

MPFILTRI®

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PASSION TO PERFORM

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A WORLDWIDE LEADER IN THE FIELD OF HYDRAULIC FILTRATION EQUIPMENT.

Our company started life in 1964, when Bruno Pasotto decided to attempt to cater for the requests of a market still to be fully explored, with the study, design, development, production and marketing of a vast range of filters for hydraulic equipment, capable of satisfying the needs of manufacturers in all sectors. The quality of our products, our extreme competitiveness compared with major international producers and our constant activities of research, design and development has made us a worldwide leader in the field of hydraulic circuit filtering.
Present for over 50 years in the market, we have played a truly decisive role in defining our sector, and by now we are a group capable of controlling our entire chain of production, monitoring all manufacturing processes to guarantee superior quality standards and to provide concrete solutions for the rapidly evolving needs of customers and the market.

HYDRAULIC FILTRATION PRODUCTS

page			up to Q_{max} l/min	up to Q_{max} gpm
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22	**SUCTION FILTERS**			
24		Filter sizing and corrective factors		
27	STRC & MPAC	Submerged suction filter, with bypass or magnetic filter	1000	264
35	SFEX	In-line filter with plastic bowl	100	26
45	SFMC	Semi-submerged positive head suction filter, low flow rate	160	42
55	SFSC	Semi-submerged positive head suction filter, high flow rate	700	185
775	CLOGGING INDICATORS			

page			up to P_{max} bar	up to P_{max} psi	up to Q_{max} l/min	up to Q_{max} gpm
66	**RETURN FILTERS**					
68		Filter sizing and corrective factors				
71	RFEX	Return filter, tank mounted filter suitable for all mineral oil and water glycol applications	16	232	260	69
81	MPFX	Tank top semi-immersed filter, standard filter element disassembly	8	116	900	238
129	MPLX	Tank top semi-immersed filter, standard filter element disassembly	10	145	1800	476
141	MPTX	Tank top semi-immersed filter, easy filter element disassembly	8	116	300	79
165	MFBX	Bowl assembly	8	116	700	185
173	MDHC	Heavy industrial applications integrated in the tank - air separation	10	145	500	132
181	MPHC	Tank top semi-immersed filter, standard filter element disassembly	10	145	3500	925
225	MPIC	Tank top semi-immersed filter, standard filter element disassembly	10	145	3500	925
237	FRIC	Tank top semi-immersed filter, easy filter element disassembly, it can be used also as in-line filter	20	290	2500	660
261	RFMC	Semi-immersed under-head filter, easy filter element disassembly	20	290	615	162
270	ACCESSORIES					
776	CLOGGING INDICATORS					

page			up to P_{max} bar	up to P_{max} psi	up to Q_{max} l/min	up to Q_{max} gpm
272	**RETURN / SUCTION FILTERS**					
274		Filter sizing and corrective factors				
277	MRSX	Unique TANK TOP filter for mobile machinery, with combined filtration on return and suction to the inlet at the hydrostatic transmissions in closed circuit	10	145	250	66
291	LMP 124 MULTIPORT	Unique IN-LINE filter for mobile machinery, with combined filtration on return and suction to the inlet at the hydrostatic transmissions in closed circuit	80	1160	120	32
778	CLOGGING INDICATORS					

page			up to P_{max} bar	up to P_{max} psi	up to Q_{max} l/min	up to Q_{max} gpm
298	**SPIN-ON FILTERS**					
301	MPS	Low pressure filter, available with single cartridge (CS) for in-line or flange mounting or with two cartridge on the same axis on the opposite sides	12	174	365	96
781	CLOGGING INDICATORS					

page			up to P_{max} bar	up to P_{max} psi	up to Q_{max} l/min	up to Q_{max} gpm
316	**LOW & MEDIUM PRESSURE FILTERS**					
318		Filter sizing and corrective factors				
321	HFEX	In-line low pressure filter, medium flow rate	35	508	300	79
331	LFEX	In-line filter with plastic bowl	16	232	300	79
341	LMP 110	In-line medium pressure filter, low flow rate	80	1160	165	44
349	LMP 112 - 123 MULTIPORT	In-line filter with Multiport design for multiple choice connection	80	1160	175	46
371	LMP 210 - 211	In-line medium pressure filter, low flow rate	60	870	365	96
381	LMP 400 - 401	In-line medium pressure filter, high flow rate	60	870	780	206
389	LMP 430 - 431	In-line medium pressure filter, high flow rate	60	870	780	206
397	LMP 950 - 951	In-line low pressure filter, available with 2 and up to 6 different heads	30	435	2400	634
405	LMP 952 - 953 - 954	In-line low pressure filter specifically designed to be mounted in series	25	363	4500	1189

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page			up to P max bar	psi	up to Q max l/min	gpm
316						
417	LMD 211	In-line duplex medium pressure filter	60	870	200	53
425	LMD 400 - 401 & 431	In-line duplex low pressure filter	16	232	600	159
441	LMD 951	In-line duplex low pressure filter, available with 2 up to 6 different heads	16	232	1200	317
449	LPH 630	Off-line low pressure filter	10	145	1600	422
457		**Filters featuring filter elements designed according to DIN24550**				
459	LDP - LDD	In-line and duplex medium pressure filter	60	870	360	95
469	LMP 900 - 901	In-line low pressure filter	30	435	2000	528
477	LMP 902 - 903	In-line low pressure filter specifically designed to be mounted in series	20	290	3000	793
486	ACCESSORIES					
784	CLOGGING INDICATORS					

			up to P max bar	psi	up to Q max l/min	gpm
488						
490		Filter sizing and corrective factors				
493	MLPX - MLPC	In-line simplex low pressure filters	16	232	13500	3566
507	MLDX - MLDC	In-line duplex low pressure filter	16	232	8700	2298
785	CLOGGING INDICATORS					

page			up to P max bar	psi	up to Q max l/min	gpm
522						
524		Filter sizing and corrective factors				
529	FMMX	Typical high pressure filter for mobile applications, low flow rate	420	6092	300	79
539	FMM	Typical high pressure filter for mobile applications, low flow rate	420	6092	300	79
549	FHA	Filter optimized for use in high pressure operating systems, low flow rate	560	8122	150	40
557	FMP 039	Filter high pressure, low flow rate applications	110	1595	80	21
565	FMP	Filter high pressure, high flow rate applications	320	4641	500	132
577	FHP	Typical high pressure filter for mobile applications, high flow rate	420	6092	630	166
597	FHM	High pressure filter with intermediate manifold construction	320	4641	400	106
617	FHB	High pressure for block mounting	320	4641	485	128
629	FHF	In-line manifold top mounting according to SAE J2066	350	5076	550	145
639	FHD	In-line duplex high pressure filter	350	5076	250	66
653	HPB	Pressure filter kits for integration in control manifolds	420	6092	300	79
786	CLOGGING INDICATORS					

page			bar max	psi	up to Q max l/min	gpm
662						
664		Filter sizing and corrective factors				
667	FZP	In-line pressure filter with threaded mount	420	6092	160	42
677	FZH	In-line pressure filter with threaded mount for higher pressure	700	10153	80	21
687	FZX	In-line pressure filter with threaded mount up to 1000 bar	1000	14504	10	3
695	FZM	Manifold top mounting	320	4641	70	18
703	FZB	Manifold side mounting	320	4641	70	18
711	FZD	Duplex pressure filter for continuous operation requirements	350	5076	60	16
787	CLOGGING INDICATORS					

page			up to P max bar	psi	up to Q max l/min	gpm
722						
724		Filter sizing and corrective factors				
727	FMMX	Typical high pressure filter for mobile applications, low flow rate	420	6092	300	79
737	FZP	In-line pressure filter with threaded mount	420	6092	160	42
747	FZH	In-line pressure filter with threaded mount for higher pressure	700	10153	80	21
757	FZX	In-line pressure filter with threaded mount up to 1000 bar	1000	14504	10	3
788	CLOGGING INDICATORS					

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Our work is based on a skillful interaction between advanced technology and fine workmanship, **customizing products according to specific market requests**, focusing strongly on innovation and quality, and following every step in the manufacturing of both standard and special products, fully respecting customer expectations.



Our customer-oriented philosophy, which enables us to satisfy all customer requests **rapidly** and **with personalized products**, makes us a **dynamic and flexible enterprise**.
The possibility of constantly controlling and monitoring the entire production process is essential to allow us to guarantee the quality of our products.

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WORLDWIDE PRESENCE

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Our foreign Branches enable us to offer a diversified range of products that allow us to successfully face the aggressive challenge of international competition, and also to maintain a stable presence at a local level.

The Group boasts **9** **business branches**

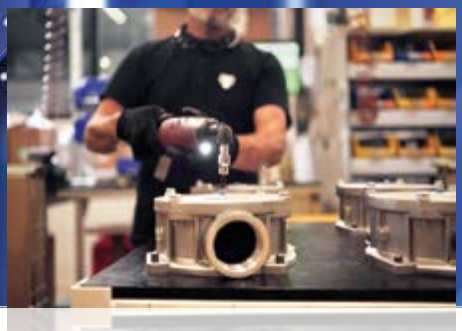


TECHNOLOGY

Our constant **quest for excellence in quality and technological innovation** allows us to offer only the best solutions and services for applications in many fields, including general industry, test rigs, lubrication, heavy engineering, renewable energies, naval engineering, offshore engineering, aviation systems, emerging technologies and mobile plant (i.e. tractors, excavators, concrete pumps, platforms).





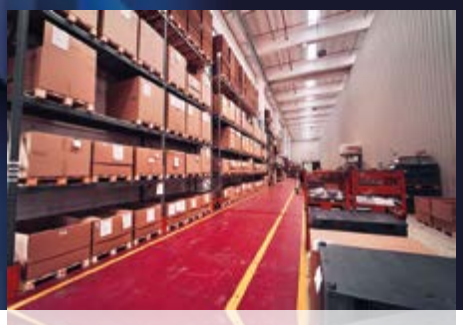


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AND PRODUCTION

Our high level of technological expertise means **we can rely entirely on our own resources, without resorting to external providers.** This in turn enables us to satisfy a growing number of customer requests, also exploiting our constantly updated range of machines and equipment, featuring **fully-automated workstations** capable of **24-hour production**.









SUCTION FILTERS

Mounting:
- Tank immersed
- In-Line
- In tank with shut off valve
- In tank with flooded suction



RETURN FILTERS

Mounting:
- In-Line
- Tank top
- In single and duplex designs



RETURN / SUCTION FILTERS

Mounting:
- In-Line
- Tank top



SPIN-ON FILTERS

Mounting:
- In-Line
- Tank top



LOW & MEDIUM PRESSURE FILTERS

Mounting:
- In-Line
- Parallel version
- In single and duplex designs



HIGH CAPACITY INDUSTRIAL FILTERS

Mounting:
- In-Line
- In single and duplex designs

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PRODUCT RANGE

MP Filtri can offer a vast and articulated range of products for the global market, suitable for all industrial sectors using hydraulic equipment.

This includes: hydraulic filters, contamination monitoring products, mobile filtration units, power transmission components and hydraulic tanks accessories.

We can provide all the skills and solutions required by the modern hydraulics industry to monitor contamination levels and other fluid conditions.

Mobile filtration units and a full range of accessories allow us to supply everything necessary for a complete service in the hydraulic circuits.



HIGH PRESSURE FILTERS

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

STAINLESS STEEL HIGH PRESSURE FILTERS

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

FILTERS FOR POTENTIALLY EXPLOSIVE ATMOSPHERE

Mounting:
- In-Line

CONTAMINATION CONTROL SOLUTIONS

- Off-line, in-line particle analyser
- Off-line bottle sampling products
- Fully calibrated using relevant ISO standards
- A wide range of variants to support fluid types and communication protocols
- Mobile FIltration Units with flow rates from 15 l/min up to 200 l/min

POWER TRANSMISSION PRODUCTS

- Aluminium bell-housings for motors from 0.12 kW to 400 kW
- Couplings in Aluminium Cast Iron - Steel
- Damping rings
- Foot bracket
- Aluminium tanks
- Cleaning covers

TANK ACCESSORIES

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

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CONTAMINATION MANAGEMENT

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1 HYDRAULIC FLUIDS

The fluid is the vector that transmits power, energy within an oleodynamic circuit. In addition to transmitting energy through the circuit, it also performs additional functions such as lubrication, protection and cooling of the surfaces.
The classification of fluids used in hydraulic systems is coded in many regulatory references, different Standards.

The most important classification system for hydraulic fluids is the one defined by International Organization for Standardization (ISO), which established a classification system within their standard: "ISO 6743-4 Lubricants, Industrial Oils and Related Products" . In particular, the parts of interest for hydraulic fluids are:
- Lubricants, industrial oils and related products (class L)
- Classifications - Part 4L - Family H (Hydraulic systems)

The ISO 6743-4 classification system can be generally applied to the three primary classes of hydraulic fluids:

- Mineral Oils (i.e.: petroleum) Hydraulic Fluids (i.e.: HH: Mineral lubricants without corrosion inhibitors; HL: HH-type lubricants with oxidation reduction and anticorrosive additives; HM: HL-type lubricants with anti-wear additives; HV: HM-type lubricants with a higher viscosity grade and temperature properties; and others).

- Biodegradable Hydraulic Fluids (HExx), also defined as "Environmentally acceptable hydraulic fluids".

- Fire Resistant Hydraulic Fluids (HFxx), which could be further split into: Fire-resistant aqueous fluids (HFAx, HFB; HFC) ; Fire-resistant synthetic anhydrous fluids (HFDx).

The choice of fluid for an hydraulic system must take into account several parameters.
These parameters can adversely affect the performance of an hydraulic system, causing delay in the controls, pump cavitation, excessive absorption, excessive temperature rise, efficiency reduction, increased drainage, wear, jam/block or air intake in the plant.

The main properties that characterize hydraulic fluids and affect their choice are:
- DYNAMIC VISCOSITY
  It identifies the fluid's resistance to sliding due to the impact of the particles forming it.

- KINEMATIC VISCOSITY
  It is a widespread formal dimension in the hydraulic field.
  It is calculated with the ratio between the dynamic viscosity and the fluid density.
  Kinematic viscosity varies with temperature and pressure variations.

- VISCOSITY INDEX
  This value expresses the ability of a fluid to maintain viscosity when the temperature changes.
  A high viscosity index indicates the fluid's ability to limit viscosity variations by varying the temperature.

- FILTERABILITY INDEX
  It is the value that indicates the ability of a fluid to cross the filter materials.
  A low filterability index could cause premature clogging of the filter material.

- WORKING TEMPERATURE
  Working temperature affects the fundamental characteristics of the fluid.
  As already seen, some fluid characteristics, such as cinematic viscosity, vary with the temperature variation.
  When choosing a hydraulic oil, must therefore be taken into account of the environmental conditions in which the machine will operate.

- COMPRESSIBILITY MODULE
  Every fluid subjected to a pressure contracts, increasing its density.
  The compressibility module identifies the increase in pressure required to cause a corresponding increase in density.

- HYDROLYTIC STABILITY
  It is the characteristic that prevents galvanic pairs that can cause wear in the plant/system.

- ANTIOXIDANT STABILITY AND WEAR PROTECTION
  These features translate into the capacity of a hydraulic oil to avoid corrosion of metal elements inside the system.

- HEAT TRANSFER CAPACITY
  It is the characteristic that indicates the capacity of hydraulic oil to exchange heat with the surfaces and then cool them.

2 FLUID CONTAMINATION

Whatever the nature and properties of fluids, they are inevitably subject to contamination. Fluid contamination can have two origins:

- INITIAL CONTAMINATION
  Caused by the introduction of contaminated fluid into the circuit, or by incorrect storage, transport or transfer operations.

- PROGRESSIVE CONTAMINATION
  Caused by factors related to the operation of the system, such as metal surface wear, sealing wear, oxidation or degradation of the fluid, the introduction of contaminants during maintenance, corrosion due to chemical or electrochemical action between fluid and components, cavitation.
  The contamination of hydraulic systems can be of different nature:

- SOLID CONTAMINATION
  For example rust, slag, metal particles, fibers, rubber particles, paint particles or additives

- LIQUID CONTAMINATION
  For example, the presence of water due to condensation or external infiltration or acids

- GASEOUS CONTAMINATION
  For example, the presence of air due to inadequate oil level in the tank, drainage in suction ducts, incorrect sizing of tubes or tanks.

3 FLUID COMPATIBILITY CHARTS

For more detailed information on specific fluid compatibility please refer to the fluid compatibility charts on our website:

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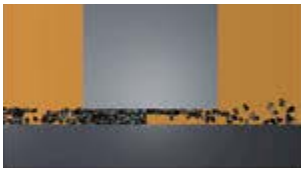
4 EFFECTS OF CONTAMINATION ON HYDRAULIC COMPONENTS

Solid contamination is recognized as the main cause of malfunction, failure and early degradation in hydraulic systems. It is impossible to delete it completely, but it can be effectively controlled by appropriate devices.

CONTAMINATION IN PRESENCE OF LARGE TOLERANCES



CONTAMINATION IN PRESENCE OF NARROW TOLERANCES



Solid contamination mainly causes surface damage and component wear.

- ABRASION OF SURFACES
  Cause of leakage through mechanical seals, reduction of system performance, failures.

- SURFACE EROSION
  Cause of leakage through mechanical seals, reduction of system performance, variation in adjustment of control components, failures.

- ADHESION OF MOVING PARTS
  Cause of failure due to lack of lubrication.

- DAMAGES DUE TO FATIGUE
  Cause of breakdowns and components breakdown.

ABRASION



EROSION



ADHESION



FATIGUE



Liquid contamination mainly results in decay of lubrication performance and protection of fluid surfaces.

DISSOLVED WATER

- INCREASING FLUID ACIDITY
  Cause of surface corrosion and premature fluid oxidation
- GALVANIC COUPLE AT HIGH TEMPERATURES
  Cause of corrosion

FREE WATER - ADDITIONAL EFFECTS

- DECAY OF LUBRICANT PERFORMANCE
  Cause of rust and sludge formation, metal corrosion and increased solid contamination
- BATTERY COLONY CREATION
  Cause of worsening in the filterability feature
- ICE CREATION AT LOW TEMPERATURES
  Cause damage to the surface
- ADDITIVE DEPLETION
  Free water retains polar additives

Gaseous contamination mainly results in decay of system performance.

- CUSHION SUSPENSION
  Cause of increased noise and cavitation.
- FLUID OXIDATION
  Cause of corrosion acceleration of metal parts.
- MODIFICATION OF FLUID PROPERTIES
  (COMPRESSIBILITY MODULE, DENSITY, VISCOSITY)
  Cause of system's reduction of efficiency and of control.
  It is easy to understand how a system without proper contamination management is subject to higher costs than a system that is provided.
- MAINTENANCE
  Increase maintenance activities, spare parts, machine stop costs.
- ENERGY AND EFFICIENCY
  Efficiency and performance reduction due to friction, drainage, cavitation.

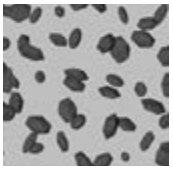
5 MEASURING THE SOLID CONTAMINATION LEVEL

The level of contamination of a system identifies the amount of contaminant contained in a fluid. This parameter refers to a unit volume of fluid.
The level of contamination may be different at different points in the system. From the information in the previous paragraphs it is also apparent that the level of contamination is heavily influenced by the working conditions of the system, by its working years and by the environmental conditions.

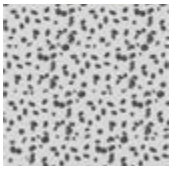
What is the size of the contaminating particles that we must handle in our hydraulic circuit?



HUMAN HAIR
(75 µm)



MINIMUM DIMENSION VISIBLE WITH HUMAN EYES
(40 µm)



TYPICAL CONTAMINANT DIMENSION IN A HYDRAULIC CIRCUIT
(4 - 14 µm)

Contamination level analysis is significant only if performed with a uniform and repeatable method, conducted with standard test methods and suitably calibrated equipment. To this end, ISO has issued a set of standards that allow tests to be conducted and express the measured values in the following ways.

- GRAVIMETRIC LEVEL - ISO 4405

The level of contamination is defined by checking the weight of particles collected by a laboratory membrane. The membrane must be cleaned, dried and desiccated, with fluid and conditions defined by the Standard.
The volume of fluid is filtered through the membrane by using a suitable suction system. The weight of the contaminant is determined by checking the weight of the membrane before and after the fluid filtration.



CLEAN MEMBRANE



CONTAMINATED MEMBRANE

- CUMULATIVE DISTRIBUTION OF THE PARTICLES SIZE - ISO 4406

The level of contamination is defined by counting the number of particles of certain dimensions per unit of volume of fluid. Measurement is performed by Contamination Monitoring Products (CMP).
Following the count, the contamination classes are determined, corresponding to the number of particles detected in the unit of fluid.
The most common classification methods follow ISO 4406 and SAE AS 4059 (Aerospace Sector) regulations.
NAS 1638 is still used although obsolete.

Classification example according to ISO 4406

The International Standards Organization standard ISO 4406 is the preferred method of quoting the number of solid contaminant particles in a sample. The level of contamination is defined by counting the number of particles of certain dimensions per unit of volume of fluid. The measurement is performed by Contamination Monitoring Products (CMP).

The numbers represent a code which identifies the number of particles of certain sizes in 1ml of fluid. Each code number has a particular size range.
The first scale number represents the number of particles equal to or larger than 4 $\mu m_{(c)}$ per millilitre of fluid;
The second scale number represents the number of particles equal to or larger than 6 $\mu m_{(c)}$ per millilitre of fluid;
The third scale number represents the number of particles equal to or larger than 14 $\mu m_{(c)}$ per millilitre of fluid.

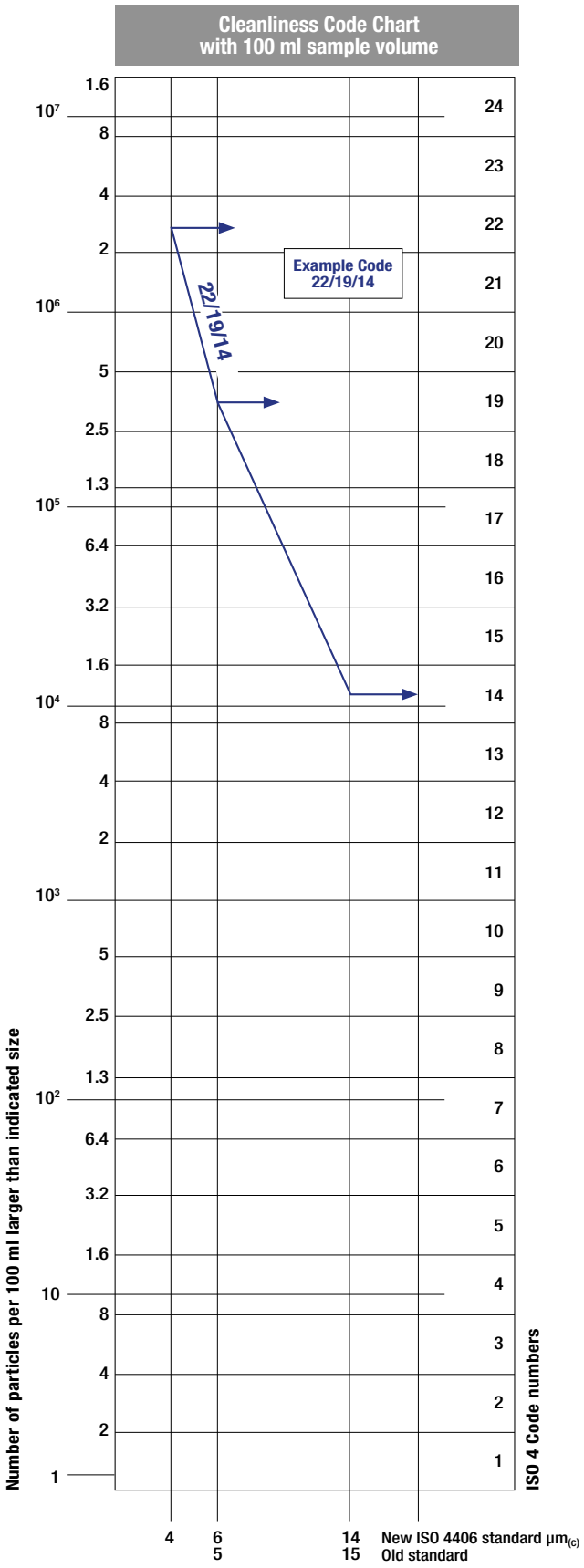
ISO 4406 - Allocation of Scale Numbers

Class	Number of particles per ml	
	Over	Up to
28	1 300 000	2 500 000
27	640 000	1 300 000
26	320 000	640 000
25	160 000	320 000
24	80 000	160 000
23	40 000	80 000
22	20 000	40 000
21	10 000	20 000
20	5 000	10 000
19	2 500	5 000
18	1 300	2 500
17	640	1 300
16	320	640
15	160	320
14	80	160
13	40	80
12	20	40
11	10	20
10	5	10
9	2.5	5
8	1.3	2.5
7	0.64	1.3
6	0.32	0.64
5	0.16	0.32
4	0.08	0.16
3	0.04	0.08
2	0.02	0.04
1	0.01	0.02
0	0	0.01

> 4 $\mu m_{(c)}$ = 350 particles
> 6 $\mu m_{(c)}$ = 100 particles
> 14 $\mu m_{(c)}$ = 25 particles
16 / 14 / 12

ISO 4406 Cleanliness Code System

Microscope counting examines the particles differently to Contamination Monitoring Products (CMP) and the code is given with two scale numbers only. These are at 5 µm and 15 µm equivalent to the 6 $\mu m_{(c)}$ and 14 $\mu m_{(c)}$ of Contamination Monitoring Products (CMP).



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- CUMULATIVE DISTRIBUTION OF THE PARTICLES SIZE
  SAE AS4059-1 and SAE AS4059-2

Classification example according to SAE AS4059 - Rev. G

The code, prepared for the aerospace industry, is based on the size, quantity, and particle spacing in a 100 ml fluid sample. The contamination classes are defined by numeric codes, the size of the contaminant is identified by letters (A-F).

This SAE Aerospace Standard (AS) defines cleanliness levels for particulate contamination of hydraulic fluids and includes methods of reporting data relating to the contamination levels. Tables 1 and 2 below provide differential and cumulative particle counts respectively for counts obtained by an automatic particle counter, e.g. LPA3.

Table 1 - Class for differential measurement

Class	Dimension of contaminant Maximum Contamination Limits per 100 ml					(3)
	5-15 µm	15-25 µm	25-50 µm	50-100 µm	>100 µm	(1)
	6-14 $\mu m_{(c)}$	14-21 $\mu m_{(c)}$	21-38 $\mu m_{(c)}$	38-70 $\mu m_{(c)}$	>70 $\mu m_{(c)}$	(2)
00	125	22	4	1	0	
0	250	44	8	2	0	
1	500	89	16	3	1	
2	1 000	178	32	6	1	
3	2 000	356	63	11	2	
4	4 000	712	126	22	4	
5	8 000	1 425	253	45	8	
6	16 000	2 850	506	90	16	
7	32 000	5 700	1 012	180	32	
8	64 000	11 400	2 025	360	64	
9	128 000	22 800	4 050	720	128	
10	256 000	45 600	8 100	1 440	256	
11	512 000	91 200	16 200	2 880	512	
12	1 024 000	182 400	32 400	5 760	1 024	

6 - 14 $\mu m_{(c)}$ = 15 000 particles
14 - 21 $\mu m_{(c)}$ = 2 200 particles
21 - 38 $\mu m_{(c)}$ = 200 particles
38 - 70 $\mu m_{(c)}$ = 35 particles
> 70 $\mu m_{(c)}$ = 3 particles
SAE AS4059 REV G - Class 6

(1) Size range, optical microscope, based on longest dimension as measured per AS598 or ISO 4407. **(2)** Size range CMP calibrated per ISO 11171 or an optical or electron microscope with image analysis software, based on projected area equivalent diameter. **(3)** Contamination classes and particle count limits are identical to NAS 1638.

Table 2 - Class for cumulative measurement

Class	Dimension of contaminant Maximum Contamination Limits per 100 ml						(1)
	>1 µm	>5 µm	>15 µm	>25 µm	>50 µm	>100 µm	
	>4 $\mu m_{(c)}$	>6 $\mu m_{(c)}$	>14 $\mu m_{(c)}$	>21 $\mu m_{(c)}$	>38 $\mu m_{(c)}$	>70 $\mu m_{(c)}$	(2)
000	195	76	14	3	1	0	
00	390	152	27	5	1	0	
0	780	304	54	10	2	0	
1	1 560	609	109	20	4	1	
2	3 120	1 217	217	39	7	1	
3	6 250	2 432	432	76	13	2	
4	12 500	4 864	864	152	26	4	
5	25 000	9 731	1 731	306	53	8	
6	50 000	19 462	3 462	612	106	16	
7	100 000	38 924	6 924	1 224	212	32	
8	200 000	77 849	13 849	2 449	424	64	
9	400 000	155 698	27 698	4 898	848	128	
10	800 000	311 396	55 396	9 796	1 696	256	
11	1 600 000	622 792	110 792	19 592	3 392	512	
12	3 200 000	1 245 584	221 584	39 184	6 784	1 024	

> 4 $\mu m_{(c)}$ = 45 000 particles
> 6 $\mu m_{(c)}$ = 15 000 particles
> 14 $\mu m_{(c)}$ = 1 500 particles
> 21 $\mu m_{(c)}$ = 250 particles
> 38 $\mu m_{(c)}$ = 15 particles
> 70 $\mu m_{(c)}$ = 3 particle
SAE AS4059 REV G
cpc* Class 6 6/6/5/5/4/2

(1) Size range, optical microscope, based on longest dimension as measured per AS598 or ISO 4407. **(2)** Size range, CMP calibrated per ISO 11171 or an optical or electron microscope with image analysis software, based on projected area equivalent diameter. **(3)** Contamination classes and particle count limits are identical to NAS 1638.

* cumulative particle count

- CLASSES OF CONTAMINATION ACCORDING TO NAS 1638 (January 1964)

The NAS system was originally developed in 1964 to define contamination classes for the contamination contained within aircraft components.
The application of this standard was extended to industrial hydraulic systems simply because nothing else existed at the time.
The coding system defines the maximum numbers permitted of 100 ml volume at various size intervals (differential counts) rather than using cumulative counts as in ISO 4406. Although there is no guidance given in the standard on how to quote the levels, most industrial users quote a single code which is the highest recorded in all sizes and this convention is used on MP Filtri Contamination Monitoring Products (CMP).

The contamination classes are defined by a number (from 00 to 12) which indicates the maximum number of particles per 100 ml, counted on a differential basis, in a given size bracket.

Size Range Classes (in microns)

Maximum Contamination Limits per 100 ml					
Class	5-15	15-25	25-50	50-100	>100
00	125	22	4	1	0
0	250	44	8	2	0
1	500	89	16	3	1
2	1 000	178	32	6	1
3	2 000	356	63	11	2
4	4 000	712	126	22	4
5	8 000	1 425	253	45	8
6	16 000	2 850	506	90	16
7	32 000	5 700	1 012	180	32
8	64 000	11 400	2 025	360	64
9	128 000	22 800	4 050	720	128
10	256 000	45 600	8 100	1 440	256
11	512 000	91 200	16 200	2 880	512
12	1 024 000	182 400	32 400	5 760	1 024

5-15 µm = 42 000 particles
15-25 µm = 2 200 particles
25-50 µm = 150 particles
50-100 µm = 18 particles
> 100 µm = 3 particles
Class NAS 8

- CUMULATIVE DISTRIBUTION OF THE PARTICLES SIZE - ISO 4407

The level of contamination is defined by counting the number of particles collected by a laboratory membrane per unit of fluid volume. The measurement is done by a microscope. The membrane must be cleaned, dried and desiccated, with fluid and conditions defined by the Standard. The fluid volume is filtered through the membrane, using a suitable suction system.
The level of contamination is identified by dividing the membrane into a predefined number of areas and by counting the contaminant particles using a suitable laboratory microscope.

MICROSCOPE CONTROL AND MEASUREMENT



Example figure 1and 2

COMPARISON PHOTOGRAPH'S
1 graduation = 10µm



Fig. 1



Fig. 2

For other comparison photographs for contamination classes see the "*Filtration and Particle Analyser Handbook*".

Scan or click me!

- CLEANLINESS CODE COMPARISON

Although ISO 4406 standard is being used extensively within the hydraulics industry other standards are occasionally required and a comparison may be requested. The table below gives a very general comparison but often no direct comparison is possible due to the different classes and sizes involved.

ISO 4406	SAE AS4059 Table 2	SAE AS4059 Table 1	NAS 1638
> 4 $\mu m_{(c)}$ 6 $\mu m_{(c)}$ 14 $\mu m_{(c)}$	> 4 $\mu m_{(c)}$ 6 $\mu m_{(c)}$ 14 $\mu m_{(c)}$	4-6 6-14 14-21 21-38 38-70 >70	5-15 15-25 25-50 50-100 >100
23 / 21 / 18	13A / 12B / 12C	12	12
22 / 20 / 17	12A / 11B / 11C	11	11
21 / 19 / 16	11A / 10B / 10C	10	10
20 / 18 / 15	10A / 9B / 9B	9	9
19 / 17 / 14	9A / 8B / 8C	8	8
18 / 16 / 13	8A / 7B / 7C	7	7
17 / 15 / 12	7A / 6B / 6C	6	6
16 / 14 / 11	6A / 5B / 5C	5	5
15 / 13 / 10	5A / 4B / 4C	4	4
14 / 12 / 09	4A / 3B / 3C	3	3

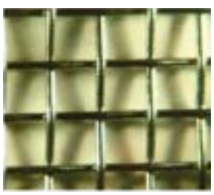
6 FILTRATION TECHNOLOGIES

Various mechanisms such as mechanical stoppage, magnetism, gravimetric deposit, or centrifugal separation can be used to reduce the level of contamination.
The mechanical stoppage method is most effective and can take place in two ways:

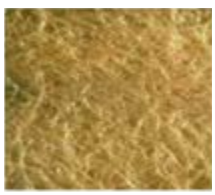
- SURFACE FILTRATION
  It is by direct interception. The filter prevents particles larger than the pores from continuing in the plant / system. Surface filters are generally manufactured with metal canvases or meshes.

- DEPTH FILTERING
  Filters are constructed by fiber interlacing. Such wraps form pathways of different shapes and sizes in which the particles remain trapped when they find smaller apertures than their diameter.
  Depth filters are generally produced with papers impregnated with phenolic resins, metal fibers or inorganic fibers.
  In inorganic fiber filtration, commonly called microfibre, the filtering layers are often overlapped in order to increase the ability to retain the contaminant.

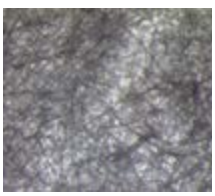
WIRE MESH FILTRATION

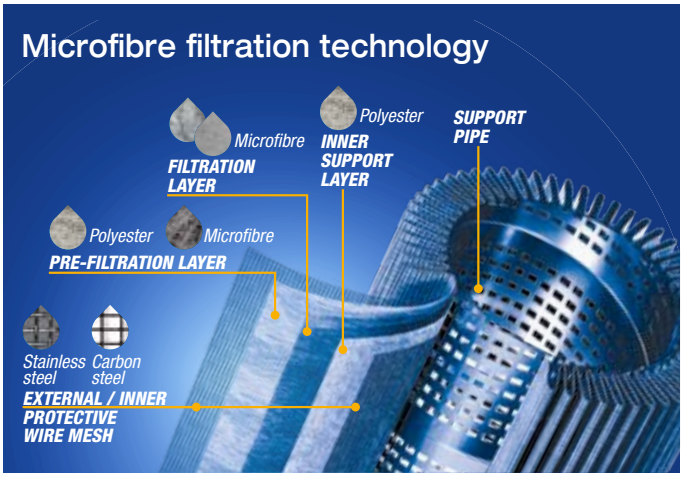


PAPER FILTRATION



MICROFIBER FILTRATION





The filtration efficiency of metallic mesh filtrations is defined as the maximum particle size that can pass through the meshes of the filtering grid.
The efficiency of microfibre and paper filtration ($\beta_{x(c)}$) is defined through a lab test called Multipass Test. The efficiency value ($\beta_{x(c)}$) is defined as the ratio between the number of particles of certain dimensions detected upstream and downstream of the filter.

$$\frac{\text{Upstream particles number} > X\ \mu m_{(c)}}{\text{Downstream particles number} > X\ \mu m_{(c)}} = \beta_{x(c)}$$



Value ($\beta_{x(c)}$)	2	10	75	100	200	1000
Efficiency	50%	90%	98.7%	99%	99.5%	99.9%

Test conditions, such as type of fluid to be used (MIL-H-5606), type of contaminant to be used (ISO MTD), fluid viscosity, test temperature, are determined by ISO 16889.
In addition to the filtration efficiency value during the Multipass test, other important features, such as filtration stability (β stability) and dirt holding capacity (DHC), are also tested.
Poor filtration stability is the cause of the filtering quality worsening as the filter life rises. Low dirt holding capacity causes a reduction in the life of the filter.

Filtration ISO Standard Comparison		
$\beta_{x(c)}$ > 1000 ISO 16889	β_x > 200 ISO 4572	MP Filtri Filter media code
5 $\mu m_{(c)}$	3 µm	A03
7 $\mu m_{(c)}$	6 µm	A06
10 $\mu m_{(c)}$	10 µm	A10
16 $\mu m_{(c)}$	18 µm	A16
21 $\mu m_{(c)}$	25 µm	A25

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7 RECOMMENDED CONTAMINATION CLASSES

Any are the nature and the properties of fluids, they are inevitably subject to contamination. The level of contamination can be managed by using special components called filters.
Hydraulic components builders, knowing the problem of contamination, recommend the filtration level appropriate to the use of their products.

Example of recommended contamination levels for pressures below 140 bar.

Piston pumps with fixed flow rate	•					
Piston pumps with variable flow rate			•			
Vane pumps with fixed flow rate		•				
Vane pumps with variable flow			•			
Engines	•					
Hydraulic cylinders	•					
Actuators					•	
Test benches						•
Check valve	•					
Directional valves	•					
Flow regulating valves	•					
Proportional valves				•		
Servo-valves					•	
Flat bearings			•			
Ball bearings				•		
ISO 4406 CODE	20/18/15	19/17/14	18/16/13	17/15/12	16/14/11	15/13/10
Recommended filtration $\beta_{x(c)} \geq 1.000$	$\beta_{21(c)}$ >1000	$\beta_{15(c)}$ >1000	$\beta_{10(c)}$ >1000	$\beta_{7(c)}$ >1000	$\beta_{7(c)}$ >1000	$\beta_{5(c)}$ >1000
MP Filtri media code	A25	A16	A10	A06	A06	A03

The common classification of filters is determined by their position in the plant.

8 TYPES OF FILTERS

Suction filters
They are positioned before the pump and are responsible for protecting the pump from dirty contaminants. It also provides additional flow guidance to the pump suction line.
Being subject to negligible working pressures are manufactured with simple and lightweight construction.
They are mainly produced with gross grade surface filtrations, mainly 60 ÷ 125 µm.
They can be equipped with a magnetic filter for retaining ferrous particles.
They are generally placed under the fluid head to take advantage of the piezometric thrust of the fluid and reduce the risk of cavitation.

There are two types of suction filters:
- IMMERSION FILTERS
  Simple filter element screwed on the suction pipe

- FILTERS WITH CONTAINER
  Container filters that are more bulky, but provide easier maintenance of the tank

Delivery (or Pressure) filters
They are positioned between the pump and most sensitive regulating and controlling components, such as servo valves or proportional valves, and are designed to ensure the class of contamination required by the components used in the circuit.
Being subjected to high working pressures are manufactured with more robust and articulated construction. In particular situations of corrosive environments or aggressive fluids can be made of stainless steel.
They are mainly produced with filtering depths of 3 ÷ 25 µm.
They can be manufactured with in-line connections, with plate or flange connections or directly integrated into the circuit control blocks / manifolds.
They can also be manufactured in duplex configuration to allow the contaminated section to be maintained even when the plant / system is in operation without interruption of the working cycle.

Return filters
They are positioned on the return line to the tank and perform the task of filtering the fluid from particles entering the system from the outside or generated by the wear of the components.
They are generally fixed to the reservoir (for this reason also called top tank mounted), positioned semi-immersed or completely immersed.
The positioning of the return filters must guarantee in all operating conditions that the fluid drainage takes place in immersed condition; this is to avoid creating foams in the tank that can cause malfunctions or cavitation in the pumps.
For the sizing of the return filters, account must be taken of the presence of accumulators or cylinders that can make the return flow considerably greater than the pump suction flow rate.
Being subject to contained working pressures are manufactured with simple and lightweight construction.
Normally it is possible to extract the filter element without disconnecting the filter from the rest of the system.

Combined filters
They are designed to be applied to systems with two or more circuits. They are commonly used in hydrostatic transmission machines where they have a dual filtration function of the return line and suction line of the hydrostatic transmission pump.
The filter is equipped with a valve that keeps the 0.5 bar pressure inside the filter. A portion of the fluid that returns to the tank is filtered by the return filter element, generally produced with absolute filtration, and returns to the transmission booster pump.
Only excess fluid returns to the tank through the valve.
The internal pressure of the filter and the absolute filtration help to avoid the cavitation phenomenon inside the pump.

Off-line filters
They are generally used in very large systems / plants, placed in a closed circuit independent from the main circuit. They remain in operation regardless of the operation of the main circuit and are crossed by a constant flow rate.
They can also be manufactured in duplex configuration to allow the contaminated section to be maintained even when the unit is in operation without interruption of the work cycle.

Venting filters
During the operation of the plants, the fluid level present in the reservoir changes continuously.
The result of this continuous fluctuation is an exchange of air with the outside environment.
The venting filter function, positioned on the tank, is to filter the air that enters the tank to compensate for fluid level variations.

9 FILTER SIZING PARAMETERS

The choice of the filter system for an hydraulic system is influenced by several factors.
It is necessary to consider the characteristics of the various components present in the plant and their sensitivity to contamination.

It is also necessary to consider all the tasks that the filter will have to do within the plant:
- FLUID PROTECTION FROM CONTAMINATION
- PROTECTION OF OLEODYNAMIC COMPONENTS SENSITIVE TO CONTAMINATION
- PROTECTION OF OLEODYNAMIC PLANTS FROM ENVIRONMENTAL WASTE
- PROTECTION OF OLEODYNAMIC PLANTS FROM CONTAMINATION CAUSED BY COMPONENTS' FAILURES

The advantages of proper positioning and sizing of the filters are
- MORE RELIABILITY OF THE SYSTEM
- LONGER LIFE OF THE FLUID COMPONENTS
- REDUCTION OF STOP TIME
- REDUCTION OF FAILURE CASUALITIES

Each hydraulic filter is described by general features that identify the possibility of use in different applications.

- *MAXIMUM WORKING PRESSURE (Pmax)*
  The maximum working pressure of the filter must be greater than or equal to the pressure of the circuit section in which it will be installed.

- *PRESSURE DROP (ΔP)*
  The pressure drop depends on a number of factors, such as the working circuit temperature, the fluid viscosity, the filter element cleaning condition.

- *WORKING TEMPERATURE (T)*
  The working temperature deeply affect the choice of materials. Excessively high or low temperatures may adversely affect the strength of the materials or the characteristics of the seals.

- *FILTRATION EFFICIENCY (%) / FILTRATION RATIO ($ß_{x(c)}$)*
  Filtration efficiency is the most important parameter to consider when selecting a filter.
  When choosing the filtration performances, the needs of the most sensitive components in the system must be considered.

- *FLUID TYPE*
  The type of fluid influences the choice of filters in terms of compatibility and viscosity. It is always mandatory to check the filterability.

- *PLACEMENT IN THE PLANT*
  The position of the filter in the system conditions the efficiency of all filter performances.

10 APPLICABLE STANDARDS FOR FILTER DEVELOPMENT

In order to obtain unique criteria for development and verification of the filters performance, specific regulations for the filters and filter elements testing have been issued by ISO. These norms describe the target, the methodology, the conditions and the presentation methods for the test results.

ISO 2941
Hydraulic fluid power -- Filter elements -- Verification of collapse/burst pressure rating
This Standard describes the method for testing the collapse / burst resistance of the filter elements.
The test is performed by crossing the contaminated fluid filter element at a predefined flow rate. The progressive clogging of the filter element, determined by contamination, causes an increase in differential pressure.

ISO 2942
Hydraulic fluid power -- Filter elements -- Verification of fabrication integrity and determination of the first bubble point
This Standard describes the method to verify the integrity of the assembled filter elements.
It can be used to verify the quality of the production process or the quality of the materials by verifying the pressure value of the first bubble point.

ISO 2943
Hydraulic fluid power -- Filter elements -- Verification of material compatibility with fluids
This Standard describes the method to verify the compatibility of materials with certain hydraulic fluids.
The test is carried out by keeping the element (the material sample) immersed in the fluid under high or low temperature conditions for a given period of time and verifying the retention of the characteristics.

ISO 3723
Hydraulic fluid power -- Filter elements -- Method for end load test
This Standard describes the method for verifying the axial load resistance of the filter elements.
After performing the procedure described in ISO 2943, the designed axial load is applied to the filter element. To verify the test results, then the test described in ISO 2941 is performed.

ISO 3968
Hydraulic fluid power -- Filters -- Evaluation of differential pressure versus flow characteristics
This Standard describes the method for checking the pressure drop across the filter.
The test is carried out by crossing the filter from a given fluid and by detecting upstream and downstream pressures.
Some of the parameters defined by the Standard are the fluid, the test temperature, the size of the tubes, the position of the pressure detection points.

ISO 16889
Hydraulic fluid power -- Filters -- Multi-pass method for evaluating filtration performance of a filter element
This Standard describes the method to check the filtration characteristics of the filter elements.
The test is performed by constant introduction of contaminant (ISO MTD). The characteristics observed during the test are the filtration efficiency and the dirty holding capacity related to the differential pressure.

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ISO 23181

Hydraulic fluid power -- Filter elements -- Determination of resistance to flow fatigue using high viscosity fluid

This Standard describes the method for testing the fatigue resistance of the filter elements. The test is carried out by subjecting the filter to continuous flow variations, thus differential pressure, using a high viscosity fluid.

ISO 11170

Hydraulic fluid power -- Sequence of tests for verifying performance characteristics of filter elements

The Standard describes the method for testing the performance of filter elements. The protocol described by the regulations provides the sequence of all the tests described above in order to verify all the working characteristics (mechanical, hydraulic and filtration).

ISO 10771-1

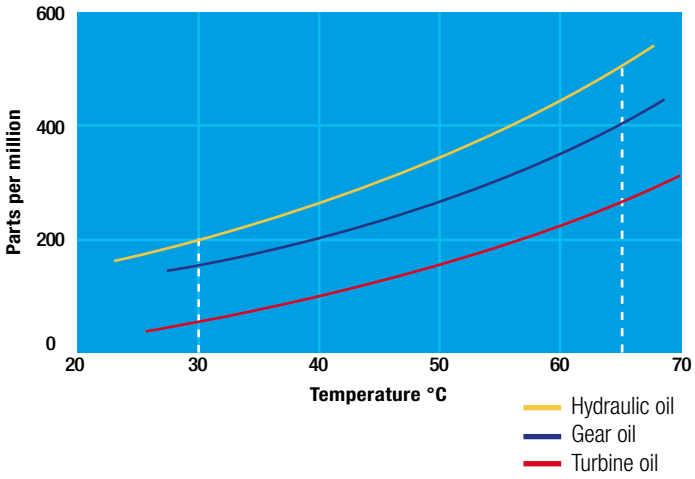
Hydraulic fluid power -- Fatigue pressure testing of metal pressure-containing envelopes -- Test method

This Standard describes the method to check the resistance of the hydraulic components with pulsing pressure.
It can be applied to all metal components (excluding tubes) subject to cyclic pressure used in the hydraulic field.

11 WATER IN HYDRAULIC AND LUBRICATING FLUIDS

Water Content

In mineral oils and non aqueous resistant fluids water is undesirable. Mineral oil usually has a water content of 50-300 ppm (@40°C) which it can support without adverse consequences.
Once the water content exceeds about 300ppm the oil starts to appear hazy. Above this level there is a danger of free water accumulating in the system in areas of low flow. This can lead to corrosion and accelerated wear.
Similarly, fire resistant fluids have a natural water which may be different to mineral oil.

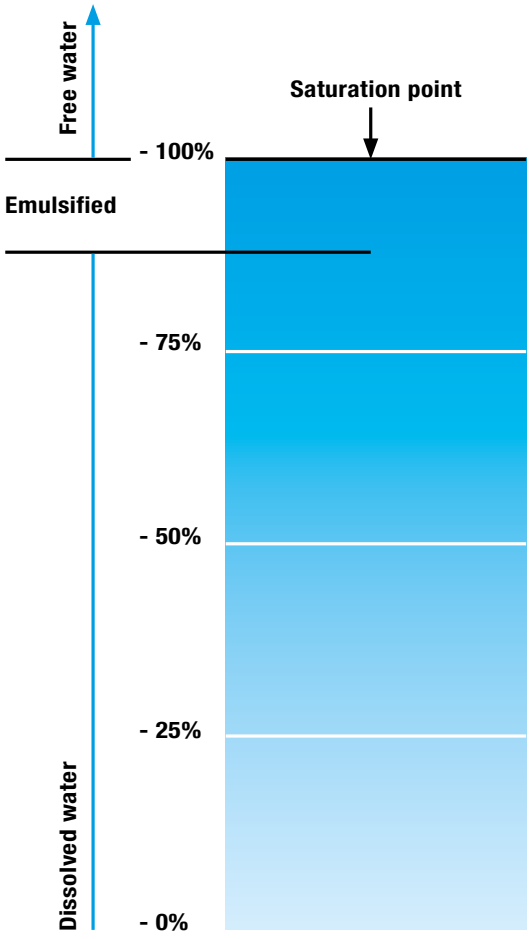


Saturation Levels

Since the effects of free (also emulsified) water is more harmful than those of dissolved water, water levels should remain well below the saturation point.

However, even water in solution can cause damage and therefore every reasonable effort should be made to keep saturation levels as low as possible. There is no such thing as too little water. As a guideline, we recommend maintaining saturation levels below 50% in all equipment.

TYPICAL WATER SATURATION LEVEL FOR NEW OILS
Examples:
Hydraulic oil @ 30°C = 200 ppm = 100% saturation
Hydraulic oil @ 65°C = 500 ppm = 100% saturation



WATER REMOVAL

Water is present everywhere, during storage, handling and servicing.

MP Filtri filter elements feature an absorbent media which protects hydraulic systems from both particulate and water contamination.
MP Filtri's filter element technology is available with inorganic microfiber media with a filtration rating 25 µm (therefore identified with media designation WA025), providing absolute filtration of solid particles to $\beta_{x(c)} = 1000$.
Absorbent media is made by water absorbent fibres which increase in size during the absorption process.
Free water is thus bonded to the filter media and completely removed from the system (it cannot even be squeezed out).

Filter Media

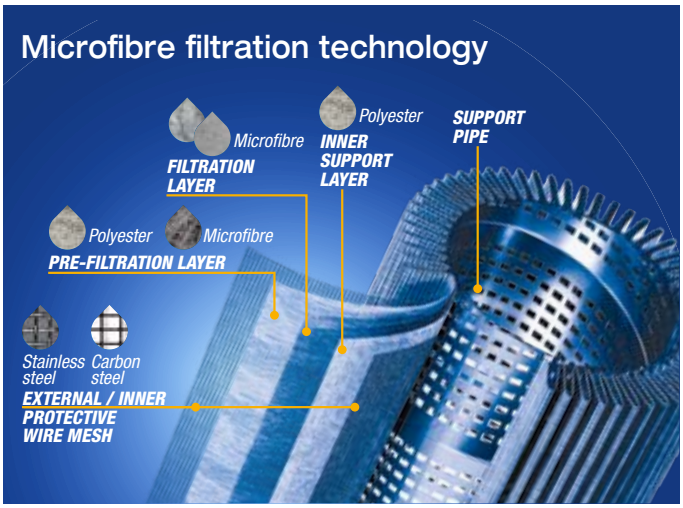


Fabric that absorbs water

Absorber media layer



The Filter Media has absorbed water



Microfibre filtration technology

By removing water from your fluid power system, you can prevent such key problems as:
- corrosion (metal etching)
- loss of lubricant power
- accelerated abrasive wear in hydraulic components
- valve-locking
- bearing fatigue
- viscosity variance (reduction in lubricating properties)
- additive precipitation and oil oxidation
- increase in acidity level
- increased electrical conductivity (loss of dielectric strength)
- slow/weak response of control systems



For more details please refer to our dedicate brochure "WATER REMOVAL"

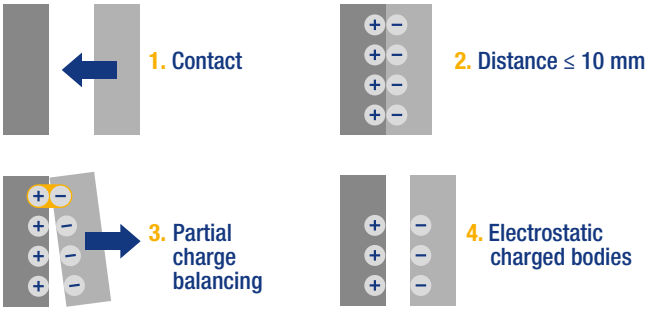
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(12) THE ANTI-STATIC FILTERS

zerospark®

zerospark is a specialist solution designed to solve the problem of electrostatic discharge inside hydraulic filters. Caused by the electrical charge build-up due to the passage of oil through the filters, this can result in damage to filter elements, oils and circuit components. It can even cause fire hazards in environments where flammable materials are present.

THE TRIBOELECTRIC EFFECT
The body with the most electronegativity strips electrons from the other, generating a build-up of a net negative charge on itself. The other body is charged by the same amount but with the opposite sign, giving rise to very high potential differences. These, if not dissipated, can give rise to electrostatic discharges.







For more details please refer to our dedicate brochure "ZEROSPARK"

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Filters sizing software

The web-based software program will allow you to select the most suitable MP Filtri's Filters, in accordance with your process design requirements.

The program will automatically check your input design process prior to propose you the acceptable solutions and create an output in PDF report style format.

The MP Filtri Selection Tool software program is easy to use with a flexible fast design method and provides improved layout formats with full descriptions.

The web-based tool is available at MP Filtri website at following link:
https://www.mpfiltri.com/tools/

The related, complete user guide is available as Manual and downloadable from the "Download" section of MP Filtri website, as well as scanning the following QR code

Scan or click me!



Suction filters are used as safety filters to protect pumps from gross contamination which can cause them to grip.

They are available in 3 families:
- Suction Strainers (STRC and MPAC)
- SFEX ELIXIR® series, for protection of the downstream pump against the coarse contamination
- SFMC and SFSC external filters, for mounting semi-immersed under the oil level

SFMC and SFSC semi-immersed filters, which shut-off oil flow while the filter element is being replaced, replace the butterfly valves usually used for servicing hydraulic pumps.

Suction filters



Filter sizing and corrective factors	page 24
STRC & MPAC	27
SFEX ELIXIR	35
SFMC	45
SFSC	55
INDICATORS	775

FILTER SIZING Calculation

THE CORRECT FILTER SIZING HAS TO BE BASED ON THE TOTAL PRESSURE DROP DEPENDING ON THE APPLICATION.

The pressure drop calculation is performed by adding together the value of the housing with the value of the filter element. The pressure drop Δpc of the housing is proportional to the fluid density (kg/dm³ / lb/ft³).
The filter element pressure drop Δpe is proportional to its viscosity (mm²/s / SUS), the corrective factor Y have to be used in case of an oil viscosity different than 30 mm²/s (cSt) / 150 SUS.

Sizing data for single filter element, head at top

Δpc = Filter housing pressure drop [bar / psi]
Δpe = Filter element pressure drop [bar / psi]
Y = Corrective factor Y (see correspondent table), depending on the filter type, on the filter element size, on the filter element length and on the filter media
Q = flow rate (l/min - gpm)
V1 reference oil viscosity = 30 mm²/s (cSt) /150 SUS
V2 = operating oil viscosity in mm²/s (cSt) / SUS

Filter element pressure drop calculation with an oil viscosity different than 30 mm²/s (cSt) / 150 SUS

International system:
Δpe = Y : 1000 x Q x (V2:V1)

Imperial system:
Δpe = Y : 17.2 x Q x (V2:V1)

Δp Tot. = Δpc + Δpe

Verification formula

Δp Tot. ≤ Δp max allowed

Maximum total pressure drop (Δp max) allowed by a new and clean filter

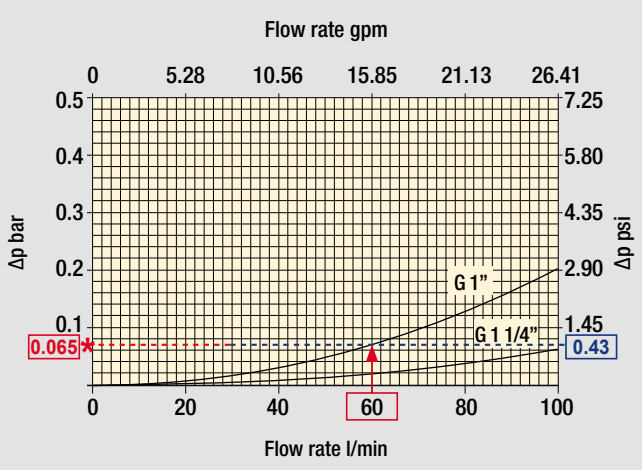
Filter family	Δp max	
	[bar]	[psi]
Suction filters	0.08 bar	1.15 psi

Filter pressure drop calculation example

Application data:
Selected filter: **SFEX 110 length 10**
Selected filter element: **FEX 110 length 10**
Selected connection: **G 1”**
Selected filtration rating: **90 µm** absolute filtration with wire mesh
Flow rate Q = **60 l/min / 15.85 gpm**
Viscosity V2 = 46 mm²/s (cSt) / 216 SUS
Oil density = 0.86 kg/dm³ / 53.68 lb/ft³

Calculation:
Δpc = 0.065 bar / 0.94 psi (see graphic below)

SFEX 110



Filter housings Δp pressure drop.
The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

Filter element		Nominal filtration Filter Elem. Δp Series: A - C					
Type	Length	P0010	P0025	M0025	M0060	M0090	M0250
FEX 110	10	1.33	1.12	0.22	0.18	0.14	0.14
	20	0.90	0.76	0.15	0.10	0.09	0.09

Δpe = (0.14 : 1000) x 60 x (46 : 30) = 0.01 bar
Δpe = (0.14 : 17.2) x 15.8 x (216 : 150) = 0.19 psi

√ **Δp Tot. = 0.065 + 0.01 = 0.075 bar**
Δp Tot. = 0.94 + 0.19 = 1.13 psi

The selection is correct because the total pressure drop value is inside the admissible range for suction filters.
In case the max allowed total pressure drop is not verified, it is necessary to repeat the calculation changing the filter and/or filter element length/size.

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Filter element		Nominal filtration Filter element ΔP Series : A - C					
Type	Length	P0010	P0025	M0025	M0060	M0090	M0250
SMC 250	10	0.65	0.20	0.10	0.08	0.05	0.03
SSC 503	10	-	-	0.17	0.11	0.11	0.11
SSC 504	10	-	-	0.11	0.08	0.08	0.08
SSC 505	10	-	-	0.23	0.18	0.18	0.18
SSC 510	10	-	-	0.18	0.14	0.14	0.14
SSC 535	10	-	-	0.08	0.05	0.05	0.05
SSC 540	10	-	-	0.05	0.04	0.04	0.04
FEX 060	10	4.58	3.22	1.02	0.89	0.63	0.63
	20	1.97	1.38	0.62	0,45	0.29	0.29
FEX 110	10	1.33	1.12	0.22	0.18	0.14	0.14
	20	0.90	0.76	0.15	0.10	0.09	0.09

Corrective factor Y to be used for the filter element pressure drop calculation. The values depend to the filter size and length and to the filter media.
Reference oil viscosity 30 mm^2/s

STRC & MPAC series

Flow rate up to 1000 l/min



Description

Suction filters

Flow rate up to 1000 l/min

STRC

STRC is a range of suction strainers for protection of the downstream pump against the coarse contamination.
They are placed below the oil level directly connected to the suction line of the pump.

Available features:
- Female threaded connections up to 3", for a maximum flow rate of 1000 l/min
- Bypass valve, to relieve excessive pressure drop across the filter media

Common application:
- Mobile machines (Construction and Agriculture machines)
- Industrial equipment

MPAC

MPAC is a range of suction strainers for protection of the downstream pump against the coarse contamination.
They are placed below the minimum oil level, directly connected to the suction line of the pump.
The robust design allows the use of these filters in any heavy duty application.

Available features:
- Female threaded connections up to 3", for a maximum flow rate of 1000 l/min
- Magnetic filter (MPAC), to hold the ferrous particles

Common application:
Industrial equipment

Technical data

STRC materials
1 - Connection: Polyamide, GF reinforced
2 - Core tube: Tinned steel
3 - Wire mesh
4 - End cap: Polyamide, GF reinforced
5 - Bypass valve: Polyamide, GF reinforced - Steel

MPAC materials
1 - Connection: Aluminium
2 - Magnetic filter
3 - Tie rod: Galvanized steel
4 - End cap: Galvanized steel
5 - Core tube: Galvanized steel
6 - Filter media: Wire mesh
7 - Bottom: Galvanized steel
8 - Washer: Galvanized steel
9 - Self-locking nut: Galvanized steel - Polyamide

Bypass valve
Opening pressure 0.03 MPa (0.3 bar)

Filter element features

Filter		Filter element	
STRC - MPAC		n.a.	
Δp Element type			
Element media	Construction	Δp Series	Δp
M - Wire mesh	Standard	A	1 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Temperature
From -25 °C to +110 °C

Quantity

Series and size		pcs/pack
STRC	045 - 050	12
STRC	065 - 070 - 086 - 100	6
STRC	140 - 150	1
MPAC	050	12
MPAC	070 - 100	6
MPAC	140	1

Weights [kg]

Filter series	
STRC	see page 31
MPAC	see page 33



STRC
Without bypass



STRC
With bypass



MPAC
Without additional features



MPAC
With magnetic filter

MP FILTRI WWW.SUMY.IR

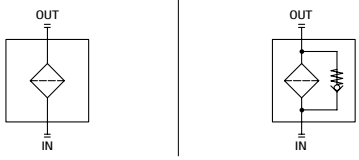
Flow rates [l/min]

Filter series	Thread	l/min
STRC & MPAC	3/8”	19
	1/2”	28
	3/4”	67
	1”	126
	1 1/4”	167
	1 1/2”	258
	2”	480
	2 1/2”	854
	2”	480
	3”	995

Maximum flow rate for a complete suction filter with a pressure drop Δp = 0.08 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

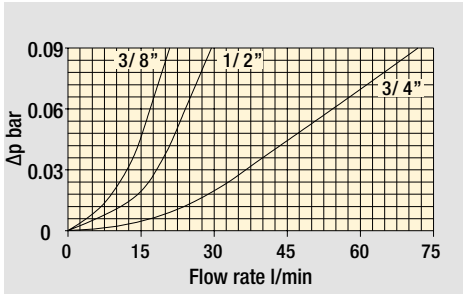
Filter series	00 - without bypass	03 - with bypass 0.3 bar
STRC	•	•
MPAC	•	-

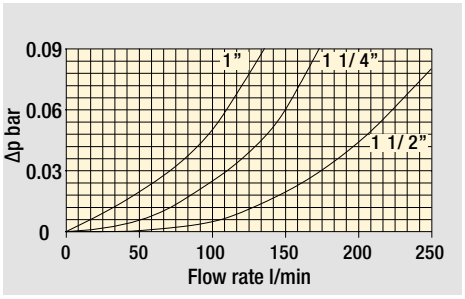
Hydraulic diagram

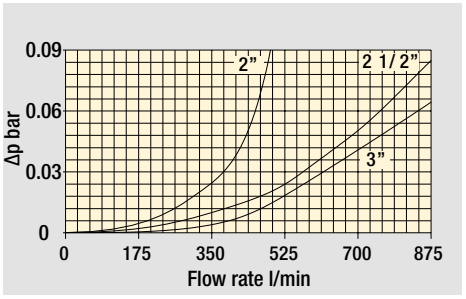


Pressure drop

Filter housings
Δp pressure drop







The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968.
Δp varies proportionally with density.

STRC

Designation & Ordering code

COMPLETE FILTER

Example 1:	STRC	045	10	M0060	A	N	03	FG038	0	0N	NN	P01	NN
Example 2:	STRC	100	20	M0250	A	N	00	FN200	0	0N	NN	P01	NN

Series

STRC

Size

045	**086**
050	**100**
065	**140**
070	**150**

Length

Size:	045	050	065	070	086	100	140	150
10	•	•	•	•	•	•	•	•
20	-	-	•	•	•	•	•	•
30	-	-	-	-	•	-	•	•
40	-	-	-	-	-	-	•	-

Filtration rating (filter media)

M0025	Wire mesh	25 µm	**M0090**	Wire mesh	90 µm
M0060	Wire mesh	60 µm	**M0250**	Wire mesh	250 µm

Element Δp

A 1 bar

Seals and treatments

N Without seals

Bypass

00 Without bypass

03 With bypass 0.03 MPa (0.3 bar)

Connection type

FG Thread ISO 1179-2 (GAS)

FN Thread ANSI/ASME B 1.20.1 (NPT)

Nominal thread

Size:	045	050	065		070		086			100		140				150		
Length	10	10	10	20	10	20	10	20	30	10	20	10	20	30	40	10	20	30
038 3/8”	•	•	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
012 1/2”	•	•	•	-	•	•	-	-	-	-	-	-	-	-	-	-	-	-
034 3/4”	-	-	•	•	•	•	-	-	-	-	-	-	-	-	-	-	-	-
100 1”	-	-	-	•	-	•	-	-	-	-	-	-	-	-	-	-	-	-
114 1 1/4”	-	-	-	-	-	-	-	-	-	•	•	-	-	-	-	-	-	-
112 1 1/2”	-	-	-	-	-	-	•	•	•	•	•	•	-	-	-	-	-	-
200 2”	-	-	-	-	-	-	•	•	•	-	•	•	•	-	-	•	-	-
212 2 1/2”	-	-	-	-	-	-	-	-	-	-	-	-	-	•	-	-	•	-
300 3”	-	-	-	-	-	-	-	-	-	-	-	-	-	•	•	-	•	•

Additional connections

0 Without additional connections

Connections for clogging indicators

0N Without connection

Additional features

NN Without additional features

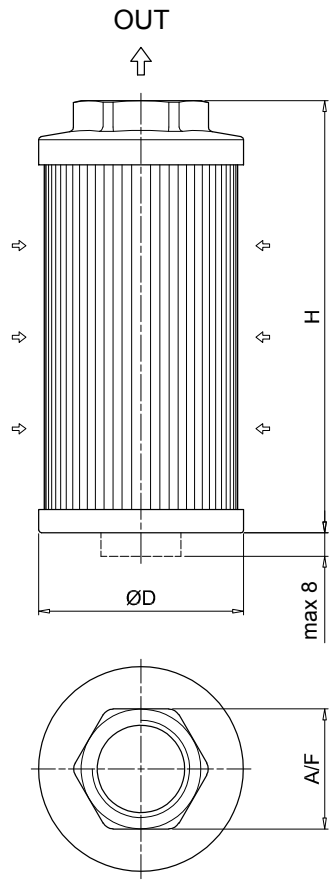
Version

P01 Standard catalogue item

Certificates

NN Without certificates

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STRC

Size	ØD [mm]	Length	Nominal thread	H [mm]	A / F [mm]	Weight [kg]
045	46	10	3/8" 1/2"	105	30	0.19
050	52	10	3/8" 1/2"	79		0.11
065	65	10	1/2" 3/4"	110	41	0.22
		20	3/4" 1"	144		0.24
070	70	10	1/2" 3/4"	95		0.18
		20	1/2" 3/4" 1"	141		0.24
086	86	10	1 1/2" 2"	143	69	0.33
		20	1 1/2" 2"	201		0.43
		30	1 1/2" 2"	261		0.53
100	99	10	1 1/4" 1 1/2"	137		0.47
		20	1 1/4" 1 1/2" 2"	227		0.58
140	130	10	1 1/2" 2"	160		0.70
		20	2"	262		0.94
		30	2 1/2" 3"	272	101	1.10
		40	3"	330		1.17
150	150	10	2"	150	70	0.34
		20	2 1/2"	212	90	0.37
		30	3"	272	100	0.40

MPAC

Designation & Ordering code

COMPLETE FILTER

Example 1:	MPAC	070	10	M0060	A	N	00	FG034	0	0N	NN	P01	NN
Example 2:	MPAC	140	30	M0250	A	N	00	FN300	0	0N	MA	P01	NN

Series

MPAC

Size

050
070
100
140

Length

Size:	050	070	100	140
10	•	•	•	•
20	-	•	•	•
30	-	-	-	•

Filtration rating (filter media)

M0025	Wire mesh	25 µm	**M0090**	Wire mesh	90 µm
M0060	Wire mesh	60 µm	**M0250**	Wire mesh	250 µm

Element Δp

A 1 bar

Seals and treatments

N Without seals

Bypass

00 Without bypass

Connection type

FG Thread ISO 1179-2 (GAS)
FN Thread ANSI/ASME B 1.20.1 (NPT)

Nominal thread

Size:	050	070		100		140		
Length	10	10	20	10	20	10	20	30
038 3/8”	•	-	-	-	-	-	-	-
012 1/2”	•	•	-	-	-	-	-	-
034 3/4”	-	•	•	-	-	-	-	-
100 1”	-	-	•	•	-	-	-	-
114 1 1/4”	-	-	-	•	•	-	-	-
112 1 1/2”	-	-	-	-	•	•	-	-
200 2”	-	-	-	-	-	•	•	•
212 2 1/2”	-	-	-	-	-	-	•	-
300 3”	-	-	-	-	-	-	-	•

Additional connections

0 Without additional connections

Connections for clogging indicators

0N Without connection

Additional features

NN Without additional features
MA With magnetic filter

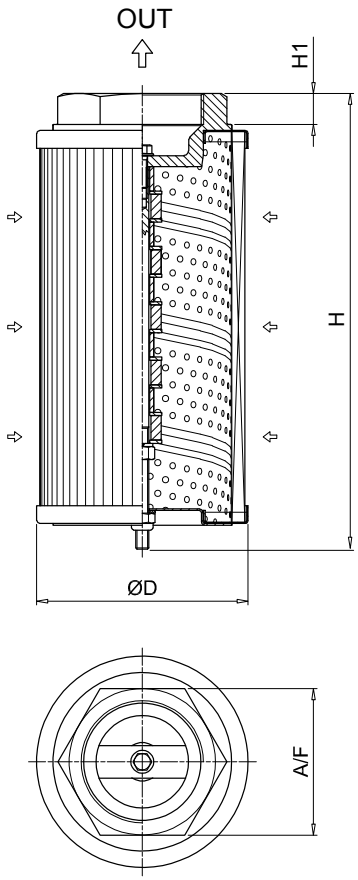
Version

P01 Standard catalogue item

Certificates

NN Without certificates

MP FILTRI WWW.SUMY.IR



MPAC

Size	Ø D [mm]	Length	Nominal thread	H [mm]	H1 [mm]	A/F [mm]	Weight [kg]
050	50	10	3/8”	98	16	28	0.17
			1/2”	113			0.27
070	70	10	3/4”	115	18	42	0.36
		20		160			0.39
			1”				0.35
				145			0.54
100	99	10	1 1/4”	148	20	60	0.63
		20		239			0.95
			1 1/2”				0.91
				174			0.98
140	136	10	2”	162	13	80	1.00
		20		272			1.60
			2 1/2”	281	20	90	1.67
		30	2”	322	13	80	1.60
			3”	335	22	106	1.93

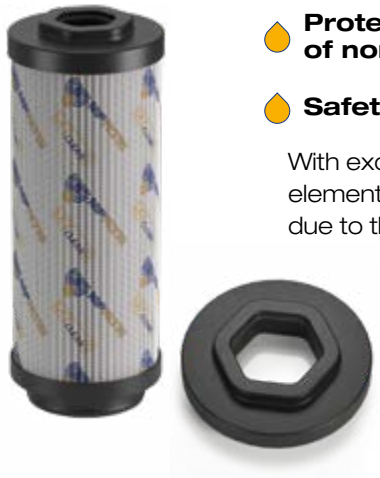
MYCLEAN

THE X CONCEPT FOR OUR FILTERS

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

SFEX series

with MYCLEAN FEX Filter Element



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

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

The products identified as SFEX are protected by:

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

MPFILTRI WWW.SUMY.IR

SFEX series

Flow rate up to 100 l/min



INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS

Please scan or click the QR codes to get updated electronic version of the related document.

SFEX060 SFEX110

For all the QR codes: Scan or click me!

SFEX GENERAL INFORMATION

Description

Suction filters

Flow rate up to 100 l/min

SFEX are range of suction filters for protection of the downstream pump against the coarse contamination.
They are placed below the minimum oil level, directly connected to the suction line of the pump in-line mounted.

Available features:
- Female threaded connections up to 1 1/4" and SAE connections up to 1 5/8", for a maximum flow rate of 100 l/min
- Bypass valve, to relieve excessive pressure drop across the filter media
- Visual, electrical, axial and radial vacuum gauges
- MYclean interface connection for the filter element, to protect the product against non-original spare parts
- External protective wrap, to optimize the flow through the element and to save the element efficiency against non-proper handling

Common application:
- Mobile machines
- Industrial equipment

Technical data

Filter housing materials
- Head: Aluminium
- Bypass valve: Polyamide - Steel
- Bowl: Polyamide

Bypass valve
Opening pressure 0.03 MPa (0.3 bar) ±10%

Filter element features

Filter		Filter element	
SFEX		FEX	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
M - Wire mesh	Standard	C	8 bar
P - Paper	Standard	C	8 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals
Standard NBR series A

Temperature
From -25 °C to +110 °C

Note
SFEX filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]			Volumes [dm³]		
	Length	10	20	Length	10	20
SFEX 060		1.00	1.15		0.60	0.80
SFEX 110		1.90	2.10		1.60	2.00

MP FILTRI WWW.SUMY.IR

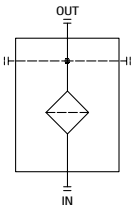
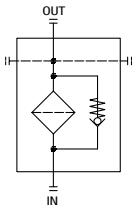
Flow rates [l/min]

		Filter element design - C Series				
Filter series	Length	M0060	M0090	M0250	P0010	P0025
SFEX 060	**10**	31	33	33	13	20
	20	34	35	35	24	30

		Filter element design - C Series				
Filter series	Length	M0060	M0090	M0250	P0010	P0025
SFEX 110	**10**	93	96	96	48	53
	20	98	99	99	60	65

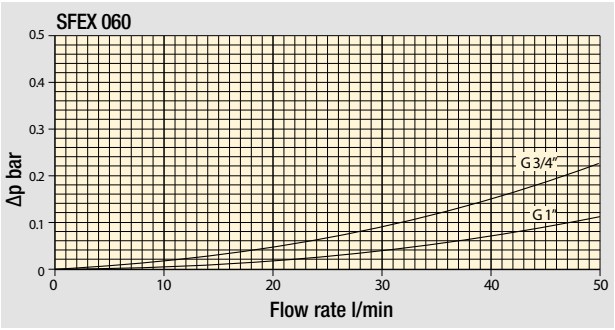
Maximum flow rate for a complete suction filter with a pressure drop Δp = 0.08 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
Please, contact our Sales Department for further additional information.

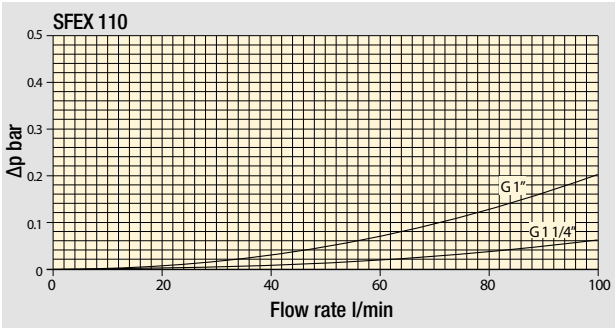
Hydraulic diagram

Filter series	00 - without bypass	03 - with bypass 0.3 bar
SFEX 060-110		

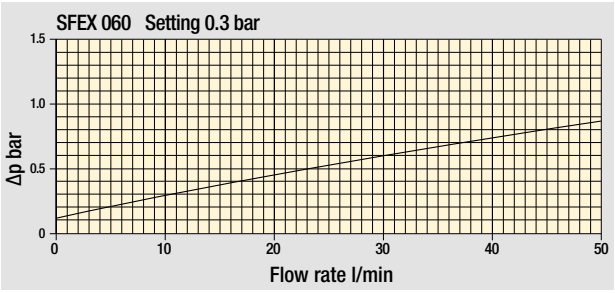
Pressure drop

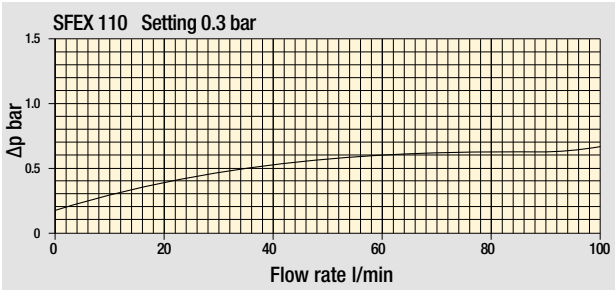
Filter housings
Δp pressure drop





Bypass valve pressure drop





The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968.
Δp varies proportionally with density.

Designation & Ordering code

COMPLETE FILTER

Example 1:	SFEX	060	10	M0060	C	A	03	FG034	0	6T	NN	P01	NN
Example 2:	SFEX	110	20	M0060	C	A	00	FS016	0	6T	NN	P01	NN

Series
SFEX Filter featuring MYCLEAN Filter Element

Size
060
110

Length
10
20

Filtration rating (filter media)
M0025 Wire mesh 25 µm
M0060 Wire mesh 60 µm
M0090 Wire mesh 90 µm
M0250 Wire mesh 250 µm
P0010 Resin-impregnated paper 10 µm
P0025 Resin-impregnated paper 25 µm

Element Δp
C 8 bar

Seals and treatments
A NBR

Bypass
00 Without bypass
03 With bypass 0.03 MPa (0.3 bar)

Connections

	060	110
FG034 G 3/4"	•	-
FG100 G 1"	•	•
FG114 G 1 1/4"	-	•

	060	110
FN034 3/4" NPT	•	-
FN100 1" NPT	•	•
FN114 1 1/4" NPT	-	•

	060	110
FS012 SAE 12 - 1 1/16" - 12 UN	•	-
FS016 SAE 16 - 1 5/16" - 12 UN	•	•
FS020 SAE 20 - 1 5/8" - 12 UN	-	•

Additional connections
0 Without additional connections

Connections for clogging indicators
6T With both side indicator connections, with metal plugs

Additional features
NN Without additional features

Version
P01 Standard catalogue item

Certificates
NN None

CLOGGING INDICATORS See page 775

VEB Electrical vacuum indicator
VLB Electrical / visual vacuum indicator
VVB Axial vacuum gauge
VVS Radial vacuum gauge

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Designation & Ordering code

FILTER ELEMENT

Example 1:	FEX	060	10	M0060	C	A	00	NN	P01	NN
Example 2:	FEX	110	20	M0060	C	A	00	NN	P01	NN

Series

FEX Filter element with MYCLEAN feature

Size

060

110

Length

10

20

Filtration rating (filter media)

M0025	Wire mesh	25 µm	**P0010**	Resin-impregnated paper	10 µm
M0060	Wire mesh	60 µm	**P0025**	Resin-impregnated paper	25 µm
M0090	Wire mesh	90 µm			
M0250	Wire mesh	250 µm			

Element Δp

C 8 bar

Seals and treatments

A NBR

Bypass

00 Without bypass

Additional features

NN Without

Version

P01 Standard catalogue item

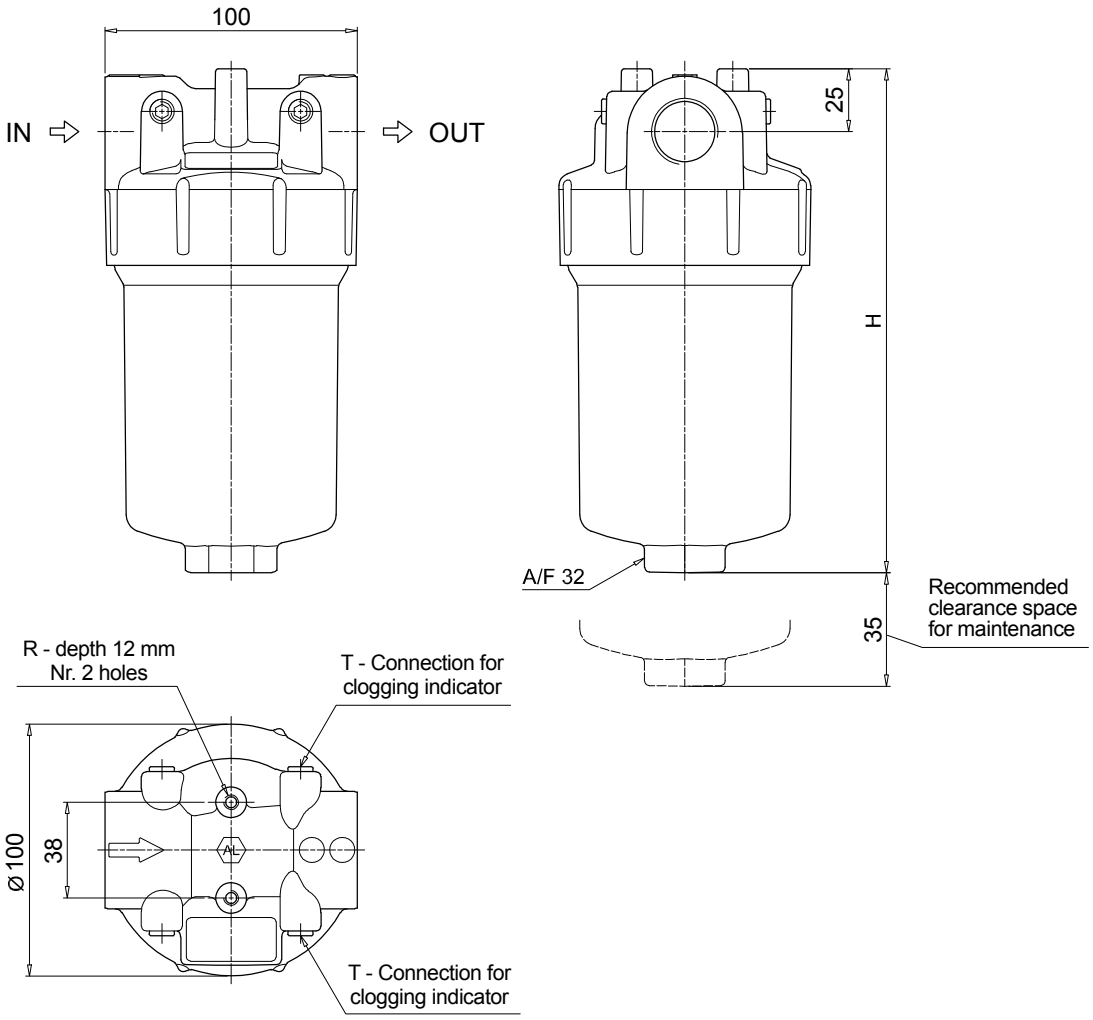
Certificates

NN None

Dimensions

Filter length	H [mm]
10	202
20	265

Connections	T	R
FG034	G 1/8"	M6
FG100	G 1/8"	M6
FN034	1/8" NPT	1/4" UNC
FN100	1/8" NPT	1/4" UNC
FS012	1/8" NPT	1/4" UNC
FS016	1/8" NPT	1/4" UNC

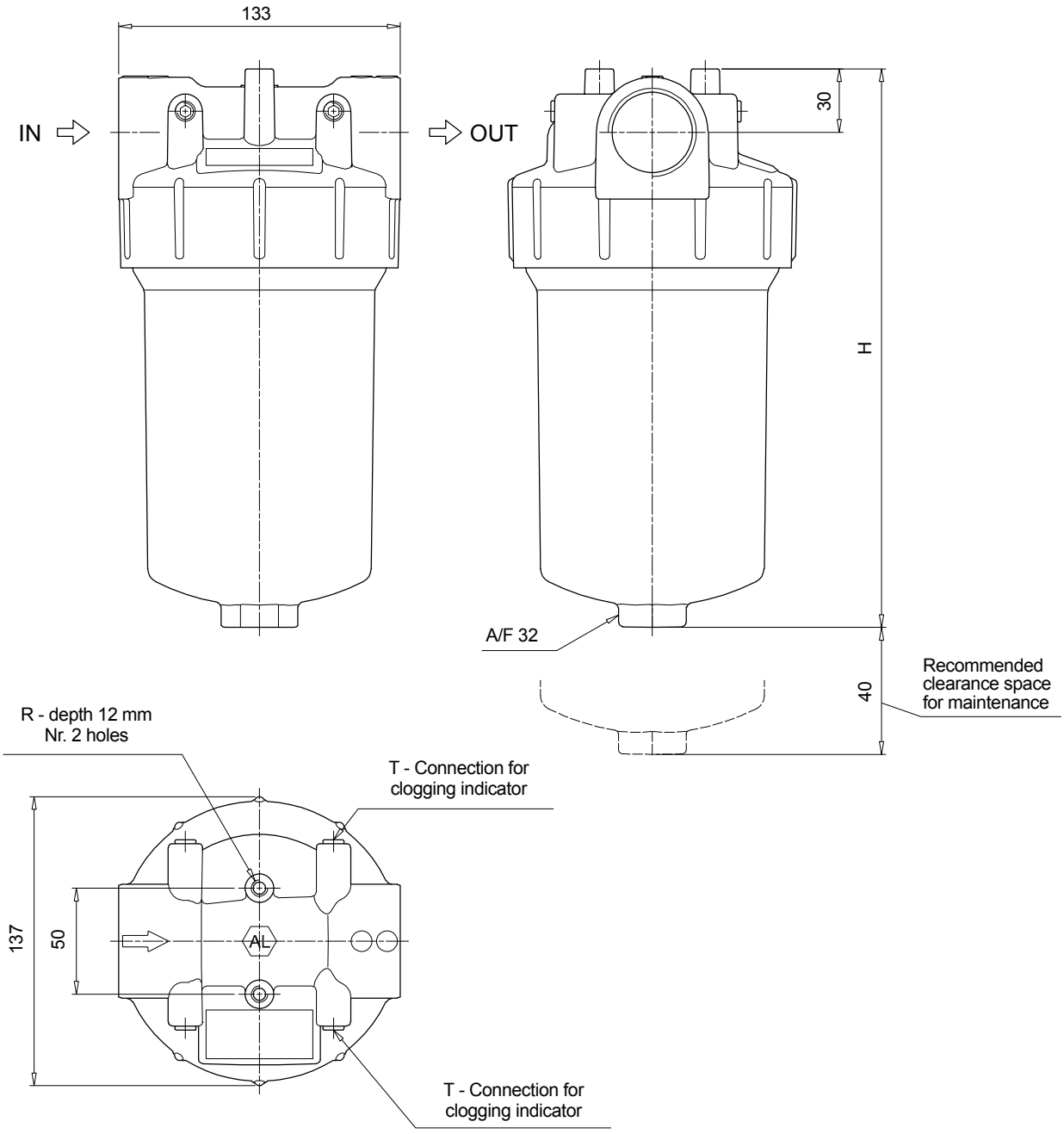


MP FILTRI WWW.SUMY.IR

Dimensions

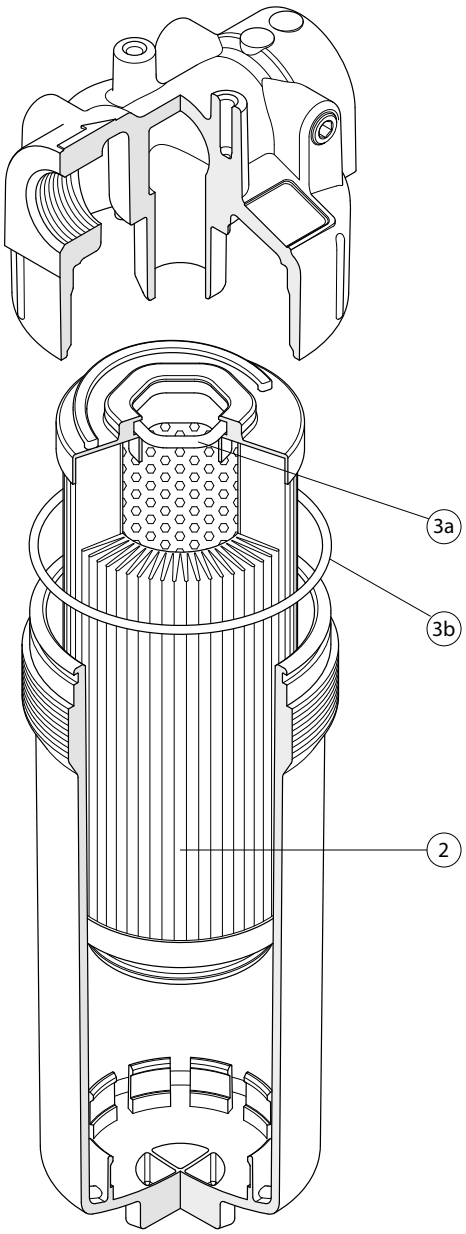
Filter length	H [mm]
10	266
20	315

Connections	T	R
FG100	G 1/8"	M8
FG114	G 1/8"	M8
FN100	1/8" NPT	5/16" UNC
FN114	1/8" NPT	5/16" UNC
FS016	1/8" NPT	5/16" UNC
FS020	1/8" NPT	5/16" UNC



SFEX SPARE PARTS

Order number for spare parts



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3b)
Filter series	**Filter element**	**Seal Kit code number NBR**
SFEX 060	See order table	AK021000512
SFEX 110		AK021000513

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MP FILTRI
WWW.SUMY.IR

MPFILTRI
WWW.SUMY.IR

SFMC 250 series

Flow rate up to 160 l/min Suctio



SFMC 250 GENERAL INFORMATION

Description

Suction filters

Flow rate up to 160 l/min

SFMC 250 is a range of suction filters with integrated shut-off valve for protection of the downstream pump against the coarse contamination.
They are placed below the minimum oil level, directly connected to the suction line of the pump.
They can be fitted on the side or below the tank, allowing a more flexible design of the tank.
The shut-off valve closes automatically when the cover is removed, allowing the filter element replacement without the fluid drop.

Available features:

- Female threaded connections up to 1" and flanged connections up to 1 1/2", for a maximum flow rate of 160 l/min
- Multiple connections, to connect several suction lines
- Bypass valve, to relieve excessive pressure drop across the filter media
- Magnetic filter, to hold the ferrous particles
- Visual, electrical and electronic clogging indicators

Common application:

- Mobile machines
- Industrial equipment

Technical data

Filter housing materials

- Filter body: Aluminium
- Cover: Polyamide, GF reinforced
- Valve: Polyamide, GF reinforced - Steel
- Anti-Emptying valve: Steel

Bypass valve

Opening pressure 0.03 MPa (0.3 bar) ±10%

Filter element features

Filter		Filter element	
SFMC		SMC	
Δp Element type			
Element media	Construction	Δp Series	Δp
M - Wire mesh	Standard	A	1 bar
P - Paper	Standard	A	1 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From IN to OUT			

Seals

- Standard NBR series A or W
- Optional FPM series V or Z

Temperature

From -25 °C to +110 °C

Note

SFMC 250 filters mounting, see the drawings on page 50 and following.

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]	Volumes [dm³]
SFMC 250	2.8	2.3
SFMC 250	2.8	2.4

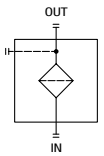
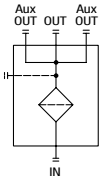
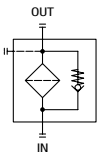
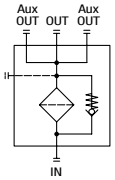
MP FILTRI WWW.SUMY.IR

Flow rates [l/min]

	Filter element design - N Series					
Filter series	M0025	M0060	M0090	M0250	P0010	P0025
SFMC 250	147	151	155	160	85	132

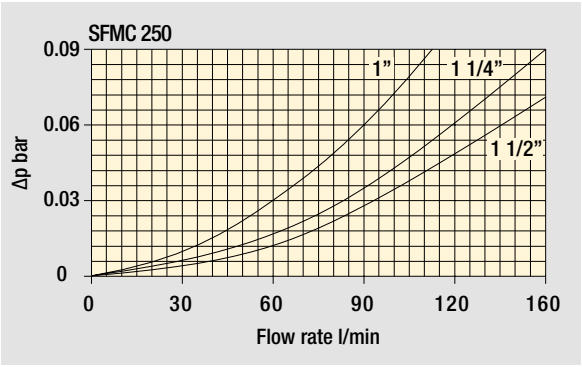
Maximum flow rate for a complete suction filter with a pressure drop Δp = 0.08 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

Hydraulic diagram

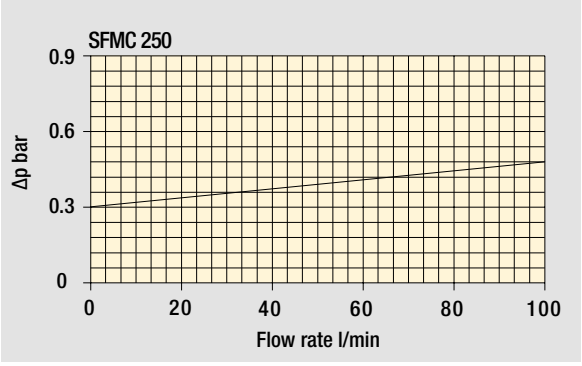
	00 - without bypass		03 - with bypass 0.3 bar	
Filter series	0 - without additional connections	1 - with smaller additional connections	0 - without additional connections	1 - with smaller additional connections
SFMC 250				

Pressure drop

Filter housings
Δp pressure drop



Bypass valve
pressure drop



The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968.
Δp varies proportionally with density.

SFMC 250

Designation & Ordering code

COMPLETE FILTER

Example 1:	SFMC	250	10	M0025	A	A	00	FF112	0	5T	MA	P01	NN
Example 2:	SFMC	250	10	P0010	A	V	00	FG112	0	5T	NN	P01	NN

Series
SFMC

Size
250

Length
10

Filtration rating (filter media)

M0025	Wire mesh	25 µm	**P0010**	Resin-impregnated paper	10 µm
M0060	Wire mesh	60 µm	**P0025**	Resin-impregnated paper	25 µm
M0090	Wire mesh	90 µm			
M0250	Wire mesh	250 µm			

Element Δp
A 1 bar

Seals and treatments		M0xxx	P0xxx
A	NBR	•	•
V	FPM	•	•
W	NBR with filter and components surface treatment	•	-
Z	FPM with filter and components surface treatment	•	-

Bypass
00 Without bypass
03 With bypass 0.03 MPa (0.3 bar)

Connections

FG100	G 1”		**FS016**	SAE 16 - 1 5/16” - 12 UN	
FG114	G 1 1/4”		**FS020**	SAE 20 - 1 5/8” - 12 UN	
FG112	G 1 1/2”	G 1”	**FS024**	SAE 24 - 1 7/8” - 12 UN	SAE 16 - 1 5/16” - 12 UN
FN100	1” NPT		**FE112**	1 1/2” SAE 3000 psi/M	
FN114	1 1/4” NPT		**FF112**	1 1/2” SAE 3000 psi/UNC	
FN112	1 1/2” NPT		**Available additional connections**		

Additional connections		FG112	FS024
0	Without additional connections	-	-
1	With smaller additional connections	G1”	SAE 16 - 1 5/16” - 12 UN

Connections for clogging indicators
5T With rear indicator connection, with metal plugs

Additional features
NN Without additional features
MA With magnetic filter

Version
P01 Standard catalogue item

Certificates
NN None

CLOGGING INDICATORS

See page 775

VEA Electrical vacuum indicator
VLA Electrical / visual vacuum indicator
VVA Axial vacuum gauge
VVR Radial vacuum gauge

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Example 1:	SMC	250	10	M0025	A	A	00	NN	P01	NN
Example 2:	SMC	250	10	P0010	A	V	00	NN	P01	NN

Series
SMC

Size
250

Length
10

Filtration rating (filter media)

M0025	Wire mesh	25 µm	**P0010**	Resin-impregnated paper	10 µm
M0060	Wire mesh	60 µm	**P0025**	Resin-impregnated paper	25 µm
M0090	Wire mesh	90 µm			
M0250	Wire mesh	250 µm			

Element Δp
A 1 bar

Seals and treatments
A NBR
V FPM

Bypass
00 Without bypass

Additional features
NN Without

Version
P01 Standard catalogue item

Certificates
NN None

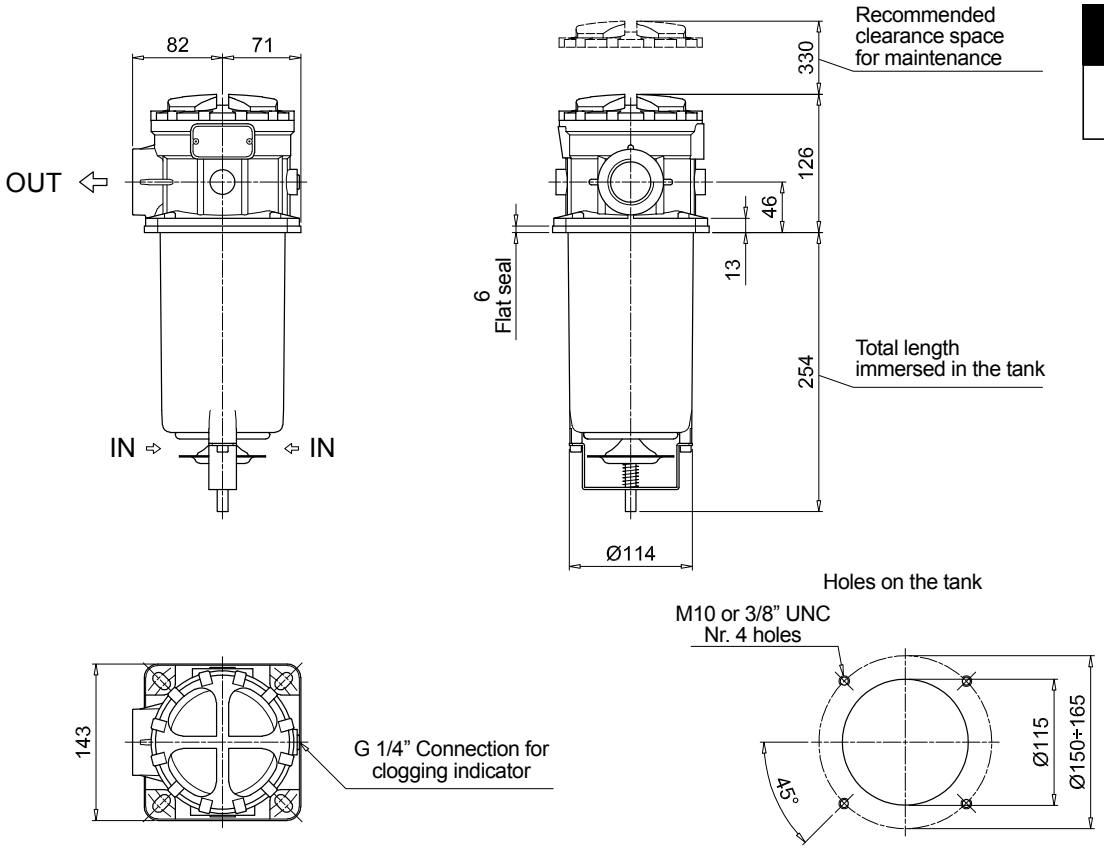
SFMC 250

Dimensions

SFMC 250

Threaded connections FG - FN - FS

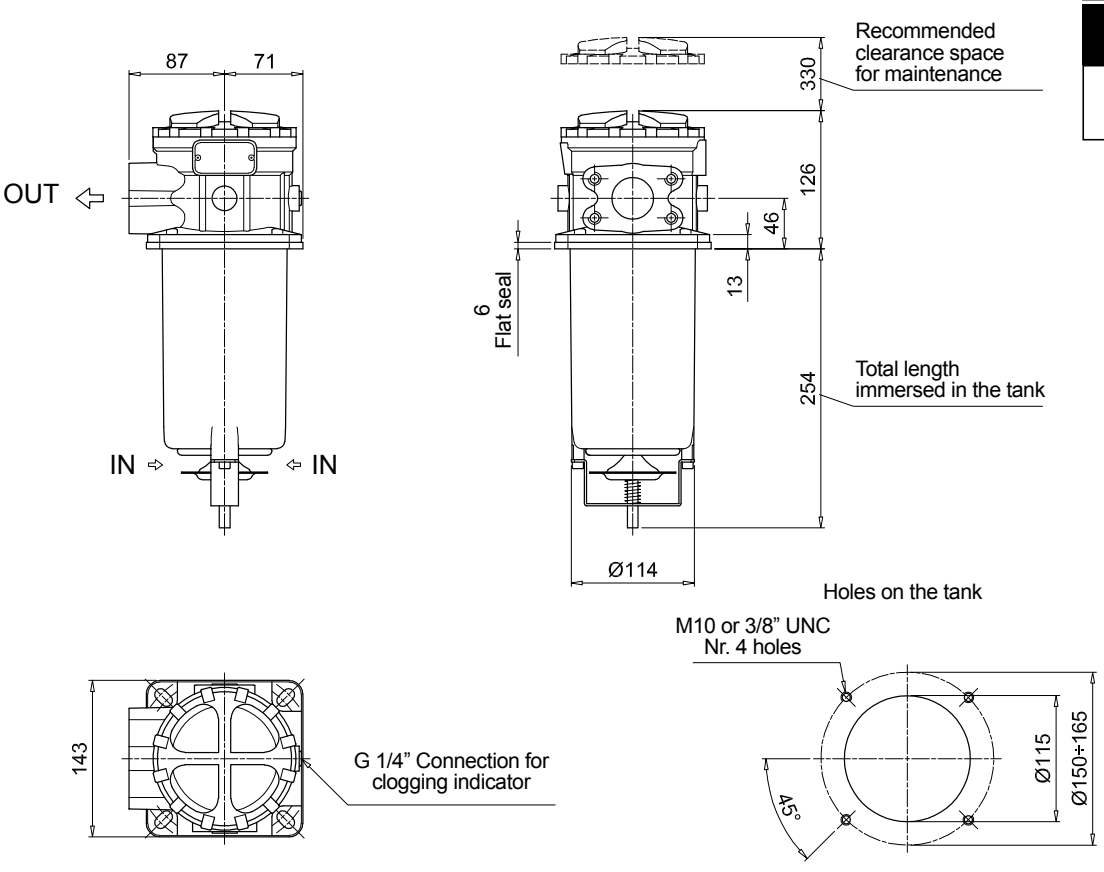
Without additional connection 0



SFMC 250

Flange connections FE - FF

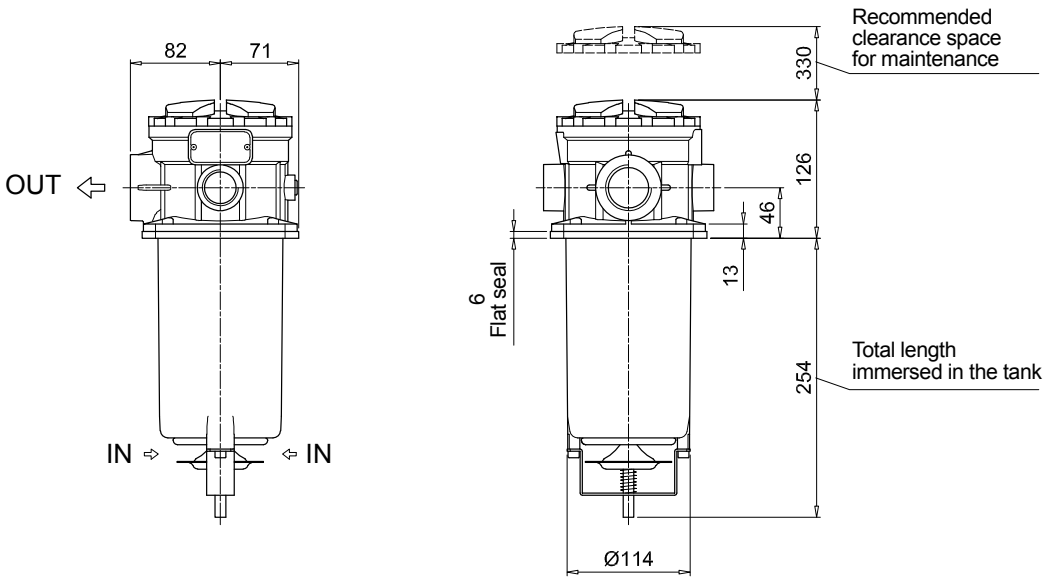
Without additional connection 0

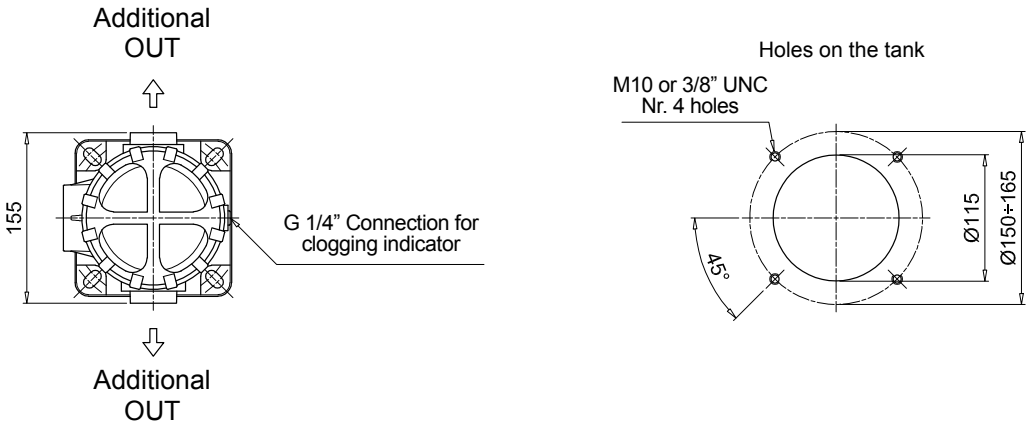


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SFMC 250

With smaller additional connection 1

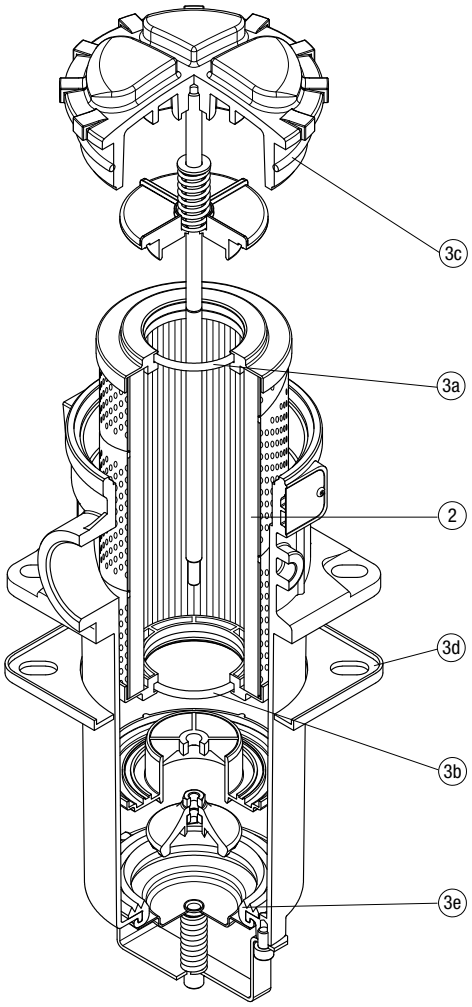




SFMC 250 SPARE PARTS

Order number for spare parts

SFMC 250



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3e)	
Filter series	Filter element	Seal Kit code number NBR	FPM
SFMC 250	See order table	AK021000375	AK021000376

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SFSC series

Flow rate up to 700 l/min



SFSC GENERAL INFORMATION

Description

Suction filters

Flow rate up to 700 l/min

SFSC is a range of suction filters with integrated shut-off valve for protection of the downstream pump against the coarse contamination.
They are placed below the minimum oil level, directly connected to the suction line of the pump.
They can be fitted on the side or below the tank, allowing a more flexible design of the tank.
The shut-off valve closes automatically when the cover is removed, allowing the filter element replacement without the fluid drop.

Available features:

- Flanged connections up to 4", for a maximum flow rate of 700 l/min
- Optional hose fitting installed, to connect the suction line without the use of flanges
- Magnetic filter, to hold the ferrous particles
- Plastic and metal handle, to close the shut-off valve before the cover removal
- Electrical switch, to signal the closed shut-off valve
- Visual, electrical and electronic clogging indicators

Common application:
Industrial equipment

Technical data

Filter housing materials

- Housing:
  Anodized Aluminium
  Steel (chemical heat treatment): only for SFSC 535 - 540

- Cover:
  Anodized Aluminium

- Optional hose barb:
  Anodized Aluminium

Filter element features

Filter		Filter element	
SFSC		SSC	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
M - Wire mesh	Standard	A	1 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element:			
From IN to OUT			

Seals

- Standard NBR series A or W
- Optional FPM series V or Z

Temperature
From -25 °C to +110 °C

Note
SFSC filters mounting, see the drawings on page 60 and following

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]	Volumes [dm³]
SFSC 500	4.2	1.8
SFSC 503	6.2	2.9
SFSC 504	7.2	4.0
SFSC 505	4.3	1.6
SFSC 510	5.4	2.1
SFSC 535	16	4.4
SFSC 540	18.6	6.5

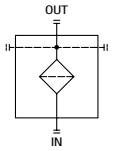
MP FILTRI WWW.SUMY.IR

Flow rates [l/min]

Filter series	Filter element design - N Series	
	M0025	M0060 M0090 M0250
SFSC 500	219	234
SFSC 503	325	390
SFSC 504	484	543
SFSC 505	199	221
SFSC 510	259	282
SFSC 535	439	479
SFSC 540	644	688

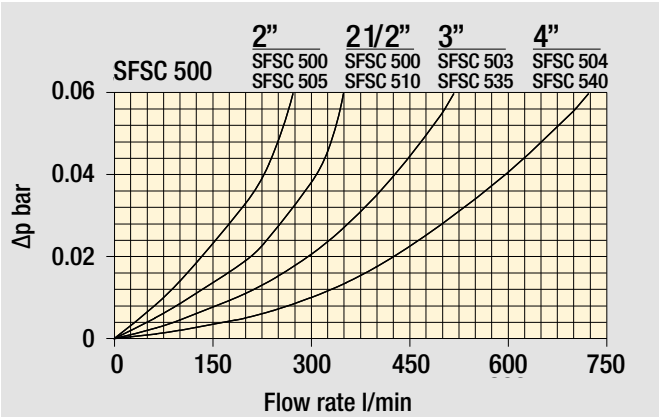
Maximum flow rate for a complete suction filter with a pressure drop Δp = 0.08 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

Hydraulic diagram

Filter series	00 - without bypass
SFSC	

Pressure drop

Filter housings
Δp pressure drop



The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968.
Δp varies proportionally with density.

Designation & Ordering code

COMPLETE FILTER

Example 1:	SFSC	500	10	M0025	A	W	00	FE200	0	6T	MA	P01	NN
Example 2:	SFSC	535	10	M0060	A	V	00	HB089	0	9T	MC	P01	NN

Series
SFSC

Size
500 | 503 | 504 | 505 | 510 | 535 | 540

Length
10

Filtration rating (filter media)

M0025	Wire mesh	25 µm	**M0090**	Wire mesh	90 µm
M0060	Wire mesh	60 µm	**M0250**	Wire mesh	250 µm

Element Δp
A 1 bar

Seals and treatments
A NBR
V FPM
W NBR with filter and components surface treatment
Z FPM with filter and components surface treatment

Bypass
00 Without bypass

Connections

		500	505	510	503-535	504-540
FE200	2" SAE 3000 psi/M	•	•	-	-	-
FE212	2 1/2" SAE 3000 psi/M	•	-	•	-	-
FE300	3" SAE 3000 psi/M	-	-	-	•	-
FE400	4" SAE 3000 psi/M	-	-	-	-	•
FF200	2" SAE 3000 psi/UNC	•	•	-	-	-
FF212	2 1/2" SAE 3000 psi/UNC	•	-	•	-	-
FF300	3" SAE 3000 psi/UNC	-	-	-	•	-
FF400	4" SAE 3000 psi/UNC	-	-	-	-	•

		500	505	510	503-535	504-540
HB063	Hose barb Ø 63 mm	•	•	-	-	-
HB075	Hose barb Ø 75 mm	•	-	•	-	-
HB089	Hose barb Ø 89 mm	-	-	-	•	-
HB114	Hose barb Ø 114 mm	-	-	-	-	•

Additional connections
0 Without additional connections

Connections for clogging indicators

		500-503-504-540	505-510-535
6T	With both side indicator connections, with metal plugs	•	-
9T	With multiple indicator connections, with metal plugs	-	•

Additional features

		500-503-504	505-510-535-540
MA	With magnetic filter	•	•
MB	With magnetic filter + polyamide handwheel	•	-
MC	With magnetic filter + microswitch	-	•
MD	With magnetic filter + microswitch + polyamide handwheel	•	-
ME	With magnetic filter + microswitch + steel handwhee	•	-

Version
P01 Standard catalogue item

Certificates
NN None

CLOGGING INDICATORS See page 775

VEB Electrical vacuum indicator
VLB Electrical / visual vacuum indicator
VVA Axial vacuum gauge
VVR Radial vacuum gauge

MP FILTRI WWW.SUMY.IR

Designation & Ordering code

FILTER ELEMENT

Example 1:	SSC	510	10	M0025	A	N	00	NN	P01	NN
Example 2:	SSC	535	10	M0060	A	N	00	NN	P01	NN

Series

SSC

Size

503	SFSC 503	**510**	SFSC 500	**540**	SFSC 540
504	SFSC 504		SFSC 510		
505	SFSC 505	**535**	SFSC 535		

Length

10

Filtration rating (filter media)

M0025	Wire mesh	25 µm	**M0090**	Wire mesh	90 µm
M0060	Wire mesh	60 µm	**M0250**	Wire mesh	250 µm

Element Δp

A 1 bar

Seals and treatments

N No seal

Bypass

00 Without bypass

Additional features

NN Without

Version

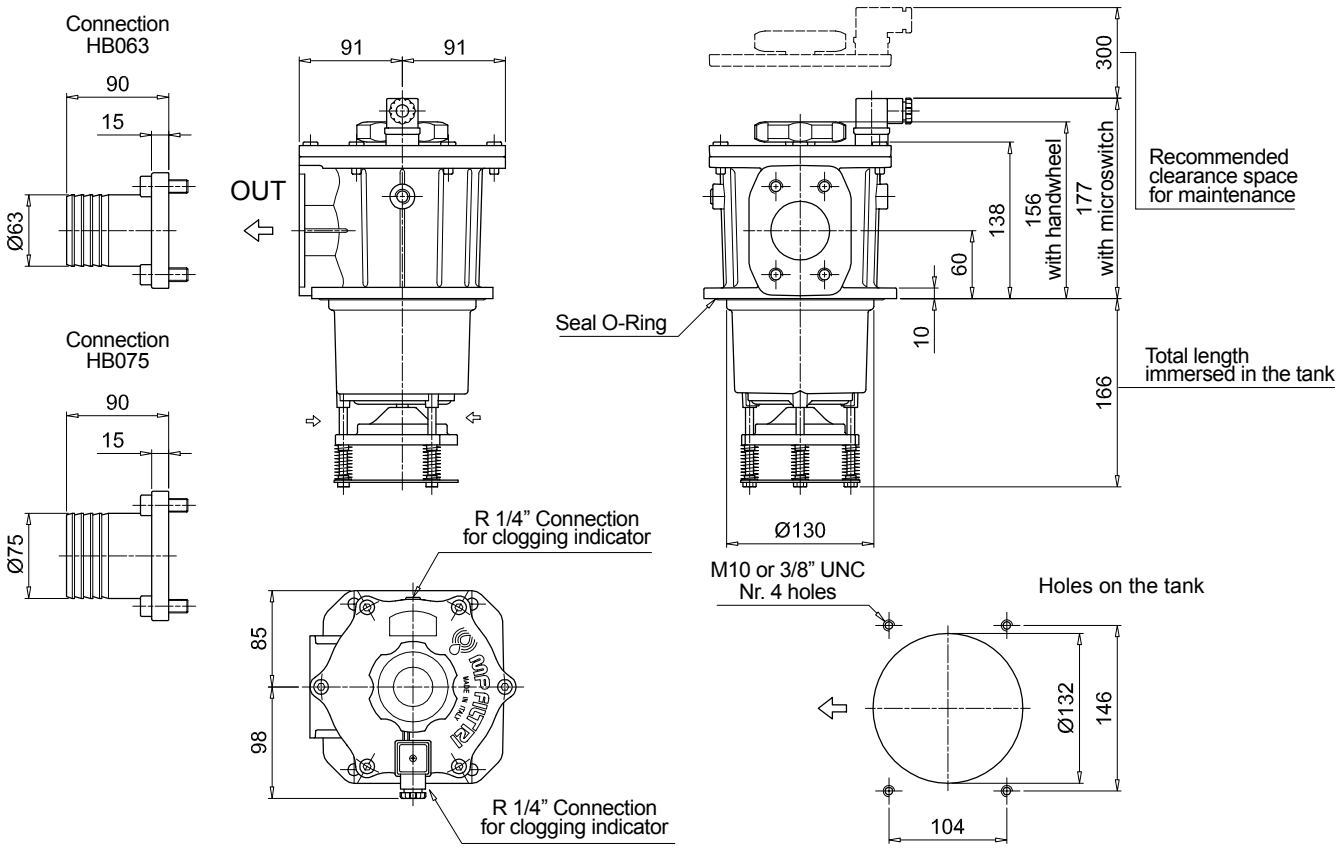
P01 Standard catalogue item

Certificates

NN None

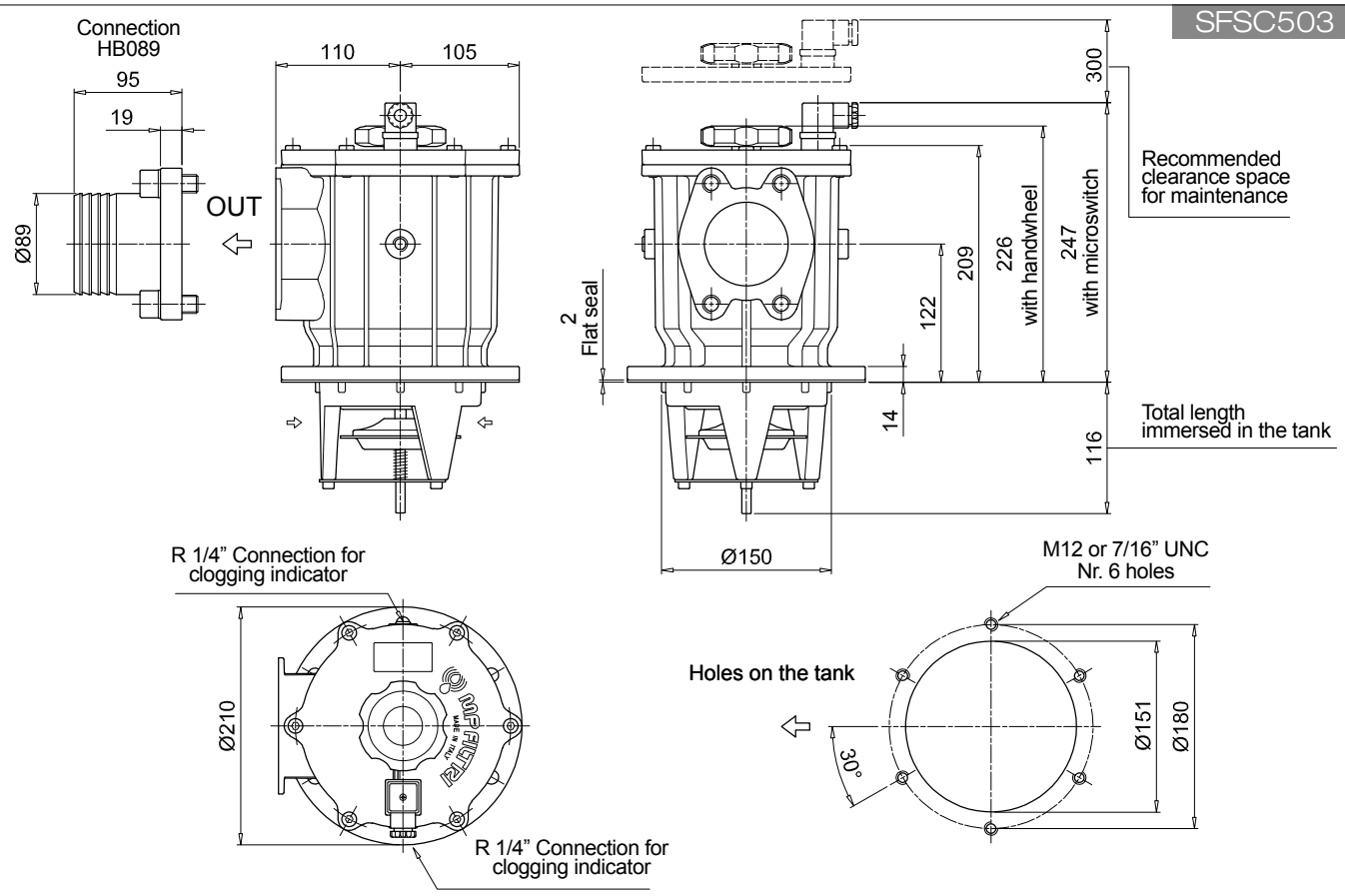
Dimensions

SFSC500

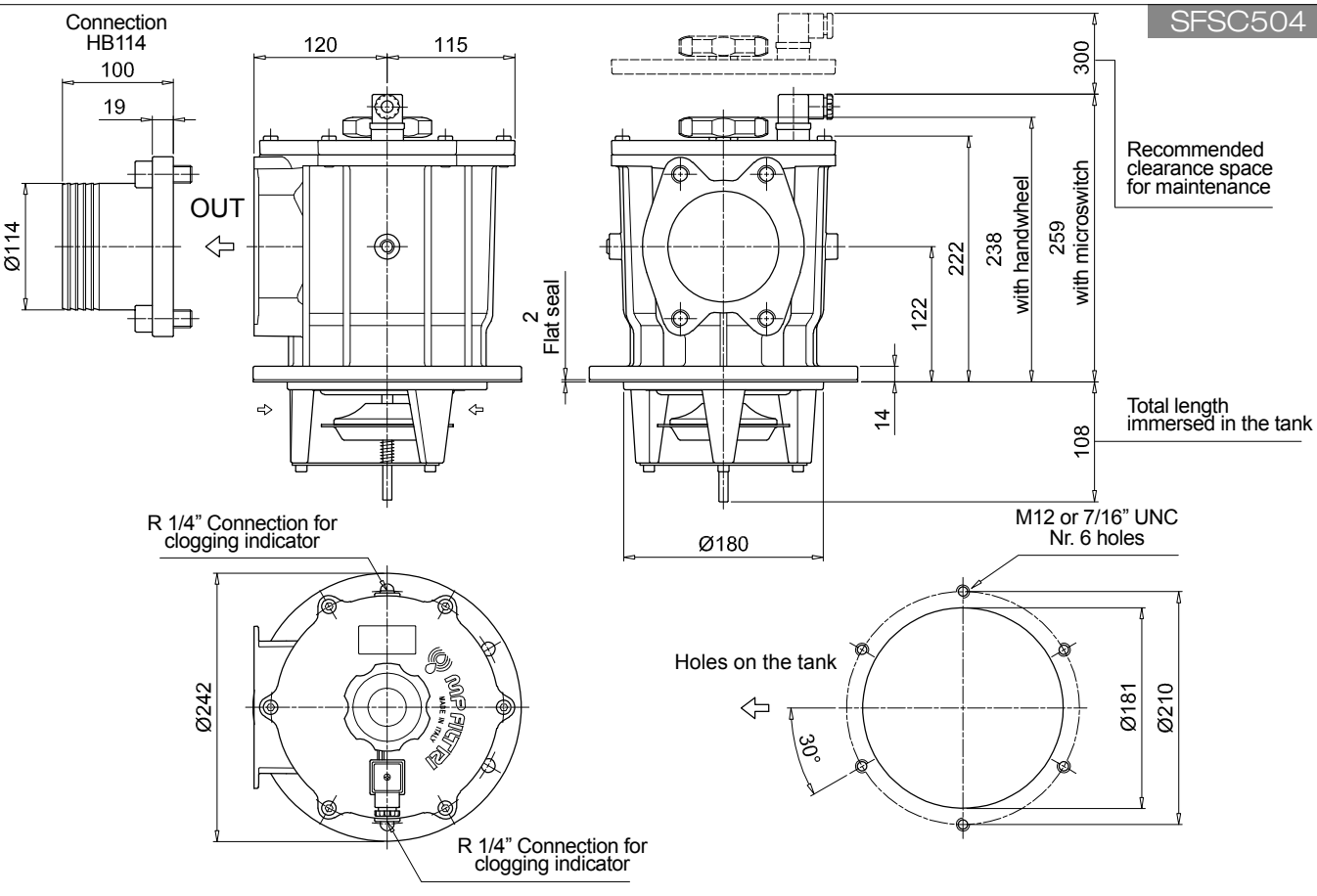


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SFSC503

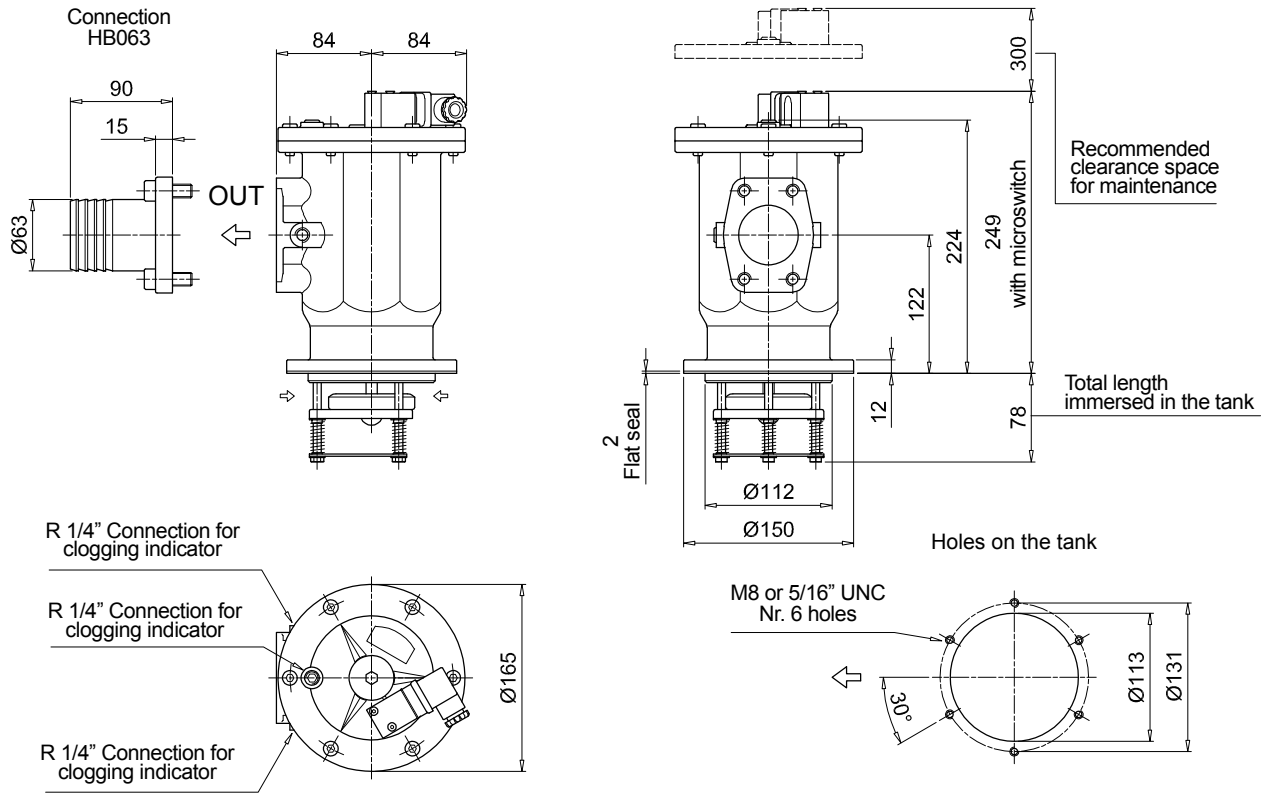


SFSC504

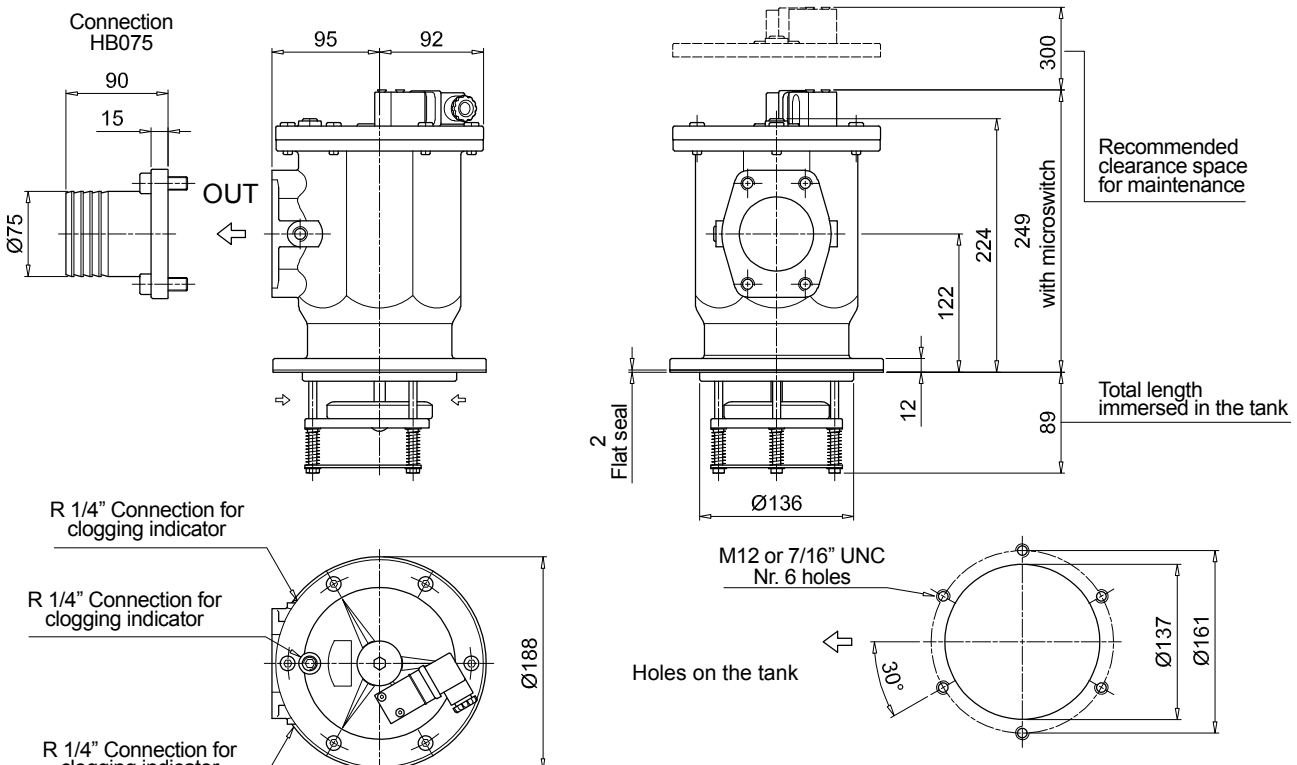


Dimensions

SFSC505

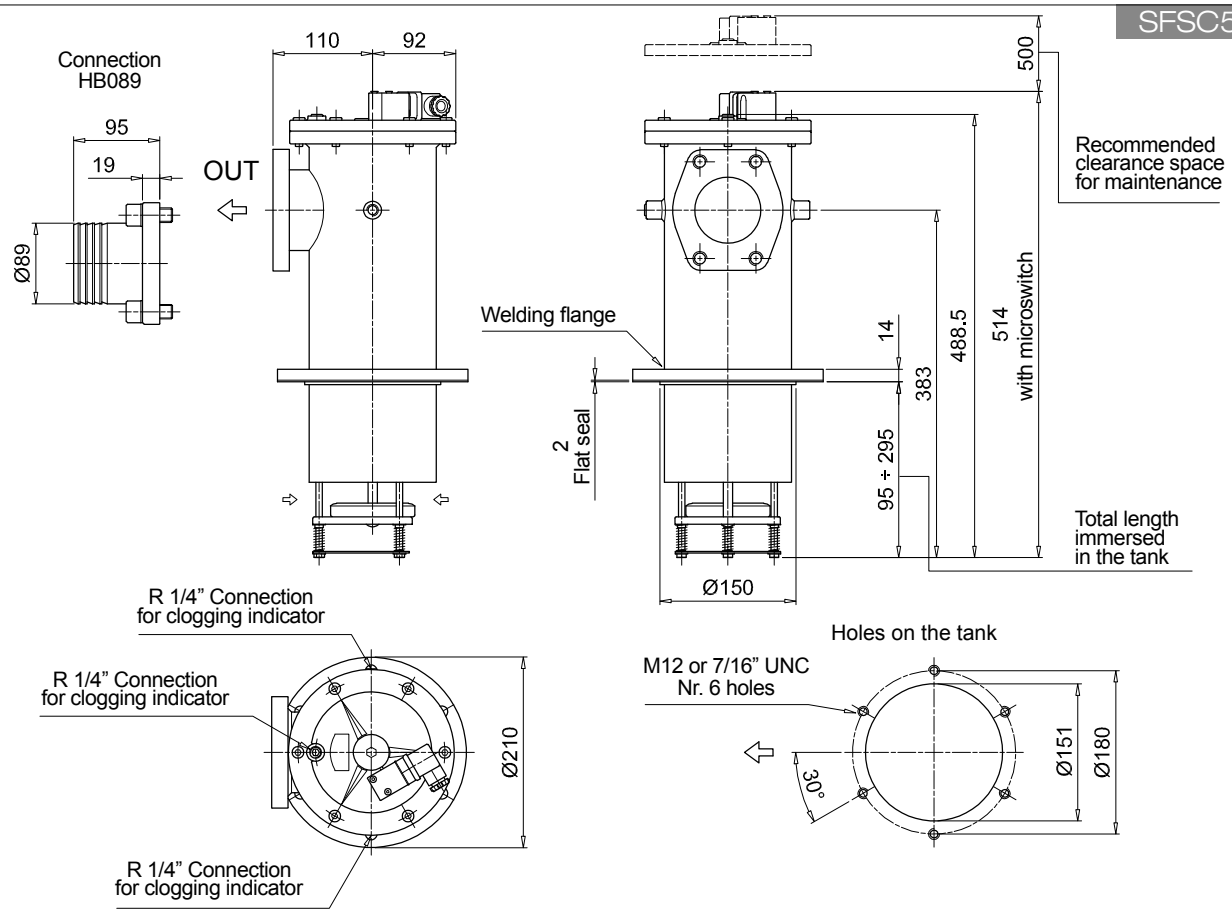


SFSC510

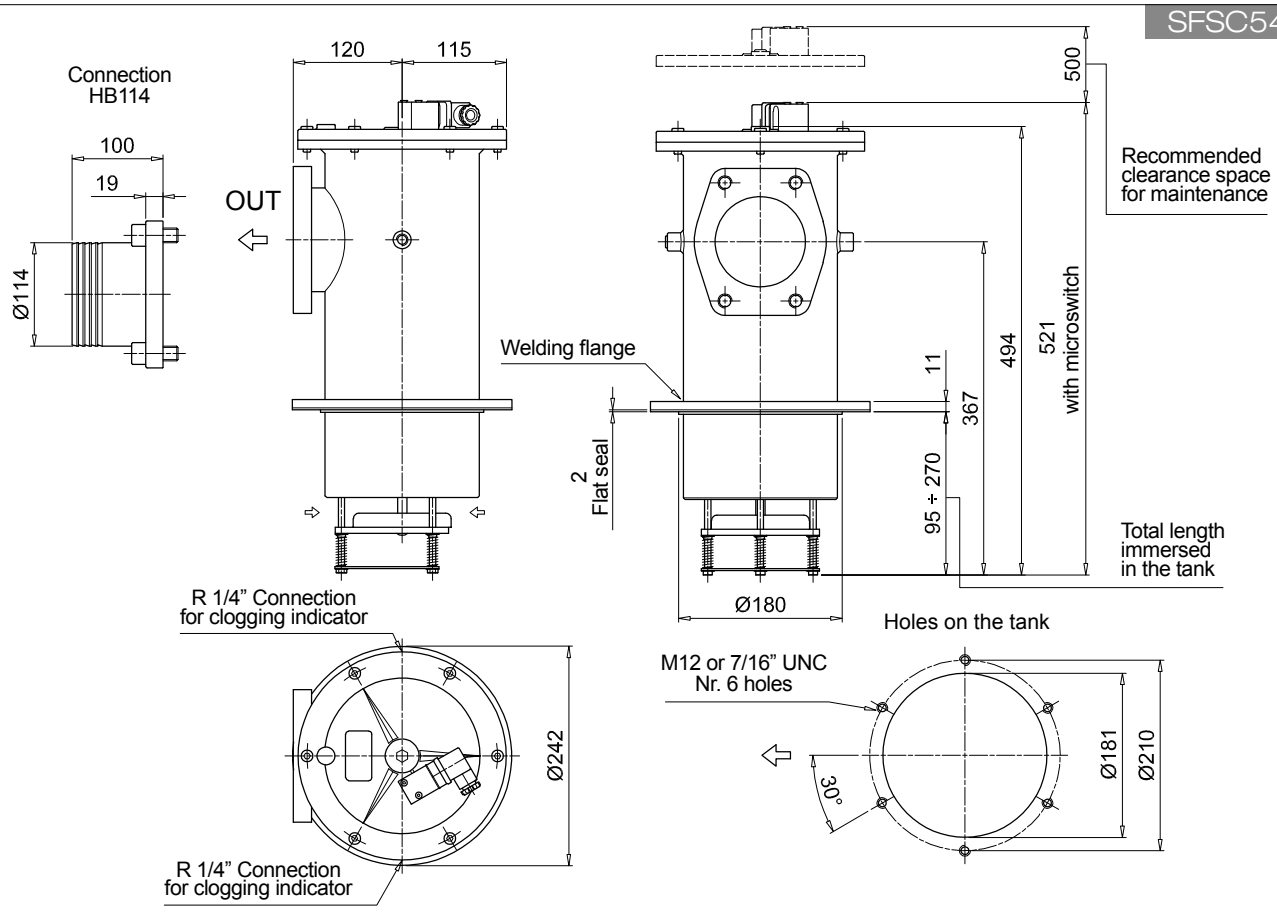


MP FILTRI
WWW.SUMY.IR

SFSC535



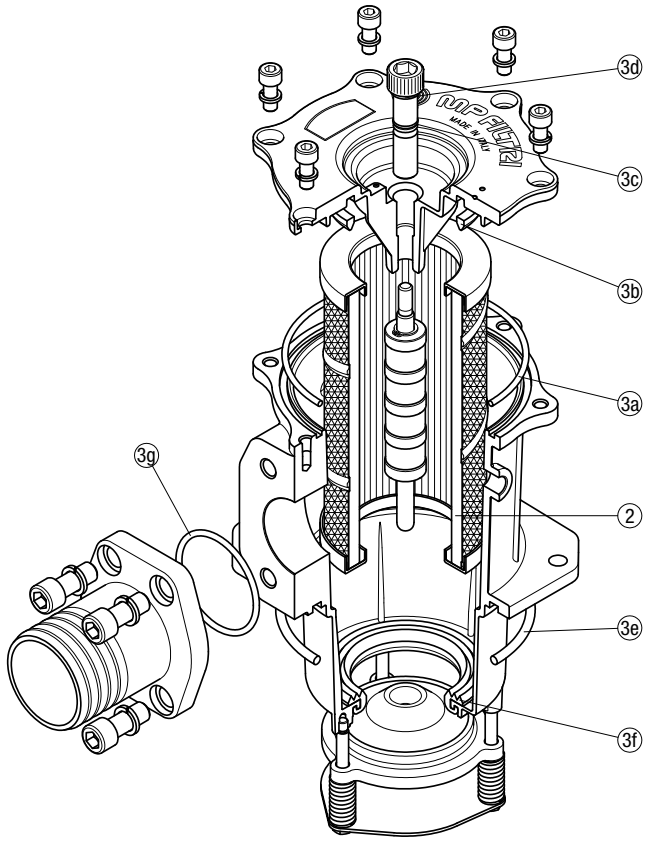
SFSC540



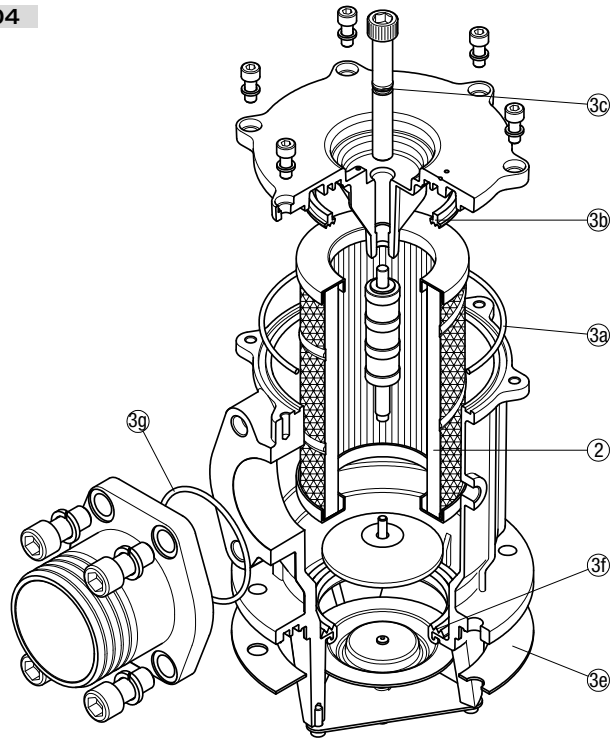
SFSC SPARE PARTS

Order number for spare parts

SFSC 500



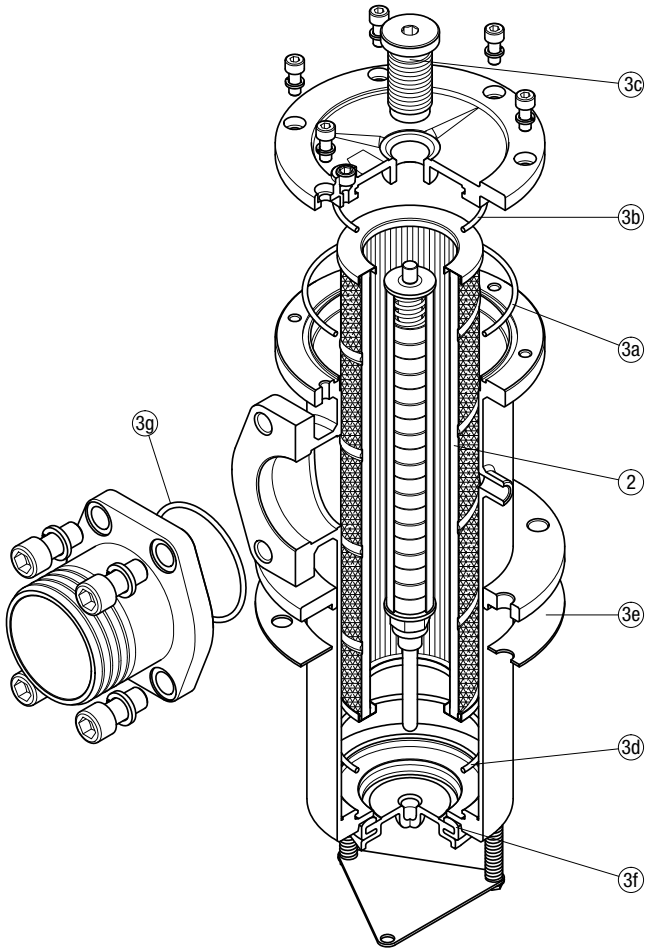
SFSC 503
SFSC 504



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3g)	
Filter series	Filter element	Seal Kit code number NBR	FPM
SFSC 500	See	AK021000094	AK021000095
SFSC 503	order	AK021000051	AK021000052
SFSC 504	table	AK021000053	AK021000054

MP FILTRI WWW.SUMY.IR

SFSC 505
SFSC 510
SFSC 535
SFSC 540



Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3g)	
Filter series	Filter element	Seal Kit code number NBR	FPM
SFSC 505	See order table	AK021000027	AK021000028
SFSC 510		AK021000029	AK021000031
SFSC 535		AK021000036	AK021000037
SFSC 540		AK021000038	AK021000039

Return filters are used as process and safety filters to protect pumps and hydraulic circuits from contamination as per ISO 4406.

They are available in 8 families:

- **MPFX tank top semi-immersed filter with external / internal oil flow; standard filter element disassembly**
- **MPLX tank top semi-immersed filter completely interchangeable with Pall 8420 & 8520, with external / internal oil flow; easy filter element disassembly**
- **MPTX tank top semi-immersed filter with external / internal oil flow; easy filter element disassembly without any specific tool**
- **MFBX element and bowl assembly with optional cover and hold-down spring for dirtbox or molded tank applications**
- **MPHC tank top semi-immersed filter with internal / external oil flow, therefore keeping the dirt inside the bowl and not on the filter element; standard filter element disassembly, magnetic filter as option**
- **MPIC semi-immersed filter element specifically designed to be mounted directly on the oil tank; magnetic filter as option**
- **FRIC, the oldest tank top semi-immersed return filter manufactured by MP FILTRI, with external / internal oil flow; available in the single or duplex versions with outlet connection, it can be used also as in-line filter**
- **RFMC semi-immersed filter with shut-off valve for side tank mounting, with external / internal oil flow; easy filter element disassembly without any specific tool.**

MP FILTRI WWW.SUMY.IR

Return filters



Filter sizing and corrective factors	page 68	MPHC	page 181
RFEX ELIXIR®	71	MPIC	225
MPFX	81	FRIC	237
MPLX	129	RFMC	261
MPTX	141	ACCESSORIES	270
MFBX	165		
MDHC	173	INDICATORS	776

THE CORRECT FILTER SIZING HAS TO BE BASED ON THE TOTAL PRESSURE DROP DEPENDING ON THE APPLICATION.

The pressure drop calculation is performed by adding together the value of the housing with the value of the filter element. The pressure drop Δpc of the housing is proportional to the fluid density (kg/dm³ / lb/ft³).
The filter element pressure drop Δpe is proportional to its viscosity (mm²/s / SUS), the corrective factor Y have to be used in case of an oil viscosity different than 30 mm²/s (cSt) / 150 SUS.

Sizing data for single filter element, head at top

Δpc = Filter housing pressure drop [bar / psi]
Δpe = Filter element pressure drop [bar / psi]
Y = Corrective factor Y (see correspondent table), depending on the filter type, on the filter element size, on the filter element length and on the filter media
Q = flow rate (l/min - gpm)
V1 reference oil viscosity = 30 mm²/s (cSt) /150 SUS
V2 = operating oil viscosity in mm²/s (cSt) / SUS

Filter element pressure drop calculation with an oil viscosity different than 30 mm²/s (cSt) / 150 SUS

International system:
Δpe = Y : 1000 x Q x (V2:V1)

Imperial system:
Δpe = Y : 17.2 x Q x (V2:V1)

Δp Tot. = Δpc + Δpe

Verification formula

Δp Tot. ≤ Δp max allowed

Maximum total pressure drop (Δp max) allowed by a new and clean filter

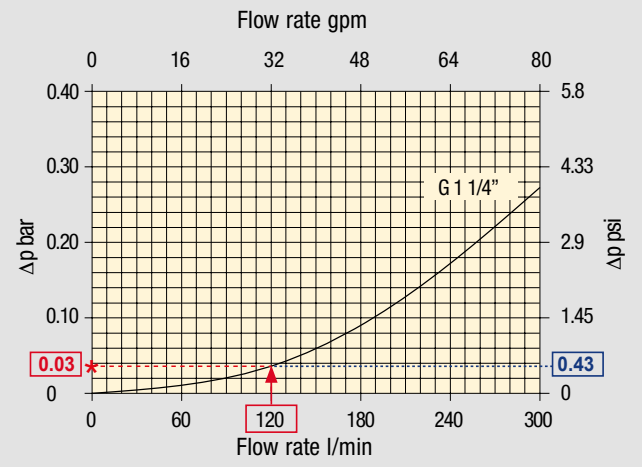
Filter family	Δp max	
	[bar]	[psi]
Return filters	0.50 bar	7.25 psi

Filter pressure drop calculation example

Application data:
Selected filter: **MPTX 110 length 40**
Selected filter element: **MF 100 length 40**
Selected connection: **G 1 1/4"**
Selected filtration rating: **25 µm** absolute filtration with microfibre
Flow rate Q = **120 l/min / 31.7 gpm**
Viscosity V2 = 46 mm²/s (cSt) / 216 SUS
Oil density = 0.86 kg/dm³ / 53.68 lb/ft³

Calculation:
Δpc = 0.03 bar / 0.43 psi (see graphic below)

MPTX 110 - Length 30 - 40



Filter housings Δp pressure drop.
The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

Filter element		Absolute filtration Filter Elem. Δp Series: H					Nominal filtration Filter Elem. Δp Series: N		
Type	Length	A0003	A0006	A0010	A0016	A0025	P0010	P0025	M0025 M0060 M0090
MFX 030	10	74.00	50.08	20.00	16.00	9.00	6.43	5.51	3.40
MFX 100	10	28.20	24.40	8.67	8.17	6.88	4.62	3.96	1.25
	20	17.33	12.50	6.86	5.70	4.00	3.05	2.47	1.10
	30	10.25	9.00	3.65	3.33	2.50	1.63	1.32	0.96
→	40	6.10	5.40	2.30	2.20	2.00	1.19	0.96	0.82

Δpe = (2.00 : 1000) x 120 x (46 : 30) = 0.37 bar
Δpe = (2.00 : 17.2) x 32 x (216 : 150) = 5.36 psi

√ **Δp Tot. = 0.03 + 0.37 = 0.4 bar**
Δp Tot. = 0.43 + 5.36 = 5.79 psi

The selection is correct because the total pressure drop value is inside the admissible range for top tank return filters.
In case the max allowed total pressure drop is not verified, it is necessary to repeat the calculation changing the filter and/or filter element length/size.

MP FILTRI WWW.SUMY.IR

Filter element		Absolute filtration Filter element ΔP Series: C					Nominal filtration Filter Element ΔP Series: C		
Type	Length	A0003	A0006	A0010	A0016	A0025	P0010	P0025	M0060 - M0090
FEX 060	10	11.63	10.79	5.1	4.78	4.26	4.58	3.22	0.89
	20	6.83	6.69	3.35	3.19	2.56	1.97	1.38	0.45
FEX 110	10	5.73	5.22	2.52	2.16	1.66	1.33	1.12	0.18
	20	3.72	3.59	1.79	1.76	1.22	0.9	0.76	0.1

Filter element		Absolute filtration Filter element ΔP Series: D					Nominal filtration Filter Element ΔP Series: D		
Type	Length	A0003	A0006	A0010	A0016	A0025	P0010	P0025	M0025 - M0060 M0090
MFX 030	10	74.00	50.08	20.00	16.00	9.00	6.43	5.51	3.40
MFX 100	10	28.20	24.40	8.67	8.17	6.88	4.62	3.96	1.25
	20	17.33	12.50	6.86	5.70	4.00	3.05	2.47	1.10
	30	10.25	9.00	3.65	3.33	2.50	1.63	1.32	0.96
	40	6.10	5.40	2.30	2.20	2.00	1.19	0.96	0.82
MFX 180	10	3.67	3.05	1.64	1.56	1.24	1.18	1.06	0.26
	20	1.69	1.37	0.68	0.54	0.51	0.43	0.39	0.12
MFX 400	10	3.20	2.75	1.39	1.33	1.06	0.96	0.87	0.22
	20	2.00	1.87	0.88	0.85	0.55	0.49	0.45	0.13
	30	1.90	1.60	0.63	0.51	0.49	0.39	0.35	0.11
MFX 750	10	1.08	0.84	0.49	0.36	0.26	0.21	0.19	0.06
MLX 250	20	3.00	3.04	1.46	1.25	1.17	1.27	1.01	0.20
MLX 660	20	1.29	1.26	0.52	0.44	0.38	1.27	1.01	0.10
CUC 025	10	78.00	48.00	28.00	24.00	9.33	9.33	8.51	1.25
CUC 040	10	25.88	20.88	10.44	10.00	3.78	3.78	3.30	1.25
CUC 100	10	15.20	14.53	5.14	4.95	2.00	2.00	0.17	1.10
CUC 250	10	3.25	2.55	1.55	1.35	0.71	0.71	0.59	0.25
CUC 630	10	1.96	1.68	0.85	0.72	0.24	0.42	0.36	0.09
CUC 850	10	1.06	0.84	0.42	0.33	0.17	0.17	0.13	0.04
DHC 250	20	3.61	4.08	1.81	1.71	1.35	1.21	0.98	0.60
	40	2.10	1.70	1.14	0.77	0.53	0.70	0.70	0.55
MRC 100	10	19.00	17.00	6.90	6.30	4.60	2.94	2.52	1.60
	20	11.70	10.80	4.40	4.30	3.00	2.94	2.52	1.37
	30	7.80	6.87	3.70	3.10	2.70	2.14	1.84	1.34
	40	5.50	4.97	2.60	2.40	2.18	1.72	1.47	1.34
	50	4.20	3.84	2.36	2.15	1.90	1.60	1.37	1.34
MRC 250	10	5.35	4.85	2.32	1.92	1.50	1.38	1.20	0.15
	20	4.00	3.28	1.44	1.10	1.07	0.96	0.83	0.13
	30	2.60	2.20	1.08	1.00	0.86	0.77	0.64	0.12
	40	1.84	1.56	0.68	0.56	0.44	0.37	0.23	0.11
MRC 630	10	3.10	2.48	1.32	1.14	0.92	0.83	0.73	0.09
	20	2.06	1.92	0.82	0.76	0.38	0.33	0.27	0.08
	30	1.48	1.30	0.60	0.56	0.26	0.22	0.17	0.08
	40	1.30	1.20	0.48	0.40	0.25	0.21	0.16	0.08
	50	0.74	0.65	0.30	0.28	0.13	0.10	0.08	0.04
MRC 850	10	0.60	0.43	0.34	0.25	0.13	0.12	0.09	0.03
	20	0.37	0.26	0.23	0.21	0.11	0.08	0.07	0.03
	30	0.27	0.18	0.17	0.17	0.05	0.04	0.04	0.02
	40	0.23	0.16	0.13	0.12	0.04	0.03	0.03	0.02

Corrective factor Y to be used for the filter element pressure drop calculation. The values depend to the filter size and length and to the filter media.
Reference oil viscosity 30 mm^2/s

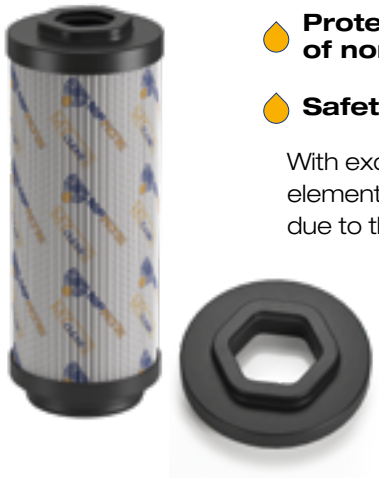
MYCLEAN

THE X CONCEPT FOR OUR FILTERS

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

RFEX series

with MYCLEAN FEX Filter Element



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

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

The products identified as RFEX are protected by:

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

MP FILTRI WWW.SUMY.IR

RFEX series

Maximum working pressure up to 1.6 MPa (16 bar) - Flow rate up to 260 l/min



INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS

Please scan or click the QR codes to get updated electronic version of the related document:

RFEX060 RFEX110

For all the QR codes: Scan or click me!

Description

Return filter

Maximum working pressure up to 1.6 MPa (16 bar)
Flow rate up to 260 l/min

RFEX is a range of return filters for protection of the reservoir against the system contamination.
They are mounted in line to limit aeration or foam generation into the reservoir.

Available features:

- Female threaded connections up to 1 1/4" and SAE connections up to 1 5/8", for a maximum flow rate of 260 l/min
- Fine filtration rating, to get a good cleanliness level into the reservoir
- Bypass valve, to relieve excessive pressure drop across the filter media
- Visual, electrical, axial and radial pressure gauges
- MYclean interface connection for the filter element, to protect the product against non-original spare parts
- External protective wrap, to optimize the flow through the element and to save the element efficiency against non-proper handling

Common applications:

- Light Industrial equipment
- Mobile application

Technical data

Filter housing materials

- Head: Aluminium
- Bypass valve: Polyamide - Steel
- Bowl: Polyamide

Pressure

- Test pressure: 2.4 MPa (24 bar)
- Min. Burst pressure: 4.8 MPa (48 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 1.6 MPa (16 bar)

Bypass valve

Opening pressure 0.175 MPa (1.75 bar) ±10%

Filter element features

Filter		Filter element	
RFEX		FEX	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	C	8 bar
M - Wire mesh	Standard	C	8 bar
P - Paper	Standard	C	8 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals

Standard NBR series A

Temperature

From -25 °C to +110 °C

Note

RFEX filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]			Volumes [dm³]		
	Length	10	20	Length	10	20
RFEX 060		1.00	1.15		0.60	0.80
RFEX 110		1.90	2.10		1.60	2.00

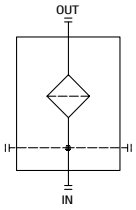
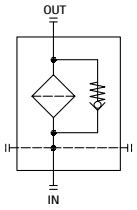
MP FILTRI WWW.SUMY.IR

Flow rates [l/min]

Filter element design - C Series								
Filter series	Length	A0010	A0016	A0025	M0060	M0090	P0010	P0025
RFEX 060	**10**	60	61	64	87	89	62	77
	20	69	70	75	91	92	79	93
RFEX 110	**10**	141	153	172	250	252	186	196
	20	166	168	191	255	256	207	215

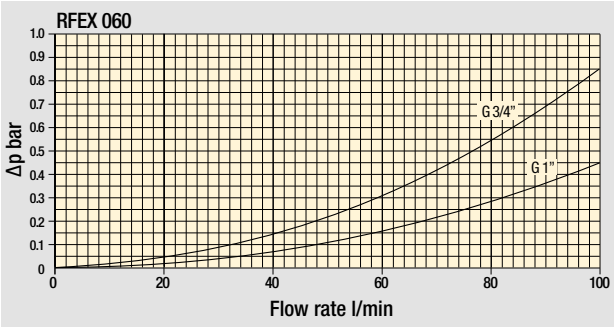
Maximum flow rate for a complete return filter with a pressure drop Δp = 0.5 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
Please, contact our Sales Department for further additional information.

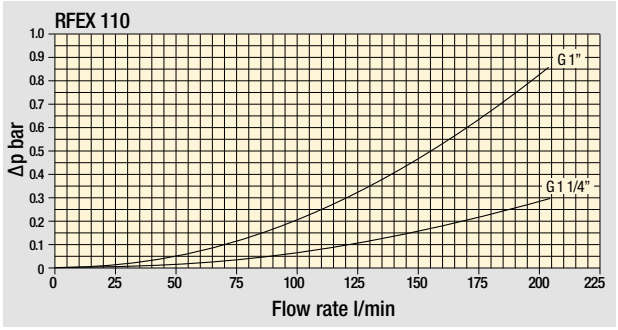
Hydraulic diagram

Filter series	00 - without bypass	17 - with bypass 1.75 bar
RFEX 060-110		

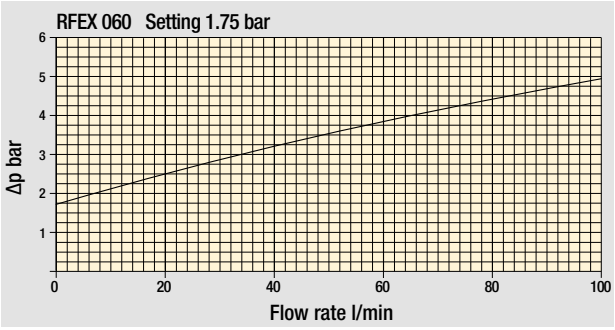
Pressure drop

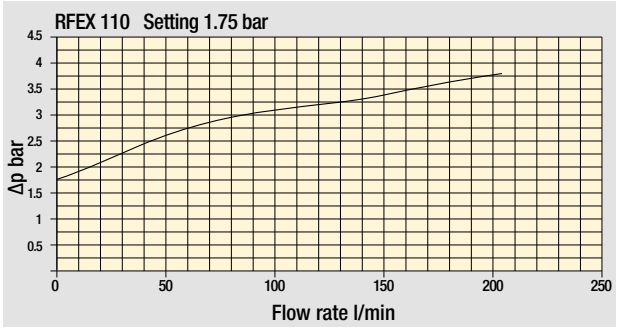
Filter housings
Δp pressure drop





Bypass valve
pressure drop





The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968.
Δp varies proportionally with density.

Designation & Ordering code

COMPLETE FILTER

Example 1:	RFEX	060	10	A0010	C	A	17	FG034	0	6T	NN	P01	NN
Example 2:	RFEX	110	20	A0010	C	A	00	FS016	0	6T	NN	P01	NN

Series

RFEX Filter featuring MYCLEAN Filter Element

Size

060
110

Length

10
20

Filtration rating (filter media)

A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin-impregnated paper	10 µm
P0025	Resin-impregnated paper	25 µm

Element Δp

C 8 bar

Seals and treatments

A NBR

Bypass

00 Without bypass
17 With bypass 1.75 bar

Connections	060	110
FG034 G 3/4”	•	-
FG100 G 1”	•	•
FG114 G 1 1/4”	-	•
FN034 3/4” NPT	•	-
FN100 1” NPT	•	•
FN114 1 1/4” NPT	-	•
FS012 SAE 12 - 1 1/16” - 12 UN	•	-
FS016 SAE 16 - 1 5/16” - 12 UN	•	•
FS020 SAE 20 - 1 5/8” - 12 UN	-	•

Additional connections

0 Without additional connections

Connections for clogging indicators

6T With both side indicator connections, with metal plugs

Additional features

NN Without additional features

Execution

P01 Standard catalogue item

Certificates

NN None

CLOGGING INDICATORS

See pages 776-777

BEA Electrical pressure indicator
BEM Electrical pressure indicator
BLA Electrical / visual pressure indicator
BVA Axial pressure gauge
BVR Radial pressure gauge
BVP Visual pressure indicator with automatic reset
BVQ Visual pressure indicator with manual reset

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FILTER ELEMENT

Example 1:	FEX	060	10	A0010	C	A	00	NN	P01	NN
Example 2:	FEX	110	20	A0010	C	A	00	NN	P01	NN

Series

FEX Filter element with MYCLEAN feature

Size

060

110

Length

10

20

Filtration rating (filter media)

A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin-impregnated paper	10 µm
P0025	Resin-impregnated paper	25 µm

Element Δp

C 8 bar

Seals and treatments

A NBR

Bypass

00 Without bypass

Additional features

NN Without additional features

Execution

P01 Standard catalogue item

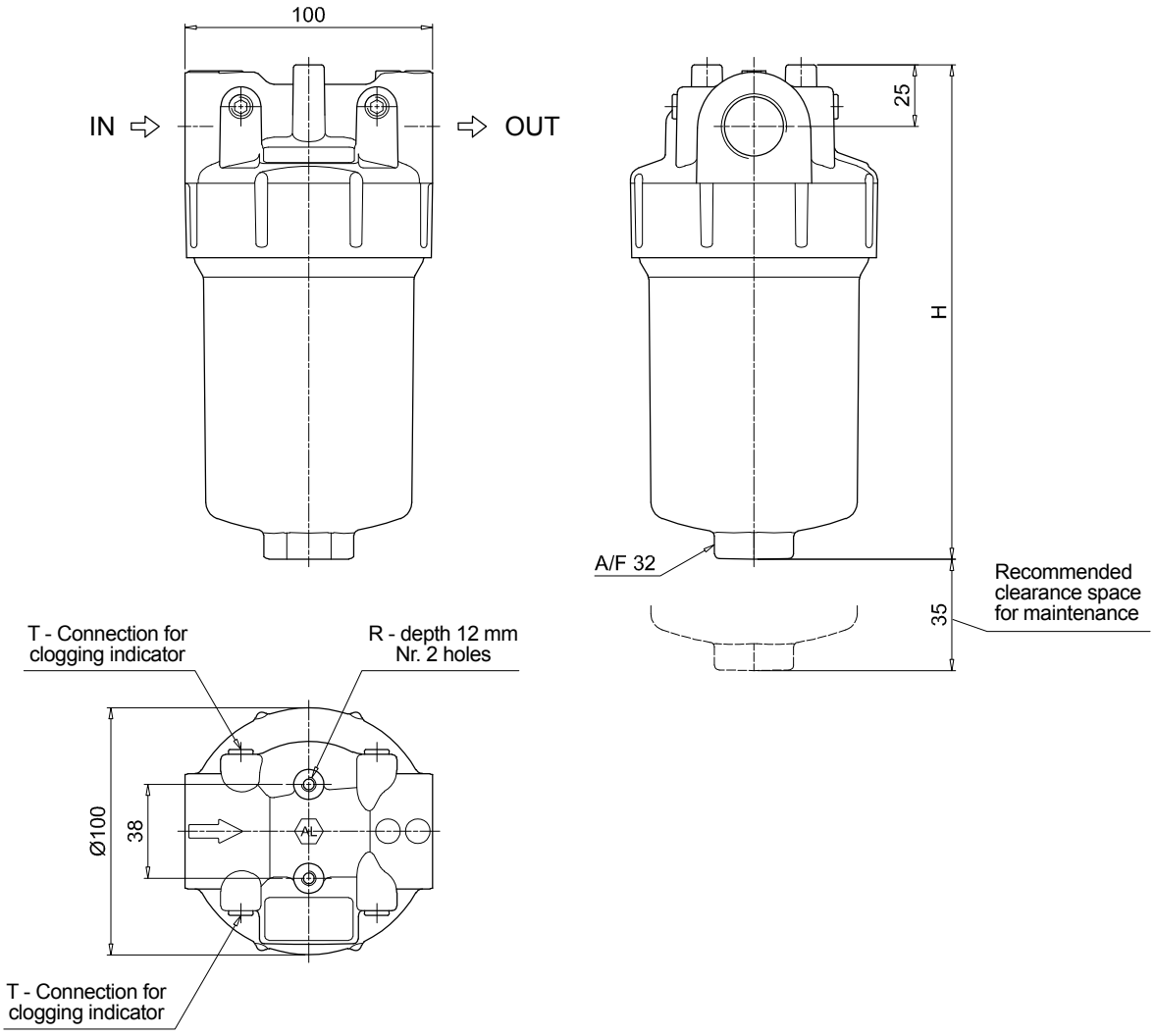
Certificates

NN None

Dimensions

RFEX060	
Filter length	**H [mm]**
10	202
20	265

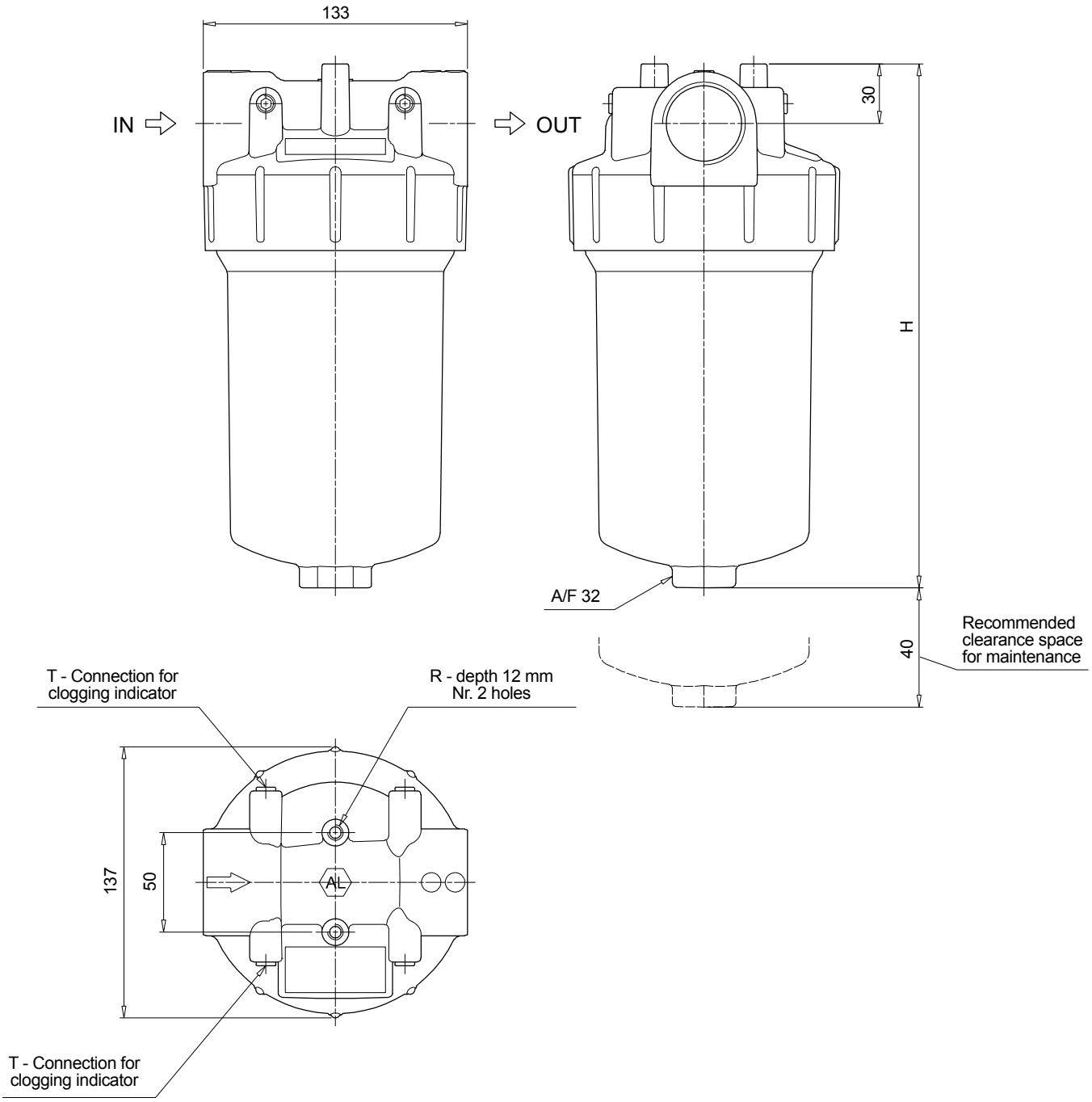
Connection	T	R
FG034	G 1/8”	M6
FG100	G 1/8”	M6
FN034	1/8” NPT	1/4” UNC
FN100	1/8” NPT	1/4” UNC
FS012	1/8” NPT	1/4” UNC
FS016	1/8” NPT	1/4” UNC



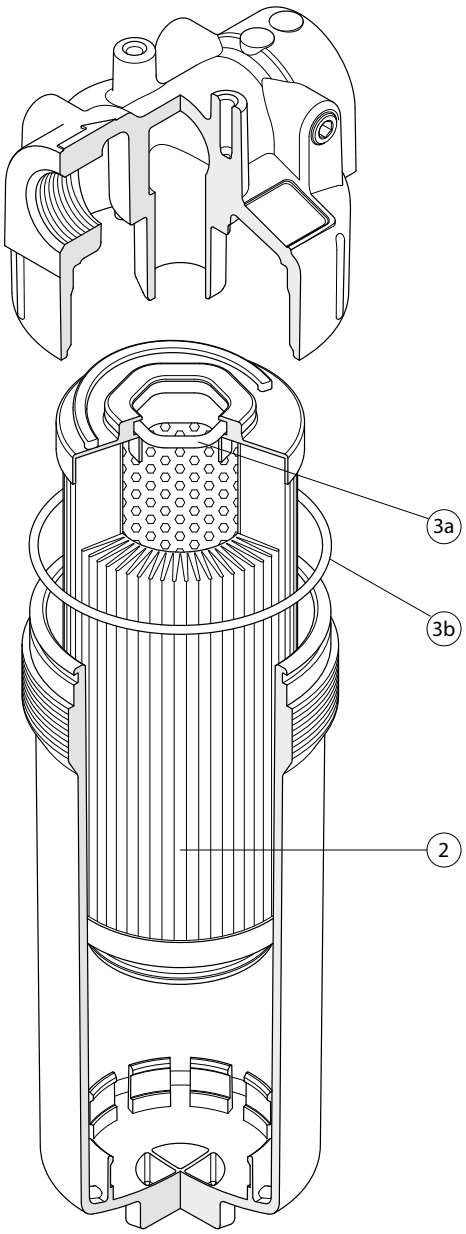
MP FILTRI WWW.SUMY.IR

RFEX110	
Filter length	H [mm]
10	266
20	315

Connection	T	R
FG100	G 1/8"	M8
FG114	G 1/8"	M8
FN100	1/8" NPT	5/16" UNC
FN114	1/8" NPT	5/16" UNC
FS016	1/8" NPT	5/16" UNC
FS020	1/8" NPT	5/16" UNC



Order number for spare parts



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3b)
Filter series	**Filter element**	**Seal Kit code number NBR**
RFEX 060	See order table	AK021000512
RFEX 110		AK021000513

MP FILTRI WWW.SUMY.IR

MYCLEAN

THE X CONCEPT FOR OUR FILTERS

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

MPFX series

with MYCLEAN MFX Filter Element



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

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

The products identified as MPFX are protected by:

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

TOGETHER WITH MYCLEAN , AS OPTION, MPFX SERIES CAN BE PROVIDED WITH

zerospark®

THE ANTI-STATIC FILTERS



THE Z CONCEPT FOR OUR FILTERS

Zerospark® is a specialist solution designed to solve the problem of electrostatic discharge inside hydraulic filters. Caused by the electrical charge build-up due to the passage of oil through the filters, this can result in damage to filter elements, oils and circuit components. It can even cause fire hazards in environments where flammable materials are present.

MP FILTRI WWW.SUMY.IR

MPFX series

Maximum working pressure up to 0.8 MPa (8 bar) - Flow rate up to 900 l/min



Description

Return filter

Maximum working pressure up to 0.8 MPa (8 bar)
Flow rate up to 900 l/min

MPFX is a range of return filters for protection of the reservoir against the system contamination.
They are directly fixed to the reservoir, in immersed or semi-immersed position.
The filter output must be always immersed into the fluid to avoid aeration or foam generation into the reservoir.

Available features:

- Female threaded connections up to 2" and flanged connections up to 2", for a maximum flow rate of 900 l/min
- Multiple connections, to connect several return lines or drains
- Fine filtration rating, to get a good cleanliness level into the reservoir
- Bypass valve integrated into the filter element, to relieve excessive pressure drop across the filter media
- 2, 3 or 4 fixing holes for installation, to suit a variety of reservoir surfaces
- O-ring or Flat Seal to suit a variety of reservoir surfaces
- Oil dipstick, to easily check the level of the fluid into the reservoir (sold as separate item)
- Extension tube, to be used in deep reservoirs (sold as separate item)
- Diffuser, to reduce the risk of aeration, foaming and noise (sold as separate item)
- Filler plug, to fill cleaned fluid into the tank without an additional connection
- Visual, electrical and electronic clogging indicators
- MYclean interface connection, to protect the product against non-original spare parts
- External protective wrap, to optimize the flow through the element and to save the element efficiency against non-proper handling

Common applications:

- Light Industrial equipment
- Mobile application

Technical data

Filter housing materials

- Head: Aluminium
- Cover: Polyamide: MPFX 030-100-104-110
  Aluminium: MPFX 181-182-184-191-192-194 400-410-450-750
- Bowl: Polyamide

Pressure

- Test pressure: 1.2 MPa (12 bar)
- Min. Burst pressure: 2.4 MPa (24 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 0.8 MPa (8 bar)

Bypass valve

- Opening pressure 0.175 MPa (1.75 bar) ±10%
- Opening pressure 0.3 MPa (3 bar) ±10%

Filter element features

Filter		Filter element	
MPFX		MFX	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	D	10 bar
M - Wire mesh	Standard	D	10 bar
P - Paper	Standard	D	10 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals

- Standard NBR series A or W
- Optional FPM series V or Z

Temperature

From -25 °C to +110 °C

Note

MPFX filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]					Volumes [dm³]				
	Length	10	20	30	40	Length	10	20	30	40
MPFX 030		0.40	-	-	-		0.29	-	-	-
MPFX 100		0.61	0.64	0.67	0.74		0.64	0.85	1.20	1.65
MPFX 104		0.82	0.96	1.02	1.25		0.64	0.85	1.20	1.65
MPFX 110		0.64	0.68	0.71	0.78		-	-	-	-
MPFX 181		2.20	3.00	-	-		2.50	4.00	-	-
MPFX 182		2.30	3.10	-	-		2.50	4.00	-	-
MPFX 184		2.55	3.45	-	-		2.65	4.45	-	-
MPFX 191		-	3.00	-	-		-	4.25	-	-
MPFX 192		-	3.10	-	-		-	4.25	-	-
MPFX 194		-	3.45	-	-		-	4.45	-	-
MPFX 400		3.35	3.65	3.90	-		3.70	4.60	5.40	-
MPFX 410		3.55	3.85	4.10	-		3.70	4.60	5.40	-
MPFX 450		3.95	4.25	4.50	-		3.70	4.60	5.40	-
MPFX 750		6.30	-	-	-		8.45	-	-	-

MP FILTRI WWW.SUMY.IR

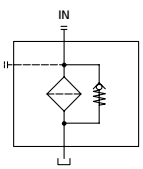
Flow rates [l/min]

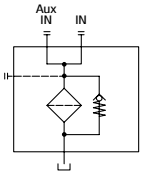
Filter series	Length	Filter element design - D series					Filter element design - D series		
		A0003	A0006	A0010	A0016	A0025	M0025 M0060 M0090	P0010	P0025
MPFX 030	**10**	7	10	24	29	47	84	60	66
MPFX 100-104-110	**10**	18	20	53	56	65	153	87	96
	20	28	38	65	75	95	158	111	123
	300	48	55	125	135	169	289	224	251
	4	79	89	180	185	198	306	264	289
MPFX 181-182-184	**10**	127	148	235	243	278	441	285	299
	20	231	262	358	382	388	472	404	412
MPFX 191-192-194	**20**	261	305	489	528	546	696	583	598
MPFX 400	**10**	150	171	294	304	350	585	370	390
	20	237	252	454	462	589	868	619	645
	30	248	288	553	609	621	885	680	703
MPFX 410	**10**	146	167	277	285	325	512	341	357
	20	226	239	396	402	485	644	503	519
	30	236	269	462	497	505	653	539	553
MPFX 450	**10**	150	171	294	304	350	585	370	390
	20	237	252	454	462	589	868	619	645
	30	248	288	553	609	621	885	680	703
MPFX 750	**10**	392	465	623	700	769	929	804	819

Maximum flow rate for a complete return filter with a pressure drop Δp = 0.5 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

Hydraulic diagram

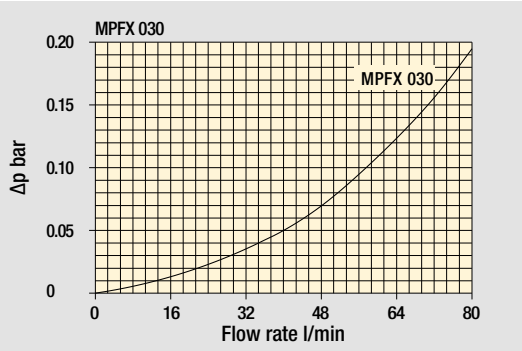
Filter series	17/30 - with bypass 1.75 bar/ 3 bar	
	Style 1 connection	Style 2 connections
MPFX 030	•	-
MPFX 100	•	-
MPFX 104	•	-
MPFX 110	-	•
MPFX 181	•	-
MPFX 182	-	•
MPFX 184	•	•
MPFX 191	•	-
MPFX 192	•	-
MPFX 194	•	•
MPFX 400	•	-
MPFX 410	-	•
MPFX 450	•	-
MPFX 750	•	-

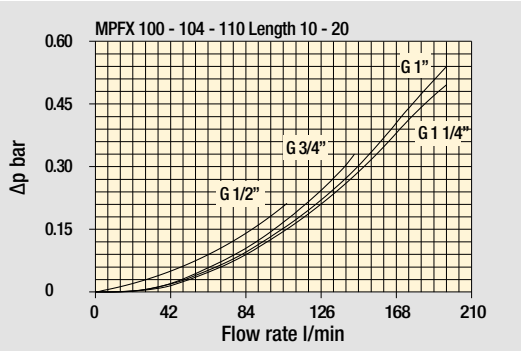


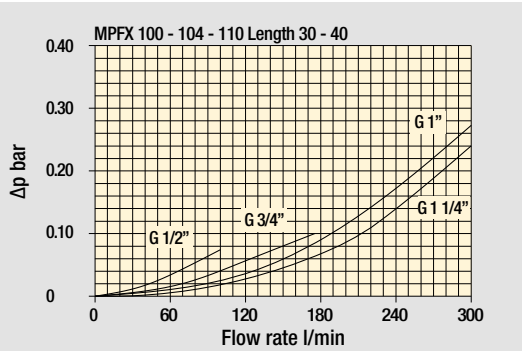


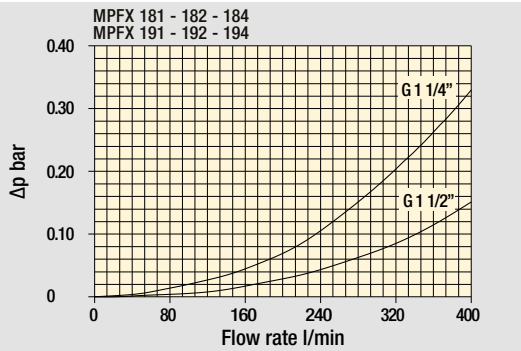
Pressure drop

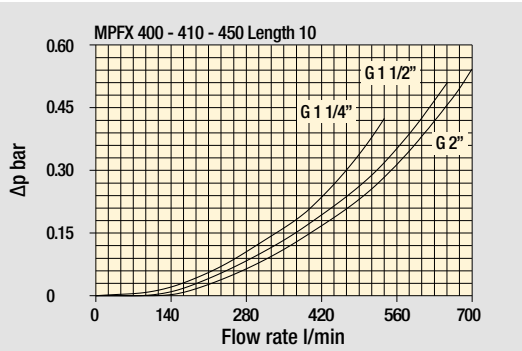
Filter housings Δp pressure drop

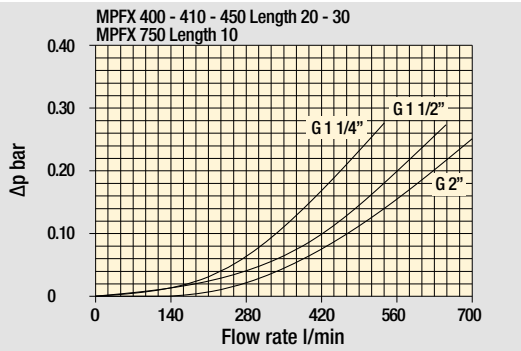




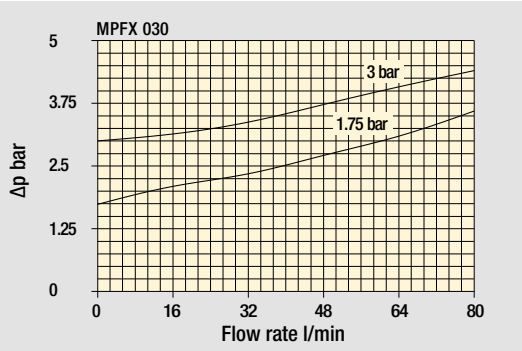


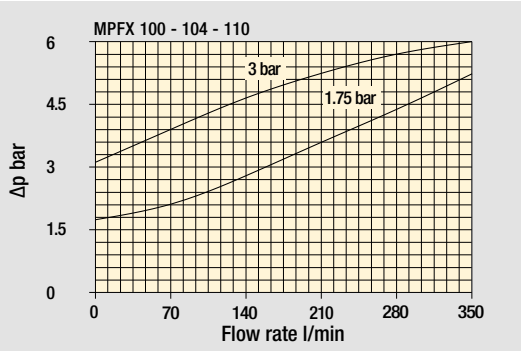


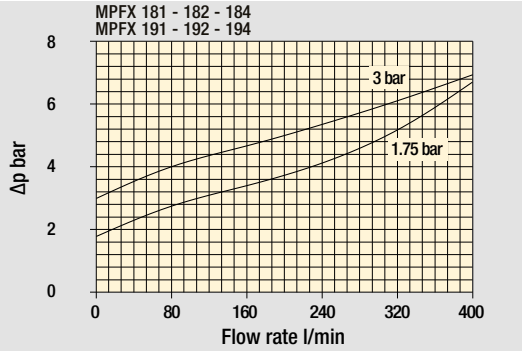


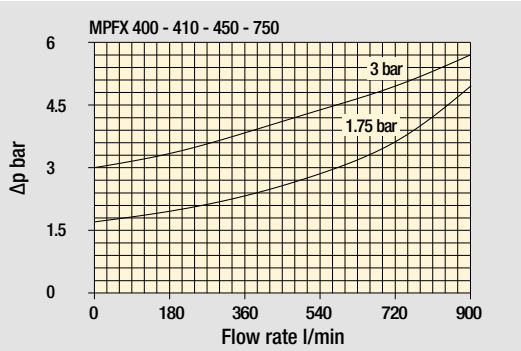


Bypass valve pressure drop





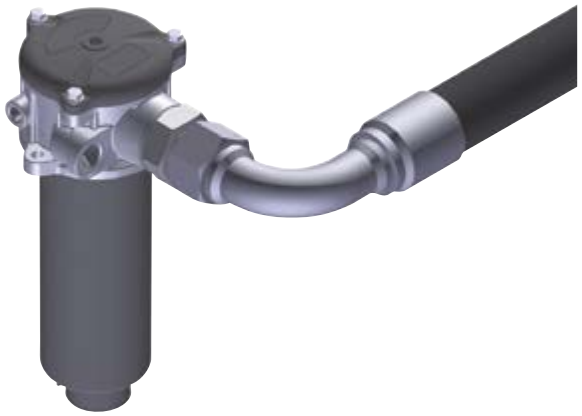




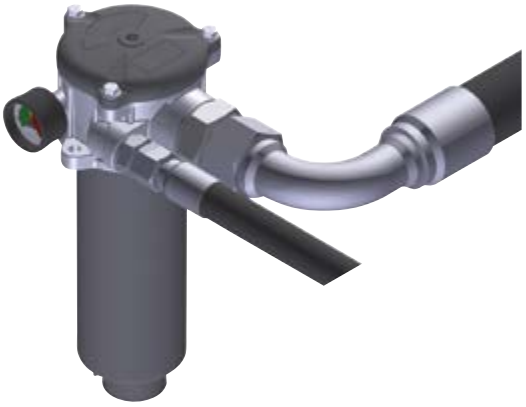
The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

MP FILTRI WWW.SUMY.IR

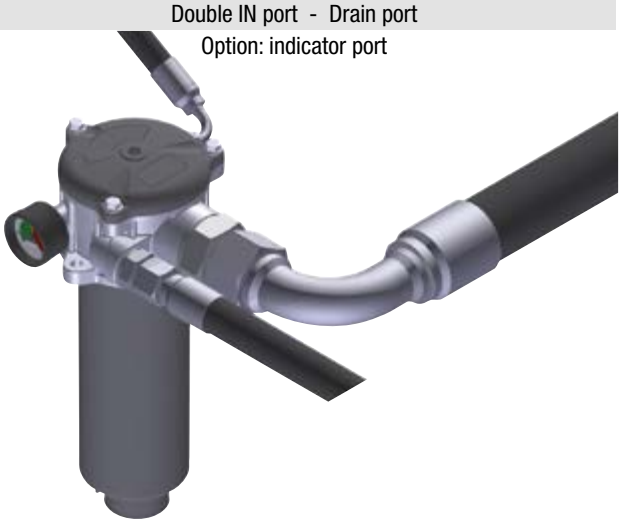
Standard - Single IN port



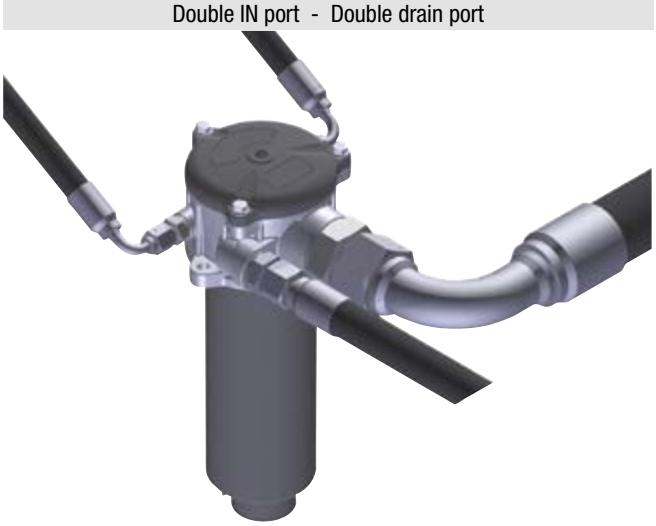
Double IN port
Option: double indicator port



Double IN port - Drain port
Option: indicator port



Double IN port - Double drain port



Designation & Ordering code

COMPLETE FILTER

Example: MPFX | 030 | 10 | Z0010 | D | A | 30 | FS008 | 0 | 1T | NN | P01 | NN

Series
MPFX Filter featuring MYCLEAN Filter Element

Size
030

Length
10

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark+

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp
D 10 bar

Seals and treatments		A0xxx	M0xxx	P0xxx	Z0xxx
A	NBR	•	•	•	•
V	FPM	•	•	•	•
W	NBR with filter and components surface treatment	•	•	-	•
Z	FPM with filter and components surface treatment	•	•	-	•

Bypass
17 With bypass 1.75 bar
30 With bypass 3.0 bar

Connections
FG012 G 1/2" **FN012** 1/2" NPT **FS008** SAE 8 - 3/4" - 16 UNF

Additional connections
0 Without additional connections

Connections for clogging indicators
1T With top indicator connection, with metal plug

Additional features
NN Without additional features

Execution
P01 Standard catalogue item

Certificates
NN None

CLOGGING INDICATORS

See pages 776-777

BVA Axial pressure gauge
BVR Radial pressure gauge
BVP Visual pressure indicator with automatic reset
BVQ Visual pressure indicator with manual reset
BEA Electrical pressure indicator
BEM Electrical pressure indicator
BLA Electrical / visual pressure indicator

ACCESSORIES

See page 270

TE Polyamide extension tube

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Example: MFX | 030 | 10 | Z0010 | D | A | 30 | NN | P01 | NN

Series
MFX Filter element with MYCLEAN feature

Size
030

Length
10

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark+

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp
D 10 bar

Seals and treatments
A NBR
V FPM

Bypass
17 With bypass 1.75 bar
30 With bypass 3.0 bar

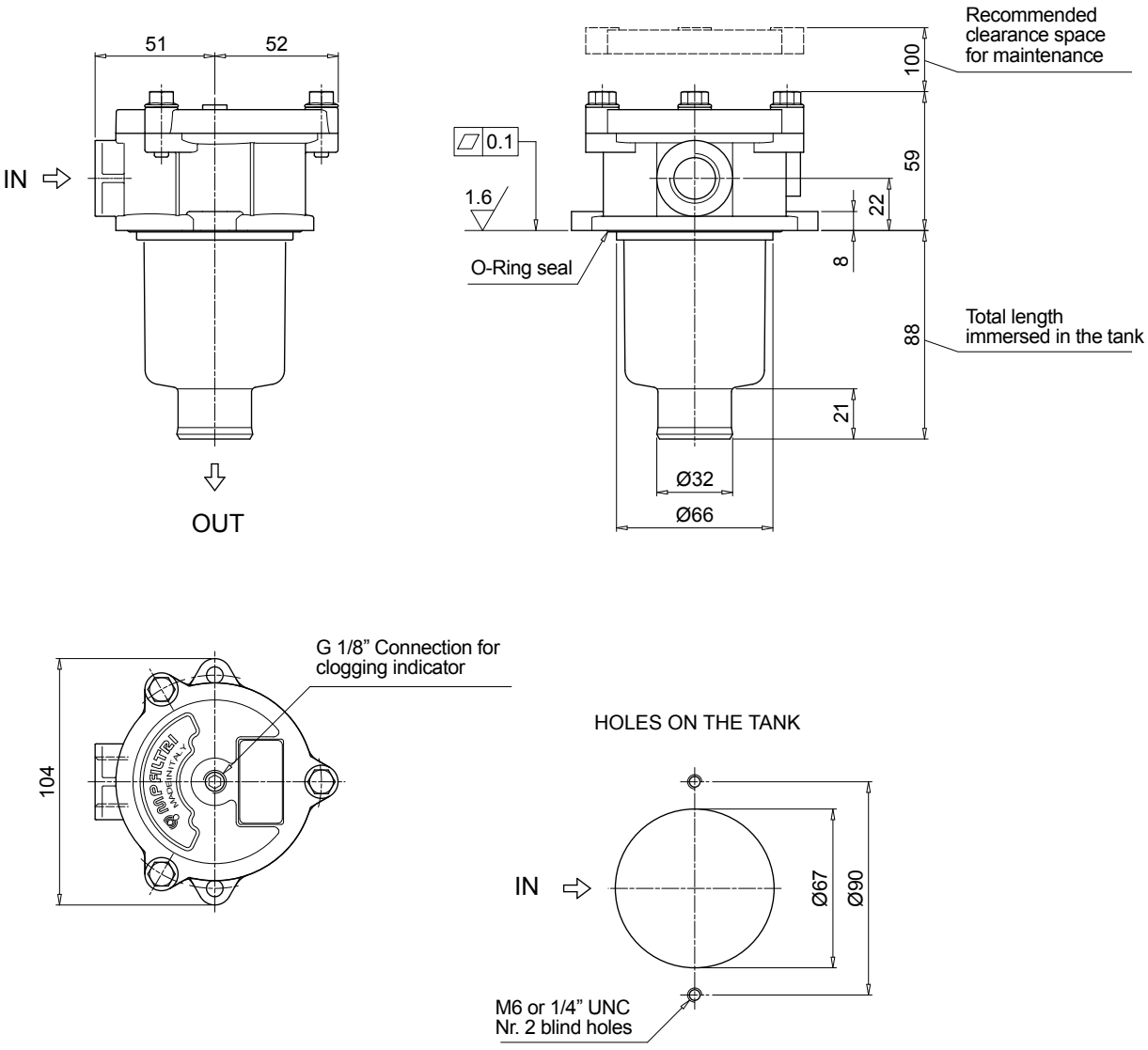
Additional features
NN Without additional features

Execution
P01 Standard catalogue item

Certificates
NN None

Dimensions

MPFX030



MP FILTRI WWW.SUMY.IR

Designation & Ordering code

COMPLETE FILTER

Example 1:	MPFX	100	20	A0006	D	W	17	FG100	0	1T	NN	P01	NN
Example 2:	MPFX	104	40	P0010	D	A	30	FS012	0	1T	NN	P01	NN

Series
MPFX Filter featuring MYCLEAN Filter Element

Size
100 **104**

Length
10 **30**
20 **40**

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark+

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp
D 10 bar

Seals and treatments

		A0xxx	M0xxx	P0xxx	Z0xxx
A	NBR	•	•	•	•
V	FPM	•	•	•	•
W	NBR with filter and components surface treatment	•	•	-	•
Z	FPM with filter and components surface treatment	•	•	-	•

Bypass
17 With bypass 1.75 bar
30 With bypass 3.0 bar

Connections

FG012 G 1/2”	**FN012** 1/2” NPT	**FS008** SAE 8 - 3/4” - 16 UNF
FG034 G 3/4”	**FN034** 3/4” NPT	**FS012** SAE 12 - 1 1/16” - 12 UN
FG100 G 1”	**FN100** 1” NPT	**FS016** SAE 16 - 1 5/16” - 12 UN

Additional connections
0 Without additional connections

Connections for clogging indicators
1T With top indicator connection, with metal plug

Additional features
NN Without additional features

Execution
P01 Standard catalogue item

Certificates
NN None

CLOGGING INDICATORS

See pages 776-777

BVA Axial pressure gauge
BVR Radial pressure gauge
BVP Visual pressure indicator with automatic reset
BVQ Visual pressure indicator with manual reset
BEA Electrical pressure indicator
BEM Electrical pressure indicator
BLA Electrical / visual pressure indicator

ACCESSORIES

See page 270

TE Polyamide extension tube
T5 Filler plug M30x1.5
DFS Diffuser with fast lock connection
DPT Dipstick

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Example 1:	MFX	100	20	A0006	D	A	17	NN	P01	NN
Example 2:	MFX	100	40	P0010	D	A	30	NN	P01	NN

Series
MFX Filter element with MYCLEAN feature

Size
100

Length
10 **30**
20 **40**

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark®

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp
D 10 bar

Seals and treatments
A NBR
V FPM

Bypass
17 With bypass 1.75 bar
30 With bypass 3.0 bar

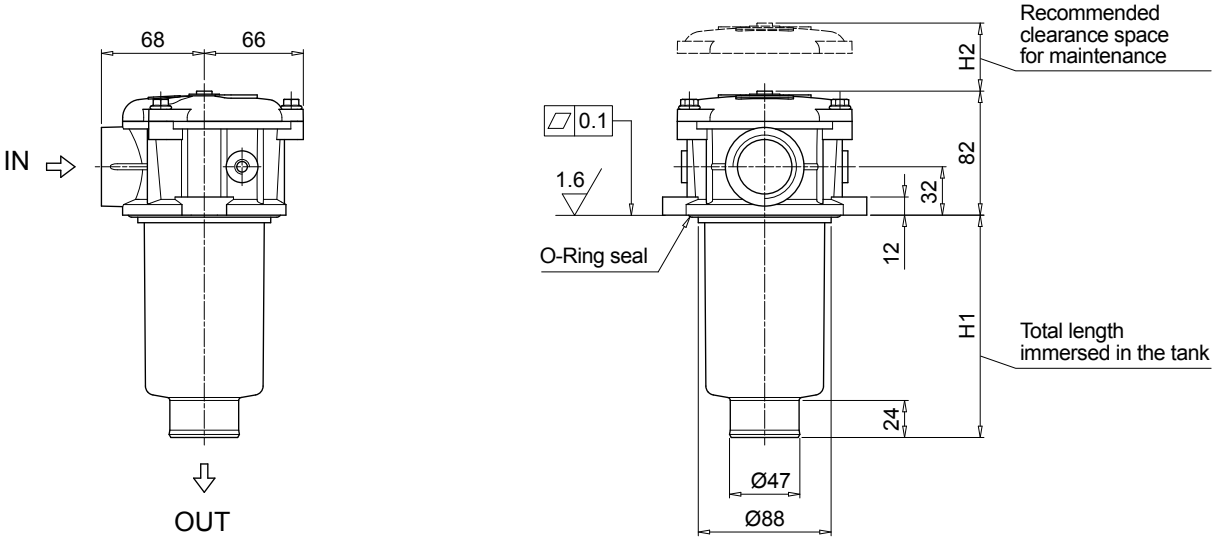
Additional features
NN Without additional features

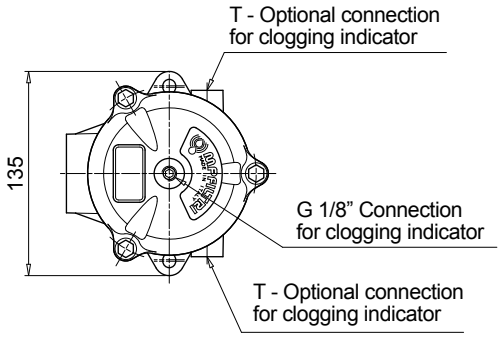
Execution
P01 Standard catalogue item

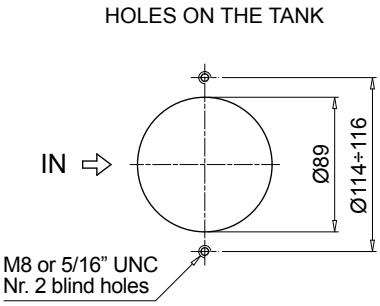
Certificates
NN None

Dimensions

MPFX100		
Filter length	**H1 [mm]**	**H2 [mm]**
10	102	120
20	147	170
30	225	250
40	327	350

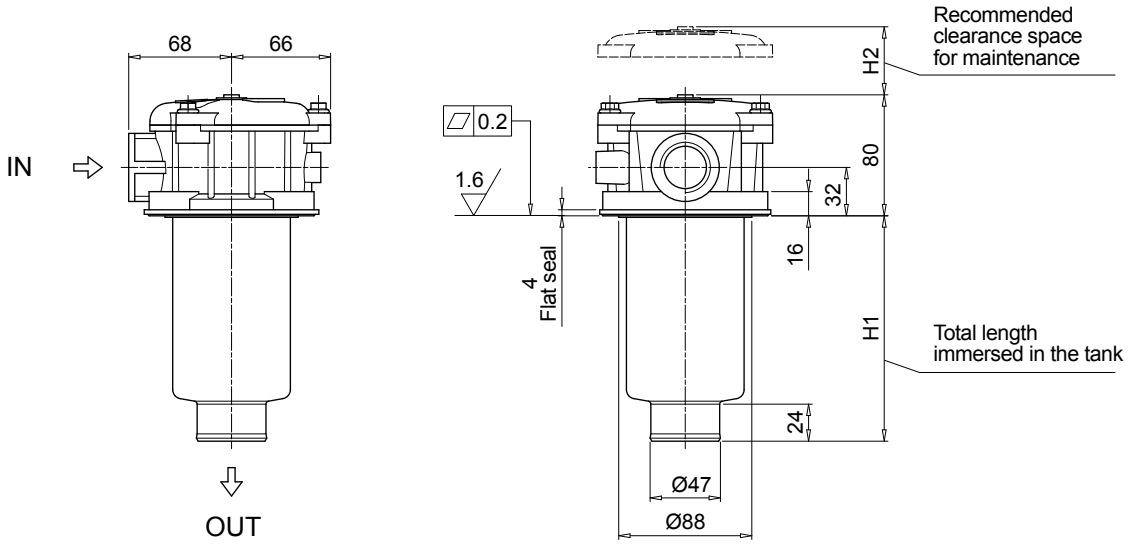


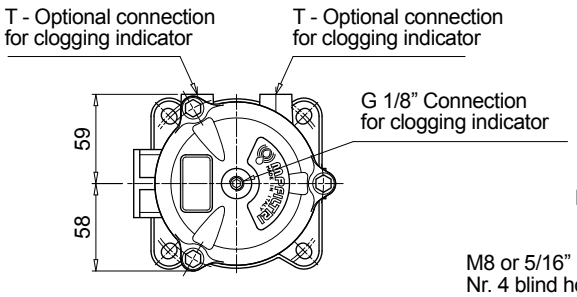


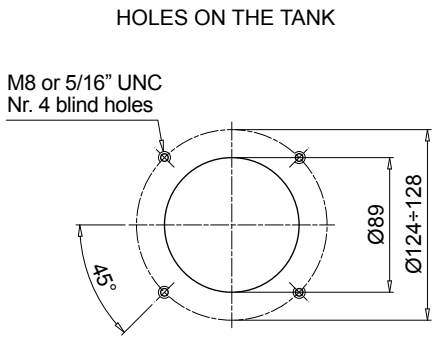


MP FILTRI WWW.SUMY.IR

MPFX104		
Filter length	**H1 [mm]**	**H2 [mm]**
10	100	120
20	145	170
30	223	250
40	325	350







MPFX MPFX110

Designation & Ordering code

COMPLETE FILTER

Example: MPFX | 110 | 20 | Z0025 | D | Z | 30 | FN114 | 2 | 9T | NN | P01 | NN

Series
MPFX Filter featuring MYCLEAN Filter Element

Size
110

Length
10 **30**
20 **40**

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark+

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp
D 10 bar

Seals and treatments

		A0xxx	M0xxx	P0xxx	Z0xxx
A	NBR	•	•	•	•
V	FPM	•	•	•	•
W	NBR with filter and components surface treatment	•	•	-	•
Z	FPM with filter and components surface treatment	•	•	-	•

Bypass
17 With bypass 1.75 bar
30 With bypass 3.0 bar

Connections

FG012 G 1/2”	**FN012** 1/2” NPT	**FS008** SAE 8 - 3/4” - 16 UNF
FG034 G 3/4”	**FN034** 3/4” NPT	**FS012** SAE 12 - 1 1/16” - 12 UN
FG100 G 1”	**FN100** 1” NPT	**FS016** SAE 16 - 1 5/16” - 12 UN
FG114 G 1 1/4”	**FN114** 1 1/4” NPT	**FS020** SAE 20 - 1 5/8” - 12 UN

Additional connections

1	Main connection	FG012 FG034 FG100 FG114	**G 3/8”**	Main connection	FN012 FN034 FN100 FN114	**3/8” NPT**	Main connection	FS008 FS012 FS016 FS020	**SAE 6 - 9/16” 18 UNF**
2	Main connection	FG012 FG034 FG100 FG114	**G 1/2”**	Main connection	FN012 FN034 FN100 FN114	**1/2” NPT**	Main connection	FS008 FS012 FS016 FS020	**SAE 8 - 3/4” 16 UNF**

Connections for clogging indicators
9T With multiple indicator connections, with metal plugs

Additional features
NN Without additional features

Execution
P01 Standard catalogue item

Certificates
NN None

CLOGGING INDICATORS

See pages 776-777

BVA Axial pressure gauge
BVR Radial pressure gauge
BVP Visual pressure indicator with automatic reset
BVQ Visual pressure indicator with manual reset
BEA Electrical pressure indicator
BEM Electrical pressure indicator
BLA Electrical / visual pressure indicator

ACCESSORIES

See page 270

TE Polyamide extension tube
T5 Filler plug M30x1.5
DFS Diffuser with fast lock connection
DPT Dipstick

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Example: MFX | 100 | 20 | Z0025 | D | V | 30 | NN | P01 | NN

Series
MFX Filter element with MYCLEAN feature

Size
100

Length
10 **30**
20 **40**

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp
D 10 bar

Seals and treatments
A NBR
V FPM

Bypass
17 With bypass 1.75 bar
30 With bypass 3.0 bar

Additional features
NN Without additional features

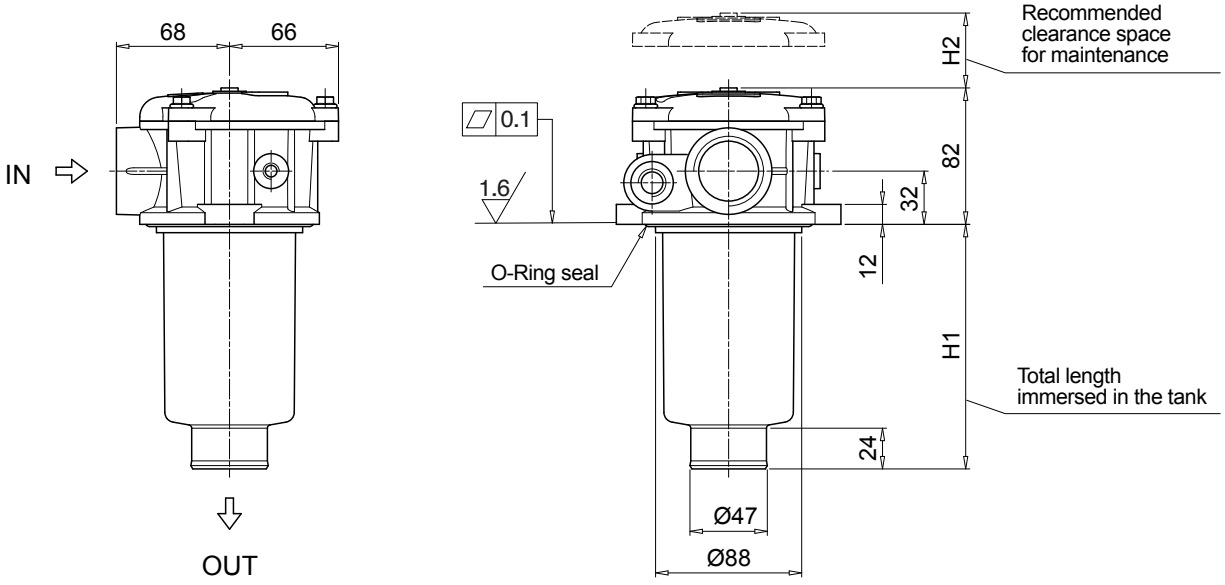
Execution
P01 Standard catalogue item

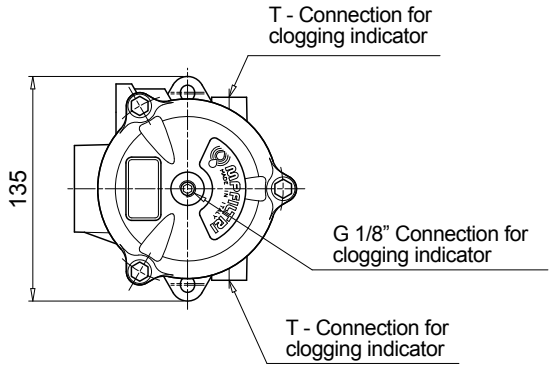
Certificates
NN None

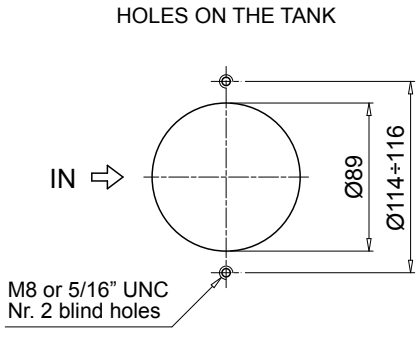
Dimensions

MPFX110		
Filter length	**H1 [mm]**	**H2 [mm]**
10	102	120
20	147	170
30	225	250
40	327	350

Connection	T
FG012	G 1/8”
FG034	
FG100	
FG114	
FN012	1/8” NPT
FN034	
FN100	
FN114	
FS008	
FS012	
FS016	
FS020	







MP FILTRI WWW.SUMY.IR

Designation & Ordering code

COMPLETE FILTER

Example 1:	MPFX	181	10	A0025	D	A	30	FG112	0	1T	NN	P01	NN
Example 2:	MPFX	191	20	P0010	D	V	17	FS024	0	1T	SN	P01	NN

Series

MPFX Filter featuring MYCLEAN Filter Element

Size

181 **191**

Length	Size 181	Size 191
10	•	-
20	•	•

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark+

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp

D 10 bar

Seals and treatments	A0xxx	M0xxx	P0xxx	Z0xxx
A NBR	•	•	•	•
V FPM	•	•	•	•
W NBR with filter and components surface treatment	•	•	-	•
Z FPM with filter and components surface treatment	•	•	-	•

Bypass

17 With bypass 1.75 bar

30 With bypass 3.0 bar

Connections

FG114	G 1 1/4”	**FN114**	1 1/4” NPT	**FS020**	SAE 20 - 1 5/8” - 12 UN
FG112	G 1 1/2”	**FN112**	1 1/2” NPT	**FS024**	SAE 24 - 1 7/8” - 12 UN

Additional connections

0 Without additional connections

Connections for clogging indicators

1T With top indicator connection, with metal plug

Additional features

NN Without additional features

SN With flat seal on head

Execution

P01 Standard catalogue item

Certificates

NN None

CLOGGING INDICATORS

See pages 776-777

BVA Axial pressure gauge

BVR Radial pressure gauge

BVP Visual pressure indicator with automatic reset

BVQ Visual pressure indicator with manual reset

BEA Electrical pressure indicator

BEM Electrical pressure indicator

BLA Electrical / visual pressure indicator

ACCESSORIES

See page 270

TE Polyamide extension tube

T5 Filler plug M30x1.5

DPT Dipstick

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Example 1:	MFX	180	10	A0025	D	A	30	NN	P01	NN
Example 2:	MFX	180	20	P0010	D	V	17	NN	P01	NN

Series
MFX Filter element with MYCLEAN feature

Size
180

Length
10
20

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark®

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp
D 10 bar

Seals and treatments
A NBR
V FPM

Bypass
17 With bypass 1.75 bar
30 With bypass 3.0 bar

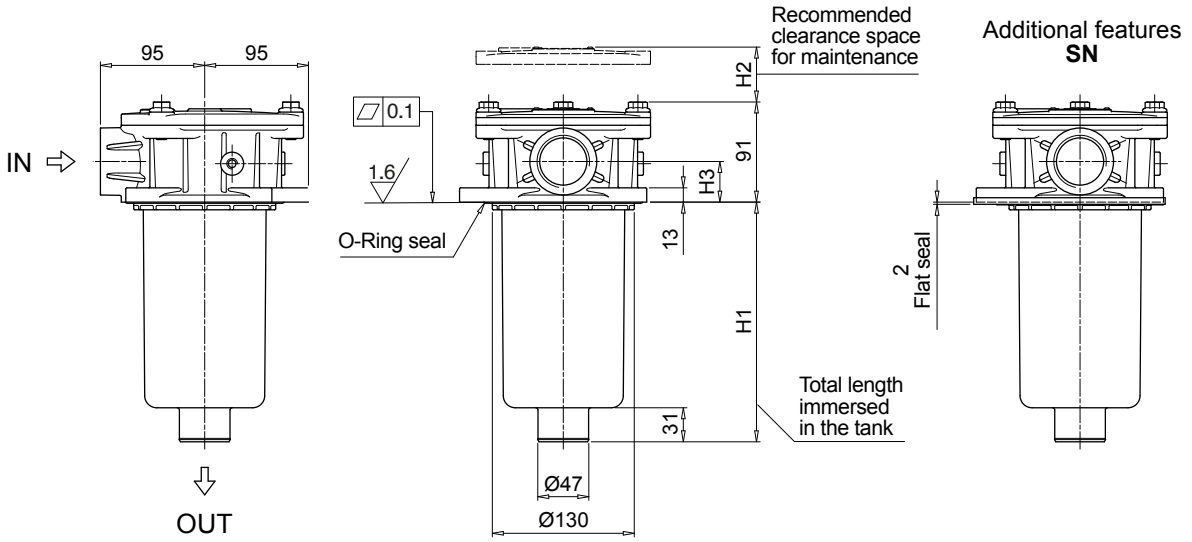
Additional features
NN Without additional features

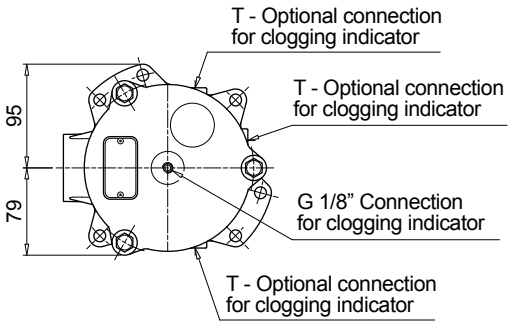
Execution
P01 Standard catalogue item

Certificates
NN None

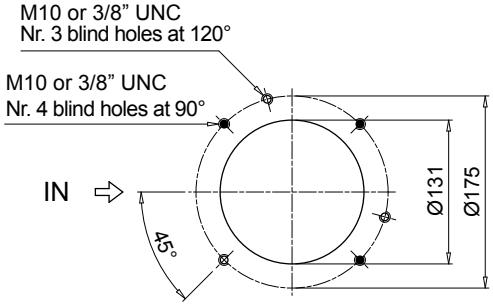
Dimensions

MPFX181				
Filter length	**H1 [mm]**	**H2 [mm]**	**Connection**	**H3 [mm]**
10	235	255	**FG114**	35
20	448	475	**FN114**	
			FS020	
			FG112	37
			FN112	
			FS024	



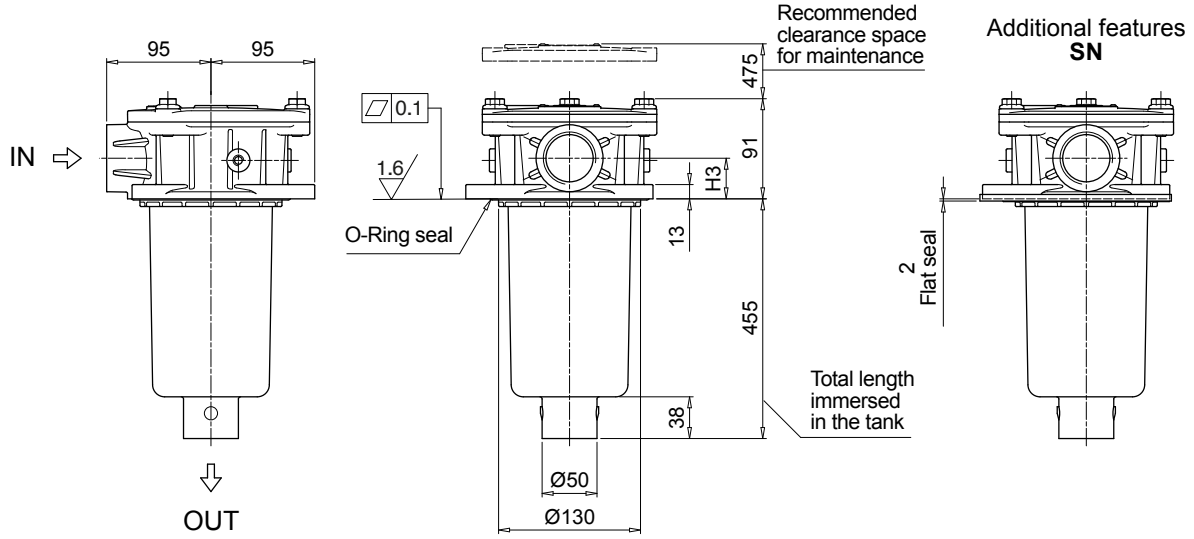


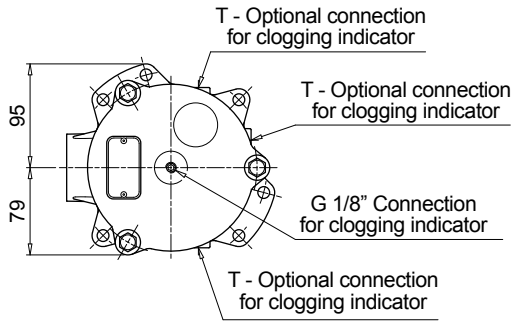
HOLES ON THE TANK
Option for 3 and 4 screws



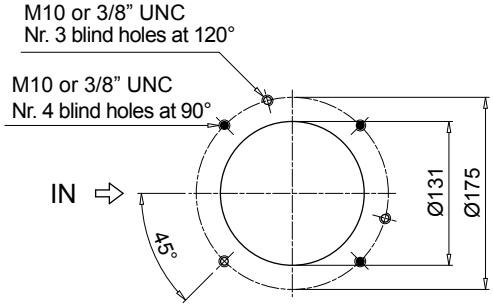
MP FILTRI WWW.SUMY.IR

MPFX191	
Connection	**H3 [mm]**
FG114	35
FN114	
FS020	
FG112	37
FN112	
FS024	





HOLES ON THE TANK
Option for 3 and 4 screws



Designation & Ordering code

COMPLETE FILTER

Example 1:	MPFX	182	10	A0025	D	A	30	FN114	2	1T	NN	P01	NN
Example 2:	MPFX	192	20	P0010	D	V	17	FS020	1	1T	SN	P01	NN

Series

MPFX Filter featuring MYCLEAN Filter Element

Size

182 **192**

Length

	Size 182	Size 192
10	•	-
20	•	•

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark+

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp

D 10 bar

Seals and treatments

		A0xxx	M0xxx	P0xxx	Z0xxx
A	NBR	•	•	•	•
V	FPM	•	•	•	•
W	NBR with filter and components surface treatment	•	•	-	•
Z	FPM with filter and components surface treatment	•	•	-	•

Bypass

17 With bypass 1.75 bar

30 With bypass 3.0 bar

Connections

FG114 G 1 1/4” **FN114** 1 1/4” NPT **FS020** SAE 20 - 1 5/8” - 12 UN

Additional connections

1	Front thread	FG114	**G 1/2”**
		FN114	**1/2” NPT**
		FS020	**SAE 8 - 3/4” - 16 UNF**
2	Front thread	FG114	**G 3/4”**
		FN114	**3/4” NPT**
		FS020	**SAE 12 - 1 1/16” - 12 UN**

Connections for clogging indicators

1T With top indicator connection, with metal plug

Additional features

NN Without additional features

SN With flat seal on head

Execution

P01 Standard catalogue item

Certificates

NN None

CLOGGING INDICATORS

See pages 776-777

BVA Axial pressure gauge
BVR Radial pressure gauge
BVP Visual pressure indicator with automatic reset
BVQ Visual pressure indicator with manual reset
BEA Electrical pressure indicator
BEM Electrical pressure indicator
BLA Electrical / visual pressure indicator

ACCESSORIES

See page 270

TE Polyamide extension tube
T5 Filler plug M30x1.5
DPT Dipstick

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Example 1:	MFX	180	10	A0025	D	A	30	NN	P01	NN
Example 2:	MFX	180	20	P0010	D	V	17	NN	P01	NN

Series
MFX Filter element with MYCLEAN feature

Size
180

Length
10
20

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark®

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp
D 10 bar

Seals and treatments
A NBR
V FPM

Bypass
17 With bypass 1.75 bar
30 With bypass 3.0 bar

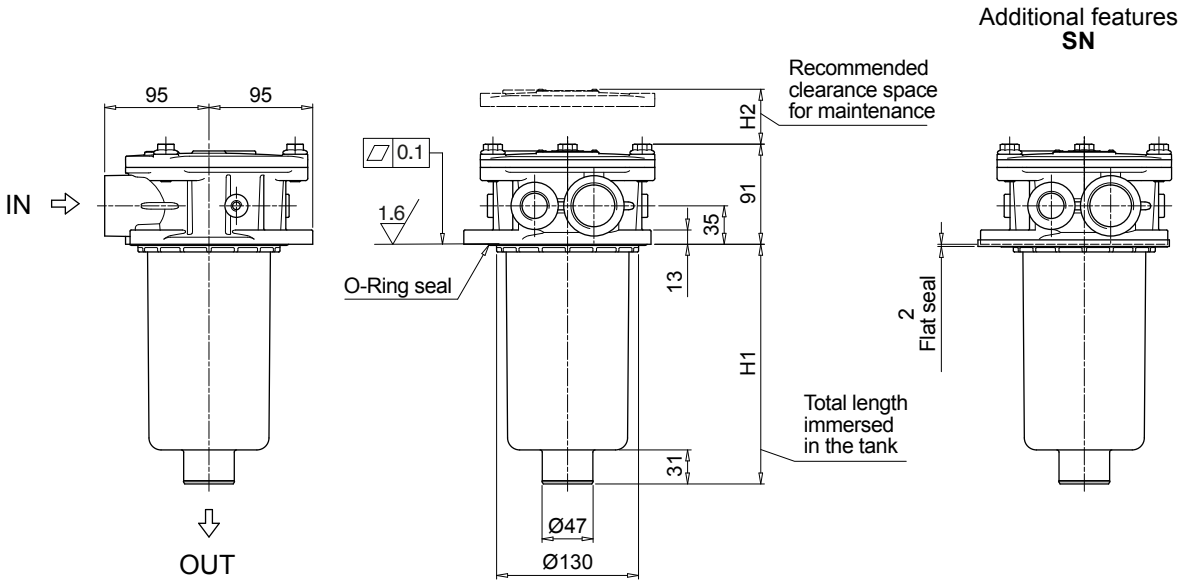
Additional features
NN Without additional features

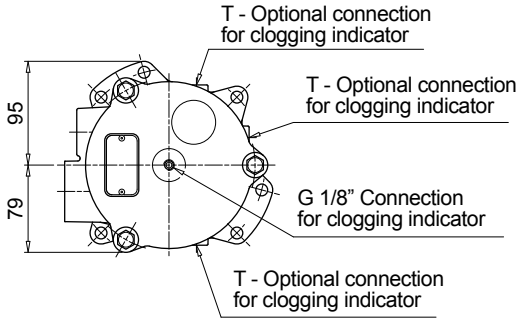
Execution
P01 Standard catalogue item

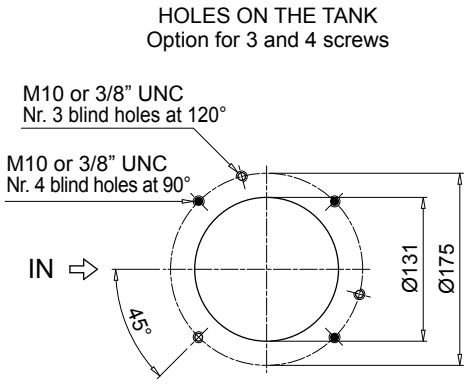
Certificates
NN None

Dimensions

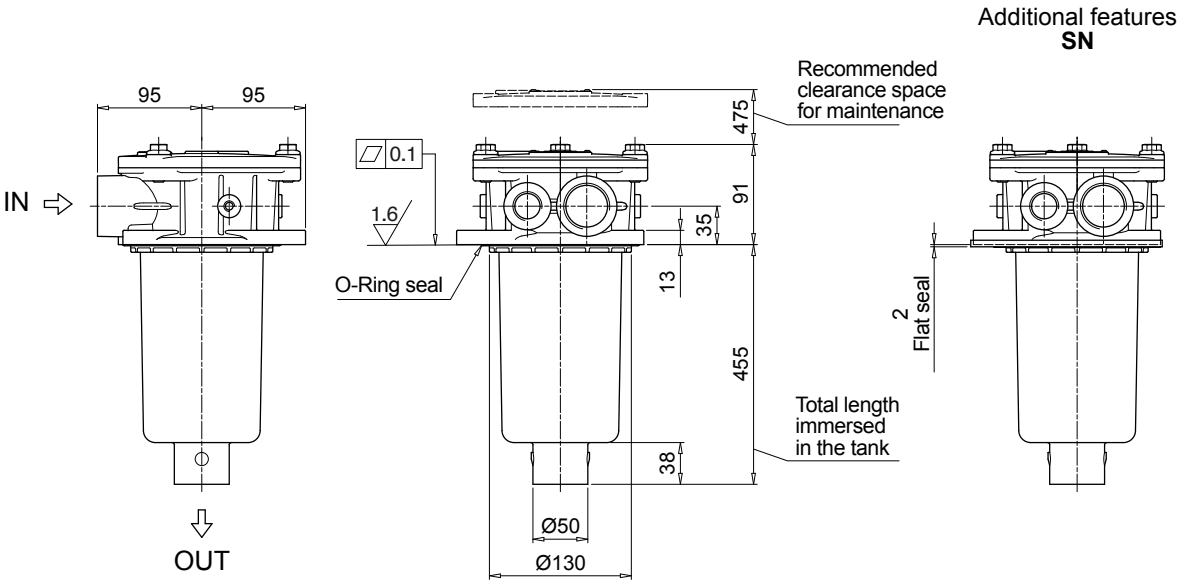
MPFX182		
Filter length	**H1 [mm]**	**H2 [mm]**
10	235	255
20	448	475

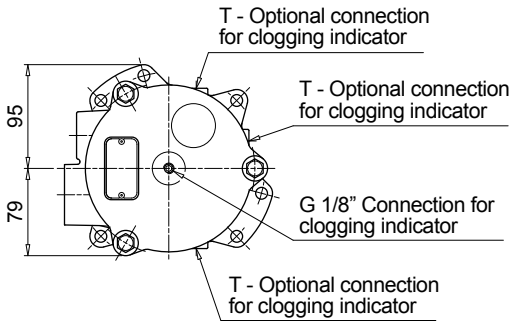


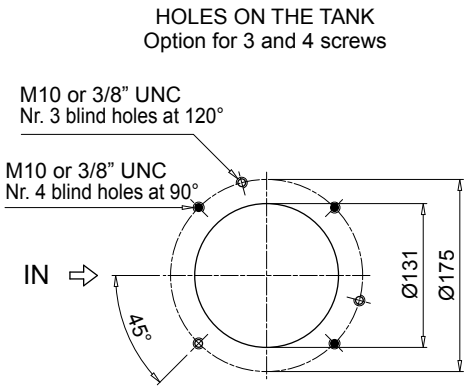




MPFX192


Additional features
SN
95
95
IN
OUT
0.1
1.6
O-Ring seal
475
91
35
13
455
38
Ø50
Ø130
Recommended
clearance space
for maintenance
2
Flat seal
Total length
immersed
in the tank


T - Optional connection
for clogging indicator
T - Optional connection
for clogging indicator
G 1/8" Connection for
clogging indicator
T - Optional connection
for clogging indicator
95
79


HOLES ON THE TANK
Option for 3 and 4 screws
M10 or 3/8" UNC
Nr. 3 blind holes at 120°
M10 or 3/8" UNC
Nr. 4 blind holes at 90°
IN
45°
Ø131
Ø175

Designation & Ordering code

COMPLETE FILTER

Example 1:	MPFX	184	10	A0025	D	A	30	FN114	0	9T	NN	P01	NN
Example 2:	MPFX	194	20	P0010	D	V	17	FS020	1	9T	NN	P01	NN

Series

MPFX Filter featuring MYCLEAN Filter Element

Size

184 **194**

Length	Size 184	Size 194
10	•	-
20	•	•

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark+

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp

D 10 bar

Seals and treatments		A0xxx	M0xxx	P0xxx	Z0xxx
A	NBR	•	•	•	•
V	FPM	•	•	•	•
W	NBR with filter and components surface treatment	•	•	-	•
Z	FPM with filter and components surface treatment	•	•	-	•

Bypass

17 With bypass 1.75 bar

30 With bypass 3.0 bar

Connections

FG114	G 1 1/4"	**FN114**	1 1/4" NPT	**FS020**	SAE 20 - 1 5/8" - 12 UN	**FE112**	1 1/2" SAE 3000 psi/M
FG112	G 1 1/2"	**FN112**	1 1/2" NPT	**FS024**	SAE 24 - 1 7/8" - 12 UN	**FF112**	1 1/2" SAE 3000 psi/UNC

Additional connections

0 Without additional connection

1	Main connection	FG114 / FG112	**G 1 1/4"**	Main connection	FS020 / FS024	**SAE 20 - 1 5/8" - 12 UN**
		FN114 / FN112	**1 1/4" NPT**		FE112 / FF112	**1 1/2" SAE 3000 psi/M**

Connections for clogging indicators

9T With multiple indicator connections, with metal plugs

Additional features

NN Without additional features

Execution

P01 Standard catalogue item

Certificates

NN None

CLOGGING INDICATORS

See pages 776-777

BVA Axial pressure gauge
BVR Radial pressure gauge
BVP Visual pressure indicator with automatic reset
BVQ Visual pressure indicator with manual reset
BEA Electrical pressure indicator
BEM Electrical pressure indicator
BLA Electrical / visual pressure indicator

ACCESSORIES

See page 270

TE Polyamide extension tube
T5 Filler plug M30x1.5
DPT Dipstick

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Example 1:	MFX	180	10	A0025	D	A	30	NN	P01	NN
Example 2:	MFX	180	20	P0010	D	V	17	NN	P01	NN

Series
MFX Filter element with MYCLEAN feature

Size
180

Length
10
20

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark®

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp
D 10 bar

Seals and treatments
A NBR
V FPM

Bypass
17 With bypass 1.75 bar
30 With bypass 3.0 bar

Additional features
NN Without additional features

Execution
P01 Standard catalogue item

Certificates
NN None

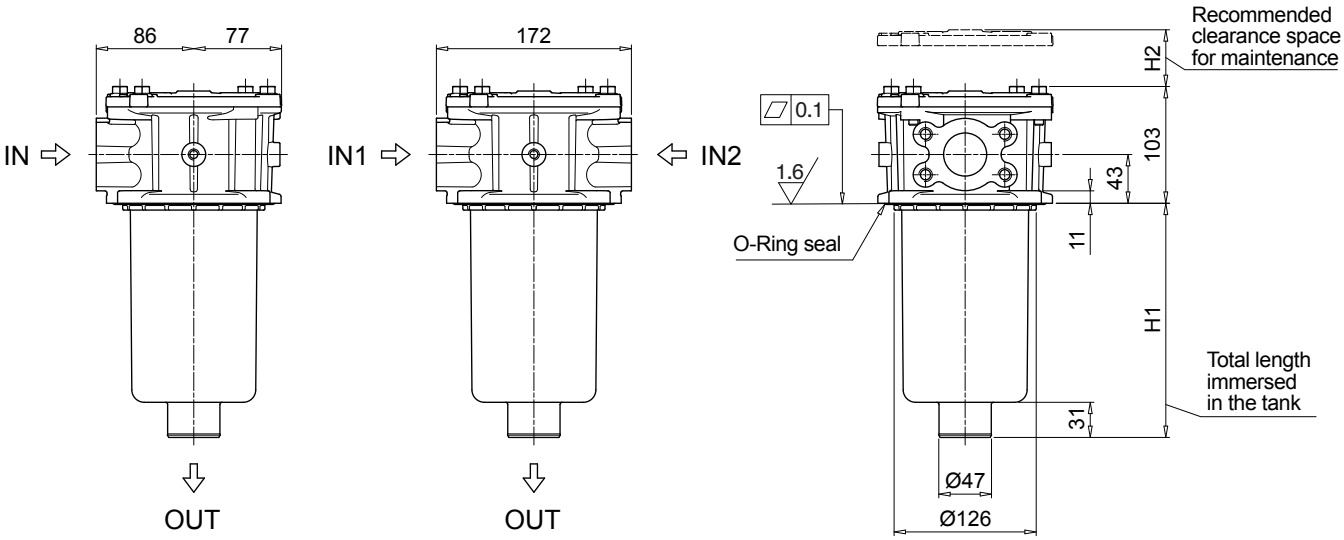
Dimensions

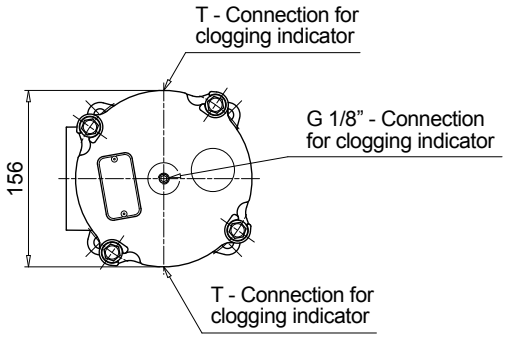
MPFX184		
Filter length	**H1 [mm]**	**H2 [mm]**
10	232	260
20	445	480

Connection	T
FG114	G 1/8”
FG112	
FN114	1/8” NPT
FN112	
FS020	
FS024	
FE112	G 1/8”
FF112	1/8” NPT

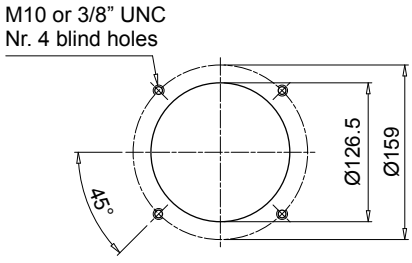
Additional connection **“0”**

Additional connection **“1”**





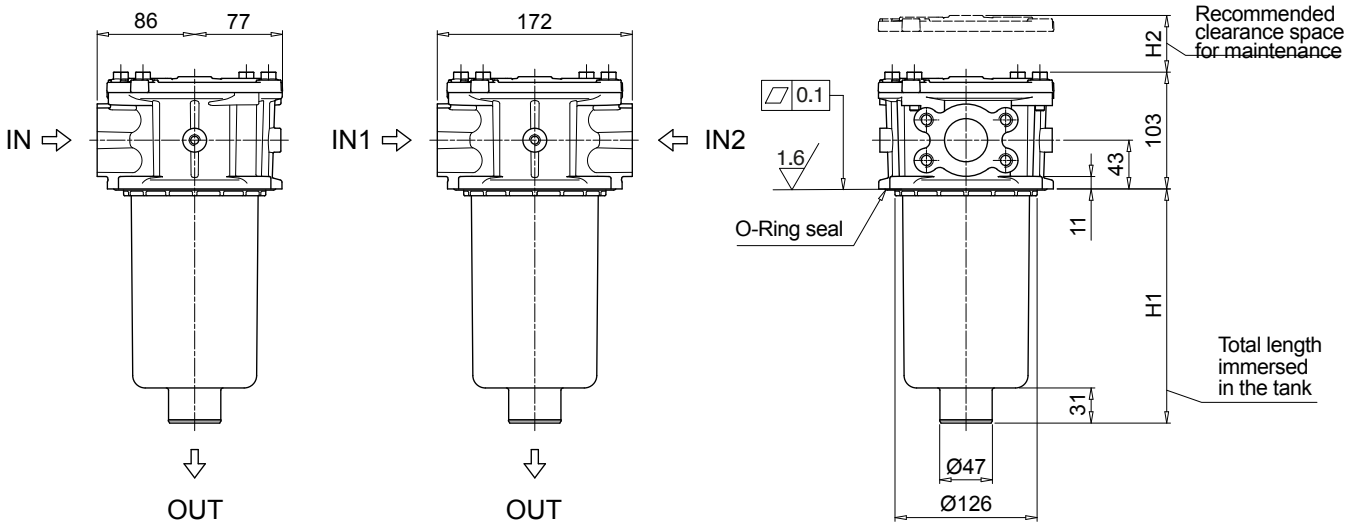
HOLES ON THE TANK

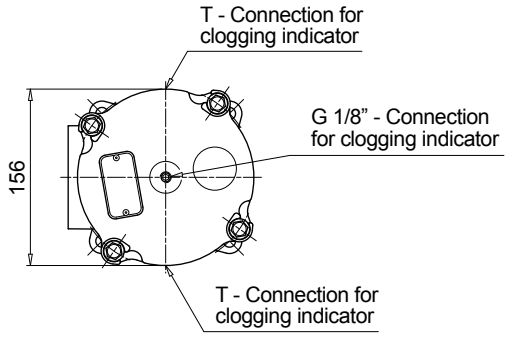


MPFX194	
Connection	**T**
FG114	G 1/8”
FG112	
FN114	1/8” NPT
FN112	
FS020	
FS024	
FE112	G 1/8”
FF112	1/8” NPT

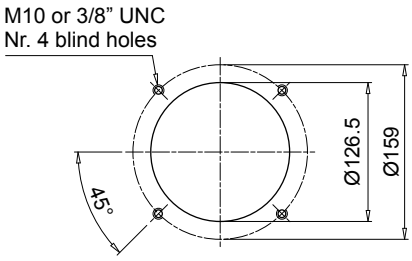
Additional connection **“0”**

Additional connection **“1”**





HOLES ON THE TANK



MPFX MPFX400

Designation & Ordering code

COMPLETE FILTER

Example: MPFX | 400 | 10 | A0025 | D | A | 30 | FG112 | 0 | 1T | NN | P01 | NN

Series
MPFX Filter featuring MYCLEAN Filter Element

Size
400

Length
10
20
30

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark+

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp
D 10 bar

Seals and treatments

		A0xxx	M0xxx	P0xxx	Z0xxx
A	NBR	•	•	•	•
V	FPM	•	•	•	•
W	NBR with filter and components surface treatment	•	•	-	•
Z	FPM with filter and components surface treatment	•	•	-	•

Bypass
17 With bypass 1.75 bar
30 With bypass 3.0 bar

Connections

FG114	G 1 1/4”	**FN114**	1 1/4” NPT	**FS020**	SAE 20 - 1 5/8” - 12 UN
FG112	G 1 1/2”	**FN112**	1 1/2” NPT	**FS024**	SAE 24 - 1 7/8” - 12 UN
FG200	G 2”	**FN200**	2” NPT	**FS032**	SAE 32 - 2 1/2” - 12 UN

Additional connections
0 Without additional connections

Connections for clogging indicators
1T With top indicator connection, with metal plug

Additional features
NN Without additional features

Execution
P01 Standard catalogue item

Certificates
NN None

CLOGGING INDICATORS

See pages 776-777

BVA Axial pressure gauge
BVR Radial pressure gauge
BVP Visual pressure indicator with automatic reset
BVQ Visual pressure indicator with manual reset
BEA Electrical pressure indicator
BEM Electrical pressure indicator
BLA Electrical / visual pressure indicator

ACCESSORIES

See page 270

TE Polyamide extension tube
T5 Filler plug M30x1.5
DPT Dipstick

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Example: MFX | 400 | 10 | A0025 | D | A | 30 | NN | P01 | NN

Series
MFX Filter element with MYCLEAN feature

Size
400

Length
10
20
30

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark®

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp
D 10 bar

Seals and treatments
A NBR
V FPM

Bypass
17 With bypass 1.75 bar
30 With bypass 3.0 bar

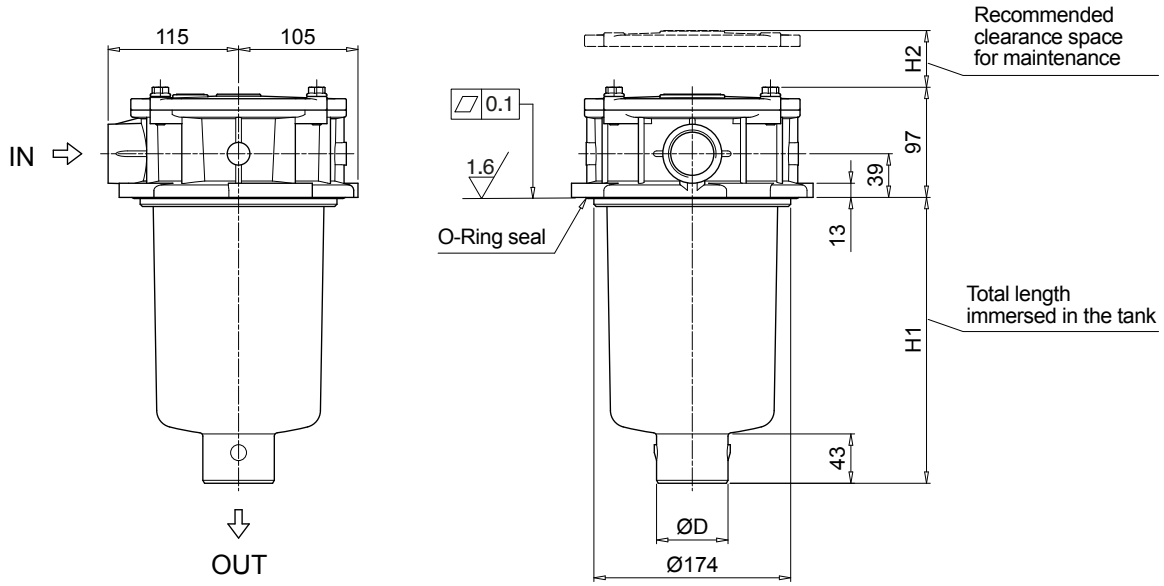
Additional features
NN Without additional features

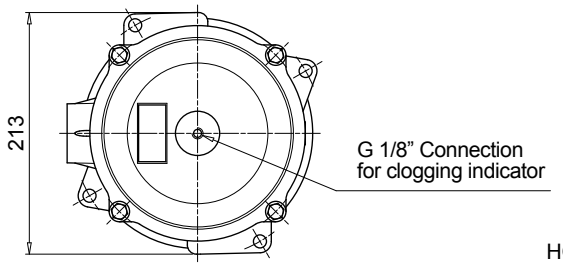
Execution
P01 Standard catalogue item

Certificates
NN None

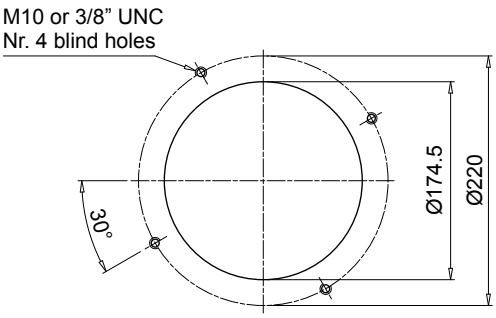
Dimensions

MPFX400			
Filter length	**H1 [mm]**	**H2 [mm]**	**D [mm]**
10	187	210	50
20	252	270	63
30	300	315	63





HOLES ON THE TANK



MP FILTRI WWW.SUMY.IR

Designation & Ordering code

COMPLETE FILTER

Example: MPFX | 410 | 10 | A0025 | D | A | 30 | FN114 | 1 | 1T | NN | P01 | NN

Series
MPFX Filter featuring MYCLEAN Filter Element

Size
410

Length
10
20
30

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark+

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp
D 10 bar

Seals and treatments

		A0xxx	M0xxx	P0xxx	Z0xxx
A	NBR	•	•	•	•
V	FPM	•	•	•	•
W	NBR with filter and components surface treatment	•	•	-	•
Z	FPM with filter and components surface treatment	•	•	-	•

Bypass
17 With bypass 1.75 bar
30 With bypass 3.0 bar

Connections
FG114 G 1 1/4" | **FN114** 1 1/4" NPT | **FS020** SAE 20 - 1 5/8" - 12 UN

Additional connections
1 Front thread
FG114 **G 1"**
FN114 **1" NPT**
FS020 **SAE 16 - 1 5/16" - 12 UN**

Connections for clogging indicators
1T With top indicator connection, with metal plug

Additional features
NN Without additional features

Execution
P01 Standard catalogue item

Certificates
NN None

CLOGGING INDICATORS

See pages 776-777

BVA Axial pressure gauge
BVR Radial pressure gauge
BVP Visual pressure indicator with automatic reset
BVQ Visual pressure indicator with manual reset
BEA Electrical pressure indicator
BEM Electrical pressure indicator
BLA Electrical / visual pressure indicator

ACCESSORIES

See page 270

TE Polyamide extension tube
T5 Filler plug M30x1.5
DPT Dipstick

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Example: MFX | 400 | 10 | A0025 | D | A | 30 | NN | P01 | NN

Series
MFX Filter element with MYCLEAN feature

Size
400

Length
10
20
30

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp
D 10 bar

Seals and treatments
A NBR
V FPM

Bypass
17 With bypass 1.75 bar
30 With bypass 3.0 bar

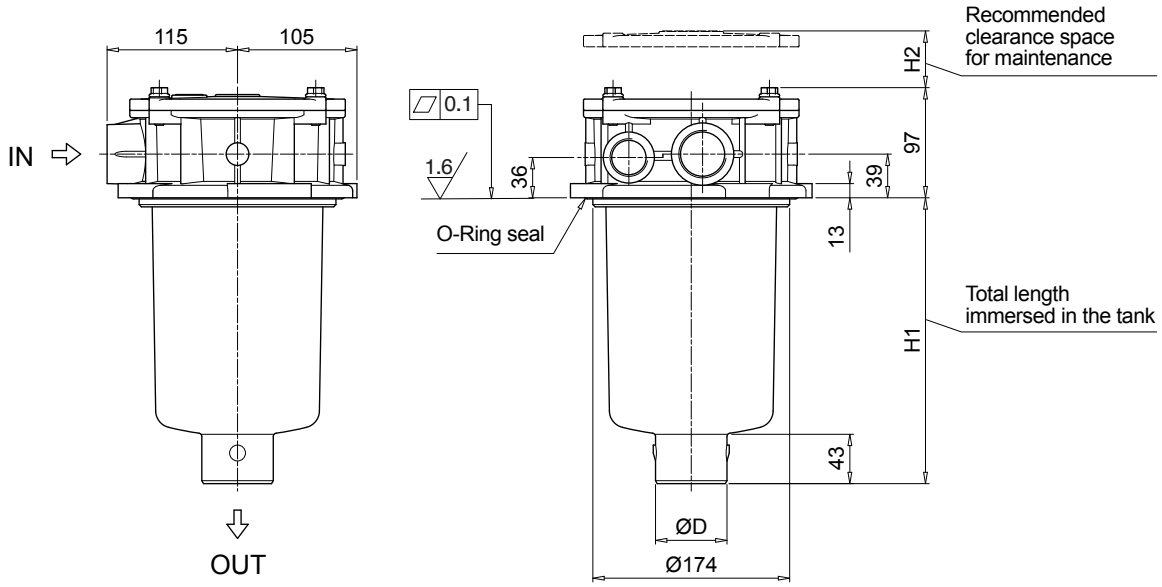
Additional features
NN Without additional features

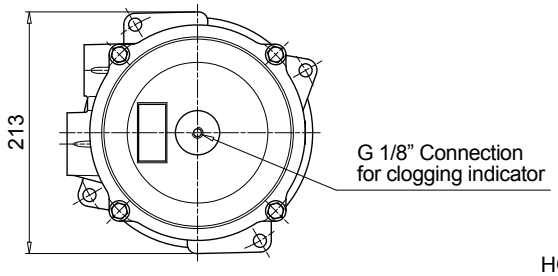
Execution
P01 Standard catalogue item

Certificates
NN None

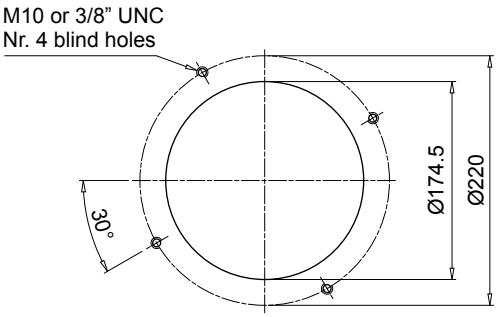
Dimensions

MPFX410			
Filter length	**H1 [mm]**	**H2 [mm]**	**D [mm]**
10	187	210	50
20	252	270	63
30	300	315	63





HOLES ON THE TANK



MP FILTRI WWW.SUMY.IR

MPFX MPFX450

Designation & Ordering code

COMPLETE FILTER

Example: MPFX | 450 | 10 | A0025 | D | A | 30 | FN114 | 1 | 9T | NN | P01 | NN

Series
MPFX Filter featuring MYCLEAN Filter Element

Size
450

Length
10
20
30

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark+

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp
D 10 bar

Seals and treatments		A0xxx	M0xxx	P0xxx	Z0xxx
A	NBR	•	•	•	•
V	FPM	•	•	•	•
W	NBR with filter and components surface treatment	•	•	-	•
Z	FPM with filter and components surface treatment	•	•	-	•

Bypass
17 With bypass 1.75 bar
30 With bypass 3.0 bar

Connections

FG200	G 2”	**FN200**	2” NPT	**FS032**	SAE 32 - 2 1/2” - 12 UN
				FE200	2” SAE 3000 psi/M
				FF200	2” SAE 3000 psi/UNC

Additional connections
0 Without additional connection

1	Main connection	FG200 / FE200	**G 3/4”**
		FN200 / FF200	**3/4” NPT**
		FS032	**SAE 12 - 1 1/16” - 12 UN**

Connections for clogging indicators
9T With multiple indicator connections, with metal plugs

Additional features
NN Without additional features

Execution
P01 Standard catalogue item

Certificates
NN None

CLOGGING INDICATORS

See pages 776-777

BVA Axial pressure gauge
BVR Radial pressure gauge
BVP Visual pressure indicator with automatic reset
BVQ Visual pressure indicator with manual reset
BEA Electrical pressure indicator
BEM Electrical pressure indicator
BLA Electrical / visual pressure indicator

ACCESSORIES

See page 270

TE Polyamide extension tube
T5 Filler plug M30x1.5
DPT Dipstick

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Example: MFX | 400 | 10 | A0025 | D | A | 30 | NN | P01 | NN

Series
MFX Filter element with MYCLEAN feature

Size
400

Length
10
20
30

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp
D 10 bar

Seals and treatments
A NBR
V FPM

Bypass
17 With bypass 1.75 bar
30 With bypass 3.0 bar

Additional features
NN Without additional features

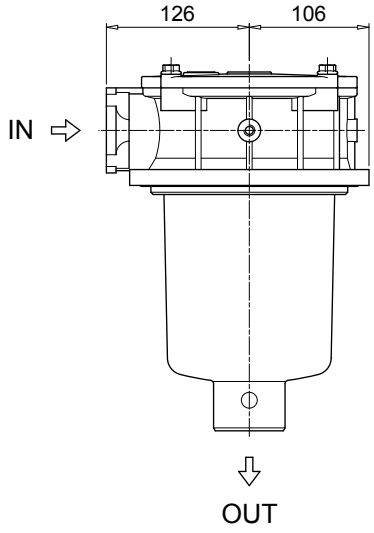
Execution
P01 Standard catalogue item

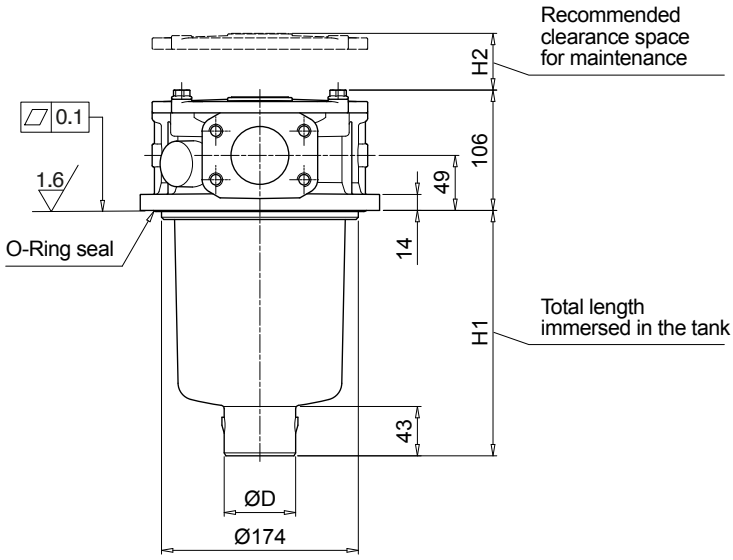
Certificates
NN None

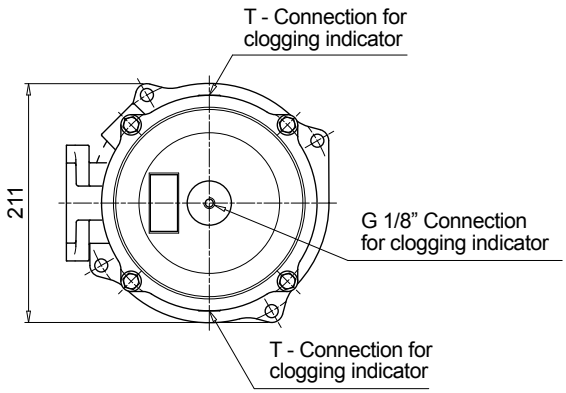
Dimensions

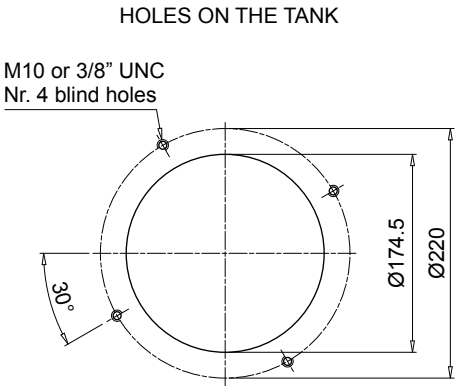
MPFX450 Additional connection "0"			
Filter length	H1 [mm]	H2 [mm]	D [mm]
10	187	210	50
20	252	270	63
30	300	315	63

Connections	T
FG200	G 1/8"
FN200	1/8" NPT
FS032	1/8" NPT
FE200	G 1/8"
FF200	1/8" NPT





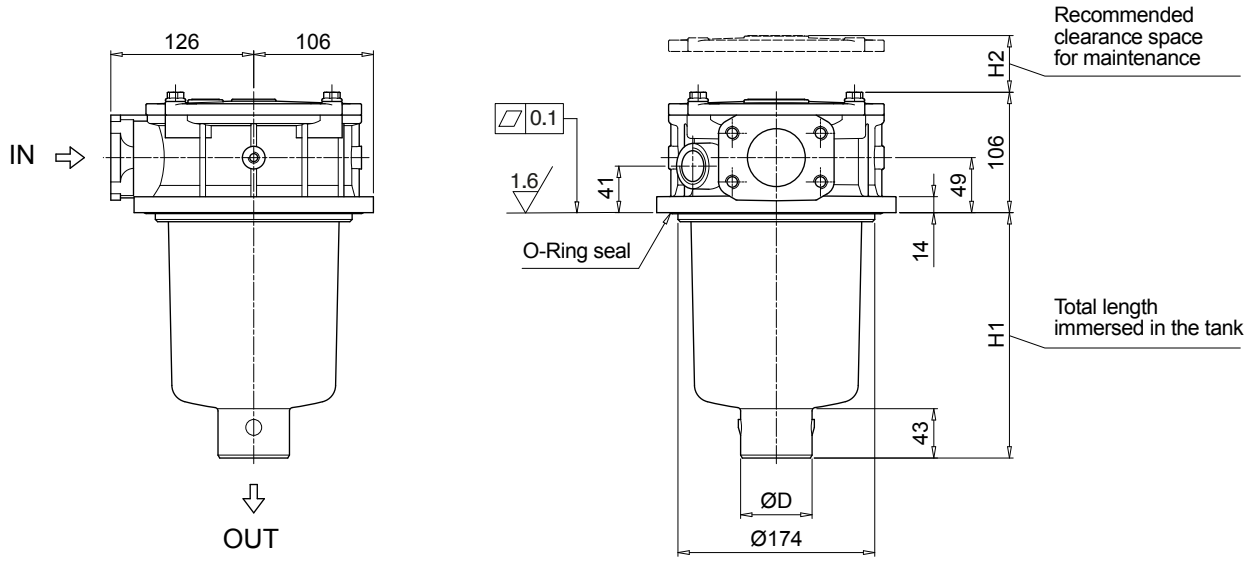


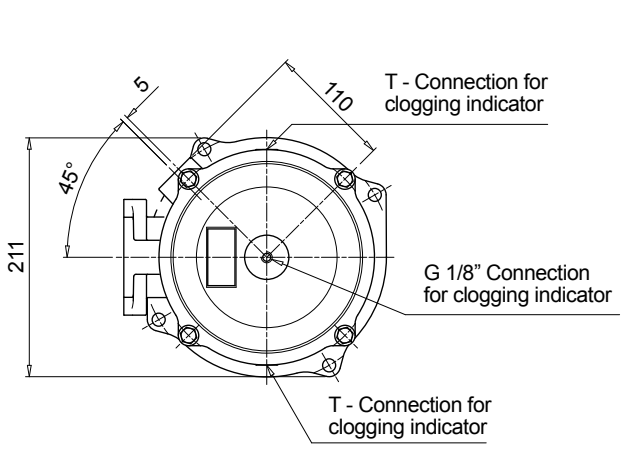


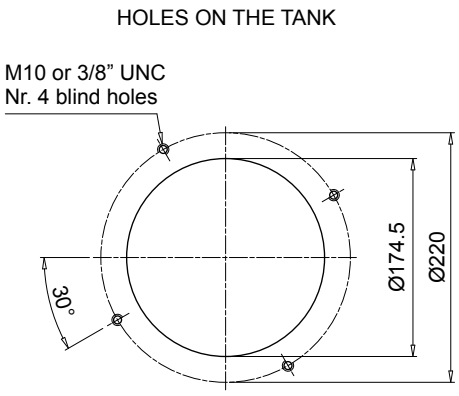
MP FILTRI WWW.SUMY.IR

MPFX450			
Additional connection "1"			
Filter length	**H1 [mm]**	**H2 [mm]**	**D [mm]**
10	187	210	50
20	252	270	63
30	300	315	63

Connections	T
FG200	G 1/8"
FN200	1/8" NPT
FS032	1/8" NPT
FE200	G 1/8"
FF200	1/8" NPT







MPFX MPFX750

Designation & Ordering code

COMPLETE FILTER

Example: MPFX | 750 | 10 | A0025 | D | A | 30 | FG200 | 0 | 1T | NN | P01 | NN

Series
MPFX Filter featuring MYCLEAN Filter Element

Size
750

Length
10

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark+

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp
D 10 bar

Seals and treatments	A0xxx	M0xxx	P0xxx	Z0xxx
A NBR	•	•	•	•
V FPM	•	•	•	•
W NBR with filter and components surface treatment	•	•	-	•
Z FPM with filter and components surface treatment	•	•	-	•

Bypass
17 With bypass 1.75 bar
30 With bypass 3.0 bar

Connections
FG200 G 2”
FN200 2” NPT
FS032 SAE 32 - 2 1/2” - 12 UN
FE200 2” SAE 3000 psi/M
FF200 2” SAE 3000 psi/UNC

Additional connections
0 Without additional connections

Connections for clogging indicators
1T With top indicator connection, with metal plug

Additional features
NN Without additional features

Execution
P01 Standard catalogue item

Certificates
NN None

CLOGGING INDICATORS

See pages 776-777

BVA Axial pressure gauge
BVR Radial pressure gauge
BVP Visual pressure indicator with automatic reset
BVQ Visual pressure indicator with manual reset
BEA Electrical pressure indicator
BEM Electrical pressure indicator
BLA Electrical / visual pressure indicator

ACCESSORIES

See page 270

TE Polyamide extension tube
T5 Filler plug M30x1.5
DPT Dipstick

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Example: MFX | 750 | 10 | A0025 | D | A | 30 | NN | P01 | NN

Series
MFX Filter element with MYCLEAN feature

Size
750

Length
10

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp
D 10 bar

Seals and treatments
A NBR
V FPM

Bypass
17 With bypass 1.75 bar
30 With bypass 3.0 bar

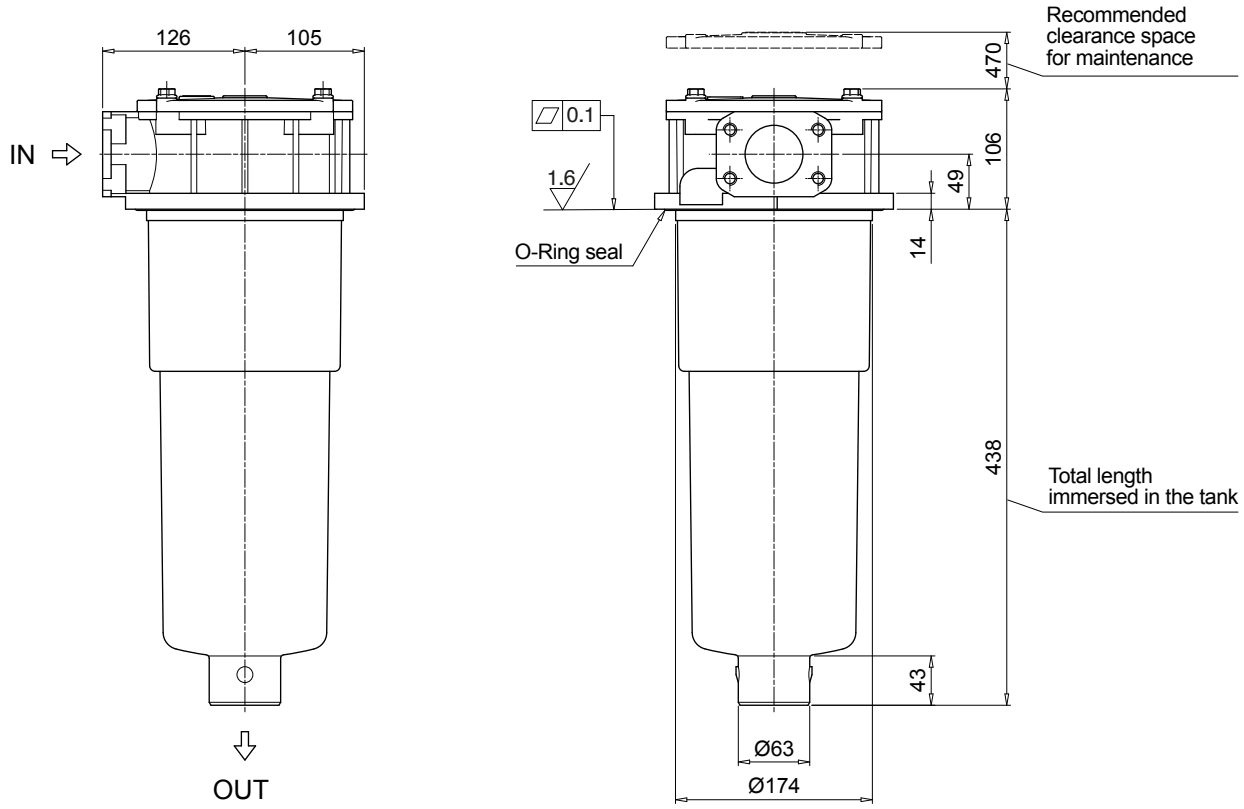
Additional features
NN Without additional features

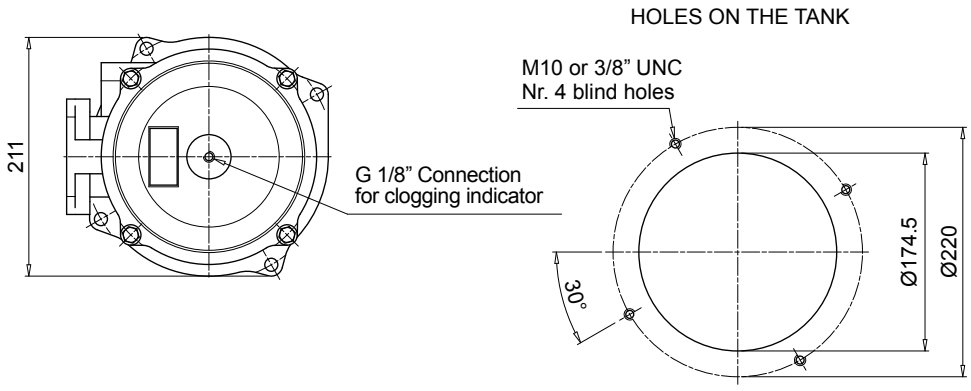
Execution
P01 Standard catalogue item

Certificates
NN None

Dimensions

MPFX750

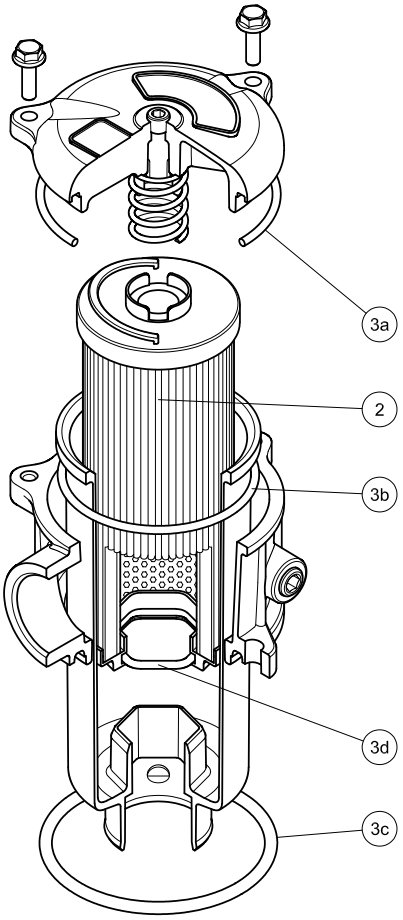




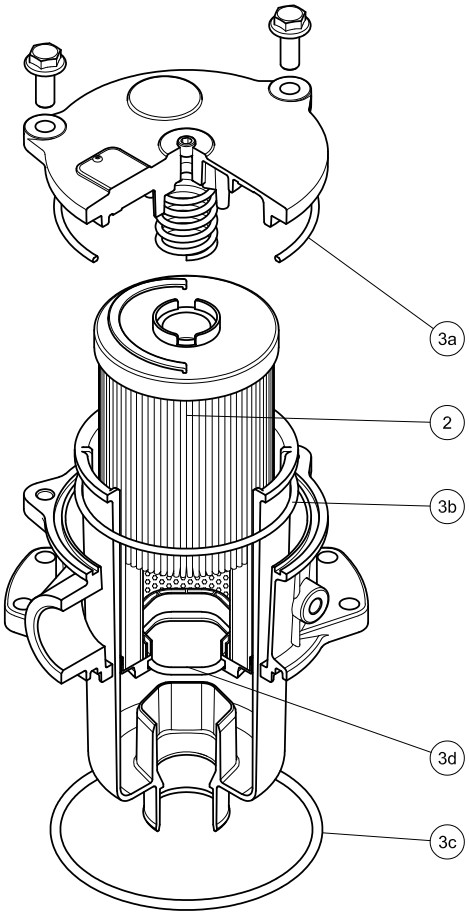
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Order number for spare parts

MPFX 100



MPFX 181

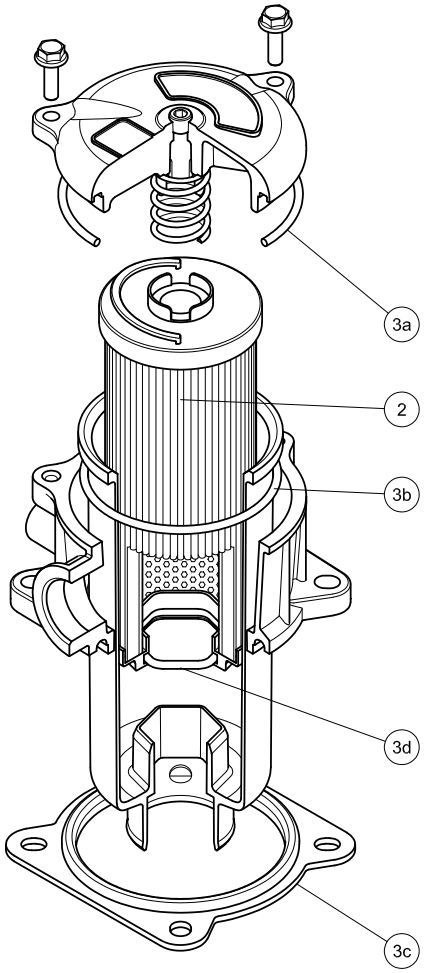


O-RING SEAL

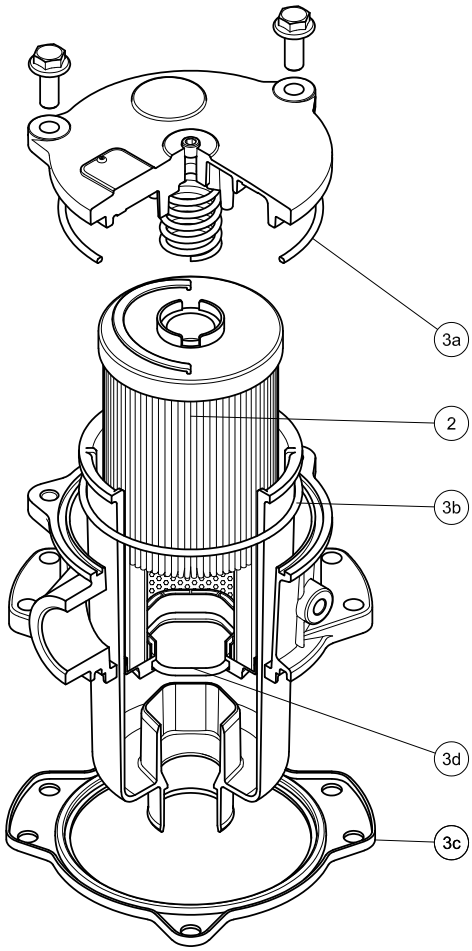
Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3d)	
Filter series	Filter element	Seal Kit code number NBR	FPM
MPFX 030	See order table	AK021000450	AK021000451
MPFX 100-110		AK021000452	AK021000453
MPFX 181-182		AK021000456	AK021000457
MPFX 184		AK021000460	AK021000461
MPFX 191-192		AK021000458	AK021000459
MPFX 194		AK021000462	AK021000463
MPFX 400-410		AK021000468	AK021000469
MPFX 450		AK021000470	AK021000471
MPFX 750		AK021000472	AK021000473

MP FILTRI WWW.SUMY.IR

MPFX 104



MPFX 181



FLAT SEAL			
	Q.ty: 1 pc.	Q.ty: 1 pc.	
Item:	**2**	**3** (3a ÷ 3d)	
Filter series	**Filter element**	**Seal Kit code number NBR**	**FPM**
MPFX 104	See order table	AK021000454	AK021000455
MPFX 181-182		AK021000466	AK021000467
MPFX 191-192		AK021000466	AK021000467

MYCLEAN

THE X CONCEPT FOR OUR FILTERS

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

MPLX series

with MYCLEAN MLX Filter Element



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

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

The products identified as MPLX are protected by:

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

MP FILTRI WWW.SUMY.IR

MPLX series

Maximum working pressure up to 1 MPa (10 bar) - Flow rate up to 1800 l/min



MPLX GENERAL INFORMATION

Description

Return filter

Maximum working pressure up to 1 MPa (10 bar)
Flow rate up to 1800 l/min

MPLX is a range of return filters for protection of the reservoir against the system contamination.
Completely interchangeable with Pall 8420 & 8520, they are directly fixed to the reservoir, in immersed or semi-immersed position.
The use of the diffuser is recommended, to place the filter output always immersed into the fluid to avoid aeration or foam generation into the reservoir.
The filter output must be always immersed into the fluid to avoid aeration or foam generation into the reservoir.

Available features:

- Flanged connections up to 3", for a maximum flow rate of 1800 l/min
- Fine filtration rating, to get a good cleanliness level into the reservoir
- Bypass valve, to relieve excessive pressure drop across the filter media
- 6 fixing holes for installation, to suit a variety of reservoir surfaces
- Diffuser, to reduce the risk of aeration, foaming and noise
- Filler plug, to fill cleaned fluid into the tank without an additional connection
- Visual, electrical and electronic differential clogging indicators
- MYclean interface connection for the filter element, to protect the product against non-original spare parts

Common applications:

- Heavy duty industrial equipment
- Heavy duty mobile equipment

Technical data

Filter housing materials

- Head: Anodized aluminium
- Cover: Anodized aluminium
- Bowl: Phosphatized steel
- Bypass valve: Steel

Pressure

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

Bypass valve

- Opening pressure 0.45 MPa (4.5 bar) ±10%

Filter element features

Filter		Filter element	
MPLX		MLX	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	D	10 bar
M - Wire mesh	Standard	D	10 bar
P - Paper	Standard	D	10 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals

- Standard NBR series A
- Optional FPM series V

Temperature

From -25 °C to +110 °C

Note

MPLX filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]		Volumes [dm³]	
	Length	20	Length	20
MPLX 250		8.95		2.90
MPLX 660		20.20		11.00

MP FILTRI WWW.SUMY.IR

Flow rates [l/min]

		Filter element design - D Series						
Filter series	Length	A0003	A0006	A0010	A0016	A0025	M0025 M0060 M0090	P0010 P0025
MPLX 250	**20**	157	155	281	312	325	583	392
MPLX 660	**20**	376	384	820	925	1018	1732	1332

Maximum flow rate for a complete return filter with a pressure drop Δp = 0.5 bar.

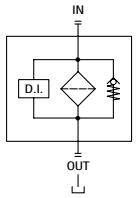
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.

For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.

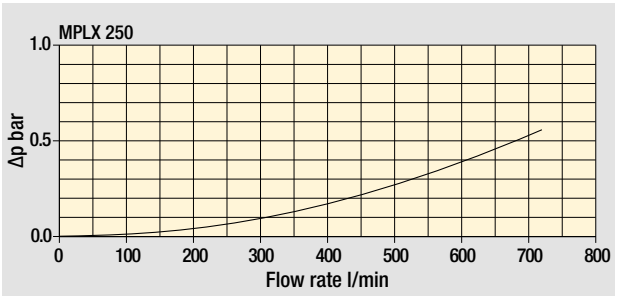
Please, contact our Sales Department for further additional information.

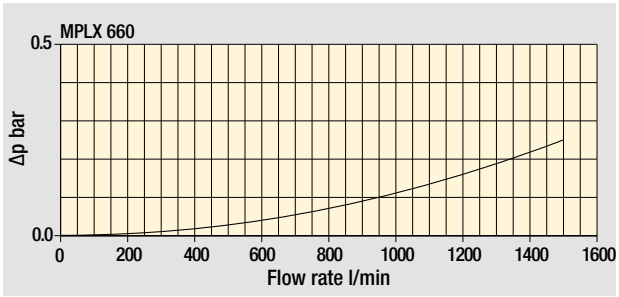
Hydraulic diagram

Filter series	45 - with bypass 4.5 bar
MPLX 250-660	

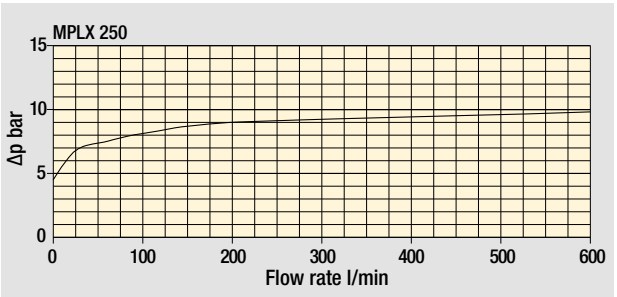
Pressure drop

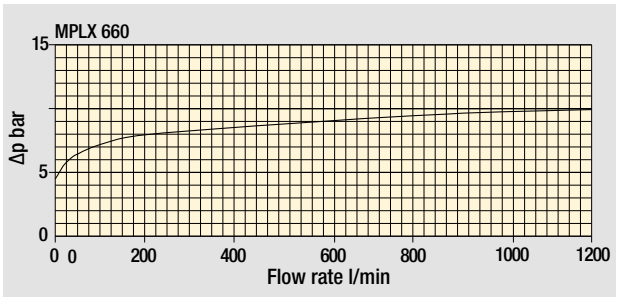
Filter housings
Δp pressure drop





Bypass valve
pressure drop





The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

MPLX MPLX250 - MPLX660

Designation & Ordering code

COMPLETE FILTER

Example 1:	MPLX	250	20	A0010	D	W	45	FE200	1	1T	DA	P01	NN
Example 2:	MPLX	660	20	M0090	D	Z	45	FF300	1	1T	NN	P01	NN

Series

MPLX Filter featuring MYCLEAN Filter Element

Size

250

660

Length

20

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp

D 10 bar

Seals and treatments

W NBR with filter and components surface treatment

Z FPM with filter and components surface treatment

By-pass valve

45 4.5 bar

Connections

		Size 250	Size 660
FE200	2” SAE 3000 psi/M	•	-
FE300	3” SAE 3000 psi/M	-	•
FF200	2” SAE 3000 psi/UNC	•	-
FF300	3” SAE 3000 psi/UNC	-	•

Additional connection

0 Without additional connection

Connections for clogging indicators

1T With top indicator connection, with metal plug

Additional features

DA With diffuser

NN Without additional features

Execution

P01 Standard catalogue item

Certificates

NN None

CLOGGING INDICATORS See pages 776-777

DEA	Electrical differential pressure indicator	**DTA**	Electronic differential pressure indicator
DEM	Electrical differential pressure indicator	**DTI**	I-O Link electronic differential pressure indicator
DEU	Electrical differential pressure indicator	**DVA**	Visual differential pressure indicator
DLA	Electrical / visual differential pressure indicator	**DVM**	Visual differential pressure indicator
DLE	Electrical / visual differential pressure indicator		

PLUGS See page 807

T2 Plug (not included)

MP FILTRI WWW.SUMY.IR

Designation & Ordering code

FILTER ELEMENT

Example 1:	MLX	250	20	A0010	D	A	00	NN	P01	NN
Example 2:	MLX	660	20	M0090	D	V	00	NN	P01	NN

Series

MLX Filter element with MYCLEAN feature

Size

250

660

Length

20

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp

D 10 bar

Seals and treatments

A NBR

V FPM

By-pass valve

00 Without bypass

Additional features

NN Without

Execution

P01 Standard catalogue item

Certificates

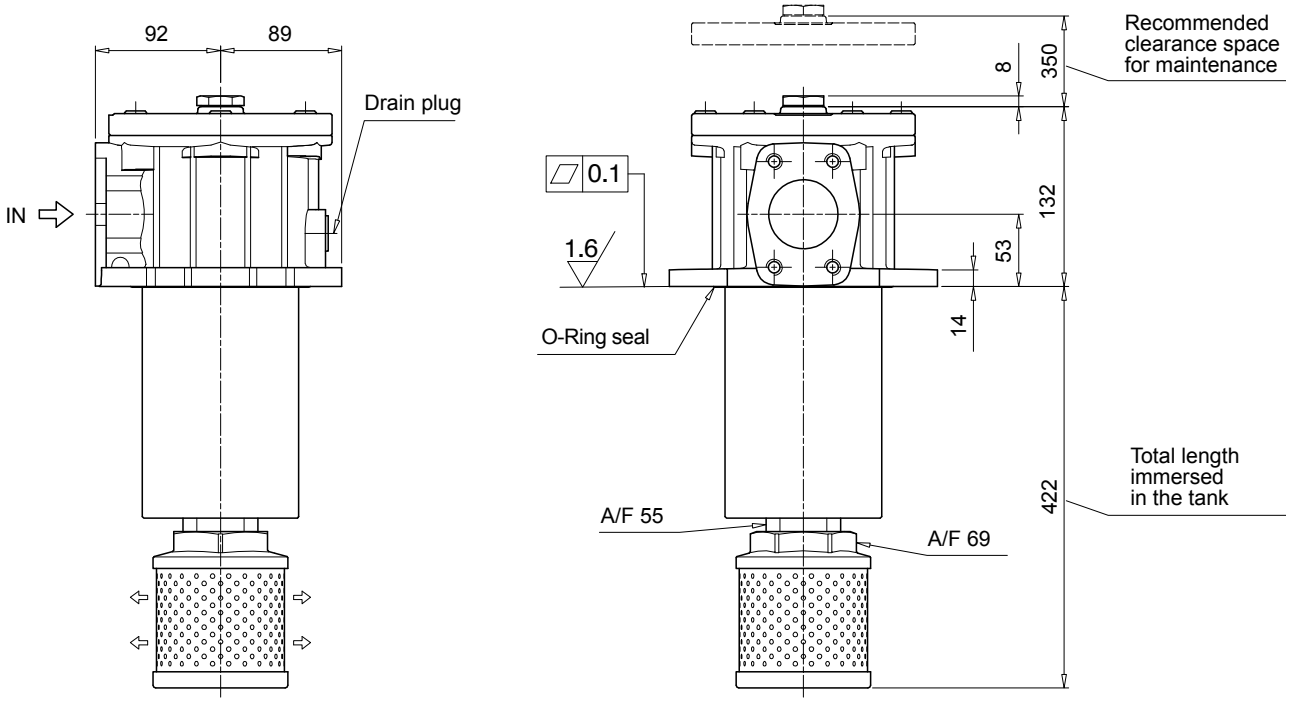
NN None

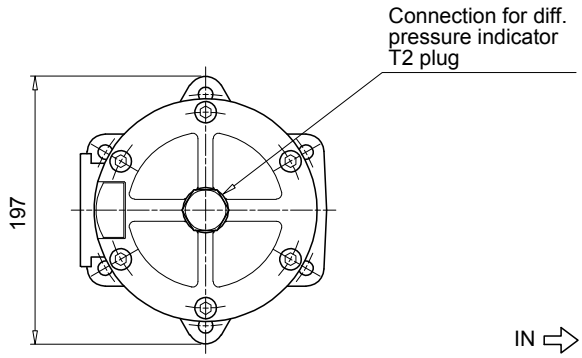
Dimensions

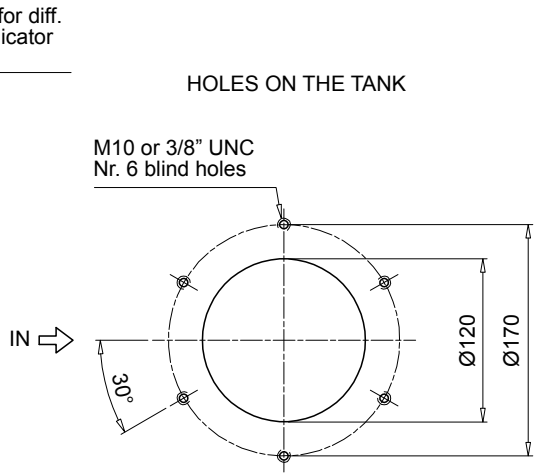
MPLX250

Additional features **DA**

with diffuser

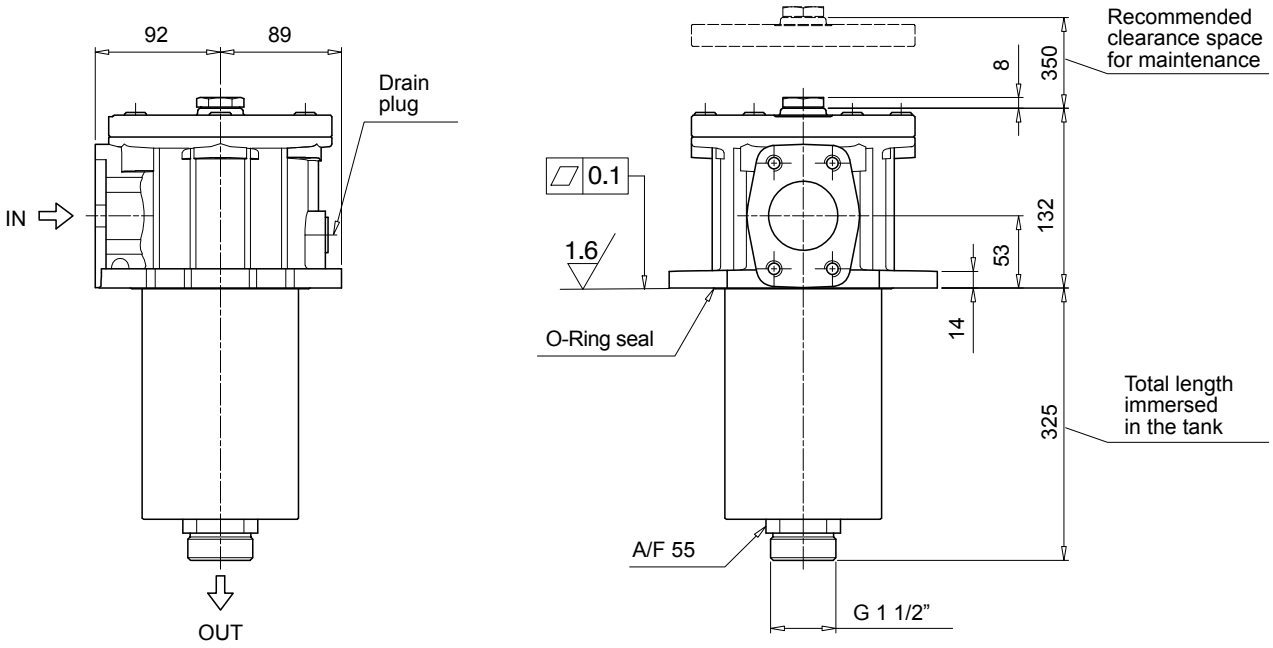


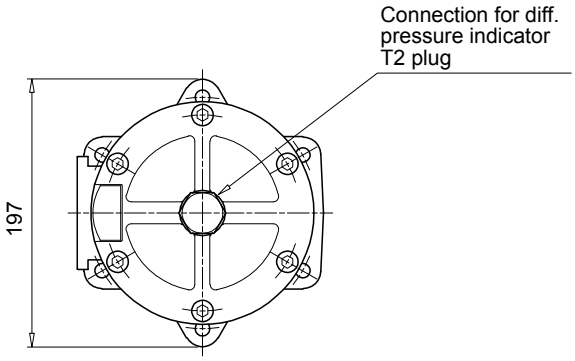


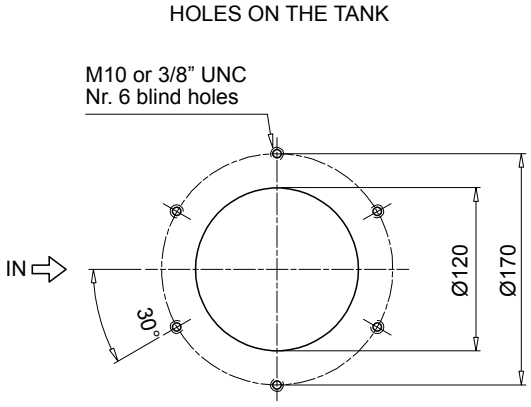


MP FILTRI WWW.SUMY.IR

MPLX250
Additional features **NN**
without diffuser





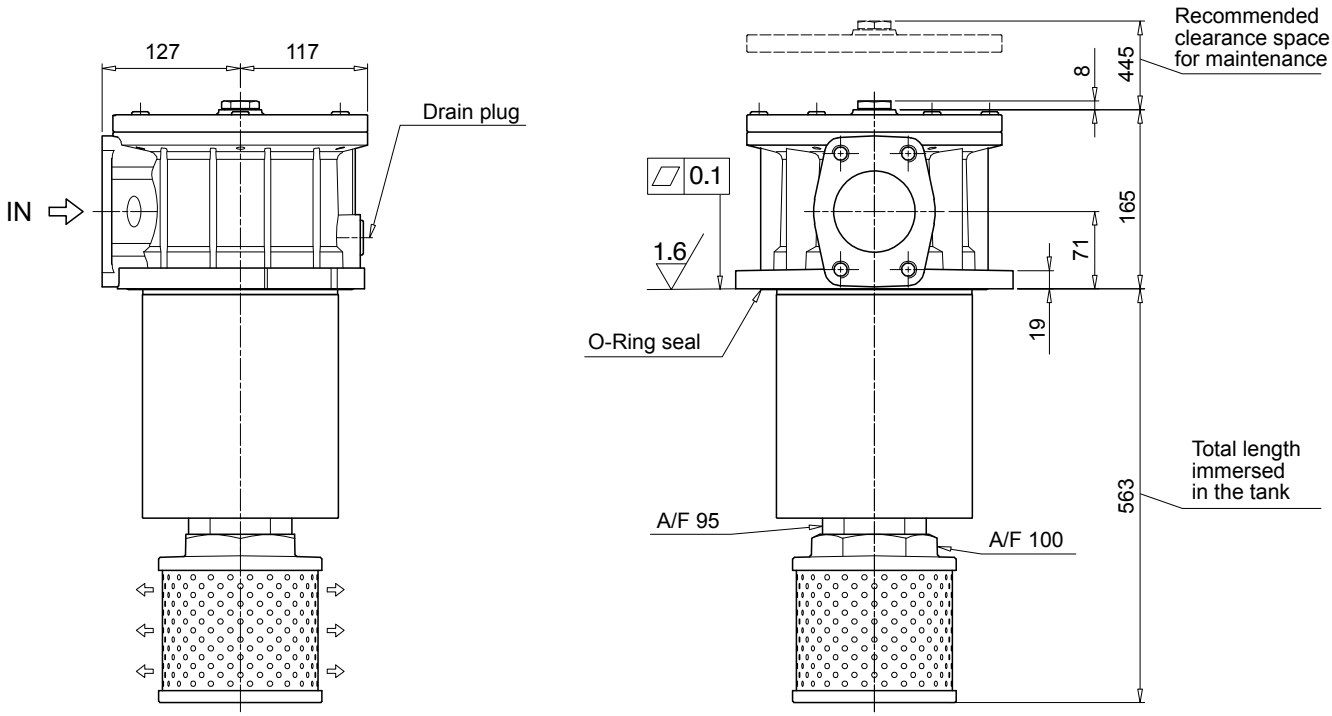


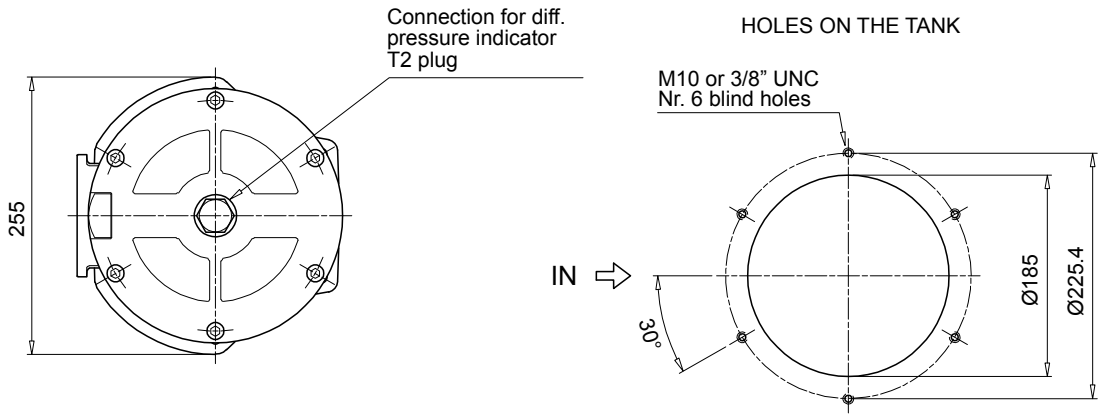
Dimensions

MPLX660

Additional features **DA**

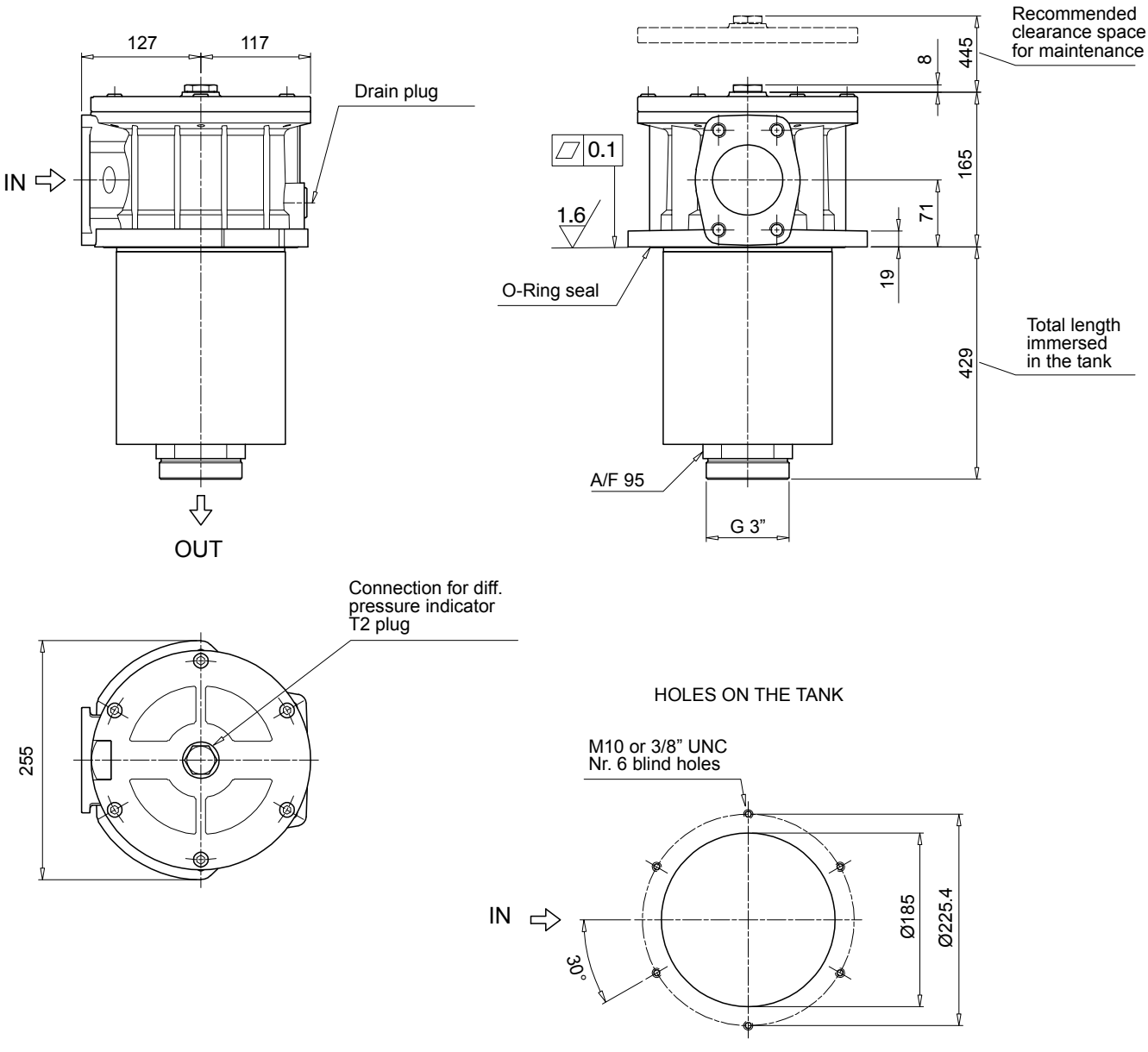
with diffuser





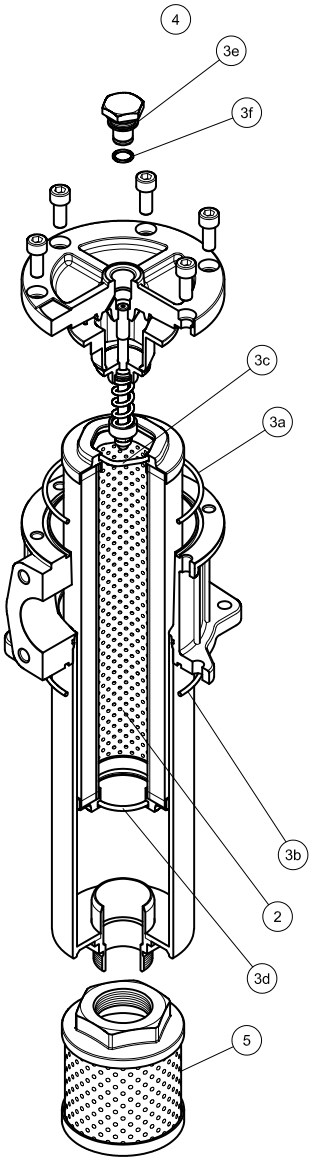
MP FILTRI WWW.SUMY.IR

MPLX660
Additional features **NN**
without diffuser



MPLX SPARE PARTS

Order number for spare parts



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3f)		Q.ty: 1 pc. (4)		Q.ty: 1 pc. (5)
Filter series	**Filter element**	**Seal Kit code number NBR**	**Seal Kit code number FPM**	**Indicator connection plug NBR**	**Indicator connection plug FPM**	**Diffuser**
MPLX 250	See order table	AK021000502	AK021000693	T2H	T2V	STD 100 C 115 P01
MPLX 660		AK021000503	AK021000592			STD 150 E 155 P01

MP FILTRI WWW.SUMY.IR

MYCLEAN

THE X CONCEPT FOR OUR FILTERS

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

MPTX series

with MYCLEAN MFX Filter Element



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

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

The products identified as MPTX are protected by:

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

TOGETHER WITH MYCLEAN , AS OPTION, MPTX SERIES CAN BE PROVIDED WITH

zerospark®

THE ANTI-STATIC FILTERS



THE Z CONCEPT FOR OUR FILTERS

Zerospark® is a specialist solution designed to solve the problem of electrostatic discharge inside hydraulic filters. Caused by the electrical charge build-up due to the passage of oil through the filters, this can result in damage to filter elements, oils and circuit components. It can even cause fire hazards in environments where flammable materials are present.

MPTX series

Maximum working pressure up to 0.8 MPa (8 bar) - Flow rate up to 300 l/min



Description

Return filter

Maximum working pressure up to 0.8 MPa (8 bar)
Flow rate up to 300 l/min

MPTX is a range of return filters with integrated breather filter, for protection of the reservoir against the system contamination.
They are directly fixed to the reservoir, in immersed or semi-immersed position.
The filter output must be always immersed into the fluid to avoid aeration or foam generation into the reservoir.

Available features:

- Female threaded connections up to 1 1/4", for a maximum flow rate of 300 l/min
- Multiple connections, to connect several return lines or drains
- Fine filtration rating, to get a good cleanliness level into the reservoir
- Bypass valve integrated into the filter element, to relieve excessive pressure drop across the filter media
- 2, 3 or 6 fixing holes for installation, to suit a variety of reservoir surfaces
- O-ring or Flat Seal to suit a variety of reservoir surfaces
- Screw-in cover with a special shape, to allow the filter element replacement without the use of specific tools
- Oil dipstick, to easily check the level of the fluid into the reservoir (sold as separate item)
- Extension tube, to be used in deep reservoirs (sold as separate item)
- Diffuser, to reduce the risk of aeration, foaming and noise (sold as separate item)
- Integrated breather filter, to clean the air that moves into the reservoir as result of the oil level fluctuation
- Integrated breather filter with pressurization valve, to clean the air that moves into the reservoir as result of the oil level fluctuation and to guarantee the pressurization into the reservoir
- Visual, electrical and electronic clogging indicators
- MYclean interface connection, to protect the product against non-original spare parts
- External protective wrap, to optimize the flow through the element and to save the element efficiency against non-proper handling

Common applications:

- Light industrial equipment
- Mobile application

Technical data

Filter housing materials

- Head: Aluminium
- Cover: Polyamide
- Bowl: Polyamide

Pressure

- Test pressure: 1.2 MPa (12 bar)
- Min. Burst pressure: 2.4 MPa (24 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 0.8 MPa (8 bar)

Bypass valve

- Opening pressure 0.175 MPa (1.75 bar) ±10%
- Opening pressure 0.3 MPa (3 bar) ±10%

Filter element features

Filter		Filter element	
MPTX		MFX	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	D	10 bar
M - Wire mesh	Standard	D	10 bar
P - Paper	Standard	D	10 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals

- Standard NBR series A or W
- Optional FPM series V or Z

Temperature

From -25 °C to +110 °C

Note

MPTX filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]					Volumes [dm³]				
	Length	10	20	30	40	Length	10	20	30	40
MPTX 025		0.41	0.45	0.50	-		0.24	0.35	0.42	-
MPTX 027		0.44	0.48	0.55	-		0.24	0.35	0.42	-
MPTX 110		1.00	1.05	1.15	1.40		0.72	0.93	1.28	1.74
MPTX 114		1.10	1.15	1.25	1.50		0.72	0.93	1.28	1.74
MPTX 116		1.10	1.15	1.25	1.50		0.72	0.93	1.28	1.74
MPTX 120		1.00	1.05	1.15	1.40		0.72	0.93	1.28	1.74

MP FILTRI WWW.SUMY.IR

Flow rates [l/min]

Filter series	Length	Filter element design - D series					Filter element design - D series		
		A0003	A0006	A0010	A0016	A0025	M0025 M0060 M0090	P0010	P0025
MPTX 025-027	**10**	7	10	23	28	42	59	51	54
	20	17	20	45	48	56	72	64	67
	30	21	24	50	55	59	76	74	75
MPTX 110-120 114-116	**10**	18	20	53	56	65	153	87	96
	20	28	38	65	75	95	158	111	123
	30	48	55	125	135	169	289	224	251
	40	79	89	180	185	198	306	264	289

Maximum flow rate for a complete return filter with a pressure drop Δp = 0.5 bar.

The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.

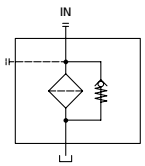
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

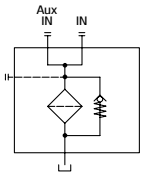
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.

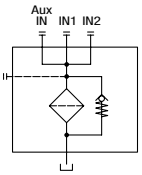
Please, contact our Sales Department for further additional information.

Hydraulic diagram

Filter series	17 / 30 - with bypass 1.75 / 3.0 bar		
	Single IN Port	Double IN Port	Triple IN port
MPTX 025	•	-	-
MPTX 027	•	-	-
MPTX 110	•	•	-
MPTX 114	•	-	-
MPTX 116	•	-	-
MPTX 120	-	-	•

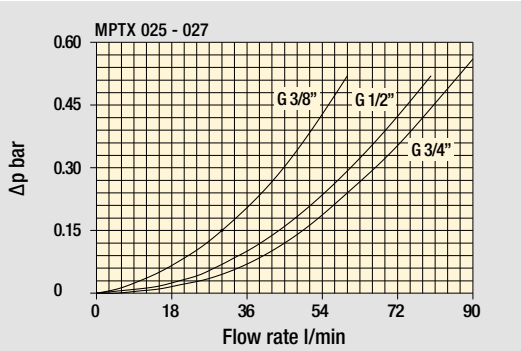


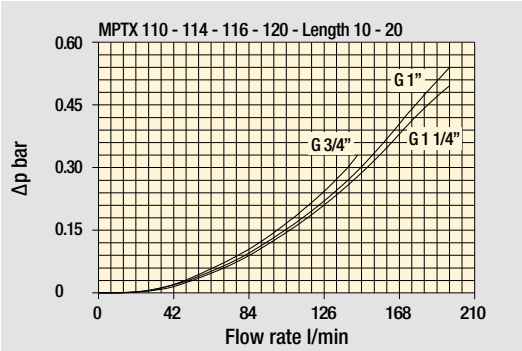


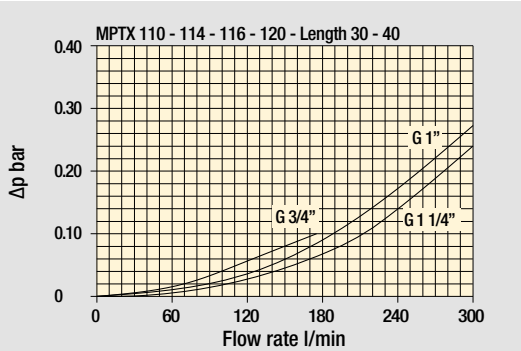


Pressure drop

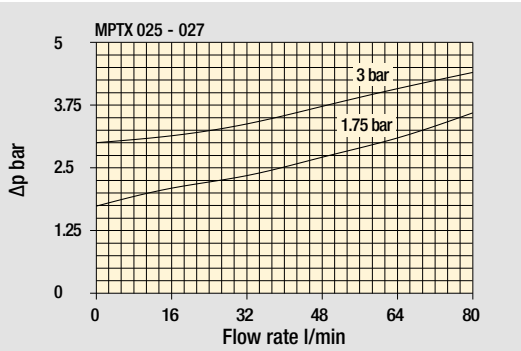
Filter housings Δp pressure drop

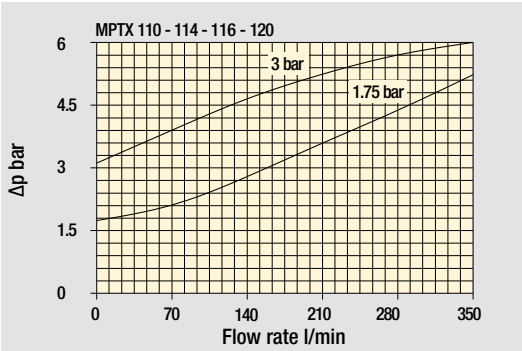




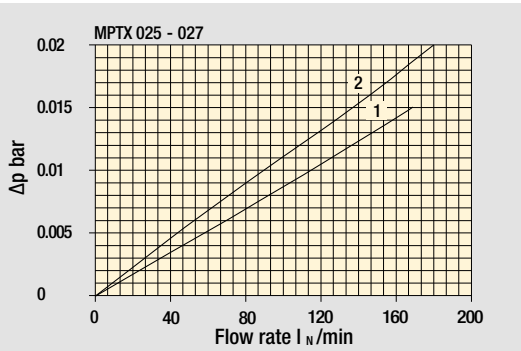


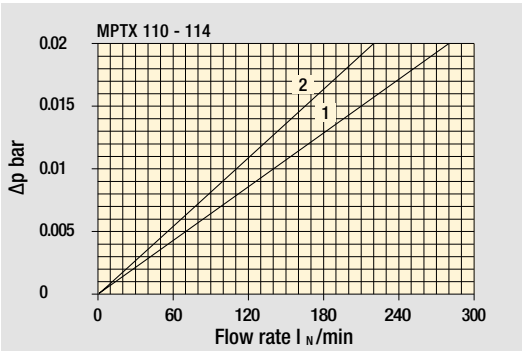
Bypass valve pressure drop





Air breather pressure drop





1 AS With air breather 10 µm

2 AR With anti-splash and SAP50 10 µm

The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

MP FILTRI WWW.SUMY.IR

MPTX 025 -027		
Air breather port plugged Indicator port	Air breather standard Indicator port	Anti-splash air breather & pressurized Double indicator port
		

Multiport - Multifunction

MPTX 110	
Standard - Single IN Port	Double IN Port - Double indicator port
	
Double IN Port Option: double drain port	Double IN Port - Indicator port Option: drain port
	

MPTX 120
Triple IN port Option: double drain port


Designation & Ordering code

COMPLETE FILTER

Example 1:	MPTX	025	10	A0006	D	Z	17	FG034	0	6T	NN	P01	NN
Example 2:	MPTX	027	30	P0010	D	A	30	FN034	0	3T	AS	P01	NN

Series
MPTX Filter featuring MYCLEAN Filter Element

Size
025 **027**

Length
10
20
30

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark+

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp
D 10 bar

Seals and treatments	A0xxx	M0xxx	P0xxx	Z0xxx
A NBR	•	•	•	•
V FPM	•	•	•	•
W NBR with filter and components surface treatment	•	•	-	•
Z FPM with filter and components surface treatment	•	•	-	•

Bypass
17 With bypass 1.75 bar
30 With bypass 3.0 bar

Connections

FG038	G 3/8"	**FN038**	3/8" NPT	**FS006**	SAE 6 - 9/16" - 18 UNF
FG012	G 1/2"	**FN012**	1/2" NPT	**FS008**	SAE 8 - 3/4" - 16 UNF
FG034	G 3/4"	**FN034**	3/4" NPT	**FS012**	SAE 12 - 1 1/16" - 12 UN

Additional connections
0 Without additional connections

	Size	
Connections for clogging indicators	025	027
3T With left indicator connection, with metal plug	-	•
6T With both side indicator connections, with metal plugs	•	-

Additional features
NN Without additional features
AS With air breather 10 µm
AR With anti-splash and air breather SAP050 10 µm
AP With anti-splash and air breather SAP050 10 µm pressurization 0.5 bar

Execution
P01 Standard catalogue item

Certificates
NN None

CLOGGING INDICATORS

See pages 776-777

BVA Axial pressure gauge
BVR Radial pressure gauge
BVP Visual pressure indicator with automatic reset
BVQ Visual pressure indicator with manual reset
BEA Electrical pressure indicator
BEM Electrical pressure indicator
BET Electrical pressure indicator
BLA Electrical / visual pressure indicator

ACCESSORIES

See page 270

TE Polyamide extension tube
DPT Dipstick

MP FILTRI WWW.SUMY.IR

Designation & Ordering code

FILTER ELEMENT

Example 1:	MFX	020	20	A0006	D	V	17	NN	P01	NN
Example 2:	MFX	020	30	P0010	D	A	30	NN	P01	NN

Series
MFX Filter element with MYCLEAN feature

Size
020

Length
10
20
30

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp
D 10 bar

Seals and treatments
A NBR
V FPM

Bypass
17 With bypass 1.75 bar
30 With bypass 3.0 bar

Additional features
NN Without additional features

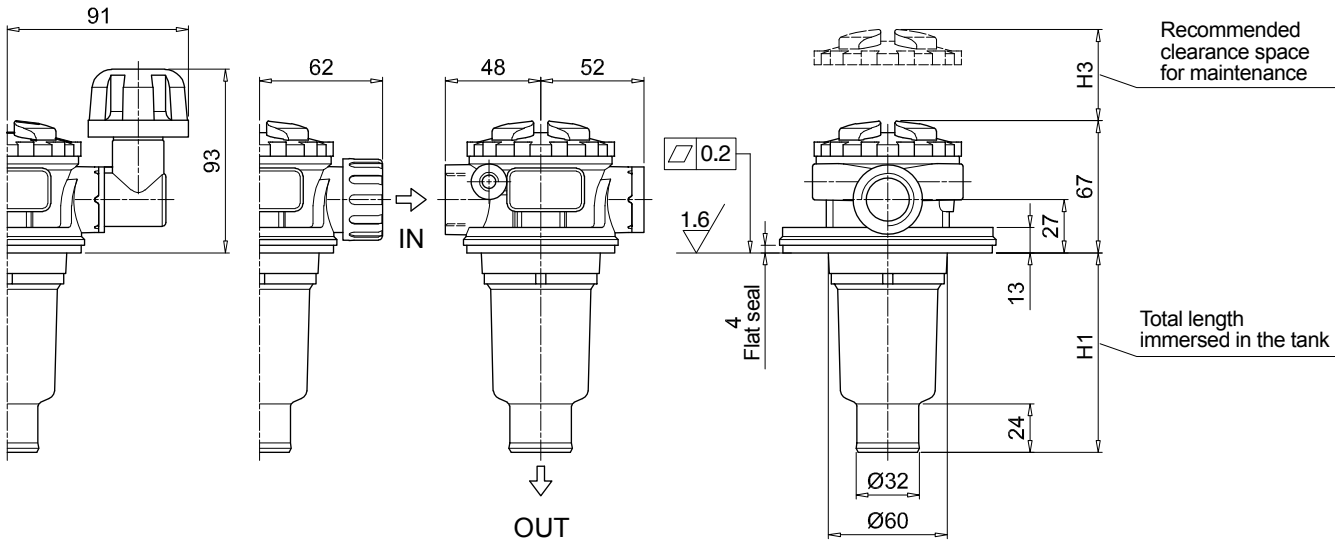
Execution
P01 Standard catalogue item

Certificates
NN None

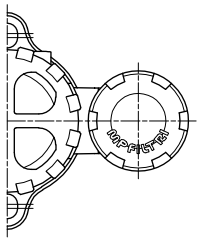
Dimensions

MPTX025		
Filter length	**H1 [mm]**	**H2 [mm]**
10	99	130
20	163	195
30	202	230

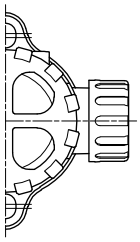
Connection	T
FG038	G 1/8”
FG012	
FG034	
FN038	1/8” NPT
FN012	
FN034	
FS006	1/8” NPT
FS008	
FS012	



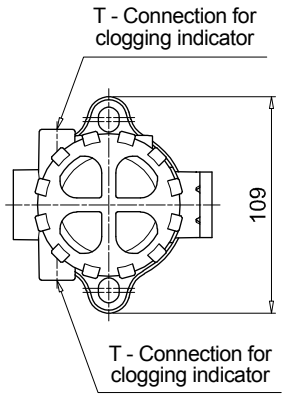
Additional features **AR / AP**



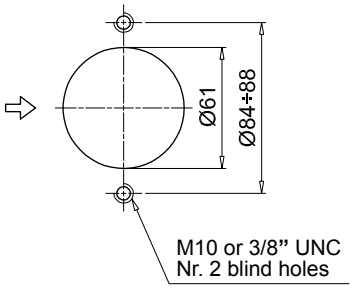
Additional features **AS**



Additional features **NN**

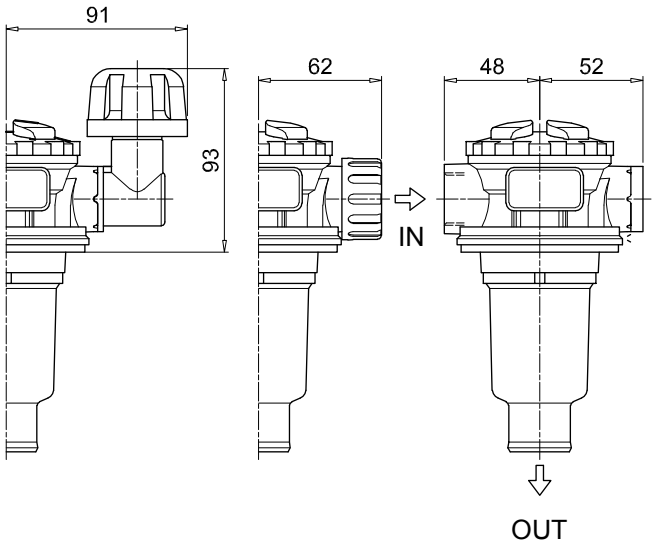


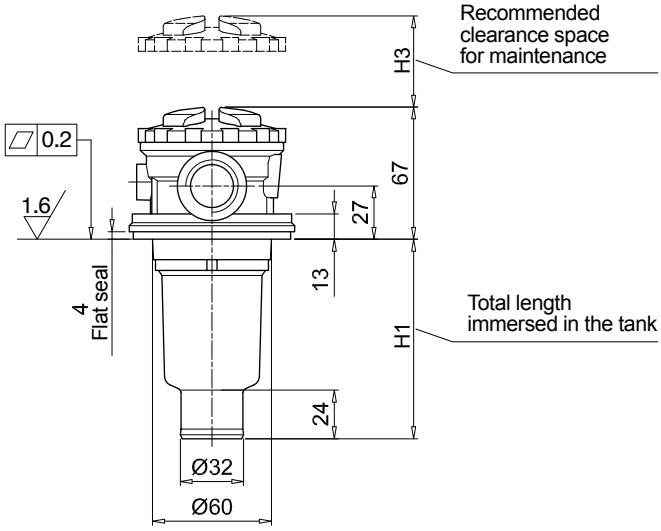
HOLES ON THE TANK



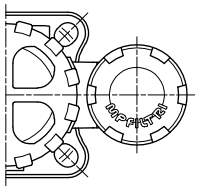
MPTX027		
Filter length	**H1 [mm]**	**H2 [mm]**
10	99	130
20	163	195
30	202	230

Connection	T
FG038	G 1/8”
FG012	
FG034	
FN038	1/8” NPT
FN012	
FN034	
FS006	1/8” NPT
FS008	
FS012	

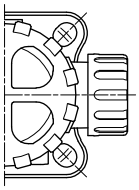




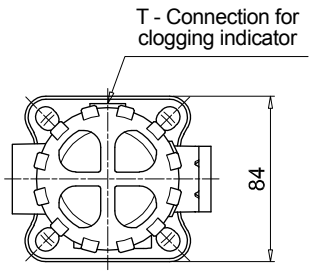
Additional features
AR / AP



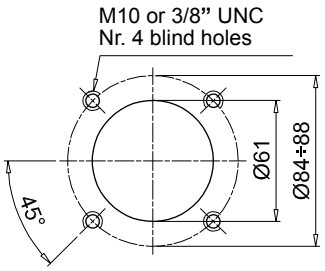
Additional features
AS



Additional features
NN



HOLES ON THE TANK



Designation & Ordering code

COMPLETE FILTER

Example: MPTX | 110 | 20 | Z0025 | D | Z | 30 | FG114 | 2 | 6T | AR | P01 | NN

Series
MPTX Filter featuring MYCLEAN Filter Element

Size
110

Length
10 **30**
20 **40**

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark+

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp
D 10 bar

Seals and treatments

		A0xxx	M0xxx	P0xxx	Z0xxx
A	NBR	•	•	•	•
V	FPM	•	•	•	•
W	NBR with filter and components surface treatment	•	•	-	•
Z	FPM with filter and components surface treatment	•	•	-	•

Bypass
17 With bypass 1.75 bar
30 With bypass 3.0 bar

Connections

FG034	G 3/4"	**FN034**	3/4" NPT	**FS012**	SAE 12 - 1 1/16" - 12 UN
FG100	G 1"	**FN100**	1" NPT	**FS016**	SAE 16 - 1 5/16" - 12 UNF
FG114	G 1 1/4"	**FN114**	1 1/4" NPT	**FS020**	SAE 20 - 1 5/8" - 12 UN

Additional connections

0 Without additional connection

1	Main connection	FG034 / FG100 / FN114	**G 3/8"**	Main connection	FN034 / FN100 / FN114	**3/8" NPT**	Main connection	FS012 / FS016 / FS020	**SAE 6 - 9/16" 18 UNF**
2	Main connection	FG034 / FG100 / FN114	**G 1/2"**	Main connection	FN034 / FN100 / FN114	**1/2" NPT**	Main connection	FS012 / FS016 / FS020	**SAE 8 - 3/4" 16 UNF**

Connections for clogging indicators
6T With both side indicator connection, with metal plug

Additional features
NN Without additional features
AS With air breather 10 µm
AR With anti-splash and air breather SAP050 10 µm
AP With anti-splash and air breather SAP050 10 µm pressurization 0.5 bar

Execution
P01 Standard catalogue item

Certificates
NN None

CLOGGING INDICATORS

See pages 776-777

BVA Axial pressure gauge
BVR Radial pressure gauge
BVP Visual pressure indicator with automatic reset
BVQ Visual pressure indicator with manual reset
BEA Electrical pressure indicator
BEM Electrical pressure indicator
BET Electrical pressure indicator
BLA Electrical / visual pressure indicator

ACCESSORIES

See page 270

TE Polyamide extension tube
DFS Diffuser with fast lock connection
DPT Dipstick

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Example: MFX | 100 | 20 | Z0025 | D | V | 30 | NN | P01 | NN

Series
MFX Filter element with MYCLEAN feature

Size
100

Length

10	**30**
20	**40**

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp
D 10 bar

Seals and treatments
A NBR
V FPM

Bypass
17 With bypass 1.75 bar
30 With bypass 3.0 bar

Additional features
NN Without additional features

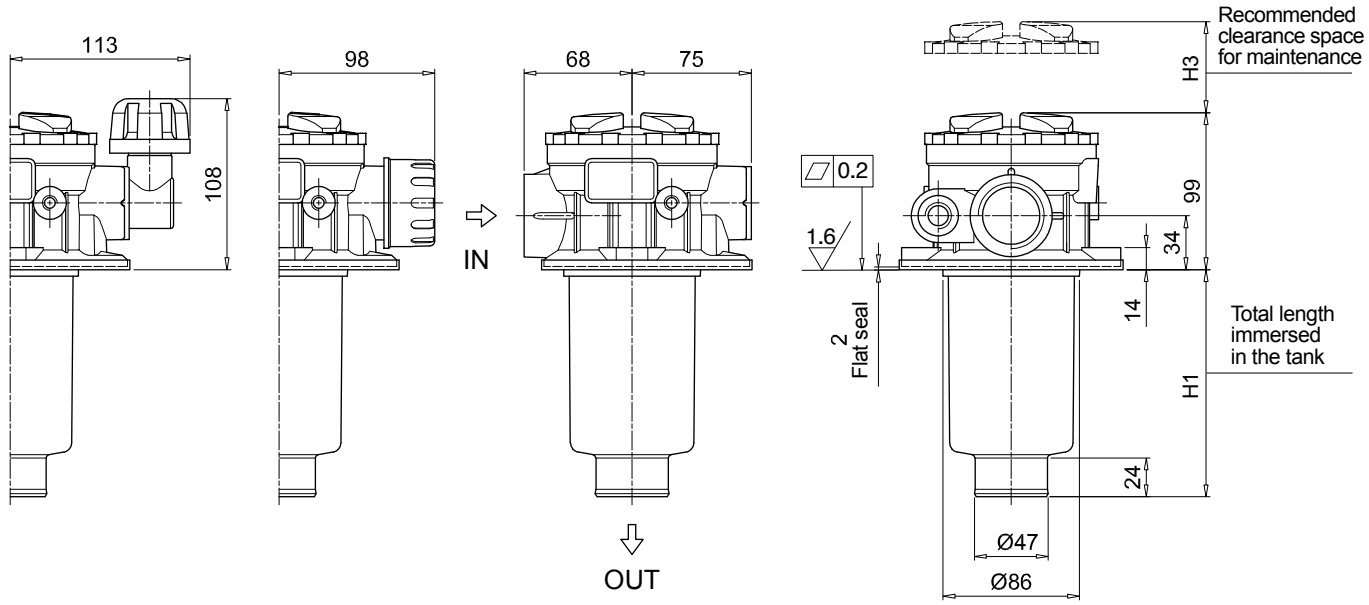
Execution
P01 Standard catalogue item

Certificates
NN None

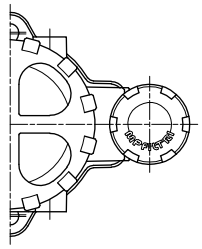
Dimensions

MPTX110		
Filter length	**H1 [mm]**	**H2 [mm]**
10	99	120
20	144	170
30	222	250
40	324	350

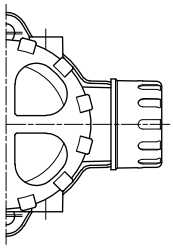
Connection	T
FG034	G 1/8”
FG100	
FG114	
FN034	1/8” NPT
FN100	
FN114	
FS012	1/8” NPT
FS016	
FS020	



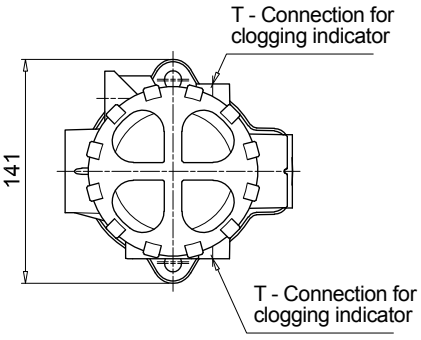
Additional features
AR / AP

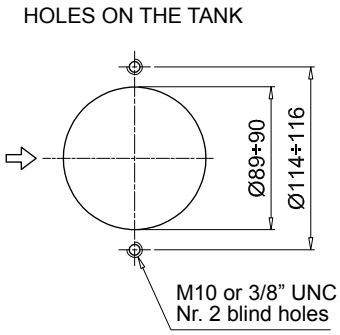


Additional features
AS



Additional features
NN





MP FILTRI WWW.SUMY.IR

Designation & Ordering code

COMPLETE FILTER

Example 1:	MPTX	114	20	Z0025	D	Z	17	FG114	0	3T	AR	P01	NN
Example 2:	MPTX	116	30	P0010	D	V	30	FG114	0	3T	NN	P01	NN

Series
MPTX Filter featuring MYCLEAN Filter Element

Size
114
116

Length
10 **30**
20 **40**

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark+

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp
D 10 bar

Seals and treatments

		A0xxx	M0xxx	P0xxx	Z0xxx
A	NBR	•	•	•	•
V	FPM	•	•	•	•
W	NBR with filter and components surface treatment	•	•	-	•
Z	FPM with filter and components surface treatment	•	•	-	•

Bypass
17 With bypass 1.75 bar
30 With bypass 3.0 bar

Connections

FG034	G 3/4”	**FN034**	3/4” NPT	**FS012**	SAE 12 - 1 1/16” - 12 UN
FG100	G 1”	**FN100**	1” NPT	**FS016**	SAE 16 - 1 5/16” - 12 UNF
FG114	G 1 1/4”	**FN114**	1 1/4” NPT	**FS020**	SAE 20 - 1 5/8” - 12 UN

Additional connections
0 Without additional connections

Connections for clogging indicators
3T With left indicator connection, with metal plug

Additional features

		Size 114	116
NN	Without additional features	•	•
AS	With air breather 10 µm	•	-
AR	With anti-splash and air breather SAP050 10 µm	•	-
AP	With anti-splash and air breather SAP050 10 µm pressurization 0.5 bar	•	-

Execution
P01 Standard catalogue item

Certificates
NN None

CLOGGING INDICATORS

See pages 776-777

BVA	Axial pressure gauge	**BEA**	Electrical pressure indicator
BVR	Radial pressure gauge	**BEM**	Electrical pressure indicator
BVP	Visual pressure indicator with automatic reset	**BET**	Electrical pressure indicator
BVQ	Visual pressure indicator with manual reset	**BLA**	Electrical / visual pressure indicator

ACCESSORIES

See page 270

TE	Polyamide extension tube	**DPT**	Dipstick
DFS	Diffuser with fast lock connection		

MP FILTRI WWW.SUMY.IR

Designation & Ordering code

FILTER ELEMENT

Example 1:	MFX	100	20	Z0025	D	V	17	NN	P01	NN
Example 2:	MFX	100	30	P0010	D	V	30	NN	P01	NN

Series

MFX Filter element with MYCLEAN feature

Size

100

Length

10	**30**
20	**40**

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp

D 10 bar

Seals and treatments

A NBR

V FPM

Bypass

17 With bypass 1.75 bar

30 With bypass 3.0 bar

Additional features

NN Without additional features

Execution

P01 Standard catalogue item

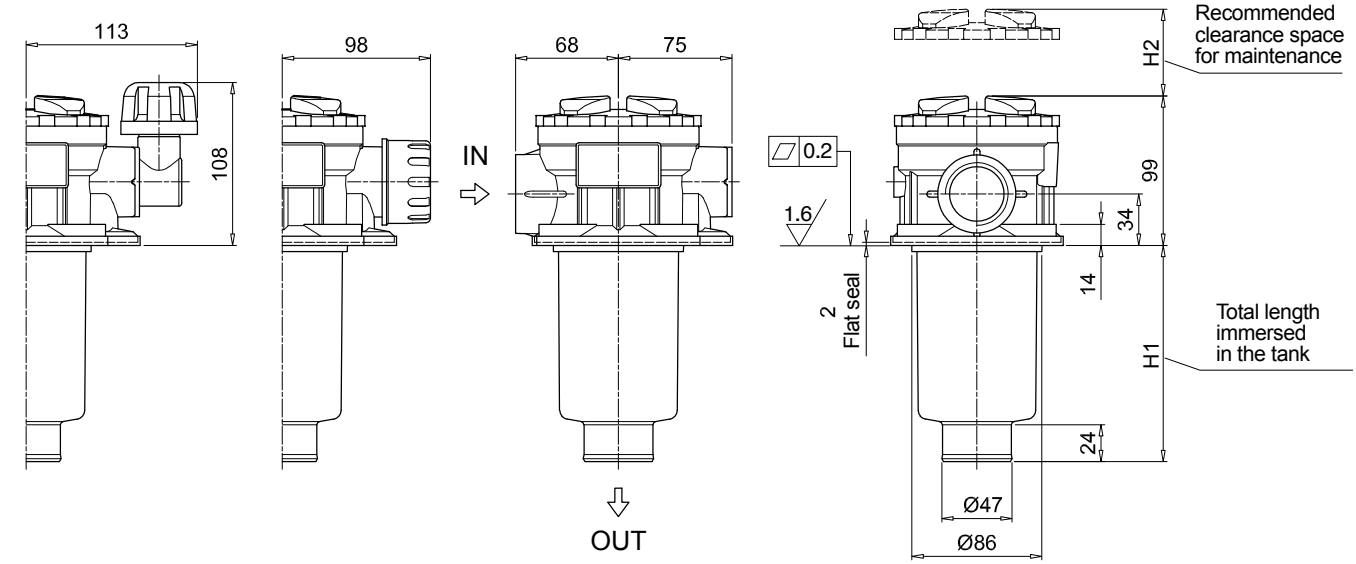
Certificates

NN None

Dimensions

MPTX114		
Filter length	**H1 [mm]**	**H2 [mm]**
10	99	120
20	144	170
30	222	250
40	324	350

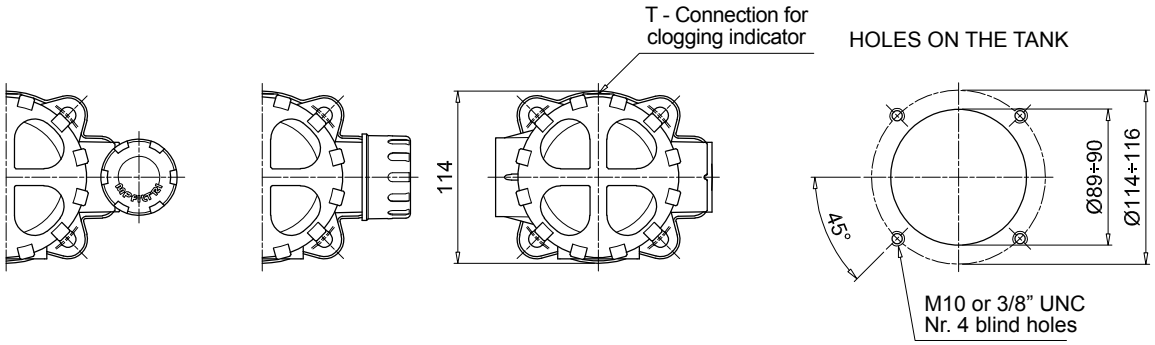
Connection	T
FG034	G 1/8"
FG100	
FG114	
FN034	1/8" NPT
FN100	
FN114	
FS012	1/8" NPT
FS016	
FS020	



Additional features
AR / AP

Additional features
AS

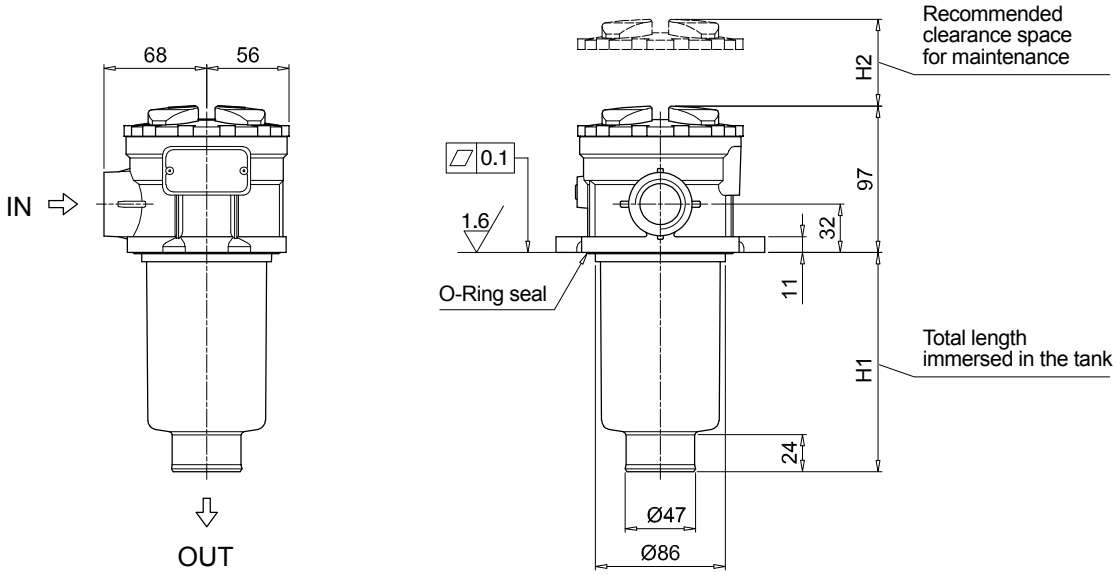
Additional features
NN

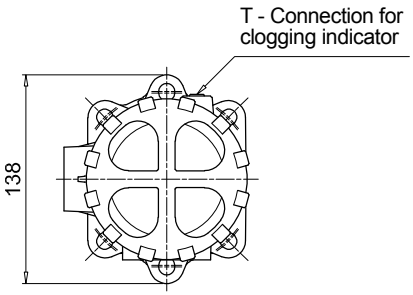


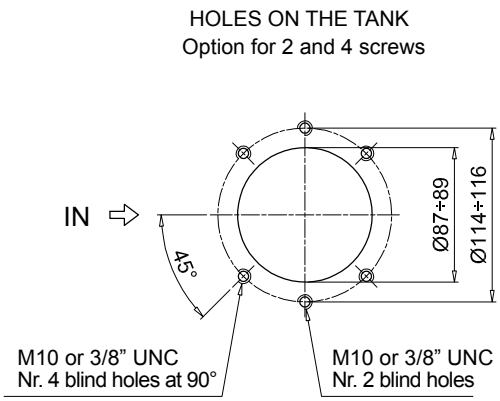
MP FILTRI WWW.SUMY.IR

MPTX116		
Filter length	**H1 [mm]**	**H2 [mm]**
10	99	120
20	146	170
30	224	250
40	326	350

Connection	T
FG034	G 1/8”
FG100	
FG114	
FN034	1/8” NPT
FN100	
FN114	
FS012	1/8” NPT
FS016	
FS020	







Designation & Ordering code

COMPLETE FILTER

Example: MPTX | 120 | 20 | Z0025 | D | Z | 30 | FG114 | 2 | 6T | NN | P01 | NN

Series
MPTX Filter featuring MYCLEAN Filter Element

Size
120

Length

10	**30**
20	**40**

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark+

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp
D 10 bar

Seals and treatments

		A0xxx	M0xxx	P0xxx	Z0xxx
A	NBR	•	•	•	•
V	FPM	•	•	•	•
W	NBR with filter and components surface treatment	•	•	-	•
Z	FPM with filter and components surface treatment	•	•	-	•

Bypass
17 With bypass 1.75 bar
30 With bypass 3.0 bar

Connections (front + rear)

FG034	G 3/4" + G 3/4"	**FN034**	3/4" NPT + 3/4" NPT	**FS012**	SAE 12-1 1/16"-12 UN + SAE 12-1 1/16"-12 UN
FG100	G 1" + G 1"	**FN100**	1" NPT + 1" NPT	**FS016**	SAE 16-1 5/16"-12 UNF + SAE 16-1 5/16"-12 UNF
FG114	G 1 1/4" + G 3/4"	**FN114**	1 1/4" NPT + 3/4" NPT	**FS020**	SAE 20-1 5/8"-12 UN + SAE 12-1 1/16"-12 UN

Additional connections

0 Without additional connection

1	Main connection	FG034 / FG100 / FN114	**G 3/8"**	Main connection	FN034 / FN100 / FN114	**3/8" NPT**	Main connection	FS012 / FS016 / FS020	**SAE 6 - 9/16" 18 UNF**
2	Main connection	FG034 / FG100 / FN114	**G 1/2"**	Main connection	FN034 / FN100 / FN114	**1/2" NPT**	Main connection	FS012 / FS016 / FS020	**SAE 8 - 3/4" 16 UNF**

Connections for clogging indicators
6T With both side indicator connections, with metal plugs

Additional features
NN Without additional features

Execution
P01 Standard catalogue item

Certificates
NN None

CLOGGING INDICATORS

See pages 776-777

BVA	Axial pressure gauge	**BEA**	Electrical pressure indicator
BVR	Radial pressure gauge	**BEM**	Electrical pressure indicator
BVP	Visual pressure indicator with automatic reset	**BET**	Electrical pressure indicator
BVQ	Visual pressure indicator with manual reset	**BLA**	Electrical / visual pressure indicator

ACCESSORIES

See page 270

TE	Polyamide extension tube	**DPT**	Dipstick
DFS	Diffuser with fast lock connection		

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Example 1: MFX | 100 | 20 | Z0025 | D | V | 30 | NN | P01 | NN

Series
MFX Filter element with MYCLEAN feature

Size
100

Length
10 **30**
20 **40**

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark+

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp
D 10 bar

Seals and treatments
A NBR
V FPM

Bypass
17 With bypass 1.75 bar
30 With bypass 3.0 bar

Additional features
NN Without additional features

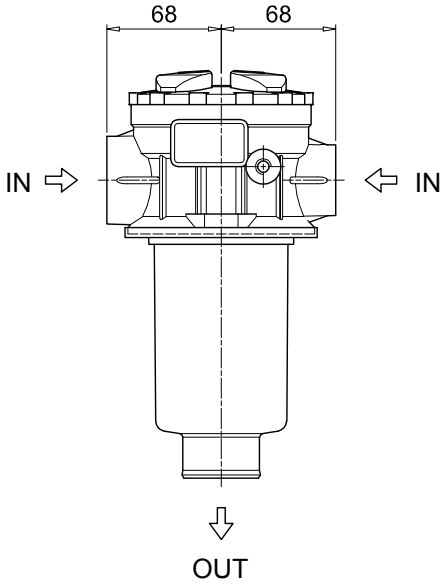
Execution
P01 Standard catalogue item

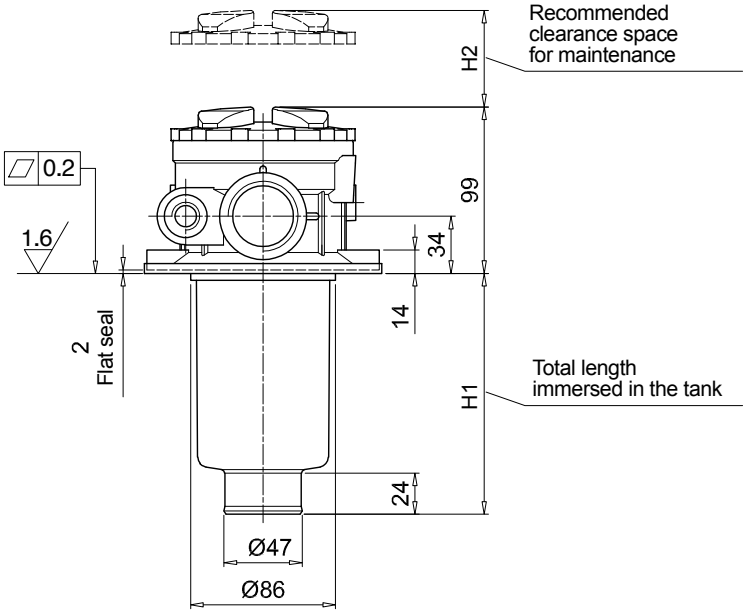
Certificates
NN None

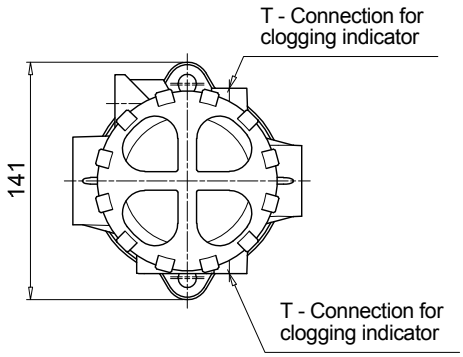
Dimensions

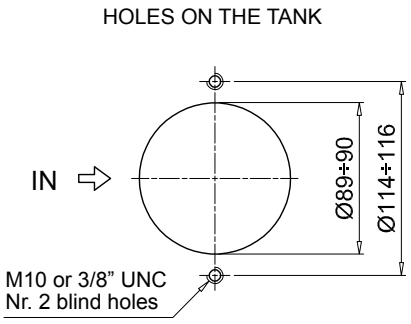
MPTX120		
Filter length	**H1 [mm]**	**H2 [mm]**
10	99	120
20	144	170
30	222	250
40	324	350

Connection	T
FG034	G 1/8”
FG100	
FG114	
FN034	1/8” NPT
FN100	
FN114	
FS012	1/8” NPT
FS016	
FS020	





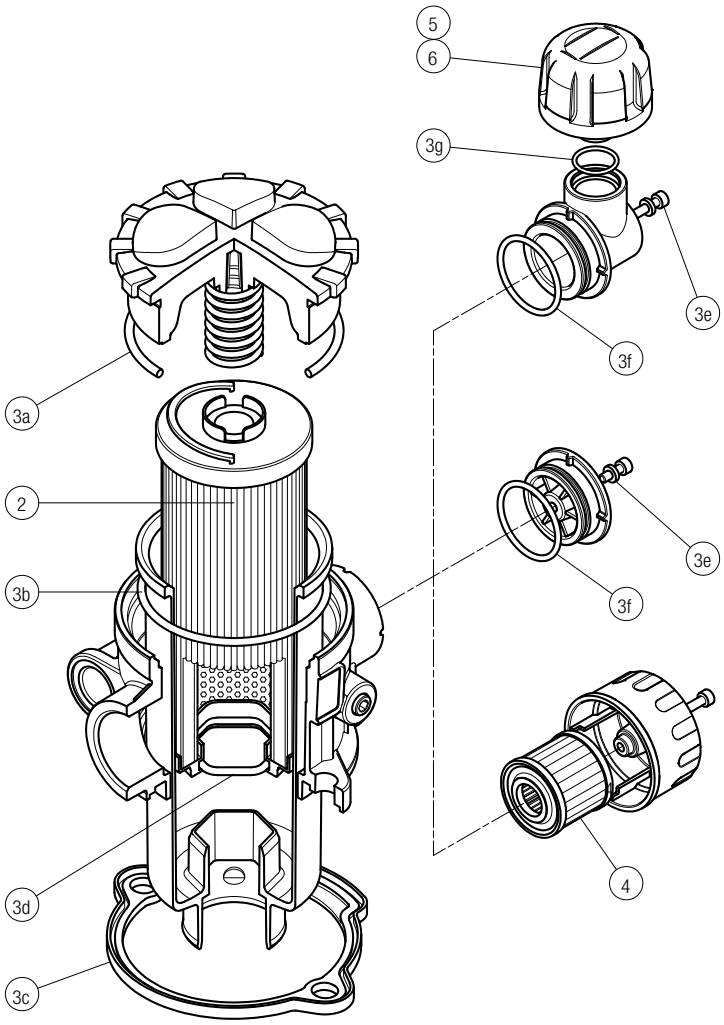




MP FILTRI WWW.SUMY.IR

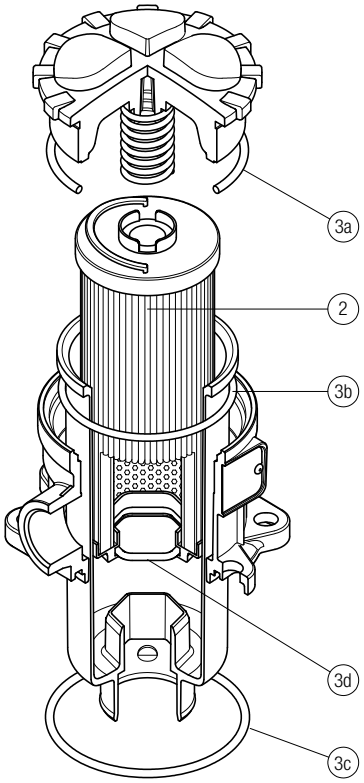
Order number for spare parts

MPTX 025 - 027 - 110



Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3g)		Q.ty: 1 pc. 4	Q.ty: 1 pc. 5	Q.ty: 1 pc. 6
Filter series	**Filter element**	**Seal Kit code number NBR**	**FPM**	**Air breather filter element - version: C**	**D**	**P**
MPTX 025	See order table	AK021000474	AK021000475	10 µm A3L03	10 µm SAP50G3L03A0P01	10 µm SAP50G3L03A1P01
MPTX 027		AK021000476	AK021000477	10 µm A3L03	10 µm SAP50G3L03A0P01	10 µm SAP50G3L03A1P01
MPTX 110		AK021000480	AK021000481	10 µm A5L03	10 µm SAP50G3L03A0P01	10 µm SAP50G3L03A1P01

MPTX 116

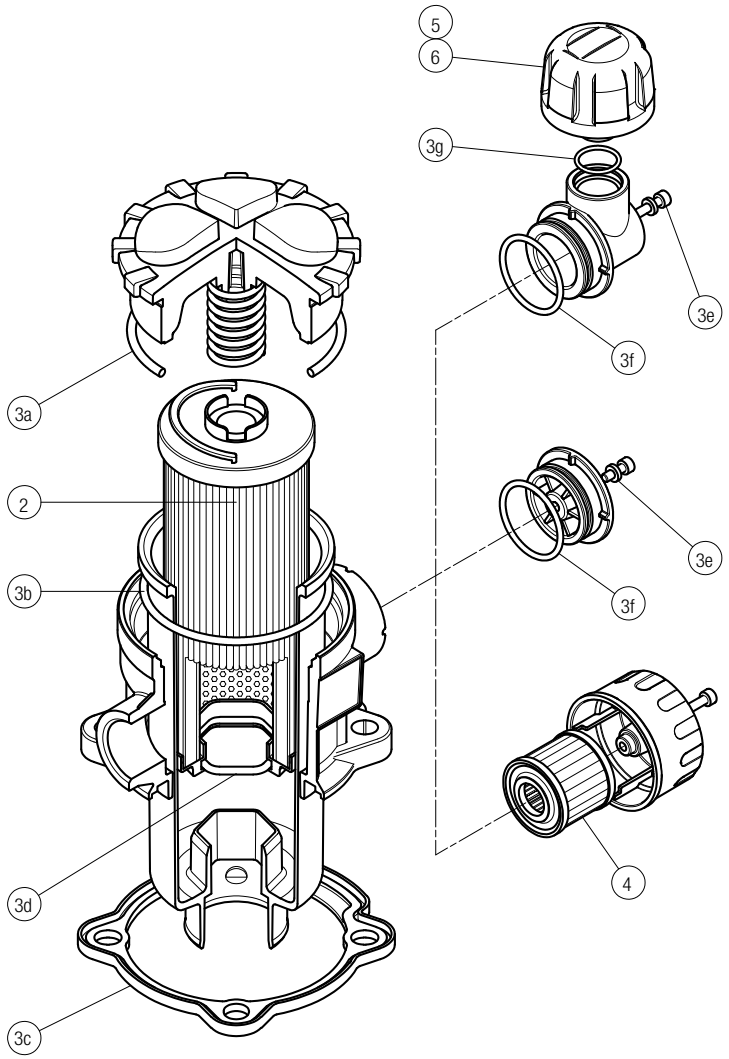


Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3d)	
Filter series	**Filter element**	**Seal Kit code number NBR**	**FPM**
MPTX 116	See order table	AK021000498	AK021000499

MP FILTRI WWW.SUMY.IR

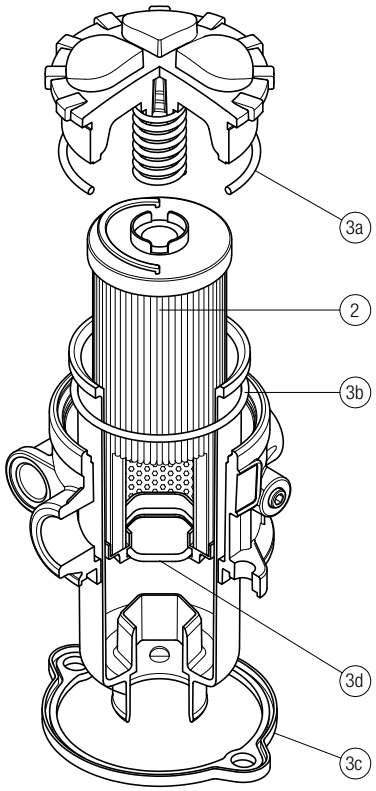
Order number for spare parts

MPTX 114



Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3g)		Q.ty: 1 pc. 4	Q.ty: 1 pc. 5	Q.ty: 1 pc. 6
Filter series	Filter element	Seal Kit code number NBR	Seal Kit code number FPM	Air breather filter element - version: C	Air breather filter element - version: D	Air breather filter element - version: P
MPTX 114	See order table	AK021000478	AK021000479	10 µm A5L03	10 µm SAP50G3L03A0P01	10 µmm SAP50G3L03A1P01

MPTX 120



Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3d)	
Filter series	Filter element	Seal Kit code number NBR	Seal Kit code number FPM
MPTX 120	See order table	AK021000482	AK021000483

MYCLEAN

THE X CONCEPT FOR OUR FILTERS

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

MFBX series

with MYCLEAN MFX Filter Element



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

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

The products identified as MFBX are protected by:

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

TOGETHER WITH MYCLEAN , AS OPTION, MFBX SERIES CAN BE PROVIDED WITH

zerospark®

THE ANTI-STATIC FILTERS



THE Z CONCEPT FOR OUR FILTERS

Zerospark® is a specialist solution designed to solve the problem of electrostatic discharge inside hydraulic filters. Caused by the electrical charge build-up due to the passage of oil through the filters, this can result in damage to filter elements, oils and circuit components. It can even cause fire hazards in environments where flammable materials are present.

MP FILTRI WWW.SUMY.IR

MFBX series
BOWL ASSEMBLY

Maximum working pressure up to 0.8 MPa (8 bar) - Flow rate up to 700 l/min



MFBX GENERAL INFORMATION

Description

Return filter | Bowl assembly

Maximum working pressure up to 0.8 MPa (8 bar)
Flow rate up to 700 l/min

MFBX is a range of return filter kits for protection of the reservoir against the system contamination.
They are directly integrated in the moulded reservoir in immersed or semi-immersed position to save space into the tank.
Treaded or flanged covers can be provided.
The filter output must be always immersed into the fluid to avoid aeration or foam generation into the reservoir.

Available features:

- Fine filtration rating, to get a good cleanliness level into the reservoir
- Bypass valve integrated into the filter element, to relieve excessive pressure drop across the filter media
- Extension tube, to be used in deep reservoirs (sold as separate item)
- Diffuser, to reduce the risk of aeration, foaming and noise (sold as separate item)
- MyClean interface connection, to protect the product against non-original spare parts
- External protective wrap, to optimize the flow through the element and to save the element efficiency against non-proper handling

Common applications:

Mobile machines

Technical data

Bowl assembly materials

- Cover: Polyamide: MFBX 020-030-100
  Aluminium: MFBX 180-190
- Bowl: Polyamide

Filter element materials

- Caps: Polyamide
- Spring: Spring steel

Pressure

- Test pressure: 1.2 MPa (12 bar)
- Min. Burst pressure: 2.4 MPa (24 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 0.8 MPa (8 bar)

Bypass valve

- Opening pressure 0.175 MPa (1.75 bar) ±10%
- Opening pressure 0.3 MPa (3 bar) ±10%

Filter element features

Filter		Filter element	
MFBX		MFX	
Δp Element type			
Element media	Construction	Δp Series	Δp
A - Microfiber	Standard	D	10 bar
M - Wire mesh	Standard	D	10 bar
P - Paper	Standard	D	10 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals

- Standard NBR series A
- Optional FPM series V

Temperature

From -25 °C to +110 °C

Note

MFBX filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]					Volumes [dm³]				
	Length	10	20	30	40	Length	10	20	30	40
MFBX 020		0.25	0.35	0.40	-		0.10	0.15	0.20	-
MFBX 030		0.25	-	-	-		0.15	-	-	-
MFBX 100		0.50	0.60	0.75	0.95		0.35	0.50	0.80	1.10
MFBX 180		1.60	2.40	-	-		1.50	2.90	-	-
MFBX 190		-	2.40	-	-		-	3.00	-	-

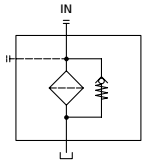
MP FILTRI WWW.SUMY.IR

Flow rates [l/min]

Filter series	Length	Filter element design - D series					Filter element design - D series		
		A0003	A0006	A0010	A0016	A0025	M0025 M0060 M0090	P0010	P0025
MFBX 020	**10**	7	10	23	28	42	59	51	54
	20	17	20	45	48	56	72	64	67
	30	21	24	50	55	59	76	74	75
MFBX 030	**10**	7	10	24	29	47	84	60	66
MFBX 100	**10**	18	20	53	56	65	153	87	96
	20	28	38	65	75	95	158	111	123
	30	48	55	125	135	169	289	224	251
	40	79	89	180	185	198	306	264	289
MFBX 180	**10**	127	148	235	243	278	441	285	299
	20	231	262	358	382	388	472	404	412
MFBX 190	**20**	261	305	489	528	546	696	583	598

Maximum flow rate for a complete return filter with a pressure drop Δp = 0.5 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

Hydraulic diagram

Filter series	17 / 30 - with bypass 1.75 / 3.0 bar
MFBX 020-030-100-180-190	

Designation & Ordering code

COMPLETE FILTER

Example 1:	MFBX	030	10	A0025	D	V	17	NN000	0	ON	CF	P01	NN
Example 2:	MFBX	190	20	Z0010	D	A	30	NN000	0	ON	NN	P01	NN

Series

MFBX Filter featuring MYCLEAN Filter Element

Size

020 **180**
030 **190**
100

Length

Length	020	030	100	180	190
10	•	•	•	•	-
20	•	-	•	•	•
30	•	-	•	-	-
40	-	-	•	-	-

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark+

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp

D 10 bar

Seals and treatments

A NBR
V FPM

Bypass

17 With bypass 1.75 bar
30 With bypass 3.0 bar

Connections

NN000 Without connections

Additional connections

0 Without additional connections

Connections for clogging indicators

ON Without connections

Additional features

Additional features	020	030	100	180	190
NN Without additional features	•	•	•	•	•
CF With flanged cover	-	•	•	•	•
CT With threaded cover	•	-	•	-	-

Execution

P01 Standard catalogue item

Certificates

NN None

ACCESSORIES

See page 270

TE Polyamide extension tube
DFS Diffuser with fast lock connection (only for MFBX 100)

MP FILTRI WWW.SUMY.IR

Designation & Ordering code

FILTER ELEMENT

Example 1:	MFX	030	10	A0025	D	V	17	NN	P01	NN
Example 2:	MFX	180	20	Z0010	D	A	30	NN	P01	NN

Series

MFX Filter element with MYCLEAN feature

Size

020	MFBX 020
030	MFBX 030
100	MFBX 100
180	MFBX 180 MFBX 190

Length	020	030	100	180
10	•	•	•	•
20	•	-	•	•
30	•	-	•	-
40	-	-	•	-

Filtration rating (filter media)

MYCLEAN

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

zerospark

Z0003	Antistatic in. microf.	3 µm
Z0006	Antistatic in. microf.	6 µm
Z0010	Antistatic in. microf.	10 µm
Z0016	Antistatic in. microf.	16 µm
Z0025	Antistatic in. microf.	25 µm

Element Δp

D 10 bar

Seals and treatments

A NBR

V FPM

Bypass

17 With bypass 1.75 bar

30 With bypass 3.0 bar

Additional features

NN Without additional features

Execution

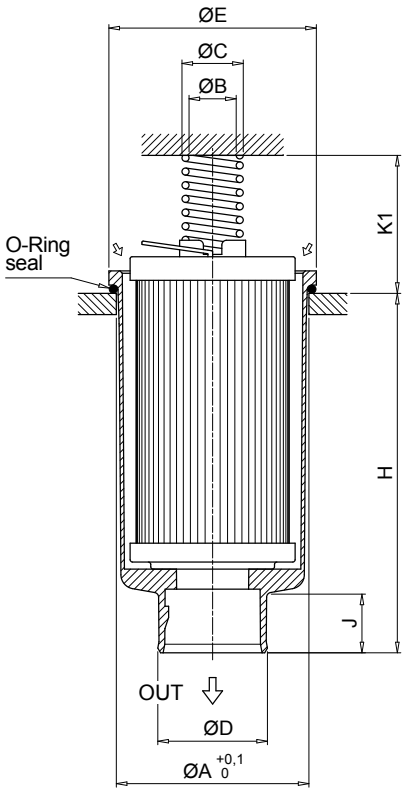
P01 Standard catalogue item

Certificates

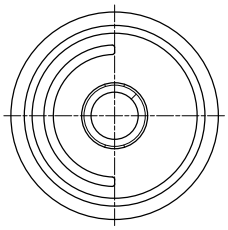
NN None

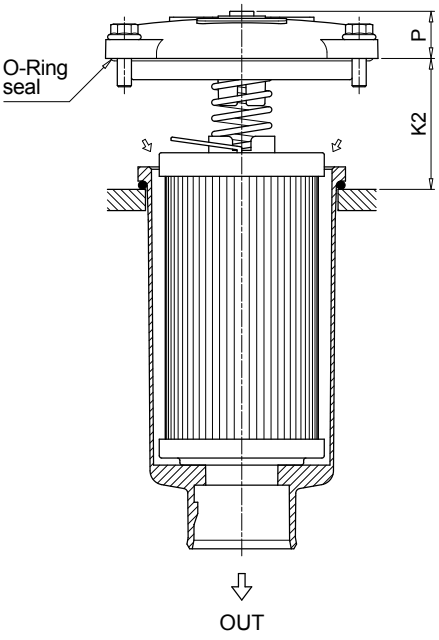
Dimensions

MFBX

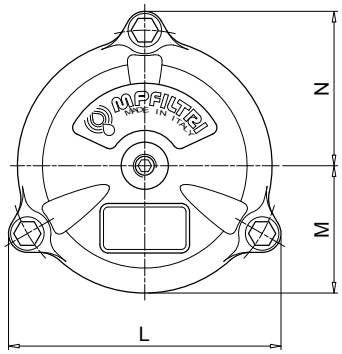


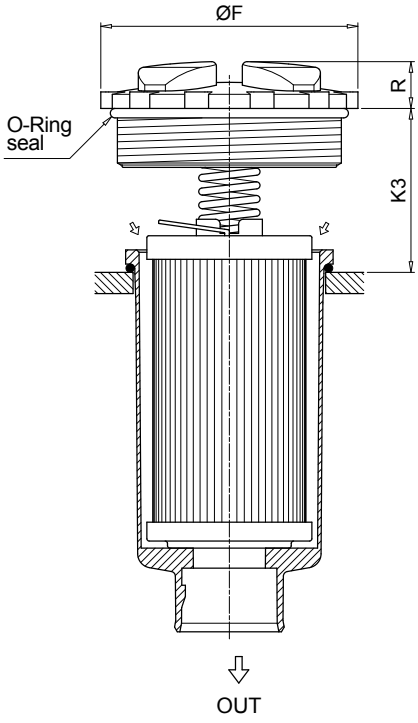
Additional features
NN



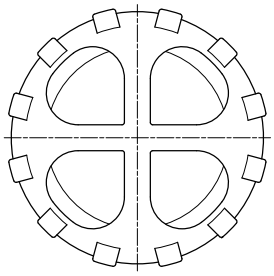


Additional features
CF





Additional features
CT



Filter size	Filter length	ØA [mm]	ØB [mm]	ØC [mm]	ØD [mm]	ØE [mm]	ØF [mm]	H [mm]	J [mm]	K1 [mm]	K2 [mm]	K3 [mm]	L [mm]	M [mm]	N [mm]	P [mm]	R [mm]
020	10	52	20.5	26	32	56	75	111	24	42	-	36	-	-	-	-	18
	20	52	20.5	26	32	56	75	175	24	42	-	36	-	-	-	-	18
	30	52	20.5	26	32	56	75	214	24	42	-	36	-	-	-	-	18
030	10	60.5	20	25.5	32	68	-	93	21	33	35	-	92	42	52	18	-
100	10	80.5	20	26	47	88	111	107	24	48	48	58	116	54	66	20	20
	20	80.5	20	26	47	88	111	154	24	48	48	58	116	54	66	20	20
	30	80.5	20	26	47	88	111	232	24	48	48	58	116	54	66	20	20
	40	80.5	20	26	47	88	111	334	24	48	48	58	116	54	66	20	20
180	10	112.5	26	33.5	47	121	-	236	31	58	58	-	159	76	95	21	-
	20	112.5	26	33.5	47	121	-	450	31	58	58	-	159	76	95	21	-
190	20	112.5	26	33.5	50	121	-	456	38	58	58	-	159	76	95	21	-

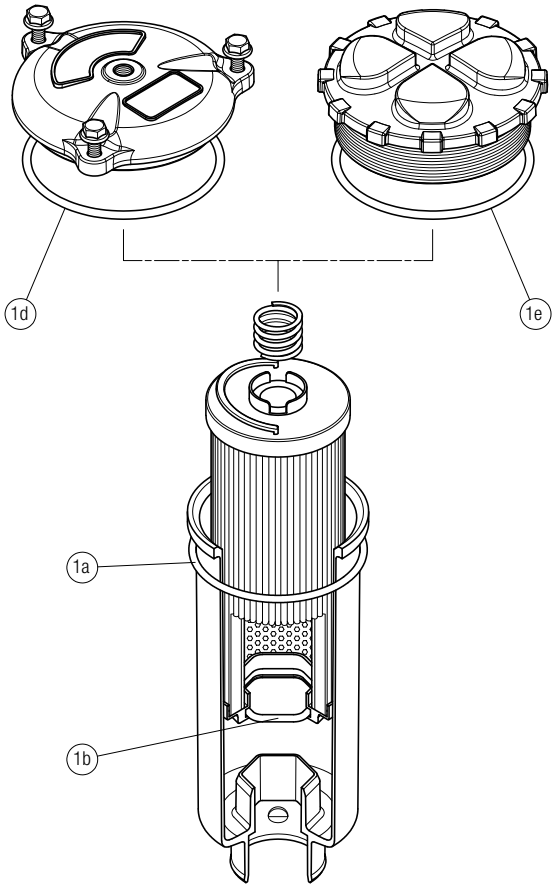
MP FILTRI WWW.SUMY.IR

MFBX

Additional features

CF
With flanged cover

CT
With threaded cover



Item:	Q.ty: 1 pc. (1) (1a ÷ 1d)	
Filter series	**Seal Kit code number**	
	NBR	**FPM**
MFBX 020	AK021000796	AK021000797
MFBX 030	AK021000798	AK021000799
MFBX 100	AK021000800	AK021000801
MFBX 180-190	AK021000802	AK021000803

MP FILTRI
WWW.SUMY.IR

MDHC series

Maximum working pressure up to 1 MPa (10 bar) - Flow rate up to 500 l/min



MDHC250 GENERAL INFORMATION

Description

Return filter

Maximum working pressure up to 1 MPa (10 bar)
Flow rate up to 500 l/min

MDHC, is a technically advanced filtration product line for efficient and compact, hydraulic reservoir management. Designed to ensure overall system cleanliness, the filters are either installed in a semi immersed or fully immersed position. This new design reduces the volume of the air coming into the tank space and dramatically reduces the velocity of the air through the filter which in turn allows the separation of the air from the fluid. This insures that the system is protected against the effects caused by air contamination such as incorrect system response, cavitation, foaming and fluid degradation. The filtration from inside to outside allows for a cleaner filter element replacement which insures that any contaminated fluid remains within the used filter element.

Available features:

- Female threaded connections up to 1 1/2" and flanged connections up to 1 1/2", for a maximum flow rate of 500 l/min
- Multiple connections, to connect several return lines or drains
- In to Out filtration, to reduce the risk of residual contamination going into the system during the maintenance works
- Fine filtration rating, to get a good cleanliness level into the reservoir
- Bypass valve, to relieve excessive pressure drop across the filter media
- Flat Seal to suit a variety of reservoir surfaces
- Oil dipstick, to easily check the level of the fluid into the reservoir (separate item)
- Anti-drain membrane, to reduce the volume of air coming to the tank
- Optimized flow path, to reduce the speed of the fluid through the filter
- Diffuser with optimized output, to promote the air separation and to reduce the risk of foaming and noise
- Optional filler plug, to fill cleaned fluid into the tank without an additional plug
- Visual, electrical and electronic clogging indicators and differential pressure clogging indicators

Common applications:

Heavy duty industrial equipment
Large mobile machines with limited space for the tank

Technical data

Filter housing materials

- Head and cover: Aluminium
- Anti-drain membrane: Polyamide
- Diffuser: AISI 430
- Valve: Polyamide / Steel

Pressure

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

Bypass valve

- Opening pressure 0.175 MPa (1.75 bar) ±10%
- Opening pressure 0.3 MPa (3 bar) ±10%

Filter element features

Filter		Filter element	
MDHC		DHC	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	D	10 bar
M - Wire mesh	Standard	D	10 bar
P - Paper	Standard	D	10 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From IN to OUT			

Seals

- Standard NBR series A or W
- Optional FPM series V or Z

Temperature

From -25 °C to +110 °C

Note

MDHC filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]			Volumes [dm³]		
	Length	20	40	Length	20	40
MDHC 250		3.80	4.55		4.65	6.90

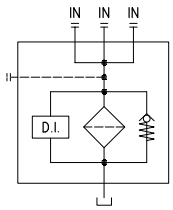
MP FILTRI WWW.SUMY.IR

Flow rates [l/min]

Filter series	Length	Filter element design - D series					Filter element design - D series		
		A0003	A0006	A0010	A0016	A0025	M0025 M0060 M0090	P0010	P0025
MDHC 250	**20**	134	120	244	255	303	480	326	370
	40	217	256	338	419	487	465	437	694

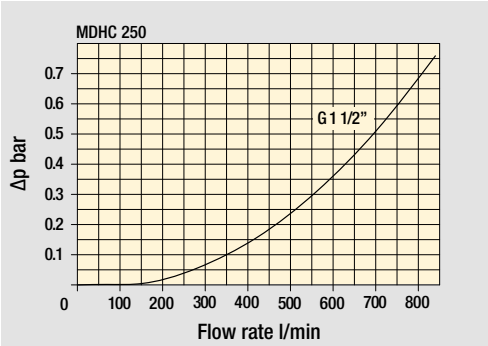
Maximum flow rate for a complete return filter with a pressure drop Δp = 0.5 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

Hydraulic diagram

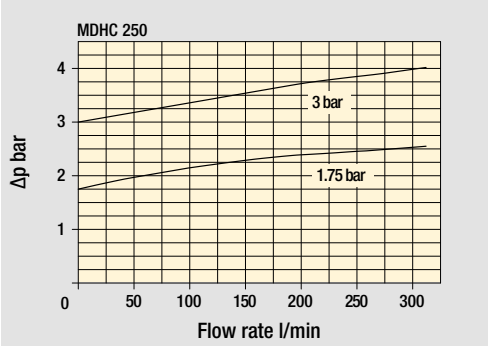
Filter series	17 / 30 - with bypass 1.75 / 3.0 bar Triple IN port
MDHC 250	

Pressure drop

Filter housings Δp pressure drop



Bypass valve pressure drop



The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

MDHC250

Designation & Ordering code

COMPLETE FILTER

Example: MDHC | 250 | 20 | A0025 | D | W | 30 | FS024 | 1 | 9T | DA | P01 | NN

Series
MDHC

Size
250

Length
20
40

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp
D 10 bar

Seals and treatments

		A0xxx	M0xxx	P0xxx
A	NBR	•	•	•
V	FPM	•	•	•
W	NBR with filter and components surface treatment	•	•	-
Z	FPM with filter and components surface treatment	•	•	-

By-pass valve
17 1.75 bar
30 3.0 bar

Connections
FG112 G 1 1/2" | **FN112** 1 1/2" NPT | **FS024** SAE 24 - 1 7/8" - 12 UN

Additional connections

			Left flange + thread	Right flange + thread
1	With additional connections	Front thread: FG112	1 1/2" SAE 3000 psi/M + G 1 1/4"	1 1/4" SAE 3000 psi/M + G 1"
		Front thread: FN112	1 1/2" SAE 3000 psi/UNC + 1 1/4" NPT	1 1/4" SAE 3000 psi/UNC + 1" NPT
		Front thread: FS024	1 1/2" SAE 3000 psi/UNC + SAE 20 - 1 5/8" - 12 UN	1 1/4" SAE 3000 psi/UNC + SAE 16 - 1 5/16" - 12 UN

Connections for clogging indicator
0N Without indicator connection
9T With multiple indicator connections, with metal plugs

Additional features
DA With diffuser

Execution
P01 Standard catalogue item

Certificates
NN None

CLOGGING INDICATORS

See pages 776-777

BVA Axial pressure gauge
BVR Radial pressure gauge
BVP Visual pressure indicator with automatic reset
BVQ Visual pressure indicator with manual reset
BEA Electrical pressure indicator
BEM Electrical pressure indicator
BLA Electrical / visual pressure indicator
DES Electrical differential pressure indicator
DVS Visual differential pressure indicator

PLUG

See page 807

T4 Plug

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Example 1: DHC | 250 | 20 | A0025 | D | A | 00 | NN | P01 | NN

Series
DHC

Size
250

Length
20
40

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp
D 10 bar

Seals and treatments
A NBR
V FPM
W NBR with components surface treatment
Z FPM with components surface treatment

Bypass
00 Without bypass

Additional features
NN Without additional features

Execution
P01 Standard catalogue item

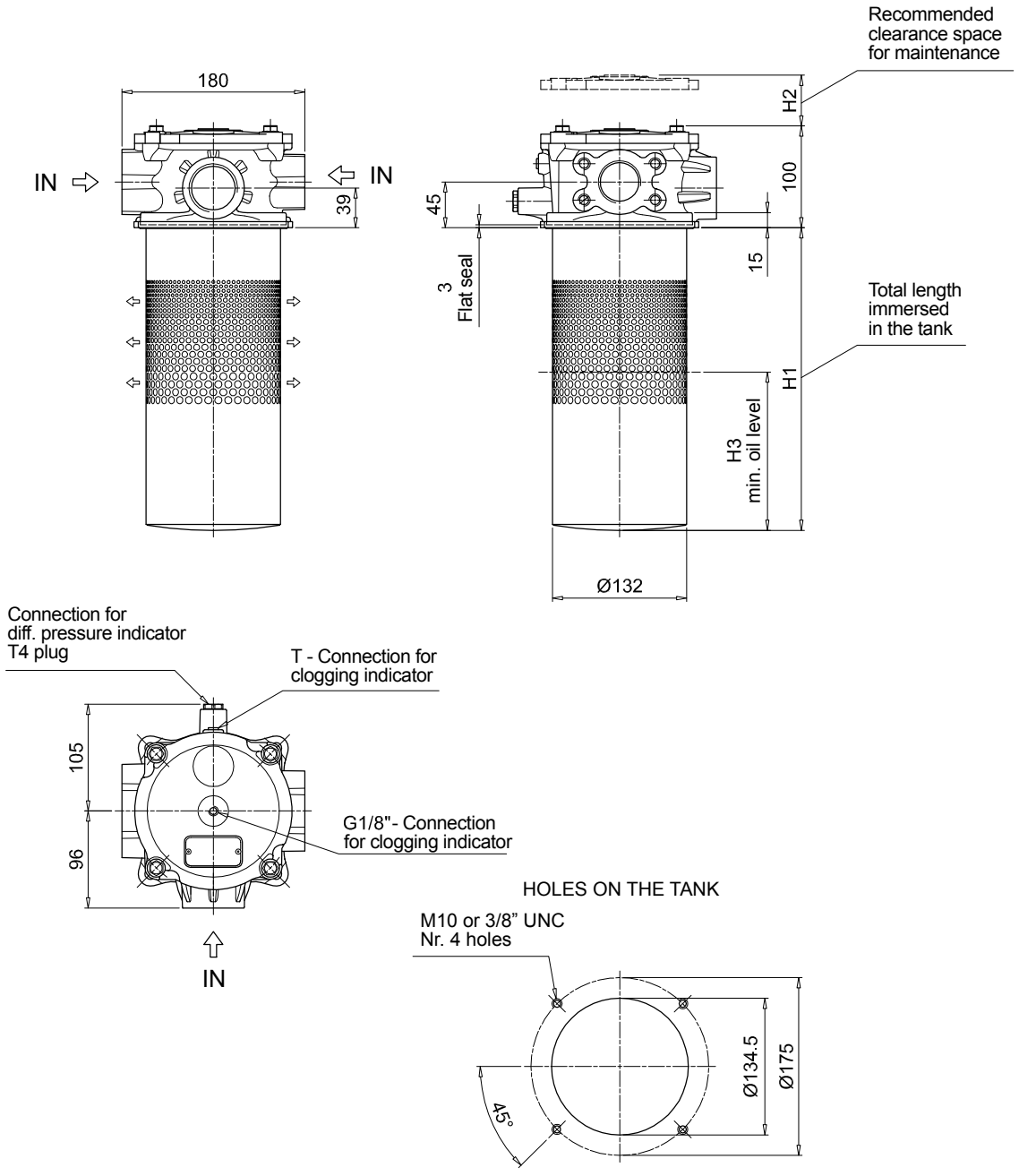
Certificates
NN None

MDHC250

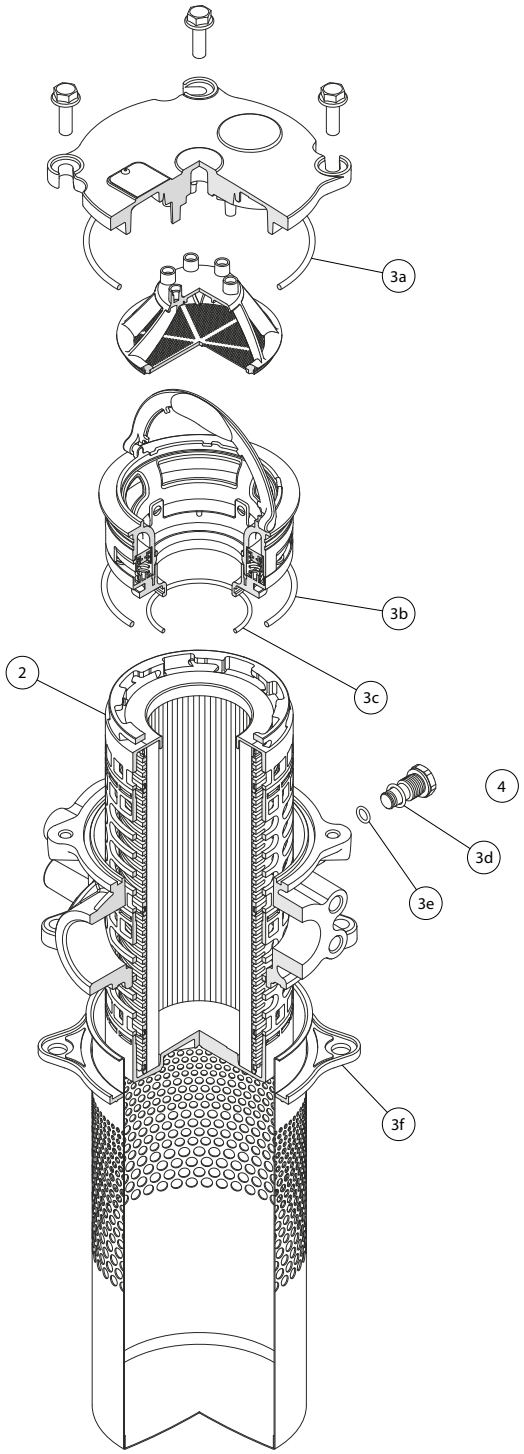
Dimensions

MDHC250			
Filter length	**H1 [mm]**	**H2 [mm]**	**H3 [mm]**
20	300	380	145
40	485	565	320

Connections	T
FG112	G 1/8"
FN112	1/8" NPT
FS024	1/8" NPT



MP FILTRI
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Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3f)		Q.ty: 1 pc. (4)
Filter series	**Filter element**	**Seal Kit code number NBR**	**FPM**	**Indicator connection plug NBR**
MDHC 250	See order table	AK021000806	AK021000807	T4A

MP FILTRI
WWW.SUMY.IR

MPHC series

Maximum working pressure up to 1 MPa (10 bar) - Flow rate up to 3500 l/min



Description

Return filter

Maximum working pressure up to 1 MPa (10 bar)
Flow rate up to 3500 l/min

MPHC is a range of return filters for protection of the reservoir against the system contamination. They are directly fixed to the reservoir, in immersed or semi-immersed position.
The use of the diffuser is recommended, to place the filter output always immersed into the fluid to avoid aeration or foam generation into the reservoir.
The filtration from inside to outside allows a cleaner filter element replacement, the dirty remains into the filter element.

Available features:

- Female threaded connections up to 1 1/2" and flanged connections up to 4", for a maximum flow rate of 3500 l/min
- Multiple connections, to connect several return lines or drains
- In to Out filtration, to reduce the risk of residual contamination going into the system during the maintenance works
- Fine filtration rating, to get a good cleanliness level into the reservoir
- Bypass valve, to relieve excessive pressure drop across the filter media
- Magnetic filter, to hold the ferrous particles
- 2, 3, 4 or 8 fixing holes for installation, to suit a variety of reservoir surfaces
- Flat Seal to suit a variety of reservoir surfaces
- Oil dipstick, to easily check the level of the fluid into the reservoir (separate item)
- Diffuser, to reduce the risk of aeration, foaming and noise
- Filler plug, to fill cleaned fluid into the tank without an additional plug
- Integrated breather filter, to clean the air that moves into the reservoir as result of the oil level fluctuation (MPH110/114)
- Integrated breather filter with pressurization valve, to clean the air that moves into the reservoir as result of the oil level fluctuation and to guarantee the pressurization into the reservoir (MPH110/114)
- Visual, electrical and electronic clogging indicators

Common applications:

Heavy duty industrial equipment

Technical data

Filter housing materials

- Head: Aluminium: MPHC 110-114-116-120-250
  Anodized Aluminium: MPHC 630-850
  Painted Aluminium: MPHC 660
- Cover: Polyamide: MPHC 110-114-116-120
  Aluminium: MPHC 250
  Anodized Aluminium: MPHC 630
  Painted Aluminium: MPHC 660
  Steel: MPHC 850
- Insert assembly: Polyamide: MPHC 110-114-116-120
  Aluminium: MPHC 250-630-660-850
- Diffuser: Stainless Steel
- Valve: Phosphatized Steel

Pressure

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

Bypass valve

- Opening pressure 0.175 MPa (1.75 bar)±10%
- Opening pressure 0.25 MPa (2.5 bar) ±10%, except for MPHC 850

Filter element features

Filter		Filter element	
MPHC		MRC	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	D	10 bar
M - Wire mesh	Standard	D	10 bar
P - Paper	Standard	D	10 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From IN to OUT			

Seals

- Standard NBR series A or W
- Optional FPM series V or Z

Temperature

From -25 °C to +110 °C

Note

MPHC filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]						Volumes [dm³]					
	Length	10	20	30	40	50	Length	10	20	30	40	50
MPHC 110		1.60	1.70	1.80	2.20	2.60		1.60	1.70	1.80	2.20	2.60
MPHC 114		1.60	1.70	1.80	2.20	2.60		1.60	1.70	1.80	2.20	2.60
MPHC 116		1.60	1.70	1.80	2.20	2.60		1.60	1.70	1.80	2.20	2.60
MPHC 120		1.60	1.70	1.80	2.20	2.60		1.60	1.70	1.80	2.20	2.60
MPHC 250		3.60	3.90	4.20	5.60	-		4.40	4.40	5.40	8.00	-
MPHC 630		6.50	7.00	7.40	8.50	10.50		7.30	9.00	11.00	13.00	19.20
MPHC 660		-	-	-	11.50	14.00		-	-	-	14.60	21.00
MPHC 850		32.00	35.00	38.00	42.00	-		13.00	16.50	21.00	25.00	-

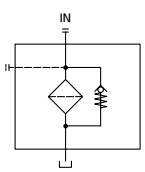
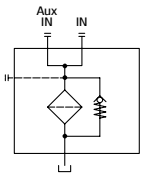
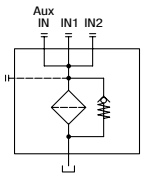
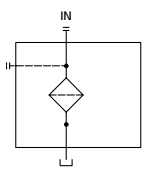
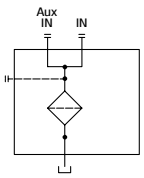
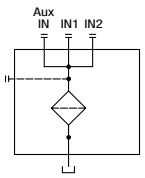
MP FILTRI WWW.SUMY.IR

Flow rates [l/min]

Filter series	Length	Filter element design - D series					Filter element design - D series		
		A0003	A0006	A0010	A0016	A0025	M0025 M0060 M0090	P0010	P0025
MPHC 110-114 116-120	1	26	29	72	79	107	282	164	190
	2	43	46	112	114	161	318	164	190
	3	64	72	132	156	178	324	219	251
	4	90	99	184	198	216	324	266	302
	5	117	128	201	219	244	324	282	318
MPHC 250	1	93	102	210	251	315	1093	339	383
	2	124	151	327	412	421	1122	460	514
	3	189	221	418	445	500	1137	544	616
	4	261	304	592	670	766	1166	832	923
MPHC 630	1	160	200	369	423	518	1894	565	632
	2	240	257	571	611	1045	1929	1137	1285
	3	330	374	745	788	1308	1938	1416	1577
	4	374	403	887	1010	1348	1956	1448	1612
	5	625	698	1210	1257	1723	2121	1839	1929
MPHC 660	4	370	399	903	1042	1460	2376	1596	1830
	5	624	699	1282	1343	1997	2663	2182	2331
MPHC 850	1	775	1041	1246	1568	2242	3311	2371	2625
	2	1176	1522	1682	1747	2449	3378	2684	2886
	3	1490	1914	1995	2014	3035	3405	3144	3220
	4	1668	2088	2305	2363	3169	3517	3272	3378

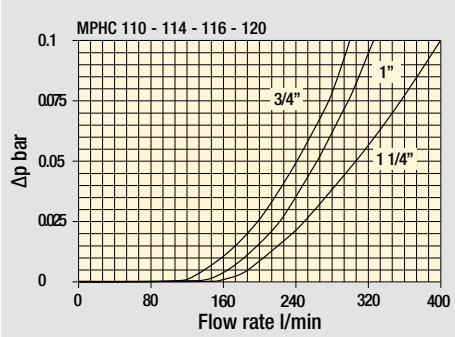
Maximum flow rate for a complete return filter with a pressure drop Δp = 0.5 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

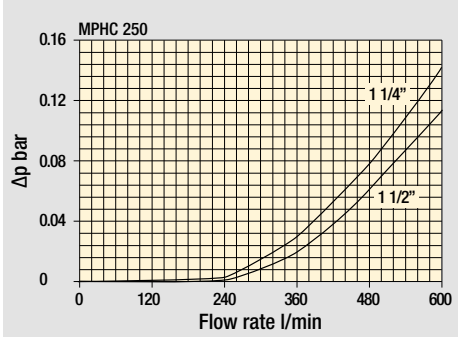
Hydraulic diagram

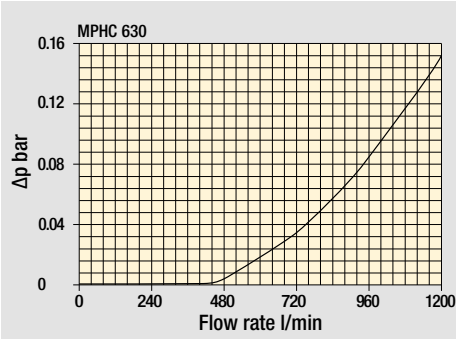
Filter series	Single IN Port	Double IN Port	Triple IN port
MPHC 110	•	•	-
MPHC 114	•	-	-
MPHC 116	•	-	-
MPHC 120	•	•	•
MPHC 250	•	•	-
MPHC 630	•	•	-
MPHC 660	•	-	-
MPHC 850	•	•	-
17 / 25 with bypass 1.75 / 2.5 bar			
00 without bypass			

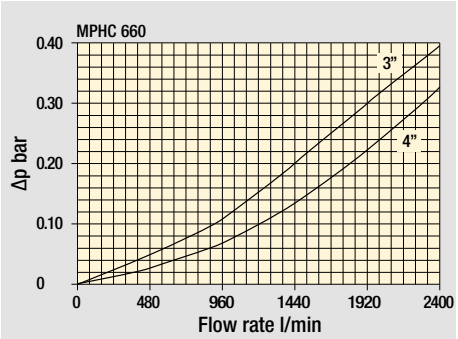
Pressure drop

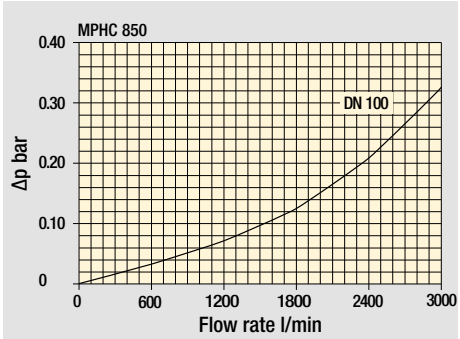
Filter housings Δp pressure drop



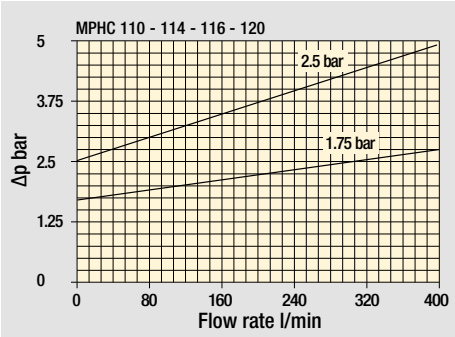


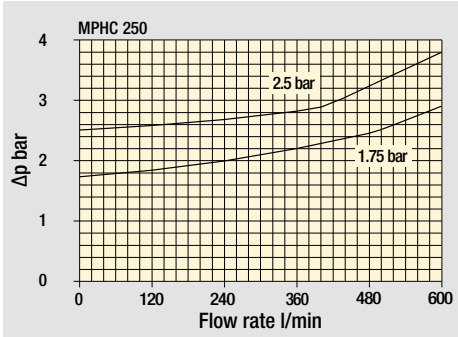


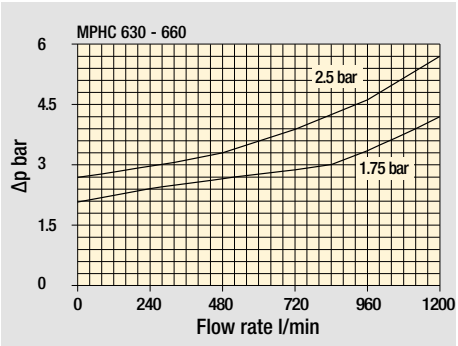


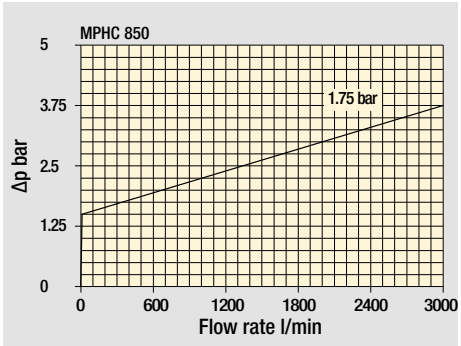


Bypass valve pressure drop

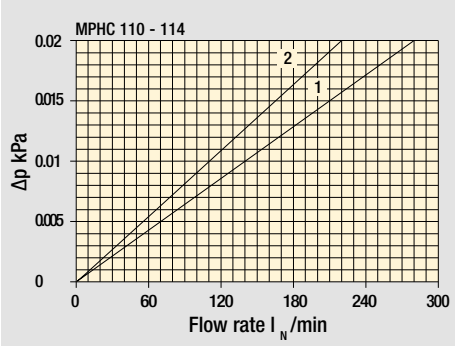








Air breather pressure drop



1 AS With air breather 10 µm
2 AR With anti-splash and SAP50 10 µm

The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

MP FILTRI WWW.SUMY.IR

Designation & Ordering code

COMPLETE FILTER

Example: MPHC | 110 | 50 | A0025 | D | W | 17 | FS012 | 1 | 6T | DA | P01 | NN

Series
MPHC

Size
110

Length
10 | **20** | **30** | **40** | **50**

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp

D	10 bar

Seals and treatments

		A0xxx	M0xxx	P0xxx
A	NBR	•	•	•
V	FPM	•	•	•
W	NBR with filter and components surface treatment	•	•	-
Z	FPM with filter and components surface treatment	•	•	-

By-pass valve

00	Without bypass
17	With bypass 1.75 bar
25	With bypass 2.5 bar

Connections

FG034	G 3/4"	**FN034**	3/4" NPT	**FS012**	SAE 12 - 1 1/16" - 12 UN
FG100	G 1"	**FN100**	1" NPT	**FS016**	SAE 16 - 1 5/16" - 12 UN
FG114	G 1 1/4"	**FN114**	1 1/4" NPT	**FS020**	SAE 20 - 1 5/8" - 12 UN

Additional connections

1	Main connection	FG034 / FG100 / FN114	**G 3/8"**	Main connection	FN034 / FN100 / FN114	**3/8" NPT**	Main connection	FS012 / FS016 / FS020 **SAE 6 - 9/16" 18 UNF**
2	Main connection	FG034 / FG100 / FN114	**G 1/2"**	Main connection	FN034 / FN100 / FN114	**1/2" NPT**	Main connection	FS012 / FS016 / FS020 **SAE 8 - 3/4" 16 UNF**

Connections for clogging indicator
6T With both side indicator connection, with metal plug

Additional features

	Standard	With diffuser	With magnetic filter	With diffuser and magnetic filter
NN	Without air breather	**DA**	**MA**	**DE**
AS	With air breather 10 µm	**DB**	**MS**	**DF**
AR	With anti-splash air breather SAP050 10 µm	**DC**	**MR**	**DG**
AP	With anti-splash air breather SAP050 10 µm, press. 0.5 bar	**DD**	**MP**	**DH**

Execution
P01 Standard catalogue item

Certificates
NN None

CLOGGING INDICATORS

See pages 776-777

BVA	Axial pressure gauge
BVR	Radial pressure gauge
BVP	Visual pressure indicator with automatic reset
BVQ	Visual pressure indicator with manual reset
BEA	Electrical pressure indicator
BEM	Electrical pressure indicator
BLA	Electrical / visual pressure indicator

ACCESSORIES

See page 270

DPT	Dipstick

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Example: MRC | 100 | 50 | A0025 | D | A | 00 | NN | P01 | NN

Series
MRC

Size
100

Length
10 | **20** | **30** | **40** | **50**

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp
D 10 bar

Seals and treatments
A NBR
V FPM

Bypass
00 Without bypass

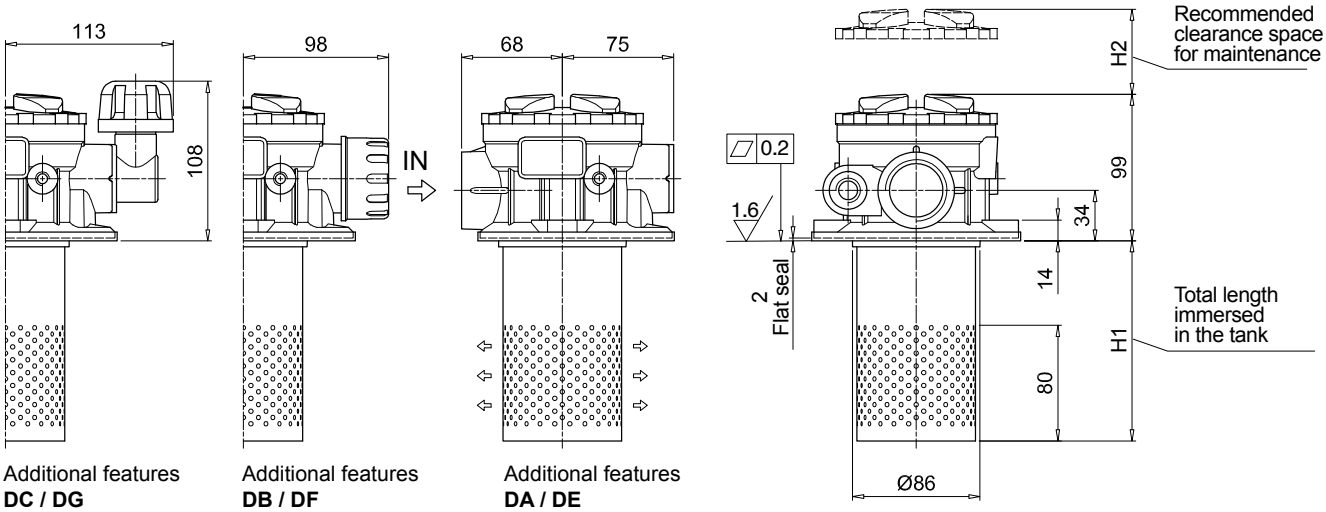
Additional features
NN Without additional features

Execution
P01 Standard catalogue item

Certificates
NN None

Dimensions

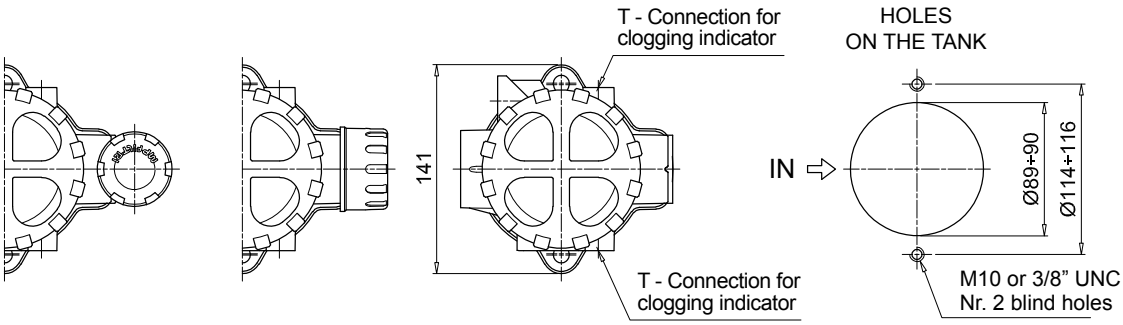
MPHC110 with diffuser		Filter length	H1 [mm]	H2 [mm]
Connection	**T**			
FG034	G 1/8"	**10**	188	255
FG100		**20**	188	255
FG114		**30**	238	305
FN034	1/8" NPT	**40**	338	405
FN100		**50**	438	505
FN114				
FS012	1/8" NPT			
FS016				
FS020				



Additional features
DC / DG
DD / DH

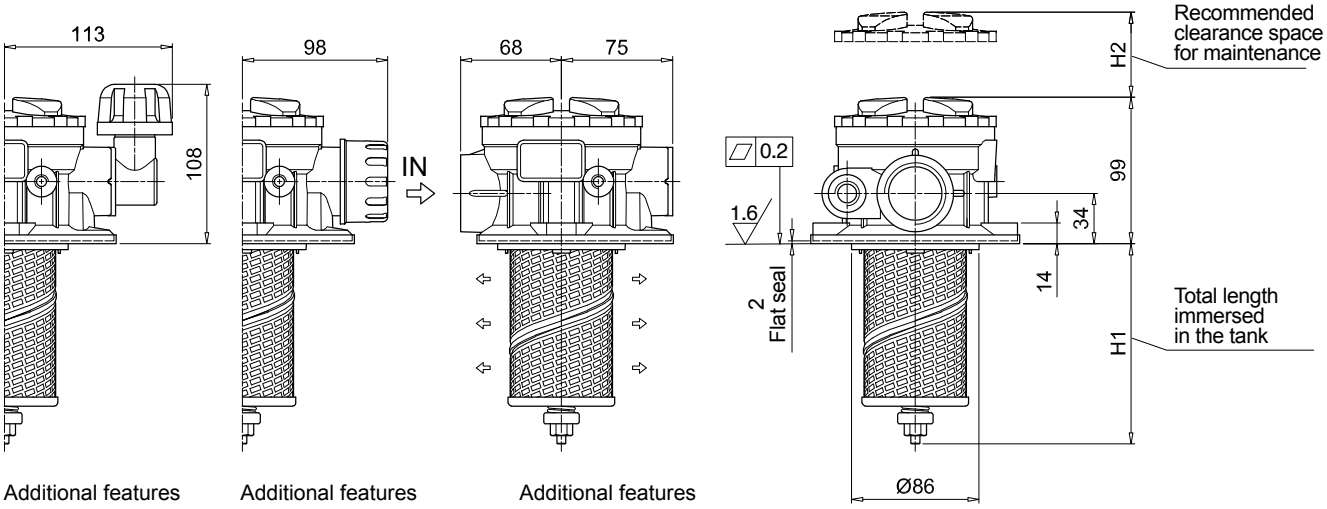
Additional features
DB / DF

Additional features
DA / DE



MP FILTRI WWW.SUMY.IR

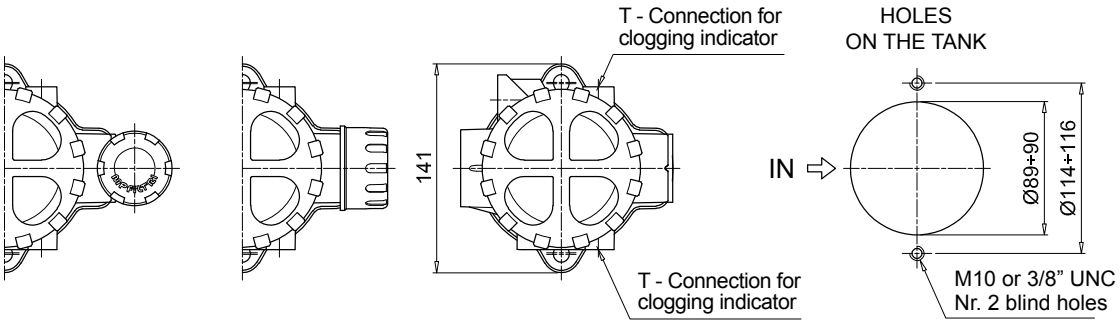
MPHC110 without diffuser				
Connection	**T**	**Filter length**	**H1 [mm]**	**H2 [mm]**
FG034	G 1/8"	**10**	129	190
FG100		**20**	173	235
FG114		**30**	223	285
FN034	1/8" NPT	**40**	323	385
FN100		**50**	423	485
FN114				
FS012	1/8" NPT			
FS016				
FS020				



Additional features
MR / AR
MP / AP

Additional features
MS / AS

Additional features
MA / NN



Designation & Ordering code

COMPLETE FILTER

Example: MPHC | 114 | 50 | A0025 | D | W | 17 | FS012 | 0 | 3T | DA | P01 | NN

Series
MPHC

Size
114

Length
10 | **20** | **30** | **40** | **50**

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp

D	10 bar

Seals and treatments

		A0xxx	M0xxx	P0xxx
A	NBR	•	•	•
V	FPM	•	•	•
W	NBR with filter and components surface treatment	•	•	-
Z	FPM with filter and components surface treatment	•	•	-

By-pass valve

00	Without bypass
17	With bypass 1.75 bar
25	With bypass 2.5 bar

Connections

FG034	G 3/4”	**FN034**	3/4” NPT	**FS012**	SAE 12 - 1 1/16” - 12 UN
FG100	G 1”	**FN100**	1” NPT	**FS016**	SAE 16 - 1 5/16” - 12 UN
FG114	G 1 1/4”	**FN114**	1 1/4” NPT	**FS020**	SAE 20 - 1 5/8” - 12 UN

Additional connections

0	Without additional connections

Connections for clogging indicator

3T	With left indicator connection, with metal plug

Additional features

Standard		With diffuser	With magnetic filter	With diffuser and magnetic filter
NN	Without air breather	**DA**	**MA**	**DE**
AS	With air breather 10 µm	**DB**	**MS**	**DF**
AR	With anti-splash air breather SAP050 10 µm	**DC**	**MR**	**DG**
AP	With anti-splash air breather SAP050 10 µm, press. 0.5 bar	**DD**	**MP**	**DH**

Execution

P01	Standard catalogue item

Certificates

NN	None

CLOGGING INDICATORS

See pages 776-777

BVA	Axial pressure gauge
BVR	Radial pressure gauge
BVP	Visual pressure indicator with automatic reset
BVQ	Visual pressure indicator with manual reset
BEA	Electrical pressure indicator
BEM	Electrical pressure indicator
BLA	Electrical / visual pressure indicator

ACCESSORIES

See page 270

DPT	Dipstick

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Example: MRC | 100 | 50 | A0025 | D | A | 00 | NN | P01 | NN

Series
MRC

Size
100

Length
10 | **20** | **30** | **40** | **50**

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp
D 10 bar

Seals and treatments
A NBR
V FPM

Bypass
00 Without bypass

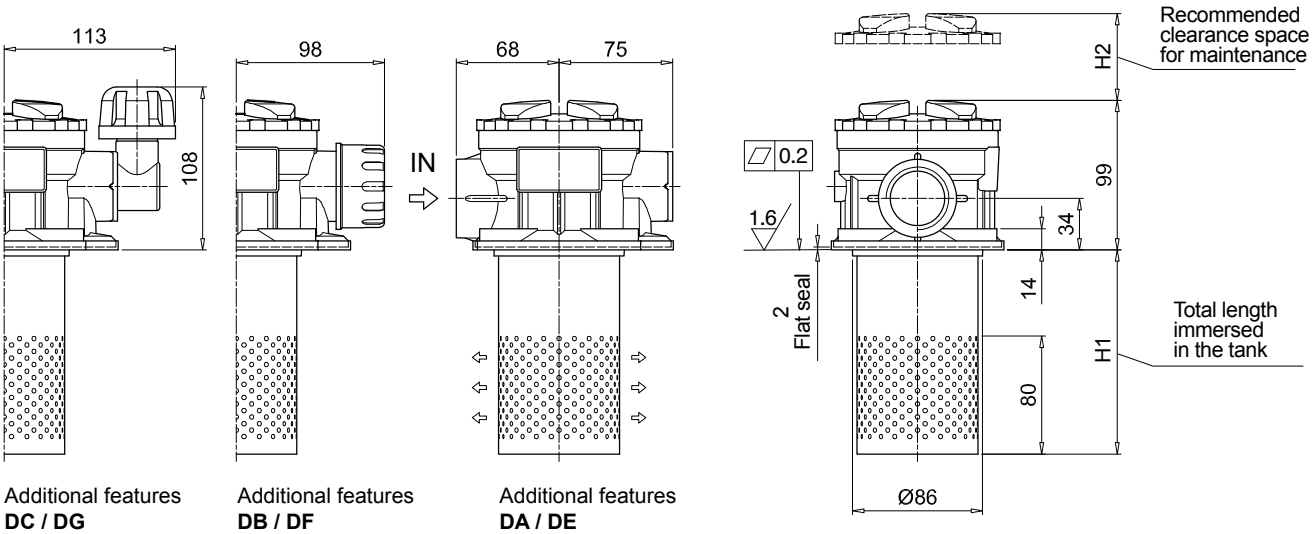
Additional features
NN Without additional features

Execution
P01 Standard catalogue item

Certificates
NN None

Dimensions

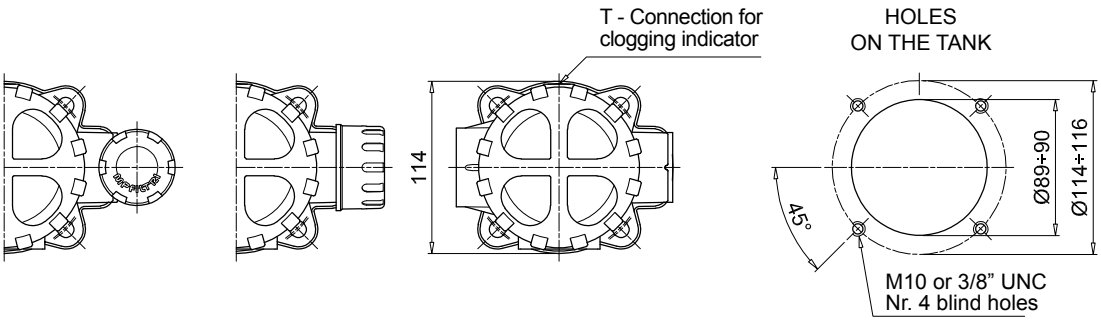
MPHC114 with diffuser				
Connection	**T**	**Filter length**	**H1 [mm]**	**H2 [mm]**
FG034	G 1/8”	**10**	188	255
FG100		**20**	188	255
FG114		**30**	238	305
FN034	1/8” NPT	**40**	338	405
FN100		**50**	438	505
FN114				
FS012	1/8” NPT			
FS016				
FS020				



Additional features
DC / DG
DD / DH

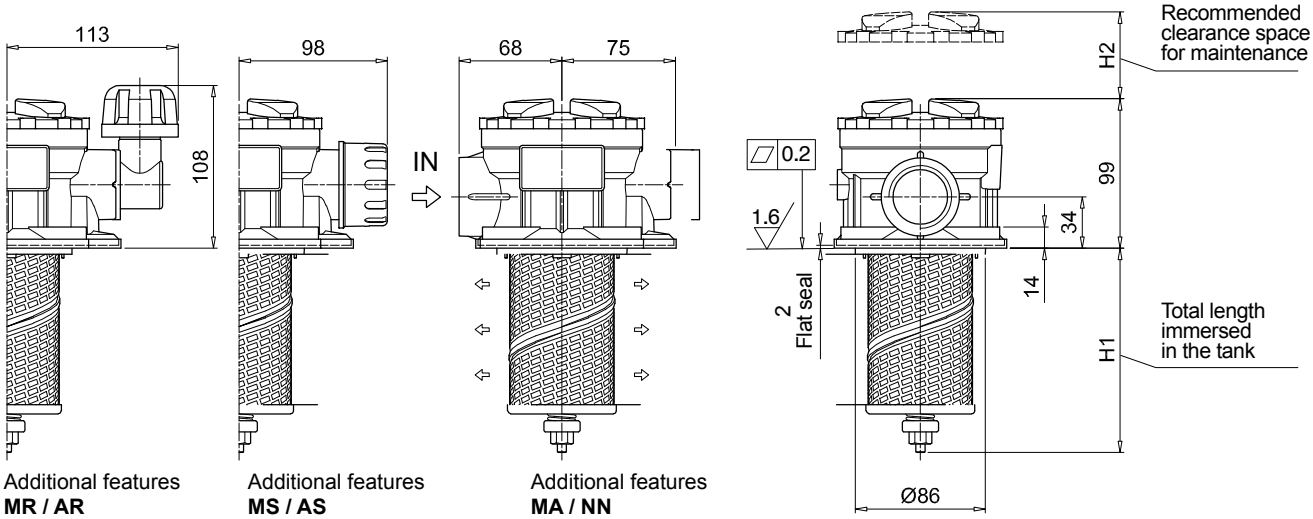
Additional features
DB / DF

Additional features
DA / DE



MP FILTRI WWW.SUMY.IR

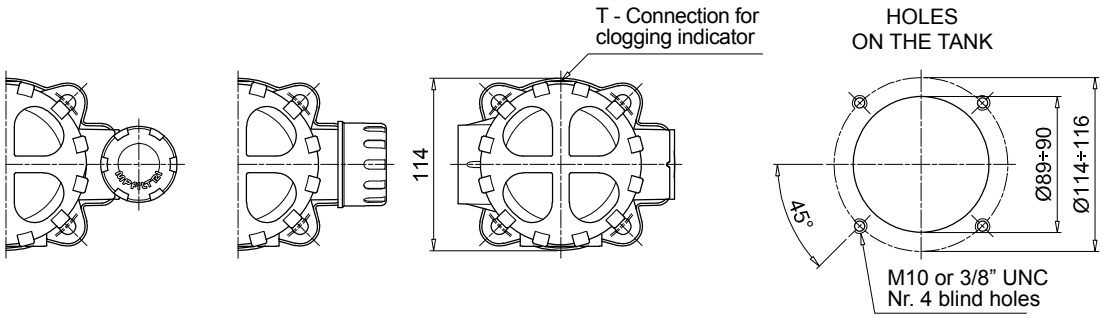
MPHC114 without diffuser				
Connection	**T**	**Filter length**	**H1 [mm]**	**H2 [mm]**
FG034	G 1/8"	**10**	129	190
FG100		**20**	173	235
FG114		**30**	223	285
FN034	1/8" NPT	**40**	323	385
FN100		**50**	423	485
FN114				
FS012	1/8" NPT			
FS016				
FS020				



Additional features
MR / AR
MP / AP

Additional features
MS / AS

Additional features
MA / NN



Designation & Ordering code

COMPLETE FILTER

Example:	MPHC	116	50	A0025	D	W	17	FS012	0	3T	DA	P01	NN

Series
MPHC

Size
116

Length
10 | **20** | **30** | **40** | **50**

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp
D 10 bar

Seals and treatments

		A0xxx	M0xxx	P0xxx
A	NBR	•	•	•
V	FPM	•	•	•
W	NBR with filter and components surface treatment	•	•	-
Z	FPM with filter and components surface treatment	•	•	-

Flat seal on head on request

By-pass valve

00	Without bypass
17	With bypass 1.75 bar
25	With bypass 2.5 bar

Connections

FG034	G 3/4”	**FN034**	3/4” NPT	**FS012**	SAE 12 - 1 1/16” - 12 UN
FG100	G 1”	**FN100**	1” NPT	**FS016**	SAE 16 - 1 5/16” - 12 UN
FG114	G 1 1/4”	**FN114**	1 1/4” NPT	**FS020**	SAE 20 - 1 5/8” - 12 UN

Additional connections
0 Without additional connections

Connections for clogging indicator
3T With left indicator connection, with metal plug

Additional features

DA	With diffuser
DE	With diffuser and magnetic filter
MA	With magnetic filter
NN	Without additional features

Execution
P01 Standard catalogue item

Certificates
NN None

CLOGGING INDICATORS

See pages 776-777

BVA	Axial pressure gauge	**BEA**	Electrical pressure indicator
BVR	Radial pressure gauge	**BEM**	Electrical pressure indicator
BVP	Visual pressure indicator with automatic reset	**BLA**	Electrical / visual pressure indicator
BVQ	Visual pressure indicator with manual reset		

ACCESSORIES

See page 270

DPT Dipstick

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Example: MRC | 100 | 50 | A0025 | D | A | 00 | NN | P01 | NN

Series
MRC

Size
100

Length
10 | **20** | **30** | **40** | **50**

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp
D 10 bar

Seals and treatments
A NBR
V FPM

Bypass
00 Without bypass

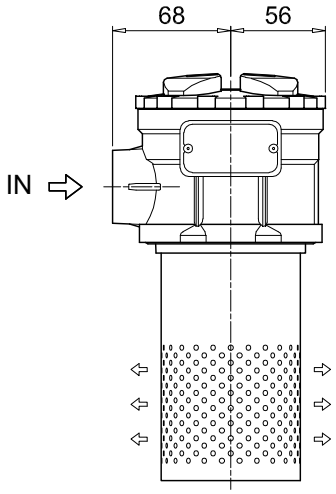
Additional features
NN Without additional features

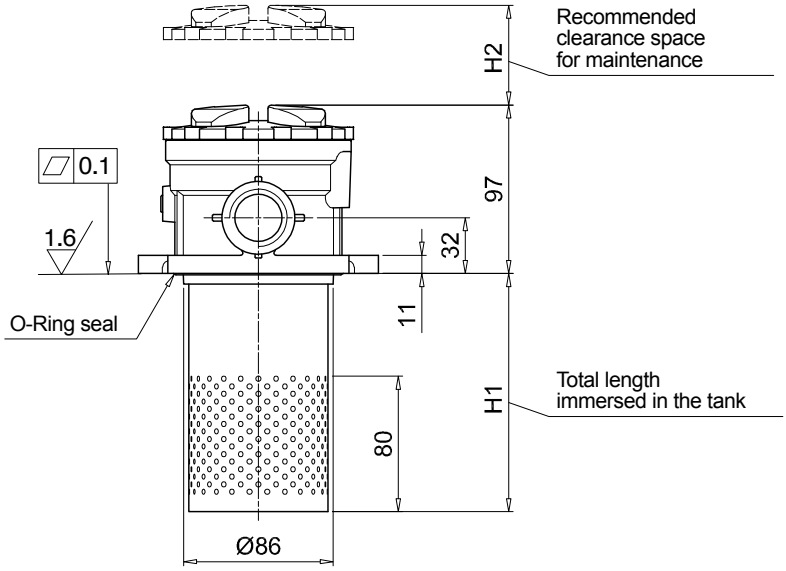
Execution
P01 Standard catalogue item

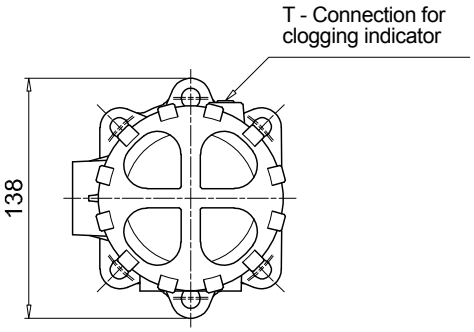
Certificates
NN None

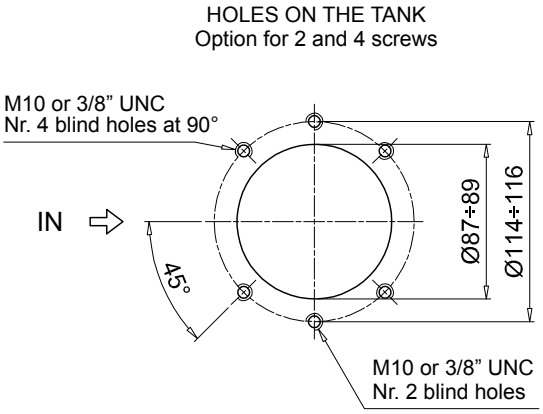
Dimensions

MPHC116				
Additional features **DA / DE**		with diffuser		
Connection	**T**	**Filter length**	**H1 [mm]**	**H2 [mm]**
FG034	G 1/8”	**10**	190	255
FG100		**20**	190	255
FG114		**30**	240	305
FN034	1/8” NPT	**40**	340	405
FN100		**50**	440	505
FN114				
FS012	1/8” NPT			
FS016				
FS020				



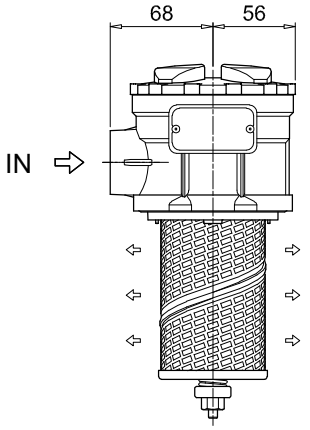


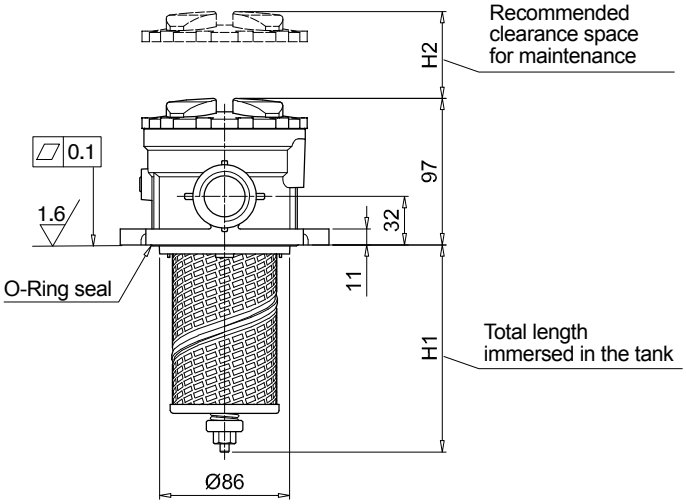


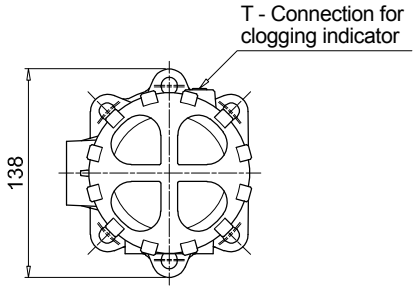


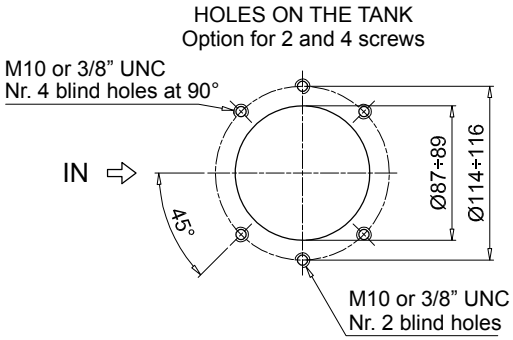
MP FILTRI WWW.SUMY.IR

MPHC116				
Additional features **MA / NN**		**without diffuser**		
Connection	**T**	**Filter length**	**H1 [mm]**	**H2 [mm]**
FG034	G 1/8"	**10**	131	190
FG100		**20**	175	235
FG114		**30**	225	285
FN034	1/8" NPT	**40**	325	385
FN100		**50**	425	485
FN114				
FS012	1/8" NPT			
FS016				
FS020				









Designation & Ordering code

COMPLETE FILTER

Example: MPHC | 120 | 50 | A0025 | D | W | 17 | FS012 | 1 | 6T | DA | P01 | NN

Series
MPHC

Size
120

Length
10 | 20 | 30 | 40 | 50

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp

D	10 bar

Seals and treatments

		A0xxx	M0xxx	P0xxx
A	NBR	•	•	•
V	FPM	•	•	•
W	NBR with filter and components surface treatment	•	•	-
Z	FPM with filter and components surface treatment	•	•	-

By-pass valve

00	Without bypass
17	With bypass 1.75 bar
25	With bypass 2.5 bar

Connections

FG034	G 3/4"	**FN034**	3/4" NPT	**FS012**	SAE 12 - 1 1/16" - 12 UN
FG100	G 1"	**FN100**	1" NPT	**FS016**	SAE 16 - 1 5/16" - 12 UN
FG114	G 1 1/4"	**FN114**	1 1/4" NPT	**FS020**	SAE 20 - 1 5/8" - 12 UN

Additional connections

1	Main connection	FG034 FG100 FN114	**G 3/8"**	Main connection	FN034 FN100 FN114	**3/8" NPT**	Main connection	FS012 FS016 FS020	**SAE 6 - 9/16" 18 UNF**
2	Main connection	FG034 FG100 FN114	**G 1/2"**	Main connection	FN034 FN100 FN114	**1/2" NPT**	Main connection	FS012 FS016 FS020	**SAE 8 - 3/4" 16 UNF**

Connections for clogging indicator

6T	With both side indicator connections, with metal plugs

Additional features

DA	With diffuser
DE	With diffuser and magnetic filter
MA	With magnetic filter
NN	Without additional features

Execution

P01	Standard catalogue item

Certificates

NN	None

CLOGGING INDICATORS

See pages 776-777

BVA	Axial pressure gauge
BVR	Radial pressure gauge
BVP	Visual pressure indicator with automatic reset
BVQ	Visual pressure indicator with manual reset
BEA	Electrical pressure indicator
BEM	Electrical pressure indicator
BLA	Electrical / visual pressure indicator

ACCESSORIES

See page 270

DPT	Dipstick

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Example: MRC | 100 | 50 | A0025 | D | A | 00 | NN | P01 | NN

Series
MRC

Size
100

Length
10 | **20** | **30** | **40** | **50**

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp
D 10 bar

Seals and treatments
A NBR
V FPM

Bypass
00 Without bypass

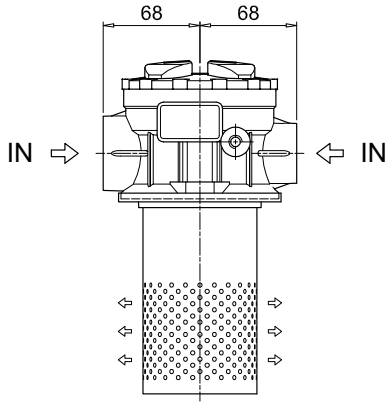
Additional features
NN Without additional features

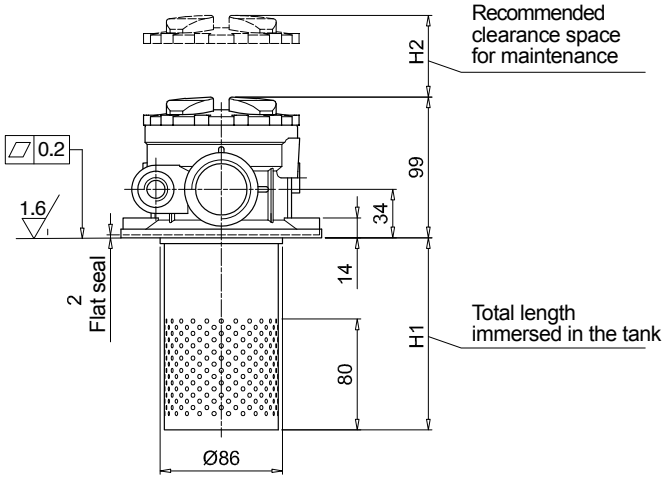
Execution
P01 Standard catalogue item

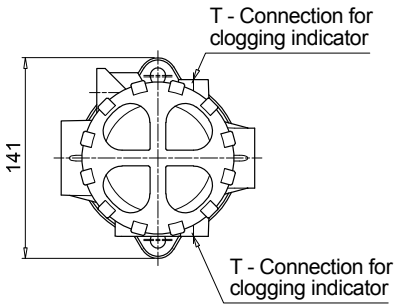
Certificates
NN None

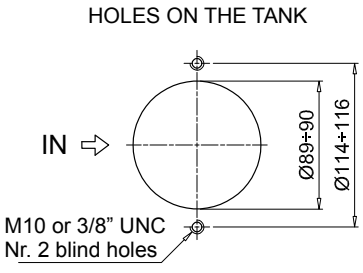
Dimensions

MPHC120				
Additional features **DA / DE**		with diffuser		
Connection	**T**	**Filter length**	**H1 [mm]**	**H2 [mm]**
FG034	G 1/8"	**10**	188	255
FG100		**20**	188	255
FG114		**30**	238	305
FN034	1/8" NPT	**40**	338	405
FN100		**50**	438	505
FN114				
FS012	1/8" NPT			
FS016				
FS020				

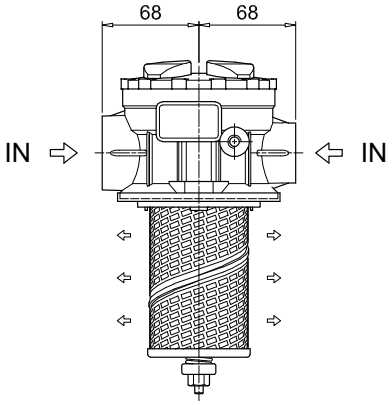


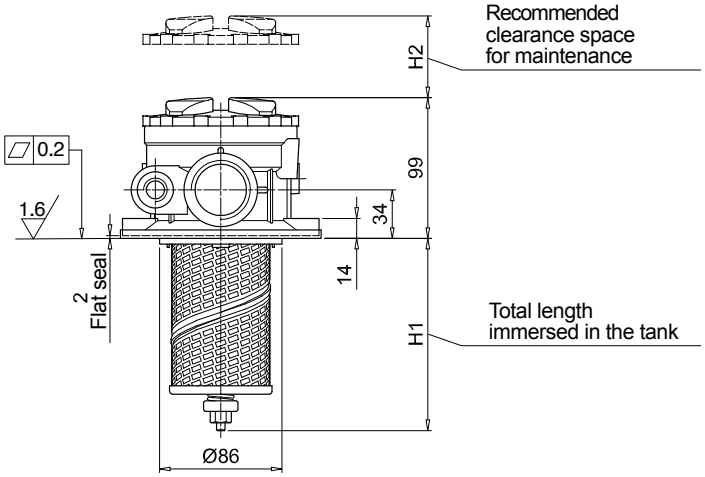


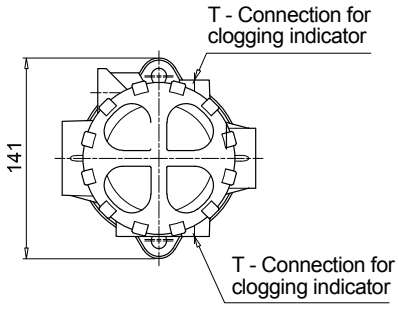


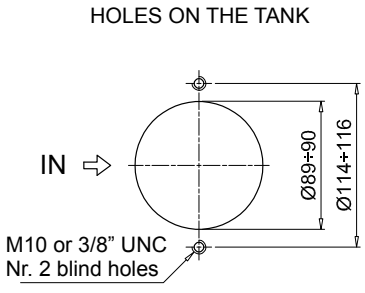


MPHC120				
Additional features **MA / NN**		**without diffuser**		
Connection	**T**	**Filter length**	**H1 [mm]**	**H2 [mm]**
FG034	G 1/8"	**10**	129	190
FG100		**20**	173	235
FG114		**30**	223	285
FN034	1/8" NPT	**40**	323	385
FN100		**50**	423	485
FN114				
FS012	1/8" NPT			
FS016				
FS020				









Designation & Ordering code

COMPLETE FILTER

Example: MPHC | 250 | 30 | M0090 | D | V | 25 | FS024 | 1 | 9T | DA | P01 | NN

Series
MPHC

Size
250

Length
10 | **20** | **30** | **40**

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp

D	10 bar

Seals and treatments

		A0xxx	M0xxx	P0xxx
A	NBR	•	•	•
V	FPM	•	•	•
W	NBR with filter and components surface treatment	•	•	-
Z	FPM with filter and components surface treatment	•	•	-

By-pass valve

00	Without bypass
17	With bypass 1.75 bar
25	With bypass 2.5 bar

Connections

FG112 G 1 1/2" **FN112** 1 1/2" NPT **FS024** SAE 24 - 1 7/8" - 12 UN **FE112** 1 1/2" SAE 3000 psi/M **FF112** 1 1/2" SAE 3000 psi/UNC

Additional connections

0	Without additional connections		
1	Main connection	FG112	**G 1 1/4"**
		FN112	**1 1/4" NPT**
		FS024	**SAE 20 - 1 5/8" - 12 UN**
		FE112	**1 1/4" SAE 3000 psi/M**
		FF112	**1 1/4" SAE 3000 psi/UNC**

Connections for clogging indicator

9T	With multiple indicator connections, with metal plugs

Additional features

DA	With diffuser
DE	With diffuser and magnetic filter
MA	With magnetic filter
NN	Without additional features

Execution

P01	Standard catalogue item

Certificates

NN	None

CLOGGING INDICATORS

See pages 776-777

BVA	Axial pressure gauge
BVR	Radial pressure gauge
BVP	Visual pressure indicator with automatic reset
BVQ	Visual pressure indicator with manual reset
BEA	Electrical pressure indicator
BEM	Electrical pressure indicator
BLA	Electrical / visual pressure indicator

ACCESSORIES

See page 270

DPT	Dipstick

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Example: MRC | 250 | 30 | M0090 | D | V | 00 | NN | P01 | NN

Series
MRC

Size
250

Length
10 | **20** | **30** | **40**

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp
D 10 bar

Seals and treatments
A NBR
V FPM

Bypass
00 Without bypass

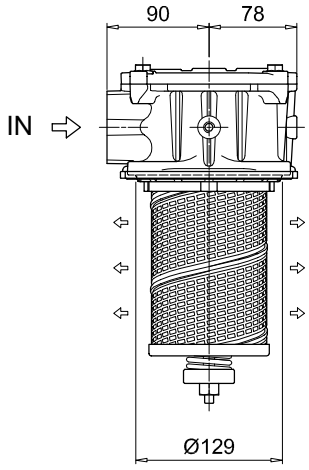
Additional features
NN Without additional features

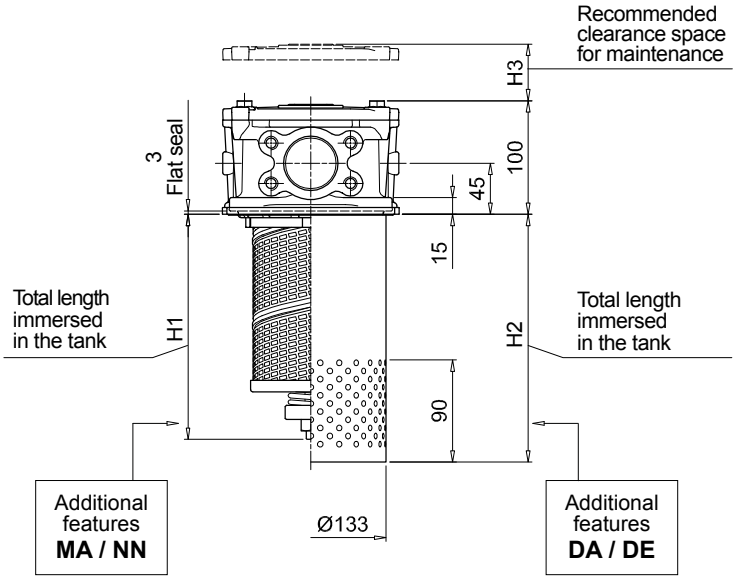
Execution
P01 Standard catalogue item

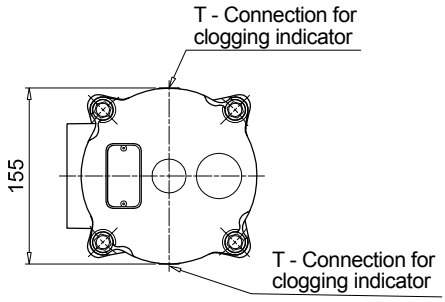
Certificates
NN None

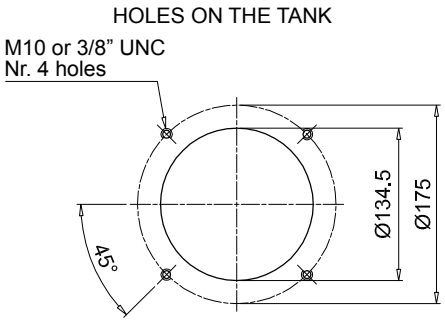
Dimensions

MPHC250					
Additional connection “0”					
Connection	**T**	**Filter length**	**H1 [mm]**	**H2 [mm]**	**H3 [mm]**
FG112	G 1/8”	**10**	182	247	255
FN112	1/8” NPT	**20**	231	247	305
FS024	1/8” NPT	**30**	302	317	375
FE112	G 1/8”	**40**	502	507	580
FF112	1/8” NPT				



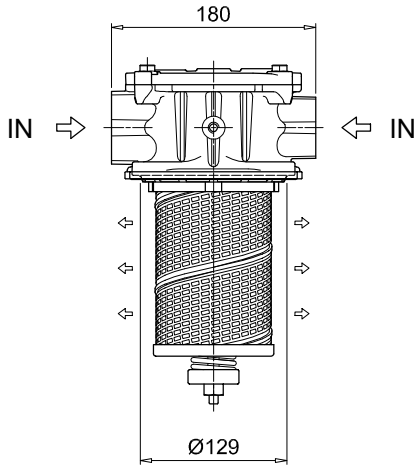


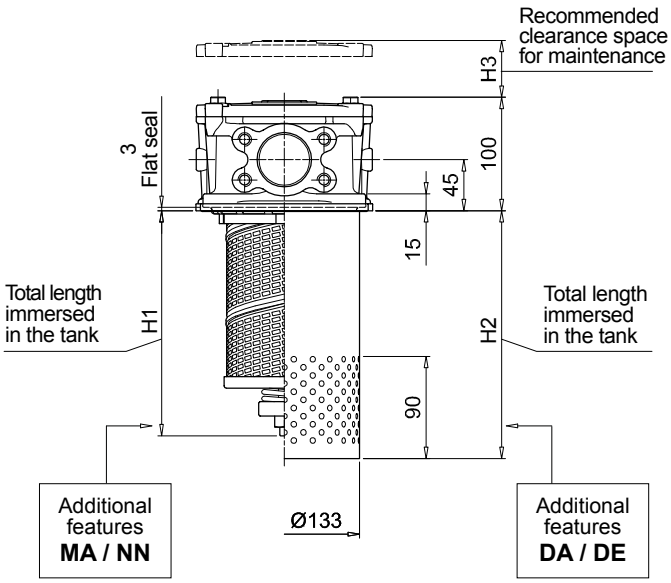


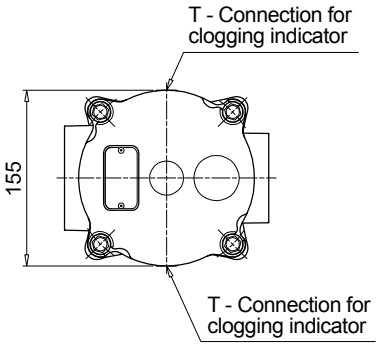


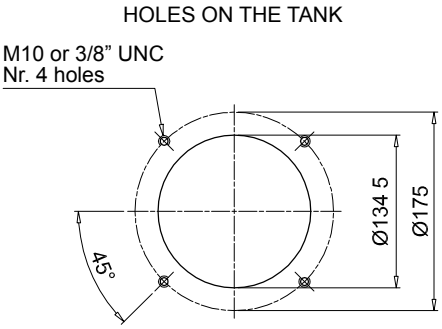
MP FILTRI WWW.SUMY.IR

MPHC250					
Additional connection "1"					
Connection	**T**	**Filter length**	**H1 [mm]**	**H2 [mm]**	**H3 [mm]**
FG112	G 1/8"	**10**	182	247	255
FN112	1/8" NPT	**20**	231	247	305
FS024	1/8" NPT	**30**	302	317	375
FE112	G 1/8"	**40**	502	507	580
FF112	1/8" NPT				









Designation & Ordering code

COMPLETE FILTER

Example: MPHC | 630 | 50 | A0025 | D | W | 17 | FE212 | 1 | 6T | DA | P01 | NN

Series
MPHC

Size
630

Length
10 | 20 | 30 | 40 | 50

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp
D 10 bar

Seals and treatments

		A0xxx	M0xxx	P0xxx
A	NBR	•	•	•
V	FPM	•	•	•
W	NBR with filter and components surface treatment	•	•	-
Z	FPM with filter and components surface treatment	•	•	-

By-pass valve

00	Without bypass
17	With bypass 1.75 bar
25	With bypass 2.5 bar

Connections

FE212	2 1/2” SAE 3000 psi/M
FF212	2 1/2” SAE 3000 psi/UNC

Additional connections

0	Without additional connections		
1	Main connection	FE212	**2” SAE 3000 psi/M**
		FF212	**2” SAE 3000 psi/UNC**

Connections for clogging indicator
6T With both side indicator connection, with metal plug

Additional features

DA	With diffuser
DE	With diffuser and magnetic filter
MA	With magnetic filter
NN	Without additional features

Execution
P01 Standard catalogue item

Certificates
NN None

CLOGGING INDICATORS

See pages 776-777

BVA	Axial pressure gauge
BVR	Radial pressure gauge
BVP	Visual pressure indicator with automatic reset
BVQ	Visual pressure indicator with manual reset
BEA	Electrical pressure indicator
BEM	Electrical pressure indicator
BLA	Electrical / visual pressure indicator

ACCESSORIES

See page 270

DPT Dipstick

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Example: MRC | 630 | 50 | A0025 | D | A | 00 | NN | P01 | NN

Series
MRC

Size
630

Length
10 | **20** | **30** | **40** | **50**

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp
D 10 bar

Seals and treatments
A NBR
V FPM

Bypass
00 Without bypass

Additional features
NN Without additional features

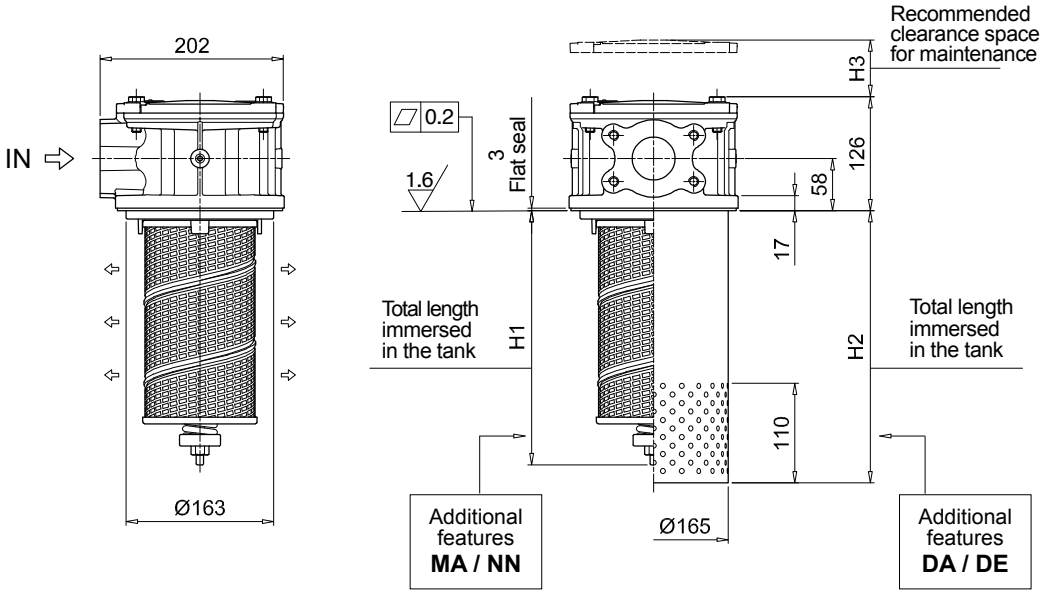
Execution
P01 Standard catalogue item

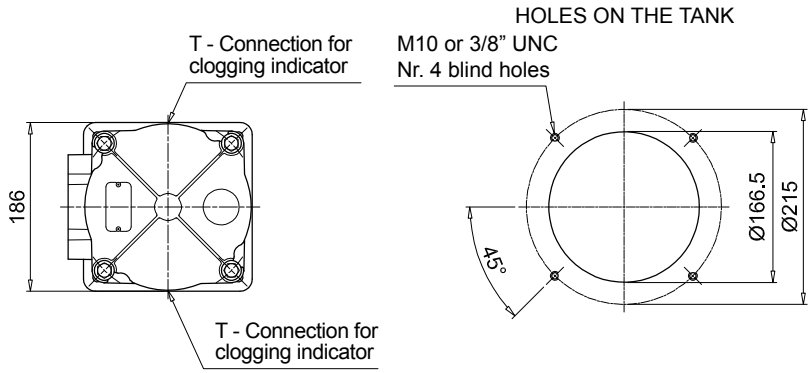
Certificates
NN None

Dimensions

MPHC630	
Additional connection “0”	
Connection	**T**
FE212	G 1/8”
FF212	1/8” NPT

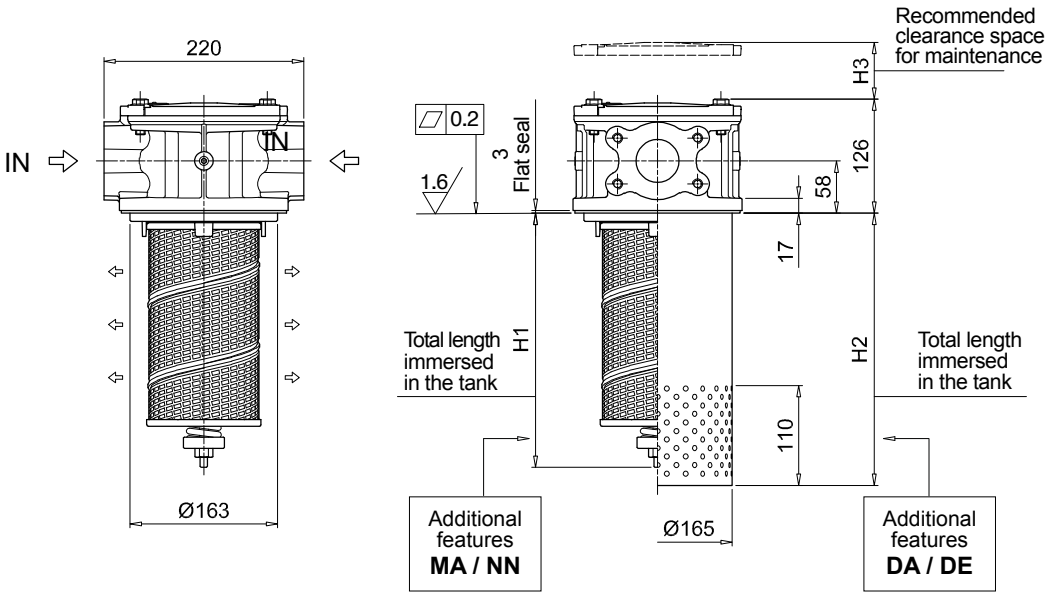
Filter length	H1 [mm]	H2 [mm]	H3 [mm]
10	260	278	330
20	340	358	410
30	440	458	510
40	528	548	600
50	829	848	900

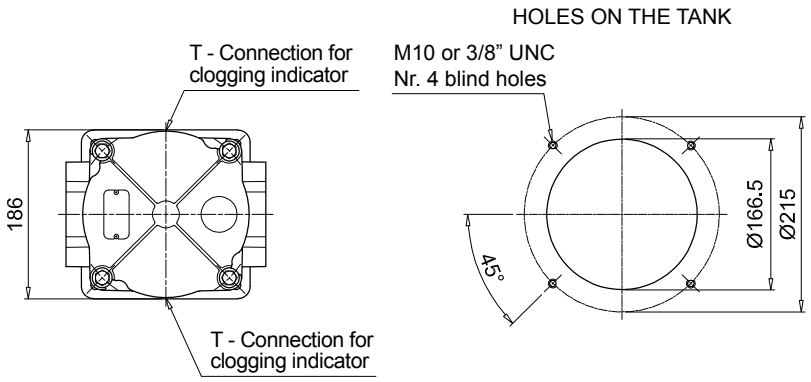




MPHC630	
Additional connection "1"	
Connection	**T**
FE212	G 1/8"
FF212	1/8" NPT

Filter length	H1 [mm]	H2 [mm]	H3 [mm]
10	260	278	330
20	340	358	410
30	440	458	510
40	528	548	600
50	829	848	900





Designation & Ordering code

COMPLETE FILTER

Example: MPHC | 660 | 40 | A0025 | D | W | 17 | FE300 | 0 | 9T | DA | P01 | NN

Series
MPHC

Size
660

Length
40 | **50**

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp
D 10 bar

Seals and treatments

		A0xxx	M0xxx	P0xxx
A	NBR	•	•	•
V	FPM	•	•	•
W	NBR with filter and components surface treatment	•	•	-
Z	FPM with filter and components surface treatment	•	•	-

By-pass valve
00 Without bypass
17 With bypass 1.75 bar
25 With bypass 2.5 bar

Connections
FE300 3” SAE 3000 psi/M
FE400 4” SAE 3000 psi/M

Additional connections
0 Without additional connections

Connections for clogging indicator
9T With multiple indicator connections, with metal plugs

Additional features
DA With diffuser
DE With diffuser and magnetic filter
MA With magnetic filter
NN Without additional features

Execution
P01 Standard catalogue item

Certificates
NN None

CLOGGING INDICATORS

See pages 776-777

BVA Axial pressure gauge
BVR Radial pressure gauge
BVP Visual pressure indicator with automatic reset
BVQ Visual pressure indicator with manual reset
BEA Electrical pressure indicator
BEM Electrical pressure indicator
BLA Electrical / visual pressure indicator

ACCESSORIES

See page 270

DPT Dipstick

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Example: MRC | 630 | 40 | A0025 | D | A | 00 | NN | P01 | NN

Series
MRC

Size
630

Length
40 | **50**

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp
D 10 bar

Seals and treatments
A NBR
V FPM

Bypass
00 Without bypass

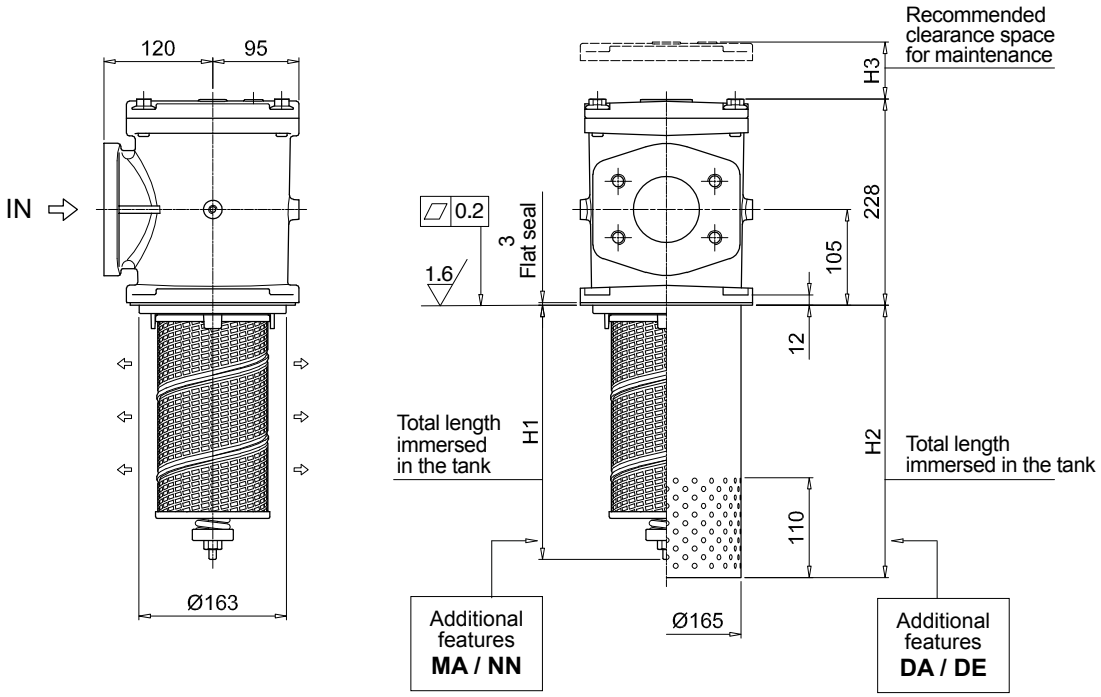
Additional features
NN Without additional features

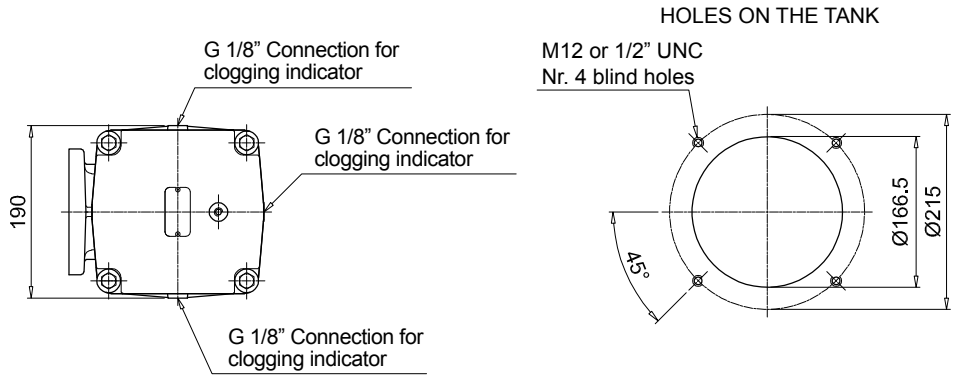
Execution
P01 Standard catalogue item

Certificates
NN None

Dimensions

MPHC660			
Filter length	**H1 [mm]**	**H2 [mm]**	**H3 [mm]**
40	538	548	610
50	838	848	910





MP FILTRI WWW.SUMY.IR

Designation & Ordering code

COMPLETE FILTER

Example: MPHC | 850 | 20 | A0025 | D | W | 17 | FE300 | 1 | 1T | DA | P01 | NN

Series
MPHC

Size
850

Length
10 | 20 | 30 | 40

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp

D	10 bar

Seals and treatments

		A0xxx	M0xxx	P0xxx
A	NBR	•	•	•
V	FPM	•	•	•
W	NBR with filter and components surface treatment	•	•	-
Z	FPM with filter and components surface treatment	•	•	-

By-pass valve

00	Without bypass
17	With bypass 1.75 bar

Connections

FE300	3” SAE 3000 psi/M
FF300	3” SAE 3000 psi/UNC

Additional connections

0	Without additional connections		
1	Main connection	FE300	**4” SAE 3000 psi/M**
		FF300	**4” SAE 3000 psi/UNC**
2	Main connection	FE300	**UNI 2223**
		FF300	**DN 100 PN 10/16**

Connections for clogging indicator

1T	With top indicator connection, with metal plug

Additional features

DA	With diffuser
DE	With diffuser and magnetic filter
MA	With magnetic filter
NN	Without additional features

Execution

P01	Standard catalogue item

Certificates

NN	None

CLOGGING INDICATORS

See pages 776-777

BVA	Axial pressure gauge
BVR	Radial pressure gauge
BVP	Visual pressure indicator with automatic reset
BVQ	Visual pressure indicator with manual reset
BEA	Electrical pressure indicator
BEM	Electrical pressure indicator
BLA	Electrical / visual pressure indicator

ACCESSORIES

See page 270

DPT	Dipstick

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Example: MRC | 850 | 20 | A0025 | D | A | 00 | NN | P01 | NN

Series
MRC

Size
850

Length
10 | **20** | **30** | **40**

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp
D 10 bar

Seals and treatments
A NBR
V FPM

Bypass
00 Without bypass

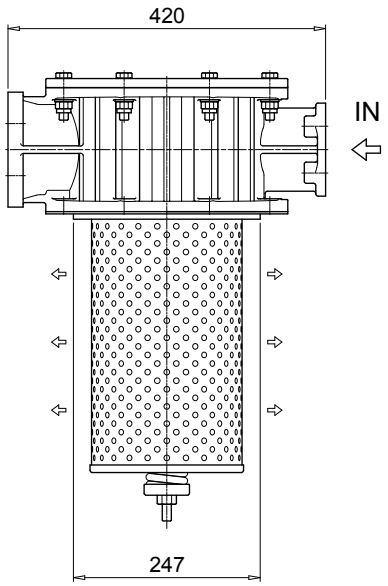
Additional features
NN Without additional features

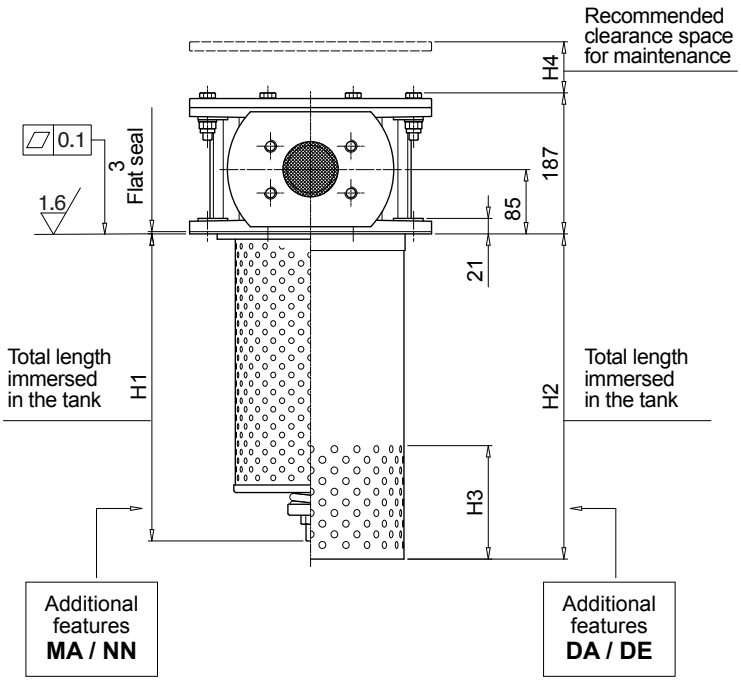
Execution
P01 Standard catalogue item

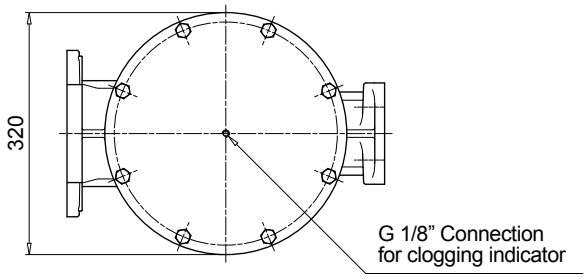
Certificates
NN None

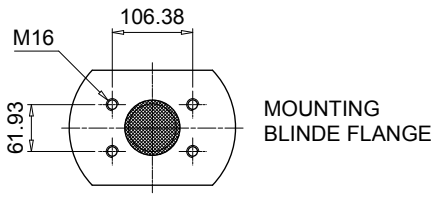
Dimensions

MPHC850				
Additional connection "0"				
Filter length	**H1 [mm]**	**H2 [mm]**	**H3 [mm]**	**H4 [mm]**
10	383	419	150	515
20	598	634	150	730
30	878	914	250	1010
40	1143	1179	250	1275

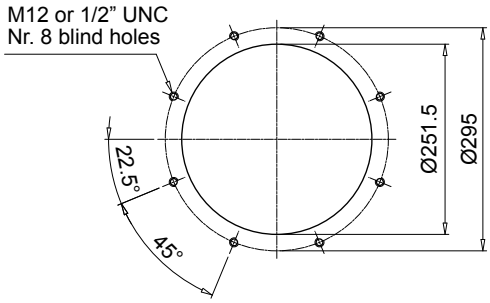






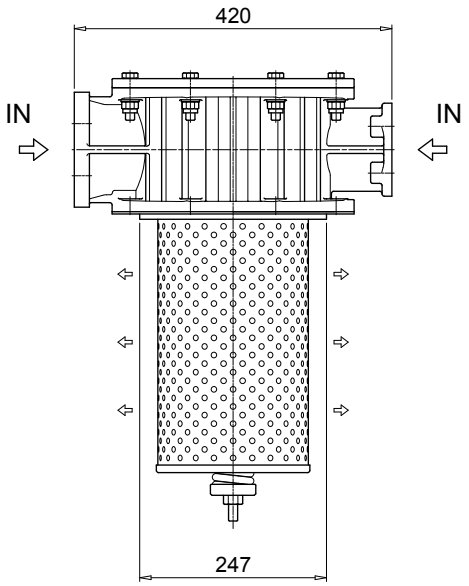


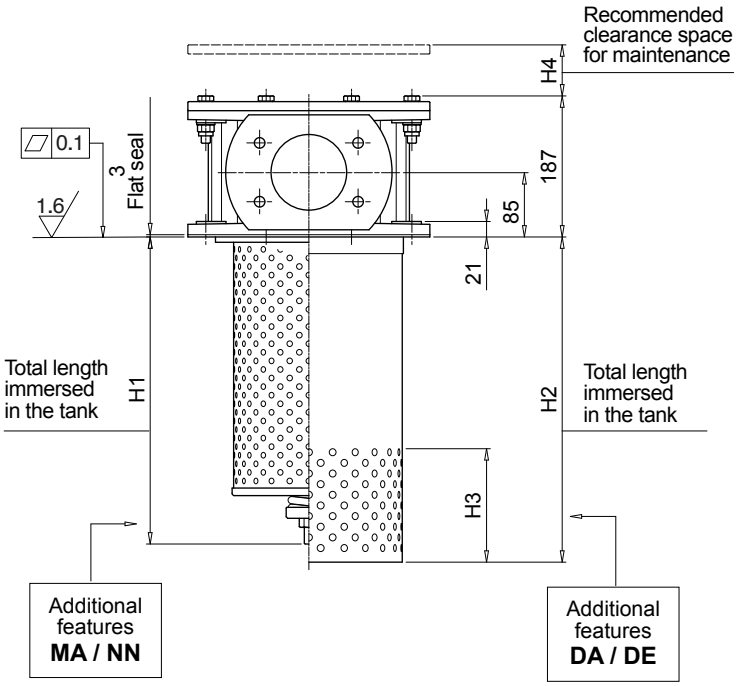
HOLES ON THE TANK

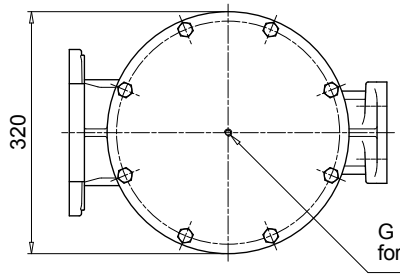


MP FILTRI WWW.SUMY.IR

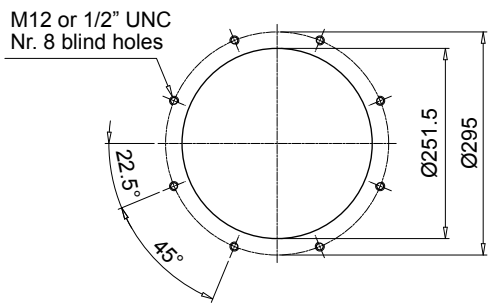
MPHC850				
Additional connection "1"				
Filter length	**H1 [mm]**	**H2 [mm]**	**H3 [mm]**	**H4 [mm]**
10	383	419	150	515
20	598	634	150	730
30	878	914	250	1010
40	1143	1179	250	1275





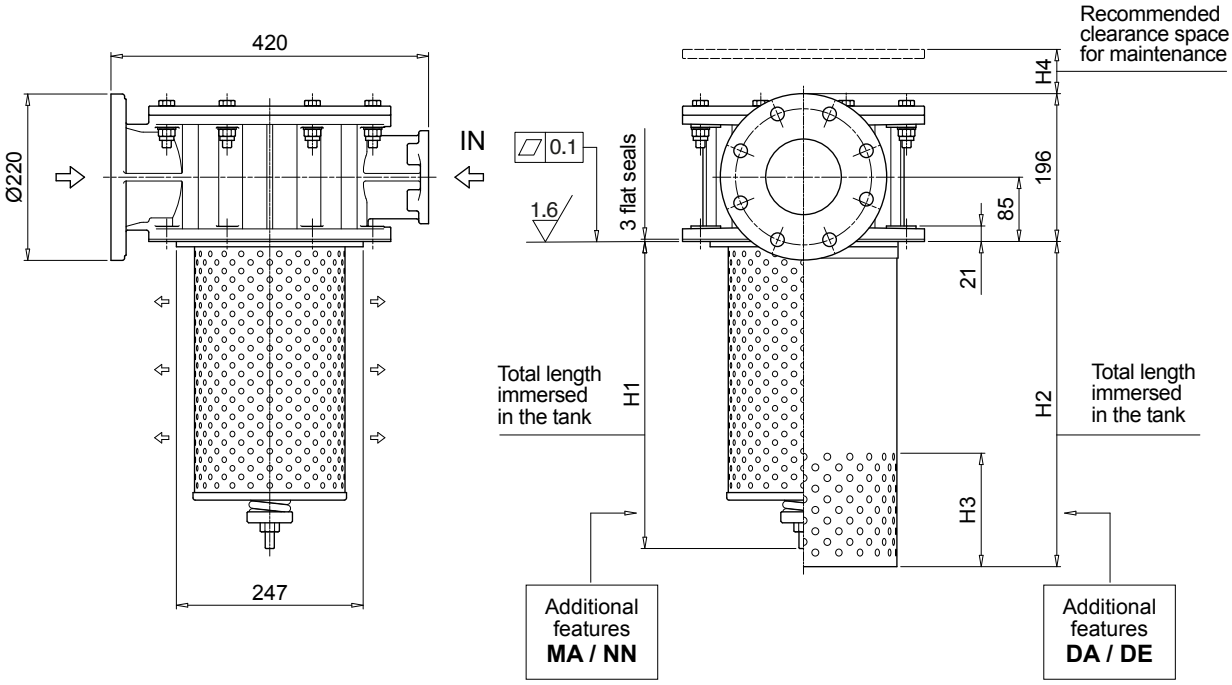


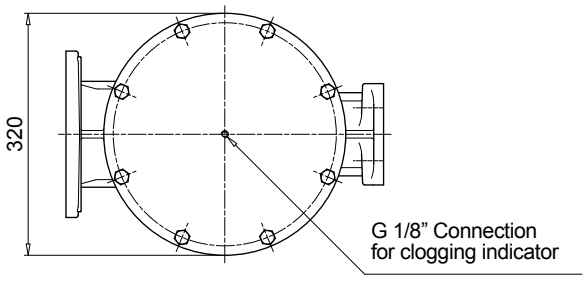
HOLES ON THE TANK



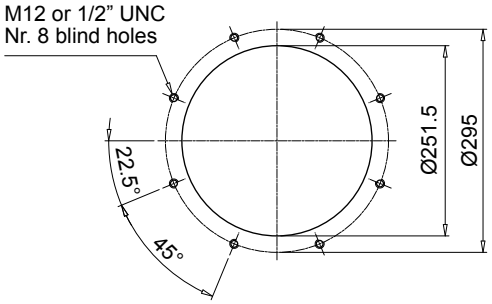
Dimensions

MPHC850				
Additional connection "2"				
Filter length	**H1 [mm]**	**H2 [mm]**	**H3 [mm]**	**H4 [mm]**
10	383	419	150	510
20	598	634	150	725
30	878	914	250	1005
40	1143	1179	250	1270





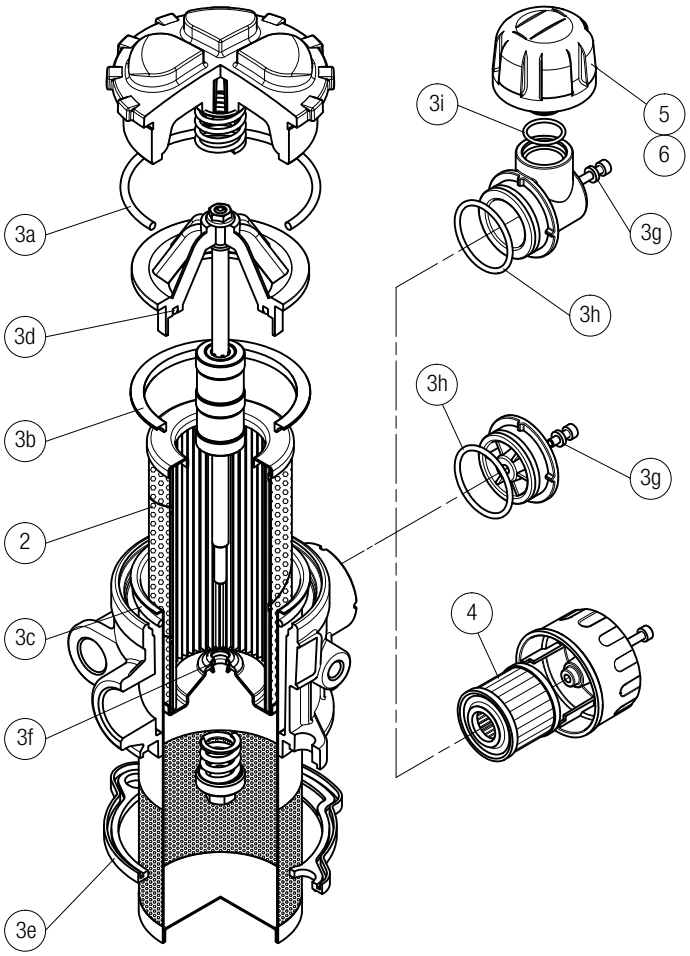
HOLES ON THE TANK



MP FILTRI WWW.SUMY.IR

Order number for spare parts

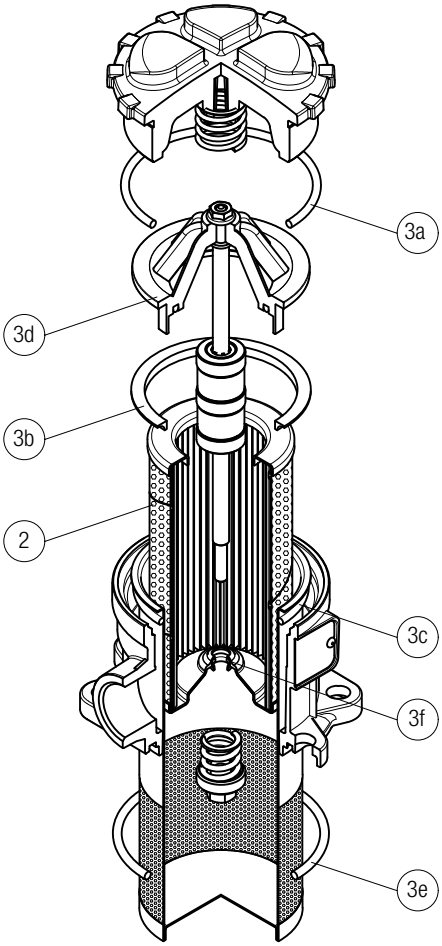
MPHC 110 - 114



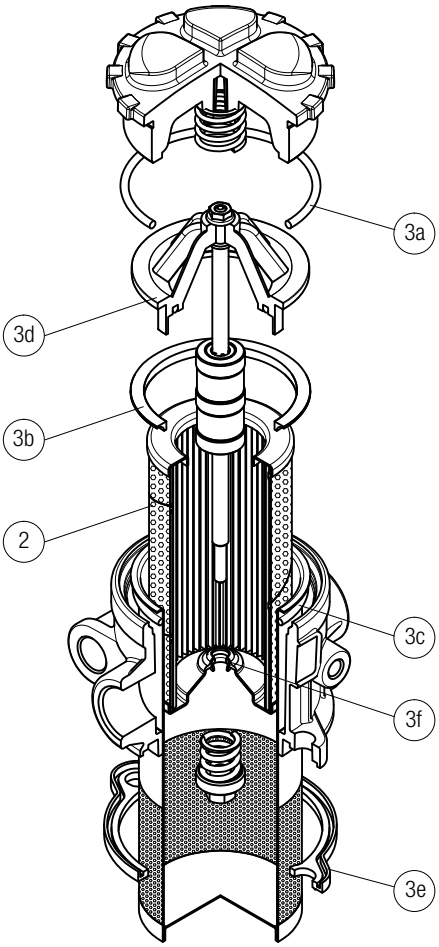
Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3i)		Q.ty: 1 pc. (4)	Q.ty: 1 pc. (5)	Q.ty: 1 pc. (6)
Filter series	Filter element	Seal Kit code number		Air breather filter element - version:		
		NBR	FPM	C	D	P
MPHC 110	See order table	AK021000354	AK021000355	10 µm	10 µm	10 µm
MPHC 114		AK021000371	AK021000372	A3L03	SAP50G3L03A0P01	SAP50G3L03A1P01

MP FILTRI WWW.SUMY.IR

MPHC 116



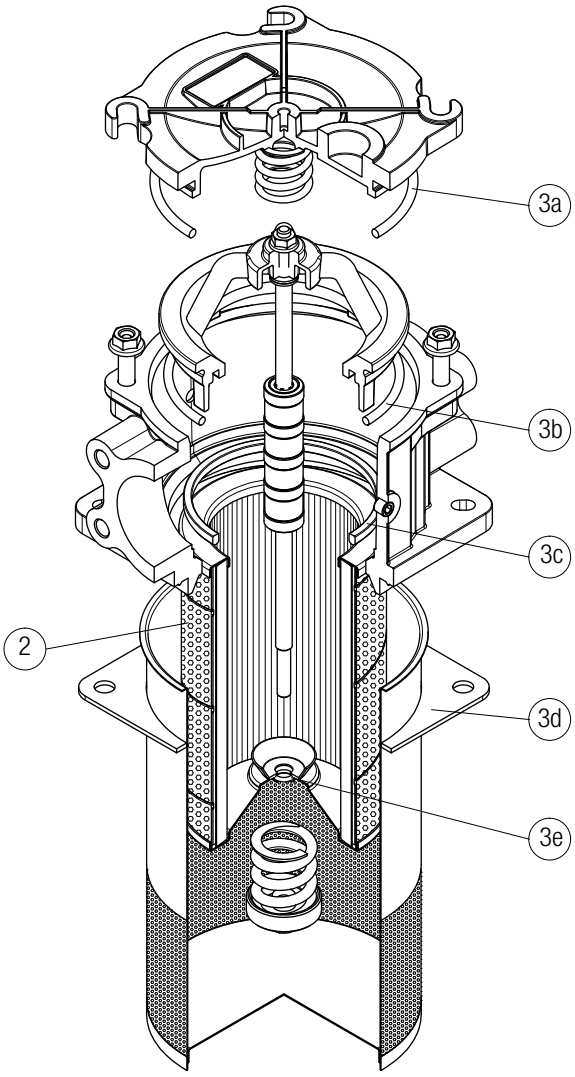
MPHC 120



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3f)	
Filter series	Filter element	Seal Kit code number NBR	FPM
MPHC 116	See order table	AK021000500	AK021000501
MPHC 120		AK021000356	AK021000357

Order number for spare parts

MPHC 250 - 630

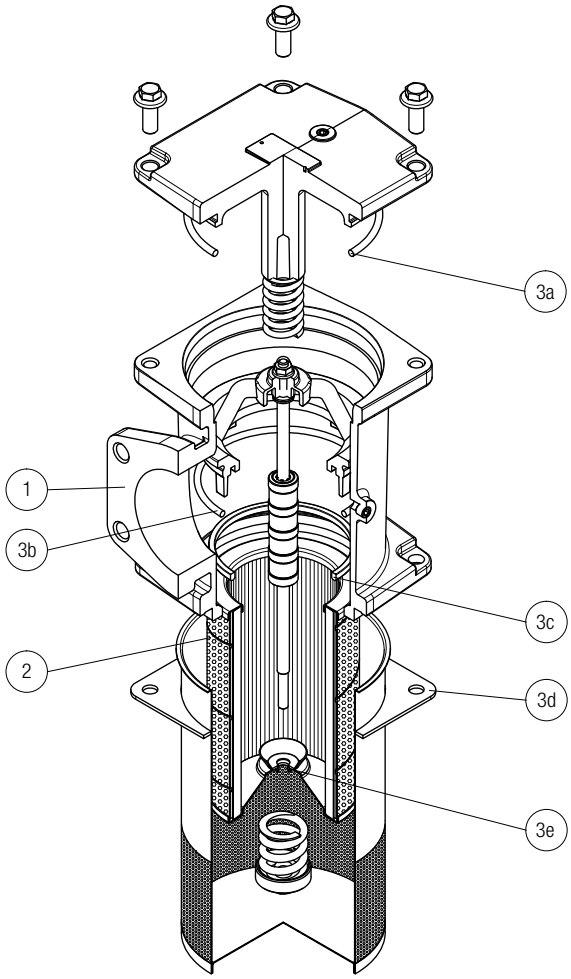


Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3e)	
Filter series	Filter element	Seal Kit code number NBR	FPM
MPHC 250	See order table	AK021000104	AK021000105
MPHC 630		AK021000106	AK021000107

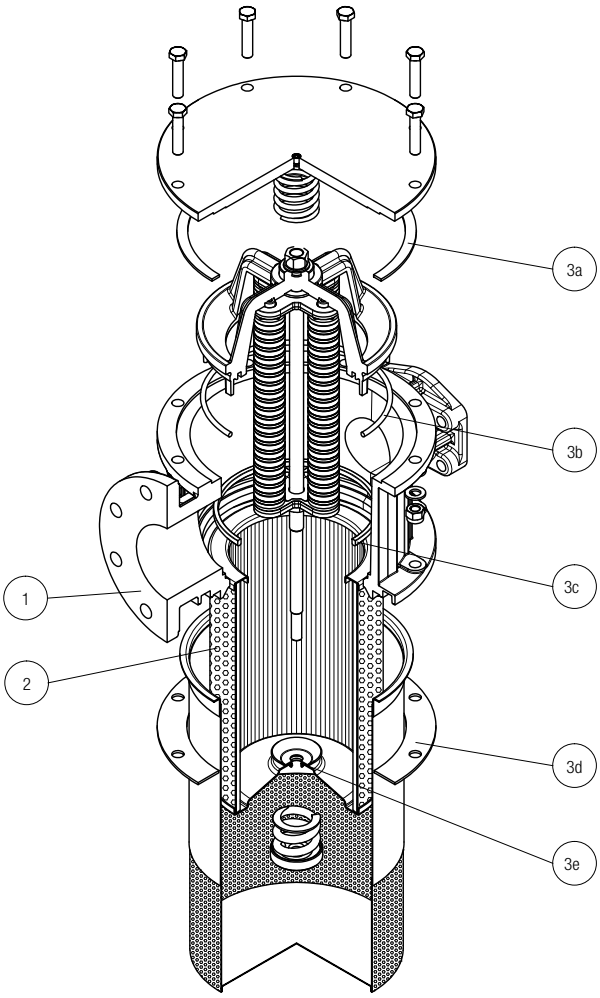
MP FILTRI WWW.SUMY.IR

Order number for spare parts

MPHC 660



MPHC 850



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3e)	
Filter series	Filter element	Seal Kit code number NBR	FPM
MPHC 660	See order table	AK021000106	AK021000107
MPHC 850		AK021000108	AK021000109

MP FILTRI
WWW.SUMY.IR

MPIC series

Maximum working pressure up to 1 MPa (10 bar) - Flow rate up to 3500 l/min



Description

Return filter

Maximum working pressure up to 1 MPa (10 bar)
Flow rate up to 3500 l/min

MPIC is a range of return filter kits for protection of the reservoir against the system contamination.
They are directly integrated in the reservoir in immersed or semi-immersed position to save space into the tank.
The use of the diffuser is recommended, to place the filter output always immersed into the fluid to avoid aeration or foam generation into the reservoir.
The filtration from inside to outside allows a cleaner filter element replacement, the dirty remains into the filter element.

Available features:

- Fine filtration rating, to get a good cleanliness level into the reservoir
- Bypass valve, to relieve excessive pressure drop across the filter media
- Magnetic filter, to hold the ferrous particles
- Oil dipstick, to easily check the level of the fluid into the reservoir (separate item)
- Diffuser, to reduce the risk of aeration, foaming and noise

Common applications:

Heavy duty industrial equipment

Technical data

Filter housing materials

- Insert assembly: Polyamide, GF reinforced: MPI 100
  Aluminium: MPIC 250-630-850
- Diffuser: Tinned Steel
- Valve: Steel

Pressure

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

Bypass valve

- Opening pressure 0.175 MPa (1.75 bar) ±10%
- Opening pressure 0.25 MPa (2.5 bar) ±10%, except for MPI 850

Filter element features

Filter		Filter element	
MPIC		MRC	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	D	10 bar
M - Wire mesh	Standard	D	10 bar
P - Paper	Standard	D	10 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From IN to OUT			

Seals

- Standard NBR series A or W
- Optional FPM series V or Z

Temperature

From -25 °C to +110 °C

Note

MPIC filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]						Volumes [dm³]					
	Length	10	20	30	40	50	Length	10	20	30	40	50
MPIC 100		0.90	1.00	1.20	1.50	1.80		0.90	0.90	1.20	1.60	1.80
MPIC 250		2.20	2.50	2.90	4.30	-		3.50	3.50	4.50	7.00	-
MPIC 630		3.40	3.90	4.30	5.40	6.60		5.80	7.40	9.50	11.40	13.50
MPIC 850		15.20	18.20	21.20	25.20	-		8.80	12.20	16.70	20.80	-

MP FILTRI WWW.SUMY.IR

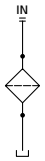
Flow rates [l/min]

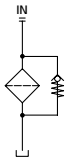
Filters series	Length	Filter element design - D series					Filter element design - D series		
		A0003	A0006	A0010	A0016	A0025	M0025 M0060 M0090	P0010	P0025
MPIC 100	**10**	26	29	72	79	107	282	164	190
	20	43	46	112	114	161	318	164	190
	30	64	72	132	156	178	324	219	251
	40	90	99	184	198	216	324	266	302
	50	117	128	201	219	244	324	282	318
MPIC 250	**10**	93	102	210	251	315	1093	339	383
	20	124	151	327	412	421	1122	460	514
	30	189	221	418	445	500	1137	544	616
	40	261	304	592	670	766	1166	832	923
MPIC 630	**10**	160	200	369	423	518	1894	565	632
	20	240	257	571	611	1045	1929	1137	1285
	30	330	374	745	788	1308	1938	1416	1577
	40	374	403	887	1010	1348	1956	1448	1612
	50	625	698	1210	1257	1723	2121	1839	1929
MPIC 850	**10**	775	1041	1246	1568	2242	3311	2371	2625
	20	1176	1522	1682	1747	2449	3378	2684	2886
	30	1490	1914	1995	2014	3035	3405	3144	3220
	40	1668	2088	2305	2363	3169	3517	3272	3378

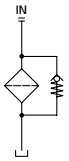
Maximum flow rate for a complete return filter with a pressure drop Δp = 0.5 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

Hydraulic diagram

Filter series	00 - without bypass	17 - with bypass 1.75 bar	25 - with bypass 2.5 bar
MPIC 100	•	•	•
MPIC 250	•	•	•
MPIC 630	•	•	•
MPIC 850	•	•	-







Designation & Ordering code

COMPLETE FILTER

Example 1:	MPIC	100	20	A0016	D	Z	25	NN000	0	ON	MA	P01	NN
Example 2:	MPIC	630	50	P0010	D	V	00	NN000	0	ON	DE	P01	NN

Series
MPIC

Size

100	**630**
250	**850**

Length	100	250	630	850
10	•	•	•	•
20	•	•	•	•
30	•	•	•	•
40	•	•	•	•
50	•	-	•	-

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp

D	10 bar

Seals and treatments		A0xxx	M0xxx	P0xxx
A	NBR	•	•	•
V	FPM	•	•	•
W	NBR with filter and components surface treatment	•	•	-
Z	FPM with filter and components surface treatment	•	•	-

		Size			
By-pass valve		100	250	630	850
00	Without bypass	•	•	•	•
17	With bypass 1.75 bar	•	•	•	•
25	With bypass 2.5 bar	•	•	•	-

Connections
NN000 Without connection

Additional connections
0 Without additional connections

Connections for clogging indicator
ON Without indicator connections

Additional features
DA With diffuser
DE With diffuser and magnetic filter
MA With magnetic filter
NN Without additional features

Execution
P01 Standard catalogue item

Certificates
NN None

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Designation & Ordering code

FILTER ELEMENT

Example 1:	MRC	100	20	A0016	D	V	00	NN	P01	NN
Example 2:	MRC	630	50	P0010	D	V	00	NN	P01	NN

Series

MRC

Size

100 **630**
250 **850**

Length	100	250	630	850
10	•	•	•	•
20	•	•	•	•
30	•	•	•	•
40	•	•	•	•
50	•	-	•	-

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp

D 10 bar

Seals and treatments

A NBR
V FPM

Bypass

00 Without bypass

Additional features

NN Without additional features

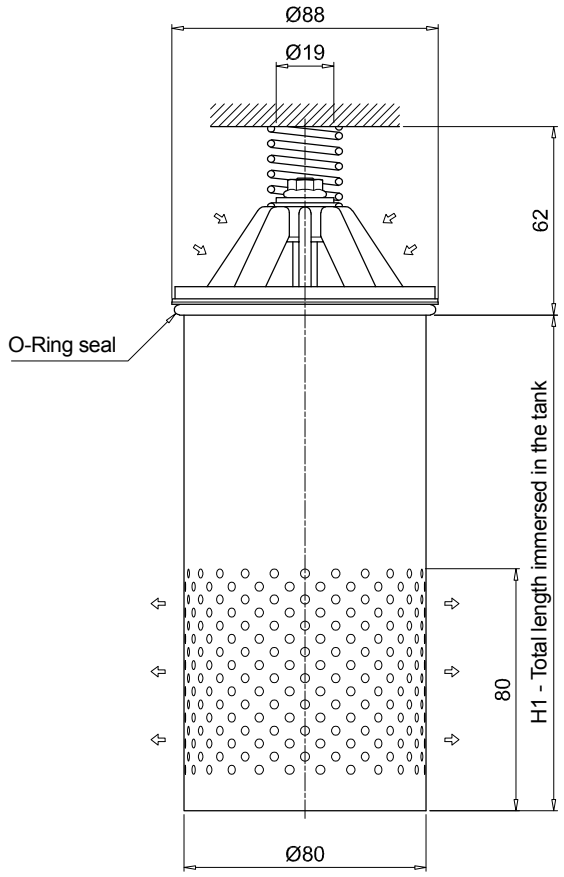
Execution

P01 Standard catalogue item

Certificates

NN None

Dimensions



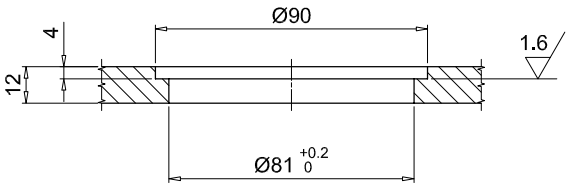
MPIC100

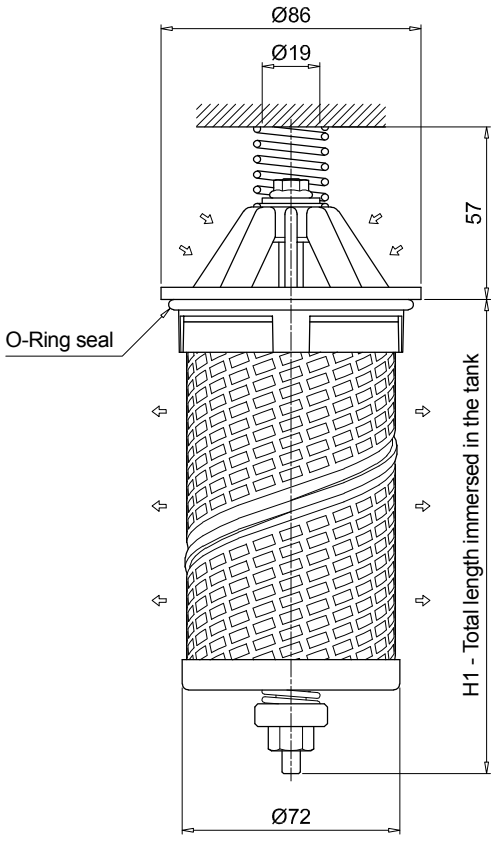
Additional features
DA / DE

with diffuser

Filter length	H1 [mm]
10	198
20	198
30	248
40	348
50	448

Filter seat





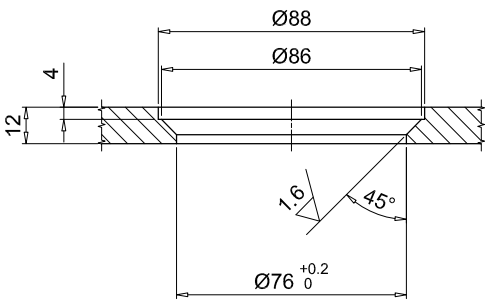
MPIC100

Additional features
MA / NN

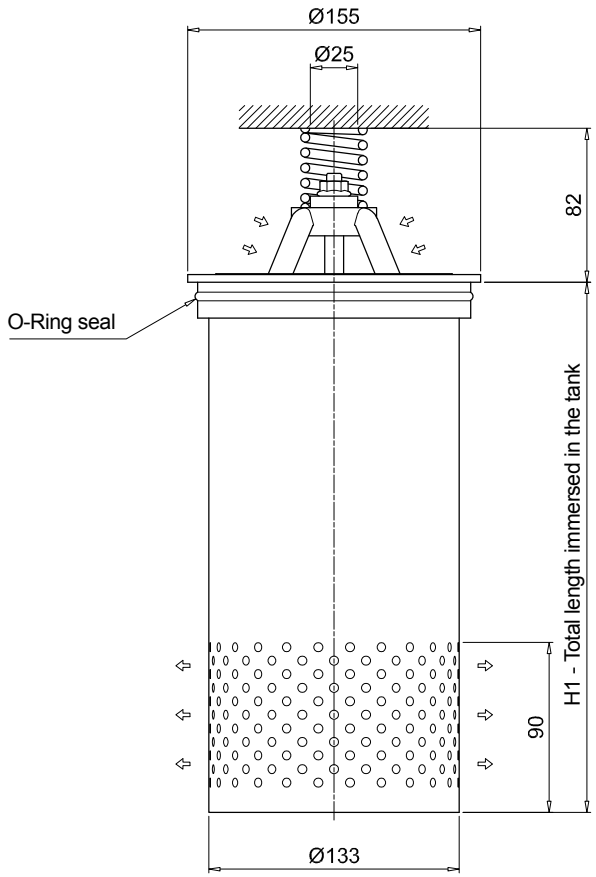
without diffuser

Filter length	H1 [mm]
10	141
20	185
30	235
40	335
50	435

Filter seat



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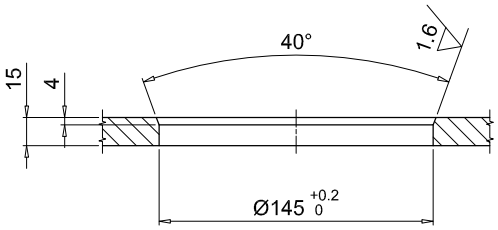
MPIC250

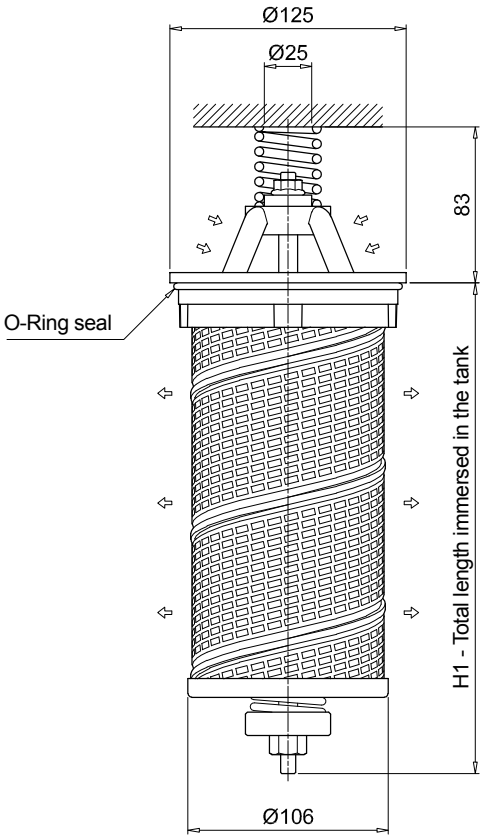
Additional features
DA / DE

with diffuser

Filter length	H1 [mm]
10	266
20	266
30	336
40	524

Filter seat





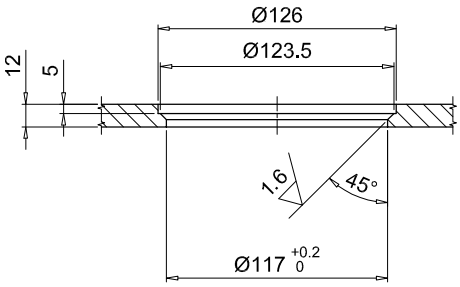
MPIC250

Additional features
MA / NN

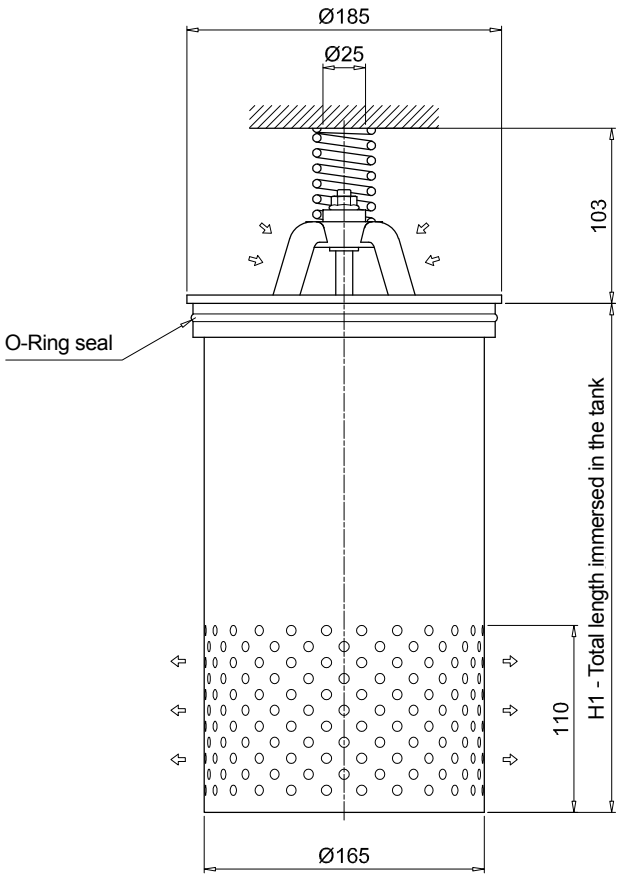
without diffuser

Filter length	H1 [mm]
10	193
20	243
30	313
40	516

Filter seat

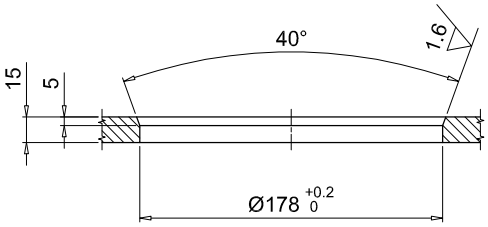


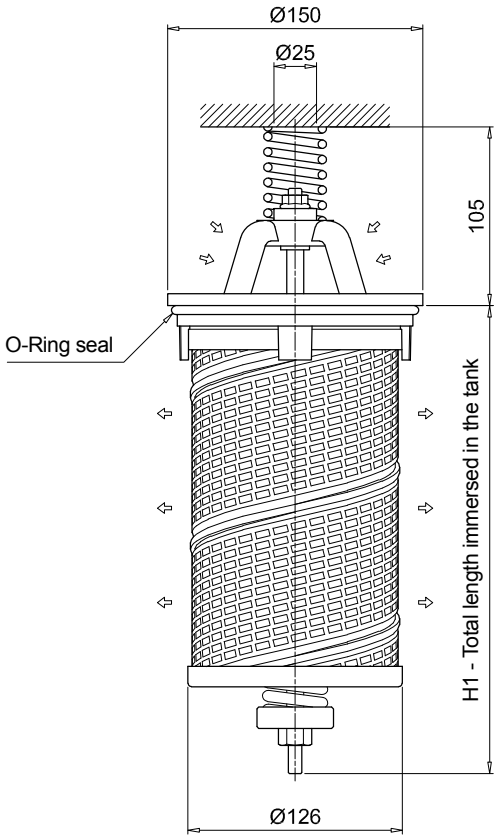
Dimensions



MPIC630	
Additional features **DA / DE**	
with diffuser	
Filter length	**H1 [mm]**
10	298
20	378
30	478
40	568
50	868

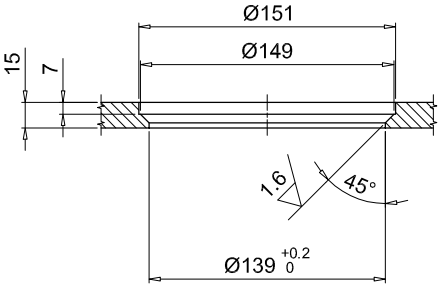
Filter seat



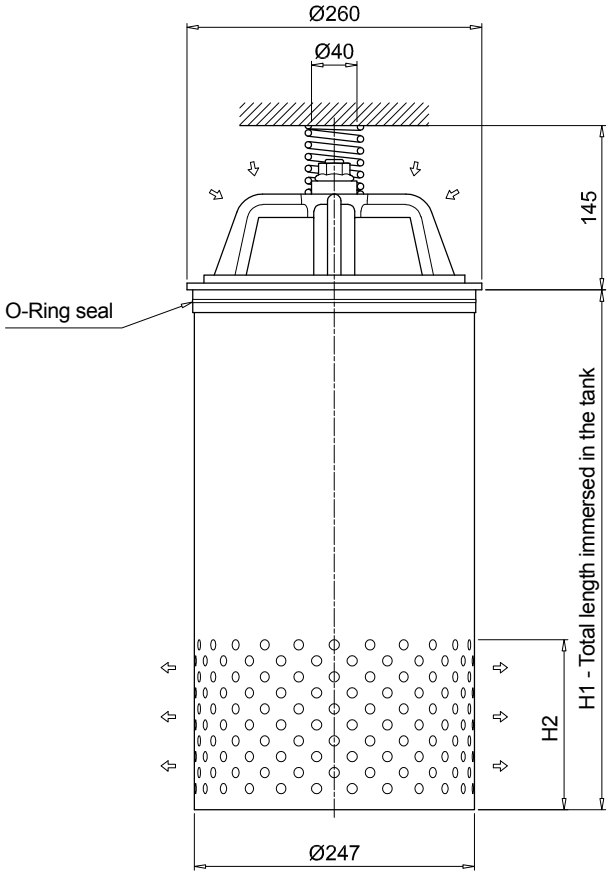


MPIC630	
Additional features **MA / NN**	
without diffuser	
Filter length	**H1 [mm]**
10	275
20	355
30	455
40	540
50	841

Filter seat



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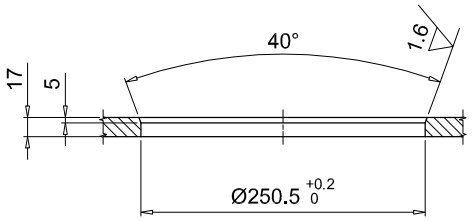
MPIC850

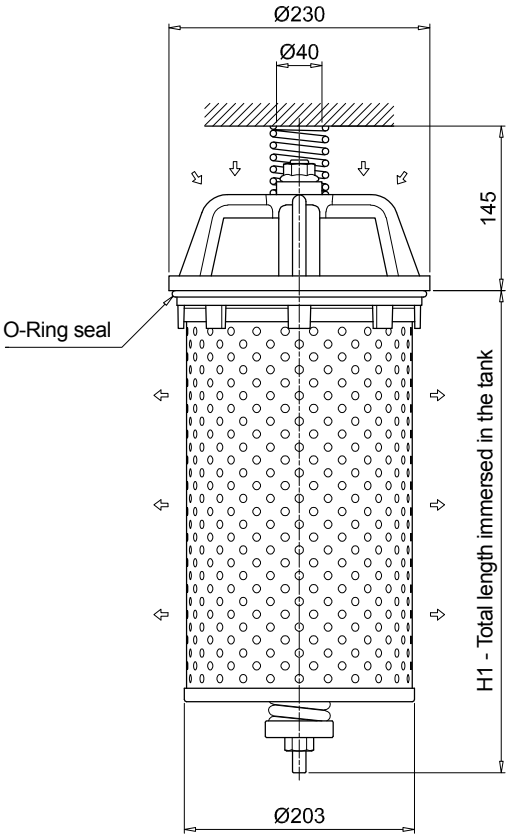
Additional features
DA / DE

with diffuser

Filter length	H1 [mm]	H2 [mm]
10	427	150
20	642	150
30	922	260
40	1187	260

Filter seat





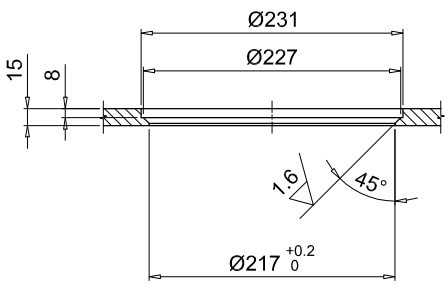
MPIC850

Additional features
MA / NN

without diffuser

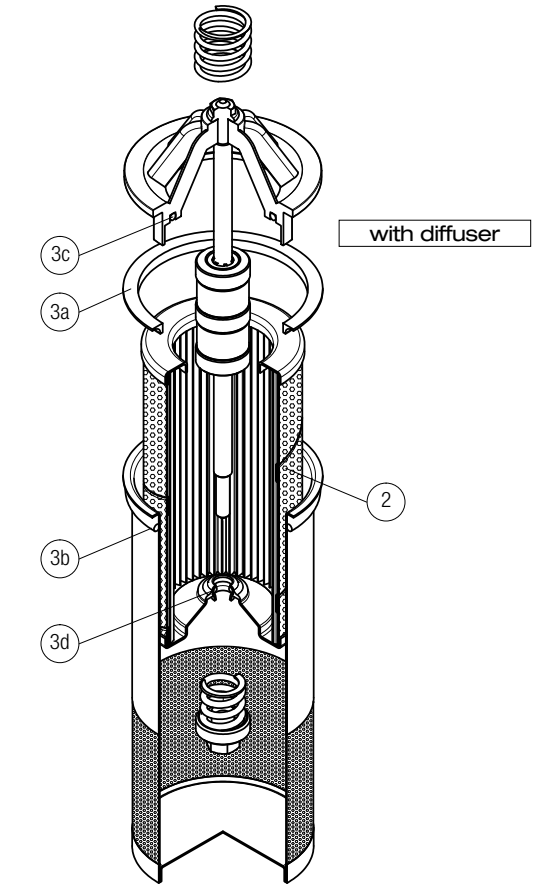
Filter length	H1 [mm]
10	405
20	620
30	900
40	1165

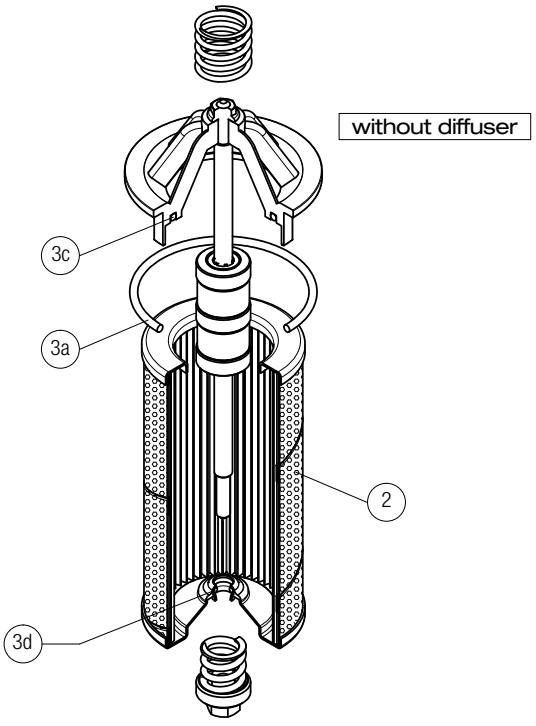
Filter seat



Order number for spare parts

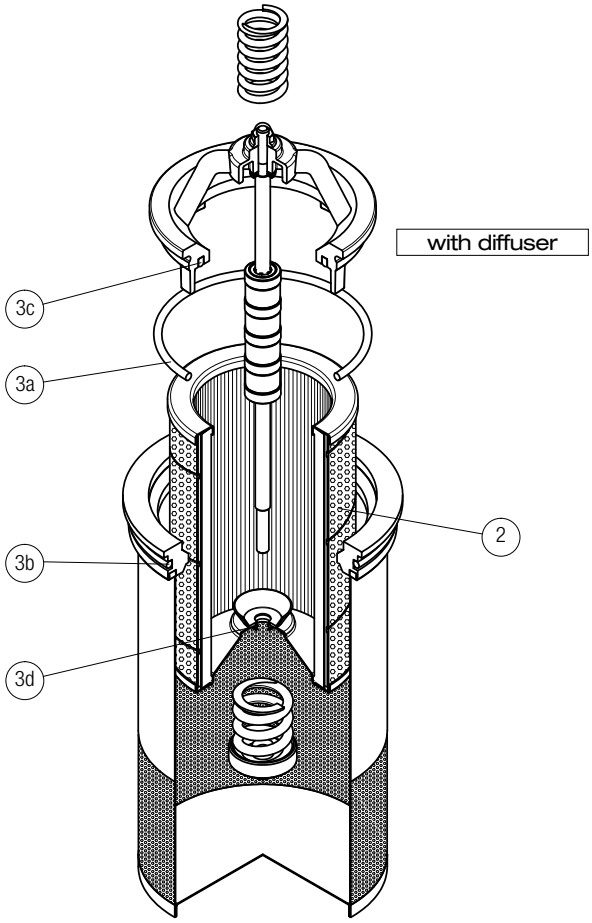
MPIC100

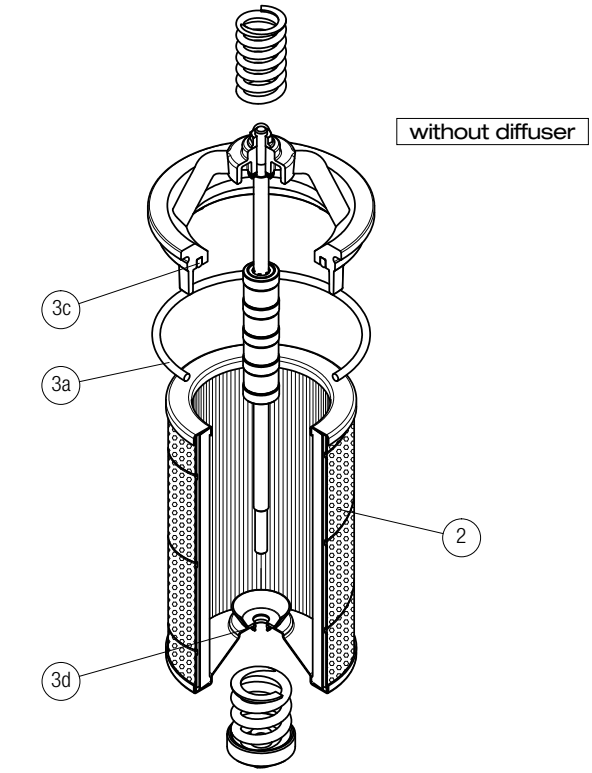




Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3d)	
Filter series	**Filter element**	**Seal Kit code number NBR**	**FPM**
MPIC 100	See order table	AK021000098	AK021000099

MPIC250 - MPIC630

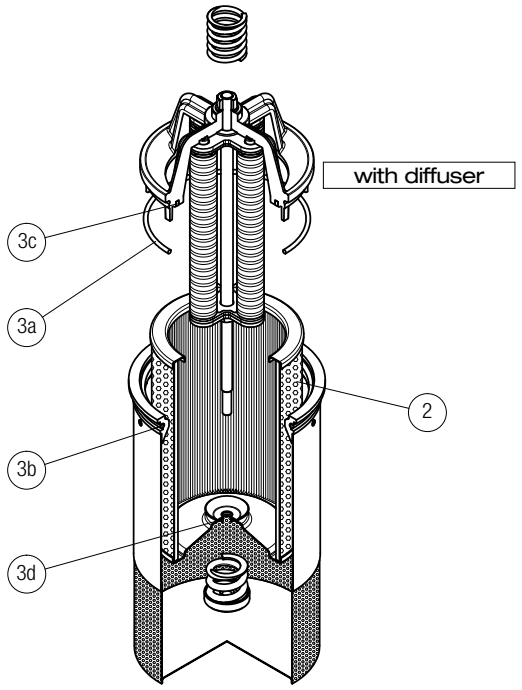


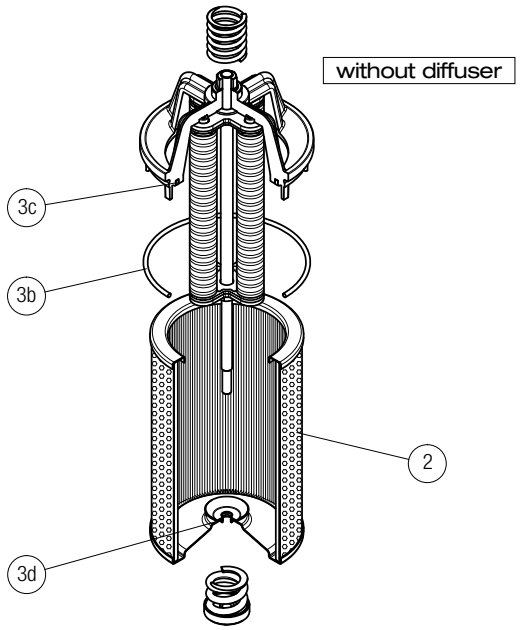


Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3d)	
Filter series	**Filter element**	**Seal Kit code number NBR**	**FPM**
MPIC 250	See order table	AK021000100	AK021000101
MPIC 630		AK021000079	AK021000080

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MPIC850





Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3d)	
Filter series	**Filter element**	**Seal Kit code number NBR**	**FPM**
MPIC 850	See order table	AK021000081	AK021000082

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FRIC series

Maximum working pressure up to 2 MPa (20 bar) - Flow rate up to 2500 l/min



FRIC GENERAL INFORMATION

Description

Return filter

Maximum working pressure up to 2 MPa (20 bar)
Flow rate up to 2500 l/min

FRIC is a range of return filters for protection of the reservoir against the system contamination.
They could be directly fixed to the reservoir in immersed or semi-immersed position or connected to the lines of the system through the hydraulic fittings.
The filter output must be always immersed into the fluid to avoid aeration or foam generation into the reservoir.

Available features:

- Female threaded connections up to 2 1/2" and flanged connections up to 3 1/2", for a maximum flow rate of 2500 l/min
- Double input connections, to connect several return lines or drains
- Fine filtration rating, to get a good cleanliness level into the reservoir
- Bypass valve, to relieve excessive pressure drop across the filter media
- Visual, electrical and electronic differential clogging indicators

Common applications:

Heavy duty industrial equipment

Technical data

Filter housing materials

- Filter body: Aluminium: FRIC 255
  Anodized Aluminium: FRIC 025-040-100-250-630
  Phosphatized Steel: FRIC 850
- Cover: Polyamide, GF reinforced: FRIC 255
  Anodized Aluminium: FRIC 025-040-100-250-630-850
- Valve: Polyamide, GF reinforced - Steel

Pressure

- Test pressure: 3 MPa (30 bar)
- Min. Burst pressure: 6 MPa (60 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 2 MPa (20 bar)

Bypass valve

Opening pressure 0.24 MPa (2.4 bar) ±10%

Filter element features

Filter	Filter element		
FRIC	CUC		
Δp Element type			
Element media	Construction	Δp Series	Δp
A - Microfiber	Standard	D	10 bar
M - Wire mesh	Standard	D	10 bar
P - Paper	Standard	D	10 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals

- Standard NBR series A (or W only for FRIC850)
- Optional FPM series V (or Z only for FRIC850)

Temperature

From -25 °C to +110 °C

Note

FRIC filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]	Volumes [dm³]
	Length 10	Length 10
FRIC 025	1.0	0.28
FRIC 040	2.0	0.70
FRIC 100	3.8	1.09
FRIC 250	6.3	2.60
FRIC 255	4.2	3.20
FRIC 630	13.8	7.05
FRIC 850	48.0	21.50

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Flow rates [l/min]

		Filter element design - D Series							
Filter series	Length	A0003	A0006	A0010	A0016	A0025	M0025 M0060 M0090	P0010	P0025
FRIC 025	**10**	6	10	17	19	43	122	43	47
FRIC 040	**10**	19	23	43	45	94	155	94	102
FRIC 100	**10**	32	34	89	92	187	260	187	206
FRIC 250	**10**	144	179	271	300	448	645	448	490
FRIC 255	**10**	144	179	271	300	448	645	448	490
FRIC 630	**10**	242	279	508	577	834	1446	834	911
FRIC 850	**10**	440	541	971	1143	1705	2528	1705	1880

Maximum flow rate for a complete return filter with a pressure drop Δp = 0.5 bar.

The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.

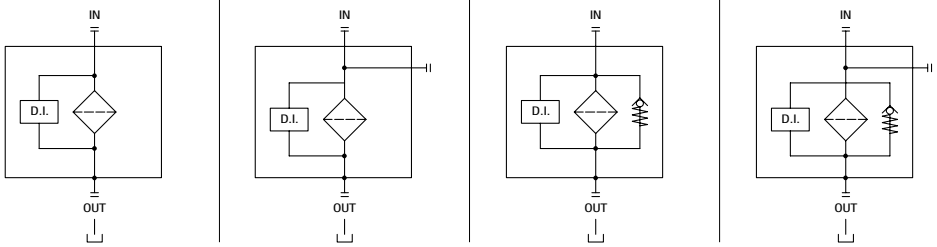
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.

Please, contact our Sales Department for further additional information.

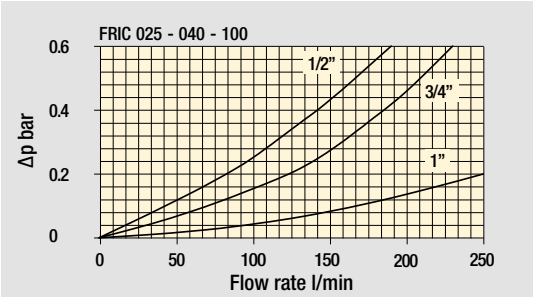
Hydraulic diagram

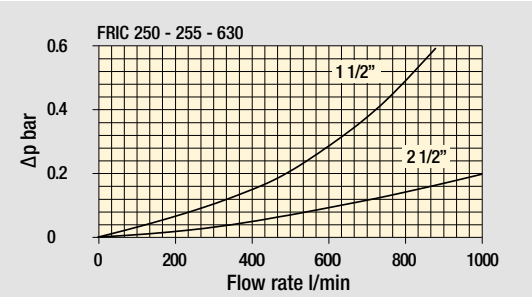
	00 - without bypass		24 - with bypass 2.4 bar	
Filter series	without additional connection	with additional connection	without additional connection	with additional connection
FRIC 025	-	•	-	•
FRIC 040	-	•	-	•
FRIC 100	-	•	-	•
FRIC 250	-	•	-	•
FRIC 255	•	-	•	-
FRIC 630	-	•	-	•
FRIC 850	•	-	•	-

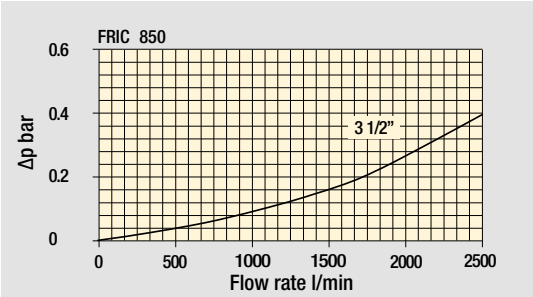


Pressure drop

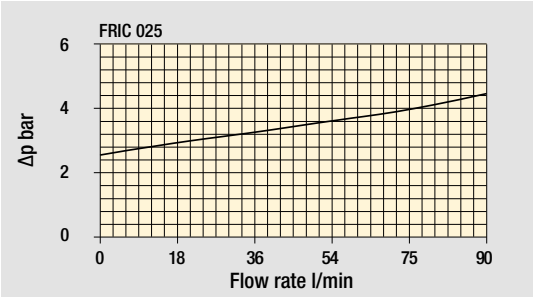
Filter housings Δp pressure drop

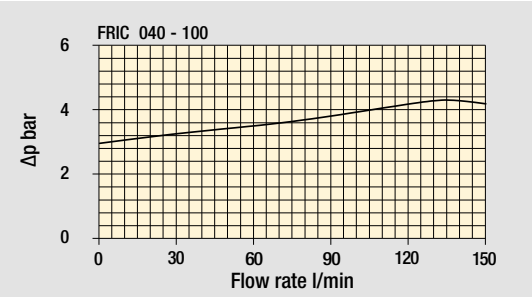


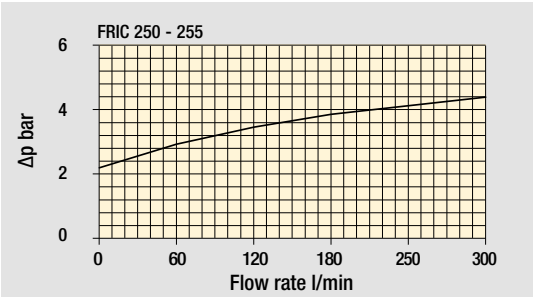


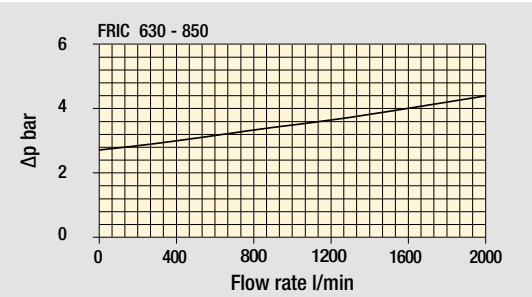


Bypass valve pressure drop









The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

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Designation & Ordering code

COMPLETE FILTER

Example 1:	FRIC	025	10	A0025	D	W	00	FG012	1	1N	NN	P01	NN
Example 2:	FRIC	630	10	M0025	D	Z	00	FF212	1	1N	NN	P01	NN

Series
FRIC

Size

025	**250**
040	**630**
100	

Length
10

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp
D 10 bar

Seals and treatments
W NBR with filter and components surface treatment
Z FPM with filter and components surface treatment

By-pass valve
00 Without bypass
24 With bypass 2.4 bar

Connections	025	040	100	250	630
FG012 G 1/2”	•	-	-	-	-
FG034 G 3/4”	-	•	-	-	-
FG100 G 1”	-	-	•	-	-
FG112 G 1 1/2”	-	-	-	•	-
FG212 G 2 1/2”	-	-	-	-	•
FN012 1/2” NPT	•	-	-	-	-
FN034 3/4” NPT	-	•	-	-	-
FN100 1” NPT	-	-	•	-	-
FN112 1 1/2” NPT	-	-	-	•	-
FN212 2 1/2” NPT	-	-	-	-	•
FS008 SAE 8 - 3/4” - 16 UNF	•	-	-	-	-
FS012 SAE 12 - 1 1/16” - 12 UN	-	•	-	-	-
FS016 SAE 16 - 1 5/16” - 12 UN	-	-	•	-	-
FS024 SAE 24 - 1 7/8” - 12 UN	-	-	-	•	-
FS032 SAE 32 - 2 1/2” - 12 UN	-	-	-	-	•

Connections	025	040	100	250	630
FE100 1” SAE 3000 psi/M	-	-	•	-	-
FE112 1 1/2” SAE 3000 psi/M	-	-	-	•	-
FE212 2 1/2” SAE 3000 psi/M	-	-	-	-	•
FF100 1” SAE 3000 psi/UNC	-	-	•	-	-
FF112 1 1/2” SAE 3000 psi/UNC	-	-	-	•	-
FF212 2 1/2” SAE 3000 psi/UNC	-	-	-	-	•

Additional connections
1 With additional connection

Connections for clogging indicator
1N With top indicator connection

Additional features
NN Without additional features

Execution
P01 Standard catalogue item

Certificates
NN None

CLOGGING INDICATORS

See pages 776-777

DEA	Electrical differential pressure indicator
DEM	Electrical differential pressure indicator
DEU	Electrical differential pressure indicator
DLA	Electrical / visual differential pressure indicator
DLE	Electrical / visual differential pressure indicator
DTA	Electronic differential pressure indicator
DTI	I-O Link electronic differential pressure indicator
DVA	Visual differential pressure indicator
DVM	Visual differential pressure indicator

PLUGS

See page 807

T2 Plug (not included)

MP FILTRI WWW.SUMY.IR

Designation & Ordering code

FILTER ELEMENT

Example 1:	CUC	025	10	A0025	D	A	00	NN	P01	NN
Example 2:	CUC	630	10	M0025	D	V	00	NN	P01	NN

Series

CUC

Size

025	**250**
040	**630**
100	

Length

10

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp

D 10 bar

Seals and treatments

A NBR

V FPM

Bypass

00 Without bypass

Additional features

NN Without additional features

Execution

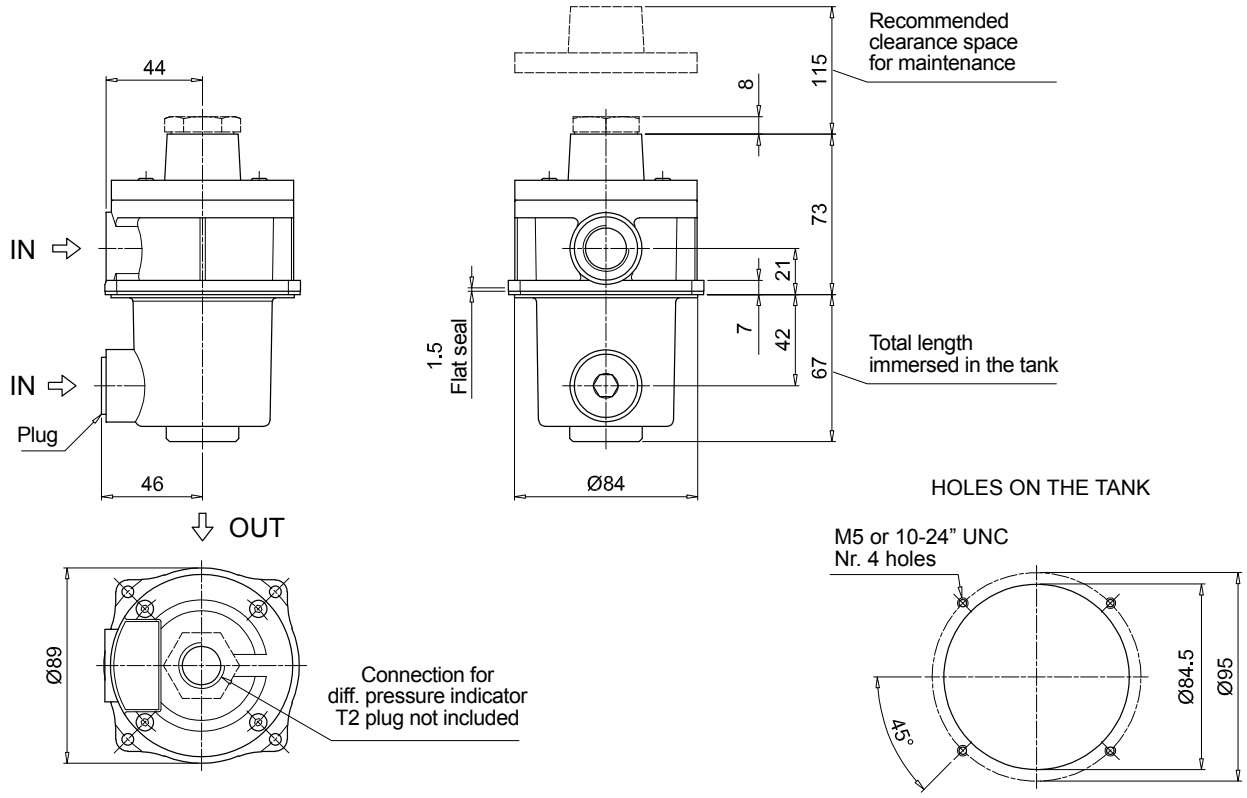
P01 Standard catalogue item

Certificates

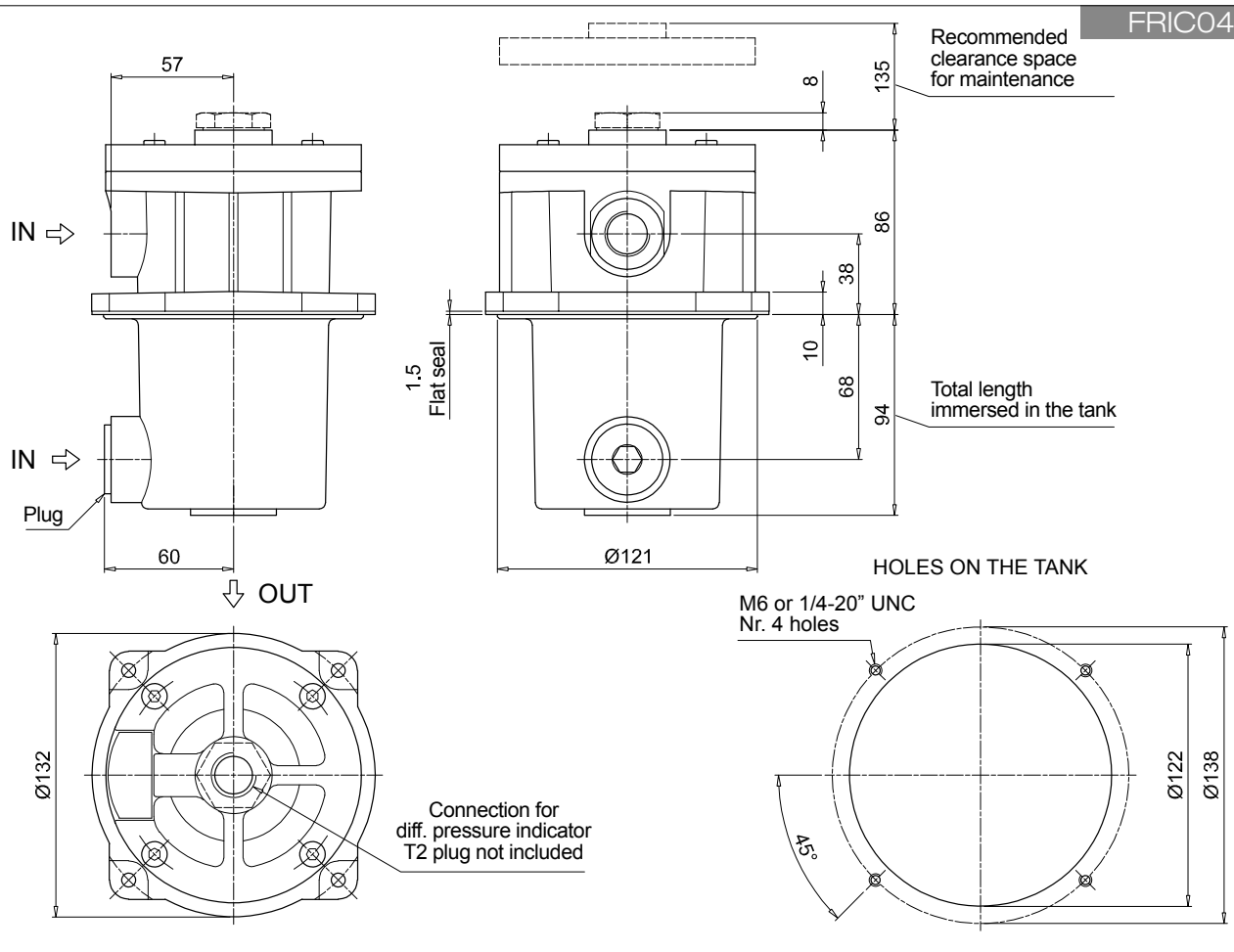
NN None

Dimensions

FRIC025

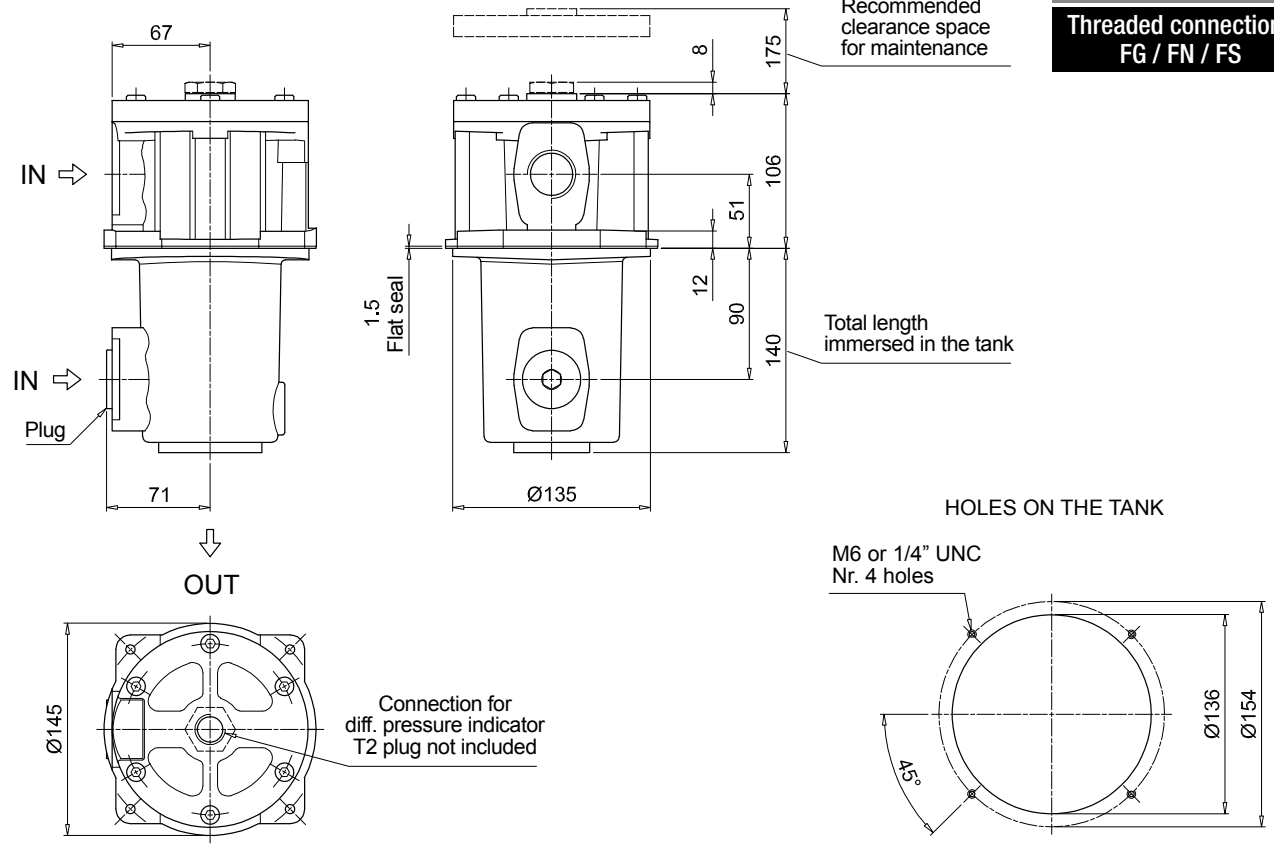


FRIC040

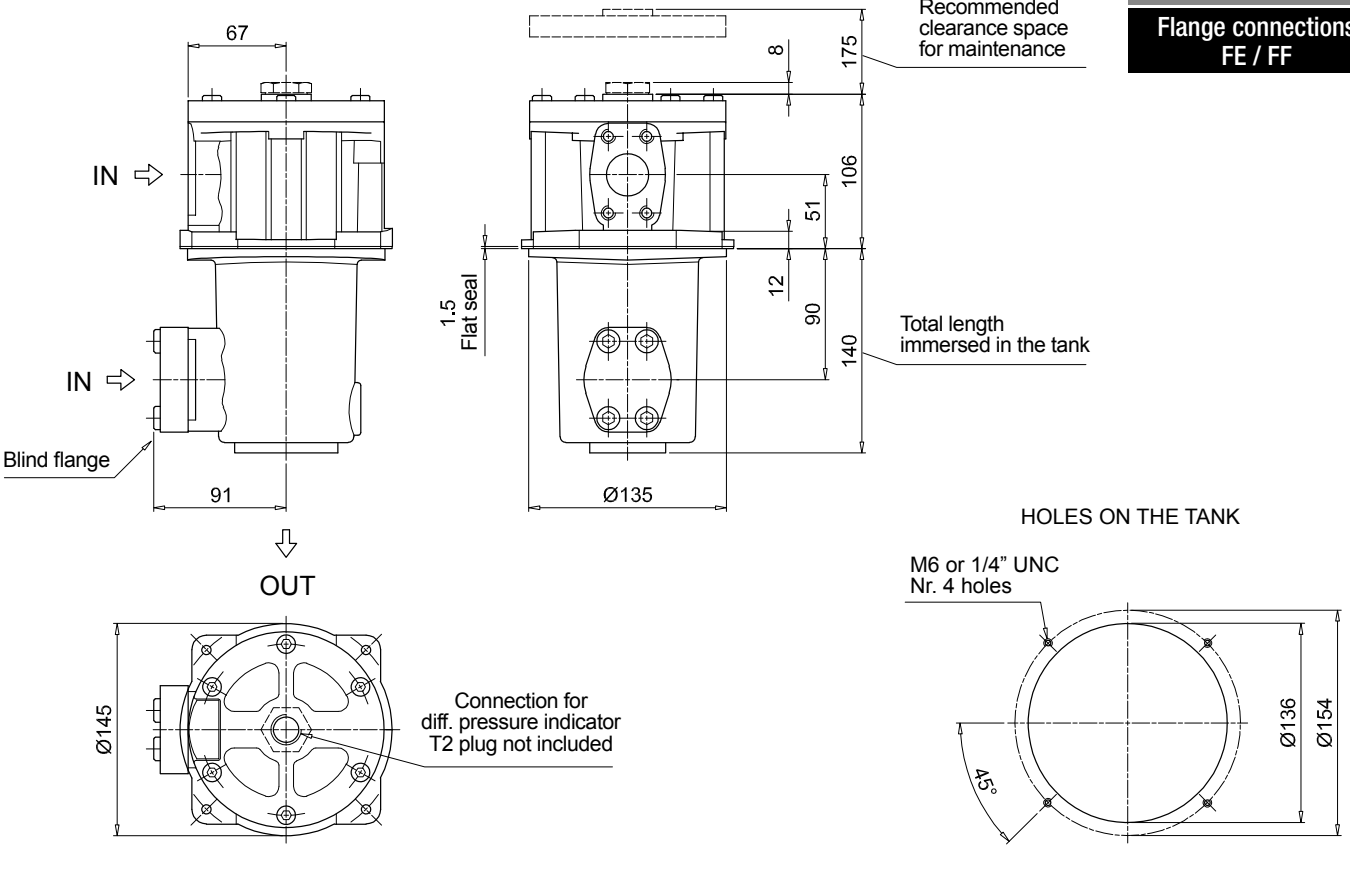


MP FILTRI WWW.SUMY.IR

FRIC100
Threaded connections FG / FN / FS



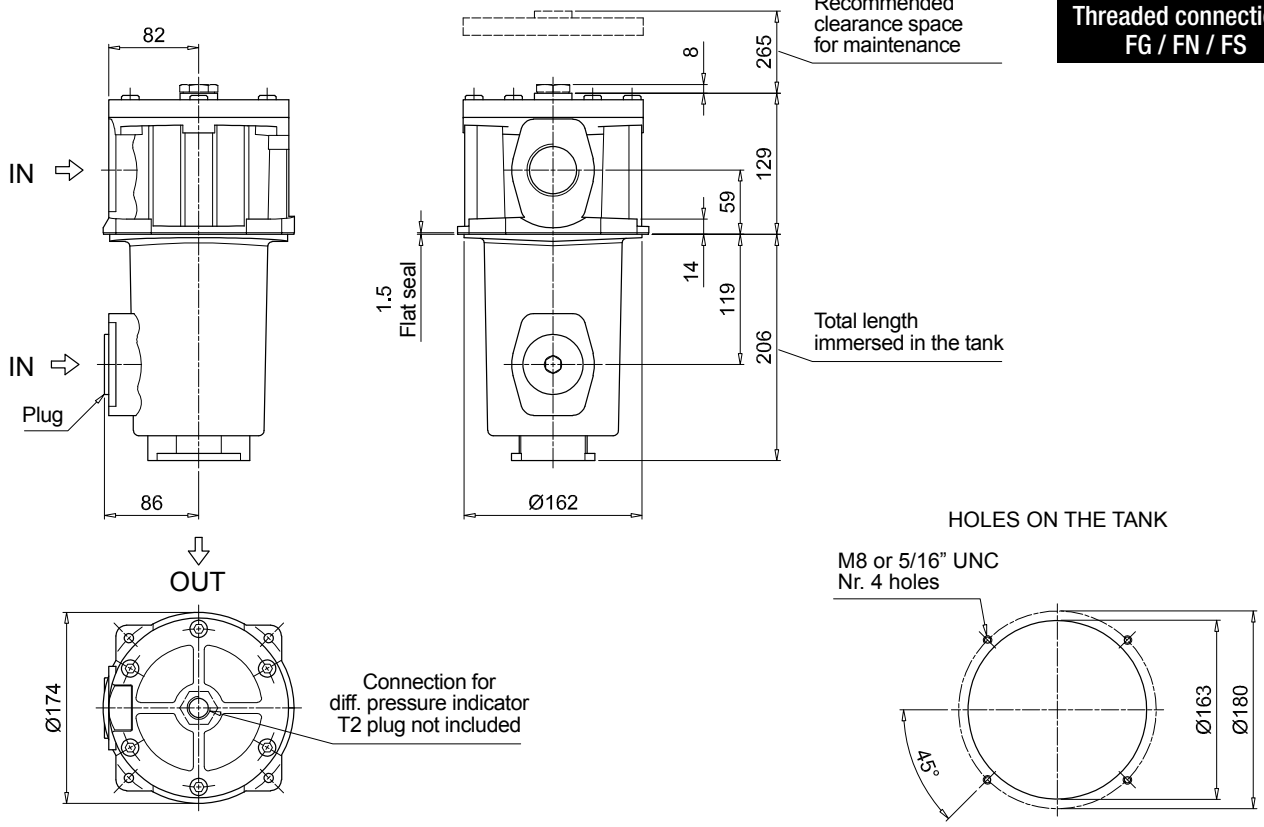
FRIC100
Flange connections FE / FF



Dimensions

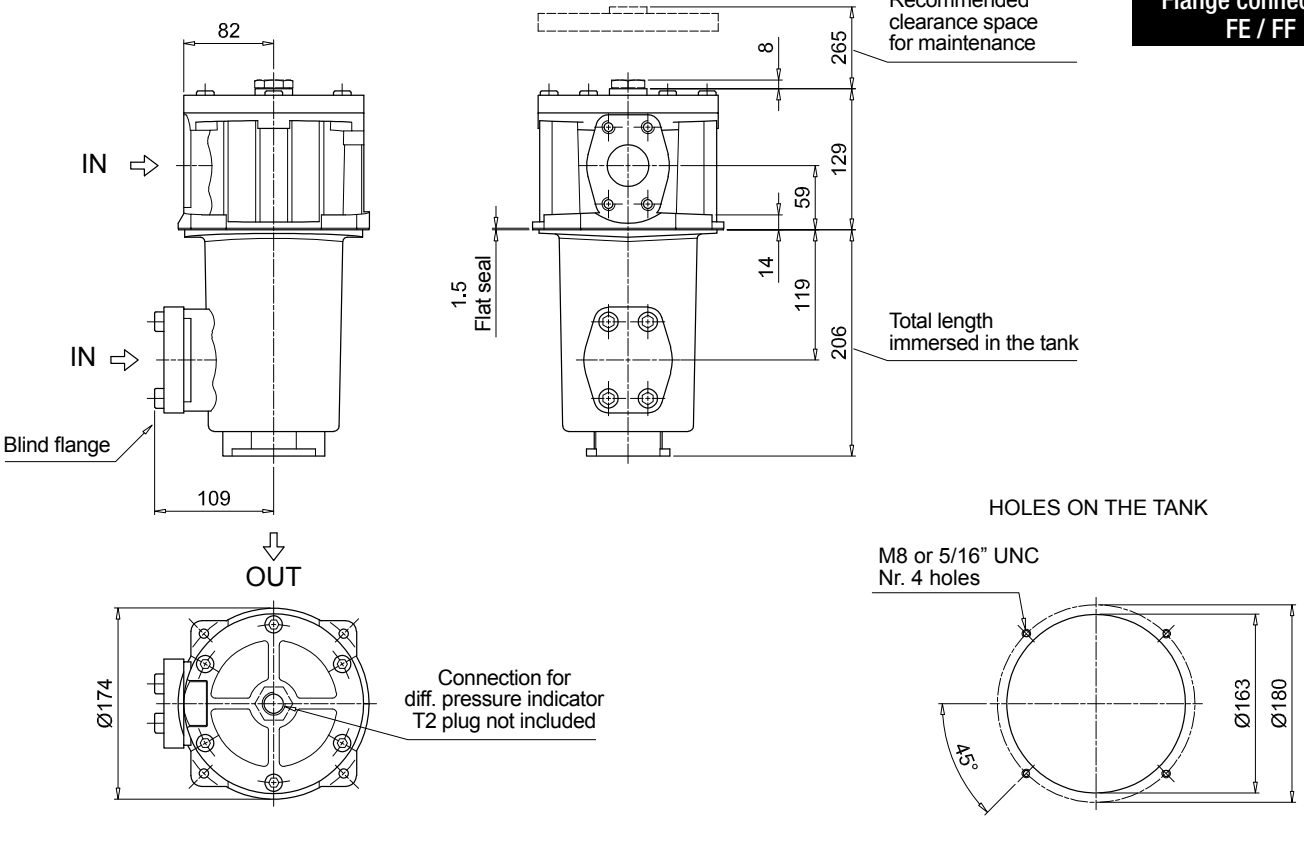
FRIC250

Threaded connections FG / FN / FS



FRIC250

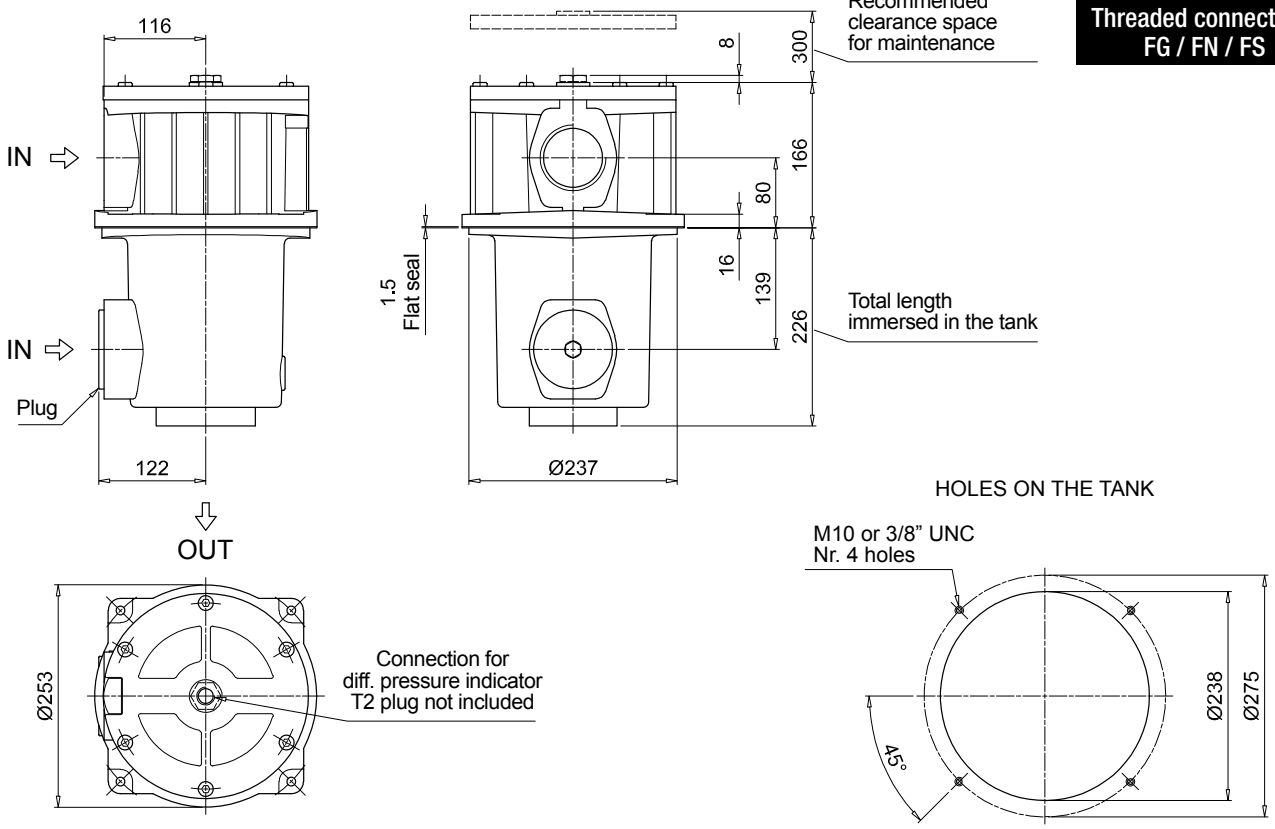
Flange connections FE / FF



MP FILTRI WWW.SUMY.IR

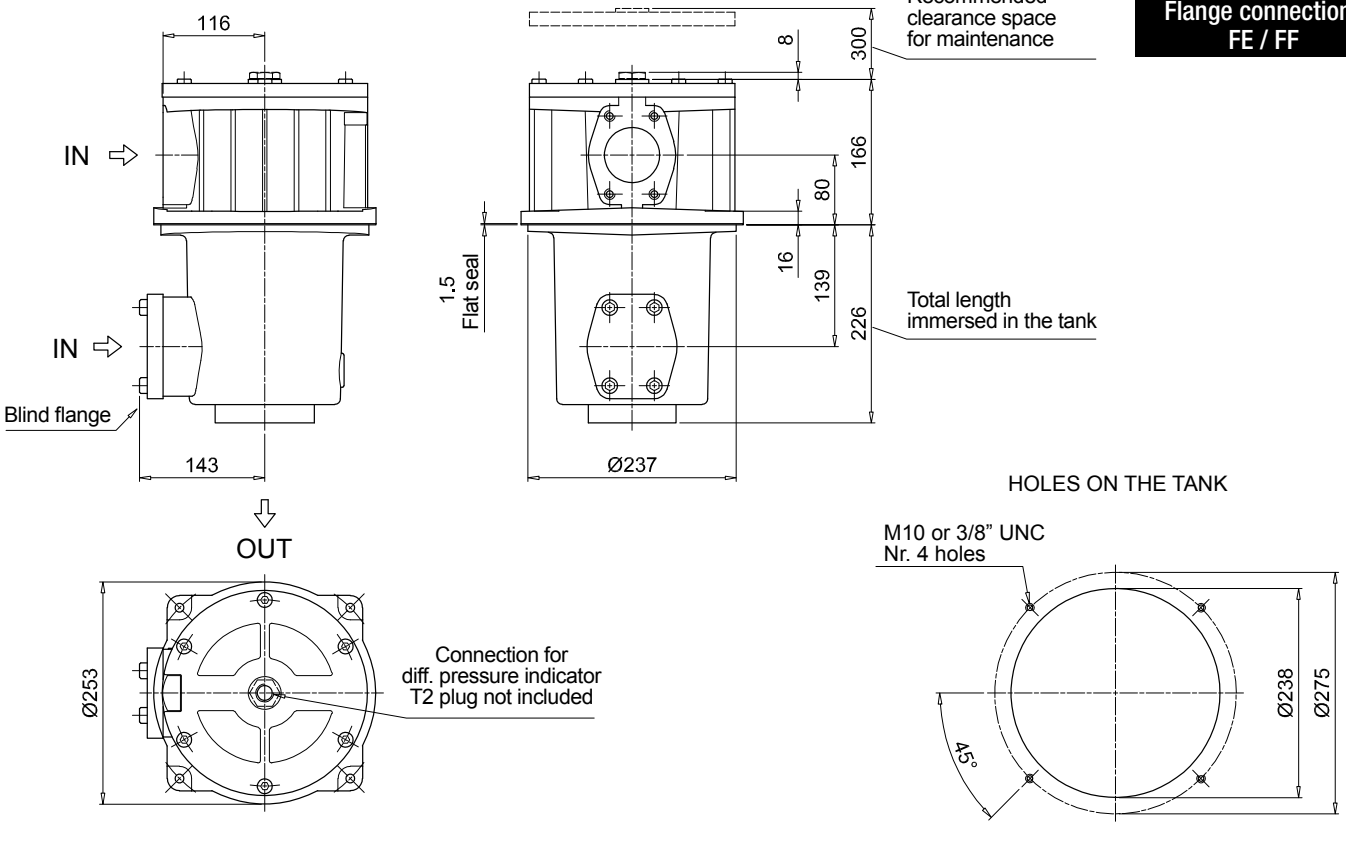
FRIC630

Threaded connections
FG / FN / FS



FRIC630

Flange connections
FE / FF



Designation & Ordering code

COMPLETE FILTER

Example: FRIC | 255 | 10 | A0025 | D | W | 24 | FF112 | 0 | 5T | NN | P01 | NN

Series
FRIC

Size
255

Length
10

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp
D 10 bar

Seals and treatments
W NBR with filter and components surface treatment
Z FPM with filter and components surface treatment

By-pass valve
00 Without bypass
24 With bypass 2.4 bar

Connections

FG114	G 1 1/4"	**FN114**	1 1/4" NPT	**FS020**	SAE 20 - 1 5/8" - 12 UN	**FE112**	1 1/2" SAE 3000 psi/M
FG112	G 1 1/2"	**FN112**	1 1/2" NPT	**FS024**	SAE 24 - 1 7/8" - 12 UN	**FF112**	1 1/2" SAE 3000 psi/UNC

Additional connections
0 Without additional connections

Connections for clogging indicator
5T With rear indicator connection, with metal plug

Additional features
NN Without additional features

Execution
P01 Standard catalogue item

Certificates
NN None

CLOGGING INDICATORS See pages 776-777

BVA Axial pressure gauge
BVR Radial pressure gauge
BVP Visual pressure indicator with automatic reset
BVQ Visual pressure indicator with manual reset
BEA Electrical pressure indicator
BEM Electrical pressure indicator
BLA Electrical / visual pressure indicator

PLUGS See page 807

T2 Plug (not included)

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Example 1: CUC | 250 | 10 | A0025 | D | A | 00 | NN | P01 | NN

Series
CUC

Size
250

Length
10

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp
D 10 bar

Seals and treatments
A NBR
V FPM

Bypass
00 Without bypass

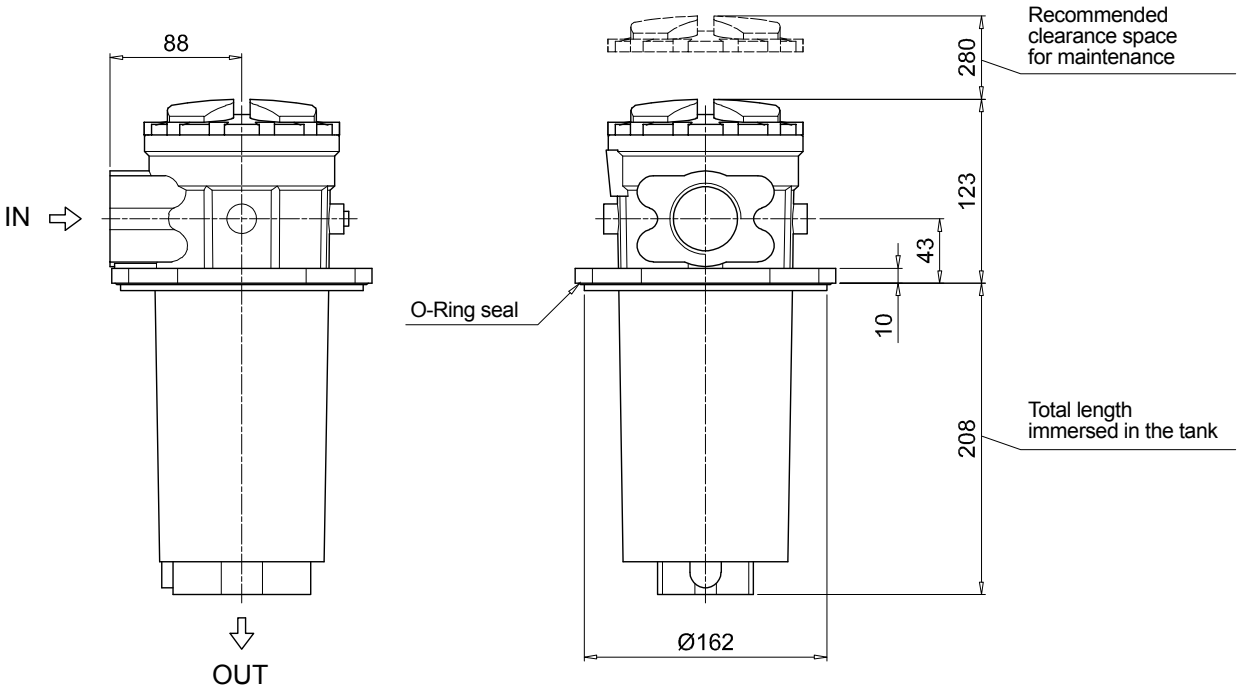
Additional features
NN Without additional features

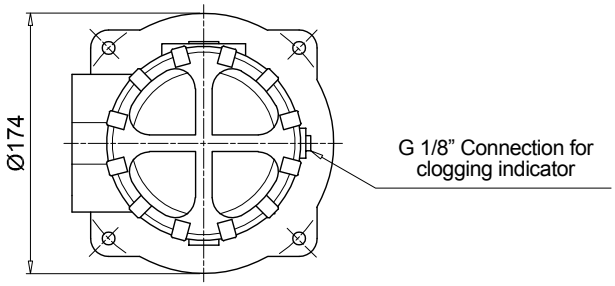
Execution
P01 Standard catalogue item

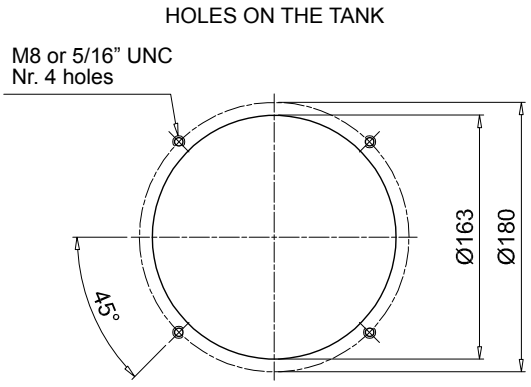
Certificates
NN None

Dimensions

FRIC255







MP FILTRI
WWW.SUMY.IR

Designation & Ordering code

COMPLETE FILTER

Example:	FRIC	850	10	A0025	D	A	24	FE312	0	1N	NN	P01	NN

Series
FRIC

Size
850

Length
10

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp

D	10 bar

Seals and treatments

		A0xxx	M0xxx	P0xxx
A	NBR	•	•	•
V	FPM	•	•	•
W	NBR with filter element tinned tube	•	•	-
Z	FPM with filter element tinned tube	•	•	-

By-pass valve

00	Without bypass
24	With bypass 2.4 bar

Connections

FE312	3 1/2” SAE 3000 psi/M
FF312	3 1/2” SAE 3000 psi/UNC

Additional connections

0	Without additional connections

Connections for clogging indicator

1N	With top indicator connection

Additional features

NN	Without additional features

Execution

P01	Standard catalogue item

Certificates

NN	None

CLOGGING INDICATORS See pages 776-777

DEA	Electrical differential pressure indicator
DEM	Electrical differential pressure indicator
DEU	Electrical differential pressure indicator
DLA	Electrical / visual differential pressure indicator
DLE	Electrical / visual differential pressure indicator
DTA	Electronic differential pressure indicator
DTI	I-O Link electronic differential pressure indicator
DVA	Visual differential pressure indicator
DVM	Visual differential pressure indicator

PLUGS See page 807

T2	Plug (not included)

MP FILTRI WWW.SUMY.IR

Designation & Ordering code

FILTER ELEMENT

Example : CUC | 850 | 10 | A0025 | D | A | 00 | NN | P01 | NN

Series
CUC

Size
850

Length
10

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp
D 10 bar

Seals and treatments
A NBR
V FPM
W NBR with tinned tube
Z FPM with tinned tube

Bypass
00 Without bypass

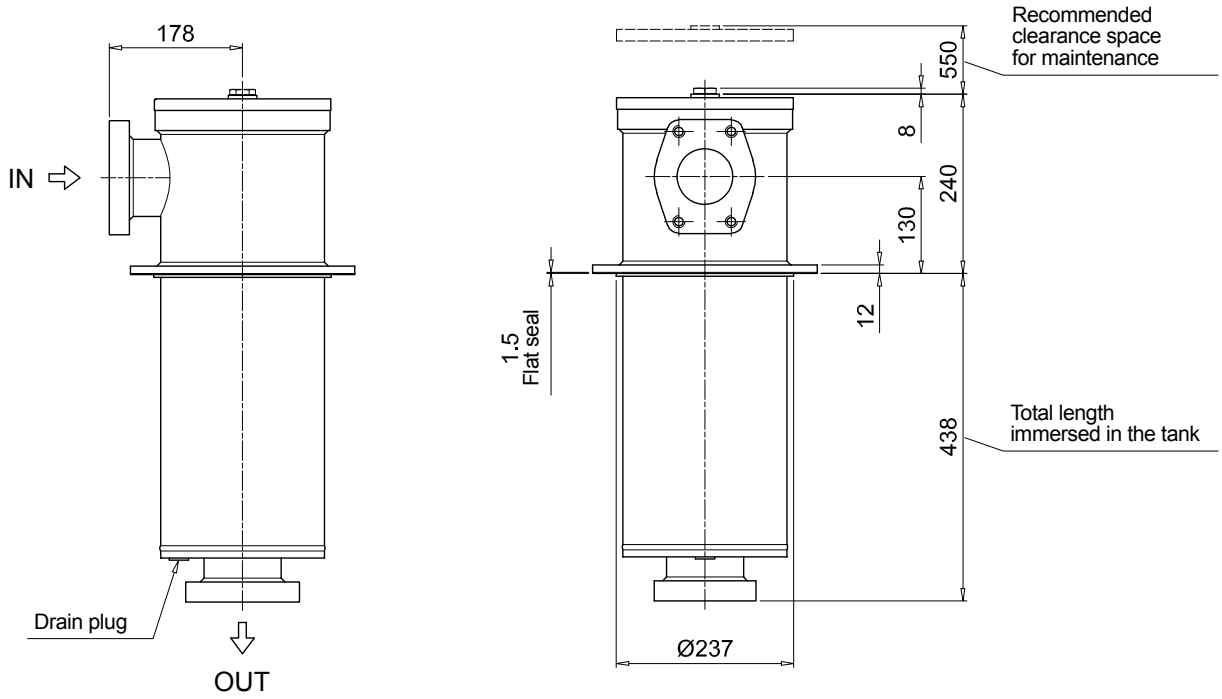
Additional features
NN Without additional features

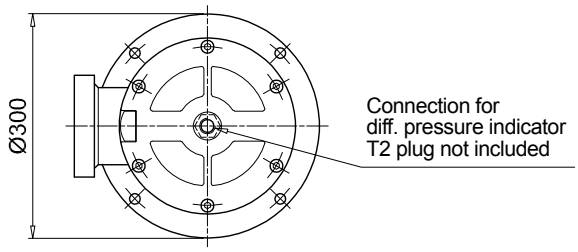
Execution
P01 Standard catalogue item

Certificates
NN None

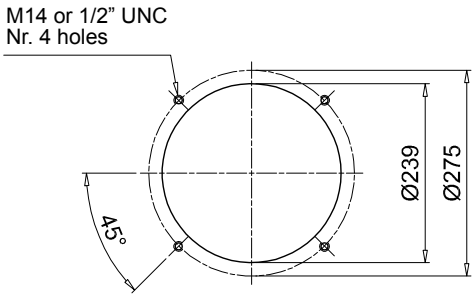
Dimensions

FRIC850





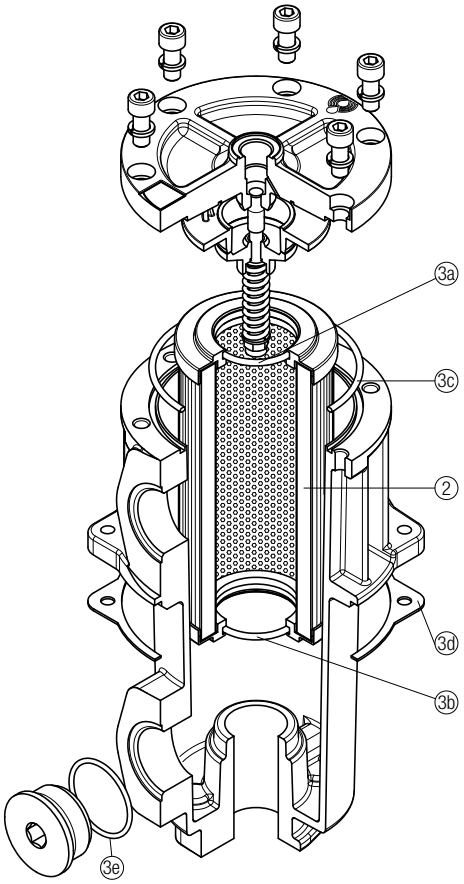
HOLES ON THE TANK



MP FILTRI WWW.SUMY.IR

Order number for spare parts

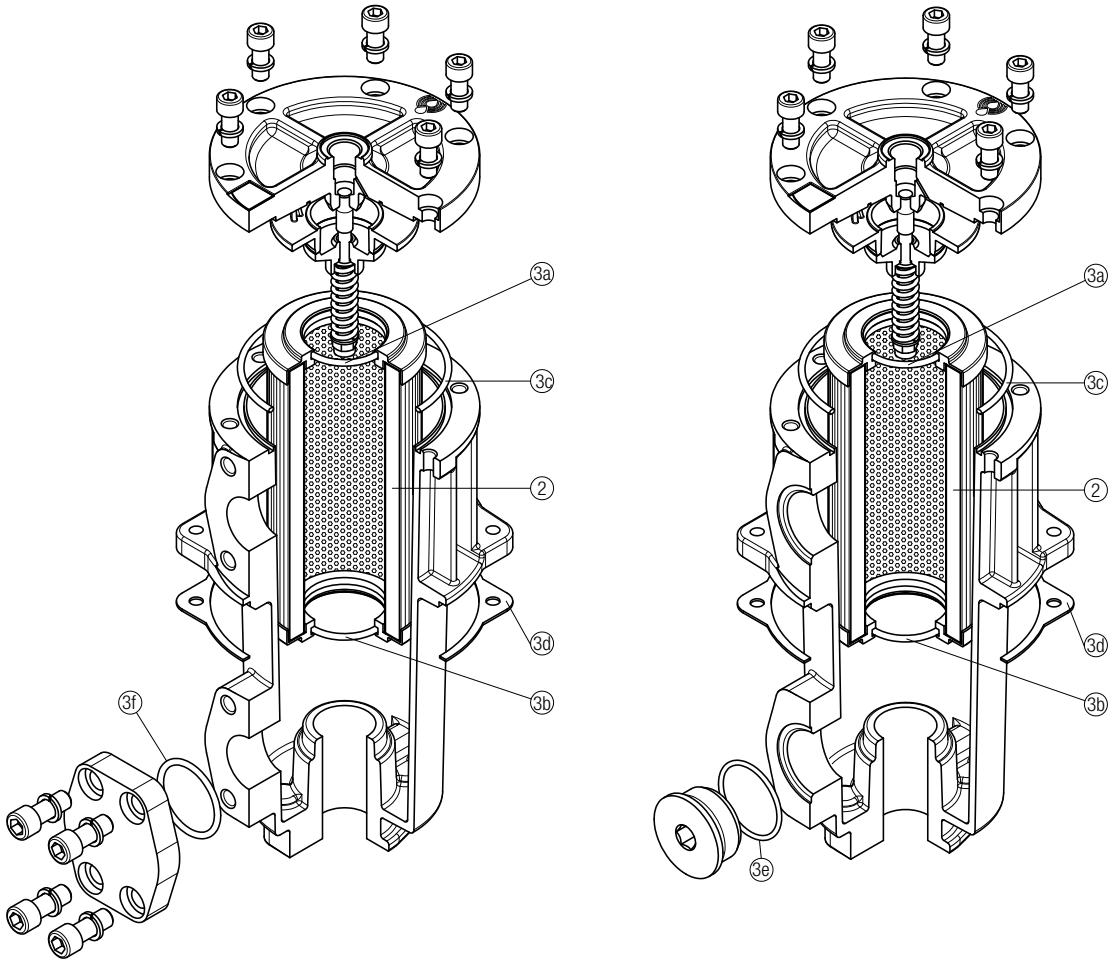
FRIC 025 - 040



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3e)	
Filter series	Filter element	Seal Kit code number NBR	FPM
FRIC 025	See order table	AK021000139	AK021000146
FRIC 040		AK021000140	AK021000147

MP FILTRI WWW.SUMY.IR

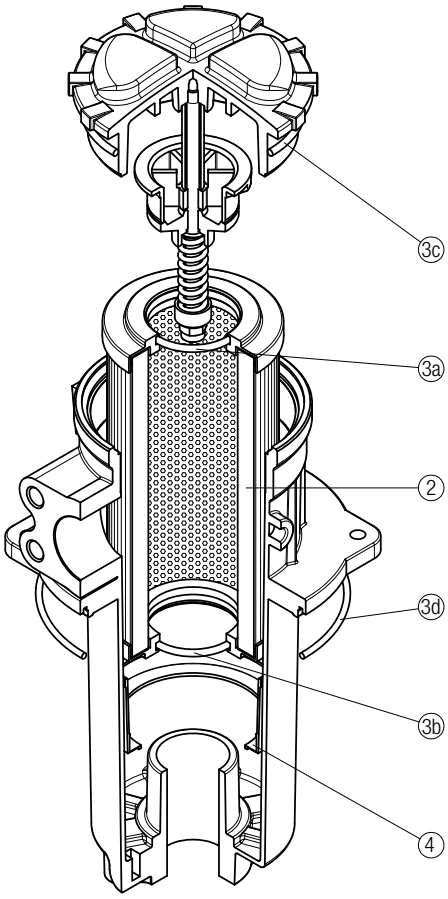
FRIC 100 - 250 - 630



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3f)	
Filter series	Filter element	Seal Kit code number NBR	FPM
FRIC 100	See order table	AK021000141	AK021000148
FRIC 250		AK021000142	AK021000149
FRIC 630		AK021000143	AK021000150

Order number for spare parts

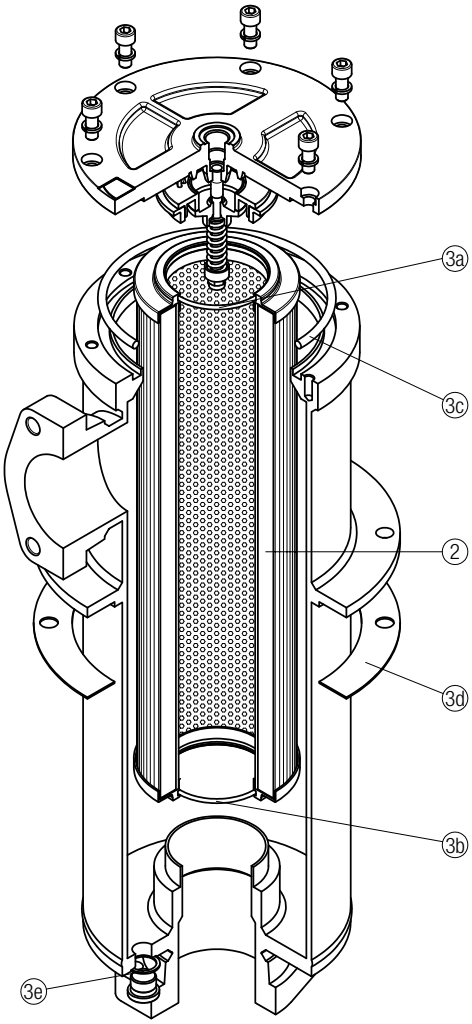
FRIC 255



Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3d)		Q.ty: 1 pc. 4
Filter series	**Filter element**	**Seal Kit code number NBR**	**FPM**	**Contamination retainer binder**
FRIC 255	See order table	AK021000012	AK021000013	01060301

MP FILTRI WWW.SUMY.IR

FRIC 850



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3e)	
Filter series	Filter element	Seal Kit code number NBR	FPM
FRIC 850	See order table	AK021000144	AK021000151

MP FILTRI
WWW.SUMY.IR

RFMC250 series

Maximum working pressure up to 2 MPa (20 bar) - Flow rate up to 615 l/min



RFMC250 GENERAL INFORMATION

Description

Return filter

Maximum working pressure up to 2 MPa (20 bar)
Flow rate up to 615 l/min

RFMC250 are ranges of return filters for side tank mounting with integrated shut-off valve for protection of the reservoir against the system contamination.
They are placed below the minimum oil level, directly connected to the return line of the system.
The shut-off valve closes automatically when the cover is removed, allowing the filter element replacement without the fluid drop.

Available features:

- Female threaded connections up to 1" and flanged connections up to 1 1/2", for a maximum flow rate of 615 l/min
- Bypass valve, to relieve excessive pressure drop across the filter media
- Magnetic filter, to hold the ferrous particles
- Visual, electrical and electronic clogging indicators

Common applications:

- Compact mobile machines
- Compact industrial equipment

Technical data

Filter housing materials

- Filter body: Aluminium
- Cover: Polyamide, GF reinforced
- Valve: Polyamide, GF reinforced - Steel
- Anti-Emptying valve: Steel

Pressure

- Test pressure: 3 MPa (30 bar)
- Min. Burst pressure: 6 MPa (60 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 2 MPa (20 bar)

Bypass valve

Opening pressure 0.175 MPa (1.75 bar) ±10%

Filter element features

Filter		Filter element	
RFMC		CUC	
Δp Element type			
Element media	Construction	Δp Series	Δp
A - Microfiber	Standard	D	10 bar
M - Wire mesh	Standard	D	10 bar
P - Paper	Standard	D	10 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals

- Standard NBR series A
- Optional FPM series V

Temperature

From -25 °C to +110 °C

Note

RFMC filters mounting, see the drawings on page 265 and following

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]	Volumes [dm³]
	Length 10	Length 10
RFMC 250	2.6	2.0

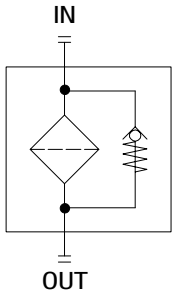
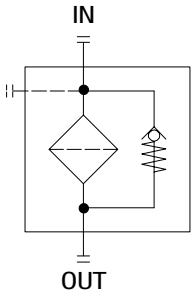
MP FILTRI WWW.SUMY.IR

Flow rates [l/min]

		Filter element design - D Series							
Filter series	Length	A0003	A0006	A0010	A0016	A0025	M0025 M0060 M0090	P0010	P0025
RFMC 250	**10**	148	184	278	307	447	615	447	485

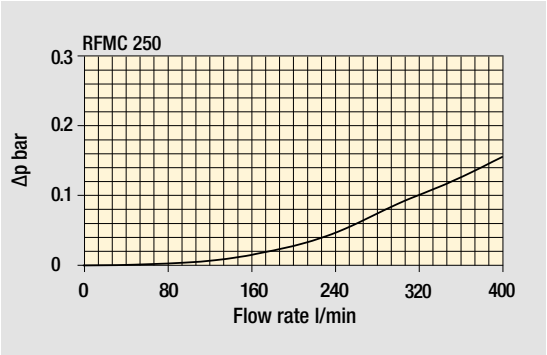
Maximum flow rate for a complete return filter with a pressure drop Δp = 0.5 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

Hydraulic diagram

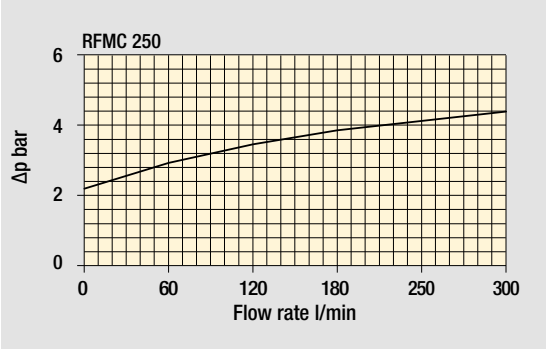
	17 / 30 - with bypass 1.7 / 3.0 bar	
Filter series	without additional connection	with additional connection
RFMC 250		

Pressure drop

Filter housings Δp pressure drop



Bypass valve pressure drop



The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

RFMC250

Designation & Ordering code

COMPLETE FILTER

Example 1:	RFMC	250	10	A0010	D	A	17	FG034	0	5T	NN	P01	NN
Example 2:	RFMC	250	10	M0060	D	V	30	FS016	1	5T	NN	P01	NN

Series
RFMC

Size
250

Length
10

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp
D 10 bar

Seals and treatments
A NBR
V FPM

By-pass valve
17 With bypass 1.75 bar
30 With bypass 3.0 bar

Connections

FG100	G 1”	**FN100**	1” NPT	**FS016**	SAE 16 - 1 5/16” - 12 UN	**FE112**	1 1/2” SAE 3000 psi/M
FG114	G 1 1/4”	**FN114**	1 1/4” NPT	**FS020**	SAE 20 - 1 5/8” - 12 UN	**FF112**	1 1/2” SAE 3000 psi/UNC
FG112	G 1 1/2”	**FN112**	1 1/2” NPT	**FS024**	SAE 24 - 1 7/8” - 12 UN		

Additional connections
0 Without additional connections
1 Main connection FG112 / FS024 — **G 1” / SAE 16 - 1 5/16” - 12 UN**

Connections for clogging indicator
5T With rear indicator connection, with metal plug

Additional features
NN Without additional features

Execution
P01 Standard catalogue item

Certificates
NN None

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Example 1:	CUC	250	10	A0010	D	A	00	NN	P01	NN
Example 2:	CUC	250	10	M0060	D	V	00	NN	P01	NN

Series
CUC

Size
250

Length
10

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0016	Inorganic microfiber	16 µm
A0025	Inorganic microfiber	25 µm
M0025	Wire mesh	25 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
P0010	Resin impregnated paper	10 µm
P0025	Resin impregnated paper	25 µm

Element Δp
D 10 bar

Seals and treatments
A NBR
V FPM

Bypass
00 Without bypass

Additional features
NN Without additional features

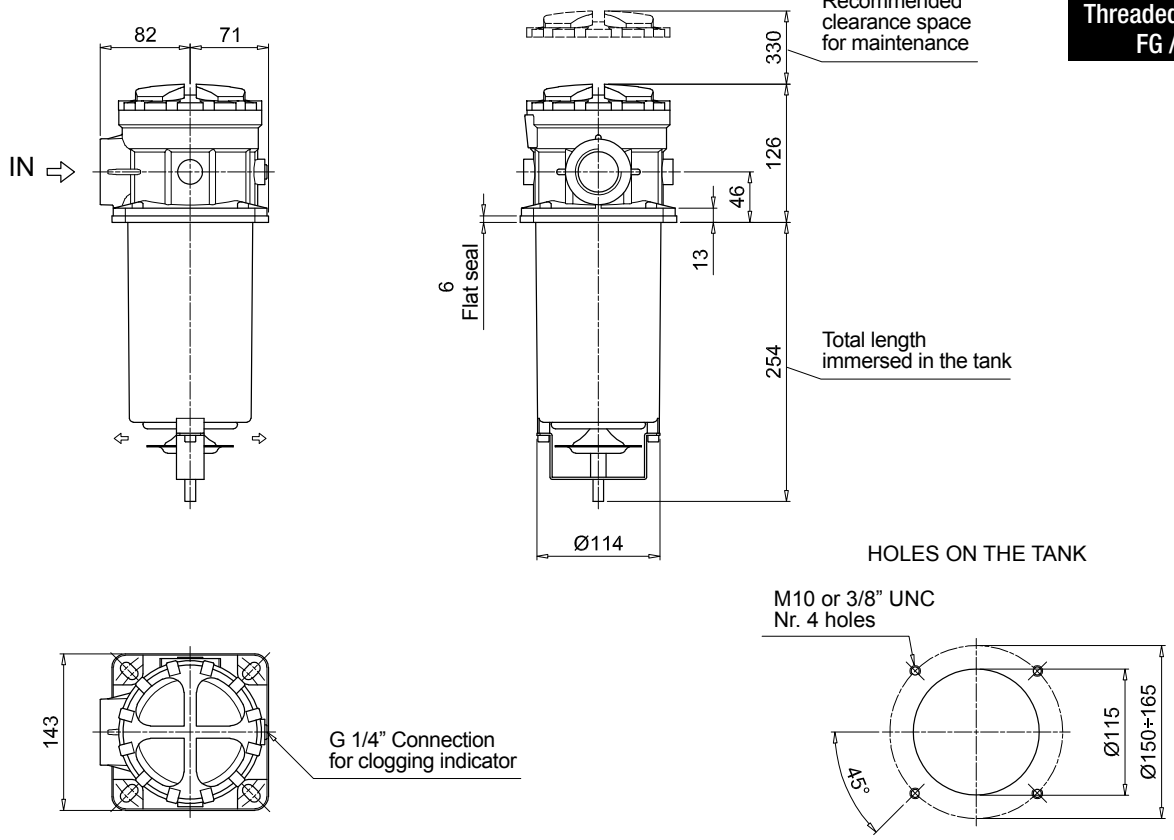
Execution
P01 Standard catalogue item

Certificates
NN None

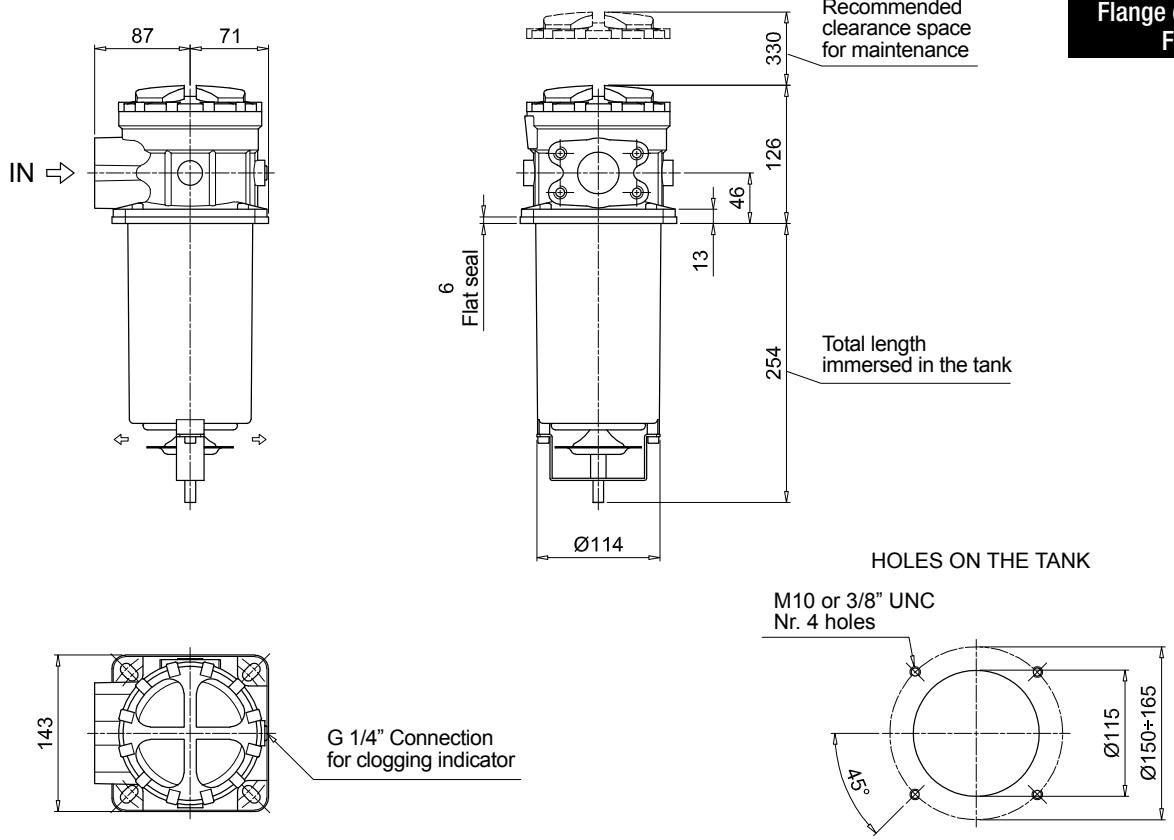
RFMC250

Dimensions

RFMC250
Threaded connections
FG / FN / FS



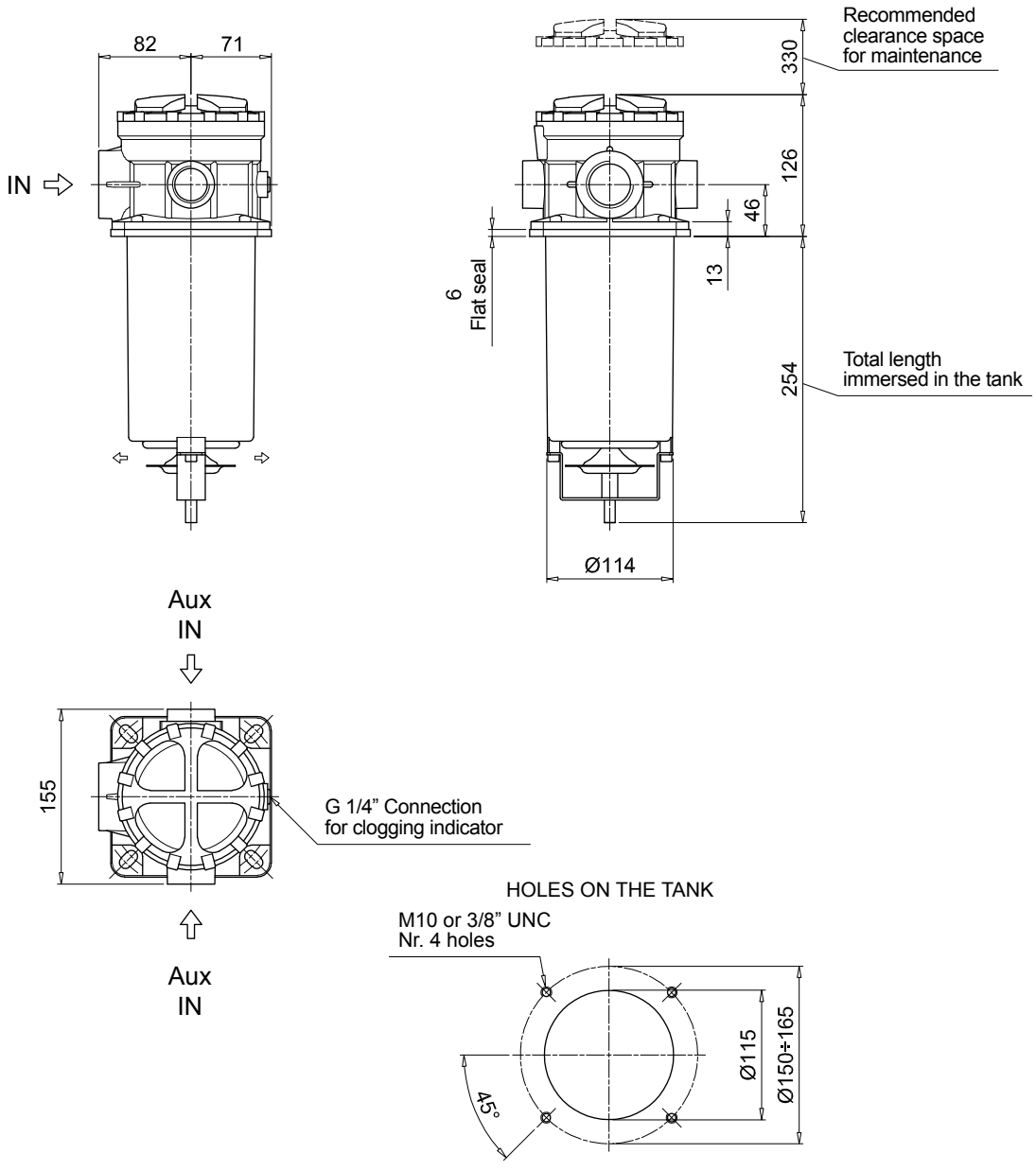
RFMC250
Flange connections
FE / FF



MP FILTRI
WWW.SUMY.IR

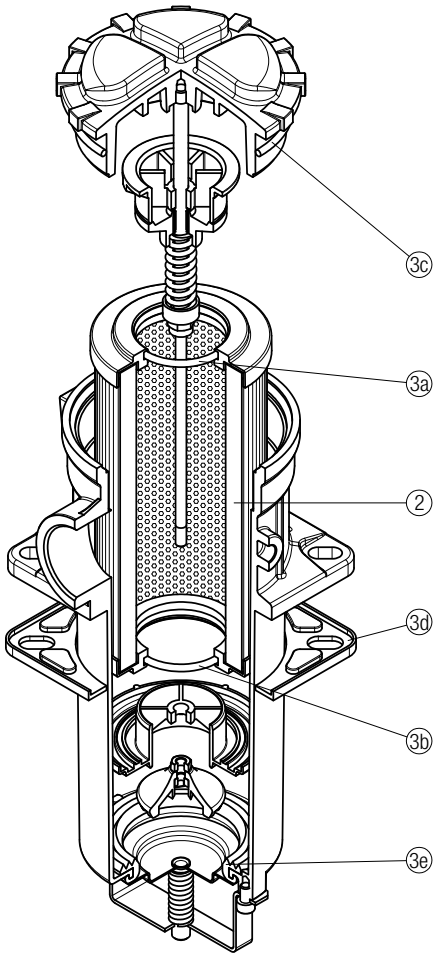
RFMC250

Additional connection "1"



Order number for spare parts

RFMC 250

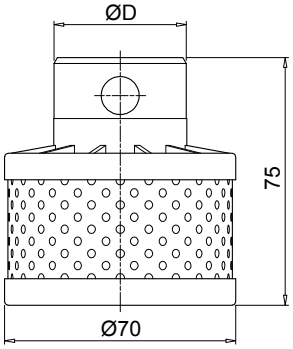


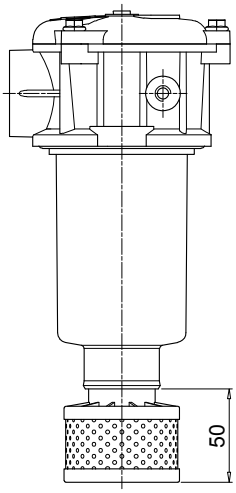
Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3e)	
Filter series	Filter element	Seal Kit code number NBR	FPM
RFMC 250	See order table	AK021000375	AK021000376

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Accessories

DIFFUSER WITH FAST LOCK CONNECTION





Example: DFS | 40 | A | 075

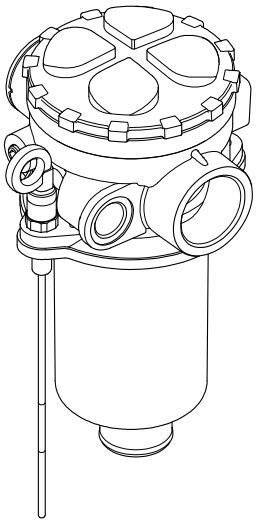
Series
DFS

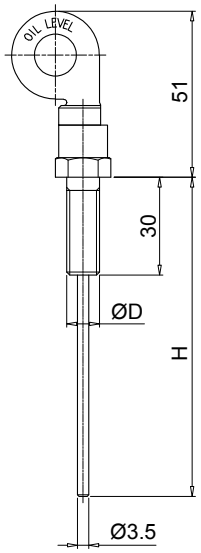
Size | **ØD [mm]**
40 40

Version
A Standard

Length
075 75 mm

DIPSTICK





Example: DPT | 20 | M10 | A | P01

Series
DPT

Length | **H [mm]**
15 134
20 184
25 234
30 284
35 334

Fastening
M8 Fastening with screws ØD = M8
M10 Fastening with screws ØD = M10

Seals
A NBR
V FPM

Execution
P01 MP Filtri standard
Pxx Customized

Materials
- Screw: phosphatized steel
- Stick: phosphatized steel
- Handle: Polyamide

Technical data
Working temperature:
from -25 °C to +110 °C

For any further information, please, contact our commercial dept.

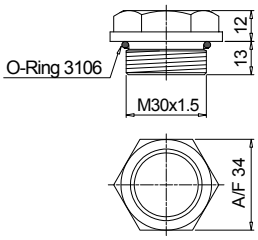
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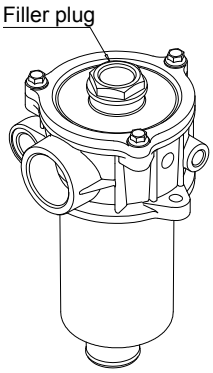
FILLER PLUG

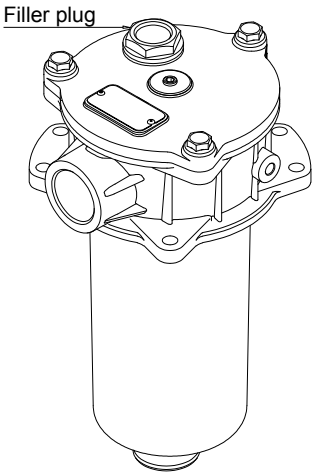
Series
T5

Materials
- Body: Polyamide
- Seal: NBR

Technical data
Tightening torque:
15 N·m







POLYAMIDE EXTENSION TUBE

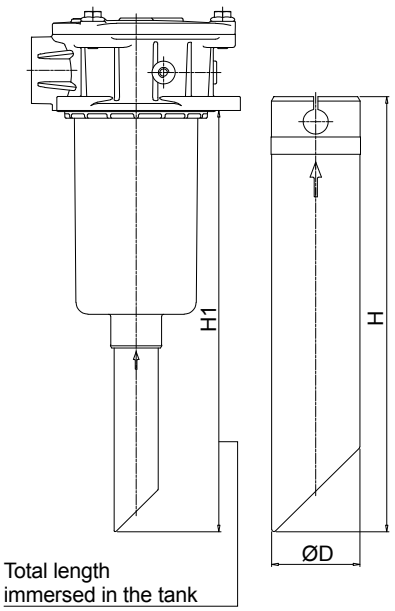
Example: TE | 40 | A | 250

Series
TE

Size	ØD [mm]
25	25
40	40
51	51
62	62

Material
A Polyamide

Length	H [mm]	25-40	51-62
200	200	•	•
250	250	•	-
300	300	•	•
350	350	•	-
400	400	•	•
450	450	•	-
500	500	•	•
600	600	-	•



COMPATIBILITY TABLE

Filter series	Filter size	Filter length	TE25	TE40	TE51	TE62	Tube length H1 [mm] 200	250	300	350	400	450	500	600
MPFX	030	10	•	-	-	-	266	316	366	416	466	516	566	-
	100 - 104 - 110	10	-	•	-	-	277	327	377	427	477	527	577	-
		20					322	372	422	472	522	572	622	-
		30					400	450	500	550	600	650	700	-
		40					502	552	602	652	702	752	802	-
	181 - 182 - 184	10	-	•	-	-	410	460	510	560	610	660	710	-
		20					623	673	723	773	823	873	923	-
	191 - 192 - 194	20	-	-	•	-	620	-	720	-	820	-	920	1020
	400 - 410 - 450	10	-	-	•	-	352	-	452	-	552	-	652	752
		20			-	•	411	-	511	-	611	-	711	811
		30					459	-	559	-	659	-	759	859
	750	10	-	-	-	•	597	-	697	-	797	-	897	997
MPTX	025 - 027	10	•	-	-	-	278	328	378	428	478	528	578	-
		20					342	392	442	492	542	592	642	-
		30					380	430	480	530	580	630	680	-
	110 - 114 - 116 - 120	10	-	•	-	-	273	323	373	423	473	523	573	-
		20					318	368	418	468	518	568	618	-
		30					396	446	496	546	596	656	696	-
		40					498	548	598	648	698	748	798	-
MFBX	100	10	-	•	-	-	284	334	384	434	484	534	584	-
		20					329	379	429	479	529	579	629	-
		30					407	457	507	557	607	657	707	-
		40					509	559	609	659	709	759	809	-

For any further information, please, contact our commercial dept.

Hydraulic combined filters for installation on the return and suction lines of hydrostatic transmissions (HSTs) for commercial vehicles, construction machinery, agricultural vehicles, and mobile work equipment with hydrostatic drive.

Advantage for the installation:
- **Space-saving assembly**
- **Reduced assembly time**
- **Fewer connections to the tank**
- **Protection from the pollution of the tank**

Advantages for the operativity:
- **Absolute filtration of the oil for the hydrostatic drive**
- **Fulfilment of the purity requirements according to ISO 4406, as specified by the manufacturer of the driving drives.**
- **Protection against damages from cavitation even under adverse conditions, i.e. cold start**
- **Less formation of free air in the system**
- **Easier maintenance operations (one spare filter element instead of two)**

FILTER SIZING

For the proper calculation see pag. 22

MP FILTRI WWW.SUMY.IR

Return / Suction filters



Filter sizing and corrective Factors	page 274
MRSX	277
LMP 124 MULTIPORT	291
INDICATORS	778

THE CORRECT FILTER SIZING HAS TO BE BASED ON THE TOTAL PRESSURE DROP DEPENDING ON THE APPLICATION.

The pressure drop calculation is performed by adding together the value of the housing with the value of the filter element. The pressure drop Δpc of the housing is proportional to the fluid density (kg/dm³ / lb/ft³).
The filter element pressure drop Δpe is proportional to its viscosity (mm²/s / SUS), the corrective factor Y have to be used in case of an oil viscosity different than 30 mm²/s (cSt) / 150 SUS.

Sizing data for single filter element, head at top

Δpc = Filter housing pressure drop [bar / psi]
Δpe = Filter element pressure drop [bar / psi]
Y = Corrective factor Y (see correspondent table), depending on the filter type, on the filter element size, on the filter element length and on the filter media
Q = flow rate (l/min - gpm)
V1 reference oil viscosity = 30 mm²/s (cSt) /150 SUS
V2 = operating oil viscosity in mm²/s (cSt) / SUS

Filter element pressure drop calculation with an oil viscosity different than 30 mm²/s (cSt) / 150 SUS

International system:
Δpe = Y : 1000 x Q x (V2:V1)

Imperial system:
Δpe = Y : 17.2 x Q x (V2:V1)

Δp Tot. = Δpc + Δpe

Verification formula

Δp Tot. ≤ Δp max allowed

Maximum total pressure drop (Δp max) allowed by a new and clean filter

Filter family	Δp max	
	[bar]	[psi]
Return - Suction filters (*)	1.50 bar	22 psi

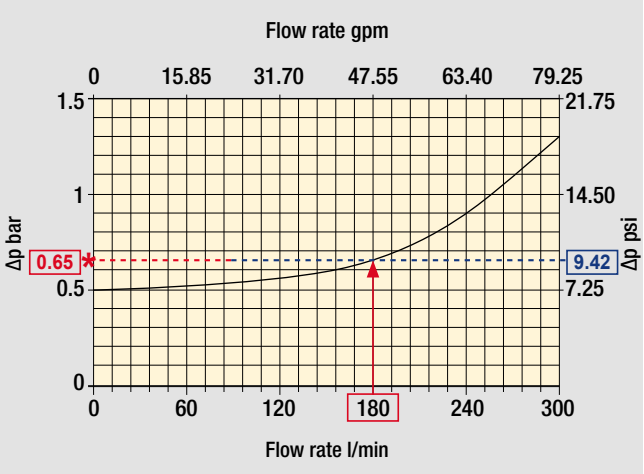
(*) The suction flow rate should not exceed 30% of the return flow rate

Filter pressure drop calculation example

Application data:
Selected filter: **MRSX 166 length 3**
Selected filter element: **RSX 165 length 3**
Selected filtration rating: **25 µm** absolute filtration with microfibre
Flow rate Q = **180 l/min / 47,55 gpm**
Viscosity V2 = 46 mm²/s (cSt) / 216 SUS
Oil density = 0.86 kg/dm³ / 53.68 lb/ft³

Calculation:
Δpc = 0.65 bar / 9.42 psi (see graphic below)

MRSX 165/166



Filter housings Δp pressure drop.
The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

Filter element		Absolute filtration Filter Elem. Δp Series: D		
Type	Length	A10	A16	A25
RSX 165	1	2.06	1.75	1.46
	2	1.24	1.05	0.96
	3	0.94	0.86	0.61

Δpe = (0.61 : 1000) x 180 x (46 : 30) = 0.17 bar
Δpe = (0.61 : 17.2) x 47.55 x (216 : 150) = 2.43 psi

√ **Δp Tot. = 0.65 + 0.17 = 0.82 bar**
Δp Tot. = 9.42 + 2.43 = 11.85 psi

The selection is correct because the total pressure drop value is inside the admissible range for return/suction filters.
In case the max allowed total pressure drop is not verified, it is necessary to repeat the calculation changing the filter and/or filter element length/size.

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Filter element		Absolute filtration		
Type	Length	A10	A16	A25
RSX 116	1	5.12	4.33	3.85
	2	2.22	1.87	1.22
RSX 165	1	2.06	1.75	1.46
	2	1.24	1.05	0.96
	3	0.94	0.86	0.61

Filter element		Absolute filtration Filter Element ΔP Series: N							
Type	Length	A03	A06	A10	A16	A25	P10	P25	M25 - M60 - M90
CU 110	1	16.25	15.16	8.75	8.14	5.87	2.86	2.65	0.14
	2	12.62	10.44	6.11	6.02	4.16	1.60	1.49	0.12
	3	8.57	7.95	5.07	4.07	2.40	1.24	1.15	0.11
	4	5.76	4.05	4.05	2.36	1.14	0.91	0.85	0.05

Corrective factor Y to be used for the filter element pressure drop calculation. The values depend to the filter size and length and to the filter media.
Reference oil viscosity 30 mm^2/s

MYCLEAN

THE X CONCEPT FOR OUR FILTERS

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

MRSX series

with MYCLEAN RSX Filter Element

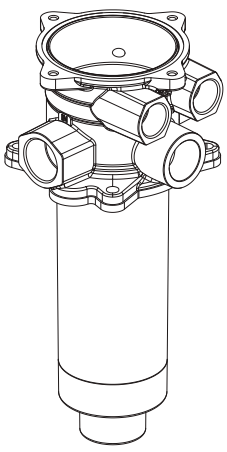


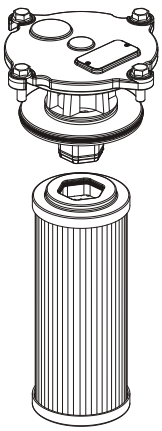
- **Protects the machine from improper use of non-original products.**
- **Safety of constant quality protection & reliability**

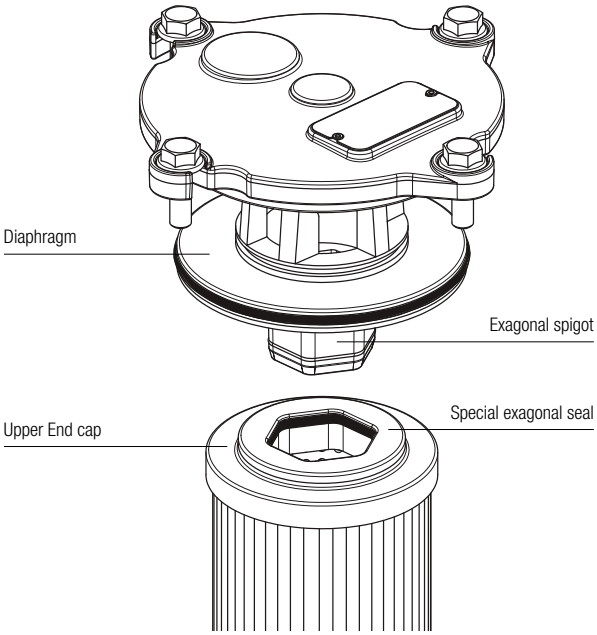
With exclusive filter element you are sure that only MP Filtri filter elements can be used, ensuring the best cleaning level of the oil due to the use of originals filter elements.

The products identified as MRSX are protected by:

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







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MRSX series

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



MRSX GENERAL INFORMATION

Description

Return / Suction filter | Tank mounted

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

MRSX is a range of suction/return filters for hydraulic systems with two or more circuits (both open and closed loops). They are able to provide pressurized oil cleaned by fine filtration to the feed pump of the hydrostatic systems.
They are directly fixed to the reservoir, in immersed or semi-immersed position.
The filter output must be always immersed into the fluid to avoid aeration or foam generation into the reservoir.

Available features:

- Female threaded return connections up to 1 1/4", for a maximum return flow rate of 250 l/min
- Multiple connections, to connect several return and suction lines
- Fine filtration rating, to get a good cleanliness level into the reservoir
- Bypass valve to the tank, to relieve excessive pressure drop across the filter media when the return flow is enough higher than the suction flow
- Bypass valve to the suction line with additional suction filter element, to relieve excessive pressure drop across the filter media when the return flow is not enough higher than the suction flow
- De-pressurization valve, to reduce the pressure inside the filter during the maintenance operations
- Anti-cavitation valve with additional suction filter element, to ensure fluid to the feed pump of the hydrostatic systems during cold starts or initial filling
- O-ring or Flat Seal to suit a variety of reservoir surfaces
- Reservoir side mounting, to save space in the machines
- Visual, electrical and electronic clogging indicators
- MYclean interface connection, to protect the product against non-original spare parts
- External protective wrap, to optimize the flow through the element and to save the element efficiency against non-proper handling

Common applications:

Mobile machines with hydrostatic systems on board
(i.e. skid steer loaders, telehandlers, dumpers, road sweepers)

Technical data

Filter housing materials

- Head: Aluminium

- Cover
  Polyamide: MRSX 116
  Aluminium: MRSX 165-166

- Bowl: Polyamide

Pressure

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

Filter element features

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

Seals

- Standard NBR series A
- Optional FPM series V

Temperature

From -25 °C to +110 °C

Flow rates [l/min]

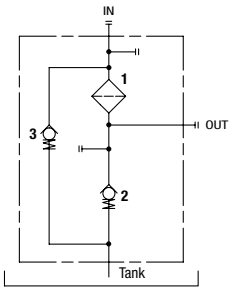
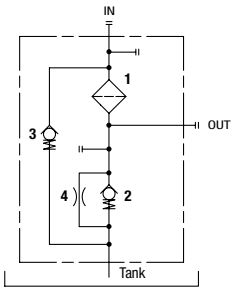
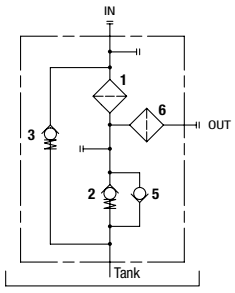
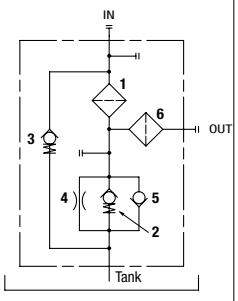
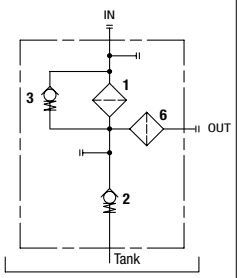
Filter series	Length	A10	A16	A25
MRSX 116	1	74	82	87
	2	108	113	124
MRSX 165 - 166	1	155	166	178
	2	187	196	200
	3	201	205	217

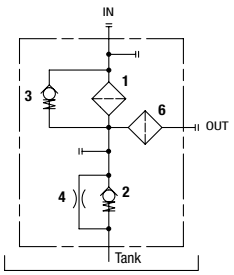
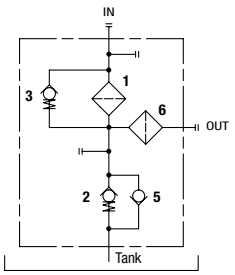
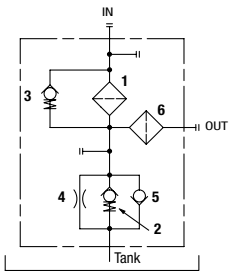
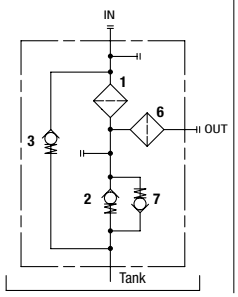
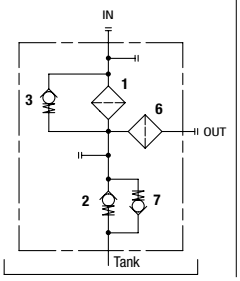
Maximum flow rate for a complete return/suction filter with a pressure drop Δp = 1 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

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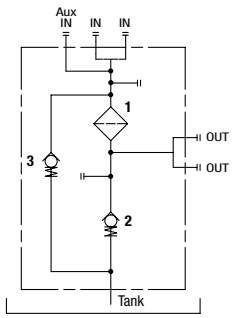
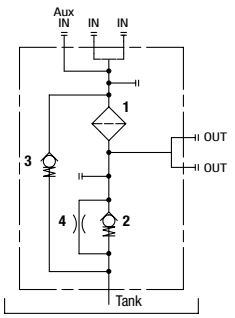
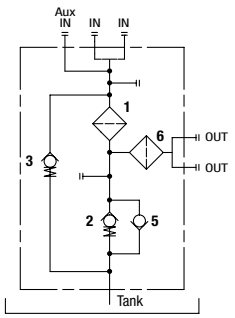
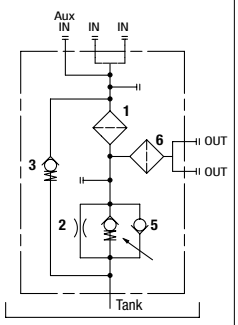
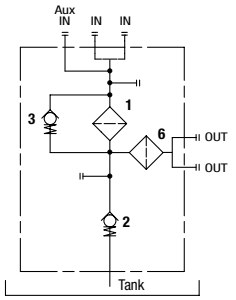
Hydraulic diagram

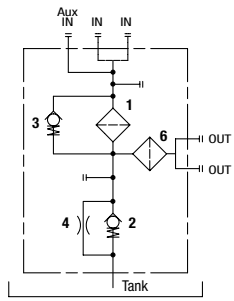
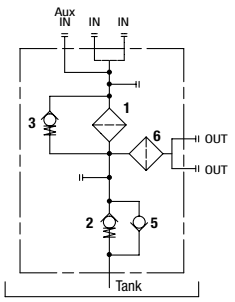
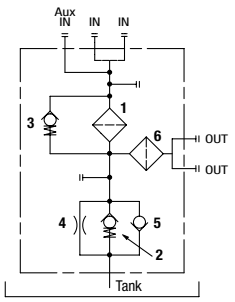
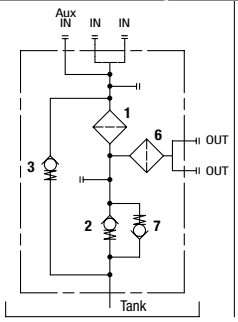
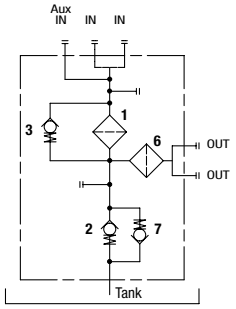
Filter series MRSX 116

Valves A option	Valves B option	Valves C option	Valves D option	Valves E option
				

Valves F option	Valves G option	Valves H option	Valves I option	Valves M option
			Suitable only for tank side-wall mounting	
				

Filter series MRSX 165-166

Valves A option	Valves B option	Valves C option	Valves D option	Valves E option
				

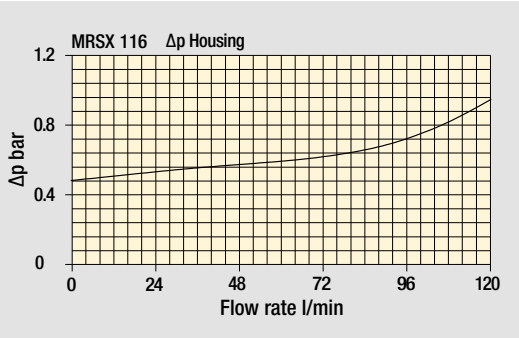
Valves F option	Valves G option	Valves H option	Valves I option	Valves M option
			Suitable only for tank side-wall mounting	
				

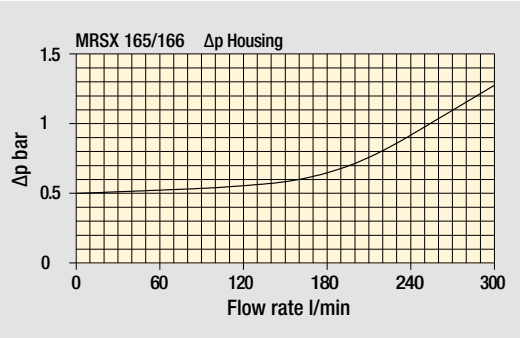
LEGEND

1 - Filter element
2 - Back-Pressure valve: opening pressure 0.5 bar ±10%
3 - Bypass valve: opening pressure 2.5 bar ±10%
4 - Depressurization valve
5 - Anti-Cavitation valve
6 - Safety filter element (wire mesh 60 µm)
7 - Anti-Cavitation valve / Anti-Emptying valve

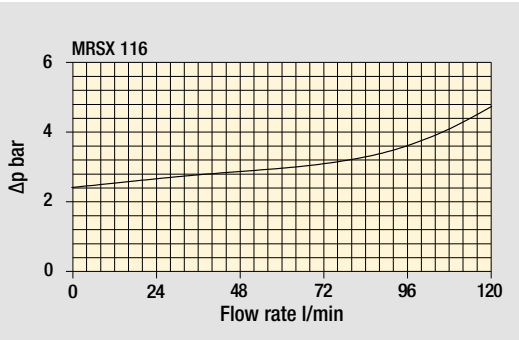
Pressure drop

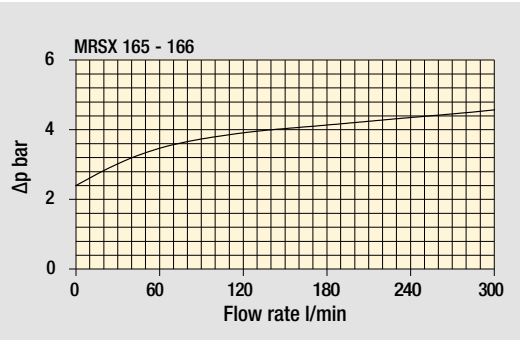
Filter housings Δp pressure drop





Bypass valve pressure drop





The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

Weights [kg] and volumes [dm^3]

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

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MRSX MRSX116

Designation & Ordering code

COMPLETE FILTER

Configuration example: MRSX116 | 1 | B | A | G1 | 0 | A16 | B | P01

Series and size

MRSX116 Filter featuring MYCLEAN Filter Element

Length

1 | **2**

Hydraulic diagram configuration - see page 275

	Bypass valve to tank	Bypass valve to OUT
A | **B** | **C** | **D**	•	-
E | **F** | **G** | **H**	-	•
I	•	-
M	-	•

Seals and treatments

A	NBR, O-Ring on head	**B**	NBR, flat seal on head
V	FPM, O-Ring on head	**D**	FPM, flat seal on head

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

Aux IN connection

0 Without aux IN connection

Filtration rating (filter media)

A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm

Valves configuration

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

Execution

P01	MP Filtri standard
Pxx	Customized

FILTER ELEMENT

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

Element series and size

RSX116 Filter Element with MYCLEAN feature

Element length

1 | **2**

Filtration rating (filter media)

A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm

Seals

A	NBR
V	FPM

Execution

P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See pages 778-780

Indicators on Return Line

BVA	Axial pressure gauge	**BEA**	Electrical pressure indicator
BVR	Radial pressure gauge	**BEM**	Electrical pressure indicator
BVP	Visual pressure indicator with automatic reset	**BET**	Electrical pressure indicator
BVQ	Visual pressure indicator with manual reset	**BLA**	Electrical / visual pressure indicator

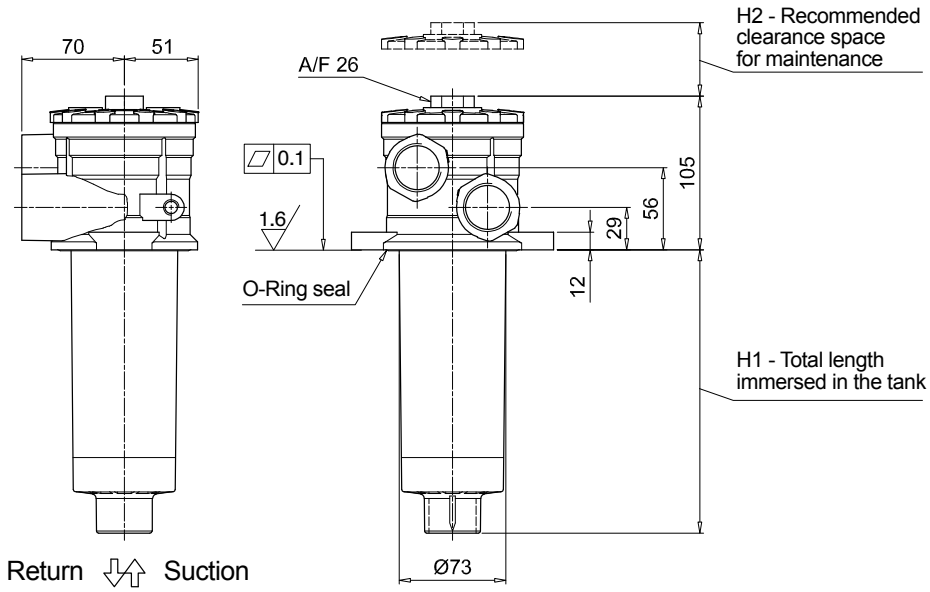
Indicators on Suction Line

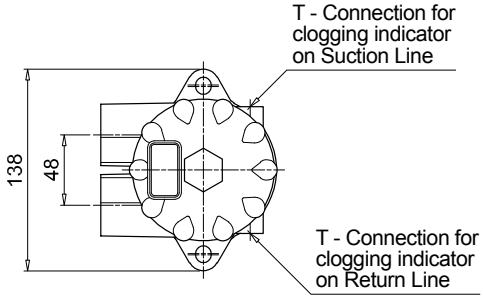
VVB	Axial vacuum gauge	**VEB**	Electrical vacuum indicator
VVS	Radial vacuum gauge	**VLB**	Electrical / visual vacuum indicator

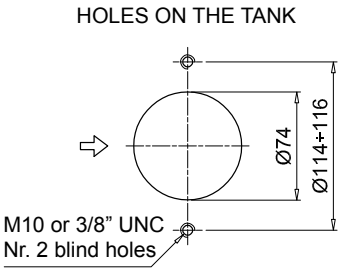
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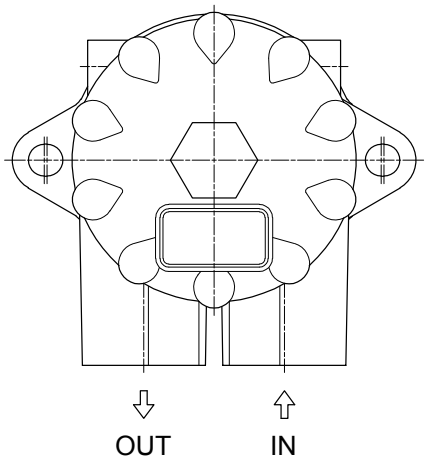
MRSX116		
Filter length	**H1 [mm]**	**H2 [mm]**
1	203	240
2	263	300

Connections	T
G1 - G2	G 1/8”
G3 - G4	1/8” NPT
G5 - G6	1/8” NPT
D1	G 1/8”
D2 - D3	1/8” NPT









MRSX MRSX165 - MRSX166

Designation & Ordering code

COMPLETE FILTER

Configuration example: MRSX166 | 2 | C | V | G3 | 1 | A10 | S | P01

Series and size

MRSX165 | **MRSX166** Filter featuring MYCLEAN Filter Element

Length

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

Hydraulic diagram configuration - see page 275

	Bypass valve to tank	Bypass valve to OUT
A | **B** | **C** | **D**	•	-
E | **F** | **G** | **H**	-	•
I	•	-
M	-	•

Seals and treatments

A	NBR, O-Ring on head	**B**	NBR, flat seal on head
V	FPM, O-Ring on head	**D**	FPM, flat seal on head

Connections

	IN (size 165)	IN (size 166)	Aux IN	OUT
G1	G 1 1/4”	G 1”	G 1 1/4”	G 1”
G2	1 1/4” NPT	1” NPT	1 1/4” NPT	1” NPT
G3	SAE 20 - 1 5/8” - 12 UN	SAE 16 - 1 5/16” - 12 UN	SAE 20 - 1 5/8” - 12 UN	SAE 16 - 1 5/16” - 12 UN

Aux IN connection

		MRSX 165	MRSX 166
0	Without aux IN connection	•	-
1	With aux IN connection - see previous table	•	•

Filtration rating (filter media)

A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm

Valves configuration

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

Execution

P01	MP Filtri standard
Pxx	Customized

FILTER ELEMENT

Configuration example: RSX165 | 2 | A10 | V | P01

Element series and size

RSX165 Filter Element with MYCLEAN feature

Element length

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

Filtration rating (filter media)

A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm

Seals

A	NBR
V	FPM

Execution

P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See pages 778-780

Indicators on Return Line

BVA	Axial pressure gauge	**BEA**	Electrical pressure indicator
BVR	Radial pressure gauge	**BEM**	Electrical pressure indicator
BVP	Visual pressure indicator with automatic reset	**BET**	Electrical pressure indicator
BVQ	Visual pressure indicator with manual reset	**BLA**	Electrical / visual pressure indicator

Indicators on Suction Line

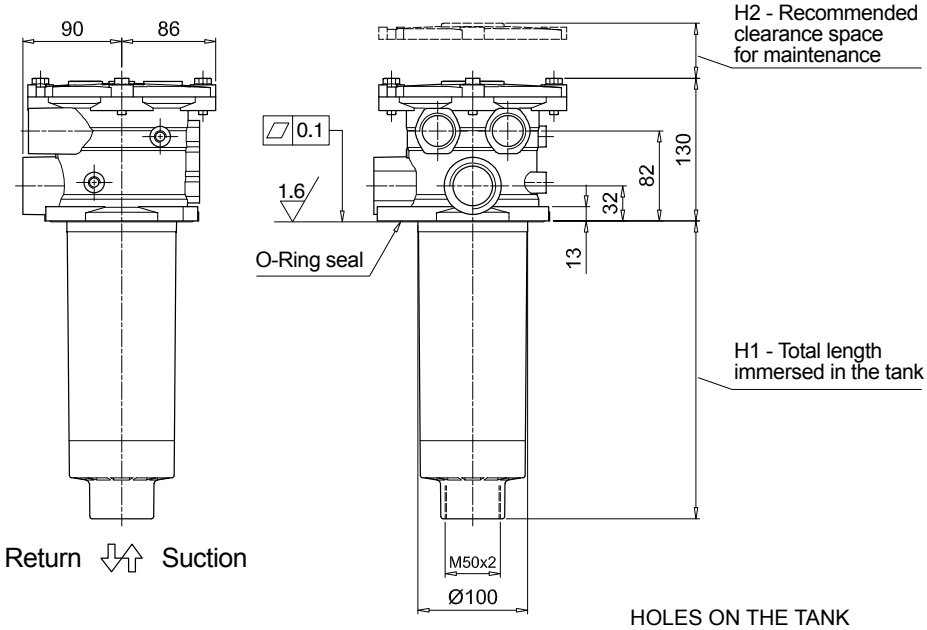
VVB	Axial vacuum gauge	**VEB**	Electrical vacuum indicator
VVS	Radial vacuum gauge	**VLB**	Electrical / visual vacuum indicator

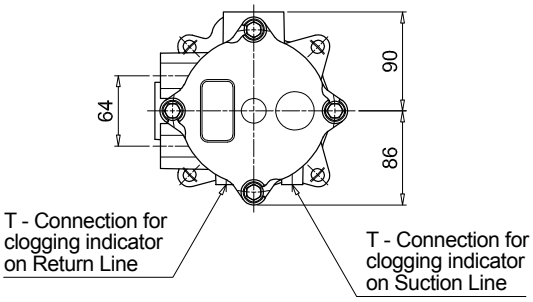
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MRSX165

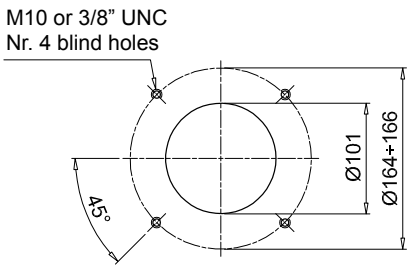
Filter length	H1 [mm]	H2 [mm]
1	270	320
2	378	430
3	445	500

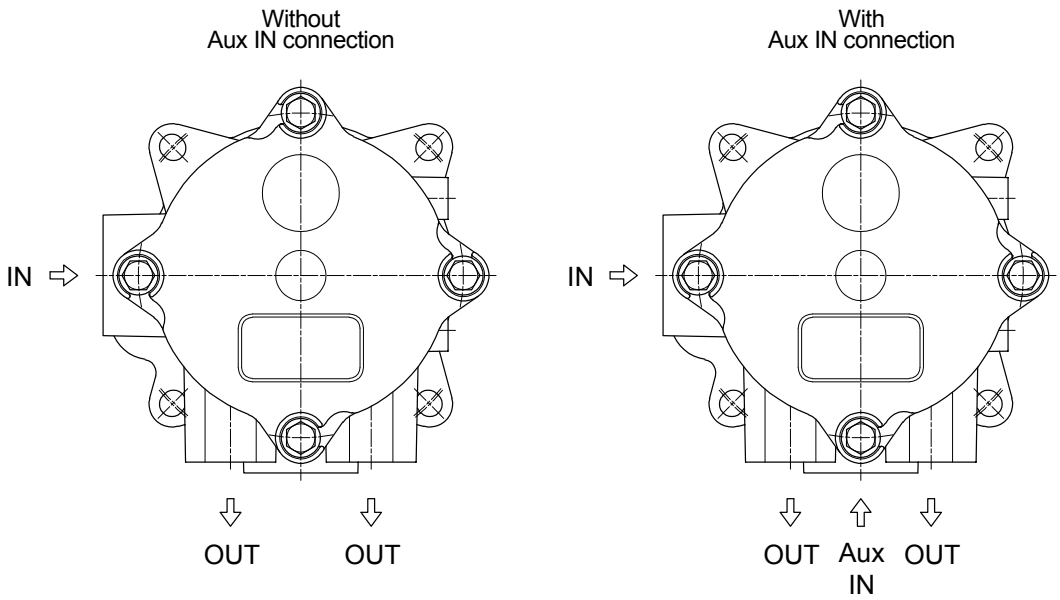
Connections	T
G1	G 1/8"
G2 - G3	1/8" NPT



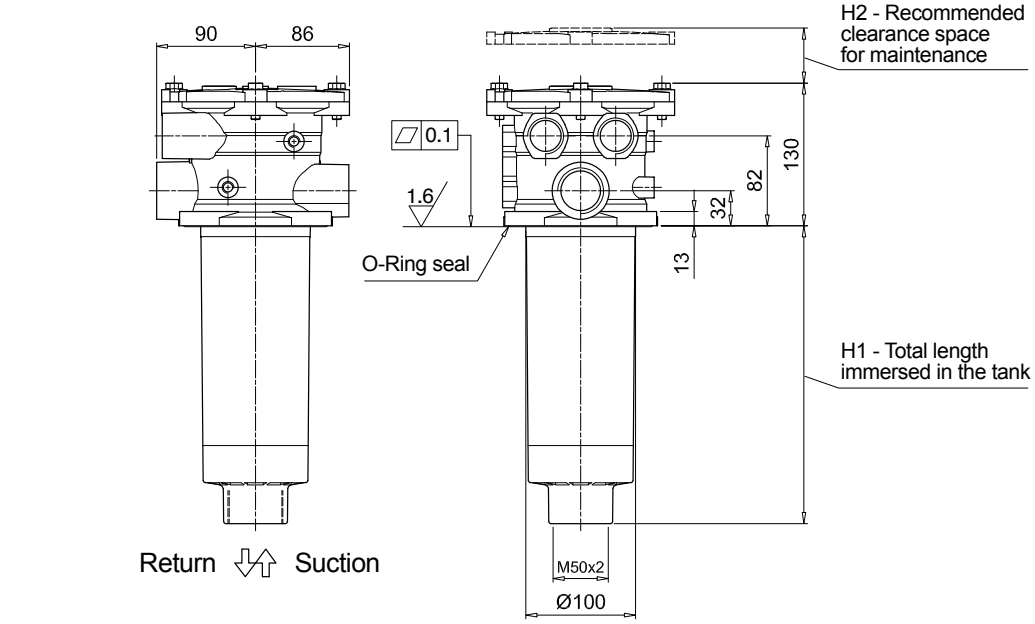


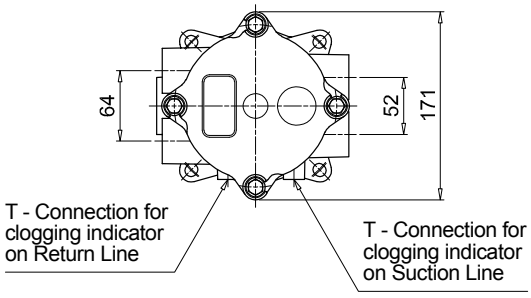
HOLES ON THE TANK

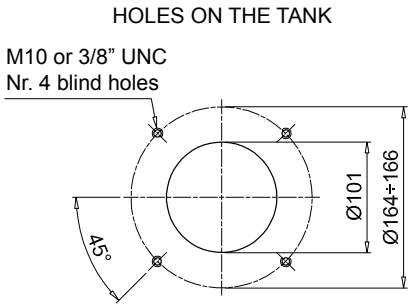


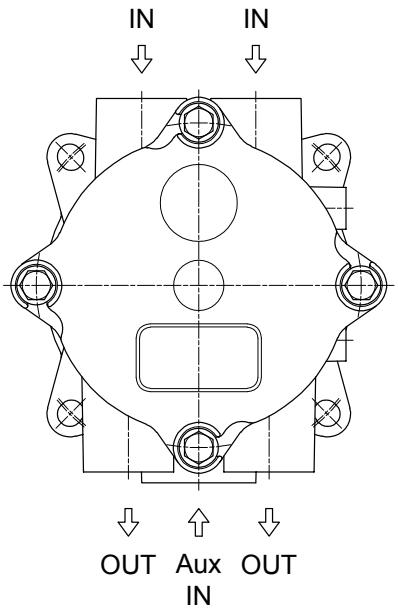


Dimensions









MRSX166

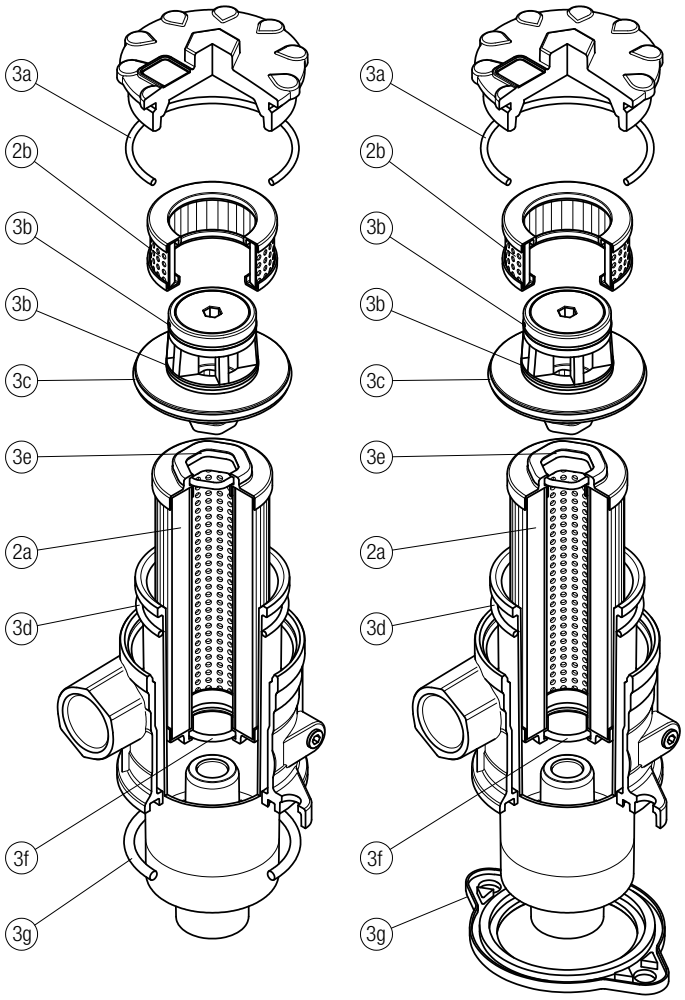
Filter length	H1 [mm]	H2 [mm]
1	270	320
2	378	430
3	445	500

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

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Order number for spare parts

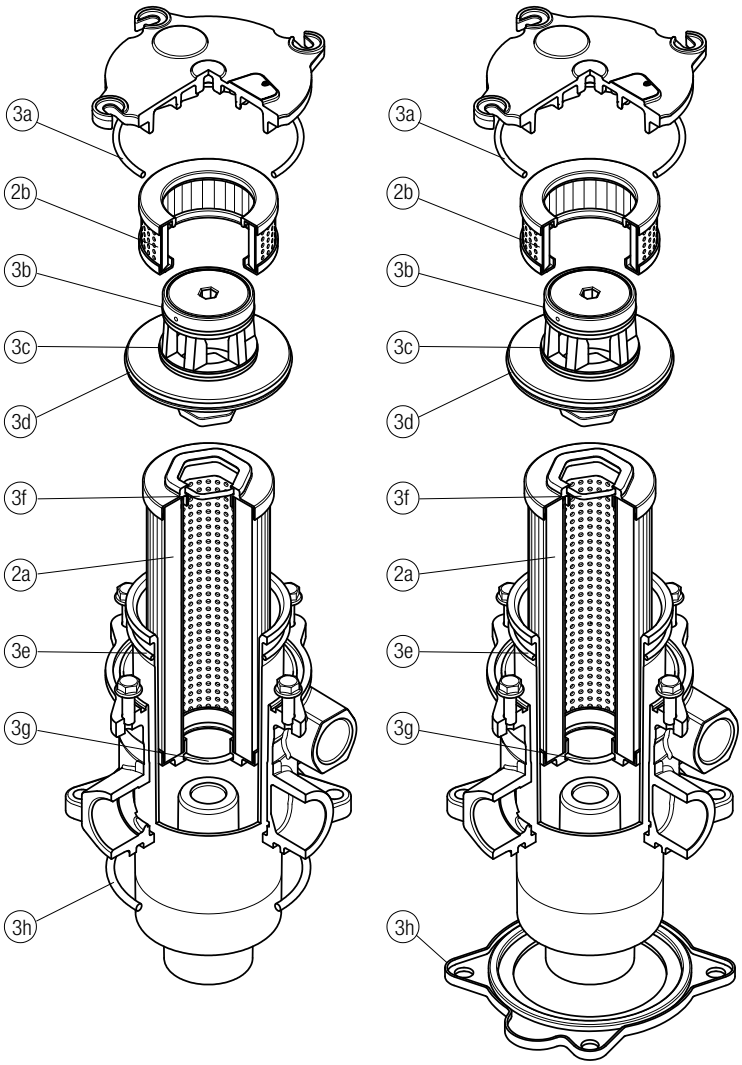
MRSX 116



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

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MRSX 165 - 166



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

MP FILTRI
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LMP 124 series
MULTIPORT

Maximum working pressure up to 8 MPa (80 bar) - Flow rate up to 120 l/min



Description

Return / Suction filter | In-line

Maximum working pressure up to 8 MPa (80 bar)
Flow rate up to 120 l/min

LMP124 is a range of return/suction filters for hydraulic systems with two or more circuits (both open and closed loops). They are able to provide pressurized oil cleaned by fine filtration to the feed pump of the hydrostatic systems.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- Female threaded connections up to 1", for a maximum return flow rate of 120 l/min
- Fine filtration rating, to get a good cleanliness level into the reservoir
- Bypass valve to the tank, to relieve excessive pressure drop across the filter media when the return flow is enough higher than the suction flow
- Bypass valve to the suction line with additional suction filter element, to relieve excessive pressure drop across the filter media when the return flow is not enough higher than the suction flow
- De-pressurization valve, to reduce the pressure inside the filter during the maintenance operations
- Visual, electrical and electronic differential clogging indicators

Common applications:

Mobile machines with hydrostatic systems on board.
(i.e. skid steer loaders, telehandlers, dumpers, road sweepers)

Technical data

Filter housing materials

- Head: Aluminium
- Housing: Cataphoresis - Painted steel
- Bypass valve: Brass - Aluminium

Pressure

- Test pressure: 12 MPa (120 bar)
- Min. Burst pressure: 24 MPa (240 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 8 MPa (80 bar)

Bypass valve

- Opening pressure 0.25 MPa (2.5 bar) ±10%
- Other opening pressures on request.

Filter element features

Filter		Filter element	
LMP 124		CU	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	N	20 bar
M - Wire mesh	Standard	N	20 bar
P - Paper	Standard	N	20 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals

- Standard NBR series A
- Optional FPM series V

Temperature

From -25 °C to +110 °C

Note

LMP124 filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]					Volumes [dm³]				
	Length	1	2	3	4	Length	1	2	3	4
LMP 124		1.70	1.90	2.20	2.70		0.75	0.81	1.11	1.53

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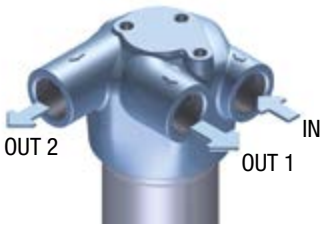
Flow rates [l/min]

Filter series	Length	Filter element design - N series							
		A03	A06	A10	A16	A25	M25 M60 M90	P10	P25
LMP 124	1	39	41	58	60	69	99	84	85
	2	47	53	68	69	77	99	90	91
	3	59	61	73	77	86	99	92	93
	4	70	78	84	86	93	100	94	95

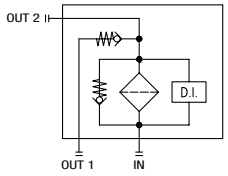
Maximum flow rate for a complete return/suction filter with a pressure drop Δp = 1.2 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

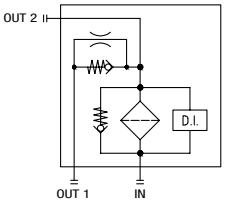
Hydraulic diagram - Valves option

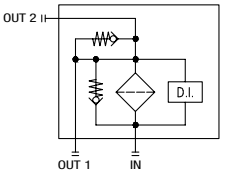
Multiport	Valves C option	Valves D option	Valves E option	Valves F option

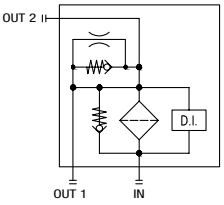


IN - Return
OUT 1 - Tank
OUT 2 - Pump

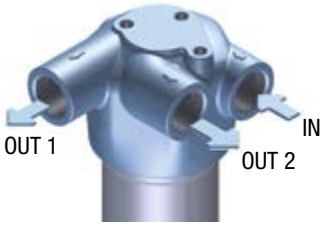




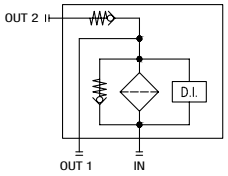


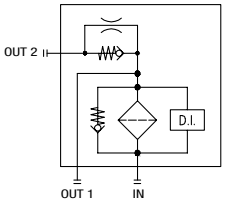


Multiport	Valves G option	Valves H option



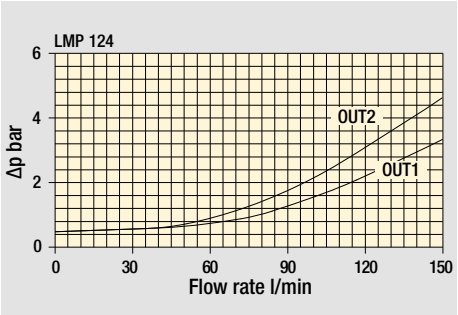
IN - Return
OUT 1 - Pump
OUT 2 - Tank



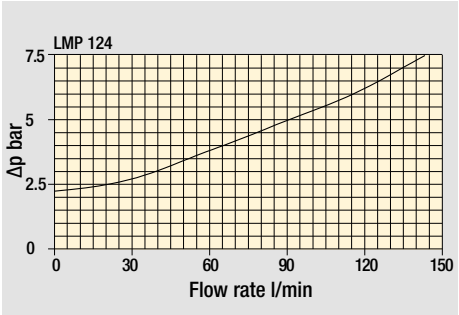


Pressure drop

Filter housings Δp pressure drop



Bypass valve pressure drop



OUT 1: Valves option G/H
OUT 2: Valves option C/D/E/F

Designation & Ordering code

COMPLETE FILTER

Configuration example: LMP124 | 4 | C | A | F | 1 | A10 | N | P01

Series and size
LMP124

Filter length
1 | **2** | **3** | **4**

Hydraulic diagram configuration - see page 293
C | **D** | **E** | **F** | **G** | **H**

Seals and treatments

A	NBR
V	FPM

Connections

B	G 1”
F	SAE 16 - 1 5/16” - 12 UN

Connection for indicator

1	Without
2	With connection G 1/8” for clogging indicator
3	With connection G 1/4” for clogging indicator
4	With connection for differential pressure indicator

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm
M60	Wire mesh	60 µm
M90	Wire mesh	90 µm
P10	Resin impregnated paper	10 µm
P25	Resin impregnated paper	25 µm

Element Δp

N	20 bar

Execution

P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See pages 282-285

Indicators on Return Line

BVA	Axial pressure gauge
BVR	Radial pressure gauge
BVP	Visual pressure indicator with automatic reset
BVQ	Visual pressure indicator with manual reset
BEA	Electrical pressure indicator
BEM	Electrical pressure indicator
BET	Electrical pressure indicator
BLA	Electrical / visual pressure indicator

Differential pressure indicators

DEA	Electrical differential pressure indicator
DEM	Electrical differential pressure indicator
DEU	Electrical differential pressure indicator
DLA	Electrical / visual differential pressure indicator
DLE	Electrical / visual differential pressure indicator
DTA	Electronic differential pressure indicator
DTI	I-O Link electronic differential pressure indicator
DVA	Visual differential pressure indicator
DVM	Visual differential pressure indicator

PLUGS

See page 807

T2	Plug (not included)

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Configuration example: CU110 | 4 | A10 | A | N | P01

Element series and size

CU110

Element length

1 | **2** | **3** | **4**

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm
M60	Wire mesh	60 µm
M90	Wire mesh	90 µm
P10	Resin impregnated paper	10 µm
P25	Resin impregnated paper	25 µm

Seals and treatments

A	NBR
V	FPM

Element Δp

N	20 bar

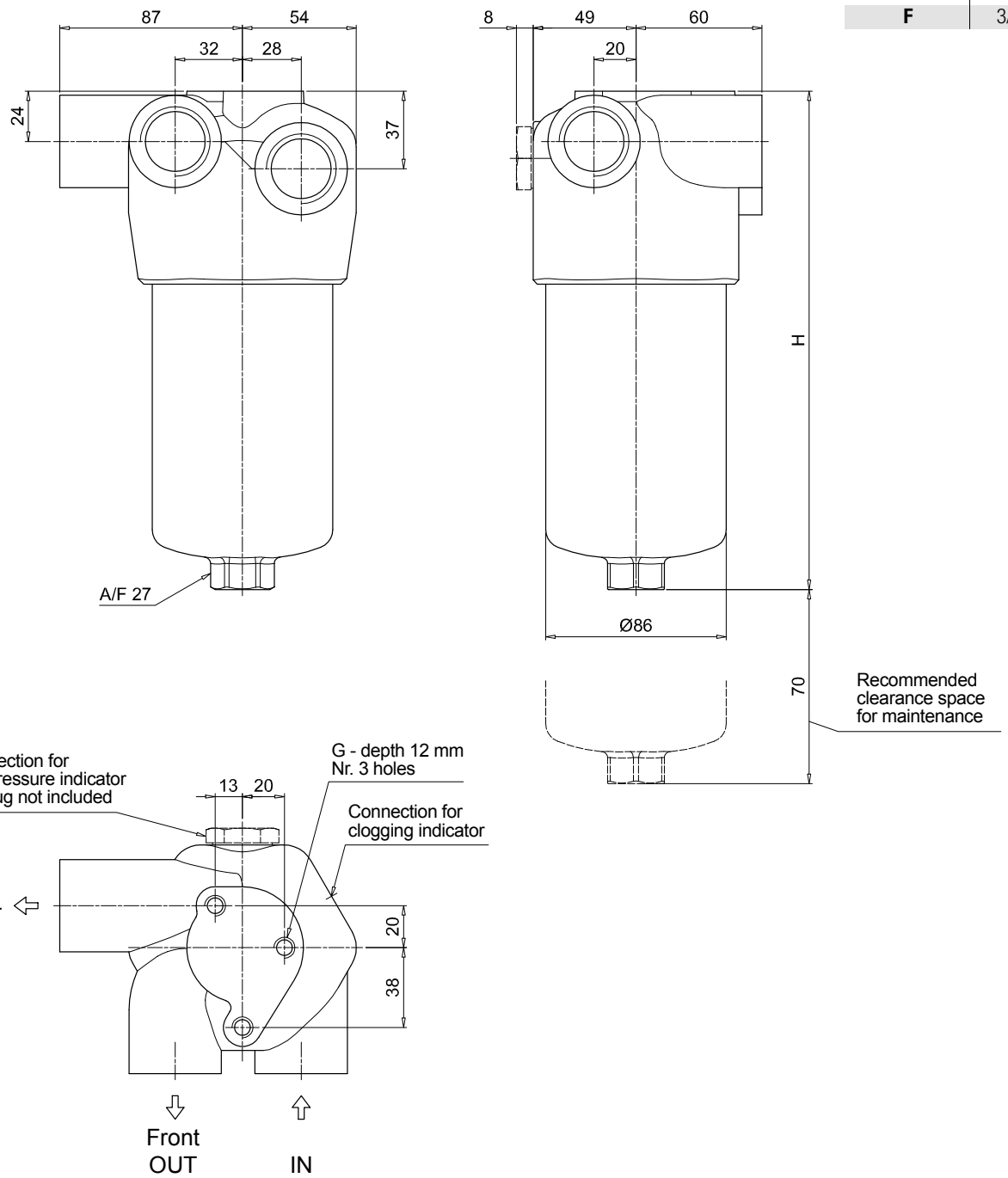
Execution

P01	MP Filtri standard
Pxx	Customized

Dimensions

LMP 124 MULTIPORT	
Filter length	**H [mm]**
1	197
2	230
3	280
4	380

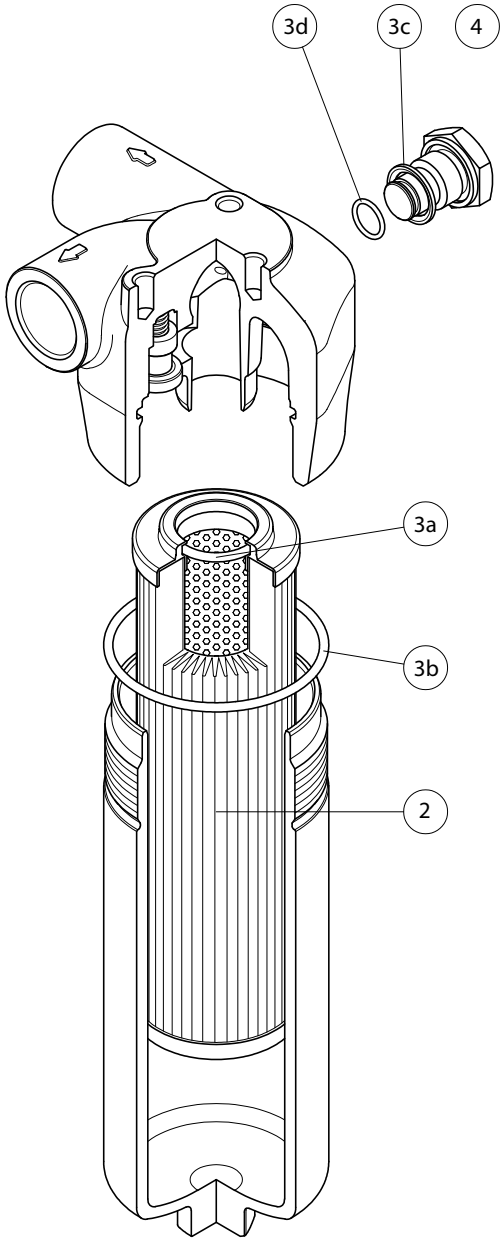
Connections	G
B	M10
F	3/8" UNC



MP FILTRI WWW.SUMY.IR

Order number for spare parts

LMP 124 MULTIPORT



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3d)		Q.ty: 1 pc. (4)	
Filter series	Filter element	Seal Kit code number NBR	Seal Kit code number FPM	Indicator connection plug NBR	Indicator connection plug FPM
LMP 124 MULTIPORT	See order table	02050478	02050479	T2H	T2V

Spin-On filters are used as process and safety filters to protect individual pumps, valves or the entire hydraulic circuit from contamination as per ISO 4406.

In-line Spin-On filters can be used for the following purposes:
- **Suction filters**
- **On the return circuit, for mounting on the line or on the tank cover**
- **In-line for low and medium pressure applications**

Spin-On filters are available in 4 configurations:
- **Single cartridge in-line**
- **In-line with two parallel cartridges on the same axis**
- **In-line with two parallel cartridges mounted side by side**

All versions may be equipped with visual and/or electrical blockage indicators.

MP FILTRI WWW.SUMY.IR

Spin-on filters



MPS	page 301
INDICATORS	781

MP FILTRI
WWW.SUMY.IR

MPS series

Maximum working pressure up to 1.2 MPa (12 bar) - Flow rate up to 365 l/min



MPS GENERAL INFORMATION

Description

Spin-on filters

Maximum working pressure up to 1.2 MPa (12 bar)
Flow rate up to 365 l/min

MPS is a range of spin-on filters suitable to be used in suction, return and low pressure lines.
They offer a good balance between performances, dimensions and prices.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- Female threaded connections up to 1 1/2" and flanged connections up to 1 1/2", for a maximum flow rate of 365 l/min
- Fine filtration rating, to get a good cleanliness level into the reservoir
- Water removal elements (CW), to remove the free water from the hydraulic fluid
- Double connection for the cans, to fit both European and American standard elements
- Double cans fitting, to increase the life time of the filter
- Bypass valve, to relieve excessive pressure drop across the filter media
- Visual, electrical and electronic clogging indicators for suction and return applications
- Visual, electrical and electronic differential clogging indicators for low pressure applications

Common applications:

- Suction lines, Return lines, Delivery lines, in economic industrial equipment or mobile machines.
- Off-line filtration tank in economic industrial equipment or mobile machines

Technical data

Filter housing materials

- Head: Aluminium
- Bypass valve: Polyamide - Steel
- Element: Zinc-Plated Steel - Painted steel

Pressure

- Test pressure: 1.8 MPa (18 bar)
- Min. Burst pressure: 3.6 MPa (36 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 1.2 MPa (12 bar)

Bypass valve

- Inline / Return filter opening pressure: 0.175 MPa (1.75 bar) ±10%
- Inline / Suction filter opening pressure: 0.03 MPa (0.3 bar) ±10%

Filter element features

Filter		Filter element
MPS		CS
Δp Element type		
Element media	Construction	Δp
A - Microfiber	Standard	5 bar
M - Wire mesh	Standard	5 bar
P - Paper	Standard	5 bar
Please see ordering code tables to check element Δp series availability based on filter features.		
Flow direction through the filter element: From OUT to IN		

Seals

Standard NBR - series A

Temperature

From -20 °C to +110 °C

Note

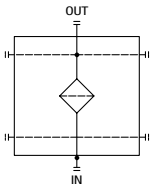
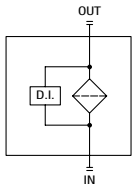
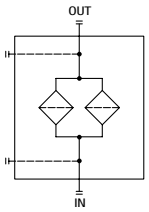
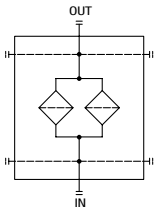
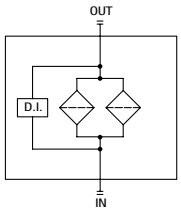
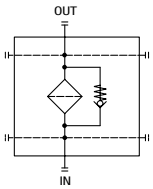
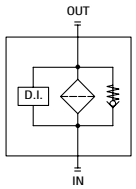
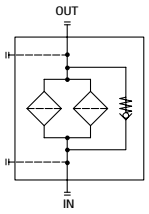
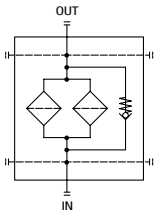
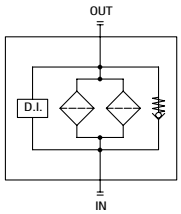
MPS filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]	Volumes [dm³]
MPS 050	1.00	0.70
MPS 051	1.05	0.70
MPS 070	1.20	0.95
MPS 071	1.25	0.95
MPS 100	2.10	1.65
MPS 101	2.20	1.65
MPS 150	2.40	2.00
MPS 151	2.50	2.00
MPS 200	3.90	3.00
MPS 250	4.60	3.70
MPS 300-301	5.30	3.40
MPS 350-351	6.00	4.10

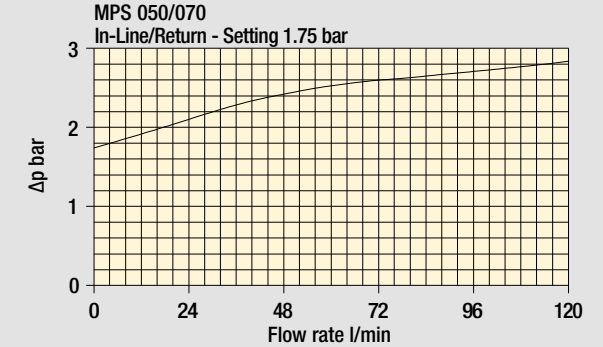
MP FILTRI WWW.SUMY.IR

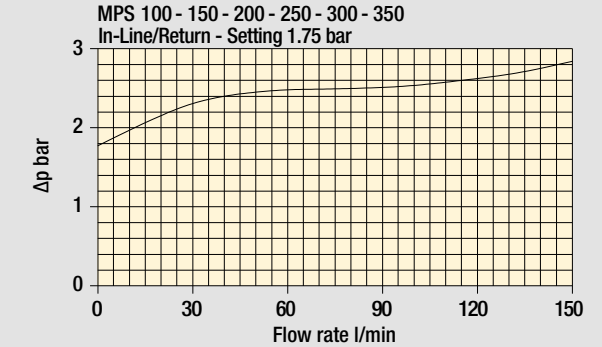
Hydraulic diagram

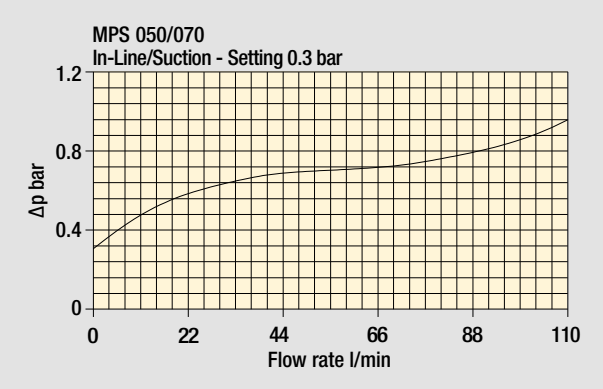
Filter series					
MPS 050	•	-	-	-	-
MPS 051	-	•	-	-	-
MPS 070	•	-	-	-	-
MPS 071	-	•	-	-	-
MPS 100	•	-	-	-	-
MPS 101	-	•	-	-	-
MPS 150	•	-	-	-	-
MPS 151	-	•	-	-	-
MPS 200	-	-	•	-	-
MPS 250	-	-	•	-	-
MPS 300	-	-	-	•	-
MPS 301	-	-	-	-	•
MPS 350	-	-	-	•	-
MPS 351	-	-	-	-	•
	Style U/P	Style U/P	Style U	Style U/P	Style U/P
					
	Style R/S	Style R/S	Style R/S	Style R/S	Style R/S
					

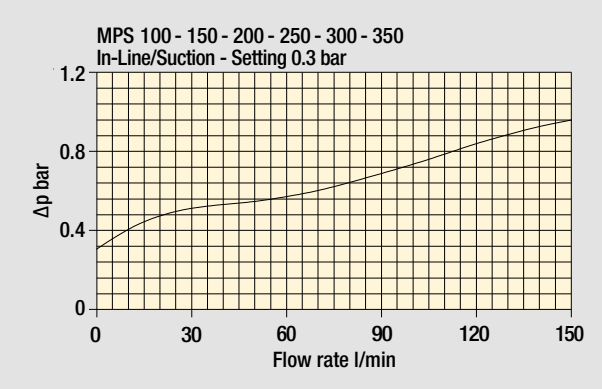
Pressure drop

Bypass valve pressure drop









The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

MP FILTRI WWW.SUMY.IR

CS 050 - 070 - 100 - 150
CG - CW 050 - 070



CG - CW 100 - 150



CW
This series of cartridge removes water from oil while filtering the oil at the same time.
Water absorbent polymers up to 800 times their own weight provide this major feature.

Water holding capacities:
CW 050= 240 ml
Ordering code: **CW050P10AP01**

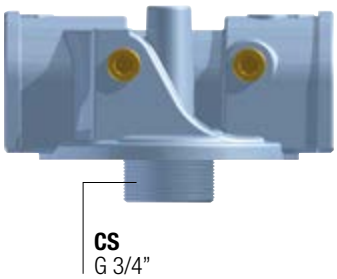
CW 150= 788 ml
Ordering code: **CW150P10AP01**

Thread connections	
Element	Connection
CS 050 - 070	G 3/4"
CS 100 - 150	G 1 1/4"
CG / CW 050 - 070	1" - 12 UNF
CG / CW 100 - 150	1 1/2" - 16 UN

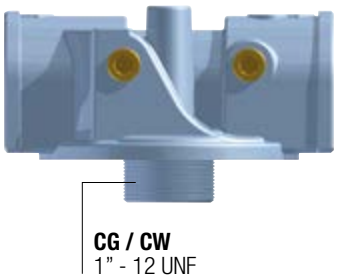
Water holding capacities CW		
	good	poor
Viscosity	30/46 mm^2/s (cSt)	> 46 mm^2/s (cSt)
H_2O p.p.m.	600/800 p.p.m.	> 800 p.p.m.
Flow rate	CW050 7/15 l/min CW150 20/40 l/min	CW050 > 20 l/min CW150 > 50 l/min
Temperature	40/60 °C	< 30 °C

Heads

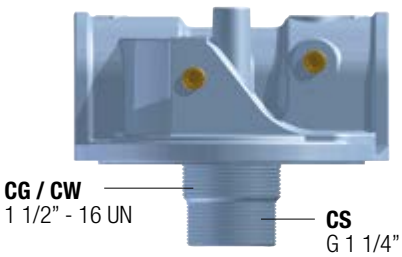
CS 050 - 070



CG / CW 050 - 070



CS / CG / CW 100 - 150



CG and CW cartridges are not foreseen as first equipment supply for MPS filters; they can be provided only as loose spare parts.
For this reason, only CS cartridges are foreseen as first equipment supply in the following Designation & Ordering code pages for MPS filters.

Designation & Ordering code

COMPLETE FILTER

Configuration example : MPS050 | R | G1 | A10 | A | P01

Series and size

MPS050	**MPS070**	With connections for clogging indicators
MPS051	**MPS071**	With connections for differential pressure indicators

Bypass valve

		MPS 050 - 070	MPS 051 - 071
R	Inline / Return: with bypass 1.75 bar	•	•
S	Inline / Suction: with bypass 0.3 bar	•	-
U	Without bypass	•	-
P	Without bypass	-	•

Connections

G1	G 3/4”
G2	3/4” NPT
G3	SAE 12 - 1 1/16” - 12 UN

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A25	Inorganic microfiber	25 µm	**P10**	Resin impregnated paper	10 µm
			P25	Resin impregnated paper	25 µm

Seal

A	NBR

Execution

P01	MP Filtri standard

CARTRIDGE

Configuration example: CS050 | A10 | A | P01

Cartridge series and size

CS050 | **CS070**

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A25	Inorganic microfiber	25 µm	**P10**	Resin impregnated paper	10 µm
			P25	Resin impregnated paper	25 µm

Seals

A	NBR

Execution

P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See pages 781-783

Clogging indicators on RETURN line

BVA	Axial pressure gauge
BVR	Radial pressure gauge
BVP	Visual pressure indicator with automatic reset
BVQ	Visual pressure indicator with manual reset
BEA	Electrical pressure indicator
BEM	Electrical pressure indicator
BET	Electrical pressure indicator
BLA	Electrical / visual pressure indicator

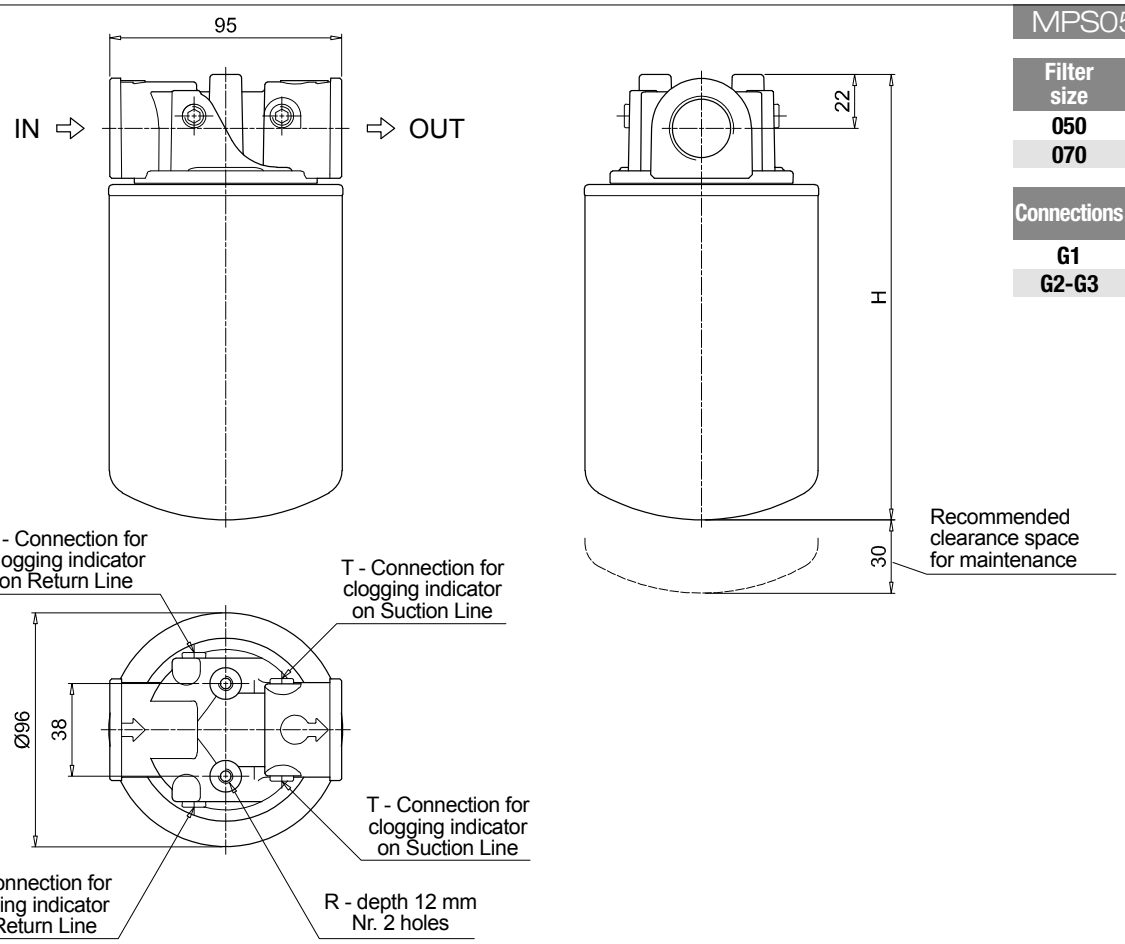
Clogging indicators on SUCTION line

VVB	Axial pressure gauge
VVS	Radial pressure gauge
VEB	Electrical vacuum indicator
VLB	Electrical / visual vacuum indicator

Differential pressure indicators

DEA	Electrical differential pressure indicator
DEM	Electrical differential pressure indicator
DEU	Electrical differential pressure indicator
DLA	Electrical / visual differential pressure indicator
DLE	Electrical / visual differential pressure indicator
DTA	Electronic differential pressure indicator
DTI	I-O Link electronic differential pressure indicator
DVA	Visual differential pressure indicator
DVM	Visual differential pressure indicator

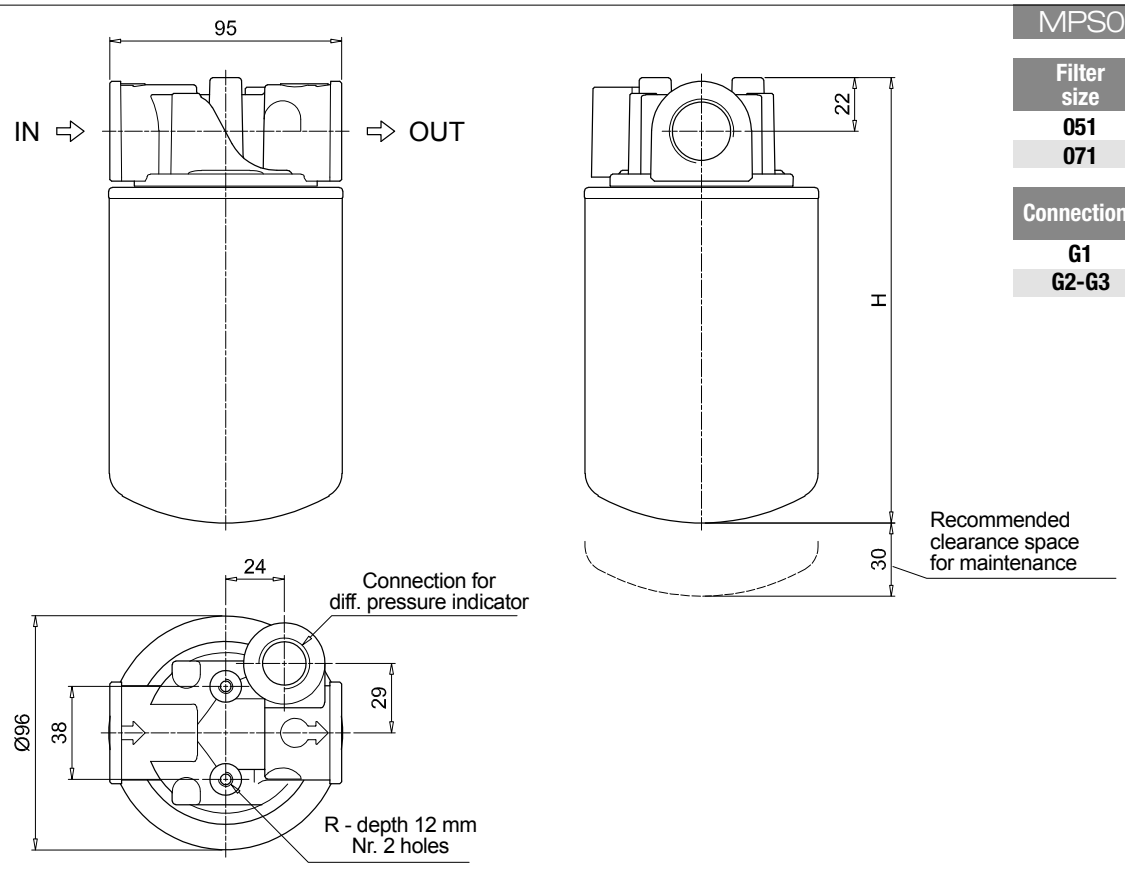
MP FILTRI WWW.SUMY.IR



MPS050 - MPS070

Filter size	H [mm]
050	192
070	256

Connections	T	R
G1	G 1/8"	M6
G2-G3	1/8" NPT	1/4" UNC



MPS051 - MPS071

Filter size	H [mm]
051	192
071	256

Connections	R
G1	M6
G2-G3	1/4" UNC

MPS MPS100 - MPS150 MPS101 - MPS151

Designation & Ordering code

COMPLETE FILTER

Configuration example : MPS100 | R | G1 | A10 | A | P01

Series and size

MPS100	**MPS150**	With connections for clogging indicators
MPS101	**MPS151**	With connections for differential pressure indicators

Bypass valve

		MPS 100 - 150	MPS 101 - 151
R	Inline / Return: with bypass 1.75 bar	•	•
S	Inline / Suction: with bypass 0.3 bar	•	-
U	Without bypass	•	-
P	Without bypass	-	•

Connections

G1	G 1 1/4”
G2	1 1/4” NPT
G3	SAE 20 - 1 5/8” - 12 UN

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A25	Inorganic microfiber	25 µm	**P10**	Resin impregnated paper	10 µm
			P25	Resin impregnated paper	25 µm

Seal

A	NBR

Execution

P01	MP Filtri standard

CARTRIDGE

Configuration example: CS100 | A10 | A | P01

Cartridge series and size

CS100 | **CS150**

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A25	Inorganic microfiber	25 µm	**P10**	Resin impregnated paper	10 µm
			P25	Resin impregnated paper	25 µm

Seals

A	NBR

Execution

P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See pages 781-783

Clogging indicators on RETURN line

BVA	Axial pressure gauge	**BEA**	Electrical pressure indicator
BVR	Radial pressure gauge	**BEM**	Electrical pressure indicator
BVP	Visual pressure indicator with automatic reset	**BET**	Electrical pressure indicator
BVQ	Visual pressure indicator with manual reset	**BLA**	Electrical / visual pressure indicator

Clogging indicators on SUCTION line

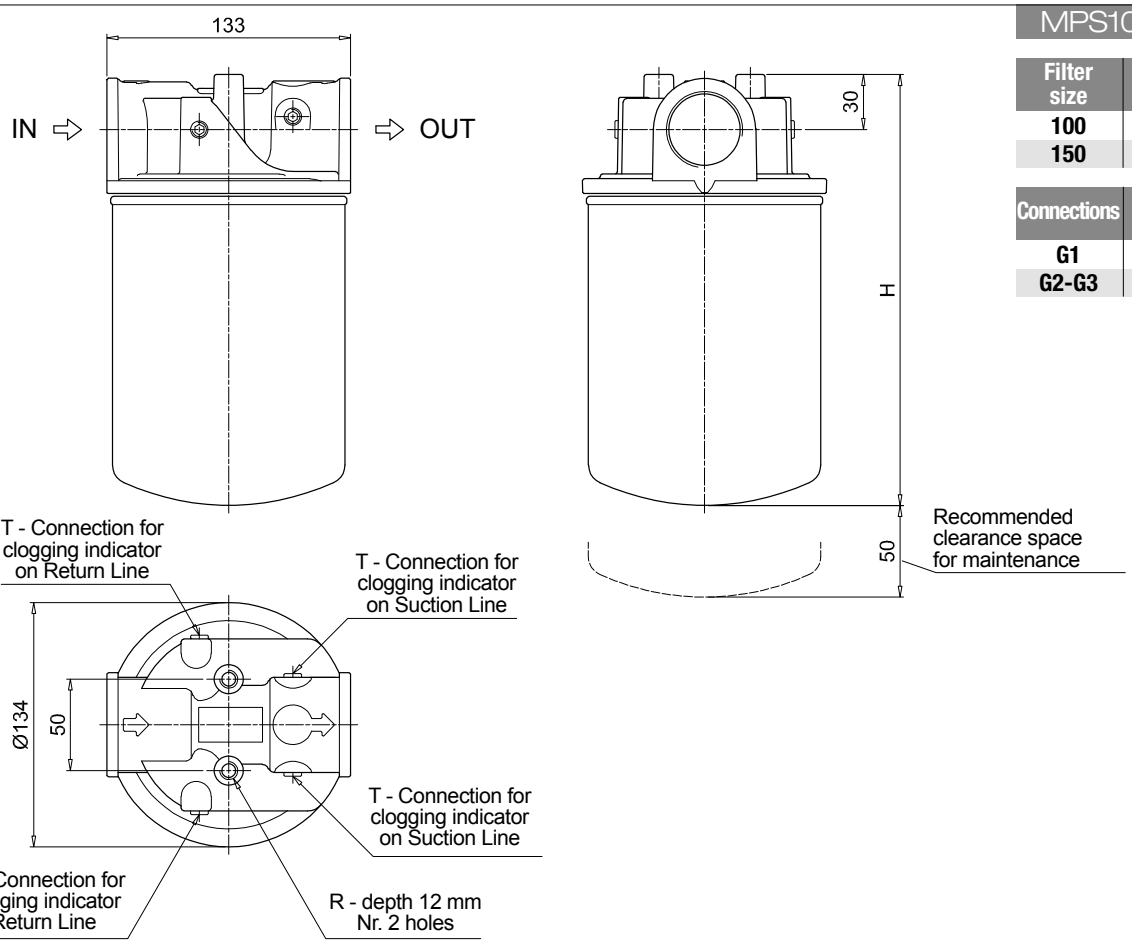
VVB	Axial pressure gauge	**VEB**	Electrical vacuum indicator
VVS	Radial pressure gauge	**VLB**	Electrical / visual vacuum indicator

Differential pressure indicators

DEA	Electrical differential pressure indicator	**DTA**	Electronic differential pressure indicator
DEM	Electrical differential pressure indicator	**DTI**	I-O Link electronic differential pressure indicator
DEU	Electrical differential pressure indicator	**DVA**	Visual differential pressure indicator
DLA	Electrical / visual differential pressure indicator	**DVM**	Visual differential pressure indicator
DLE	Electrical / visual differential pressure indicator		

MPFILTRI WWW.SUMY.IR

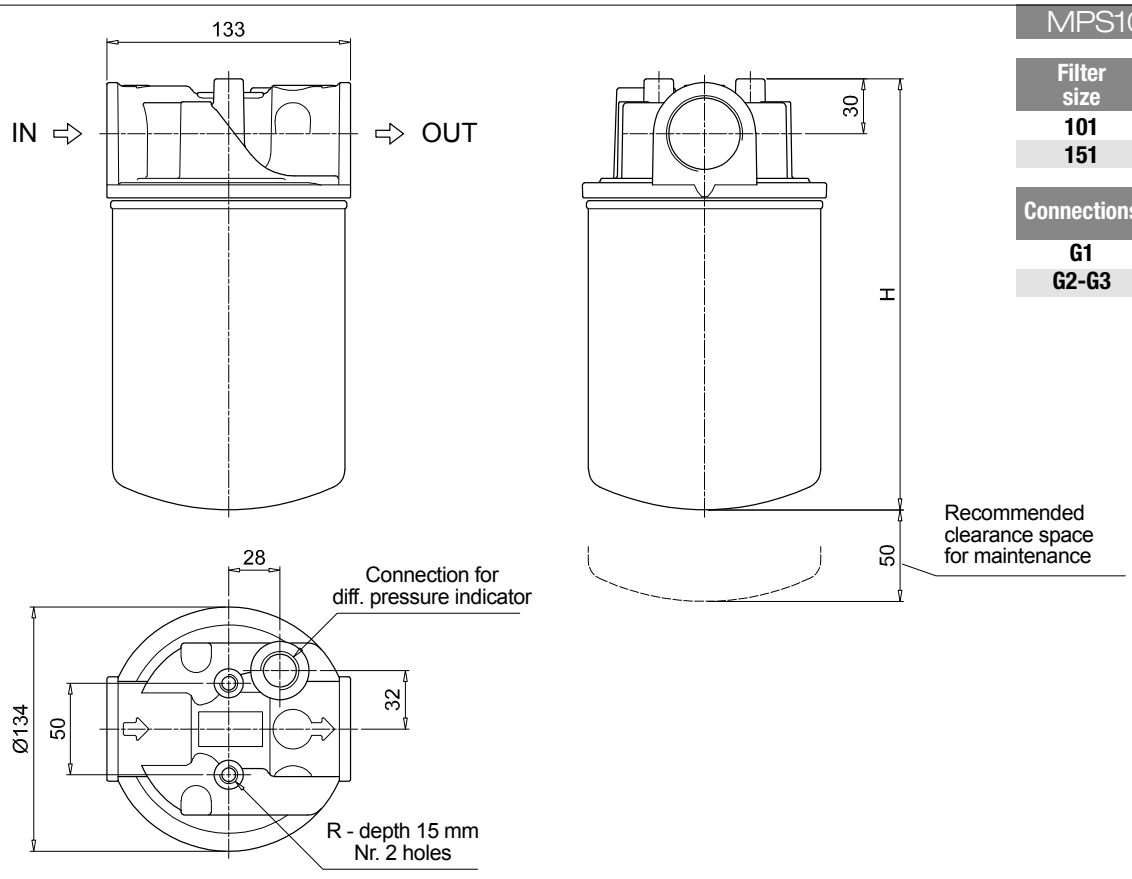
Dimensions



MPS100 - MPS150

Filter size	H [mm]
100	246
150	295

Connections	T	R
G1	G 1/8"	M8
G2-G3	1/8" NPT	5/16" UNC



MPS101 - MPS151

Filter size	H [mm]
101	246
151	295

Connections	R
G1	M8
G2-G3	5/16" UNC

MPS MPS200 - MPS250

Designation & Ordering code

COMPLETE FILTER

Configuration example : MPS200 | R | G1 | A10 | A | P01

Series and size

MPS200 | **MPS250**

Bypass valve

R	Inline / Return: with bypass 1.75 bar
S	Inline / Suction: with bypass 0.3 bar
U	Without bypass

Connections

G1	G 1 1/2”
G2	1 1/2” NPT
G3	SAE 24 - 1 7/8” - 12 UN

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A25	Inorganic microfiber	25 µm	**P10**	Resin impregnated paper	10 µm
			P25	Resin impregnated paper	25 µm

Seal

A	NBR

Execution

P01	MP Filtri standard

CARTRIDGE

Configuration example: CS100 | A10 | A | P01

Cartridge series and size

CS100 | **CS150**

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A25	Inorganic microfiber	25 µm	**P10**	Resin impregnated paper	10 µm
			P25	Resin impregnated paper	25 µm

Seals

A	NBR

Execution

P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See pages 781-783

Clogging indicators on RETURN line

BVA	Axial pressure gauge	**BEA**	Electrical pressure indicator
BVR	Radial pressure gauge	**BEM**	Electrical pressure indicator
BVP	Visual pressure indicator with automatic reset	**BET**	Electrical pressure indicator
BVQ	Visual pressure indicator with manual reset	**BLA**	Electrical / visual pressure indicator

Clogging indicators on SUCTION line

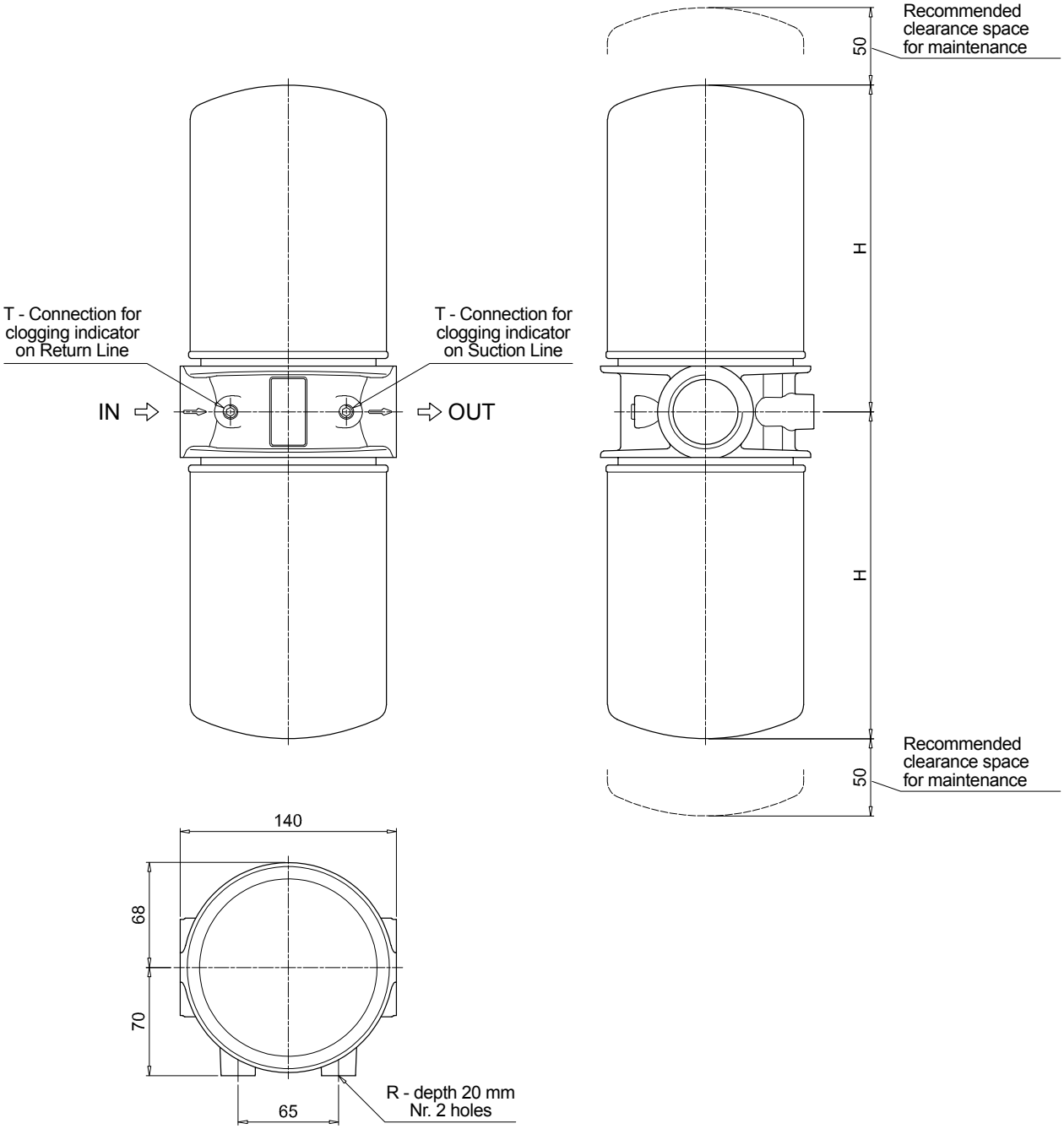
VVB	Axial pressure gauge	**VEB**	Electrical vacuum indicator
VVS	Radial pressure gauge	**VLB**	Electrical / visual vacuum indicator

MP FILTRI WWW.SUMY.IR

MPS200 - MPS250

Filter size	H [mm]
200	213
250	262

Connections	T	R
G1	G 1/8"	M10
G2-G3	1/8" NPT	7/16" UNC



Designation & Ordering code

COMPLETE FILTER

Configuration example : MPS300 | R | F1 | A10 | A | P01

Series and size

MPS300	**MPS350**	With connections for clogging indicators
MPS301	**MPS351**	With connections for differential pressure indicators

Bypass valve

		MPS 300 - 350	MPS 301 - 351
R	Inline / Return: with bypass 1.75 bar	•	•
S	Inline / Suction: with bypass 0.3 bar	•	-
U	Without bypass	•	-
P	Without bypass	-	•

Connections

G1	G 1 1/2”
G2	1 1/2” NPT
G3	SAE 24 - 1 7/8” - 12 UN
F1	1 1/2” SAE 3000 psi/M
F2	1 1/2” SAE 3000 psi/UNC

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A25	Inorganic microfiber	25 µm	**P10**	Resin impregnated paper	10 µm
			P25	Resin impregnated paper	25 µm

Seal

A	NBR

Execution

P01	MP Filtri standard

CARTRIDGE

Configuration example: CS100 | A10 | A | P01

Cartridge series and size

CS100 | **CS150**

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A25	Inorganic microfiber	25 µm	**P10**	Resin impregnated paper	10 µm
			P25	Resin impregnated paper	25 µm

Seals

A	NBR

Execution

P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See pages 781-783

Clogging indicators on RETURN line

BVA	Axial pressure gauge	**BEA**	Electrical pressure indicator
BVR	Radial pressure gauge	**BEM**	Electrical pressure indicator
BVP	Visual pressure indicator with automatic reset	**BET**	Electrical pressure indicator
BVQ	Visual pressure indicator with manual reset	**BLA**	Electrical / visual pressure indicator

Clogging indicators on SUCTION line

VVB	Axial pressure gauge	**VEB**	Electrical vacuum indicator
VVS	Radial pressure gauge	**VLB**	Electrical / visual vacuum indicator

Differential pressure indicators

DEA	Electrical differential pressure indicator	**DTA**	Electronic differential pressure indicator
DEM	Electrical differential pressure indicator	**DTI**	I-O Link electronic differential pressure indicator
DEU	Electrical differential pressure indicator	**DVA**	Visual differential pressure indicator
DLA	Electrical / visual differential pressure indicator	**DVM**	Visual differential pressure indicator
DLE	Electrical / visual differential pressure indicator		

PLUGS

See page 807

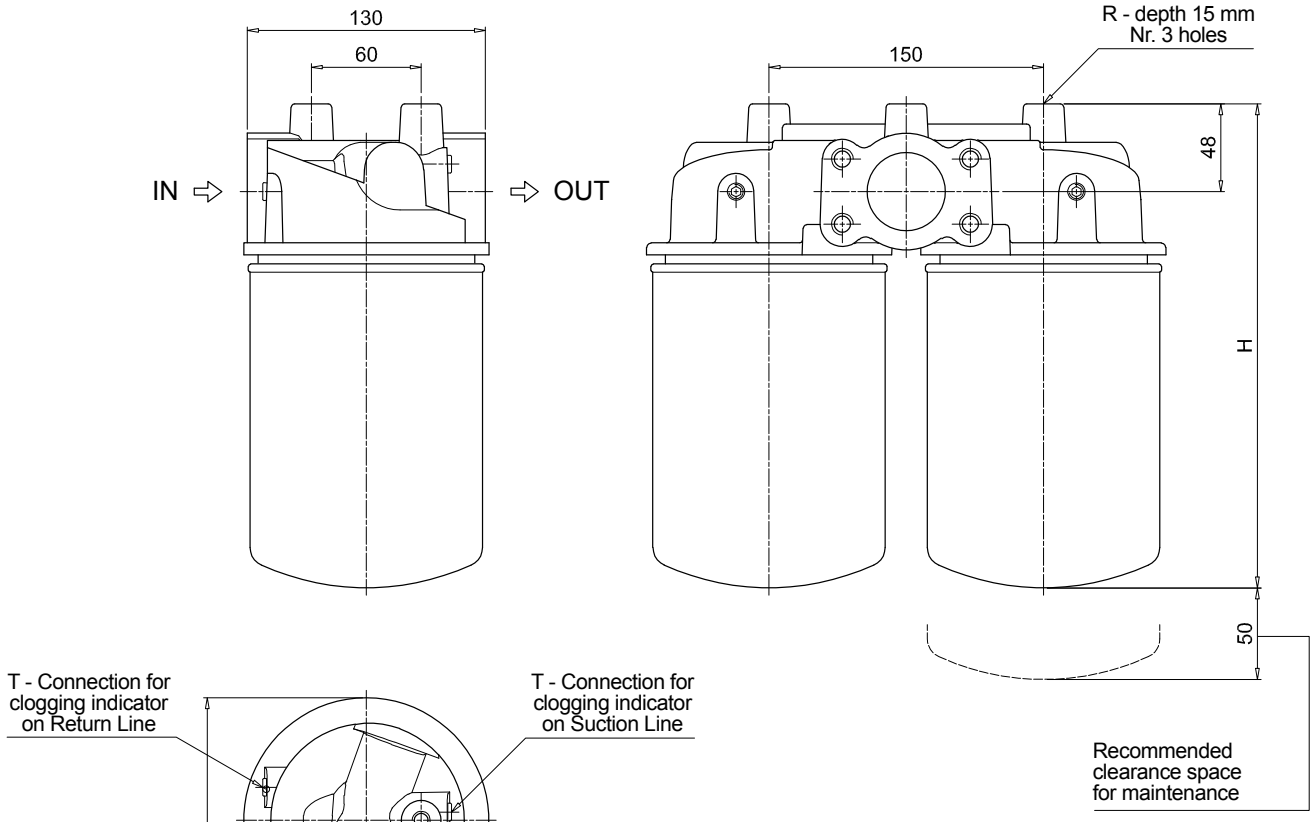
T2	Plug (not included)

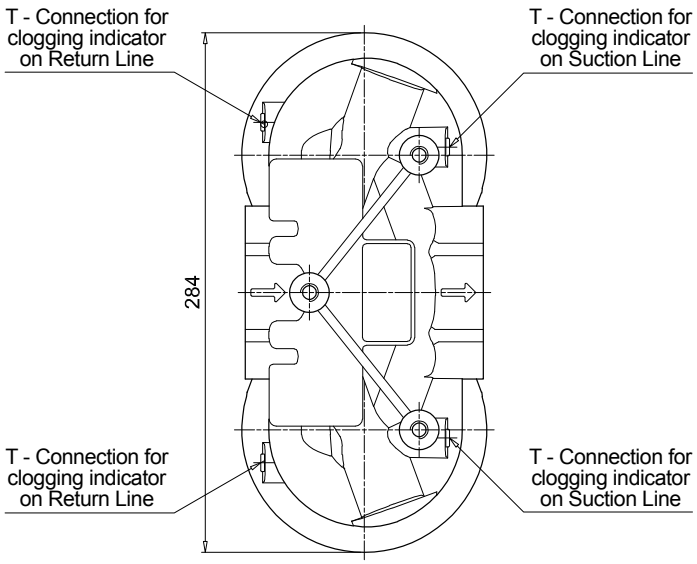
MP FILTRI WWW.SUMY.IR

MPS300 - MPS350

Filter size	H [mm]
300	266
350	315

Connections	T	R
G1	G 1/8"	M10
G2-G3	1/8" NPT	7/16" UNC
F1	G 1/8"	M10
F2	1/8" NPT	7/16" UNC



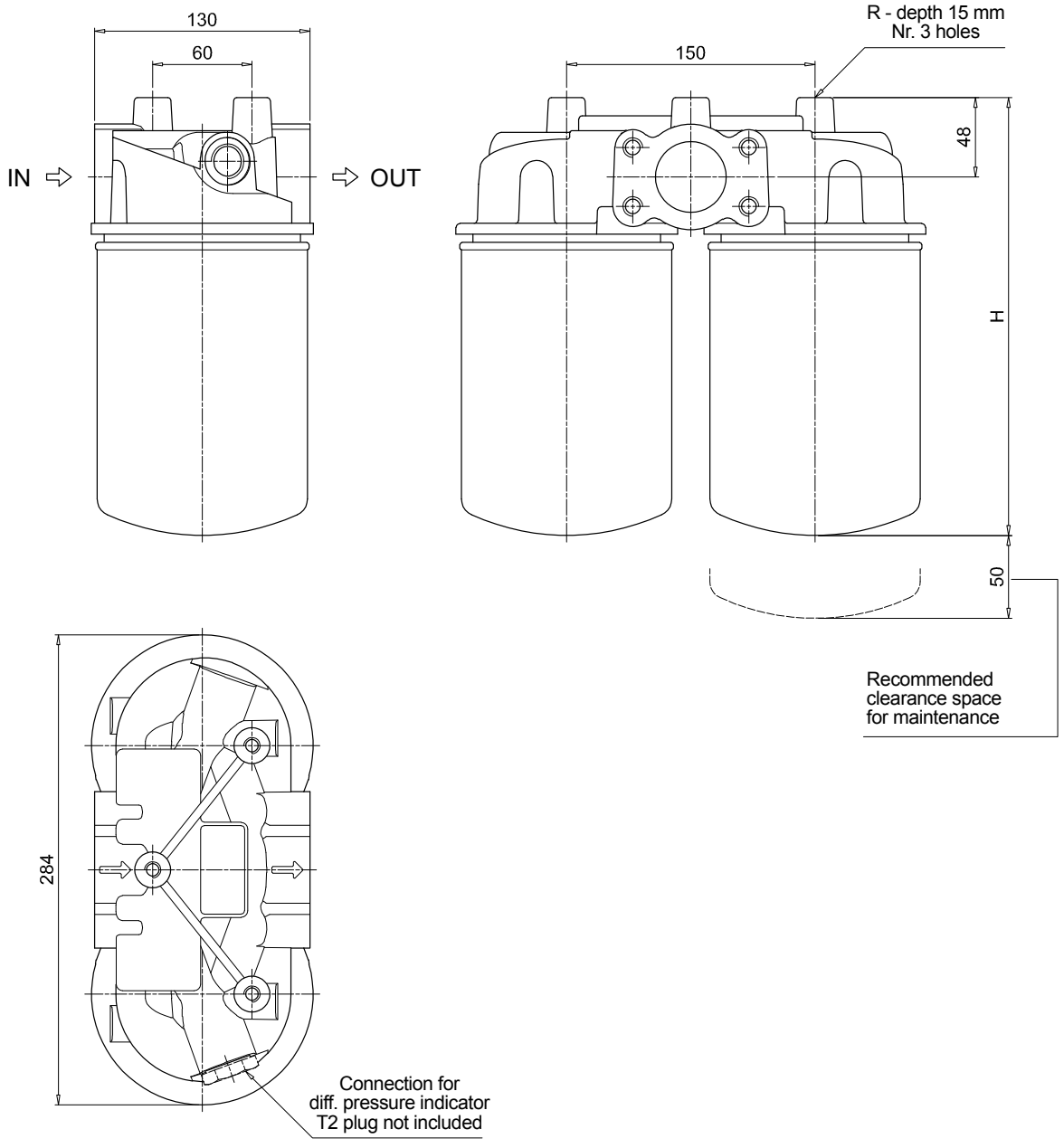


Dimensions

MPS301 - MPS351

Filter size	H [mm]
301	266
351	315

Connections	R
G1	M10
G2-G3	7/16" UNC
F1	M10
F2	7/16" UNC



MP FILTRI WWW.SUMY.IR

LMP - low and medium pressure filters are used as process filters to protect pumps, pressure reducers and hydraulic circuits from damage due to oil contamination as per ISO 4406.

LMP series is available in 5 different sizes: 100, 200, 400, 900 and 950 and a wide range of versions.

LMP filters are available with several working pressures suitable for all hydraulic circuits as:

- **return filters in external tank mounting construction for medium and high flow rates in single and duplex versions**
- **in-line filters for low and medium pressures for off-line applications**
- **in-line process filters for medium pressures, for example, for forced lubrication applications, in single or duplex versions**
- **in-line filters for medium pressures for filtering hydraulic boost circuits**
- **in-line filters as high holding capacity filters on test beds**

LMP filters are thus specifically designed to be suitable for a wide range of application: from steel plants to mobile equipments, from test benches to naval application, providing the right solution for filtering requirements in all sectors.

LMP filters are available in single, manifold and duplex versions (LMD series).

MP FILTRI WWW.SUMY.IR

Low & Medium Pressure filters



Filter sizing and corrective factors	page 318
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LFEX ELIXIR	331
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LMP 112 - 123 MULTIPORT	349
LMP 210 - 211	371
LMP 400 - 401	381
LMP 430 - 431	389
LMP 950 - 951	397
LMP 952 - 953 - 954	405
LMD 211	417
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Filters featuring filter elements designed according to DIN 24550	457
LDP - LDD	459
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FILTER SIZING Calculation

THE CORRECT FILTER SIZING HAS TO BE BASED ON THE TOTAL PRESSURE DROP DEPENDING ON THE APPLICATION.

The pressure drop calculation is performed by adding together the value of the housing with the value of the filter element. The pressure drop Δpc of the housing is proportional to the fluid density (kg/dm³ / lb/ft³).
The filter element pressure drop Δpe is proportional to its viscosity (mm²/s / SUS), the corrective factor Y have to be used in case of an oil viscosity different than 30 mm²/s (cSt) / 150 SUS.

Sizing data for single filter element, head at top

Δpc = Filter housing pressure drop [bar / psi]
Δpe = Filter element pressure drop [bar / psi]
Y = Corrective factor Y (see correspondent table), depending on the filter type, on the filter element size, on the filter element length and on the filter media
Q = flow rate (l/min - gpm)
V1 reference oil viscosity = 30 mm²/s (cSt) /150 SUS
V2 = operating oil viscosity in mm²/s (cSt) / SUS

Filter element pressure drop calculation with an oil viscosity different than 30 mm²/s (cSt) / 150 SUS

International system:
Δpe = Y : 1000 x Q x (V2:V1)

Imperial system:
Δpe = Y : 17.2 x Q x (V2:V1)

Δp Tot. = Δpc + Δpe

Verification formula

Δp Tot. ≤ Δp max allowed

Maximum total pressure drop (Δp max) allowed by a new and clean filter

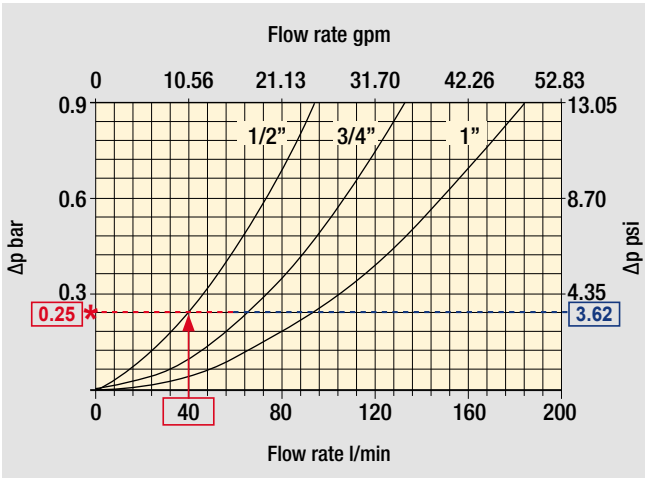
Filter family	Δp max	
	[bar]	[psi]
Low & Medium Pressure/Duplex filters	0.70 bar	10.15 psi

Filter pressure drop calculation example

Application data:
Selected filter: **LMP 110 length 4**
Selected filter element: **CU 110 length 4**
Selected connection: **G 1/2"**
Selected filtration rating: **25 µm** absolute filtration with wire mesh
Flow rate Q = **40 l/min / 10.56 gpm**
Viscosity V2 = 46 mm²/s (cSt) / 216 SUS
Oil density = 0.86 kg/dm³ / 53.68 lb/ft³

Calculation:
Δpc = 0.25 bar / 3.62 psi (see graphic below)

LMP 110



Filter housings Δp pressure drop.
The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

Filter element		Absolute filtration Filter Elem. Δp Series: N - W					Nominal filtration Filter Elem. Δp Series: N		
Type	Length	A03	A06	A10	A16	A25	P10	P25	M25
CU 110	3	8.57	7.95	5.07	4.07	2.40	1.24	1.15	0.11
	4	5.76	4.05	2.80	2.36	1.14	0.91	0.85	0.05

Δpe = (0.05 : 1000) x 40 x (46 : 30) = 0.00 bar
Δpe = (0.05 : 17.2) x 10.56 x (216 : 150) = 0.04 psi

√ **Δp Tot. = 0.25 + 0.00 = 0.25 bar**
Δp Tot. = 3.62 + 0.04 = 3.66 psi

The selection is correct because the total pressure drop value is inside the admissible range for low & medium pressure filters.
In case the max allowed total pressure drop is not verified, it is necessary to repeat the calculation changing the filter and/or filter element length/size.

MP FILTRI WWW.SUMY.IR

Corrective factors

Filter element		Absolute filtration Filter Element ΔP Series: N - W					Nominal filtration Filter Element ΔP Series: N		
Type	Length	A03	A06	A10	A16	A25	P10	P25	M25 M60 M90
CU 110	1	16.25	15.16	8.75	8.14	5.87	2.86	2.65	0.14
	2	12.62	10.44	6.11	6.02	4.15	1.60	1.49	0.12
	3	8.57	7.95	5.07	4.07	2.40	1.24	1.15	0.11
	4	5.76	4.05	2.80	2.36	1.14	0.91	0.85	0.05
CU 210	1	5.30	4.80	2.00	1.66	1.32	0.56	0.43	0.12
	2	3.44	2.95	1.24	1.09	0.70	0.42	0.35	0.09
	3	2.40	1.70	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
CU 400	2	3.14	2.55	1.46	1.22	0.78	0.75	0.64	0.19
	3	2.15	1.70	0.94	0.78	0.50	0.40	0.34	0.10
	4	1.60	1.28	0.71	0.61	0.40	0.34	0.27	0.08
	5	1.00	0.83	0.47	0.34	0.20	0.24	0.19	0.06
	6	0.82	0.58	0.30	0.27	0.17	0.22	0.18	0.05
CU 900	1	0.86	0.63	0.32	0.30	0.21	-	-	0.05
CU 950	2	1.03	0.80	0.59	0.40	0.26	-	-	0.05
	3	0.44	0.40	0.27	0.18	0.15	-	-	0.02
MR 630	7	0.88	0.78	0.36	0.34	0.16	0.12	0.96	0.47

Filter element	Absolute filtration Filter Element ΔP Series: N - W					Nominal filtration Filter Element ΔP Series: N			
Type	A03	A06	A10	A16	A25	P10	P25	M25	M60 M90
FEX 060	11.63	10.79	5.1	4.78	4.26	4.58	3.22	1.02	0.89
FEX 080	6.83	6.69	3.35	3.19	2.56	1.97	1.38	0.62	0.45
FEX 110	5.73	5.22	2.52	2.16	1.66	1.33	1.12	0.22	0.18
FEX 160	3.72	3.59	1.79	1.76	1.22	0.9	0.76	0.15	0.1

Corrective factor Y to be used for the filter element pressure drop calculation. The values depend to the filter size and length and to the filter media.
Reference oil viscosity 30 mm^2/s

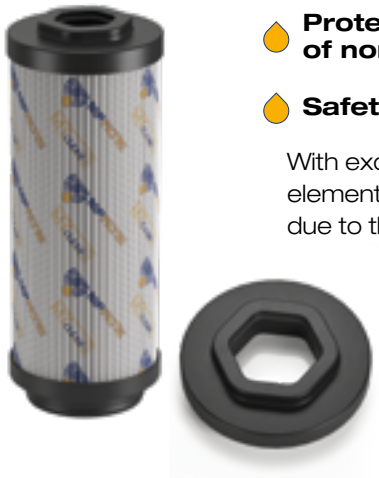
MYCLEAN

THE X CONCEPT FOR OUR FILTERS

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

LFEX series

with MYCLEAN FEX Filter Element



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

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

The products identified as LFEX are protected by:

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

MPFILTRI WWW.SUMY.IR

HFEX series

Maximum working pressure up to 3.5 MPa (35 bar) Flow rate up to 300 l/min

ELIXIR®



HFEX GENERAL INFORMATION

Description

Low & Medium Pressure filters

Maximum working pressure up to 3.5 MPa (35 bar)
Flow rate up to 300 l/min

HFEX is a range of low pressure filter for protection of sensitive components in low pressure hydraulic systems. They are also suitable for the off-line filtration of small reservoirs.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- Female threaded connections up to 1 1/4", for a maximum flow rate of 300 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid
- Bypass valve, to relieve excessive pressure drop across the filter media
- Visual and electrical differential clogging indicators, capable to hold the overall dimension
- MYclean interface connection for the filter element, to protect the product against non-original spare parts
- External protective wrap, to optimize the flow through the element and to save the element efficiency against non-proper handling.

Common applications:

Delivery lines, in any low pressure industrial equipment or mobile machines.

Technical data

Filter housing materials

- Head: Aluminium
- Bypass valve: Polyamide - Steel
- Bowl: Aluminium

Bypass valve

Opening pressure 350 kPa (3.5 bar) ±10%

Filter element features

Filter		Filter element	
HFEX		FEX	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	N	8 bar
M - Wire mesh	Standard	N	8 bar
P - Paper	Standard	N	8 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals

Standard NBR series A

Temperature

From -25 °C to +110 °C

Note

HFEX filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]	Volumes [dm³]
HFEX 060	1.50	0.60
HFEX 080	1.85	0.80
HFEX 110	2.60	1.60
HFEX 160	2.95	2.00

MP FILTRI WWW.SUMY.IR

FILTER ASSEMBLY SIZING
Flow rates [l/min]

Filter element design - N Series

Filter series	A03	A06	A10	A16	A25	M25	M60	M90	P10	P25
HFEX 060	45	47	65	66	68	84	84	86	67	73
HFEX 080	58	59	73	72	76	86	87	88	79	82

Connections of filter under test G 3/4”

Filter series	A03	A06	A10	A16	A25	M25	M60	M90	P10	P25
HFEX 060	49	51	75	77	80	104	105	107	74	95
HFEX 080	67	67	86	87	92	107	108	110	96	112

Connections of filter under test G 1”

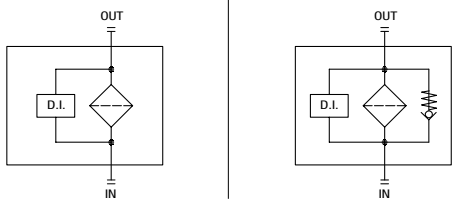
Filter series	A03	A06	A10	A16	A25	M25	M60	M90	P10	P25
HFEX 110	107	115	182	195	216	295	298	300	232	242
HFEX 160	146	150	210	212	237	300	303	304	254	262

Connections of filter under test G 1 1/4”

Maximum flow rate for a complete delivery filter with a pressure drop Δp = 0.7 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
Please, contact our Sales Department for further additional information.

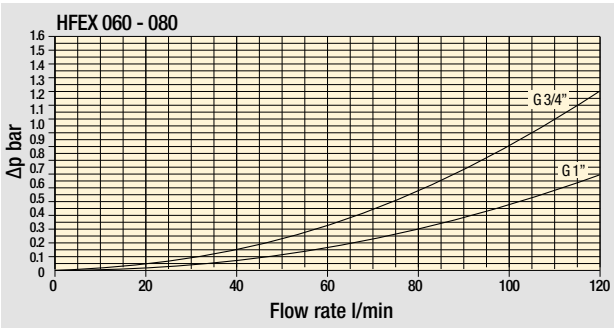
Hydraulic diagram

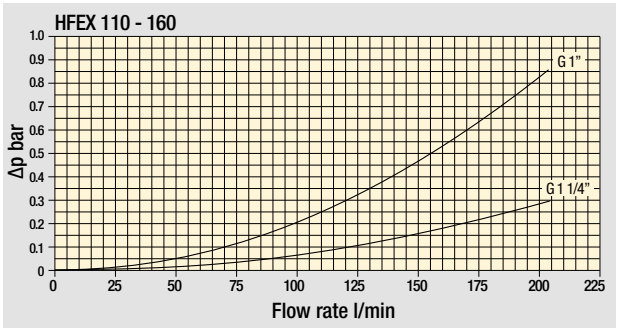
Filter series	Style S	Style B
HFEX 060	•	•
HFEX 080	•	•
HFEX 110	•	•
HFEX 160	•	•



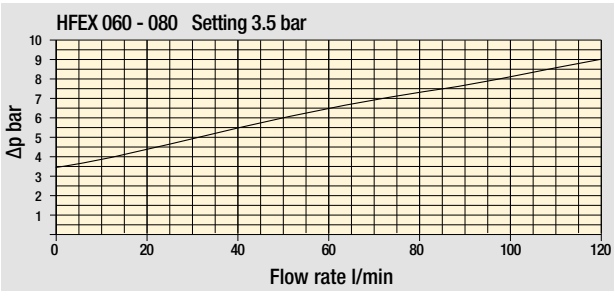
Pressure drop

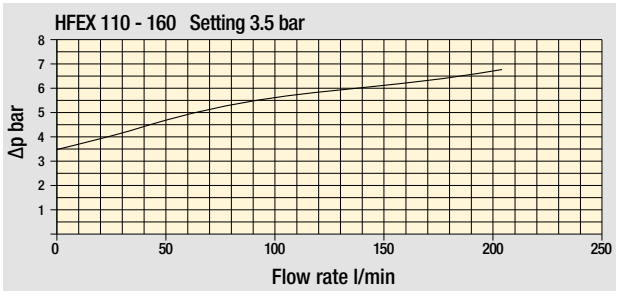
Filter housings
Δp pressure drop





Bypass valve pressure drop





The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968.
Δp varies proportionally with density.

Designation & Ordering code

COMPLETE FILTER

Configuration example : HFEX060 | B | A | A | 6 | A10 | N | P01

Series and size

HFEX060 | **HFEX080** Filter featuring MYCLEAN Filter Element

Bypass valve

S	Without bypass
B	3.5 bar

Seals and treatments

A	NBR

Connections

A	G 3/4”
B	G 1”
C	3/4” NPT
D	1” NPT
E	SAE 12 - 1 1/16” - 12 UN
F	SAE 16 - 1 5/16” - 12 UN

Connection for clogging indicator

1	Without
6	With plugged connections

Filtration rating

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm	**P10**	Resin impregnated paper	10 µm
A25	Inorganic microfiber	25 µm	**P25**	Resin impregnated paper	25 µm

WA025 Water absorber inorganic microfiber 25 µm

Element Δp

N	8 bar

Execution

P01	MP Filtri standard
Pxx	Customized

FILTER ELEMENT

Configuration example: FEX060 | A10 | A | N | P01

Element series and size

FEX060 | **FEX080** Filter Element with MYCLEAN feature

Filtration rating

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm	**P10**	Resin impregnated paper	10 µm
A25	Inorganic microfiber	25 µm	**P25**	Resin impregnated paper	25 µm

WA025 Water absorber inorganic microfiber 25 µm

Seals and treatments

A	NBR

Element Δp

N	8 bar

Execution

P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See page 784

DES	Electrical differential pressure indicator
DVS	Visual differential pressure indicator

PLUGS

See page 807

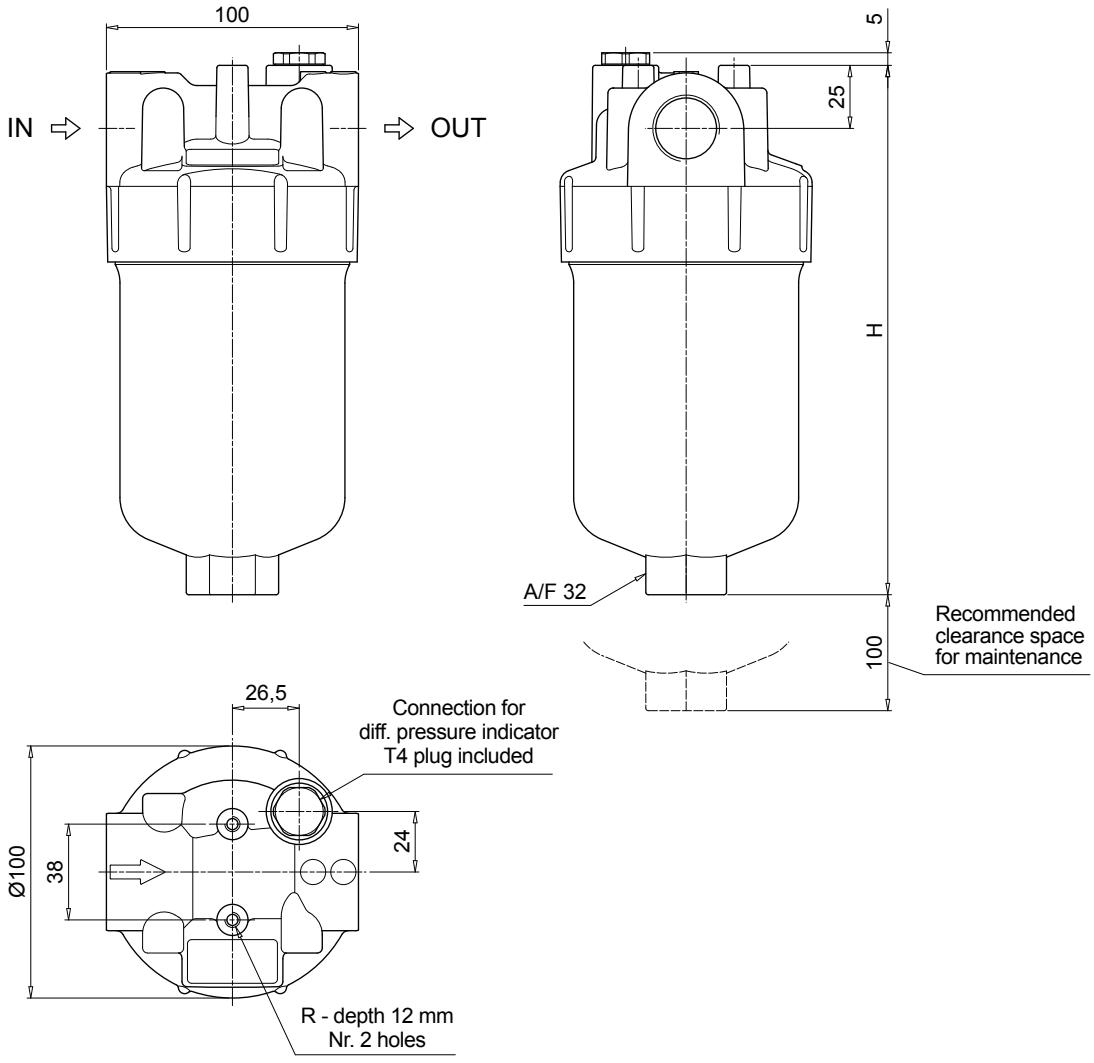
T4	Plug

MPFILTRI WWW.SUMY.IR

Dimensions

Filter size	H [mm]
060	210
080	273

Connections	R
A	M6
B	M6
C	1/4" UNC
D	1/4" UNC
E	1/4" UNC
F	1/4" UNC



Designation & Ordering code

COMPLETE FILTER

Configuration example : HFEX110 | B | A | A | 6 | A10 | N | P01

Series and size

HFEX110 | **HFEX160** Filter featuring MYCLEAN Filter Element

Bypass valve

S	Without bypass
B	3.5 bar

Seals and treatments

A	NBR

Connections

A	G 1”
B	G 1 1/4”
C	1” NPT
D	1 1/4” NPT
E	SAE 16 - 1 5/16” - 12 UN
F	SAE 20 - 1 5/8” - 12 UN

Connection for clogging indicator

1	Without
6	With plugged connections

Filtration rating

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm	**P10**	Resin impregnated paper	10 µm
A25	Inorganic microfiber	25 µm	**P25**	Resin impregnated paper	25 µm

WA025 Water absorber inorganic microfiber 25 µm

Element Δp

N	8 bar

Execution

P01	MP Filtri standard
Pxx	Customized

FILTER ELEMENT

Configuration example: FEX110 | A10 | A | N | P01

Element series and size

FEX110 | **FEX160** Filter Element with MYCLEAN feature

Filtration rating

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm	**P10**	Resin impregnated paper	10 µm
A25	Inorganic microfiber	25 µm	**P25**	Resin impregnated paper	25 µm

WA025 Water absorber inorganic microfiber 25 µm

Seals and treatments

A	NBR

Element Δp

N	8 bar

Execution

P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See page 784

DES	Electrical differential pressure indicator
DVS	Visual differential pressure indicator

PLUGS

See page 807

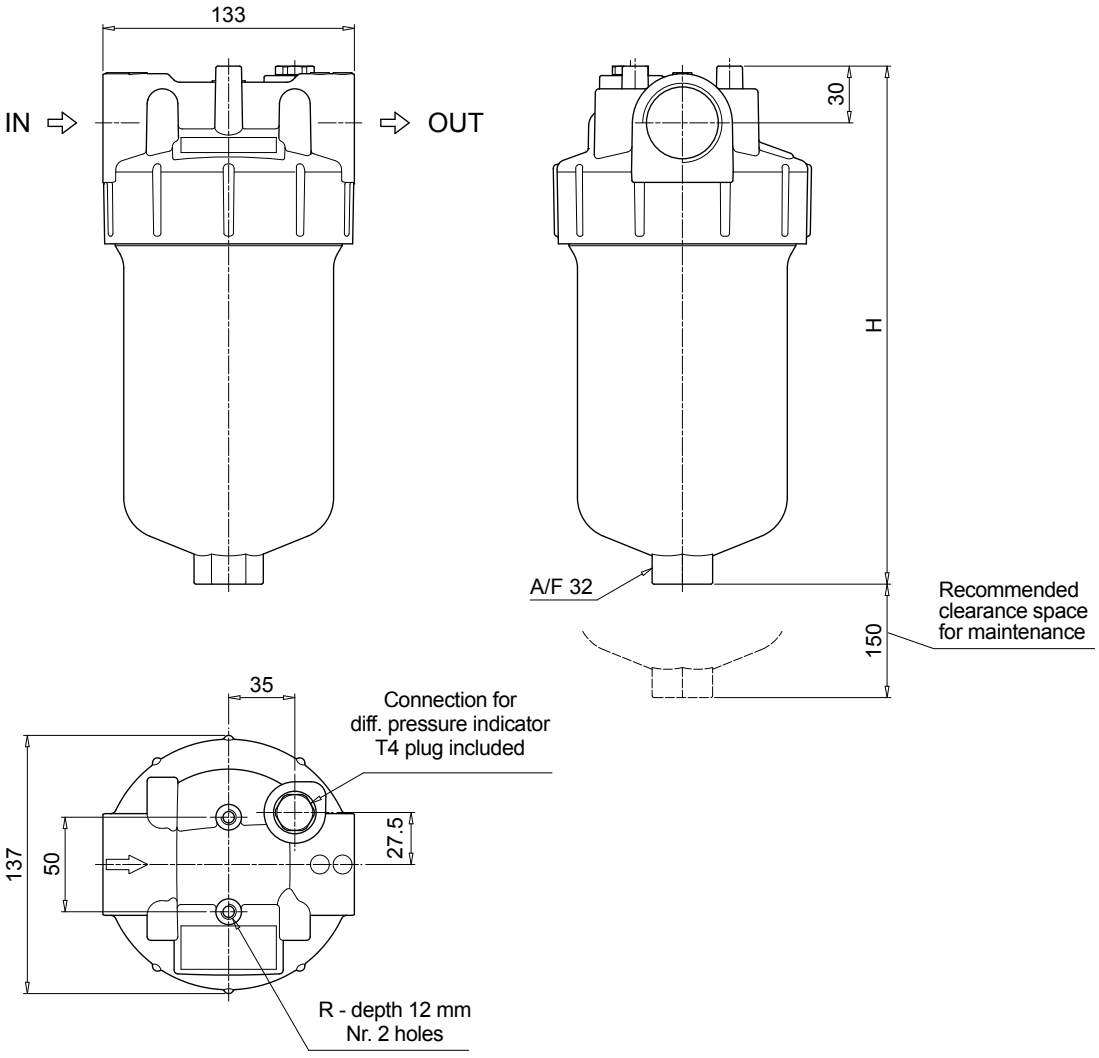
T4	Plug

MPFILTRI WWW.SUMY.IR

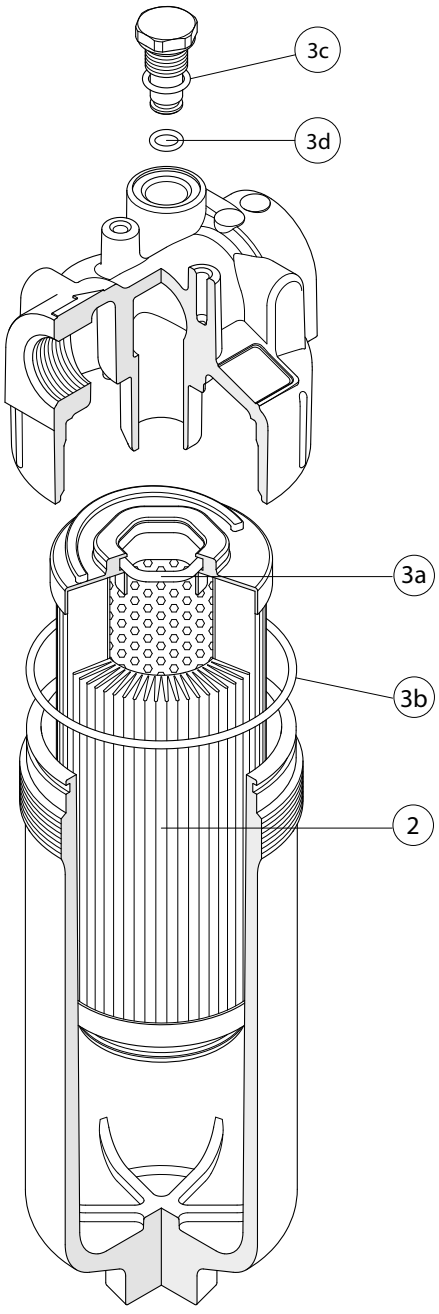
Dimensions

Filter size	H [mm]
110	274
160	323

Connections	R
A	M8
B	M8
C	5/16" UNC
D	5/16" UNC
E	5/16" UNC
F	5/16" UNC



Order number for spare parts



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3d)	Q.ty: 1 pc. (4)
Filter series	**Filter element**	**Seal Kit code number NBR**	**Indicator connection plug NBR**
HFEX 060-080	See order table	02050771	T4A
HFEX 110-160		02050772	

MP FILTRI WWW.SUMY.IR

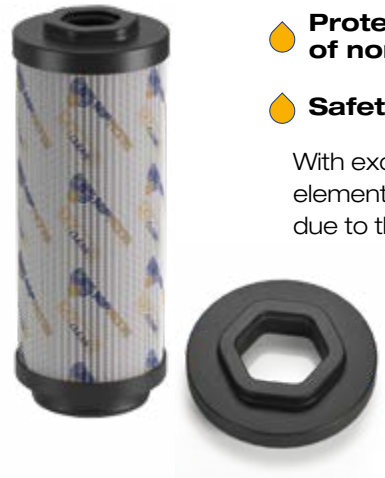
MYCLEAN

THE X CONCEPT FOR OUR FILTERS

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

LFEX series

with MYCLEAN FEX Filter Element



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

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

The products identified as LFEX are protected by:

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

MP FILTRI WWW.SUMY.IR

LFEX series

Maximum working pressure up to 1.6 MPa (16 bar) - Flow rate up to 300 l/min



INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS

Please scan or click the QR codes to get updated electronic version of the related document:

LFEX060 LFEX080 LFEX110 LFEX160

For all the QR codes: Scan or click me!

LFEX GENERAL INFORMATION

Description

Low & Medium Pressure filters

Maximum working pressure up to 1.6 MPa (16 bar)
Flow rate up to 300 l/min

LFEX is a range of low pressure filter for protection of sensitive components in low pressure hydraulic systems.
They are also suitable for the off-line filtration of small reservoirs.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- Female threaded connections up to 1 1/4" and SAE connections up to 1 5/8", for a maximum flow rate of 300 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid
- Bypass valve, to relieve excessive pressure drop across the filter media
- NEW Visual and electrical differential clogging indicators, capable to hold the overall dimension
- MYclean interface connection for the filter element, to protect the product against non-original spare parts
- External protective wrap, to optimize the flow through the element and to save the element efficiency against non-proper handling

Common applications:

Delivery lines, in any low pressure industrial equipment or mobile machines

Technical data

Filter housing materials

- Head: Aluminium
- Bypass valve: Polyamide - Steel
- Bowl: Polyamide

Pressure

- Test pressure: 2.4 MPa (24 bar)
- Min. Burst pressure: 4.8 MPa (48 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 1.6 MPa (16 bar)

Bypass valve

Opening pressure 0.35 MPa (3.5 bar) ±10%

Filter element features

Filter		Filter element	
LFEX		FEX	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	N	8 bar
M - Wire mesh	Standard	N	8 bar
P - Paper	Standard	N	8 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals

Standard NBR series A

Temperature

From -25 °C to +110 °C

Note

LFEX filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]	Volumes [dm³]
LFEX 060	1.00	0.60
LFEX 080	1.15	0.80
LFEX 110	1.90	1.60
LFEX 160	2.10	2.00

MP FILTRI WWW.SUMY.IR

Flow rates [l/min]

Filter element design - N Series

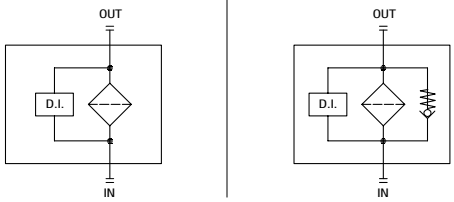
Filter series	A03	A06	A10	A16	A25	M25	M60	M90	P10	P25
LFEX 060	49	51	75	77	80	104	105	107	74	95
LFEX 080	67	67	86	87	92	107	108	110	96	112

Filter series	A03	A06	A10	A16	A25	M25	M60	M90	P10	P25
LFEX 110	107	115	182	195	216	295	298	300	232	242
LFEX 160	146	150	210	212	237	300	303	304	254	262

Maximum flow rate for a complete delivery filter with a pressure drop Δp = 0.7 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
Please, contact our Sales Department for further additional information.

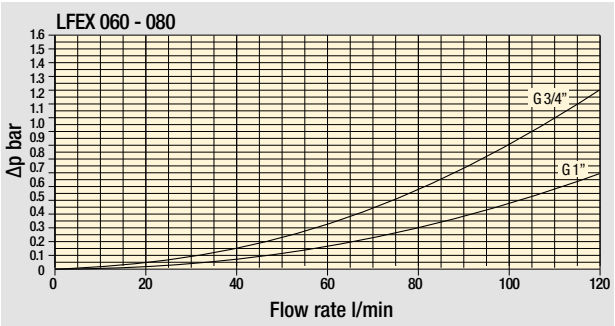
Hydraulic diagram

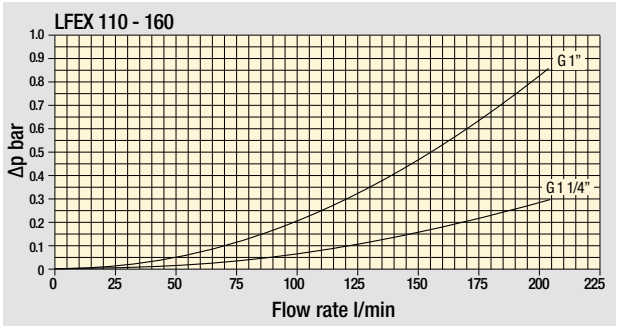
Filter series	Style S	Style B
LFEX 060	•	•
LFEX 080	•	•
LFEX 110	•	•
LFEX 160	•	•



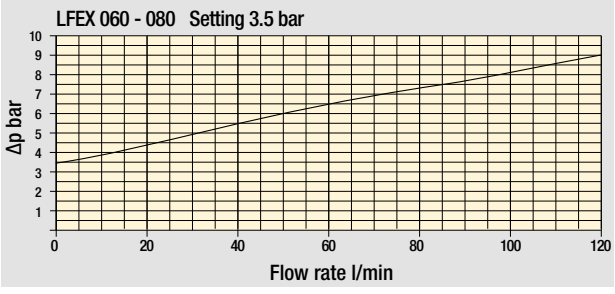
Pressure drop

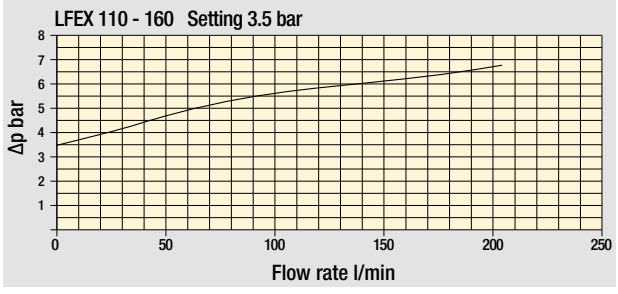
Filter housings
Δp pressure drop





Bypass valve
pressure drop





The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968.
Δp varies proportionally with density.

Designation & Ordering code

COMPLETE FILTER

Configuration example : LFEX060 | B | A | A | 6 | A10 | N | P01

Series and size

LFEX060 | **LFEX080** Filter featuring MYCLEAN Filter Element

Bypass valve

S	Without bypass
B	With bypass 3.5 bar

Seals and treatments

A	NBR

Connections

A	G 3/4”
B	G 1”
C	3/4” NPT
D	1” NPT
E	SAE 12 - 1 1/16” - 12 UN
F	SAE 16 - 1 5/16” - 12 UN

Connection for clogging indicator

1	Without
6	With plugged connections

Filtration rating

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm	**P10**	Resin impregnated paper	10 µm
A25	Inorganic microfiber	25 µm	**P25**	Resin impregnated paper	25 µm

WA025 Water absorber inorganic microfiber 25 µm

Element Δp

N	8 bar

Execution

P01	MP Filtri standard
Pxx	Customized

FILTER ELEMENT

Configuration example: FEX060 | A10 | A | N | P01

Element series and size

FEX060 | **FEX080** Filter Element with MYCLEAN feature

Filtration rating

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm	**P10**	Resin impregnated paper	10 µm
A25	Inorganic microfiber	25 µm	**P25**	Resin impregnated paper	25 µm

WA025 Water absorber inorganic microfiber 25 µm

Seals and treatments

A	NBR

Element Δp

N	8 bar

Execution

P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See page 784

DES	Electrical differential pressure indicator
DVS	Visual differential pressure indicator

PLUGS

See page 807

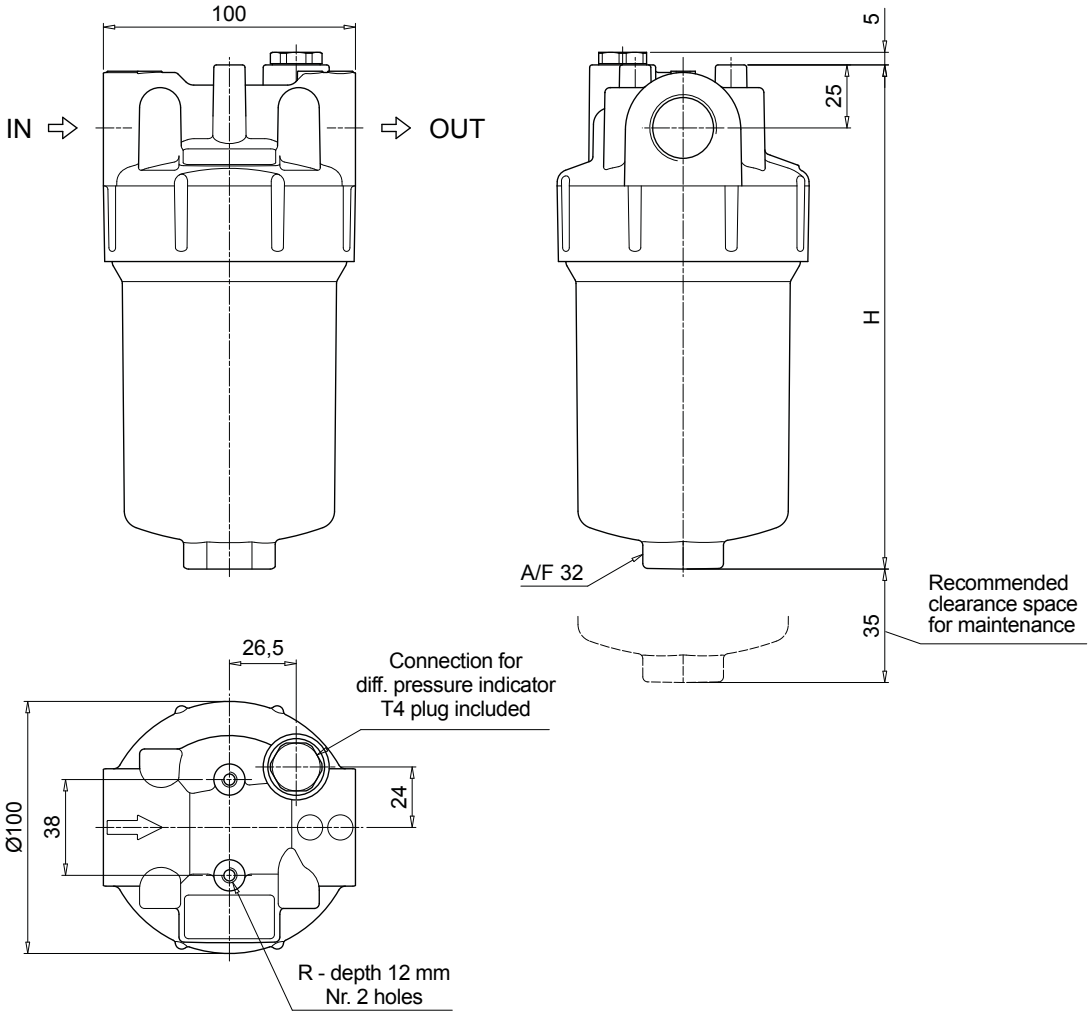
T4	Plug

MPFILTRI WWW.SUMY.IR

Dimensions

Filter size	H [mm]
060	202
080	265

Connections	R
A	M6
B	M6
C	1/4" UNC
D	1/4" UNC
E	1/4" UNC
F	1/4" UNC



Designation & Ordering code

COMPLETE FILTER

Configuration example : LFEX110 | B | A | A | 6 | A10 | N | P01

Series and size

LFEX110 | **LFEX160** Filter featuring MYCLEAN Filter Element

Bypass valve

S	Without bypass
B	With bypass 3.5 bar

Seals and treatments

A	NBR

Connections

A	G 1”
B	G 1 1/4”
C	1” NPT
D	1 1/4” NPT
E	SAE 16 - 1 5/16” - 12 UN
F	SAE 20 - 1 5/8” - 12 UN

Connection for clogging indicator

1	Without
6	With plugged connections

Filtration rating

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm	**P10**	Resin impregnated paper	10 µm
A25	Inorganic microfiber	25 µm	**P25**	Resin impregnated paper	25 µm

WA025 Water absorber inorganic microfiber 25 µm

Element Δp

N	8 bar

Execution

P01	MP Filtri standard
Pxx	Customized

FILTER ELEMENT

Configuration example: FEX110 | A10 | A | N | P01

Element series and size

FEX110 | **FEX160** Filter Element with MYCLEAN feature

Filtration rating

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm	**P10**	Resin impregnated paper	10 µm
A25	Inorganic microfiber	25 µm	**P25**	Resin impregnated paper	25 µm

WA025 Water absorber inorganic microfiber 25 µm

Seals and treatments

A	NBR

Element Δp

N	8 bar

Execution

P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See page 784

DES	Electrical differential pressure indicator
DVS	Visual differential pressure indicator

PLUGS

See page 807

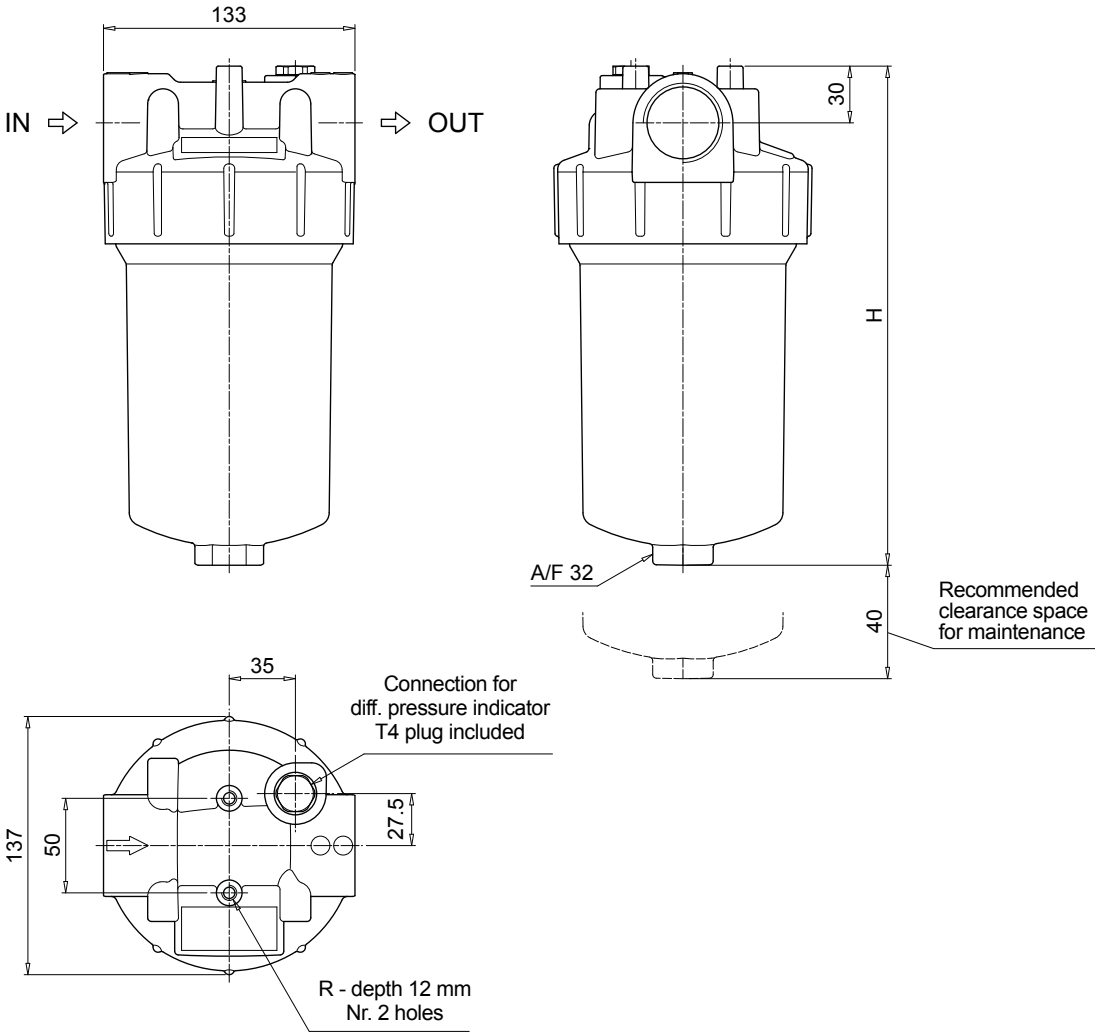
T4	Plug

MP FILTRI WWW.SUMY.IR

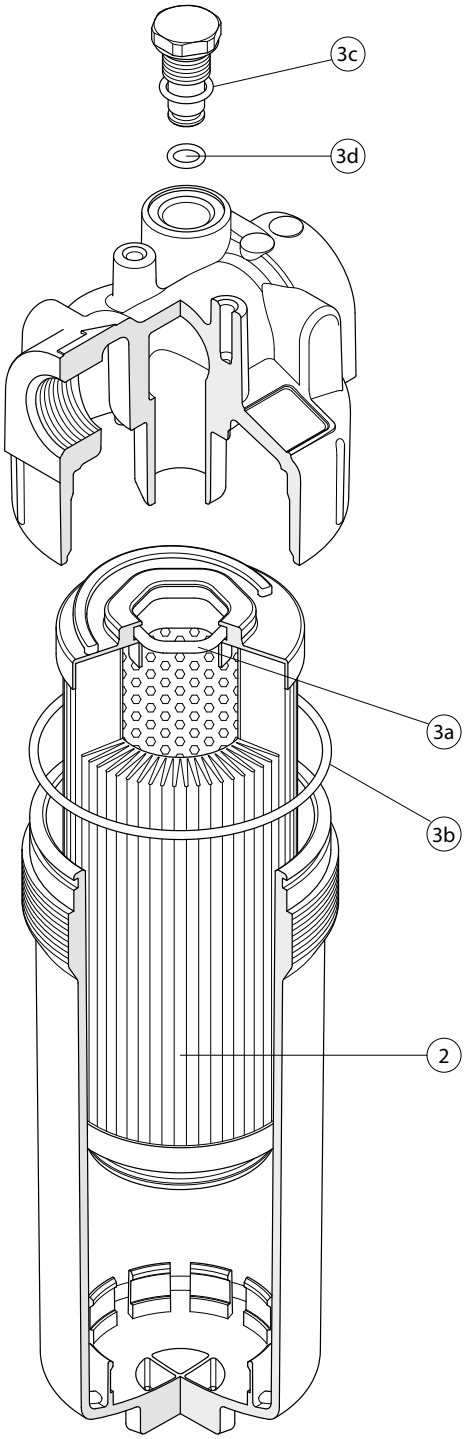
Dimensions

Filter size	H [mm]
110	266
160	315

Connections	R
A	M8
B	M8
C	5/16" UNC
D	5/16" UNC
E	5/16" UNC
F	5/16" UNC



Order number for spare parts



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3d)	Q.ty: 1 pc. (4)
Filter series	**Filter element**	**Seal Kit code number NBR**	**Indicator connection plug NBR**
LFEX 060-080	See order table	02050771	T4A
LFEX 110-160		02050772	

MP FILTRI WWW.SUMY.IR

MP FILTRI
WWW.SUMY.IR

LMP 110 series

Maximum working pressure up to 8 MPa (80 bar) - Flow rate up to 165 l/min



INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS

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of the related document.

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LMP 110 GENERAL INFORMATION

Description

Low & Medium Pressure filters

Maximum working pressure up to 8 MPa (80 bar)
Flow rate up to 165 l/min

LMP110 is a range of versatile low pressure filter for transmission, protection of sensitive components in low pressure hydraulic systems and filtration of the coolant into the machine tools.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- Female threaded connections up to 1", for a maximum return flow rate of 165 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Bypass valve, to relieve excessive pressure drop across the filter media
- Visual, electrical and electronic differential clogging indicators.

Common applications:

Delivery lines, in any low pressure industrial equipment or mobile machines

Technical data

Filter housing materials

- Head: Aluminium
- Housing: Cataphoresis - Painted steel
- Bypass valve: Brass - Aluminium

Pressure

- Test pressure: 12 MPa (120 bar)
- Min. Burst pressure: 24 MPa (240 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 8 MPa (80 bar)

Bypass valve

- Opening pressure 0.35 MPa (3.5 bar) ±10%
- Other opening pressures on request.

Filter element features

Filter		Filter element	
LMP 110		CU	
Δp Element type			
Element media	Construction	Δp Series	Δp
A - Microfiber	Standard	N	20 bar
M - Wire mesh	Standard	N	20 bar
P - Paper	Standard	N	20 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals

- Standard NBR series A
- Optional FPM series V

Temperature

From -25 °C to +110 °C

Note

LMP filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]					Volumes [dm³]				
	Length	1	2	3	4	Length	1	2	3	4
LMP 110		1.60	1.80	2.10	2.60		0.75	0.81	1.11	1.53

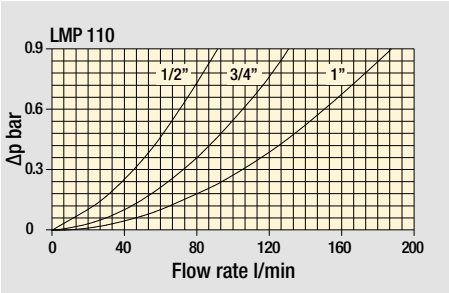
MP FILTRI WWW.SUMY.IR

Flow rates [l/min]

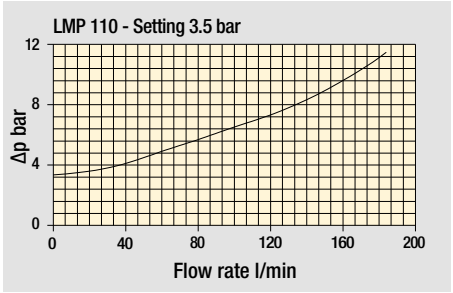
Filter series	Length	Filter element design - N Series							
		A03	A06	A10	A16	A25	M25 M60 M90	P10	P25
LMP 110	1	40	42	65	69	85	163	117	120
	2	49	57	83	83	101	163	136	138
	3	66	70	92	102	124	164	142	144
	4	86	102	118	124	144	165	148	149

Maximum flow rate for a complete low and medium pressure filter with a pressure drop Δp = 0.7 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

Pressure drop



Filter housings Δp pressure drop



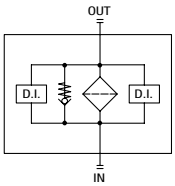
Bypass valve pressure drop

The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

Hydraulic diagram

Filter series	In-Line filter
LMP 110	





LMP 110

Designation & Ordering code

COMPLETE FILTER

Configuration example: LMP110 | 4 | B | A | D | 1 | A10 | N | P01

Series and size
LMP110

Length
1 | **2** | **3** | **4**

Bypass valve
S Without bypass
B With bypass 3.5 bar

Seals and treatments
A NBR
V FPM
E EPDM
C CR

Connections
A G 3/4”
B G 1”
C 3/4” NPT
D 1” NPT
E SAE 12 - 1 1/16” - 12 UN
F SAE 16 - 1 5/16” - 12 UN

Connection for differential pressure indicator
1 Without
2 With standard connection
3 With connection on the opposite side
6 With two connections on both sides

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm
M60	Wire mesh	60 µm
M90	Wire mesh	90 µm
P10	Resin impregnated paper	10 µm
P25	Resin impregnated paper	25 µm

Element Δp
N 20 bar

Execution
P01 MP Filtri standard
Pxx Customized

CLOGGING INDICATORS

See page 784

DEA Electrical differential pressure indicator
DEM Electrical differential pressure indicator
DEU Electrical differential pressure indicator
DLA Electrical / visual differential pressure indicator
DLE Electrical / visual differential pressure indicator
DTA Electronic differential pressure indicator
DTI I-O Link electronic differential pressure indicator
DVA Visual differential pressure indicator
DVM Visual differential pressure indicator

PLUGS

See page 807

T2 Plug (not included)

MPFILTRI WWW.SUMY.IR

FILTER ELEMENT

Configuration example: CU110 | 4 | A10 | A | N | P01

Element series and size

CU110

Element length

1 | **2** | **3** | **4**

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm
M60	Wire mesh	60 µm
M90	Wire mesh	90 µm
P10	Resin impregnated paper	10 µm
P25	Resin impregnated paper	25 µm

Seals and treatments

A	NBR
V	FPM
E	EPDM
C	CR

Element Δp

N	20 bar

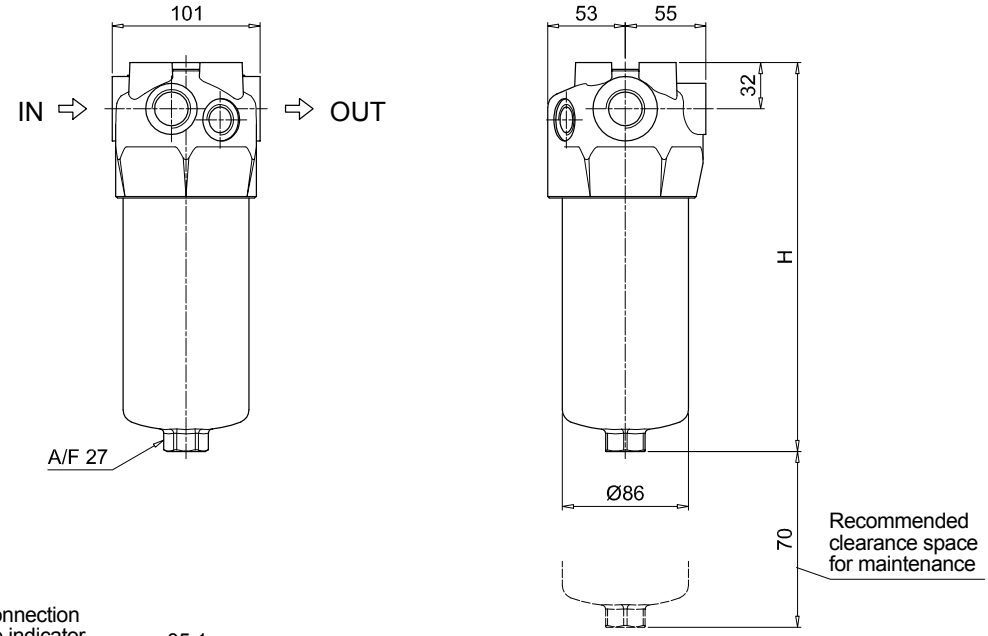
Execution

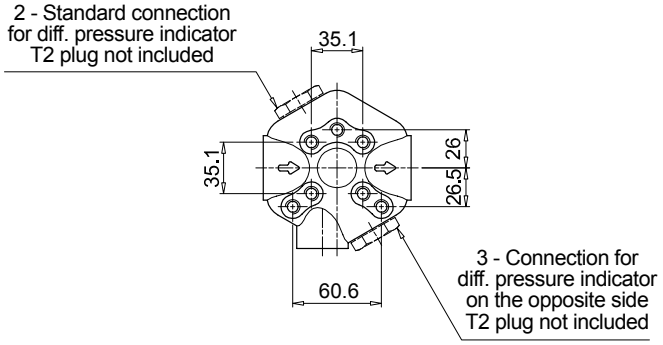
P01	MP Filtri standard
Pxx	Customized

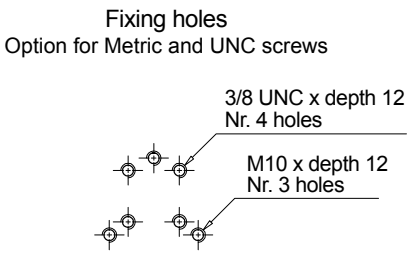
LMP 110

Dimensions

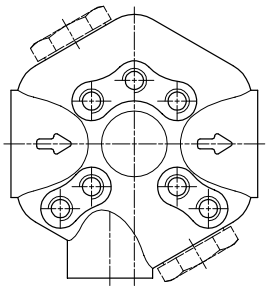
LMP110	
Filter length	**H [mm]**
1	197
2	230
3	280
4	380





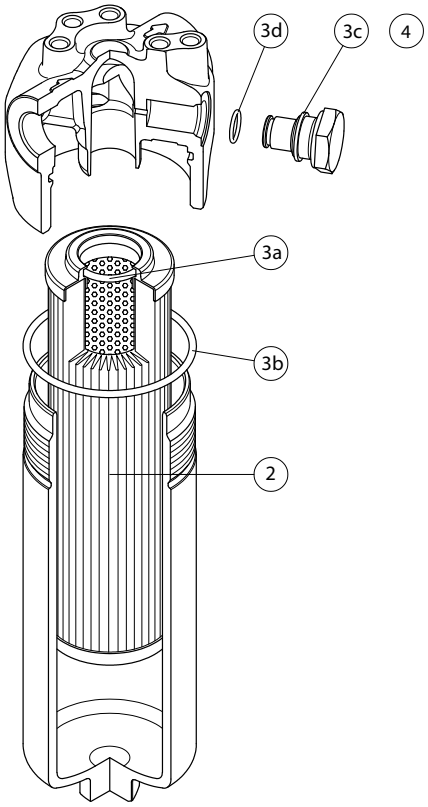


LMP 110



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LMP 110



Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3d)		Q.ty: 1 pc. 4	
Filter series	Filter element	Seal Kit code number NBR	FPM	Indicator connection plug NBR	FPM
LMP 110	See order table	02050478	02050479	T2H	T2V

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LMP 112 / 123 series
MULTIPORT

Maximum working pressure up to 8 MPa (80 bar) - Flow rate up to 175 l/min



INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS

Please scan or click the QR codes to get updated electronic version of the related document:

LMP112 LMP116 LMP118 LMP119 LMP120 LMP122 LMP123

For all the QR codes: Scan or click me!

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Description

Low & Medium Pressure filters

Maximum working pressure up to 8 MPa (80 bar)
Flow rate up to 175 l/min

LMP MULTIPORT filters is a range of versatile low pressure filter for transmission, protection of sensitive components in low pressure hydraulic systems and filtration of the coolant into the machine tools. They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- Female threaded connections up to 1", for a maximum return flow rate of 175 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Bypass valve, to relieve excessive pressure drop across the filter media
- Visual, electrical and electronic differential clogging indicators
- Multiport and multifunction schemes, to meet any type of application.
- LMP112: 3/4" additional input port
- LMP116: 3/4" additional output port
- LMP118: 3/4" bypass port, to send the bypass flow to the reservoir instead of the system
- LMP119: 3/4" relief port, to relief the input pressure in the filter, protecting the components downstream the filter against back pressure caused by the pressure drop (cold starts)
- LMP120: connections placed in the same side
- LMP122: connections placed in the same side and 1" additional output port
- LMP123: 2 and 3 bar integrated relief valve

Common applications:

Delivery lines, in any low pressure industrial equipment or mobile machines

Technical data

Filter housing materials

- Head: Aluminium
- Housing: Cataphoresis - Painted steel
- Bypass valve: Brass - Aluminium

Pressure

- Test pressure: 12 MPa (120 bar)
- Min. Burst pressure 24 MPa (240 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 8 MPa (80 bar)

Bypass valve

- Opening pressure 0.35 MPa (3.5 bar) ±10%
- Other opening pressures on request.

Filter element features

Filter		Filter element	
LMP 112 ÷ 123		CU	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	N	20 bar
M - Wire mesh	Standard	N	20 bar
P - Paper	Standard	N	20 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals

- Standard NBR series A
- Optional FPM series V

Temperature

From -25 °C to +110 °C

Note

LMP MULTIPORT filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]				Volumes [dm³]				
	Length 1	2	3	4	Length 1	2	3	4
LMP 112-116-118-119	1.60	1.80	2.10	2.60	0.75	0.81	1.11	1.53
LMP 120-122	1.90	2.10	2.40	2.90	0.75	0.81	1.11	1.53
LMP 123	1.70	1.90	2.20	2.70	0.75	0.81	1.11	1.53

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Flow rates [l/min]

Filter series	Length	Filter element design - N Series							
		A03	A06	A10	A16	A25	M25 M60 M90	P10	P25
LMP 112	1	36	38	55	57	67	105	84	86
	2	44	49	66	66	76	105	93	94
	3	56	58	71	77	87	106	96	97
	4	67	77	85	88	97	106	99	99
LMP 116	1	36	38	54	56	64	96	79	80
	2	43	49	63	64	72	96	86	87
	3	54	57	68	73	82	96	88	89
	4	65	73	79	82	89	96	91	91
LMP 118 LMP 119	1	40	42	65	69	85	163	117	120
	2	49	57	83	83	101	163	136	138
	3	66	70	92	102	124	164	142	144
	4	86	102	118	124	144	165	148	149
LMP 120	1	40	43	66	70	87	172	121	125
	2	50	58	85	85	104	172	142	144
	3	67	71	94	105	129	173	149	151
	4	88	106	122	129	151	174	155	157
LMP 122	1	39	42	64	67	81	146	109	111
	2	49	56	80	80	96	146	124	126
	3	65	68	88	96	114	146	129	130
	4	82	97	110	115	131	147	134	135

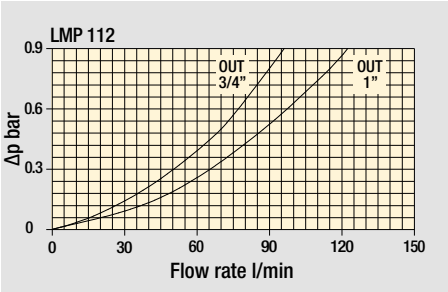
Maximum flow rate for a complete low and medium pressure filter with a pressure drop Δp = 0.7 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

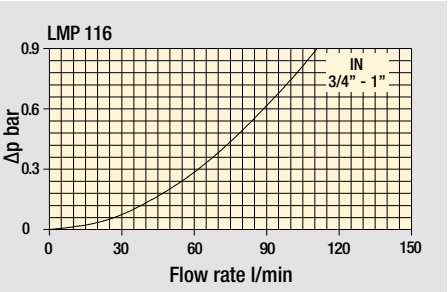
Filter series	Length	Filter element design - N Series							
		A03	A06	A10	A16	A25	M25 M60 M90	P10	P25
LMP 123	1	35	37	50	52	59	83	70	71
	2	41	46	58	58	65	83	76	76
	3	51	53	62	65	72	83	77	78
	4	59	65	70	72	78	83	79	79

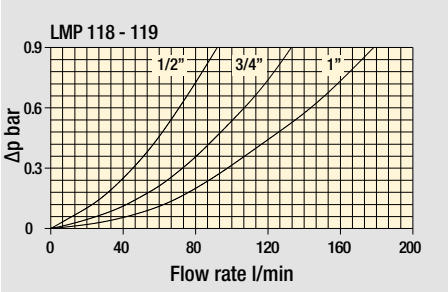
Maximum flow rate for a complete low and medium pressure filter with a pressure drop Δp = 2.7 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

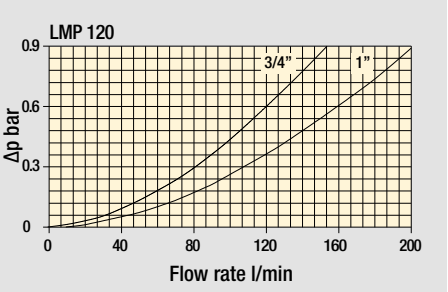
Pressure drop

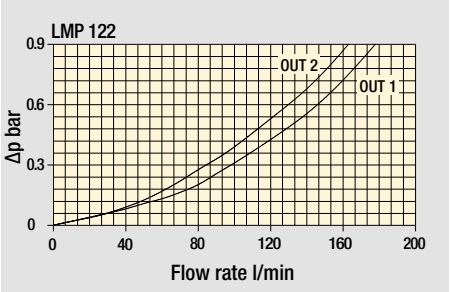
Filter housings Δp pressure drop

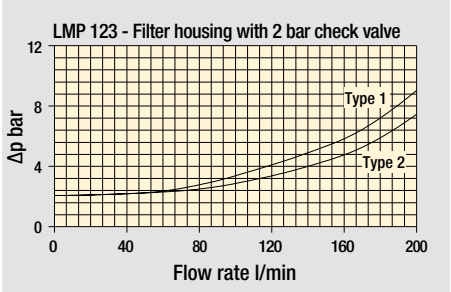


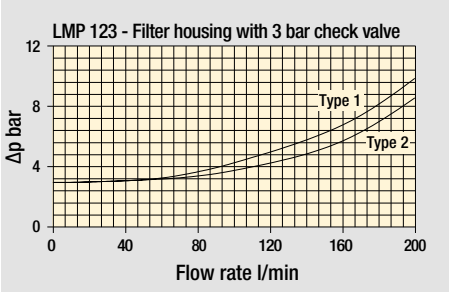




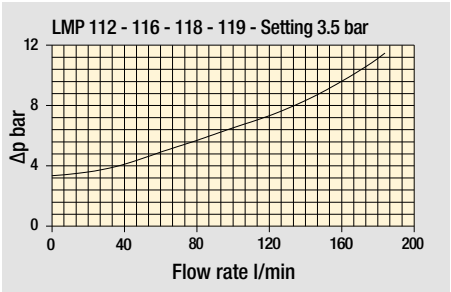


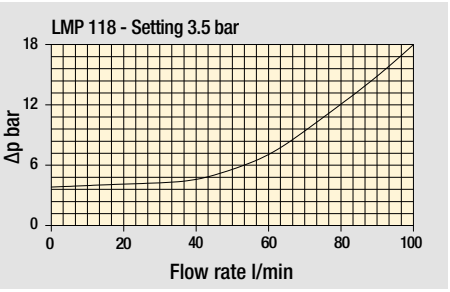


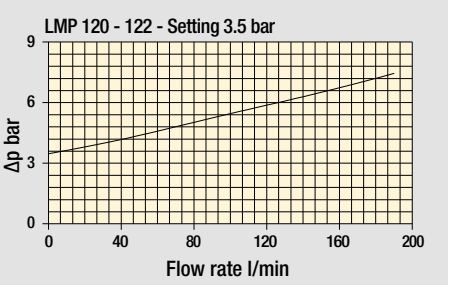




Bypass valve pressure drop



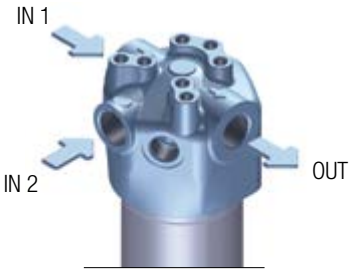


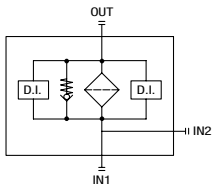


The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

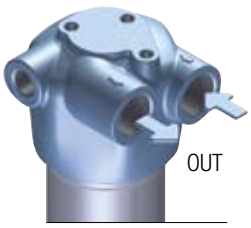
Hydraulic diagram - Multiport styles

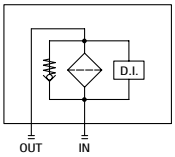
LMP 112 — Double IN port



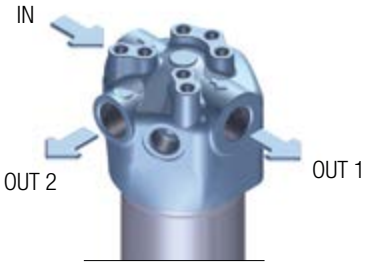


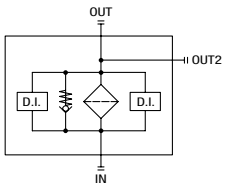
LMP 120 — Port IN-OUT on the same side



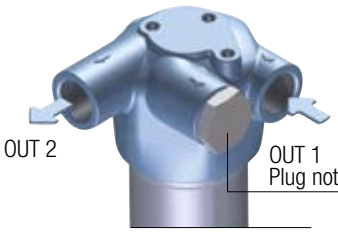


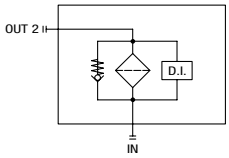
LMP 116 — Double OUT port





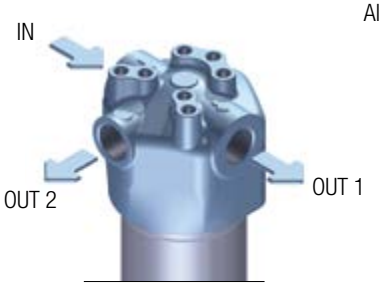
LMP 122 — Lateral OUT port high flow

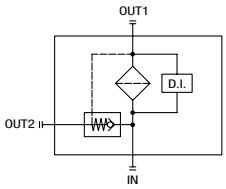




LMP 118 — Bypass lateral

Always cleaning fluid in OUT port

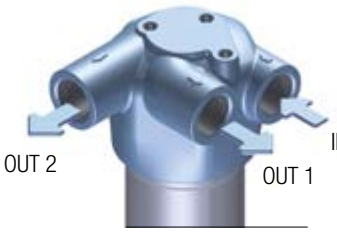


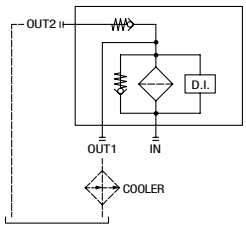


LMP 123 — Bypass valve

Type 1

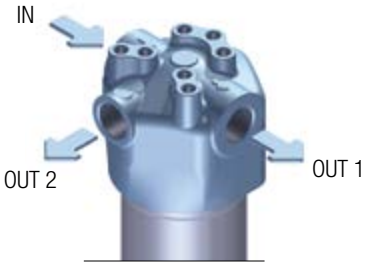
for heat exchanger high flow

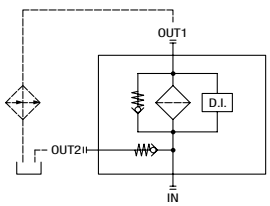




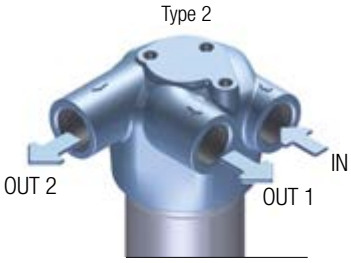
LMP 119 — Safety valve 6 bar

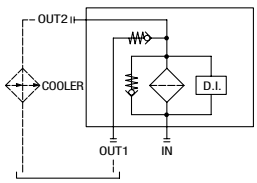
for heat exchanger





Type 2





Designation & Ordering code

COMPLETE FILTER

Configuration example: LMP112 | 4 | B | A | D | 1 | A10 | N | P01

Series and size
- **LMP112**
- **LMP116**

Length

1 | **2** | **3** | **4**

Bypass valve

S	Without bypass
B	With bypass 3.5 bar

Seals and treatments

A	NBR	**E**	EPDM
V	FPM	**C**	CR

Connections		Aux
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 - 1 1/16” - 12 UN	SAE 12 - 1 1/16” - 12 UN
F	SAE 16 - 1 5/16” - 12 UN	SAE 12 - 1 1/16” - 12 UN

Connection for differential pressure indicator

1	Without
2	With standard connection
3	With connection on the opposite side
6	With two connections on both sides

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm
M60	Wire mesh	60 µm
M90	Wire mesh	90 µm
P10	Resin impregnated paper	10 µm
P25	Resin impregnated paper	25 µm

Element Δp

N	20 bar

Execution

P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See page 784

DEA	Electrical differential pressure indicator
DEM	Electrical differential pressure indicator
DEU	Electrical differential pressure indicator
DLA	Electrical / visual differential pressure indicator
DLE	Electrical / visual differential pressure indicator
DTA	Electronic differential pressure indicator
DTI	I-O Link electronic differential pressure indicator
DVA	Visual differential pressure indicator
DVM	Visual differential pressure indicator

PLUGS

See page 807

T2	Plug (not included)

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FILTER ELEMENT

Configuration example: CU110 | 4 | A10 | A | N | P01

Element series and size

CU110

Element length

1	2	3	4

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm
M60	Wire mesh	60 µm
M90	Wire mesh	90 µm
P10	Resin impregnated paper	10 µm
P25	Resin impregnated paper	25 µm

Seals and treatments

A	NBR
V	FPM
E	EPDM
C	CR

Element Δp

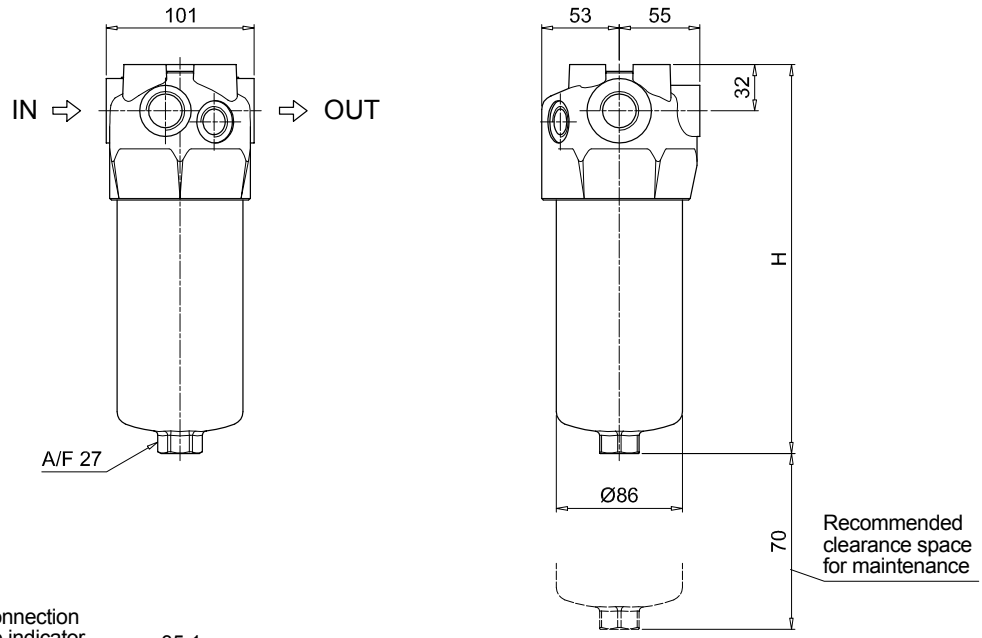
N	20 bar

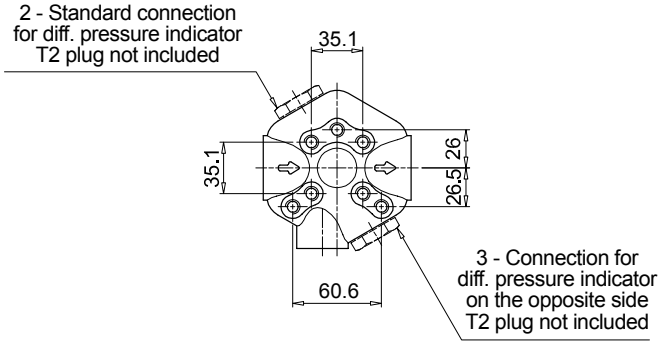
Execution

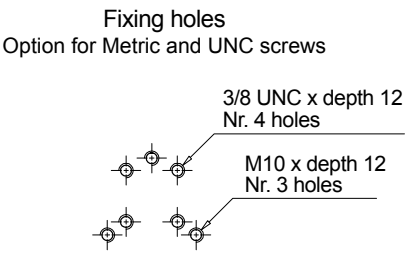
P01	MP Filtri standard
Pxx	Customized

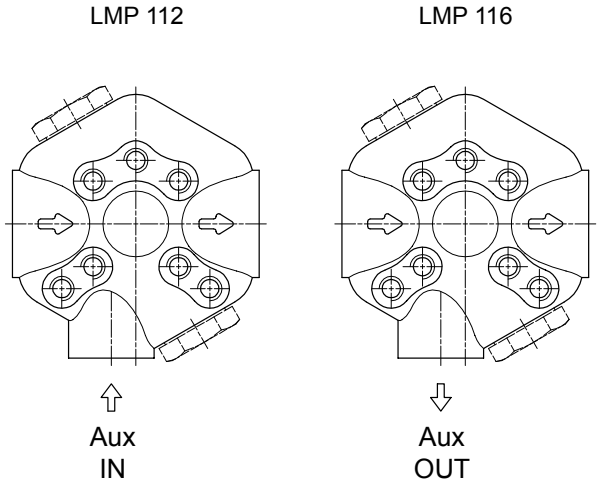
Dimensions

LMP112 - LMP116	
Filter length	**H [mm]**
1	197
2	230
3	280
4	380









MP FILTRI
WWW.SUMY.IR

Designation & Ordering code

COMPLETE FILTER

Configuration example: LMP118 | 4 | B | A | D | 1 | A10 | N | P01

Series and size
- **LMP118**
- **LMP119**

Length

1	2	3	4

Bypass valve
- **B** With bypass 3.5 bar

Seals and treatments

A	NBR	**E**	EPDM
V	FPM	**C**	CR

Connections

		Aux OUT
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 - 1 1/16” - 12 UN	SAE 12 - 1 1/16” - 12 UN
F	SAE 16 - 1 5/16” - 12 UN	SAE 12 - 1 1/16” - 12 UN

Connection for differential pressure indicator
- **1** Without
- **2** With standard connection

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm
M60	Wire mesh	60 µm
M90	Wire mesh	90 µm
P10	Resin impregnated paper	10 µm
P25	Resin impregnated paper	25 µm

Element Δp
- **N** 20 bar

Execution
- **P01** MP Filtri standard
- **Pxx** Customized

CLOGGING INDICATORS

See page 784

- **DEA** Electrical differential pressure indicator
- **DEM** Electrical differential pressure indicator
- **DEU** Electrical differential pressure indicator
- **DLA** Electrical / visual differential pressure indicator
- **DLE** Electrical / visual differential pressure indicator
- **DTA** Electronic differential pressure indicator
- **DTI** I-O Link electronic differential pressure indicator
- **DVA** Visual differential pressure indicator
- **DVM** Visual differential pressure indicator

PLUGS

See page 807

- **T2** Plug (not included)

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Configuration example: CU110 | 4 | A10 | A | N | P01

Element series and size

CU110

Element length

1	2	3	4

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm
M60	Wire mesh	60 µm
M90	Wire mesh	90 µm
P10	Resin impregnated paper	10 µm
P25	Resin impregnated paper	25 µm

Seals and treatments

A	NBR
V	FPM
E	EPDM
C	CR

Element Δp

N	20 bar

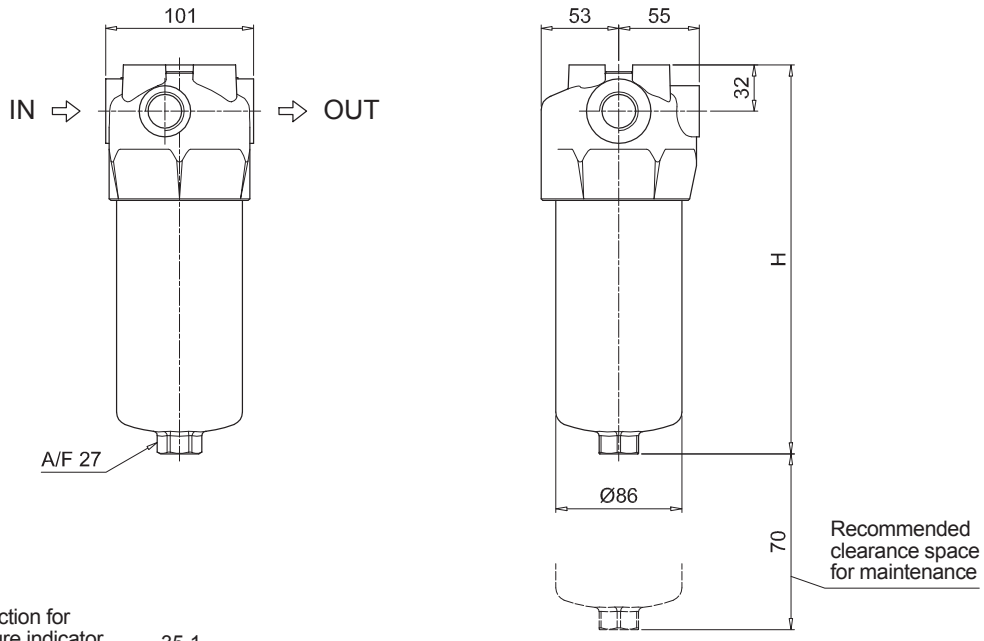
Execution

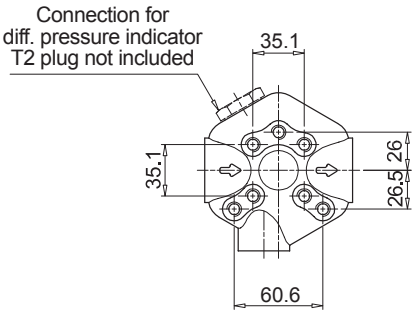
P01	MP Filtri standard
Pxx	Customized

Dimensions

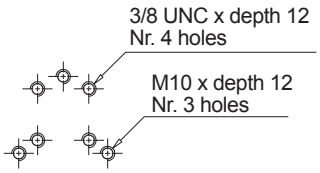
LMP118 - LMP119

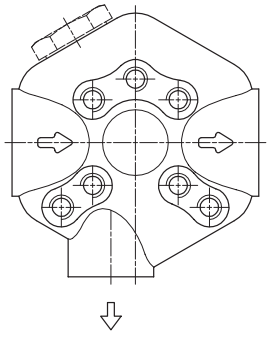
Filter length	H [mm]
1	197
2	230
3	280
4	380





Fixing holes
Option for Metric and UNC screws





MP FILTRI
WWW.SUMY.IR

Designation & Ordering code

COMPLETE FILTER

Configuration example: LMP120 | 4 | B | A | D | 1 | A10 | N | P01

Series and size
- **LMP120**
- **LMP122**

Length
1 | **2** | **3** | **4**

Bypass valve
- **S** Without bypass
- **B** With bypass 3.5 bar

Seals and treatments
- **A** NBR
- **E** EPDM
- **V** FPM
- **C** CR

Connections		LMP120	LMP122
A	G 3/4”	•	-
B	G 1”	•	•
C	3/4” NPT	•	-
D	1” NPT	•	•
E	SAE 12 - 1 1/16” - 12 UN	•	-
F	SAE 16 - 1 5/16” - 12 UN	•	•

Connection for differential pressure indicator
- **1** Without
- **2** With standard connection

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm
M60	Wire mesh	60 µm
M90	Wire mesh	90 µm
P10	Resin impregnated paper	10 µm
P25	Resin impregnated paper	25 µm

Element Δp
- **N** 20 bar

Execution
- **P01** MP Filtri standard
- **Pxx** Customized

CLOGGING INDICATORS

See page 784

- **DEA** Electrical differential pressure indicator
- **DEM** Electrical differential pressure indicator
- **DEU** Electrical differential pressure indicator
- **DLA** Electrical / visual differential pressure indicator
- **DLE** Electrical / visual differential pressure indicator
- **DTA** Electronic differential pressure indicator
- **DTI** I-O Link electronic differential pressure indicator
- **DVA** Visual differential pressure indicator
- **DVM** Visual differential pressure indicator

PLUGS

See page 807

- **T2** Plug (not included)

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Configuration example: CU110 | 4 | A10 | A | N | P01

Element series and size

CU110

Element length

1 | **2** | **3** | **4**

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm
M60	Wire mesh	60 µm
M90	Wire mesh	90 µm
P10	Resin impregnated paper	10 µm
P25	Resin impregnated paper	25 µm

Seals and treatments

A	NBR
V	FPM
E	EPDM
C	CR

Element Δp

N	20 bar

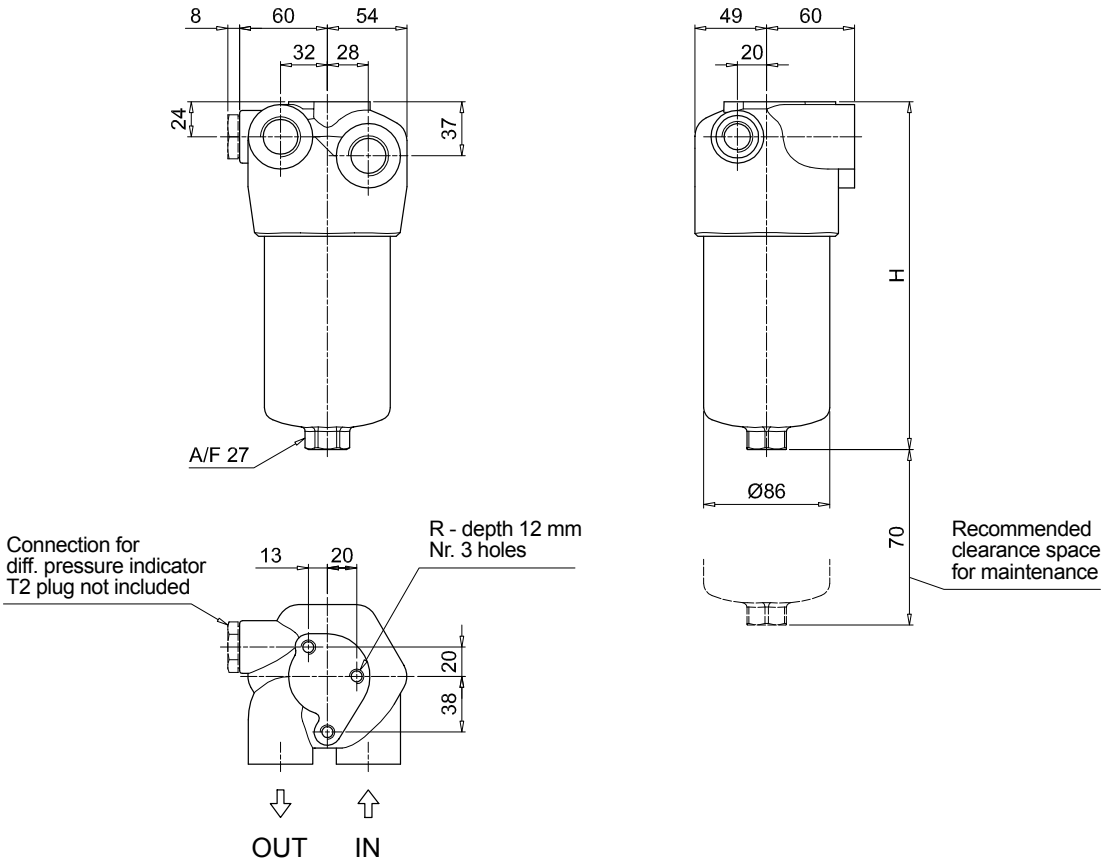
Execution

P01	MP Filtri standard
Pxx	Customized

Dimensions

LMP120	
Filter length	**H [mm]**
1	197
2	230
3	280
4	380

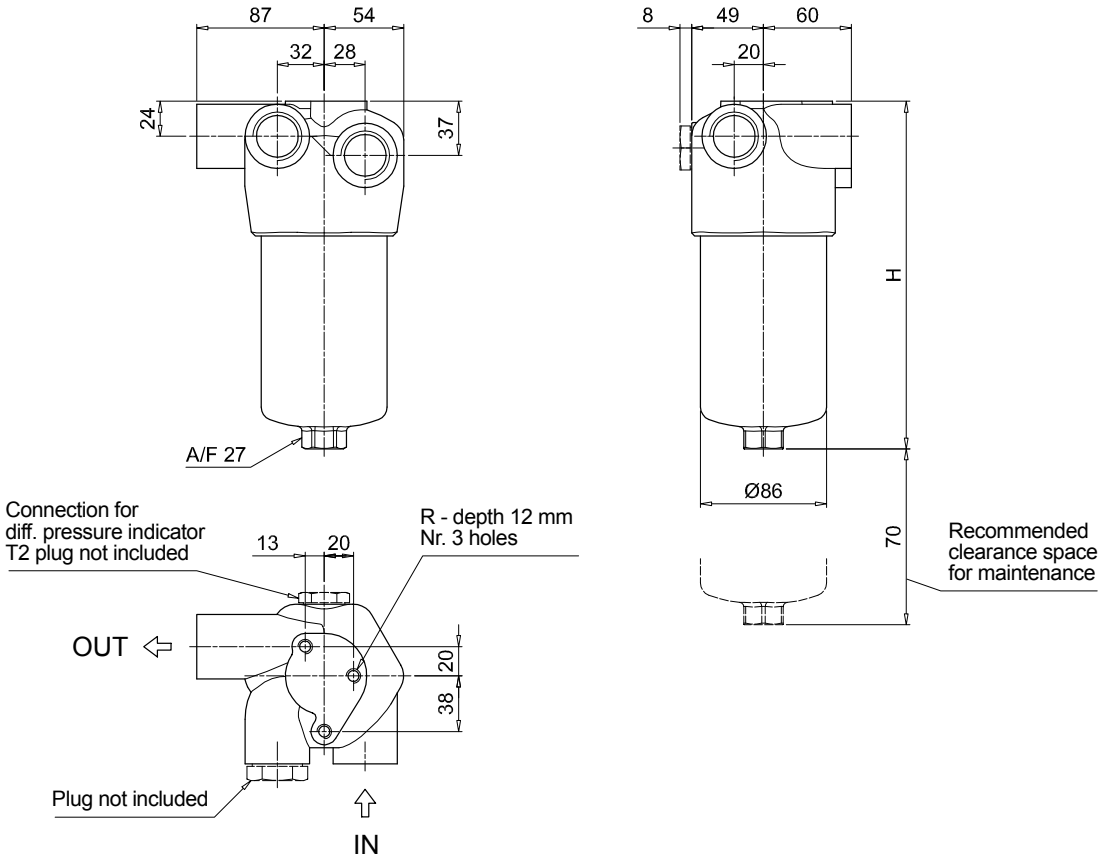
Connections	R
A - B	M10
C - D - E - F	3/8" UNC



MP FILTRI WWW.SUMY.IR

LMP122	
Filter length	**H [mm]**
1	197
2	230
3	280
4	380

Connections	**R**
B	M10
D - F	3/8" UNC



Designation & Ordering code

COMPLETE FILTER

Configuration example: LMP123 | 4 | R | A | F | 1 | A10 | N | P01

Series and size

LMP123

Length

1 | **2** | **3** | **4**

Valves	Bypass	OUT to cooler	Check valve
C	without	front	2 bar
D			3 bar
G		side	2 bar
H			3 bar
M	With bypass 3.5 bar	front	2 bar
N			3 bar
Q		side	2 bar
R			3 bar

Seals and treatments

A	NBR	**E**	EPDM
V	FPM	**C**	CR

Connections

B	G 1”
F	SAE 16 - 1 5/16” - 12 UN

Connection for differential pressure indicator

1	Without
2	With standard connection

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm
M60	Wire mesh	60 µm
M90	Wire mesh	90 µm
P10	Resin impregnated paper	10 µm
P25	Resin impregnated paper	25 µm

Element Δp

N	20 bar

Execution

P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See page 784

DEA	Electrical differential pressure indicator	**DTA**	Electronic differential pressure indicator
DEM	Electrical differential pressure indicator	**DTI**	I-O Link electronic differential pressure indicator
DEU	Electrical differential pressure indicator	**DVA**	Visual differential pressure indicator
DLA	Electrical / visual differential pressure indicator	**DVM**	Visual differential pressure indicator
DLE	Electrical / visual differential pressure indicator		

PLUGS

See page 807

T2	Plug (not included)

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Configuration example: CU110 | 4 | A10 | A | N | P01

Element series and size

CU110

Element length

1 | **2** | **3** | **4**

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm
M60	Wire mesh	60 µm
M90	Wire mesh	90 µm
P10	Resin impregnated paper	10 µm
P25	Resin impregnated paper	25 µm

Seals and treatments

A	NBR
V	FPM
E	EPDM
C	CR

Element Δp

N	20 bar

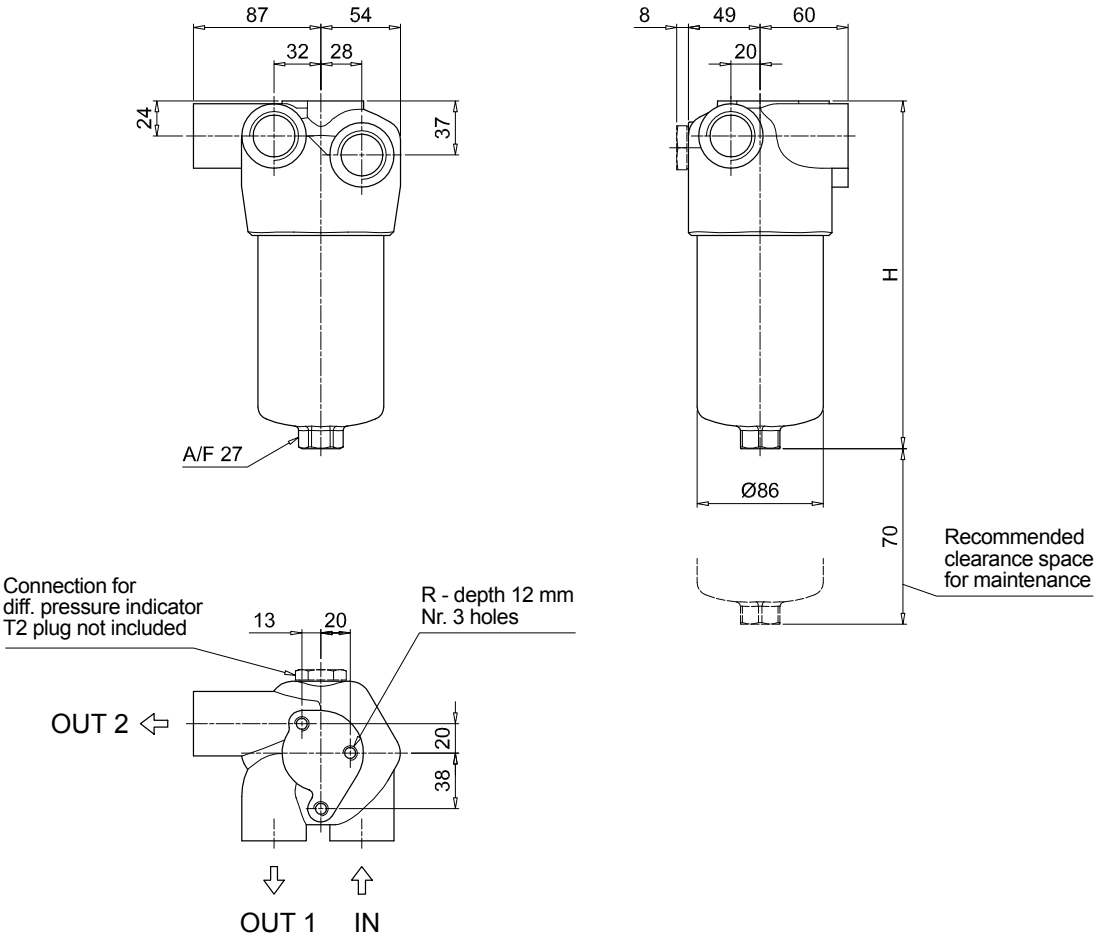
Execution

P01	MP Filtri standard
Pxx	Customized

Dimensions

LMP123	
Filter length	**H [mm]**
1	197
2	230
3	280
4	380

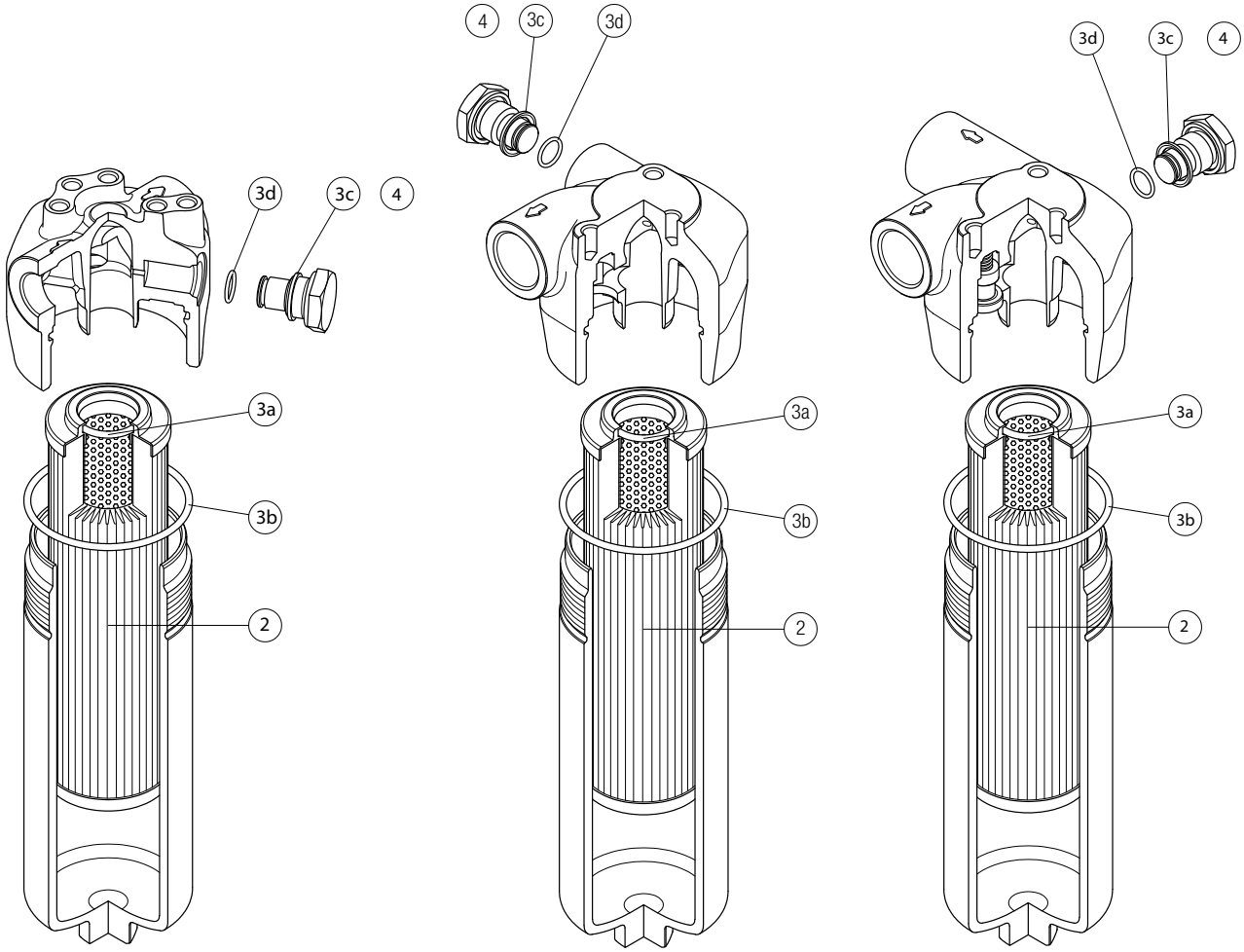
Connections	**R**
B	M10
F	3/8" UNC



MP FILTRI WWW.SUMY.IR

Order number for spare parts

LMP 112 - 116 - 118 - 119	LMP 120	LMP 122 - 123



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3d)		Q.ty: 1 pc. (4)	
Filter series	Filter element	Seal Kit code number NBR	Seal Kit code number FPM	Indicator connection plug NBR	Indicator connection plug FPM
LMP 112-116 -118-119 LMP 120 LMP 122-123	See order table	02050478	02050479	T2H	T2V

MP FILTRI
WWW.SUMY.IR

LMP 210-211

Maximum working pressure up to 6 MPa (60 bar) - Flow rate up to 365 l/min



INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS

Please scan or click the QR codes to get updated electronic version of the related document.

LMP210 LMP211

For all the QR codes: Scan or click me!

LMP 210-211 GENERAL INFORMATION

Description

Low & Medium Pressure filters

Maximum working pressure up to 6 MPa (60 bar)
Flow rate up to 365 l/min

LMP210 is a range of versatile low pressure filter for transmission, protection of sensitive components in low pressure hydraulic systems and filtration of the coolant into the machine tools.
They are also suitable for the off-line filtration of small reservoirs.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- Flanged connections up to 1 1/2", for a maximum flow rate of 365 l/min (LMP210)
- Female threaded connections up to 1 1/2", for a maximum return flow rate of 365 l/min (LMP211)
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid. For further information, see the Contamination Management document and the dedicate leaflet.
- Bypass valve, to relieve excessive pressure drop across the filter media
- Visual, electrical and electronic differential clogging indicators

Common applications:

Delivery lines, in any low pressure industrial equipment or mobile machines

Technical data

Filter housing materials

- Head: Aluminium
- Bowl: Cataphoretic painted steel
- Bypass valve: AISI 304 - Polyamide

Pressure

- Test pressure: 9 MPa (90 bar)
- Min. Burst pressure: 18 MPa (180 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 6 MPa (60 bar)

Bypass valve

- Opening pressure 0.35 MPa (3.5 bar) ±10%
- Other opening pressures on request.

Filter element features

Filter		Filter element	
LMP 210 - 211		CU	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	N	20 bar
M - Wire mesh	Standard	N	20 bar
P - Paper	Standard	N	20 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals

- Standard NBR series A
- Optional FPM series V

Connections

Inlet/Outlet In-Line

Temperature

From -25 °C to +110 °C

Note

LMP 210 - 211 filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]				Volumes [dm³]			
	Length	1	2	3	Length	1	2	3
LMP 210-211		3.10	4.80	6.40		1.60	2.10	2.80

MP FILTRI WWW.SUMY.IR

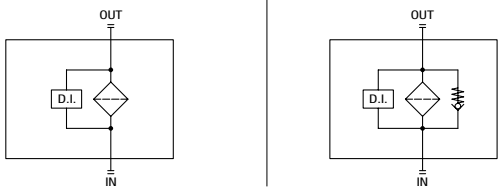
Flow rates [l/min]

		Filter element design - N Series									
Filter series	Length	A03	A06	A10	A16	A25	M25	M60	M90	P10	P25
LMP 210	**1**	106	130	190	200	221	286	287	287	261	265
	2	153	175	220	237	249	288	289	290	265	269
	3	204	214	248	260	265	289	290	291	277	281
LMP 211	**1**	118	149	227	240	269	358	359	360	324	330
	2	178	207	268	292	307	361	362	363	329	335
	3	247	260	306	323	329	362	363	364	345	351

Maximum flow rate for a complete low and medium pressure filter with a pressure drop Δp = 0.7 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

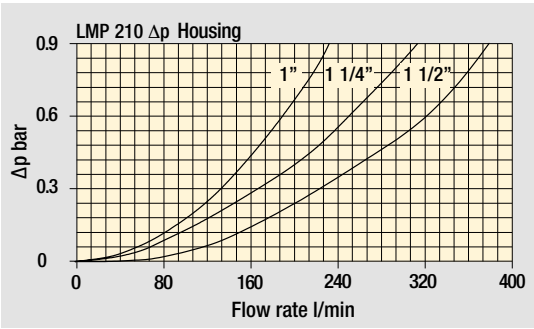
Hydraulic diagram

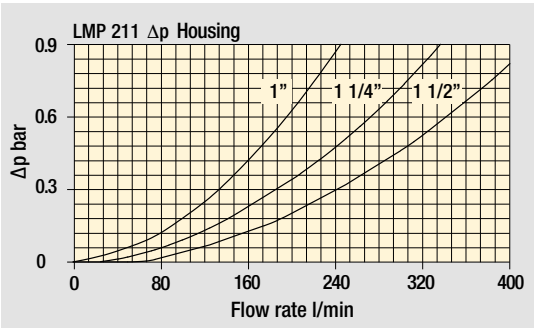
Filter series	Execution S	Execution B
LMP 210-211	•	•



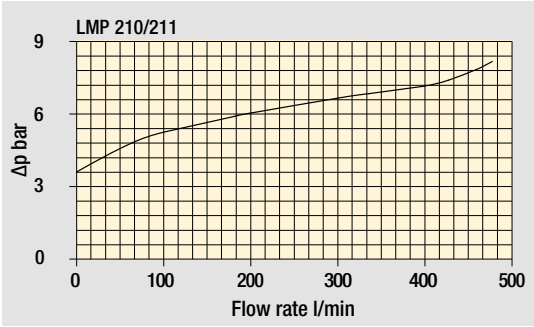
Pressure drop

Filter housings
Δp pressure drop





Bypass valve
pressure drop



The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

LMP 210

Designation & Ordering code

COMPLETE FILTER

Configuration example: LMP210 | 3 | B | A | F1 | A10 | N | P01

Series and size

LMP210

Length

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

Bypass valve

S Without bypass

B With bypass 3.5 bar

Seals and treatments

A NBR

V FPM

E EPDM

Connections

F1 1" SAE 3000 psi/M

F2 1 1/4" SAE 3000 psi/M

F3 1 1/2" SAE 3000 psi/M

F4 1" SAE 3000 psi/UNC

F5 1 1/4" SAE 3000 psi/UNC

F6 1 1/2" SAE 3000 psi/UNC

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm	**P10**	Resin impregnated paper	10 µm
A25	Inorganic microfiber	25 µm	**P25**	Resin impregnated paper	25 µm

WA025 Water absorber inorganic microfiber 25 µm

Element Δp

N 20 bar

Execution

P01 MP Filtri standard

Pxx Customized

FILTER ELEMENT

Configuration example: CU210 | 3 | A10 | A | N | P01

Element series and size

CU210

Element length

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

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm	**P10**	Resin impregnated paper	10 µm
A25	Inorganic microfiber	25 µm	**P25**	Resin impregnated paper	25 µm

WA025 Water absorber inorganic microfiber 25 µm

Seals and treatments

A NBR

V FPM

E EPDM

Element Δp

N 20 bar

Execution

P01 MP Filtri standard

Pxx Customized

CLOGGING INDICATORS

See page 784

DEA Electrical differential pressure indicator

DEM Electrical differential pressure indicator

DEU Electrical differential pressure indicator

DLA Electrical / visual differential pressure indicator

DLE Electrical / visual differential pressure indicator

DTA Electronic differential pressure indicator

DTI I-O Link electronic differential pressure indicator

DVA Visual differential pressure indicator

DVM Visual differential pressure indicator

PLUGS

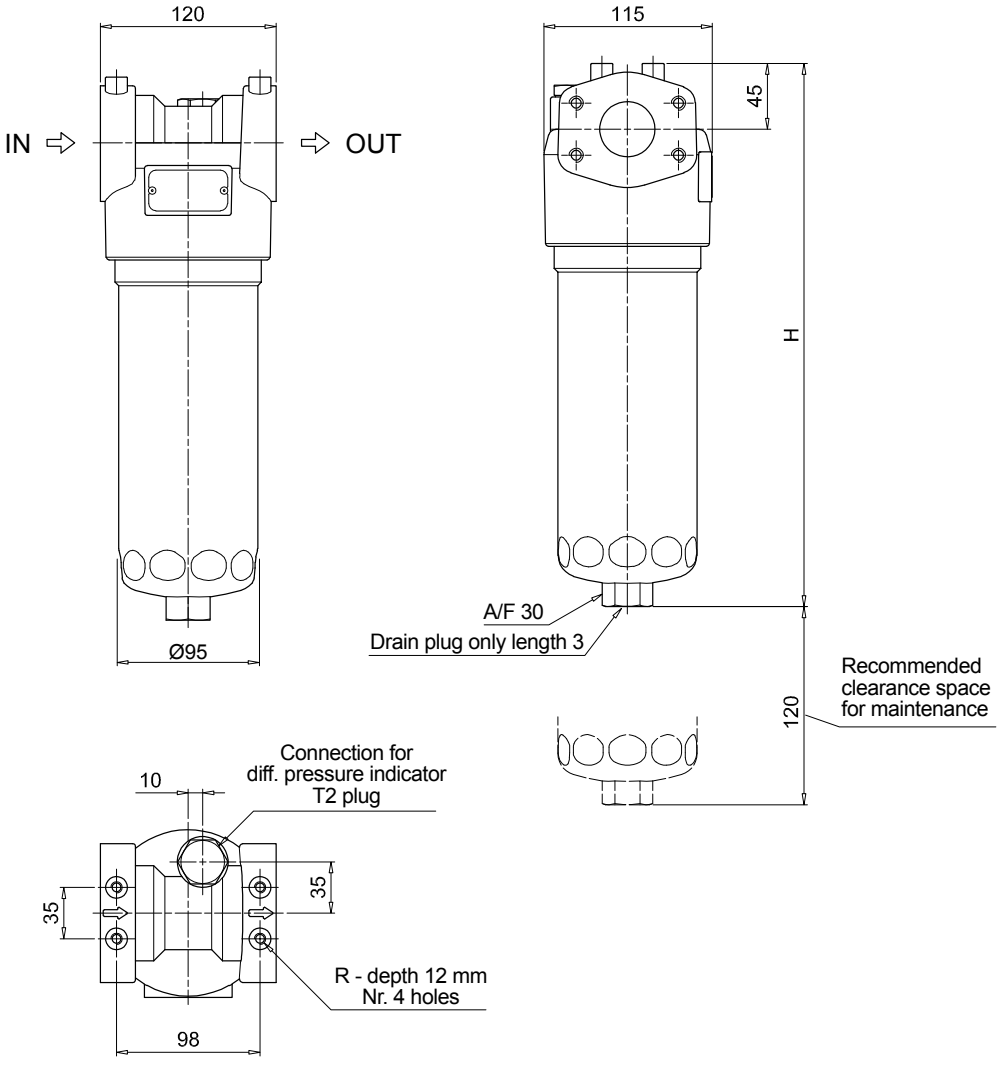
See page 807

T2 Plug

MP FILTRI WWW.SUMY.IR

LMP210	
Filter length	**H [mm]**
1	362
2	492
3	633

Connections	**R**
F1 - F2 - F3	M8
F4 - F5 - F6	5/16" UNC



LMP 211

Designation & Ordering code

COMPLETE FILTER

Configuration example: LMP211 | 3 | B | A | D | 6 | A10 | N | P01

Series and size

LMP211

Length

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

Bypass valve

S	Without bypass	**B**	With bypass 3.5 bar

Seals and treatments

A	NBR	**E**	EPDM
V	FPM	**C**	CR

Connections

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

Connection for differential pressure indicator

6 With plugged connection

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm	**P10**	Resin impregnated paper	10 µm
A25	Inorganic microfiber	25 µm	**P25**	Resin impregnated paper	25 µm

WA025 Water absorber inorganic microfiber 25 µm

Element Δp

N 20 bar

Execution

P01	MP Filtri standard
Pxx	Customized

FILTER ELEMENT

Configuration example: CU210 | 3 | A10 | A | N | P01

Element series and size

CU210

Element length

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

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm	**P10**	Resin impregnated paper	10 µm
A25	Inorganic microfiber	25 µm	**P25**	Resin impregnated paper	25 µm

WA025 Water absorber inorganic microfiber 25 µm

Seals and treatments

A	NBR	**E**	EPDM
V	FPM	**C**	CR

Element Δp

N 20 bar

Execution

P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See page 784

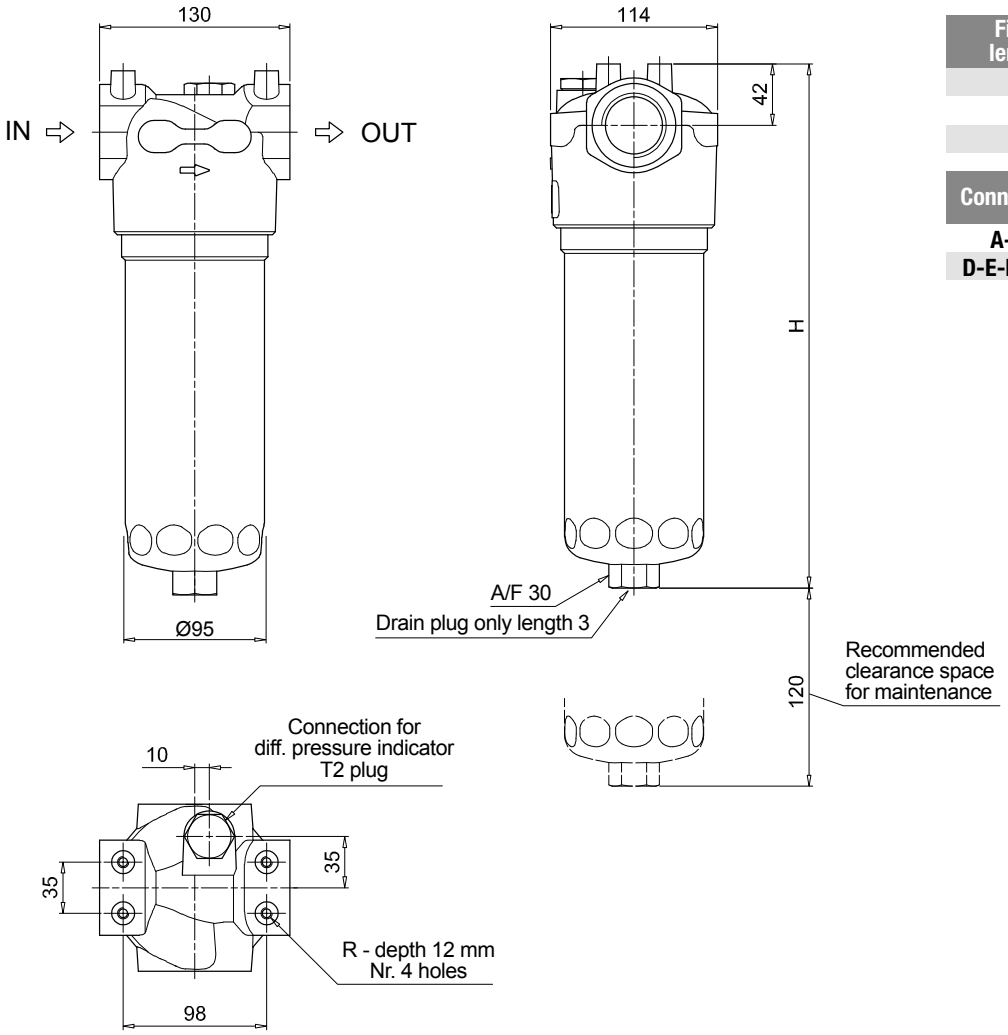
DEA	Electrical differential pressure indicator	**DTA**	Electronic differential pressure indicator
DEM	Electrical differential pressure indicator	**DTI**	I-O Link electronic differential pressure indicator
DEU	Electrical differential pressure indicator	**DVA**	Visual differential pressure indicator
DLA	Electrical / visual differential pressure indicator	**DVM**	Visual differential pressure indicator
DLE	Electrical / visual differential pressure indicator		

PLUGS

See page 807

T2 Plug

MP FILTRI WWW.SUMY.IR



LMP211

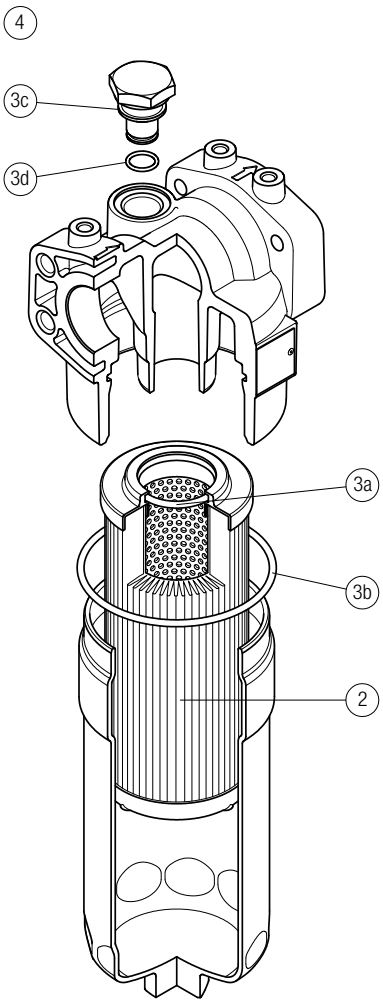
Filter length	H [mm]
1	358
2	488
3	629

Connections	R
A-B-C	M8
D-E-F-G-H-I	5/16" UNC

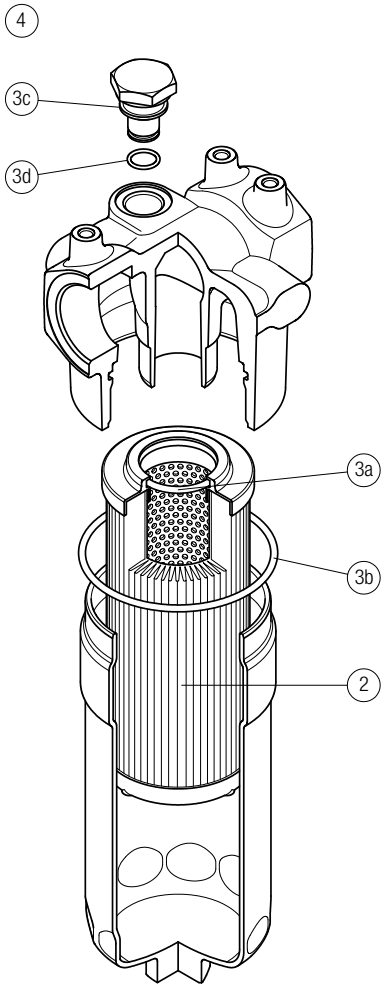
LMP 210-211 SPARE PARTS

Order number for spare parts

LMP 210



LMP 211



Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3d)		Q.ty: 1 pc. 4	
Filter series	Filter element	Seal Kit code number NBR	FPM	Indicator connection plug NBR	FPM
LMP 210-211	See order table	02050435	02050436	T2H	T2V

MP FILTRI WWW.SUMY.IR

MP FILTRI
WWW.SUMY.IR

LMP 400-401 series

Maximum working pressure up to 6 MPa (60 bar) - Flow rate up to 780 l/min



Description

Low & Medium Pressure filters

Maximum working pressure up to 6 MPa (60 bar)
Flow rate up to 780 l/min

LMP400 is a range of low pressure filter with large filtration surface mainly suitable for lubrication, off-line filtration of the reservoirs and filtration equipment.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:
- Female threaded connections up to 2" and flanged connections up to 2 1/2", for a maximum flow rate of 780 l/min
- In line or 90° connections, to meet any type of application
- Base-mounting design also available, for ease of the replacement of the filter element
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid. For further information, see the Contamination Management document and the dedicate leaflet.
- Bypass valve, to relieve excessive pressure drop across the filter media
- Vent ports, to avoid air trapped into the filter going into the system
- Drain ports, to remove the fluid from the housing prior the maintenance work
- Visual, electrical and electronic differential clogging indicators

Common applications:
- Off-line filtration of reservoirs
- Filtration systems

Technical data

Filter housing materials
- Head: Anodized Aluminium
- Housing: Anodized Aluminium
- Bypass valve: Steel

Pressure LMP 400-401 length 2 -3 - 4
- Working pressure: 6 MPa (60 bar)
- Test pressure: 9 MPa (90 bar)
- Min. Burst pressure: 18 MPa (180 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 6 MPa (60 bar)

Pressure LMP 400-401 length 5 - 6
- Working pressure: 5 MPa (50 bar)
- Test pressure: 7.5 MPa (75 bar)
- Min. Burst pressure: 15 MPa (150 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 5 MPa (50 bar)

Bypass valve
- Opening pressure 0.35 MPa (3.5 bar) ±10%
- Other opening pressures on request.

Filter element features

Filter		Filter element	
LMP 400 - 401		CU	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	N	20 bar
M - Wire mesh	Standard	N	20 bar
P - Paper	Standard	N	20 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals
- Standard NBR series A
- Optional FPM series V

Connections
LMP 400: In-line Inlet/Outlet
LMP 401: 90° Inlet/Outlet

Temperature
From -25 °C to +110 °C

Note
LMP 400 filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]						Volumes [dm³]					
	Length	2	3	4	5	6	Length	2	3	4	5	6
LMP 400-401		7.20	8.10	8.80	11.90	14.40		3.50	5.00	6.50	9.50	13.50

MP FILTRI WWW.SUMY.IR

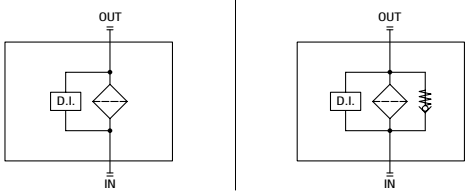
Flow rates [l/min]

Filter series	Length	Filter element design - N Series							
		A03	A06	A10	A16	A25	M25 M60 M90	P10	P25
LMP 400	2	205	244	370	411	515	720	524	556
	3	280	333	474	515	602	760	637	660
	4	347	400	535	564	637	769	660	688
	5	459	501	610	660	717	781	700	721
	6	504	575	676	689	728	783	708	727
LMP 401	2	200	236	347	382	468	628	475	501
	3	268	315	434	468	537	659	565	582
	4	328	373	484	507	565	665	582	603
	5	423	456	544	582	626	674	613	629
	6	459	516	594	604	634	676	619	633

Maximum flow rate for a complete low and medium pressure filter with a pressure drop Δp = 0.7 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

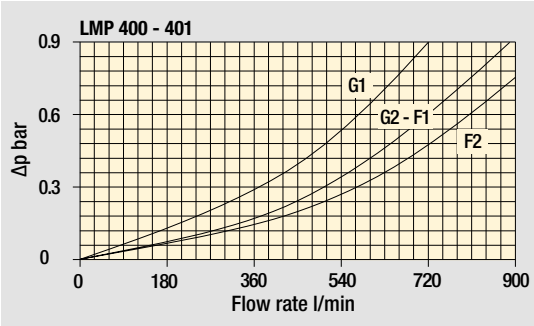
Hydraulic diagram

Filter series	Execution S	Execution B
LMP 400-401	•	•

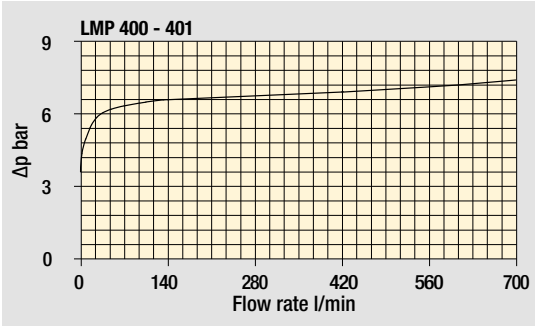


Pressure drop

Filter housings Δp pressure drop



Bypass valve pressure drop



The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

LMP 400-401

Designation & Ordering code

COMPLETE FILTER

Configuration example: LMP401 | 3 | B | A | G1 | A10 | N | P01

Series and size

LMP400 | **LMP401**

Length

2 | **3** | **4** | **5** | **6**

Bypass valve

S Without bypass

B With bypass 3.5 bar

Seals and treatments	Filtration rating Axx	Mxx	Pxx
A NBR	•	•	•
V FPM	•	•	•
W NBR with surface-treatment on filter element's tube	•	•	-

Connections

G1	G 1 1/2"	**F1**	2" SAE 3000 psi/M
G2	G 2"	**F2**	2 1/2" SAE 3000 psi/M
G3	1 1/2" NPT	**F3**	2" SAE 3000 psi/UNC
G4	2" NPT	**F4**	2 1/2" SAE 3000 psi/UNC
G5	SAE 24 - 1 7/8" - 12 UN		
G6	SAE 32 - 2 1/2" - 12 UN		

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm	**P10**	Resin impregnated paper	10 µm
A25	Inorganic microfiber	25 µm	**P25**	Resin impregnated paper	25 µm

WA025 Water absorber inorganic microfiber 25 µm

Element Δp

N 20 bar

Execution	Filter length 2	3	4	5	6
P01 MP Filtri standard	•	•	•	•	•
P02 Maintenance from the bottom of the housing				•	•
Pxx Customized					

FILTER ELEMENT

Configuration example: CU400 | 3 | A10 | A | N | P01

Element series and size

CU400

Element length

2 | **3** | **4** | **5** | **6**

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm	**P10**	Resin impregnated paper	10 µm
A25	Inorganic microfiber	25 µm	**P25**	Resin impregnated paper	25 µm

WA025 Water absorber inorganic microfiber 25 µm

Seals	Filtration rating Axx	Mxx	Pxx
A NBR	•	•	•
V FPM	•	•	•
W NBR with surface-treatment on tube	•	•	-

Element Δp

N 20 bar

Execution

P01 MP Filtri standard

Pxx Customized

CLOGGING INDICATORS

See page 784

DEA Electrical differential pressure indicator

DEM Electrical differential pressure indicator

DEU Electrical differential pressure indicator

DLA Electrical / visual differential pressure indicator

DLE Electrical / visual differential pressure indicator

DTA Electronic differential pressure indicator

DTI I-O Link electronic differential pressure indicator

DVA Visual differential pressure indicator

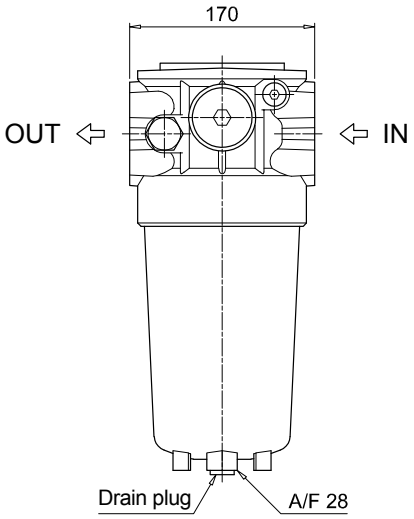
DVM Visual differential pressure indicator

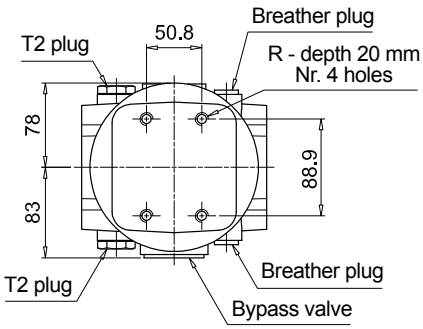
PLUGS

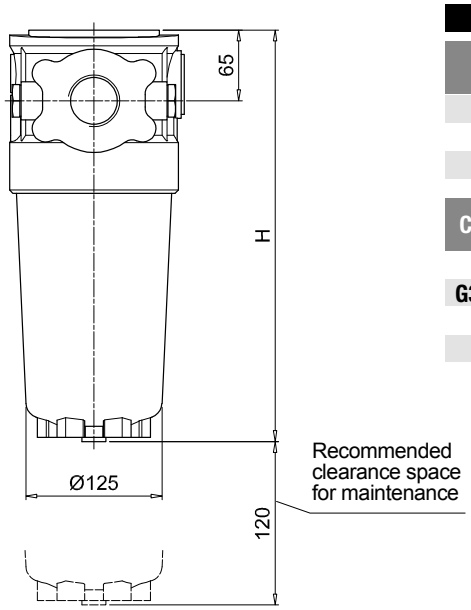
See page 807

T2 Plug

MP FILTRI WWW.SUMY.IR







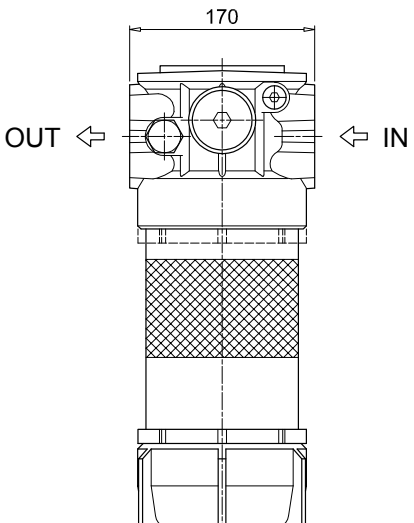
T2 plug =
connection for diff. pressure indicator

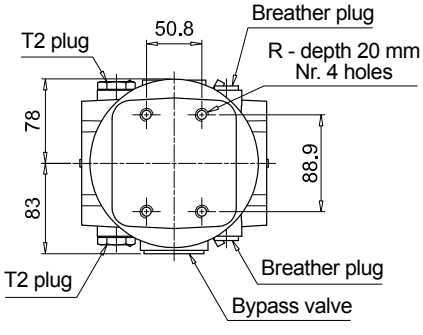
LMP400

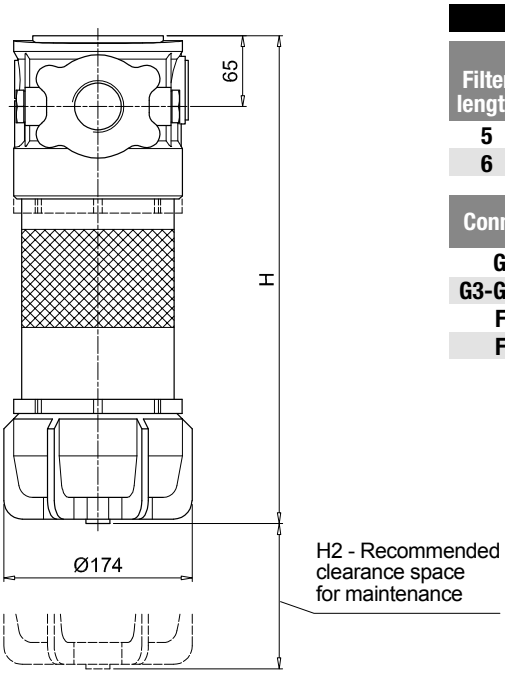
Length 2 - 3 - 4

Filter length	H [mm]
2	378
3	478
4	578

Connections	R
G1-G2	M12
G3-G4-G5-G6	1/2" UNC
F1-F2	M12
F3-F4	1/2" UNC







T2 plug =
connection for diff. pressure indicator

LMP400

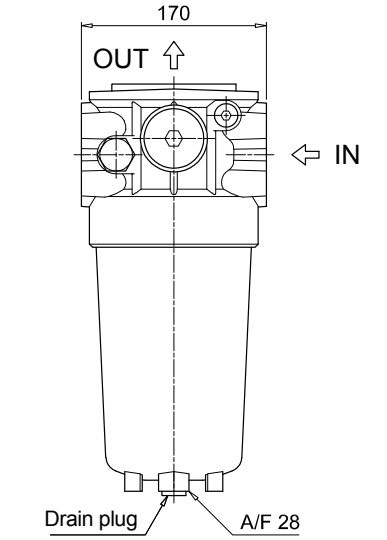
Length 5 - 6

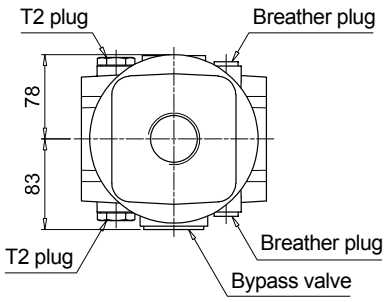
Filter length	H [mm]	H2 [mm] Execution P01	H2 [mm] Execution P02
5	828	120	660
6	1158	120	690

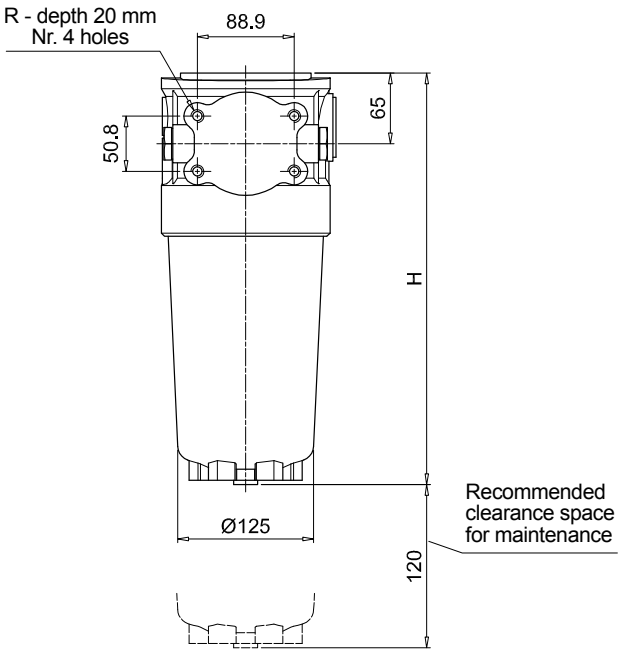
Connections	R
G1-G2	M12
G3-G4-G5-G6	1/2" UNC
F1-F2	M12
F3-F4	1/2" UNC

LMP 400-401

Dimensions







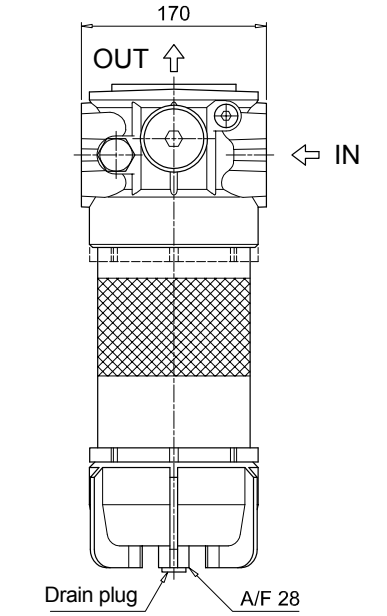
T2 plug =
connection for diff. pressure indicator

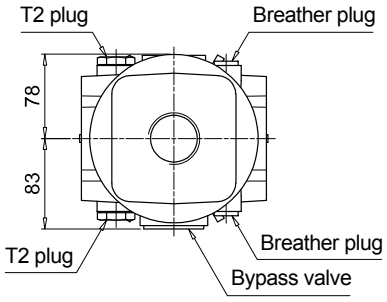
LMP401

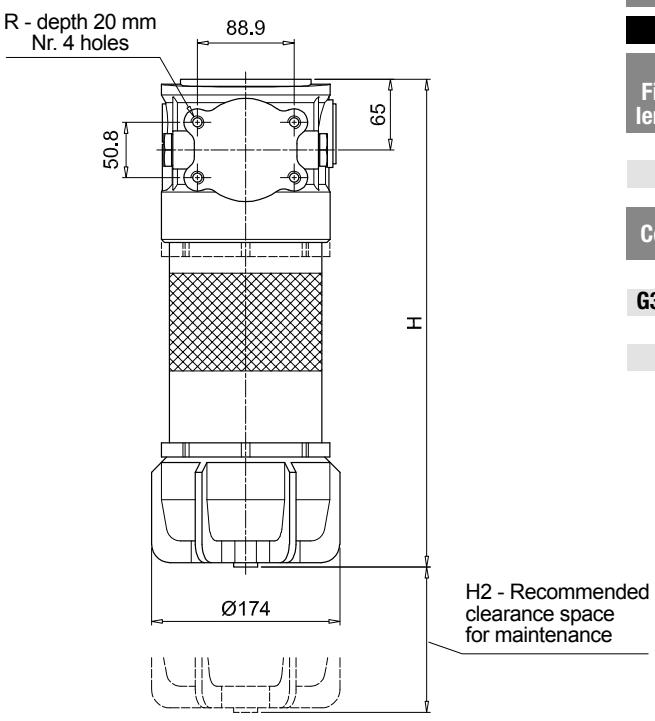
Length 2 - 3 - 4

Filter length	H [mm]
2	378
3	478
4	578

Connections	R
G1-G2	M12
G3-G4-G5-G6	1/2" UNC
F1-F2	M12
F3-F4	1/2" UNC







T2 plug =
connection for diff. pressure indicator

LMP401

Length 5 - 6

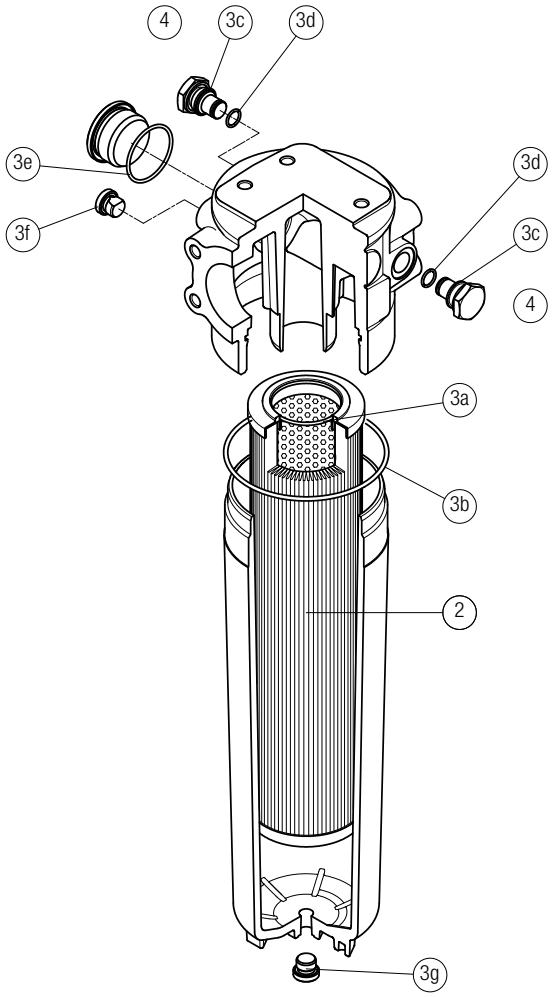
Filter length	H [mm]	H2 [mm] Execution P01	H2 [mm] Execution P02
5	828	120	660
6	1158	120	690

Connections	R
G1-G2	M12
G3-G4-G5-G6	1/2" UNC
F1-F2	M12
F3-F4	1/2" UNC

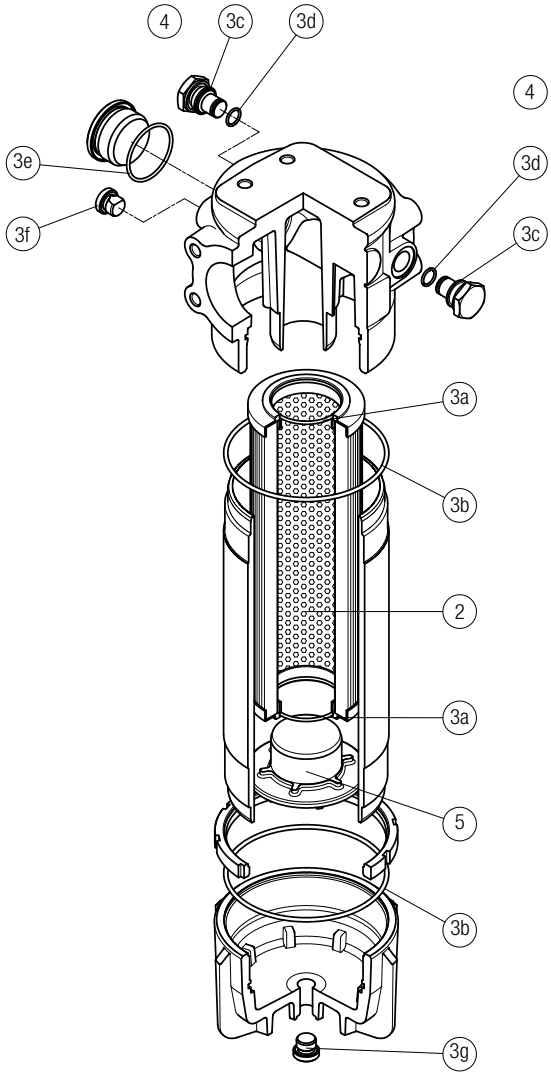
MP FILTRI WWW.SUMY.IR

LMP 400 - 401

length 2 - 3 - 4



length 5 - 6



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3g)		Q.ty: 2 pcs. (4)		Q.ty: 2 pcs. (5)
Filter series	**Filter element**	**Seal Kit code number NBR**	**FPM**	**Indicator connection plug NBR**	**FPM**	**Housing spigot no bypass**
LMP 400-401 length 2-3-4	See order	02050391	02050392	T2H	T2V	-
LMP 400-401 length 5-6	table	02050393	02050394			01044108

MP FILTRI
WWW.SUMY.IR

LMP 430-431 series

Maximum working pressure up to 5 MPa (50 bar) - Flow rate up to 780 l/min



WWW.SUMY.IR

Description

Low & Medium Pressure filters

Maximum working pressure up to 5 MPa (50 bar)
Flow rate up to 780 l/min

LMP431-431 is a range of low pressure filter with large filtration surface mainly suitable for lubrication, off-line filtration of the reservoirs and filtration equipment.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- Female threaded connections up to 2" and flanged connections up to 2 1/2", for a maximum flow rate of 780 l/min
- In line or 90° connections, to meet any type of application
- Base-mounting design also available, for ease of the replacement of the filter element
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid. For further information, see the Contamination Management document and the dedicate leaflet.
- Bypass valve, to relieve excessive pressure drop across the filter media
- Vent ports, to avoid air trapped into the filter going into the system
- Drain ports, to remove the fluid from the housing prior the maintenance work
- Visual, electrical and electronic differential clogging indicators

Common applications:

- Off-line filtration of reservoirs
- Filtration systems

Technical data

Filter housing materials

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

Pressure LMP 430-431

- Test pressure: 7.5 MPa (75 bar)
- Min. Burst pressure: 15 MPa (150 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 5 MPa (50 bar)

Bypass valve

- Opening pressure 0.35 MPa (3.5 bar) ±10%
- Other opening pressures on request.

Filter element features

Filter		Filter element	
LMP 430 - 431		CU	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	N	20 bar
M - Wire mesh	Standard	N	20 bar
P - Paper	Standard	N	20 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals

- Standard NBR series A
- Optional FPM series V

Connections

LMP 400 - 430: In-line Inlet/Outlet
LMP 401 - 431: 90° Inlet/Outlet

Temperature

From -25 °C to +110 °C

Note

LMP 400 filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]			Volumes [dm³]		
	Length	5	6	Length	5	6
LMP 430 - 431		11.90	14.40		9.50	13.50

MP FILTRI WWW.SUMY.IR

Flow rates [l/min]

Filter series	Length	Filter element design - N Series							
		A03	A06	A10	A16	A25	M25 M60 M90	P10	P25
LMP 430	**5**	459	501	610	660	717	781	700	721
	6	504	575	676	689	728	783	708	727
LMP 431	**5**	423	456	544	582	626	674	613	629
	6	459	516	594	604	634	676	619	633

Maximum flow rate for a complete low and medium pressure filter with a pressure drop Δp = 0.7 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

LMP 430-431: execution P02

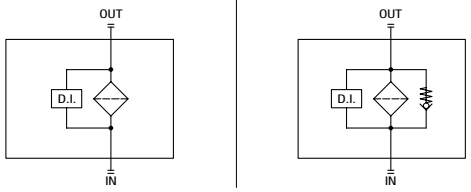


"Internal tube for low flow rate" is recommended for flow rate values below 100/150 l/min.

The use of option P02 makes it easier to fill the housing with the operating fluid.

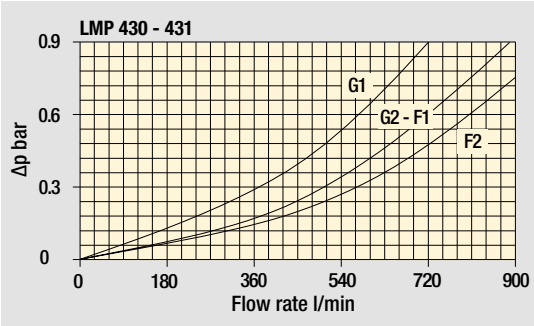
Hydraulic diagram

Filter series	Execution S	Execution B
LMP 430-431	•	•

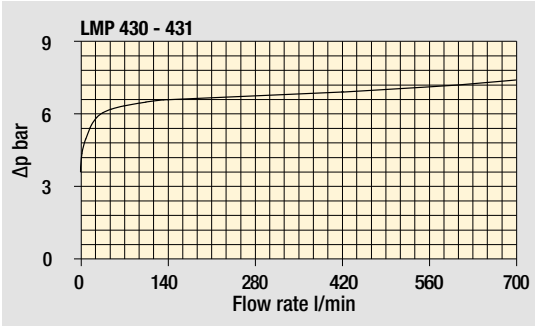


Pressure drop

Filter housings Δp pressure drop



Bypass valve pressure drop



The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

LMP 430-431

Designation & Ordering code

COMPLETE FILTER

Configuration example: LMP431 | 5 | B | A | G1 | A10 | N | P01

Series and size

LMP430 | **LMP431**

Length

5 | **6**

Bypass valve

S	Without bypass	**B**	With bypass 3.5 bar

Seals and treatments		Filtration rating Axx	Mxx	Pxx
A	NBR	•	•	•
V	FPM	•	•	•
W	NBR with surface-treatment on filter element's tube	•	•	-

Connections

G1	G 1 1/2"	**F1**	2" SAE 3000 psi/M
G2	G 2"	**F2**	2 1/2" SAE 3000 psi/M
G3	1 1/2" NPT	**F3**	2" SAE 3000 psi/UNC
G4	2" NPT	**F4**	2 1/2" SAE 3000 psi/UNC
G5	SAE 24 - 1 7/8" - 12 UN		
G6	SAE 32 - 2 1/2" - 12 UN		

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm	**P10**	Resin impregnated paper	10 µm
A25	Inorganic microfiber	25 µm	**P25**	Resin impregnated paper	25 µm

WA025 Water absorber inorganic microfiber 25 µm

Element Δp

N 20 bar

Execution

P01	MP Filtri standard
P02	With internal tube for low flow rate
Pxx	Customized

FILTER ELEMENT

Configuration example: CU400 | 5 | A10 | A | N | P01

Element series and size

CU400

Element length

5 | **6**

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm	**P10**	Resin impregnated paper	10 µm
A25	Inorganic microfiber	25 µm	**P25**	Resin impregnated paper	25 µm

WA025 Water absorber inorganic microfiber 25 µm

Seals		Filtration rating Axx	Mxx	Pxx
A	NBR	•	•	•
V	FPM	•	•	•
W	NBR with surface-treatment on tube	•	•	-

Element Δp

N 20 bar

Execution

P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See page 784

DEA	Electrical differential pressure indicator	**DTA**	Electronic differential pressure indicator
DEM	Electrical differential pressure indicator	**DTI**	I-O Link electronic differential pressure indicator
DEU	Electrical differential pressure indicator	**DVA**	Visual differential pressure indicator
DLA	Electrical / visual differential pressure indicator	**DVM**	Visual differential pressure indicator
DLE	Electrical / visual differential pressure indicator		

PLUGS

See page 807

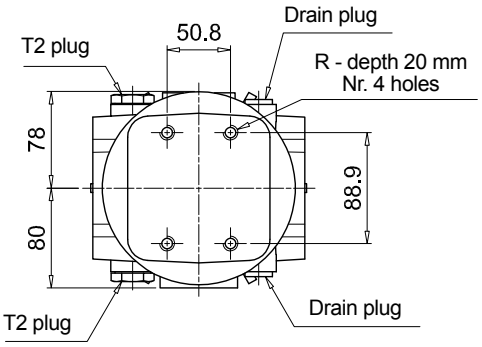
T2 Plug

MP FILTRI WWW.SUMY.IR

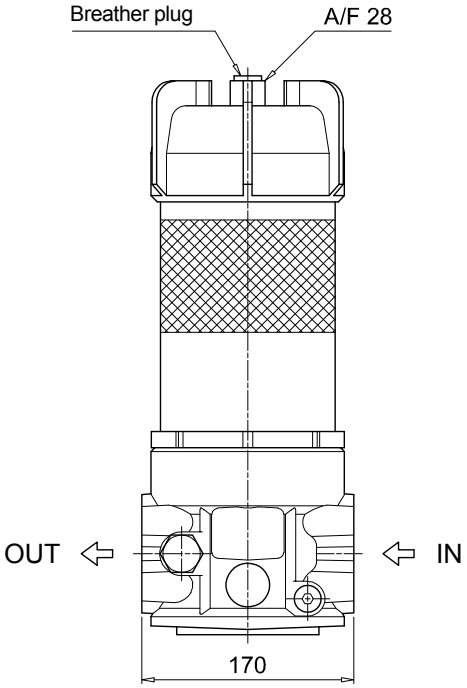
Dimensions

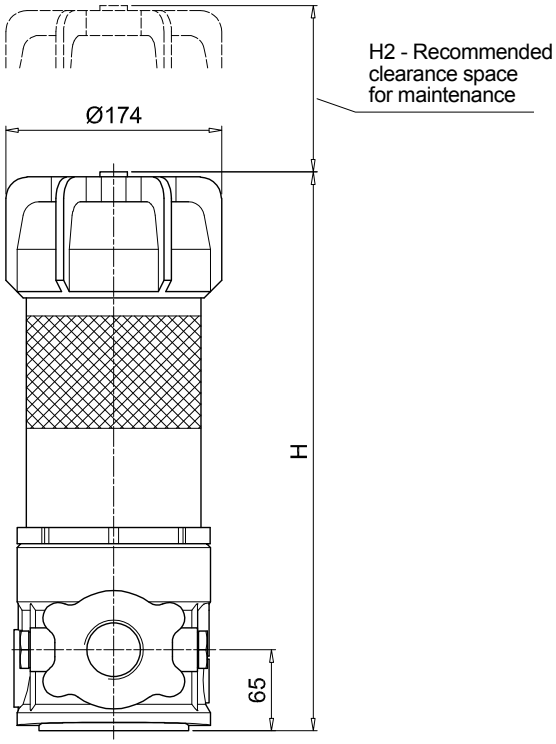
LMP430		
Filter length	**H [mm]**	**H2 [mm]**
5	828	660
6	1158	690

Connections	R
G1-G2	M12
G3-G4-G5-G6	1/2" UNC
F1-F2	M12
F3-F4	1/2" UNC



T2 plug =
connection for diff. pressure indicator



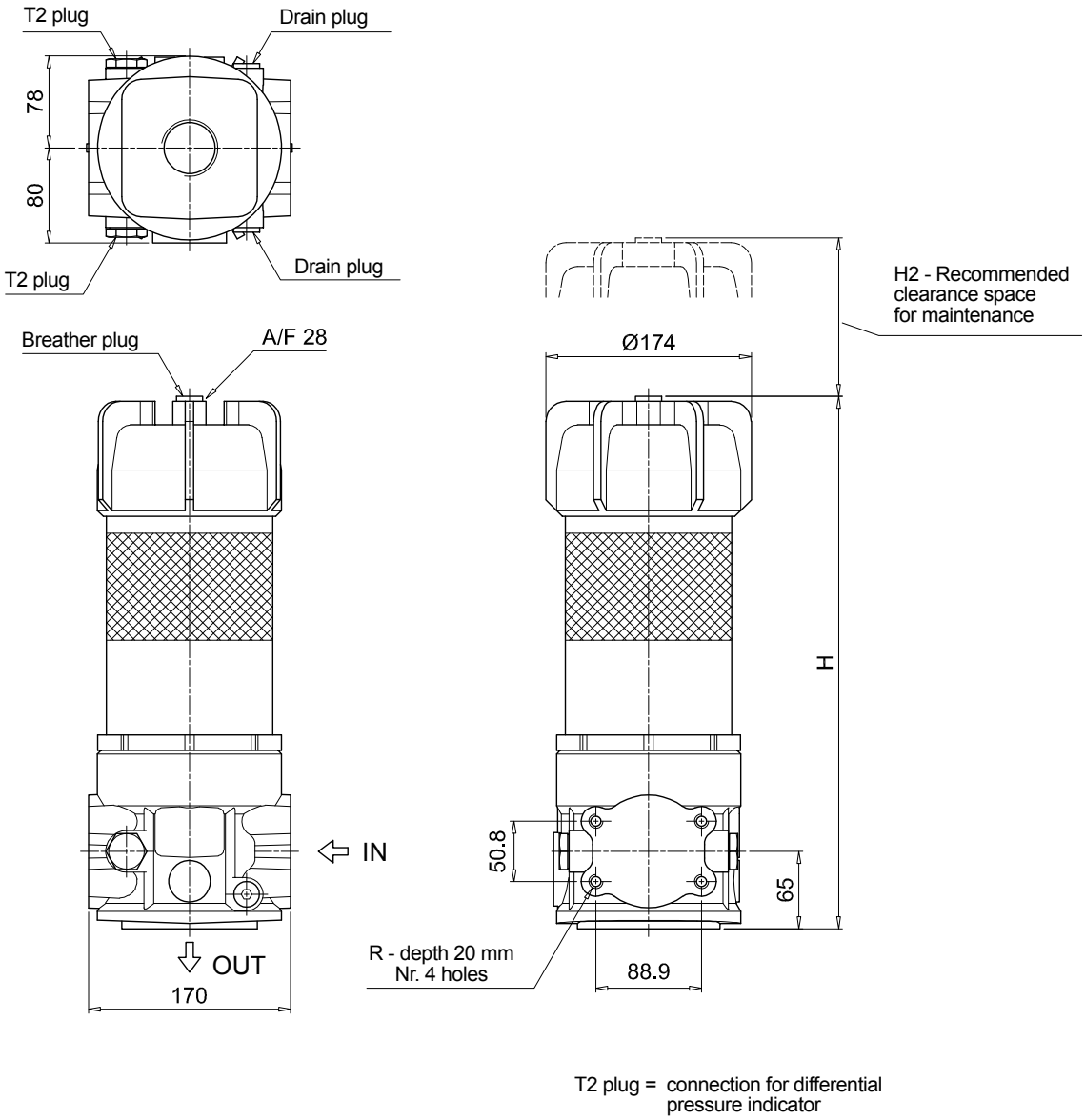


LMP 430-431

Dimensions

LMP431		
Filter length	**H [mm]**	**H2 [mm]**
5	828	660
6	1158	690

Connections	R
G1-G2	M12
G3-G4-G5-G6	1/2" UNC
F1-F2	M12
F3-F4	1/2" UNC

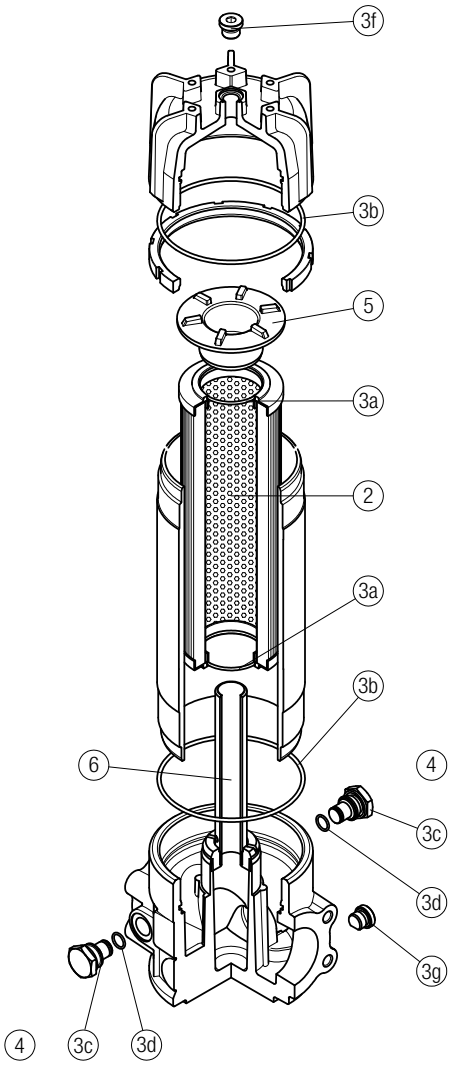


T2 plug = connection for differential pressure indicator

MP FILTRI WWW.SUMY.IR

LMP 430 - 431

length 5 - 6



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3g)		Q.ty: 2 pcs. (4)		Q.ty: 2 pcs. (5)		Q.ty: 1 pc. (6)	
Filter series	**Filter element**	**Seal Kit code number NBR**	**FPM**	**Indicator connection plug NBR**	**FPM**	**Housing spigot no bypass**	**with bypass**	**Internal tube for low flow rate, execution P02**	
LMP 430-431 length 5-6	See order table	02050393	02050394	T2H	T2V	01044108	02001414	Length 5: 02025041	Length 6: 02025042

MP FILTRI
WWW.SUMY.IR

LMP 950-951 series

Maximum working pressure up to 3 MPa (30 bar) - Flow rate up to 2400 l/min



WWW.SUMY.IR

LMP 950-951 GENERAL INFORMATION

Description

Low & Medium Pressure filters

Maximum working pressure up to 3 MPa (30 bar)
Flow rate up to 2400 l/min

LMP950 is a range of low pressure filter with large filtration surface mainly suitable for lubrication, off-line filtration of the reservoirs and filtration equipment.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- Flanged connections up to 4", for a maximum flow rate of 2400 l/min
- In line or 90° connections, to meet any type of application
- Base-mounting design, for ease of the replacement of the filter element
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid. For further information, see the Contamination Management document and the dedicate leaflet.
- Bypass valve, to relieve excessive pressure drop across the filter media
- Vent ports, to avoid air trapped into the filter going into the system
- Drain ports, to remove the fluid from the housing prior the maintenance work
- Visual, electrical and electronic differential clogging indicators

Common applications:

- Off-line filtration of reservoirs
- Filtration systems
- Lubrication systems

Technical data

Filter housing materials

- Head: Anodized Aluminium
- Housing: Anodized Aluminium
- Bypass valve: Anodized Aluminium

Pressure

- Test pressure: 4.5 MPa (45 bar)
- Min. Burst pressure: 9 MPa (90 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 3 MPa (30 bar)

Bypass valve

- Opening pressure 0.35 MPa (3.5 bar) ±10%
- Other opening pressures on request.

Filter element features

Filter		Filter element	
LMP 950 - 951		CU	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	N	20 bar
M - Wire mesh	Standard	N	20 bar
P - Paper	Standard	N	20 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals

- Standard NBR series A
- Optional FPM series V

Connections

LMP 950: In-line Inlet/Outlet
LMP 951: 90° Inlet/Outlet

Temperature

From -25 °C to +110 °C

Note

LMP 950 - 951 filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]			Volumes [dm³]		
	Length	2	3	Length	2	3
LMP 950-951		25.1	33.5		15	28

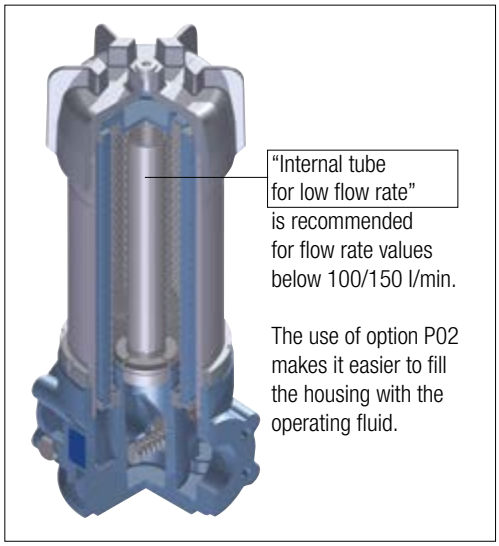
MP FILTRI WWW.SUMY.IR

Flow rates [l/min]

Filter series	Length	Filter element design - N Series					
		A03	A06	A10	A16	A25	M25 M60 M90
LMP 950	**2**	613	756	953	1219	1515	2170
	3	1148	1219	1502	1713	1808	2293
LMP 951	**2**	635	789	1007	1308	1649	2420
	3	1226	1308	1634	1881	1993	2566

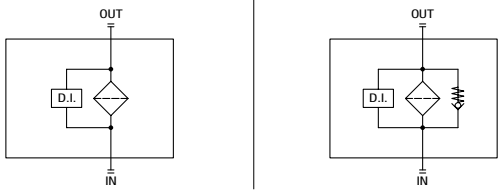
Maximum flow rate for a complete low and medium pressure filter with a pressure drop Δp = 0.7 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

Execution P02



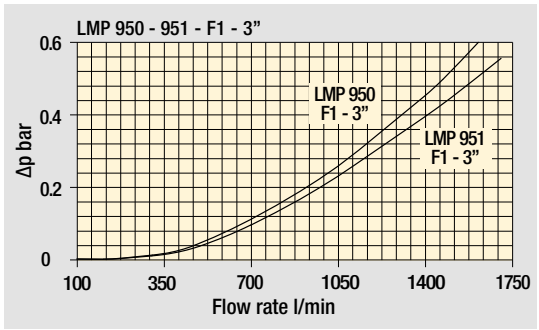
Hydraulic diagram

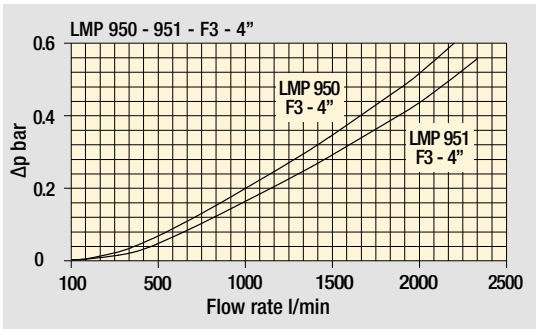
Filter series	Execution S	Execution B
LMP 950-951	•	•



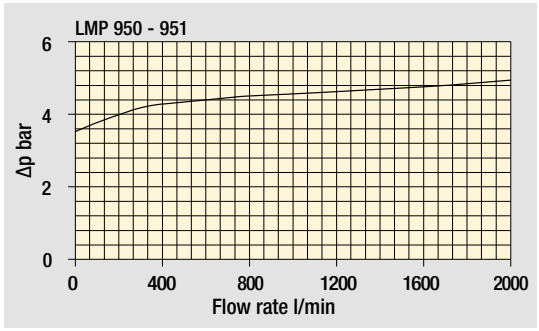
Pressure drop

Filter housings Δp pressure drop





Bypass valve pressure drop



The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

LMP 950-951

Designation & Ordering code

COMPLETE FILTER

Configuration example: LMP951 | 2 | B | A | F2 | A10 | N | P01

Series and size

LMP950 | **LMP951**

Length

2 | **3**

Bypass valve

S Without bypass

B With bypass 3.5 bar

Seals and treatments

A NBR

V FPM

Connections

F1 3" SAE 3000 psi/M

F2 3" SAE 3000 psi/UNC

F3 4" SAE 3000 psi/M

F4 4" SAE 3000 psi/UNC

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm			
A25	Inorganic microfiber	25 µm			

WA025 Water absorber inorganic microfiber 25 µm

Element Δp

N 20 bar

Execution

P01 MP Filtri standard

P02 With internal tube for low flow rate

Pxx Customized

FILTER ELEMENT

Configuration example: CU950 | 2 | A10 | A | N | P01

Element series and size

CU950

Element length

2 | **3**

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm			
A25	Inorganic microfiber	25 µm			

WA025 Water absorber inorganic microfiber 25 µm

Seals

A NBR

V FPM

Element Δp

N 20 bar

Execution

P01 MP Filtri standard

Pxx Customized

CLOGGING INDICATORS

See page 784

DEA Electrical differential pressure indicator

DEM Electrical differential pressure indicator

DEU Electrical differential pressure indicator

DLA Electrical / visual differential pressure indicator

DLE Electrical / visual differential pressure indicator

DTA Electronic differential pressure indicator

DTI I-O Link electronic differential pressure indicator

DVA Visual differential pressure indicator

DVM Visual differential pressure indicator

PLUGS

See page 807

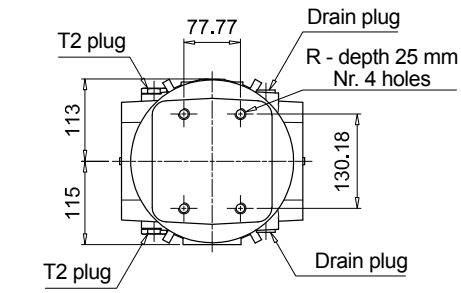
T2 Plug

ACCESSORIES

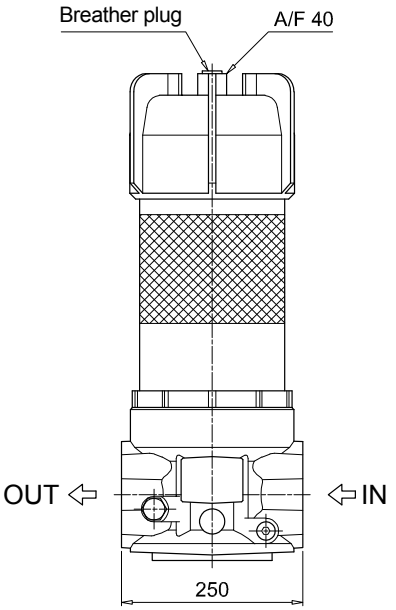
See page 486

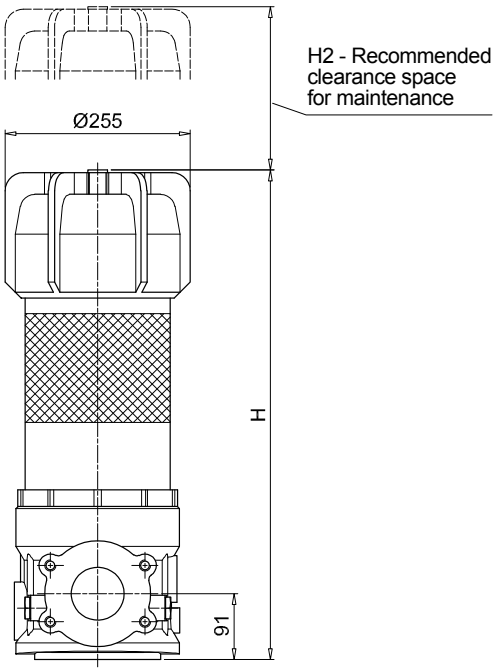
CFA Retaining clamp

MP FILTRI WWW.SUMY.IR



T2 plug = connection for differential pressure indicator

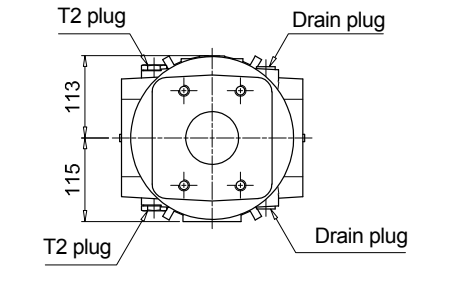




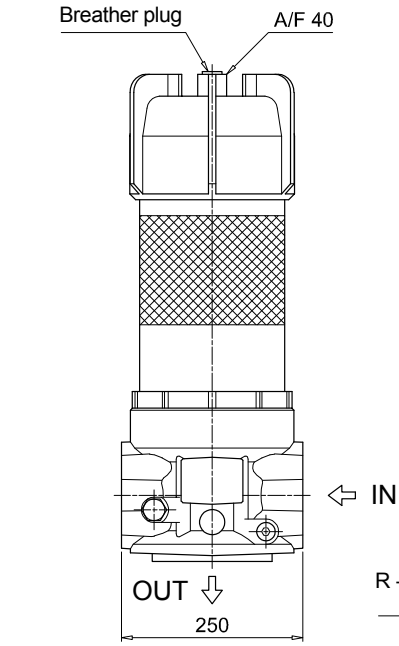
LMP950

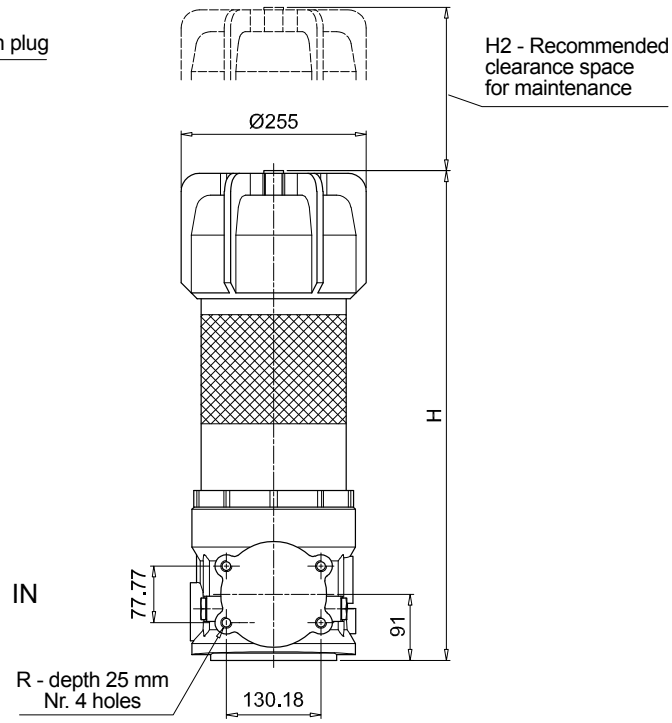
Filter length	H [mm]	H2 [mm]
2	680	350
3	1230	900

Connections	R
F1 - F3	M16
F2 - F4	5/8" UNC



T2 plug = connection for differential pressure indicator





LMP951

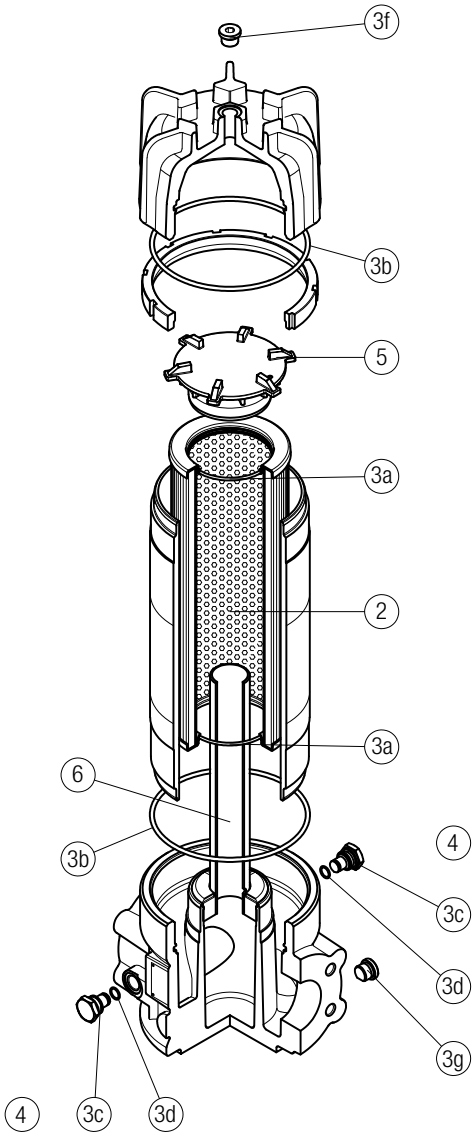
Filter length	H [mm]	H2 [mm]
2	680	350
3	1230	900

Connections	R
F1 - F3	M16
F2 - F4	5/8" UNC

LMP 950-951 SPARE PARTS

Order number for spare parts

LMP 950 - 951



	Q.ty: 1 pc.	Q.ty: 1 pc.		Q.ty: 2 pcs.		Q.ty: 1 pc.		Q.ty: 1 pc.	
Item:	**2**	**3** (3a ÷ 3g)		**4**		**5**		**6**	
Filter series	**Filter element**	**Seal Kit code number NBR**	**FPM**	**Indicator connection plug NBR**	**FPM**	**Housing spigot no bypass**	**with bypass**	**Internal tube for low flow rate, exec. P02 length 2**	**length 3**
LMP 950-951 length 2-3	See order table	02050367	02050368	T2H	T2V	01044106	02001379	02025032	02025033

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LMP 952-953-954 series

Maximum working pressure up to 2.5 MPa (25 bar) - Flow rate up to 4500 l/min



WWW.SUMY.IR

LMP 952-953-954 GENERAL INFORMATION

Description

Low & Medium Pressure filters

Maximum working pressure up to 2.5 MPa (25 bar)
Flow rate up to 4500 l/min

LMP952, LMP953 and LMP954 are ranges of low pressure filter with large filtration surface mainly suitable for lubrication, off-line filtration of the reservoirs and filtration equipment.
Multiple LMP950 filters are connected to a manifold to reduce the pressure drop caused by the filter media and to increase the life time of the filter element.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- 4" flanged connections, for a maximum flow rate of 4500 l/min
- Base-mounting design, for ease of the replacement of the filter element
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid. For further information, see the Contamination Management document and the dedicate leaflet.
- Bypass valve, to relieve excessive pressure drop across the filter media
- Vent ports, to avoid air trapped into the filter going into the system
- Drain ports, to remove the fluid from the housing prior the maintenance work
- Visual, electrical and electronic differential clogging indicators

Common applications:

- Off-line filtration of reservoirs
- Filtration systems

Technical data

Filter housing materials

- Head: Anodized Aluminium
- Housing: Anodized Aluminium
- Manifolds: Welded - Phosphatized Steel
- Bypass valve: Anodized Aluminium

Pressure

- Test pressure: 3.5 MPa (35 bar)
- Min. Burst pressure: 7.5 MPa (75 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 2.5 MPa (25 bar)

Bypass valve

- Opening pressure 0.35 MPa (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

Filter element features

Filter		Filter element	
LMP 951 - 953 - 954		CU	
Δp Element type			
Element media	Construction	Δp Series	Δp
A - Microfiber	Standard	N	20 bar
M - Wire mesh	Standard	N	20 bar
P - Paper	Standard	N	20 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals

- Standard NBR series A
- Optional FPM series V

Temperature

From -25 °C to +110 °C

Connections

LMP 952-953-954:
In-line Inlet/Outlet

Note

LMP 952 - 953 - 954 filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]	Volumes [dm³]
	Length 3	Length 3
LMP 952	96	66
LMP 953	138	99
LMP 954	192	132

MP FILTRI WWW.SUMY.IR

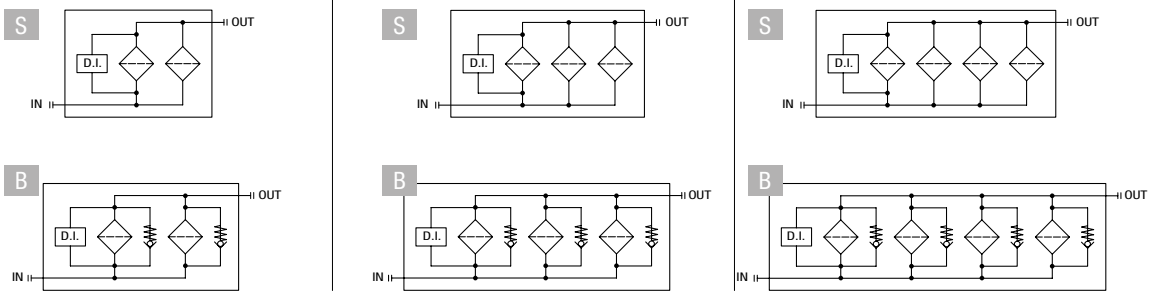
Flow rates [l/min]

		Filter element design - N Series					
Filter series	Length	A03	A06	A10	A16	A25	M25 M60 M90
LMP 952	**3**	2172	2294	2766	3106	3256	3998
LMP 953	**3**	2842	2964	3403	3696	3820	4395
LMP 954	**3**	3259	3372	3770	4026	4133	4618

Maximum flow rate for a complete low and medium pressure filter with a pressure drop Δp = 0.7 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

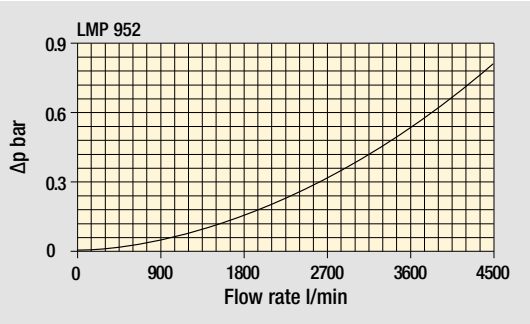
Hydraulic diagram

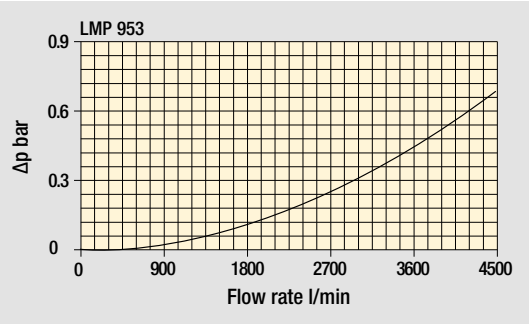
Filter series	Execution S - Execution B	Execution S - Execution B	Execution S - Execution B
LMP 952	•	-	-
LMP 953	-	•	-
LMP 954	-	-	•

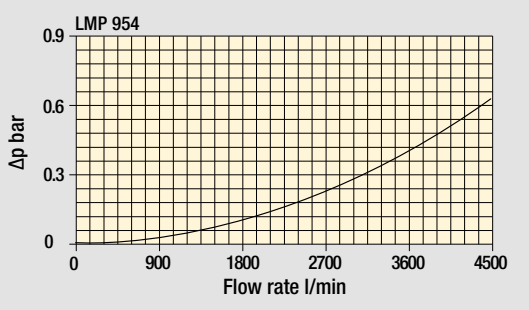


Pressure drop

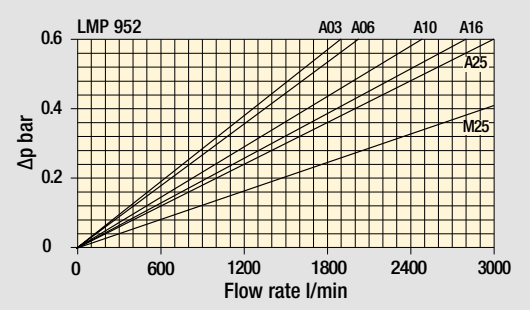
Filter housings Δp pressure drop

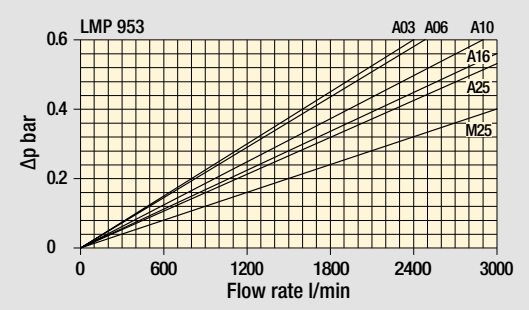


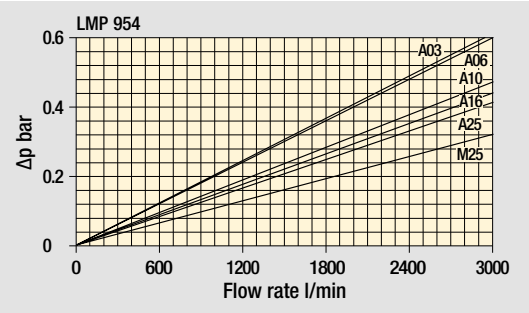




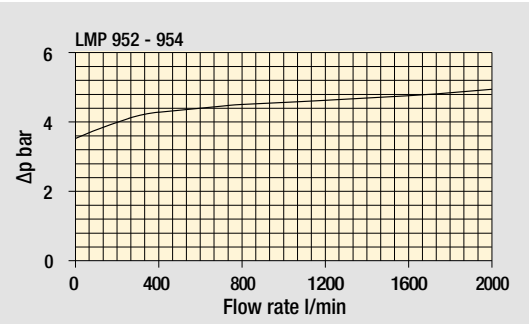
Pressure drop of filter complete with cartridge, oil viscosity 30 mm²/s (cSt)







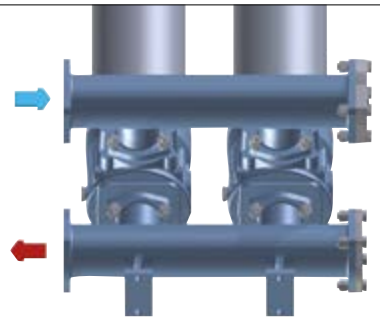
Bypass valve pressure drop



The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

MP FILTRI WWW.SUMY.IR

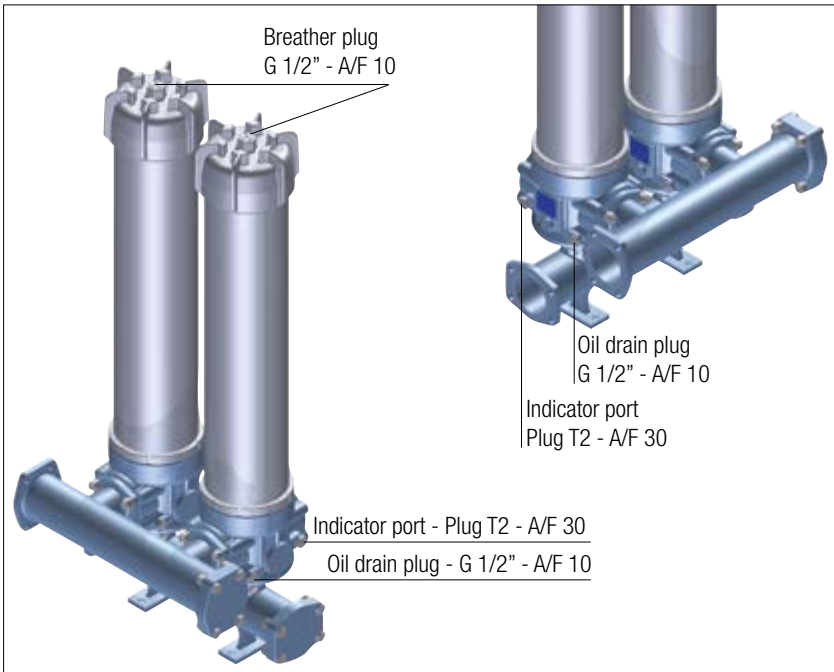
Manifolds



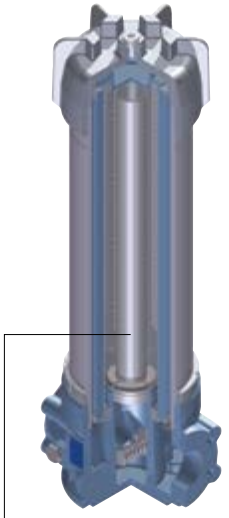
FA

Position of manifolds
IN - OUT connections

Focus on



Execution P02

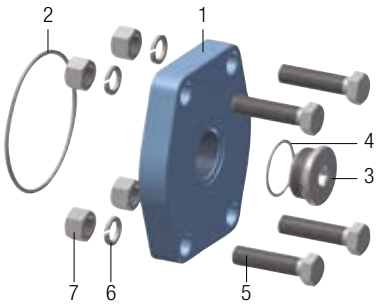


"Internal tube
for low flow rate"
is recommended for
flow rate values below:
LMP 952 - 300 l/min
LMP 953 - 450 l/min
LMP 954 - 600 l/min

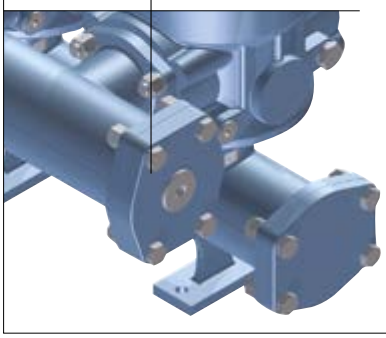
The use of option P02
makes it easier to fill the
housing with the operating fluid.

CMV4 & CUV4 Flange options

Code	Thread	Materials
CMV4	**G 1 1/4"**	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 Hex 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	**SAE 20**	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 Hex 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
Flange with oil drain plug
for rapid discharge



LMP 952-953-954

Designation & Ordering code

COMPLETE FILTER

Configuration example: LMP952 | 3 | B | A | FA | A10 | N | P01

Series and size
LMP952 | **LMP953** | **LMP954**

Length
3

Bypass valve
S Without bypass
B With bypass 3.5 bar

Seals and treatments
A NBR
V FPM

Connections
FA 4" SAE 3000 psi

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm			
A25	Inorganic microfiber	25 µm			

WA025 Water absorber inorganic microfiber 25 µm

Element Δp
N 20 bar

Execution
P01 MP Filtri standard
P02 With internal tube for low flow rate
Pxx Customized

FILTER ELEMENT

Configuration example: CU950 | 3 | A10 | A | N | P01

Element series and size
CU950

Element length
3

Filter series and size
LMP952 Nr. 2 filter elements
LMP953 Nr. 3 filter elements
LMP954 Nr. 4 filter elements

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm			
A25	Inorganic microfiber	25 µm			

WA025 Water absorber inorganic microfiber 25 µm

Seals
A NBR
V FPM

Element Δp
N 20 bar

Execution
P01 MP Filtri standard
Pxx Customized

CLOGGING INDICATORS

See page 784

DEA Electrical differential pressure indicator
DEM Electrical differential pressure indicator
DEU Electrical differential pressure indicator
DLA Electrical / visual differential pressure indicator
DLE Electrical / visual differential pressure indicator
DTA Electronic differential pressure indicator
DTI I-0 Link electronic differential pressure indicator
DVA Visual differential pressure indicator
DVM Visual differential pressure indicator

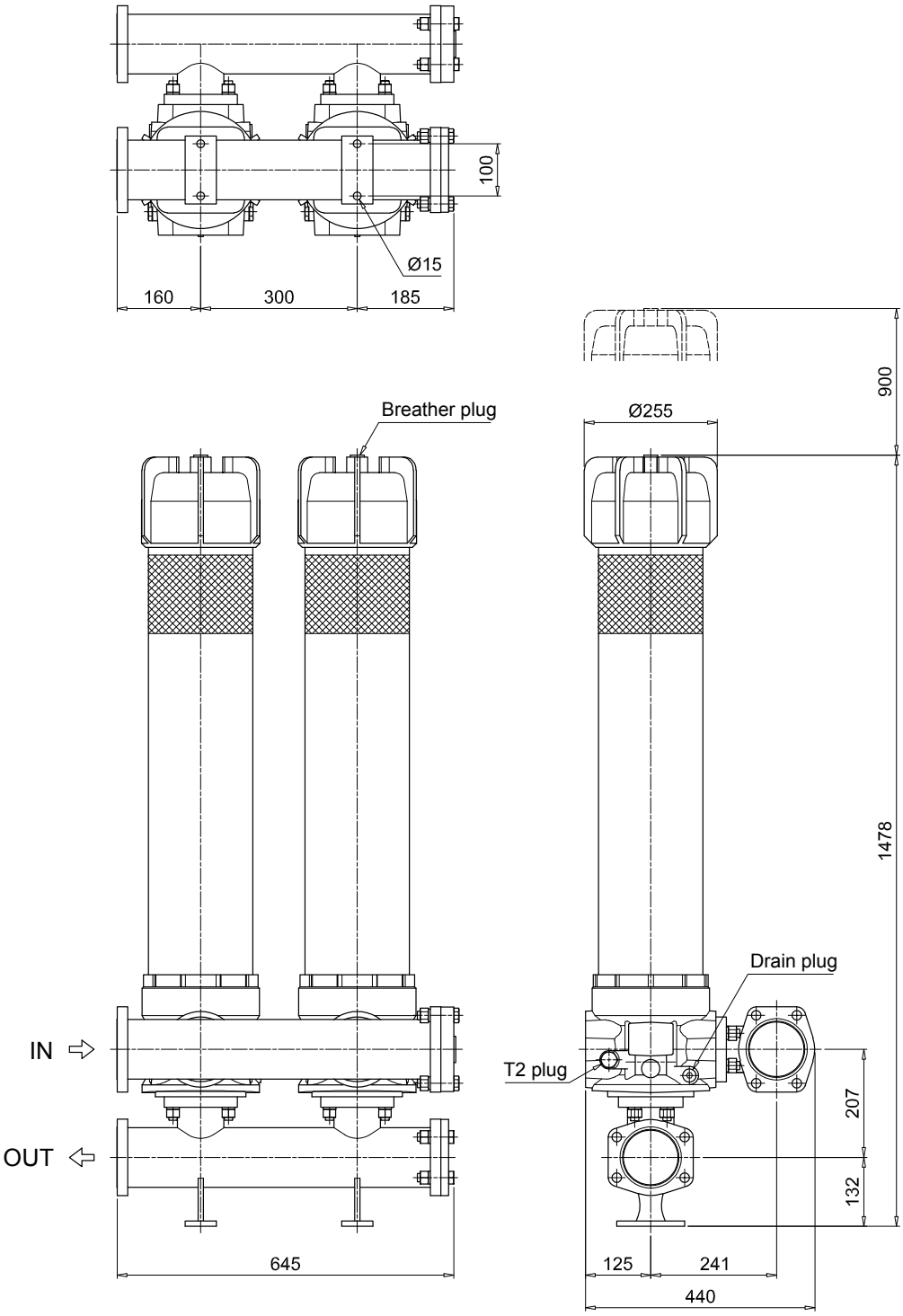
PLUGS

See page 807

T2 Plug

MP FILTRI WWW.SUMY.IR

LMP952

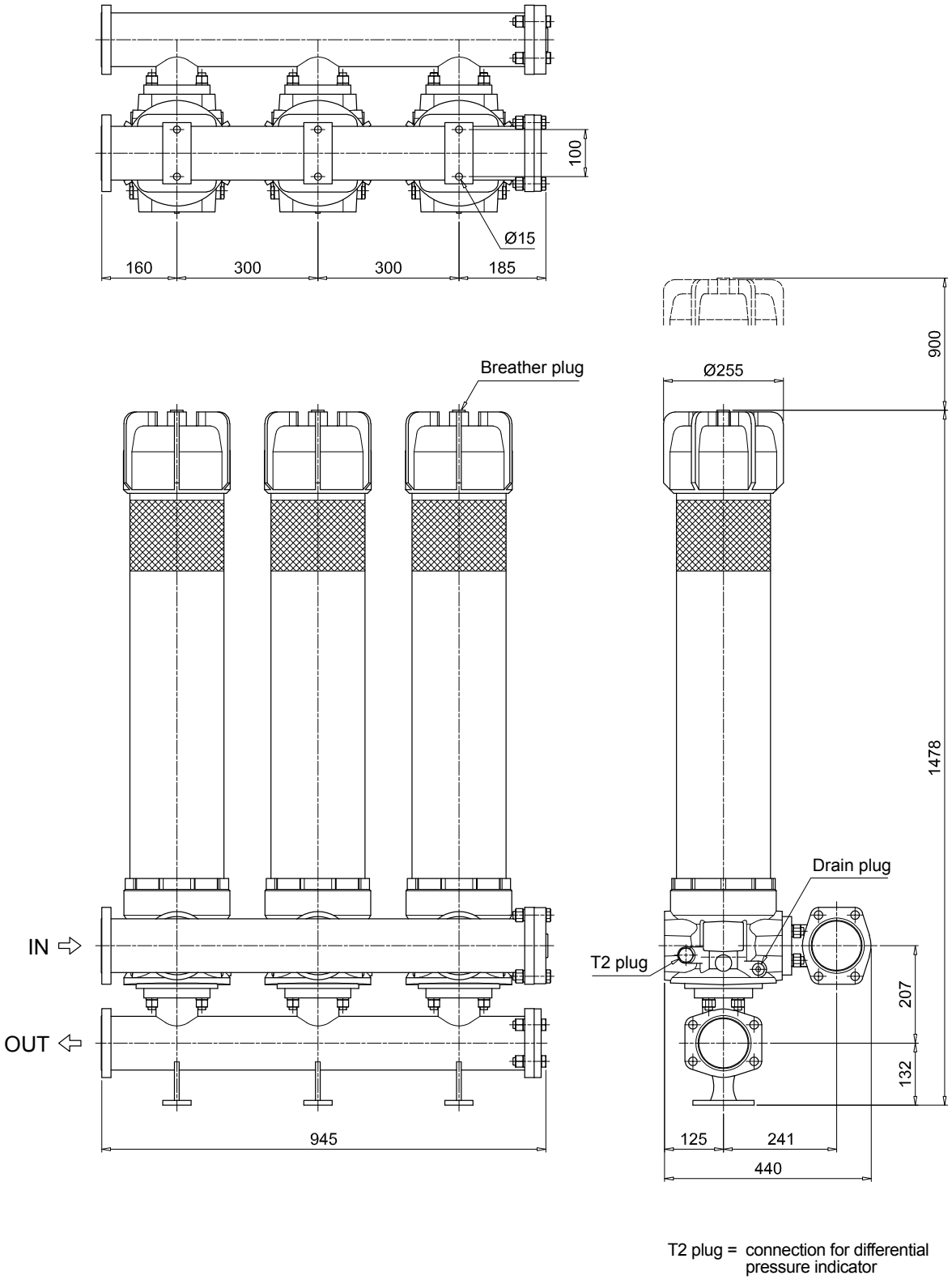


T2 plug = connection for differential pressure indicator

LMP 952-953-954

Dimensions

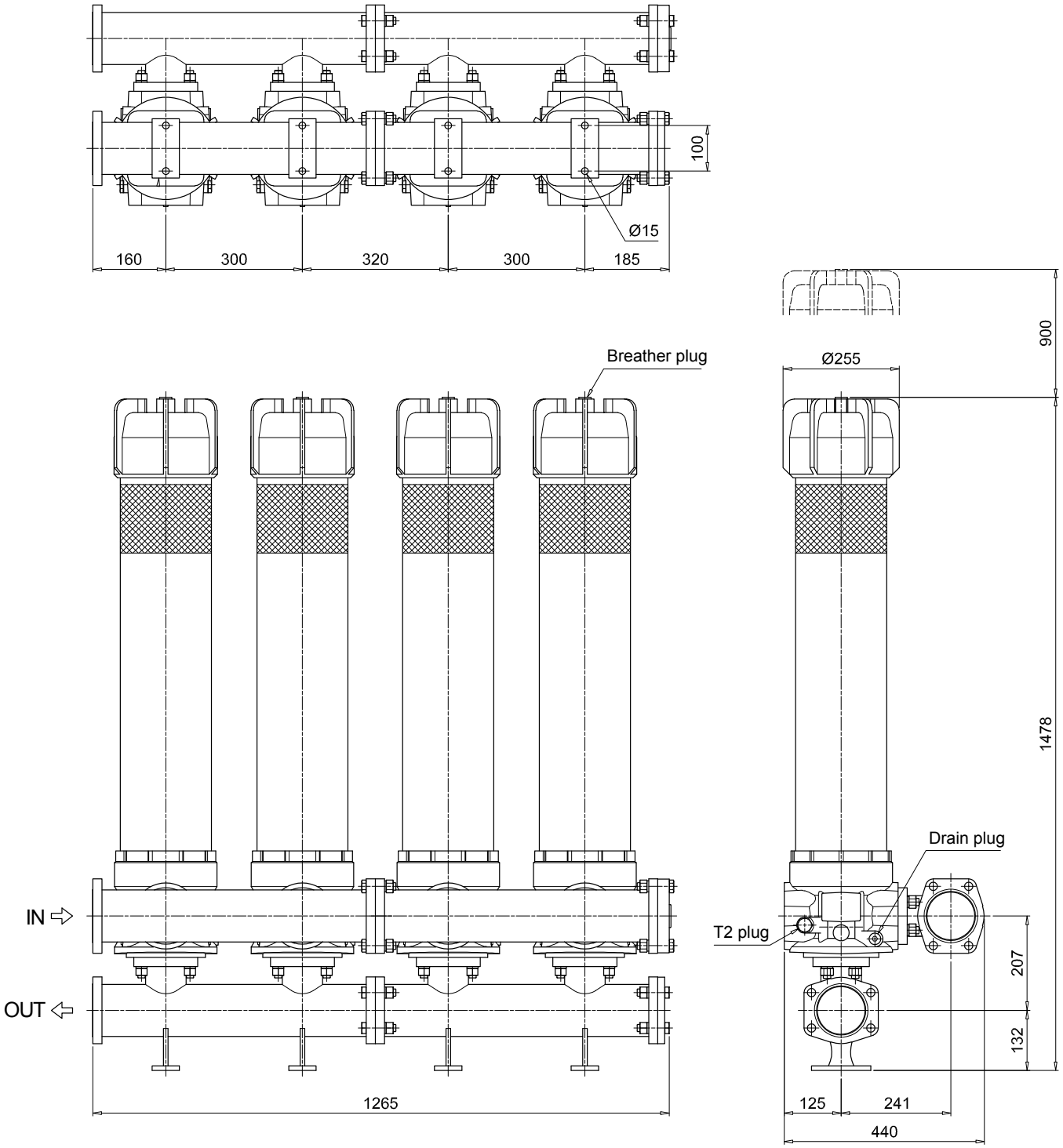
LMP953



T2 plug = connection for differential pressure indicator

MP FILTRI WWW.SUMY.IR

LMP954

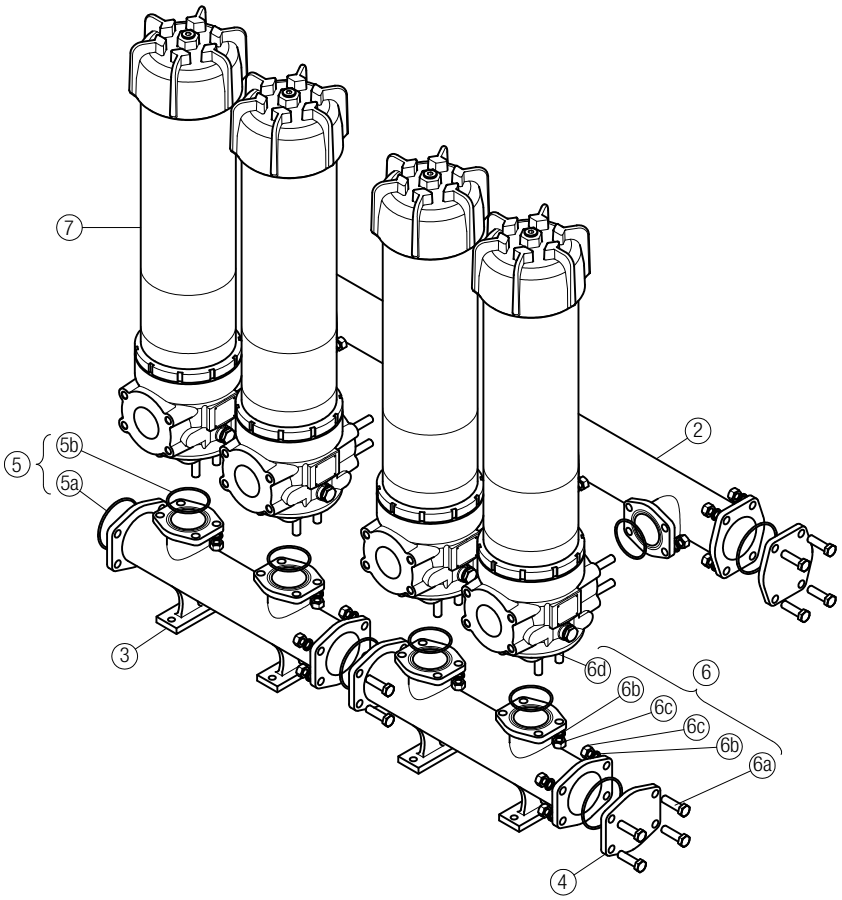


T2 plug = connection for differential pressure indicator

LMP 952-953-954 SPARE PARTS

Order number for spare parts

LMP 952 - 953 - 954



Item 7:
for complete filter code and spare parts, see LMP 950 - 951 series chapter

Quantity:
- filter spare parts:
LMP 952 - 2 pcs.
LMP 953 - 3 pcs.
LMP 954 - 4 pcs.

- filter seal kit:
LMP 952 - 2 pcs.
LMP 953 - 3 pcs.
LMP 954 - 4 pcs.

Item:	2	3		4		5 (5a-5b)			6 (6a ÷ 6d)		7	
Filter series	Manifold Q.ty	IN	OUT	4" SAE 3000 psi plugged flange Q.ty		Manifolds seal kit Q.ty	NBR	FPM	Threaded fasteners kit Q.ty		Filter Q.ty	
LMP 952	1 pc.	01039270	01039271	2 pcs.	01042012	1 pc.	02050404	02050405	1 pc.	02049051	2 pcs.	LMP9513xxF1xxxNP0x
LMP 953	1 pc.	01039337	01039338	2 pcs.		1 pc.	02050404	02050405	1 pc.	02049052	3 pcs.	
LMP 954	2 pcs.	01039270	01039271	2 pcs.		1 pc.	02050406	02050407	1 pc.	02049053	4 pcs.	

MP FILTRI WWW.SUMY.IR

MP FILTRI
WWW.SUMY.IR

LMD 211 series

Maximum working pressure up to 6 MPa (60 bar) - Flow rate up to 200 l/min



LMD 211 GENERAL INFORMATION

Description

Low & Medium Pressure filters

Duplex
Maximum working pressure up to 6 MPa (60 bar)
Flow rate up to 200 l/min

LMD211 is a range of versatile low pressure duplex filter with integrated changeover function to allow the filter element replacement without the system shut-down.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:
- Female threaded connections up to 1 1/2" and flanged connections up to 1 1/2", for a maximum flow rate of 200 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid. For further information, see the Contamination Management document and the dedicate leaflet.
- Balancing valve integrated in the changeover lever, to equalize the housing pressure before the switch
- Bypass valve, to relieve excessive pressure drop across the filter media
- Vent ports, to avoid air trapped into the filter going into the system
- Drain ports, to remove the fluid from the housing prior the maintenance work
- Optional sampling ports, to get samples of fluid or to connect additional instrument to the system
- Visual, electrical and electronic differential clogging indicators

Common applications:
- Systems where shut-down causes high costs
- Systems where shut-down causes safety issues

Technical data

Filter housing materials
- Head: Aluminium
- Bowl: Cataphoretic painted steel
- Bypass valve: AISI 304 - Polyamide

Pressure
- Test pressure: 9 MPa (90 bar)
- Min. Burst pressure: 18 MPa (180 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 6 MPa (60 bar)

Bypass valve
- Opening pressure 0.35 MPa (3.5 bar) ±10%
- Other opening pressures on request.

Filter element features

Filter		Filter element	
LMD 211		CU	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	N	20 bar
WA - Water absorber microfiber	Standard	N	20 bar
M - Wire mesh	Standard	N	20 bar
P - Paper	Standard	N	20 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals
- Standard NBR series A
- Optional FPM series V

Connections
Inlet/Outlet In-Line

Temperature
From -25° C to +110° C

Note
LMD 211 filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]				Volumes [dm³]			
	Length	1	2	3	Length	1	2	3
LMD 211		9.5	11.2	12.8		4.1	4.6	5.3

MP FILTRI WWW.SUMY.IR

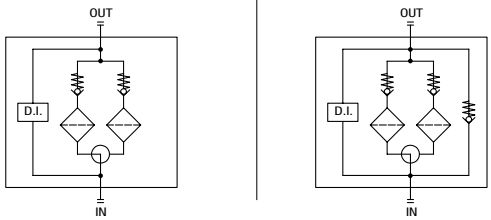
Flow rates [l/min]

		Filter element design - N Series									
Filter series	Length	A03	A06	A10	A16	A25	M25	M60	M90	P10	P25
LMD 211	1	90	95	140	147	156	191	192	192	177	181
	2	113	121	158	162	173	192	192	193	181	183
	3	131	146	166	169	177	193	194	194	184	187

Maximum flow rate for a complete low and medium pressure filter with a pressure drop Δp = 0.7 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

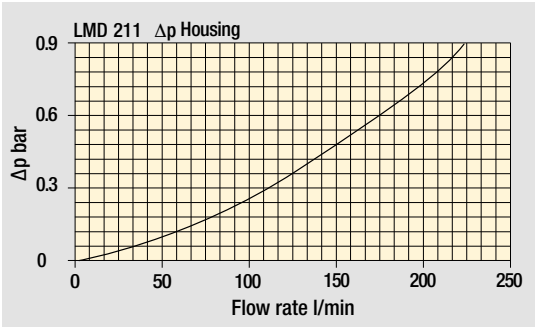
Hydraulic diagram

Filter series	Style S	Style B
LMD 211	•	•

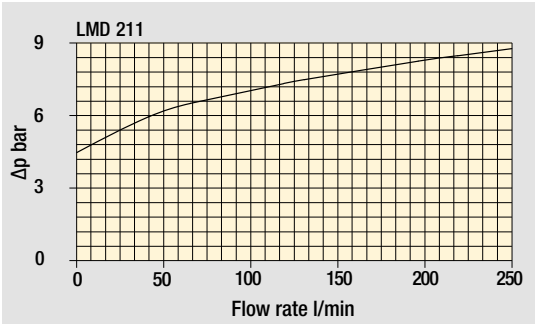


Pressure drop

Filter housings Δp pressure drop



Bypass valve pressure drop



The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

LMD 211

Designation & Ordering code

COMPLETE FILTER

Configuration example: LMD211 | 3 | B | A | C | 6 | A10 | N | P01

Series and size

LMD211

Length

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

Bypass valve

S Without bypass

B With bypass 3.5 bar

Seals and treatments

A NBR

V FPM

Connections

C G 1 1/2”

F 1 1/2” NPT

I SAE 24 - 1 7/8” - 12 UN

L 1 1/2” SAE 3000 psi/M + G 1 1/4”

M 1 1/2” SAE 3000 psi/UNC + 1 1/4” NPT

N 1 1/2” SAE 3000 psi/UNC + SAE 20 - 1 5/8” UN

Connection for differential pressure indicator

6 With plugged connection

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm	**P10**	Resin impregnated paper	10 µm
A25	Inorganic microfiber	25 µm	**P25**	Resin impregnated paper	25 µm

WA025 Water absorber inorganic microfiber 25 µm

Element Δp

N 20 bar

Execution

P01 MP Filtri standard

Pxx Customized

FILTER ELEMENT

Configuration example: CU210 | 3 | A10 | A | N | P01

Element series and size

CU210

Element length

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

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm	**P10**	Resin impregnated paper	10 µm
A25	Inorganic microfiber	25 µm	**P25**	Resin impregnated paper	25 µm

WA025 Water absorber inorganic microfiber 25 µm

Seals and treatments

A NBR

V FPM

Element Δp

N 20 bar

Execution

P01 MP Filtri standard

Pxx Customized

CLOGGING INDICATORS

See page 784

DEA Electrical differential pressure indicator

DEM Electrical differential pressure indicator

DEU Electrical differential pressure indicator

DLA Electrical / visual differential pressure indicator

DLE Electrical / visual differential pressure indicator

DTA Electronic differential pressure indicator

DTI I-O Link electronic differential pressure indicator

DVA Visual differential pressure indicator

DVM Visual differential pressure indicator

PLUGS

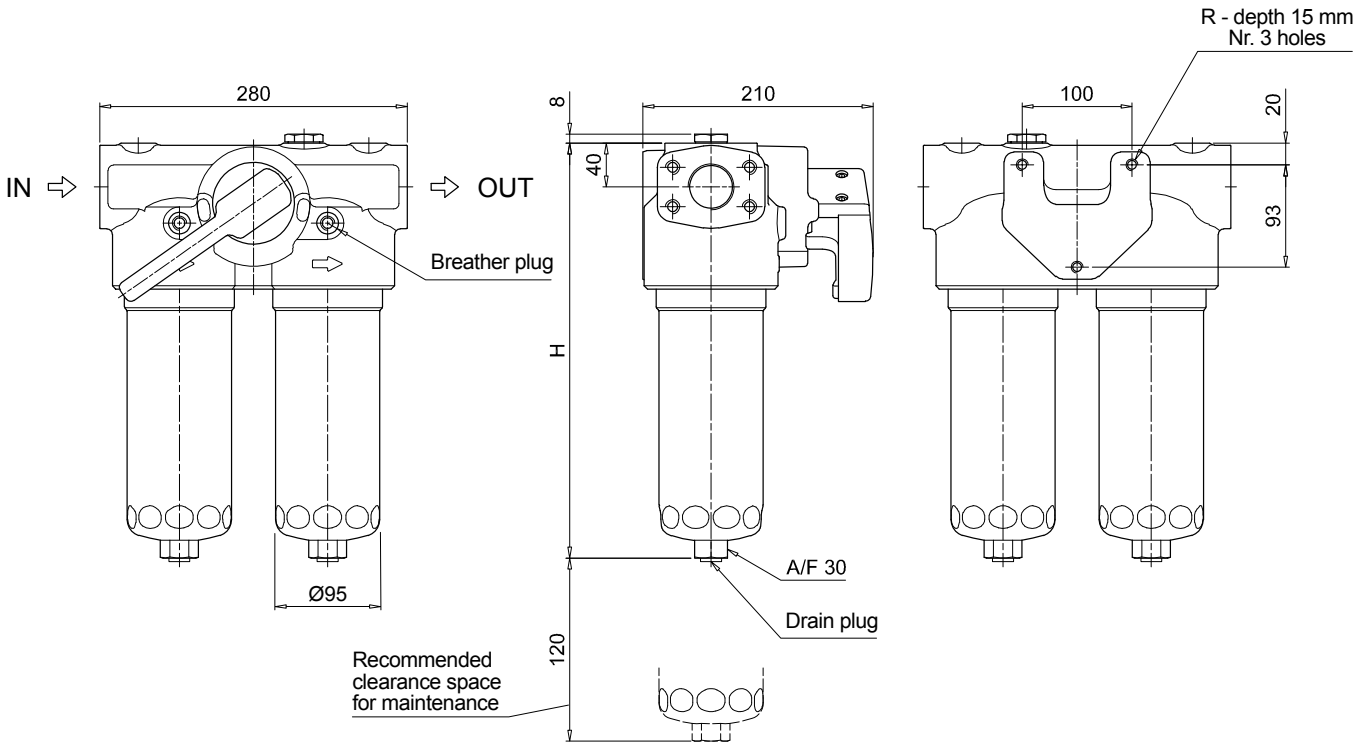
See page 807

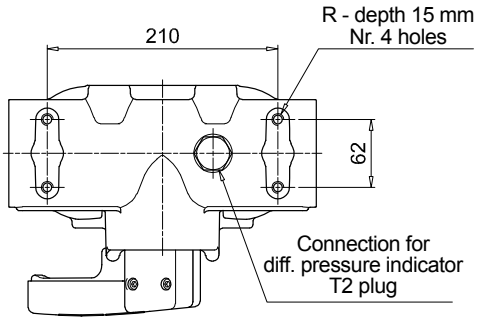
T2 Plug

MP FILTRI WWW.SUMY.IR

LMD211	
Filter length	**H [mm]**
1	383
2	513
3	651

Connections	**R**
C	M10
F - I	3/8" UNC
L	M10
M - N	3/8" UNC

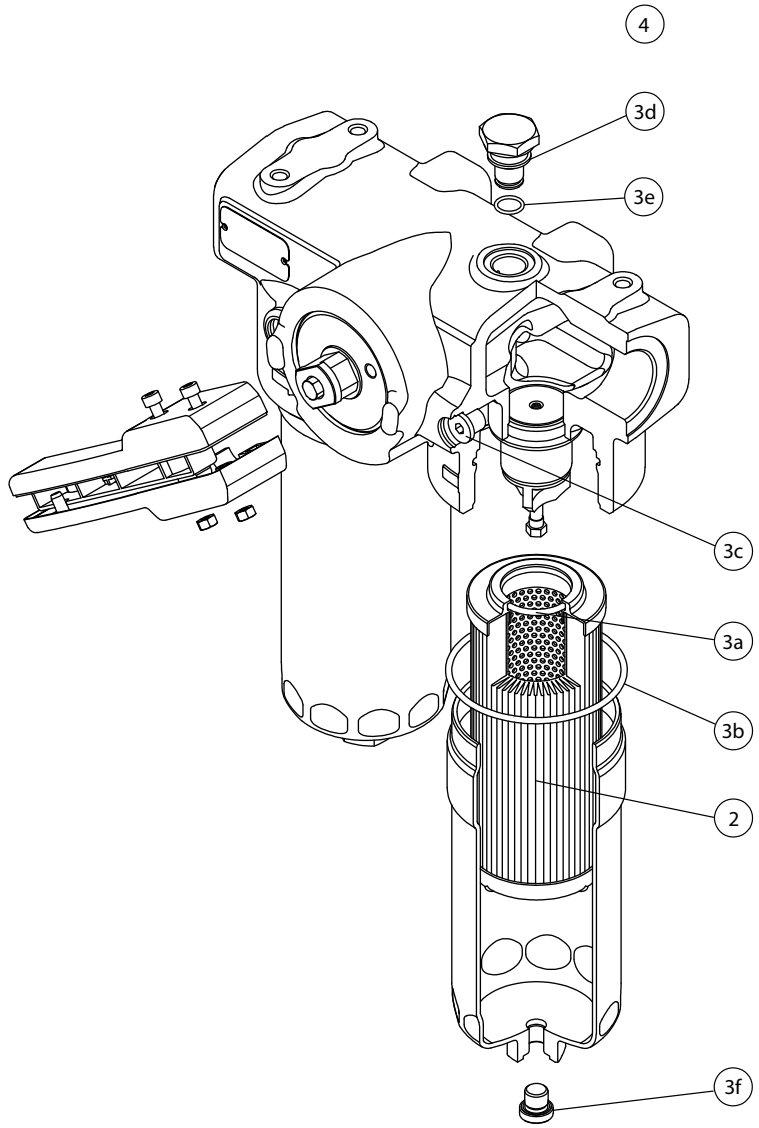




LMD 211 SPARE PARTS

Order number for spare parts

LMD 211



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3f)		Q.ty: 2 pcs. (4)	
Filter series	Filter element	Seal Kit code number NBR	Seal Kit code number FPM	Indicator connection plug NBR	Indicator connection plug FPM
LDD	See order table	02050671	02050672	T2H	T2V

MP FILTRI WWW.SUMY.IR

MP FILTRI
WWW.SUMY.IR

LMD 400-401 & 431 series

Maximum working pressure up to 1.6 MPa (16 bar) - Flow rate up to 600 l/min



Description

Low & Medium Pressure filters

Duplex
Maximum working pressure up to 1.6 MPa (16 bar)
Flow rate up to 600 l/min

LMD400 is a range of versatile low pressure duplex filter with integrated changeover function to allow the filter element replacement without the system shut-down.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- 2 1/2" flanged connections, for a maximum flow rate of 600 l/min
- LMD400: In-line connections
- LMD401: In-line connections with compact design
- LMD431: In-line connections with compact design and base mounting
- Base-mounting design also available, for ease of the replacement of the filter element
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid. For further information, see the Contamination Management document and the dedicate leaflet.
- Balancing valve, to equalize the housing pressure before the switch
- Bypass valve, to relieve excessive pressure drop across the filter media
- Vent ports, to avoid air trapped into the filter going into the system
- Drain ports, to remove the fluid from the housing prior the maintenance work
- Visual, electrical and electronic differential clogging indicators

Common applications:

- Systems where shut-down causes high costs
- Systems where shut-down causes safety issues

Technical data

Filter housing materials

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

Pressure

- Test pressure: 2.4 MPa (24 bar)
- Min. Burst pressure: 4.8 MPa (48 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 1.6 MPa (16 bar)

Bypass valve

- Opening pressure 0.35 MPa (3.5 bar) ±10%
- Other opening pressures on request.

Filter element features

Filter		Filter element	
LMD 400 - 401 / 431		CU	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	N	20 bar
WA - Water absorber microfiber	Standard	N	20 bar
M - Wire mesh	Standard	N	20 bar
P - Paper	Standard	N	20 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals
FPM series V

Temperature
From -25° C to +110° C

Connections
- LMD 400-401: In-line Inlet/Outlet
- LMD 401: Same side
- LMD 400-401-431: In-Line

Note
LMP 400 - 401 - 431 filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]			Volumes [dm³]		
Length	4	5	6	4	5	6
LMD 400 - 401	60	65	72	20	28	33
LMD 431	-	68	78	-	28	33

MP FILTRI WWW.SUMY.IR

Flow rates [l/min]

Filter series	Length	Filter element design - N Series							
		A03	A06	A10	A16	A25	M25 M60 M90	P10	P25
LMD 400 - 401	4	308	349	453	474	530	628	547	567
	5	395	427	509	547	589	637	577	592
	6	429	483	558	568	597	639	583	597
LMD 431	5	395	427	509	547	589	637	577	592
	6	429	483	558	568	597	639	583	597

Maximum flow rate for a complete low and medium pressure filter with a pressure drop Δp = 0.7 bar.

The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.

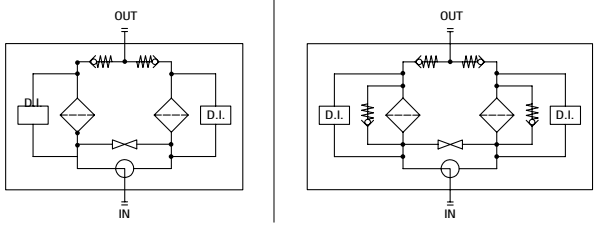
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.

Please, contact our Sales Department for further additional information.

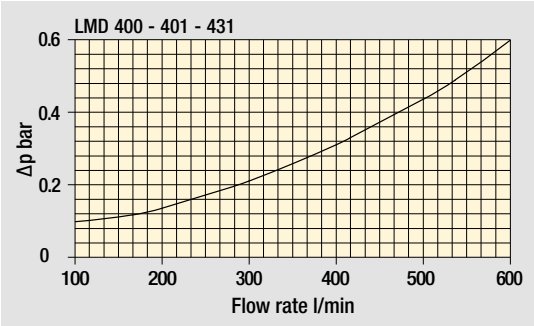
Hydraulic diagram

Filter series	Execution S	Execution B
LMD 400 - 401	•	•
LMD 431	•	•

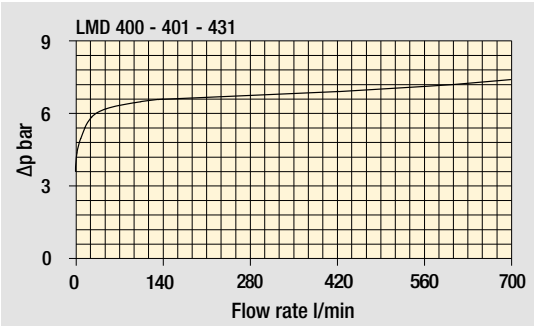


Pressure drop

Filter housings Δp pressure drop



Bypass valve pressure drop

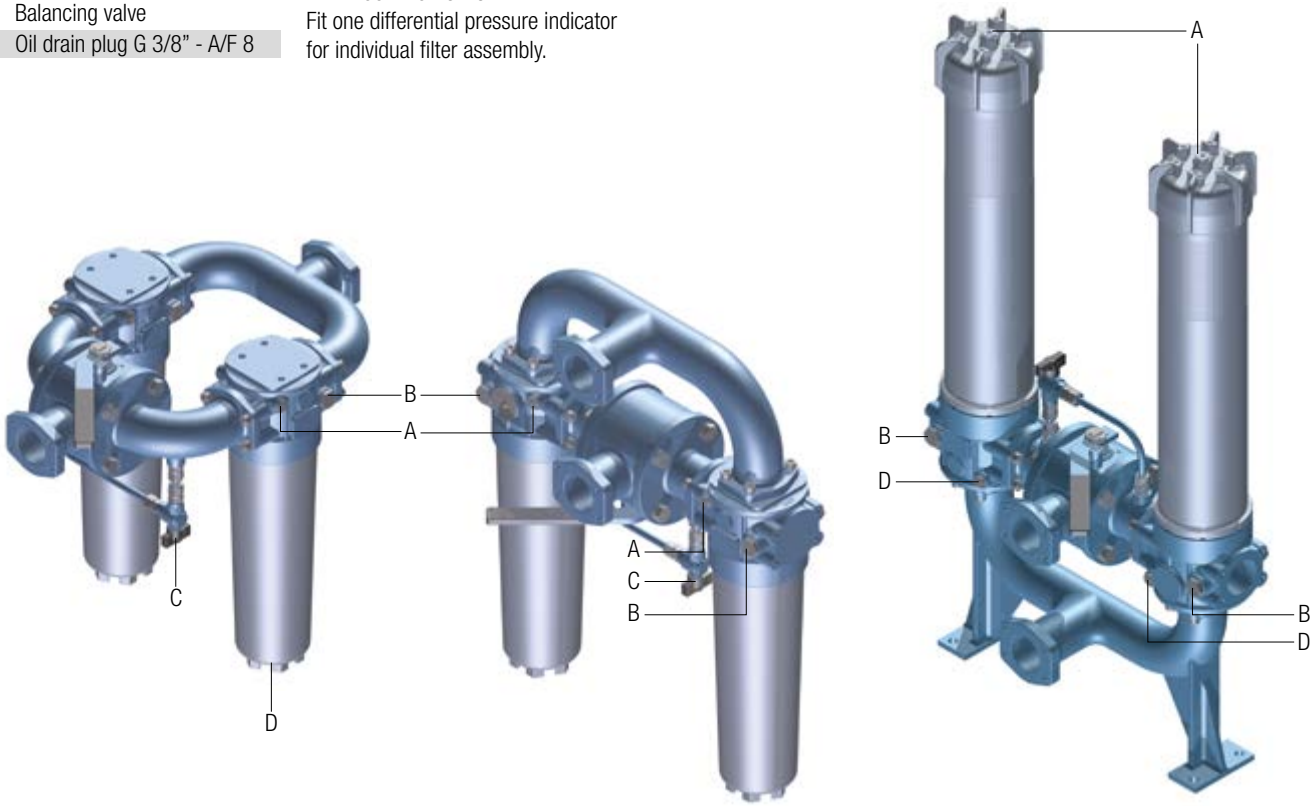


The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

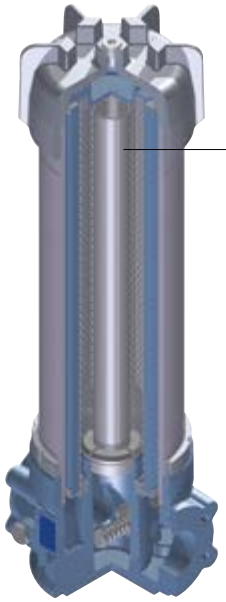
Focus on

A	Breather plug G 3/8" - A/F 8
B	Indicator port Plug T2 - A/F 30
C	Balancing valve
D	Oil drain plug G 3/8" - A/F 8

LMP 400 - 401 & 431
Fit one differential pressure indicator for individual filter assembly.



LMD 431: Execution P02



"Internal tube for low 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.

MP FILTRI WWW.SUMY.IR

LMD 400-401

Designation & Ordering code

COMPLETE FILTER

Configuration example: LMD401 | 4 | B | V | F1 | A10 | N | P01

Series and size

LMD400 | **LMD401**

Length

4 | **5** | **6**

Bypass valve

S	Without bypass	**B**	With bypass 3.5 bar

Seals and treatments

V FPM

Connections

		LMD400	LMD401
F1	2 1/2" SAE 3000 psi/M	•	•
F2	2 1/2" SAE 3000 psi/UNC	•	•
F3	2 1/2" SAE 3000 psi/M, In-line connections	-	•
F4	2 1/2" SAE 3000 psi/UNC, In-line connections	-	•

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm	**P10**	Resin impregnated paper	10 µm
A25	Inorganic microfiber	25 µm	**P25**	Resin impregnated paper	25 µm

WA025 Water absorber inorganic microfiber 25 µm

Element Δp

N 20 bar

Execution

		Filter length 4	5	6
P01	MP Filtri standard	•	•	•
P02	Maintenance from the bottom of the housing	-	•	•
Pxx	Customized	-	-	-

FILTER ELEMENT

Configuration example: CU400 | 4 | A10 | V | N | P01

Element series and size

CU400

Element length

4 | **5** | **6**

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm	**P10**	Resin impregnated paper	10 µm
A25	Inorganic microfiber	25 µm	**P25**	Resin impregnated paper	25 µm

WA025 Water absorber inorganic microfiber 25 µm

Seals

V FPM

Element Δp

N 20 bar

Execution

P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See page 784

DEA	Electrical differential pressure indicator
DEM	Electrical differential pressure indicator
DEU	Electrical differential pressure indicator
DLA	Electrical / visual differential pressure indicator
DLE	Electrical / visual differential pressure indicator
DTA	Electronic differential pressure indicator
DTI	I-O Link electronic differential pressure indicator
DVA	Visual differential pressure indicator
DVM	Visual differential pressure indicator

PLUGS

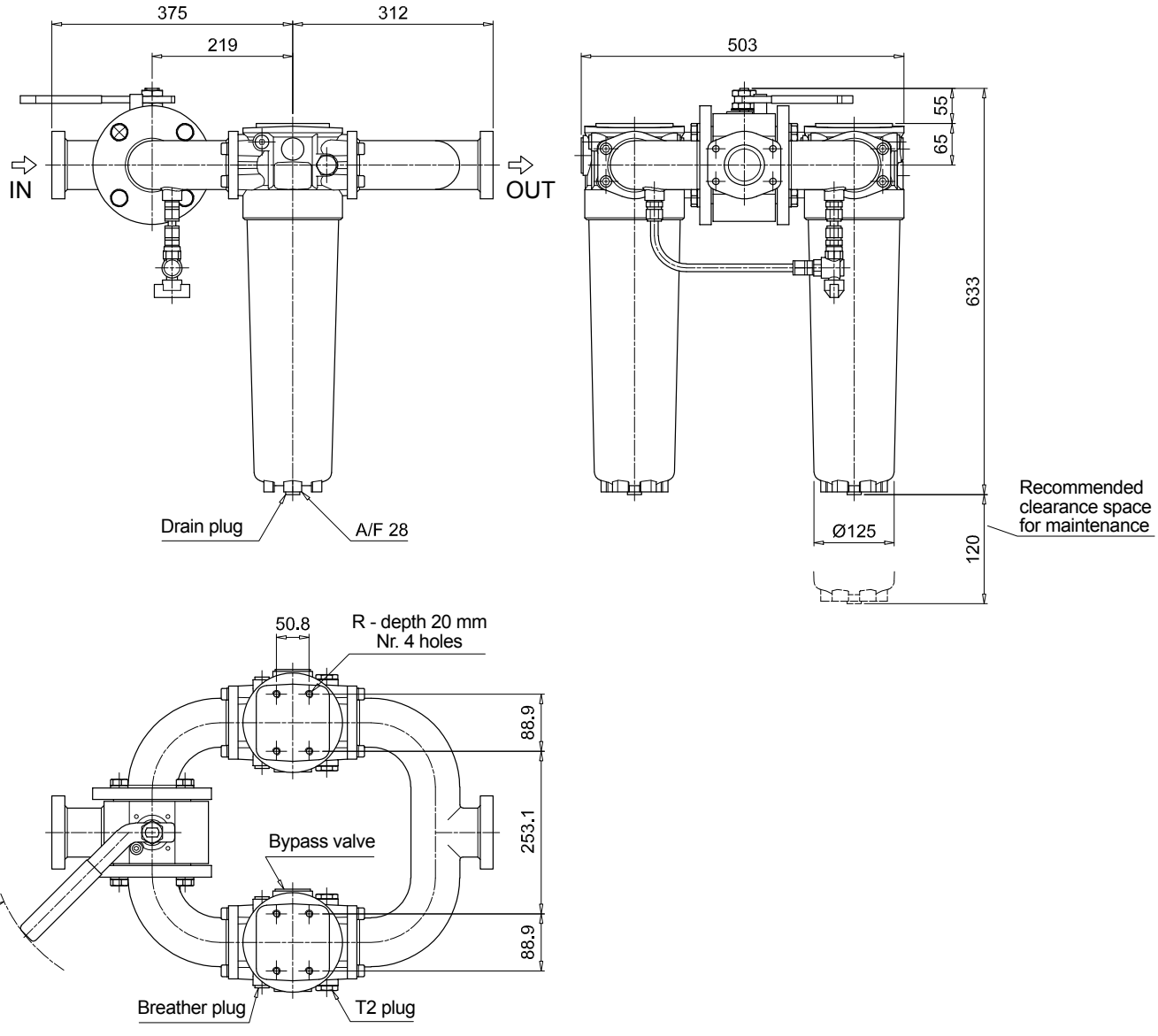
See page 807

T2 Plug

MP FILTRI WWW.SUMY.IR

Dimensions

LMD400	
Length 4	
Connections	**R**
F1	M12
F2	1/2" UNC
F3	M12
F4	1/2" UNC



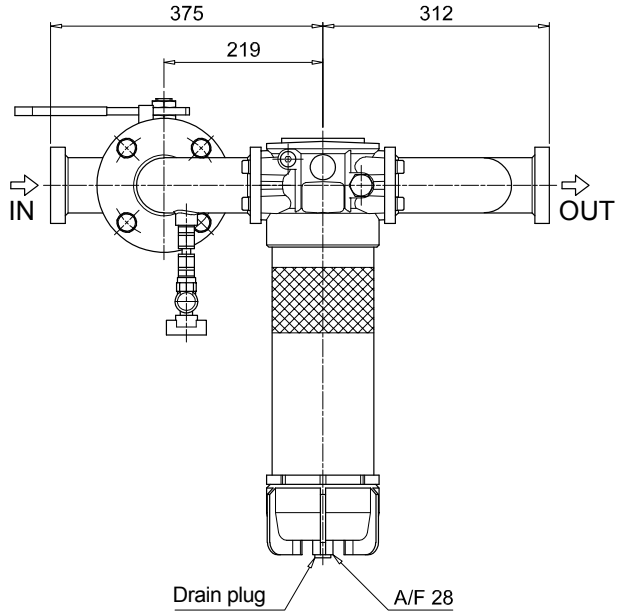
T2 plug = connection for differential pressure indicator

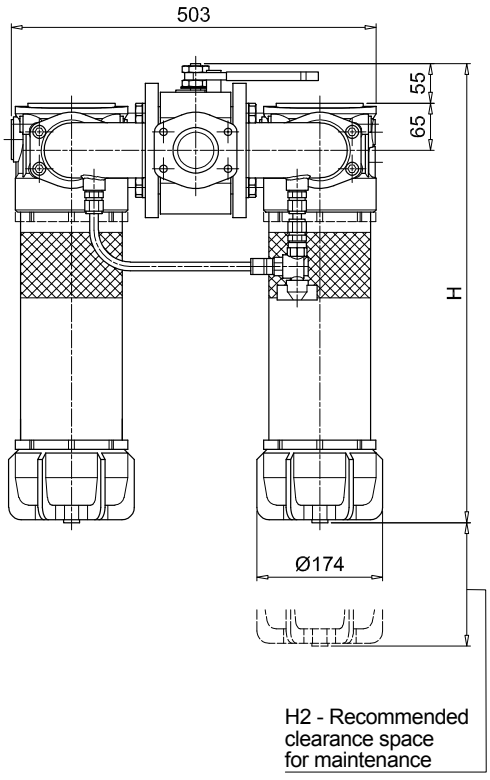
LMD 400-401

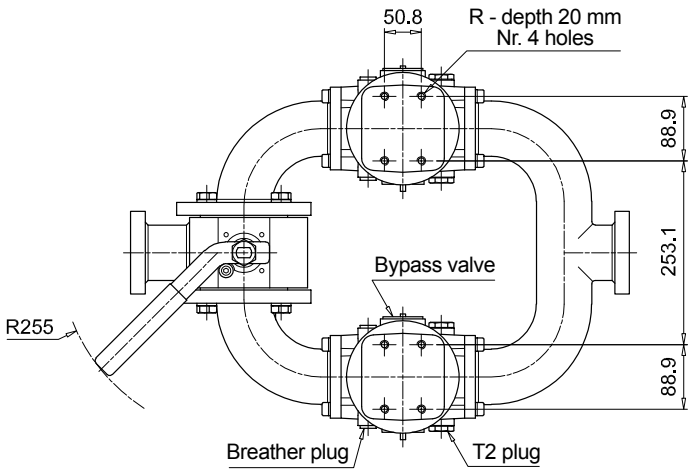
Dimensions

LMD400			
Length 5 - 6			
Filter length	**H [mm]**	**H2 [mm] Execution P01**	**P02**
5	883	120	660
6	1213	120	690

Connections	R
F1	M12
F2	1/2" UNC
F3	M12
F4	1/2" UNC



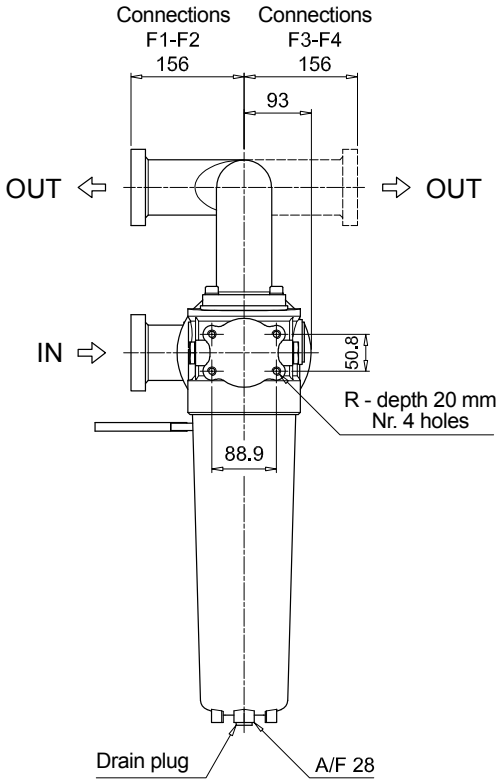


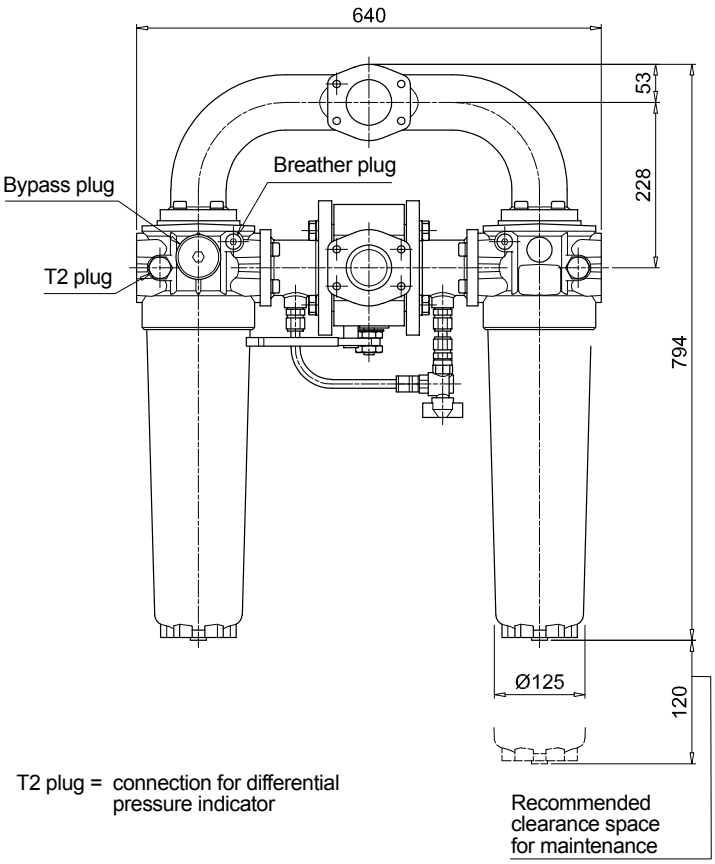


T2 plug = connection for differential pressure indicator

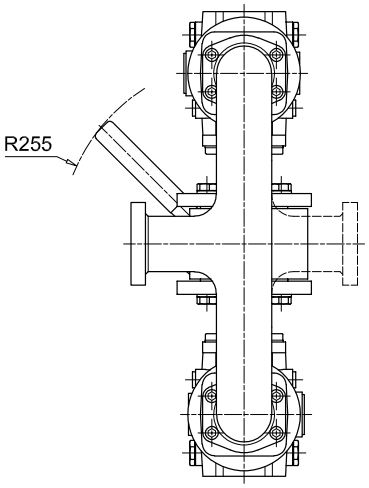
MP FILTRI WWW.SUMY.IR

LMD401	
Length 4	
Connections	**R**
F1	M12
F2	1/2" UNC
F3	M12
F4	1/2" UNC





T2 plug = connection for differential pressure indicator



LMD 400-401

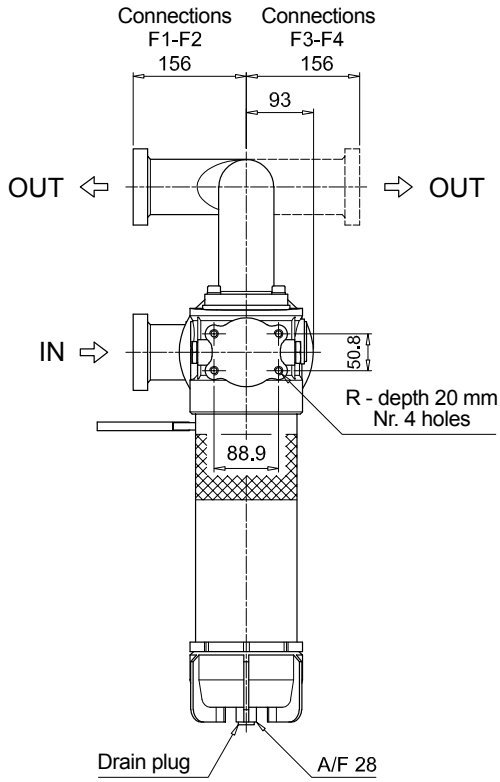
Dimensions

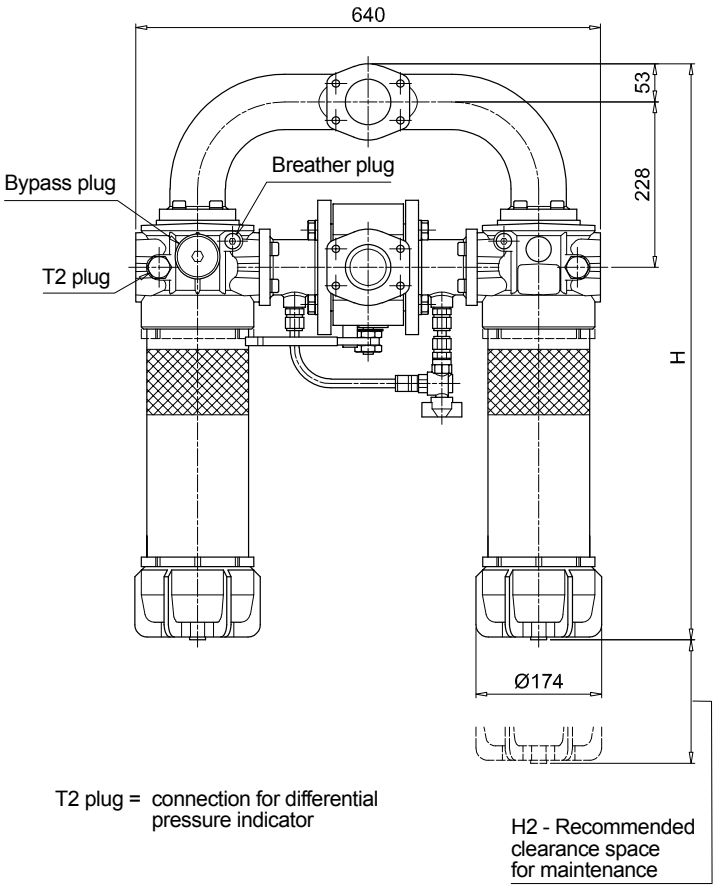
LMD401

Length 5 - 6

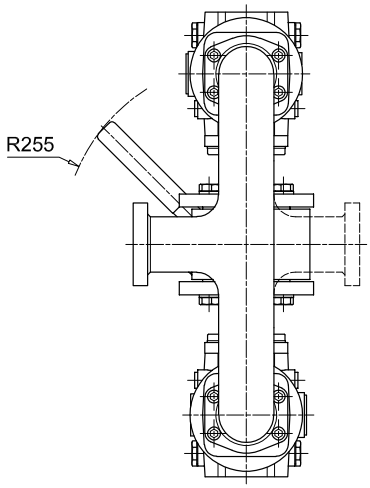
Filter length	H [mm]	H2 [mm] Execution P01	P02
5	1044	120	660
6	1374	120	690

Connections	R
F1	M12
F2	1/2" UNC
F3	M12
F4	1/2" UNC





T2 plug = connection for differential pressure indicator



MP FILTRI WWW.SUMY.IR

LMD 431

Designation & Ordering code

COMPLETE FILTER

Configuration example: LMD431 | 5 | B | V | F1 | A10 | N | P01

Series and size
LMD431

Length
5 | **6**

Bypass valve
S Without bypass
B With bypass 3.5 bar

Seals and treatments
V FPM

Connections
F1 2 1/2" SAE 3000 psi/M
F2 2 1/2" SAE 3000 psi/UNC
F3 2 1/2" SAE 3000 psi/M, In-line connections
F4 2 1/2" SAE 3000 psi/UNC, In-line connections

Filtration rating (filter media)

A03	Inorganic microfiber 3 µm	**M25**	Wire mesh 25 µm
A06	Inorganic microfiber 6 µm	**M60**	Wire mesh 60 µm
A10	Inorganic microfiber 10 µm	**M90**	Wire mesh 90 µm
A16	Inorganic microfiber 16 µm	**P10**	Resin impregnated paper 10 µm
A25	Inorganic microfiber 25 µm	**P25**	Resin impregnated paper 25 µm

WA025 Water absorber inorganic microfiber 25 µm

Element Δp
N 20 bar

Execution
P01 MP Filtri standard
P02 With internal tube for low flow rate
Pxx Customized

FILTER ELEMENT

Configuration example: CU400 | 5 | A10 | V | N | P01

Element series and size
CU400

Element length
5 | **6**

Filtration rating (filter media)

A03	Inorganic microfiber 3 µm	**M25**	Wire mesh 25 µm
A06	Inorganic microfiber 6 µm	**M60**	Wire mesh 60 µm
A10	Inorganic microfiber 10 µm	**M90**	Wire mesh 90 µm
A16	Inorganic microfiber 16 µm	**P10**	Resin impregnated paper 10 µm
A25	Inorganic microfiber 25 µm	**P25**	Resin impregnated paper 25 µm

WA025 Water absorber inorganic microfiber 25 µm

Seals
V FPM

Element Δp
N 20 bar

Execution
P01 MP Filtri standard
Pxx Customized

CLOGGING INDICATORS

See page 784

DEA Electrical differential pressure indicator
DEM Electrical differential pressure indicator
DEU Electrical differential pressure indicator
DLA Electrical / visual differential pressure indicator
DLE Electrical / visual differential pressure indicator
DTA Electronic differential pressure indicator
DTI I-O Link electronic differential pressure indicator
DVA Visual differential pressure indicator
DVM Visual differential pressure indicator

PLUGS

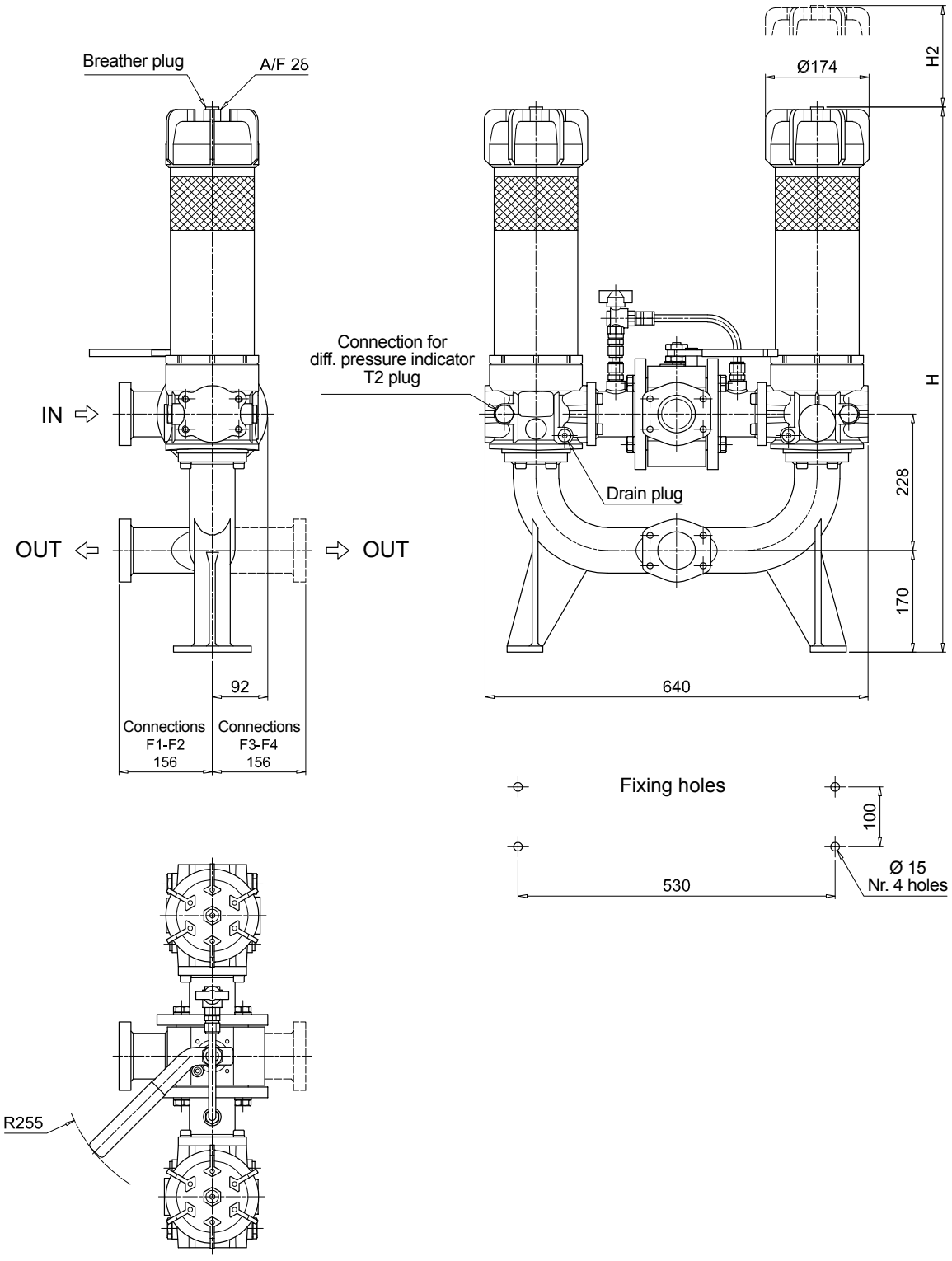
See page 807

T2 Plug

MP FILTRI WWW.SUMY.IR

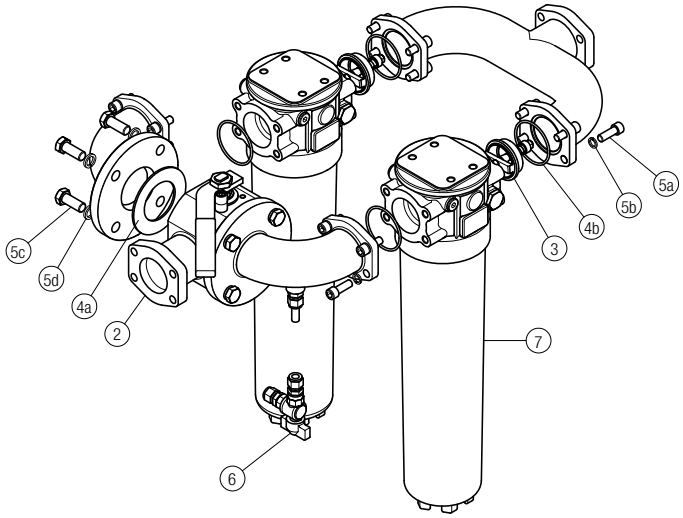
Dimensions

LMD431		
Filter length	**H [mm]**	**H2 [mm]**
5	1161	660
6	1491	690

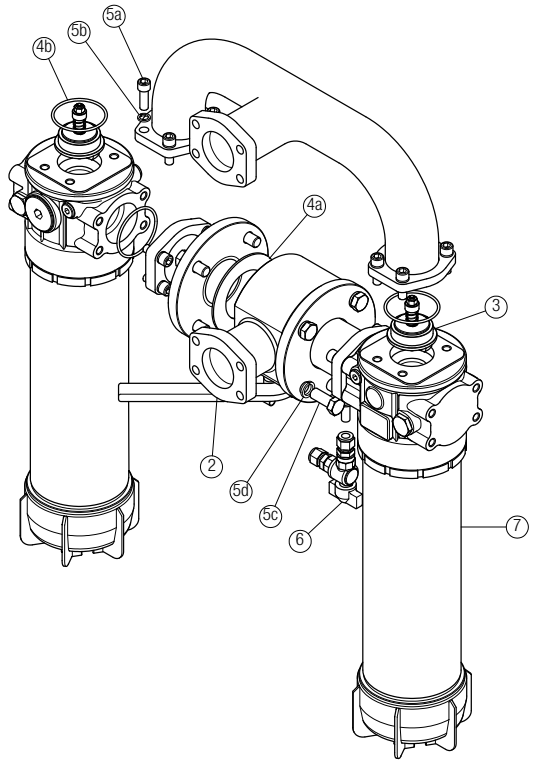


Order number for spare parts

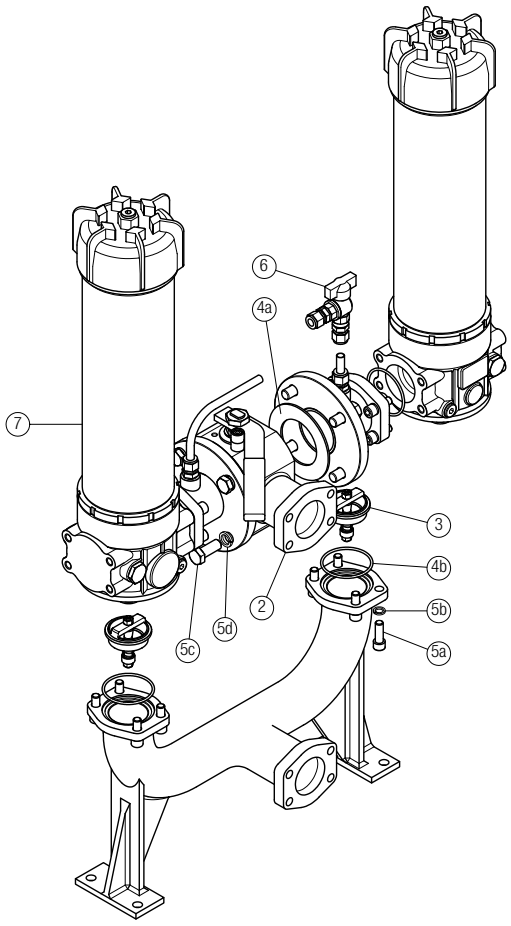
LMD 400



LMD 401



LMD 431



Item:	Q.ty: 1 pc. (2)		Q.ty: 2 pcs. (3)	Q.ty: 1 pc. (4) (4a ÷ 4b)	Q.ty: 1 pc. (5) (5a ÷ 5d)	Q.ty: 1 pc. (6)	Q.ty: 2 pcs. (7)
Filter series	**3-way ball valve PN 16** 2 1/2" SAE 3000 psi/M	2 1/2" SAE 3000 psi/UNC	**One-way valve**	**Seal Kit**	**Threaded fasteners kit**	**Kit ball valve with hose fitting**	**Filter** See order table
LMD 400-401-431	02001440	02001441	02001429	02050399	02049062	02025043	LMP400xF2.....

MP FILTRI WWW.SUMY.IR

MP FILTRI
WWW.SUMY.IR

LMD 951 series

Maximum working pressure up to 1.6 MPa (16 bar) - Flow rate up to 1200 l/min



LMD 951 GENERAL INFORMATION

Description

Low & Medium Pressure filters

Duplex
Maximum working pressure up to 1.6 MPa (16 bar)
Flow rate up to 1200 l/min

LMD950 is a range of versatile low pressure duplex filter with integrated changeover function to allow the filter element replacement without the system shut-down.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- Flanged connections up to 4", for a maximum flow rate of 1200 l/min
- Base-mounting design, for ease of the replacement of the filter element
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid. For further information, see the Contamination Management document and the dedicate leaflet.
- Balancing valve, to equalize the housing pressure before the switch
- Bypass valve, to relieve excessive pressure drop across the filter media
- Drain ports, to remove the fluid from the housing prior the maintenance work
- Visual, electrical and electronic differential clogging indicators

Common applications:

- Systems where shut-down causes high costs
- Systems where shut-down causes safety issues

Technical data

Filter housing materials

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

Pressure

- Test pressure: 2.4 MPa (24 bar)
- Min. Burst pressure: 4.8 MPa (48 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 1.6 MPa (16 bar)

Bypass valve

- Opening pressure 0.35 MPa (3.5 bar) ±10%
- Other opening pressures on request.

Number of filter elements

LMD 951: 2 filter elements CU950-3

Filter element features

Filter		Filter element	
LMD 951		CU	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	N	20 bar
WA - Water absorber microfiber	Standard	N	20 bar
M - Wire mesh	Standard	N	20 bar
P - Paper	Standard	N	20 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals

FPM series V

Temperature

From -25° C to +110° C

Connections

- LMD 951: In-line Inlet/Outlet
- Same side

Note

LMD 951 filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]		Volumes [dm³]	
	DN 80	DN 100	DN 80	DN 100
LMD 951	102	130	62	66

MP FILTRI WWW.SUMY.IR

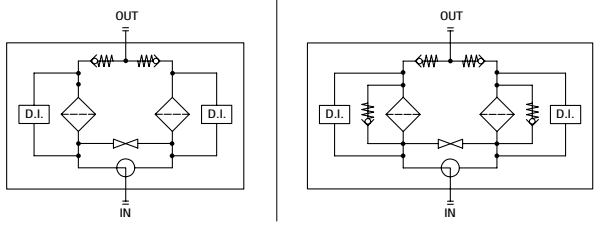
Flow rates [l/min]

Filter series	Length	Filter element design - N Series					
		A03	A06	A10	A16	A25	M25 M60 M90
LMD 951	**3**	853	884	995	1066	1096	1233

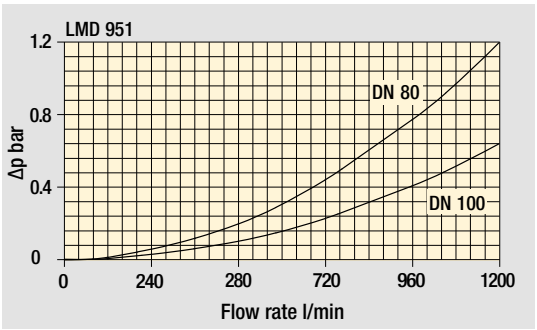
Maximum flow rate for a complete low and medium pressure filter with a pressure drop Δp = 0.7 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

Hydraulic diagram

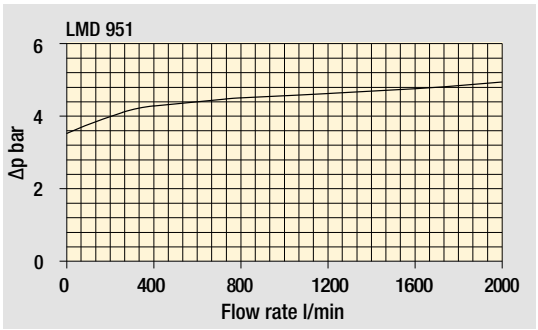
Filter series	Execution S	Execution B
LMD 951	•	•



Pressure drop



Filter housings
Δp pressure drop



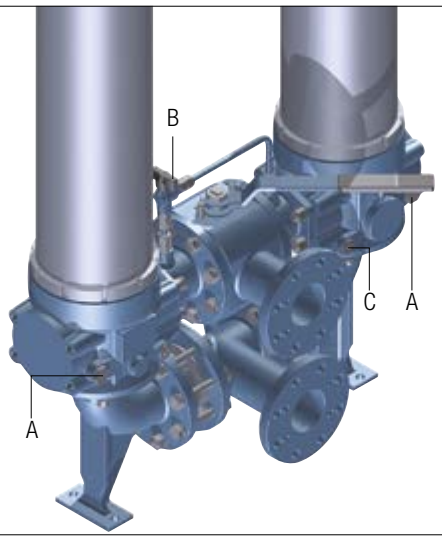
Bypass valve
pressure drop

The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

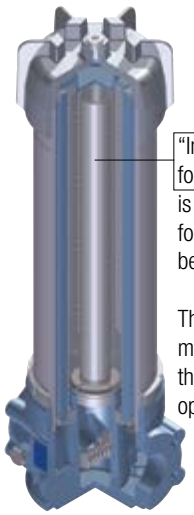
Focus on

LMD 951
Fit one differential pressure indicator for individual filter assembly.

A	Indicator port Plug T2 - A/F 30
B	Balancing valve
C	Oil drain plug G 1/2" - A/F 10



Execution P02



"Internal tube for low 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.

LMD 951

Designation & Ordering code

COMPLETE FILTER

Configuration example: LMD951 | 3 | B | V | F1 | A10 | N | P01

Series and size
LMD951

Length
3

Bypass valve
S Without bypass
B With bypass 3.5 bar

Seals and treatments
V FPM

Connections
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 3” SAE 3000 psi/M, In-line connections
F6 3” SAE 3000 psi/UNC, In-line connections
F7 4” SAE 3000 psi/M, In-line connections
F8 4” SAE 3000 psi/UNC, In-line connections

Filtration rating (filter media)
A03 Inorganic microfiber 3 µm
A06 Inorganic microfiber 6 µm
A10 Inorganic microfiber 10 µm
A16 Inorganic microfiber 16 µm
A25 Inorganic microfiber 25 µm
M25 Wire mesh 25 µm
M60 Wire mesh 60 µm
M90 Wire mesh 90 µm

WA025 Water absorber inorganic microfiber 25 µm

Element Δp
N 20 bar

Execution
P01 MP Filtri standard
P02 With internal tube for low flow rate
Pxx Customized

FILTER ELEMENT

Configuration example: CU950 | 3 | A10 | V | N | P01

Element series and size
CU950

Element length
3

Filtration rating (filter media)
A03 Inorganic microfiber 3 µm
A06 Inorganic microfiber 6 µm
A10 Inorganic microfiber 10 µm
A16 Inorganic microfiber 16 µm
A25 Inorganic microfiber 25 µm
M25 Wire mesh 25 µm
M60 Wire mesh 60 µm
M90 Wire mesh 90 µm

WA025 Water absorber inorganic microfiber 25 µm

Seals
V FPM

Element Δp
N 20 bar

Execution
P01 MP Filtri standard
Pxx Customized

CLOGGING INDICATORS

See page 784

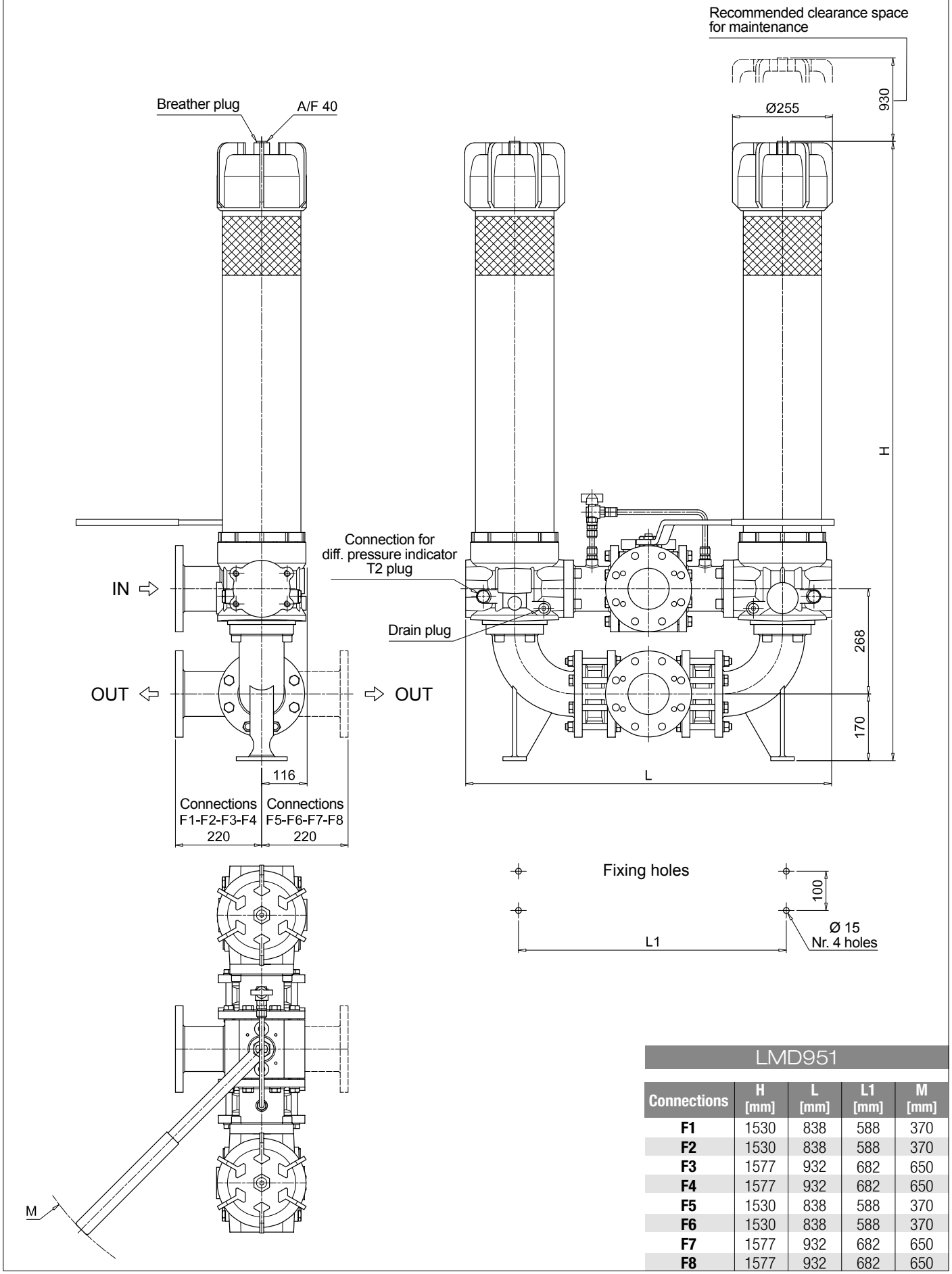
DEA Electrical differential pressure indicator
DEM Electrical differential pressure indicator
DEU Electrical differential pressure indicator
DLA Electrical / visual differential pressure indicator
DLE Electrical / visual differential pressure indicator
DTA Electronic differential pressure indicator
DTI I-O Link electronic differential pressure indicator
DVA Visual differential pressure indicator
DVM Visual differential pressure indicator

PLUGS

See page 807

T2 Plug

MP FILTRI WWW.SUMY.IR

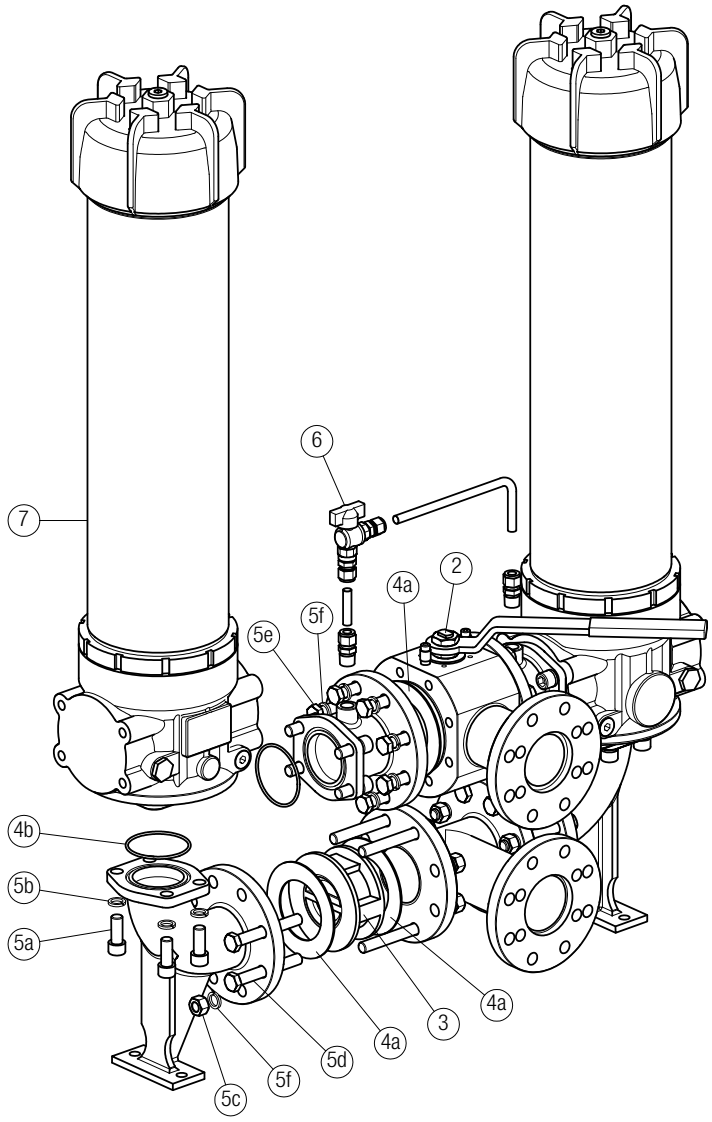


LMD951				
Connections	**H [mm]**	**L [mm]**	**L1 [mm]**	**M [mm]**
F1	1530	838	588	370
F2	1530	838	588	370
F3	1577	932	682	650
F4	1577	932	682	650
F5	1530	838	588	370
F6	1530	838	588	370
F7	1577	932	682	650
F8	1577	932	682	650

LMD 951 SPARE PARTS

Order number for spare parts

LMD 951



Item 7:
for complete filter code and spare parts, see LMP 950 - 951 series chapter

Quantity:
- filter spare parts: 2 pcs.
- filter seal kit: 2 pcs.

Item:	Q.ty: 1 pc. (2)		Q.ty: 2 pcs. (3)	Q.ty: 1 pc. (4)	Q.ty: 1 pc. (5) (5a ÷ 5f)	Q.ty: 1 pc. (6)	Q.ty: 2 pcs. (7)
Filter series LMD 951	**3-way ball valve PN 16**		**One-way valve**	**Seal Kit**	**Threaded fasteners kit**	**G 1/2" Ball Valve Kit with straight fittings**	**Filter**
F1 - F2 - F5 - F6 / D1 - D3 (3" SAE / DIN PN16 DN 80)	3" SAE 3000 psi/M 02001135	3" SAE 3000 psi/UNC 02001438	02001418	02050388	02049056	02025043	LMP9513xVF1xxxNP01
F3 - F4 - F7 - F8 / D2 - D4 (4" SAE / DIN PN16 DN 100)	4" SAE 3000 psi/M 02001162	4" SAE 3000 psi/UNC 02001439	02001419	02050389	02049057		LMP9513xVF3xxxNP01

MP FILTRI WWW.SUMY.IR

MP FILTRI
WWW.SUMY.IR

LPH 630 series

Maximum working pressure up to 1 MPa (10 bar) Flow rate up to 1600 l/min



INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS

Please scan or click the QR codes
to get updated electronic version
of the related document.

Scan or click me!

LPH 630 GENERAL INFORMATION

Description

Low & Medium Pressure filters

Maximum working pressure up to 1 MPa (10 bar)
Flow rate up to 1600 l/min

LPH630 is a high capacity low pressure filter with large filtration surface particularly suitable for industrial applications and off-line filtration of the lubrication system reservoirs.

Available features:

- 2 1/2" flanged connection connections, for a maximum flow rate of 1600 l/min
- Versatile orientation of the connections, to suite a variety of hydraulic systems
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid.
- Bypass valve, to relieve excessive pressure drop across the filter media
- Magnetic filter, to hold the ferrous particles
- Visual, electrical and electronic differential clogging indicators.

Common applications:

- Lubrication
- Off-line filtration of reservoirs
- Filtration systems

Technical data

Filter housing materials

- Head & Cover: Anodized Aluminium
- Bypass valve: Phosphatized steel
- Bowl: Phosphatized steel

Pressure

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

Bypass valve

Opening pressure 0.175 MPa (1.75 bar) ±10%
Opening pressure 0.25 MPa (2.5 bar) ±10%

Filter element features

Filter		Filter element
LPH 630		MR
Δp Element type		
Element media	Construction	Δp
A - Microfiber	Standard	10 bar
WA - Water absorber microfiber	Standard	10 bar
M - Wire mesh	Standard	10 bar
P - Paper	Standard	10 bar
Please see ordering code tables to check element Δp series availability based on filter features.		
Flow direction through the filter element: From OUT to IN		

Seals

Standard NBR series A
Optional FPM series V

Temperature

From -25 °C to +110 °C

Note

LPH filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]	Volumes [dm³]
	Length 7	Length 7
LPH 630	1.50	0.60

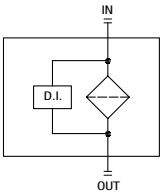
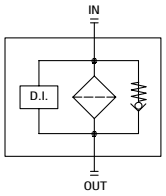
MP FILTRI WWW.SUMY.IR

Flow rates [l/min]

Filter series	Length	Filter element design - N Series							
		A03	A06	A10	A16	A25	M25 M60 M90	P10	P25
LPH 630	**7**	633	671	1091	1130	1217	1669	1518	1602

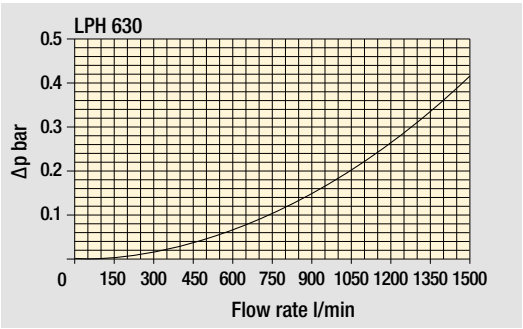
Maximum flow rate for a complete delivery filter with a pressure drop Δp = 0.7 bar.
The reference fluid has a kinematic viscosity of 30 mm²/s (cSt) and a density of 0.86 kg/dm³.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
Please, contact our Sales Department for further additional information.

Hydraulic diagram

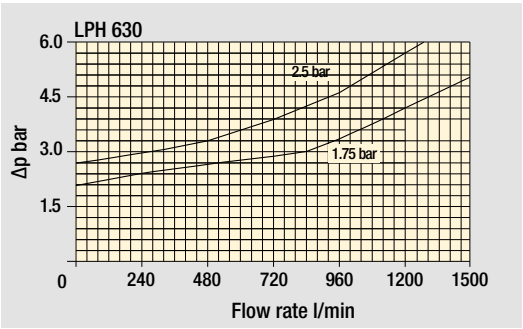
Filter series	Style S	Style C-E
LPH 630		

Pressure drop

Filter housings
Δp pressure drop



Bypass valve
pressure drop



The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

LPH 630

Designation & Ordering code

COMPLETE FILTER

Configuration example: LPH630 | 7 | C | E | 1 | 1 | A | F1 | A10 | P01

Series and size
LPH630

Length
7

Bypass valve
S Without bypass
C With bypass 1.75 bar
E With bypass 2.5 bar

Diffuser and magnetic filter
0 With magnetic filter
E Without magnetic filter

Port IN position
1 On the left of the bracket

Port OUT position
1 On the left of the bracket

Seals and treatments
A NBR
V FPM

Connection
F1 2 1/2" SAE 3000 psi/M
F3 2 1/2" SAE 3000 psi/UNC

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm	**P10**	Resin impregnated paper	10 µm
A25	Inorganic microfiber	25 µm	**P25**	Resin impregnated paper	25 µm

WA025 Water absorber inorganic microfiber 25 µm

Execution
P01 MP Filtri standard
Pxx Customized

FILTER ELEMENT

Configuration example: MR630 | 7 | M25 | A | P01

Element series and size
MR630

Element length
7

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm	**P10**	Resin impregnated paper	10 µm
A25	Inorganic microfiber	25 µm	**P25**	Resin impregnated paper	25 µm

WA025 Water absorber inorganic microfiber 25 µm

Seals and treatments
A NBR
V FPM

Execution
P01 MP Filtri standard
Pxx Customized

CLOGGING INDICATORS

See page 784

DEA Electrical differential pressure indicator
DEM Electrical differential pressure indicator
DEU Electrical differential pressure indicator
DLA Electrical / visual differential pressure indicator
DLE Electrical / visual differential pressure indicator
DTA Electronic differential pressure indicator
DTI I-O Link electronic differential pressure indicator
DVA Visual differential pressure indicator
DVM Visual differential pressure indicator

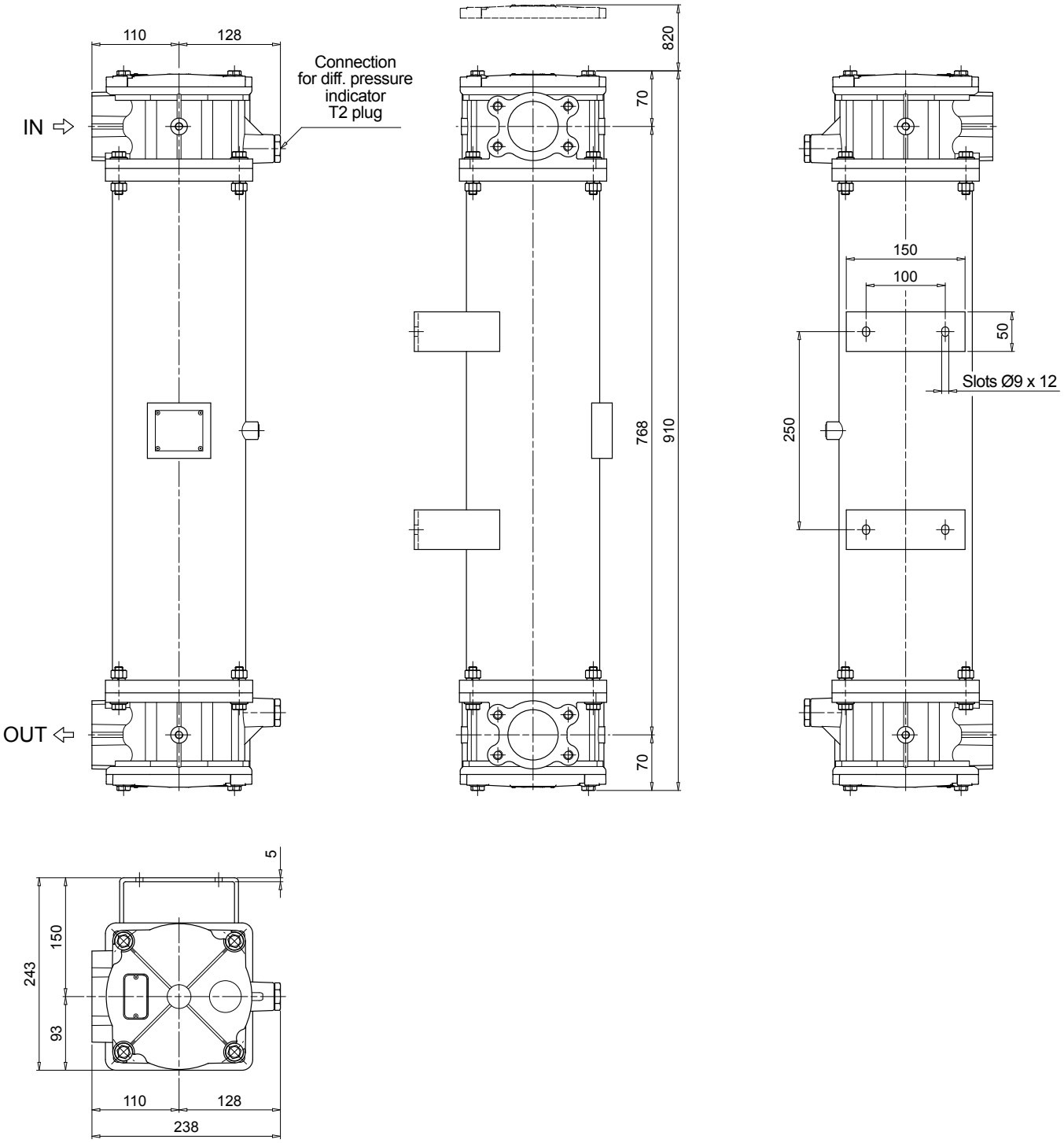
PLUGS

See page 807

T2 Plug

MP FILTRI WWW.SUMY.IR

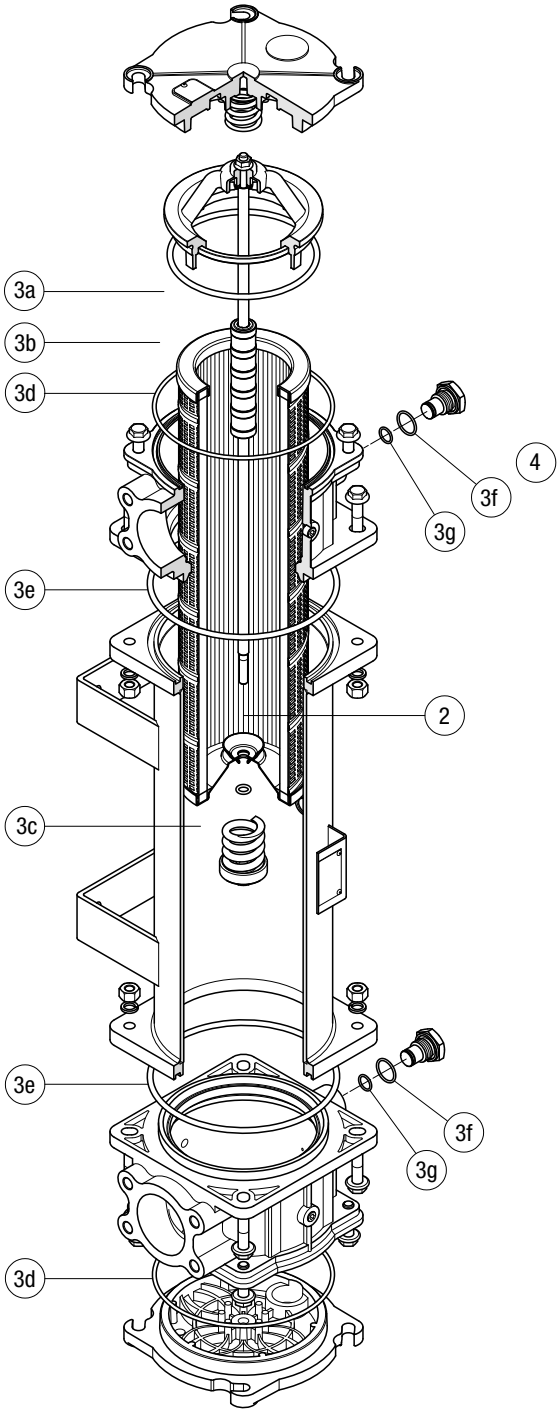
LPH630


110
128
Connection
for diff. pressure
indicator
T2 plug
IN
OUT
820
70
768
910
70
150
100
50
Slots Ø9 x 12
250
5
243
150
93
110
128
238

LPH 630

Order number for spare parts

LPH 630



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3g)		Q.ty: 2 pc. (4)	
Filter series	**Filter element**	**Seal Kit code number NBR**	**FPM**	**Indicator connection plug NBR**	**FPM**
LPH 630	See order table	02050640	02050641	T2H	T2V

MP FILTRI WWW.SUMY.IR

MP FILTRI
WWW.SUMY.IR

DIN 24550

Filters featuring filter elements designed according to DIN 24550

LDP & LDD series

Maximum working pressure up to 6 MPa (60 bar)
Flow rate up to 360 l/min

LMP 900-901 series

Maximum working pressure up to 3 MPa (30 bar)
Flow rate up to 2000 l/min

LMP 902-903 series

Maximum working pressure up to 2 MPa (20 bar)
Flow rate up to 3000 l/min

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MP FILTRI
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LDP & LDD series

Filters featuring filter elements designed according to DIN 24550

Maximum working pressure up to 6 MPa (60 bar) - Flow rate up to 360 l/min

INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS

Please scan or click the QR codes to get updated electronic version of the related document:

LDP016 LDP025 LDP040

For all the QR codes: Scan or click me!

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LDP & LDD GENERAL INFORMATION

Filters featuring filter elements designed according to DIN 24550

Descriptions

Low & Medium Pressure filters

Maximum working pressure up to 6 MPa (60 bar)
Flow rate up to 360 l/min

LDP is a range of versatile low pressure filter for transmission, protection of sensitive components in low pressure hydraulic systems and filtration of the coolant into the machine tools.
They are also suitable for the off-line filtration of small reservoirs.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:
- Female threaded connections up to 1 1/2", for a maximum return flow rate of 360 l/min
- Filter element designed in accordance with DIN 24550 regulation
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid. For further information, see the Contamination Management document and the dedicate leaflet.
- Bypass valve, to relieve excessive pressure drop across the filter media
- Visual, electrical and electronic differential clogging indicators

Common applications:
Delivery lines, in low pressure industrial equipment or mobile machines

LDD is a range of versatile low pressure duplex filter with integrated changeover function to allow the filter element replacement without the system shut-down.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:
- Female threaded connections up to 1 1/2" and flanged connections up to 1 1/2", for a maximum flow rate of 360 l/min
- Filter element designed in accordance with DIN 24550 regulation
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid. For further information, see the Contamination Management document and the dedicate leaflet.
- Balancing valve integrated in the changeover lever, to equalize the housing pressure before the switch
- Bypass valve, to relieve excessive pressure drop across the filter media
- Vent ports, to avoid air trapped into the filter going into the system
- Drain ports, to remove the fluid from the housing prior the maintenance work
- Optional sampling ports, to get samples of fluid or to connect additional instrument to the system
- Visual, electrical and electronic differential clogging indicators

Common applications:
- Systems where shut-down causes high costs
- Systems where shut-down causes safety issues

Technical data

Filter housing materials
- Head: Aluminium
- Bowl: Cataphoretic painted steel
- Bypass valve: AISI 304 - Polyamide

Pressure
- Test pressure: 9 MPa (90 bar)
- Min. Burst pressure: 18 MPa (180 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 6 MPa (60 bar)

Bypass valve
- Opening pressure 0.35 MPa (3.5 bar) ±10%
- Other opening pressures on request.

Filter element features

Filter	Filter element		
LDP - LDD	CU		
Δp Element type			
Element media	Construction	Δp Series	Δp
A - Microfiber	Standard	N	20 bar
WA - Water absorber microfiber	Standard	N	20 bar
M - Wire mesh	Standard	N	20 bar
P - Paper	Standard	N	20 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals
- Standard NBR series A
- Optional FPM series V

Temperature
From -25° C to +110° C

Connections
Inlet/Outlet In-Line

Note
LDP - LDD filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]	Volumes [dm³]
LDP 016	2.0	1.2
LDP 025	3.0	1.6
LDP 040	5.0	2.2
LDD 016	9.3	3.6
LDD 025	9.5	4.1
LDD 040	11.3	4.8

MP FILTRI WWW.SUMY.IR

Filters featuring filter elements designed according to DIN 24550

Flow rates [l/min]

	Filter element design - N Series									
Filter series	A03	A06	A10	A16	A25	M25	M60	M90	P10	P25
LDP 016	83	91	178	198	222	350	353	358	295	309
LDP 025	124	134	227	245	265	357	358	358	319	330
LDP 040	173	191	274	284	311	359	360	361	332	337
LDD 016	68	73	120	130	140	189	190	192	169	174
LDD 025	93	98	142	149	157	191	192	192	178	181
LDD 040	118	126	161	165	175	192	192	193	182	184

Maximum flow rate for a complete low and medium pressure filter with a pressure drop Δp = 0.7 bar.

The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.

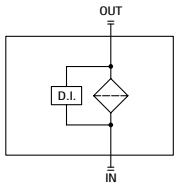
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

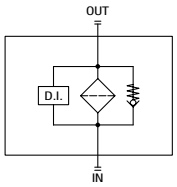
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.

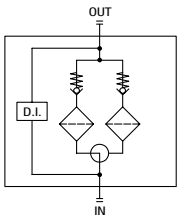
Please, contact our Sales Department for further additional information.

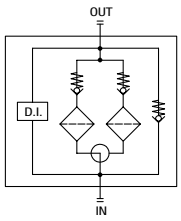
Hydraulic diagram

Filter series	Execution S	Execution B	Execution S	Execution B
LDP 016	•	•	-	-
LDP 025	•	•	-	-
LDP 040	•	•	-	-
LDD 016	-	-	•	•
LDD 025	-	-	•	•
LDD 040	-	-	•	•



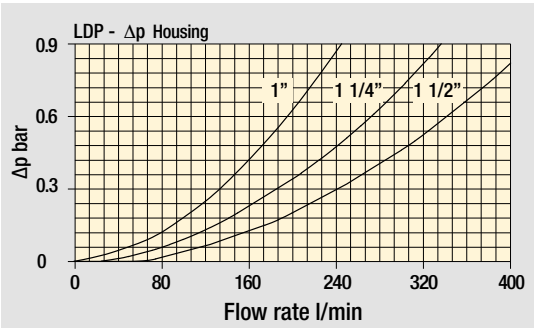


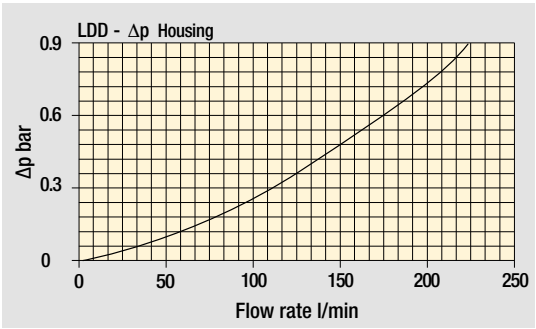




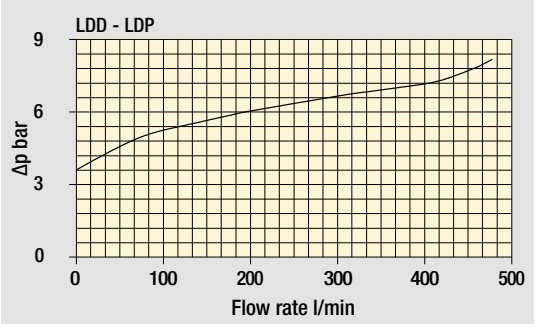
Pressure drop

Filter housings Δp pressure drop





Bypass valve pressure drop



The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

Designation & Ordering code

COMPLETE FILTER

Configuration example: LDP | 025 | B | A | D | 6 | A10 | N | P01

Series
LDP

Size
016 Element according to DIN 24550 - T3 DN160
025 Element according to DIN 24550 - T3 DN250
040 Element according to DIN 24550 - T3 DN400

Bypass valve
S Without bypass
B With bypass 3.5 bar

Seals and treatments
A NBR
V FPM

Connections
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

Connection for differential pressure indicator
6 With plugged connection

Filtration rating (filter media)
A03 Inorganic microfiber 3 µm
A06 Inorganic microfiber 6 µm
A10 Inorganic microfiber 10 µm
A16 Inorganic microfiber 16 µm
A25 Inorganic microfiber 25 µm
M25 Wire mesh 25 µm
M60 Wire mesh 60 µm
M90 Wire mesh 90 µm
P10 Resin impregnated paper 10 µm
P25 Resin impregnated paper 25 µm

WA025 Water absorber inorganic microfiber 25 µm

Element Δp
N 20 bar

Execution
P01 MP Filtri standard
Pxx Customized

FILTER ELEMENT

Configuration example: DN | 025 | A10 | A | N | P01

Element series
DN

Element size
016 Element according to DIN 24550 - T3 DN160
025 Element according to DIN 24550 - T3 DN250
040 Element according to DIN 24550 - T3 DN400

Filtration rating (filter media)
A03 Inorganic microfiber 3 µm
A06 Inorganic microfiber 6 µm
A10 Inorganic microfiber 10 µm
A16 Inorganic microfiber 16 µm
A25 Inorganic microfiber 25 µm
M25 Wire mesh 25 µm
M60 Wire mesh 60 µm
M90 Wire mesh 90 µm
P10 Resin impregnated paper 10 µm
P25 Resin impregnated paper 25 µm

WA025 Water absorber inorganic microfiber 25 µm

Seals and treatments
A NBR
V FPM

Element Δp
N 20 bar

Execution
P01 MP Filtri standard
Pxx Customized

CLOGGING INDICATORS

See page 784

DEA Electrical differential pressure indicator
DEM Electrical differential pressure indicator
DEU Electrical differential pressure indicator
DLA Electrical / visual differential pressure indicator
DLE Electrical / visual differential pressure indicator
DTA Electronic differential pressure indicator
DTI I-O Link electronic differential pressure indicator
DVA Visual differential pressure indicator
DVM Visual differential pressure indicator

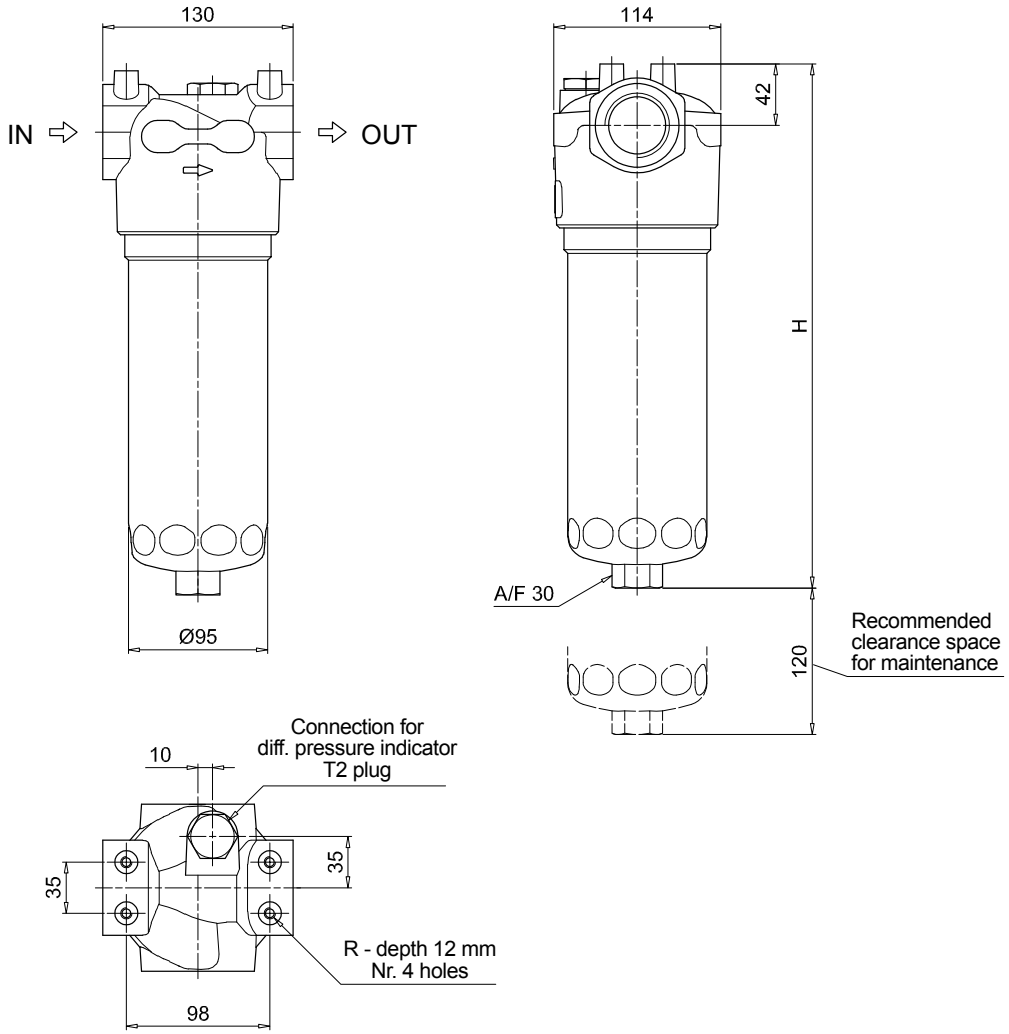
PLUGS

See page 807

T2 Plug

MP FILTRI WWW.SUMY.IR

Dimensions



LDP

Filter size	H [mm]
016	268
025	358
040	508

Connections	R
A-B-C	M8
D-E-F-G-H-I	5/16" UNC

Designation & Ordering code

COMPLETE FILTER

Configuration example: LDD | 025 | B | A | C | 6 | A10 | N | P01

Series
LDD

Size
016 Element according to DIN 24550 - T3 DN160
025 Element according to DIN 24550 - T3 DN250
040 Element according to DIN 24550 - T3 DN400

Bypass valve
S Without bypass
B With bypass 3.5 bar

Seals and treatments
A NBR
V FPM

Connections
C G 1 1/2”
F 1 1/2” NPT
I SAE 24 - 1 7/8” - 12 UN
L 1 1/2” SAE 3000 psi/M + G 1 1/4”
M 1 1/2” SAE 3000 psi/UNC + 1 1/4” NPT
N 1 1/2” SAE 3000 psi/UNC + SAE 20 - 1 5/8” UN

Connection for differential pressure indicator
6 With plugged connection

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm	**P10**	Resin impregnated paper	10 µm
A25	Inorganic microfiber	25 µm	**P25**	Resin impregnated paper	25 µm

WA025 Water absorber inorganic microfiber 25 µm

Element Δp
N 20 bar

Execution
P01 MP Filtri standard
Pxx Customized

FILTER ELEMENT

Configuration example: DN | 025 | A10 | A | N | P01

Element series
DN

Element size
016 Element according to DIN 24550 - T3 DN160
025 Element according to DIN 24550 - T3 DN250
040 Element according to DIN 24550 - T3 DN400

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm	**P10**	Resin impregnated paper	10 µm
A25	Inorganic microfiber	25 µm	**P25**	Resin impregnated paper	25 µm

WA025 Water absorber inorganic microfiber 25 µm

Seals and treatments
A NBR
V FPM

Element Δp
N 20 bar

Execution
P01 MP Filtri standard
Pxx Customized

CLOGGING INDICATORS

See page 784

DEA Electrical differential pressure indicator
DEM Electrical differential pressure indicator
DEU Electrical differential pressure indicator
DLA Electrical / visual differential pressure indicator
DLE Electrical / visual differential pressure indicator
DTA Electronic differential pressure indicator
DTI I-O Link electronic differential pressure indicator
DVA Visual differential pressure indicator
DVM Visual differential pressure indicator

PLUGS

See page 807

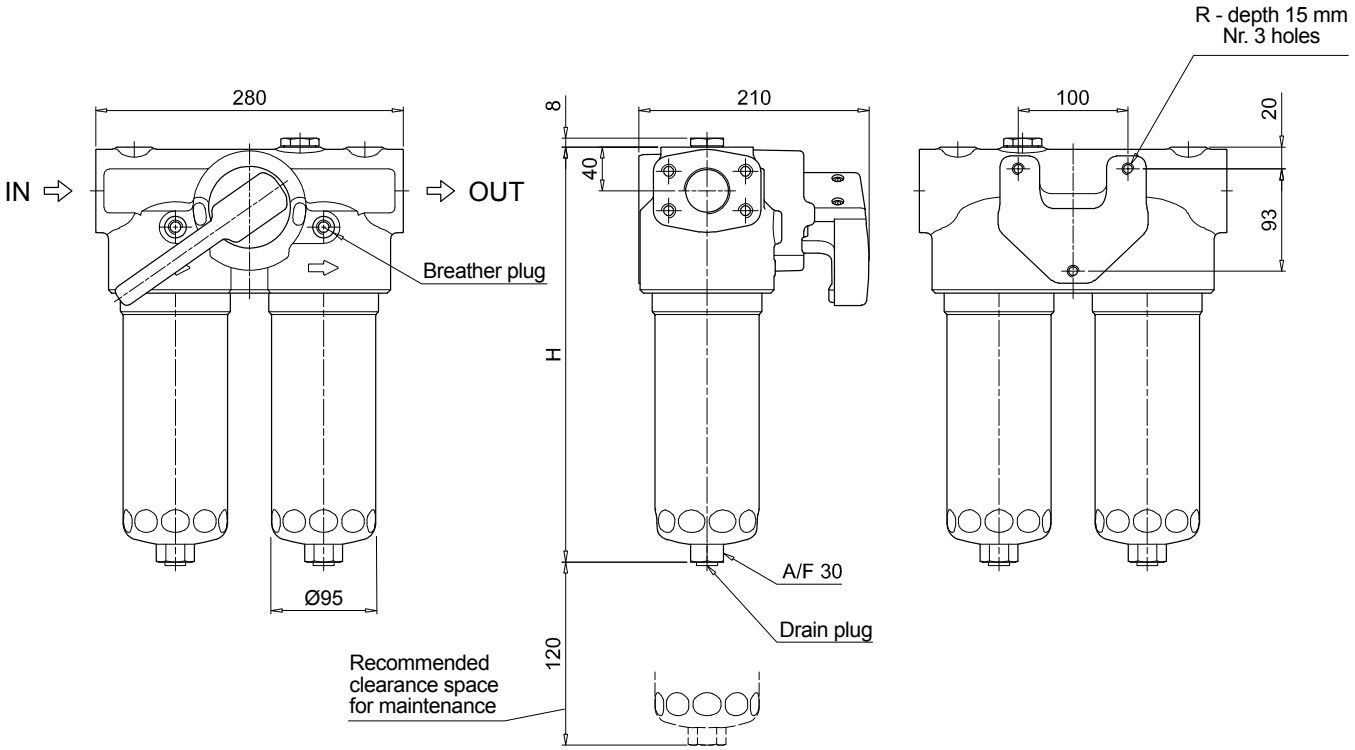
T2 Plug

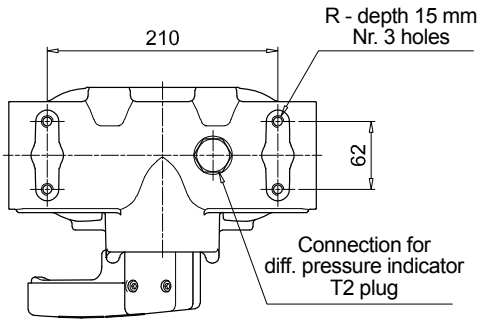
MP FILTRI WWW.SUMY.IR

Dimensions

LDD	
Filter size	**H [mm]**
016	293
025	383
040	533

Connections	**R**
C	M10
F - I	3/8" UNC
L	M10
M - N	3/8" UNC

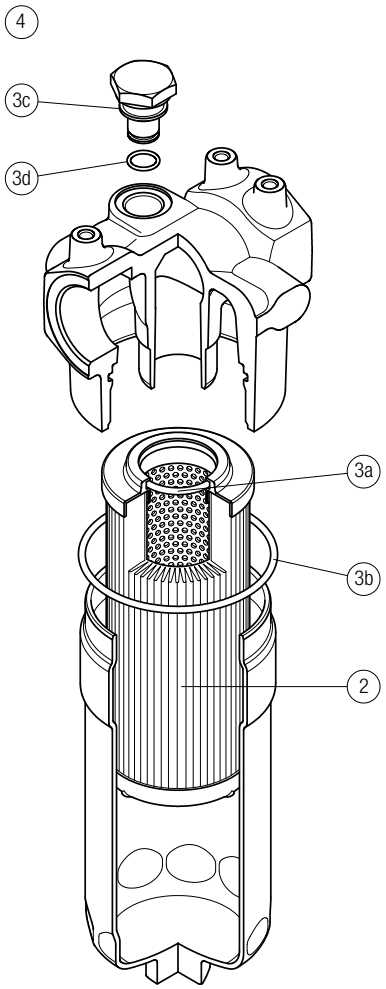




Filters featuring filter elements designed according to DIN 24550

Order number for spare parts

LDP



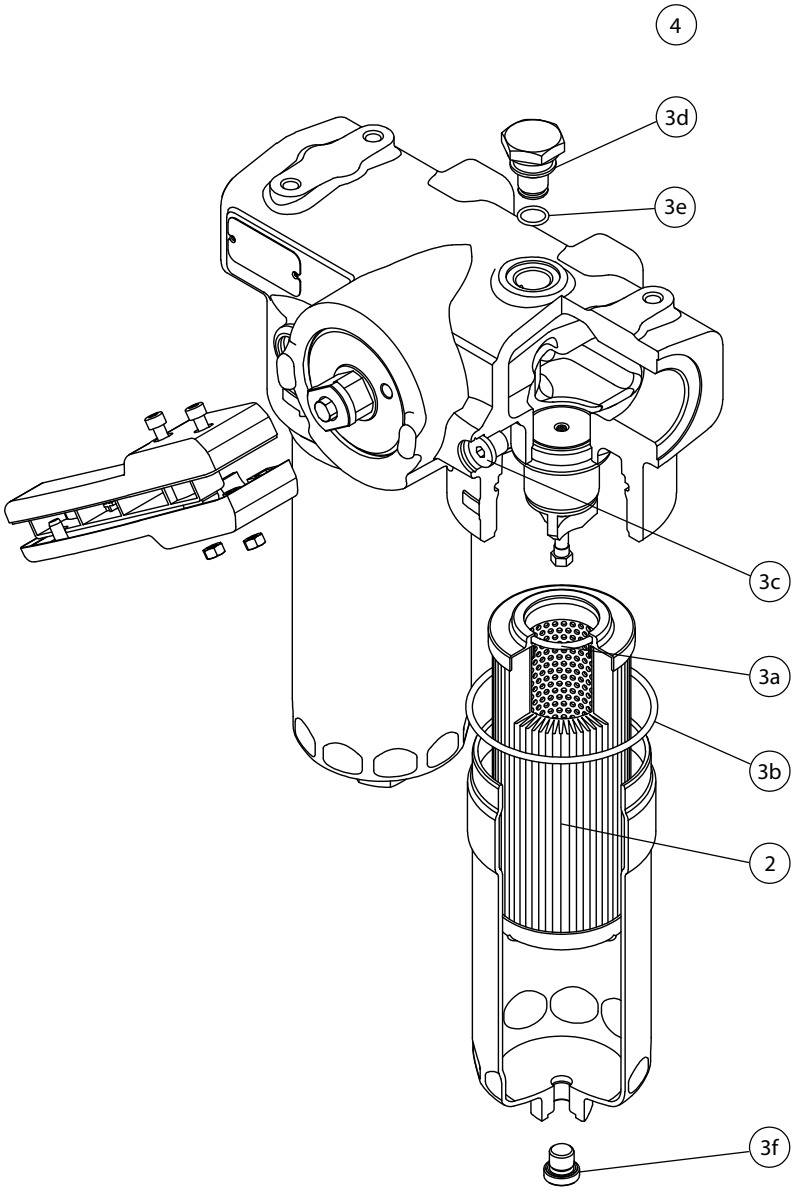
Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3d)		Q.ty: 1 pc. (4)	
Filter series	Filter element	Seal Kit code number NBR	Seal Kit code number FPM	Indicator connection plug NBR	Indicator connection plug FPM
LDP	See order table	02050435	02050436	T2H	T2V

MP FILTRI WWW.SUMY.IR

Filters featuring filter elements designed according to DIN 24550

Order number for spare parts

LDD



Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3i)		Q.ty: 2 pc. 4	
Filter series	**Filter element**	**Seal Kit code number NBR**	**FPM**	**Indicator connection plug NBR**	**FPM**
LDD	See order table	02050671	02050672	T2H	T2V

MP FILTRI
WWW.SUMY.IR

LMP 900-901 series

Filters featuring filter elements designed according to DIN 24550

Maximum working pressure up to 3 MPa (30 bar) - Flow rate up to 2000 l/min



LMP 900-901 GENERAL INFORMATION

Filters featuring filter elements designed according to DIN 24550

Description

Low & Medium Pressure filters

Maximum working pressure up to 3 MPa (30 bar)
Flow rate up to 2000 l/min

LMP900 is a range of low pressure filter with large filtration surface mainly suitable for lubrication, off-line filtration of the reservoirs and filtration equipment.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:
- Flanged connections up to 4", for a maximum flow rate of 2000 l/min
- In line or 90° connections, to meet any type of application
- Filter element designed in accordance with DIN 24550 regulation
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid. For further information, see the Contamination Management document and the dedicate leaflet.
- Bypass valve, to relieve excessive pressure drop across the filter media
- Vent ports, to avoid air trapped into the filter going into the system
- Drain ports, to remove the fluid from the housing prior the maintenance work
- Visual, electrical and electronic differential clogging indicators

Common applications:
- Off-line filtration of reservoirs
- Filtration systems
- Lubrication systems

Technical data

Filter housing materials
- Head: Anodized aluminium
- Housing: Anodized aluminium
- Manifolds: Anodized aluminium
- Bypass valve: Steel

Pressure
- Test pressure: 4.5 MPa (45 bar)
- Min. Burst pressure: 9 MPa (90 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 3 MPa (30 bar)

Bypass valve
- Opening pressure 0.35 MPa (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 designed in accordance with DIN 24550
Size: 1000

Filter element features

Filter		Filter element	
LMP 900 - 901		CU	
Δp Element type			
Element media	Construction	Δp Series	Δp
A - Microfiber	Standard	N	20 bar
M - Wire mesh	Standard	N	20 bar
P - Paper	Standard	N	20 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals
- Standard NBR series A
- Optional FPM series V

Connections
LMP 900: In-line Inlet/Outlet
LMP 901: 90° Inlet/Outlet

Temperature
From -25 °C to +110 °C

Note
LMP 900 - 901 filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]			Volumes [dm³]		
	Length	1	2	Length	1	2
LMP 900-901		19.2	30.4		16	24

MP FILTRI WWW.SUMY.IR

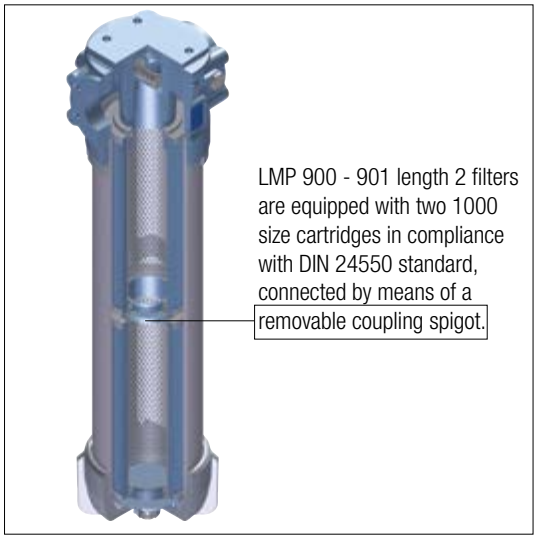
Filters featuring filter elements designed according to DIN 24550

Flow rates [l/min]

Filter series	Length	Filter element design - N Series					
		A03	A06	A10	A16	A25	M25 M60 M90
LMP 900	**1**	706	877	1264	1291	1444	1803
	2	1100	1264	1556	1573	1668	1867
LMP 901	**1**	715	899	1337	1369	1552	2000
	2	1147	1337	1689	1710	1828	2081

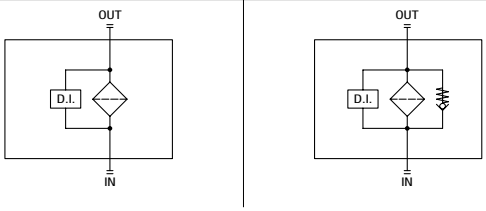
Maximum flow rate for a complete low and medium pressure filter with a pressure drop Δp = 0.7 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

LMP 900-901 Length 2



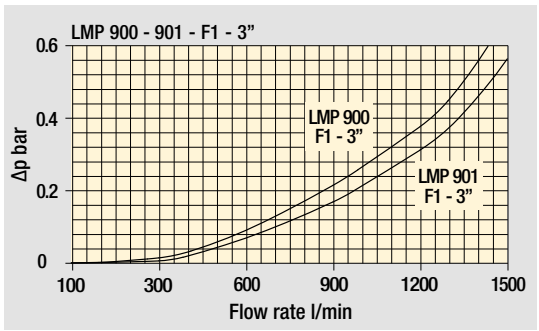
Hydraulic diagram

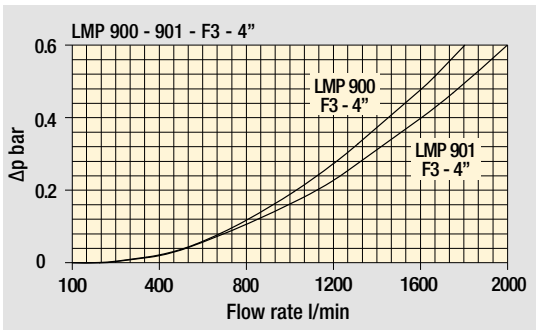
Filter series	Execution S	Execution B
LMP 900-901	•	•



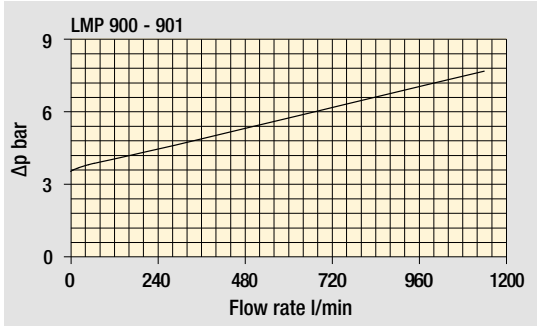
Pressure drop

Filter housings Δp pressure drop





Bypass valve pressure drop



The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

Designation & Ordering code

COMPLETE FILTER

Configuration example: LMP901 | 2 | B | A | F2 | A10 | N | P01

Series and size
LMP900 | **LMP901**

Length
1 | **2**

Bypass valve
S Without bypass
B With bypass 3.5 bar

Seals and treatments
A NBR
V FPM

Connections
F1 3" SAE 3000 psi/M
F2 3" SAE 3000 psi/UNC
F3 4" SAE 3000 psi/M
F4 4" SAE 3000 psi/UNC

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm			
A25	Inorganic microfiber	25 µm			

WA025 Water absorber inorganic microfiber 25 µm

Element Δp
N 20 bar

Execution

		Filter length 1	2
P01	MP Filtri standard	•	•
P02	Maintenance from the bottom of the housing	-	•
Pxx	Customized		

FILTER ELEMENT

Configuration example: CU900 | A10 | A | N | P01

Element series and size
CU900

Length
1 Nr. 1 filter element
2 Nr. 2 filter elements

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm			
A25	Inorganic microfiber	25 µm			

WA025 Water absorber inorganic microfiber 25 µm

Seals
A NBR
V FPM

Element Δp
N 20 bar

Execution
P01 MP Filtri standard
Pxx Customized

CLOGGING INDICATORS

See page 784

DEA Electrical differential pressure indicator
DEM Electrical differential pressure indicator
DEU Electrical differential pressure indicator
DLA Electrical / visual differential pressure indicator
DLE Electrical / visual differential pressure indicator
DTA Electronic differential pressure indicator
DTI I-0 Link electronic differential pressure indicator
DVA Visual differential pressure indicator
DVM Visual differential pressure indicator

PLUGS

See page 807

T2 Plug - Filter length 1 - 2

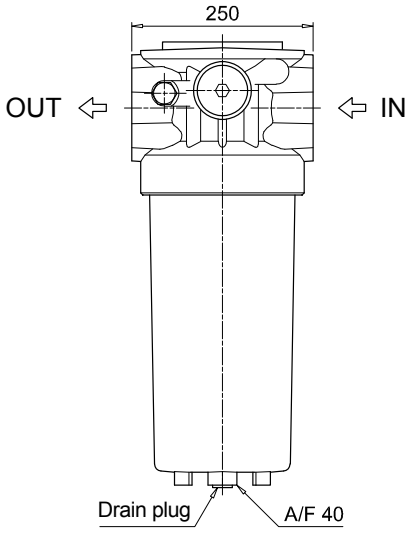
ACCESSORIES

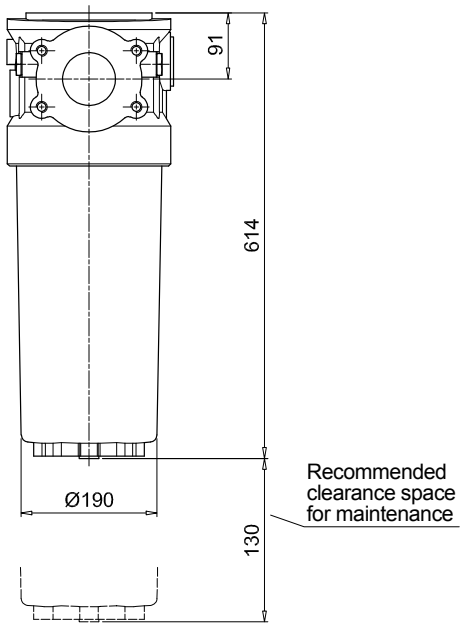
See page 486

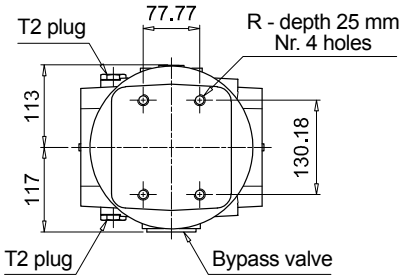
CFA Retaining clamp - Filter length 2

MP FILTRI WWW.SUMY.IR

Dimensions





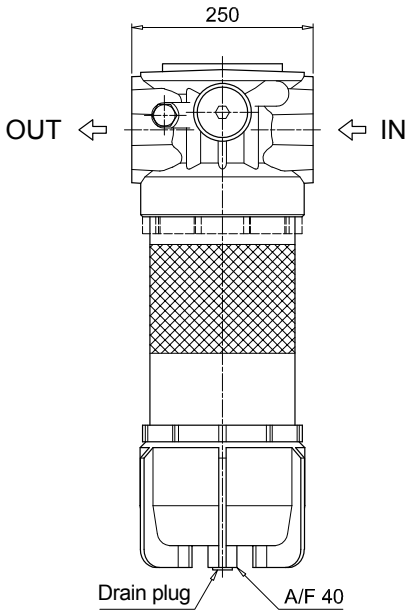


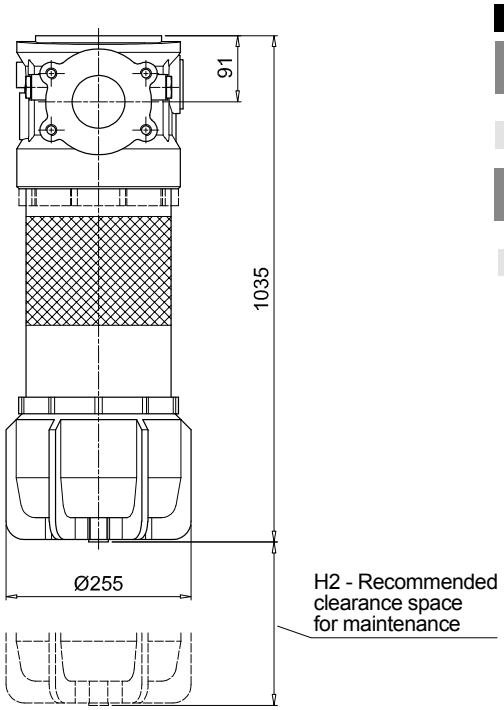
T2 plug = connection for differential pressure indicator

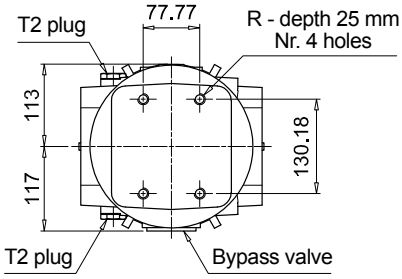
LMP900

Length 1

Connections	R
F1 - F3	M16
F2 - F4	5/8" UNC







T2 plug = connection for differential pressure indicator

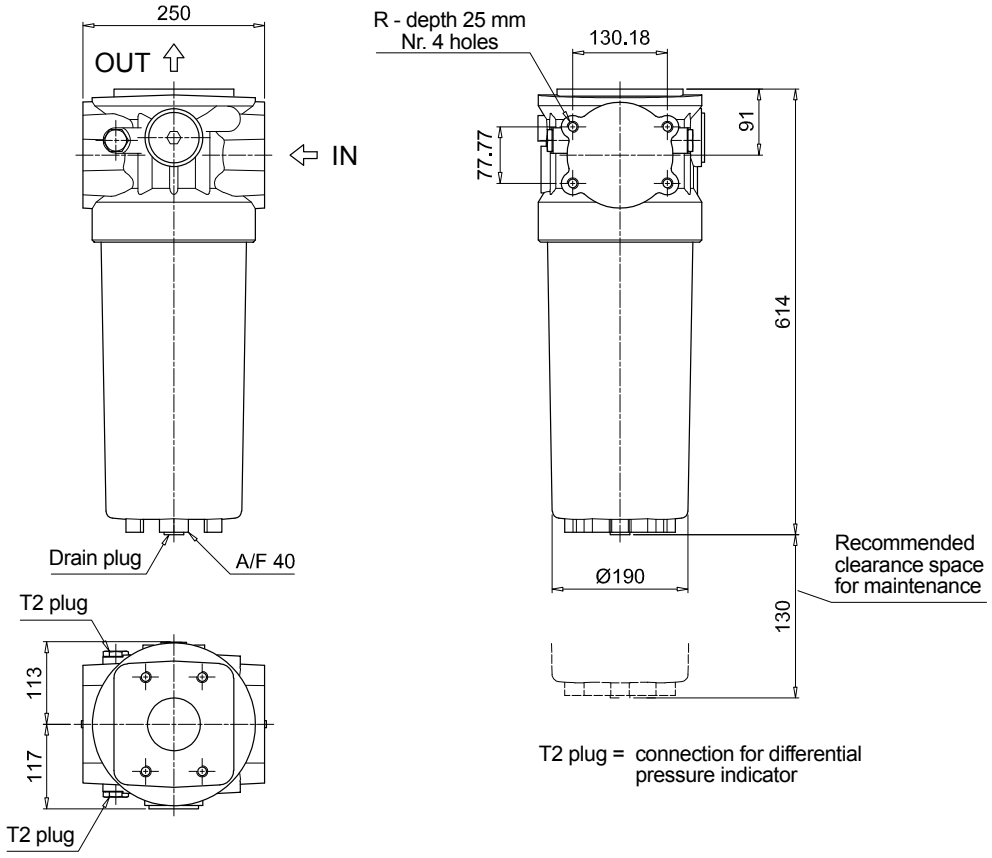
LMP900

Length 2

Execution	H2 [mm]
P01	130
P02	800

Connections	R
F1 - F3	M16
F2 - F4	5/8" UNC

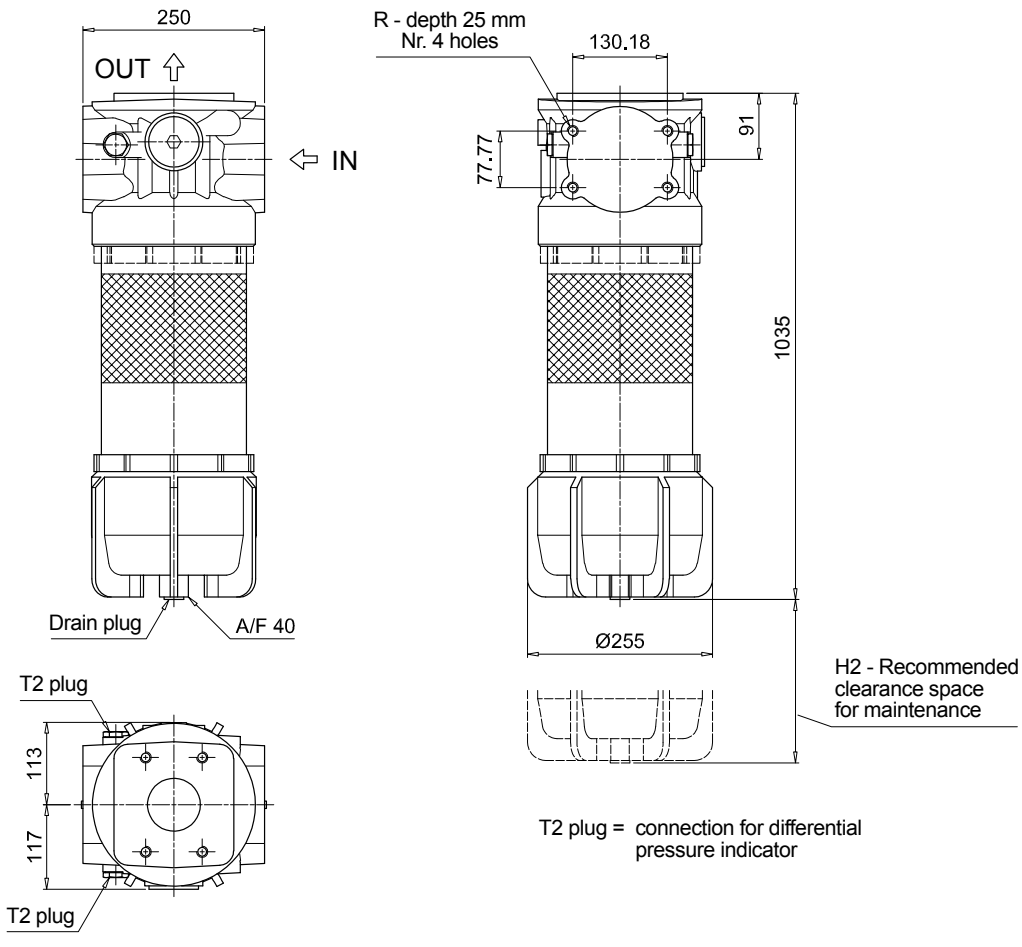
Dimensions



LMP901

Length 1

Connections	R
F1 - F3	M16
F2 - F4	5/8" UNC



LMP901

Length 2

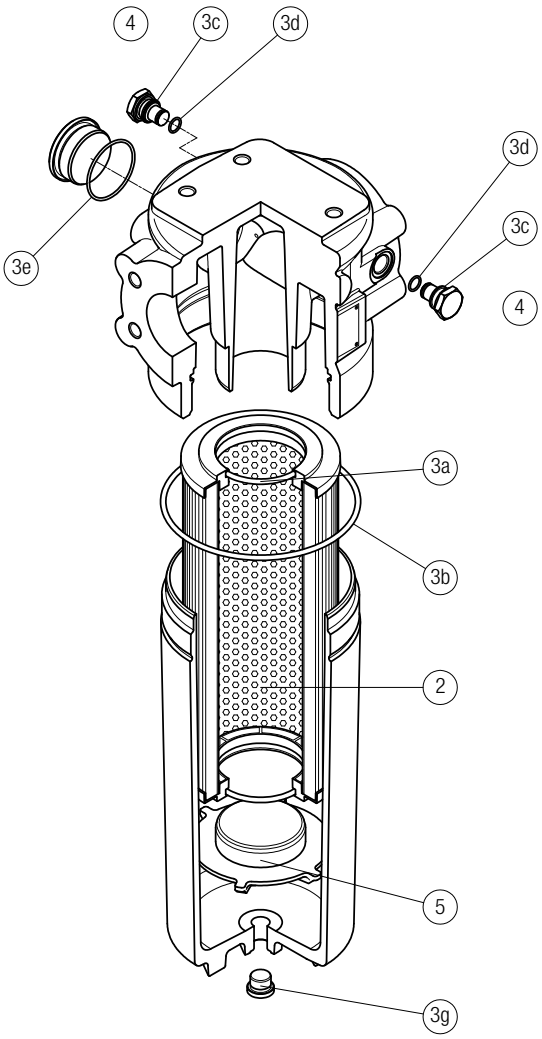
Execution	H2 [mm]
P01	130
P02	800

Connections	R
F1 - F3	M16
F2 - F4	5/8" UNC

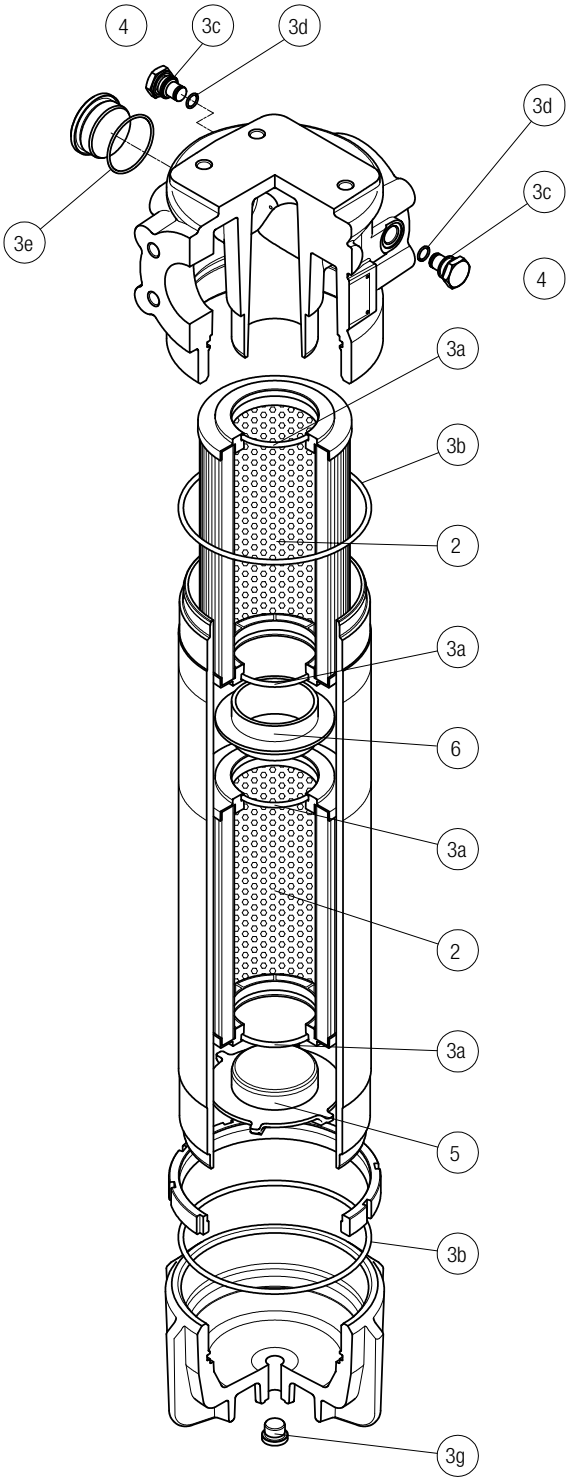
MP FILTRI WWW.SUMY.IR

Order number for spare parts

LMP 900 - 901
length 1



LMP 900 - 901
length 2



Item:	2		3 (3a ÷ 3g)			4			5		6	
Filter series	Filter element Q.ty		Seal Kit code number Q.ty	NBR	FPM	Indicator connection plug Q.ty	NBR	FPM	Housing spigot Q.ty		Coupling spigot Q.ty	
LMP 900-901 length 1	1 pc.	See order table	1 pc.	02050363	02050364	2 pcs.	T2H	T2V	1 pc.	01044104	-	01044099
LMP 900-901 length 2	2 pcs.		1 pc.	02050365	02050366	2 pcs.			1 pc.		1 pc.	

MP FILTRI
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LMP 902-903 series

Filters featuring filter elements designed according to DIN 24550

Maximum working pressure up to 2 MPa (20 bar) - Flow rate up to 3000 l/min



LMP 902-903 GENERAL INFORMATION

Filters featuring filter elements designed according to DIN 24550

Description

Low & Medium Pressure filters

Maximum working pressure up to 2 MPa (20 bar)
Flow rate up to 3000 l/min

LMP902 and LMP903 are ranges of low pressure filter with large filtration surface mainly suitable for lubrication, off-line filtration of the reservoirs and filtration equipment.
Multiple LMP950 filters are connected to a manifold to reduce the pressure drop caused by the filter media and to increase the life time of the filter element.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:
- 4" flanged connections, for a maximum flow rate of 3000 l/min
- Filter element designed in accordance with DIN 24550 regulation
- Fine filtration rating, to get a good cleanliness level into the system
- Water removal elements, to remove the free water from the hydraulic fluid. For further information, see the Contamination Management document and the dedicate leaflet.
- Bypass valve, to relieve excessive pressure drop across the filter media
- Vent ports, to avoid air trapped into the filter going into the system
- Drain ports, to remove the fluid from the housing prior the maintenance work
- Visual, electrical and electronic differential clogging indicators

Common applications:
- Off-line filtration of reservoirs
- Filtration systems

Technical data

Filter housing materials
- Head: Anodized aluminium
- Housing: Anodized aluminium
- Manifolds: Welded - Phosphatized steel
- Bypass valve: Steel
- Size 1000 filter elements complying with DIN 24550 standard

Pressure
- Test pressure: 3 MPa (30 bar)
- Min. Burst pressure: 6 MPa (60 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 2 MPa (20 bar)

Bypass valve
- Opening pressure 0.35 MPa (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 designed in accordance with DIN 24550
Size: 1000

Filter element features

Filter		Filter element	
LMP 902 - 903		CU	
Δp Element type			
Element media	Construction	Δp Series	Δp
A - Microfiber	Standard	N	20 bar
M - Wire mesh	Standard	N	20 bar
P - Paper	Standard	N	20 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals
- Standard NBR series A
- Optional FPM series V

Temperature
From -25 °C to +110 °C

Connections
LMP 902-903: In-line Inlet/Outlet

Note
LMP 902 - 903 filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]	Volumes [dm³]
	Length 2	Length 2
LMP 902	89.6	58
LMP 903	129.2	87

MP FILTRI WWW.SUMY.IR

Filters featuring filter elements designed according to DIN 24550

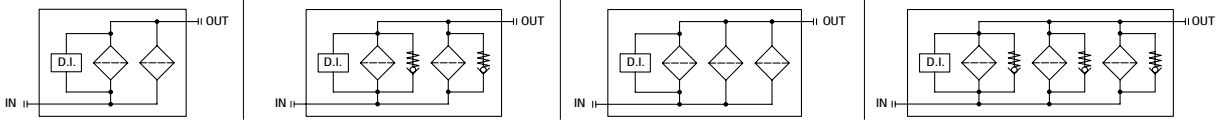
Flow rates [l/min]

Filter series	Length	Filter element design - N Series					
		A03	A06	A10	A16	A25	M25 M60 M90
LMP 902	**2**	2217	2576	3241	3282	3506	3987
LMP 903	**2**	2838	3170	3720	3755	3926	4278

Maximum flow rate for a complete low and medium pressure filter with a pressure drop Δp = 0.7 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

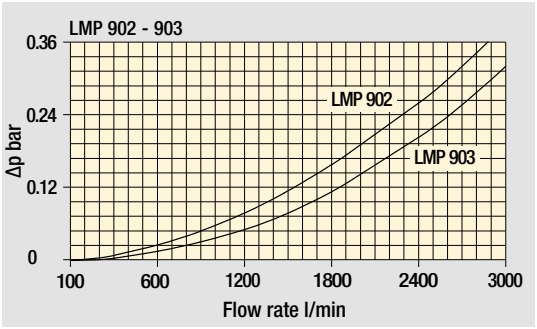
Hydraulic diagram

Filter series	Execution S	Execution B	Execution S	Execution B
LMP 902	•	•	-	-
LMP 903	-	-	•	•

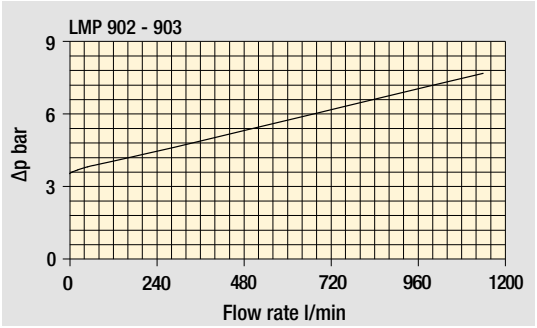


Pressure drop

Filter housings Δp pressure drop



Bypass valve pressure drop

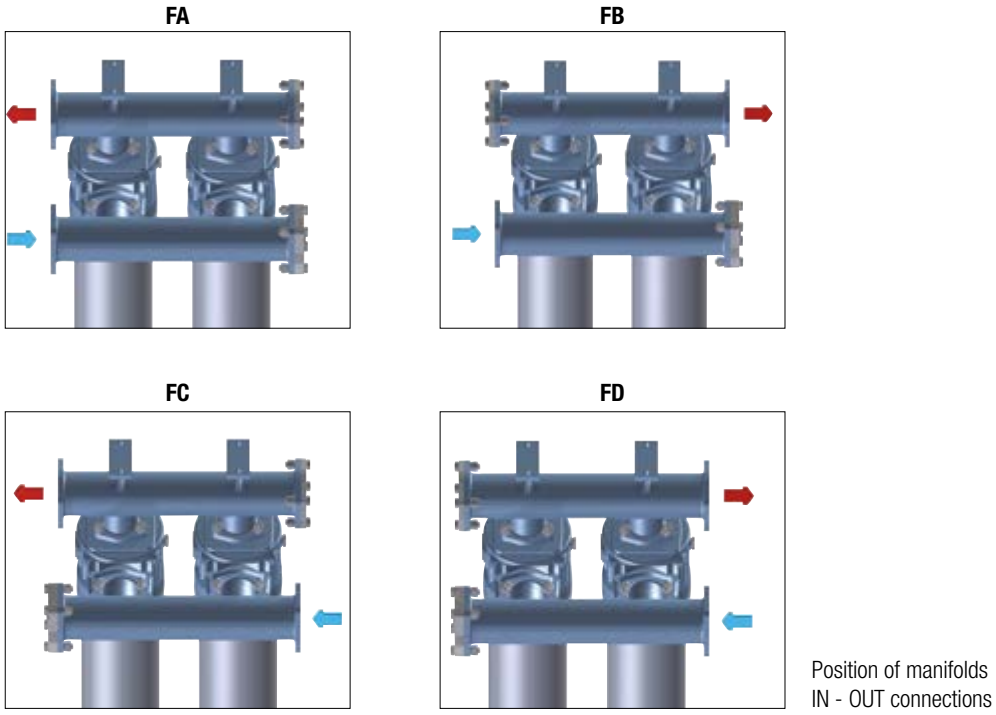


The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

LMP 902-903 GENERAL INFORMATION

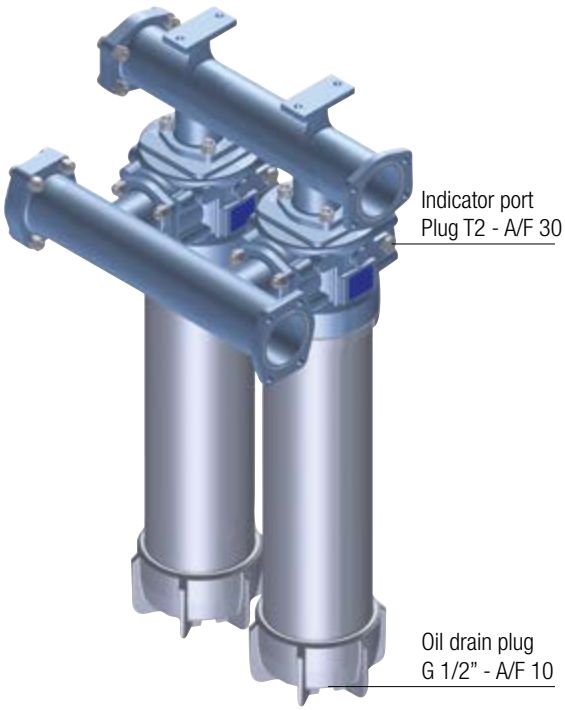
Filters featuring filter elements designed according to DIN 24550

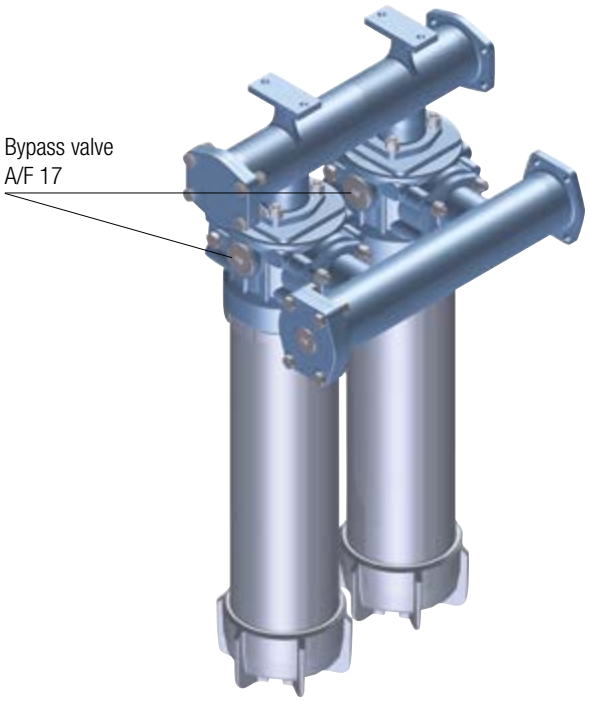
Manifolds



Position of manifolds
IN - OUT connections

Focus on





MP FILTRI
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Designation & Ordering code

COMPLETE FILTER

Configuration example: LMP902 | 2 | B | A | FA | A10 | N | P01

Series and size
LMP902 | **LMP903**

Length
2

Bypass valve
S Without bypass
B With bypass 3.5 bar

Seals and treatments
A NBR
V FPM

Connections	IN	OUT
FA 4" SAE 3000 psi	left	left
FB 4" SAE 3000 psi	left	right
FC 4" SAE 3000 psi	right	left
FD 4" SAE 3000 psi	right	right

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm			
A25	Inorganic microfiber	25 µm			

WA025 Water absorber inorganic microfiber 25 µm

Element Δp
N 20 bar

Execution
P01 MP Filtri standard
Pxx Customized

FILTER ELEMENT

Configuration example: CU900 | A10 | A | N | P01

Element series and size
CU900

Filter series and size
LMP902 Nr. 4 filter elements
LMP903 Nr. 6 filter elements

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**M25**	Wire mesh	25 µm
A06	Inorganic microfiber	6 µm	**M60**	Wire mesh	60 µm
A10	Inorganic microfiber	10 µm	**M90**	Wire mesh	90 µm
A16	Inorganic microfiber	16 µm			
A25	Inorganic microfiber	25 µm			

WA025 Water absorber inorganic microfiber 25 µm

Seals
A NBR
V FPM

Element Δp
N 20 bar

Execution
P01 MP Filtri standard
Pxx Customized

CLOGGING INDICATORS

See page 784

DEA Electrical differential pressure indicator
DEM Electrical differential pressure indicator
DEU Electrical differential pressure indicator
DLA Electrical / visual differential pressure indicator
DLE Electrical / visual differential pressure indicator
DTA Electronic differential pressure indicator
DTI I-O Link electronic differential pressure indicator
DVA Visual differential pressure indicator
DVM Visual differential pressure indicator

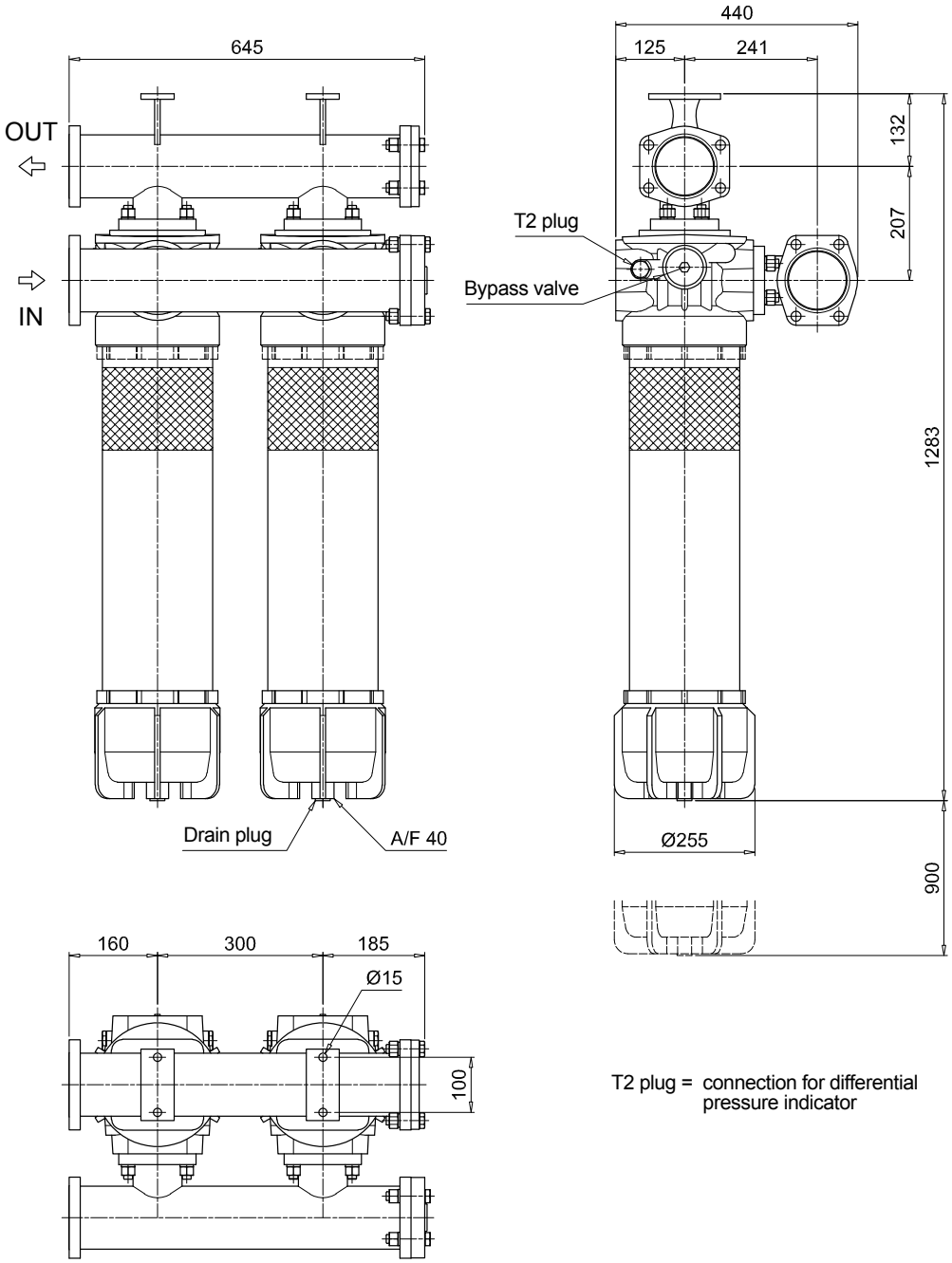
PLUGS

See page 807

T2 Plug

MP FILTRI WWW.SUMY.IR

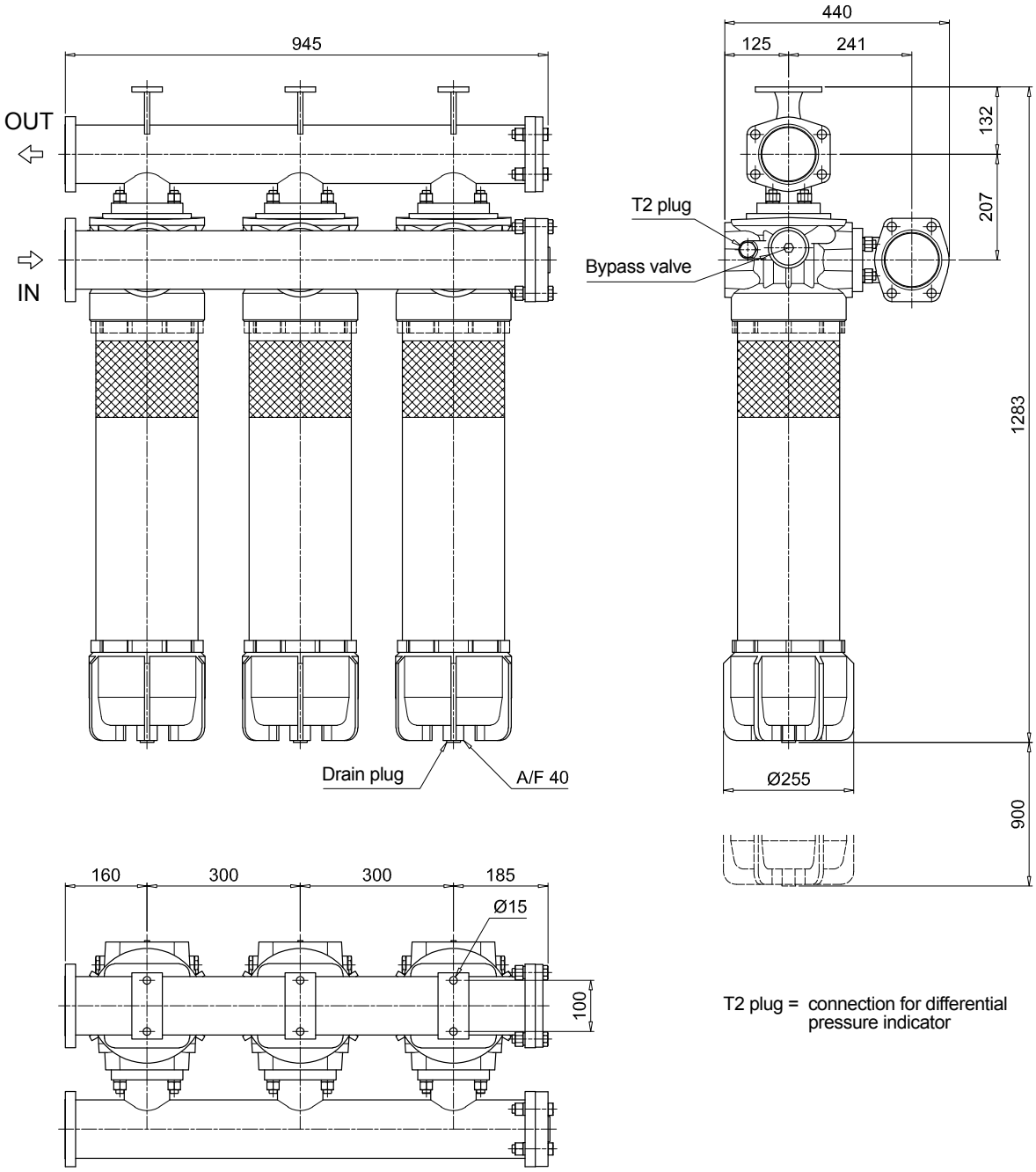
LMP902



T2 plug = connection for differential pressure indicator

Dimensions

LMP903

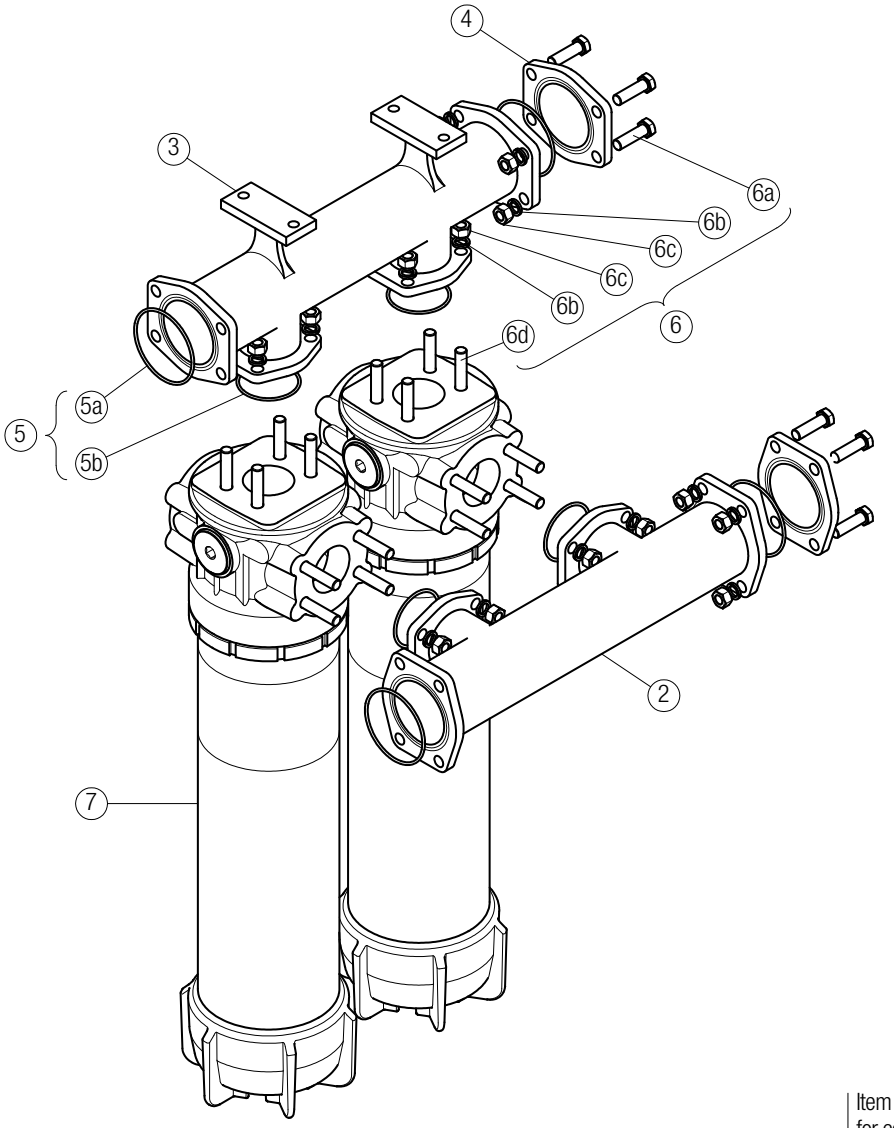


T2 plug = connection for differential pressure indicator

MP FILTRI WWW.SUMY.IR

Order number for spare parts

LMP 902 - 903



Item 7:
for complete filter code and spare parts, see LMP 900 - 901 series chapter

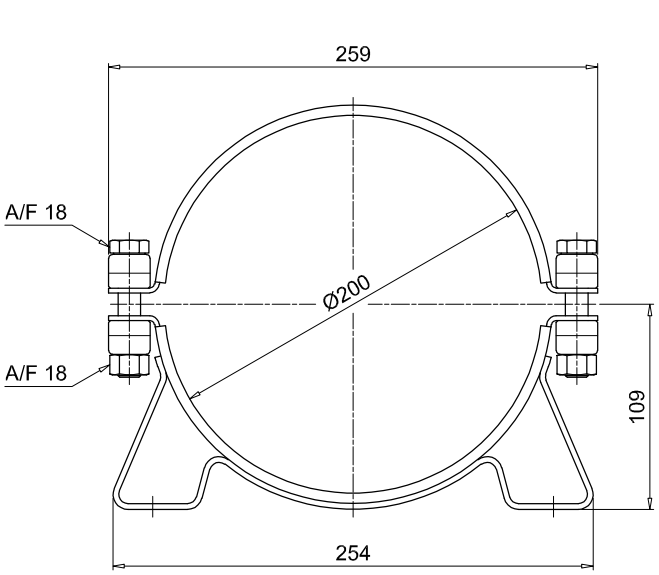
Quantity:
- filter spare parts:
LMP 902 - 2 pcs.
LMP 903 - 3 pcs.

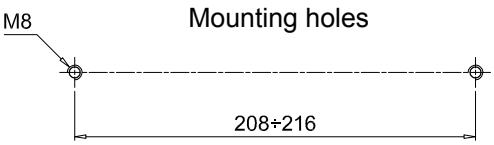
- filter seal kit:
LMP 902 - 2 pcs.
LMP 903 - 3 pcs.

Item:	2	3		4		5 (5a-5b)			6 (6a ÷ 6d)		7	
Filter series	Manifold			4" SAE 3000 psi plugged flange		Manifolds seal kit			Threaded fasteners kit		Filter	
	Q.ty	IN	OUT	Q.ty		Q.ty	NBR	FPM	Q.ty		Q.ty	
LMP 902	1 pc.	01039270	01039271	2 pcs.	01042012	1 pc.	02050404	02050405	1 pc.	02049051	2 pcs.	LMP9012xxF1xxxNP02
LMP 903	1 pc.	01039337	01039338	2 pcs.		1 pc.	02050404	02050405	1 pc.	02049052	3 pcs.	

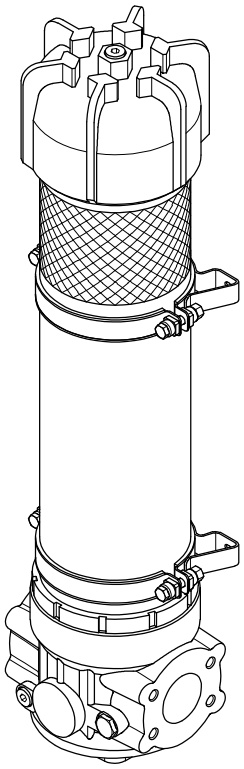
Accessories

RETAINING CLAMP





example
LMP950



Configuration example: CFA | 20 | M | P01

Series
CFA Retaining clamp

Size
20

Screw
M Metric

Execution
P01 MP Filtri standard

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Low-pressure filtration units for lubrication systems in industrial applications.
Designed specifically for lubrication circuits in industrial settings - such as for instance refineries and both onshore and offshore installations - the MLPX filter range offers high-efficiency filtration with a large filter surface area.
Available in two series: MLPX, featuring a single filter unit, and MLDX, featuring a switchable duplex filter. Both series can include one or more filter elements per filter, according to the selected size.

Advantages for installation:
- Compact design for efficient space usage and simplified installation process
- Wide selection of flange connections and flow rates
- Certified components readily available on the market for faster replacement and procurement
- Compliant with international design and construction standards

Advantages for operation:
- Significant reduction of contamination in the lubrication circuit
- Enhanced stability and sealing of the filter element, even during transport
- Multiple filter elements minimize pressure drop and maximize dirt-holding capacity
- Filter element equipped with a practical handle for easier replacement
- Dual-side ports for indicator installation, offering flexible positioning to suit the user's needs

MP FILTRI
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High capacity industrial filters



Filter sizing and corrective factors	page 490
MLPX / MLPC	493
MLDX / MLDC	507
INDICATORS	785

WWW.SUMY.IR

THE CORRECT FILTER SIZING HAS TO BE BASED ON THE TOTAL PRESSURE DROP DEPENDING ON THE APPLICATION.

The pressure drop calculation is performed by adding together the value of the housing with the value of the filter element. The pressure drop Δpc of the housing is proportional to the fluid density (kg/dm³ / lb/ft³).
The filter element pressure drop Δpe is proportional to its viscosity (mm²/s / SUS), the corrective factor Y have to be used in case of an oil viscosity different than 30 mm²/s (cSt) / 150 SUS.

Sizing data for single filter element, head at top

Δpc = Filter housing pressure drop [bar / psi]
Δpe = Filter element pressure drop [bar / psi]
Y = Corrective factor Y (see correspondent table), depending on the filter type, on the filter element size, on the filter element length and on the filter media
Q = flow rate (l/min - gpm)
V1 reference oil viscosity = 30 mm²/s (cSt) /150 SUS
V2 = operating oil viscosity in mm²/s (cSt) / SUS

Filter element pressure drop calculation with an oil viscosity different than 30 mm²/s (cSt) / 150 SUS

International system:
Δpe = Y : 1000 x Q x (V2:V1)

Imperial system:
Δpe = Y : 17.2 x Q x (V2:V1)

Δp Tot. = Δpc + Δpe

Verification formula

Δp Tot. ≤ Δp max allowed

Maximum total pressure drop (Δp max) allowed by a new and clean filter

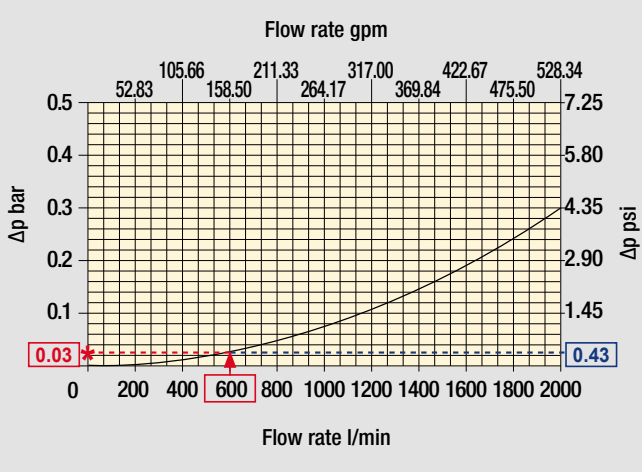
Filter family	Δp max	
	[bar]	[psi]
High Capacity Industrial filters	0.70 bar	10.15 psi

Filter pressure drop calculation example

Application data:
Selected filter: **MLPX 631 length 20**
Selected filter element: **LPX 630 length 20**
Selected filtration rating: **40 µm** absolute filtration with microfibre
Pressure Pmax = **16 bar / 232 psi**
Flow rate Q = **600 l/min / 158.5 gpm**
Viscosity V2 = 46 mm²/s (cSt) / 216 SUS
Oil density = 0.86 kg/dm³ / 53.68 lb/ft³

Calculation:
Δpc = 0.03 bar / 0.43 psi (see graphic below)

MLPX 631 - Length 20



Filter housings Δp pressure drop.
The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

Filter element		Absolute filtration Filter Elem. Δp Series: D					Nominal filtration Filter Elem. Δp Series: D
Type	Length	A0003	A0006	A0010	A0025	A0040	M0060 - M0090 - M00250
LPX 630	10	3.10	2.48	1.32	0.92	0.83	0.09
	20	2.06	1.92	0.82	0.38	0.33	0.08

Δpe = (0.33 : 1000) x 600 x (46 : 30) = 0.30 bar
Δpe = (0.33 : 17.2) x 158.5 x (216 : 150) = 4.38 psi

√ **Δp Tot. = 0.03 + 0.30 = 0.33 bar**
Δp Tot. = 0.43 + 4.38 = 4.81 psi

The selection is correct because the total pressure drop value is inside the admissible range for high capacity industrial filters.
In case the max allowed total pressure drop is not verified, it is necessary to repeat the calculation changing the filter and/or filter element length/size.

MP FILTRI WWW.SUMY.IR

Filter element		Absolute filtration Filter element ΔP Series: D					Nominal filtration Filter Element ΔP Series: D
Type	Length	A0003	A0006	A0010	A0025	A0040	M0060 - M0090 - M0250
LPX 630	10	1.36	1.22	0.53	0.26	0.22	0.08
	20	0.68	0.60	0.28	0.12	0.10	0.04
MRC 850	20	0.37	0.26	0.23	0.11	0.08	0.03
	30	0.27	0.18	0.17	0.05	0.04	0.02
	40	0.23	0.16	0.13	0.04	0.03	0.02

Corrective factor Y to be used for the filter element pressure drop calculation. The values depend to the filter size and length and to the filter media.
Reference oil viscosity 30 mm^2/s

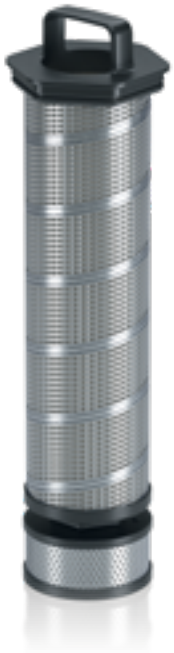
MYCLEAN

THE X CONCEPT FOR OUR FILTERS

Designed and manufactured in compliance with the PED regulation (Europe only), our components feature practical solutions such as the filter element with handle, designed to simplify replacement. The positioning of the filter element has been engineered to ensure stability in its housing and sealing integrity, even during transport.

MLPX series

with MYCLEAN LPX Filter Element



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

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

The products identified as MLPX are protected by:

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

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

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MLPX / MLPC series

Maximum working pressure up to 1.6 MPa (16 bar) - Flow rate up to 13500 l/min



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MLPX - MLPC GENERAL INFORMATION

Description

High capacity industrial filters - simplex type

Maximum working pressure up to 1.6 MPa (16 bar)
Flow rate up to 13500 l/min

MLPX / MLPC is a range of low pressure simplex filters with large filtration surface mainly suitable for high capacity applications in industrial lubrication systems.
Multiple filter elements can be fitted in parallel into the housing to reduce the pressure drop caused by the filter media and to increase the dust holding capacity of the filter.
They are directly connected to the lines of the system through the hydraulic flanges.

Available features:

- Flanged connections EN 1092-1 up to DN200 (MLPX) - DN100 (MLPC), for a maximum flow rate of 13500 l/min
- Base-mounting design for ease of the replacement of the filter elements
- Single filter elements
- In to Out filtration, to reduce the risk of residual contamination going into the system during the maintenance works
- Fine filtration rating, to get a good cleanliness level into the system
- Bypass valve, to relieve excessive pressure drop across the filter media
- Vent ports, to avoid air trapped into the filter going into the system
- Drain ports, to remove the fluid from the housing prior the maintenance works
- Visual, electrical and electronic differential pressure clogging indicators
- MYclean interface connection for the filter element, to protect the product against non-original spare parts (only for MLPX series)

Common applications:

- Lubrication systems
- Off-line filtration of reservoirs
- Filtration systems

Technical data

Filter housing materials

- Body and cover: blue-painted carbon steel
- Fasteners: galvanized steel
- Indicator block, plugs: phosphatized steel
- Nameplate: plastic

Pressure

- Test pressure: 2.4 MPa (24 bar)
- Min. Burst pressure: 4.8 MPa (48 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 1.6 MPa (16 bar)

All MLPX and MLPC filters are 100% pressure-tested

Bypass valve

- Opening pressure:
  0.35 MPa (3.5 bar) ±10% (MLPX series)
  0.175 MPa (1.75 bar) ±10% (MLPC series)

Filter element features

Filter	Filter element
MLPX	LPX
MLPC	MRC

Δp Element type

Element media	Construction	Δp Series	Δp
A - Microfiber	Standard	D	10 bar
M - Wire mesh	Standard	D	10 bar

Please see ordering code tables to check element Δp series availability based on filter features.

Flow direction through the filter element:
From IN to OUT

Seals

- Standard NBR series A

Temperature

From -10 °C to +100 °C

Note

MLPX and MLPC filters are equipped with slotted mounting brackets, designed to be bolted to the foundation.

Weights [kg] and volumes [dm³]

Filter series	Length	Connection nom. dia. [DN]	Weights [kg]	Volumes [dm³]
MLPX 631	10	**65**	90	26
	20	**80**	100	42
	20	**100**	115	43
MLPC 851	20	**80**	79	48
	20	**100**	82	50
	30	**80**	81	63
	30	**100**	84	65
	40	**80**	83	76
	40	**100**	86	78
MLPX 633	20	**125**	265	153
MLPX 634	20	**150**	345	215
MLPX 635	20	**200**	425	270

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Flow rates [l/min]

Filter element design - D Series							
Filter series	Length	A0003	A0006	A0010	A0025	A0040	M0060 M0090 M0250
MLPX 631	**10**	501	555	1140	1783	1927	2575
	20	935	1035	1718	2364	2467	2808
MLPC 851	**20**	1613	2050	2204	3034	3307	3832
	30	2003	2504	2571	3611	3720	3948
	40	2204	2641	2860	3832	3832	3948
MLPX 633	**20**	2914	3252	5782	8583	9062	10707
MLPX 634	**20**	3731	4128	6810	9314	9708	11014
MLPX 635	**20**	4644	5133	8406	11418	11889	13445

Maximum flow rate for a complete delivery filter with a pressure drop Δp = 0.7 bar.

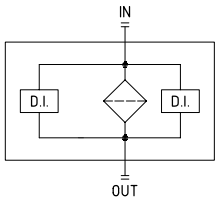
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.

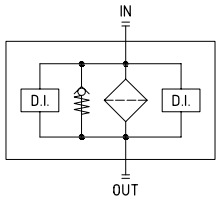
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

Please, contact our Sales Department for further additional information.

Hydraulic diagram

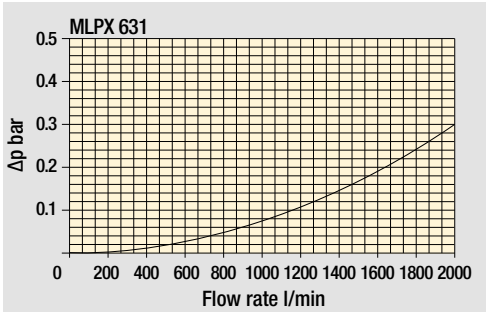
Filter series	00 - without bypass	17 - with bypass 1.75 bar	35 - with bypass 3.5 bar
MLPX 631-633-634-635	-	-	•
MLPC 851	•	•	-

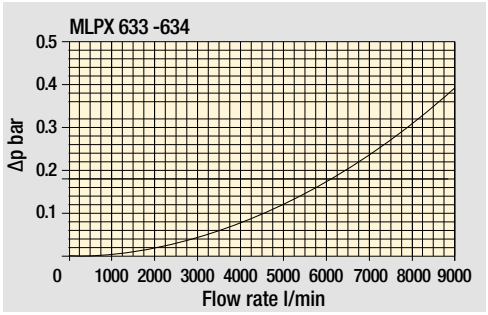


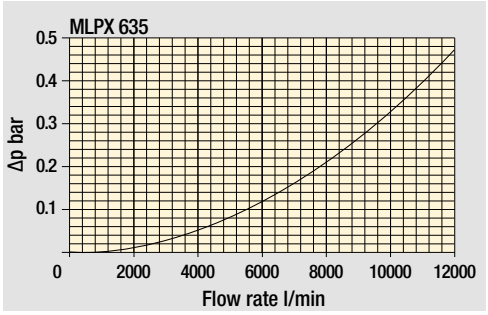


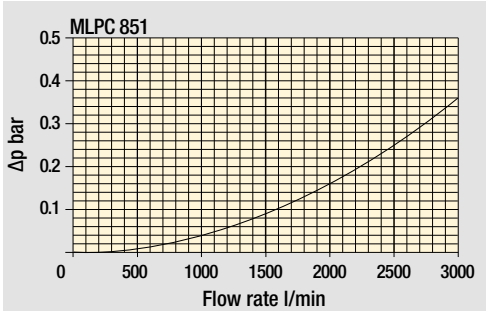
Pressure drop

Filter housings
Δp pressure drop









The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

Designation & Ordering code

COMPLETE FILTER

Example :	MLPX	633	20	A0010	D	A	35	FD125	0	6T	NN	P01	NN

Series

MLPX Filter featuring MYCLEAN Filter Element

Filter size — Nr. of elements LPX 630

MLPX 631	1
MLPX 633	3
MLPX 634	4
MLPX 635	5

Length

Length	Filter size 631	633	634	635
10	•	-	-	-
20	•	•	•	•

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0025	Inorganic microfiber	25 µm
A0040	Inorganic microfiber	40 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
M0250	Wire mesh	250 µm

Element Δp

D 10 bar

Seals

A NBR

Bypass

35 With bypass 3.5 bar

Connections

Connections	631 size / 10 length	631 size / 20 length	633 size / 20 length	634 size / 20 length	635 size / 20 length
FD065 Flange EN 1092-1 / 01A / **DN 65** / PN 16	•	-	-	-	-
FD080 Flange EN 1092-1 / 01A / **DN 80** / PN 16	-	•	-	-	-
FD100 Flange EN 1092-1 / 01A / **DN 100** / PN 16	-	•	-	-	-
FD125 Flange EN 1092-1 / 01A / **DN 125** / PN 16	-	-	•	-	-
FD150 Flange EN 1092-1 / 01A / **DN 150** / PN 16	-	-	-	•	-
FD200 Flange EN 1092-1 / 01A / **DN 200** / PN 16	-	-	-	-	•

Additional connections

0 Without additional connections

Connections for clogging indicators

6T With both side indicator connection, with metal plugs

Additional features

NN Without additional features

Execution

P01 Standard catalogue item

Certificates

NN None

CLOGGING INDICATORS

See page 785

DEA Electrical differential pressure indicator
DEM Electrical differential pressure indicator
DLA Electrical / visual differential pressure indicator
DLE Electrical / visual differential pressure indicator
DTA Electronic differential pressure indicator
DTI I-O Link electronic differential pressure indicator
DVA Visual differential pressure indicator
DVM Visual differential pressure indicator

PLUGS

See page 807

T2 Plug

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FILTER ELEMENT

Config. example: LPX | 630 | 20 | A0010 | D | A | 35 | NN | P01 | NN

Series
LPX Filter element with MYCLEAN feature

Element size
630

Element length
10 | **20** |

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0025	Inorganic microfiber	25 µm
A0040	Inorganic microfiber	40 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
M0250	Wire mesh	250 µm

Element Δp
D 10 bar

Seals
A NBR

Bypass
35 With bypass 3.5 bar

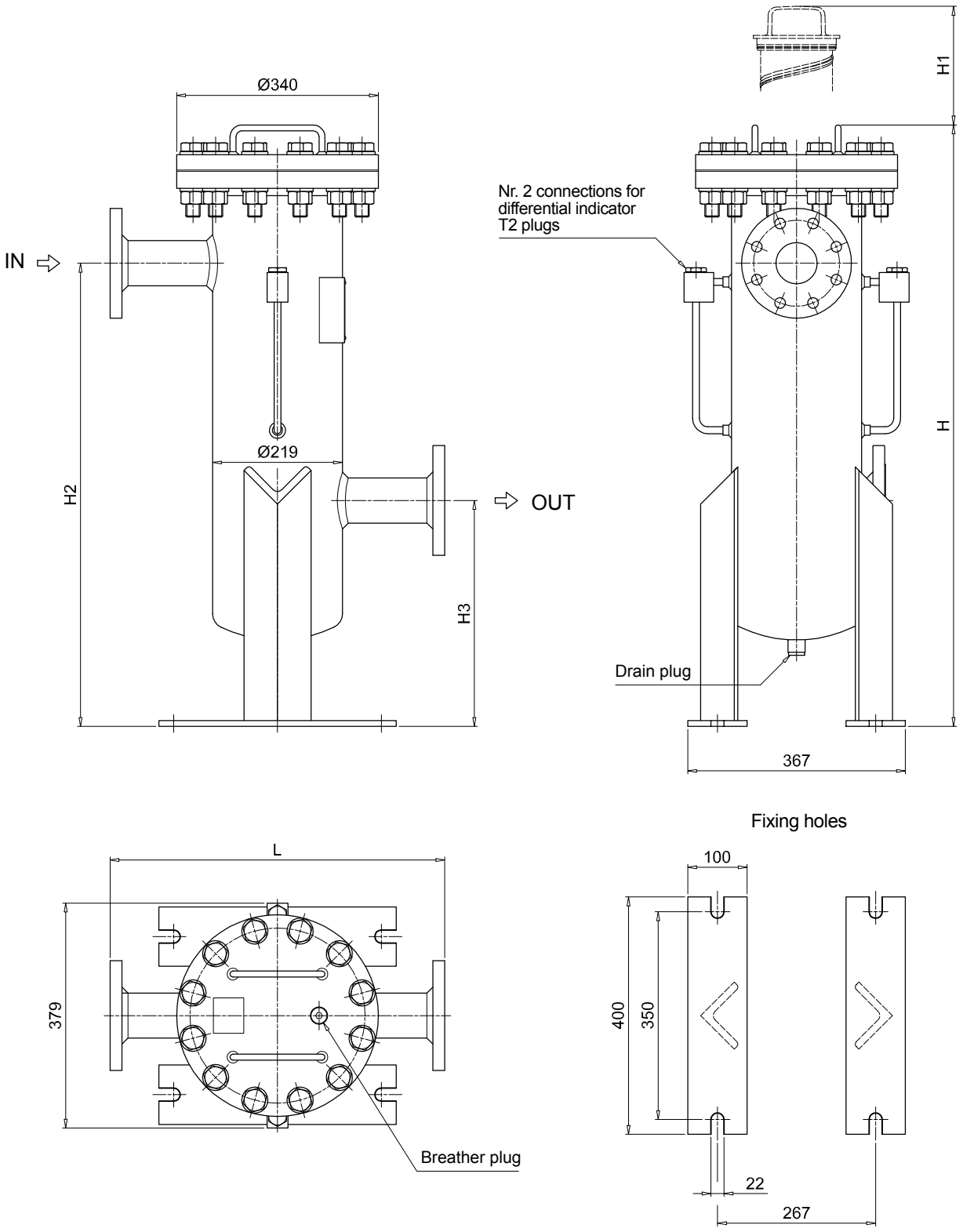
Addictional features
NN Without addictional features

Execution
P01 Standard catalogue item

Certificates
NN None

Dimensions

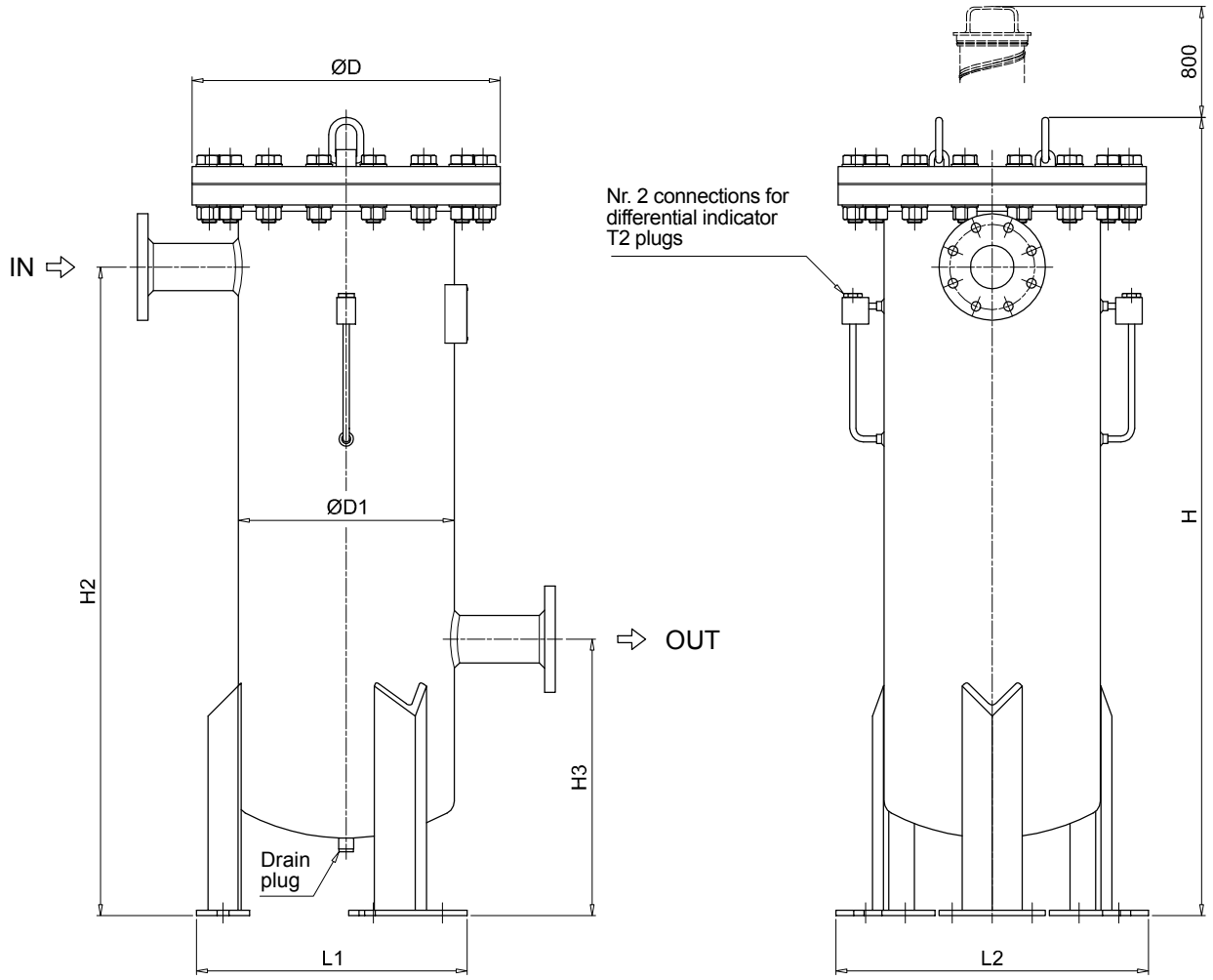
MLPX631

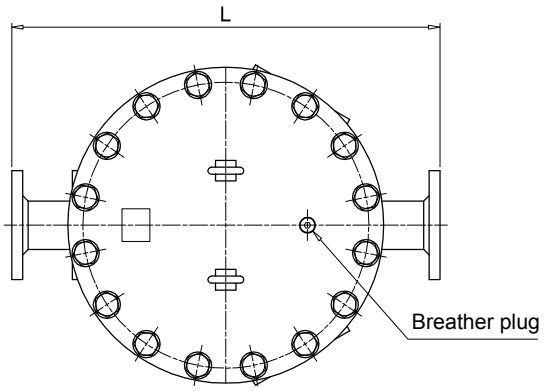


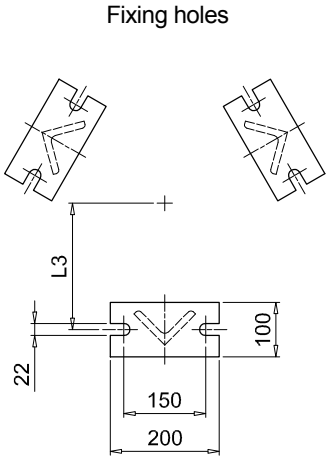
Filter length	Connections	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	L [mm]
10	**DN 65**	1018	435	800	400	564
20	**DN 80**	1430	845	1210	510	584
20	**DN 100**	1430	845	1210	510	600

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MLPX633 - 634 -635







Filter size	Connection	ØD [mm]	ØD1 [mm]	H [mm]	H2 [mm]	H3 [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]
633	**DN 125**	580	406	1565	1280	580	786	509	588	232
634	**DN 150**	640	457	1702	1340	640	840	548	633	258
635	**DN 200**	715	508	1688	1330	630	888	587	678	284

Designation & Ordering code

COMPLETE FILTER

Example :	MLPC	851	20	A0010	D	A	17	FD100	0	6T	NN	P01	NN

Series
MLPC

Filter size Nr. of elements MRC 850
851 1

Length
20
30
40

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0025	Inorganic microfiber	25 µm
A0040	Inorganic microfiber	40 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
M0250	Wire mesh	250 µm

Element Δp
D 10 bar

Seals
A NBR

Bypass
00 Without bypass
17 With bypass 1.75 bar

Connections
FD080 Flange EN 1092-1 / 01A / DN 80 / PN 16
FD100 Flange EN 1092-1 / 01A / DN 100 / PN 16

Additional connections
0 Without additional connections

Connections for clogging indicators
6T With both side indicator connection, with metal plugs

Additional features
NN Without additional features

Execution
P01 Standard catalogue item

Certificates
NN None

CLOGGING INDICATORS See page 785

DEA Electrical differential pressure indicator
DEM Electrical differential pressure indicator
DLA Electrical / visual differential pressure indicator
DLE Electrical / visual differential pressure indicator
DTA Electronic differential pressure indicator
DTI I-O Link electronic differential pressure indicator
DVA Visual differential pressure indicator
DVM Visual differential pressure indicator

PLUGS See page 807

T2 Plug

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Config. example: MRC | 850 | 20 | A0010 | D | A | 00 | NN | P01 | NN

Element series and size
MRC

Element size
850

Element length
20
30
40

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0025	Inorganic microfiber	25 µm
A0040	Inorganic microfiber	40 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
M0250	Wire mesh	250 µm

Element Δp
D 10 bar

Seals
A NBR

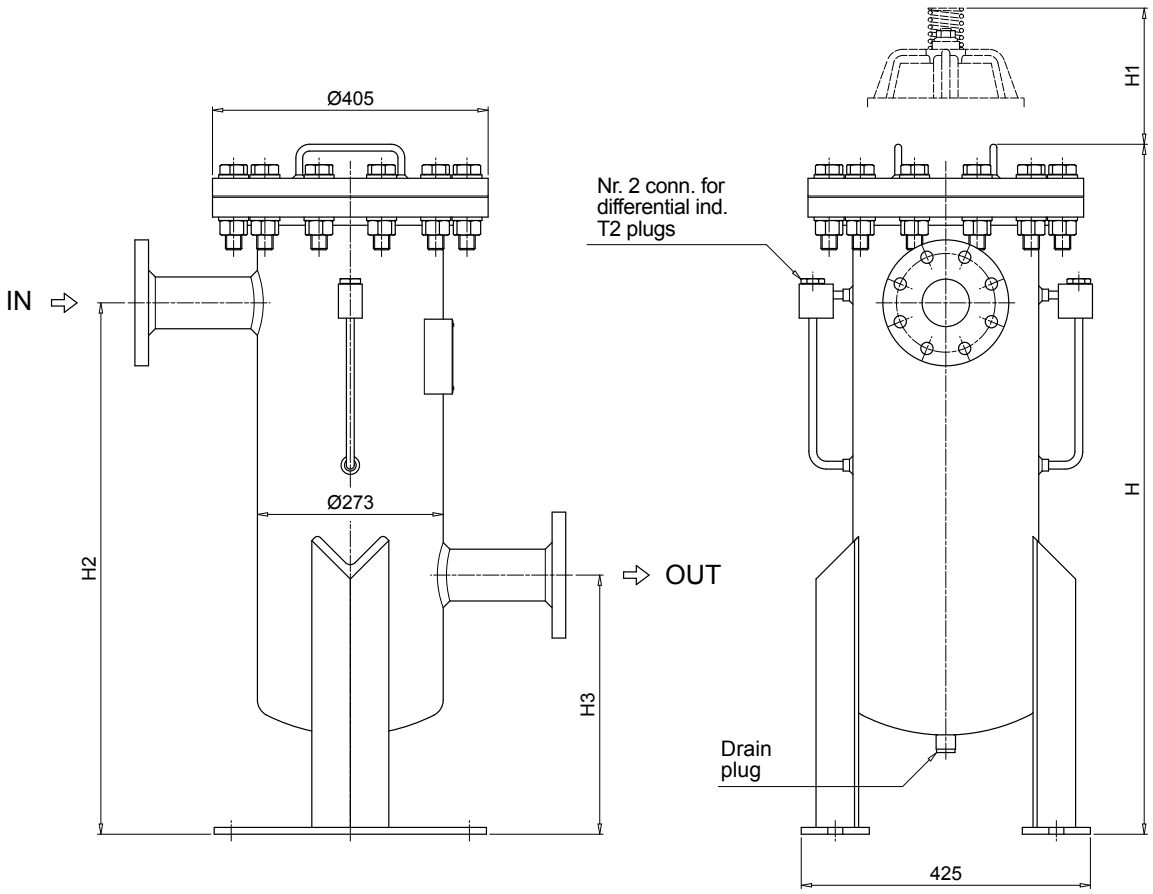
Bypass
00 Without bypass

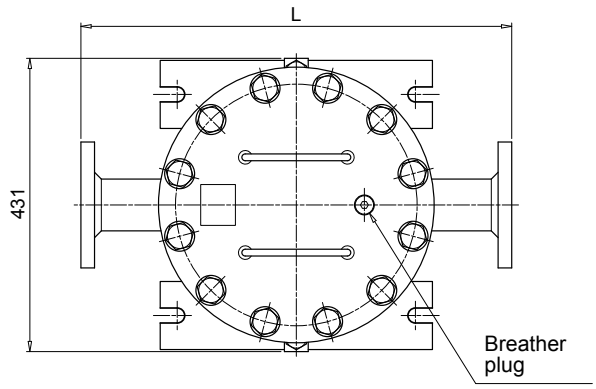
Addictional features
NN Without addictional features

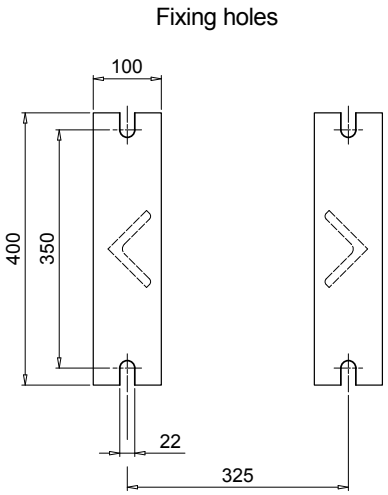
Execution
P01 Standard catalogue item

Certificates
NN None

Dimensions





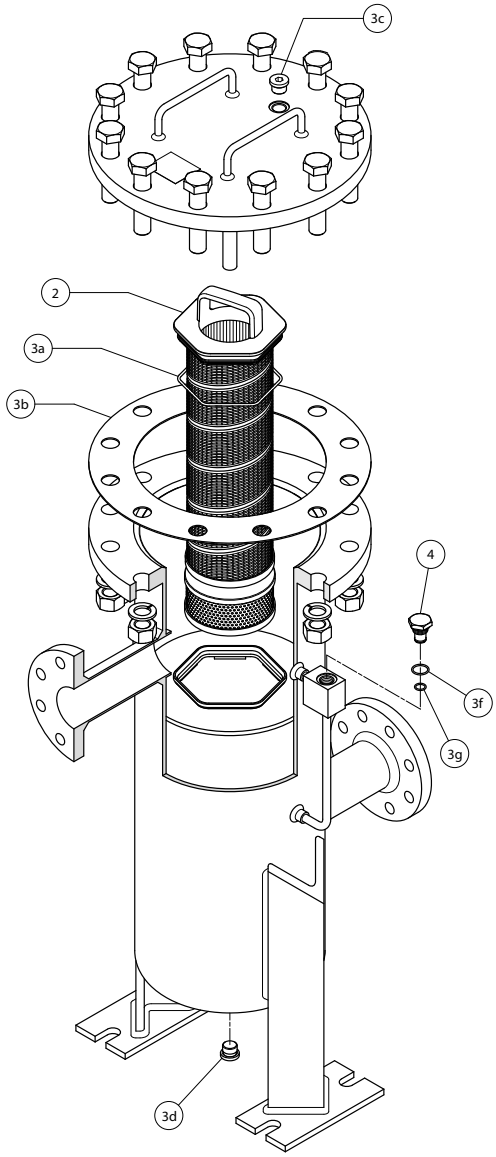


Filter length	H [mm]	H1 [mm]	H2 [mm]	Conn.	H3 [mm]	L [mm]
20	1174	675	940	**DN 80**	520	656
				DN 100	440	668
30	1451	955	1220	**DN 80**	800	656
				DN 100	720	668
40	1722	1220	1490	**DN 80**	1070	656
				DN 100	990	668

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Order number for spare parts

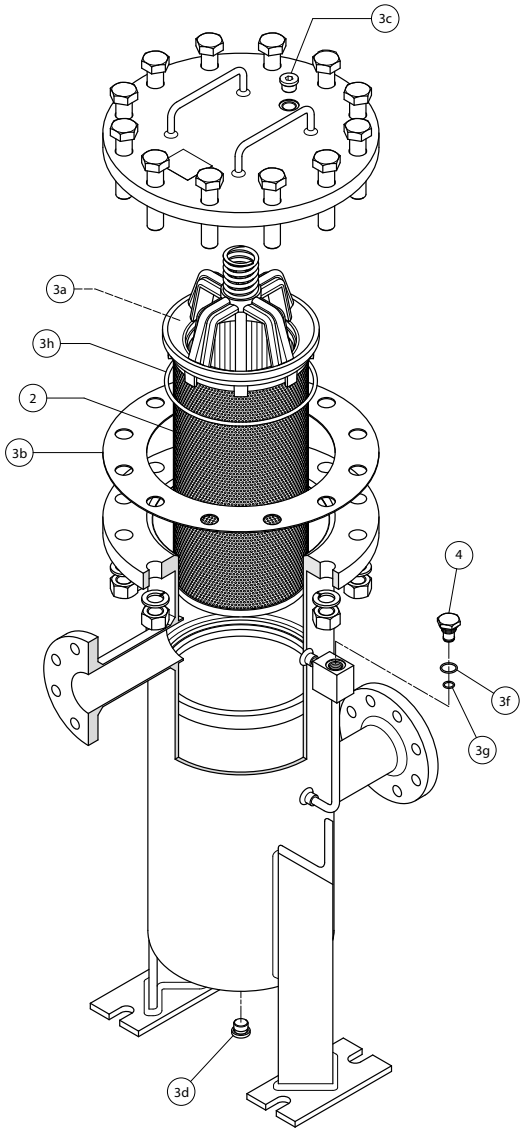
MLPX 631 - 633 - 634 - 635



Item:	2	Q.ty: 1 pc. 3 (3a ÷ 3f)	Q.ty: 2 pcs. 4
Filter series	**Filter element**	**Seal Kit code number NBR**	**Indicator connection plug NBR**
MLPX631	See order table	AK021000684	T2H
MLPX633		AK021000685	T2H
MLPX634		AK021000686	T2H
MLPX635		AK021000687	T2H

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MLPC 851



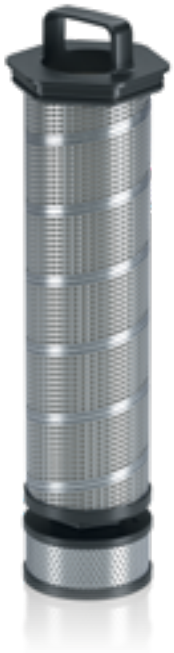
Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3f)	Q.ty: 2 pcs. (4)
Filter series	**Filter element**	**Seal Kit code number NBR**	**Indicator connection plug NBR**
MLPC851	See order table	AK021000786	T2H

THE X CONCEPT FOR OUR FILTERS

Designed and manufactured in compliance with the PED regulation (Europe only), our components feature practical solutions such as the filter element with handle, designed to simplify replacement. The positioning of the filter element has been engineered to ensure stability in its housing and sealing integrity, even during transport.

MLDX series

with MYCLEAN LPX Filter Element



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

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

The products identified as MLDX are protected by:

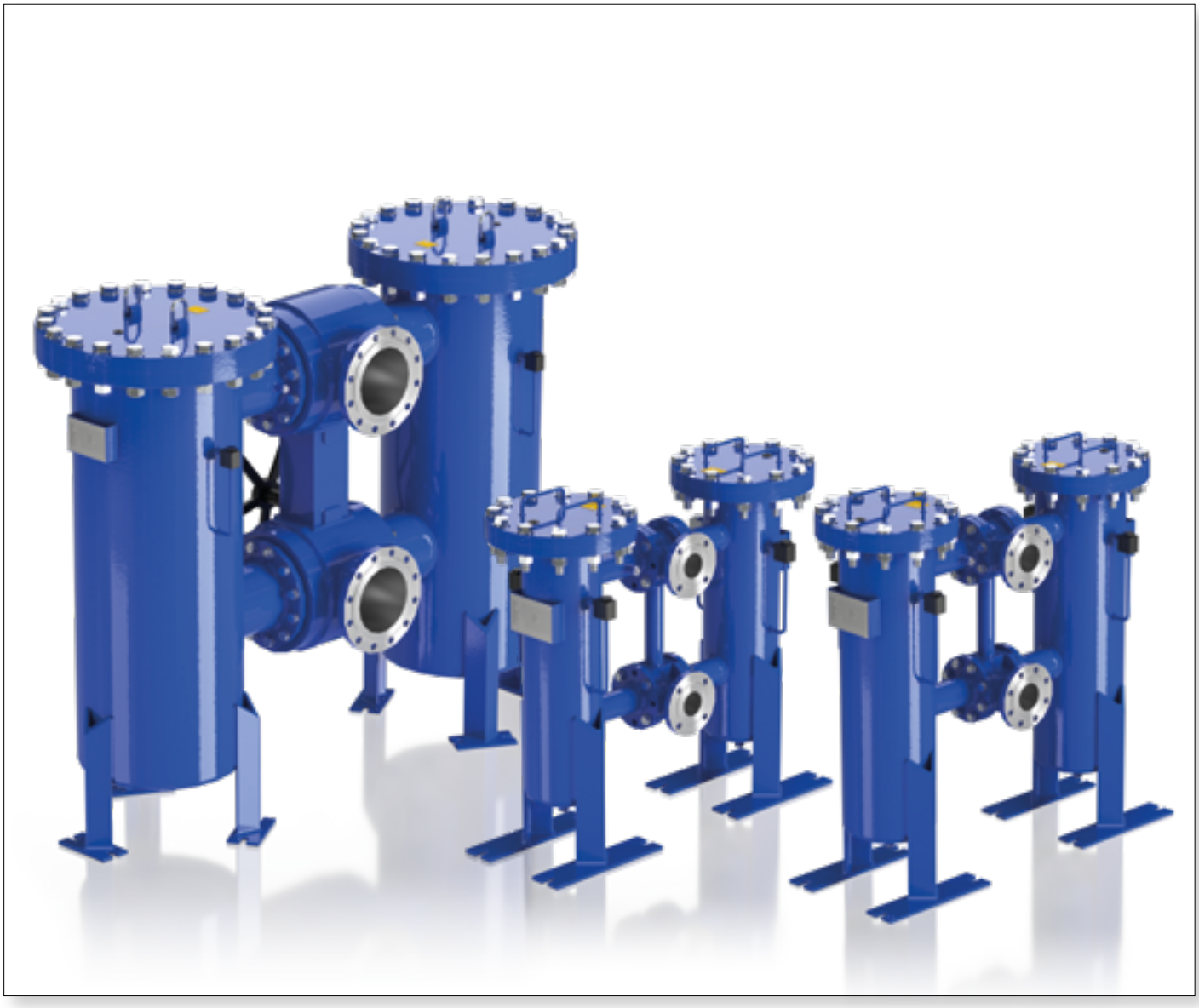
- Italian Patent n° 102014902261205
- Canadian Patent n° 2,937,258
- European Patent n° 3 124 092 B1
- US Patent n° 20170030384 A1

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

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MLDX / MLDC series

Maximum working pressure up to 1.6 MPa (16 bar) - Flow rate up to 8700 l/min



WWW.SUMY.IR

MLDX / MLDC GENERAL INFORMATION

Description

High capacity industrial filters - duplex type

Maximum working pressure up to 1.6 MPa (16 bar)
Flow rate up to 8700 l/min

MLDX/MLDC is a range of versatile low pressure, high capacity duplex filters with integrated changeover function operated by a single-lever or a hand-wheel to allow the filter element replacement without the system shut-down, mainly suitable for high capacity applications in industrial lubrication systems.
Multiple filter elements can be fitted in parallel into the housing to reduce the pressure drop caused by the filter media and to increase the dust holding capacity of the filter.
They are directly connected to the lines of the system through the hydraulic flanges.

Available features:
- Flanged connections EN 1092-1 up to DN200 (MLDX) - DN100 (MLDC), for a maximum flow rate of 8700 l/min
- Base-mounting design for ease of the replacement of the filter elements
- Multiple filter elements, for increased dust-holding capacity
- In to Out filtration, to reduce the risk of residual contamination going into the system during the maintenance works
- Fine filtration rating, to get a good cleanliness level into the system
- Balancing valve, to equalize the housing pressure before the switch
- Bypass valve, to relieve excessive pressure drop across the filter media
- Vent ports, to avoid air trapped into the filter going into the system
- Drain ports, to remove the fluid from the housing prior the maintenance works
- Visual, electrical and electronic differential pressure clogging indicators
- MYclean interface connection for the filter element, to protect the product against non-original spare parts (only for MLDX series)

Common applications:
- Lubrication systems
- Off-line filtration of reservoirs
- Filtration systems

Technical data

Filter housing materials
- Body and cover: blue-painted carbon steel
- Fasteners: galvanized steel
- Indicator block, plugs: phosphatized steel
- Balancing valve: nickel-plated brass
- Nameplate: plastic

Pressure
- Test pressure: 2.4 MPa (24 bar)
- Min. Burst pressure: 4.8 MPa (48 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 1.6 MPa (16 bar)

100% testing: every MLDX and MLDC filter is individually inspected and tested

Bypass valve
- Opening pressure:
  0.35 MPa (3.5 bar) ±10% (MLDX series)
  0.175 MPa (1.75 bar) ±10% (MLDC series)

Filter element features

Filter	Filter element
MLDX	LPX
MLDC	MRC

Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	D	10 bar
M - Wire mesh	Standard	D	10 bar

Please see ordering code tables to check element Δp series availability based on filter features.

Flow direction through the filter element:
From IN to OUT

Seals
- Standard NBR series A

Temperature
From -10 °C to +100 °C

Note
MLDX and MLDC filters are equipped with slotted mounting brackets, designed to be bolted to the foundation.

Weights [kg] and volumes [dm³]

Filter series	Length	Connection nom. dia. [DN]	Weights [kg]	Volumes [dm³]
MLDX 631	10	**65**	240	54
	20	**80**	305	88
	20	**100**	370	91
MLDC 851	20	**80**	242	100
	20	**100**	308	106
	30	**80**	246	130
	30	**100**	312	136
	40	**80**	250	156
	40	**100**	316	162
MLDX 633	20	**125**	685	320
MLDX 634	20	**150**	1035	450
MLDX 635	20	**200**	1285	590

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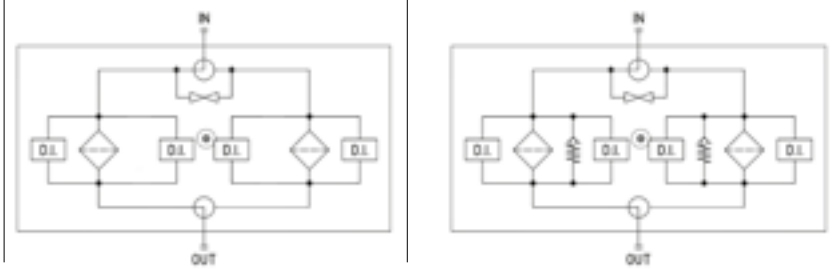
Flow rates [l/min]

Filter element design - D Series							
Filter series	Length	A0003	A0006	A0010	A0025	A0040	M0060 M0090 M0250
MLDX 631	**10**	475	521	933	1257	1318	1562
	20	804	869	1228	1487	1524	1641
MLDC 851	**20**	1508	1860	1979	2581	2768	3116
	30	1823	2203	2253	2971	3043	3192
	40	1979	2303	2459	3116	3116	3192
MLDX 633	**20**	2754	3038	4913	6602	6864	7727
MLDX 634	**20**	3427	3736	5569	7000	7210	7882
MLDX 635	**20**	4113	4456	6401	7835	8040	8693

Maximum flow rate for a complete delivery filter with a pressure drop Δp = 0.7 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
Please, contact our Sales Department for further additional information.

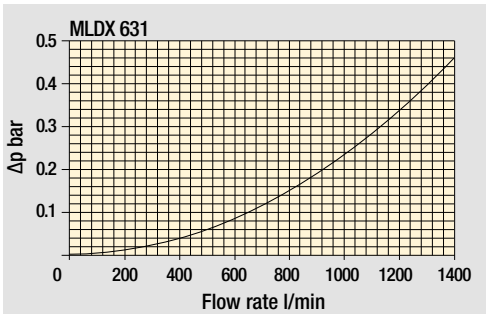
Hydraulic diagram

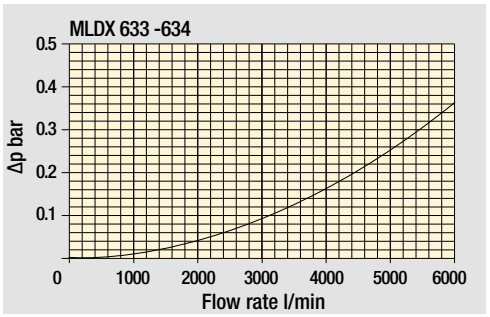
Filter series	00 - without bypass	17 - with bypass 1.75 bar	35 - with bypass 3.5 bar
MLDX 631-633-634-635	-	-	•
MLDC 851	•	•	-

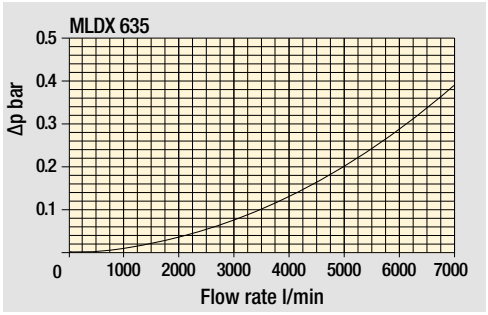


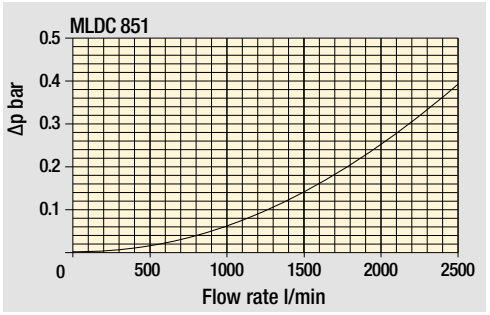
Pressure drop

Filter housings
Δp pressure drop









The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

MLDX MLDX631 - MLDX633 - MLDX634 - MLDX635

Designation & Ordering code

COMPLETE FILTER

Example : MLDX | 633 | 20 | A0010 | D | A | 35 | FD125 | 0 | 6T | NN | P01 | NN

Series

MLDX Filter featuring MYCLEAN Filter Element

Filter size Nr. of elements LPX 630

MLDX 631	1 + 1
MLDX 633	3 + 3
MLDX 634	4 + 4
MLDX 635	5 + 5

Length	Filter size 631	633	634	635
10	•	-	-	-
20	•	•	•	•

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0025	Inorganic microfiber	25 µm
A0040	Inorganic microfiber	40 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
M0250	Wire mesh	250 µm

Element Δp

D 10 bar

Seals

A NBR

Bypass

35 With bypass 3.5 bar

Connections	631 10	631 20	633 20	634 20	635 20
FD065 Flange EN 1092-1 / 01A / **DN 65** / PN 16	•	-	-	-	-
FD080 Flange EN 1092-1 / 01A / **DN 80** / PN 16	-	•	-	-	-
FD100 Flange EN 1092-1 / 01A / **DN 100** / PN 16	-	•	-	-	-
FD125 Flange EN 1092-1 / 01A / **DN 125** / PN 16	-	-	•	-	-
FD150 Flange EN 1092-1 / 01A / **DN 150** / PN 16	-	-	-	•	-
FD200 Flange EN 1092-1 / 01A / **DN 200** / PN 16	-	-	-	-	•

(size / length)

Additional connections

0 Without additional connections

Connections for clogging indicators

6T With both side indicator connection, with metal plugs

Additional features

NN Without additional features

Execution

P01 Standard catalogue item

Certificates

NN None

CLOGGING INDICATORS See page 785

DEA Electrical differential pressure indicator	**DTA** Electronic differential pressure indicator
DEM Electrical differential pressure indicator	**DTI** I-O Link electronic differential pressure indicator
DLA Electrical / visual differential pressure indicator	**DVA** Visual differential pressure indicator
DLE Electrical / visual differential pressure indicator	**DVM** Visual differential pressure indicator

PLUGS See page 807

T2 Plug

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Config. example: LPX | 630 | 20 | A0010 | D | A | 35 | NN | P01 | NN

Series
LPX Filter element with MYCLEAN feature

Element size
630

Element length
10 | **20** |

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0025	Inorganic microfiber	25 µm
A0040	Inorganic microfiber	40 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
M0250	Wire mesh	250 µm

Element Δp
D 10 bar

Seals
A NBR

Bypass
35 With bypass 3.5 bar

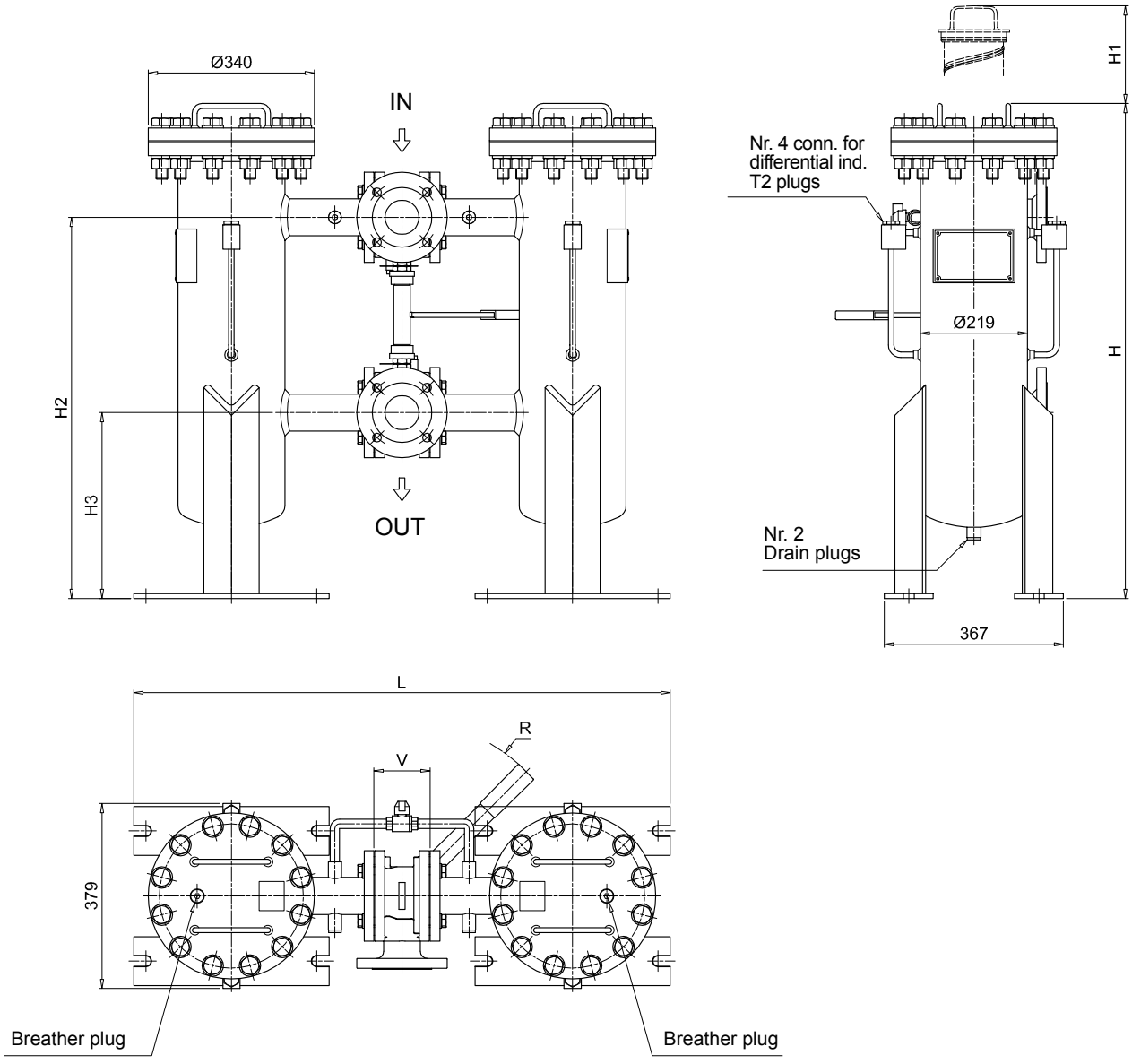
Addictional features
NN Without addictional features

Execution
P01 Standard catalogue item

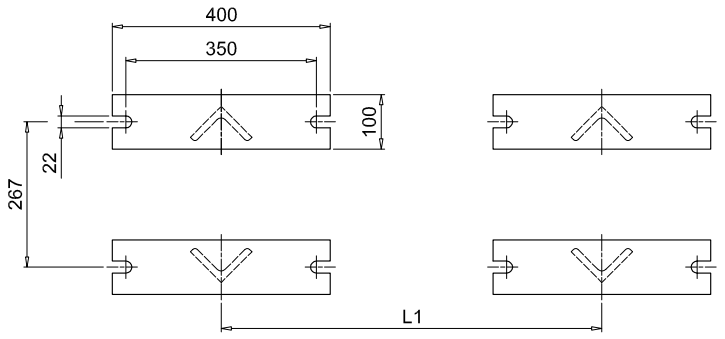
Certificates
NN None

Dimensions

MLDX631



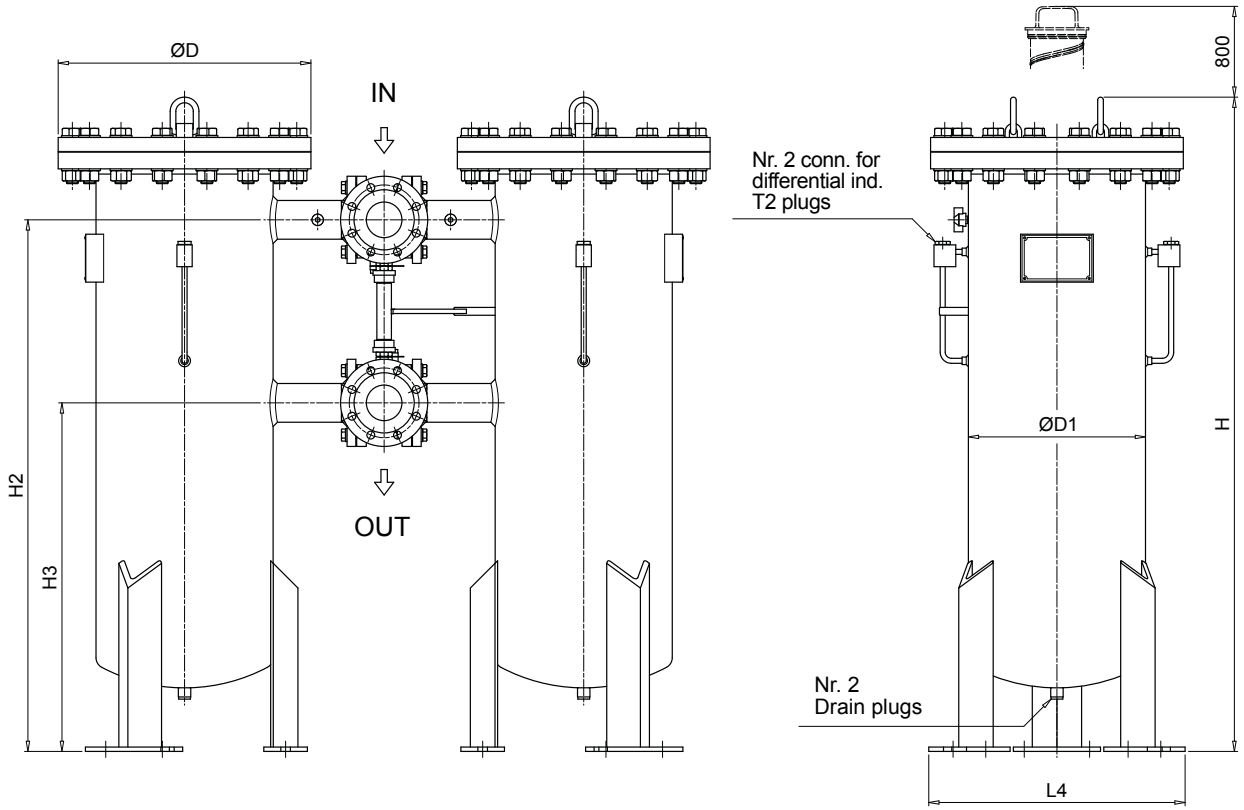
Fixing holes

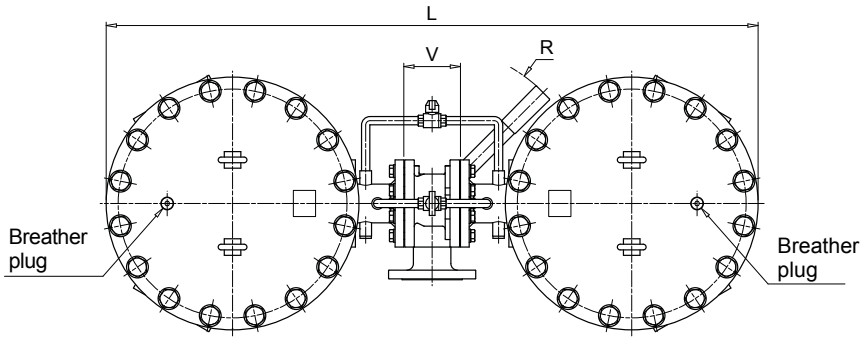


Filter length	Connections	H [mm]	H1 [mm]	H2 [mm]	H3 [mm]	L [mm]	L1 [mm]	R [mm]	V [mm]
10	**DN 65**	1018	435	800	400	1099	699	380	115
20	**DN 80**	1430	845	1210	790	1114	714	380	130
20	**DN 100**	1430	845	1210	710	1150	750	440	150

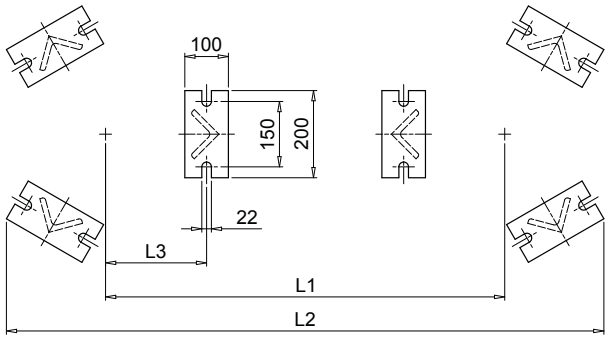
MP FILTRI WWW.SUMY.IR

MLDX633 - 634





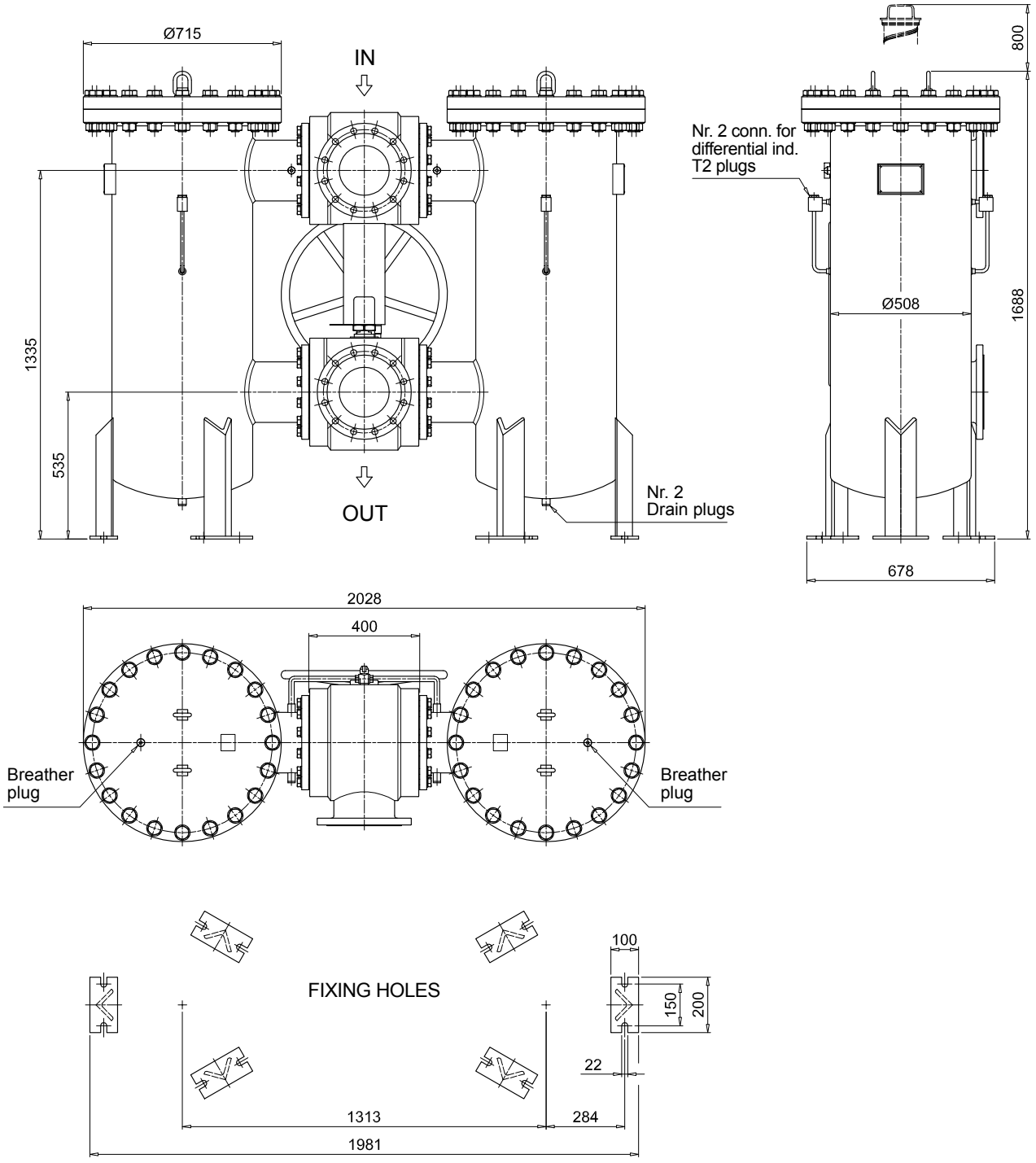
Fixing holes



Filter size	Connection	ØD [mm]	ØD1 [mm]	H [mm]	H2 [mm]	H3 [mm]	L [mm]	L1 [mm]	L2 [mm]	L3 [mm]	L4 [mm]	R [mm]	V [mm]
633	**DN 125**	580	406	1563	1270	670	1551	971	1426	232	588	440	185
634	**DN 150**	640	457	1702	1340	640	1780	1140	1621	258	633	715	300

Dimensions

MLDX635



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Designation & Ordering code

COMPLETE FILTER

Example :	MLDC	851	20	A0010	D	A	17	FD080	0	6T	NN	P01	NN

Series
MLDC

Filter size Nr. of elements MRC 850

851	1 + 1

Length

20	
30	
40	

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0025	Inorganic microfiber	25 µm
A0040	Inorganic microfiber	40 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
M0250	Wire mesh	250 µm

Element Δp

D	10 bar

Seals

A	NBR

Bypass

00	Without bypass
17	With bypass 1.75 bar

Connections

FD080	Flange EN 1092-1 / 01A / DN 80 / PN 16
FD100	Flange EN 1092-1 / 01A / DN 100 / PN 16

Additional connections

0	Without additional connections

Connections for clogging indicators

6T	With both side indicator connection, with metal plugs

Additional features

NN	Without additional features

Execution

P01	Standard catalogue item

Certificates

NN	None

CLOGGING INDICATORS See page 785

DEA	Electrical differential pressure indicator
DEM	Electrical differential pressure indicator
DLA	Electrical / visual differential pressure indicator
DLE	Electrical / visual differential pressure indicator
DTA	Electronic differential pressure indicator
DTI	I-O Link electronic differential pressure indicator
DVA	Visual differential pressure indicator
DVM	Visual differential pressure indicator

PLUGS See page 807

T2	Plug

MP FILTRI WWW.SUMY.IR

FILTER ELEMENT

Config. example: MRC | 850 | 20 | A0010 | D | A | 00 | NN | P01 | NN

Element series and size
MRC

Element size
850

Element length
20
30
40

Filtration rating (filter media)

A0003	Inorganic microfiber	3 µm
A0006	Inorganic microfiber	6 µm
A0010	Inorganic microfiber	10 µm
A0025	Inorganic microfiber	25 µm
A0040	Inorganic microfiber	40 µm
M0060	Wire mesh	60 µm
M0090	Wire mesh	90 µm
M0250	Wire mesh	250 µm

Element Δp
D 10 bar

Seals
A NBR

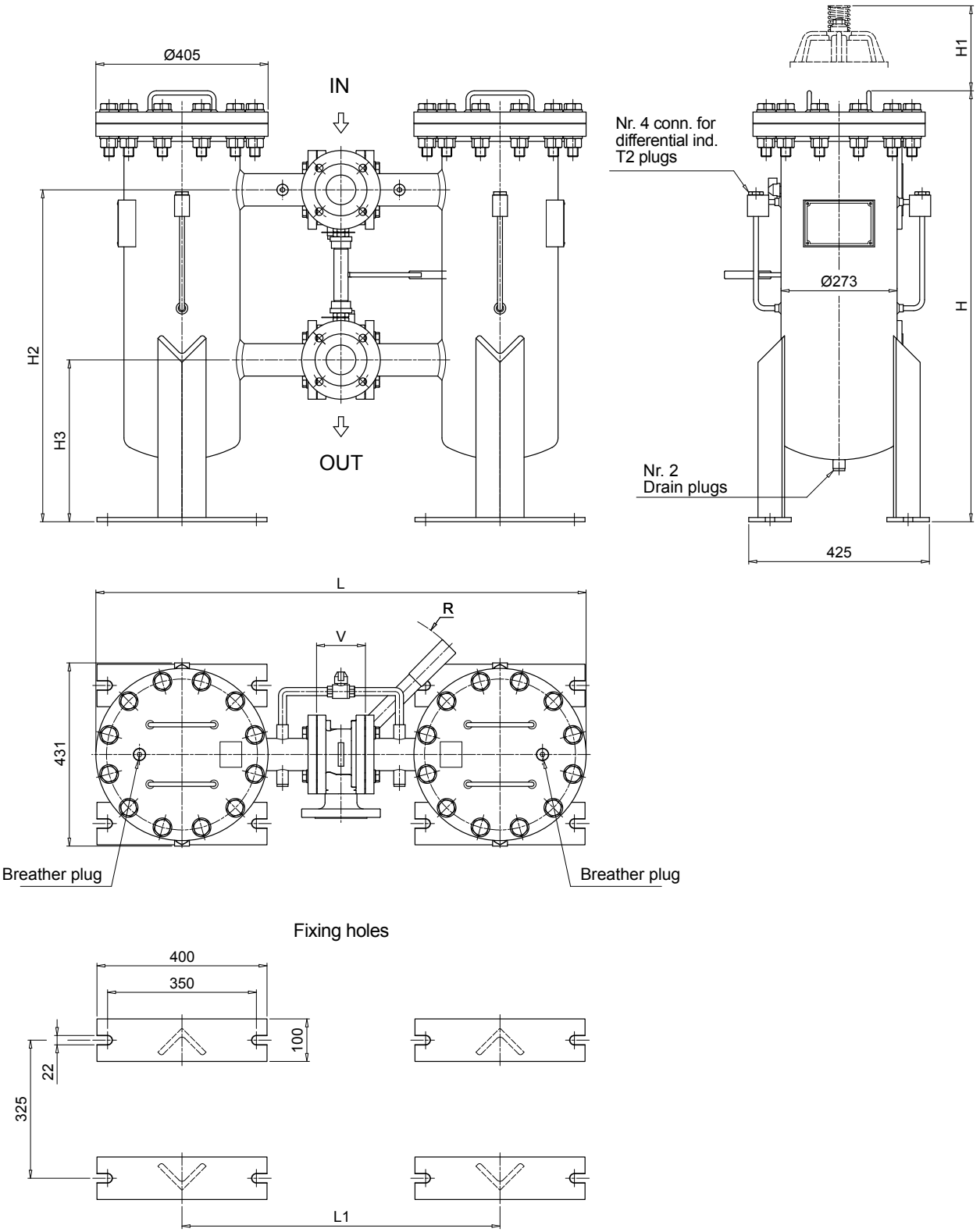
Bypass
00 Without bypass

Addictional features
NN Without addictional features

Execution
P01 Standard catalogue item

Certificates
NN None

Dimensions

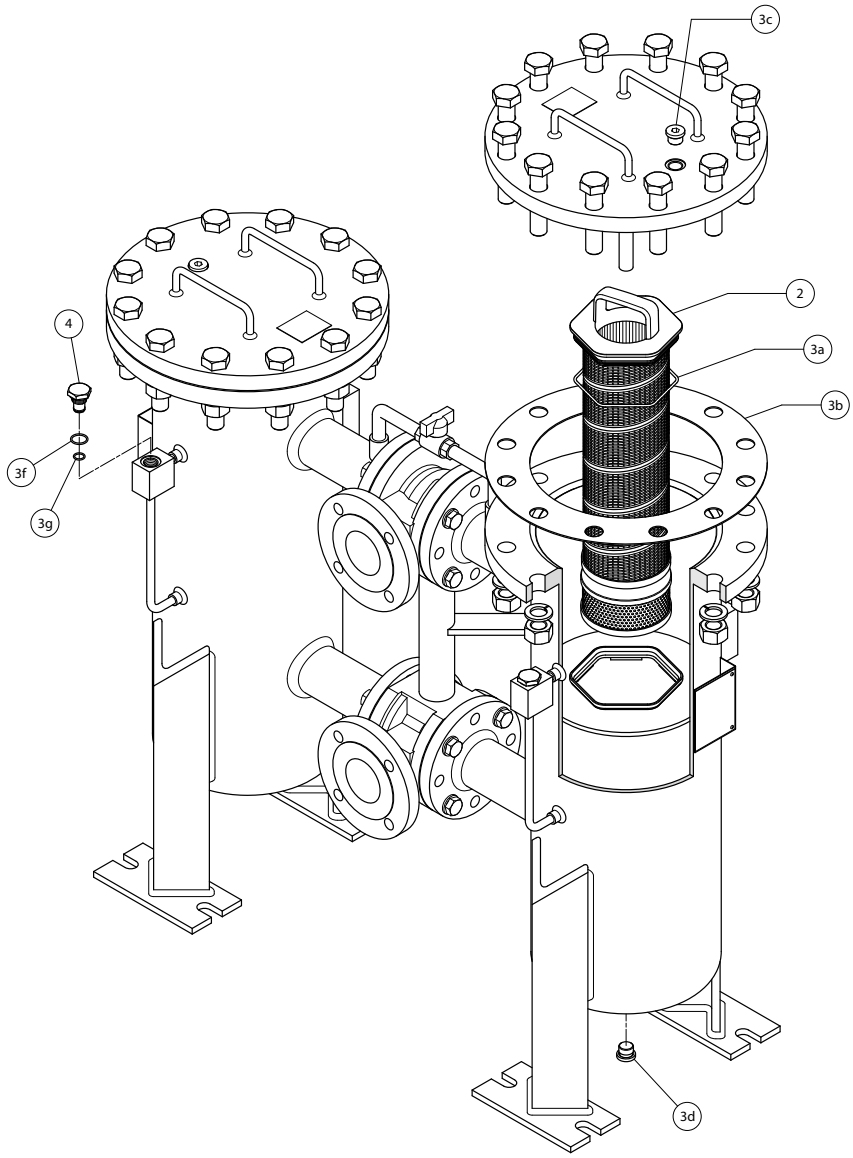


Filter length	H [mm]	H1 [mm]	H2 [mm]	Conn.	H3 [mm]	L [mm]	L1 [mm]	R [mm]	V [mm]
20	1174	675	940	**DN 80**	520	1191	786	380	130
				DN 100	440	1223	818	440	150
30	1451	955	1220	**DN 80**	800	1191	786	380	130
				DN 100	720	1223	818	440	150
40	1722	1220	1490	**DN 80**	1070	1191	786	380	130
				DN 100	990	1223	818	440	150

MP FILTRI
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Order number for spare parts

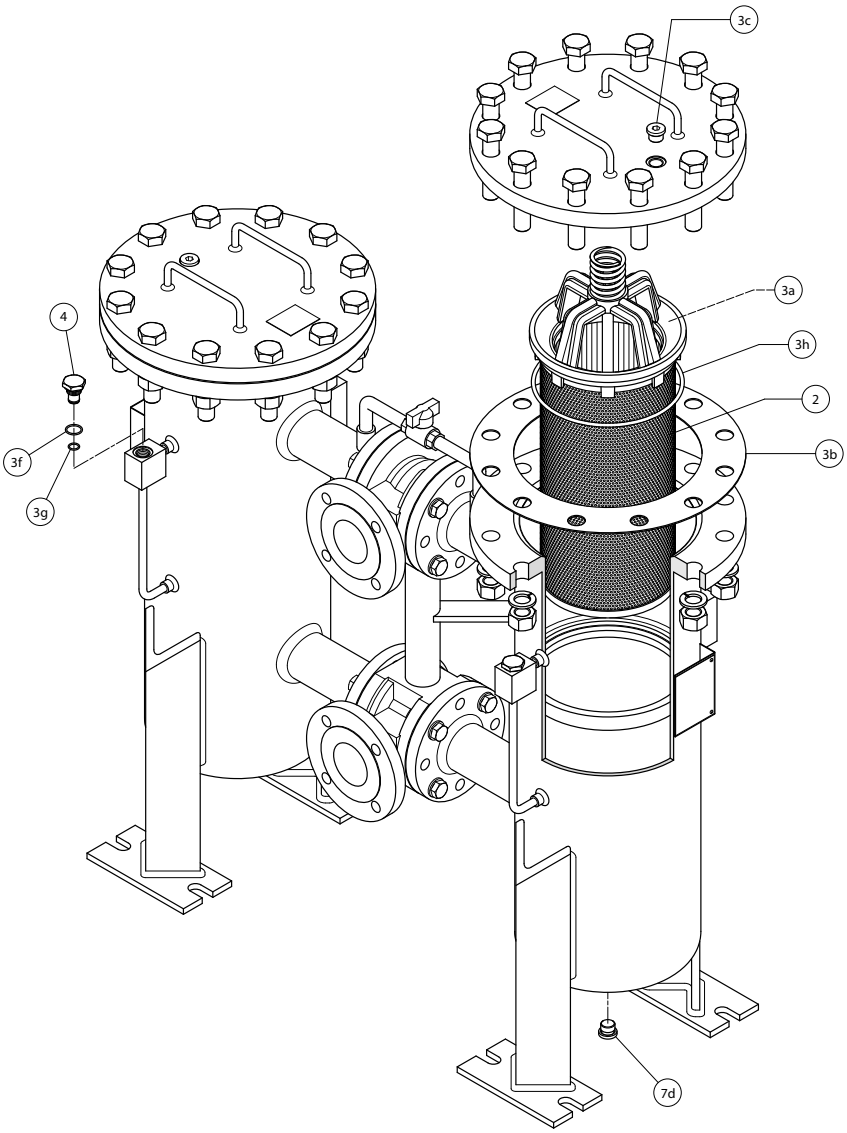
MLDX 631 - 633 - 634 - 635



Item:	2	Q.ty: 2 pcs. 3 (3a ÷ 3g)	Q.ty: 4 pcs. 4
Filter series	**Filter element**	**Seal Kit code number NBR**	**Indicator connection plug NBR**
MLDX631	See order table	AK021000684	T2H
MLDX633		AK021000685	T2H
MLDX634		AK021000686	T2H
MLDX635		AK021000687	T2H

MP FILTRI WWW.SUMY.IR

MLDC 851



Item:	Q.ty: 1 + 1 pcs. (2)	Q.ty: 2 pcs. (3) (3a ÷ 3g)	Q.ty: 4 pcs. (4)
Filter series	**Filter element**	**Seal Kit code number NBR**	**Indicator connection plug NBR**
MLDC851	See order table	AK021000786	T2H

High pressure filters are used as process filters to protect individual valves or the entire hydraulic circuit from contamination as per ISO 4406.
9 versions are available with operating pressures range from 110 bar up to 560 bar.
A range of products is available to resolve all filter mounting problems, in the following configurations:
- In-line, with threaded and flange mounting
- Manifold top mounting
- Manifold side mounting
- Manifold mounting, to DIN 24340 CETOP R 35 H
- Manifold threaded/flange mounting in the top extraction filter cartridge version
- Duplex versions for continuous operation requirements

FMP series is specifically designed and suitable for:
- feed pumps of hydrostatic drives
- pressure lubrication
- hydraulic systems in the high pressure range

FMMX & FMM series is optimized for the protection of servo and proportional hydraulics:
- in agricultural machinery
- in construction machinery
- in commercial vehicles

HPB are kits designed for the direct integration into the control block; they can be easily integrated into the block through a simple cavity.

FHP & FHA series are the typical high-pressure filters optimized for industrial applications.

FHM series is designed for intermediate plate construction, CETOP design.

FHB series is designed for block mounting; the filter head can be screwed in from the outside.

FHF series is designed to assemble HF4 filter element according to SAE J2066.

FHD series is the duplex high pressure filter; with two independent filter heads, the flow can be switched without interruption during operation.

The range includes a complete set of valves:
- Bypass valve
- Check valve
- Bypass + check valve
- Reverse-flow valve
- Reverse-flow + bypass valve

MP FILTRI WWW.SUMY.IR

High pressure filters



Filter sizing and corrective factors	page 524
FMMX	529
FMM	539
FHA 051	549
FMP 039	557
FMP	565
FHP	577
FHM	page 597
FHB	617
FHF 325	629
FHD	639
HPB	653
INDICATORS	786

WWW.SUMY.IR

THE CORRECT FILTER SIZING HAS TO BE BASED ON THE TOTAL PRESSURE DROP DEPENDING ON THE APPLICATION.

The pressure drop calculation is performed by adding together the value of the housing with the value of the filter element. The pressure drop Δpc of the housing is proportional to the fluid density (kg/dm³ / lb/ft³).
The filter element pressure drop Δpe is proportional to its viscosity (mm²/s / SUS), the corrective factor Y have to be used in case of an oil viscosity different than 30 mm²/s (cSt) / 150 SUS.

Sizing data for single filter element, head at top

Δpc = Filter housing pressure drop [bar / psi]
Δpe = Filter element pressure drop [bar / psi]
Y = Corrective factor Y (see correspondent table), depending on the filter type, on the filter element size, on the filter element length and on the filter media
Q = flow rate (l/min - gpm)
V1 reference oil viscosity = 30 mm²/s (cSt) /150 SUS
V2 = operating oil viscosity in mm²/s (cSt) / SUS

Filter element pressure drop calculation with an oil viscosity different than 30 mm²/s (cSt) / 150 SUS

International system:
Δpe = Y : 1000 x Q x (V2:V1)

Imperial system:
Δpe = Y : 17.2 x Q x (V2:V1)

Δp Tot. = Δpc + Δpe

Verification formula

Δp Tot. ≤ Δp max allowed

Maximum total pressure drop (Δp max) allowed by a new and clean filter

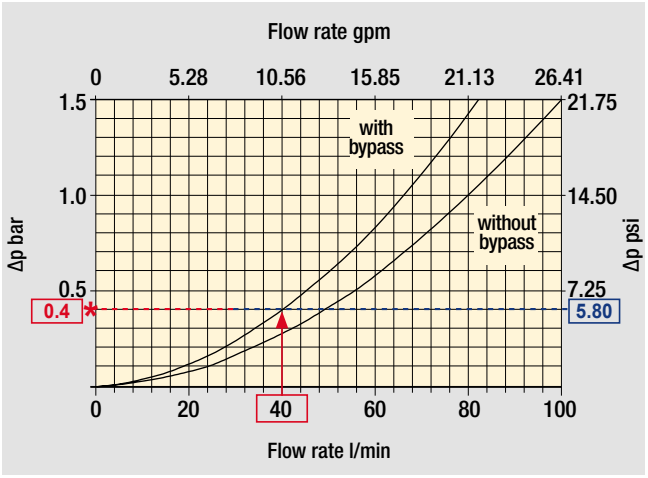
Filter family	Δp max	
	[bar]	[psi]
High Pressure/Duplex filters	1.50 bar	22 psi

Filter pressure drop calculation example

Application data:
Selected filter: **FMP 039 length 4**
Selected filter element: **HP 039 length 4**
Selected bypass: **with bypass**
Selected filtration rating: **25 µm** absolute filtration with wire mesh
Flow rate Q = **40 l/min / 10,56 gpm**
Viscosity V2 = 46 mm²/s (cSt) / 216 SUS
Oil density = 0.86 kg/dm³ / 53.68 lb/ft³

Calculation:
Δpc = 0.4 bar / 5.80 psi (see graphic below)

FMP 039



Filter housings Δp pressure drop.
The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

Filter element		Absolute filtration Filter Elem. Δp Series: N - R					Nominal filtration Filter Elem. Δp Series: N
Type	Length	A03	A06	A10	A16	A25	M25
HP 039	2	70.66	53.2	25.77	20.57	14.67	4.9
	3	36.57	32.28	18.00	13.38	8.00	2.9
→	4	26.57	23.27	12.46	8.80	5.58	2.2

Δpe = (2.2 : 1000) x 40 x (46 : 30) = 0.13 bar
Δpe = (2.2 : 17.2) x 10.56 x (216 : 150) = 1.95 psi

√ **Δp Tot. = 0.4 + 0.13 = 0.53 bar**
Δp Tot. = 5.80 + 1.95 = 7.75 psi

The selection is correct because the total pressure drop value is inside the admissible range for high pressure filters.
In case the max allowed total pressure drop is not verified, it is necessary to repeat the calculation changing the filter and/or filter element length/size.

MP FILTRI WWW.SUMY.IR

Filter element		Absolute filtration Filter Element ΔP Series: N - R					Nominal filtration Filter Element ΔP Series: N
Type	Length	A03	A06	A10	A16	A25	M25
HP 011	1	332.71	250.07	184.32	152.36	128.36	8,00
	2	220.28	165.56	74.08	59.13	37.05	3,00
	3	123.24	92.68	41.48	33.08	20.72	2,00
	4	77.76	58.52	28.37	22.67	16.17	1,00
HP 039	2	70.66	53.20	25.77	20.57	14.67	4.90
	3	36.57	32.28	18.00	13.38	8.00	2.90
	4	26.57	23.27	12.46	8.80	5.58	2.20
HP 050 HPX 050	1	31.75	30.30	13.16	12.3	7.29	1.60
	2	24.25	21.26	11.70	9.09	4.90	1.40
	3	17.37	16.25	8.90	7.18	3.63	1.25
	4	12.12	10.75	6.10	5.75	3.08	1.07
	5	7.00	6.56	3.60	3.10	2.25	0.80
HP 065	1	58.50	43.46	23.16	19.66	10.71	1.28
	2	42.60	25.64	16.22	13.88	7.32	1.11
	3	20.50	15.88	8.18	6.81	3.91	0.58
HP 135	1	20.33	18.80	9.71	8.66	4.78	2.78
	2	11.14	10.16	6.60	6.38	2.22	1.11
	3	6.48	6.33	3.38	3.16	2.14	1.01
HP 150 HPX 150	1	17.53	15.91	7.48	6.96	5.94	1.07
	2	8.60	8.37	3.54	3.38	3.15	0.58
	3	6.53	5.90	2.93	2.79	2.12	0.49
HP 320	1	10.88	9.73	5.02	3.73	2.54	1.04
	2	4.40	3.83	1.75	1.48	0.88	0.71
	3	2.75	2.11	1.05	0.87	0.77	0.61
	4	2.12	1.77	0.98	0.78	0.55	0.47
HP 500	1	4.44	3.67	2.30	2.10	1.65	0.15
	2	3.37	2.77	1.78	1.68	1.24	0.10
	3	2.22	1.98	1.11	1.09	0.75	0.08
	4	1.81	1.33	0.93	0.86	0.68	0.05
	5	1.33	1.15	0.77	0.68	0.48	0.04
HP 325	1	3.65	2.95	2.80	1.80	0.90	0.38
	2	2.03	1.73	1.61	1.35	0.85	0.36
	3	1.84	1.42	1.32	1.22	0.80	0.35

Corrective factor Y to be used for the filter element pressure drop calculation. The values depend to the filter size and length and to the filter media.
Reference oil viscosity 30 mm^2/s

MP FILTRI WWW.SUMY.IR

Filter element		Absolute filtration Filter Element ΔP Series: S - H - U				
Type	Length	A03	A06	A10	A16	A25
HP 011	1	424.58	319.74	235.17	194.44	163.78
	2	281.06	211.25	94.35	75.45	47.26
	3	130.14	97.50	43.63	34.82	21.81
	4	109.39	82.25	36.79	29.37	18.40
HP 039	2	73.00	57.00	28.00	24.00	17.20
	3	40.90	36.33	21.88	18.80	11.20
	4	31.50	28.22	17.22	9.30	6.70
HP 050	1	47.33	34.25	21.50	20.50	14.71
	2	29.10	25.95	10.04	10.90	5.88
	3	20.85	19.50	10.68	8.61	4.36
	4	14.55	12.90	7.32	6.90	3.69
	5	9.86	9.34	6.40	4.80	2.50
HP 135	1	29.16	25.33	13.00	12.47	5.92
	2	14.28	11.04	7.86	7.90	4.44
	3	8.96	7.46	4.89	4.16	3.07
HP 150 HPX 150	1	25.14	21.44	10.01	10.02	7.36
	2	11.02	9.09	4.22	4.19	4.00
	3	9.03	6.95	3.82	3.67	3.04
HP 320	1	13.00	12.19	6.80	6.40	3.32
	2	6.45	5.31	3.01	2.89	1.73
	3	4.13	3.14	1.90	1.78	1.17
	4	3.17	2.71	1.80	1.70	1.10
HP 500	1	9.70	8.81	4.55	4.47	2.80
	2	5.46	4.63	2.88	2.68	2.20
	3	3.90	3.74	2.22	2.07	1.53
	4	3.10	2.84	1.56	1.53	1.02
	5	1.93	1.83	1.14	1.08	0.69

Corrective factor Y to be used for the filter element pressure drop calculation. The values depend to the filter size and length and to the filter media.
Reference oil viscosity 30 mm^2/s

MYCLEAN

THE X CONCEPT FOR OUR FILTERS

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

FMMX series

with MYCLEAN HPX Filter Element



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

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

The products identified as FMMX series are protected by:

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

TOGETHER WITH MYCLEAN , AS OPTION, FMMX SERIES CAN BE PROVIDED WITH

zerospark®

THE ANTI-STATIC FILTERS



THE Z CONCEPT FOR OUR FILTERS

Zerospark® is a specialist solution designed to solve the problem of electrostatic discharge inside hydraulic filters. Caused by the electrical charge build-up due to the passage of oil through the filters, this can result in damage to filter elements, oils and circuit components. It can even cause fire hazards in environments where flammable materials are present.

MP FILTRI WWW.SUMY.IR

FMMX series

Maximum working pressure up to 42 MPa (420 bar) - Flow rate up to 300 l/min



INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS

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FMMX050 FMMX150

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FMMX GENERAL INFORMATION

Description

High Pressure filters

In-line
Maximum working pressure up to 42 MPa (420 bar)
Flow rate up to 300 l/min

FMMX is a range of versatile high pressure filter for protection of sensitive components in high pressure hydraulic systems in the mobile machines.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- Female threaded connections up to 1 1/4", for a maximum flow rate of 300 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Bypass valve, to relieve excessive pressure drop across the filter media
- Low collapse filter element "N", for use with filters provided with bypass valve
- Visual, electrical and electronic differential clogging indicators
- MYclean interface connection for the filter element, to protect the product against non-original spare parts.
- External protective wrap, to optimize the flow through the element and to save the element efficiency against non-proper handling

Common applications:

- Agricultural machines
- Mobile machines

Technical data

Filter housing materials

- Head: Painted cast iron, black RAL 9005
- Housing: Phosphatized steel
- Bypass valve: Steel

Pressure

- Test pressure: 63 MPa (630 bar)
- Min. Burst pressure: 126 MPa (1260 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 42 MPa (420 bar)

Bypass valve

- Opening pressure 0.6 MPa (6 bar) ±10%
- Other opening pressures on request.

Filter element features

Filter		Filter element	
FMMX		HPX	
Δp Element type			
Element media	Construction	Δp Series	Δp
A - Microfiber	Standard	N	20 bar
A - Microfiber	High Δp with external support	S	210 bar
M - Wire mesh	Standard	N	20 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals

- Standard NBR series A
- Optional FPM series V

Temperature

From -25 °C to +110 °C

Connections

In-line Inlet/Outlet

Note

FMMX filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]						Volumes [dm³]					
	Length	1	2	3	4	5	Length	1	2	3	4	5
FMMX 050		3.11	3.48	3.90	4.36	5.54		0.34	0.48	0.63	0.81	1.23
FMMX 150		7.50	9.50	10.90	-	-		0.60	1.00	1.25	-	-

MP FILTRI WWW.SUMY.IR

Flow rates [l/min]

		Filter element design - N Series						Filter element design - S Series				
Filter series	Length	A03	A06	A10	A16	A25	M25	A03	A06	A10	A16	A25
FMMX 050	1	42	43	79	82	106	147	29	39	57	59	74
	2	52	57	85	96	121	149	45	49	76	88	114
	3	66	69	97	106	130	150	58	61	89	99	125
	4	83	89	113	115	134	152	74	80	106	108	129
	5	107	110	130	134	141	154	93	95	111	121	139
FMMX 150	1	81	88	156	163	179	295	58	67	128	128	158
	2	142	145	227	230	236	312	119	137	212	212	207
	3	170	180	242	245	263	315	138	164	211	224	239

Maximum flow rate for a complete pressure filter with a pressure drop Δp = 1.5 bar.

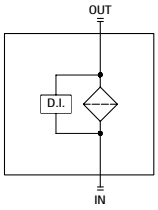
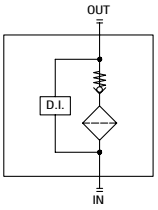
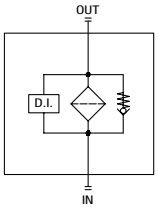
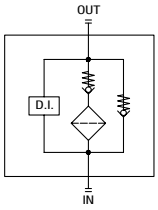
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.

For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.

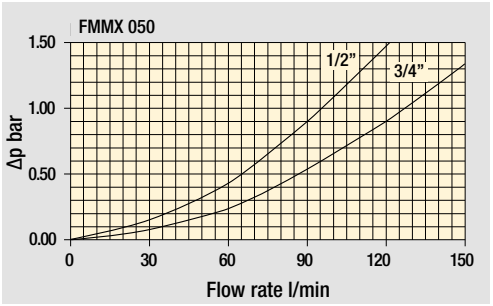
Please, contact our Sales Department for further additional information.

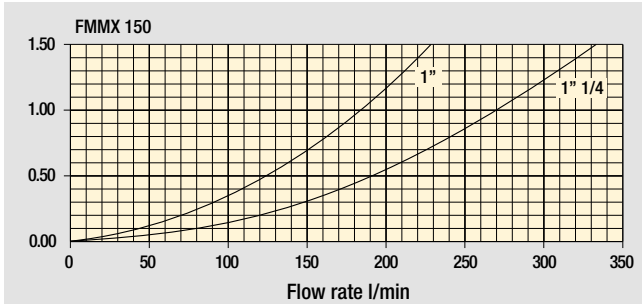
Hydraulic diagram

	without bypass		with bypass 6.0 bar	
Filter series	Style S - without check valve	Style T - with check valve	Style B - without check valve	Style D - with check valve
FMMX 050-150				

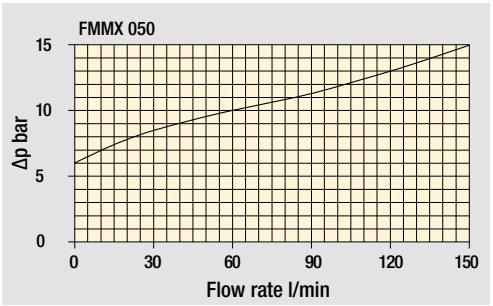
Pressure drop

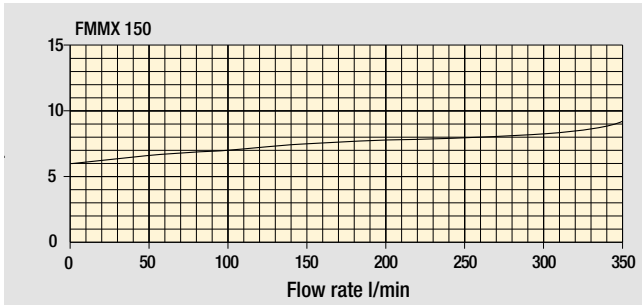
Filter housings
Δp pressure drop



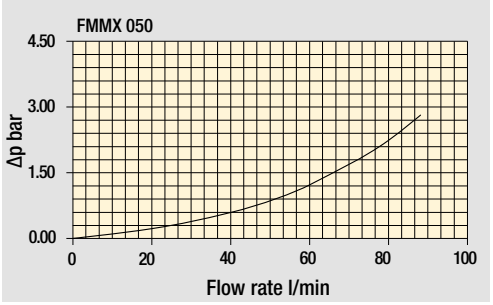


Bypass valve
pressure drop





Filter housing with check valve



The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

FMMX FMMX050

Designation & Ordering code

COMPLETE FILTER

Configuration example: FMMX050 | 3 | B | A | G | A10 | N | P01

Series and size
FMMX050 Filter featuring MYCLEAN Filter Element

Length
1 | **2** | **3** | **4** | **5**

Valves (see page 531)

S	Without bypass
B	With bypass 6 bar
T	With check valve, without bypass
D	With check valve, with bypass 6 bar

Seals

A	NBR	**V**	FPM

Connections

A	M18x1.5 - ISO 6149	**E**	1/2" NPT
B	M22x1.5 - ISO 6149	**F**	3/4" NPT
C	G 1/2"	**G**	SAE 8 - 3/4" - 16 UNF
D	G 3/4"	**H**	SAE 12 - 1 1/16" - 12 UN

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**A16**	Inorganic microfiber	16 µm
A06	Inorganic microfiber	6 µm	**A25**	Inorganic microfiber	25 µm
A10	Inorganic microfiber	10 µm	**M25**	Wire mesh	25 µm

Element Δp (Valves)

		S	B	T	D
N	20 bar	-	•	-	•
S	210 bar	•	-	•	-

Executions

Base	zerospark	
P01	**Z01** *	Upper connection for clogging indicator
P02	**Z02** *	Without connection for clogging indicator
P03	**Z03** *	Frontal connection for clogging indicator
Pxx	**Zxx** *	Customized

* Not for Mxx filter media

FILTER ELEMENT

Configuration example: HPX050 | 3 | A10 | A | N | P01

Element series and size
HPX050 Filter Element with MYCLEAN feature

Element length
1 | **2** | **3** | **4** | **5**

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Seals

A	NBR
V	FPM

Element Δp

N	20 bar
S	210 bar

Executions

Base	zerospark	
P01	**Z01** *	MP Filtri standard
Pxx	**Zxx** *	Customized

* Not for Mxx filter media

CLOGGING INDICATORS

See page 786

DEA	Electrical differential pressure indicator
DEM	Electrical differential pressure indicator
DEU	Electrical differential pressure indicator
DLA	Electrical / visual differential pressure indicator
DLE	Electrical / visual differential pressure indicator
DTA	Electronic differential pressure indicator
DTI	I-O Link electronic differential pressure indicator
DVA	Visual differential pressure indicator
DVM	Visual differential pressure indicator

PLUGS

See page 807

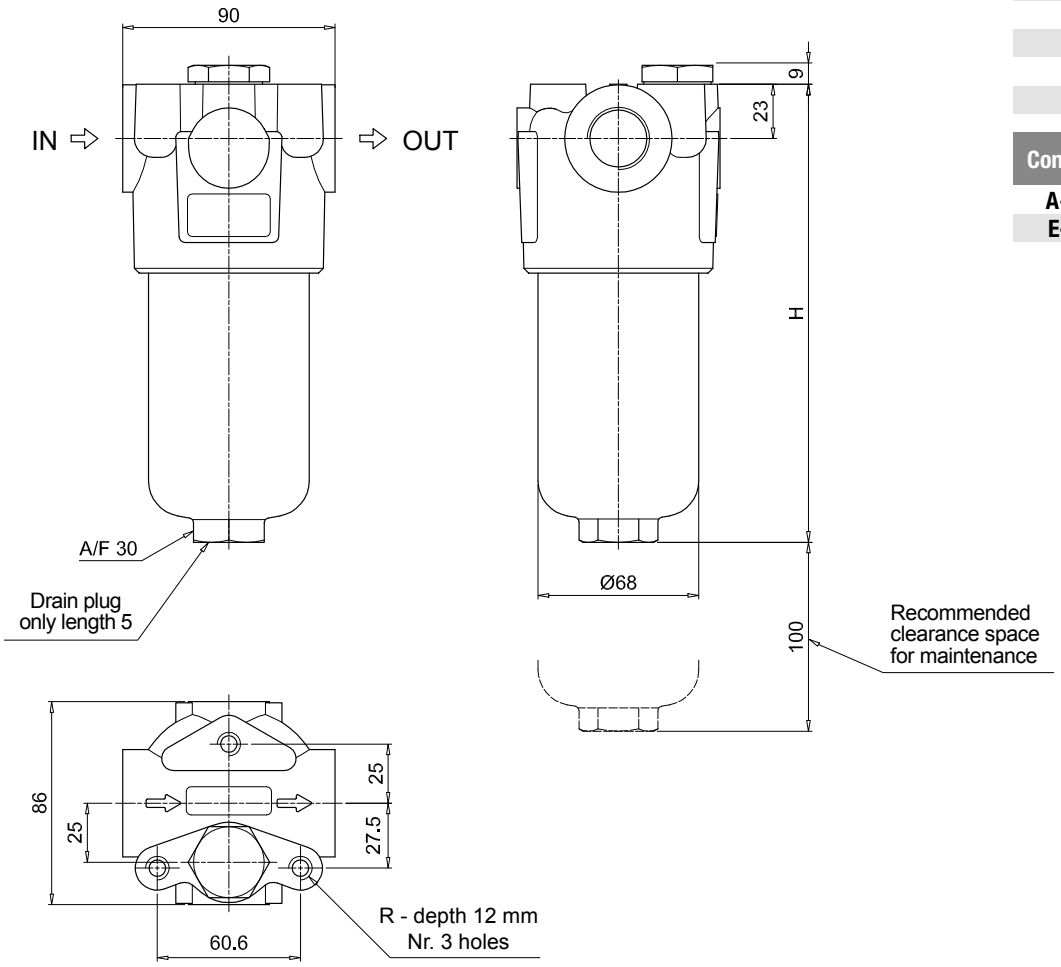
T2	Plug

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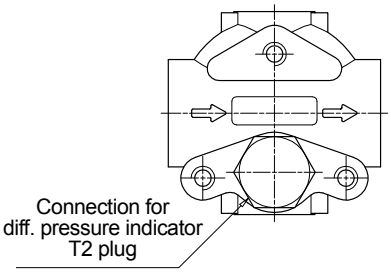
FMMX050

Filter length	H [mm]
1	158
2	195
3	237
4	285
5	407

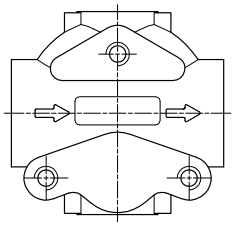
Connections	R
A-B-C-D	M10
E-F-G-H	3/8" UNC



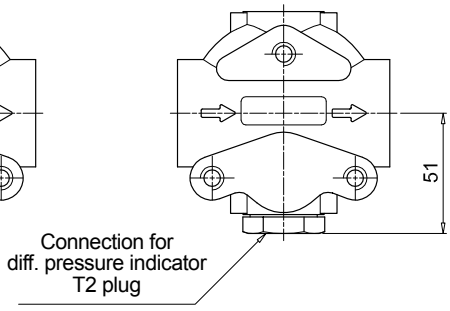
Execution P01



Execution P02



Execution P03



FMMX FMMX150

Designation & Ordering code

COMPLETE FILTER

Configuration example: FMMX150 | 2 | B | A | D | 2 | M25 | N | P01

Series and size

FMMX150 Filter featuring MYCLEAN Filter Element

Length

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

Valves (see page 531)

S	Without bypass
B	With bypass 6 bar
T	With check valve, without bypass
D	With check valve, with bypass 6 bar

Seals

A	NBR	**V**	FPM

Connections

C	G1”	**F**	1 1/4” NPT
D	G1 1/4”	**G**	SAE 16 - 1 5/16” - 12 UN
E	1” NPT	**H**	SAE 20 - 1 5/8” - 12 UN

Connections for differential indicator

1	Without connection
2	Upper connection
3	Frontal connection

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Element Δp		Valves S	B	T	D
N	20 bar	-	•	-	•
S	210 bar	•	-	•	-

Executions

Base	zerospark	
P01	**Z01** *	MP Filtri standard
Pxx	**Zxx** *	Customized

* Not for Mxx filter media

FILTER ELEMENT

Configuration example: HPX150 | 3 | A10 | A | N | P01

Element series and size

HPX150 Filter Element with MYCLEAN feature

Element length

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

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Seals

A	NBR
V	FPM

Element Δp

N	20 bar
S	210 bar

Executions

Base	zerospark	
P01	**Z01** *	MP Filtri standard
Pxx	**Zxx** *	Customized

* Not for Mxx filter media

CLOGGING INDICATORS

See page 786

DEA	Electrical differential pressure indicator
DEM	Electrical differential pressure indicator
DEU	Electrical differential pressure indicator
DLA	Electrical / visual differential pressure indicator
DLE	Electrical / visual differential pressure indicator
DTA	Electronic differential pressure indicator
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DVA	Visual differential pressure indicator
DVM	Visual differential pressure indicator

PLUGS

See page 807

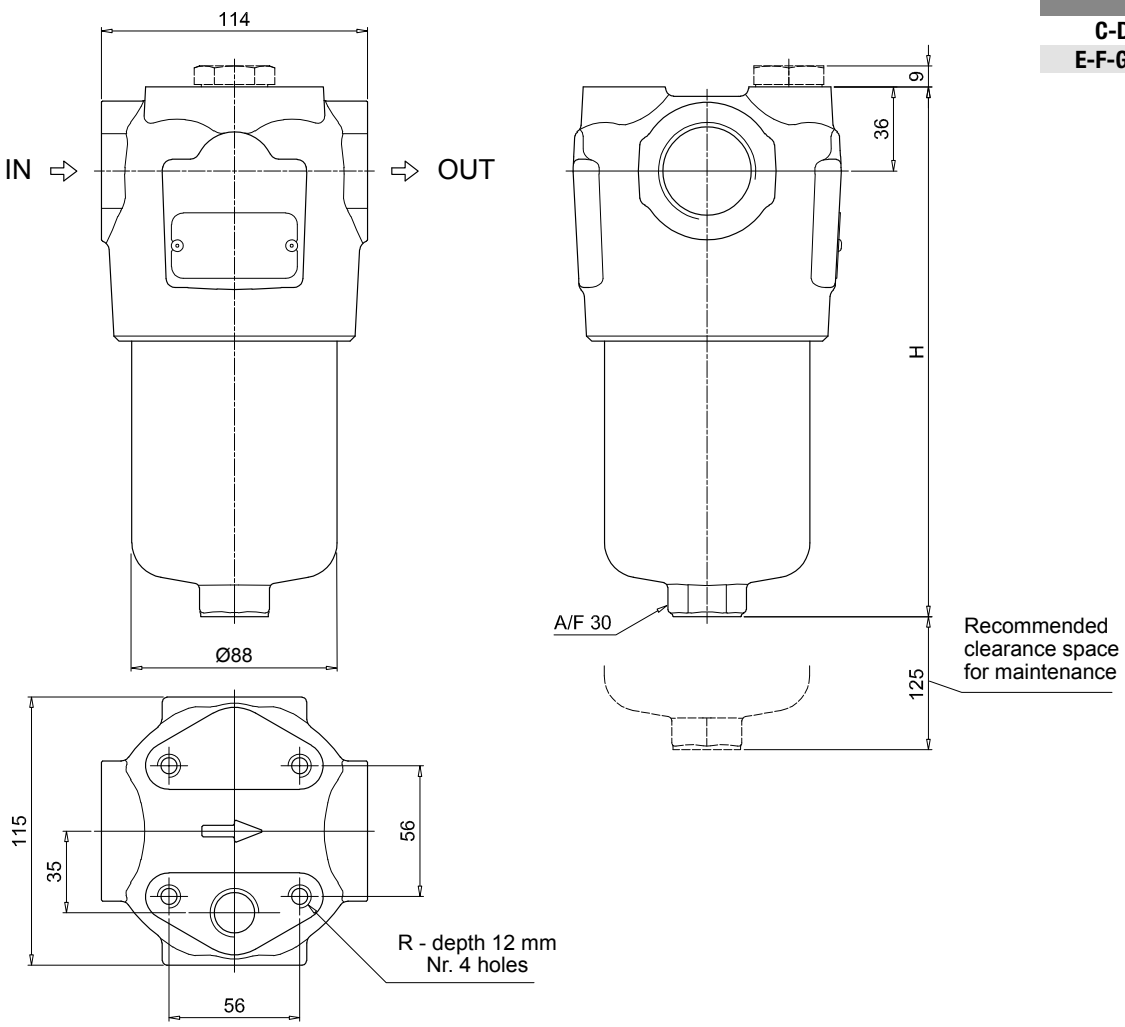
T2	Plug

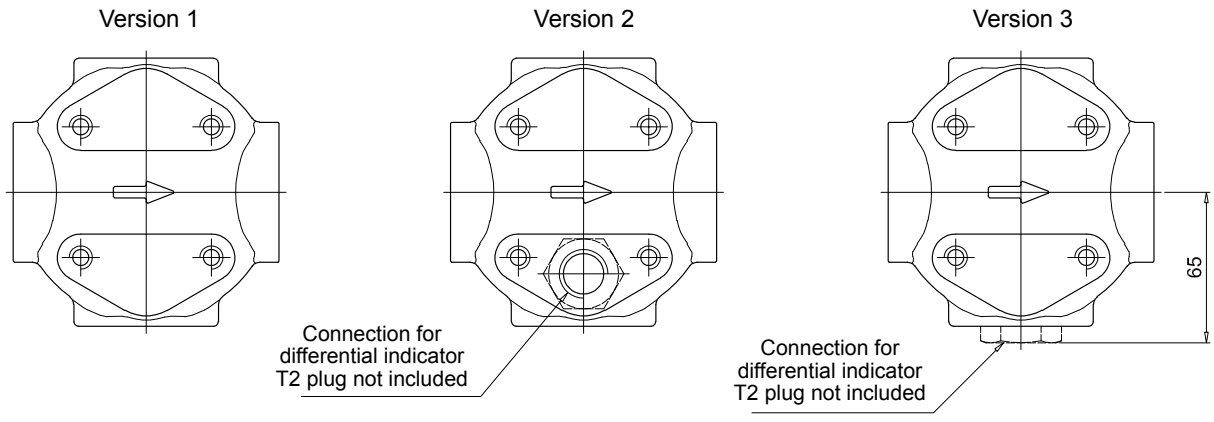
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Dimensions

FMMX150	
Filter length	**H [mm]**
1	230
2	340
3	415

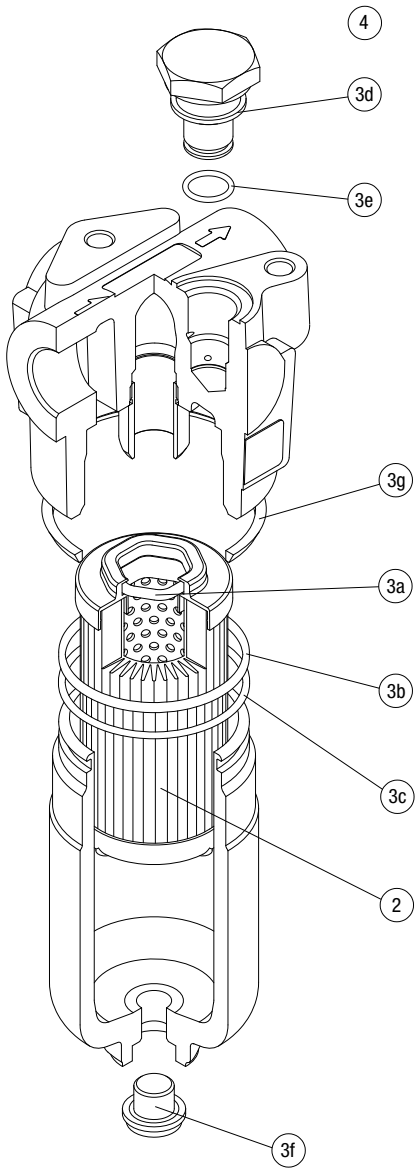
Connections	R
C-D	M10
E-F-G-H	3/8" UNC





Order number for spare parts

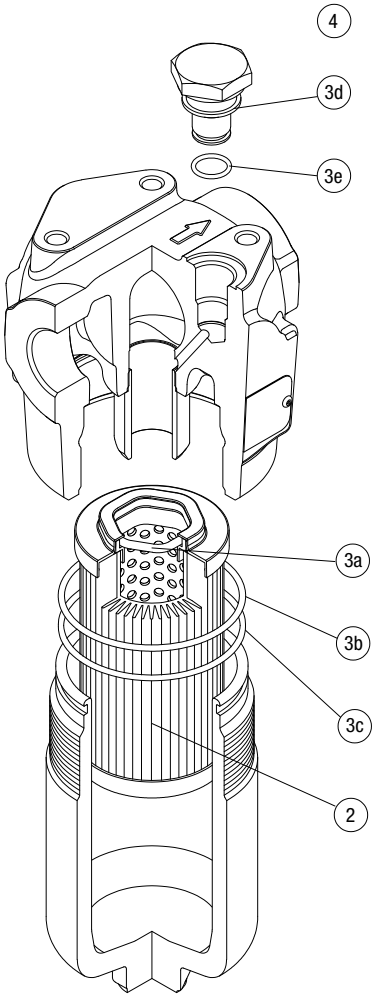
FMMX 050



Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3g)		Q.ty: 1 pc. 4	
Filter series	Filter element	Seal Kit code number NBR	FPM	Indicator connection plug NBR	FPM
FMMX 050	See order table	02050864	02050865	T2H	T2V

MP FILTRI WWW.SUMY.IR

FMMX 150



Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3e)		Q.ty: 1 pc. 4	
Filter series	Filter element	Seal Kit code number NBR	FPM	Indicator connection plug NBR	FPM
FMMX 150	See order table	02050868	02050869	T2H	T2V

MP FILTRI
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FMM series

Maximum working pressure up to 42 MPa (420 bar) - Flow rate up to 300 l/min



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FMM050 FMM150

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FMM GENERAL INFORMATION

Description

High Pressure filters

In-line
Maximum working pressure up to 42 MPa (420 bar)
Flow rate up to 300 l/min

FMM is a range of versatile high pressure filter for protection of sensitive components in high pressure hydraulic systems in the mobile machines.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- Female threaded connections up to 1 1/4", for a maximum flow rate of 250 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Bypass valve, to relieve excessive pressure drop across the filter media
- Low collapse filter element "N", for use with filters provided with bypass valve
- Low collapse filter element with external support "R", for filter element protection against the back pressure caused by the check valve in filters provided with the bypass valve
- High collapse filter element with external support "S", for filter element protection against the back pressure caused by the check valve in filters not provided with the bypass valve
- Visual, electrical and electronic differential clogging indicators

Common applications:

- Agricultural machines
- Mobile machines

Technical data

Filter housing materials

- Head: Painted cast iron, black RAL 9005
- Housing: Phosphatized steel
- Bypass valve: Steel

Pressure

- Test pressure: 63 MPa (630 bar)
- Min. Burst pressure: 126 MPa (1260 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 42 MPa (420 bar)

Bypass valve

- Opening pressure 0.6 MPa (6 bar) ±10%
- Other opening pressures on request.

Filter element features

Filter		Filter element	
FMM		HP	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	N	20 bar
A - Microfiber	With external support	R	20 bar
A - Microfiber	High Δp with external support	S	210 bar
M - Wire mesh	Standard	N	20 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals

- Standard NBR series A
- Optional FPM series V

Temperature

From -25 °C to +110 °C

Connections

In-line Inlet/Outlet

Note

FMM filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]						Volumes [dm³]					
	Length	1	2	3	4	5	Length	1	2	3	4	5
FMM 050		3.11	3.48	3.90	4.36	5.54		0.34	0.48	0.63	0.81	1.23
FMM 150		7.50	9.50	10.90	-	-		0.60	1.00	1.25	-	-

MP FILTRI WWW.SUMY.IR

Flow rates [l/min]

		Filter element design - N - R Series						Filter element design - S Series				
Filter series	Length	A03	A06	A10	A16	A25	M25	A03	A06	A10	A16	A25
FMM 050	1	42	43	79	82	106	147	29	39	57	59	74
	2	52	57	85	96	121	149	45	49	76	88	114
	3	66	69	97	106	130	150	58	61	89	99	125
	4	83	89	113	115	134	152	74	80	106	108	129
	5	107	110	130	134	141	154	93	95	111	121	139
FMM 150	1	81	88	156	163	179	295	58	67	128	128	158
	2	142	145	227	230	236	312	119	137	212	212	207
	3	170	180	242	245	263	315	138	164	211	224	239

Maximum flow rate for a complete pressure filter with a pressure drop Δp = 1.5 bar.

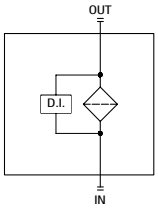
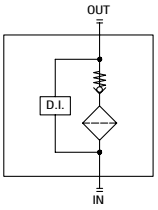
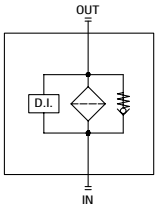
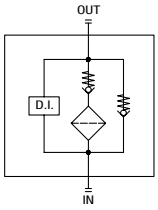
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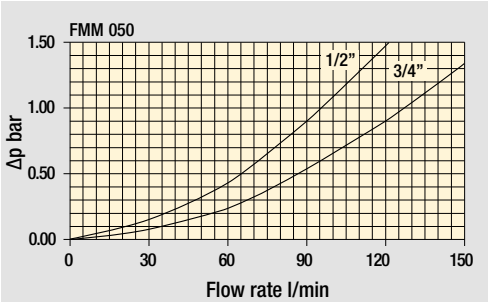
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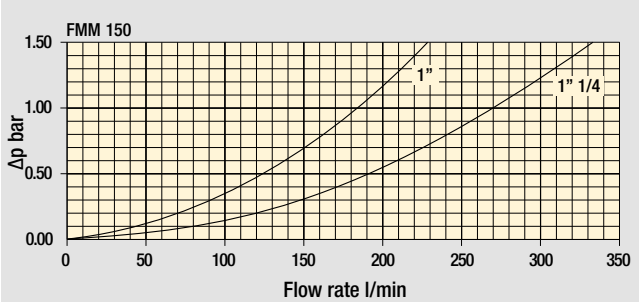
Hydraulic diagram

	without bypass		with bypass 6.0 bar	
Filter series	Style S - without check valve	Style T - with check valve	Style B - without check valve	Style D - with check valve
FMM 050-150				

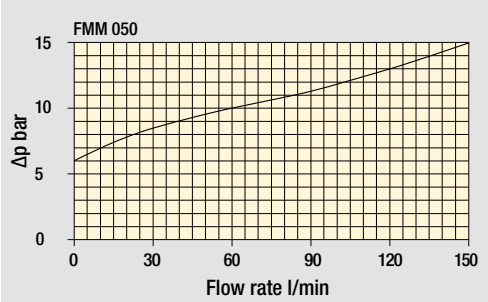
Pressure drop

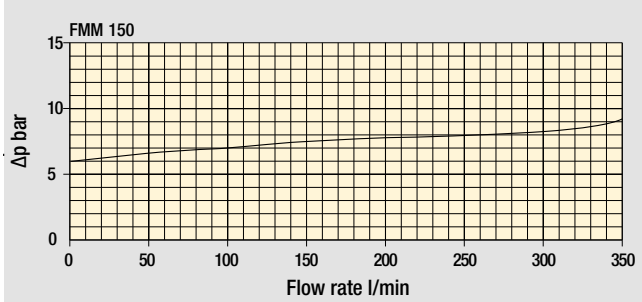
Filter housings
Δp pressure drop



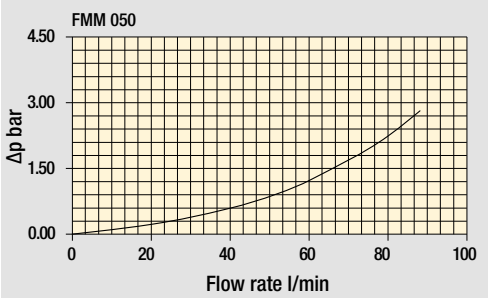


Bypass valve
pressure drop





Filter housing with check valve



The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

Designation & Ordering code

COMPLETE FILTER

Configuration example: FMM050 | 3 | B | A | G | A10 | N | P01

Series and size
FMM050

Length
1 | 2 | 3 | 4 | 5

Valves (see page 541)

S	Without bypass
B	With bypass 6 bar
T	With check valve, without bypass
D	With check valve, with bypass 6 bar

Seals

A	NBR
V	FPM

Connections

A	M18x1.5 - ISO 6149	**E**	1/2" NPT
B	M22x1.5 - ISO 6149	**F**	3/4" NPT
C	G 1/2"	**G**	SAE 8 - 3/4" - 16 UNF
D	G 3/4"	**H**	SAE 12 - 1 1/16" - 12 UN

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Element Δp		Valves S	B	T	D
N	20 bar	-	•	-	-
S	210 bar	•	-	•	-

Executions

P01	Upper connection for clogging indicator
P02	Without connection for clogging indicator
P03	Frontal connection for clogging indicator
Pxx	Customized

FILTER ELEMENT

Configuration example: HP050 | 3 | A10 | A | N | P01

Element series and size
HP050

Element length
1 | 2 | 3 | 4 | 5

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Seals

A	NBR
V	FPM

Element Δp

N	20 bar
S	210 bar

Execution

P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See page 786

DEA	Electrical differential pressure indicator
DEM	Electrical differential pressure indicator
DEU	Electrical differential pressure indicator
DLA	Electrical / visual differential pressure indicator
DLE	Electrical / visual differential pressure indicator
DTA	Electronic differential pressure indicator
DTI	I-O Link electronic differential pressure indicator
DVA	Visual differential pressure indicator
DVM	Visual differential pressure indicator

PLUGS

See page 807

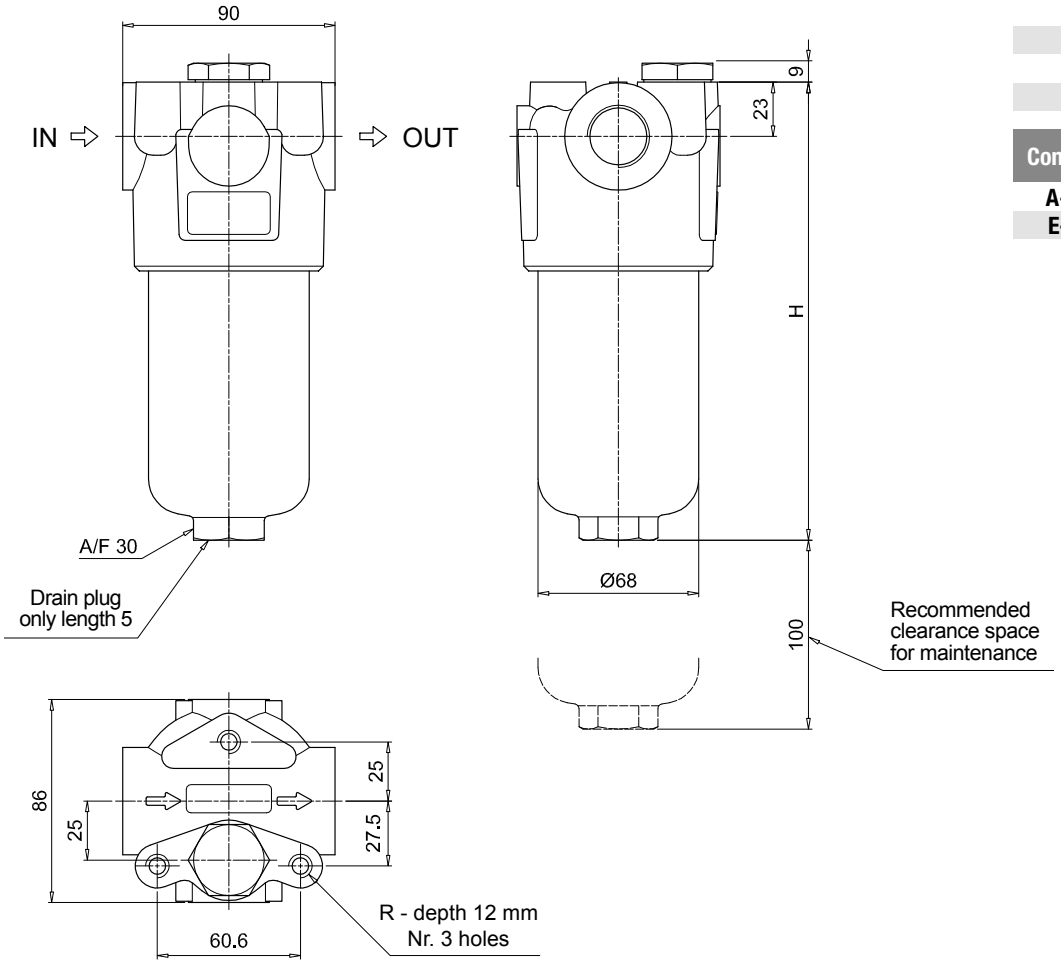
T2	Plug

MP FILTRI WWW.SUMY.IR

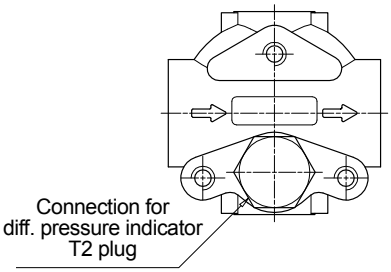
FMM050

Filter length	H [mm]
1	158
2	195
3	237
4	285
5	407

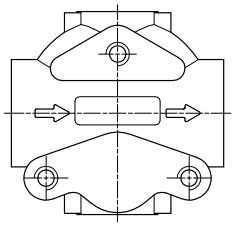
Connections	R
A-B-C-D	M10
E-F-G-H	3/8" UNC



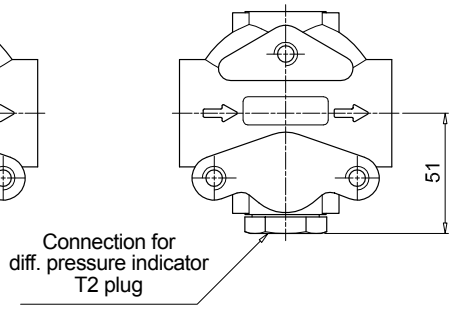
Execution P01



Execution P02



Execution P03



Designation & Ordering code

COMPLETE FILTER

Configuration example: FMM150 | 2 | B | A | D | 2 | M25 | N | P01

Series and size
FMM150

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

Valves (see page 541)
S Without bypass
B With bypass 6 bar
T With check valve, without bypass
D With check valve, with bypass 6 bar

Seals
A NBR
V FPM

Connections
C G 1”
D G 1 1/4”
E 1” NPT
F 1 1/4” NPT
G SAE 16 - 1 5/16” - 12 UN
H SAE 20 - 1 5/8” - 12 UN

Connection for differential pressure indicator
1 Without connection
2 Upper connection
3 Frontal connection

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Element Δp		Valves S	B	T	D
N	20 bar	-	•	-	-
R	20 bar	-	-	-	•
S	210 bar	•	-	•	-

Execution
P01 MP Filtri standard
Pxx Customized

FILTER ELEMENT

Configuration example: HP150 | 2 | M25 | A | N | P01

Element series and size
HP150

Element length
1 | **2** | **3**

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Seals
A NBR
V FPM

Element Δp
N 20 bar
R 20 bar
S 210 bar

Execution
P01 MP Filtri standard
Pxx Customized

CLOGGING INDICATORS

See page 786

DEA Electrical differential pressure indicator
DEM Electrical differential pressure indicator
DEU Electrical differential pressure indicator
DLA Electrical / visual differential pressure indicator
DLE Electrical / visual differential pressure indicator
DTA Electronic differential pressure indicator
DTI I-O Link electronic differential pressure indicator
DVA Visual differential pressure indicator
DVM Visual differential pressure indicator

PLUGS

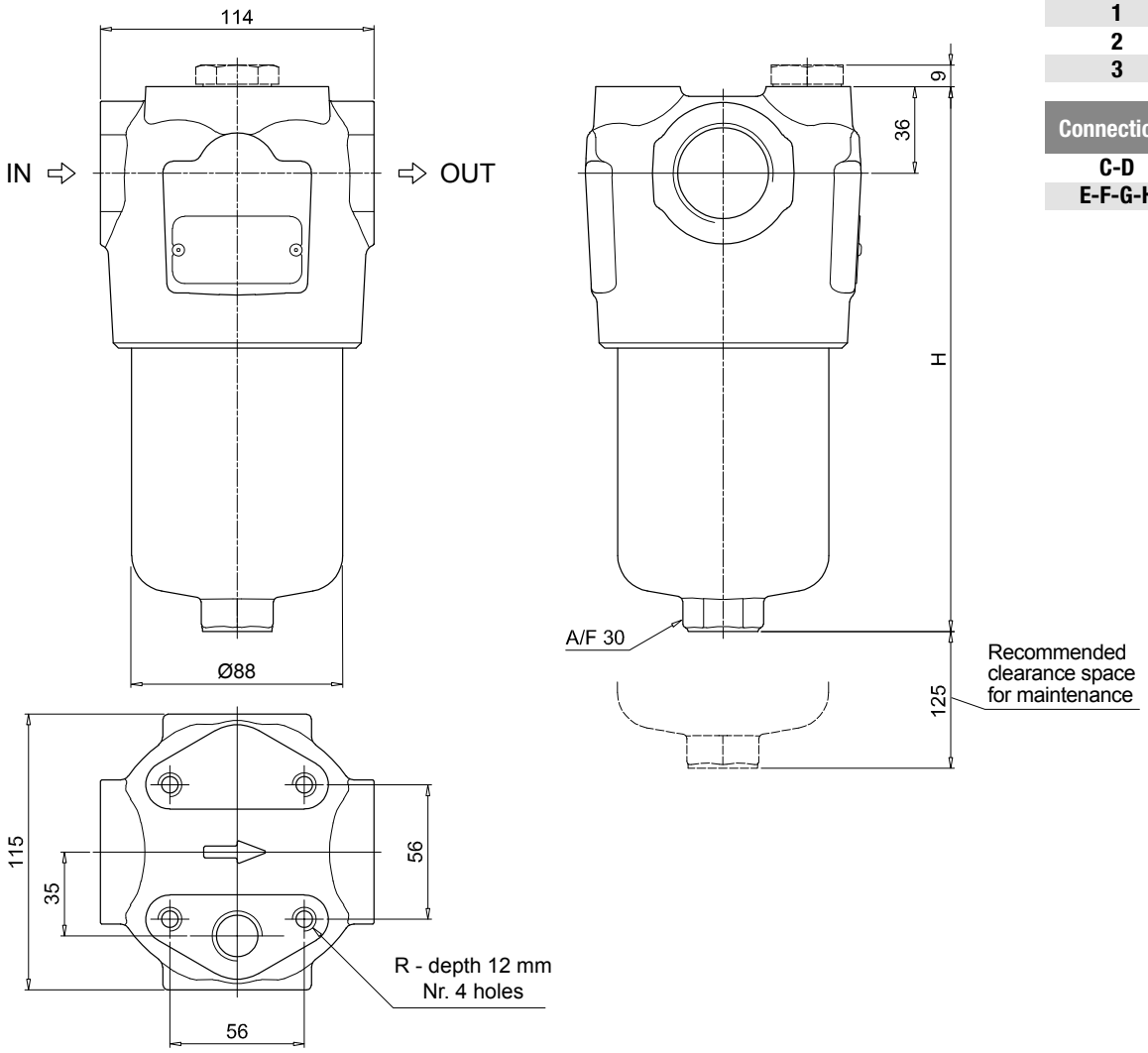
See page 807

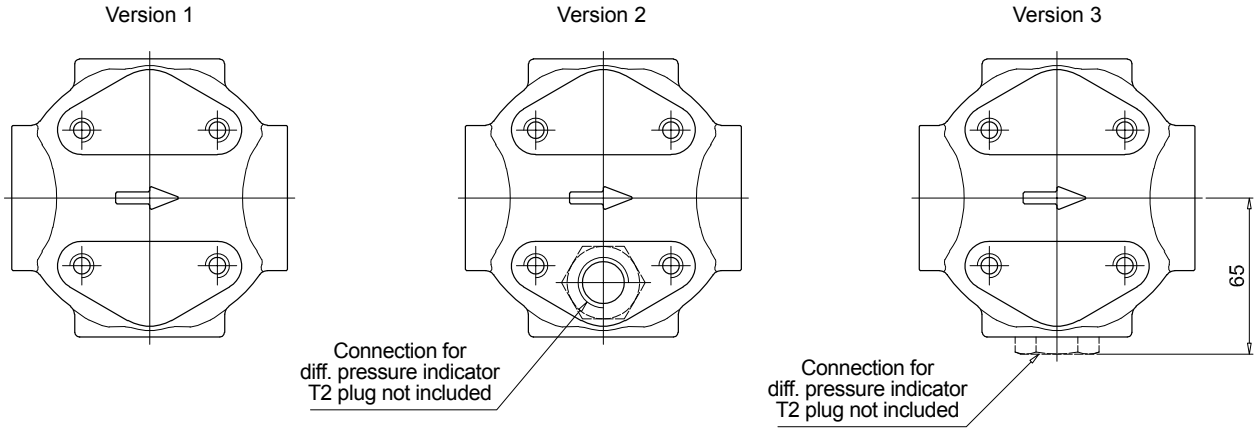
T2 Plug (not included)

MP FILTRI WWW.SUMY.IR

FMM150	
Filter length	**H [mm]**
1	230
2	340
3	415

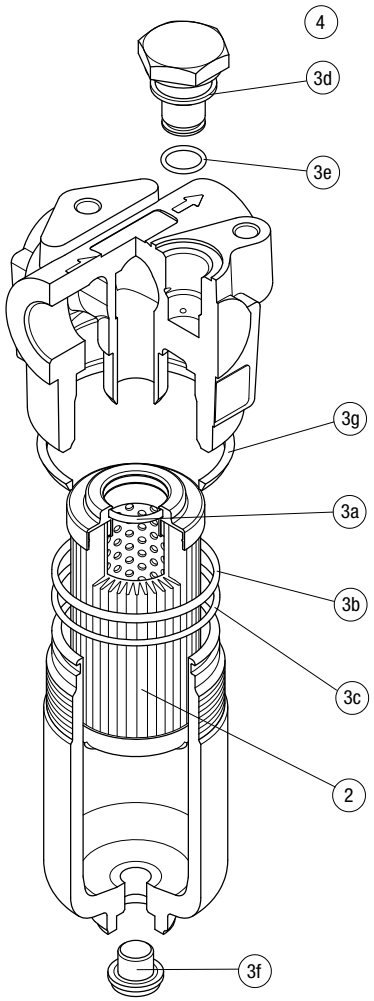
Connections	**R**
C-D	M10
E-F-G-H	3/8" UNC





Order number for spare parts

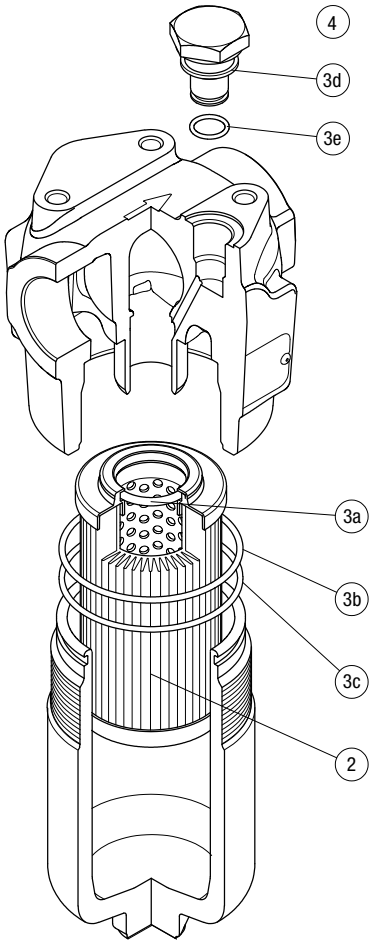
FMM 050



Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3g)		Q.ty: 1 pc. 4	
Filter series	Filter element	Seal Kit code number NBR	FPM	Indicator connection plug NBR	FPM
FMM 050	See order table	02050314	02050315	T2H	T2V

MP FILTRI WWW.SUMY.IR

FMM 150



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3e)		Q.ty: 1 pc. (4)	
Filter series	**Filter element**	**Seal Kit code number NBR**	**FPM**	**Indicator connection plug NBR**	**FPM**
FMM 150	See order table	02050731	02050732	T2H	T2V

MP FILTRI
WWW.SUMY.IR

FHA 051 series

Maximum working pressure up to 56 MPa (560 bar) - Flow rate up to 150 l/min



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FHA 051 GENERAL INFORMATION

Description

High Pressure filters

In-line
Maximum working pressure up to 56 MPa (560 bar)
Flow rate up to 150 l/min

FHA is a range of high pressure filter for protection of sensitive components in high pressure hydraulic systems in the mobile machines. They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- Female threaded connections up to 3/4", for a maximum flow rate of 150 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Bypass valve, to relieve excessive pressure drop across the filter media
- Check valve, to protect the system against reverse flow
- Reverse flow valve, to allow bidirectional flow through the filter housing. The back flow is not filtered
- Low collapse filter element "N", for use with filters provided with bypass valve
- Low collapse filter element with external support "R", for filter element protection against the back pressure caused by the check valve or the reverse flow in filters provided with the bypass valve
- High collapse filter element with external support "S", for filter element protection against the back pressure caused by the check valve or the reverse flow in filters not provided with the bypass valve
- Visual, electrical and electronic differential clogging indicators

Common applications:

Delivery lines, in any heavy duty industrial equipment or mobile machines

Technical data

Filter housing materials

- Head: Steel (chemical heat treatment)
- Housing: Steel (chemical heat treatment)
- Bypass valve: Steel

Pressure

- Test pressure: 84 MPa (840 bar)
- Min. Burst pressure: 168 MPa (1680 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 56 MPa (560 bar)

Bypass valve

- Opening pressure 0.6 MPa (6 bar) ±10%
- Other opening pressures on request.

Filter element features

Filter		Filter element	
FHA 051		HP	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	N	20 bar
	With external support	R	20 bar
	High Δp with external support	S	210 bar
M - Wire mesh	Standard	N	20 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals

- Standard NBR series A
- Optional FPM series V

Temperature

From -25 °C to +110 °C

Connections

In-line Inlet/Outlet

Note

FHA filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]						Volumes [dm³]					
	Length	1	2	3	4	5	Length	1	2	3	4	5
FHA 051		3.28	3.65	4.06	4.54	5.74		0.33	0.47	0.62	0.79	1.23

MP FILTRI WWW.SUMY.IR

Flow rates [l/min]

		Filter element design - N Series						Filter element design - R Series					Filter element design - S Series				
Filter series	Length	A03	A06	A10	A16	A25	M25	A03	A06	A10	A16	A25	A03	A06	A10	A16	A25
	1	42	41	82	85	110	156	42	41	82	85	110	30	40	58	60	76
	2	53	58	87	100	127	158	53	58	87	100	127	45	50	78	91	120
FHA 051	**3**	68	71	101	111	137	160	68	71	101	111	137	59	62	92	103	131
	4	86	92	118	121	142	162	86	92	118	121	142	77	83	110	113	137
	5	112	115	137	142	150	165	112	115	137	142	150	96	99	116	128	147

Maximum flow rate for a complete pressure filter with a pressure drop Δp = 1.5 bar.

The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.

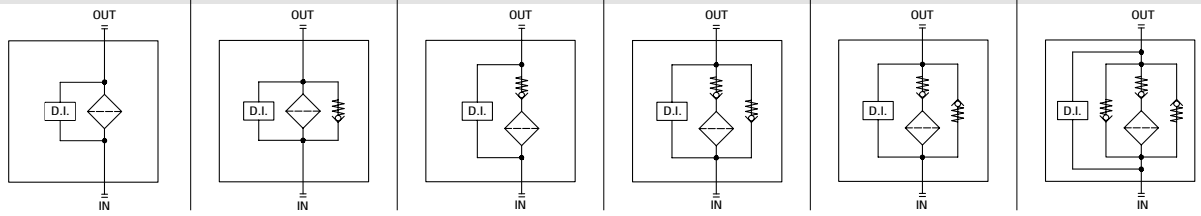
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.

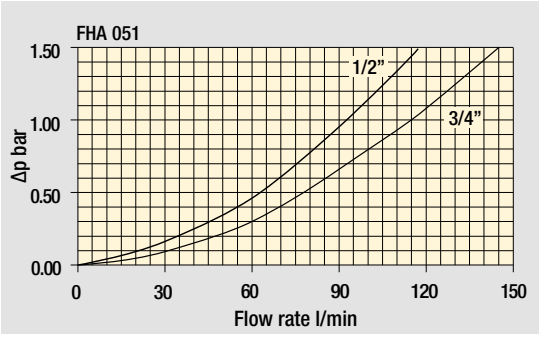
Please, contact our Sales Department for further additional information.

Hydraulic diagram

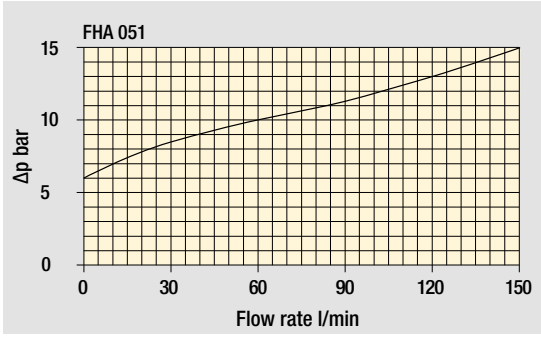
Filter series	Style S	Style B	Style T	Style D	Style V	Style Z
FHA 051	•	•	•	•	•	•



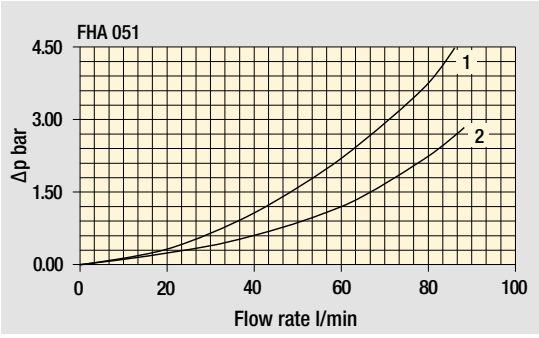
Pressure drop



Filter housings
Δp pressure drop



Bypass valve
pressure drop



Pressure drop in reverse flow valves

1 - Reverse flow
2 - In filter direction

The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

FHA 051

Designation & Ordering code

COMPLETE FILTER

Configuration example: FHA051 | 3 | B | A | G | A10 | N | P01

Series and size
FHA051

Length
1 | **2** | **3** | **4** | **5**

Valves

S	Without bypass
B	With bypass 6 bar
T	With check valve, without bypass
D	With check valve, with bypass 6 bar
V	With reverse flow, without bypass
Z	With reverse flow, with bypass 6 bar

Seals

A	NBR
V	FPM

Connections

A	M18x1.5 - ISO 6149	**E**	1/2" NPT
B	M22x1.5 - ISO 6149	**F**	3/4" NPT
C	G 1/2"	**G**	SAE 8 - 3/4" - 16 UNF
D	G 3/4"	**H**	SAE 12 - 1 1/16" - 12 UN

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Element Δp		Valves S	B	T	D	V	Z
N	20 bar	-	•	-	-	-	-
R	20 bar	-	-	-	•	-	•
S	210 bar	•	-	•	-	•	-

Execution

P01	Upper connection for clogging indicator
P02	Without connection for clogging indicator
P03	Frontal connection for clogging indicator
Pxx	Customized

FILTER ELEMENT

Configuration example: HP050 | 3 | A10 | A | N | P01

Element series and size
HP050

Element length
1 | **2** | **3** | **4** | **5**

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Seals

A	NBR
V	FPM

Element Δp

N	20 bar
R	20 bar
S	210 bar

Execution

P01	MP Filtri standard
Pxx	Customized

To be installed for working pressures up to 420 bar max

CLOGGING INDICATORS

See page 786

DEA	Electrical differential pressure indicator
DEM	Electrical differential pressure indicator
DEU	Electrical differential pressure indicator
DLA	Electrical / visual differential pressure indicator
DLE	Electrical / visual differential pressure indicator
DTA	Electronic differential pressure indicator
DTI	I-O Link electronic differential pressure indicator
DVA	Visual differential pressure indicator
DVM	Visual differential pressure indicator

PLUGS

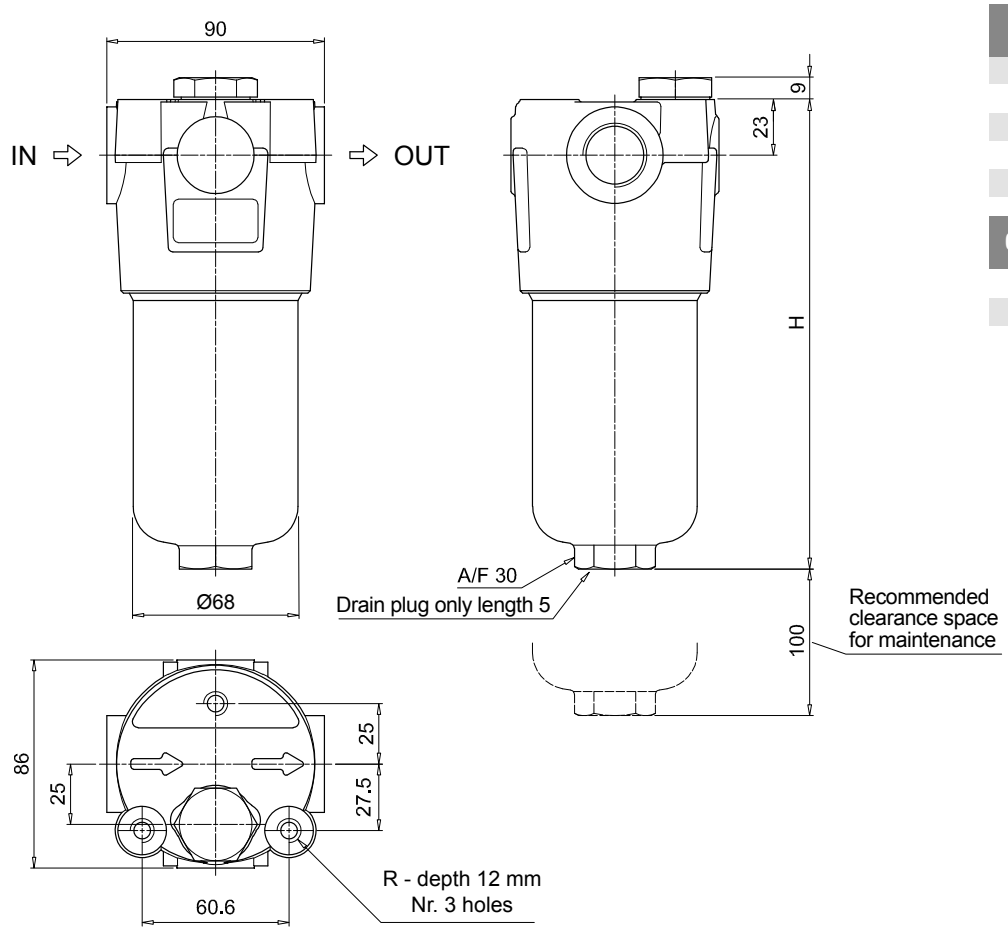
See page 807

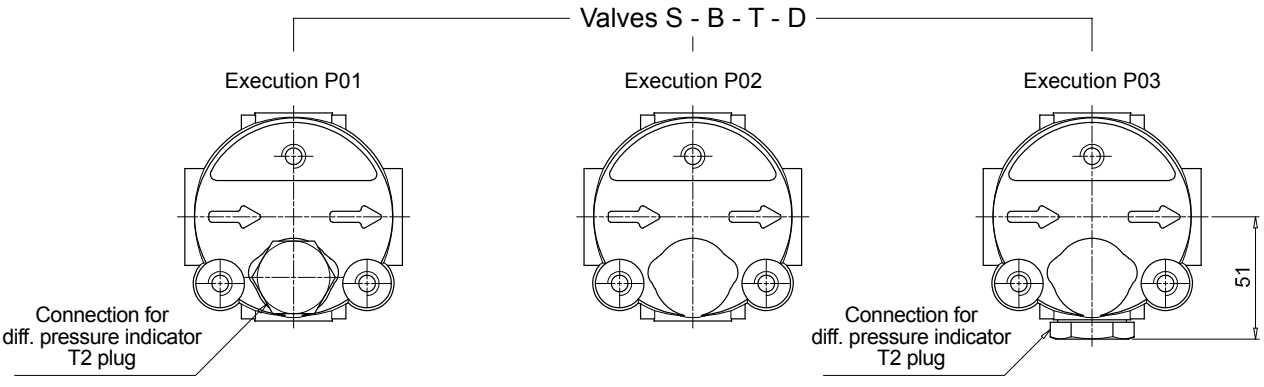
T2	Plug (not included)

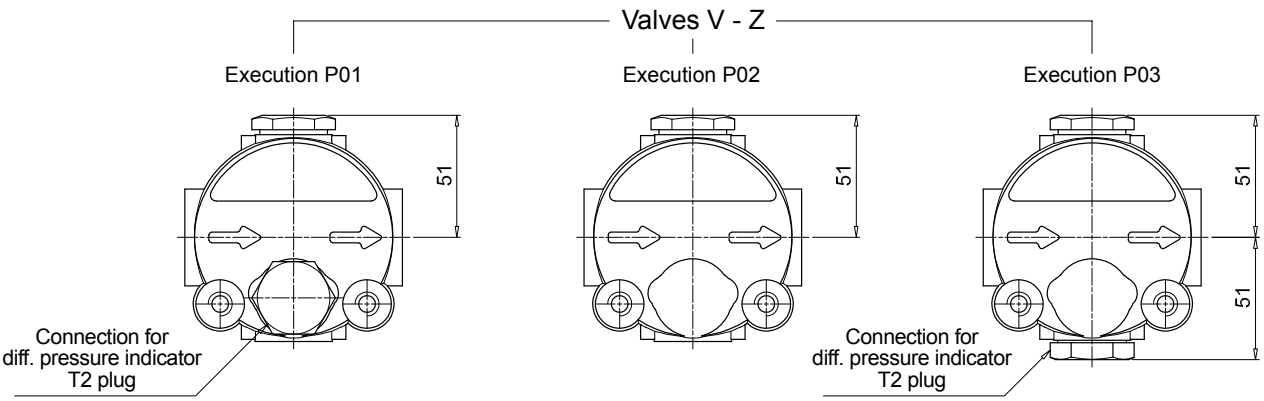
MP FILTRI WWW.SUMY.IR

FHA051	
Filter length	**H [mm]**
1	158
2	195
3	237
4	285
5	407

Connections	**R**
A-B-C-D	M10
E-F-G-H	3/8" UNC



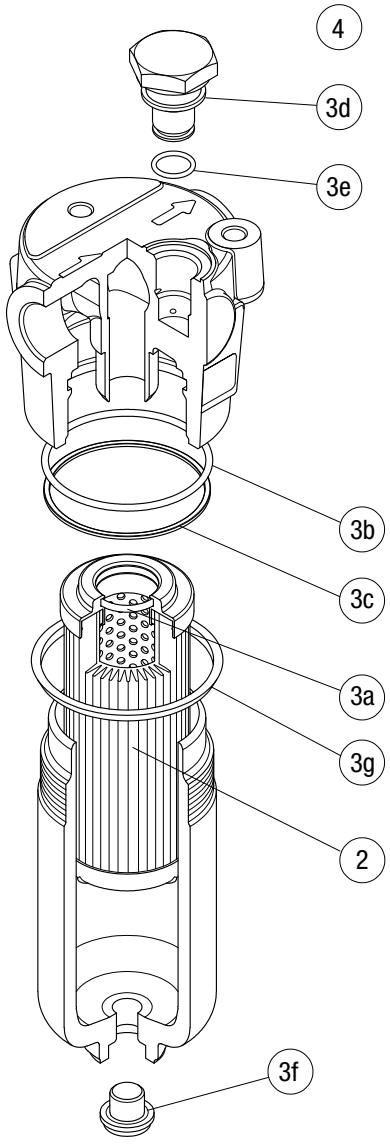




FHA 051 SPARE PARTS

Order number for spare parts

FHA 051



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3g)		Q.ty: 1 pc. (4)	
Filter series	Filter element	Seal Kit code number NBR	Seal Kit code number FPM	Indicator connection plug NBR	Indicator connection plug FPM
FHA 051	See order table	02050288	02050305	T2H	T2V

MP FILTRI WWW.SUMY.IR

MP FILTRI
WWW.SUMY.IR

FMP 039 series

Maximum working pressure up to 11 MPa (110 bar) - Flow rate up to 80 l/min



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FMP 039 GENERAL INFORMATION

Description

High Pressure filters

In-line
Maximum working pressure up to 11 MPa (110 bar)
Flow rate up to 80 l/min

FMP039 is a range of versatile medium pressure filter for transmission, protection of sensitive components in medium pressure hydraulic systems and filtration of the coolant into the machine tools.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:
- 1/2" female threaded connections, for a maximum flow rate of 80 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Bypass valve, to relieve excessive pressure drop across the filter media
- Low collapse filter element "N"
- Visual, electrical and electronic differential clogging indicators

Common applications:
Delivery lines, in any medium pressure industrial equipment or mobile machines

Technical data

Filter housing materials
- Head: Anodized aluminium
- Housing: Anodized aluminium
- Bypass valve: Steel

Pressure
- Test pressure: 16.5 MPa (165 bar)
- Min. Burst pressure: 33 MPa (330 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 11 MPa (110 bar)

Bypass valve
- Opening pressure 0.6 MPa (6 bar) ±10%
- Other opening pressures on request.

Filter element features

Filter	Filter element		
FMP 039	HP		
Δp Element type			
Element media	Construction	Δp Series	Δp
A - Microfiber	Standard	N	20 bar
M - Wire mesh	Standard	N	20 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals
- Standard NBR series A
- Optional FPM series V

Temperature
From -25 °C to +110 °C

Connections
In-line Inlet/Outlet

Note
FMP 039 filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

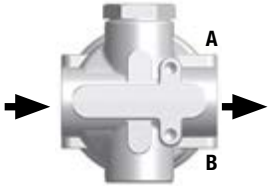
Filter series	Weights [kg]				Volumes [dm³]			
	Length	2	3	4	Length	2	3	4
FMP 039		0.60	0.70	0.80		0.19	0.26	0.34

Executions

Execution 1:
without indicator connection



Execution 6
double indicator connection (A - B)

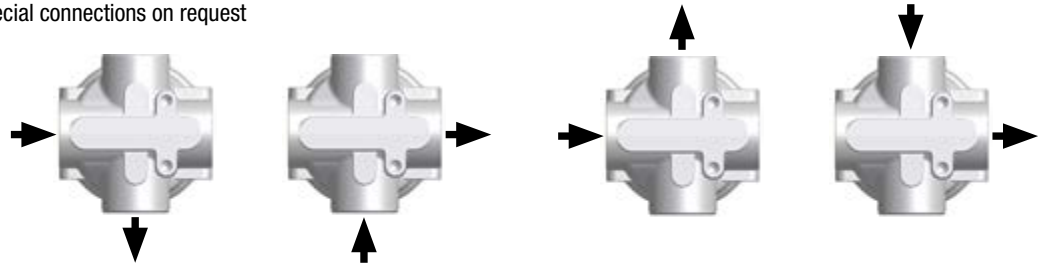


A:
Closure cap with standard T2 steel. The position of the cap is reversible.

B:
Standard closure cap with plastic thread protection.

If necessary, a second T2 plug is available, see ordering information.

Special connections on request



MP FILTRI WWW.SUMY.IR

Flow rates [l/min]

		Filter element design - N Series					
Filter series	Length	A03	A06	A10	A16	A25	M25
FMP 039	2	20	26	45	52	61	97
	3	35	39	56	64	76	98
	4	44	48	66	71	82	92

Maximum flow rate for a complete pressure filter with a pressure drop Δp = 1.5 bar.

The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.

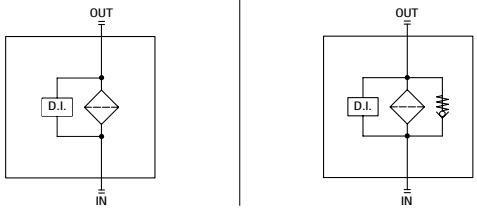
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.

Please, contact our Sales Department for further additional information.

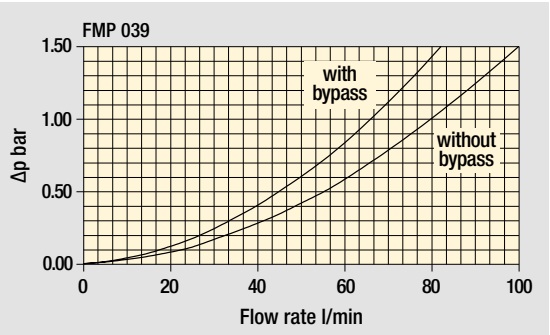
Hydraulic diagram

Filter series	Style S	Style B
FMP 039	•	•

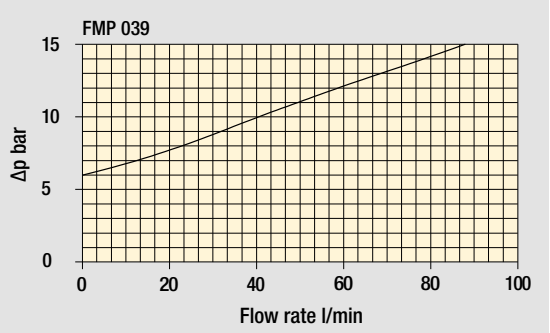


Pressure drop

Filter housings Δp pressure drop



Bypass valve pressure drop



The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

FMP 039

Designation & Ordering code

COMPLETE FILTER

Configuration example: FMP039 | 3 | B | A | B | 6 | A03 | N | P01

Series and size
FMP039

Length
2 | **3** | **4**

Valves
S Without bypass
B With bypass 6 bar

Seals
A NBR
V FPM

Connections
A G 1/2”
B 1/2” NPT
C SAE 8 - 3/4” - 16 UNF

Connection for differential pressure indicator
1 Without connections
6 With two connections on both sides

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Element Δp
N 20 bar

Execution
P01 MP Filtri standard
Pxx Customized

FILTER ELEMENT

Configuration example: HP039 | 3 | A03 | A | N | P01

Element series and size
HP039

Element length
2 | **3** | **4**

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Seals
A NBR
V FPM

Element Δp
N 20 bar

Execution
P01 MP Filtri standard
Pxx Customized

CLOGGING INDICATORS

See page 786

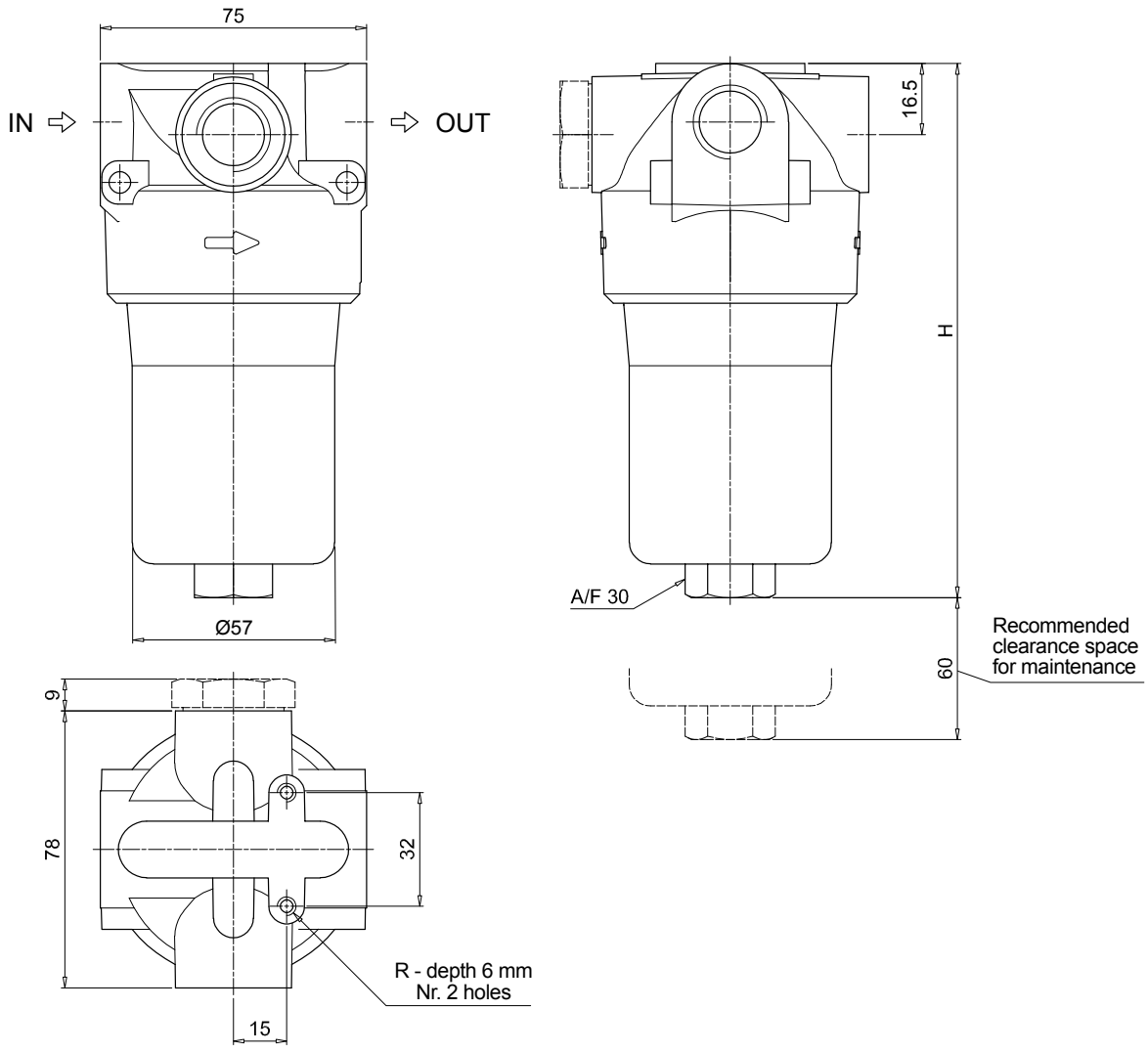
DEA Electrical differential pressure indicator
DEM Electrical differential pressure indicator
DEU Electrical differential pressure indicator
DLA Electrical / visual differential pressure indicator
DLE Electrical / visual differential pressure indicator
DTA Electronic differential pressure indicator
DTI I-O Link electronic differential pressure indicator
DVA Visual differential pressure indicator
DVM Visual differential pressure indicator

PLUGS

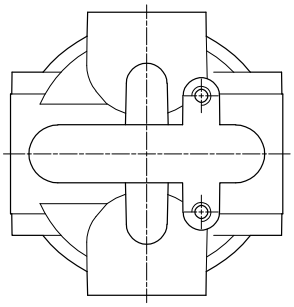
See page 807

T2 Plug (not included)

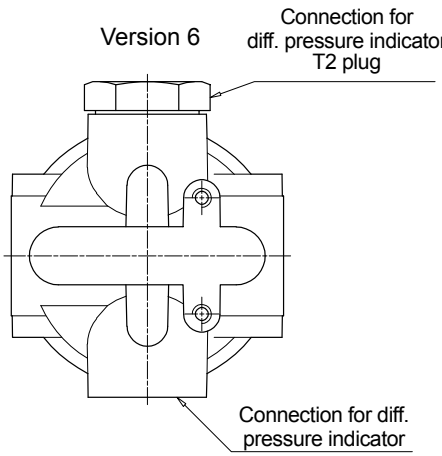
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Version 1



Version 6



The position of the T2 plug is reversible

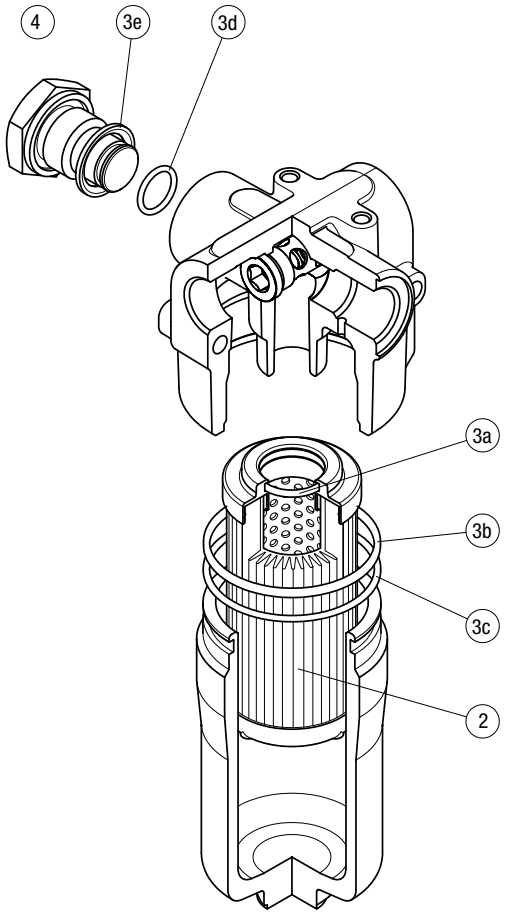
FMP039	
Filter length	**H [mm]**
2	151
3	194
4	238

Connections	**R**
A	M6
B - C	1/4" UNC

FMP 039 SPARE PARTS

Order number for spare parts

FMP 039



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3e)	
Filter series	**Filter element**	**Seal Kit code number NBR**	**FPM**
FMP 039	See order table	02050509	02050510

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FMP series

Maximum working pressure up to 32 MPa (320 bar) - Flow rate up to 500 l/min



INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS

Please scan or click the QR codes to get updated electronic version of the related document.

FMP065 FMP135 FMP320

For all the QR codes: Scan or click me!

FMP GENERAL INFORMATION

Description

High Pressure filters

In-line
Maximum working pressure up to 32 MPa (320 bar)
Flow rate up to 500 l/min

FMP is a range of versatile high pressure filter for protection of sensitive components in high pressure hydraulic systems in the industrial equipment.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- Female threaded connections up to 1 1/2" and flanged connections up to 1 1/2", for a maximum flow rate of 500 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Bypass valve, to relieve excessive pressure drop across the filter media
- Check valve, to protect the system against reverse flow
- Low collapse filter element "N", for use with filters provided with bypass valve
- High collapse filter element "H", for use with filters not provided with bypass valve
- Low collapse filter element with external support "R", for filter element protection against the back pressure caused by the check valve in filters provided with the bypass valve
- High collapse filter element with external support "S", for filter element protection against the back pressure caused by the check valve in filters not provided with the bypass valve
- Visual, electrical and electronic differential clogging indicators

Common applications:

Delivery lines, in any high pressure industrial equipment or mobile machines

Technical data

Filter housing materials

- Head: Phosphatized cast iron
- Housing: Phosphatized steel
- Bypass valve: Brass
- Reverse Flow: Steel (only for series FMP 320)
- Check valve: Steel

Pressure

- Test pressure: 48 MPa (480 bar)
- Min. Burst pressure: 96 MPa (960 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 32 MPa (320 bar)

Bypass valve

- Opening pressure 0.6 MPa (6 bar) ±10%
- Other opening pressures on request.

Filter element features

Filter FMP		Filter element HP	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	N	20 bar
	With external support	R	20 bar
	High Δp	H	210 bar
	High Δp with external support	S	210 bar
M - Wire mesh	Standard	N	20 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals

- Standard NBR series A
- Optional FPM series V

Temperature

From -25 °C to +110 °C

Connections

In-line Inlet/Outlet

Note

FMP filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]					Volumes [dm³]				
	Length	1	2	3	4	Length	1	2	3	4
FMP 065		3.26	3.62	4.83	-		0.36	0.47	0.84	-
FMP 135		5.61	7.21	8.27	-		0.45	0.78	1.00	-
FMP 320		10.95	13.08	15.37	17.85		1.03	1.75	2.52	3.35

MP FILTRI WWW.SUMY.IR

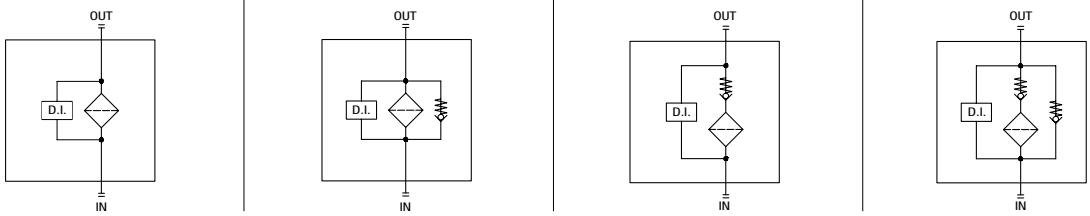
Flow rates [l/min]

		Filter element design - N Series					
Filter series	Length	A03	A06	A10	A16	A25	M25
FMP 065	1	23	30	48	54	72	105
	2	31	45	60	65	82	106
	3	52	60	80	84	94	108
FMP 135	1	69	73	120	129	171	201
	2	110	117	149	152	211	232
	3	151	152	192	195	212	233
FMP 320	1	130	144	244	296	361	477
	2	267	291	417	438	492	509
	3	348	390	476	493	503	519
	4	389	415	483	502	525	534

Maximum flow rate for a complete pressure filter with a pressure drop Δp = 1.5 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

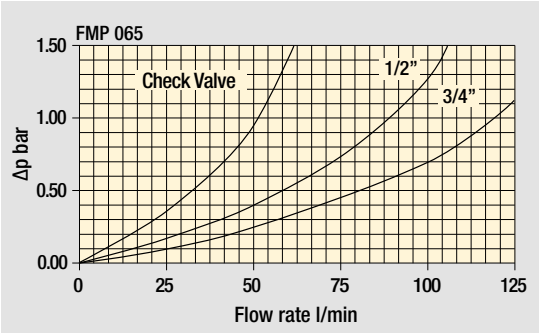
Hydraulic diagram

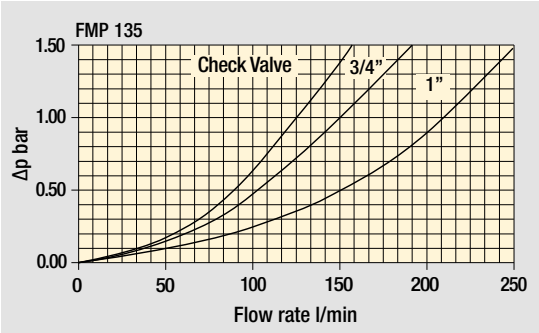
Filter series	Style S - E	Style B - C	Style T	Style D
FMP 065	•	•	•	•
FMP 135	•	•	•	•
FMP 320	•	•	•	•

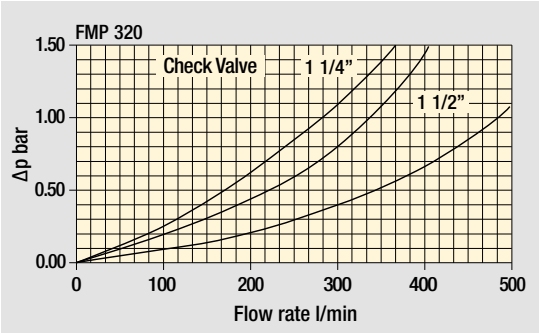


Pressure drop

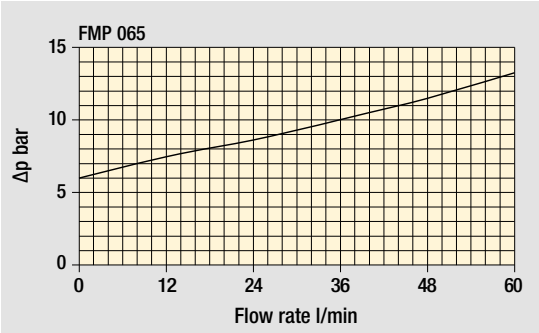
Filter housings Δp pressure drop

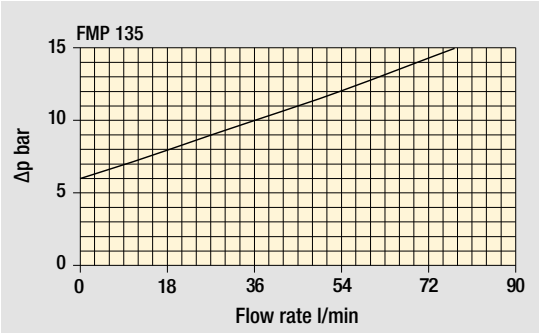


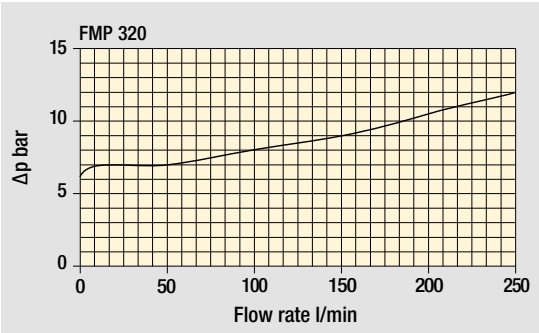




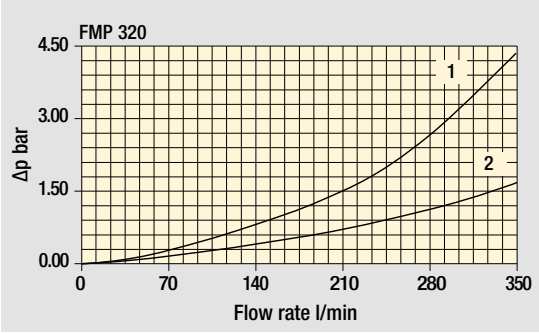
Bypass valve pressure drop







Valves



Filter housing with check valve

1 - Reverse flow
2 - In filter direction

The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

MP FILTRI WWW.SUMY.IR

Designation & Ordering code

COMPLETE FILTER

Configuration example: FMP065 | 3 | T | A | G1 | M25 | S | P01

Series and size

FMP065 | **FMP135** | **FMP320**

Length	FMP065	FMP135	FMP320
1	•	•	•
2	•	•	•
3	•	•	•
4	-	-	•

Valves

S	Without bypass	**C**	With bypass 6 bar, plug on the opposite side
E	Without bypass, plug on the opposite side	**T**	With check valve, without bypass
B	With bypass 6 bar	**D**	With check valve, with bypass

Seals

A	NBR	**V**	FPM

Connections	FMP065	FMP135	FMP320
G1	G 1/2"	G 3/4"	G 1 1/4"
G2	G 3/4"	G 1"	G 1 1/2"
G3	1/2" NPT	3/4" NPT	1 1/4" NPT
G4	3/4" NPT	1" NPT	1 1/2" NPT
G5	SAE 8 - 3/4" - 16 UNF	SAE 12 - 1 1/16" - 12 UN	SAE 20 - 1 5/8" - 12 UN
G6	SAE 12 - 1 1/16" - 12 UN	SAE 16 - 1 5/16" - 12 UN	SAE 24 - 1 7/8" - 12 UN
F1	-	3/4" SAE 3000 psi/M	1 1/4" SAE 3000 psi/M
F2	-	1" SAE 3000 psi/M	1 1/2" SAE 3000 psi/M
F3	-	3/4" SAE 3000 psi/UNC	1 1/4" SAE 3000 psi/UNC
F4	-	1" SAE 3000 psi/UNC	1 1/2" SAE 3000 psi/UNC

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Element Δp		Valves S	E	B	C	T	D
N	20 bar	-	-	•	•	-	-
R	20 bar	-	-	-	-	-	•
H	210 bar	•	•	-	-	-	-
S	210 bar	-	-	-	-	•	-

Execution		Filter length 1	2	3	4
P01	MP Filtri standard	•	•	•	•
P02	Maintenance from the bottom of the housing	-	-	-	•
Pxx	Customized	-	-	-	-

FILTER ELEMENT

Configuration example: HP065 | 3 | M25 | A | S | P01

Element series and size

HP065 | **HP135** | **HP320**

Element length	HP065	HP135	HP320
1	•	•	•
2	•	•	•
3	•	•	•
4	-	-	•

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Seals

A	NBR
V	FPM

Element Δp

N	20 bar
R	20 bar
H	210 bar
S	210 bar

Execution

P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See page 786

DEA	Electrical differential pressure indicator	**DTA**	Electronic differential pressure indicator
DEM	Electrical differential pressure indicator	**DTI**	I-O Link electronic differential pressure indicator
DEU	Electrical differential pressure indicator	**DVA**	Visual differential pressure indicator
DLA	Electrical / visual differential pressure indicator	**DVM**	Visual differential pressure indicator
DLE	Electrical / visual differential pressure indicator		

PLUGS

See page 807

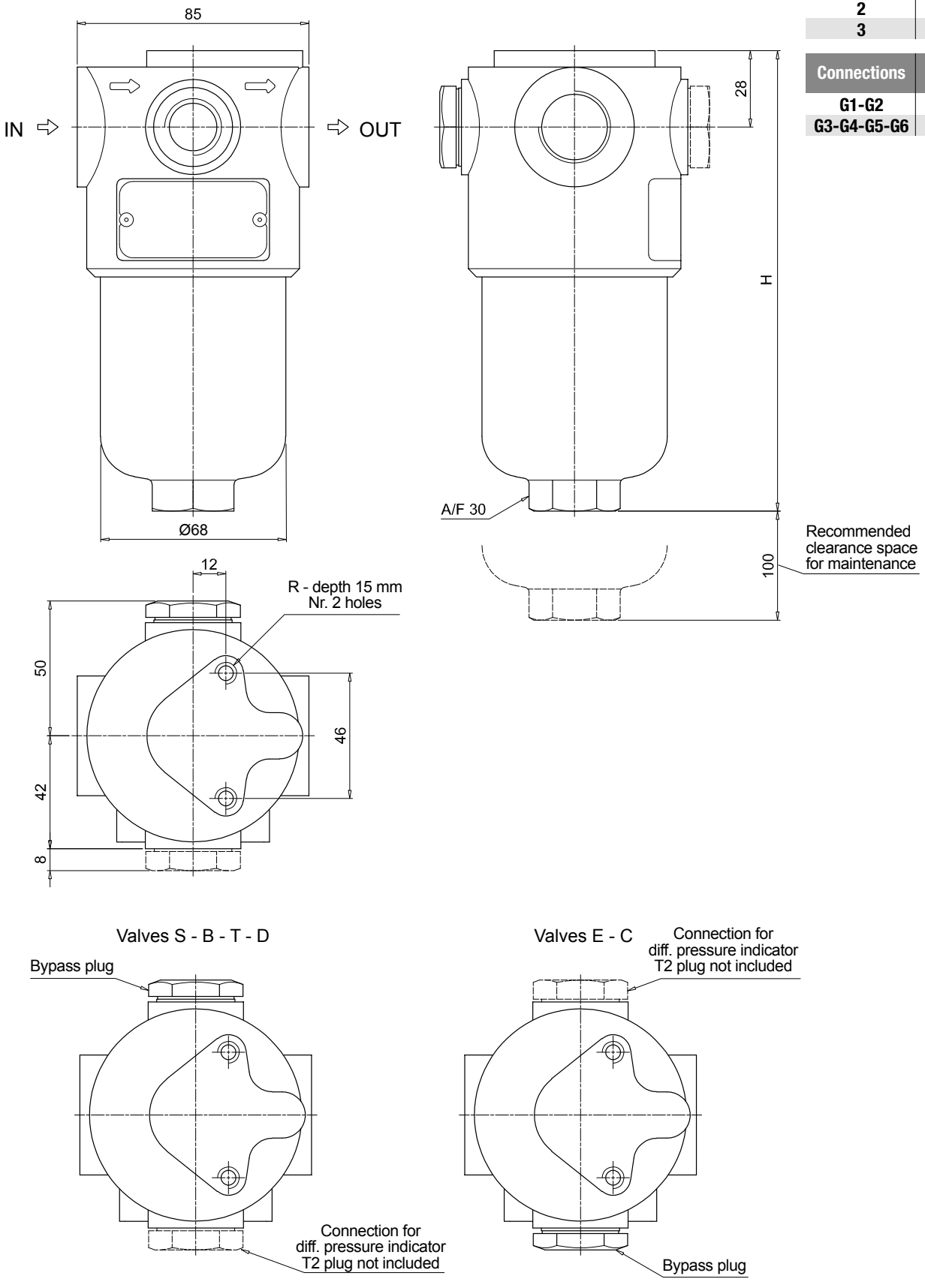
T2 Plug (not included)

MP FILTRI WWW.SUMY.IR

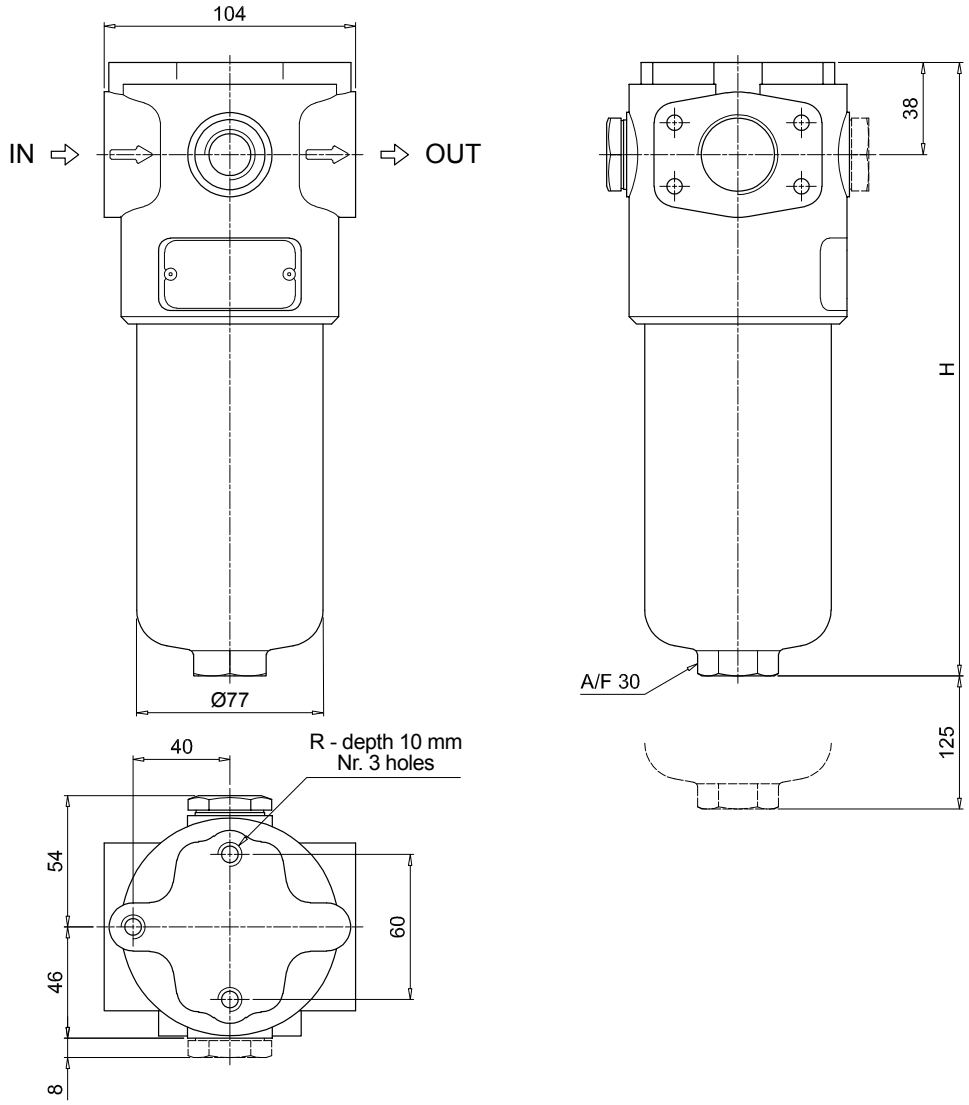
FMP065

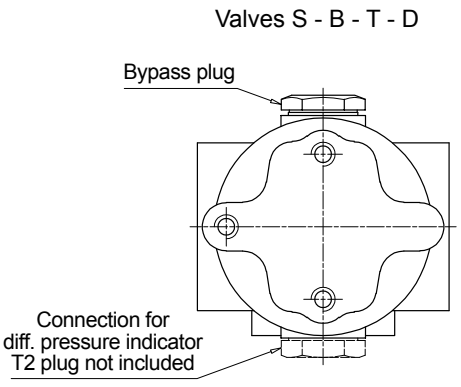
Filter length	H [mm]
1	169
2	200
3	302

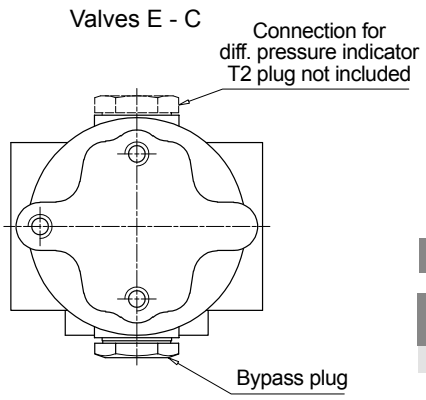
Connections	R
G1-G2	M8
G3-G4-G5-G6	5/16" UNC



Dimensions





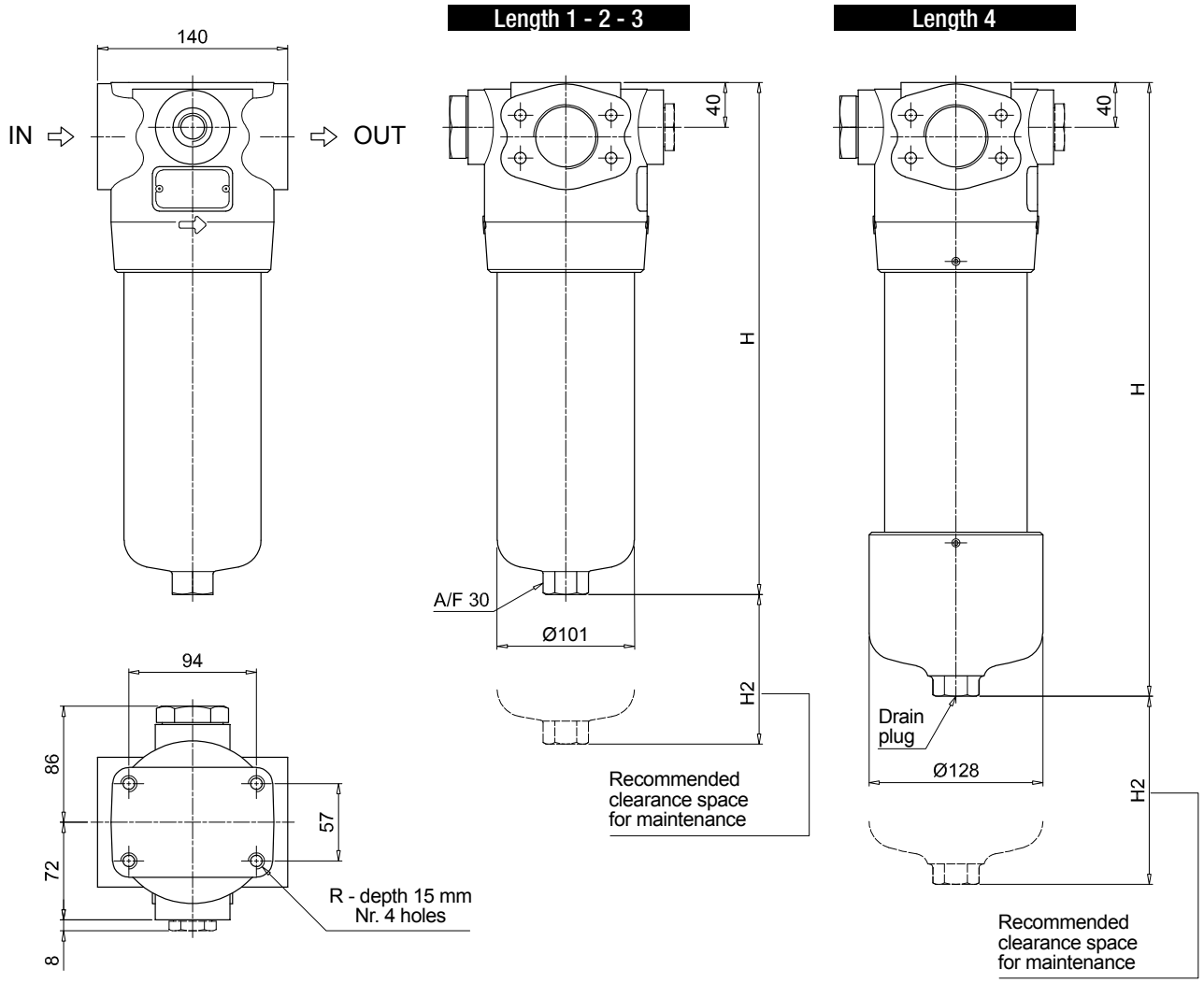


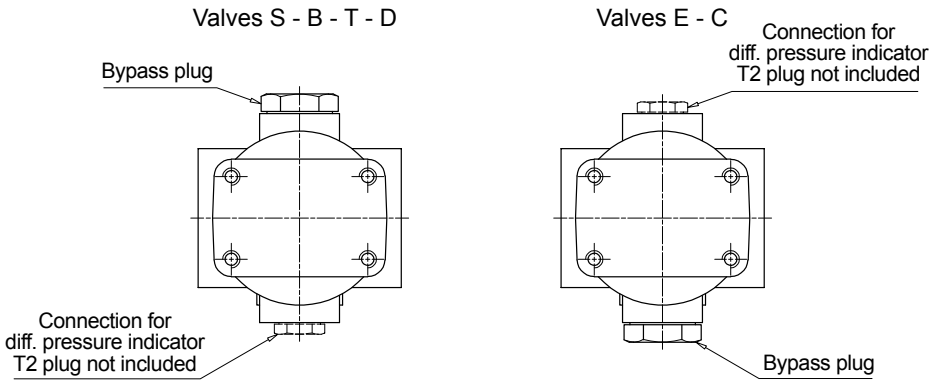
FMP135

Filter length	H [mm]
1	221
2	334
3	409

Connections	R
G1-G2	M10
G3-G4-G5-G6	3/8" UNC
F1-F2	M10
F3-F4	3/8" UNC

MP FILTRI WWW.SUMY.IR





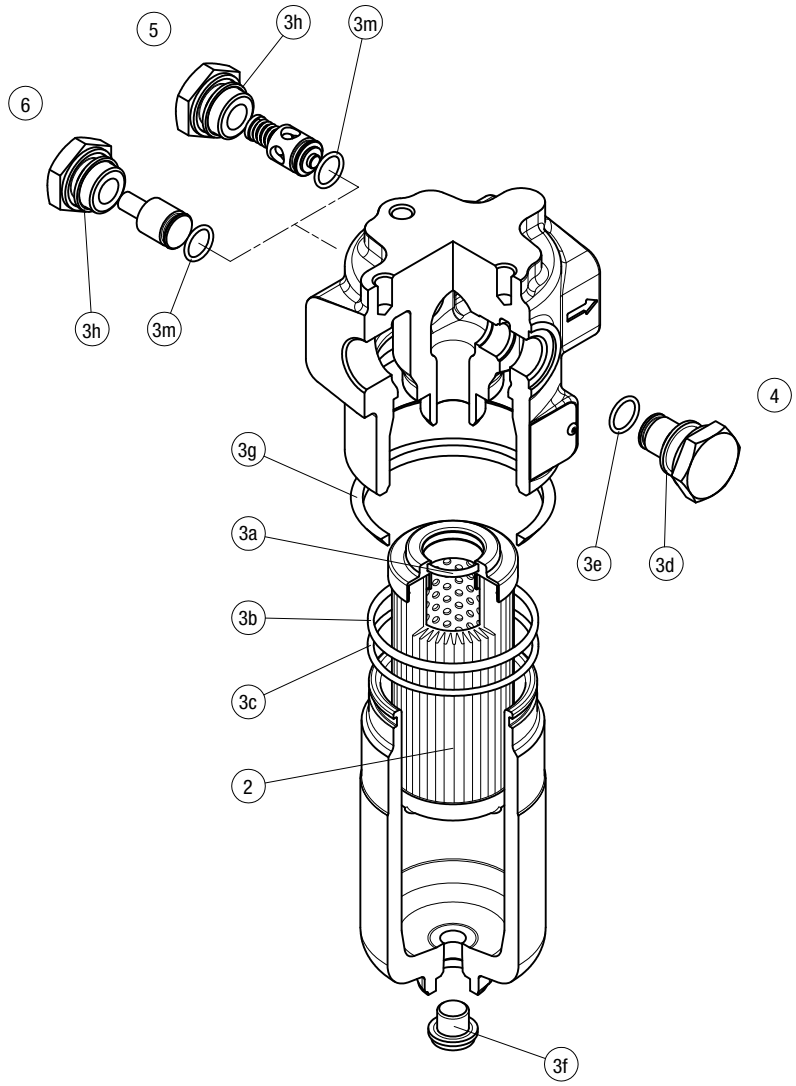
FMP320

Filter length	H [mm]	H2 [mm] Execution P01	P02
1	263	150	-
2	386	150	-
3	518	150	-
4	671	150	550

Connections	R
G1-G2	M12
G3-G4-G5-G6	1/2" UNC
F1-F2	M12
F3-F4	1/2" UNC

Order number for spare parts

FMP 065 - 135 - 320



Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3m)		Q.ty: 1 pc. 4		Q.ty: 1 pc. 5		Q.ty: 1 pc. 6	
Filter series	**Filter element**	**Seal Kit code number NBR**	**FPM**	**Indicator connection plug NBR**	**FPM**	**Bypass assembly NBR**	**FPM**	**Non-bypass assembly NBR**	**FPM**
FMP 065	See order table	02050267	02050278	T2H	T2V	02001312	02001385	02001314	02001386
FMP 135		02050293	02050294			02001312	02001385	02001314	02001386
FMP 320		02050274	02050285			02001396	02001397	02001398	02001399

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FHP series

Maximum working pressure up to 42 MPa (420 bar) - Flow rate up to 630 l/min



INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS

Please scan or click the QR codes to get updated electronic version of the related document:

FHP010 FHP011 FHP065 FHP135 FHP350 FHP351 FHP500

For all the QR codes: Scan or click me!

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FHP GENERAL INFORMATION

Description

High Pressure filters

In-line
Maximum working pressure up to 42 MPa (420 bar)
Flow rate up to 630 l/min

FHP is a range of versatile high pressure filter for protection of sensitive components in high pressure hydraulic systems in the industrial equipment.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- Female threaded connections up to 1 1/2" and flanged connections up to 2", for a maximum return flow rate of 630 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Bypass valve, to relieve excessive pressure drop across the filter media
- Check valve, to protect the system against reverse flow
- Reverse flow valve, to allow bidirectional flow through the filter housing. The back flow is not filtered. The filter requires the use of internal check valves to direct the flow through the element in one direction and around the element in the other
- Low collapse filter element "N", for use with filters provided with bypass valve
- High collapse filter element "H", for use with filters not provided with bypass valve
- Low collapse filter element with external support "R", for filter element protection against the back pressure caused by the check valve or the reverse flow in filters provided with the bypass valve
- High collapse filter element with external support "S", for filter element protection against the back pressure caused by the check valve or the reverse flow in filters not provided with the bypass valve
- Visual, electrical and electronic differential clogging indicators

Common applications:

Delivery lines, in any high pressure industrial equipment or mobile machines

Technical data

Filter housing materials

- Head: Phosphatized cast iron
- Housing: Phosphatized steel
- Bypass valve
  AISI 316L: FHP 010 - 011
  Brass: FHP 065 - 135
  Brass / AISI 304: FHP 350-351
  Steel: FHP 500
- Reverse Flow
  Steel: FHP 350 - FHP 500
- Check valve: Steel

Pressure

- Test pressure: 63 MPa (630 bar)
- Burst pressure: 126 MPa (1260 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 42 MPa (420 bar)

Bypass valve

- Opening pressure 0.6 MPa (6 bar) ±10%
- Other opening pressures on request.

Filter element features

Filter		Filter element	
FHP		HP	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	N	20 bar
	With external support	R	20 bar
	High Δp	H	210 bar
	High Δp with external support	S	210 bar
M - Wire mesh	Standard	N	20 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals

- Standard NBR series A
- Optional FPM series V

Temperature

From -25 °C to +110 °C

Connections

FHP 010 - 065 - 135 - 350 - 351 - 500:
In-line Inlet/Outlet
FHP 011:
90° Inlet/Outlet

Note

FHP filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]						Volumes [dm³]					
	Length	1	2	3	4	5	Length	1	2	3	4	5
FHP 010 - 011		2.05	2.18	2.64	3.13	-		0.10	0.12	0.15	0.20	-
FHP 065		4.26	4.62	5.83	-	-		0.25	0.30	0.50	-	-
FHP 135		7.11	8.71	9.76	-	-		0.43	0.76	0.97	-	-
FHP 350 - 351		13.95	16.08	18.37	20.85	-		1.00	1.72	2.49	3.32	-
FHP 500		27.00	31.17	34.69	46.70	52.5		1.71	2.43	3.04	5.18	6.51

MP FILTRI WWW.SUMY.IR

Flow rates [l/min]

		Filter element design - H Series					Filter element design - N Series					
Filter series	Length	A03	A06	A10	A16	A25	A03	A06	A10	A16	A25	M25
FHP 010	**1**	3	5	6	7	8	4	6	8	9	10	37
	2	5	7	13	16	22	6	8	16	19	24	40
	3	10	13	22	25	30	11	14	23	26	31	41
	4	12	15	25	27	32	16	19	27	30	33	41
FHP 011	**1**	3	5	6	7	9	4	6	8	9	11	47
	2	5	7	14	17	24	7	9	17	21	28	52
	3	11	14	25	29	36	11	14	26	30	37	53
	4	12	16	28	32	38	17	21	32	36	40	54
FHP 065	**1**	24	25	50	59	84	25	33	56	63	90	142
	2	33	38	68	77	98	34	52	72	79	106	143
	3	61	70	100	107	123	61	73	101	108	125	147
FHP 135	**1**	49	55	95	98	147	67	72	115	122	159	184
	2	89	106	129	131	163	105	111	140	142	192	209
	3	120	132	158	166	180	141	143	176	179	193	211
FHP 350 FHP 351	**1**	108	115	188	197	301	127	140	234	282	343	451
	2	196	225	317	323	396	256	278	394	415	465	480
	3	266	310	384	392	440	331	370	450	466	475	490
	4	308	333	391	398	445	369	393	456	474	495	503
FHP 500	**1**	144	157	265	268	355	269	305	390	406	444	612
	2	232	262	350	363	398	321	357	433	441	484	619
	3	293	301	398	408	455	396	416	497	499	537	622
	4	336	377	452	455	507	430	475	516	524	545	626
	5	420	428	494	500	544	475	493	535	545	569	627

Maximum flow rate for a complete pressure filter with a pressure drop Δp = 1.5 bar.

The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.

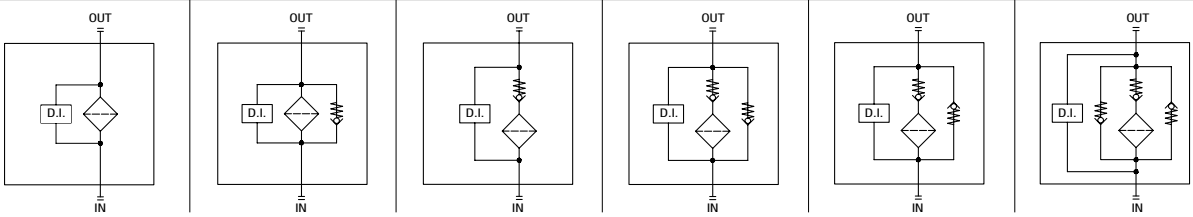
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.

Please, contact our Sales Department for further additional information.

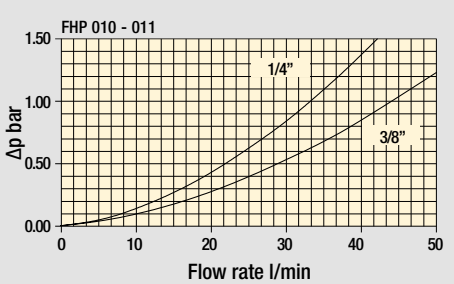
Hydraulic diagram

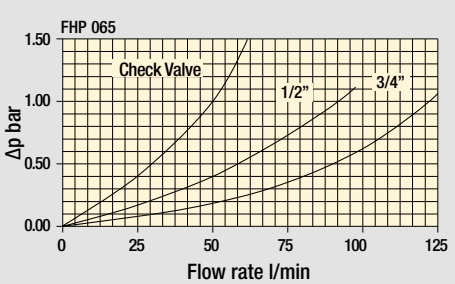
Filter series	Style S	Style B	Style T	Style D	Style V	Style Z
FHP 010 - 011	•	•	-	-	•	•
FHP 065	•	•	•	-	-	-
FHP 135	•	•	•	-	-	-
FHP 350-351	•	•	•	•	•	•
FHP 500	•	•	•	•	•	•

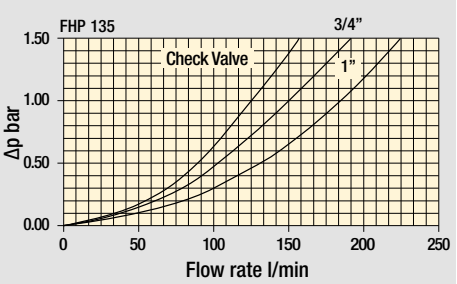


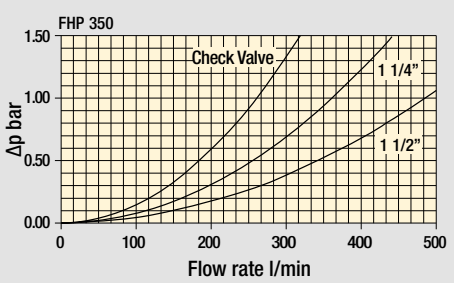
Pressure drop

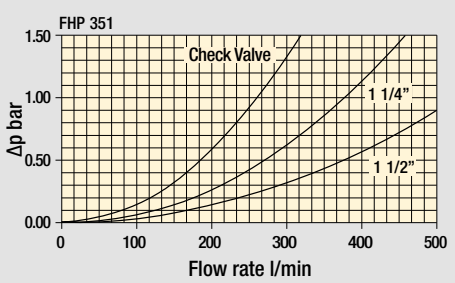
Filter housings Δp pressure drop

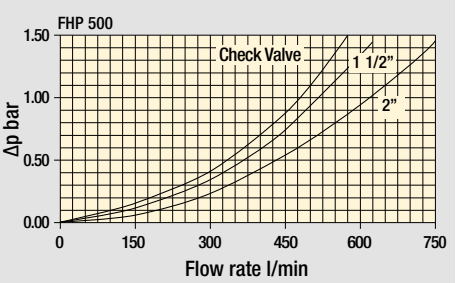




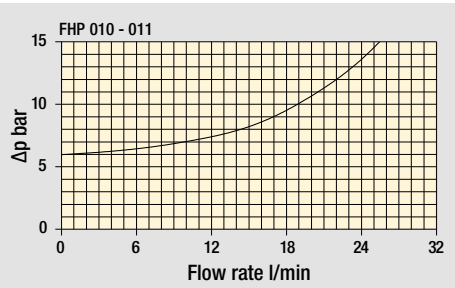


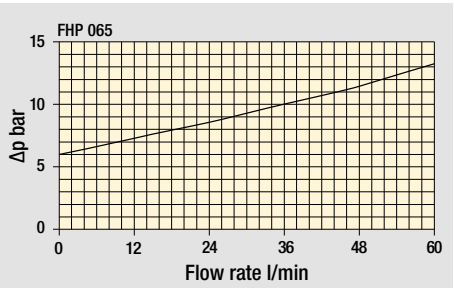


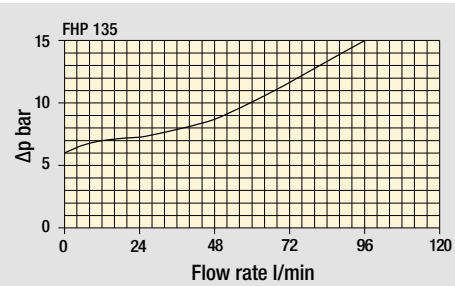


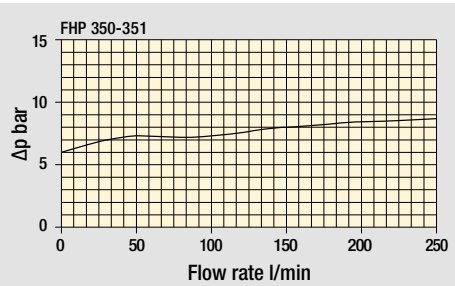


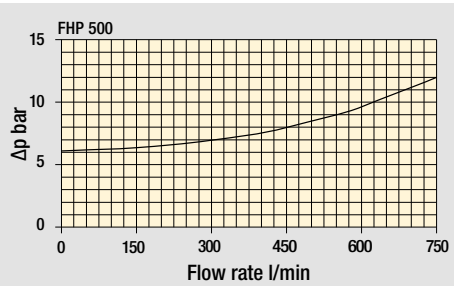
Bypass valve pressure drop



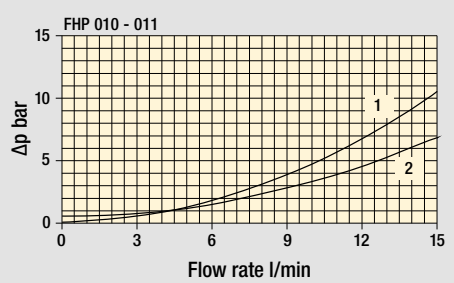




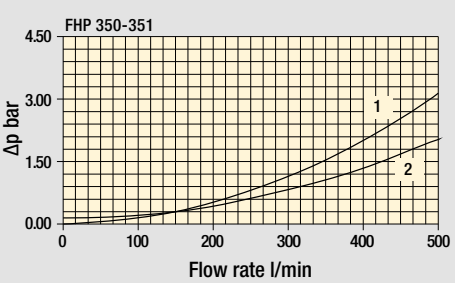




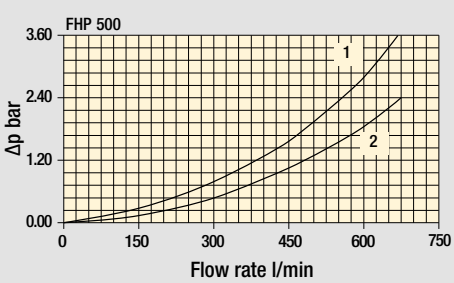
Valves



Pressure drop with reverse flow valve in
1 - Filtering direction
2 - Opposite direction



Pressure drop with reverse flow valve in
1 - Filtering direction
2 - Opposite direction



Pressure drop with reverse flow valve in
1 - Opposite direction
2 - Filtering direction

The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

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Designation & Ordering code

COMPLETE FILTER

Configuration example: FHP010 | 2 | B | A | B | 2 | A03 | N | P01

Series and size
FHP010 | **FHP011**

Length
1 | **2** | **3** | **4**

Valves
S Without bypass
B With bypass 6 bar
V With reverse flow, without bypass
Z With reverse flow, with bypass 6 bar

Seals
A NBR
V FPM

Connections
A G 1/4”
B 1/4” NPT
C SAE 5 - 1/2” - 20 UNF
D G 3/8”
E 3/8” NPT
F SAE 6 - 9/16” - 18 UNF

Connection for differential pressure indicator
1 Without
2 With connection

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Element Δp		Valves S	B	V	Z
N	20 bar	-	•	-	•
H	210 bar	•	-	•	-

Execution
P01 MP Filtri standard
Pxx Customized

FILTER ELEMENT

Configuration example: HP011 | 2 | A03 | A | N | P01

Element series and size
HP011

Element length
1 | **2** | **3** | **4**

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Seals
A NBR
V FPM

Element Δp
N 20 bar
H 210 bar

Execution
P01 MP Filtri standard
Pxx Customized

CLOGGING INDICATORS

See page 786

DEA Electrical differential pressure indicator
DEM Electrical differential pressure indicator
DEU Electrical differential pressure indicator
DLA Electrical / visual differential pressure indicator
DLE Electrical / visual differential pressure indicator
DTA Electronic differential pressure indicator
DTI I-O Link electronic differential pressure indicator
DVA Visual differential pressure indicator
DVM Visual differential pressure indicator

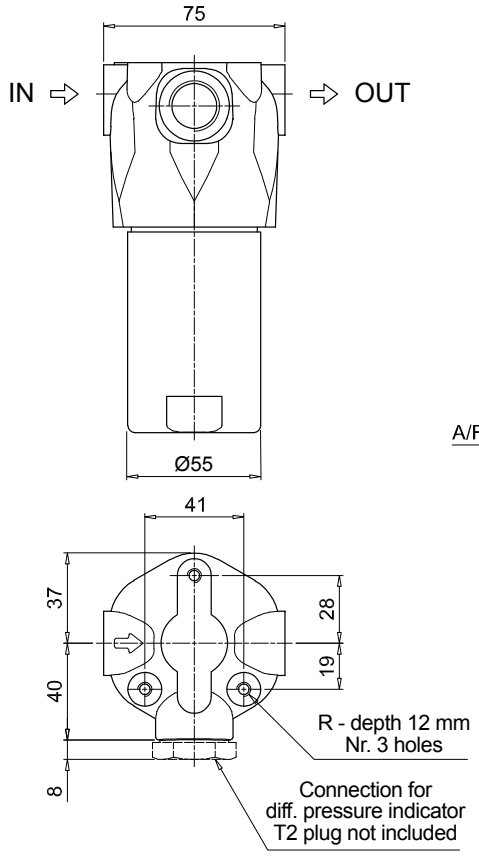
PLUGS

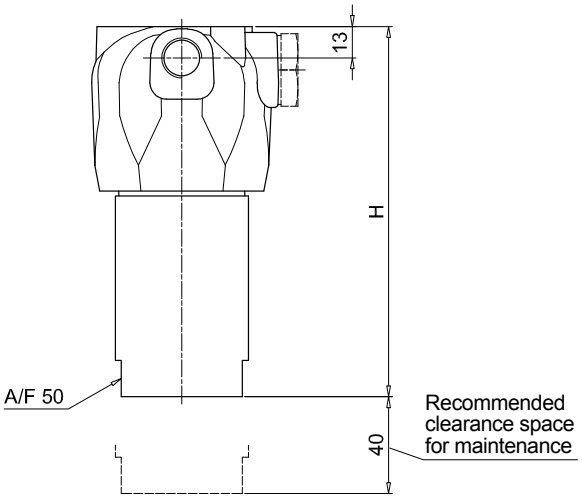
See page 807

T2 Plug (not included)

MP FILTRI WWW.SUMY.IR

Dimensions

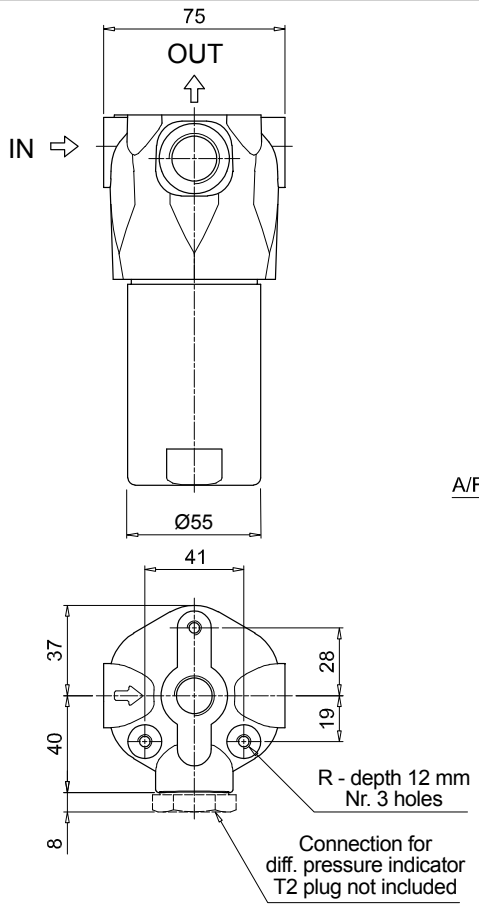


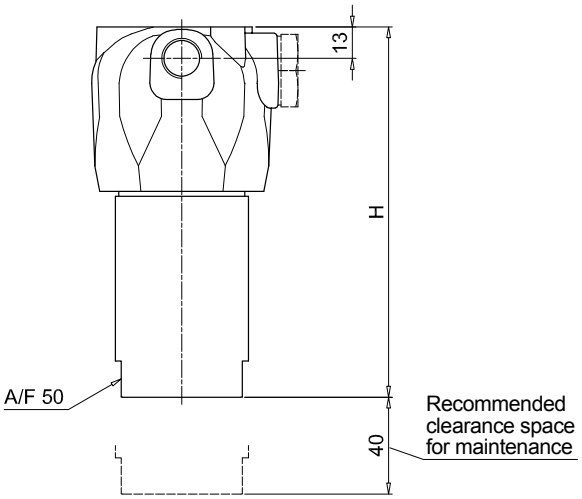


FHP010

Filter length	H [mm]
1	92
2	103
3	153
4	203

Connections	R
A	M6
B - C	1/4" UNC
D	M6
E - F	1/4" UNC





FHP011

Filter length	H [mm]
1	92
2	103
3	153
4	203

Connections	R
A	M6
B - C	1/4" UNC
D	M6
E - F	1/4" UNC

Designation & Ordering code

COMPLETE FILTER

Configuration example: FHP135 | 2 | B | A | G3 | A06 | S | P01

Series and size

FHP065 | **FHP135**

Length

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

Valves

S	Without bypass
B	With bypass 6 bar
T	With check valve, without bypass

Seals

A	NBR
V	FPM

Connections	FHP065	FHP135
G1	G 1/2”	G 3/4”
G2	G 3/4”	G 1”
G3	1/2” NPT	3/4” NPT
G4	3/4” NPT	1” NPT
G5	SAE 8 - 3/4” - 16 UNF	SAE 12 - 1 1/16” - 12 UN
G6	SAE 12 - 1 1/16” - 12 UN	SAE 16 - 1 5/16” - 12 UN
F1	-	3/4” SAE 3000 psi/M
F2	-	1” SAE 3000 psi/M
F3	-	3/4” SAE 3000 psi/UNC
F4	-	1” SAE 3000 psi/UNC
F5	-	3/4” SAE 6000 psi/M
F6	-	3/4” SAE 6000 psi/UNC

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Element Δp	Valves S	B	T
N 20 bar	-	•	-
H 210 bar	•	-	-
S 210 bar	-	-	•

Execution

P01	MP Filtri standard
Pxx	Customized

FILTER ELEMENT

Configuration example: HP135 | 2 | A06 | A | S | P01

Element series and size

HP065 | **HP135**

Element length

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

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Seals

A	NBR
V	FPM

Element Δp

N	20 bar
H	210 bar
S	210 bar

Execution

P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See page 786

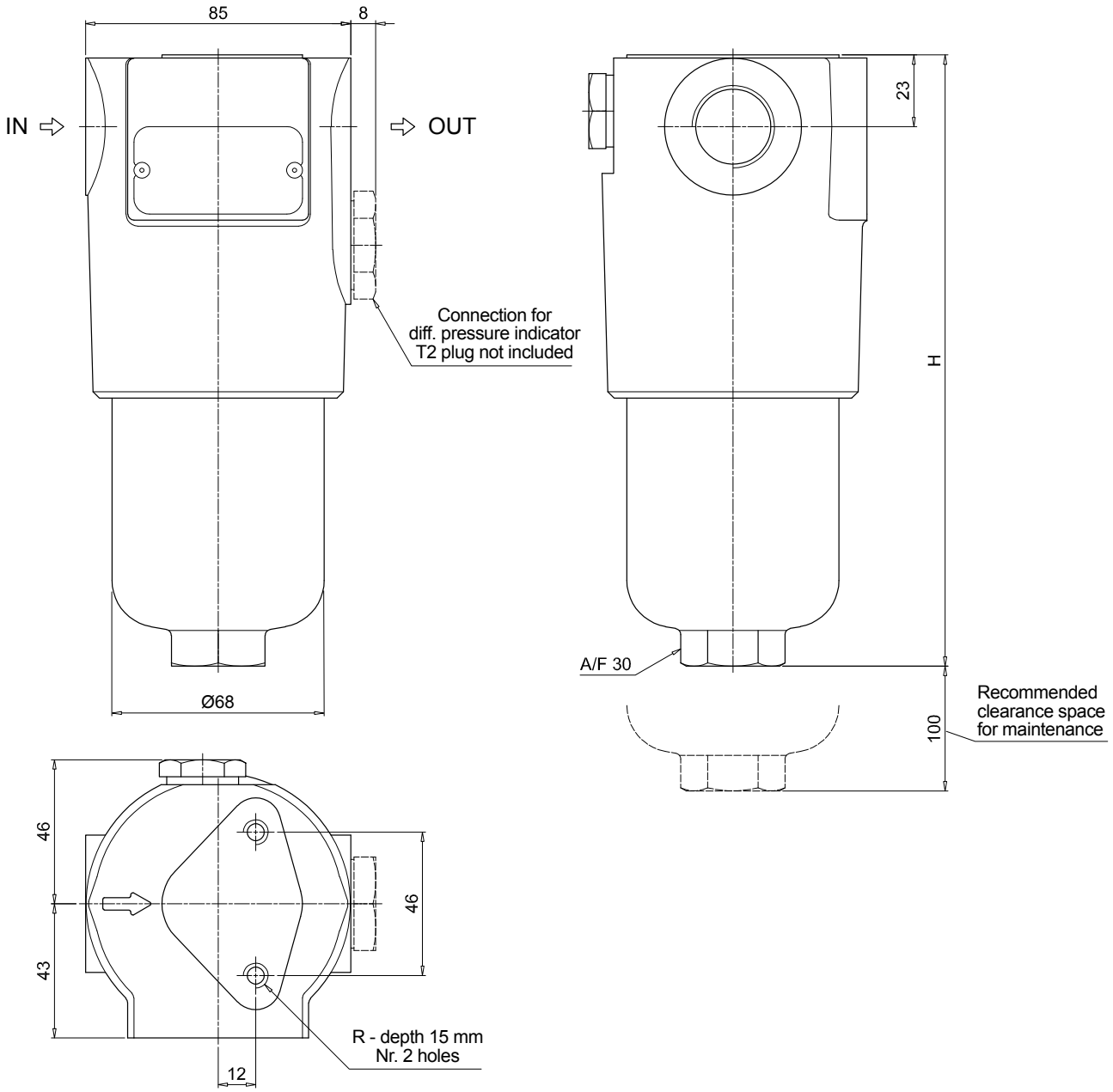
DEA	Electrical differential pressure indicator
DEM	Electrical differential pressure indicator
DEU	Electrical differential pressure indicator
DLA	Electrical / visual differential pressure indicator
DLE	Electrical / visual differential pressure indicator
DTA	Electronic differential pressure indicator
DTI	I-O Link electronic differential pressure indicator
DVA	Visual differential pressure indicator
DVM	Visual differential pressure indicator

PLUGS

See page 807

T2	Plug (not included)

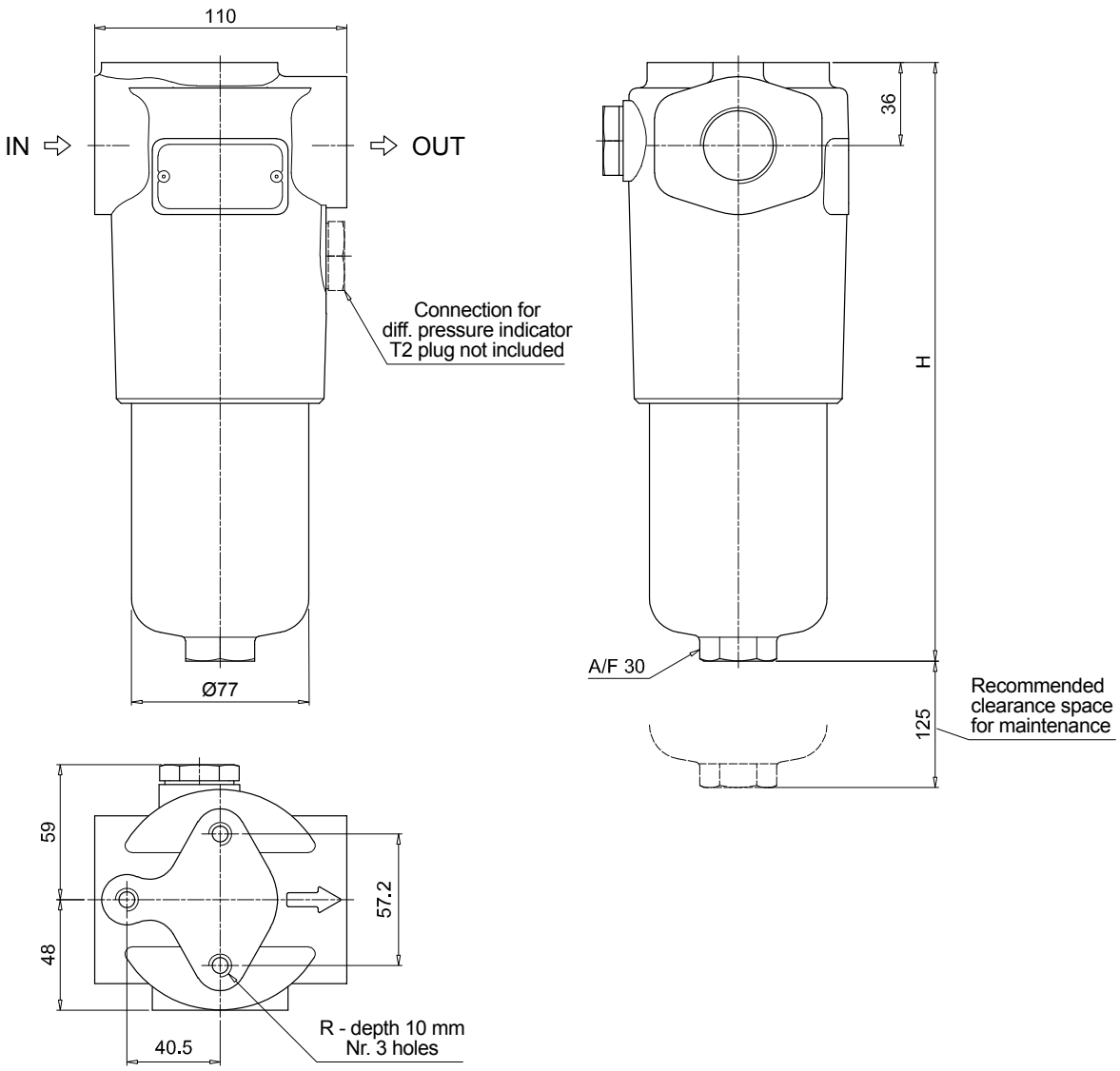
MP FILTRI WWW.SUMY.IR



FHP065	
Filter length	**H [mm]**
1	196
2	227
3	329

Connections	**R**
G1-G2	M8
G3-G4-G5-G6	5/16" UNC

Dimensions



FHP135	
Filter length	**H [mm]**
1	260
2	373
3	448

Connections	**R**
G1-G2	M10
G3-G4-G5-G6	3/8" UNC
F1-F2	M10
F3-F4	3/8" UNC
F5	M10
F6	3/8" UNC

MP FILTRI WWW.SUMY.IR

Designation & Ordering code

COMPLETE FILTER

Configuration example: FHP350 | 4 | B | A | D | 2 | A06 | N | P01

Series and size
- **FHP350**
- **FHP351**

Length
1 | **2** | **3** | **4**

Valves

S	Without bypass
B	With bypass 6 bar
T	With check valve, without bypass
D	With check valve, with bypass 6 bar
V	With reverse flow, without bypass
Z	With reverse flow, with bypass 6 bar

Seals

A	NBR
V	FPM

Connections

A	G 1 1/2”	**F**	1 1/2” SAE 3000 psi/UNC + SAE 20 - 1 5/8” - 12 UN
B	1 1/2” NPT	**G**	1 1/4” SAE 3000 psi/M
C	SAE 24 - 1 7/8” - 12 UN	**H**	1 1/4” SAE 3000 psi/UNC
D	1 1/2” SAE 3000 psi/M + G 1 1/4”	**I**	1 1/4” SAE 6000 psi/M (bolts M12, IAW ISO 6162-2:2018)
E	1 1/2” SAE 3000 psi/UNC + 1 1/4” NPT	**L**	1 1/4” SAE 6000 psi/UNC

Connection for differential pressure indicator
- **2** With connection

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Element Δp		Valves S	B	T	D	V	Z
N	20 bar	-	•	-	-	-	-
R	20 bar	-	-	-	•	-	•
H	210 bar	•	-	-	-	-	-
S	210 bar	-	-	•	-	•	-

Execution		Filter length 1	2	3	4
P01	MP Filtri standard	•	•	•	•
P02	Maintenance from the bottom of the housing	-	-	-	•
Pxx	Customized	-	-	-	-

FILTER ELEMENT

Configuration example: HP320 | 4 | A06 | A | N | P01

Element series and size
- **HP320**

Element length
1 | **2** | **3** | **4**

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Seals

A	NBR
V	FPM

Element Δp

N	20 bar
R	20 bar
H	210 bar
S	210 bar

Execution

P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See page 786

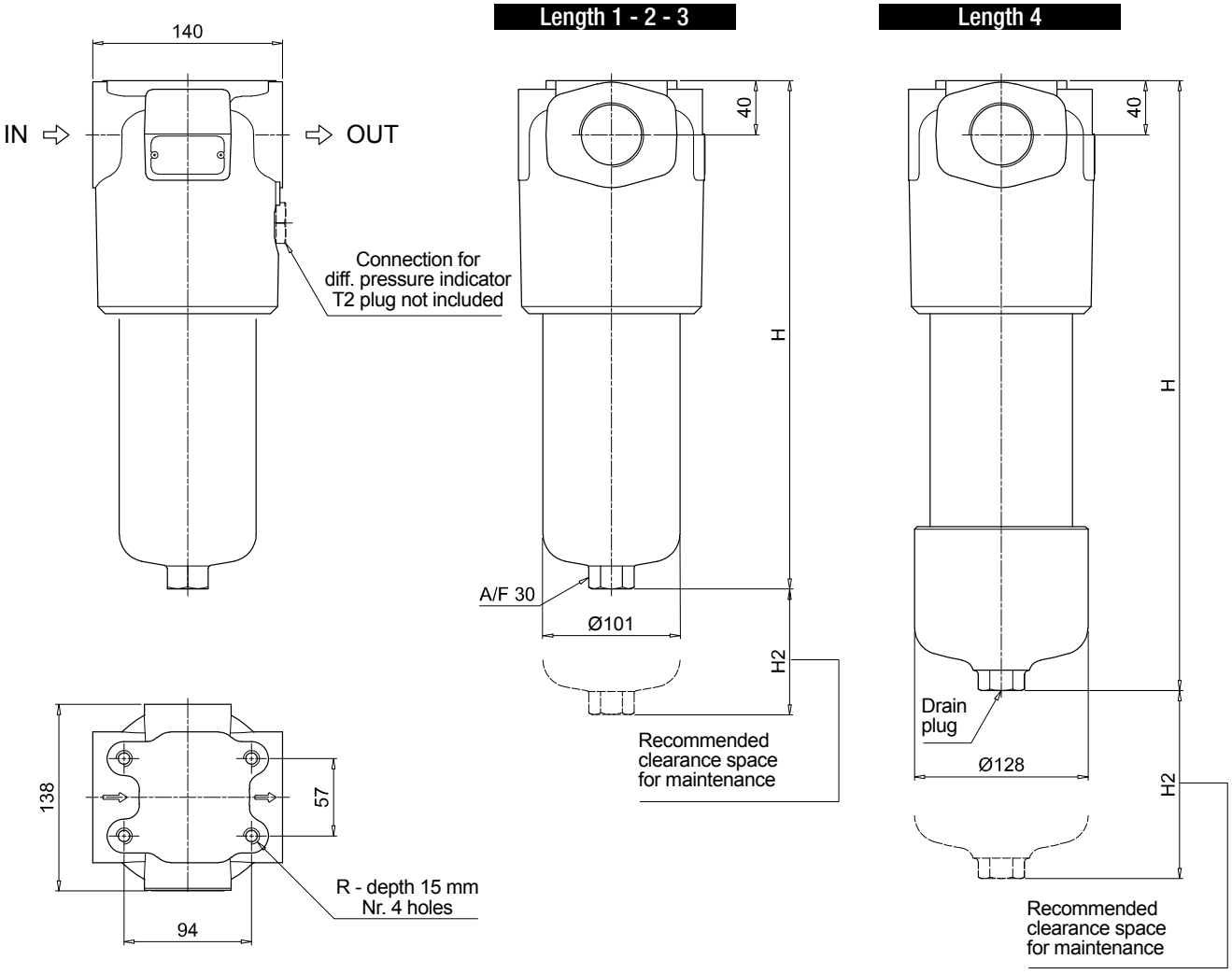
DEA	Electrical differential pressure indicator
DEM	Electrical differential pressure indicator
DEU	Electrical differential pressure indicator
DLA	Electrical / visual differential pressure indicator
DLE	Electrical / visual differential pressure indicator
DTA	Electronic differential pressure indicator
DTI	I-O Link electronic differential pressure indicator
DVA	Visual differential pressure indicator
DVM	Visual differential pressure indicator

PLUGS

See page 807

T2	Plug (not included)

MP FILTRI WWW.SUMY.IR

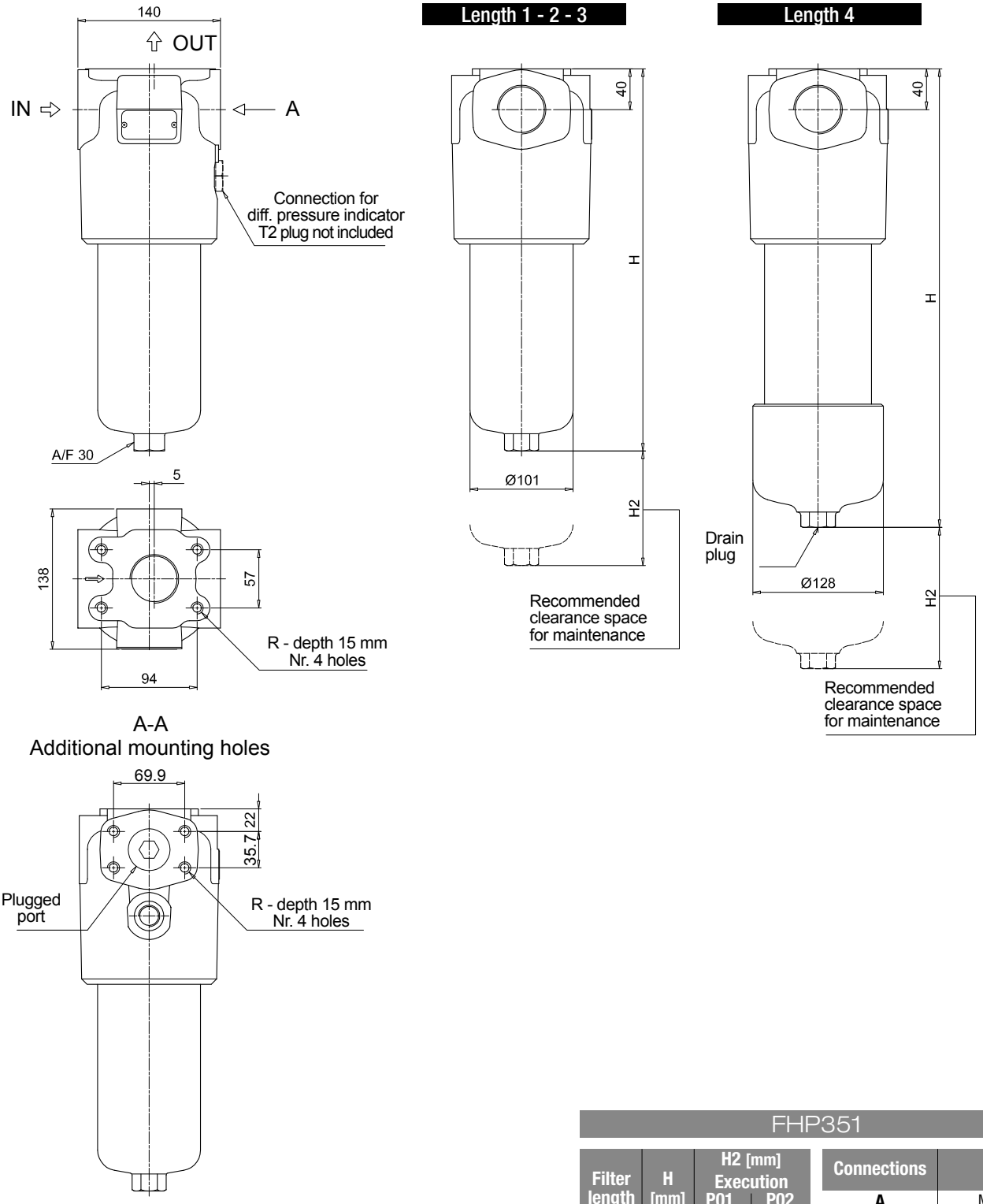


FHP350

Filter length	H [mm]	H2 [mm] Execution P01	H2 [mm] Execution P02
1	295	150	-
2	418	150	-
3	550	150	-
4	703	150	550

Connections	R
A	M12
B - C	1/2" UNC
D	M12
E - F	1/2" UNC
G	M12
H	1/2" UNC
I	M12
L	1/2" UNC

Dimensions



FHP351

Filter length	H [mm]	H2 [mm] Execution P01	H2 [mm] Execution P02
1	295	150	-
2	418	150	-
3	550	150	-
4	703	150	550

Connections	R
A	M12
B - C	1/2" UNC
D	M12
E - F	1/2" UNC
G	M12
H	1/2" UNC
I	M12
L	1/2" UNC

MP FILTRI WWW.SUMY.IR

Designation & Ordering code

COMPLETE FILTER

Configuration example: FHP500 | 4 | V | A | F1 | A06 | S | P01

Series and size
FHP500

Length
1 | 2 | 3 | 4 | 5

Valves

S	Without bypass
B	With bypass 6 bar
T	With check valve, without bypass
D	With check valve, with bypass 6 bar
V	With reverse flow, without bypass
Z	With reverse flow, with bypass 6 bar

Seals

A	NBR
V	FPM

Connections

F1	1 1/2” SAE 3000 psi/M
F2	1 1/2” SAE 3000 psi/UNC
F3	2” SAE 3000 psi/M
F4	2” SAE 3000 psi/UNC + 1 1/2” NPT
F5	1 1/2” SAE 6000 psi/M
F6	1 1/2” SAE 6000 psi/UNC
F7	2” SAE 6000 psi/M + G 1 1/2”
F8	2” SAE 6000 psi/UNC + SAE 24 - 1 7/8” - 12 UN

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Valves

Element Δp		S	B	T	D	V	Z
N	20 bar	-	•	-	-	-	-
R	20 bar	-	-	-	•	-	•
S	210 bar	•	-	•	-	•	-

Filter length

Execution		1	2	3	4	5
P01	MP Filtri standard	•	•	•	•	•
P02	Maintenance from the bottom of the housing	-	-	-	•	•
P03	Drain plug	•	•	-	-	-
Pxx	Customized	•	•	•	•	•

FILTER ELEMENT

Configuration example: HP500 | 4 | A06 | A | S | P01

Element series and size
HP500

Element length
1 | 2 | 3 | 4 | 5

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Seals

A	NBR
V	FPM

Element Δp

N	20 bar
R	20 bar
S	210 bar

Execution

P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See page 786

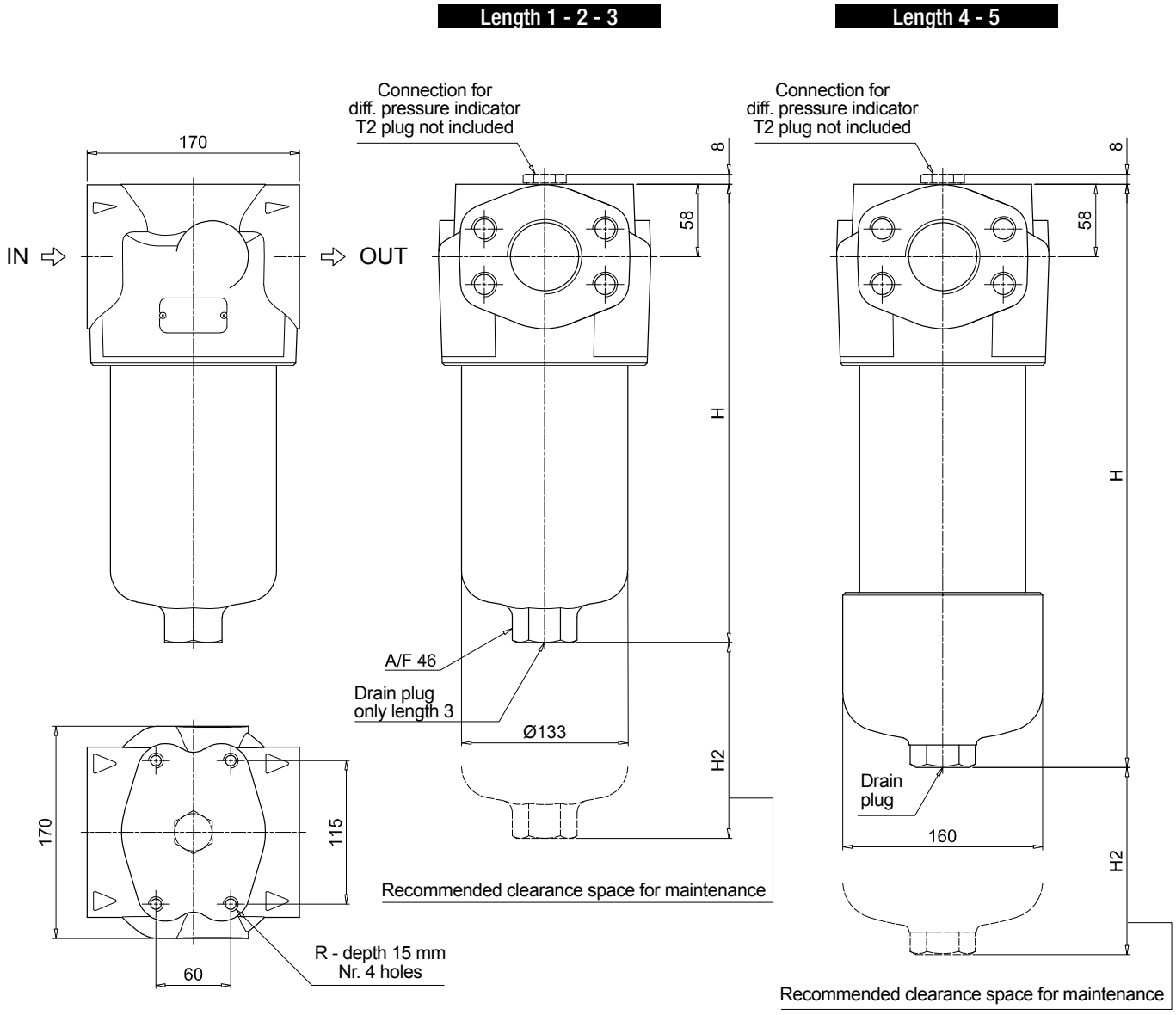
DEA	Electrical differential pressure indicator
DEM	Electrical differential pressure indicator
DEU	Electrical differential pressure indicator
DLA	Electrical / visual differential pressure indicator
DLE	Electrical / visual differential pressure indicator
DTA	Electronic differential pressure indicator
DTI	I-O Link electronic differential pressure indicator
DVA	Visual differential pressure indicator
DVM	Visual differential pressure indicator

PLUGS

See page 807

T2	Plug (not included)

MP FILTRI WWW.SUMY.IR



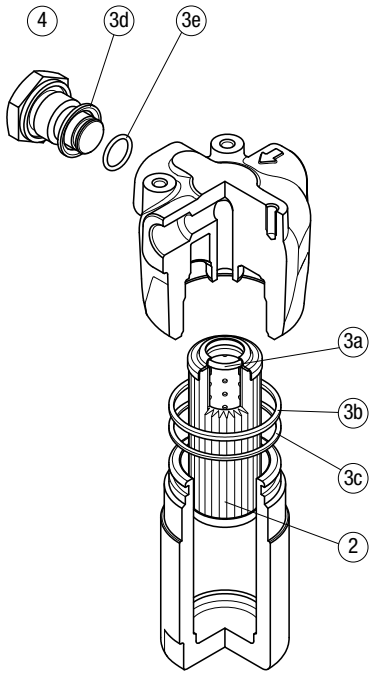
FHP500

Filter length	H [mm]	H2 [mm] Execution P01	P02
1	330	150	-
2	420	150	-
3	496	150	-
4	654	150	480
5	820	150	650

Connections	R
F1	M12
F2	1/2" UNC
F3	M12
F4	1/2" UNC
F5	M12
F6	1/2" UNC
F7	M12
F8	1/2" UNC

Order number for spare parts

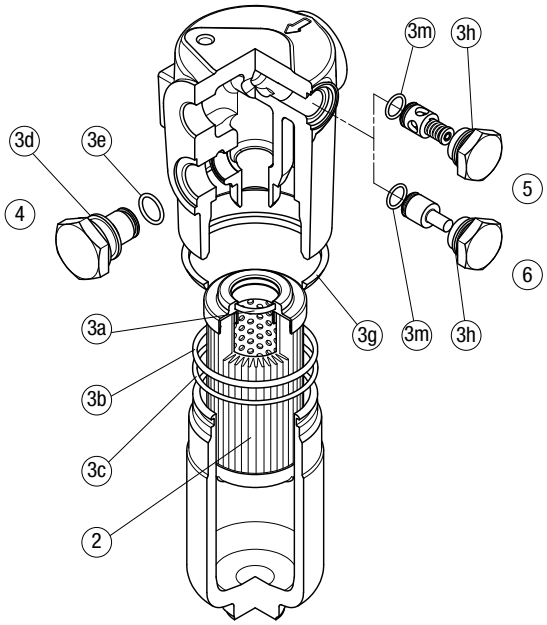
FHP 010 - 011



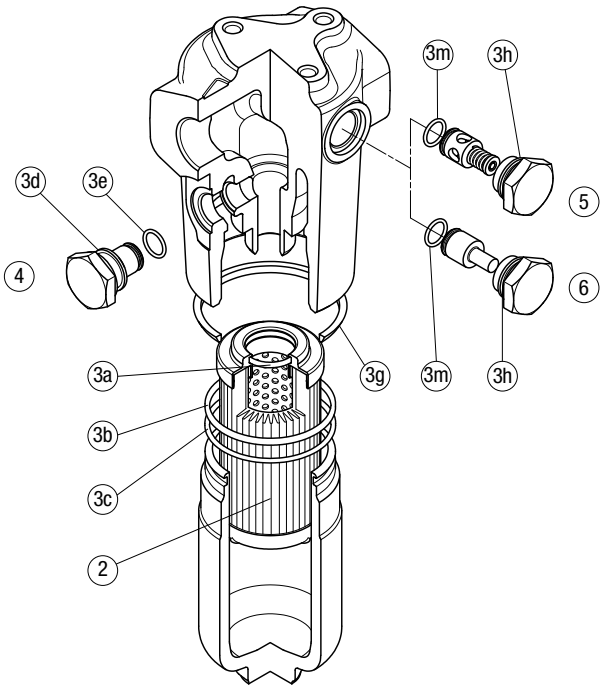
Q.ty:
nr. 0 pcs. for version 1 (without indicator port)
nr. 1 pc. for version 2 (with indicator port)

Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3e)		4	
Filter series	Filter element	Seal Kit code number NBR	Seal Kit code number FPM	Indicator connection plug NBR	Indicator connection plug FPM
FHP 010-011	See order table	02050501	02050492	T2H	T2V

FHP 065



FHP 135

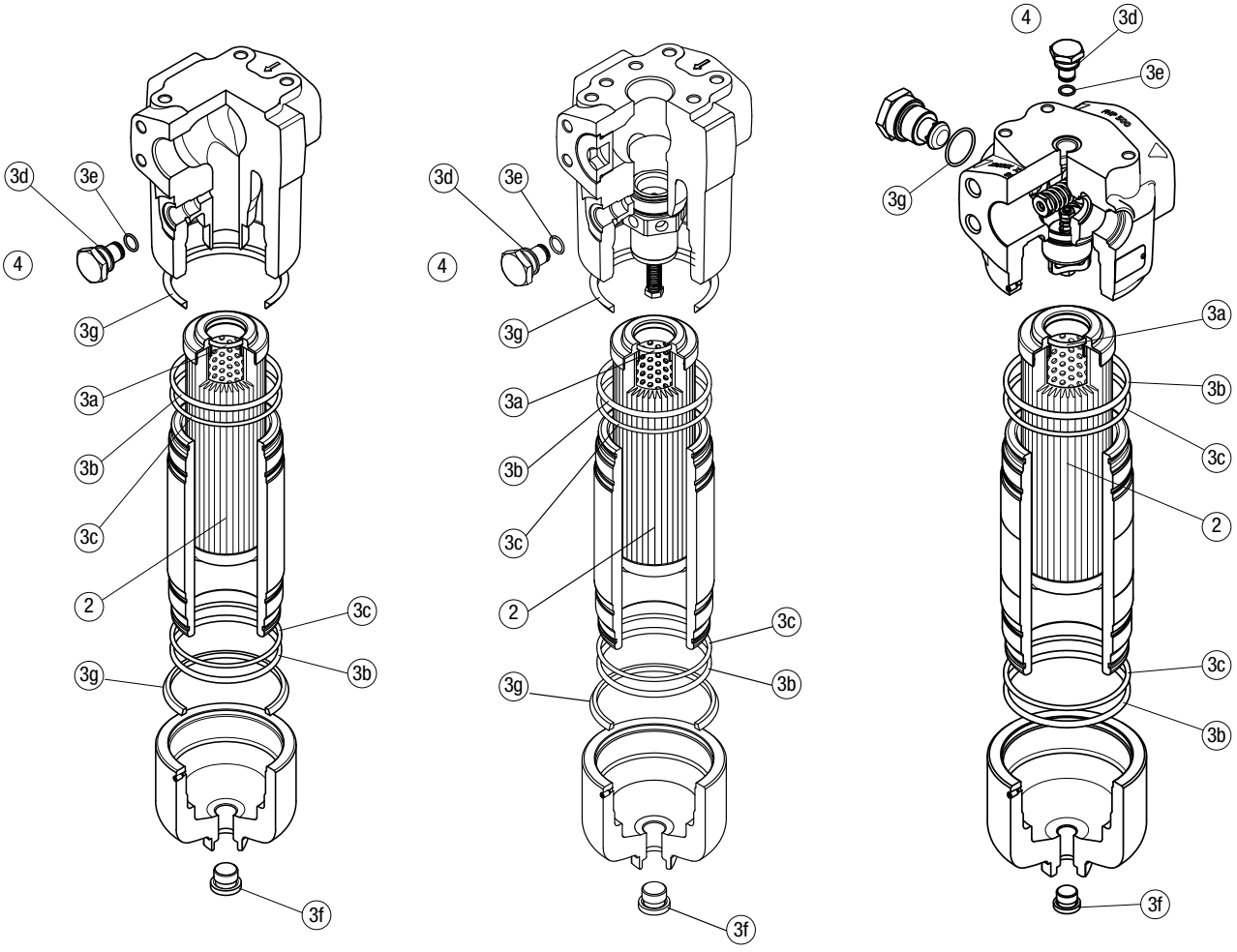


Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3m)		Q.ty: 1 pc. 4		Q.ty: 1 pc. 5		Q.ty: 1 pc. 6	
Filter series	Filter element	Seal Kit code number NBR	Seal Kit code number FPM	Indicator connection plug NBR	Indicator connection plug FPM	Bypass assembly NBR	Bypass assembly FPM	Non-bypass assembly NBR	Non-bypass assembly FPM
FHP 065	See order table	02050265	02050276	T2H	T2V	02001116	02001136	02001142	02001139
FHP 135		02050269	02050280			02001117	02001137	02001143	02001392

MP FILTRI WWW.SUMY.IR

Order number for spare parts

FHP 350 | **FHP 351** | **FHP 500**



Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3g for FHP 350) (3a ÷ 3f for FHP 500)		Q.ty: 1 pc. 4	
Filter series	Filter element	Seal Kit code number NBR	Seal Kit code number FPM	Indicator connection plug NBR	Indicator connection plug FPM
FHP 350 - 351	See order table	02050272	02050283	T2H	T2V
FHP 500		02050330	02050331		

MP FILTRI
WWW.SUMY.IR

FHM series

Maximum working pressure up to 32 MPa (320 bar) - Flow rate up to 400 l/min



INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS

Please scan or click the QR codes to get updated electronic version of the related document:

FHM006 FHM007 FHM010 FHM050 FHM065 FHM135 FHM320 FHM500

For all the QR codes: Scan or click me!

FHM GENERAL INFORMATION

Description

High Pressure filters

Manifold
Maximum working pressure up to 32 MPa (320 bar)
Flow rate up to 400 l/min

FHM is a range of high pressure filter for protection of sensitive components in high pressure hydraulic systems in the mobile machines.
They are directly connected to the top of the manifold, through the proper flanged interface.

Available features:

- Manifold connections up to Ø30 mm, for a maximum flow rate of 400 l/min
- ISO 4401 CETOP 3 and CETOP 5 interface, for direct mounting on the CETOP valves
- Fine filtration rating, to get a good cleanliness level into the system
- Bypass valve, to relieve excessive pressure drop across the filter media
- Check valve, to protect the system against reverse flow
- Low collapse filter element "N", for use with filters provided with bypass valve
- High collapse filter element "H", for use with filters not provided with bypass valve
- High collapse filter element with external support "S", for filter element protection against the back pressure caused by the check valve in filters not provided with the bypass valve
- Visual, electrical and electronic differential clogging indicators

Common applications:

Delivery lines, in any high pressure industrial equipment

Technical data

Filter housing materials

- Head
  Phosphatized cast iron: FHM 006-007-010
  Phosphatized steel: FHM 050-065-135-320-500
- Housing: Phosphatized steel
- Bypass valve: Steel
- Check valve: Steel

Pressure

- Test pressure: 48 MPa (480 bar)
- Min. Burst pressure: 96 MPa (960 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 32 MPa (320 bar)

Bypass valve

- Opening pressure 0.6 MPa (6 bar) ±10%
- Other opening pressures on request.

Filter element features

Filter		Filter element	
FHM		HP	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	N	20 bar
	High Δp	H	210 bar
	High Δp with external support	S	210 bar
M - Wire mesh	Standard	N	20 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals

- Standard NBR series A
- Optional FPM series V

Temperature

From -25 °C to +110 °C

Connections

Manifold mounting

Note

FHM filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]					Volumes [dm³]					
	Length	1	2	3	4	5	Length	1	2	3	4	5
FHM 006		2.17	-	-	-	-		0.12	-	-	-	-
FHM 007		-	4.74	5.95	-	-		-	0.30	0.50	-	-
FHM 010		-	4.74	5.95	-	-		-	0.30	0.50	-	-
FHM 050		5.31	5.68	6.09	6.56	7.74		0.29	0.38	0.48	0.60	0.89
FHM 065		5.47	5.83	7.04	-	-		0.27	0.34	0.56	-	-
FHM 135		8.78	10.38	11.43	-	-		0.49	0.82	1.03	-	-
FHM 320		19.80	21.93	24.22	26.70	-		1.04	1.76	2.53	3.36	-
FHM 500		35.00	39.17	42.69	54.70	60.50		1.63	2.35	2.96	5.11	6.44

MP FILTRI WWW.SUMY.IR

Flow rates [l/min]

		Filter element design - H Series					
Filter series	Length	A03	A06	A10	A16	A25	M25
FHM 006	**1**	9	10	13	14	15	16
FHM 007	**2**	13	13	15	16	16	16
	3	15	15	16	16	17	17
FHM 010	**2**	23	25	32	34	37	38
	3	31	33	37	38	39	40

		Filter element design - N Series						Filter element design - S Series				
Filter series	Length	A03	A06	A10	A16	A25	M25	A03	A06	A10	A16	A25
FHM 050	**1**	38	37	65	67	81	101	28	36	50	52	62
	2	46	50	69	75	89	102	41	44	63	71	85
	3	57	59	76	81	93	103	51	53	71	77	90
	4	68	71	84	86	95	103	62	66	81	82	93
	5	82	83	93	95	98	105	73	75	83	89	97

		Filter element design - N Series						Filter element design - H Series				
Filter series	Length	A03	A06	A10	A16	A25	M25	A03	A06	A10	A16	A25
FHM 065	**1**	23	30	48	53	71	102	22	23	43	50	67
	2	30	45	59	64	81	103	30	34	56	62	76
	3	52	60	78	82	92	105	51	58	77	81	91
FHM 135	**1**	61	65	99	104	131	149	46	51	83	86	122
	2	91	96	118	119	155	167	79	92	109	111	134
	3	118	119	144	146	156	168	103	112	130	137	146
FHM 320	**1**	112	121	187	217	252	312	97	102	156	162	228
	2	200	214	281	293	320	328	161	181	237	241	282
	3	245	267	312	320	325	333	207	233	275	280	306
	4	267	281	315	325	336	341	232	247	279	283	309

		Filter element design - N Series						Filter element design - S Series				
Filter series	Length	A03	A06	A10	A16	A25	M25	A03	A06	A10	A16	A25
FHM 500	**1**	211	232	281	289	309	394	126	135	208	210	261
	2	242	262	303	308	330	397	187	206	258	266	285
	3	284	294	336	338	357	399	226	230	285	290	315
	4	302	325	346	350	361	401	251	273	314	315	341
	5	325	334	356	361	373	401	296	301	335	338	360

Maximum flow rate for a complete pressure filter with a pressure drop Δp = 1.5 bar.

The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.

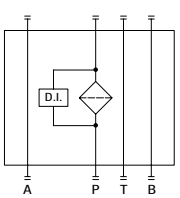
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

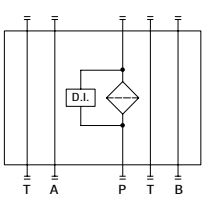
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.

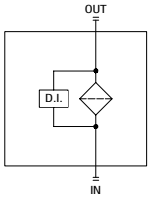
Please, contact our Sales Department for further additional information.

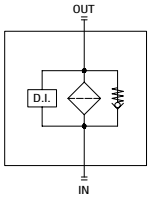
Hydraulic diagram

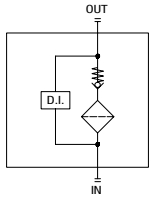
Filter series	Stile S	Stile S	Stile S	Stile B	Stile T	Stile D
FHM 006	•	-	-	-	-	-
FHM 007	•	-	-	-	-	-
FHM 010	-	•	-	-	-	-
FHM 050	-	-	•	•	•	•
FHM 065	-	-	•	•	•	•
FHM 135	-	-	•	•	•	•
FHM 320	-	-	•	•	•	•
FHM 500	-	-	•	•	•	•

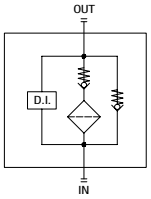






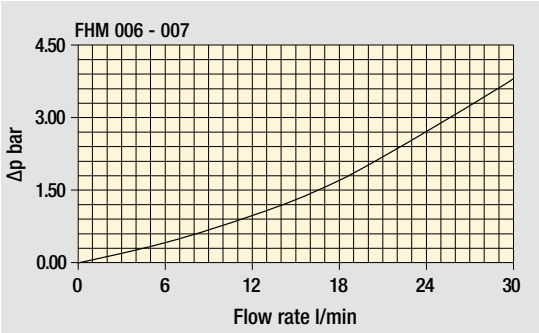


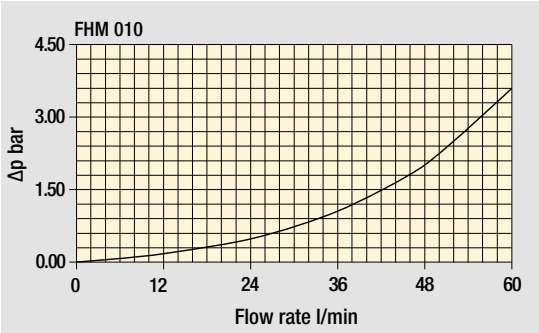


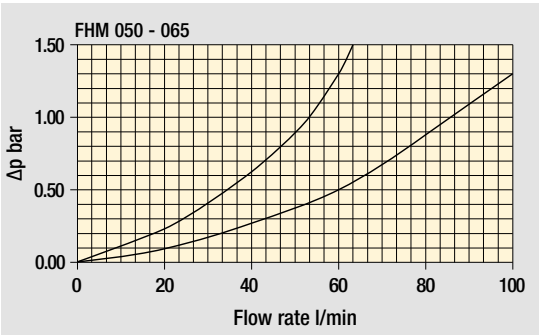


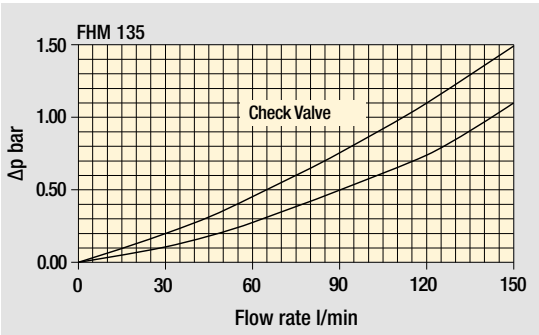
Pressure drop

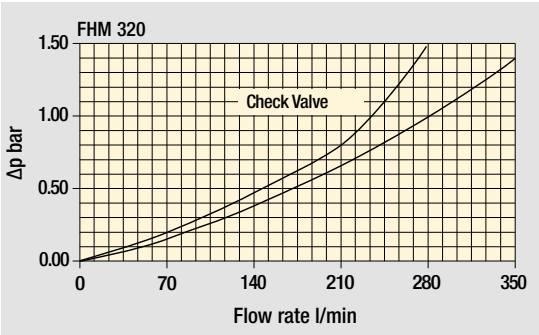
Filter housings Δp pressure drop

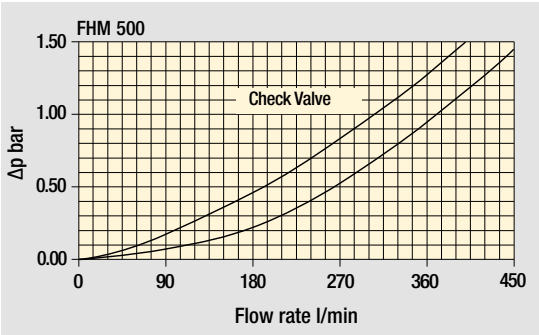




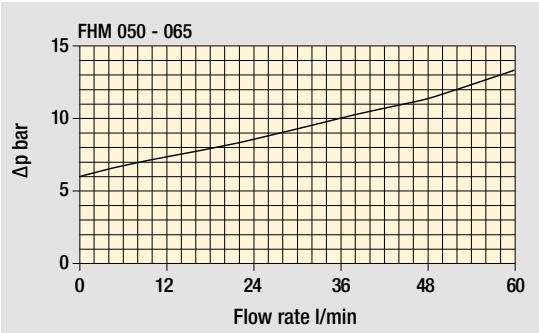


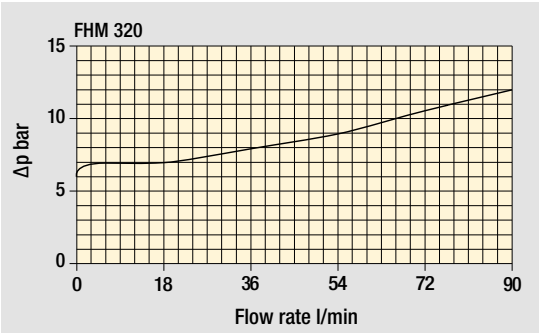


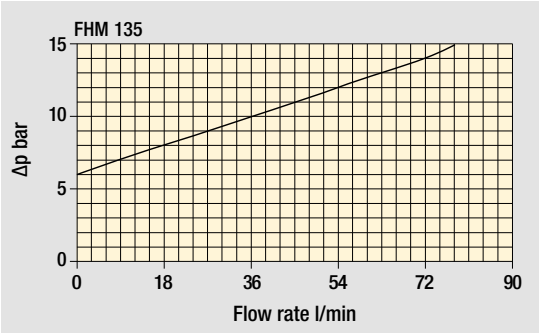




Bypass valve pressure drop







The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

MP FILTRI WWW.SUMY.IR

Designation & Ordering code

COMPLETE FILTER

Configuration example: FHM010 | 2 | S | V | G1 | A03 | H | P01

Series and size

FHM006 | **FHM007** | **FHM010**

Length	FHM006	FHM007	FHM010
1	•	-	-
2	-	•	•
3	-	•	•

Valves

S Without bypass

Seals

A NBR
V FPM

Connections

G1 Manifold side “A”
G2 Manifold side “B”

Filtration rating (filter media)

A03	Inorganic microfiber 3 µm	**A16**	Inorganic microfiber 16 µm
A06	Inorganic microfiber 6 µm	**A25**	Inorganic microfiber 25 µm
A10	Inorganic microfiber 10 µm	**M25**	Wire mesh 25 µm

Element Δp

H 210 bar

Execution

P01 MP Filtri standard
Pxx Customized

FILTER ELEMENT

Configuration example: HP065 | 2 | A03 | A | H | P01

Element series and size

	FHM006	FHM007	FHM010
HP011	•	-	-
HP065	-	•	•

Element length	FHM006	FHM007	FHM010
2	-	•	•
3	•	•	•

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Seals

A NBR
V FPM

Element Δp

H 210 bar

Execution

P01 MP Filtri standard
Pxx Customized

CLOGGING INDICATORS

See page 786

DEA Electrical differential pressure indicator
DEM Electrical differential pressure indicator
DEU Electrical differential pressure indicator
DLA Electrical / visual differential pressure indicator
DLE Electrical / visual differential pressure indicator
DTA Electronic differential pressure indicator
DTI I-O Link electronic differential pressure indicator
DVA Visual differential pressure indicator
DVM Visual differential pressure indicator

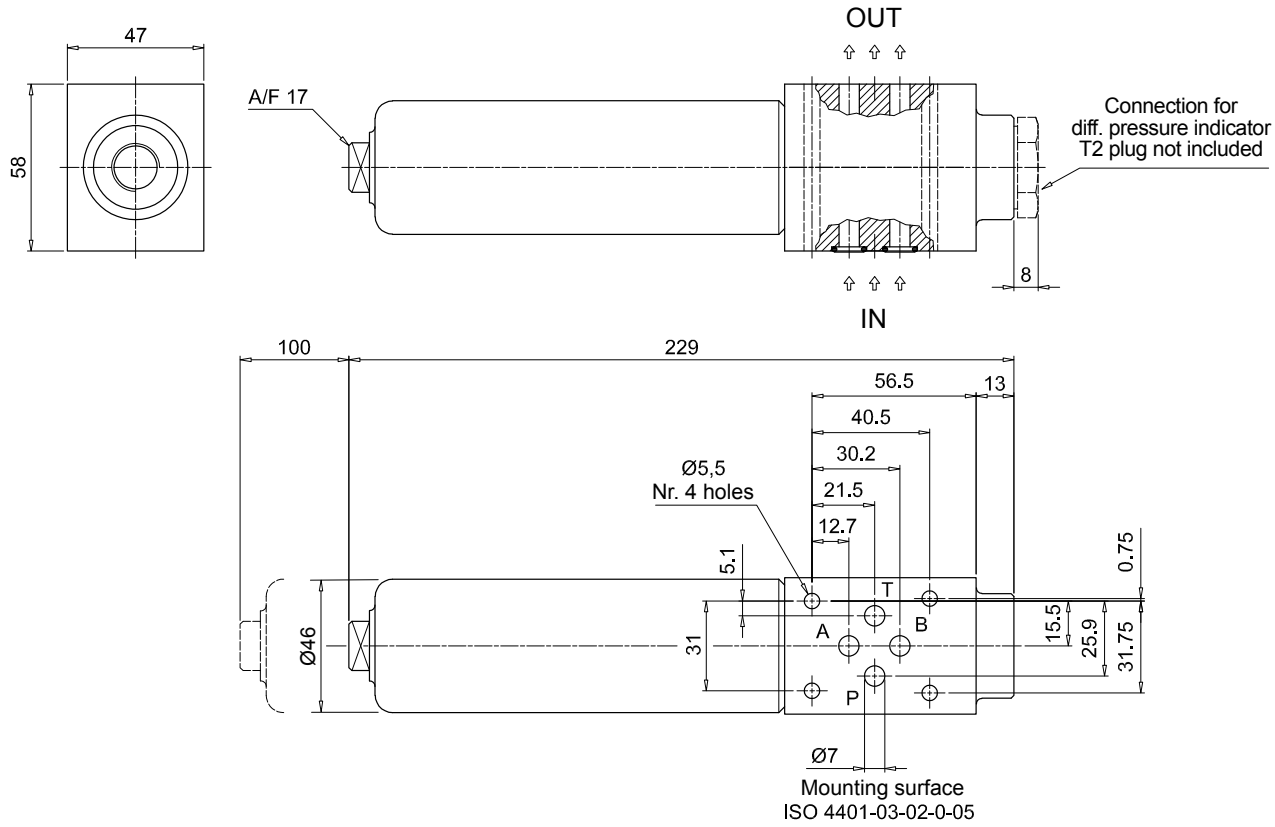
PLUGS

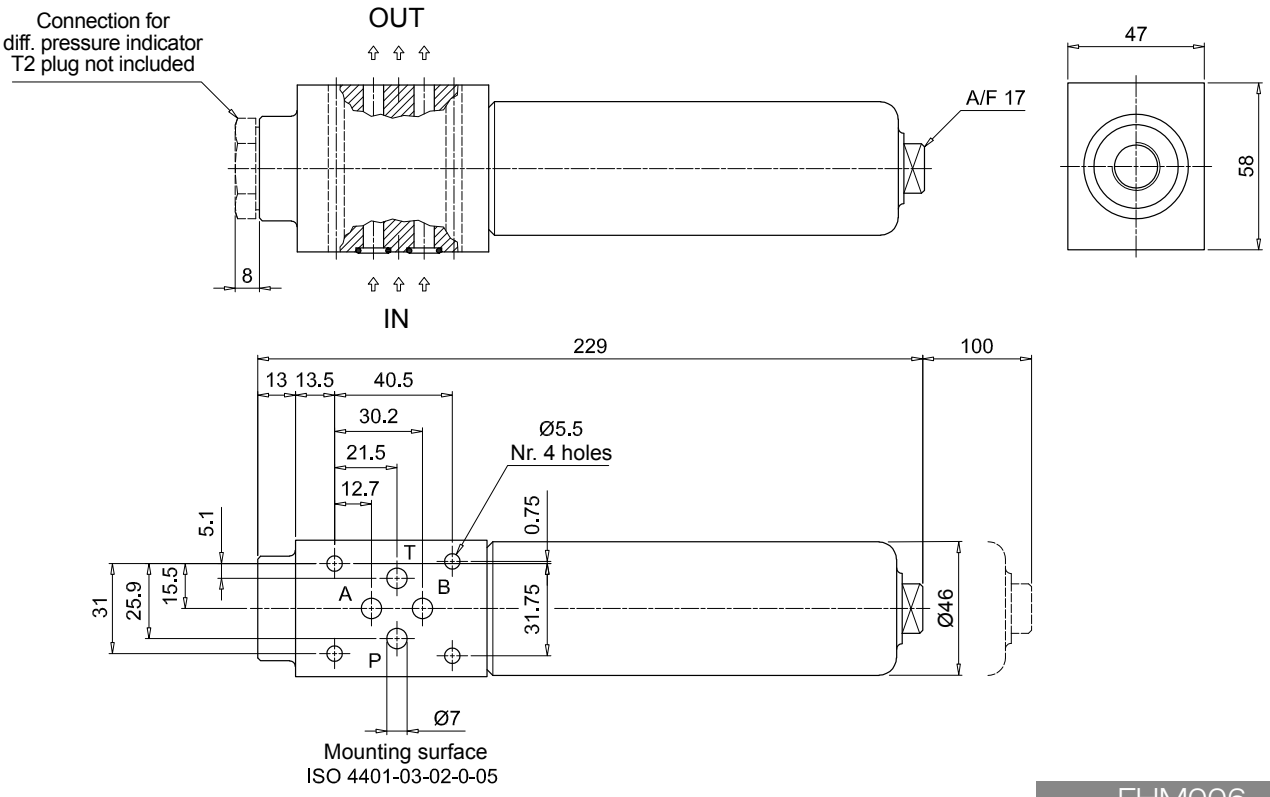
See page 807

T2 Plug (not included)

MP FILTRI WWW.SUMY.IR

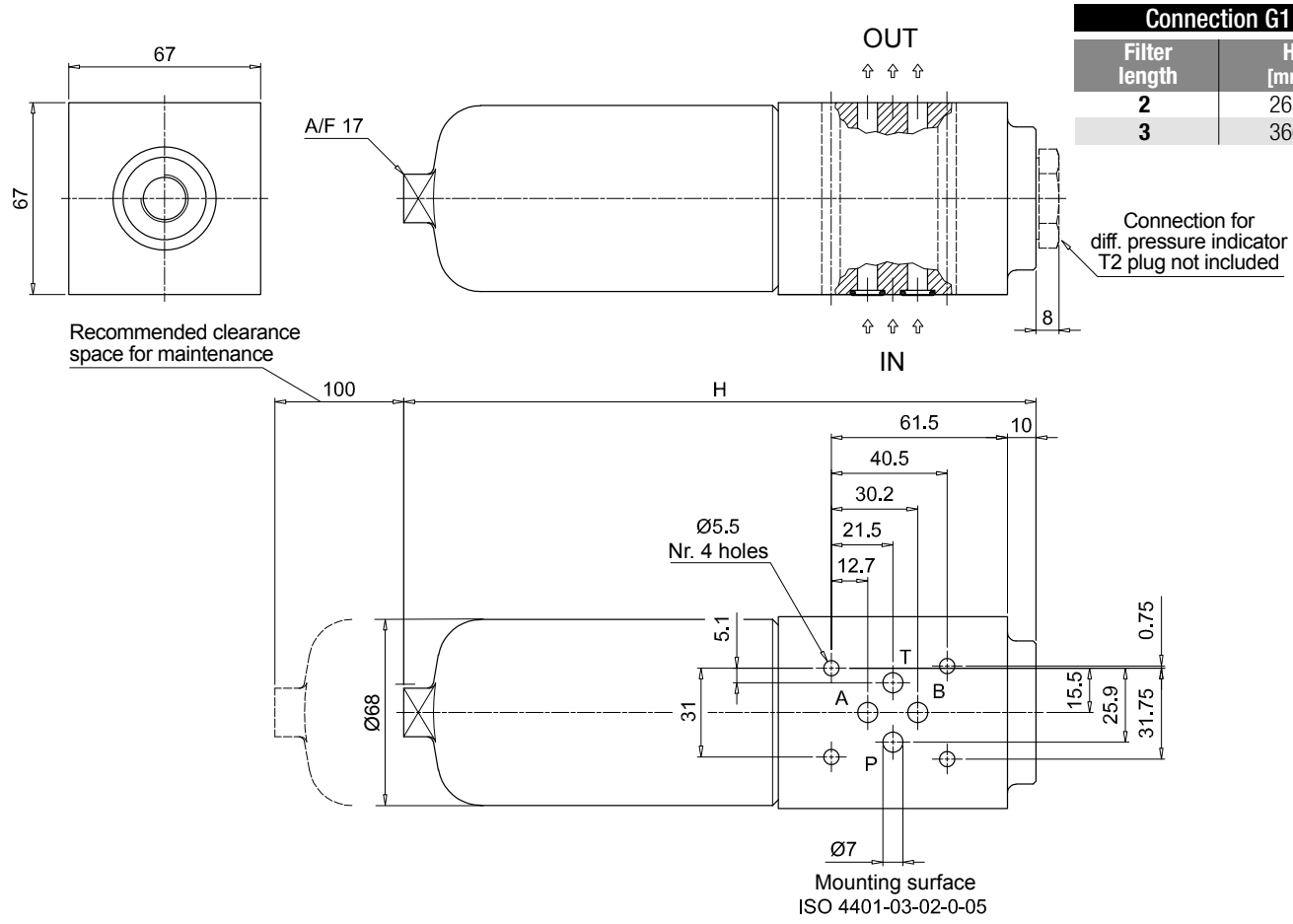
FHM006
Connection G1



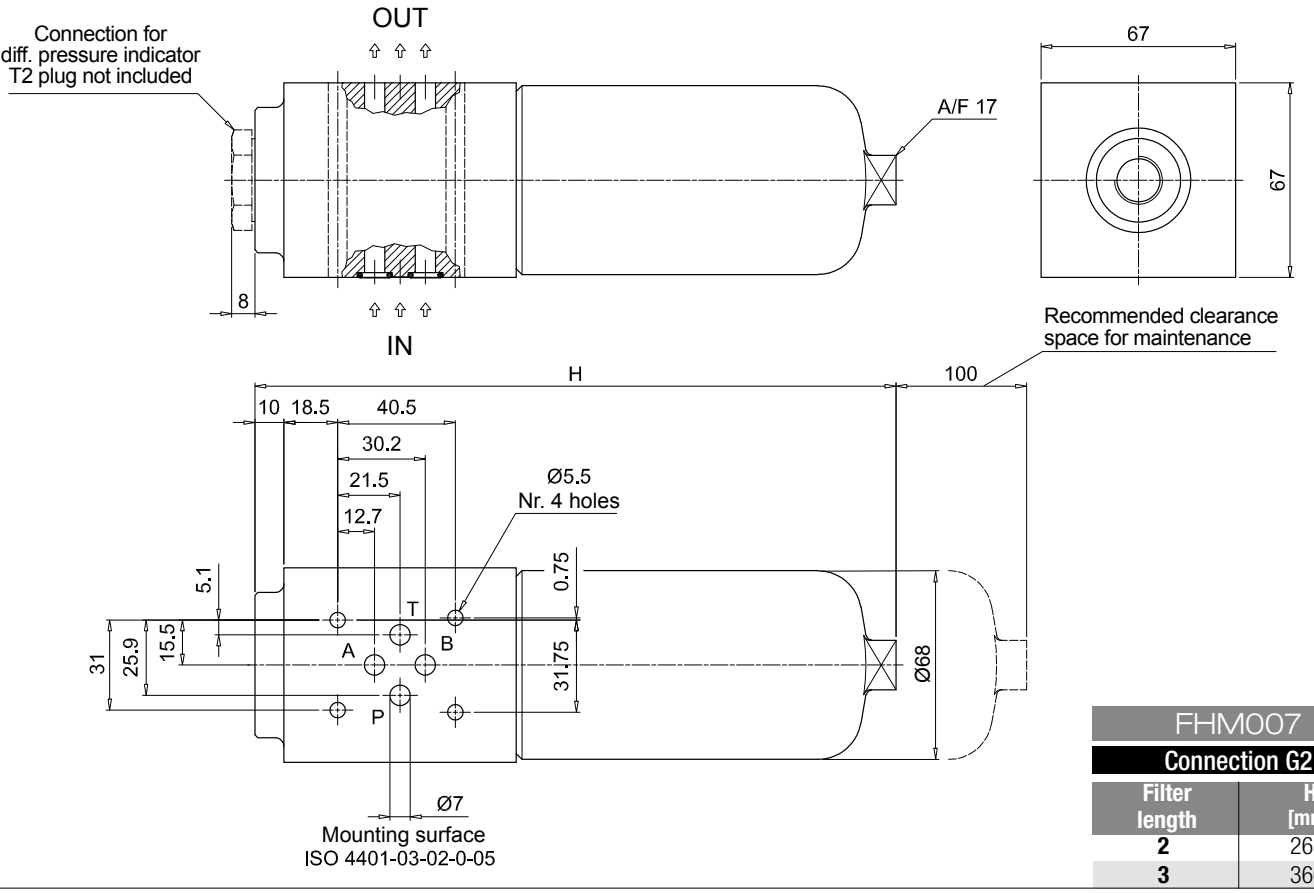


FHM006
Connection G2

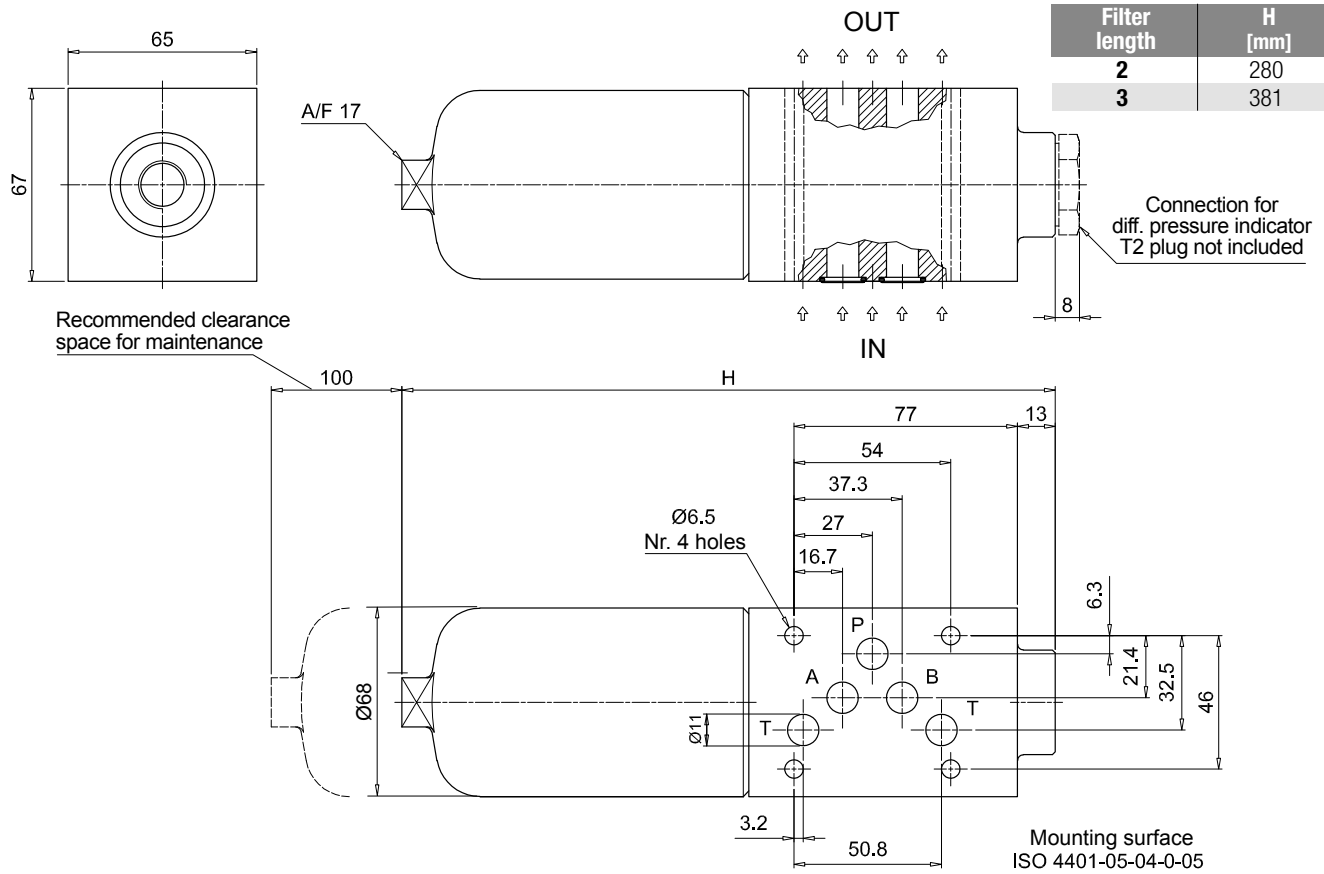
Dimensions



FHM007 Connection G1	
Filter length	**H [mm]**
2	265
3	366



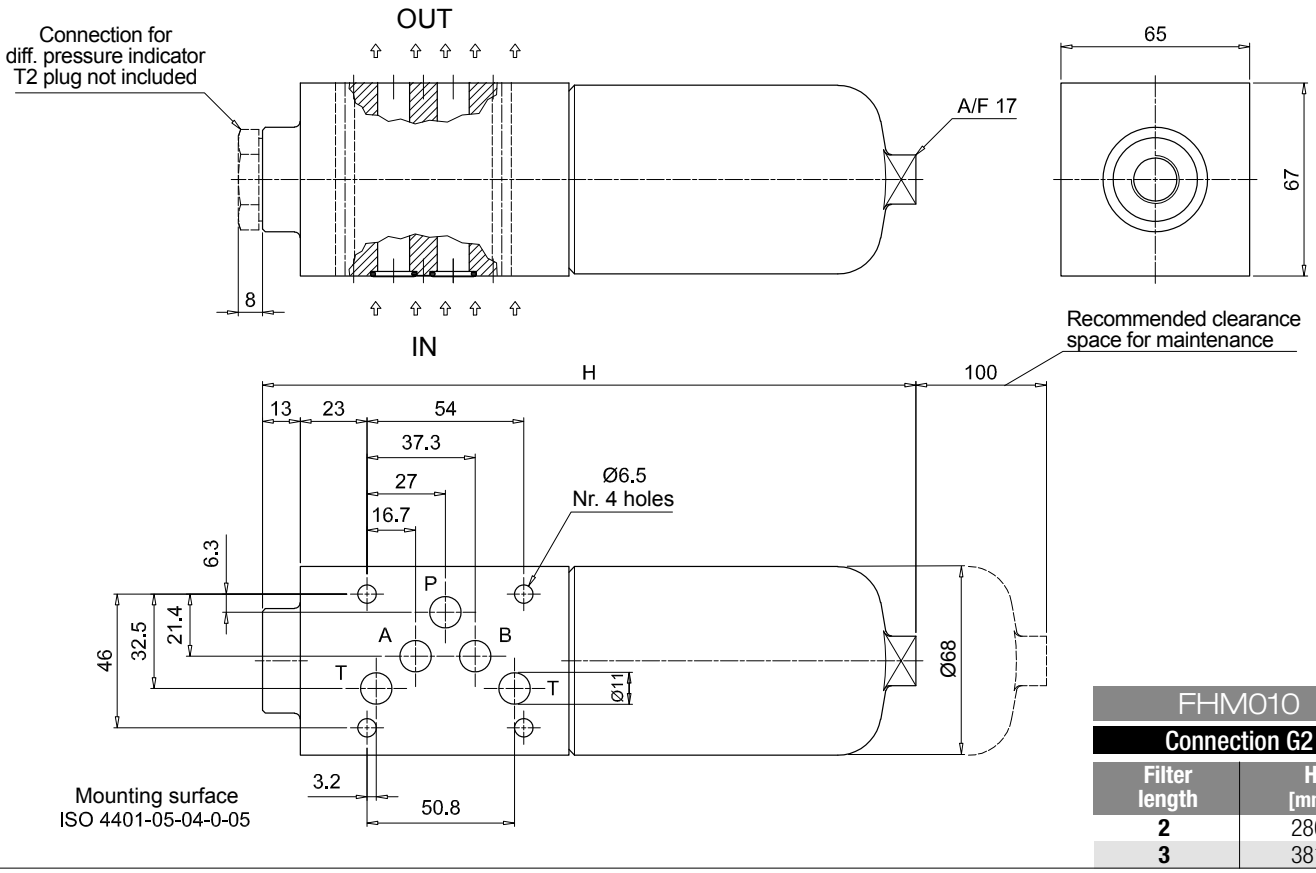
FHM007 Connection G2	
Filter length	**H [mm]**
2	265
3	366



FHM010

Connection G1

Filter length	H [mm]
2	280
3	381



FHM010

Connection G2

Filter length	H [mm]
2	280
3	381

Designation & Ordering code

COMPLETE FILTER

Configuration example: FHM135 | 3 | S | A | F1 | A10 | H | P01

Series and size

FHM050 | **FHM065** | **FHM135**

Length	FHM050	FHM065	FHM135
1	•	•	•
2	•	•	•
3	•	•	•
4	•	-	-
5	•	-	-

Valves

S	Without bypass
B	With bypass 6 bar
T	With check valve, without bypass
D	With check valve, with bypass 6 bar

Seals

A	NBR
V	FPM

Connections

F1	Manifold

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Valves:	FHM050				FHM065-135			
Element Δp	S	B	T	D	S	B	T	D
N 20 bar	-	•	-	•	-	•	-	•
H 210 bar	-	-	-	-	•	-	•	-
S 210 bar	•	-	•	-	-	-	-	-

Execution

P01	MP Filtri standard
Pxx	Customized

FILTER ELEMENT

Configuration example: HP135 | 3 | A10 | A | H | P01

Element series and size

HP050 | **HP065** | **HP135**

Element length	HP050	HP065	HP135
1	•	•	•
2	•	•	•
3	•	•	•
4	•	-	-
5	•	-	-

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Seals

A	NBR
V	FPM

Element Δp	HP050	HP065	HP135
N 20 bar	•	•	•
H 210 bar	-	•	•
S 210 bar	•	-	-

Execution

P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See page 786

DEA	Electrical differential pressure indicator
DEM	Electrical differential pressure indicator
DEU	Electrical differential pressure indicator
DLA	Electrical / visual differential pressure indicator
DLE	Electrical / visual differential pressure indicator
DTA	Electronic differential pressure indicator
DTI	I-O Link electronic differential pressure indicator
DVA	Visual differential pressure indicator
DVM	Visual differential pressure indicator

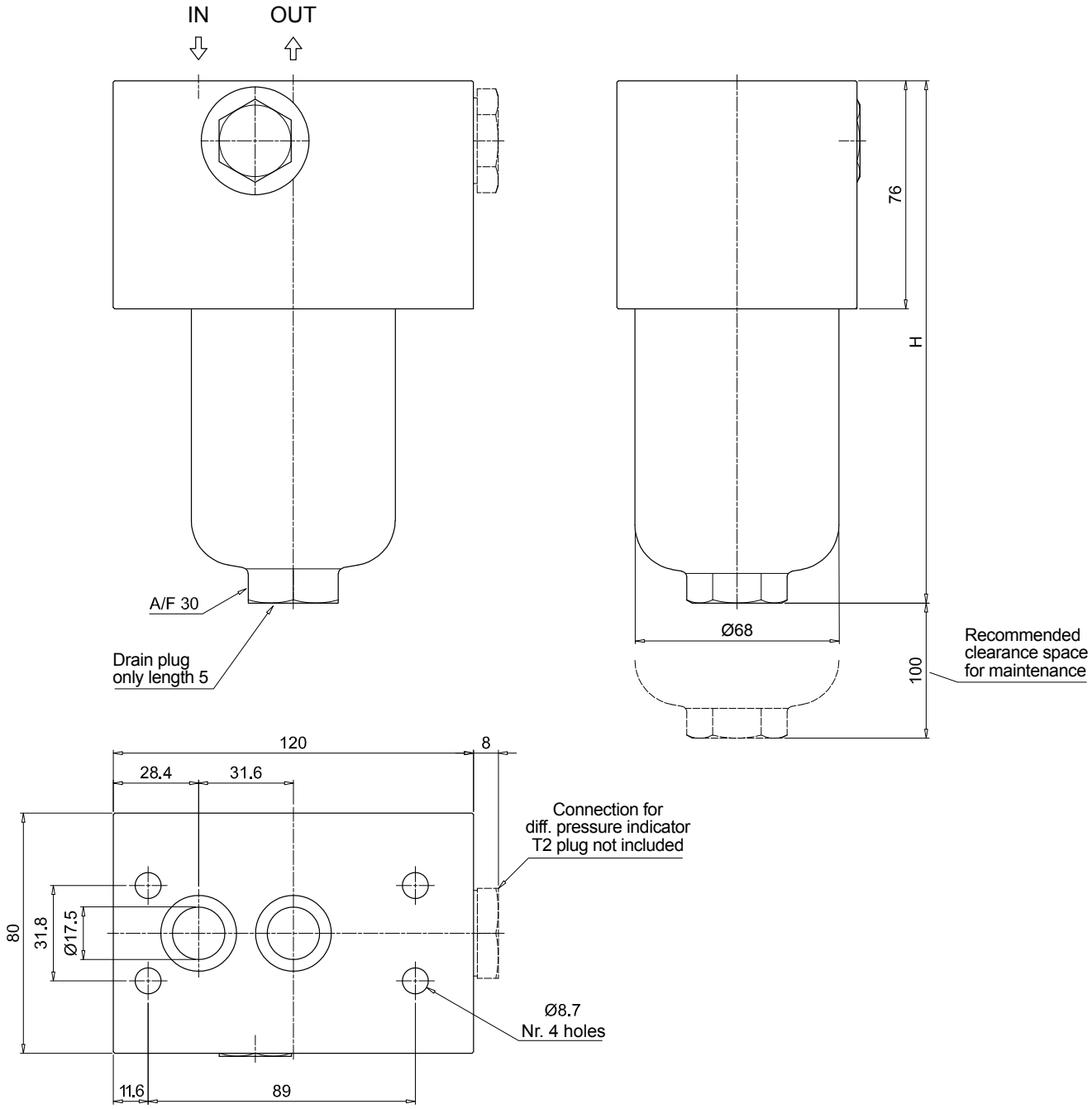
PLUGS

See page 807

T2	Plug (not included)

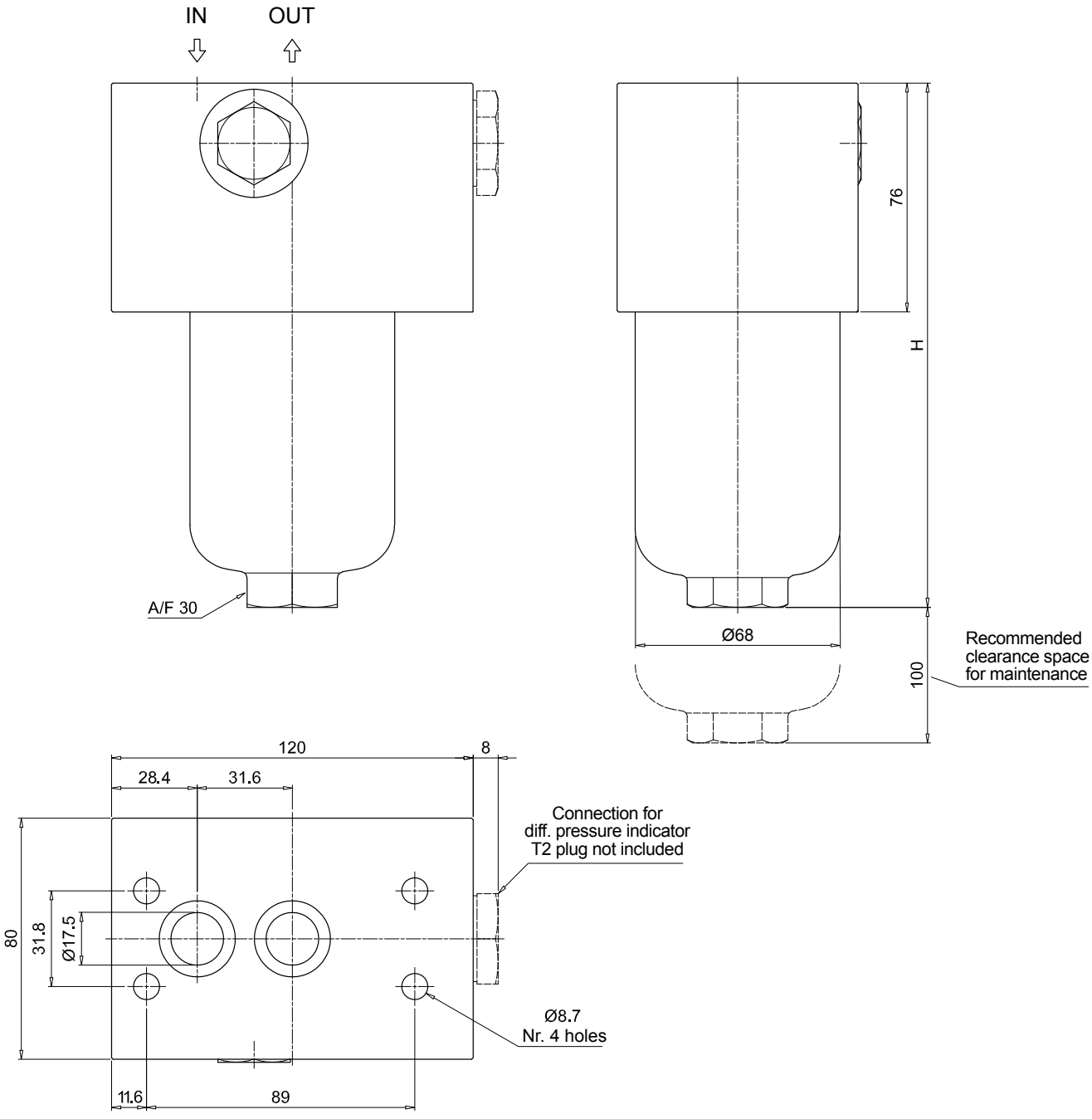
MP FILTRI WWW.SUMY.IR

FHM050	
Filter length	**H [mm]**
1	154
2	191
3	233
4	281
5	403



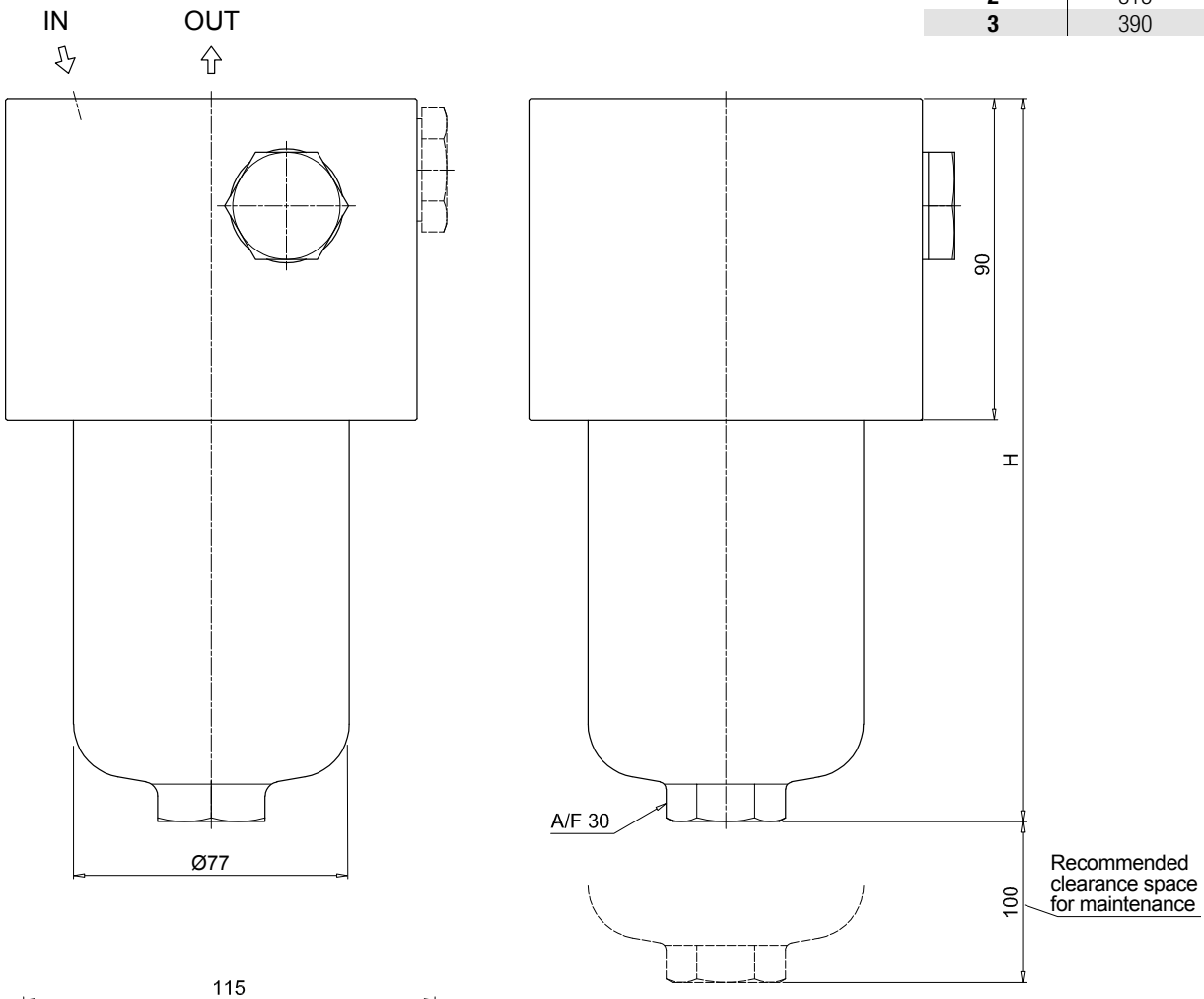
Dimensions

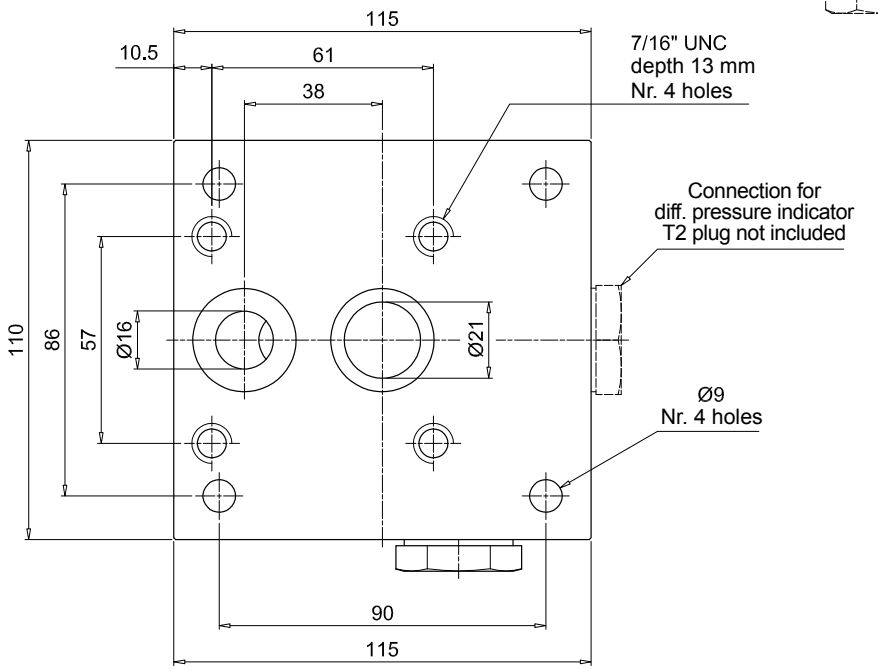
FHM065	
Filter length	**H [mm]**
1	162
2	193
3	295



MP FILTRI WWW.SUMY.IR

FHM135	
Filter length	**H [mm]**
1	202
2	315
3	390





Designation & Ordering code

COMPLETE FILTER

Configuration example: FHM320 | 4 | D | A | F1 | A06 | N | P01

Series and size

FHM320 | **FHM500**

Length	FHM320	FHM500
1	•	•
2	•	•
3	•	•
4	•	•
5	-	•

Valves

S	Without bypass
B	With bypass 6 bar
T	With check valve, without bypass
D	With check valve, with bypass 6 bar

Seals

A	NBR
V	FPM

Connections

F1	Manifold

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm	**A16**	Inorganic microfiber	16 µm
A06	Inorganic microfiber	6 µm	**A25**	Inorganic microfiber	25 µm
A10	Inorganic microfiber	10 µm	**M25**	Wire mesh	25 µm

Valves:	FHM320				FHM500			
Element Δp	S	B	T	D	S	B	T	D
N 20 bar	-	•	-	•	-	•	-	•
H 210 bar	•	-	•	-	-	-	-	-
S 210 bar	-	-	-	-	•	-	•	-

Execution	Filter length 1	2	3	4	5
P01 MP Filtri standard	•	•	•	•	•
P02 Maintenance from the bottom of the housing				•	•
Pxx Customized					

FILTER ELEMENT

Configuration example: HP320 | 4 | A06 | A | N | P01

Element series and size

HP320 | **HP500**

Element length	HP320	HP500
1	•	•
2	•	•
3	•	•
4	•	•
5		•

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Seals

A	NBR
V	FPM

Element Δp	HP320	HP500
N 20 bar	•	•
H 210 bar	•	-
S 210 bar	-	•

Execution

P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See page 786

DEA	Electrical differential pressure indicator
DEM	Electrical differential pressure indicator
DEU	Electrical differential pressure indicator
DLA	Electrical / visual differential pressure indicator
DLE	Electrical / visual differential pressure indicator
DTA	Electronic differential pressure indicator
DTI	I-O Link electronic differential pressure indicator
DVA	Visual differential pressure indicator
DVM	Visual differential pressure indicator

PLUGS

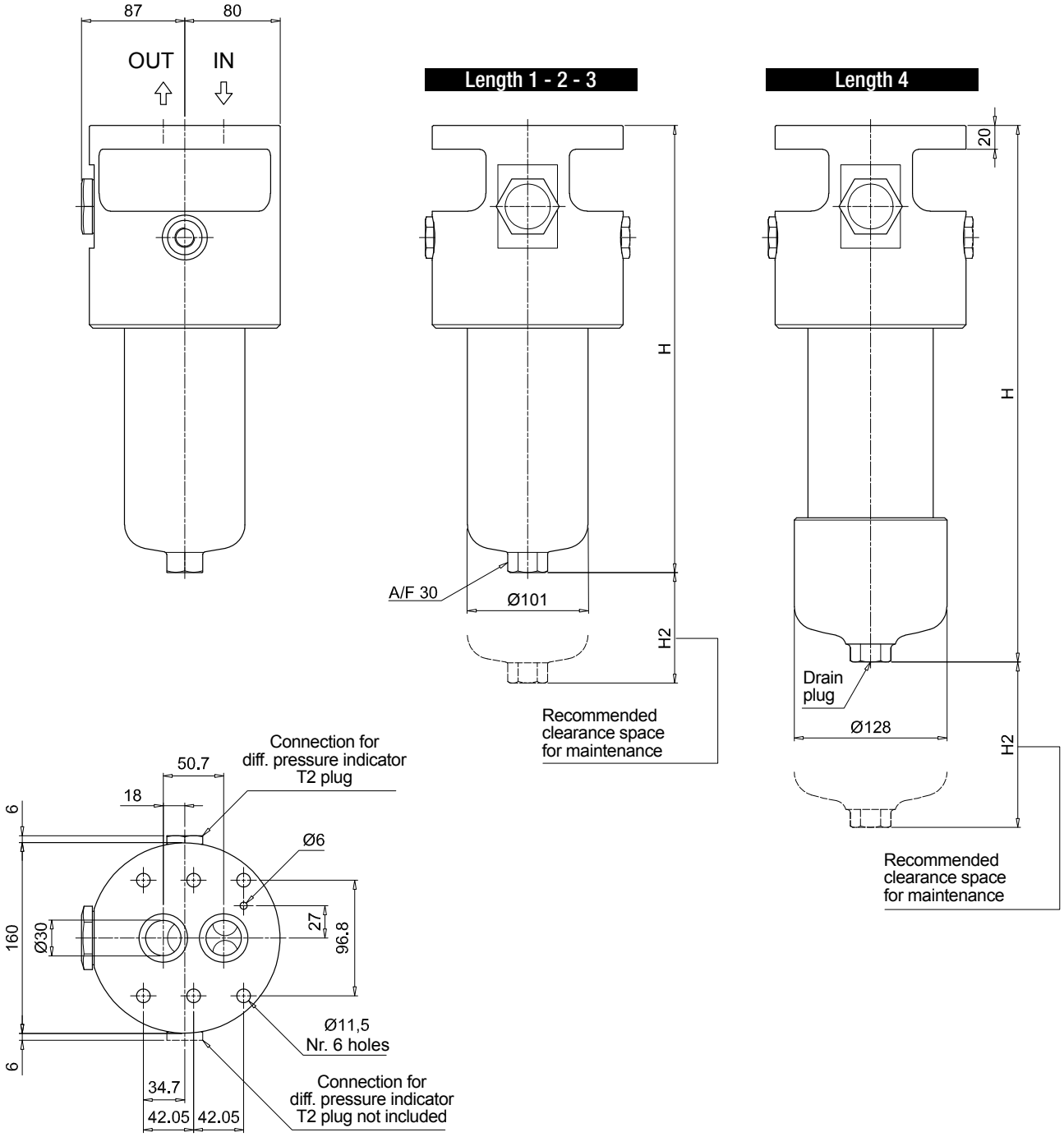
See page 807

T2	Plug (not included)

MP FILTRI WWW.SUMY.IR

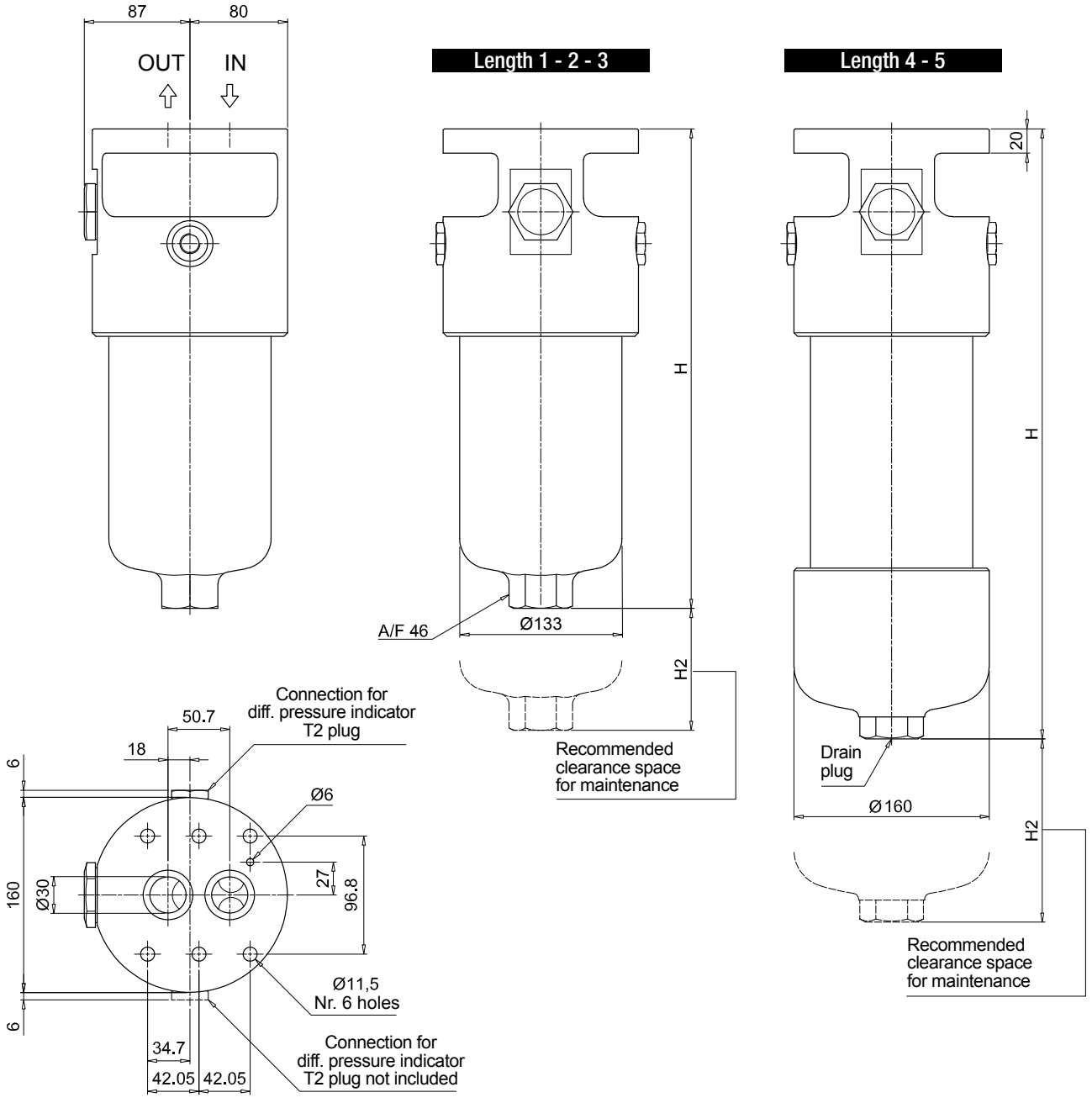
FHM320

Filter length	H [mm]	H2 [mm] Execution P01	P02
1	293	150	-
2	416	150	-
3	548	150	-
4	702	150	550



Dimensions

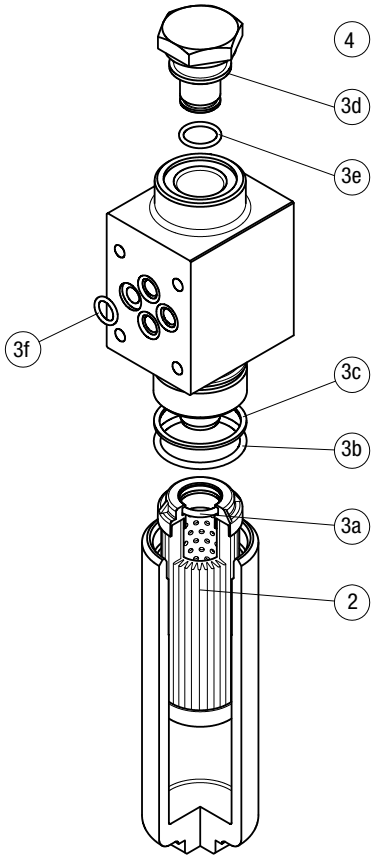
FHM500			
Filter length	H [mm]	H2 [mm] Execution P01	H2 [mm] Execution P02
1	355	150	-
2	445	150	-
3	521	150	-
4	679	150	480
5	845	150	650



MP FILTRI WWW.SUMY.IR

Order number for spare parts

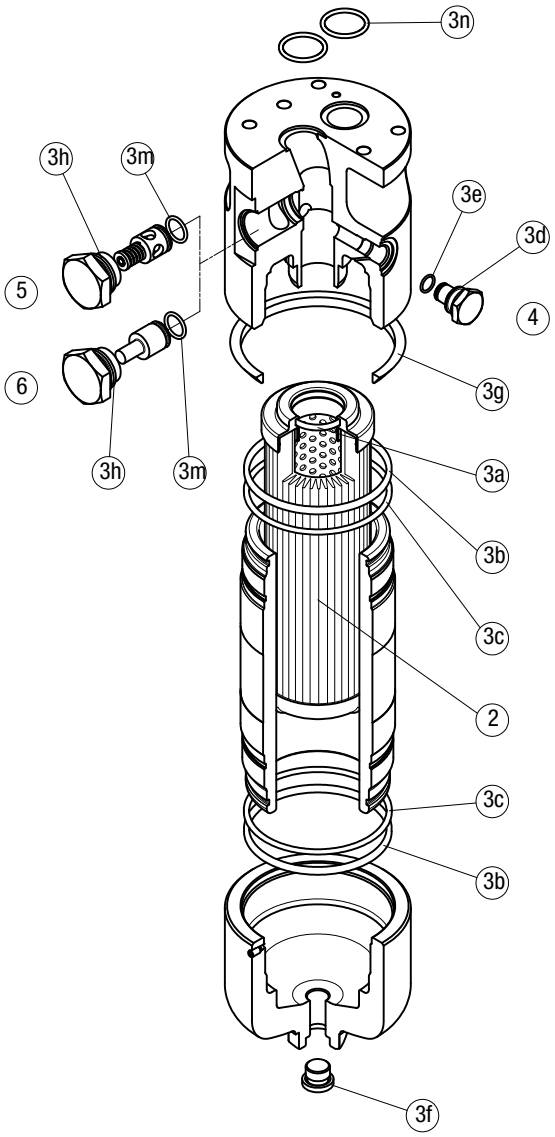
FHM 006 - 007 - 010



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3f)		Q.ty: 1 pc. (4)	
Filter series	Filter element	Seal Kit code number NBR	Seal Kit code number FPM	Indicator connection plug NBR	Indicator connection plug FPM
FHM 006	See order table	02050324	02050325	T2H	T2V
FHM 007		02050600	02050601		
FHM 010		02050320	02050321		

MP FILTRI WWW.SUMY.IR

FHM 050 - 065 - 135 - 320 - 500



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3m)		Q.ty: 1 pc. (4)		Q.ty: 1 pc. (5)		Q.ty: 1 pc. (6)	
Filter series	**Filter element**	**Seal Kit code number NBR**	**FPM**	**Indicator connection plug NBR**	**FPM**	**Bypass assembly NBR**	**FPM**	**Non-bypass assembly NBR**	**FPM**
FHM 050	See order table	02050410	02050411	T2H	T2V	02001400	02001401	02001402	02001403
FHM 065		02050268	02050279			02001400	02001401	02001402	02001403
FHM 135		02050271	02050282			02001404	02001405	02001406	02001407
FHM 320		02050275	02050286			02001408	02001409	02001410	02001411
FHM 500		02050332	02050333			02001408	02001409	02001410	02001411

MP FILTRI
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FHB series

Maximum working pressure up to 32 MPa (320 bar) - Flow rate up to 485 l/min



INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS

Please scan or click the QR codes to get updated electronic version of the related document:

FHB050 FHB065 FHB135 FHB320

For all the QR codes: Scan or click me!

FHB GENERAL INFORMATION

Description

High Pressure filters

Manifold
Maximum working pressure up to 32 MPa (320 bar)
Flow rate up to 485 l/min

FHB is a range of high pressure filter for protection of sensitive components in high pressure hydraulic systems in the mobile machines. They are directly connected to the side of the manifold, through the proper flanged interface.

Available features:

- Manifold connections up to Ø30 mm, for a maximum flow rate of 485 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Bypass valve, to relieve excessive pressure drop across the filter media
- Check valve, to protect the system against reverse flow
- Low collapse filter element "N", for use with filters provided with bypass valve
- High collapse filter element "H", for use with filters not provided with bypass valve
- High collapse filter element with external support "S", for filter element protection against the back pressure caused by the check valve in filters not provided with the bypass valve
- Visual, electrical and electronic differential clogging indicators

Common applications:

Delivery lines, in any high pressure industrial equipment or mobile machines

Technical data

Filter housing materials

- Head: Phosphatized cast iron
- Housing: Phosphatized steel
- Bypass valve: Steel
- Check valve: Steel

Pressure

- Test pressure: 48 MPa (480 bar)
- Min. Burst pressure: 96 MPa (960 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 32 MPa (320 bar)

Bypass valve

- Opening pressure 0.6 MPa (6 bar) ±10%
- Other opening pressures on request.

Filter element features

Filter		Filter element	
FHB		HP	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	N	20 bar
	High Δp	H	210 bar
	High Δp with external support	S	210 bar
M - Wire mesh	Standard	N	20 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals

- Standard NBR series A
- Optional FPM series V

Temperature

From -25 °C to +110 °C

Connections

Manifold mounting

Note

FHB filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]						Volumes [dm³]					
	Length	1	2	3	4	5	Length	1	2	3	4	5
FHB 050		2.61	2.98	3.39	3.86	5.04		0.21	0.30	0.40	0.52	0.81
FHB 065		3.33	3.69	4.90	-	-		0.20	0.27	0.49	-	-
FHB 135		6.61	8.21	9.21	-	-		0.40	0.73	0.94	-	-
FHB 320		12.95	15.08	17.37	26.77	-		0.91	1.63	2.40	3.59	-

MP FILTRI WWW.SUMY.IR

Flow rates [l/min]

		Filter element design - N Series						Filter element design - S Series				
Filter series	Length	A03	A06	A10	A16	A25	M25	A03	A06	A10	A16	A25
FHB 050	1	43	42	79	81	101	131	30	40	58	60	74
	2	53	58	84	93	112	132	46	50	76	86	108
	3	67	70	94	101	119	133	59	62	87	95	115
	4	82	87	106	108	122	134	74	80	101	103	119
	5	102	104	119	122	127	136	90	92	105	113	126

		Filter element design - N Series						Filter element design - H Series				
Filter series	Length	A03	A06	A10	A16	A25	M25	A03	A06	A10	A16	A25
FHB 065	1	25	33	55	62	87	133	23	25	49	58	81
	2	33	51	70	76	101	134	33	38	66	75	94
	3	60	71	97	103	118	138	60	68	95	102	116
FHB 135	1	67	72	120	129	177	212	49	55	97	100	160
	2	109	116	152	154	224	250	90	110	137	140	182
	3	153	155	201	205	226	253	126	142	175	187	207
FHB 320	1	130	143	238	286	343	442	110	117	192	201	304
	2	259	281	391	409	454	468	200	230	319	325	392
	3	332	368	441	455	463	476	269	312	381	389	432
	4	368	390	446	462	481	488	311	334	388	394	437

Maximum flow rate for a complete pressure filter with a pressure drop Δp = 1.5 bar.

The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.

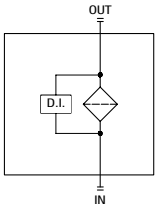
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

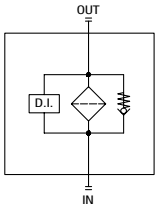
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.

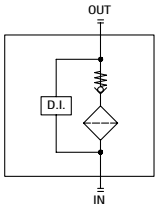
Please, contact our Sales Department for further additional information.

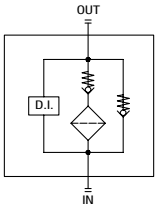
Hydraulic diagram

Filter series	Style S	Style B	Style T	Style D
FHB 050	•	•	•	•
FHB 065	•	•	•	•
FHB 135	•	•	•	•
FHB 320	•	•	•	•



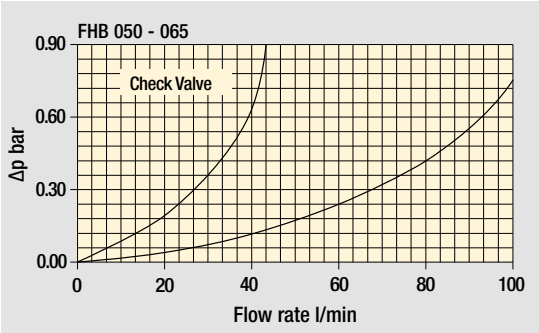


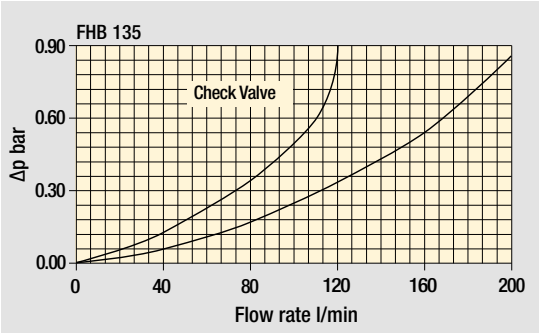


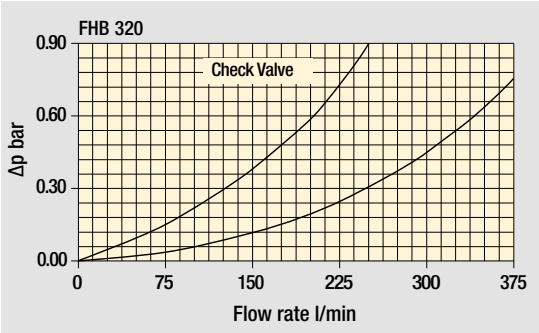


Pressure drop

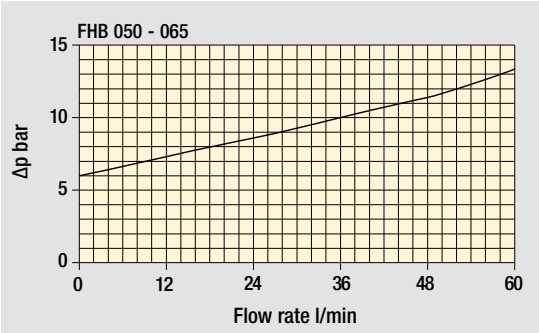
Filter housings Δp pressure drop

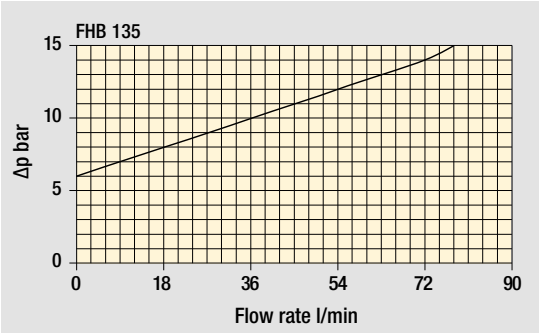


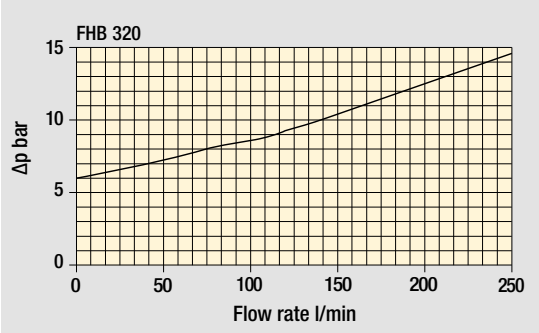




Bypass valve pressure drop







The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

MP FILTRI WWW.SUMY.IR

Designation & Ordering code

COMPLETE FILTER

Configuration example: FHB320 | 4 | S | A | F1 | A06 | H | P01

Series and size

FHB050 | FHB065 | FHB135 | FHB320

Length	FHB050	FHB065	FHB135	FHB320
1	•	•	•	•
2	•	•	•	•
3	•	•	•	•
4	•	-	-	•
5	•	-	-	-

Valves

S	Without bypass
B	With bypass 6 bar
T	With check valve, without bypass
D	With check valve, with bypass 6 bar

Seals

A	NBR
V	FPM

Connections

F1	Manifold

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Element Δp	Valves S	B	T	D
N 20 bar	-	•	-	•
S 210 bar (only for size 050)	•	-	•	-
H 210 bar (for sizes 065-135-320)	•	-	•	-

Execution	Filter size 050	065	135	320 1-2-3	320 4
P01 MP Filtri standard	•	•	•	•	•
P02 Maintenance from the bottom of the housing	-	-	-	-	•
Pxx Customized	•	•	•	•	•

FILTER ELEMENT

Configuration example: HP320 | 4 | A06 | A | H | P01

Element series and size

HP050 | HP065 | HP135 | HP320

Element length	FHB050	FHB065	FHB135	FHB320
1	•	•	•	•
2	•	•	•	•
3	•	•	•	•
4	•	-	-	•
5	•	-	-	-

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Seals	
A	NBR
V	FPM

Element Δp	Filter size 050	065	135	320
N 20 bar	•	•	•	•
S 210 bar (only for size 050)	•	-	-	-
H 210 bar (for sizes 065-135-320)	-	•	•	•

Execution	
P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See page 786

DEA	Electrical differential pressure indicator
DEM	Electrical differential pressure indicator
DEU	Electrical differential pressure indicator
DLA	Electrical / visual differential pressure indicator
DLE	Electrical / visual differential pressure indicator
DTA	Electronic differential pressure indicator
DTI	I-O Link electronic differential pressure indicator
DVA	Visual differential pressure indicator
DVM	Visual differential pressure indicator

PLUGS

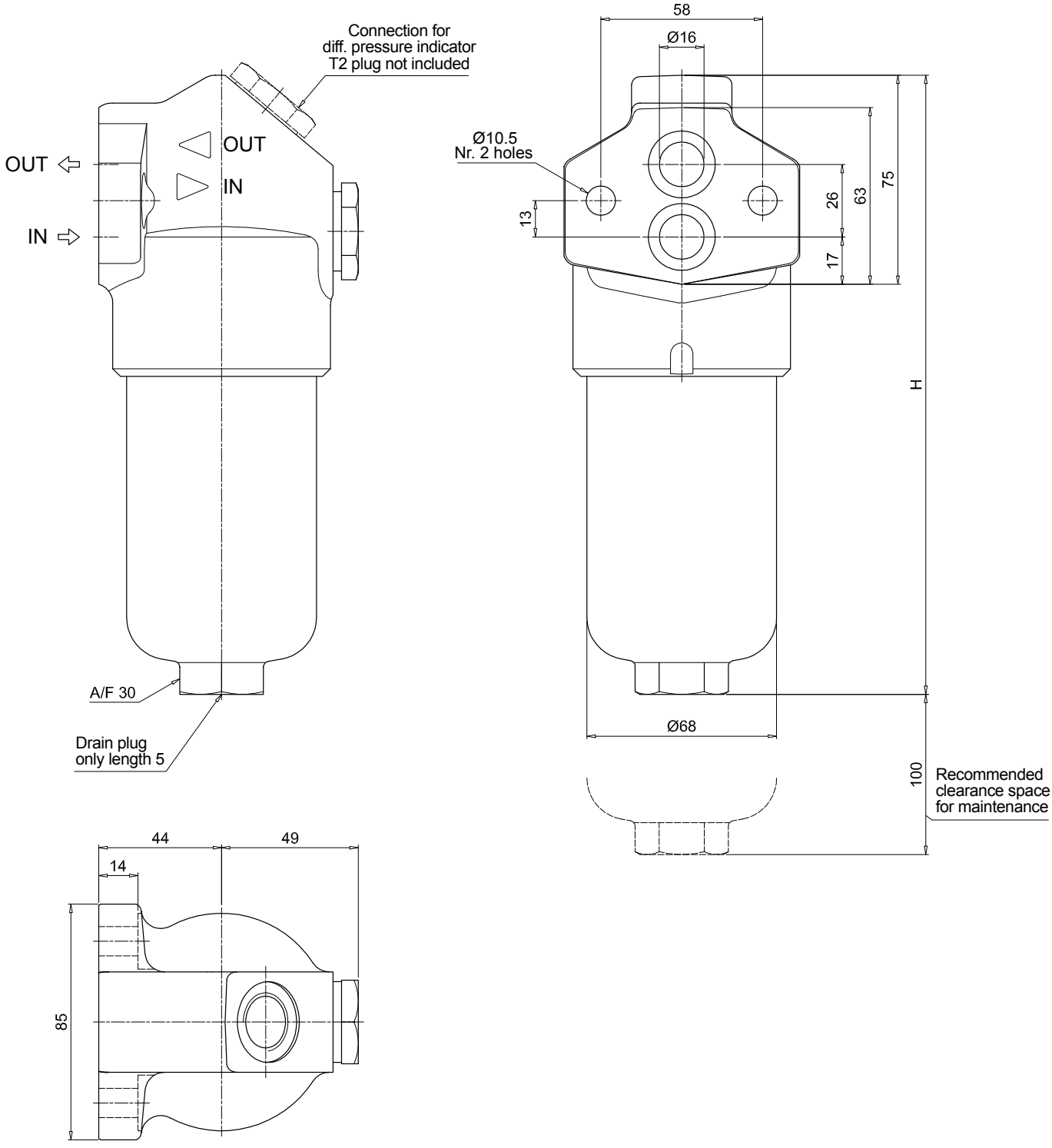
See page 807

T2	Plug (not included)

MP FILTRI WWW.SUMY.IR

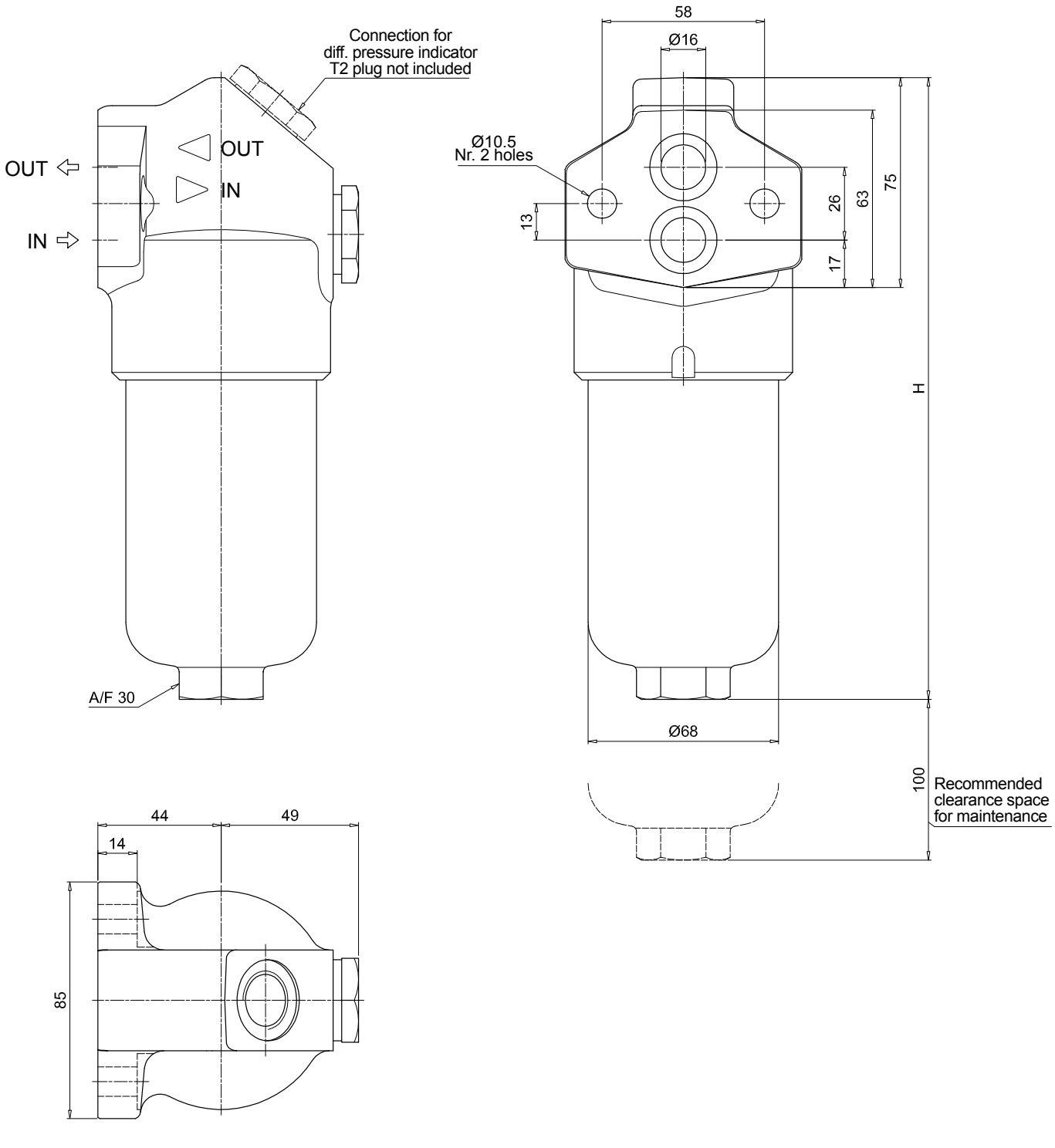
Dimensions

FHB050	
Filter length	**H [mm]**
1	187
2	224
3	266
4	314
5	436



Dimensions

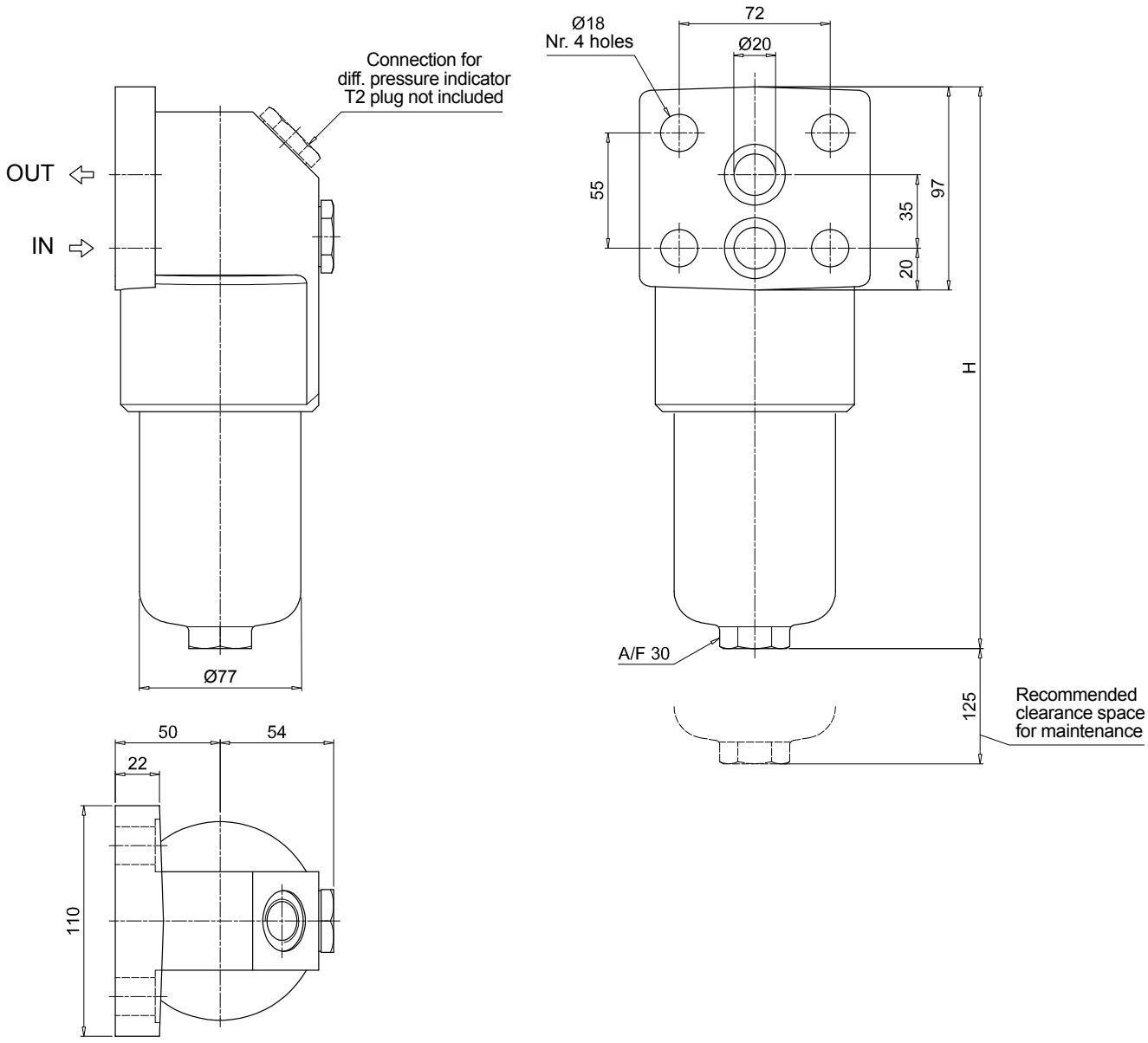
FHB065	
Filter length	**H [mm]**
1	196
2	227
3	329



MP FILTRI WWW.SUMY.IR

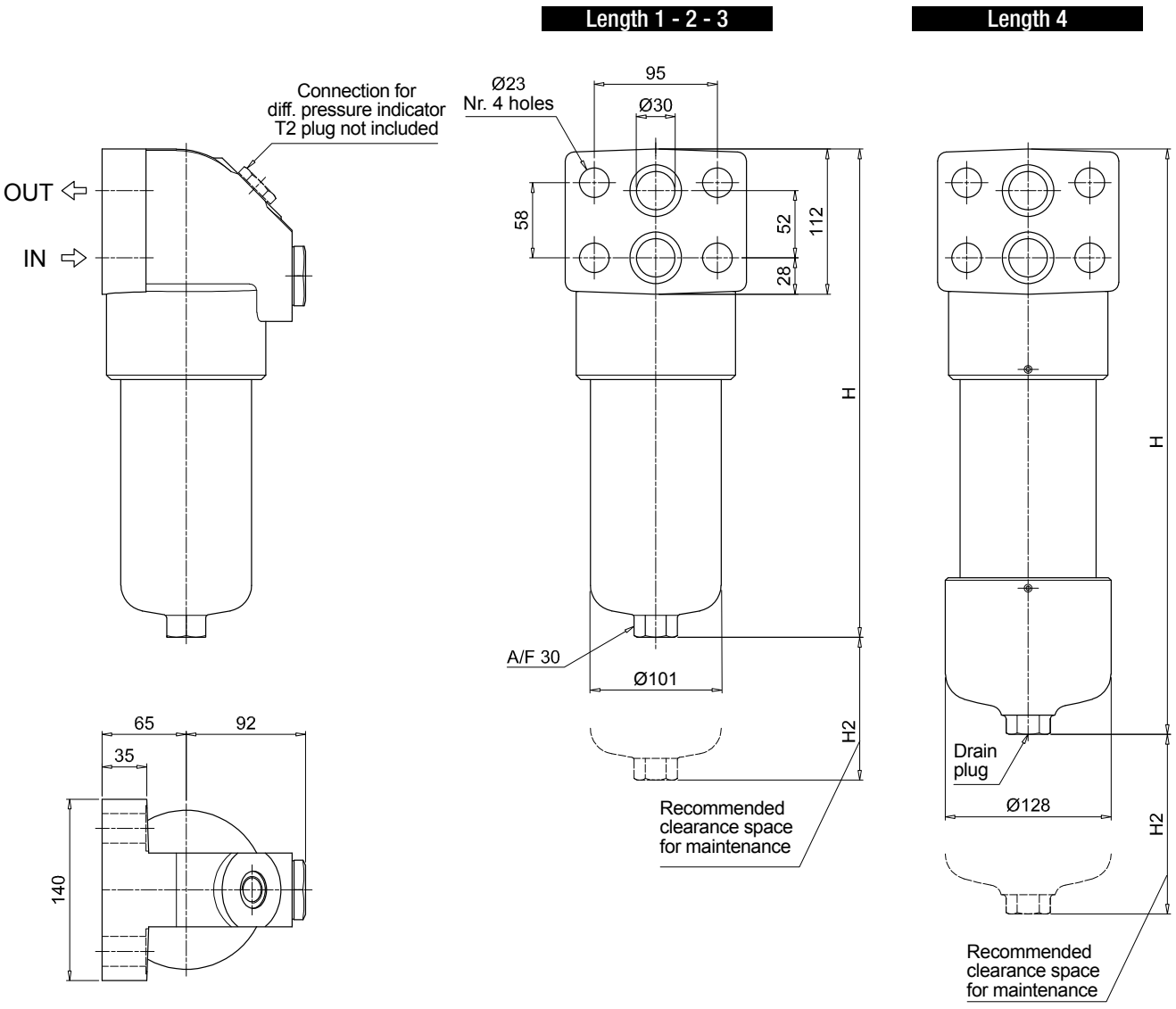
Dimensions

FHB135	
Filter length	**H [mm]**
1	268
2	381
3	456



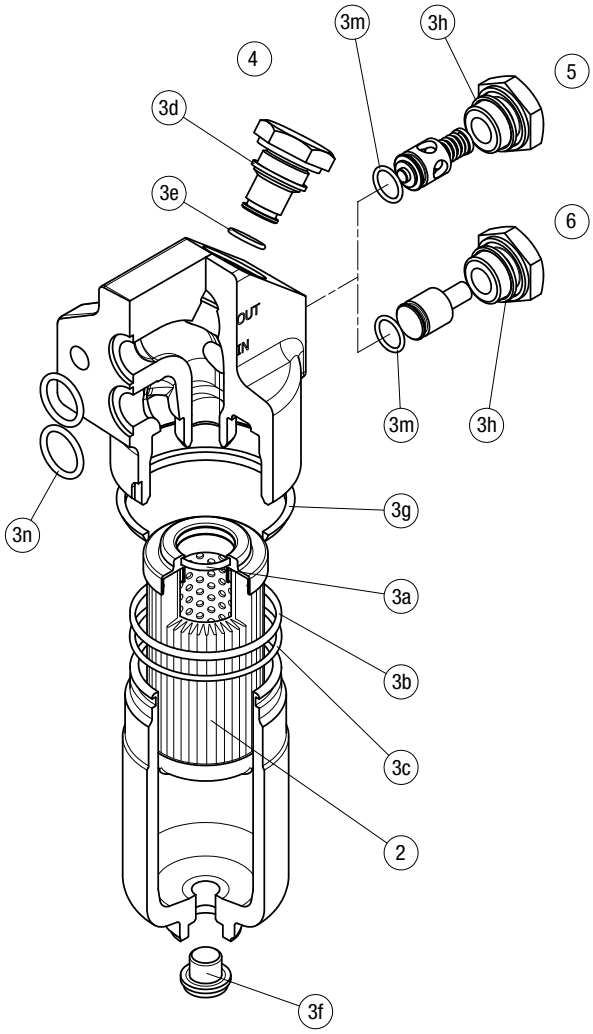
Dimensions

FHB320			
Filter length	H [mm]	H2 [mm] Execution P01	P02
1	301	150	-
2	424	150	-
3	556	150	-
4	709	150	550



MP FILTRI WWW.SUMY.IR

FHB 050 - 065 - 135 - 320



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3n)		Q.ty: 1 pc. (4)		Q.ty: 1 pc. (5)		Q.ty: 1 pc. (6)	
Filter series	**Filter element**	**Seal Kit code number NBR**	**FPM**	**Indicator connection plug NBR**	**FPM**	**Bypass assembly NBR**	**FPM**	**Non-bypass assembly NBR**	**FPM**
FHB 050	See order table	02050412	02050413	T2H	T2V	02001312	02001385	02001314	02001386
FHB 065		02050266	02050277			02001312	02001385	02001314	02001386
FHB 135		02050270	02050281			02001312	02001385	02001314	02001386
FHB 320		02050273	02050284			02001381	02001382	02001383	02001384

MP FILTRI
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FHF 325 series

Maximum working pressure up to 35 MPa (350 bar) - Flow rate up to 550 l/min

Filter housing according to SAE J2066 for HF4 filter elements



INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS

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FHF 325 GENERAL INFORMATION

Filter housing according to SAE J2066 for HF4 filter elements

Description

High Pressure filters

Manifold
Maximum working pressure up to 35 MPa (350 bar)
Flow rate up to 550 l/min

FHF is a range of high pressure filter for protection of sensitive components in high pressure hydraulic systems in the mobile machines. They are directly connected to the lines of the system through the hydraulic fittings or the proper flanged interface.

Available features:
- 1 1/2" female threaded connections, 1 1/2" flanged connections and manifold connections up to 1 1/2", for a maximum flow rate of 550 l/min
- Base-mounting design, for ease of the replacement of the filter element
- Filter element designed in accordance with SAE J2066 HF4 regulation
- Fine filtration rating, to get a good cleanliness level into the system
- Bypass valve, to relieve excessive pressure drop across the filter media
- Low collapse filter element "N", for use with filters provided with bypass valve
- Visual, electrical and electronic differential clogging indicators

Common applications:
Delivery lines, in any high pressure industrial equipment

Technical data

Filter housing materials
- Head: Phosphatized cast iron
- Housing: Phosphatized steel
- Cover: Cast iron (chemical heat treatment)
- Bypass valve: Brass - Steel

Pressure
- Test pressure: 52.5 MPa (525 bar)
- Min. Burst pressure: 105 MPa (1050 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 35 MPa (350 bar)

Bypass valve
- Opening pressure 0.6 MPa (6 bar) ±10%
- Other opening pressures on request.

Filter element features

Filter		Filter element	
FHF		HF	
Δp Element type			
Element media	Construction	Δp Series	Δp
A - Microfiber	Standard	N	20 bar
M - Wire mesh	Standard	N	20 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals
- Standard NBR series A
- Optional FPM series V

Temperature
From -25 °C to +110 °C

Connections
FHF 325: In-line threaded connection
FHF 325: In-line flanged connection
FHF 325: Manifold mounting

Note
FHF filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]				Volumes [dm³]			
	Length	1	2	3	Length	1	2	3
FHF 325		23.90	32.68	41.47		3.50	5.80	8.11

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Filter housing according to SAE J2066 for HF4 filter elements

Flow rates [l/min]

Filter series	Length	Filter element design - N Series					
		A03	A06	A10	A16	A25	M25
FHF 325	1	302	339	348	419	500	556
	2	401	424	434	457	505	557
	3	416	451	460	469	510	559

Maximum flow rate for a complete pressure filter with a pressure drop Δp = 1.5 bar.

The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.

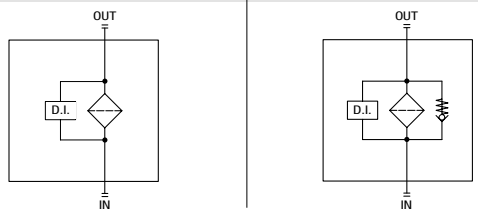
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.

Please, contact our Sales Department for further additional information.

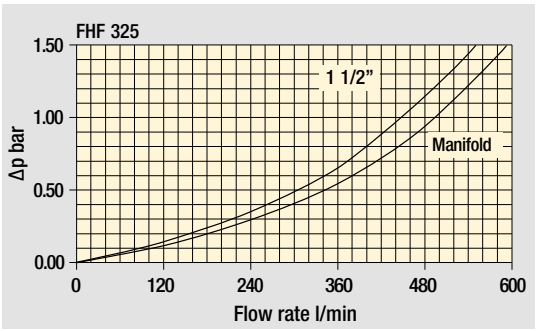
Hydraulic diagram

Filter series	Style S	Style B
FHF 325	•	•



Pressure drop

Filter housings Δp pressure drop



The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

FHF 325

Designation & Ordering code

COMPLETE FILTER

Configuration example: FHF325 | 2 | S | A | H | 7 | A10 | N | P01

Series and size
FHF325

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

Valves
S Without bypass
B With bypass 6 bar

Seals
A NBR
V FPM

Connections
A G 1 1/2”
B 1 1/2” NPT
C SAE 24 - 1 7/8” - 12 UN
G 1 1/2” SAE 6000 psi/M
H 1 1/2” SAE 6000 psi/UNC
M Manifold ø1.38”
N Manifold ø1.50”

Connection for differential pressure indicator
7 With two connections plugged on both sides

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Element Δp
N 20 bar

Execution
P01 MP Filtri standard
Pxx Customized

FILTER ELEMENT

Configuration example: HF325 | 2 | A10 | A | N | P01

Element series and size
HF325

Element length
1 | **2** | **3**

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Seals
A NBR
V FPM

Element Δp
N 20 bar

Execution
P01 MP Filtri standard
Pxx Customized

CLOGGING INDICATORS

See page 786

DEA Electrical differential pressure indicator
DEM Electrical differential pressure indicator
DEU Electrical differential pressure indicator
DLA Electrical / visual differential pressure indicator
DLE Electrical / visual differential pressure indicator
DTA Electronic differential pressure indicator
DTI I-O Link electronic differential pressure indicator
DVA Visual differential pressure indicator
DVM Visual differential pressure indicator

PLUGS

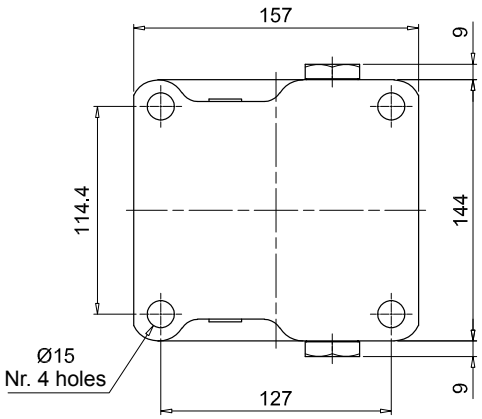
See page 807

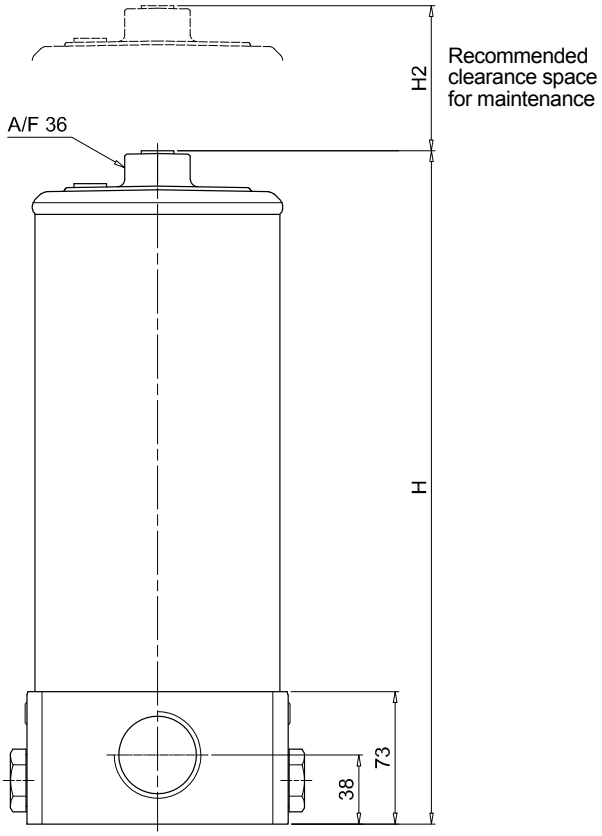
T2 Plug (not included)

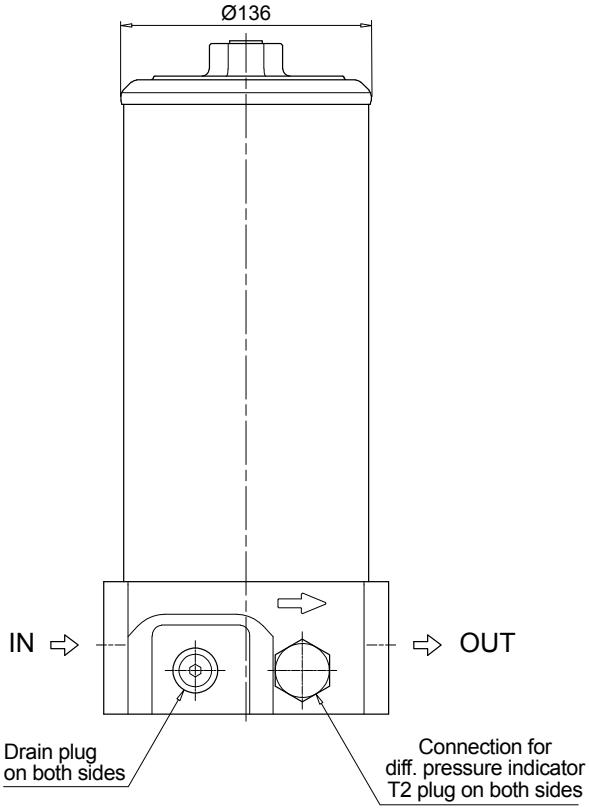
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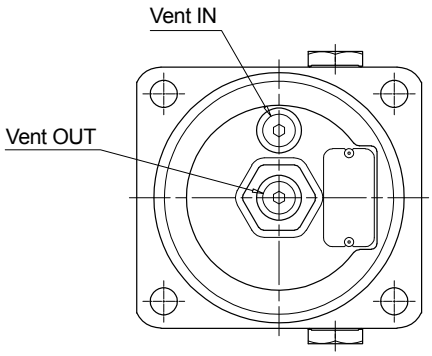
Dimensions

FHF325		
Connection A - B - C		
Filter length	**H [mm]**	**H2 [mm]**
1	452	250
2	690	485
3	928	725





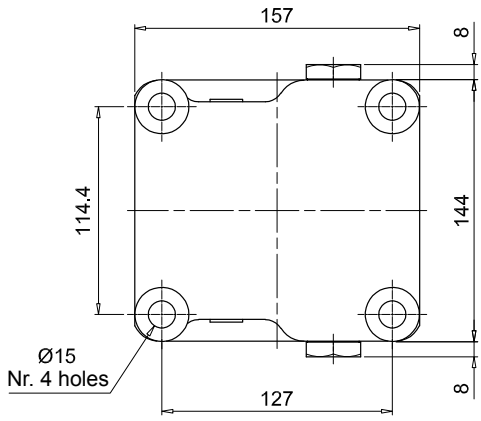


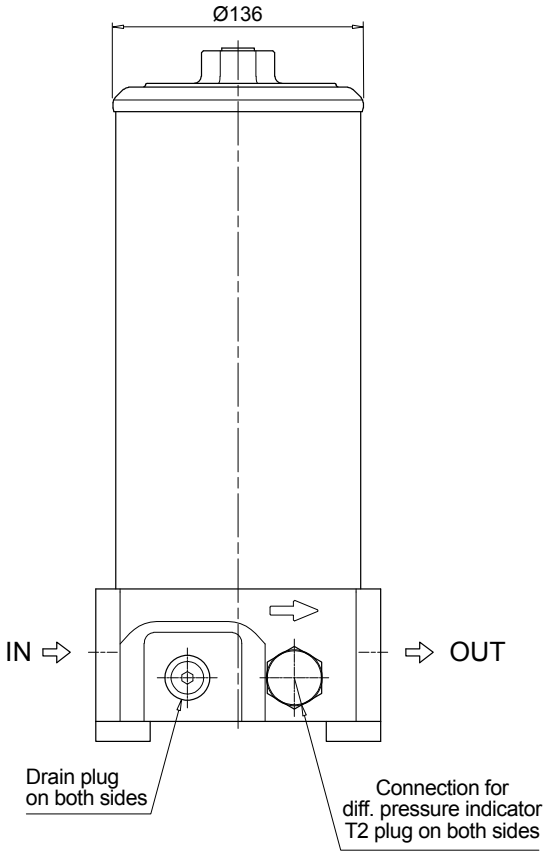


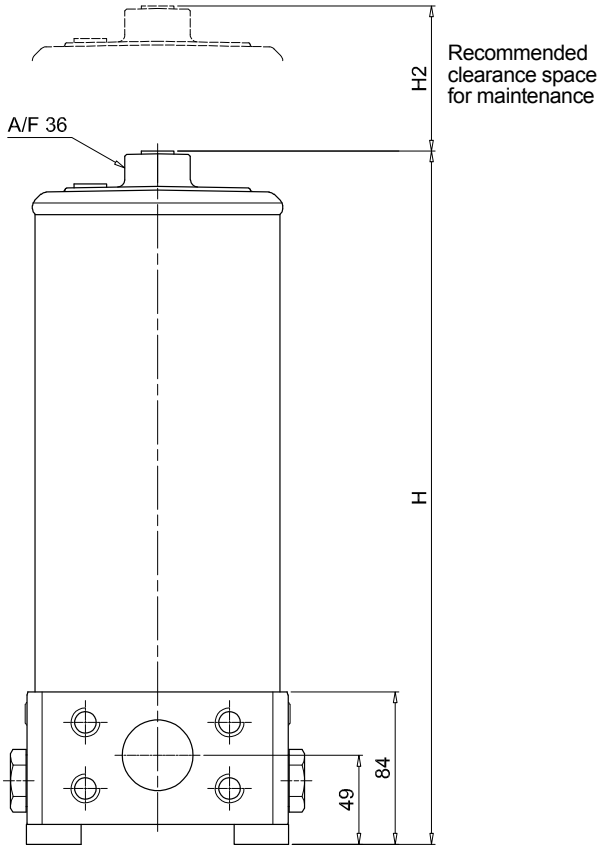
FHF 325

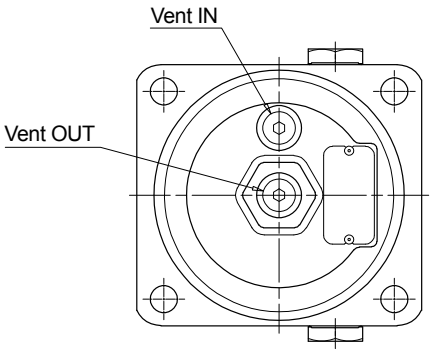
Dimensions

FHF325		
Connection G - H		
Filter length	H [mm]	H2 [mm]
1	463	250
2	701	485
3	939	725





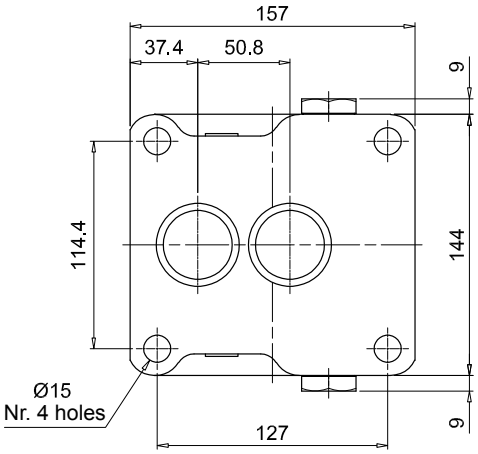


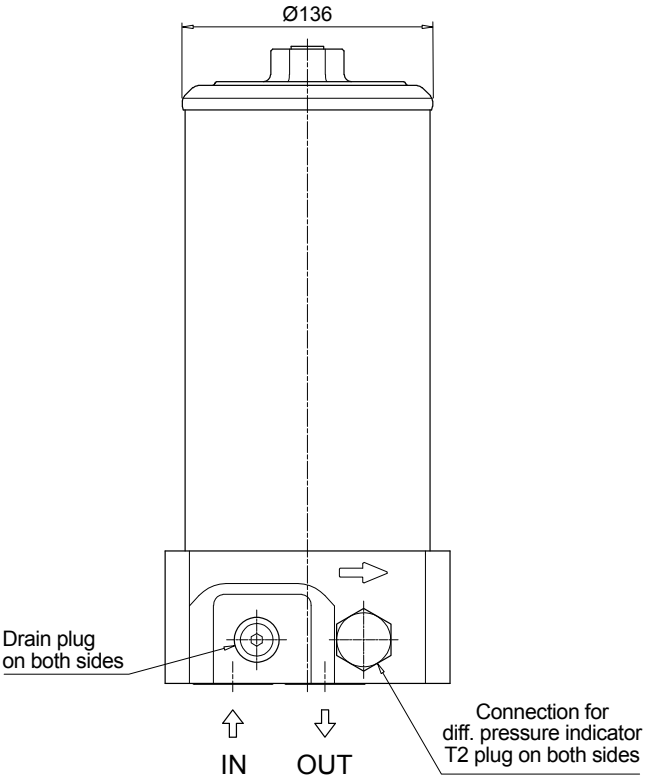


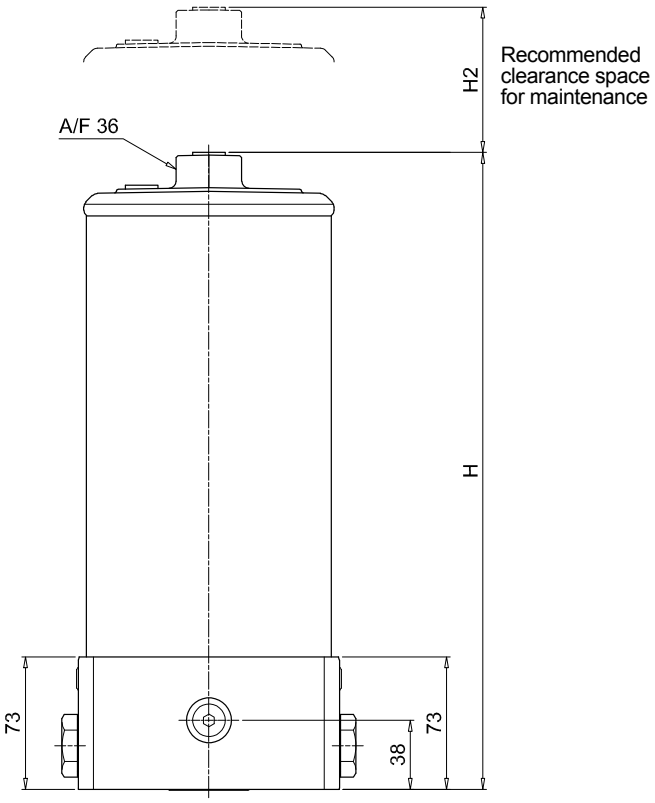
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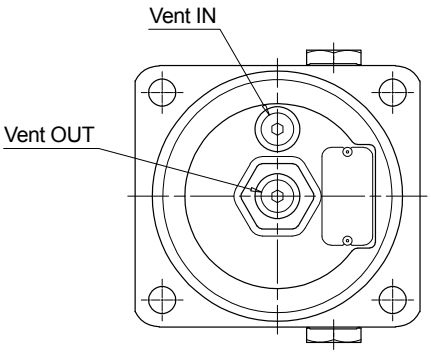
Dimensions

FHF325		
Connection M - N		
Filter length	**H [mm]**	**H2 [mm]**
1	452	250
2	690	485
3	928	725









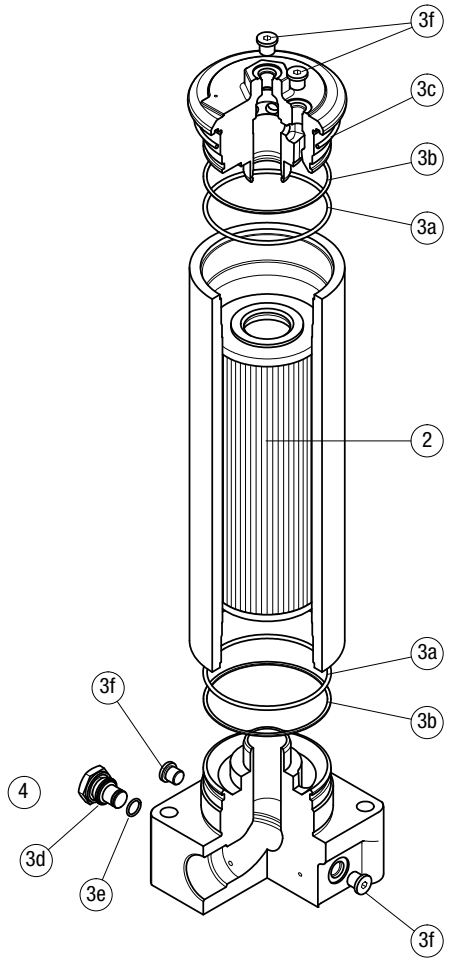
FHF 325 SPARE PARTS

Filter housing according to SAE J2066 for HF4 filter elements

Order number for spare parts

FHF 325

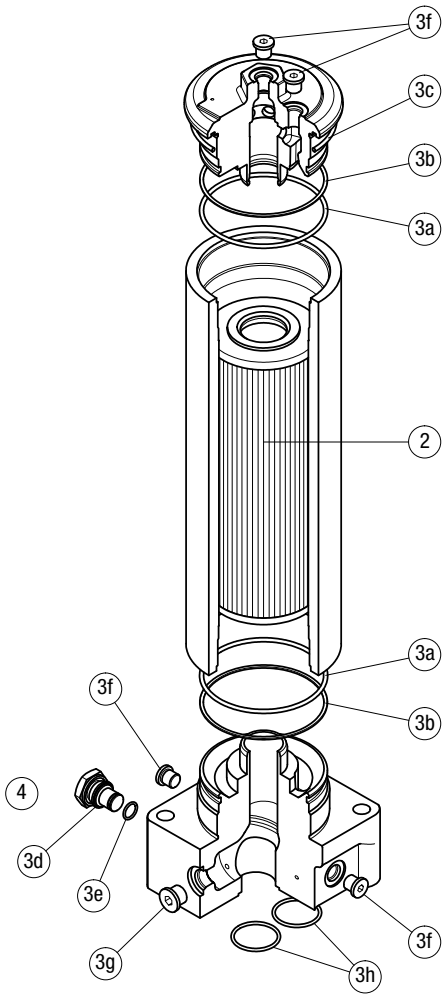
Connections
A - B - C - G - H



	Q.ty: 1 pc.	Q.ty: 1 pc.		Q.ty: 2 pc.	
Item:	**2**	**3** (3a ÷ 3f)		**4**	
Filter series	**Filter element**	**Seal Kit code number NBR**	**FPM**	**Indicator connection plug NBR**	**FPM**
FHF 325 A-B-C-G-H	See order table	02050588	02050589	T2H	T2V

FHF 325

Connections
M - N



	Q.ty: 1 pc.	Q.ty: 1 pc.		Q.ty: 2 pc.	
Item:	**2**	**3** (3a ÷ 3h)		**4**	
Filter series	**Filter element**	**Seal Kit code number NBR**	**FPM**	**Indicator connection plug NBR**	**FPM**
FHF 325 M-N	See order table	02050590	02050591	T2H	T2V

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FHD series

Maximum working pressure up to 35 MPa (350 bar) - Flow rate up to 250 l/min



INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS

Please scan or click the QR codes to get updated electronic version of the related document:

FHD021 FHD051 FHD326 FHD333

For all the QR codes: Scan or click me!

FHD GENERAL INFORMATION

Description

High Pressure filters

Duplex
Maximum working pressure up to 35 MPa (350 bar)
Flow rate up to 250 l/min

FHD is a range of high pressure duplex filter with integrated changeover function to allow the filter element replacement without the system shut-down.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- Female threaded connections up to 1 1/4" and flanged connections up to 1 1/2", for a maximum flow rate of 345 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Balancing valve, available for FHD051, FHD326 and FHD333, to equalize the housing pressure before the switch.
- Bypass valve, to relieve excessive pressure drop across the filter media
- Vent ports, to avoid air trapped into the filter going into the system
- Drain ports, to remove the fluid from the housing prior the maintenance work
- Low collapse filter element "N", for use with filters provided with M25 wire mesh
- High collapse filter element "H", for use with filters not provided with bypass valve
- Low collapse filter element with external support "R", for filter element protection against the back pressure caused by the check valve or the reverse flow in filters provided with the bypass valve
- High collapse filter element with external support "S", for filter element protection against the back pressure caused by the check valve or the reverse flow in filters not provided with the bypass valve
- Visual, electrical and electronic differential clogging indicators

Common applications:

- System where shut-down causes high costs
- System where shut-down causes safety issues

Technical data

Filter housing materials

- Head: Phosphatized cast iron
- Housing: Phosphatized steel
- Bypass valve: Steel

Pressure

- Test pressure: 52.5 MPa (525 bar)
- Min. Burst pressure: 105 MPa (1050 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 35 MPa (350 bar)

Bypass valve

- Opening pressure 0.6 MPa (6 bar) ±10%
- Other opening pressures on request.

Filter element features

Filter		Filter element	
FHD		HP	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	with outer net	R	20 bar
	High Δp	H	210 bar
	High Δp with external support	S	210 bar
M - Wire mesh	Standard	N	20 bar
	High Δp	H	210 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals

- Standard NBR series A
- Optional FPM series V

Connections

In-line Inlet/Outlet 90°

Temperature

From -25 °C to +110 °C

Note

FHD filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]						Volumes [dm³]					
	Length	1	2	3	4	5	Length	1	2	3	4	5
FHD 021		-	8.0	9.0	9.9	-		-	0.06	0.12	0.22	-
FHD 051		-	16.9	17.5	18.5	19.8		-	0.31	0.41	0.53	0.83
FHD 326		43.0	50.0	54.0	-	-		0.88	1.60	2.37	-	-
FHD 333		-	74.0	79.0	98.0	-		-	1.75	2.52	3.35	-

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Flow rates [l/min]

		Filter element design - H Series					
Filter series	Length	A03	A06	A10	A16	A25	M25
FHD 021	2	6	8	14	16	19	26
	3	10	12	18	20	22	27
	4	13	16	21	22	24	27

		Filter element design - R Series					N Series	Filter element design - S Series				
Filter series	Length	A03	A06	A10	A16	A25	M25	A03	A06	A10	A16	A25
FHD 051	2	39	41	51	54	59	64	35	37	48	51	58
	3	45	46	54	56	61	65	41	43	52	54	60
	4	50	52	58	58	62	65	47	49	56	56	61
	5	56	57	61	62	63	65	53	53	57	59	63
FHD 326	1	93	99	131	142	154	171	83	87	117	120	146
	2	136	141	163	166	173	176	119	128	149	151	163
	3	152	159	171	174	175	177	139	148	161	163	170
FHD 333	2	175	184	224	230	245	249	147	162	199	201	225
	3	204	217	241	245	247	252	179	196	221	224	238
	4	216	224	242	247	253	255	196	204	223	225	239

Maximum flow rate for a complete pressure filter with a pressure drop Δp = 1.5 bar.

The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.

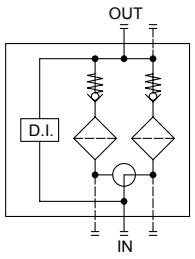
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

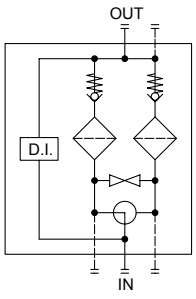
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.

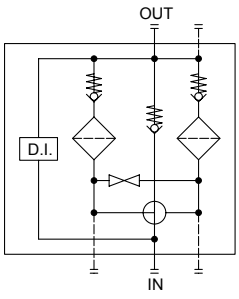
Please, contact our Sales Department for further additional information.

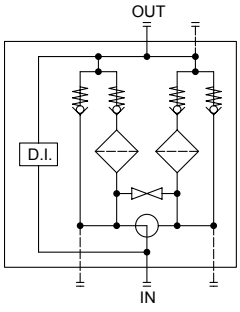
Hydraulic diagram

Filter series	Without Bypass	Without Bypass	Single Bypass	Double Bypass
FHD 021	•	-	-	-
FHD 051	-	•	•	-
FHD 326	-	-	-	•
FHD 333	-	-	-	•



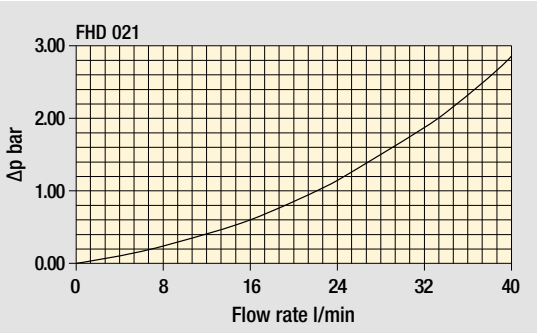


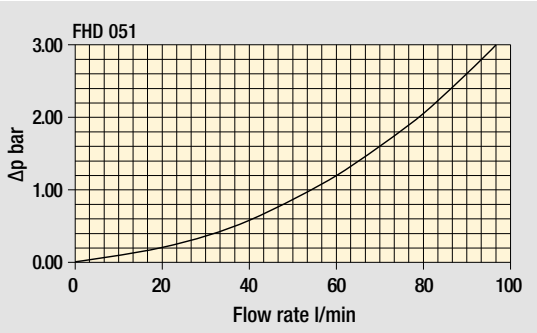


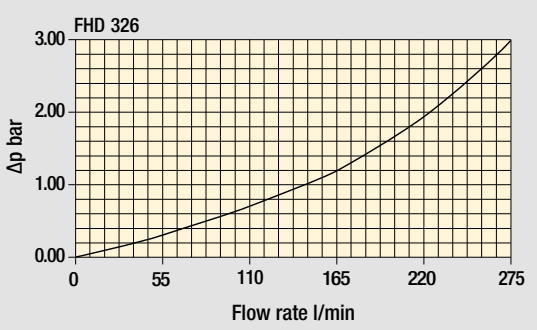


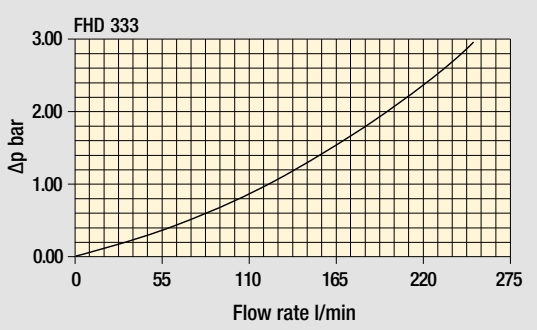
Pressure drop

Filter housings Δp pressure drop

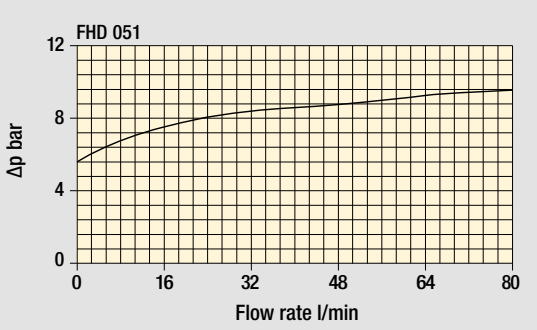


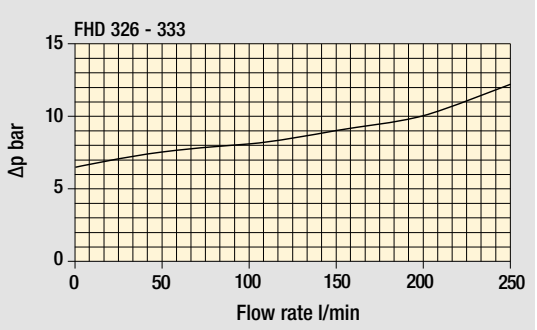






Bypass valve pressure drop





The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

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Designation & Ordering code

COMPLETE FILTER

Configuration example: FHD021 | 4 | S | A | G1 | A06 | H | P01

Series and size
FHD021

Length
2 | **3** | **4**

Bypass valve
S Without bypass

Seals
A NBR
V FPM

Connections
G1 G 1/2”
G2 1/2” NPT
G3 SAE 8 - 3/4” - 16 UNF

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Element Δp		Filtration rating Axx	Filtration rating M25
N	20 bar	-	•
H	210 bar	•	•

Execution
P01 MP Filtri standard
Pxx Customized

FILTER ELEMENT

Configuration example: HP011 | 4 | A06 | A | H | P01

Element series and size
HP011

Element length
2 | **3** | **4**

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Seals
A NBR
V FPM

Element Δp		Filtration rating Axx	Filtration rating M25
N	20 bar	-	•
H	210 bar	•	•

Execution
P01 MP Filtri standard
Pxx Customized

CLOGGING INDICATORS

See page 786

DEA Electrical differential pressure indicator
DEM Electrical differential pressure indicator
DEU Electrical differential pressure indicator
DLA Electrical / visual differential pressure indicator
DLE Electrical / visual differential pressure indicator
DTA Electronic differential pressure indicator
DTI I-O Link electronic differential pressure indicator
DVA Visual differential pressure indicator
DVM Visual differential pressure indicator

PLUGS

See page 807

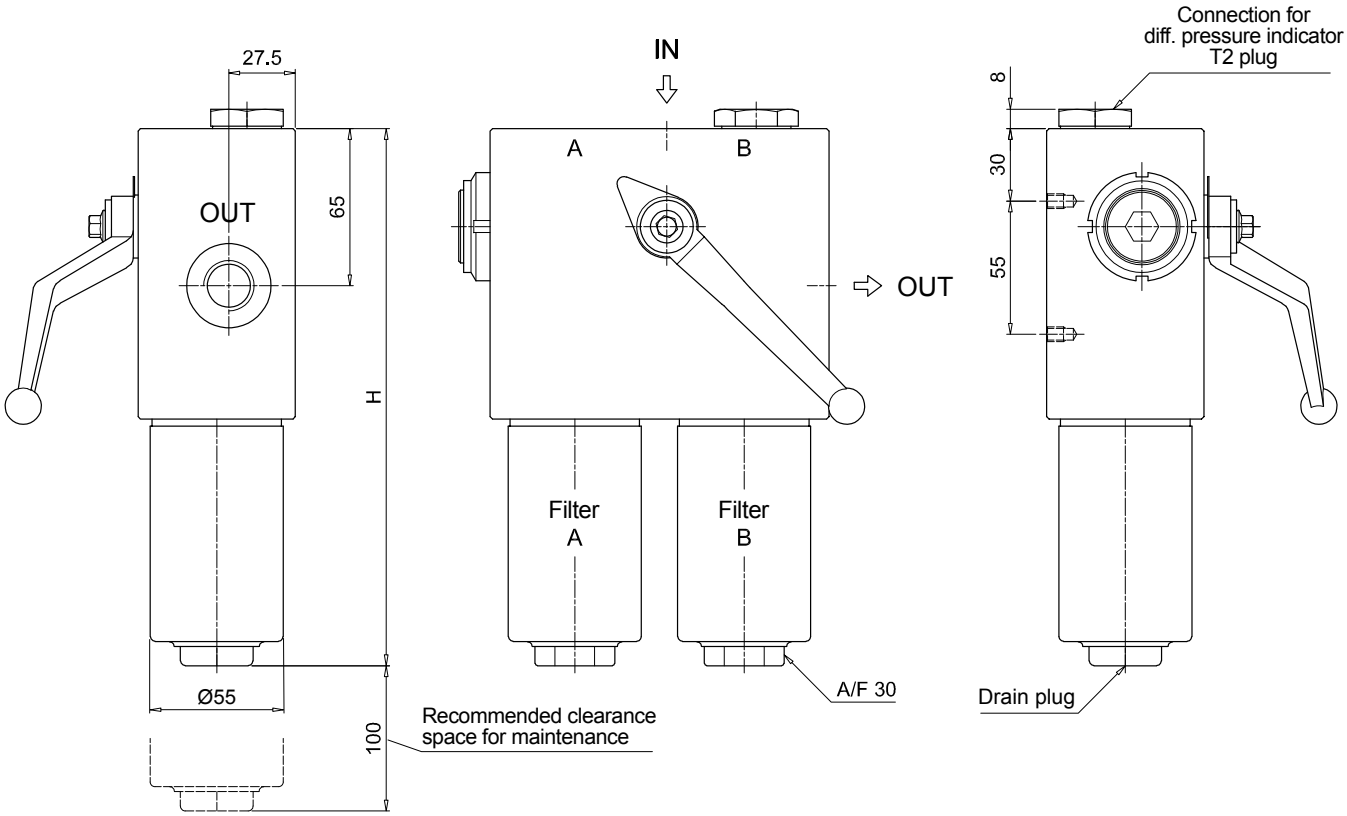
T2 Plug (not included)

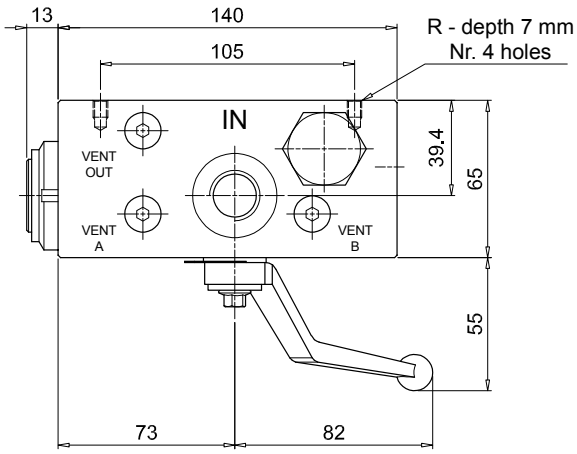
MP FILTRI WWW.SUMY.IR

Dimensions

FHD021	
Filter length	**H [mm]**
2	172
3	222
4	272

Connections	R
G1	M6
G2 - G3	1/4" UNC





FHD FHD051 - FHD326 - FHD333

Designation & Ordering code

COMPLETE FILTER

Configuration example: FHD326 | 3 | S | A | G1 | M25 | N | P01

Series and size

FHD051 | **FHD326** | **FHD333**

Length	FHD051	FHD326	FHD333
1	-	•	-
2	•	•	•
3	•	•	•
4	•	-	•
5	•	-	-

Valves

S	Without bypass
B	With bypass 6 bar

Seals

A	NBR
V	FPM

Connections	FHD051	FHD326	FHD333
G1	G 3/4”	G 1 1/4”	-
G2	3/4” NPT	-	-
G3	G 1/2”	1 1/4” NPT	-
G4	1/2” NPT	SAE 20 - 1 5/8” - 12 UN	-
G5	SAE 8 - 3/4” - 16 UNF	-	-
G6	SAE 12 - 1 1/16” - 12 UN	-	-
F1	-	-	1 1/2” SAE 6000 psi/M
F2	-	-	1 1/2” SAE 6000 psi/UNC

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Element Δp		Filtration rating Axx	Filtration rating M25
N	20 bar	-	•
R	20 bar	•	-
S	210 bar	•	-

Execution

P01	MP Filtri standard
Pxx	Customized

FILTER ELEMENT

Configuration example: HP320 | 3 | M25 | A | N | P01

Element series and size

	FHD051	FHD326	FHD333
HP050	•		
HP320		•	•

Element length	HP050	HP320
1		•
2	•	•
3	•	•
4	•	•
5	•	

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Seals

A	NBR
V	FPM

Element Δp		Filtration rating Axx	Filtration rating M25
N	20 bar	-	•
R	20 bar	•	-
S	210 bar	•	-

Execution

P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See page 786

DEA	Electrical differential pressure indicator
DEM	Electrical differential pressure indicator
DEU	Electrical differential pressure indicator
DLA	Electrical / visual differential pressure indicator
DLE	Electrical / visual differential pressure indicator
DTA	Electronic differential pressure indicator
DTI	I-O Link electronic differential pressure indicator
DVA	Visual differential pressure indicator
DVM	Visual differential pressure indicator

PLUGS

See page 807

T2	Plug (not included)

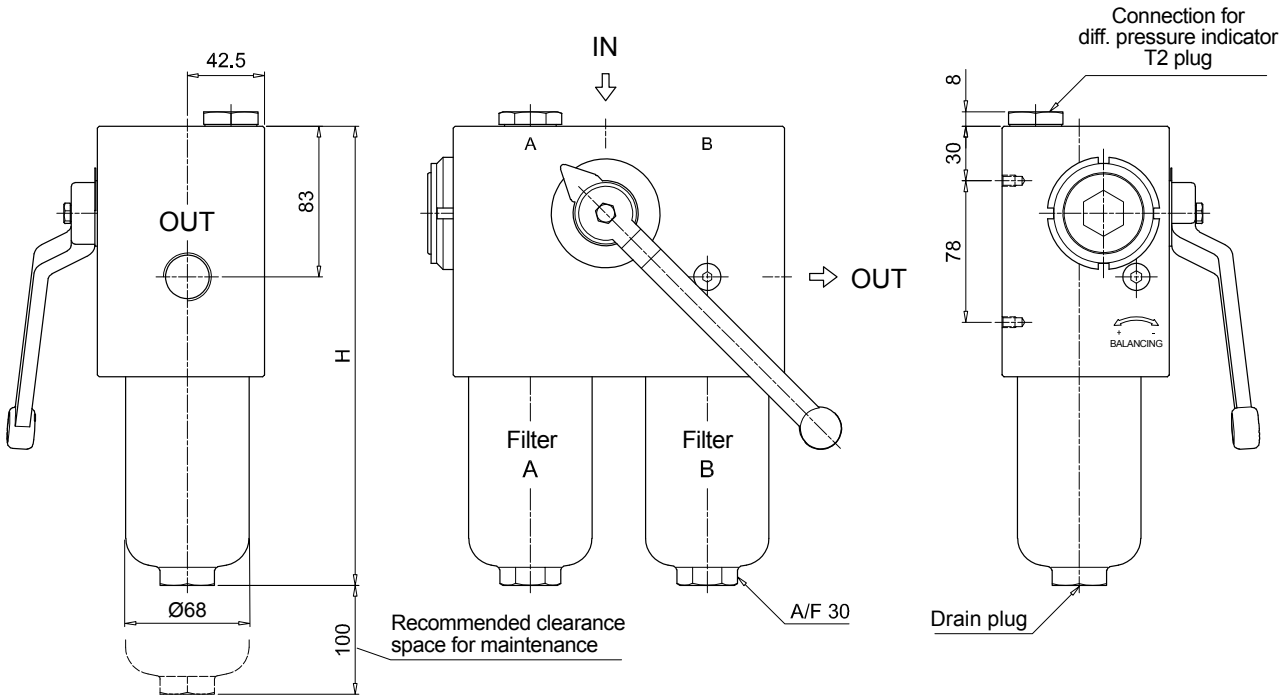
MP FILTRI WWW.SUMY.IR

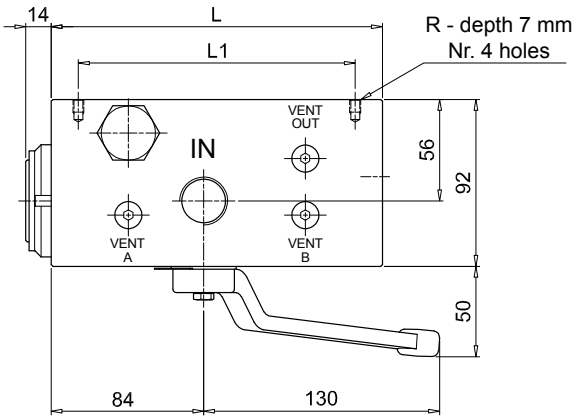
Dimensions

FHD051	
Filter length	**H [mm]**
2	253
3	295
4	343
5	465

Connections	**R**
G1	M6
G2	1/4" UNC
G3	M6
G4-G5-G6	1/4" UNC

Valves	**L [mm]**	**L1 [mm]**
S	168	138
B	182.5	152.5

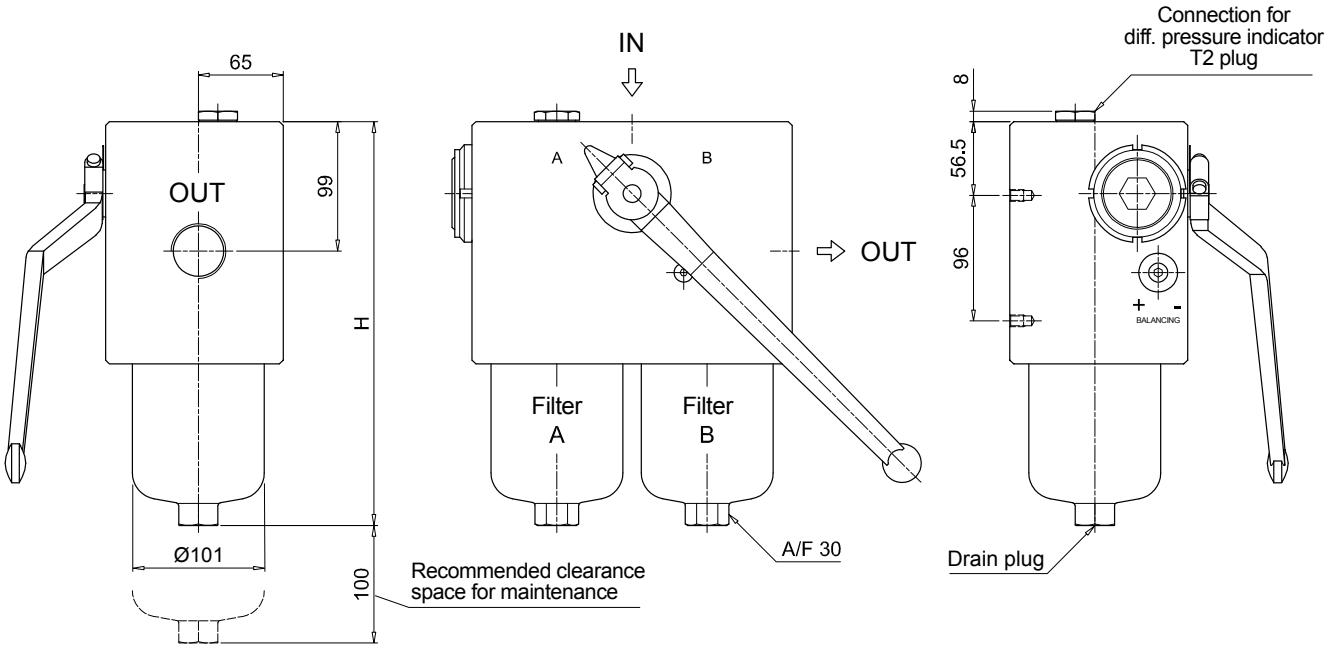


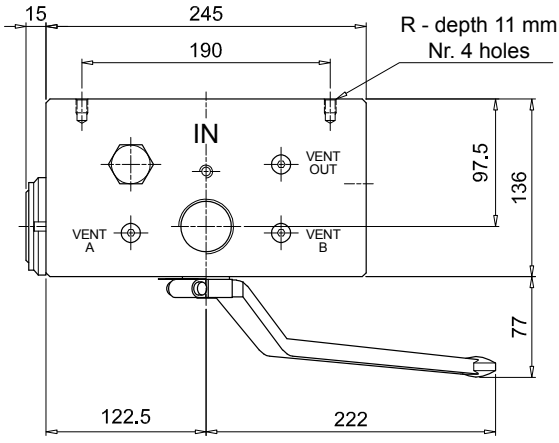


Dimensions

FHD326	
Filter length	**H [mm]**
1	309
2	432
3	564

Connections	R
G1	M10
G2 - G3	3/8" UNC

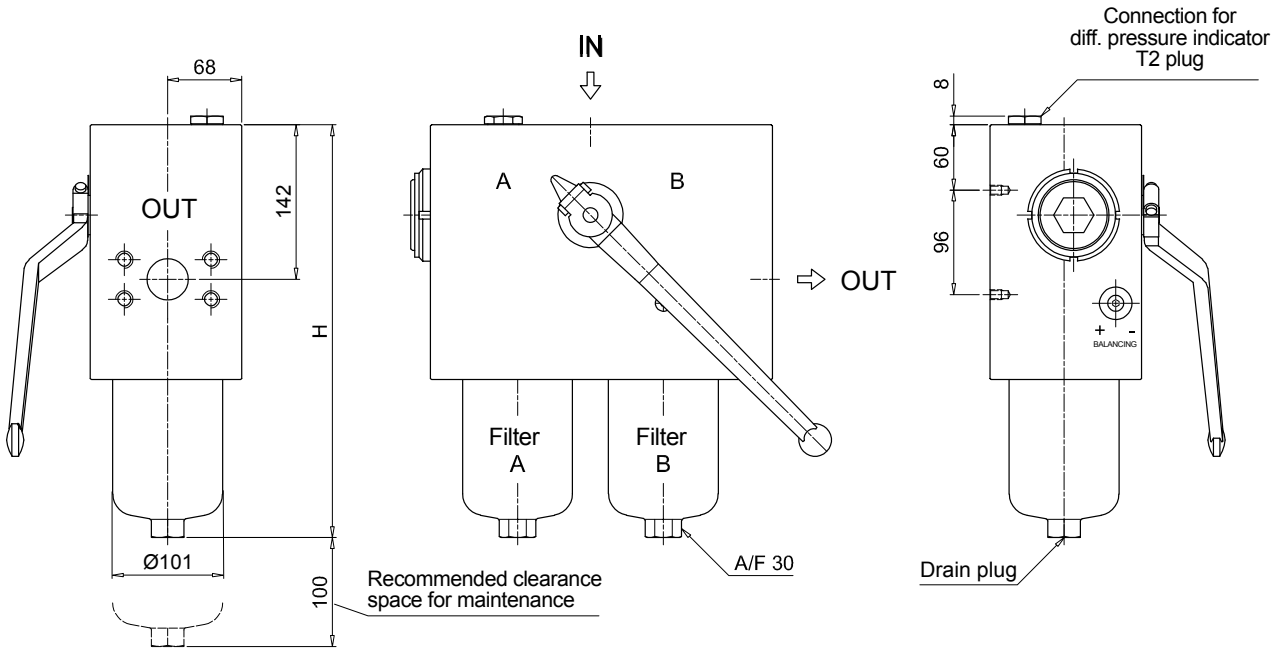


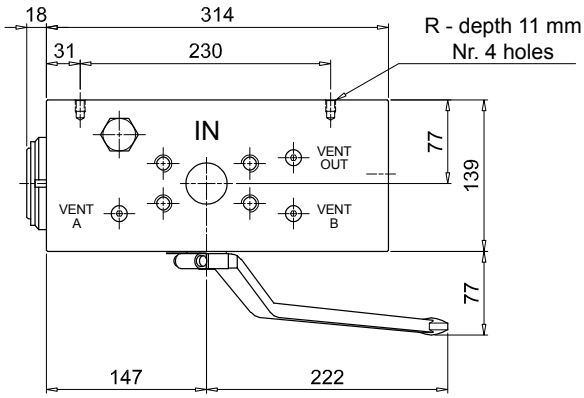


MP FILTRI WWW.SUMY.IR

FHD333	
Length 2 - 3	
Filter length	**H [mm]**
2	479
3	612

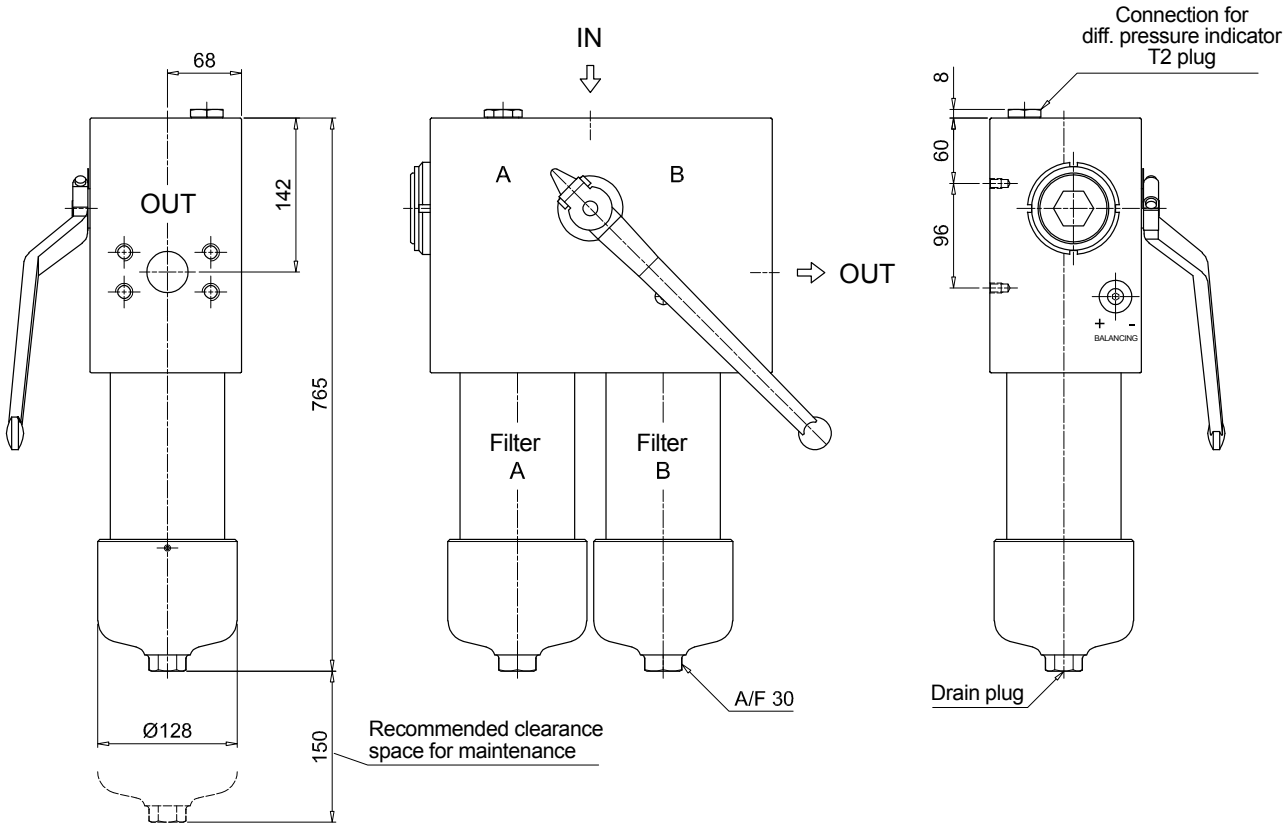
Connections	**R**
F1	M10
F2	3/8" UNC

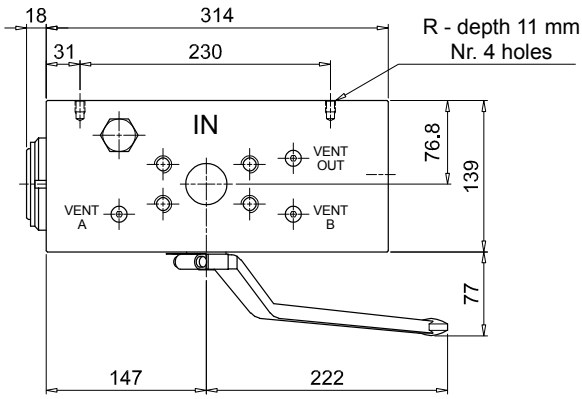




Dimensions

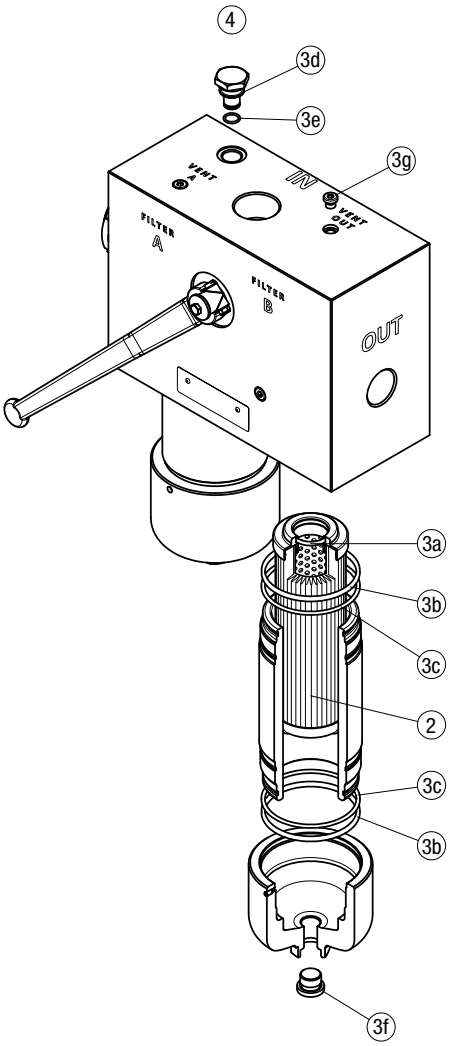
FHD333	
Length 4	
Connections	**R**
F1	M10
F2	3/8" UNC





MP FILTRI
WWW.SUMY.IR

FHD 021 - 051 - 326 - 333



Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3g)		Q.ty: 1 pc. 4	
Filter series	Filter element	Seal Kit code number NBR	FPM	Indicator connection plug NBR	FPM
FHD 021	See order table	02050511	02050512	T2H	T2V
FHD 051		02050420	02050421		
FHD 326-333		02050377	02050378		

MP FILTRI
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HPB series
BOWL KIT

Maximum working pressure up to 42 MPa (420 bar) - Flow rate up to 300 l/min



INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS

Please scan or click the QR codes to get updated electronic version of the related document.

HPB050 HPB150

For all the QR codes: Scan or click me!

HPB GENERAL INFORMATION

Description

High Pressure Bowl Kit

Maximum working pressure up to 42 MPa (420 bar)
Flow rate up to 300 l/min

HPB is a range of high pressure bowl kits for protection of sensitive components in high pressure hydraulic systems in the mobile machines. They are directly integrated in the control blocks.

Available features:
- Fine filtration rating, to get a good cleanliness level into the system
- Low collapse filter element "N", for use with blocks provided with bypass valve
- High collapse filter element with external support "S", for use with blocks not provided with the bypass valve

Technical data

Filter housing materials
- Housing: Phosphatized steel

Pressure
- Test pressure: 63 MPa (630 bar)
- Min. Burst pressure: 126 MPa (1260 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 42 MPa (420 bar)

Filter element features

Filter		Filter element	
HPB		HP	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	N	20 bar
	High Δp with external support	S	210 bar
M - Wire mesh	Standard	N	20 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Seals
- Standard NBR series A
- Optional FPM series V

Temperature
From -25 °C to +110 °C

Note
HPB filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]						Volumes [dm³]					
	Length	1	2	3	4	5	Length	1	2	3	4	5
HPB 050		1.10	1.50	1.90	2.40	3.50		0.30	0.45	0.60	0.80	1.20
HPB 150		2.90	4.90	6.30	-	-		0.45	0.85	1.10	-	-

MP FILTRI WWW.SUMY.IR

Flow rates [l/min]

		Filter element design - N Series						Filter element design - S Series				
Filter series	Length	A03	A06	A10	A16	A25	M25	A03	A06	A10	A16	A25
HPB 050	1	42	43	79	82	106	147	29	39	57	59	74
	2	52	57	85	96	121	149	45	49	76	88	114
	3	66	69	97	106	130	150	58	61	89	99	125
	4	83	89	113	115	134	152	74	80	106	108	129
	5	107	110	130	134	141	154	93	95	111	121	139
HPB 150	1	81	88	156	163	179	295					
	2	142	145	227	230	236	312					
	3	170	180	242	245	263	315					

Maximum flow rate for a complete pressure filter with a pressure drop Δp = 1.5 bar.

The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.

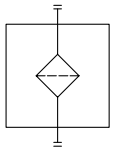
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.

Please, contact our Sales Department for further additional information.

Filter series	Style S
HPB 050	•
HPB 150	•

Hydraulic diagram



Designation & Ordering code

COMPLETE FILTER

Configuration example: HPB050 | 3 | A | A10 | N | P01

Series and size
HPB050

Length
1 | **2** | **3** | **4** | **5**

Seals

A	NBR
V	FPM

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Filtration rating

Element Δp		Axx	M25
N	20 bar	•	•
S	210 bar	•	-

Execution

P01	MP Filtri standard
Pxx	Customized

FILTER ELEMENT

Configuration example: HP050 | 3 | A10 | A | N | P01

Element series and size
HP050

Element length
1 | **2** | **3** | **4** | **5**

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Seals

A	NBR
V	FPM

Filtration rating

Element Δp		Axx	M25
N	20 bar	•	•
S	210 bar	•	-

Execution

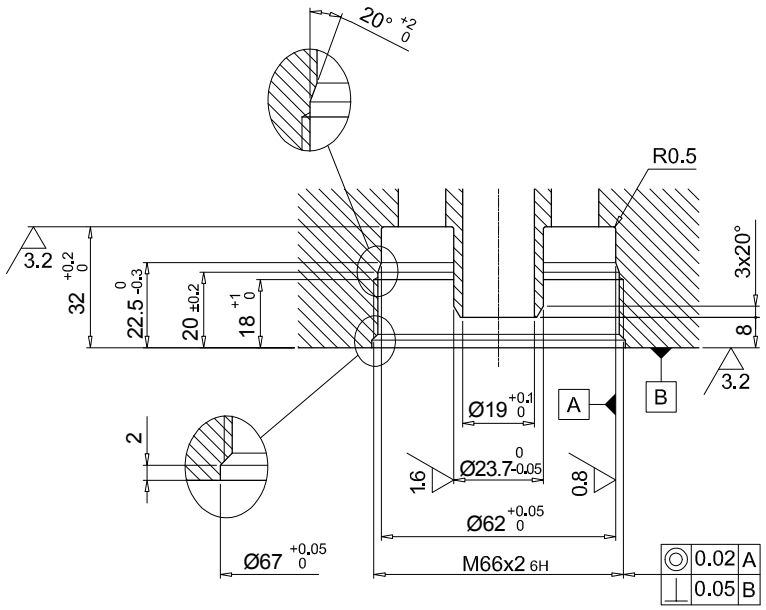
P01	MP Filtri standard
Pxx	Customized

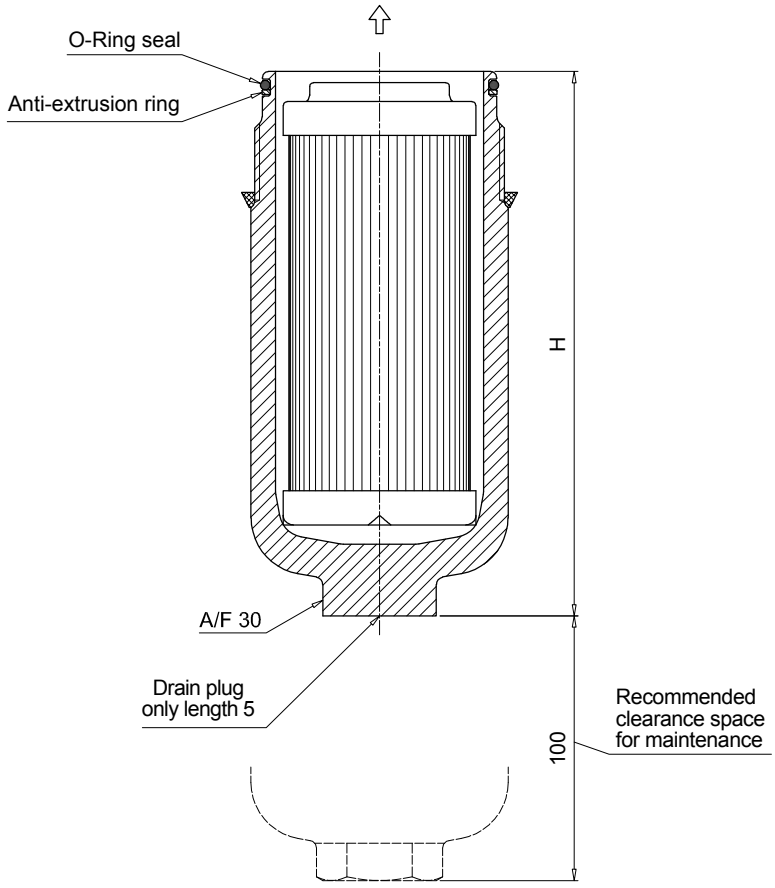
MP FILTRI WWW.SUMY.IR

Dimensions

HPB050

Filter length	H [mm]
1	107
2	144
3	186
4	234
5	356





Designation & Ordering code

COMPLETE FILTER

Configuration example: HPB150 | 3 | A | A10 | N | P01

Series and size
HPB150

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

Seals

A	NBR
V	FPM

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Element Δp

N	20 bar

Execution

P01	MP Filtri standard
Pxx	Customized

FILTER ELEMENT

Configuration example: HP150 | 3 | A10 | A | N | P01

Element series and size
HP150

Element length
1 | **2** | **3**

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Seals

A	NBR
V	FPM

Element Δp

N	20 bar

Execution

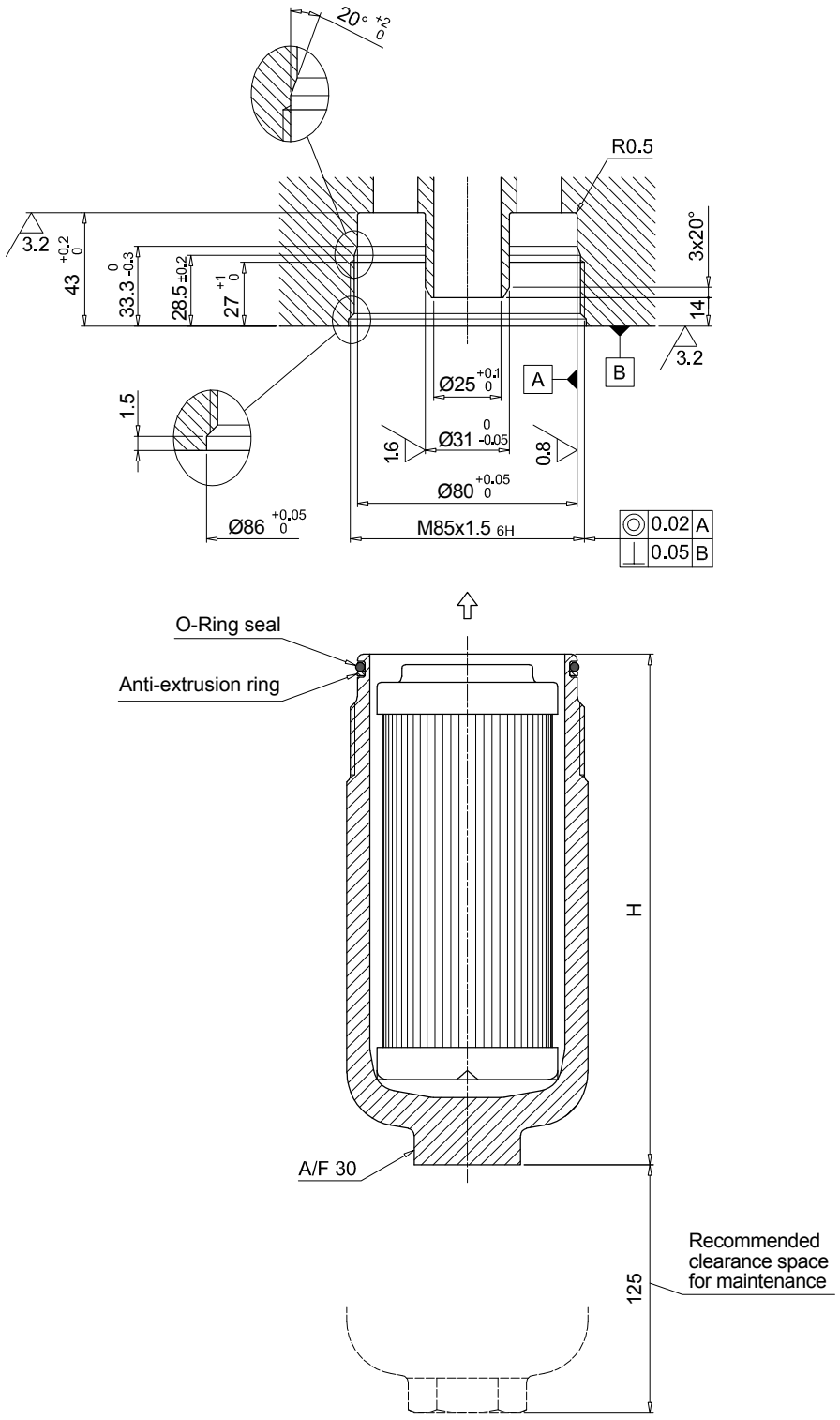
P01	MP Filtri standard
Pxx	Customized

MPFILTRI WWW.SUMY.IR

Dimensions

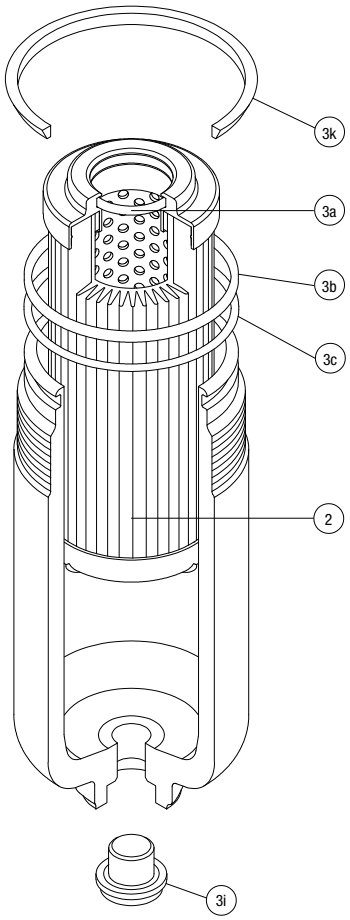
HPB150

Filter length	H [mm]
1	161
2	271
3	346



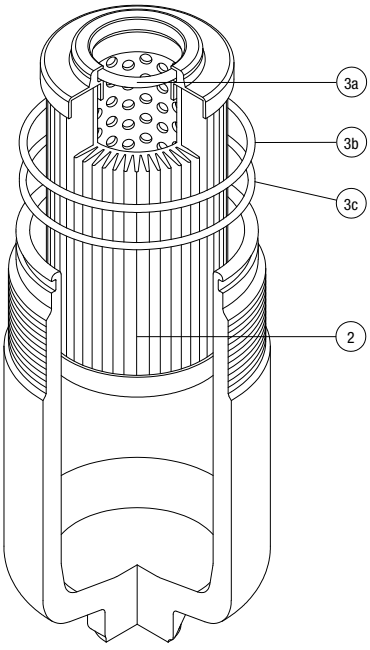
Order number for spare parts

HPB 050



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3i)	
Filter series	Filter element	Seal Kit code number NBR	FPM
HPB 050	See order table	02050813	02050823

HPB 150



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3c)	
Filter series	Filter element	Seal Kit code number NBR	FPM
HPB 150	See order table	02050816	02050826

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Stainless steel high pressure filters are used as process filters to protect individual valves or the entire hydraulic circuit from contamination as per ISO 4406.
6 versions are available with operating pressures ranging from 320 bar up to 1000 bar.

A range of products is available to resolve all filter mounting problems, in the following configurations:
- FZP In-line pressure filter with threaded mount
- FZH In-line pressure filter with threaded mount for higher pressure
- FZX In-line pressure filter with threaded mount up to 1000 bar
- FZB Manifold side mounting
- FZM Manifold top mounting
- FZD Duplex pressure filter for continuous operation requirements

FZ stainless steel filters are specifically designed for applications in the:
- Process engineering
- Water hydraulics
- Offshore technology
- Marine technology
- High pressure hydraulics
- Any application in harsh or aggressive environment

MP FILTRI WWW.SUMY.IR

Stainless steel high pressure filters



Filter sizing and corrective factors	page 664
FZP	667
FZH	677
FZX	687
FZM	695
FZB	703
FZD	711
INDICATORS	787

WWW.SUMY.IR

FILTER SIZING Calculation

THE CORRECT FILTER SIZING HAS TO BE BASED ON THE TOTAL PRESSURE DROP DEPENDING ON THE APPLICATION.

The pressure drop calculation is performed by adding together the value of the housing with the value of the filter element. The pressure drop Δpc of the housing is proportional to the fluid density (kg/dm³ / lb/ft³).
The filter element pressure drop Δpe is proportional to its viscosity (mm²/s / SUS), the corrective factor Y have to be used in case of an oil viscosity different than 30 mm²/s (cSt) / 150 SUS.

Sizing data for single filter element, head at top

Δpc = Filter housing pressure drop [bar / psi]
Δpe = Filter element pressure drop [bar / psi]
Y = Corrective factor Y (see correspondent table), depending on the filter type, on the filter element size, on the filter element length and on the filter media
Q = flow rate (l/min - gpm)
V1 reference oil viscosity = 30 mm²/s (cSt) /150 SUS
V2 = operating oil viscosity in mm²/s (cSt) / SUS

Filter element pressure drop calculation with an oil viscosity different than 30 mm²/s (cSt) / 150 SUS

International system:
Δpe = Y : 1000 x Q x (V2:V1)

Imperial system:
Δpe = Y : 17.2 x Q x (V2:V1)

Δp Tot. = Δpc + Δpe

Verification formula

Δp Tot. ≤ Δp max allowed

Maximum total pressure drop (Δp max) allowed by a new and clean filter

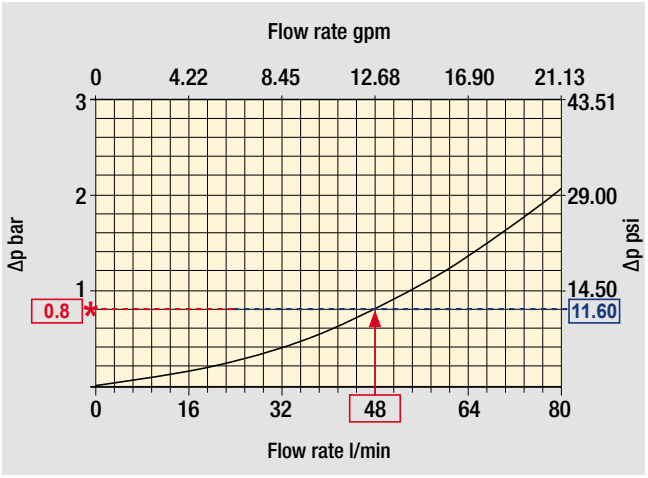
Filter family	Δp max	
	[bar]	[psi]
Stainless Steel filters	1.50 bar	22 psi

Filter pressure drop calculation example

Application data:
Selected filter: **FZD 051 length 5**
Selected filter element: **HP 050 length 5**
Selected filtration rating: **25 µm** absolute filtration with wire mesh
Flow rate Q = **48 l/min / 12.68 gpm**
Viscosity V2 = 46 mm²/s (cSt) / 216 SUS
Oil density = 0.86 kg/dm³ / 53.68 lb/ft³

Calculation:
Δpc = 0.8 bar / 11.60 psi (see graphic below)

FZD 051



Filter housings Δp pressure drop.
The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

Filter element		Absolute filtration Filter Elem. Δp Series: N - R				
Type	Length	A03	A06	A10	A16	A25
HP 050	3	17.37	16.25	8.90	7.18	3.63
	4	12.12	10.75	6.10	5.75	3.08
	5	7.00	6.56	3.60	3.10	2.25

Δpe = (2.25 : 1000) x 48 x (46 : 30) = 0.17 bar
Δpe = (2.25 : 17.2) x 12.68 x (216 : 150) = 2.39 psi

√ **Δp Tot. = 0.8 + 0.17 = 0.97 bar**
Δp Tot. = 11.60 + 2.39 = 13.99 psi

The selection is correct because the total pressure drop value is inside the admissible range for stainless steel filters.
In case the max allowed total pressure drop is not verified, it is necessary to repeat the calculation changing the filter and/or filter element length/size.

MP FILTRI WWW.SUMY.IR

Corrective factors

Filter element		Absolute filtration Filter Element ΔP Series: N - R				
Type	Length	A03	A06	A10	A16	A25
HP 011	1	332.71	250.07	184.32	152.36	128.36
	2	220.28	165.56	74.08	59.13	37.05
	3	123.24	92.68	41.48	33.08	20.72
	4	77.76	58.52	28.37	22.67	16.17
HP 039	2	70.66	53.20	25.77	20.57	14.67
	3	36.57	32.28	18.00	13.38	8.00
	4	26.57	23.27	12.46	8.80	5.58
HP 050	1	31.75	30.30	13.16	12.3	7.29
	2	24.25	21.26	11.70	9.09	4.90
	3	17.37	16.25	8.90	7.18	3.63
	4	12.12	10.75	6.10	5.75	3.08
	5	7.00	6.56	3.60	3.10	2.25
HP 135	1	20.33	18.80	9.71	8.66	4.78
	2	11.14	10.16	6.60	6.38	2.22
	3	6.48	6.33	3.38	3.16	2.14

Filter element		Absolute filtration Filter Element ΔP Series: S - H - U				
Type	Length	A03	A06	A10	A16	A25
HP 011	1	424.58	319.74	235.17	194.44	163.78
	2	281.06	211.25	94.35	75.45	47.26
	3	130.14	97.50	43.63	34.82	21.81
	4	109.39	82.25	36.79	29.37	18.40
HP 039	2	73.00	57.00	28.00	24.00	17.20
	3	40.90	36.33	21.88	18.80	11.20
	4	31.50	28.22	17.22	9.30	6.70
HP 050	1	47.33	34.25	21.50	20.50	14.71
	2	29.10	25.95	10.04	10.90	5.88
	3	20.85	19.50	10.68	8.61	4.36
	4	14.55	12.90	7.32	6.90	3.69
	5	9.86	9.34	6.40	4.80	2.50
HP 135	1	29.16	25.33	13.00	12.47	5.92
	2	14.28	11.04	7.86	7.90	4.44
	3	8.96	7.46	4.89	4.16	3.07

Corrective factor Y to be used for the filter element pressure drop calculation.
The values depend to the filter size and length and to the filter media.

Reference oil viscosity 30 mm^2/s

MP FILTRI
WWW.SUMY.IR

MP FILTRI
WWW.SUMY.IR

FZP series

Maximum working pressure up to 42 Mpa (420 bar) - Flow rate up to 160 l/min



INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS

Please scan or click the QR codes to get updated electronic version of the related document.

FZP039 FZP136

For all the QR codes: Scan or click me!

FZP GENERAL INFORMATION

Description

Stainless steel high pressure filters

In-line
Maximum working pressure up to 42 Mpa (420 bar)
Flow rate up to 160 l/min

FZP is a range of stainless steel high pressure filter for protection of sensitive components in high pressure hydraulic systems placed in difficult environmental conditions.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- 1 1/4" female threaded connections, for a maximum flow rate of 160 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Bypass valve, to relieve excessive pressure drop across the filter media
- Low collapse filter element with external support "R", for filter element protection against the back pressure caused by the check valve or the reverse flow in filters provided with the bypass valve
- High collapse filter element with external support "S", for filter element protection against the back pressure caused by the check valve or the reverse flow in filters not provided with the bypass valve
- High collapse filter element "U", for use with aggressive fluids
- Visual, electrical and electronic differential clogging indicators

Common applications:

- Off-shore equipment
- Water filtration systems
- Systems with strong or corrosive environmental conditions
- Systems with corrosive fluids

Technical data

Filter housing materials

- Head: AISI 316L
- Housing: AISI 316L
- Bypass valve: AISI 316L

Pressure

- Test pressure: 63 MPa (630 bar)
- Min. Burst pressure: 126 MPa (1260 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 42 MPa (420 bar)

Bypass valve

Opening pressure 6 bar ±10%

Filter element features

Filter		Filter element	
FZP		HP	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	with external support	R	20 bar
	High Δp with external support	S	210 bar
	High Δp with stainless steel components	U	210 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Filter element components materials	Δp Series		
	R	S	U
End cap	Polyamide	Tinned Steel	Stainless steel
Core tube	Tinned Steel	Tinned Steel	Stainless steel
External support	Wire mesh epoxy painted	Wire mesh epoxy painted	Stainless steel
Internal support	Wire mesh epoxy painted	Stainless steel	Stainless steel
Pre-filter	Synthetic	Synthetic	Synthetic

Seals

- Standard NBR series A (-25 °C to +110 °C)
- Optional FPM series V (-20 °C to +120 °C)
- Optional MFQ series F (-50 °C to +120 °C)

Temperature

From -50 °C to +120 °C

Note

FZP filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]					Volumes [dm³]				
	Length	1	2	3	4	Length	1	2	3	4
FZP 039		-	4.5	5.1	5.6		-	0.19	0.26	0.34
FZP 136		8.3	10.2	11.5	-		0.45	0.78	1.00	-

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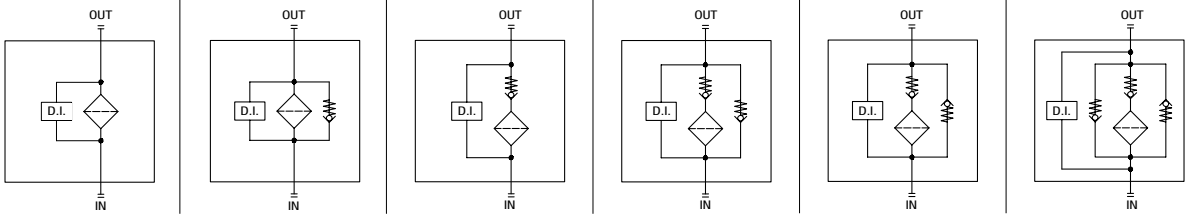
Flow rates [l/min]

		Filter element design - R Series					Filter element design - S-U Series				
Filter series	Length	A03	A06	A10	A16	A25	A03	A06	A10	A16	A25
	2	19	25	43	50	59	19	23	41	45	55
FZP 039	**3**	34	37	53	62	74	31	34	48	52	66
	4	42	46	63	72	81	38	41	55	71	78
	1	63	67	102	108	136	47	53	87	89	127
FZP 136	**2**	95	100	122	123	159	81	95	113	115	138
	3	122	124	148	150	160	106	116	135	141	151

Maximum flow rate for a complete stainless steel high pressure filter with a pressure drop Δp = 1.5 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

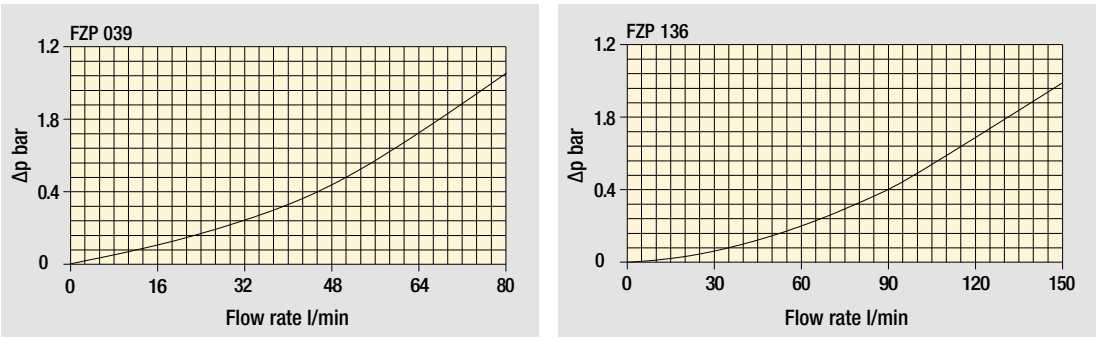
Hydraulic diagram

Filter series	Style S	Style B	Style T	Style D	Style V	Style Z
FZP 039	•	•	•	•	•	•
FZP 136	•	•	-	-	-	-



Pressure drop

Filter housings Δp pressure drop



The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

Designation & Ordering code

COMPLETE FILTER

Configuration example: FZP039 | 2 | B | F | B | 2 | A03 | U | P01

Series and size
FZP039

Length
2 | **3** | **4**

Valves
S Without bypass
B With bypass 6 bar
T With check valve, without bypass
D With check valve, with bypass 6 bar
V With reverse flow, without bypass
Z With reverse flow, with bypass 6 bar

Seals
A NBR
V FPM
F MFQ

Connections
A G 1/2”
B 1/2” NPT
C SAE 8 - 3/4” - 16 UNF

Connections for differential pressure indicators
1 Without connection
2 With connection

Filtration rating (filter media)
A03 Inorganic microfiber 3 µm
A06 Inorganic microfiber 6 µm
A10 Inorganic microfiber 10 µm
A16 Inorganic microfiber 16 µm
A25 Inorganic microfiber 25 µm

Element Δp		Valves S	B	T	D	V	Z
R	20 bar	-	•	-	•	-	•
S	210 bar	•	-	•	-	•	-
U	210 bar, stainless steel filter element	•	•	•	•	•	•

Execution
P01 MP Filtri standard
Pxx Customized

FILTER ELEMENT

Configuration example: HP039 | 2 | A03 | F | U | P01

Element series and size
HP039

Element length
2 | **3** | **4**

Filtration rating (filter media)
A03 Inorganic microfiber 3 µm
A06 Inorganic microfiber 6 µm
A10 Inorganic microfiber 10 µm
A16 Inorganic microfiber 16 µm
A25 Inorganic microfiber 25 µm

Seals
A NBR
V FPM
F MFQ

Element Δp		Valves S	B	T	D	V	Z
R	20 bar	-	•	-	•	-	•
S	210 bar	•	-	•	-	•	-
U	210 bar, stainless steel filter element	•	•	•	•	•	•

Execution
P01 MP Filtri standard
Pxx Customized

CLOGGING INDICATORS

See page 787

DEX Electrical differential pressure indicator
DLX Electrical/visual differential pressure indicator
DVX Visual differential pressure indicator
DVY Visual differential pressure indicator

PLUGS

See page 807

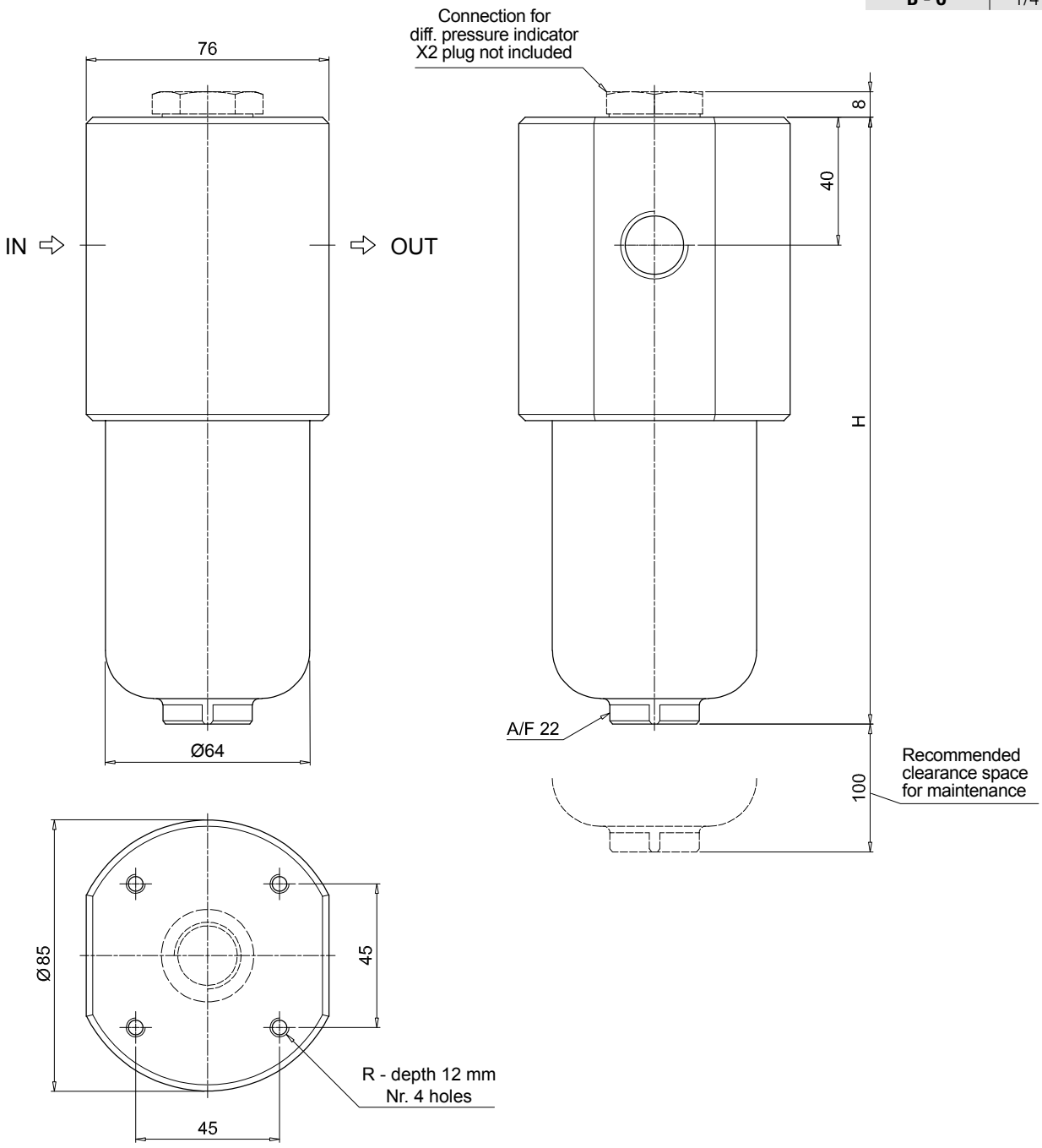
X2 Stainless steel plug (not included)

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Dimensions

FZP039	
Filter length	**H [mm]**
2	179
3	222
4	266

Connections	R
A	M6
B - C	1/4" UNC



Designation & Ordering code

COMPLETE FILTER

Configuration example: FZP136 | 1 | B | A | B | 6 | A03 | R | P01

Series and size
FZP136

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

Bypass valve
S Without bypass
B With bypass 6 bar

Seals
A NBR
V FPM
F MFQ

Connections
A G 3/4"
B 3/4" NPT
C SAE 12 - 1 1/16" - 12 UN
D G 1"
E 1" NPT
F SAE 16 - 1 5/16" - 12 UN
G G 1 1/4"
H 1 1/4" NPT
I SAE 20 - 1 5/8" - 12 UN

Connections for differential pressure indicators
1 Without connection
6 With two connections on both sides

Filtration rating (filter media)
A03 Inorganic microfiber 3 µm
A06 Inorganic microfiber 6 µm
A10 Inorganic microfiber 10 µm
A16 Inorganic microfiber 16 µm
A25 Inorganic microfiber 25 µm

Element Δp		Valves S	Valves B
R	20 bar	-	•
S	210 bar	•	-
U	210 bar, stainless steel filter element	•	•

Execution
P01 MP Filtri standard
Pxx Customized

FILTER ELEMENT

Configuration example: HP135 | 1 | A03 | A | R | P01

Element series and size
HP135

Element length
1 | **2** | **3**

Filtration rating (filter media)
A03 Inorganic microfiber 3 µm
A06 Inorganic microfiber 6 µm
A10 Inorganic microfiber 10 µm
A16 Inorganic microfiber 16 µm
A25 Inorganic microfiber 25 µm

Seals
A NBR
V FPM
F MFQ

Element Δp		Valves S	Valves B
R	20 bar	-	•
S	210 bar	•	-
U	210 bar, stainless steel filter element	•	•

Execution
P01 MP Filtri standard
Pxx Customized

CLOGGING INDICATORS

See page 787

DEX Electrical differential pressure indicator
DLX Electrical/visual differential pressure indicator
DVX Visual differential pressure indicator
DVY Visual differential pressure indicator

PLUGS

See page 807

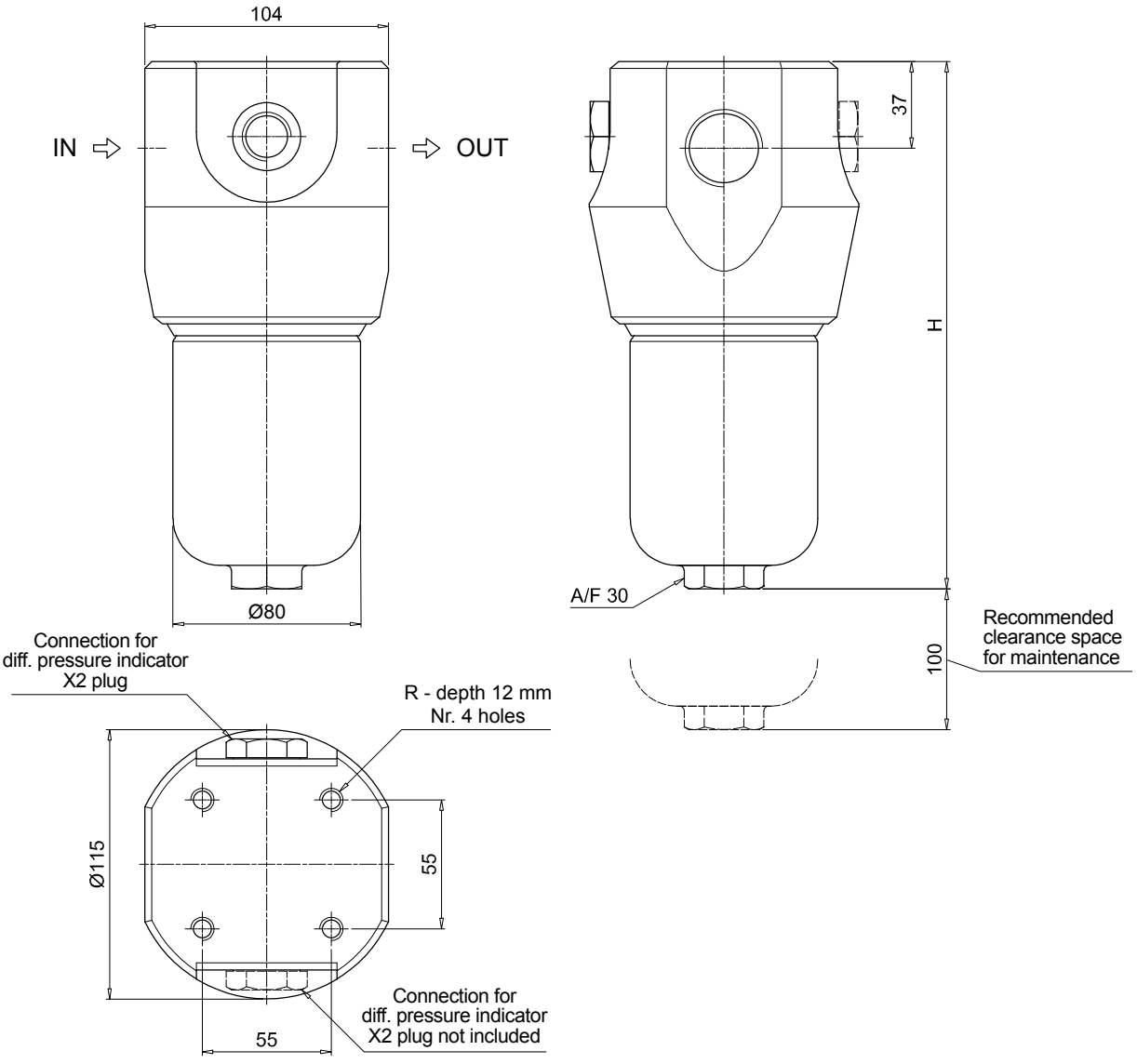
X2 Stainless steel plug (not included)

MP FILTRI WWW.SUMY.IR

Dimensions

FZP136	
Filter length	**H [mm]**
1	222
2	335
3	410

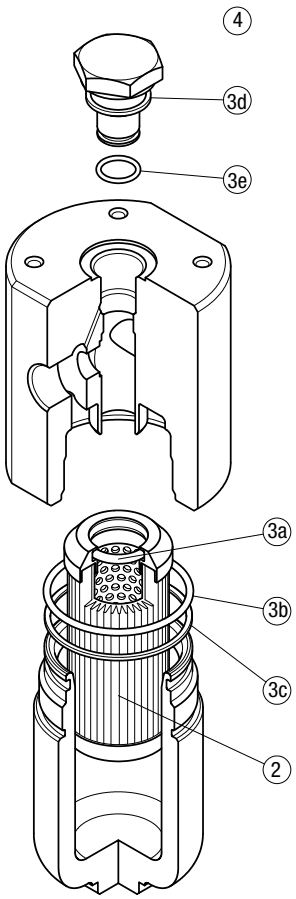
Connections	R
A	M10
B - C	3/8" UNC
D	M10
E - F	3/8" UNC
G	M10
H - I	3/8" UNC



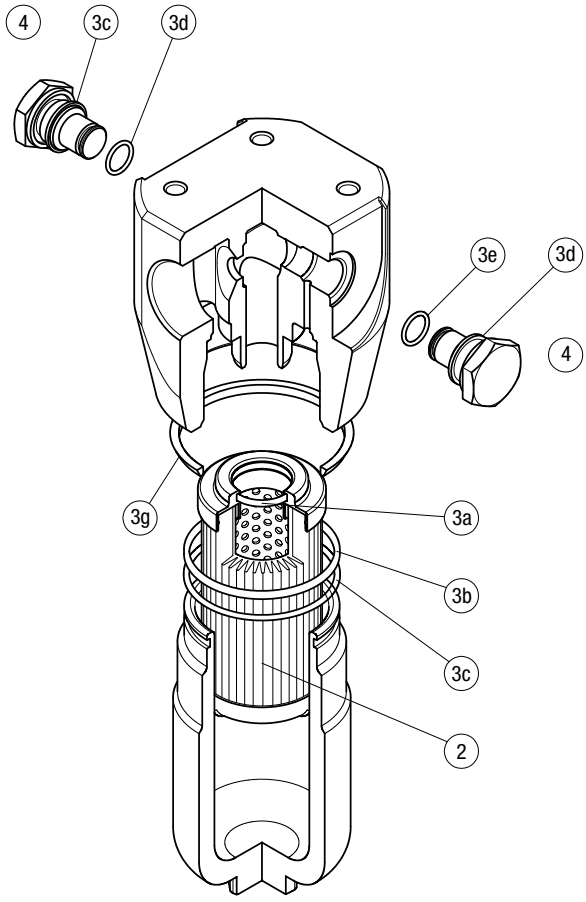
The position of the X2 plug is reversible

Order number for spare parts

FZP 039



FZP 136



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3g)		Q.ty: 1 pc. (4)	
Filter series	**Filter element**	**Seal Kit code number NBR**	**FPM**	**Indicator connection plug NBR**	**FPM**
FZP 039	See order table	02050299	02050300	X2H	X2V
FZP 136		02050636	02050637		

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FZH series

Maximum working pressure up to 70 Mpa (700 bar) - Flow rate up to 80 l/min



INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS

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FZH012 FZH040

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FZH GENERAL INFORMATION

Description

Stainless steel high pressure filters

In-line
Maximum working pressure up to 70 Mpa (700 bar)
Flow rate up to 80 l/min

FZH is a range of stainless steel high pressure filter for protection of sensitive components in high pressure hydraulic systems placed in difficult environmental conditions.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- 1/2" female threaded connections, for a maximum flow rate of 80 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Bypass valve, to relieve excessive pressure drop across the filter media
- Low collapse filter element "N", for use with filters provided with bypass valve
- High collapse filter element "H", for use with filters not provided with bypass valve
- Low collapse filter element with external support "R", for filter element protection against the back pressure caused by the check valve or the reverse flow in filters provided with the bypass valve
- High collapse filter element with external support "S", for filter element protection against the back pressure caused by the check valve or the reverse flow in filters not provided with the bypass valve
- High collapse filter element "U", for use with aggressive fluids
- Visual, electrical and electronic differential clogging indicators

Common applications:

- Off-shore equipment
- Water filtration systems
- Systems with strong or corrosive environmental conditions
- Systems with corrosive fluids

Technical data

Filter housing materials

- Head: AISI 316L
- Housing: AISI 316L
- Bypass valve: AISI 316L

Pressure

- Test pressure: 105 MPa (1050 bar)
- Min. Burst pressure: 210 MPa (2100 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 70 MPa (700 bar)

Bypass valve

Opening pressure 6 bar ±10%

Filter element features

Filter		Filter element	
FZH		HP	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	N	20 bar
	with external support	R	20 bar
	High Δp	H	210 bar
	High Δp with external support	S	210 bar
	High Δp with stainless steel components	U	210 bar

Please see ordering code tables to check element Δp series availability based on filter features.

Flow direction through the filter element:
From OUT to IN

Filter element components materials	Δp Series		
	N - R	**H - S**	**U**
End cap	Polyamide	Tinned Steel	Stainless steel
Core tube	Tinned Steel	Tinned Steel	Stainless steel
External support	Wire mesh epoxy painted	Wire mesh epoxy painted	Stainless steel
Internal support	Wire mesh epoxy painted	Stainless steel	Stainless steel
Pre-filter	Synthetic	Synthetic	Synthetic

Seals

- Standard NBR series A (-25 °C to +110 °C)
- Optional FPM series V (-20 °C to +120 °C)
- Optional MFQ series F (-50 °C to +120 °C)

Temperature

From -50 °C to +120 °C

Note

FZH filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]					Volumes [dm³]				
	Length	1	2	3	4	Length	1	2	3	4
FZH 012		2.1	2.2	2.7	3.3		0.10	0.12	0.15	0.20
FZH 040		-	4.5	5.1	5.6		-	0.19	0.26	0.34

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Flow rates [l/min]

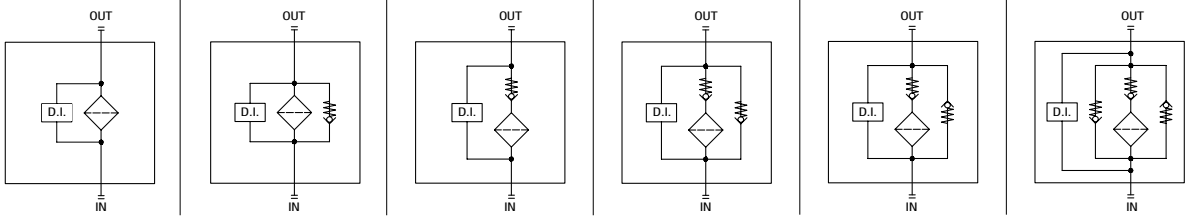
		Filter element design - N Series					Filter element design - H-U Series				
Filter series	Length	A03	A06	A10	A16	A25	A03	A06	A10	A16	A25
FZH 012	1	4	6	8	9	11	3	5	6	7	9
	2	7	9	17	20	26	5	7	14	17	23
	3	11	14	25	27	32	11	14	24	27	32
	4	17	20	29	31	34	13	16	26	29	33

		Filter element design - R Series					Filter element design - S-U Series				
Filter series	Length	A03	A06	A10	A16	A25	A03	A06	A10	A16	A25
FZH 040	2	19	25	43	50	59	19	23	41	45	55
	3	34	37	53	62	74	31	34	48	52	66
	4	42	46	63	72	81	38	41	55	71	78

Maximum flow rate for a complete stainless steel high pressure filter with a pressure drop Δp = 1.5 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

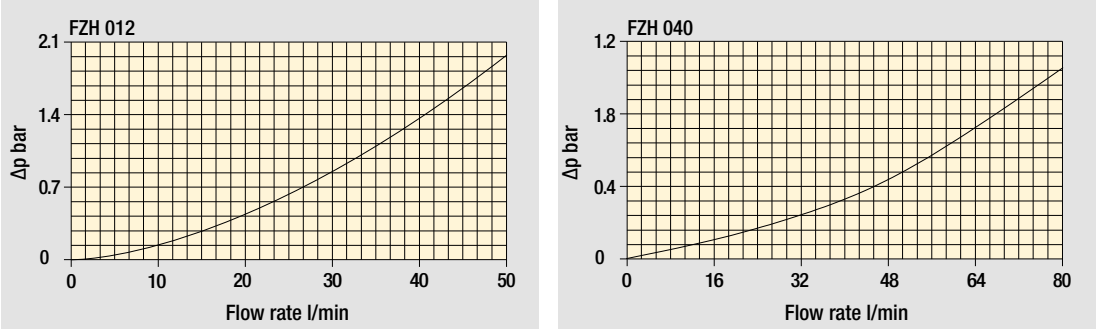
Hydraulic diagram

Filter series	Style S	Style B	Style T	Style D	Style V	Style Z
FZH 012	•	•	-	-	•	•
FZH 040	•	•	•	•	•	•



Pressure drop

Filter housings Δp pressure drop



The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

Designation & Ordering code

COMPLETE FILTER

Configuration example: FZH012 | 2 | B | F | B | 2 | A03 | U | P01

Filter Series and size
FZH012

Filter length
1 | **2** | **3** | **4**

Valves
S	Without bypass
B	With bypass 6 bar
V	With reverse flow, without bypass
Z	With reverse flow, with bypass 6 bar

Seals
A	NBR
V	FPM
F	MFQ

Connections
A	G 1/4”
B	1/4” NPT
C	SAE 5 - 1/2” - 20 UNF
D	G 3/8”
E	3/8” NPT
F	SAE 6 - 9/16” - 18 UNF

Connection for differential pressure indicator
1	Without connection
2	With connection

Filtration rating (filter media)
A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm

Element Δp		Valves S	B	V	Z
N	20 bar	-	•	-	•
H	210 bar	•	-	•	-
U	210 bar, stainless steel filter element	•	•	•	•

Execution
P01	MP Filtri standard
Pxx	Customized

FILTER ELEMENT

Configuration example: HP011 | 2 | A03 | F | U | P01

Element series and size
HP011

Element length
1 | **2** | **3** | **4**

Filtration rating (filter media)
A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm

Seals
A	NBR
V	FPM
F	MFQ

Element Δp		Valves S	B	V	Z
N	20 bar	-	•	-	•
H	210 bar	•	-	•	-
U	210 bar, stainless steel filter element	•	•	•	•

Execution
P01	MP Filtri standard
Pxx	Customized

CLOGGING INDICATORS

See page 787

DEZ	Electrical differential pressure indicator
DLZ	Electrical/visual differential pressure indicator
DVZ	Visual differential pressure indicator

PLUGS

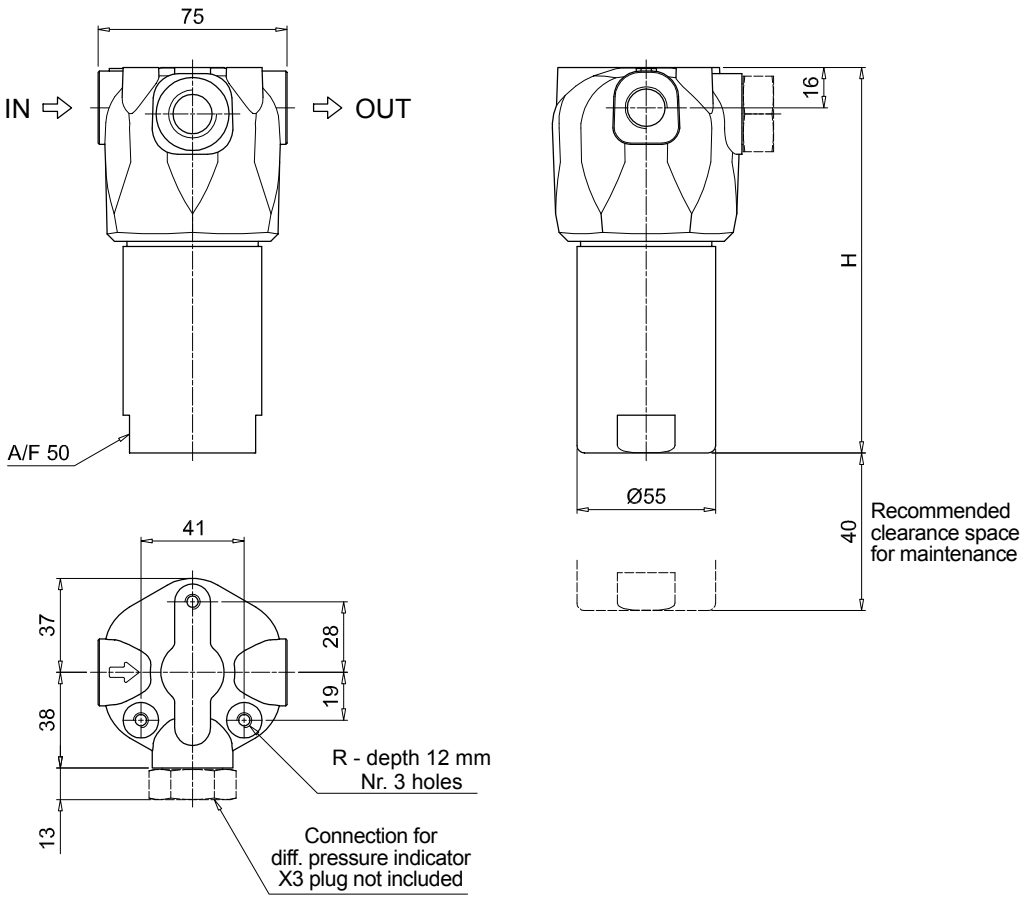
See page 807

X3	Stainless steel plug (not included)

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FZH012	
Filter length	**H [mm]**
1	93
2	104
3	154
4	204

Connections	**R**
A	M6
B - C	1/4" UNC
D	M6
E - F	1/4" UNC



Designation & Ordering code

COMPLETE FILTER

Configuration example: FZH040 | 2 | T | A | A | 2 | A03 | S | P01

Filter Series and size
FZH040

Filter length
2 | **3** | **4**

Valves
S Without bypass
B With bypass 6 bar
T With check valve, without bypass
D With check valve, with bypass 6 bar
V With reverse flow, without bypass
Z With reverse flow, with bypass 6 bar

Seals
A NBR
F MFQ
V FPM

Connections
A G 1/2”
B 1/2” NPT
C SAE 8 - 3/4” - 16 UNF

Connection for differential pressure indicator
1 Without connection
2 With connection

Filtration rating (filter media)
A03 Inorganic microfiber 3 µm
A06 Inorganic microfiber 6 µm
A10 Inorganic microfiber 10 µm
A16 Inorganic microfiber 16 µm
A25 Inorganic microfiber 25 µm

Element Δp		Valves S	B	T	D	V	Z
R	20 bar	-	•	-	•	-	•
S	210 bar	•	-	•	-	•	-
U	210 bar, stainless steel filter element	•	•	•	•	•	•

Execution
P01 MP Filtri standard
Pxx Customized

FILTER ELEMENT

Configuration example: HP039 | 2 | A03 | A | S | P01

Element series and size
HP039

Element length
2 | **3** | **4**

Filtration rating (filter media)
A03 Inorganic microfiber 3 µm
A06 Inorganic microfiber 6 µm
A10 Inorganic microfiber 10 µm
A16 Inorganic microfiber 16 µm
A25 Inorganic microfiber 25 µm

Seals
A NBR
F MFQ
V FPM

Element Δp		Valves S	B	T	D	V	Z
R	20 bar	-	•	-	•	-	•
S	210 bar	•	-	•	-	•	-
U	210 bar, stainless steel filter element	•	•	•	•	•	•

Execution
P01 MP Filtri standard
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CLOGGING INDICATORS

See page 787

DEZ Electrical differential pressure indicator
DLZ Electrical/visual differential pressure indicator
DVZ Visual differential pressure indicator

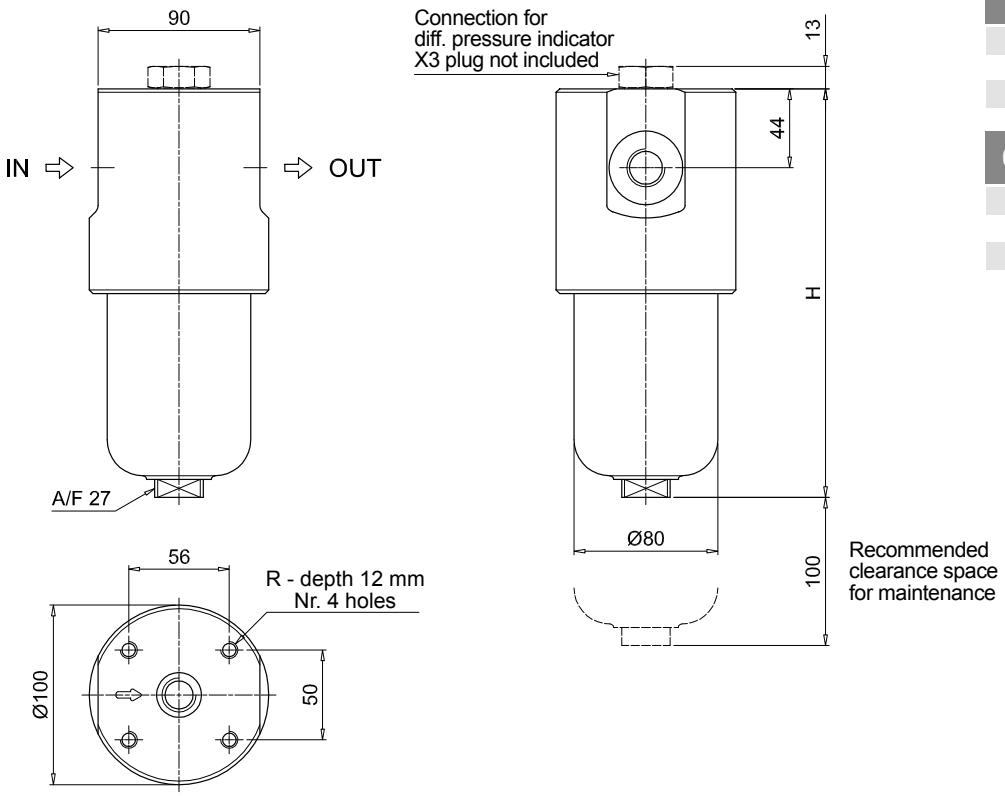
PLUGS

See page 807

X3 Stainless steel plug (not included)

MP FILTRI WWW.SUMY.IR

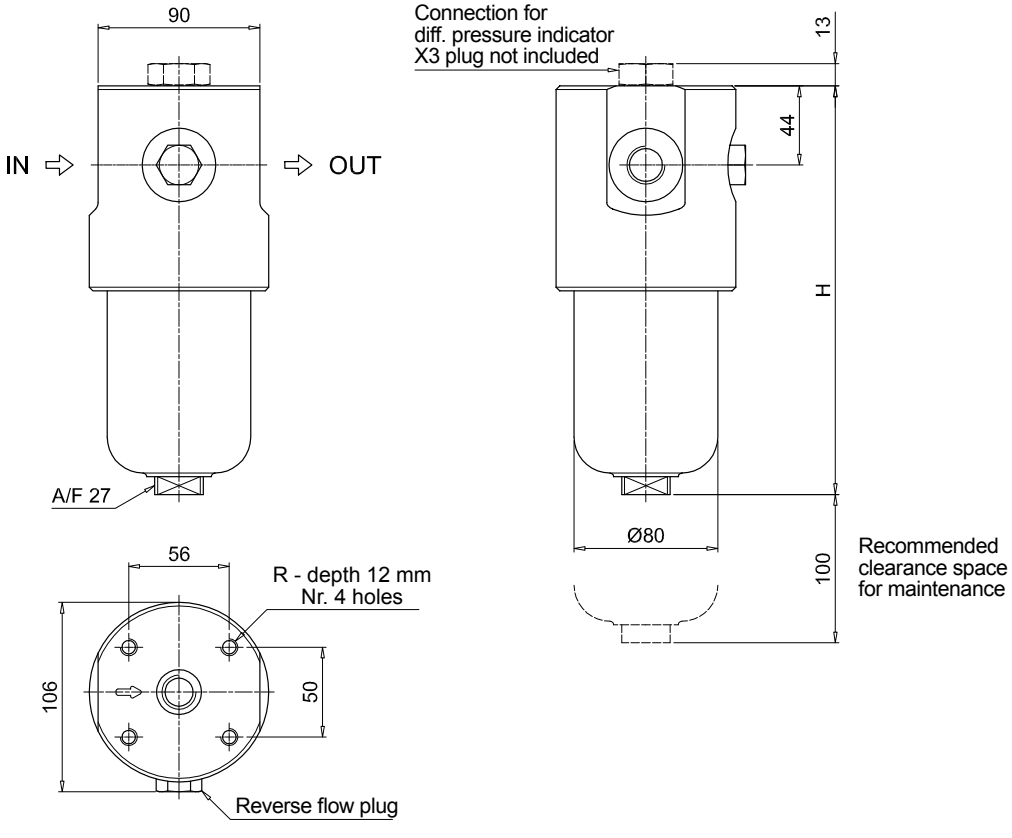
Valves S - B - T - D



FZH040	
Filter length	**H [mm]**
2	204
3	247
4	291

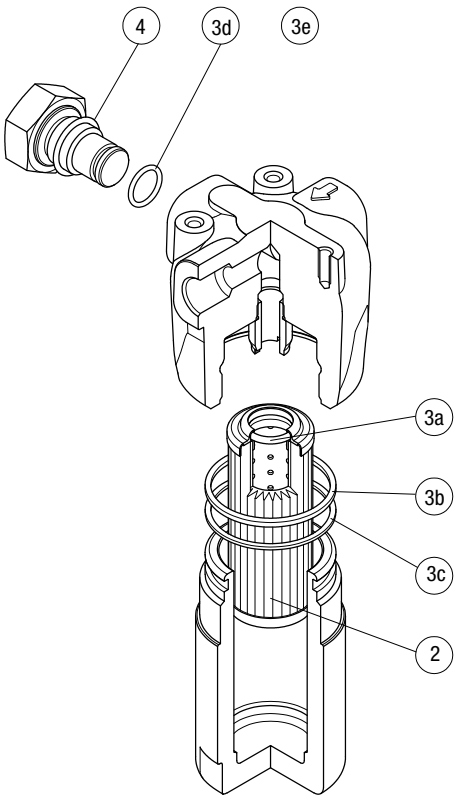
Connections	**R**
A	M10
B	3/8" UNC
C	3/8" UNC

Valves V - Z

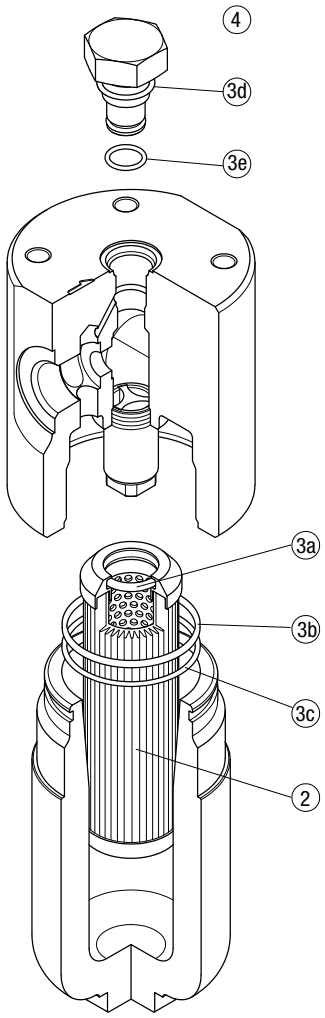


Order number for spare parts

FZH 012



FZH 040



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3e)		Q.ty: 1 pc. (4)	
Filter series	Filter element	Seal Kit code number NBR	Seal Kit code number FPM	Indicator connection plug NBR	Indicator connection plug FPM
FZH 012	See order table	02050856	02050857	X3H	X3V
FZH 040		02050860	02050861		

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MP FILTRI
WWW.SUMY.IR

FZX series

Maximum working pressure up to 100 MPa (1000 bar) - Flow rate up to 10 l/min



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FZX GENERAL INFORMATION

Description

Stainless steel high pressure filters

In-line
Maximum working pressure up to 100 Mpa (1000 bar)
Flow rate up to 10 l/min

FZX is a range of stainless steel high pressure filter for protection of sensitive components in high pressure hydraulic systems placed in difficult environmental conditions.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- Female threaded connections up to 1/2", for a maximum flow rate of 10 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- High collapse filter element "H"
- High collapse filter element "U", for use with aggressive fluids

Common applications:

- Off-shore equipment
- Water filtration systems
- Systems with strong or corrosive environmental conditions
- Systems with corrosive fluids

Technical data

Filter housing materials

- Head: AISI 316L
- Housing: AISI 316L

Pressure

- Test pressure: 150 MPa (1500 bar)
- Min. Burst pressure: 300 MPa (3000 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 10 MPa (1000 bar)

Filter element features

Filter	Filter element
FZX	HP

Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	High Δp	H	210 bar
	High Δp with stainless steel components	U	210 bar

Please see ordering code tables to check element Δp series availability based on filter features.

Flow direction through the filter element:
From OUT to IN

Filter element components materials	Δp Series	
	H	U
End cap	Tinned Steel	Stainless steel
Core tube	Tinned Steel	Stainless steel
External support	Wire mesh epoxy painted	Stainless steel
Internal support	Stainless steel	Stainless steel
Pre-filter	Synthetic	Synthetic

Seals

- Standard NBR series A (-25 °C to +110 °C)
- Optional FPM series V (-20 °C to +120 °C)
- Optional MFQ series F (-50 °C to +120 °C)

Temperature

From -50 °C to +120 °C

Note

FZX filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]					Volumes [dm³]				
	Length	1	2	3	4	Length	1	2	3	4
FZX 011		-	-	6.5	-		-	-	0.15	-

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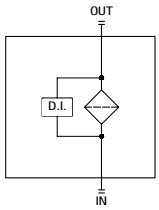
Flow rates [l/min]

		Filter element design - H-U Series				
Filter series	Length	A03	A06	A10	A16	A25
FZX 011	**3**	1.57	1.63	1.73	1.74	1.77

Maximum flow rate for a complete stainless steel high pressure filter with a pressure drop Δp = 1.5 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

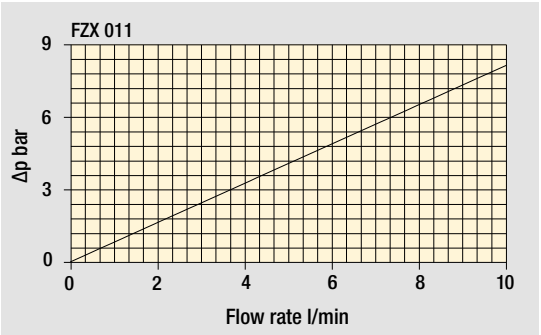
Hydraulic diagram

Filter series	Style S
FZX 011	•



Pressure drop

Filter housings Δp pressure drop



The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

Designation & Ordering code

COMPLETE FILTER

Configuration example: FZX011 | 3 | S | V | B | 1 | A03 | U | P01

Filter series and size
FZX011

Filter length
3

Bypass valve
S Without bypass

Seals
A NBR
V FPM
F MFQ

Connections

700 bar
A G 1/4”
B 1/4” NPT
G G 1/2”
H 1/2” NPT”

Autoclave 1000 bar
M 9/16” - 18 UNF
L 3/4” - 14 NPS

Connection for differential pressure indicators
1 Without connection

Filtration rating (filter media)
A03 Inorganic microfiber 3 µm
A06 Inorganic microfiber 6 µm
A10 Inorganic microfiber 10 µm
A16 Inorganic microfiber 16 µm
A25 Inorganic microfiber 25 µm

Element Δp
H 210 bar
U 210 bar, stainless steel filter element

Execution
P01 MP Filtri standard
Pxx Customized

FILTER ELEMENT

Example: HP011 | 3 | A03 | V | U | P01

Element series and size
HP011

Element length
3

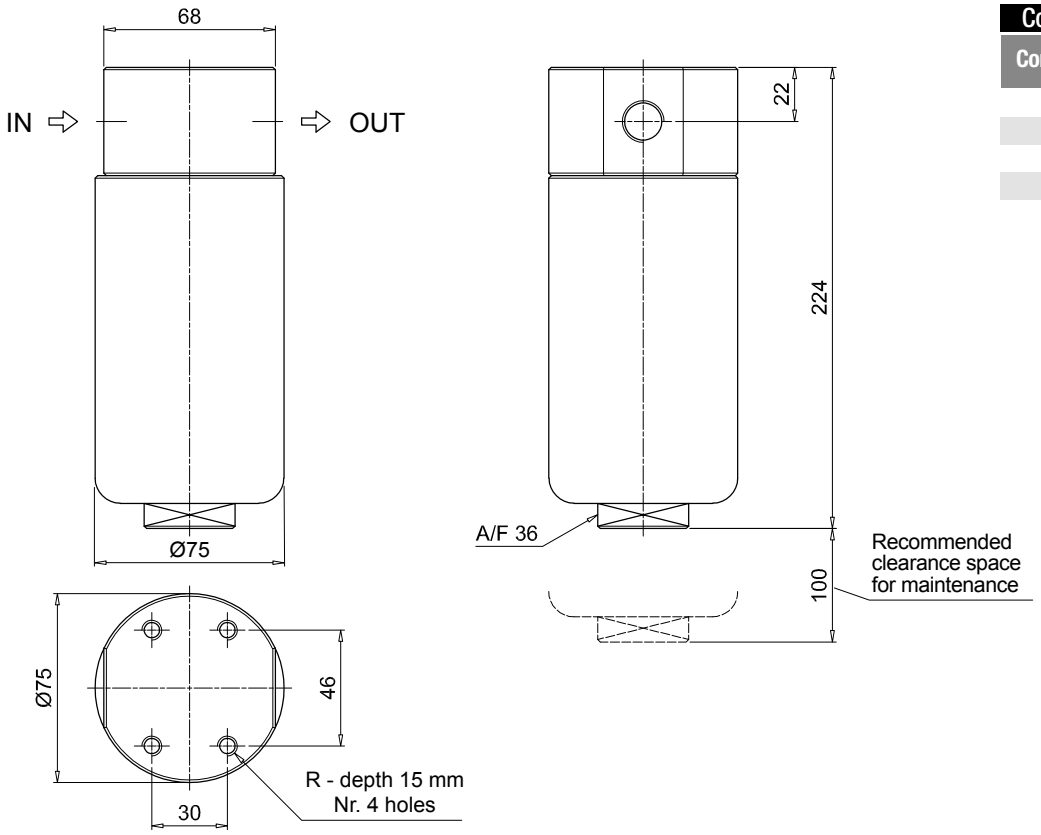
Filtration rating (filter media)
A03 Inorganic microfiber 3 µm
A06 Inorganic microfiber 6 µm
A10 Inorganic microfiber 10 µm
A16 Inorganic microfiber 16 µm
A25 Inorganic microfiber 25 µm

Seals
A NBR
V FPM
F MFQ

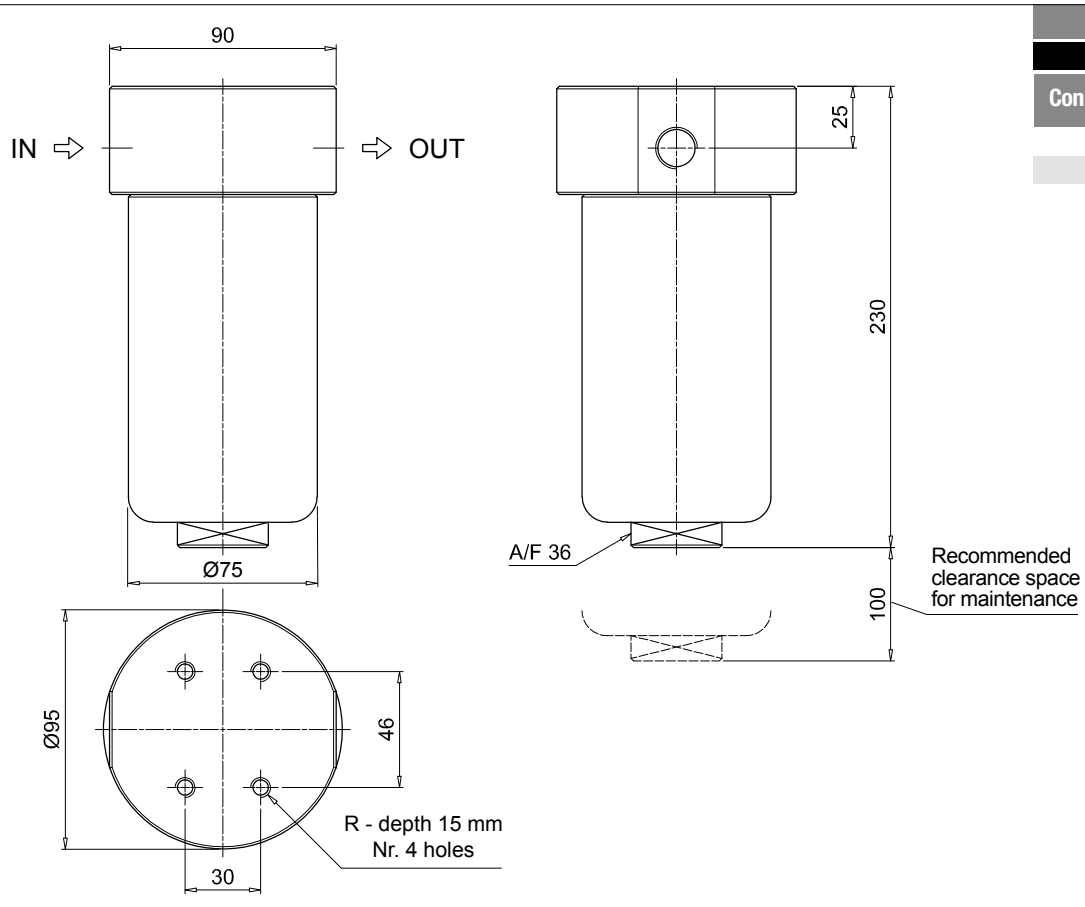
Element Δp
H 210 bar
U 210 bar, stainless steel filter element

Execution
P01 MP Filtri standard
Pxx Customized

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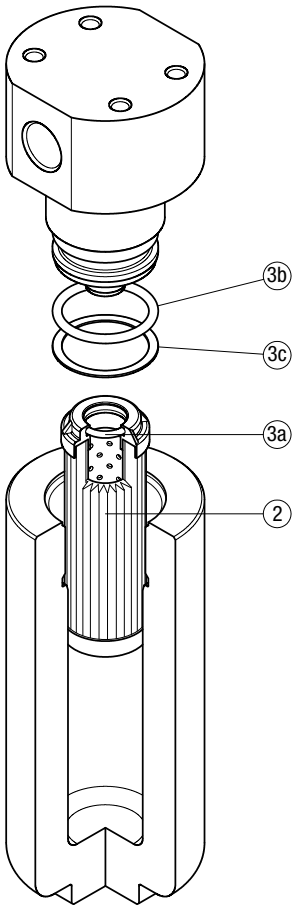
FZX011	
Connection A - B - G - H	
Connections	**R**
A	M8
B	5/16" UNC
G	M8
H	5/16" UNC



FZX011	
Connection M - L	
Connections	**R**
M	M8
L	M8

Order number for spare parts

FZX 011



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3c)		
Filter series	Filter element	Seal Kit code number NBR	FPM	MFQ
FZX 011	See order table	02050643	02050644	02050646

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FZM series

Maximum working pressure up to 32 Mpa (320 bar) - Flow rate up to 70 l/min



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FZM GENERAL INFORMATION

Description

Stainless steel high pressure filters

Manifold
Maximum working pressure up to 32 Mpa (320 bar)
Flow rate up to 70 l/min

FZM is a range of stainless steel high pressure filter for protection of sensitive components in high pressure hydraulic systems placed in difficult environmental conditions.
They are directly connected to the top of the manifold, through the proper flanged interface.

Available features:

- Manifold connections up to Ø15 mm, for a maximum flow rate of 70 l/min
- ISO 4401 CETOP 3 and CETOP 5 interface, for direct mounting on the CETOP valves.
- Fine filtration rating, to get a good cleanliness level into the system
- Bypass valve, to relieve excessive pressure drop across the filter media
- Low collapse filter element with external support "R", for filter element protection against the back pressure caused by the check valve or the reverse flow in filters provided with the bypass valve
- High collapse filter element with external support "S", for filter element protection against the back pressure caused by the check valve or the reverse flow in filters not provided with the bypass valve
- High collapse filter element "U", for use with aggressive fluids
- Visual, electrical and electronic differential clogging indicators

Common applications:

- Off-shore equipment
- Water filtration systems
- Systems with strong or corrosive environmental conditions
- Systems with corrosive fluids

Technical data

Filter housing materials

- Head: AISI 316L
- Housing: AISI 316L
- Bypass valve: AISI 316L

Pressure

- Test pressure: 48 MPa (480 bar)
- Min. Burst pressure: 96 MPa (960 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 32 MPa (320 bar)

Bypass valve

Opening pressure 6 bar ±10%

Filter element features

Filter		Filter element	
FZM		HP	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	with external support	R	20 bar
	High Δp with external support	S	210 bar
	High Δp with stainless steel components	U	210 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Filter element components materials	Δp Series		
	R	S	U
End cap	Polyamide	Tinned Steel	Stainless steel
Core tube	Tinned Steel	Tinned Steel	Stainless steel
External support	Wire mesh epoxy painted	Wire mesh epoxy painted	Stainless steel
Internal support	Wire mesh epoxy painted	Stainless steel	Stainless steel
Pre-filter	Synthetic	Synthetic	Synthetic

Seals

- Standard NBR series A (-25 °C to +110 °C)
- Optional FPM series V (-20 °C to +120 °C)
- Optional MFQ series F (-50 °C to +120 °C)

Temperature

From -50 °C to +120 °C

Note

FZM filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]					Volumes [dm³]				
	Length	1	2	3	4	Length	1	2	3	4
FZM 039		-	5.0	5.6	6.1		-	0.19	0.26	0.34

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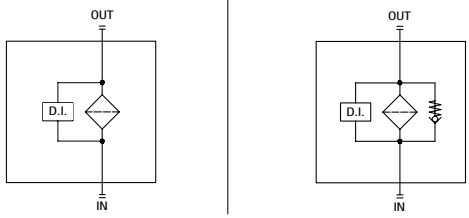
Flow rates [l/min]

		Filter element design - R Series					Filter element design - S-U Series				
Filter series	Length	A03	A06	A10	A16	A25	A03	A06	A10	A16	A25
FZM 039	**2**	19	25	41	47	54	19	23	39	43	51
	3	33	36	50	56	65	30	33	45	49	60
	4	41	44	58	64	70	37	39	51	63	68

Maximum flow rate for a complete stainless steel high pressure filter with a return drop Δp = 1.5 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

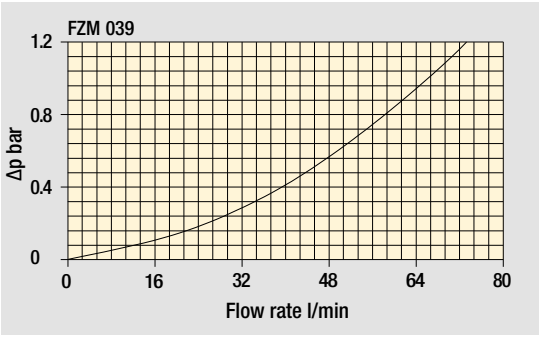
Hydraulic diagram

Filter series	Style S	Style B
FZM 039	•	•



Pressure drop

Filter housings Δp pressure drop



The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

Designation & Ordering code

COMPLETE FILTER

Configuration example: FZM039 | 2 | S | A | M | 1 | A10 | H | P01

Series and size
FZM039

Length
2 | **3** | **4**

Bypass valve
S Without bypass
B With bypass 6 bar

Seals
A NBR
V FPM
F MFQ

Connections
M Manifold

Connection for differential pressure indicator
1 Without connection
2 With connection

Filtration rating (filter media)
A03 Inorganic microfiber 3 µm
A06 Inorganic microfiber 6 µm
A10 Inorganic microfiber 10 µm
A16 Inorganic microfiber 16 µm
A25 Inorganic microfiber 25 µm

Element Δp	Valves S	Valves B
R 20 bar	-	•
S 210 bar	•	-
U 210 bar, stainless steel filter element	•	•

Execution
P01 MP Filtri standard
Pxx Customized

FILTER ELEMENT

Configuration example: HP039 | 3 | A10 | A | S | P01

Element series and size
HP039

Element length
2 | **3** | **4**

Filtration rating (filter media)
A03 Inorganic microfiber 3 µm
A06 Inorganic microfiber 6 µm
A10 Inorganic microfiber 10 µm
A16 Inorganic microfiber 16 µm
A25 Inorganic microfiber 25 µm

Seals
A NBR
V FPM
F MFQ

Element Δp
R 20 bar
S 210 bar
U 210 bar, stainless steel filter element

Execution
P01 MP Filtri standard
Pxx Customized

CLOGGING INDICATORS

See page 787

DEX Electrical differential pressure indicator
DLX Electrical/visual differential pressure indicator
DVX Visual differential pressure indicator
DVY Visual differential pressure indicator

PLUGS

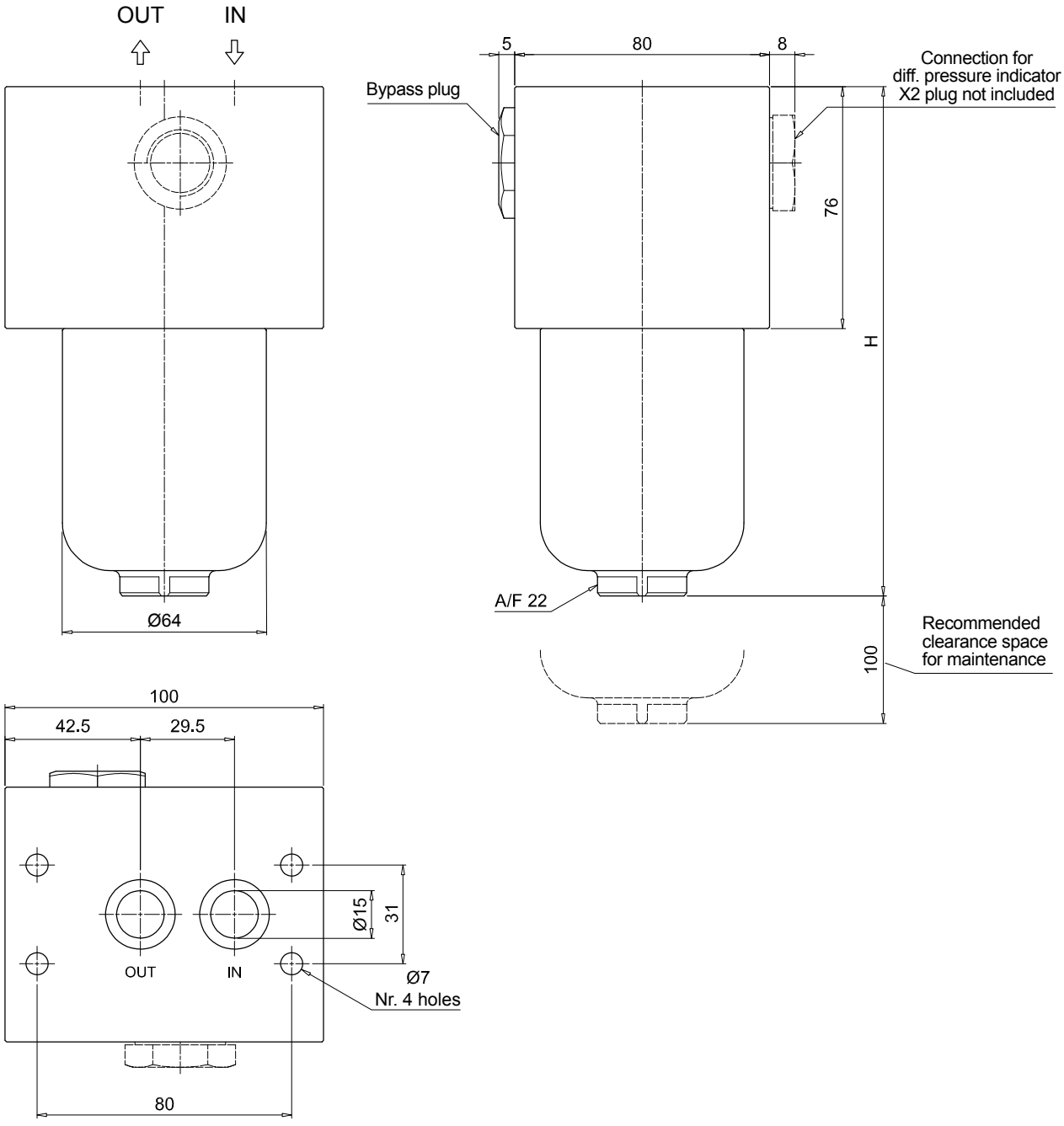
See page 807

X2 Stainless steel plug (not included)

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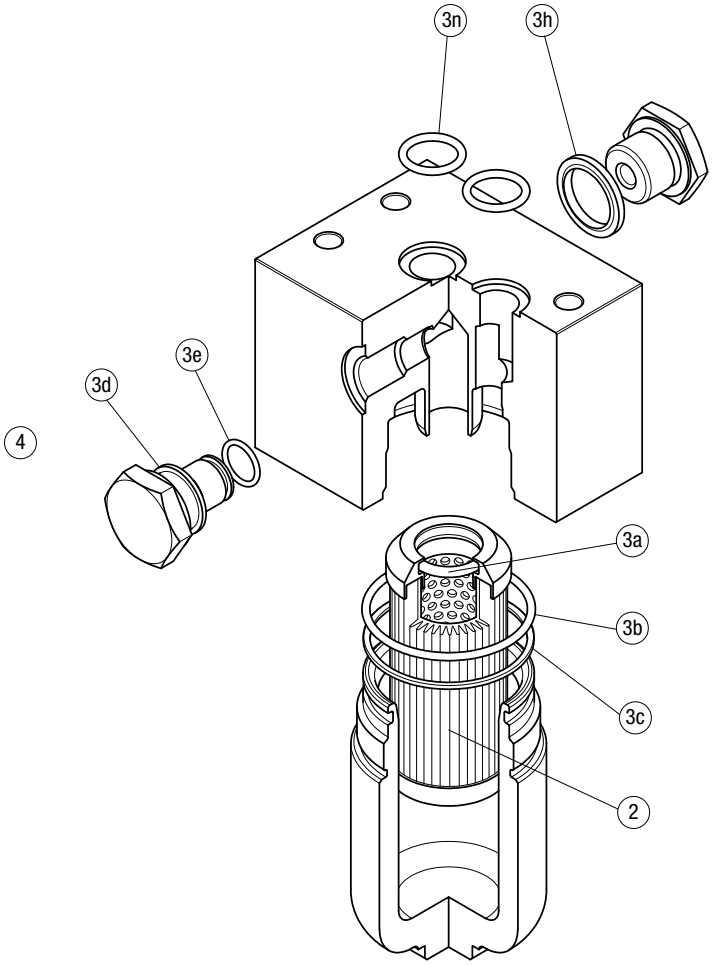
Dimensions

FZM039	
Filter length	**H [mm]**
2	160
3	203
4	247



Order number for spare parts

FZM 039



Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3n)		Q.ty: 1 pc. 4	
Filter series	**Filter element**	**Seal Kit code number NBR**	**FPM**	**Indicator connection plug NBR**	**FPM**
FZM 039	See order table	02050651	02050652	X2H	X2V

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FZB series

Maximum working pressure up to 32 Mpa (320 bar) - Flow rate up to 70 l/min



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Description

Stainless steel high pressure filters

Manifold
Maximum working pressure up to 32 Mpa (320 bar)
Flow rate up to 70 l/min

FZB is a range of stainless steel high pressure filter for protection of sensitive components in high pressure hydraulic systems placed in difficult environmental conditions.
They are directly connected to the side of the manifold, through the proper flanged interface.

Available features:

- Manifold connections up to Ø16 mm, for a maximum flow rate of 70 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Bypass valve, to relieve excessive pressure drop across the filter media
- Low collapse filter element with external support "R", for filter element protection against the back pressure caused by the check valve or the reverse flow in filters provided with the bypass valve
- High collapse filter element with external support "S", for filter element protection against the back pressure caused by the check valve or the reverse flow in filters not provided with the bypass valve
- High collapse filter element "U", for use with aggressive fluids
- Visual, electrical and electronic differential clogging indicators

Common applications:

- Off-shore equipment
- Water filtration systems
- Systems with strong or corrosive environmental conditions
- Systems with corrosive fluids

Technical data

Filter housing materials

- Head: AISI 316L
- Housing: AISI 316L
- Bypass valve: AISI 316L

Pressure

- Test pressure: 48 MPa (480 bar)
- Min. Burst pressure: 96 MPa (960 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 32 MPa (320 bar)

Bypass valve

Opening pressure 6 bar ±10%

Filter element features

Filter		Filter element	
FZB		HP	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	with external support	R	20 bar
	High Δp with external support	S	210 bar
	High Δp with stainless steel components	U	210 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Filter element components materials	Δp Series		
	R	S	U
End cap	Polyamide	Tinned Steel	Stainless steel
Core tube	Tinned Steel	Tinned Steel	Stainless steel
External support	Wire mesh epoxy painted	Wire mesh epoxy painted	Stainless steel
Internal support	Wire mesh epoxy painted	Stainless steel	Stainless steel
Pre-filter	Synthetic	Synthetic	Synthetic

Seals

- Standard NBR series A (-25 °C to +110 °C)
- Optional FPM series V (-20 °C to +120 °C)
- Optional MFQ series F (-50 °C to +120 °C)

Temperature

From -50 °C to +120 °C

Note

FZB filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]					Volumes [dm³]				
	Length	1	2	3	4	Length	1	2	3	4
FZB 039		-	4.6	5.2	5.7		-	0.19	0.26	0.34

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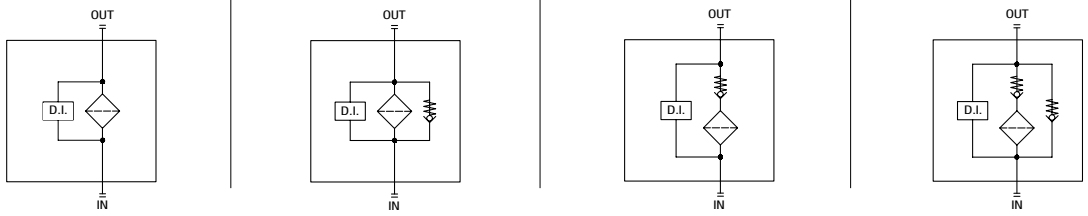
Flow rates [l/min]

		Filter element design - R Series					Filter element design - S Series					Filter element design - U Series				
Filter series	Length	A03	A06	A10	A16	A25	A03	A06	A10	A16	A25	A03	A06	A10	A16	A25
	2	18	23	39	44	52	18	22	37	40	48	18	22	37	40	48
FZB 039	**3**	31	33	47	54	65	28	31	43	46	84	28	31	43	46	84
	4	38	41	56	63	71	34	36	48	62	68	34	36	48	62	68

Maximum flow rate for a complete stainless steel high pressure filter with a pressure drop Δp = 1.5 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
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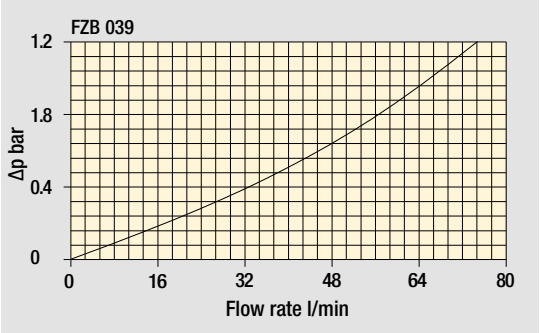
Hydraulic diagram

Filter series	Style S	Style B	Style T	Style D
FZB 039	•	•	•	•



Pressure drop

Filter housings Δp pressure drop



The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

Designation & Ordering code

COMPLETE FILTER

Configuration example: FZB039 | 2 | T | A | F | 2 | A06 | S | P01

Series and size
FZB039

Length
2 | **3** | **4**

Valves
S Without bypass
B With bypass 6 bar
T With check valve, without bypass
D With check valve, with bypass 6 bar

Seals
A NBR
V FPM
F MFQ

Connections
F Manifold

Connections for differential pressure indicators
1 Without connection
2 With connection on the top

Filtration rating (filter media)
A03 Inorganic microfiber 3 µm
A06 Inorganic microfiber 6 µm
A10 Inorganic microfiber 10 µm
A16 Inorganic microfiber 16 µm
A25 Inorganic microfiber 25 µm

Element Δp	Valves S	B	T	D
R 20 bar	-	•	-	•
S 210 bar	•	-	•	-
U 210 bar, stainless steel filter element	•	•	•	•

Execution
P01 MP Filtri standard
Pxx Customized

FILTER ELEMENT

Configuration example: HP039 | 2 | A06 | A | S | P01

Element series and size
HP039

Element length
2 | **3** | **4**

Filtration rating (filter media)
A03 Inorganic microfiber 3 µm
A06 Inorganic microfiber 6 µm
A10 Inorganic microfiber 10 µm
A16 Inorganic microfiber 16 µm
A25 Inorganic microfiber 25 µm

Seals
A NBR
V FPM
F MFQ

Element Δp
R 20 bar
S 210 bar
U 210 bar, stainless steel filter element

Execution
P01 MP Filtri standard
Pxx Customized

CLOGGING INDICATORS

See page 787

DEX Electrical differential pressure indicator
DLX Electrical/visual differential pressure indicator
DVX Visual differential pressure indicator
DVY Visual differential pressure indicator

PLUGS

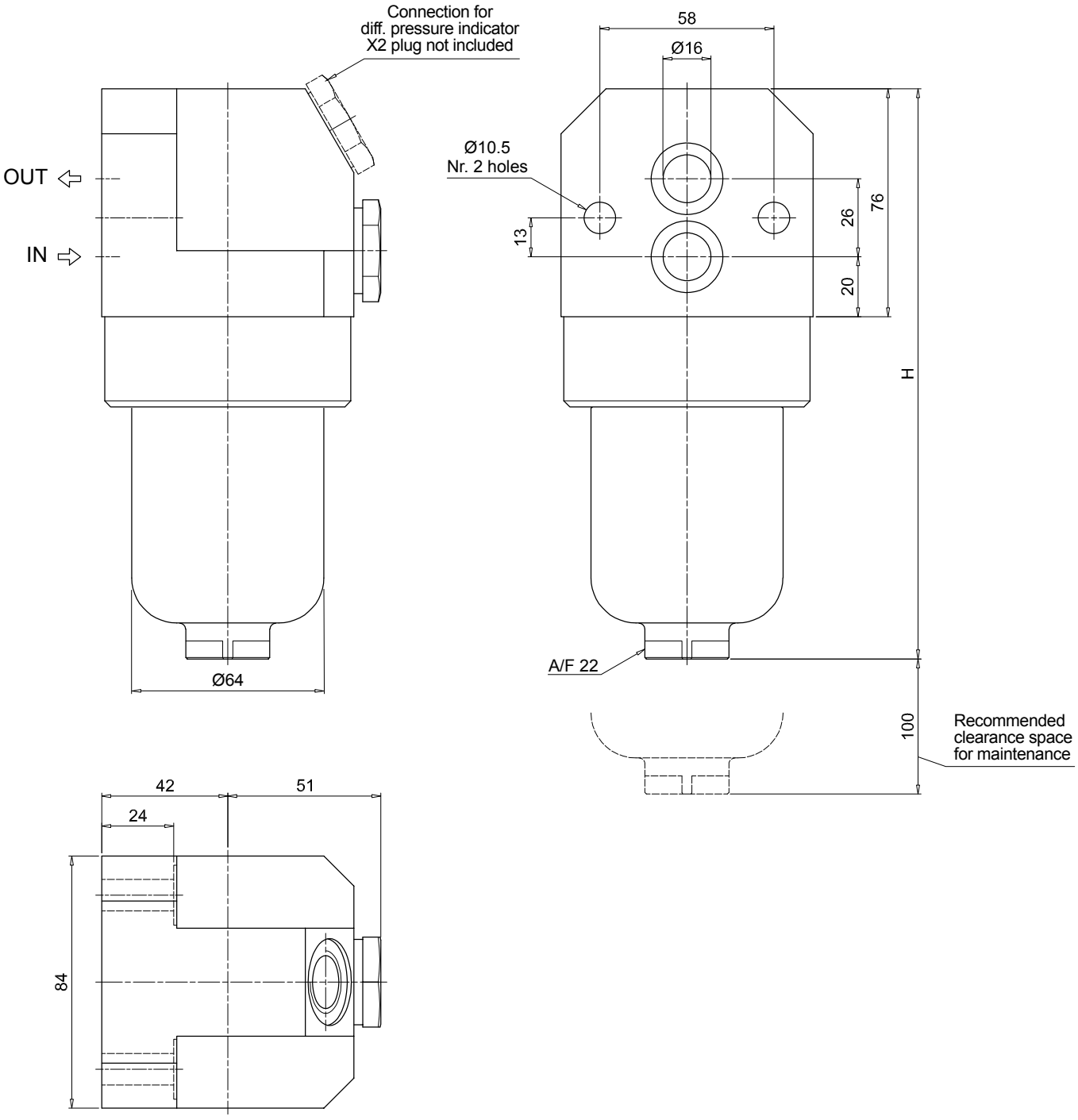
See page 807

X2 Stainless steel plug (not included)

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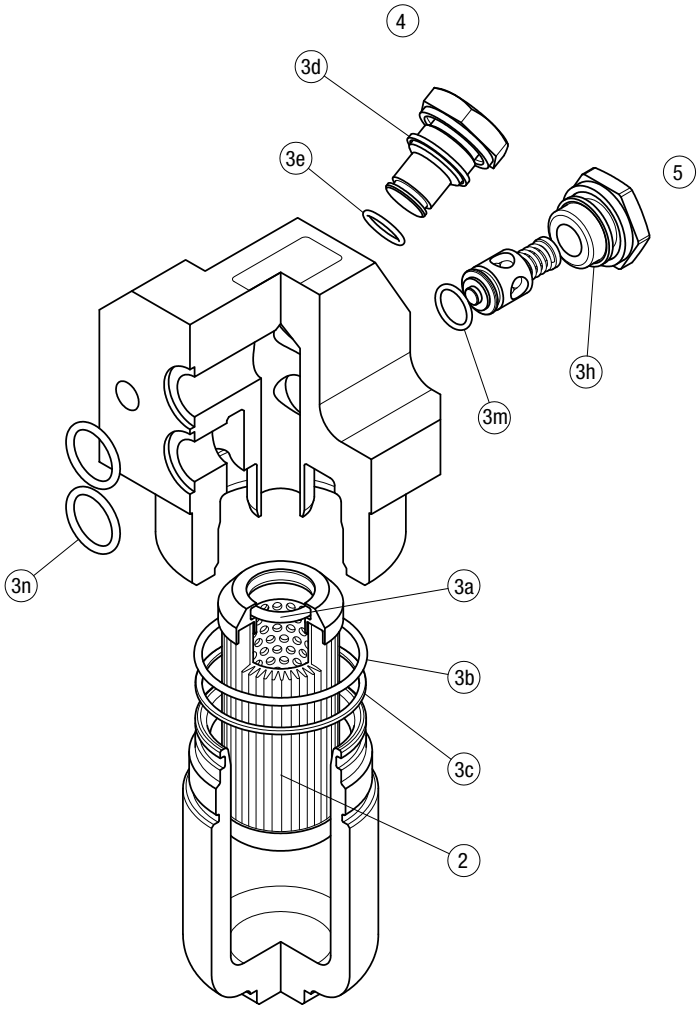
Dimensions

FZB039	
Filter length	**H [mm]**
2	190
3	233
4	277



Order number for spare parts

FZB 039



Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3n)		Q.ty: 1 pc. 4		Q.ty: 1 pc. 5	
Filter series	**Filter element**	**Seal Kit code number NBR**	**FPM**	**Indicator connection plug NBR**	**FPM**	**Bypass assembly / plug NBR**	**FPM**
FZB 039	See order table	02050647	02050648	X2H	X2V	02001286	02001295

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FZD series

Maximum working pressure up to 35 Mpa (350 bar) - Flow rate up to 60 l/min



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FZD010 FZD021 FZD051

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FZD GENERAL INFORMATION

Description

Stainless steel high pressure filters

Duplex
Maximum working pressure up to 35 Mpa (350 bar)
Flow rate up to 60 l/min

FZD is a range of stainless steel high pressure duplex filter with integrated changeover function to allow the filter element replacement without the system shut-down.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- Female threaded connections up to 3/4", for a maximum flow rate of 60 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Balancing valve, available for FZD051, to equalize the housing pressure before the switch.
- Bypass valve, to relieve excessive pressure drop across the filter media
- Vent ports, to avoid air trapped into the filter going into the system
- Drain ports, to remove the fluid from the housing prior the maintenance work
- High collapse filter element "H", for use with filters not provided with bypass valve
- Low collapse filter element with external support "R", for filter element protection against the back pressure caused by the check valve or the reverse flow in filters provided with the bypass valve
- High collapse filter element with external support "S", for filter element protection against the back pressure caused by the check valve or the reverse flow in filters not provided with the bypass valve
- High collapse filter element "U", for use with aggressive fluids
- Visual, electrical and electronic differential clogging indicators

Common applications:

- System where shut-down causes high costs
- System where shut-down causes safety issues

Technical data

Filter housing materials

- Head: AISI 316L
- Housing: AISI 316L
- Bypass valve: AISI 316L

Pressure

- Test pressure: 52.5 MPa (525 bar)
- Min. Burst pressure: 105 MPa (1050 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 35 MPa (350 bar)

Bypass valve

Opening pressure 6 bar ±10%

Filter element features

Filter		Filter element	
FZD		HP	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	with external support	R	20 bar
	High Δp	H	210 bar
	High Δp with external support	S	210 bar
	High Δp with stainless steel components	U	210 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Filter element components materials	Δp Series		
	R	**H - S**	**U**
End cap	Polyamide	Tinned Steel	Stainless steel
Core tube	Tinned Steel	Tinned Steel	Stainless steel
External support	Wire mesh epoxy painted	Wire mesh epoxy painted	Stainless steel
Internal support	Wire mesh epoxy painted	Stainless steel	Stainless steel
Pre-filter	Synthetic	Synthetic	Synthetic

Seals

- Standard NBR series A (-25 °C to +110 °C)
- Optional FPM series V (-20 °C to +120 °C)
- Optional MFQ series F (-50 °C to +120 °C)

Temperature

From -50 °C to +120 °C

Note

FZD filters are provided for vertical mounting

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]						Volumes [dm³]					
	Length	1	2	3	4	5	Length	1	2	3	4	4
FZD 010		-	7.9	-	-	-		-	0.10	-	-	-
FZD 021		-	9.6	9.8	10.3	-		-	0.06	0.12	0.22	-
FZD 051		-	17.4	18.0	19.0	20.3		-	0.31	0.41	0.53	0.83

MP FILTRI WWW.SUMY.IR

Flow rates [l/min]

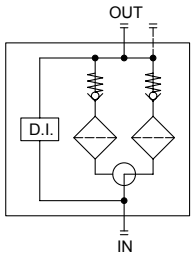
		Filter element design - H Series					Filter element design - U Series				
Filter series	Length	A03	A06	A10	A16	A25	A03	A06	A10	A16	A25
FZD 010	**2**	4	5	7	8	11	4	5	7	8	11
FZD 021	**2**	5	6	11	12	16	5	6	11	12	16
	3	9	11	16	18	20	9	11	16	18	20
	4	10	12	17	19	21	10	12	17	19	21

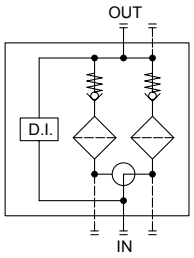
		Filter element design - R Series					Filter element design - S Series					Filter element design - U Series				
Filter series	Length	A03	A06	A10	A16	A25	A03	A06	A10	A16	A25	A03	A06	A10	A16	A25
FZD 051	**2**	39	41	51	54	59	35	37	48	51	58	35	37	48	51	58
	3	45	46	54	56	61	41	43	52	54	60	41	43	52	54	60
	4	50	52	58	58	62	47	49	56	56	61	47	49	56	56	61
	5	56	57	61	62	63	53	53	57	59	63	53	53	57	59	63

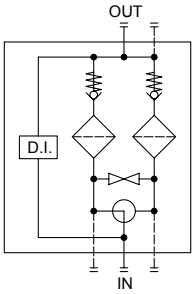
Maximum flow rate for a complete stainless steel high pressure filter with a pressure drop Δp = 1.5 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

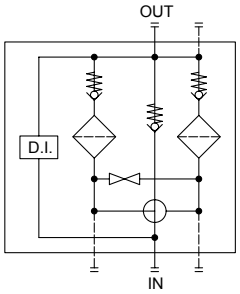
Hydraulic diagram

Filter series	Without Bypass	Without Bypass	Single Bypass	Double Bypass
FZD 010	•	-	-	-
FZD 021	-	•	-	-
FZD 051	-	-	•	•



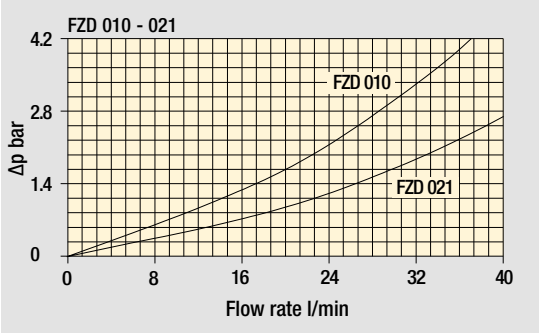


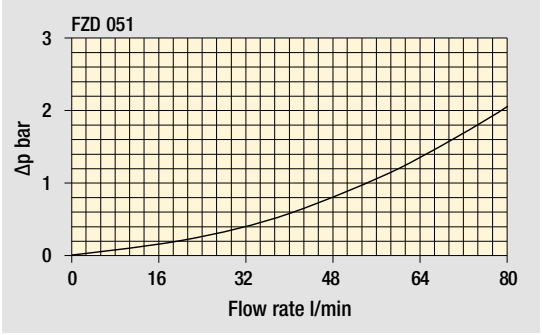




Pressure drop

Filter housings Δp pressure drop





The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

Designation & Ordering code

COMPLETE FILTER

Configuration example: FZD021 | 4 | S | A | G1 | A06 | H | P01

Series and size

FZD010 | **FZD021**

Length	FZD010	FZD021
2	•	•
3	-	•
4	-	•

Bypass valve

S Without bypass

Seals

A NBR
V FPM

Connections	FZD010	FZD021
G1	G 3/8”	G 1/2”
G2	3/8” NPT	1/2” NPT
G3	-	SAE 8 - 3/4” - 16 UNF

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm

Element Δp

H 210 bar
U 210 bar, stainless steel filter element

Execution

P01 MP Filtri standard
Pxx Customized

FILTER ELEMENT

Configuration example: HP011 | 4 | A06 | A | H | P01

Element series and size

	FZD010	FZD021
HP010	•	-
HP011	-	•

Element length	HP010	HP011
2	•	•
3	-	•
4	-	•

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm

Seals

A NBR
V FPM

Element Δp

H 210 bar
U 210 bar, stainless steel filter element

Execution

P01 MP Filtri standard
Pxx Customized

CLOGGING INDICATORS

See page 787

DEX Electrical differential pressure indicator
DLX Electrical/visual differential pressure indicator
DVX Visual differential pressure indicator
DVY Visual differential pressure indicator

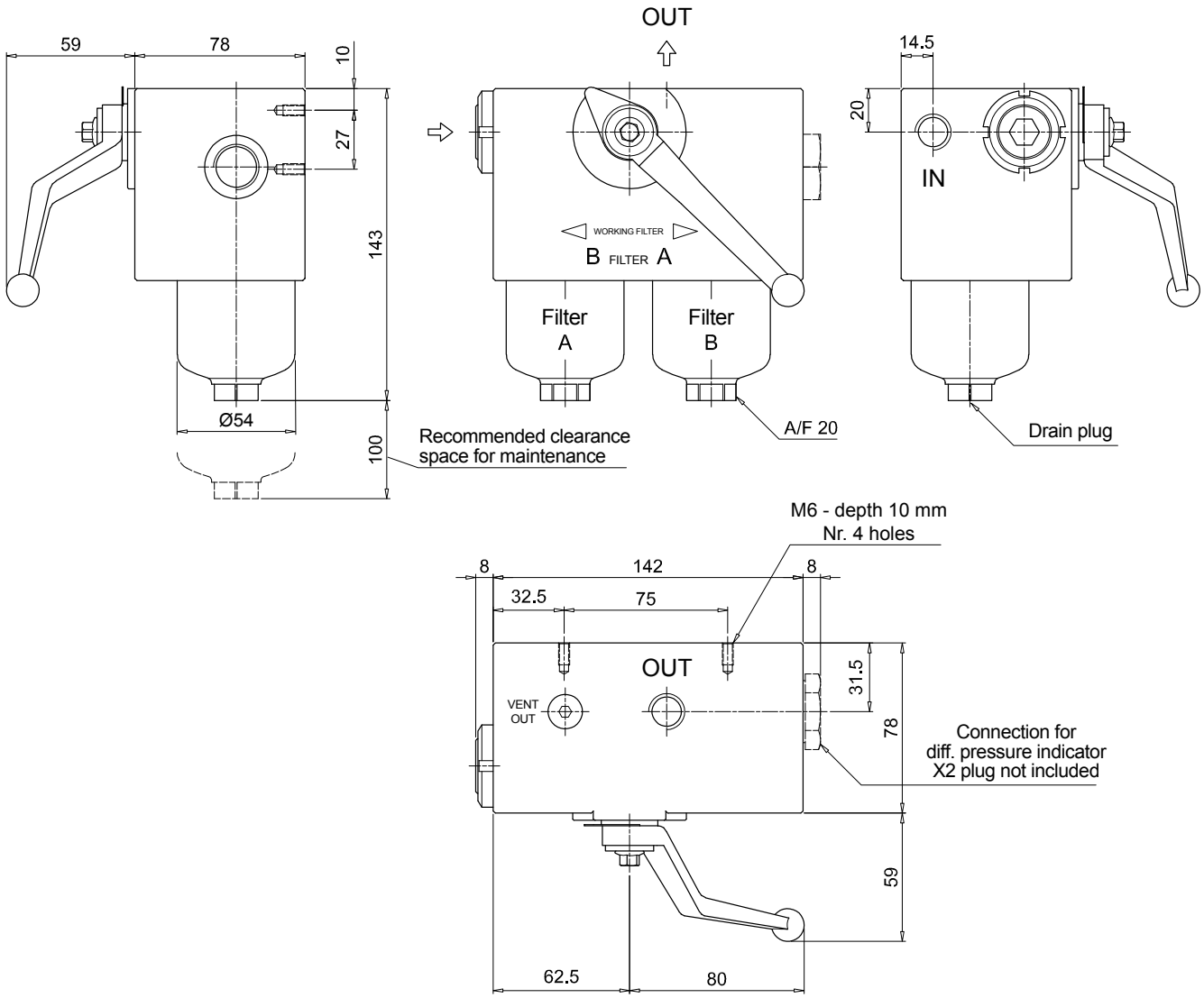
PLUGS

See page 807

X2 Stainless steel plug (not included)

MP FILTRI WWW.SUMY.IR

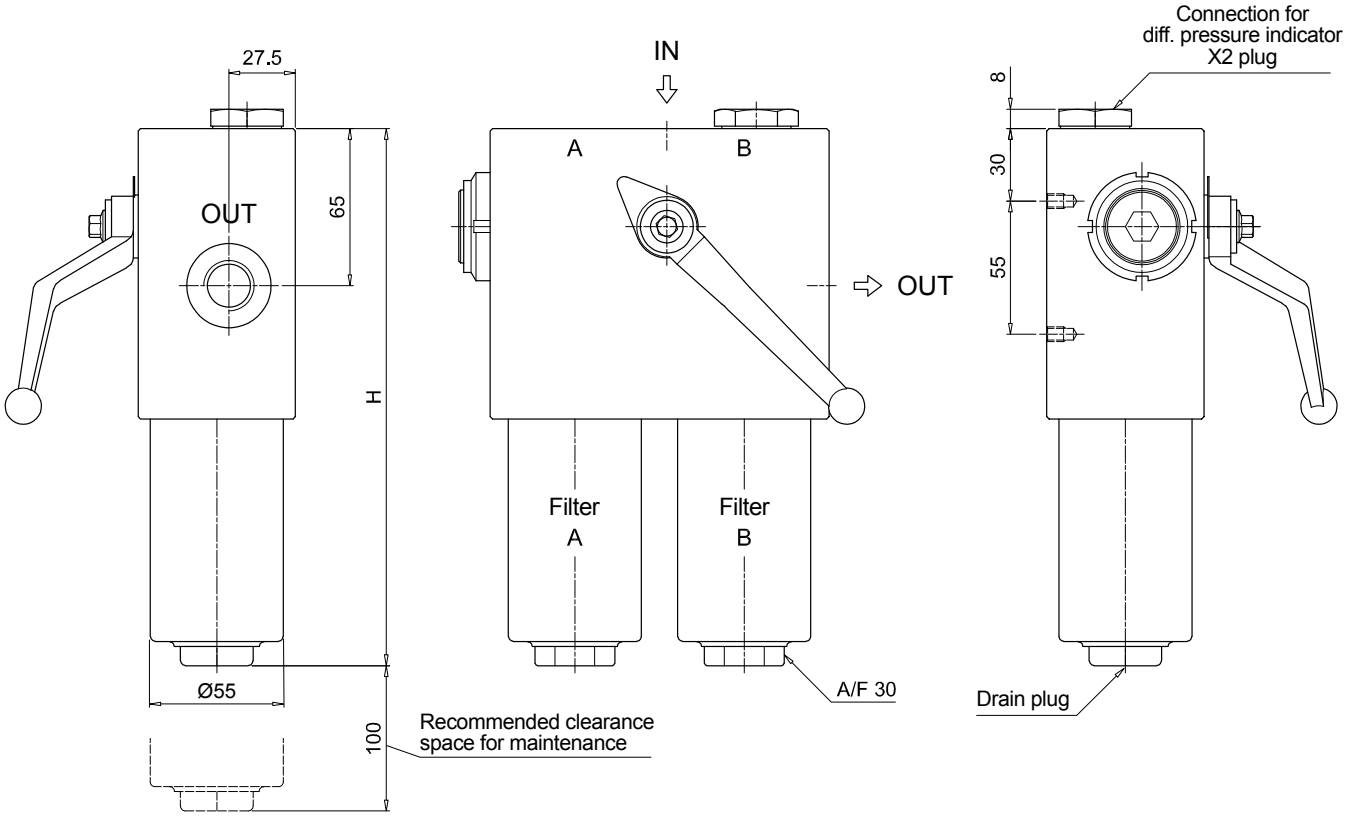
FZD010

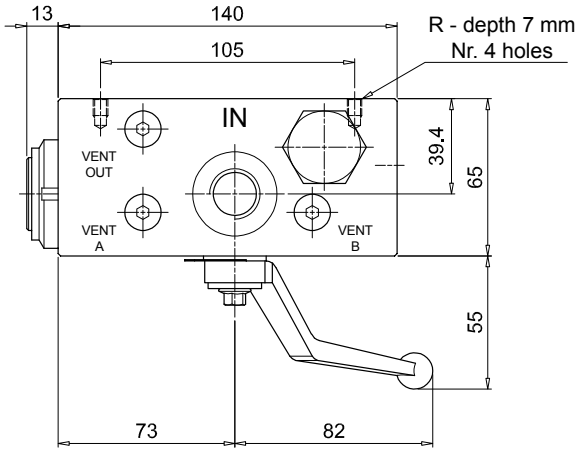

OUT
59
78
10
27
143
100
Ø54
Recommended clearance
space for maintenance
WORKING FILTER
B FILTER A
Filter
A
Filter
B
A/F 20
14.5
20
IN
Drain plug
M6 - depth 10 mm
Nr. 4 holes
8
142
8
32.5
75
OUT
VENT
OUT
31.5
78
Connection for
diff. pressure indicator
X2 plug not included
59
62.5
80

Dimensions

FZD021	
Filter length	**H [mm]**
2	172
3	222
4	272

Connections	R
G1	M6
G2 - G3	1/4" UNC





MP FILTRI WWW.SUMY.IR

Designation & Ordering code

COMPLETE FILTER

Configuration example: FZD051 | 3 | B | A | G3 | A03 | U | P01

Series and size
FZD051

Length
2 | **3** | **4** | **5**

Bypass valve
S Without bypass
B With bypass 6 bar

Seals
A NBR
V FPM

Connections
G1 G 3/4”
G2 3/4” NPT
G3 G 1/2”
G4 1/2” NPT
G5 SAE 8 - 3/4” - 16 UNF
G6 SAE 12 - 1 1/16” - 12 UN

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm

Element Δp

		Valves S	Valves B
R	20 bar	-	•
S	210 bar	•	-
U	210 bar, stainless steel filter element	•	•

Execution
P01 MP Filtri standard
Pxx Customized

FILTER ELEMENT

Configuration example: HP050 | 3 | A03 | A | U | P01

Element series and size
HP050

Element length
2 | **3** | **4** | **5**

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm

Seals
A NBR
V FPM

Element Δp
R 20 bar
S 210 bar
U 210 bar, stainless steel filter element

Execution
P01 MP Filtri standard
Pxx Customized

CLOGGING INDICATORS

See page 787

DEX Electrical differential pressure indicator
DLX Electrical/visual differential pressure indicator
DVX Visual differential pressure indicator
DVY Visual differential pressure indicator

PLUGS

See page 807

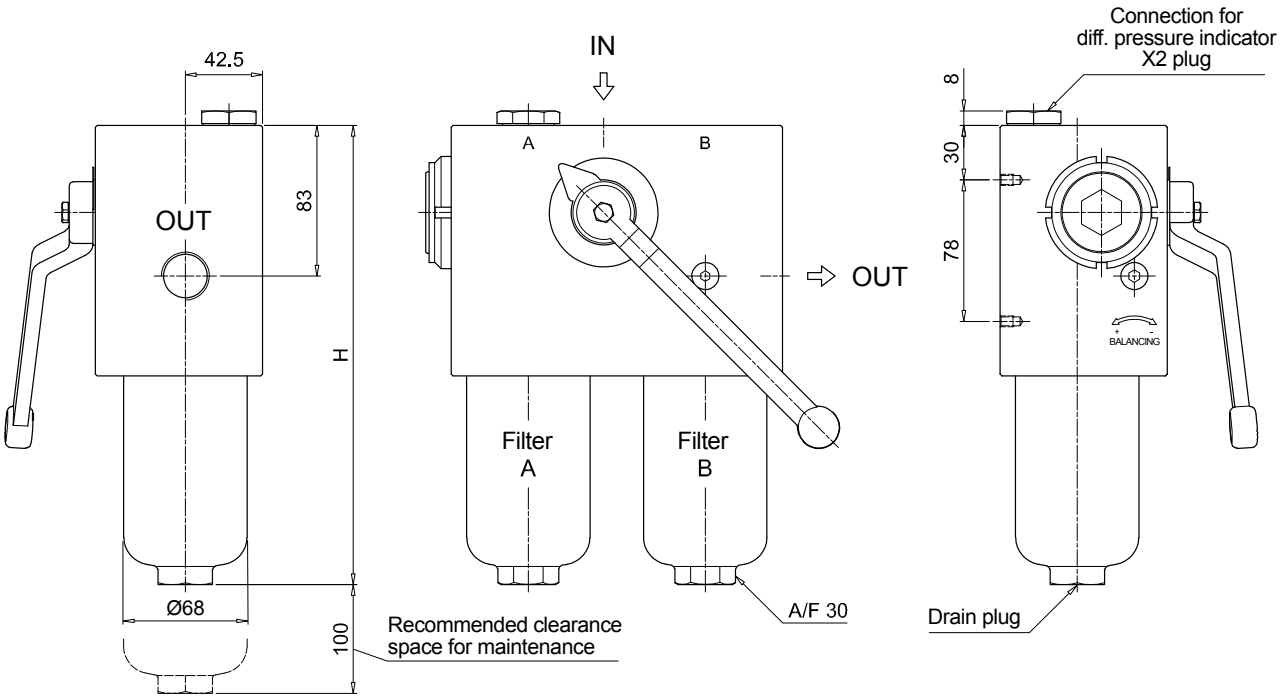
X2 Stainless steel plug (not included)

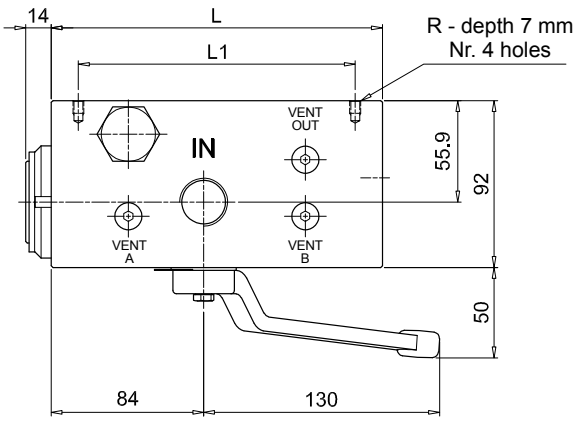
Dimensions

FZD051	
Filter length	**H [mm]**
2	253
3	295
4	343
5	465

Connections	**R**
G1	M6
G2	1/4" UNC
G3	M6
G4-G5-G6	1/4" UNC

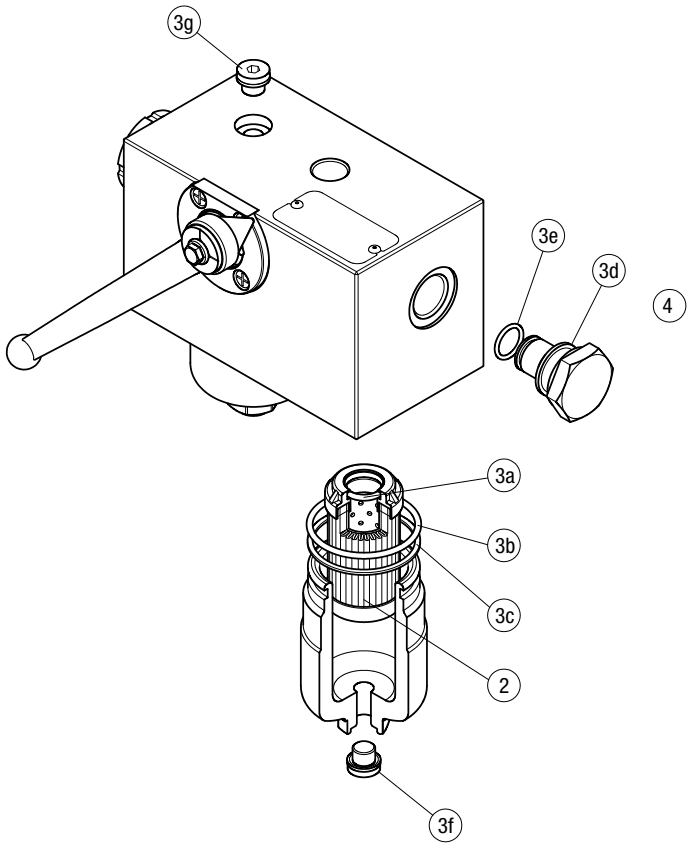
Valves	**L [mm]**	**L1 [mm]**
S	168	138
B	182.5	152.5



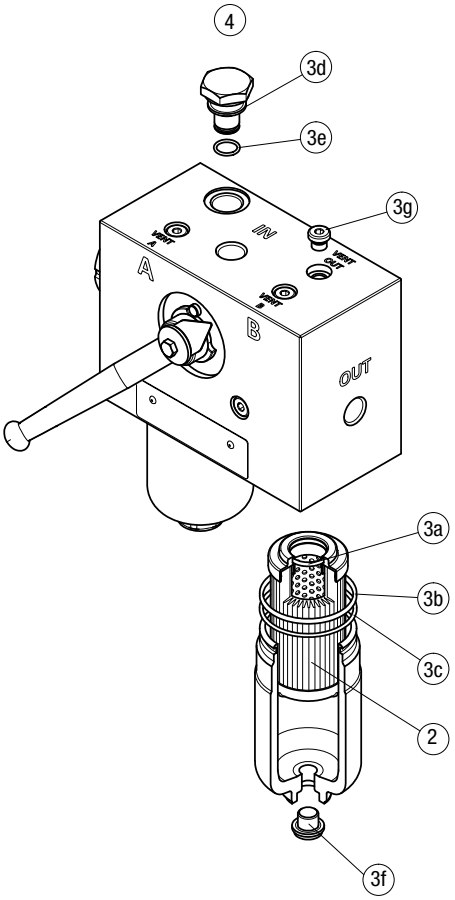


Order number for spare parts

FZD 010



FZD 021 - FZD 051



Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3g)		Q.ty: 1 pc. 4	
Filter series	Filter element	Seal Kit code number NBR	FPM	Indicator connection plug NBR	FPM
FZD 010	See order table	02050613	02050655	X2H	X2V
FZD 021		02050796	02050797		
FZD 051		02050800	02050801		

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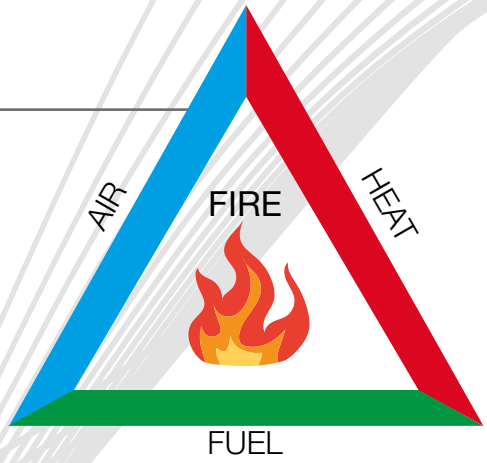
MP Filtri knows how to manage it thanks to our

ATEX CERTIFIED PRODUCTS

Standard ATEX Directive 2014/34/EU and UK Regulation S.I. 2016 No. 1107 (as amended)

FIRE TRIANGLE

According to the legislation, each appliance used in explosive atmospheres must ensure adequate ATEX protection, that is, it must present the precautions necessary to ensure it is removed at least one of the components of the triangle of fire.



zerospark®

THE ANTI-STATIC FILTERS

zerospark® filter element
is the default concept for all MP Filtri Atex filters

MP FILTRI WWW.SUMY.IR

Filters for potentially explosive atmosphere



Filter sizing and corrective factors	page 724
FMMX	727
FZP	737
FZH	747
FZX	757
INDICATORS	788

THE CORRECT FILTER SIZING HAS TO BE BASED ON THE TOTAL PRESSURE DROP DEPENDING ON THE APPLICATION.

The pressure drop calculation is performed by adding together the value of the housing with the value of the filter element. The pressure drop Δpc of the housing is proportional to the fluid density (kg/dm³ / lb/ft³).
The filter element pressure drop Δpe is proportional to its viscosity (mm²/s / SUS), the corrective factor Y have to be used in case of an oil viscosity different than 30 mm²/s (cSt) / 150 SUS.

Sizing data for single filter element, head at top

Δpc = Filter housing pressure drop [bar / psi]
Δpe = Filter element pressure drop [bar / psi]
Y = Corrective factor Y (see correspondent table), depending on the filter type, on the filter element size, on the filter element length and on the filter media
Q = flow rate (l/min - gpm)
V1 reference oil viscosity = 30 mm²/s (cSt) /150 SUS
V2 = operating oil viscosity in mm²/s (cSt) / SUS

Filter element pressure drop calculation with an oil viscosity different than 30 mm²/s (cSt) / 150 SUS

International system:
Δpe = Y : 1000 x Q x (V2:V1)

Imperial system:
Δpe = Y : 17.2 x Q x (V2:V1)

Δp Tot. = Δpc + Δpe

Verification formula

Δp Tot. ≤ Δp max allowed

Maximum total pressure drop (Δp max) allowed by a new and clean filter

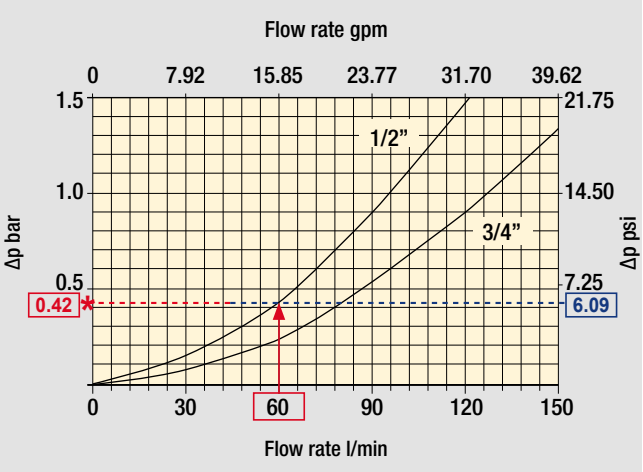
Filter family	Δp max	
	[bar]	[psi]
ATEX filters	1.50 bar	22 psi

Filter pressure drop calculation example

Application data:
Selected filter: **FMMX 050 length 5**
Selected filter element: **HPX 050 length 5**
Selected connection: **G 1/2"**
Selected filtration rating: **25 µm** absolute filtration with wire mesh
Flow rate Q = **60 l/min / 15.85 gpm**
Viscosity V2 = 46 mm²/s (cSt) / 216 SUS
Oil density = 0.86 kg/dm³ / 53.68 lb/ft³

Calculation:
Δpc = 0.42 bar / 6.09 psi (see graphic below)

FMM 050



Filter housings Δp pressure drop.
The curves are plotted using mineral oil with density of 0.86 kg/dm³ in compliance with ISO 3968. Δp varies proportionally with density.

Filter element		Absolute filtration Filter Elem. Δp Series: N - R				
Type	Length	A03	A06	A10	A16	A25
HPX 050	3	17.37	16.25	8.90	7.18	3.63
	4	12.12	10.75	6.10	5.75	3.08
	5	7.00	6.56	3.60	3.10	2.25

Δpe = (2.25 : 1000) x 60 x (46 : 30) = 0.21 bar
Δpe = (2.25 : 17.2) x 15.85 x (216 : 150) = 2.99 psi

√ **Δp Tot. = 0.42 + 0.21 = 0.63 bar**
Δp Tot. = 6.09 + 2.99 = 9.08 psi

The selection is correct because the total pressure drop value is inside the admissible range for stainless steel filters.
In case the max allowed total pressure drop is not verified, it is necessary to repeat the calculation changing the filter and/or filter element length/size.

MP FILTRI WWW.SUMY.IR

Corrective factors

Filter element		Absolute filtration Filter Element ΔP Series: N - R				
Type	Length	A03	A06	A10	A16	A25
HP 011	1	332.71	250.07	184.32	152.36	128.36
	2	220.28	165.56	74.08	59.13	37.05
	3	123.24	92.68	41.48	33.08	20.72
	4	77.76	58.52	28.37	22.67	16.17
HP 039	2	70.66	53.20	25.77	20.57	14.67
	3	36.57	32.28	18.00	13.38	8.00
	4	26.57	23.27	12.46	8.80	5.58
HPX 050	1	31.75	30.30	13.16	12.3	7.29
	2	24.25	21.26	11.70	9.09	4.90
	3	17.37	16.25	8.90	7.18	3.63
	4	12.12	10.75	6.10	5.75	3.08
	5	7.00	6.56	3.60	3.10	2.25
HP 135	1	20.33	18.80	9.71	8.66	4.78
	2	11.14	10.16	6.60	6.38	2.22
	3	6.48	6.33	3.38	3.16	2.14
HPX 150	1	17.53	15.91	7.48	6.96	5.94
	2	8.60	8.37	3.54	3.38	3.15
	3	6.53	5.90	2.93	2.79	2.12

Filter element		Absolute filtration Filter Element ΔP Series: S - H - U				
Type	Length	A03	A06	A10	A16	A25
HP 011	1	424.58	319.74	235.17	194.44	163.78
	2	281.06	211.25	94.35	75.45	47.26
	3	130.14	97.50	43.63	34.82	21.81
	4	109.39	82.25	36.79	29.37	18.40
HP 039	2	73.00	57.00	28.00	24.00	17.20
	3	40.90	36.33	21.88	18.80	11.20
	4	31.50	28.22	17.22	9.30	6.70
HP 135	1	29.16	25.33	13.00	12.47	5.92
	2	14.28	11.04	7.86	7.90	4.44
	3	8.96	7.46	4.89	4.16	3.07
HPX 150	1	25.14	21.44	10.01	10.02	7.36
	2	11.02	9.09	4.22	4.19	4.00
	3	9.03	6.95	3.82	3.67	3.04

Corrective factor Y to be used for the filter element pressure drop calculation.
The values depend to the filter size and length and to the filter media.

Reference oil viscosity 30 mm^2/s

MYCLEAN + zerospark®

THE ANTI-STATIC FILTERS

THE X CONCEPT FOR OUR FILTERS

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

THE Z CONCEPT FOR OUR FILTERS

Zerospark® is a specialist solution designed to solve the problem of electrostatic discharge inside hydraulic filters. Caused by the electrical charge build-up due to the passage of oil through the filters, this can result in damage to filter elements, oils and circuit components. It can even cause fire hazards in environments where flammable materials are present.



FMMX ATEX series

with MYCLEAN + zerospark®

HPX Filter Element

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

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

The products identified as FMMX series are protected by:

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

MP FILTRI WWW.SUMY.IR

FMMX series

Maximum working pressure up to 42 MPa (420 bar) - Flow rate up to 300 l/min



INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS

Please scan or click the QR codes
to get updated electronic version
of the related document.

Scan or click me!

FMMX GENERAL INFORMATION

Description

Filters for potentially explosive atmosphere

In-line
Maximum working pressure up to 42 MPa (420 bar)
Flow rate up to 300 l/min

FMMX is a range of versatile high pressure filter for protection of sensitive components in high pressure hydraulic systems in the mobile machines. They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- Female threaded connections up to 1 1/4", for a maximum flow rate of 300 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Bypass valve, to relieve excessive pressure drop across the filter media
- Low collapse filter element with external support "N", for filter element protection against the back pressure caused by the check valve in filters provided with the bypass valve
- Visual, electrical and electronic differential clogging indicators
- MYclean interface connection for the filter element, to protect the product against non-original spare parts

Common applications:

- Agricultural machines
- Mobile machines

Filter with:

NBR seal in configuration zerospark®

II 3G Ex h IIC T6 Gc X
II 3D Ex h IIIC T85°C Dc X

FPM seal in configuration zerospark®

II 3G Ex h IIC T6... T4 Gc X
II 3D Ex h IIIC T85°C...T115°C Dc X

Technical data

Filter housing materials

- Head: Painted cast iron, black RAL 9005
- Housing: Phosphatized steel
- Bypass valve: Steel

Pressure

- Test pressure: 63 MPa (630 bar)
- Min. Burst pressure: 126 MPa (1260 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 42 MPa (420 bar)

Bypass valve

- Opening pressure 0.6 MPa (6 bar) ±10%
- Other opening pressures on request.

Filter element features

Filter		Filter element	
FMMX		HPX	
Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	Standard	N	20 bar
A - Microfiber	High Δp with external support	S	210 bar
M - Wire mesh	Standard	N	20 bar
Please see ordering code tables to check element Δp series availability based on filter features.			
Flow direction through the filter element: From OUT to IN			

Temperature

Seals	Ambient Temperature	Max fluid Temperature	Temperature Class	Max surface temperature
NBR	-15 °C ÷ +80 °C	+80 °C	T6	T85 °C
FPM	-15 °C ÷ +80 °C	+80 °C	T6	T85 °C
	-15 °C ÷ +95 °C	+95 °C	T5	T100 °C
	-15 °C ÷ +110 °C	+110 °C	T4	T115 °C

Seals

- Standard NBR series A
- Optional FPM series V

Note

FMMX filters are provided for vertical mounting

Connections

In-line Inlet/Outlet

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]						Volumes [dm³]					
	Length	1	2	3	4	5	Length	1	2	3	4	5
FMMX 050		3.11	3.48	3.90	4.36	5.54		0.34	0.48	0.63	0.81	1.23
FMMX 150		7.50	9.50	10.90	-	-		0.60	1.00	1.25	-	-

MP FILTRI WWW.SUMY.IR

Flow rates [l/min]

		Filter element design - N Series						Filter element design - S Series				
Filter series	Length	A03	A06	A10	A16	A25	M25	A03	A06	A10	A16	A25
FMMX 050	1	42	43	79	82	106	147	29	39	57	59	74
	2	52	57	85	96	121	149	45	49	76	88	114
	3	66	69	97	106	130	150	58	61	89	99	125
	4	83	89	113	115	134	152	74	80	106	108	129
	5	107	110	130	134	141	154	93	95	111	121	139
FMMX 150	1	81	88	156	163	179	295	58	67	128	128	158
	2	142	145	227	230	236	312	119	137	212	212	207
	3	170	180	242	245	263	315	138	164	211	224	239

Maximum flow rate for a complete pressure filter with a pressure drop Δp = 1.5 bar.

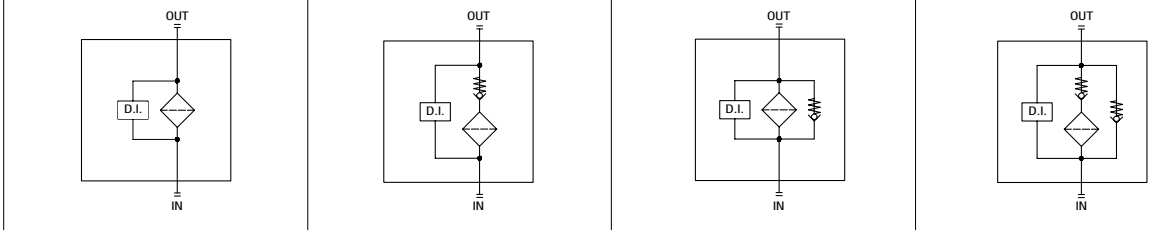
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.

For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.

You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.

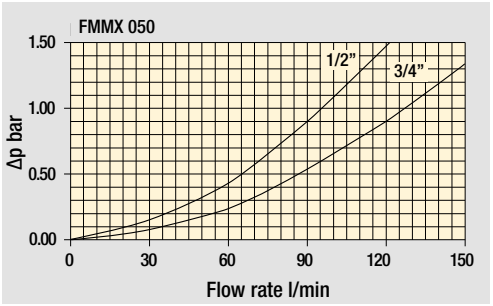
Please, contact our Sales Department for further additional information.

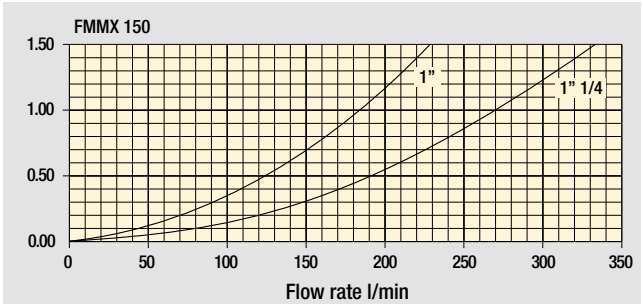
Hydraulic diagram

	without bypass		with bypass 6.0 bar	
Filter series	Style S - without check valve	Style T - with check valve	Style B - without check valve	Style D - with check valve
FMMX 050-150				

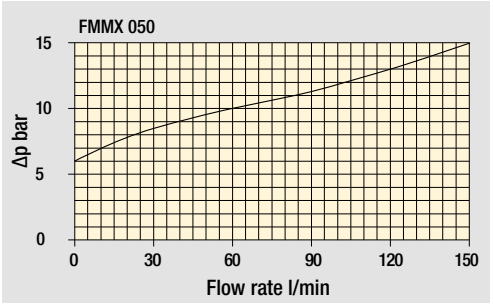
Pressure drop

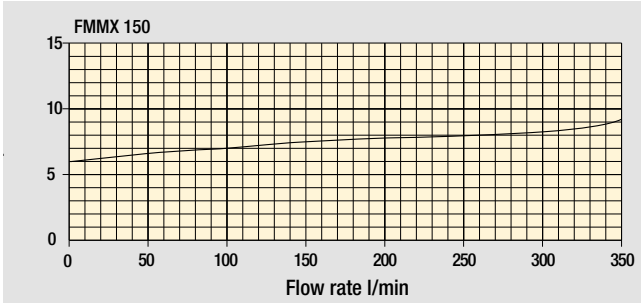
Filter housings
Δp pressure drop



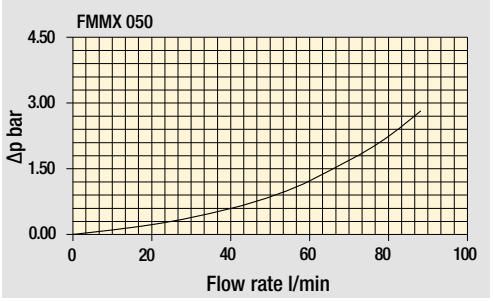


Bypass valve
pressure drop





Filter housing with check valve



The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

FMMX FMMX050

Designation & Ordering code

COMPLETE FILTER

Configuration example: FMMX050 | 3 | B | A | G | A10 | N | Z01 | EX

Series and size

FMMX050 Filter featuring MYCLEAN Filter Element

Length

1 | **2** | **3** | **4** | **5**

Valves (see page 665)

S	Without bypass
B	With bypass 6 bar
T	With check valve, without bypass
D	With check valve, with bypass 6 bar

Seals

A	NBR	**V**	FPM

Connections

A	M18x1.5 - ISO 6149	**E**	1/2" NPT
B	M22x1.5 - ISO 6149	**F**	3/4" NPT
C	G 1/2"	**G**	SAE 8 - 3/4" - 16 UNF
D	G 3/4"	**H**	SAE 12 - 1 1/16" - 12 UN

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm

Valves

Element Δp	S	B	T	D
N 20 bar	-	•	-	•
S 210 bar	•	-	•	-

Executions

zerospark

Z01	Upper connection for clogging indicator
Z02	Without connection for clogging indicator
Z03	Frontal connection for clogging indicator
Zxx	Customized

Certifications

EX	ATEX certifications

FILTER ELEMENT

Configuration example: HPX050 | 3 | A10 | A | N | Z01

Element series and size

HPX050 Filter Element with MYCLEAN feature

Element length

1 | **2** | **3** | **4** | **5**

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm

Seals

A	NBR
V	FPM

Element Δp

N	20 bar
S	210 bar

Execution

zerospark

Z01	MP Filtri standard
Zxx	Customized

CLOGGING INDICATORS

See page 788

DEH	Electrical differential pressure indicator 420 bar
DVA	Visual differential pressure indicator
DVM	Visual differential pressure indicator

PLUGS

See page 807

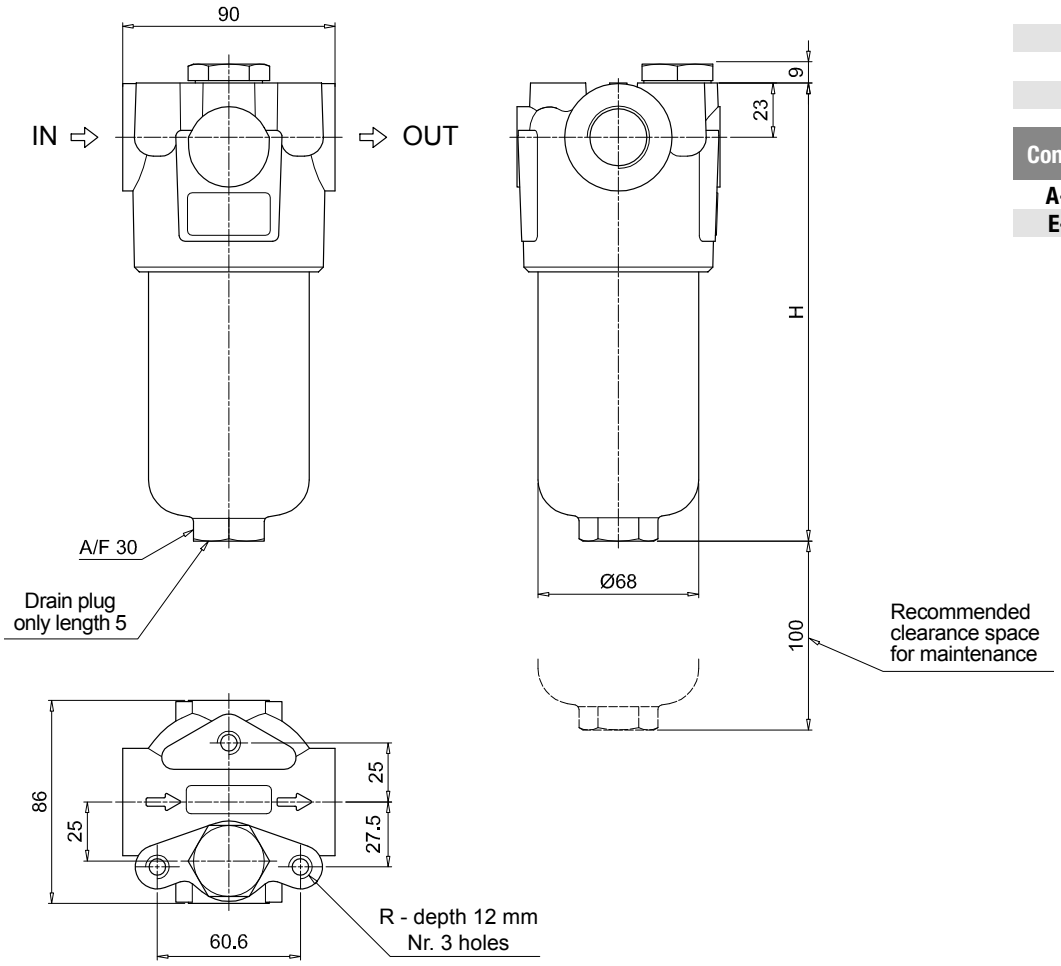
T2	Plug

MP FILTRI WWW.SUMY.IR

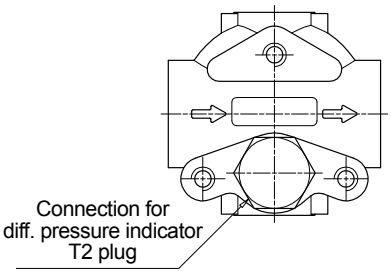
FMMX050

Filter length	H [mm]
1	158
2	195
3	237
4	285
5	407

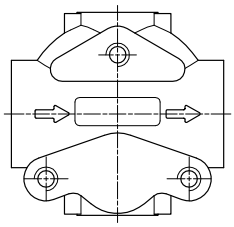
Connections	R
A-B-C-D	M10
E-F-G-H	3/8" UNC



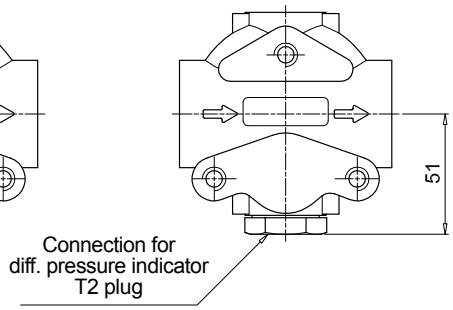
Execution P01



Execution P02



Execution P03



FMMX FMMX150

Designation & Ordering code

COMPLETE FILTER

Config. example: FMMX150 | 2 | B | A | D | 2 | M25 | N | Z01 | EX

Series and size

FMMX150 Filter featuring MYCLEAN Filter Element

Length

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

Valves (see page 471)

S	Without bypass
B	With bypass 6 bar
T	With check valve, without bypass
D	With check valve, with bypass 6 bar

Seals

A	NBR	**V**	FPM

Connections

C	G1”	**F**	1 1/4” NPT
D	G1 1/4”	**G**	SAE 16 - 1 5/16” - 12 UN
E	1” NPT	**H**	SAE 20 - 1 5/8” - 12 UN

Connections for differential indicator

1	Without connection
2	Upper connection
3	Frontal connection

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Element Δp		Valves S	B	T	D
N	20 bar	-	•	-	•
S	210 bar	•	-	•	-

Execution

zerospark

Z01	MP Filtri standard
Zxx	Customized

Certifications

EX	ATEX certifications

FILTER ELEMENT

Configuration example: HPX150 | 3 | A10 | A | N | Z01

Element series and size

HPX150 Filter Element with MYCLEAN feature

Element length

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

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm
M25	Wire mesh	25 µm

Seals

A	NBR
V	FPM

Element Δp

N	20 bar
S	210 bar

Execution

zerospark

Z01	MP Filtri standard
Zxx	Customized

CLOGGING INDICATORS

See page 788

DEH	Electrical differential pressure indicator 420 bar
DVA	Visual differential pressure indicator
DVM	Visual differential pressure indicator

PLUGS

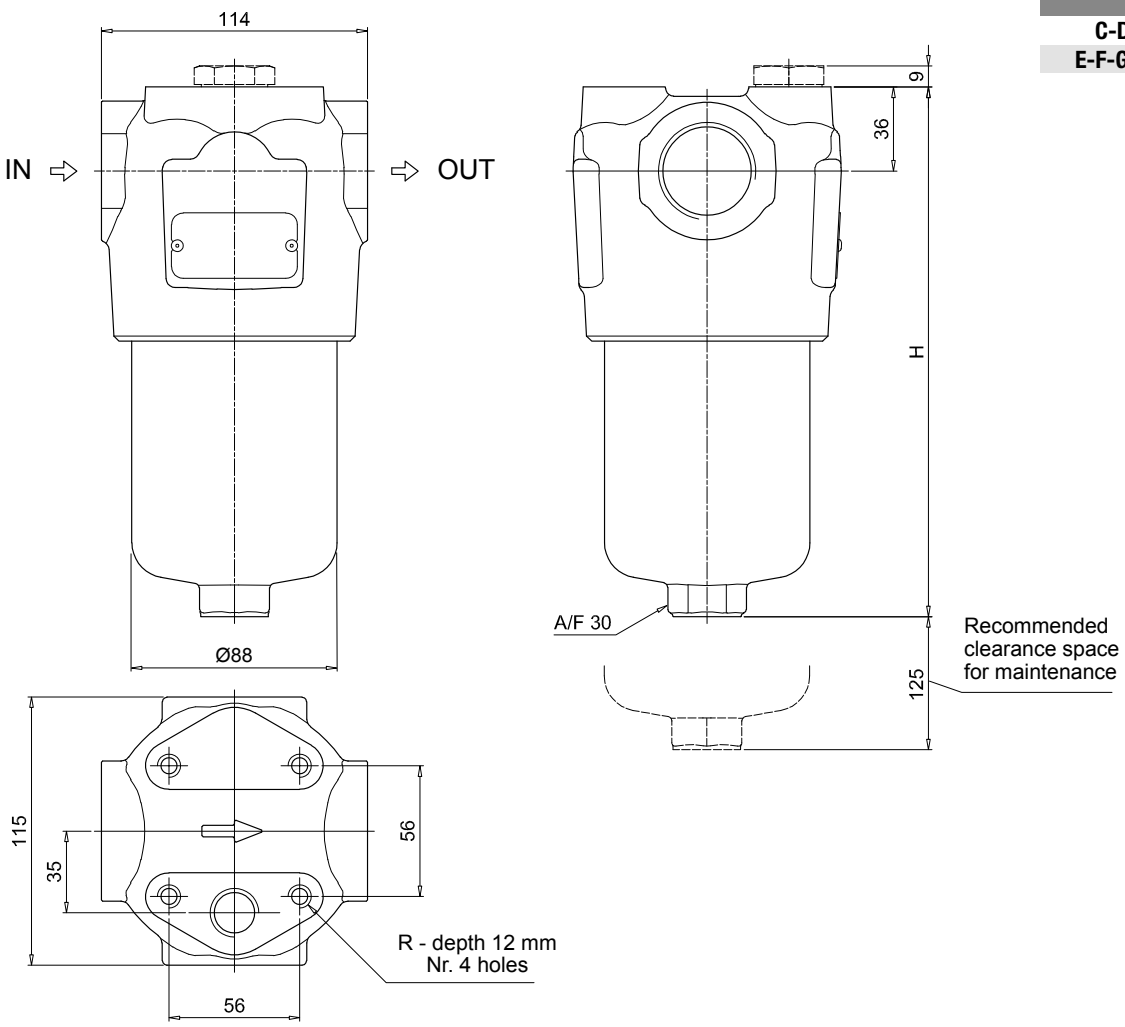
See page 807

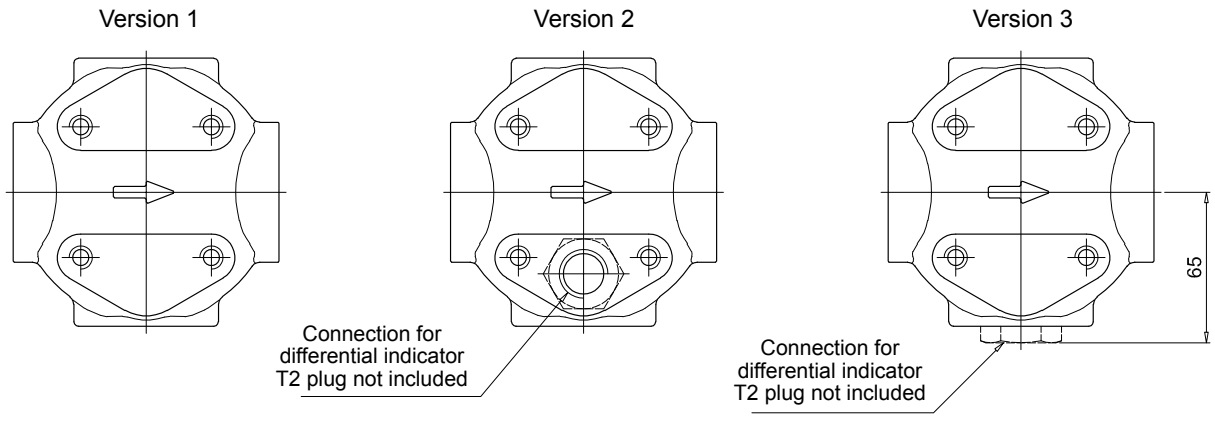
T2	Plug

MP FILTRI WWW.SUMY.IR

FMMX150	
Filter length	**H [mm]**
1	230
2	340
3	415

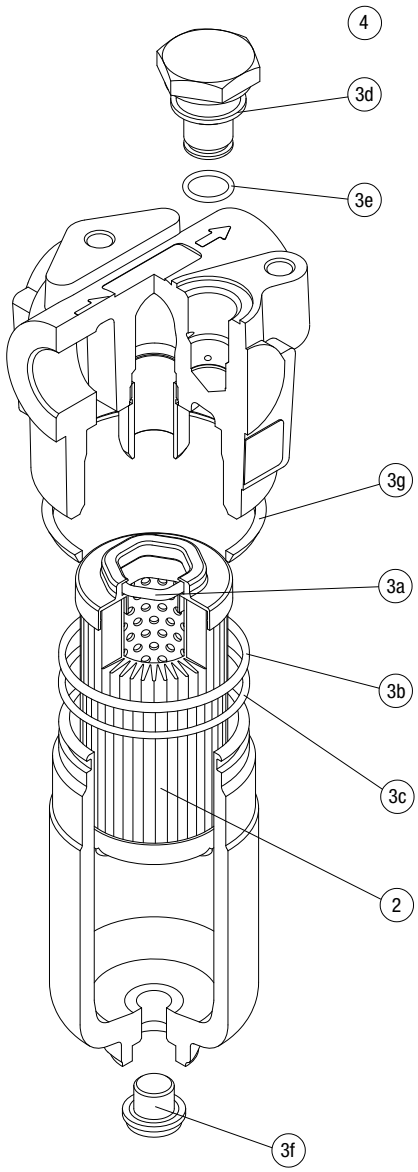
Connections	**R**
C-D	M10
E-F-G-H	3/8" UNC





Order number for spare parts

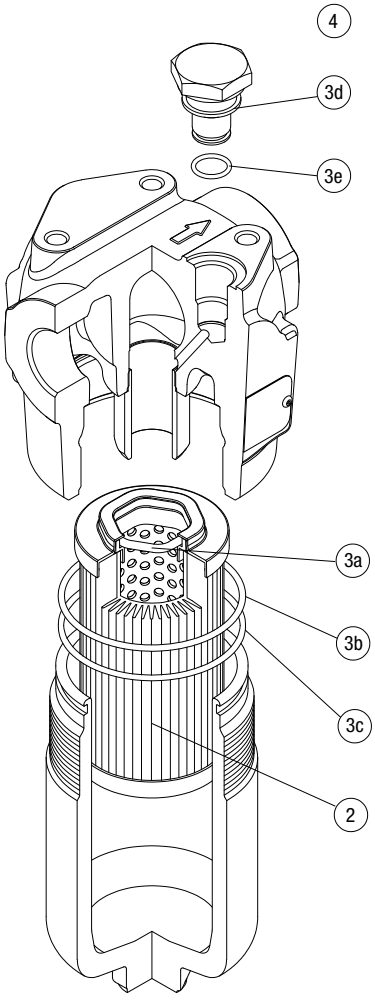
FMMX 050



Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3g)		Q.ty: 1 pc. 4	
Filter series	Filter element	Seal Kit code number NBR	FPM	Indicator connection plug NBR	FPM
FMMX 050	See order table	02050864	02050865	T2H	T2V

MP FILTRI WWW.SUMY.IR

FMMX 150



Item:	Q.ty: 1 pc. 2	Q.ty: 1 pc. 3 (3a ÷ 3e)		Q.ty: 1 pc. 4	
Filter series	**Filter element**	**Seal Kit code number NBR**	**FPM**	**Indicator connection plug NBR**	**FPM**
FMMX 150	See order table	02050868	02050869	T2H	T2V

MP FILTRI
WWW.SUMY.IR

FZP series

Maximum working pressure up to 42 Mpa (420 bar) - Flow rate up to 160 l/min



INSTALLATION, SERVICE AND MAINTENANCE MANUAL AND SAFETY INSTRUCTIONS

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to get updated electronic version
of the related document.

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FZP GENERAL INFORMATION

Description

Filters for potentially explosive atmosphere

In-line
Maximum working pressure up to 42 Mpa (420 bar)
Flow rate up to 160 l/min

FZP is a range of stainless steel high pressure filter for protection of sensitive components in high pressure hydraulic systems placed in difficult environmental conditions.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- 1 1/4" female threaded connections, for a maximum flow rate of 160 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Bypass valve, to relieve excessive pressure drop across the filter media
- Low collapse filter element with external support "R", for filter element protection against the back pressure caused by the check valve or the reverse flow in filters provided with the bypass valve
- High collapse filter element with external support "S", for filter element protection against the back pressure caused by the check valve or the reverse flow in filters not provided with the bypass valve
- High collapse filter element "U", for use with aggressive fluids
- Visual, electrical and electronic differential clogging indicators

Common applications:

- Off-shore equipment
- Water filtration systems
- Systems with strong or corrosive environmental conditions
- Systems with corrosive fluids

Technical data

Filter housing materials

- Head: AISI 316L
- Housing: AISI 316L
- Bypass valve: AISI 316L

Pressure

- Test pressure: 63 MPa (630 bar)
- Min. Burst pressure: 126 MPa (1260 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 42 MPa (420 bar)

Bypass valve

Opening pressure 6 bar ±10%

Filter element features

Filter	Filter element
FZP	HP

Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	with external support	R	20 bar
	High Δp with external support	S	210 bar
	High Δp with stainless steel components	U	210 bar

Please see ordering code tables to check element Δp series availability based on filter features.

Flow direction through the filter element:
From OUT to IN

Filter element components materials	Δp Series		
	R	**S**	**U**
End cap	Polyamide	Tinned Steel	Stainless steel
Core tube	Tinned Steel	Tinned Steel	Stainless steel
External support	Wire mesh epoxy painted	Wire mesh epoxy painted	Stainless steel
Internal support	Wire mesh epoxy painted	Stainless steel	Stainless steel
Pre-filter	Synthetic	Synthetic	Synthetic

Temperature

Seals	Ambient Temperature	Max fluid Temperature	Temperature Class	Max surface temperature
NBR	-15 °C ÷ +80 °C	+80 °C	T6	T85 °C
FPM / MFQ	-15 °C ÷ +80 °C	+80 °C	T6	T85 °C
	-15 °C ÷ +95 °C	+95 °C	T5	T100 °C
	-15 °C ÷ +110 °C	+110 °C	T4	T115 °C

Seals

- Standard NBR series A
- Optional FPM series V
- Optional MFQ series F

Note

FZP filters are provided for vertical mounting

Filter with:

NBR seal in configuration zerospark®

II 3G Ex h IIC T6 Gc X
II 3D Ex h IIIC T85°C Dc X

FPM / MFQ seal in configuration zerospark®

II 3G Ex h IIC T6... T4 Gc X
II 3D Ex h IIIC T85°C...T115°C Dc X

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]					Volumes [dm³]				
	Length	1	2	3	4	Length	1	2	3	4
FZP 039		-	4.5	5.1	5.6		-	0.19	0.26	0.34
FZP 136		8.3	10.2	11.5	-		0.45	0.78	1.00	-

MP FILTRI WWW.SUMY.IR

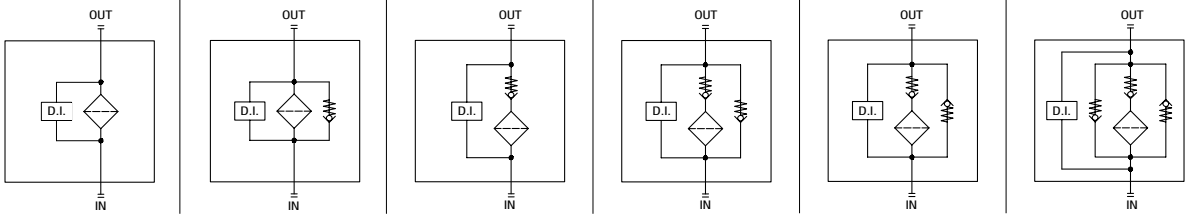
Flow rates [l/min]

		Filter element design - R Series					Filter element design - S-U Series				
Filter series	Length	A03	A06	A10	A16	A25	A03	A06	A10	A16	A25
	2	19	25	43	50	59	19	23	41	45	55
FZP 039	**3**	34	37	53	62	74	31	34	48	52	66
	4	42	46	63	72	81	38	41	55	71	78
	1	63	67	102	108	136	47	53	87	89	127
FZP 136	**2**	95	100	122	123	159	81	95	113	115	138
	3	122	124	148	150	160	106	116	135	141	151

Maximum flow rate for a complete stainless steel high pressure filter with a pressure drop Δp = 1.5 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

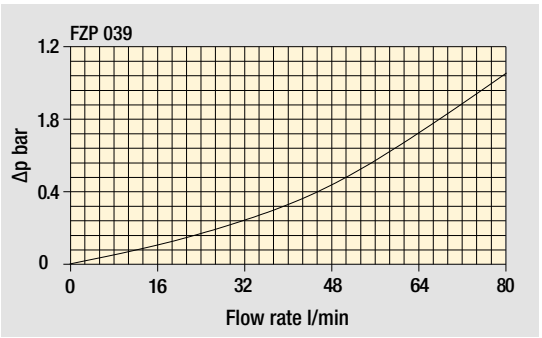
Hydraulic diagram

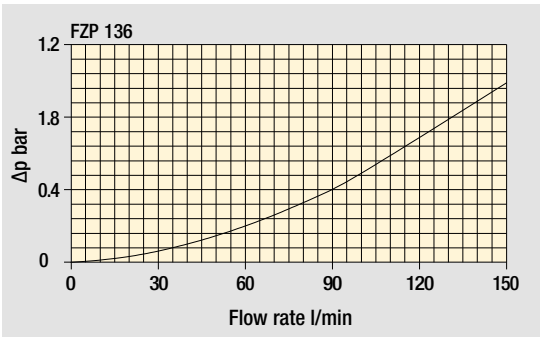
Filter series	Style S	Style B	Style T	Style D	Style V	Style Z
FZP 039	•	•	•	•	•	•
FZP 136	•	•	-	-	-	-



Pressure drop

Filter housings Δp pressure drop





The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

Designation & Ordering code

COMPLETE FILTER

Configuration example: FZP039 | 2 | B | F | B | 2 | A03 | U | Z01 | EX

Filter series and size
FZP039

Filter length
2 | **3** | **4**

Valves

S	Without bypass	**D**	With reverse flow, with bypass 6 bar
B	With bypass 6 bar	**V**	With reverse flow, without bypass
T	With reverse flow, without bypass	**Z**	With reverse flow, with bypass 6 bar

Seals

A	NBR
V	FPM
F	MFQ

Connections

A	G 1/2”
B	1/2” NPT
C	SAE 8 - 3/4” - 16 UNF

Connections for differential pressure indicator

1	Without connection
2	With connection

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm

Element Δp		Valves S	B	T	D	V	Z
R	20 bar	-	•	-	•	-	•
S	210 bar	•	-	•	-	•	-
U	210 bar, stainless steel filter element	•	•	•	•	•	•

Execution
zerospark
Z01 MP Filtri standard
Zxx Customized

Certifications
EX ATEX certifications

FILTER ELEMENT

Configuration example: HP039 | 2 | A03 | F | U | Z01

Element series and size
HP039

Element length
2 | **3** | **4**

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm

Seals

A	NBR
V	FPM
F	MFQ

Element Δp

R	20 bar
S	210 bar
U	210 bar, stainless steel filter element

Execution
zerospark
Z01 MP Filtri standard
Zxx Customized

CLOGGING INDICATORS

See page 788

DEH Electrical differential pressure indicator
DVX Visual differential pressure indicator
DVY Visual differential pressure indicator

PLUGS

See page 807

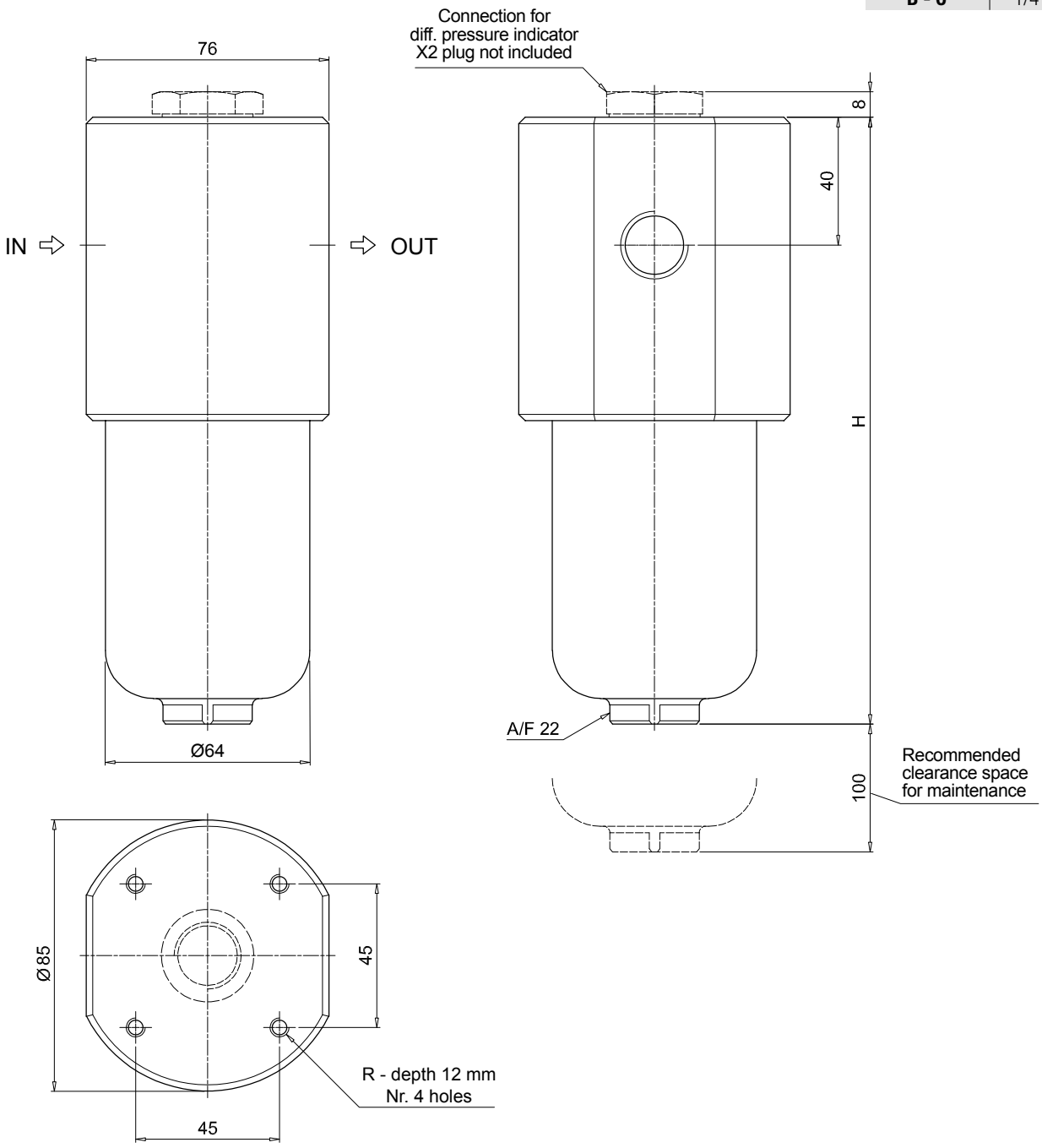
X2 Stainless steel plug (not included)

MP FILTRI WWW.SUMY.IR

Dimensions

FZP039	
Filter length	**H [mm]**
2	179
3	222
4	266

Connections	R
A	M6
B - C	1/4" UNC



Designation & Ordering code

COMPLETE FILTER

Configuration example: FZP136 | 1 | B | A | B | 6 | A03 | R | Z01 | EX

Filter series and size
FZP136

Filter length
1 | **2** | **3**

Valves
S Without bypass
B With bypass 6 bar

Seals
A NBR
V FPM
F MFQ

Connections
A G 3/4"
B 3/4" NPT
C SAE 12 - 1 1/16" - 12 UN
D G 1"
E 1" NPT
F SAE 16 - 1 5/16" - 12 UN
G G 1 1/4"
H 1 1/4" NPT
I SAE 20 - 1 5/8" - 12 UN

Connections for differential pressure indicator
1 Without connection
6 With two connections on both sides

Filtration rating (filter media)
A03 Inorganic microfiber 3 µm
A06 Inorganic microfiber 6 µm
A10 Inorganic microfiber 10 µm
A16 Inorganic microfiber 16 µm
A25 Inorganic microfiber 25 µm

Element Δp	Valves S	Valves B
R 20 bar	-	•
S 210 bar	•	-
U 210 bar, stainless steel filter element	•	•

Execution
zerospark
Z01 MP Filtri standard
Zxx Customized

Certifications
EX ATEX certifications

FILTER ELEMENT

Configuration example: HP135 | 1 | A03 | A | R | Z01

Element series and size
HP135

Element length
1 | **2** | **3**

Filtration rating (filter media)
A03 Inorganic microfiber 3 µm
A06 Inorganic microfiber 6 µm
A10 Inorganic microfiber 10 µm
A16 Inorganic microfiber 16 µm
A25 Inorganic microfiber 25 µm

Seals
A NBR
V FPM
F MFQ

Element Δp
R 20 bar
S 210 bar
U 210 bar, stainless steel filter element

Execution
zerospark
Z01 MP Filtri standard
Zxx Customized

CLOGGING INDICATORS

See page 788

DEH Electrical differential pressure indicator
DVX Visual differential pressure indicator
DVY Visual differential pressure indicator

PLUGS

See page 807

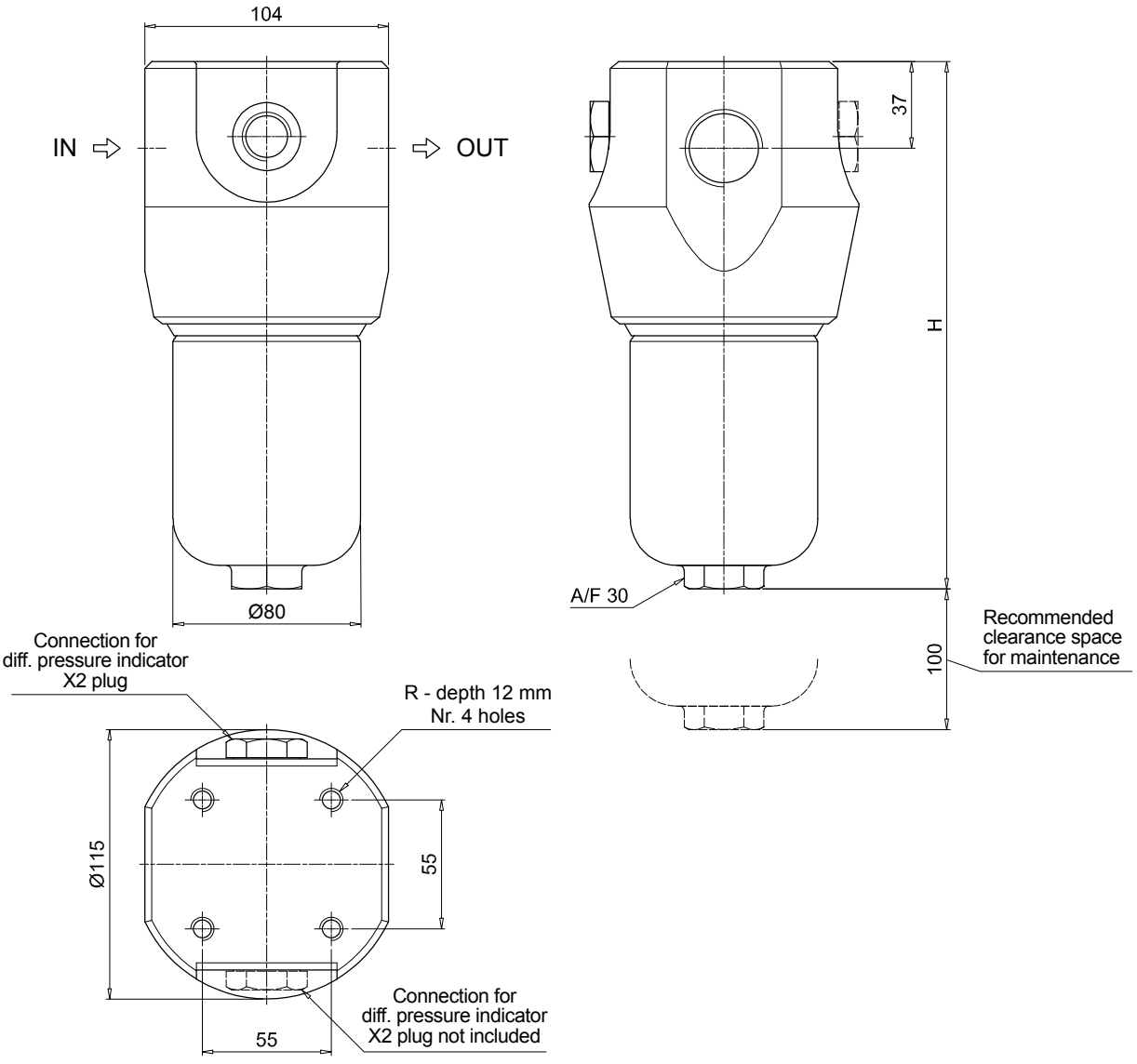
X2 Stainless steel plug (not included)

MP FILTRI WWW.SUMY.IR

Dimensions

FZP136	
Filter length	**H [mm]**
1	222
2	335
3	410

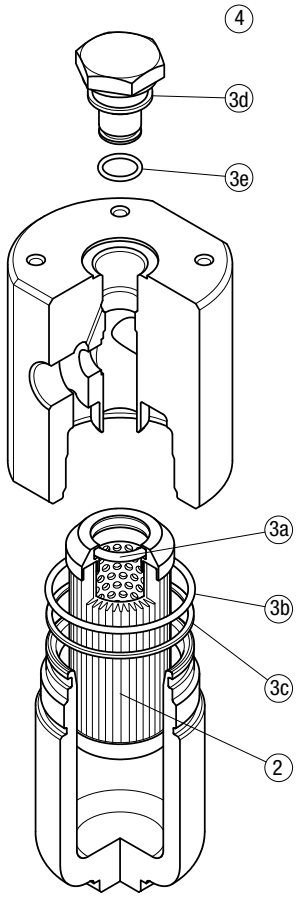
Connections	R
A	M10
B - C	3/8" UNC
D	M10
E - F	3/8" UNC
G	M10
H - I	3/8" UNC



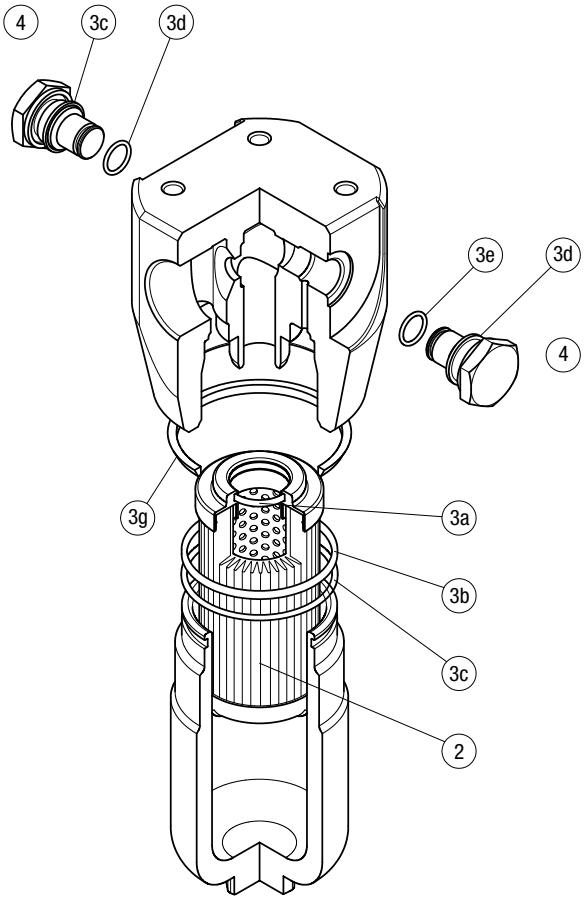
The position of the X2 plug is reversible

Order number for spare parts

FZP 039



FZP 136



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3g)		Q.ty: 1 pc. (4)	
Filter series	**Filter element**	**Seal Kit code number NBR**	**FPM**	**Indicator connection plug NBR**	**FPM**
FZP 039	See order table	02050299	02050300	X2H	X2V
FZP 136		02050636	02050637		

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MP FILTRI
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FZH series

Maximum working pressure up to 70 Mpa (700 bar) - Flow rate up to 80 l/min



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FZH GENERAL INFORMATION

Description

Filters for potentially explosive atmosphere

In-line
Maximum working pressure up to 70 Mpa (700 bar)
Flow rate up to 80 l/min

FZH is a range of stainless steel high pressure filter for protection of sensitive components in high pressure hydraulic systems placed in difficult environmental conditions.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- 1/2" female threaded connections, for a maximum flow rate of 80 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- Bypass valve, to relieve excessive pressure drop across the filter media
- Low collapse filter element "N", for use with filters provided with bypass valve
- High collapse filter element "H", for use with filters not provided with bypass valve
- Low collapse filter element with external support "R", for filter element protection against the back pressure caused by the check valve or the reverse flow in filters provided with the bypass valve
- High collapse filter element with external support "S", for filter element protection against the back pressure caused by the check valve or the reverse flow in filters not provided with the bypass valve
- High collapse filter element "U", for use with aggressive fluids
- Visual, electrical and electronic differential clogging indicators

Common applications:

- Off-shore equipment
- Water filtration systems
- Systems with strong or corrosive environmental conditions
- Systems with corrosive fluids

Technical data

Filter housing materials

- Head: AISI 316L
- Housing: AISI 316L
- Bypass valve: AISI 316L

Pressure

- Test pressure: 105 MPa (1050 bar)
- Min. Burst pressure: 210 MPa (2100 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 70 MPa (700 bar)

Bypass valve

Opening pressure 6 bar ±10%

Filter element features

Filter	Filter element
FZH	HP

Δp Element type

Element media	Construction	Δp Series	Δp
A - Microfiber	Standard	N	20 bar
	with external support	R	20 bar
	High Δp	H	210 bar
	High Δp with external support	S	210 bar
	High Δp with stainless steel components	U	210 bar

Please see ordering code tables to check element Δp series availability based on filter features.

Flow direction through the filter element:
From OUT to IN

Filter element components materials	Δp Series		
	N - R	H - S	U
End cap	Polyamide	Tinned Steel	Stainless steel
Core tube	Tinned Steel	Tinned Steel	Stainless steel
External support	Wire mesh epoxy painted	Wire mesh epoxy painted	Stainless steel
Internal support	Wire mesh epoxy painted	Stainless steel	Stainless steel
Pre-filter	Synthetic	Synthetic	Synthetic

Temperature

Seals	Ambient Temperature	Max fluid Temperature	Temperature Class	Max surface temperature
NBR	-15 °C ÷ +80 °C	+80 °C	T6	T85 °C
FPM / MFQ	-15 °C ÷ +80 °C	+80 °C	T6	T85 °C
	-15 °C ÷ +95 °C	+95 °C	T5	T100 °C
	-15 °C ÷ +110 °C	+110 °C	T4	T115 °C

Seals

- Standard NBR series A
- Optional FPM series V
- Optional MFQ series F

Note

FZH filters are provided for vertical mounting

Filter with:

NBR seal in configuration zerospark®

II 3G Ex h IIC T6 Gc X
II 3D Ex h IIIC T85°C Dc X

FPM / MFQ seal in configuration zerospark®

II 3G Ex h IIC T6... T4 Gc X
II 3D Ex h IIIC T85°C...T115°C Dc X

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]					Volumes [dm³]				
	Length	1	2	3	4	Length	1	2	3	4
FZH 012		2.1	2.2	2.7	3.3		0.10	0.12	0.15	0.20
FZH 040		-	4.5	5.1	5.6		-	0.19	0.26	0.34

MP FILTRI WWW.SUMY.IR

Flow rates [l/min]

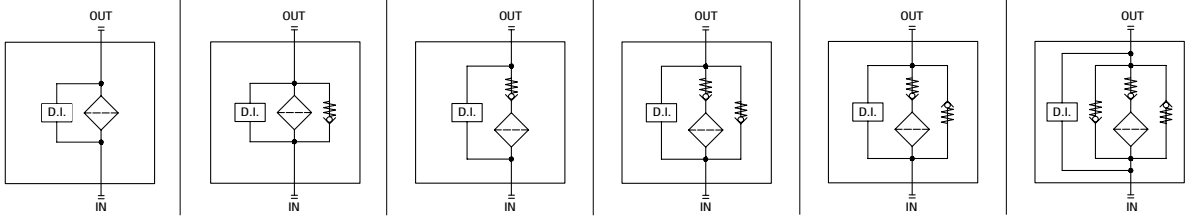
		Filter element design - N Series					Filter element design - H-U Series				
Filter series	Length	A03	A06	A10	A16	A25	A03	A06	A10	A16	A25
FZH 012	1	4	6	8	9	11	3	5	6	7	9
	2	7	9	17	20	26	5	7	14	17	23
	3	11	14	25	27	32	11	14	24	27	32
	4	17	20	29	31	34	13	16	26	29	33

		Filter element design - R Series					Filter element design - S-U Series				
Filter series	Length	A03	A06	A10	A16	A25	A03	A06	A10	A16	A25
FZH 040	2	19	25	43	50	59	19	23	41	45	55
	3	34	37	53	62	74	31	34	48	52	66
	4	42	46	63	72	81	38	41	55	71	78

Maximum flow rate for a complete stainless steel high pressure filter with a pressure drop Δp = 1.5 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

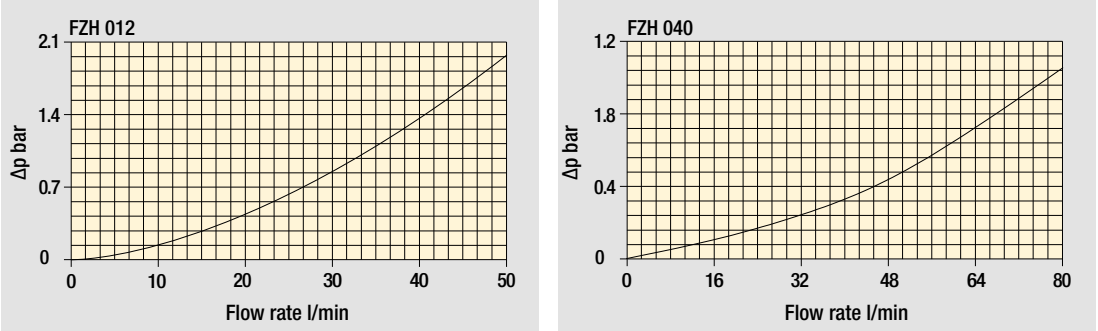
Hydraulic diagram

Filter series	Style S	Style B	Style T	Style D	Style V	Style Z
FZH 012	•	•	-	-	•	•
FZH 040	•	•	•	•	•	•



Pressure drop

Filter housings Δp pressure drop



The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

Designation & Ordering code

COMPLETE FILTER

Configuration example: FZH012 | 2 | B | F | B | 2 | A03 | U | Z01 | EX

Filter Series and size
FZH012

Filter length
1 | **2** | **3** | **4**

Valves
- **S** Without bypass
- **B** With bypass 6 bar
- **V** With reverse flow, without bypass
- **Z** With reverse flow, with bypass 6 bar

Seals
- **A** NBR
- **V** FPM
- **F** MFQ

Connections
- **A** G 1/4”
- **B** 1/4” NPT
- **C** SAE 5 - 1/2” - 20 UNF
- **D** G 3/8”
- **E** 3/8” NPT
- **F** SAE 6 - 9/16” - 18 UNF

Connection for differential pressure indicator
- **1** Without connection
- **2** With connection

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm

Element Δp

		Valves S	B	V	Z
N	20 bar	-	•	-	•
H	210 bar	•	-	•	-
U	210 bar stainless steel filter element	•	•	•	•

Execution
zerospark
- **Z01** MP Filtri standard
- **Zxx** Customized

Certifications
- **EX** ATEX certifications

FILTER ELEMENT

Configuration example: HP011 | 2 | A03 | F | U | Z01

Element series and size
HP011

Element length
1 | **2** | **3** | **4**

Filtration rating (filter media)

A03	Inorganic microfiber	3 µm
A06	Inorganic microfiber	6 µm
A10	Inorganic microfiber	10 µm
A16	Inorganic microfiber	16 µm
A25	Inorganic microfiber	25 µm

Seals
- **A** NBR
- **V** FPM
- **F** MFQ

Element Δp
- **N** 20 bar
- **H** 210 bar
- **U** 210 bar, stainless steel filter element

Execution
zerospark
- **Z01** MP Filtri standard
- **Zxx** Customized

CLOGGING INDICATORS

See page 788

DVZ Visual differential pressure indicator

PLUGS

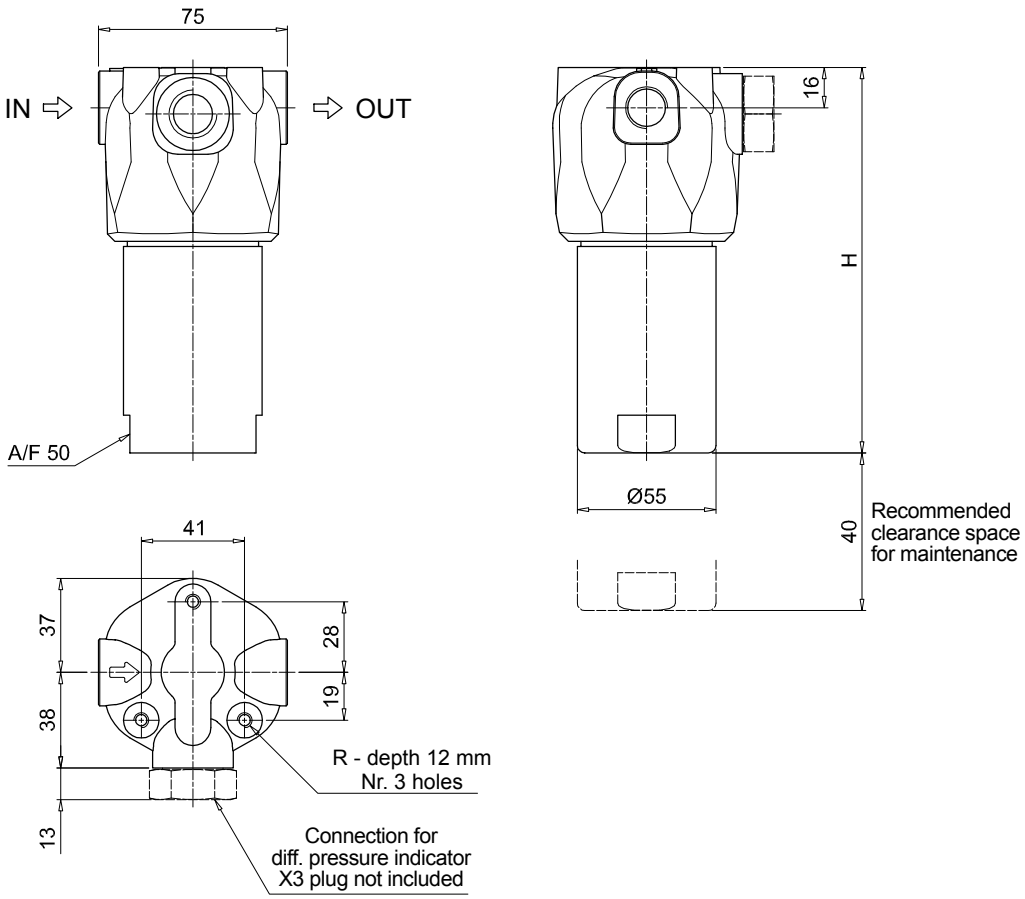
See page 807

X3 Stainless steel plug (not included)

MP FILTRI WWW.SUMY.IR

FZH012	
Filter length	**H [mm]**
1	93
2	104
3	154
4	204

Connections	**R**
A	M6
B - C	1/4" UNC
D	M6
E - F	1/4" UNC



Designation & Ordering code

COMPLETE FILTER

Configuration example: FZH040 | 2 | T | A | A | 2 | A03 | S | Z01 | EX

Filter Series and size
FZH040

Filter length
2 | **3** | **4**

Valves
S Without bypass
B With bypass 6 bar
T With check valve, without bypass
D With check valve, with bypass 6 bar
V With reverse flow, without bypass
Z With reverse flow, with bypass 6 bar

Seals
A NBR
F MFQ
V FPM

Connections
A G 1/2”
B 1/2” NPT
C SAE 8 - 3/4” - 16 UNF

Connection for differential pressure indicator
1 Without connection
2 With connection

Filtration rating (filter media)
A03 Inorganic microfiber 3 µm
A06 Inorganic microfiber 6 µm
A10 Inorganic microfiber 10 µm
A16 Inorganic microfiber 16 µm
A25 Inorganic microfiber 25 µm

Element Δp	Valves S	B	T	D	V	Z
R 20 bar	-	•	-	•	-	•
S 210 bar	•	-	•	-	•	-
U 210 bar, stainless steel filter element	•	•	•	•	•	•

Execution
zerospark
Z01 MP Filtri standard
Zxx Customized

Certifications
EX ATEX certifications

FILTER ELEMENT

Configuration example: HP039 | 2 | A03 | A | S | Z01

Element series and size
HP039

Element length
2 | **3** | **4**

Filtration rating (filter media)
A03 Inorganic microfiber 3 µm
A06 Inorganic microfiber 6 µm
A10 Inorganic microfiber 10 µm
A16 Inorganic microfiber 16 µm
A25 Inorganic microfiber 25 µm

Seals
A NBR
V FPM
F MFQ

Element Δp
R 20 bar
S 210 bar
U 210 bar, stainless steel filter element

Execution
zerospark
Z01 MP Filtri standard
Zxx Customized

CLOGGING INDICATORS

See page 788

DVZ Visual differential pressure indicator

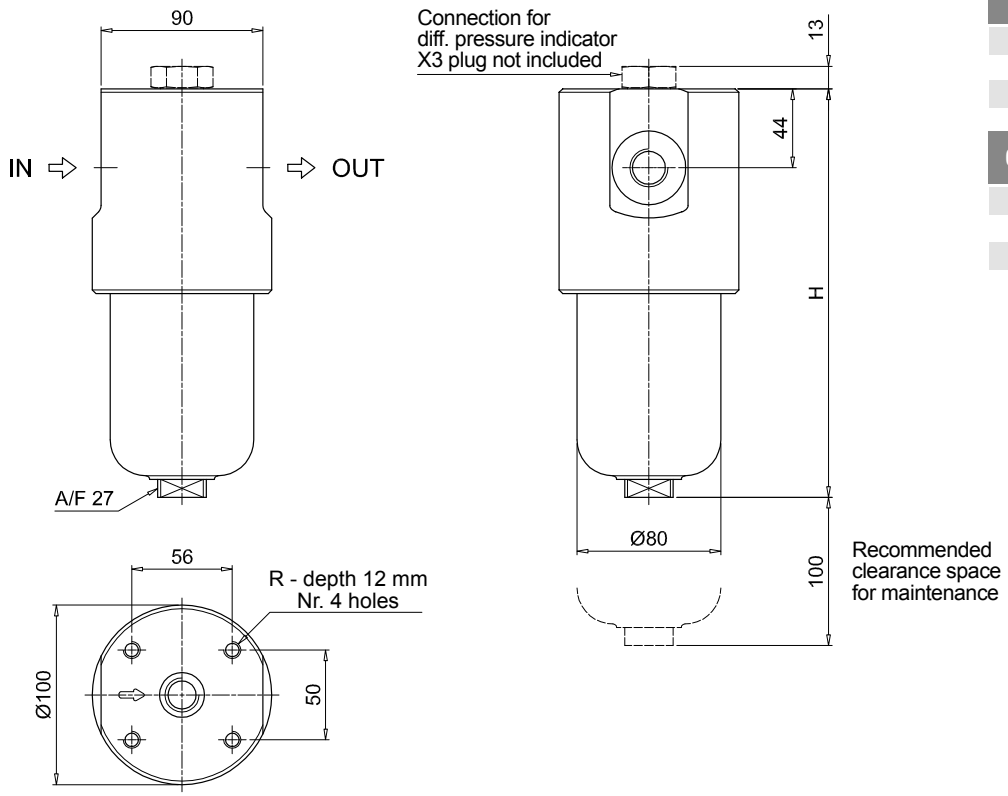
PLUGS

See page 807

X3 Stainless steel plug (not included)

MP FILTRI WWW.SUMY.IR

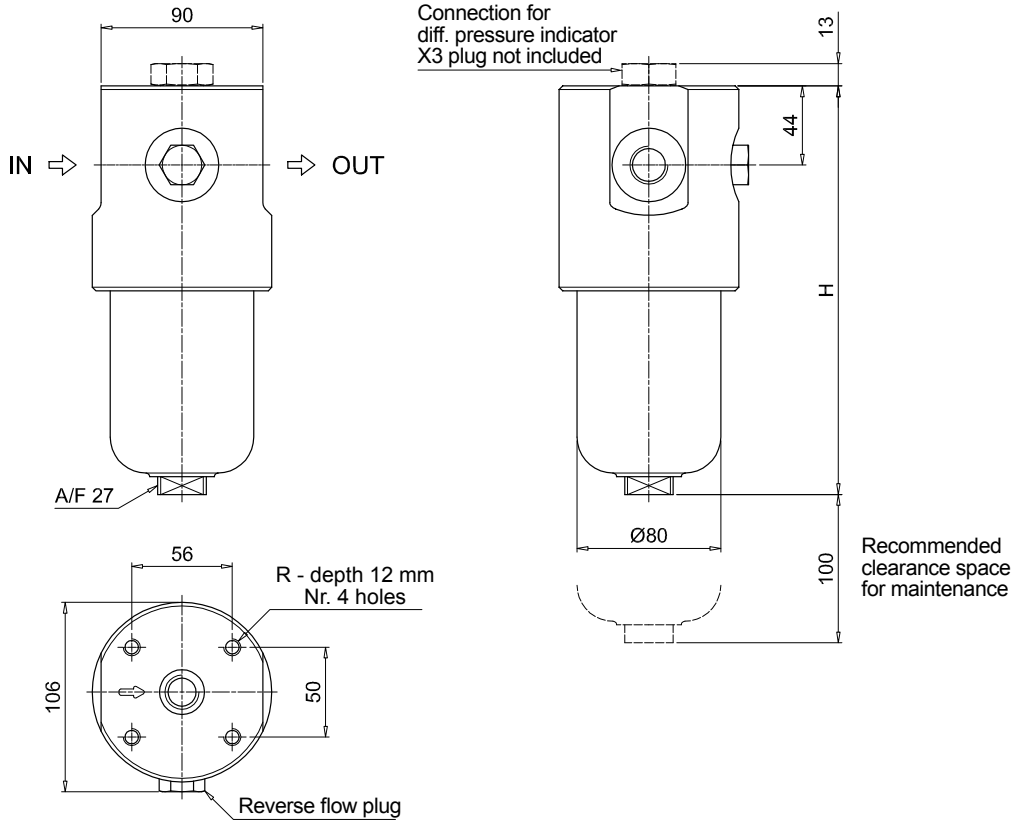
Valves S - B - T - D



FZH040	
Filter length	**H [mm]**
2	204
3	247
4	291

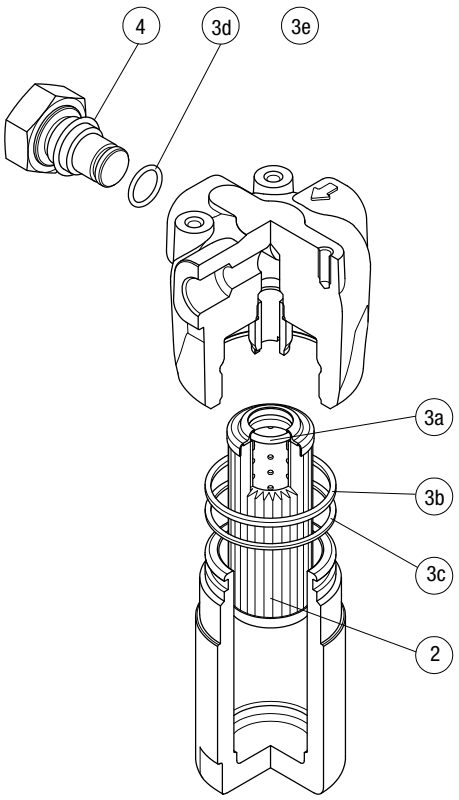
Connections	**R**
A	M10
B	3/8" UNC
C	3/8" UNC

Valves V - Z

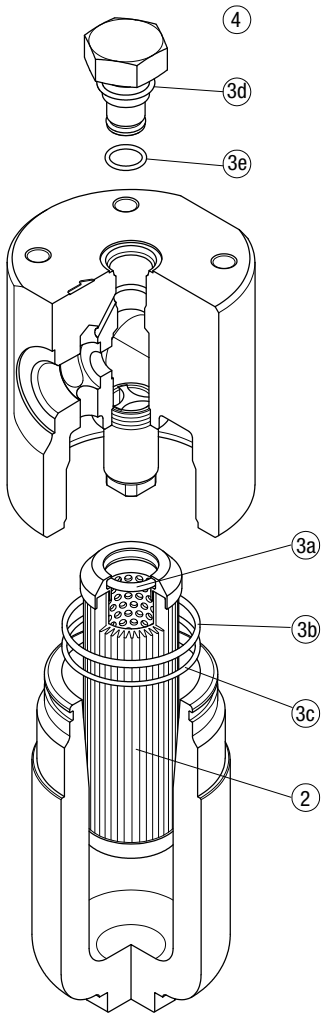


Order number for spare parts

FZH 012



FZH 040



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3e)		Q.ty: 1 pc. (4)	
Filter series	Filter element	Seal Kit code number NBR	Seal Kit code number FPM	Indicator connection plug NBR	Indicator connection plug FPM
FZH 012	See order table	02050856	02050857	X3H	X3V
FZH 040		02050860	02050861		

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MP FILTRI
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FZX series

Maximum working pressure up to 100 Mpa (1000 bar) - Flow rate up to 10 l/min



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FZX GENERAL INFORMATION

Description

Filters for potentially explosive atmosphere

In-line
Maximum working pressure up to 100 Mpa (1000 bar)
Flow rate up to 10 l/min

FZX is a range of stainless steel high pressure filter for protection of sensitive components in high pressure hydraulic systems placed in difficult environmental conditions.
They are directly connected to the lines of the system through the hydraulic fittings.

Available features:

- 1/2" female threaded connections, for a maximum flow rate of 10 l/min
- Fine filtration rating, to get a good cleanliness level into the system
- High collapse filter element "H", for use with filters not provided with bypass valve
- High collapse filter element "U", for use with aggressive fluids

Common applications:

- Off-shore equipment
- Water filtration systems
- Systems with strong or corrosive environmental conditions
- Systems with corrosive fluids

Technical data

Filter housing materials

- Head: AISI 316L
- Housing: AISI 316L
- Bypass valve: AISI 316L

Pressure

- Test pressure: 150 MPa (1500 bar)
- Min. Burst pressure: 300 MPa (3000 bar)
- Pulse pressure fatigue test: 1 000 000 cycles with pressure from 0 to 100 MPa (1000 bar)

Bypass valve

Opening pressure 6 bar ±10%

Filter element features

Filter	Filter element
FZX	HP

Δp Element type			
Element media	**Construction**	**Δp Series**	**Δp**
A - Microfiber	High Δp	H	210 bar
	High Δp with stainless steel components	U	210 bar

Please see ordering code tables to check element Δp series availability based on filter features.

Flow direction through the filter element:
From OUT to IN

Filter element components materials	Δp Series	
	H	U
End cap	Tinned Steel	Stainless steel
Core tube	Tinned Steel	Stainless steel
External support	Wire mesh epoxy painted	Stainless steel
Internal support	Stainless steel	Stainless steel
Pre-filter	Synthetic	Synthetic

Temperature

Seals	Ambient Temperature	Max fluid Temperature	Temperature Class	Max surface temperature
NBR	-15 °C ÷ +80 °C	+80 °C	T6	T85 °C
FPM / MFQ	-15 °C ÷ +80 °C	+80 °C	T6	T85 °C
	-15 °C ÷ +95 °C	+95 °C	T5	T100 °C
	-15 °C ÷ +110 °C	+110 °C	T4	T115 °C

Seals

- Standard NBR series A
- Optional FPM series V
- Optional MFQ series F

Note

FZX filters are provided for vertical mounting

Filter with:

NBR seal in configuration zerospark®

II 3G Ex h IIC T6 Gc X
II 3D Ex h IIIC T85°C Dc X

FPM / MFQ seal in configuration zerospark®

II 3G Ex h IIC T6... T4 Gc X
II 3D Ex h IIIC T85°C...T115°C Dc X

Weights [kg] and volumes [dm³]

Filter series	Weights [kg]					Volumes [dm³]				
	Length	1	2	3	4	Length	1	2	3	4
FZX 011		-	-	6.5	-		-	-	0.15	-

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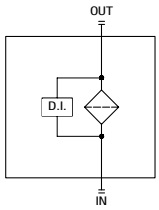
Flow rates [l/min]

		Filter element design - H-U Series				
Filter series	Length	A03	A06	A10	A16	A25
FZX 011	**3**	1.57	1.63	1.73	1.74	1.77

Maximum flow rate for a complete stainless steel high pressure filter with a pressure drop Δp = 1.5 bar.
The reference fluid has a kinematic viscosity of 30 mm^2/s (cSt) and a density of 0.86 kg/dm^3.
For different pressure drop or fluid viscosity we recommend to use our selection software available on www.mpfiltri.com.
You can also calculate the right size using the formulas present on the FILTER SIZING paragraph at the beginning of the full catalogue or at the beginning of the filter family brochure.
Please, contact our Sales Department for further additional information.

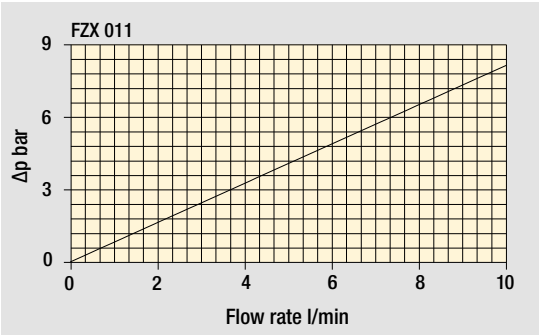
Hydraulic diagram

Filter series	Style S
FZX 011	•



Pressure drop

Filter housings Δp pressure drop



The curves are plotted using mineral oil with density of 0.86 kg/dm^3 in compliance with ISO 3968. Δp varies proportionally with density.

Designation & Ordering code

COMPLETE FILTER

Configuration example: FZX011 | 3 | S | V | B | 1 | A03 | U | Z01 | EX

Filter series and size
FZX011

Filter length
3

Bypass valve
S Without bypass

Seals
A NBR
V FPM
F MFQ

Connections

700 bar
A G 1/4”
B 1/4” NPT
G G 1/2”
H 1/2” NPT”

Autoclave 1000 bar
M 9/16” - 18 UNF
L 3/4” - 14 NPS

Connection for differential pressure indicator
1 Without connection

Filtration rating (filter media)
A03 Inorganic microfiber 3 µm
A06 Inorganic microfiber 6 µm
A10 Inorganic microfiber 10 µm
A16 Inorganic microfiber 16 µm
A25 Inorganic microfiber 25 µm

Element Δp
H 210 bar
U 210 bar, stainless steel filter element

Execution
zerospark
Z01 MP Filtri standard
Zxx Customized

Certifications
EX ATEX certifications

FILTER ELEMENT

Example: HP011 | 3 | A03 | V | U | Z01

Element series and size
HP011

Element length
3

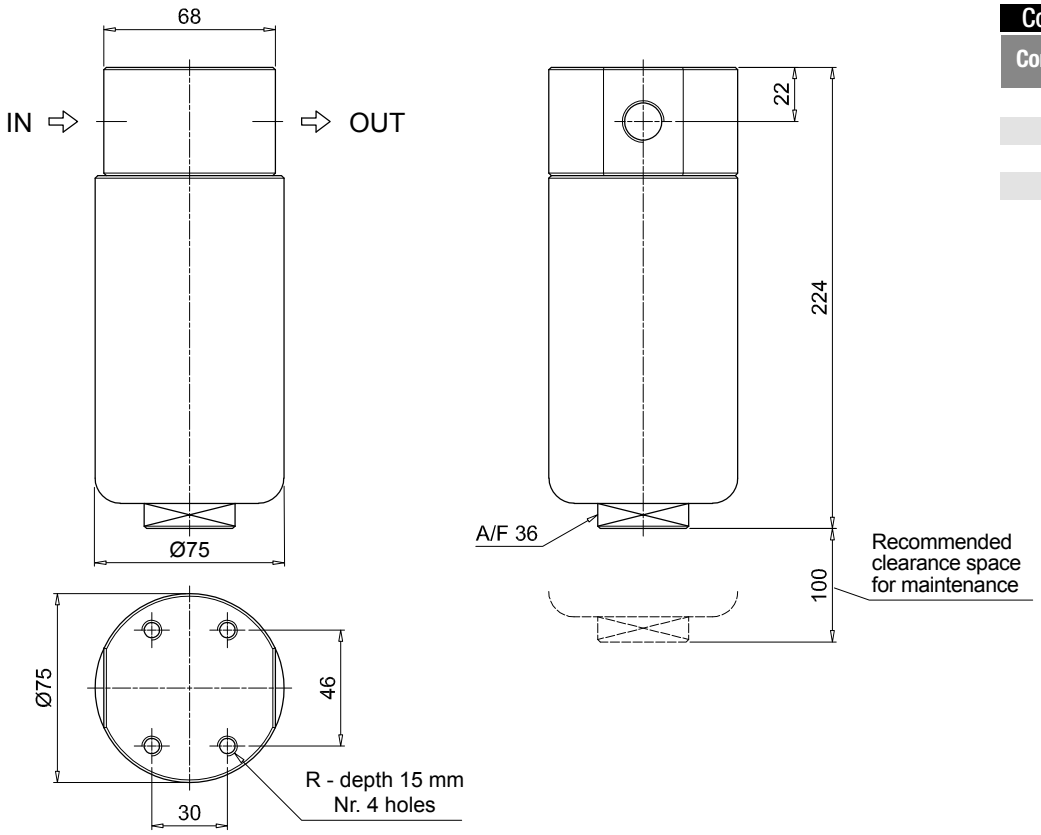
Filtration rating (filter media)
A03 Inorganic microfiber 3 µm
A06 Inorganic microfiber 6 µm
A10 Inorganic microfiber 10 µm
A16 Inorganic microfiber 16 µm
A25 Inorganic microfiber 25 µm

Seals
A NBR
V FPM
F MFQ

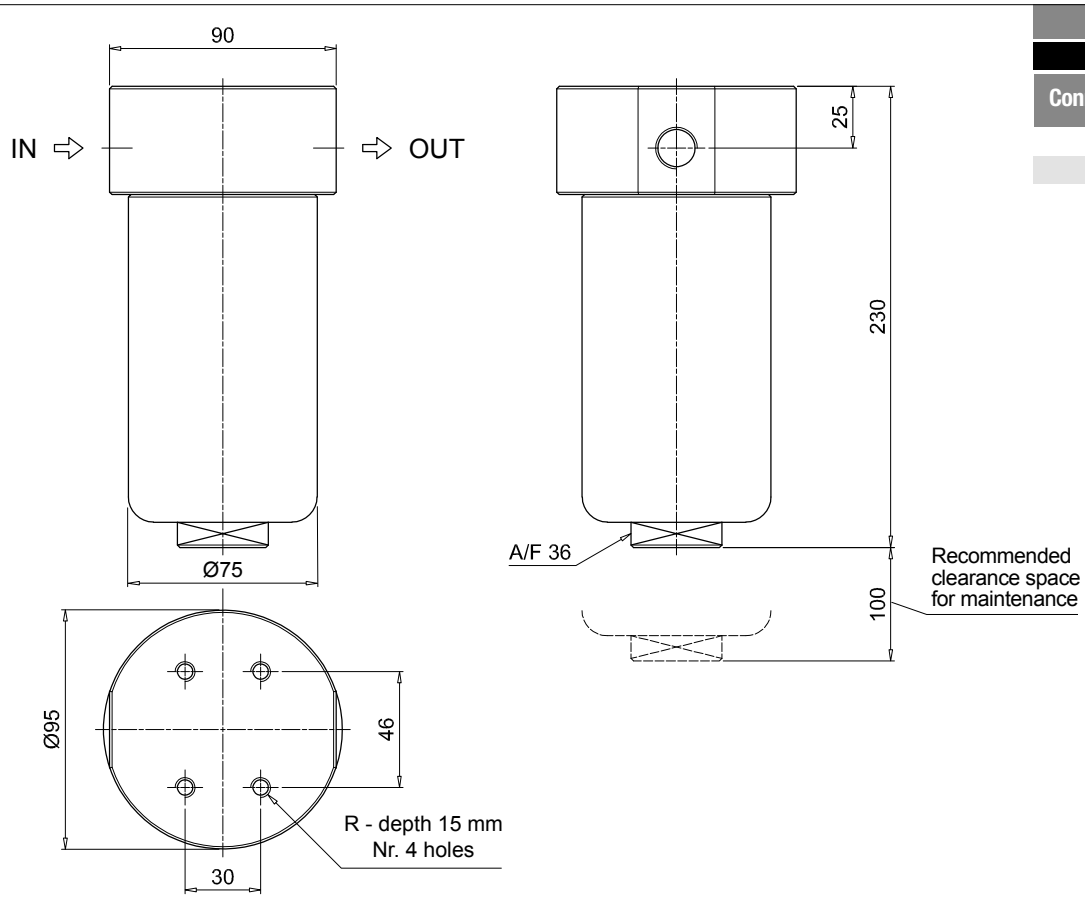
Element Δp
H 210 bar
U 210 bar, stainless steel filter element

Execution
zerospark
Z01 MP Filtri standard
Zxx Customized

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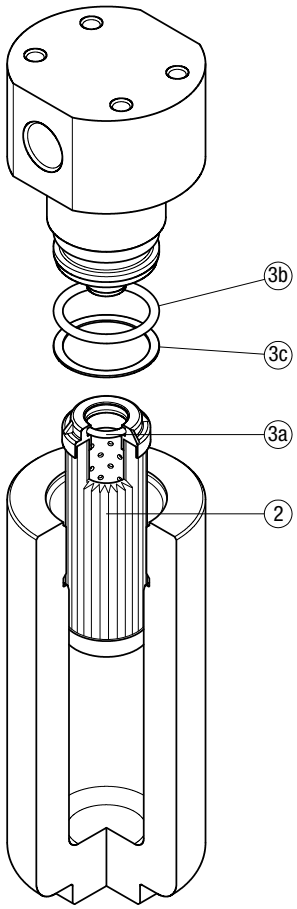
FZX011	
Connection A - B - G - H	
Connections	**R**
A	M8
B	5/16" UNC
G	M8
H	5/16" UNC



FZX011	
Connection M - L	
Connections	**R**
M	M8
L	M8

Order number for spare parts

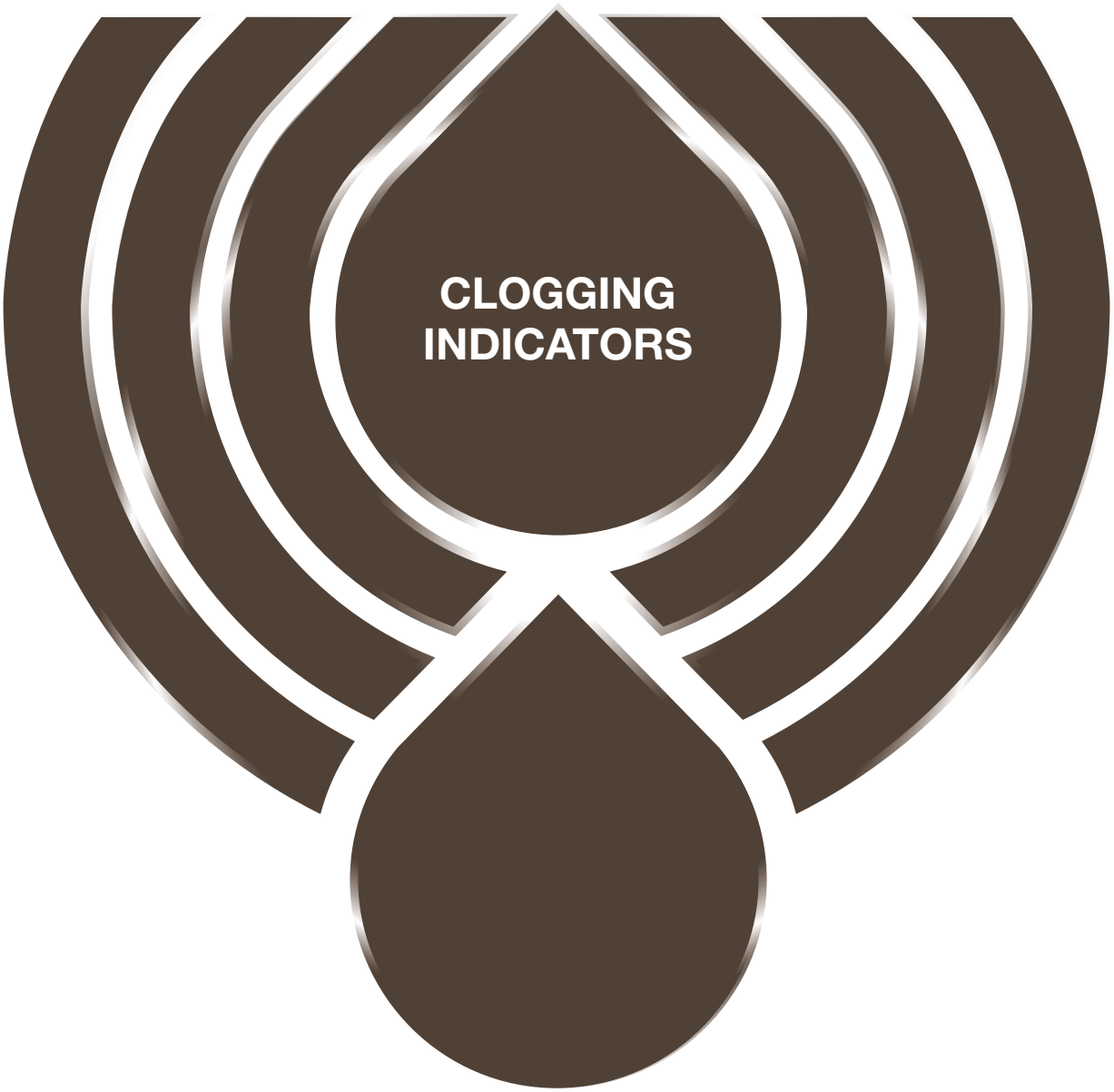
FZX 011



Item:	Q.ty: 1 pc. (2)	Q.ty: 1 pc. (3) (3a ÷ 3c)	
Filter series	**Filter element**	**Seal Kit code number NBR**	**FPM**
FZX 011	See order table	02050643	02050644

MP FILTRI WWW.SUMY.IR

MP FILTRI
WWW.SUMY.IR


CLOGGING
INDICATORS

Clogging indicators are devices that check the life time of the filter elements. They measure the pressure drop through the filter element directly connected to the filter housing.
These devices trip when the clogging of the filter element causes a pressure drop increasing across the filter element.
Filter elements are efficient only if their Dirt Holding Capacity is fully exploited. This is achieved by using filter housings equipped with clogging indicators.
The indicator is set to alarm before the element becomes fully clogged.

MP Filtri can supply indicators of the following designs:
- Vacuum switches and gauges
- Pressure switches and gauges
- Differential pressure indicators

These type of devices can be provided with a visual, electrical or both signals. The electronic differential pressure clogging indicator is also available. It provides both analogical 4-20 mA output and digital warning (75% of clogging) and alarm (clogging) outputs.

In the following pages you can find a reference guide about the types of clogging indicators available in the different families of MP Filtri's Hydraulic Filtration range of products.

MP FILTRI WWW.SUMY.IR

Clogging Indicators



MP FILTRI
WWW.SUMY.IR

DESIGNATION, ORDERING CODES & TECHNICAL DATA

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DIFFERENTIAL PRESSURE INDICATORS	796
PLUGS	807

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QUICK REFERENCE GUIDE

Ordering codes

Filter family	Filter series		Visual indicators	Electrical indicators	Electronic / Electrical-Visual indicators
SUCTION FILTERS		ELIXIR® SFEX 060-110	VVB20P01 VVS20P01	VEB21AA50P01	VLB21AA51P01 VLB21AA52P01 VLB21AA53P01 VLB21AA71P01
SUCTION FILTERS	Suction Line	SFMC250	VVA20P01 VVR20P01	VEA21xA50P01 VEA21xA50P01UL	VLA21xA51P01 VLA21xA52P01 VLA21xA53P01 VLA21xA71P01
SUCTION FILTERS	Without bypass	SFSC 500 - 503 - 504 - 505 SFSC 510 - 535 - 540	VVA20P01 VVR20P01	VEA21xA50P01 VEA21xA50P01UL	VLA21xA51P01 VLA21xA52P01 VLA21xA53P01 VLA21xA71P01
RETURN FILTERS	With bypass 1.75 bar	ELIXIR® RFEX 060-110	BVA14P01 BVR14P01 BVP15HP01 BVQ15HP01	BEA15HA50P01 BEA15HA50P01UL BEM15HA41P01	BLA15HA51P01 BLA15HA52P01 BLA15HA53P01 BLA15HA71P01
RETURN FILTERS	Without bypass	ELIXIR® RFEX 060-110	BVA25P01 BVR25P01 BVP20HP01 BVQ20HP01	BEA20HA50P01 BEA20HA50P01UL BEM20HA41P01	BLA20HA51P01 BLA20HA52P01 BLA20HA53P01 BLA20HA71P01
RETURN FILTERS	With bypass 1.75 bar	MDHC 250	BVA14P01 BVR14P01 BVP15HP01 BVQ15HP01 DVS12HP01	BEA15HA50P01 BEA15HA50P01UL BEM15HA41P01 DES12HA10P01 DES12HA30P01 DES12HA80P01	BLA15HA51P01 BLA15HA52P01 BLA15HA53P01 BLA15HA71P01
RETURN FILTERS	With bypass 3 bar	MDHC 250	BVA25P01 BVR25P01 BVP20HP01 BVQ20HP01 DVS25HP01	BEA20HA50P01 BEA20HA50P01UL BEM20HA41P01 BET20HF10P01 BET20HF30P01 BET25HF10P01 BET25HF30P01 DES25HA10P01 DES25HA30P01 DES25HA80P01	BLA20HA51P01 BLA20HA52P01 BLA20HA53P01 BLA20HA71P01
RETURN FILTERS	With bypass 1.75 bar	MPFX MPTX MPHC	BVA14P01 BVR14P01 BVP15HP01 BVQ15HP01	BEA15HA50P01 BEA15HA50P01UL BEM15HA41P01	BLA15HA51P01 BLA15HA52P01 BLA15HA53P01 BLA15HA71P01
RETURN FILTERS	With bypass 3 bar With bypass 2.5 bar	MPFX MPTX MPHC	BVA25P01 BVR25P01 BVP20HP01 BVQ20HP01	BEA20HA50P01 BEA20HA50P01UL BEM20HA41P01 BET20HF10P01 BET20HF30P01	BLA20HA51P01 BLA20HA52P01 BLA20HA53P01 BLA20HA71P01
RETURN FILTERS	With bypass 4.5 bar Return line	MPLX FRIC 025 - 040 - 100 - 250 - 630 - 850	DVA20xP01 DVM20xP01	DEA20xA50P01 DEM20xx10P01 DEM20xx20P01 DEM20xx30P01 DEM20xx35P01 DEU20VA50P01UL	DLA20xA51P01 DLA20xA52P01 DLA20xA71P01 DLE20xA50P01 DLE20xF50P01 DTA20xF70P01 DTI20xA70P01
RETURN FILTERS	Return line	FRIC 255	BVA25P01 BVR25P01 BVP20HP01 BVQ20HP01	BEA20HA50P01 BEA20HA50P01UL BEM20HA41P01	BLA20HA51P01 BLA20HA52P01 BLA20HA53P01 BLA20HA71P01

Ordering codes

Filter family	Filter series		Visual indicators	Electrical indicators	Electronic / Electrical-Visual indicators
RETURN / SUCTION FILTERS	With bypass 2.5 bar	MRSX 116 - 165 - 166 Suction line	VVB20P01 VVS20P01	VEB21AA50P01	VLB21AA51P01 VLB21AA52P01 VLB21AA53P01 VLB21AA71P01
		MRSX 116 - 165 - 166 Return line	BVA25P01 BVR25P01 BVP20HP01 BVQ20HP01	BEA20HA50P01 BEA20HA50P01UL BEM20HA41P01 BET25HF10P01 BET25HF30P01 BET25HF50P01	BLA20HA51P01 BLA20HA52P01 BLA20HA53P01 BLA20HA71P01
	With bypass 2.5 bar	LMP 124 MULTIPORT	BVA25P01 BVR25P01 BVP20HP01 BVQ20HP01 DVA20xP01 DVM20xP01	BEA20HA50P01 BEA20HA50P01UL BEM20HA41P01 BET25HF10P01 BET25HF30P01 BET25HF50P01 DEA20xA50P01 DEM20xx10P01 DEM20xx20P01 DEM20xx30P01 DEM20xx35P01 DEU20VA50P01UL	BLA20HA51P01 BLA20HA52P01 BLA20HA53P01 BLA20HA71P01 DLA20xA51P01 DLA20xA52P01 DLA20xA71P01 DLE20xA50P01 DLE20xF50P01 DTA20xF70P01 DTI20xA70P01
SPIN-ON FILTERS	Suction line	MPS 050 - 070 - 100 - 150 MPS 200 - 250 - 300 - 350	VVB20P01 VVS20P01	VEB21AA50P01	VLB21AA51P01 VLB21AA52P01 VLB21AA53P01 VLB21AA71P01
	Return line	MPS 050 - 070 - 100 - 150 MPS 200 - 250 - 300 - 350	BVA14P01 BVR14P01 BVP15HP01 BVQ15HP01	BEA15HA50P01 BEA15HA50P01UL BEM15HA41P01	BLA15HA51P01 BLA15HA52P01 BLA15HA53P01 BLA15HA71P01
	In-line	MPS 051 - 071 - 101 - 151 MPS 301 - 351	DVA12xP01 DVM12xP01 DVA20xP01 DVM20xP01	DEA12xA50P01 DEM12xAxxP01 DEA20xA50P01 DEM20xAxxP01 DEU20VA50P01UL	DLA12xA51P01 DLA12xA52P01 DLA12xA71P01 DLA20xA51P01 DLA20xA52P01 DLA20xA71P01 DLE12xA50P01 DLE12xF50P01 DLE20xF50P01 DLE20xF50P01 DTA12xF70P01 DTA20xF70P01 DTI12xA70P01 DTI20xA70P01

QUICK REFERENCE GUIDE

Ordering codes

Filter family	Filter series		Visual indicators	Electrical indicators	Electronic / Electrical-Visual indicators
LOW & MEDIUM PRESSURE FILTERS		ELIXIR® HFEX 060-110	DVS25HP01	DES25HA50P01	
		ELIXIR® LFEX 060-080-110-160	DVS25HP01	DES25HA10P01 DES25HA30P01 DES25HA50P01 DES25HA80P01	
	With bypass 3.5 bar	LMP 110 LMP 112 - 116 - 118 - 119 MULTIPORT LMP 120 - 122 - 123 MULTIPORT LMP 210 - 211 - LDP LMP 400 - 401 & 430 - 431 LMP 900 - 901 LMP 902 - 903 LMP 950 - 951 LMP 952 - 953 - 954 LMD 211 - 400 - 401 - 431 - 951 - LDD	DVA20xP01 DVM20xP01	DEA20xA50P01 DEM20xx10P01 DEM20xx20P01 DEM20xx30P01 DEM20xx35P01 DEU20VA50P01UL	DLA20xA51P01 DLA20xA52P01 DLA20xA71P01 DLE20xA50P01 DLE20xF50P01 DTA20xF70P01 DTI20xA70P01
	With bypass 2.5 bar	LPH 630	DVA20xP01 DVM20xP01	DEA20xA50P01 DEM20xx10P01 DEM20xx20P01 DEM20xx30P01 DEM20xx35P01 DEU20VA50P01UL	DLA20xA51P01 DLA20xA52P01 DLA20xA71P01 DLE20xA50P01 DLE20xF50P01 DTA20xF70P01 DTI20xA70P01
	With bypass 1.75 bar	LPH 630	DVA12xP01 DVM12xP01	DEA12xA50P01 DEM12xx10P01 DEM12xx20P01 DEM12xx30P01 DEM12xx35P01	DLA12xA51P01 DLA12xA52P01 DLA12xA71P01 DLE12xA50P01 DLE12xF50P01 DTA12xF70P01 DTI12xA70P01
	Without bypass	ELIXIR® HFEX 060-110	DVS40HP01	DES40HA50P01	
		ELIXIR® LFEX 060-080-110-160	DVS40HP01	DES40HA10P01 DES40HA30P01 DES40HA50P01 DES40HA80P01	
	Without bypass	LMP 110 LMP 112 - 116 - 118 - 119 MULTIPORT LMP 120 - 122 - 123 MULTIPORT LMP 210 - 211 - LDP LMP 400 - 401 & 430 - 431 LMP 900 - 901 LMP 902 - 903 LMP 950 - 951 LMP 952 - 953 - 954 LMD 211 - 400 - 401 - 431 - 951 - LDD LPH 630	DVA50xP01 DVM50xP01	DEA50xA50P01 DEM50xx10P01 DEM50xx20P01 DEM50xx30P01 DEM50xx35P01 DEU50VA50P01UL	DLA50xA51P01 DLA50xA52P01 DLA50xA71P01 DLE50xA50P01 DLE50xF50P01 DTA50xF70P01 DTI50xA70P01
HIGH CAPACITY INDUSTRIAL FILTERS	With bypass 3.5 bar	MLPX MLDX	DVA20xP01 DVM20xP01	DEA20xA50P01 DEM20xx10P01 DEM20xx20P01 DEM20xx30P01 DEM20xx35P01v	DLA20xA51P01 DLA20xA52P01 DLA20xA71P01 DLE20xA50P01 DLE20xF50P01 DTA20xF70P01 DTI20xA70P01
	With bypass 1.75 bar	MLPC MLDC	DVA12xP01 DVM12xP01	DEA12xA50P01 DEM12xx10P01 DEM12xx20P01 DEM12xx30P01 DEM12xx35P01	DLA12xA51P01 DLA12xA52P01 DLA12xA71P01 DLE12xA50P01 DLE12xF50P01 DTA12xF70P01 DTI12xA70P01
	Without bypass	MLDC MLPC	DVA50xP01 DVM50xP01	DEA50xA50P01 DEM50xx10P01 DEM50xx20P01 DEM50xx30P01 DEM50xx35P01	DLA50xA51P01 DLA50xA52P01 DLA50xA71P01 DLE50xA50P01 DLE50xF50P01 DTA50xF70P01 DTI50xA70P01

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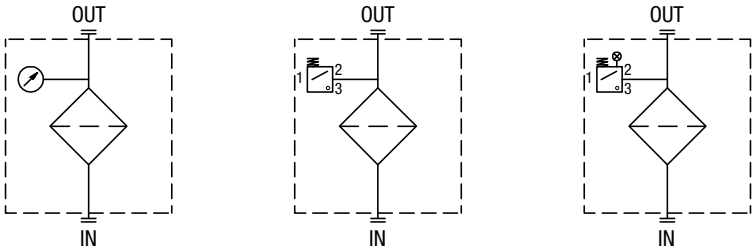
Ordering codes

Filter family	Filter series		Visual indicators	Electrical indicators	Electronic / Electrical-Visual indicators
HIGH PRESSURE FILTERS	With bypass 6 bar	FMP 039 - 065 - 135 - 320 FHP 010 - 011 - 065 - 135 - 350 - 351 - 500 FMMX 050 - 150 FMM 050 - 150 FHA 051 FHM 050 - 065 - 135 - 320 - 500 FHB 050 - 135 - 320 FHF 325 FHD 051 - 326 - 333	DVA50xP01 DVM50xP01	DEA50xA50P01 DEM50xx10P01 DEM50xx20P01 DEM50xx30P01 DEM50xx35P01 DEU50VA50P01UL	DLA50xA51P01 DLA50xA52P01 DLA50xA71P01 DLE50xA50P01 DLE50xF50P01 DTA50xF70P01 DTI50xA70P01
	Without bypass	FMP 039 - 065 - 135 - 320 FHP 010 - 011 - 065 - 135 - 350 - 351 - 500 FMMX 050 - 150 FMM 050 - 150 FHA 051 FHM 006 - 007 - 010 - 050 - 065 - 135 - 320 - 500 FHB 050 - 135 - 320 FHF 325 FHD 021 - 051 - 326 - 333	DVA70xP01 DVA95xP01 DVM70xP01 DVM95xP01	DEA70xA50P01 DEA95xA50P01 DEM70xx10P01 DEM70xx20P01 DEM70xx30P01 DEM70xx35P01 DEU70VA50P01UL DEM95xx10P01 DEM95xx20P01 DEM95xx30P01 DEM95xx35P01	DLA70xA51P01 DLA70xA52P01 DLA70xA71P01 DLA95xA51P01 DLA95xA52P01 DLA95xA71P01 DLE70xA50P01 DLE70xF50P01 DLE95xA50P01 DLE95xF50P01 DTA70xF70P01 DTA95xF70P01 DTI70xA70P01 DTI95xA70P01
STAINLESS STEEL HIGH PRESSURE FILTERS	With bypass 6 bar	FZH 012 - 040	DVZ50xP01	DEZ50xA50P01	DLZ50xA51P01 DLZ50xA52P01
	Without bypass	FZH 012 - 040	DVZ70xP01 DVZ95xP01	DEZ70xA50P01 DEZ95xA50P01	DLZ70xA51P01 DLZ70xA52P01 DLZ95xA51P01 DLZ95xA52P01
	With bypass 6 bar	FZP 039 - 136 FZB 039 FZM 039 FZD 051	DVX50xP01 DVY50xP01	DEX50xA50P01	DLX50xA51P01 DLX50xA52P01
	Without bypass	FZP 039 - 136 FZB 039 FZM 039 FZD 010 - 021 - 051	DVX70xP01 DVX95xP01 DVY70xP01 DVY95xP01	DEX70xA50P01 DEX95xA50P01	DLX70xA51P01 DLX70xA52P01 DLX95xA51P01 DLX95xA52P01
FILTERS FOR POTENTIALLY EXPLOSIVE ATMOSPHERE	With bypass 6 bar	FMMX 050 - 150	DVA50xP01 DVM50xP01	DEH50xA48P01 DEH50xA49P01 DEH50xA70P01	
	Without bypass	FMMX 050 - 150	DVA70xP01 DVA95xP01 DVM70xP01 DVM95xP01	DEH70xA48P01 DEH70xA49P01 DEH70xA70P01	
	With bypass 6 bar	FZP 039 - 136	DVX50xP01 DVY50xP01	DEH50xA48P01 DEH50xA49P01 DEH50xA70P01	
	Without bypass	FZP 039 - 136	DVX70xP01 DVX95xP01 DVY70xP01 DVY95xP01	DEH70xA48P01 DEH70xA49P01 DEH70xA70P01	
	With bypass 6 bar	FZH 012 - 040	DVZ50xP01		
	Without bypass	FZH 012 - 040	DVZ70xP01 DVZ95xP01		

Suitable indicator types

V ACUUM INDICATORS

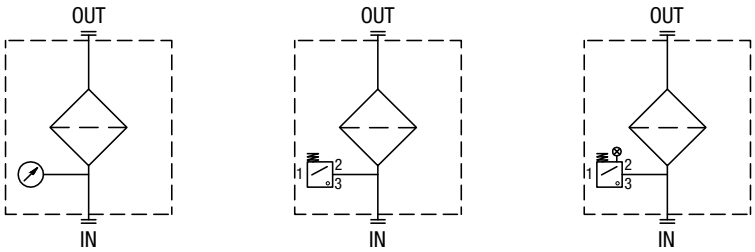
Vacuum indicators are used on the Suction line to check the efficiency of the filter element.
They measure the pressure downstream of the filter element.
Standard items are produced with R 1/4" EN 10226 connection.
Available products with R 1/8" EN 10226 to be fitted on MPS series.
Vacuum indicators are identified in the Hydraulic Filtration catalogue and in the Quick Reference Guide table by the letter "V".



Example:
V VVB20P01

B AROMETRIC (PRESSURE) INDICATORS

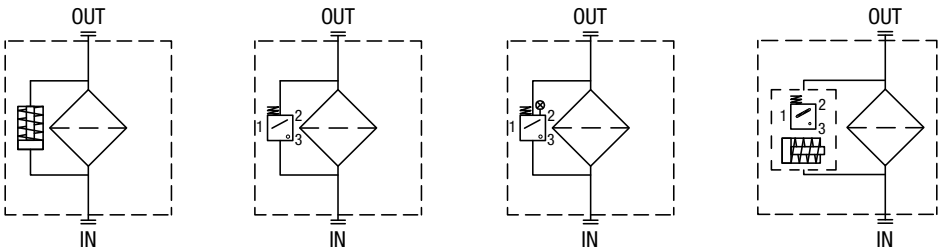
Pressure indicators are used on the Return line to check the efficiency of the filter element.
They measure the pressure upstream of the filter element.
Standard items are produced with R 1/8" EN 10226 connection.
Barometric (pressure) indicators are identified in the Hydraulic Filtration catalogue and in the Quick Reference Guide table by the letter "B"



Example:
B BVA14P01

D IFFERENTIAL PRESSURE INDICATORS

Differential pressure 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.
Differential pressure indicators are identified in the Hydraulic Filtration catalogue and in the Quick Reference Guide table by the letter "D"



Example:
D DVA20xP01

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Designation & Ordering code

APPLICABLE VACUUM INDICATORS BY FILTER SERIES

Filter Series	VEA	VEB	VLA	VLB	VVA	VVB	VVR	VVS
STRC	-	-	-	-	-	-	-	-
MPAC	-	-	-	-	-	-	-	-
SFEX	-	•	-	•	-	•	-	•
SFMC	•	-	•	-	•	-	•	-
SFSC	•	-	•	-	•	-	•	-

VACUUM INDICATORS

Configuration example 1:	VE	A	21	V	A	50	P01	EX
Configuration example 2:	VL	B	21	A	A	71	P01	
Configuration example 3:	VV	R	20				P01	

Series

VE Electrical vacuum indicator
VL Electrical/Visual vacuum indicator
VV Vacuum gauge

Type VE - VL

A Connection EN 10226 - R1/4”
B Connection EN 10226 - R1/8”

Type VV	SFxC	SFEX
A Axial connection EN 10226 - R1/4”	•	-
B Axial connection EN 10226 - R1/8”	-	•
R Radial connection EN 10226 - R1/4”	•	-
S Radial connection EN 10226 - R1/8”	-	•

Vacuum setting	VE	VL	VVA	VVB	VVR	VVS
20 0.20 bar	-	-	•	•	•	•
21 0.21 bar	•	•	-	-	-	-

Seals	VEA - VLA	VEB - VLB	VV
A NBR	•	•	-
V FPM	•	-	-

Thermostat	VE	VL	VV
A Without	•	•	-

Electrical connections	VE	VL	VV
50 Connection EN 175301-803	•	-	-
51 Connection EN 175301-803, transparent base with lamps 24 Vdc	-	•	-
52 Connection EN 175301-803, transparent base with lamps 110 Vdc	-	•	-
53 Connection EN 175301-803, transparent base with lamps 230 Vac	-	•	-
71 Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc	-	•	-

Option

P01 MP Filtri standard
Pxx Customized

Certifications	VEA21A	VEA21V	VEB	VL	VV
Without	•	•	•	•	•
EX ATEX certification	•	•	•	-	-
UL UL certification	•	-	-	-	-

Designation & Ordering code

APPLICABLE BAROMETRIC (PRESSURE) INDICATORS BY FILTER SERIES

Filter Series	BEA	BEM	BET	BLA	BVA	BVR	BVP	BVQ
RFEX	•	•	-	•	•	•	•	•
MPFX	•	•	•	•	•	•	•	•
MPLX	-	-	-	-	-	-	-	-
MPTX	•	•	•	•	•	•	•	•
MFBX	-	-	-	-	-	-	-	-
MDHC	•	•	•	•	•	•	•	•
MPHC	•	•	-	•	•	•	•	•
MPIC	-	-	-	-	-	-	-	-
FRIC (all sizes, except 255)	-	-	-	-	-	-	-	-
FRIC 255	•	•	-	•	•	•	•	•
RFMC	-	-	-	-	-	-	-	-

BAROMETRIC (PRESSURE) INDICATORS

Configuration example 1:	BE	A	15	H	A	41	P01	EX
Configuration example 2:	BL	A	20	H	A	71	P01	
Configuration example 3:	BV	R	14				P01	
Configuration example 4:	BV	P	20	H			P01	

Series

BE Electrical pressure indicator
BL Electrical/Visual pressure indicator
BV Visual pressure indicator

Type	BE	BL
A Standard type	•	•
M With wired electrical connection	•	-
T With thermal switch	•	-

BV	
A	Axial connection pressure gauge
R	Radial connection pressure gauge
P	Visual indicator with automatic reset
Q	Visual indicator with manual reset

Pressure setting	BEA-BEM	BET	BLA	BVA-BVR-BVE-BVH	BVP-BVQ-BVN-BVO
14 1.4 bar	-	-	-	•	-
15 1.5 bar	•	-	•	-	•
20 2.0 bar	•	•	•	-	•
25 2.5 bar	-	•	-	•	-

Seals	BE	BLA	BVA-BVR-BVE-BVH	BVP-BVQ-BVN-BVO
H HNBR	•	•	-	•

Thermostat	BEA-BEM	BET	BLA	BV
A Without thermostat	•	-	•	-
F With thermostat	-	•	-	-

Electrical connections	BEA	BEM	BET	BL	BV
10 Connection AMP Superseal series 1,5	-	-	•	-	-
30 Connection Deutsch DT-04-2-P	-	-	•	-	-
41 Connection via four-core cable	-	•	-	-	-
50 Connection EN 175301-803	•	-	-	-	-
51 Connection EN 175301-803, transparent base with lamps 24 Vdc	-	-	-	•	-
52 Connection EN 175301-803, transparent base with lamps 110 Vdc	-	-	-	•	-
53 Connection EN 175301-803, transparent base with lamps 230 Vac	-	-	-	•	-
71 Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc	-	-	-	•	-

Option	
P01	MP Filtri standard
Pxx	Customized

Certifications	BEA	BEM-BET	BL	BV
Without	•	•	•	•
EX ATEX certification	•	-	-	-
UL UL certification	•	-	-	-

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Designation & Ordering code

APPLICABLE DIFFERENTIAL PRESSURE INDICATORS BY FILTER SERIES

Filter Series	DEA	DEM	DEU	DES	DLA	DLE	DTA	DTI	DVA	DVM	DVS
RFEX	-	-	-	-	-	-	-	-	-	-	-
MPFX	-	-	-	-	-	-	-	-	-	-	-
MPLX	•	•	•	-	•	•	•	•	•	•	-
MPTX	-	-	-	-	-	-	-	-	-	-	-
MFBX	-	-	-	-	-	-	-	-	-	-	-
MDHC	-	-	-	•	-	-	-	-	-	-	•
MPHC	-	-	-	-	-	-	-	-	-	-	-
MPIC	-	-	-	-	-	-	-	-	-	-	-
FRIC (all sizes, except 255)	•	•	•	-	•	•	•	•	•	•	-
FRIC 255	-	-	-	-	-	-	-	-	-	-	-
RFMC	-	-	-	-	-	-	-	-	-	-	-

DIFFERENTIAL PRESSURE INDICATORS

Configuration example								
1:	DE	M	20	H	F	50	P01	
2:	DE	U	50	V	A	50	P01	UL
3:	DL	E	20	V	A	71	P01	
4:	DT	A	20	H	F	70	P01	
5:	DV	M	20	V			P01	

Series

DE Electrical differential pressure indicator
DL Electrical/Visual differential pressure indicator
DT Electrical differential pressure indicator
DV Visual differential pressure indicator

Type	DE	DL	DT
A Standard type	•	•	•
I I-O Link type	-	-	•
M With wired electrical connection	•	-	-
U Standard type 210 bar, UL certified	•	-	-
E For high power supply	-	•	-
S Compact version	•	-	-

DV	
A	With automatic reset
M	With manual reset
S	With automatic reset

Pressure setting	DEA	DEM	DEU	DES	DL	DT	DVA	DVM	DVS
12 1.2 bar	-	-	-	•	-	-	-	-	•
20 2.0 bar	•	•	•	-	•	•	•	•	
25 2.5 bar	-	-	-	•	-	-	-	-	•
50 5.0 bar	•	•	•	-	•	•	•	•	-

Seals	DEA	DEM	DEU	DES	DL	DT	DVA	DVM	DVS
H HNBR	•	•	-	•	•	•	•	•	•
V FPM	•	•	•	-	•	•	•	•	-

Thermostat	DEA	DEM	DEU	DES	DLA	DLE	DTA	DTI
A Without thermostat	•	•	•	•	•	•	-	•
F With thermostat	-	•	-	-	-	•	•	-

Electrical connections	DEA	DEM	DEU	DES	DLA	DLE	DT
10 Connection AMP Superseal series 1.5	-	•	-	•	-	-	-
20 Connection AMP Timer Junior	-	•	-	-	-	-	-
30 Connection Deutsch DT-04-2-P	-	•	-	•	-	-	-
35 Connection Deutsch DT-04-3-P	-	•	-	-	-	-	-
50 Connection EN 175301-803	•	-	•	-	-	•	-
51 Connection EN 175301-803, transparent base with lamps 24 Vdc	-	-	-	-	•	-	-
52 Connection EN 175301-803, transparent base with lamps 110 Vdc	-	-	-	-	•	-	-
70 Connection IEC 61076-2-101 D (M12)	-	-	-	-	-	-	•
71 Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc	-	-	-	-	•	-	-
80 Connection Stud #10-32 UNF	-	-	-	•	-	-	-

Option	
P01	MP Filtri standard
Pxx	Customized

Certifications	DEU	OTHERS
Without	-	•
UL UL certification	•	-

PLUGS

Configuration example	T2	H

Series

T2 Plug
T4 Plug

Seals	T2	T4
A NBR	-	•
H HNBR	•	-
V FPM	•	-

Designation & Ordering code

APPLICABLE VACUUM INDICATORS BY FILTER SERIES

Filter Series	VEB	VLB	VVB	VVS
MRSX	•	•	•	•
LMP124	-	-	-	-

VACUUM INDICATORS

Configuration example 1:	VE	B	21	V	A	50	P01	EX
Configuration example 2:	VL	B	21	A	A	71	P01	
Configuration example 3:	VV	S	20				P01	

Series
- **VE** Electrical vacuum indicator
- **VL** Electrical/Visual vacuum indicator
- **VV** Vacuum gauge

Type VE - VL
- **B** Connection EN 10226 - R1/8”

Type VV
- **B** Axial connection EN 10226 - R1/8”
- **S** Radial connection EN 10226 - R1/8”

Vacuum setting	VE	VL	VVB	VVS
20 0.20 bar	-	-	•	•
21 0.21 bar	•	•	-	-

Seals	VEB - VLB	VV
A NBR	•	-
V FPM	-	-

Thermostat	VE	VL	VV
A Without	•	•	-

Electrical connections	VE	VL
50 Connection EN 175301-803	•	-
51 Connection EN 175301-803, transparent base with lamps 24 Vdc	-	•
52 Connection EN 175301-803, transparent base with lamps 110 Vdc	-	•
53 Connection EN 175301-803, transparent base with lamps 230 Vac	-	•
71 Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc	-	•

Option
- **P01** MP Filtri standard
- **Pxx** Customized

Certifications	VEB	VL	VV
Without	•	•	•
EX ATEX certification	•	-	-

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Designation & Ordering code

APPLICABLE BAROMETRIC (PRESSURE) INDICATORS BY FILTER SERIES

Filter Series	BEA	BEM	BET	BLA	BVA	BVR	BVP	BVQ
MRSX	•	•	•	•	•	•	•	•
LMP124	•	•	•	•	•	•	•	•

BAROMETRIC (PRESSURE) INDICATORS

Configuration example 1:	BE	M	15	H	A	41	P01	EX
Configuration example 2:	BL	A	20	H	A	71	P01	
Configuration example 3:	BV	R	14				P01	
Configuration example 4:	BV	P	20	H			P01	

Series

BE Electrical pressure indicator
BL Electrical/Visual pressure indicator
BV Visual pressure indicator

Type	BE	BL
A Standard type	•	•
M With wired electrical connection	•	-
T With thermal switch	•	-

BV	
A	Axial connection pressure gauge
R	Radial connection pressure gauge
P	Visual indicator with automatic reset
Q	Visual indicator with manual reset

Pressure setting	BEA-BEM	BET	BLA	BVA-BVR	BVP-BVQ
14 1.4 bar	-	-	-	•	-
15 1.5 bar	•	-	•	-	•
20 2.0 bar	•	•	•	-	•
25 2.5 bar	-	•	-	•	-

Seals	BE	BLA	BVA-BVR	BVP-BVQ
H HNBR	•	•	-	•

Thermostat	BEA-BEM	BET	BLA	BV
A Without thermostat	•	-	•	-
F With thermostat	-	•	-	-

Electrical connections	BEA	BEM	BET	BL
10 Connection AMP Superseal series 1.5	-	-	•	-
30 Connection Deutsch DT-04-2-P	-	-	•	-
41 Connection via four-core cable	-	•	-	-
50 Connection EN 175301-803	•	-	•	-
51 Connection EN 175301-803, transparent base with lamps 24 Vdc	-	-	-	•
52 Connection EN 175301-803, transparent base with lamps 110 Vdc	-	-	-	•
53 Connection EN 175301-803, transparent base with lamps 230 Vac	-	-	-	•
71 Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc	-	-	-	•

Option

P01 MP Filtri standard
Pxx Customized

Certifications	BEA	BEM-BET	BL	BV
Without	•	•	•	•
EX ATEX certification	•	-	-	-
UL UL certification	•	-	-	-

Designation & Ordering code

APPLICABLE DIFFERENTIAL PRESSURE INDICATORS BY FILTER SERIES

Filter Series	DEA	DEM	DEU	DLA	DLE	DTA	DTI	DVA	DVM
MRSX	-	-	-	-	-	-	-	-	-
LMP124	•	•	•	•	•	•	•	•	•

DIFFERENTIAL PRESSURE INDICATORS

Configuration example 1:	DE	M	12	H	F	50	P01	
Configuration example 2:	DE	U	50	V	A	50	P01	UL
Configuration example 3:	DL	E	20	V	A	71	P01	
Configuration example 4:	DT	A	50	H	F	70	P01	
Configuration example 5:	DV	M	70	V			P01	

Series

DE	Electrical differential pressure indicator
DL	Electrical/Visual differential pressure indicator
DT	Electronic differential pressure indicator
DV	Visual differential pressure indicator

Type	DE	DL	DT
A Standard type	•	•	•
I I-O Link type	-	-	•
M With wired electrical connection	•	-	-
U Standard type 210 bar, UL certified	•	-	-
E For high power supply	-	•	-

DV	
A	With automatic reset
M	With manual reset

Pressure setting	DEA	DEM	DEU	DLA	DLE	DT	DVA	DVM
20 2.0 bar	•	•	•	•	•	•	•	•

Seals	DEA	DEM	DEU	DLA	DLE	DT	DVA	DVM
H HNBR	•	•	-	•	•	•	•	•
V FPM	•	•	•	•	•	•	•	•

Thermostat	DEA	DEM	DEU	DLA	DLE	DTA	DTI
A Without thermostat		•	•	•	•	•	-	•
F With thermostat		-	•	-	-	•	•	-

Electrical connections	DEA	DEM	DEU	DLA	DLE	DT
10 Connection AMP Superseal series 1.5	-	•	-	-	-	-
20 Connection AMP Timer Junior	-	•	-	-	-	-
30 Connection Deutsch DT-04-2-P	-	•	-	-	-	-
35 Connection Deutsch DT-04-3-P	-	•	-	-	-	-
50 Connection EN 175301-803	•	-	•	-	•	-
51 Connection EN 175301-803, transparent base with lamps 24 Vdc	-	-	-	•	-	-
52 Connection EN 175301-803, transparent base with lamps 110 Vdc	-	-	-	•	-	-
70 Connection IEC 61076-2-101 D (M12)	-	-	-	-	-	•
71 Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc	-	-	-	•	-	-

Option	
P01	MP Filtri standard
Pxx	Customized

Certifications	DEU	OTHERS
Without	-	•
UL UL certification	•	-

PLUGS

Configuration example	T2	H

Series

T2	Plug

Seals

H	HNBR
V	FPM

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APPLICABLE VACUUM INDICATORS BY FILTER SERIES

Filter Series	VEA	VEB	VLA	VLB	VVA	VVB	VVR	VVS
MPS	-	•	-	•	-	•	-	•

VACUUM INDICATORS

Configuration example 1:	VE	B	21	A	A	50	P01	EX
Configuration example 2:	VL	B	21	A	A	71	P01	
Configuration example 3:	VV	S	20				P01	

Series
- **VE** Electrical vacuum indicator
- **VL** Electrical/Visual vacuum indicator
- **VV** Vacuum gauge

Type VE - VL
- **B** Connection EN 10226 - R1/8”

Type VV
- **B** Axial connection EN 10226 - R1/8”
- **S** Radial connection EN 10226 - R1/8”

Vacuum setting	VE	VL	VVB	VVS
20 0.20 bar	-	-	•	•
21 0.21 bar	•	•	-	-

Seals	VEB - VLB	VV
A NBR	•	-
V FPM	-	-

Thermostat	VE	VL	VV
A Without	•	•	-

Electrical connections	VE	VL
50 Connection EN 175301-803	•	-
51 Connection EN 175301-803, transparent base with lamps 24 Vdc	-	•
52 Connection EN 175301-803, transparent base with lamps 110 Vdc	-	•
53 Connection EN 175301-803, transparent base with lamps 230 Vac	-	•
71 Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc	-	•

Option
- **P01** MP Filtri standard
- **Pxx** Customized

Certifications	VEB	VL	VV
Without	•	•	•
EX ATEX certification	•	-	-

Designation & Ordering code

APPLICABLE BAROMETRIC (PRESSURE) INDICATORS BY FILTER SERIES

Filter Series	BEA	BEM	BET	BLA	BVA	BVR	BVP	BVQ
MPS	•	•	•	•	•	•	•	•

BAROMETRIC (PRESSURE) INDICATORS

Configuration example 1:	BE	M	15	H	A	41	P01	EX
Configuration example 2:	BL	A	20	H	A	71	P01	
Configuration example 3:	BV	R	14				P01	
Configuration example 4:	BV	P	20	H			P01	

Series

BE Electrical pressure indicator
BL Electrical/Visual pressure indicator
BV Visual pressure indicator

Type	BE	BL
A Standard type	•	•
M With wired electrical connection	•	-

BV

A Axial connection pressure gauge
R Radial connection pressure gauge
P Visual indicator with automatic reset
Q Visual indicator with manual reset

Pressure setting	BEA-BEM	BET	BLA	BVA-BVR	BVP-BVQ
14 1.4 bar	-	-	-	•	-
15 1.5 bar	•	-	•	-	•
20 2.0 bar	•	•	•	-	•
25 2.5 bar	-	•	-	•	-

Seals	BE	BLA	BVA-BVR	BVP-BVQ
H HNBR	•	•	-	•

Thermostat	BEA-BEM	BET	BLA	BV
A Without thermostat	•	-	•	-
F With thermostat	-	•	-	-

Electrical connections	BEA	BEM	BL
10 Connection AMP Superseal series 1.5	-	-	-
30 Connection Deutsch DT-04-2-P	-	-	-
41 Connection via four-core cable	-	•	-
50 Connection EN 175301-803	•	-	-
51 Connection EN 175301-803, transparent base with lamps 24 Vdc	-	-	•
52 Connection EN 175301-803, transparent base with lamps 110 Vdc	-	-	•
53 Connection EN 175301-803, transparent base with lamps 230 Vac	-	-	•
71 Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc	-	-	•

Option

P01 MP Filtri standard
Pxx Customized

Certifications	BEA	BEM-BET	BL	BV
Without	•	•	•	•
EX ATEX certification	•	-	-	-
UL UL certification	•	-	-	-

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Designation & Ordering code

APPLICABLE DIFFERENTIAL PRESSURE INDICATORS BY FILTER SERIES

Filter Series	DEA	DEM	DEU	DLA	DLE	DTA	DTI	DVA	DVM
MPS	•	•	•	•	•	•	•	•	•

DIFFERENTIAL PRESSURE INDICATORS

Configuration example 1:	DE	M	12	H	F	50	P01	
Configuration example 2:	DE	U	50	V	A	50	P01	UL
Configuration example 3:	DL	E	20	V	A	71	P01	
Configuration example 4:	DT	A	50	H	F	70	P01	
Configuration example 5:	DV	M	70	V			P01	

Series

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

Type	DE	DL	DT
A Standard type	•	•	•
I I-O Link type	-	-	•
M With wired electrical connection	•	-	-
U Standard type 210 bar, UL certified	•	-	-
E For high power supply	-	•	-

DV	
A	With automatic reset
M	With manual reset

Pressure setting	DEA	DEM	DEU	DLA	DLE	DT	DVA	DVM
12 1.2 bar	•	•	-	•	•	•	•	•
20 2.0 bar	•	•	•	•	•	•	•	•

Seals	DEA	DEM	DEU	DLA	DLE	DT	DVA	DVM
H HNBR	•	•	-	•	•	•	•	•
V FPM	•	•	•	•	•	•	•	•

Thermostat	DEA	DEM	DEU	DLA	DLE	DTA	DTI
A Without thermostat	•	•	•	•	•	-	•
F With thermostat	-	•	-	-	•	•	-

Electrical connections	DEA	DEM	DEU	DLA	DLE	DT
10 Connection AMP Superseal series 1.5	-	•	-	-	-	-
20 Connection AMP Timer Junior	-	•	-	-	-	-
30 Connection Deutsch DT-04-2-P	-	•	-	-	-	-
35 Connection Deutsch DT-04-3-P	-	•	-	-	-	-
50 Connection EN 175301-803	•	-	•	-	•	-
51 Connection EN 175301-803, transparent base with lamps 24 Vdc	-	-	-	•	-	-
52 Connection EN 175301-803, transparent base with lamps 110 Vdc	-	-	-	•	-	-
70 Connection IEC 61076-2-101 D (M12)	-	-	-	-	-	•
71 Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc	-	-	-	•	-	-

Option

- **P01** MP Filtri standard
- **Pxx** Customized

Certifications	DEU	OTHERS
Without	-	•
UL UL certification	•	-

PLUGS

Configuration example	T2	H

Series

- **T2** Plug

Seals

- **H** HNBR
- **V** FPM

Designation & Ordering code

APPLICABLE DIFFERENTIAL PRESSURE INDICATORS BY FILTER SERIES

Filter Series	DEA	DEM	DEU	DES *10-*30-*80	DES *50	DLA	DLE	DTA	DTI	DVA	DVM	DVS
HFEX	-	-	-	-	•	-	-	-	-	-	-	•
LFEX	-	-	-	•	•	-	-	-	-	-	-	•
LMP 110	•	•	•	-	-	•	•	•	•	•	•	-
LMP 112 / 123 MULTIPORT	•	•	•	-	-	•	•	•	•	•	•	-
LMP 210 - 211	•	•	•	-	-	•	•	•	•	•	•	-
LMP 400 - 401	•	•	•	-	-	•	•	•	•	•	•	-
LMP 430 - 431	•	•	•	-	-	•	•	•	•	•	•	-
LMP 950 - 951	•	•	•	-	-	•	•	•	•	•	•	-
LMP 952 - 953 - 954	•	•	•	-	-	•	•	•	•	•	•	-
LMD 211	•	•	•	-	-	•	•	•	•	•	•	-
LMD 400 - 401 & 431	•	•	•	-	-	•	•	•	•	•	•	-
LMD 951	•	•	•	-	-	•	•	•	•	•	•	-
LDP-LDD	•	•	•	-	-	•	•	•	•	•	•	-
LMP 900 - 901	•	•	•	-	-	•	•	•	•	•	•	-
LMP 902 - 903	•	•	•	-	-	•	•	•	•	•	•	-
LPH 630	•	•	•	-	-	•	•	•	•	•	•	-

DIFFERENTIAL PRESSURE INDICATORS

Configuration example 1:	DE	M	20	H	F	50	P01	
Configuration example 2:	DE	U	50	V	A	50	P01	UL
Configuration example 3:	DL	E	50	V	A	71	P01	
Configuration example 4:	DT	A	20	H	F	70	P01	
Configuration example 5:	DV	M	50	V			P01	

Series

DE Electrical differential pressure indicator
DL Electrical/Visual differential pressure indicator
DT Electronic differential pressure indicator
DV Visual differential pressure indicator

Type	DE	DL	DT
A Standard type	•	•	•
I I-O Link type	-	-	•
M With wired electrical connection	•	-	-
U Standard type 210 bar, UL certified	•	-	-
E For high power supply	-	•	-
S Compact version	•	-	-

DV	
A	With automatic reset
M	With manual reset
S	With automatic reset

Pressure setting	DEA	DEM	DEU	DES	DLA	DLE	DTA	DTI	DVA	DVM	DVS
12 1.2 bar	•	•	-	•	•	•	•	•	•	•	•
20 2.0 bar	•	•	•	-	•	•	•	•	•	•	-
25 2.5 bar	-	-	-	•	-	-	-	-	-	-	•
40 4.0 bar	-	-	-	•	-	-	-	-	-	-	•
50 5.0 bar	•	•	•	-	•	•	•	•	•	•	-

Seals	DEA	DEM	DEU	DES	DL	DT	DVA	DVM	DVS
H HNBR	•	•	-	•	•	•	•	•	•
V FPM	•	•	•	-	•	•	•	•	-

Thermostat	DEA	DEM	DEU	DES	DLA	DLE	DTA	DTI
A Without thermostat	•	•	•	•	•	•	-	•
F With thermostat	-	•	-	-	-	•	•	-

Electrical connections	DEA	DEM	DEU	DES	DLA	DLE	DT
10 Connection AMP Superseal series 1.5	-	•	-	•	-	-	-
20 Connection AMP Timer Junior	-	•	-	-	-	-	-
30 Connection Deutsch DT-04-2-P	-	•	-	•	-	-	-
35 Connection Deutsch DT-04-3-P	-	•	-	-	-	-	-
50 Connection EN 175301-803	•	-	•	•	-	•	-
51 Connection EN 175301-803, transparent base with lamps 24 Vdc	-	-	-	-	•	-	-
52 Connection EN 175301-803, transparent base with lamps 110 Vdc	-	-	-	-	•	-	-
70 Connection IEC 61076-2-101 D (M12)	-	-	-	-	-	-	•
71 Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc	-	-	-	-	•	-	-
80 Connection Stud #10-32 UNF	-	-	-	•	-	-	-

Option	
P01	MP Filtri standard
Pxx	Customized

Certifications	DEU	OTHERS
Without	-	•
UL UL certification	•	-

PLUGS

Series

T2 Plug
T4 Plug

Example: T2 H

Seals	T2	T4
A NBR	-	•
H HNBR	•	-
V FPM	•	-

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Designation & Ordering code

APPLICABLE DIFFERENTIAL PRESSURE INDICATORS BY FILTER SERIES

Filter Series	DEA	DEM	DLA	DLE	DTA	DTI	DVA	DVM
MLPX	•	•	•	•	•	•	•	•
MLPC	•	•	•	•	•	•	•	•
MLDX	•	•	•	•	•	•	•	•
MLDC	•	•	•	•	•	•	•	•

DIFFERENTIAL PRESSURE INDICATORS

Configuration example 1:	DE	M	20	H	F	50	P01
Configuration example 2:	DT	I	50	V	A	70	P01
Configuration example 3:	DL	E	50	V	A	71	P01
Configuration example 4:	DT	A	20	H	F	70	P01
Configuration example 5:	DV	M	50	V			P01

Series

DE Electrical differential pressure indicator
DL Electrical/Visual differential pressure indicator
DT Electronic differential pressure indicator
DV Visual differential pressure indicator

Type	DE	DL	DT	DV
A Standard type	•	•	•	
I I-O Link type	-	-	•	
M With wired electrical connection	•	-	-	
E For high power supply	-	•	-	
A With automatic reset				•
M With manual reset				•

Pressure setting	DEA	DEM	DLA	DLE	DTA	DTI	DVA	DVM
12 1.2 bar	•	•	•	•	•	•	•	•
20 2.0 bar	•	•	•	•	•	•	•	•
25 2.5 bar	-	-	-	-	-	-	-	-
40 4.0 bar	-	-	-	-	-	-	-	-
50 5.0 bar	•	•	•	•	•	•	•	•

Seals	DEA	DEM	DL	DT	DVA	DVM
H HNBR	•	•	•	•	•	•
V FPM	•	•	•	•	•	•

Thermostat	DEA	DEM	DLA	DLE	DTA	DTI
A Without thermostat	•	•	•	•	-	•
F With thermostat	-	•	-	•	•	-

Electrical connections	DEA	DEM	DLA	DLE	DT
10 Connection AMP Superseal series 1.5	-	•	-	-	-
20 Connection AMP Timer Junior	-	•	-	-	-
30 Connection Deutsch DT-04-2-P	-	•	-	-	-
35 Connection Deutsch DT-04-3-P	-	•	-	-	-
50 Connection EN 175301-803	•	-	-	•	-
51 Connection EN 175301-803, transparent base with lamps 24 Vdc	-	-	•	-	-
52 Connection EN 175301-803, transparent base with lamps 110 Vdc	-	-	•	-	-
70 Connection IEC 61076-2-101 D (M12)	-	-	-	-	•
71 Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc	-	-	•	-	-

Option

P01 MP Filtri standard
Pxx Customized

PLUGS

Example:	T2	H

Series

T2 Plug

Seals

A NBR	-
H HNBR	•
V FPM	•

Designation & Ordering code

APPLICABLE DIFFERENTIAL PRESSURE INDICATORS BY FILTER SERIES

Filter Series	DEA	DEM	DEU	DLA	DLE	DTA	DTI	DVA	DVM
FMMX	•	•	•	•	•	•	•	•	•
FMM	•	•	•	•	•	•	•	•	•
FHA	•	•	•	•	•	•	•	•	•
FMP 039	•	•	•	•	•	•	•	•	•
FMP	•	•	•	•	•	•	•	•	•
FHP	•	•	•	•	•	•	•	•	•
FHM	•	•	•	•	•	•	•	•	•
FHB	•	•	•	•	•	•	•	•	•
FHF	•	•	•	•	•	•	•	•	•
FHD	•	•	•	•	•	•	•	•	•
HPB	-	-	-	-	-	-	-	-	-

DIFFERENTIAL PRESSURE INDICATORS

Configuration example 1:	DE	M	12	H	F	50	P01	
Configuration example 2:	DE	U	50	V	A	50	P01	UL
Configuration example 3:	DL	E	20	V	A	71	P01	
Configuration example 4:	DT	A	50	H	F	70	P01	
Configuration example 5:	DV	M	70	V			P01	

Series

DE	Electrical differential pressure indicator
DL	Electrical/Visual differential pressure indicator
DT	Electronic differential pressure indicator
DV	Visual differential pressure indicator

Type

		DE	DL	DT	DV
A	Standard type	•	•	•	
I	I-O Link type	-	-	•	
M	With wired electrical connection	•	-	-	
U	Standard type 210 bar, UL certified	•	-	-	
E	For high power supply	-	•	-	

A	With automatic reset	
M	With manual reset	

Pressure setting

		DEA	DEM	DEU	DLA	DLE	DT	DVA	DVM
50	5.0 bar	•	•	•	•	•	•	•	•
70	7.0 bar	•	•	•	•	•	•	•	•
95	9.5 bar	•	•	-	•	•	•	•	•

Seals

		DEA	DEM	DEU	DLA	DLE	DT	DVA	DVM
H	HNBR	•	•	-	•	•	•	•	•
V	FPM	•	•	•	•	•	•	•	•

Thermostat

		DEA	DEM	DEU	DLA	DLE	DTA	DTI
A	Without thermostat	•	•	•	•	•	-	•
F	With thermostat	-	•	-	-	•	•	-

Electrical connections

		DEA	DEM	DEU	DLA	DLE	DT
10	Connection AMP Superseal series 1.5	-	•	-	-	-	-
20	Connection AMP Timer Junior	-	•	-	-	-	-
30	Connection Deutsch DT-04-2-P	-	•	-	-	-	-
35	Connection Deutsch DT-04-3-P	-	•	-	-	-	-
50	Connection EN 175301-803	•	-	•	-	•	-
51	Connection EN 175301-803, transparent base with lamps 24 Vdc	-	-	-	•	-	-
52	Connection EN 175301-803, transparent base with lamps 110 Vdc	-	-	-	•	-	-
70	Connection IEC 61076-2-101 D (M12)	-	-	-	-	-	•
71	Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc	-	-	-	•	-	-

Option

P01	MP Filtri standard
Pxx	Customized

Certifications

		DEU	OTHERS
	Without	-	•
UL	UL certification	•	-

PLUGS

Configuration example	T2 H

Series

T2	Plug

Seals

H	HNBR
V	FPM

MP FILTRI WWW.SUMY.IR

STAINLESS STEEL HIGH PRESSURE FILTERS

Designation & Ordering code

APPLICABLE DIFFERENTIAL PRESSURE INDICATORS BY FILTER SERIES

Filter Series	DEX	DEZ	DLX	DLZ	DVX	DVY	DVZ
FZP	•	-	•	-	•	•	-
FZH	-	•	-	•	-	-	•
FZX	-	-	-	-	-	-	-
FZM	•	-	•	-	•	•	-
FZB	•	-	•	-	•	•	-
FZD	•	-	•	-	•	•	-

DIFFERENTIAL PRESSURE INDICATORS

Configuration example 1:	DE	Z	50	H	A	50	P01
Configuration example 2:	DL	X	70	V	A	52	P01

Series

DE	Electrical differential pressure indicator
DL	Electrical / Visual differential pressure indicator
DV	Visual differential pressure indicator

Type	DE	DL	DV
X Stainless steel standard type 420 bar	•	•	•
Y Stainless steel optional type 420 bar	-	-	•
Z Stainless steel 700 bar (only for FZH)	•	•	•

Pressure setting	DEX	DEZ	DL	DV
50 5.0 bar	•	•	•	•
70 7.0 bar	•	•	•	•
95 9.5 bar	•	•	•	•

Seals	DEX	DEZ	DL	DV
H HNBR	•	•	•	•
V FPM	-	-	•	•
F MFQ	•	-	-	-

Thermostat	DEX	DEZ	DL	DV
A Without thermostat	•	•	•	-

Electrical connections	DEX	DEZ	DL
50 Connection EN 175301-803	•	•	-
51 Connection EN 175301-803, transparent base with lamps 24 Vdc	-	-	•
52 Connection EN 175301-803, transparent base with lamps 110 Vdc	-	-	•

Option

P01	MP Filtri standard
Pxx	Customized

PLUGS

Configuration example	X2	H

Series

X2	Stainless Steel plug 420 bar
X3	Stainless Steel plug 700 bar (only for FZH)

Seals

H	HNBR
V	FPM
F	MFQ

FILTERS FOR POTENTIALLY EXPLOSIVE ATMOSPHERE

Designation & Ordering code

APPLICABLE DIFFERENTIAL PRESSURE INDICATORS BY FILTER SERIES

Filter Series	DEH	DVA	DVM	DVX	DVY	DVZ
FMMX	•	•	•	-	-	-
FZP	•	-	-	•	•	-
FZH	-	-	-	-	-	•
FZX	-	-	-	-	-	-

DIFFERENTIAL PRESSURE INDICATORS

Configuration example 1: DE | H | 50 | F | A | 48 | P01

Configuration example 2: DV | X | 70 | V | | | P01

Series

DE Electrical differential pressure indicator

DV Visual differential pressure indicator

Type	DE	DV
A With automatic reset	-	•
M With manual reset	-	•
H Stainless steel hazardous area 420 bar	•	-
X Stainless steel standard type 420 bar	-	•
Y Stainless steel optional type 420 bar	-	•
Z Stainless steel standard type 700 bar	-	•

Pressure setting	DEH	DVA	DVM	DVX	DVY
50 5.0 bar	•	•	•	•	•
70 7.0 bar	•	•	•	•	•
95 9.5 bar	-	•	•	•	•

Seals	DEH	DVA	DVM	DVX	DVY
H HNBR	-	•	•	•	•
V FPM	•	•	•	•	•
F MFQ	•	-	-	-	-

Thermostat	DEH
A Without thermostat	•

Electrical connections	DEH
48 Connection via three-core cable - fitting M20x1.5	•
49 Connection via four-core cable - fitting 1/2” NPT	•
70 Connection IEC 61076-2-101 D (M12)	•

Option

P01 MP Filtri standard

Pxx Customized

PLUGS

Configuration example: X2 | H

Series

T2 Plug

X2 Stainless Steel plug 420 bar

X3 Stainless Steel plug 700 bar (only for FZH)

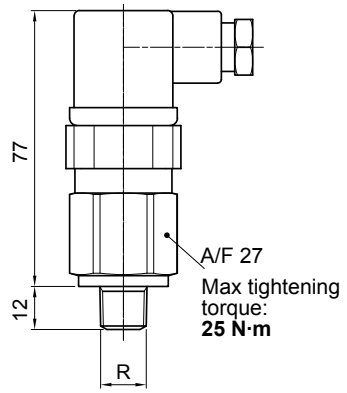
Seals	T2	X2	X3
H HNBR	•	•	•
V FPM	•	•	•
F MFQ	-	•	•

Technical data

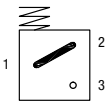
VE*50 (EX)

Electrical Vacuum Indicator
Connection: EN 175301-803

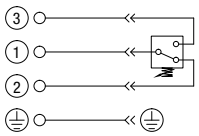
R	Ordering code
EN 10226 - R1/4"	VE A 21 x A 50 P01
	VE A 21 x A 50 P01 EX
EN 10226 - R1/8"	VE B 21 A A 50 P01
	VE B 21 A A 50 P01 EX



Hydraulic symbol



Electrical symbol



- Certification: ATEX, IECEx
- Certification included in EX version

Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: VEA: NBR/FPM
  VEB: NBR

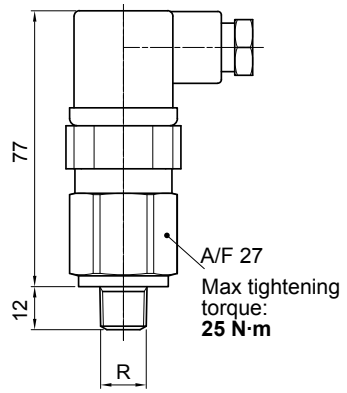
Technical data
- Vacuum setting: 0.21 bar ±10%
- Max working pressure: 10 bar
- Proof pressure: 15 bar
- Working temperature: From -25 °C to +80 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
  HFB and HFC according to ISO 2943
- Degree of protection: IP65 according to EN 60529

Electrical data
- Electrical connection: EN 175301-803
- Resistive load: 5 A / 14 Vdc
  4 A / 30 Vdc
  5 A / 125 Vac
  4 A / 250 Vac

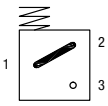
VEA50 UL

Electrical Vacuum Indicator
Connection: EN 175301-803

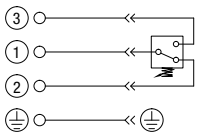
R	Ordering code
EN 10226 - R1/4"	VE A 21 A A 50 P01 UL



Hydraulic symbol



Electrical symbol



- Certification: UL
- Certification included as standard

Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: VEA: NBR/FPM
  VEB: NBR

Technical data
- Vacuum setting: 0.21 bar ±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
  HFB and HFC according to ISO 2943
- Degree of protection: IP65 according to EN 60529

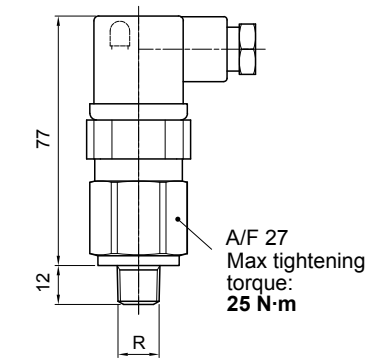
Electrical data
- Electrical connection: EN 175301-803
- Resistive load: 5 A / 14 Vdc
  4 A / 30 Vdc
  5 A / 125 Vac
  4 A / 250 Vac

VL*51 - VL*52 - VL*53

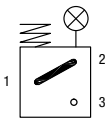
Electrical/Visual Vacuum Indicator
Connection: EN 175301-803

51: Transparent base with lamps 24 Vdc
52: Transparent base with lamps 110 Vdc
53: Transparent base with lamps 230 Vac

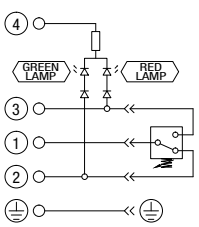
R	Ordering code
EN 10226 - R1/4"	VL A 21 x A xx P01
EN 10226 - R1/8"	VL B 21 A A xx P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Transparent polyamide
- Contacts: Brass - Polyamide
- Seal: VLA: NBR/FPM
  VLB: NBR

Technical data
- Vacuum setting: 0.21 bar ±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
  HFB and HFC according to ISO 2943
- Degree of protection: IP65 according to EN 60529

Electrical data
- Electrical connection: EN 175301-803

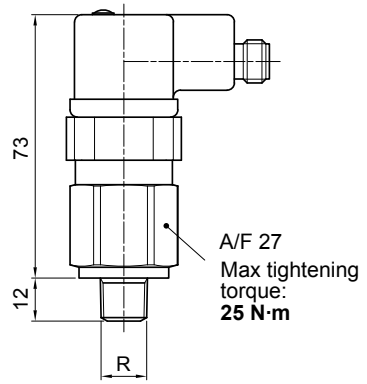
- Type	51	52	53
- Lamps	24 Vdc	110 Vdc	230 Vac
- Resistive load:	1 A / 24 Vdc	1 A / 110 Vdc	1 A / 230 Vac

MP FILTRI
WWW.SUMY.IR

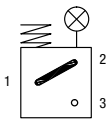
VL*71

Electrical/Visual Vacuum Indicator
Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc

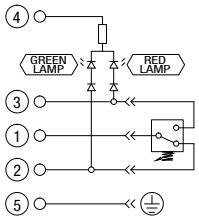
Connections	Indicator code
EN 10226 - R1/4"	VL A 21 x A 71 P01
EN 10226 - R1/8"	VL B 21 A A 71 P01



Hydraulic symbol



Electrical symbol



Materials

- Body:	Brass
- Base:	Black polyamide
- Contacts:	Silver
- Seal:	VLA: NBR/FPM VLB: NBR

Technical data

- Vacuum setting:	0.21 bar ±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 HFB and HFC according to ISO 2943
- Degree of protection:	IP65 according to EN 60529

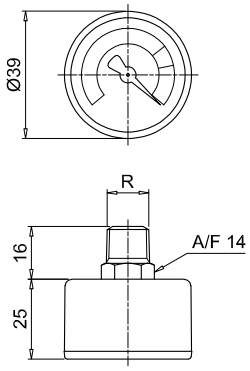
Electrical data

- Electrical connection:	IEC 61076-2-101 D (M12)
- Lamps	24 Vdc (black base)
- Resistive load:	0.4 A / 24 Vdc

VVA - VVB

Axial Vacuum Gauge

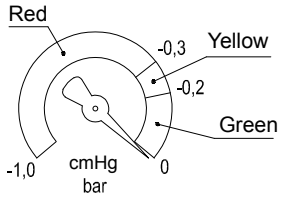
R	Ordering code
EN 10226 - R1/4"	VVA 20 P01
EN 10226 - R1/8"	VVB 20 P01



Hydraulic symbol



Dial scale



Conversion to SI units

[cmHg]	[bar]
-12	-0.16
-18	-0.24
-76	-1.01

Materials

- Case:	Black plastic
- Window:	Clear plastic
- Dial:	White plastic
- Pointer:	Black plastic
- Pressure connection:	Cu-alloy
- Pressure element:	Bourdon tube Cu-alloy soft soldered, C type
- Movement:	Cu-alloy

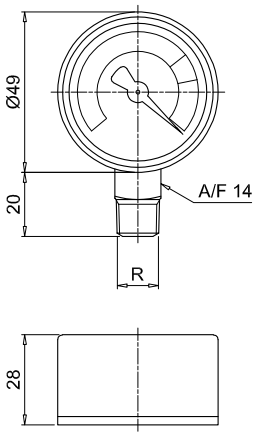
Technical data

- Max working pressure:	Steady: -0.7 bar Fluctuating: -0.6 bar Short time: -1.0 bar
- Working temperature:	Ambienti from -40 °C to +60 °C Fluid max + 60 °C Storage from -40 °C to +60 °C
- Compatibility with fluids:	Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Accuracy:	Class 2.5 according to EN 13190
- Degree of protection:	IP31 according to EN 60529

VVR - VVS

Radial Vacuum Gauge

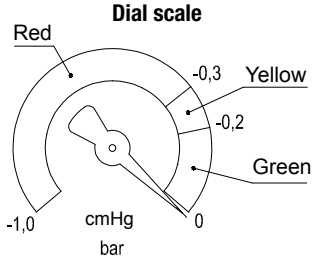
R	A/F	Ordering code
EN 10226 - R1/4"	14	VVR 20 P01
EN 10226 - R1/8"	11	VVS 20 P01



Hydraulic symbol



Dial scale



Conversion to SI units

[cmHg]	[bar]
-12	-0.16
-18	-0.24
-76	-1.01

Materials

- Case:	Black plastic
- Window:	Clear plastic
- Dial:	White plastic
- Pointer:	Black plastic
- Pressure connection:	Cu-alloy
- Pressure element:	Bourdon tube Cu-alloy soft soldered, C type
- Movement:	Cu-alloy

Technical data

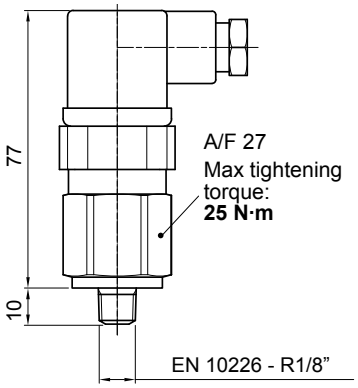
- Max working pressure:	Steady: -0.7 bar Fluctuating: -0.6 bar Short time: -1.0 bar
- Working temperature:	Ambienti from -40 °C to +60 °C Fluid max + 60 °C Storage from -40 °C to +60 °C
- Compatibility with fluids:	Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Accuracy:	Class 2.5 according to EN 13190
- Degree of protection:	IP31 according to EN 60529

Dimensions

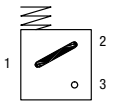
BEA*50 (EX)

Electrical Pressure Indicator
Connection EN 175301-803

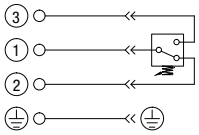
Settings	Ordering code
1.5 bar ±10%	BE A 15 H A 50 P01
	BE A 15 H A 50 P01 EX
2.0 bar ±10%	BE A 20 H A 50 P01
	BE A 20 H A 50 P01 EX



Hydraulic symbol



Electrical symbol



- Certification: ATEX, IECEx
- Certification included in EX version

Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR

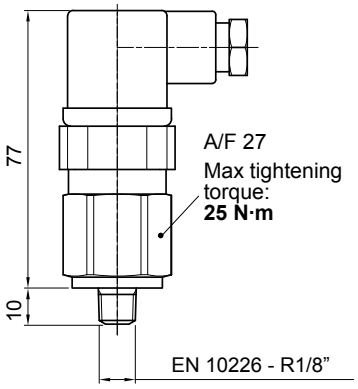
Technical data
- Max working pressure: 40 bar
- Proof pressure: 60 bar
- Working temperature: From -25 °C to +80 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Degree of protection: IP65 according to EN 60529

Electrical data
- Electrical connection: EN 175301-803
- Resistive load: 5 A / 14 Vdc
  4 A / 30 Vdc
  5 A / 125 Vac
  4 A / 250 Vac

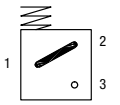
BEA*50 UL

Electrical Pressure Indicator
Connection EN 175301-803

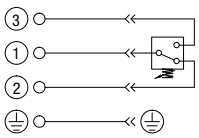
Settings	Ordering code
1.5 bar ±10%	BE A 15 H A 50 P01 UL
2.0 bar ±10%	BE A 20 H A 50 P01 UL



Hydraulic symbol



Electrical symbol



- Certification: UL
- Certification included as standard

Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR

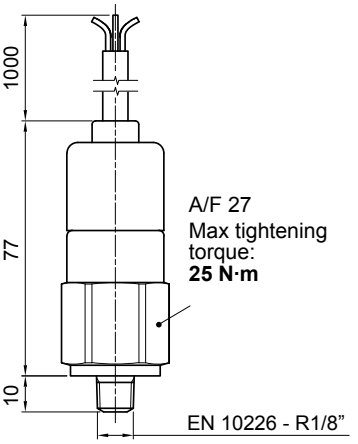
Technical data
- Max working pressure: 12 bar
- Proof pressure: 40 bar
- Working temperature: From -25 °C to +80 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Degree of protection: IP65 according to EN 60529

Electrical data
- Electrical connection: EN 175301-803
- Resistive load: 5 A / 14 Vdc
  4 A / 30 Vdc
  5 A / 125 Vac
  4 A / 250 Vac

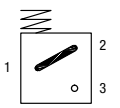
BEM*41

Electrical Pressure Indicator
Connection via four-core cable

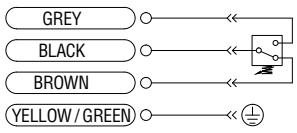
Settings	Ordering code
1.5 bar ±10%	BE M 15 H A 41 P01
2.0 bar ±10%	BE M 20 H A 41 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR

Technical data
- Max working pressure: 40 bar
- Proof pressure: 60 bar
- Working temperature: From -25 °C to +80 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Degree of protection: IP67 according to EN 60529

Electrical data
- Electrical connection: Four-core cable
- Resistive load: 5 A / 14 Vdc
  4 A / 30 Vdc
  5 A / 125 Vac
  4 A / 250 Vac
- CE certification

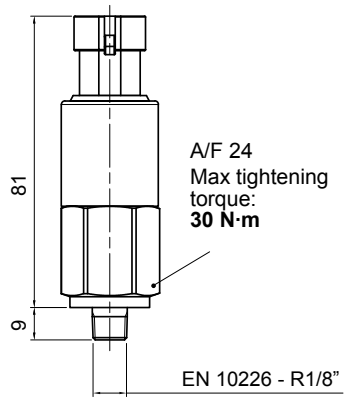
On request this indicator can be provided with main connectors in use for wirings.

MP FILTRI WWW.SUMY.IR

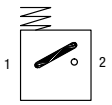
BET*F10

Electrical Pressure Indicator
Connection AMP Superseal series 1.5

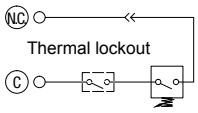
Settings	Ordering code
2.0 bar ±10%	BE T 20 H F 10 P01
2.5 bar ±10%	BE T 25 H F 10 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR

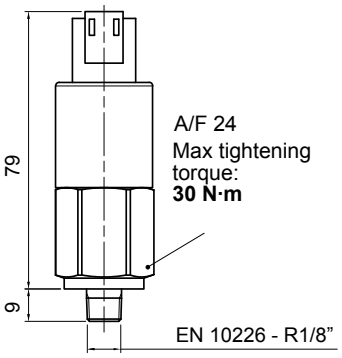
Technical data
- Max working pressure: 10 bar
- Proof pressure: 15 bar
- Working temperature: From -25 °C to +100 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Degree of protection: IP65 according to EN 60529

Electrical data
- Electrical connection: AMP Superseal series 1.5
- Resistive load: 0.5 A / 48 Vdc
- Thermostat condition: Open up to 30 °C
- CE certification

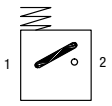
BET*F30

Electrical Pressure Indicator
Deutsch DT-04-2-P

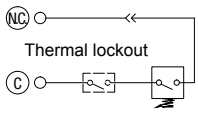
Settings	Ordering code
2.0 bar ±10%	BE T 20 H F 30 P01
2.5 bar ±10%	BE T 25 H F 30 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR

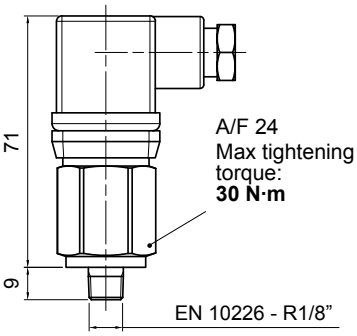
Technical data
- Max working pressure: 10 bar
- Proof pressure: 15 bar
- Working temperature: From -25 °C to +100 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Degree of protection: IP65 according to EN 60529

Electrical data
- Electrical connection: Deutsch DT-04-2-P
- Resistive load: 0.5 A / 48 Vdc
- Thermostat condition: Open up to 30 °C
- CE certification

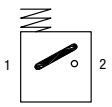
BET*F50

Electrical Pressure Indicator
Connection EN 175301-803

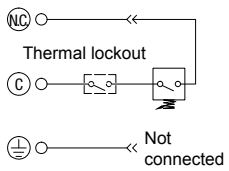
Settings	Ordering code
2.0 bar ±10%	BE T 20 H F 50 P01
2.5 bar ±10%	BE T 25 H F 50 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR

Technical data
- Max working pressure: 10 bar
- Proof pressure: 15 bar
- Working temperature: From -25 °C to +100 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Degree of protection: IP65 according to EN 60529

Electrical data
- Electrical connection: EN 175301-803
- Resistive load: 0.5 A / 48 Vdc
- Thermostat condition: Open up to 30 °C
- CE certification

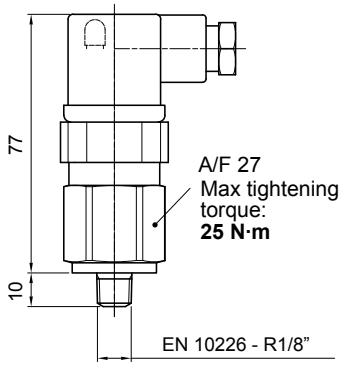
Dimensions

BL*51 - BL*52 - BL*53

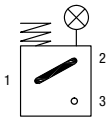
Electrical/Visual Pressure Indicator
Connection: EN 175301-803

51: Transparent base with lamps 24 Vdc
52: Transparent base with lamps 110 Vdc
53: Transparent base with lamps 230 Vac

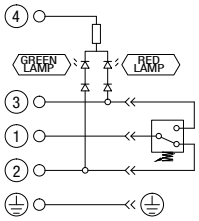
Settings	Ordering code
1.5 bar ±10%	BL A 15 H A xx P01
2.0 bar ±10%	BL A 20 H A xx P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Transparent polyamide
- Contacts: Silver
- Seal: HNBR

Technical data
- Max working pressure: 40 bar
- Proof pressure: 60 bar
- Working temperature: From -25 °C to +80 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Degree of protection: IP65 according to EN 60529

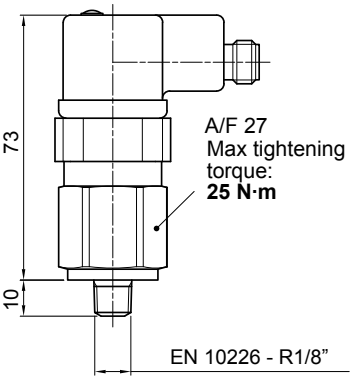
Electrical data

- Electrical connection:	EN 175301-803		
- Type	51	52	53
- Lamps	24 Vdc	110 Vdc	230 Vac
- Resistive load:	1 A / 24 Vdc	1 A / 110 Vdc	1 A / 230 Vac

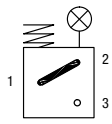
BL*71

Electrical/Visual Pressure Indicator
Connection IEC 61076-2-101 D (M12), black base with lamps 24 Vdc

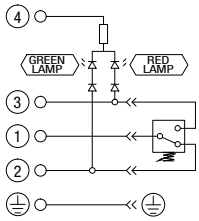
Settings	Ordering code
1.5 bar ±10%	BL A 15 H A 71 P01
2.0 bar ±10%	BL A 20 H A 71 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR

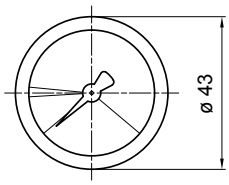
Technical data
- Max working pressure: 40 bar
- Proof pressure: 60 bar
- Working temperature: From -25 °C to +80 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Degree of protection: IP65 according to EN 60529

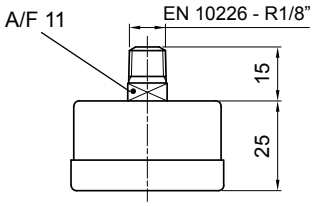
Electrical data
- Electrical connection: IEC 61076-2-101 D (M12)
- Lamps: 24 Vdc (black base)
- Resistive load: 0.4 A / 24 Vdc

BVA

Axial Pressure Gauge

Settings	Ordering code
1.4 bar ±10%	BV A 14 P01
2.5 bar ±10%	BV A 25 P01



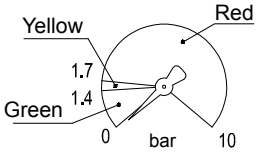


Hydraulic symbol

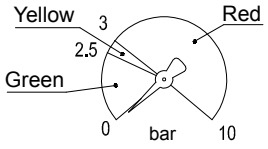


Dial scale

BV A 14 P01



BV A 25 P01



Materials
- Case: Painted Steel
- Window: Clear plastic
- Dial: Painted Steel
- Pointer: Black plastic
- Pressure connection: Brass
- Pressure element: Bourdon tube Cu-alloy sof t soldered, C type
- Movement: Cu-alloy

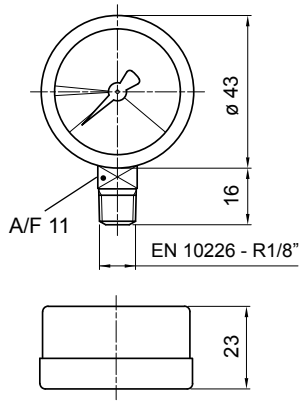
Technical data
- Max working pressure: Static: 7 bar
  Fluctuating: 6 bar
  Short time: 10 bar
- Working temperature: Ambient from -40 °C to +60 °C
  Fluid max +60 °C
  Storage from -40 °C to +60 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Accuracy: Class 2.5 according to EN 13190
- Degree of protection: IP31 according to EN 60529

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BVR

Radial Pressure Gauge

Settings	Ordering code
1.4 bar ±10%	BV R 14 P01
2.5 bar ±10%	BV R 25 P01

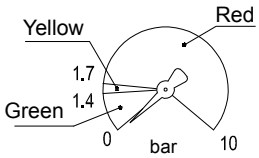


Hydraulic symbol

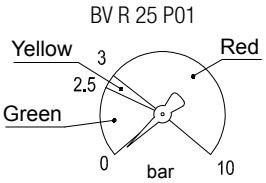


Dial scale

BV R 14 P01



BV R 25 P01



Materials

- Case: Painted Steel
- Window: Clear plastic
- Dial: Painted Steel
- Pointer: Black plastic
- Pressure connection: Brass
- Pressure element: Bourdon tube Cu-alloy sof t soldered, C type
- Movement: Cu-alloy

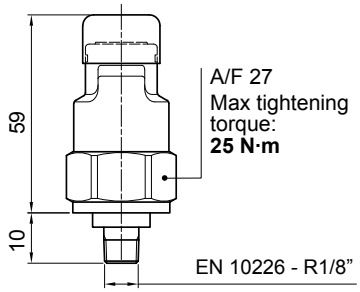
Technical data

- Max working pressure: Static: 7 bar
  Fluctuating: 6 bar
  Short time: 10 bar
- Working temperature: Ambient from -40 °C to +60 °C
  Fluid max +60 °C
  Storage from -40 °C to +60 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
  HFB and HFC according to ISO 2943
- Accuracy: Class 2.5 according to EN 13190
- Degree of protection: IP31 according to EN 60529

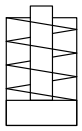
BVP - BVQ

Visual Pressure Indicator
BVP - Automatic reset
BVQ - Manual reset

Setting	Ordering code
1.5 bar ±10%	BV P 15 H P01
	BV Q 15 H P01
2.0 bar ±10%	BV P 20 H P01
	BV Q 20 H P01



Hydraulic symbol



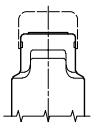
Materials

- Body: Brass
- Cover / internal parts: Polyamide
- Caps: VMQ
- Seal: HNBR

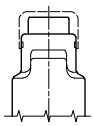
Technical data

- Reset: BVP - Automatic reset
  BVQ - Manual reset
- Max working pressure: 10 bar
- Proof pressure: 15 bar
- Working temperature: From -25 °C to +80 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids
  HFB and HFC according to ISO 2943
- Degree of protection: IP45 according to EN 60529

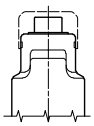
Signals



Absence of pressure
(no indicator)



Presence of pressure
(green button rises gradually)



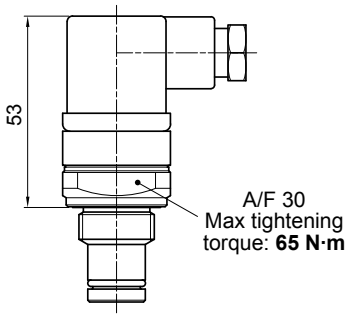
Clogged filter element
(red button risen)

Dimensions

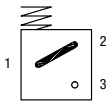
DEA*50

Electrical Differential Pressure Indicator
Connection: EN 175301-803

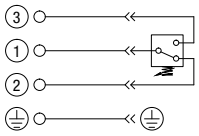
Settings	Ordering code
1.2 bar ±10%	DE A 12 x A 50 P01
2.0 bar ±10%	DE A 20 x A 50 P01
5.0 bar ±10%	DE A 50 x A 50 P01
7.0 bar ±10%	DE A 70 x A 50 P01
9.5 bar ±10%	DE A 95 x A 50 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - FPM

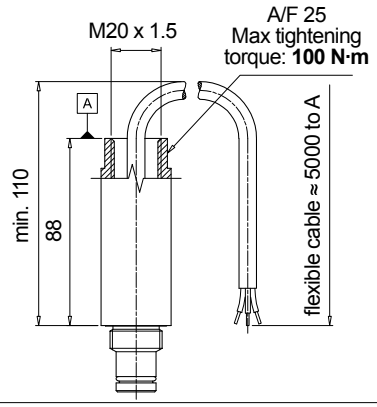
Technical data
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529 IP69K according to ISO 20653

Electrical data
- Electrical connection: EN 175301-803
- Resistive load: 0.2 A / 115 Vdc

DEH*48

Hazardous Area
Electrical Differential Pressure Indicator
Connection via three-core cable - cable fitting M20x1.5

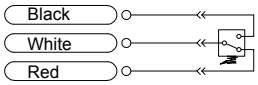
Settings	Ordering code
2.0 bar ±10%	DE H 20 x A 48 P01
5.0 bar ±10%	DE H 50 x A 48 P01
7.0 bar ±10%	DE H 70 x A 48 P01



Hydraulic symbol



Electrical symbol



- Certification / Approvals: ATEX, IECEx, EAC TR CU
- Certification included as standard

Materials
- Body: AISI 316L
- Contacts: Rhodium
- Seal: FPM - MFQ

Technical data
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Temperature range: T4=Tamb -60 °C to +125 °C (-76 to 257 °F) T6=Tamb -60 °C to +80 °C (-76 to 176 °F)
- Degree of protection: IP 66/67/68 according to EN 60529
- Connection type: Three-core cable, fitting M20x1.5
- Contact type: SPCO/SPDT (Hermetically sealed - Volt-free contacts)

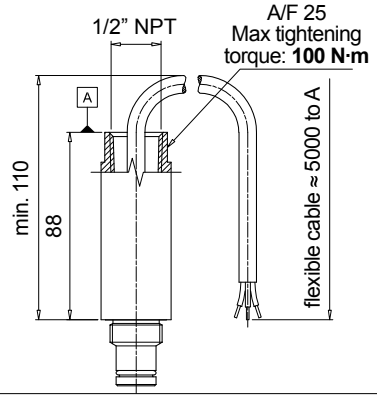
Electrical data
- Resistive Load: 830 mA / 24 Vdc - 180 mA / 110 Vac
- Electrical Ratings: Ui = 30 Vdc / Ii = 250 mA / Pi = 1.3 W

Atex Rating	IECEx Rating
II 1 GD Ex ia IIC T6 Ga	Ex ia IIC T6 Ga
Ex ia IIC T4 Ga	Ex ia IIC T4 Ga
Ex ia IIIC T_{200} 85 °C Da	Ex ia IIIC T_{200} 85 °C Da
Ex ia IIIC T_{200} 135 °C Da	Ex ia IIIC T_{200} 135 °C Da

DEH*49

Hazardous Area
Electrical Differential Pressure Indicator
Connection via four-core cable - cable fitting 1/2" NPT

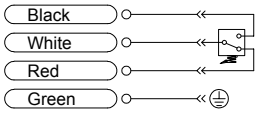
Settings	Ordering code
2.0 bar ±10%	DE H 20 x A 49 P01
5.0 bar ±10%	DE H 50 x A 49 P01
7.0 bar ±10%	DE H 70 x A 49 P01



Hydraulic symbol



Electrical symbol



- Certification / Approvals: ATEX, IECEx, EAC TR CU, UL/CSA
- Certification included as standard

Materials
- Body: AISI 316L
- Contacts: Rhodium
- Seal: FPM - MFQ

Technical data
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Temperature range: T4=Tamb -60 °C to +120 °C (-76 to 248 °F) T6=Tamb -60 °C to +70 °C (-76 to 158 °F) From -60 °C to +105 °C (-76 to 221 °F) : UL/CSA
- Degree of protection: IP 66/67/68 according to EN 60529
- Connection type: Four-core cable, fitting 1/2" NPT
- Contact type: SPCO/SPDT (Hermetically sealed - Volt-free contacts)

Electrical data
- Resistive Load: 830 mA / 24 Vdc - 180 mA / 110 Vac
- Electrical Ratings: Ui = 150 Vac/dc / Pi = 20 W

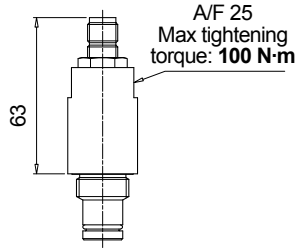
Atex Rating	IECEx Rating	UL/CSA Rating
II 2 GD Ex db IIC T6 Gb	Ex db IIC T6 Gb	Class I Div 1 Groups A, B, C, & D
Ex db IIC T4 Gb	Ex db IIC T4 Gb	Class II Div 1 Groups E, F, & G
Ex tb IIIC T85 °C Db	Ex tb IIIC T85 °C Db	Class III Hazardous Locations
Ex tb IIIC T135 °C Db	Ex tb IIIC T135 °C Db	

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DEH*70

Hazardous Area
Electrical Differential Pressure Indicator
Connection IEC 61076-2-101 D (M12)

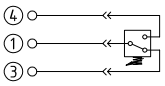
Settings	Ordering code
2.0 bar ±10%	DE H 20 x A 70 P01
5.0 bar ±10%	DE H 50 x A 70 P01
7.0 bar ±10%	DE H 70 x A 70 P01



Hydraulic symbol



Electrical symbol



- Certification / Approvals: ATEX, IECEx, EAC TR CU
- Certification included as standard

Materials
- Body: AISI 316L with internal engineered resin switch
- Contacts: Rhodium
- Seal: FPM - MFQ

Technical data
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Temperature range: T6=Tamb -60 °C to +80 °C (-76 to 176 °F)
- Degree of protection: IP 66/67 according to EN 60529
- Connection type: IEC 61076-2-101 D (M12)
- Contact type: SPCO/SPDT (Hermetically sealed - Volt-free contacts)

Electrical data
- Resistive Load: 830 mA / 24 Vdc - 180 mA / 110 Vdc
- Electrical Ratings: Ui = 30 Vdc / Ii = 250 mA / Pi = 1.3 W

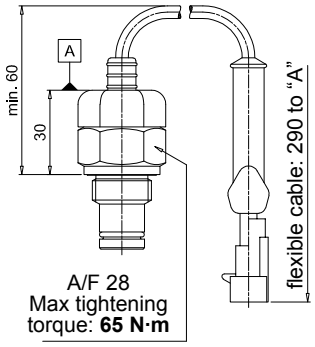
Atex Rating
II 1 GD Ex ia IIC T6 Ga
Ex ia IIIC T_{200} 135 °C Da

IECEx Rating
Ex ia IIC T6 Ga
Ex ia IIIC T_{200} 135 °C Da

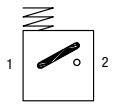
DEM*F10

Electrical Differential Pressure Indicator
Connection: AMP Superseal series 1.5

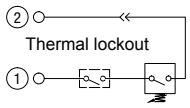
Settings	Ordering code
1.2 bar ±10%	DE M 12 x F 10 P01
2.0 bar ±10%	DE M 20 x F 10 P01
5.0 bar ±10%	DE M 50 x F 10 P01
7.0 bar ±10%	DE M 70 x F 10 P01
9.5 bar ±10%	DE M 95 x F 10 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - FPM

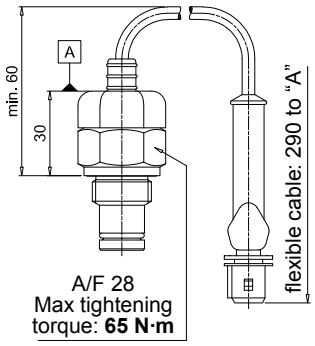
Technical data
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529

Electrical data
- Electrical connection: AMP Superseal series 1.5
- Resistive load: 0.2 A / 115 Vdc
- Switching type: Normally open contacts (NC on request)
- Thermal lockout: Normally open up to 30 °C (option "F")

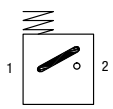
DEM*F20

Electrical Differential Pressure Indicator
AMP Time junior

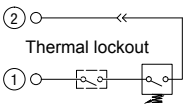
Settings	Ordering code
1.2 bar ±10%	DE M 12 x F 20 P01
2.0 bar ±10%	DE M 20 x F 20 P01
5.0 bar ±10%	DE M 50 x F 20 P01
7.0 bar ±10%	DE M 70 x F 20 P01
9.5 bar ±10%	DE M 95 x F 20 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - FPM

Technical data
- 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 HFB and HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529

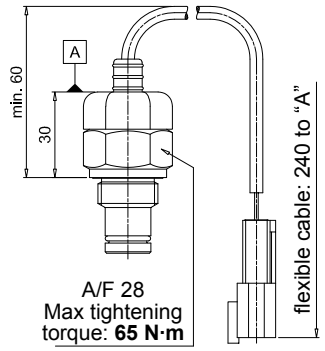
Electrical data
- Electrical connection: AMP Time junior
- Resistive load: 0.2 A / 115 Vdc
- Switching type: Normally open contacts (NC on request)
- Thermal lockout: Normally open up to 30 °C (option "F")

Dimensions

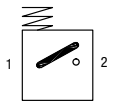
DEM*F30

Electrical Differential Pressure Indicator
Deutsch DT-04-2-P

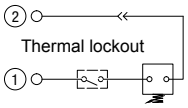
Settings	Ordering code
1.2 bar ±10%	DE M 12 x F 30 P01
2.0 bar ±10%	DE M 20 x F 30 P01
5.0 bar ±10%	DE M 50 x F 30 P01
7.0 bar ±10%	DE M 70 x F 30 P01
9.5 bar ±10%	DE M 95 x F 30 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - FPM

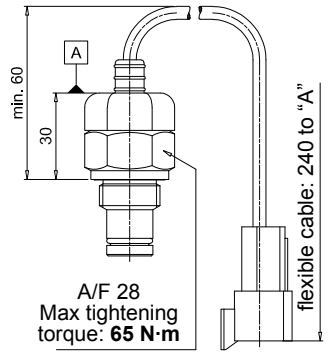
Technical data
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529

Electrical data
- Electrical connection: Deutsch DT-04-2-P
- Resistive load: 0.2 A / 115 Vdc
- Switching type: Normally open contacts (NC on request)
- Thermal lockout: Normally open up to 30 °C (option "F")

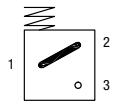
DEM*F35

Electrical Differential Pressure Indicator
Deutsch DT-04-3-P

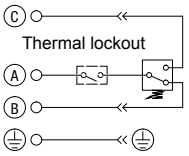
Settings	Ordering code
1.2 bar ±10%	DE M 12 x F 35 P01
2.0 bar ±10%	DE M 20 x F 35 P01
5.0 bar ±10%	DE M 50 x F 35 P01
7.0 bar ±10%	DE M 70 x F 35 P01
9.5 bar ±10%	DE M 95 x F 35 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - FPM

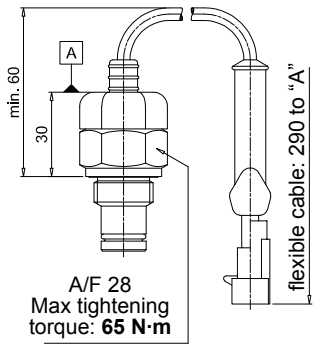
Technical data
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529

Electrical data
- Electrical connection: Deutsch DT-04-3-P
- Resistive load: 0.2 A / 115 Vdc
- Switching type: SPDT contact
- Thermal lockout: Normally open up to 30 °C (option "F")

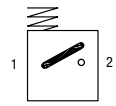
DEM*A10

Electrical Differential Pressure Indicator
Connection: AMP Superseal series 1.5

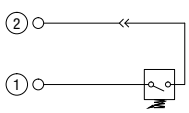
Settings	Ordering code
1.2 bar ±10%	DE M 12 x A 10 P01
2.0 bar ±10%	DE M 20 x A 10 P01
5.0 bar ±10%	DE M 50 x A 10 P01
7.0 bar ±10%	DE M 70 x A 10 P01
9.5 bar ±10%	DE M 95 x A 10 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - FPM

Technical data
- 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 HFB and HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529

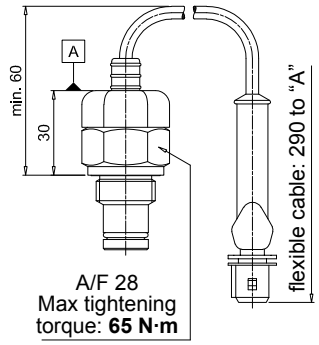
Electrical data
- Electrical connection: AMP Superseal series 1.5
- Resistive load: 0.2 A / 115 Vdc
- Switching type: Normally open contacts (NC on request)

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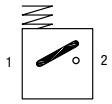
DEM*A20

Electrical Differential Pressure Indicator
AMP Time junior

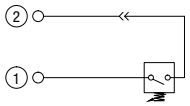
Settings	Ordering code
1.2 bar ±10%	DE M 12 x A 20 P01
2.0 bar ±10%	DE M 20 x A 20 P01
5.0 bar ±10%	DE M 50 x A 20 P01
7.0 bar ±10%	DE M 70 x A 20 P01
9.5 bar ±10%	DE M 95 x A 20 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - FPM

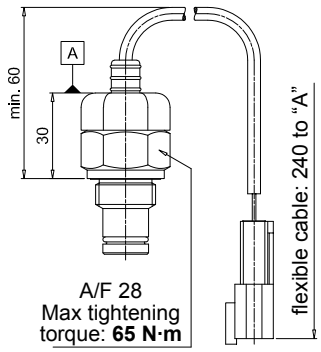
Technical data
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529

Electrical data
- Electrical connection: AMP Time junior
- Resistive load: 0.2 A / 115 Vdc
- Switching type: Normally open contacts (NC on request)

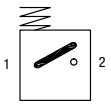
DEM*A30

Electrical Differential Pressure Indicator
Deutsch DT-04-2-P

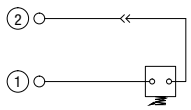
Settings	Ordering code
1.2 bar ±10%	DE M 12 x A 30 P01
2.0 bar ±10%	DE M 20 x A 30 P01
5.0 bar ±10%	DE M 50 x A 30 P01
7.0 bar ±10%	DE M 70 x A 30 P01
9.5 bar ±10%	DE M 95 x A 30 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - FPM

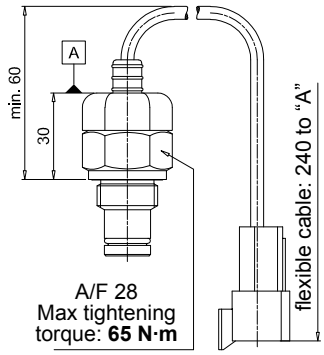
Technical data
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529

Electrical data
- Electrical connection: Deutsch DT-04-2-P
- Resistive load: 0.2 A / 115 Vdc
- Switching type: Normally open contacts (NC on request)

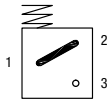
DEM*A35

Electrical Differential Pressure Indicator
Deutsch DT-04-3-P

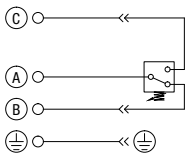
Settings	Ordering code
1.2 bar ±10%	DE M 12 x A 35 P01
2.0 bar ±10%	DE M 20 x A 35 P01
5.0 bar ±10%	DE M 50 x A 35 P01
7.0 bar ±10%	DE M 70 x A 35 P01
9.5 bar ±10%	DE M 95 x A 35 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - FPM

Technical data
- 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 HFB and HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529

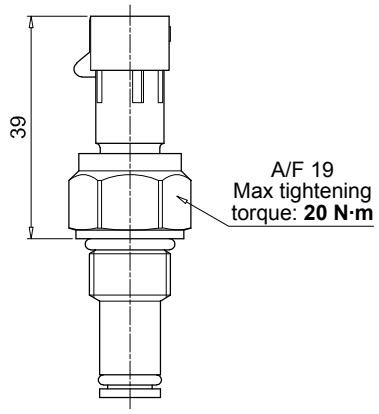
Electrical data
- Electrical connection: Deutsch DT-04-3-P
- Resistive load: 0.2 A / 115 Vdc
- Switching type: SPDT contact

Dimensions

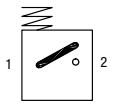
DES*10

Electrical Differential Pressure Indicator
AMP Superseal series 1.5

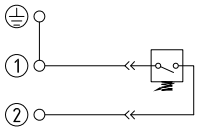
Settings	Ordering code
1.2 bar ±10%	DE S 12 H A 10 P01
2.5 bar ±10%	DE S 25 H A 10 P01
4.0 bar ±10%	DE S 40 H A 10 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Internal parts: Brass - Polyamide
- Contacts: Silver
- Seal: HNBR

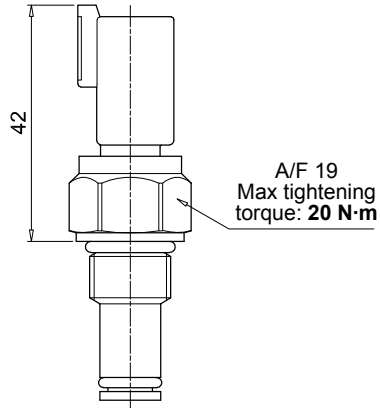
Technical data
- Max working pressure: 16 bar
- Proof pressure: 24 bar
- Burst pressure: 48 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Degree protection: IP67 according to EN 60529

Electrical data
- Electrical connection: AMP Superseal series 1.5
- Resistive load: 0.2 A / 24 Vdc
- Switching type: Normally open contacts (NC on request)

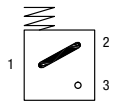
DES*30

Electrical Differential Pressure Indicator
Deutsch DT-04-2-P

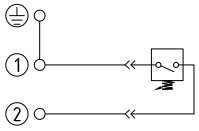
Settings	Ordering code
1.2 bar ±10%	DE S 12 H A 30 P01
2.5 bar ±10%	DE S 25 H A 30 P01
4.0 bar ±10%	DE S 40 H A 30 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Internal parts: Brass - Polyamide
- Contacts: Silver
- Seal: HNBR

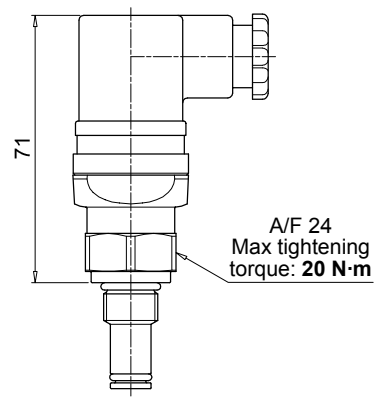
Technical data
- Max working pressure: 16 bar
- Proof pressure: 24 bar
- Burst pressure: 48 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Degree protection: IP67 according to EN 60529

Electrical data
- Electrical connection: Deutsch DT-04-2-P
- Resistive load: 0.2 A / 24 Vdc
- Switching type: Normally open contacts (NC on request)

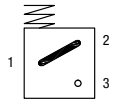
DES*50

Electrical Differential Pressure Indicator
Connection: EN 175301-803

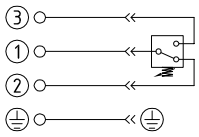
Settings	Ordering code
1.2 bar ±10%	DE S 12 H A 50 P01
2.5 bar ±10%	DE S 25 H A 50 P01
4.0 bar ±10%	DE S 40 H A 50 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Aluminium
- Internal parts: Aluminium - Polyamide
- Contacts: Silver
- Seal: HNBR

Technical data
- Max working pressure: 35 bar
- Proof pressure: 53 bar
- Burst pressure: 105 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529 IP69K according to EN 20653

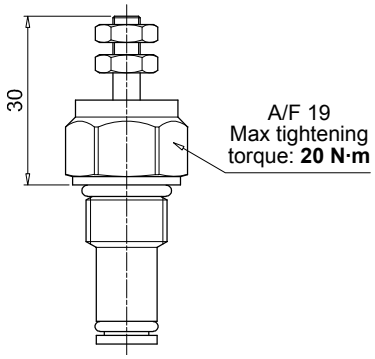
Electrical data
- Electrical connection: EN 175301-803
- Resistive load: 0.2 A / 115 Vdc

MP FILTRI
WWW.SUMY.IR

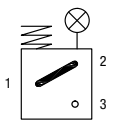
DES*80

Electrical Differential Pressure Indicator
Stud #10-32 UNF

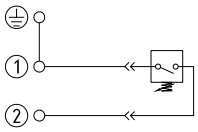
Settings	Ordering code
1.2 bar ±10%	DE S 12 H A 80 P01
2.5 bar ±10%	DE S 25 H A 80 P01
4.0 bar ±10%	DE S 40 H A 80 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Internal parts: Brass - Polyamide
- Contacts: Silver
- Seal: HNBR

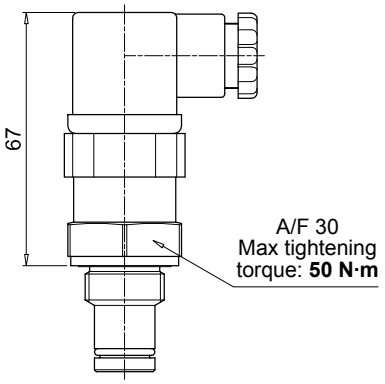
Technical data
- Max working pressure: 16 bar
- Proof pressure: 24 bar
- Burst pressure: 48 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Degree protection: IP67 according to EN 60529

Electrical data
- Electrical connection: Stud #10-32 UNF
- Resistive load: 0.2 A / 24 Vdc
- Switching type: Normally open contacts (NC on request)

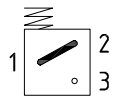
DEU*50 UL

Electrical Differential Pressure Indicator
Connection EN 175301-803

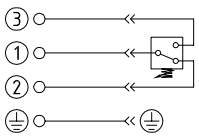
Settings	Ordering code
2.0 bar ±10%	DE U 20 V A 50 P01 UL
5.0 bar ±10%	DE U 50 V A 50 P01 UL
7.0 bar ±10%	DE U 70 V A 50 P01 UL



Hydraulic symbol



Electrical symbol



- Certification: UL
- Certification included as standard

Materials
- Body: Brass
- Base: Black Polyamide
- Contacts: Silver
- Seal: FPM

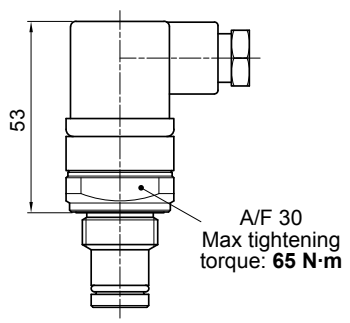
Technical data
- Max working pressure: 210 bar
- Proof pressure: 220 bar
- Burst pressure: 880 bar
- Working temperature: From --25 °C to +85 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Degree protection: IP65 according to EN 60529

Electrical data
- Electrical connection: EN 175301-803
- Resistive load: 3 A / 30 Vdc
  3 A / 125 Vac
  3 (3) A / 250 Vac

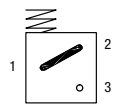
DEX*50

Electrical Differential Pressure Indicator
Connection: EN 175301-803

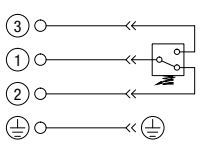
Settings	Ordering code
1.2 bar ±10%	DE X 12 x A 50 P01
2.0 bar ±10%	DE X 20 x A 50 P01
5.0 bar ±10%	DE X 50 x A 50 P01
7.0 bar ±10%	DE X 70 x A 50 P01
9.5 bar ±10%	DE X 95 x A 50 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: AISI 316L
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - MFQ

Technical data
- 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 HFB and HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529
  IP69K according to ISO 20653

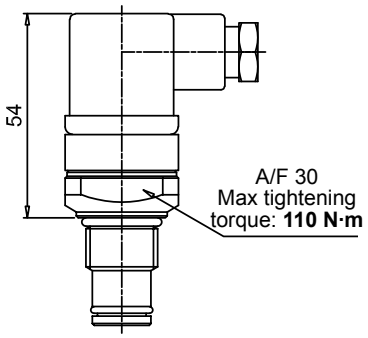
Electrical data
- Electrical connection: EN 175301-803
- Resistive load: 0.2 A / 115 Vdc

Dimensions

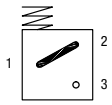
DEZ*50

Electrical Differential Pressure Indicator
Connection: EN 175301-803

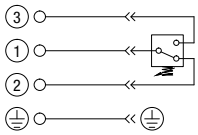
Settings	Ordering code
5.0 bar ±10%	DE Z 50 x A 50 P01
7.0 bar ±10%	DE Z 70 x A 50 P01
9.5 bar ±10%	DE Z 95 x A 50 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: AISI 316L
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - MFQ

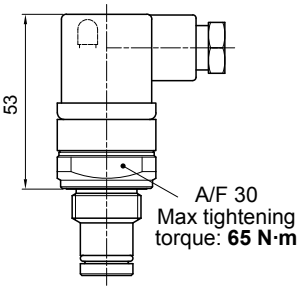
Technical data
- Max working pressure: 700 bar
- Proof pressure: 1050 bar
- Burst pressure: 2100 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFA, HFB, HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529 IP69K according to ISO 20653

Electrical data
- Electrical connection: EN 175301-803
- Resistive load: 0.2 A / 115 Vdc

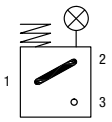
DLA*51 - DLA*52

Electrical/Visual Differential Pressure Indicator
Connection: EN 175301-803
51: Transparent base with lamps 24 Vdc
52: Transparent base with lamps 110 Vdc

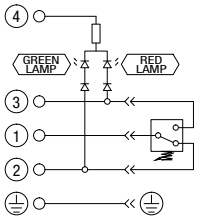
Settings	Ordering code
1.2 bar ±10%	DL A 12 x A xx P01
2.0 bar ±10%	DL A 20 x A xx P01
5.0 bar ±10%	DL A 50 x A xx P01
7.0 bar ±10%	DL A 70 x A xx P01
9.5 bar ±10%	DL A 95 x A xx P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Transparent polyamide
- Contacts: Silver
- Seal: HNBR - FPM

Technical data
- 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 HFB and HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529 IP69K according to ISO 20653

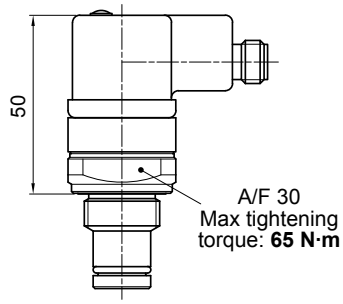
Electrical data

- Electrical connection:	EN 175301-803	
- Type	51	52
- Lamps	24 Vdc	110 Vdc
- Resistive load:	1 A / 24 Vdc	1 A / 110 Vdc

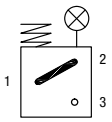
DLA*71

Electrical/Visual Differential pressure indicator
Connection IEC 61076-2-101 D (M12),
black base with lamps 24 Vdc

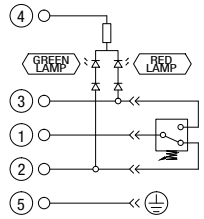
Settings	Ordering code
1.2 bar ±10%	DL A 12 x A 71 P01
2.0 bar ±10%	DL A 20 x A 71 P01
5.0 bar ±10%	DL A 50 x A 71 P01
7.0 bar ±10%	DL A 70 x A 71 P01
9.5 bar ±10%	DL A 95 x A 71 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - FPM

Technical data
- 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 HFB and HFC according to ISO 2943
- Degree protection: IP65 according to EN 60529 IP69K according to ISO 20653

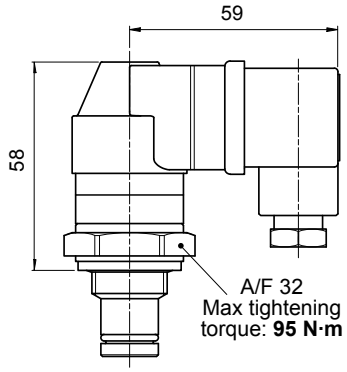
Electrical data
- Electrical connection: IEC 61076-2-101 D (M12)
- Lamps 24 Vdc (black base)
- Resistive load: 0.4 A / 24 Vdc

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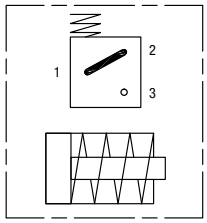
DLE*A50

Electrical/Visual Differential Pressure Indicator
Without term. Connections: EN 175301-803

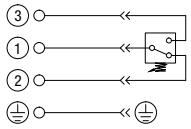
Settings	Ordering code
1.2 bar ±10%	DL E 12 x A 50 P01
2.0 bar ±10%	DL E 20 x A 50 P01
5.0 bar ±10%	DL E 50 x A 50 P01
7.0 bar ±10%	DL E 70 x A 50 P01
9.5 bar ±10%	DL E 95 x A 50 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - FPM

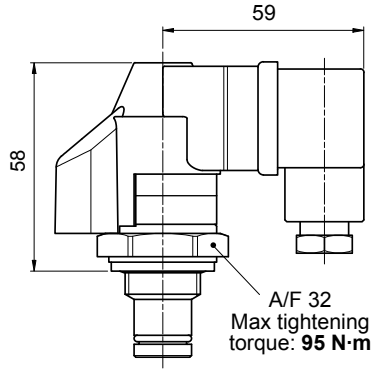
Technical data
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Degree protection: IP65 according to EN 60529

Electrical data
- Electrical connections: EN 175301-803
- Resistive load: 5 A / 250 Vac
- Available the connector with lamps

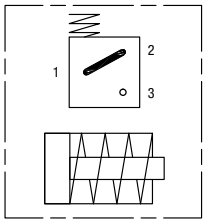
DLE*F50

Electrical/Visual Differential Pressure Indicator
With term. Connections: EN 175301-803

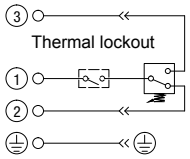
Settings	Ordering code
1.2 bar ±10%	DL E 12 x F 50 P01
2.0 bar ±10%	DL E 20 x F 50 P01
5.0 bar ±10%	DL E 50 x F 50 P01
7.0 bar ±10%	DL E 70 x F 50 P01
9.5 bar ±10%	DL E 95 x F 50 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Base: Black polyamide
- Contacts: Silver
- Seal: HNBR - FPM

Technical data
- 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 HFB and HFC according to ISO 2943
- Degree protection: IP65 according to EN 60529

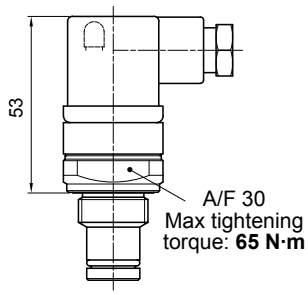
Electrical data
- Electrical connections: EN 175301-803
- Resistive load: 5 A / 250 Vac
- Thermal lockout setting: +30 °C

DLX*51 - DLX*52

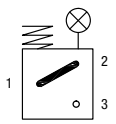
Electrical/Visual Differential Pressure Indicator
Connection: EN 175301-803

51: Transparent base with lamps 24 Vdc
52: Transparent base with lamps 110 Vdc

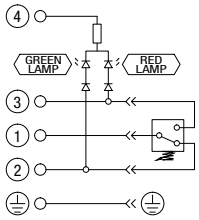
Settings	Ordering code
1.2 bar ±10%	DL X 12 x A 5x P01
2.0 bar ±10%	DL X 20 x A 5x P01
5.0 bar ±10%	DL X 50 x A 5x P01
7.0 bar ±10%	DL X 70 x A 5x P01
9.5 bar ±10%	DL X 95 x A 5x P01



Hydraulic symbol



Electrical symbol



Materials
- Body: AISI 316L
- Base: Transparent polyamide
- Contacts: Silver
- Seal: HNBR - MFQ

Technical data
- 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 HFB and HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529 IP69K according to ISO 20653

Electrical data

- Electrical connection:	EN 175301-803	
- Type	51	52
- Lamps	24 Vdc	110 Vdc
- Resistive load:	1 A / 24 Vdc	1 A / 110 Vdc

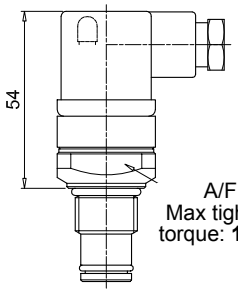
Dimensions

DLZ*51 - DLZ*52

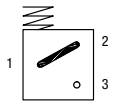
Electrical/Visual Differential Pressure Indicator
Connection: EN 175301-803

51: Transparent base with lamps 24 Vdc
52: Transparent base with lamps 110 Vdc

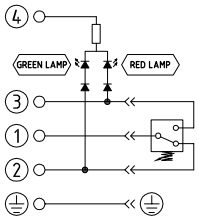
Settings	Ordering code
1.2 bar ±10%	DL Z 12 x A 5x P01
2.5 bar ±10%	DL Z 25 x A 5x P01
5.0 bar ±10%	DL Z 50 x A 5x P01
7.0 bar ±10%	DL Z 70 x A 5x P01
9.5 bar ±10%	DL Z 95 x A 5x P01



Hydraulic symbol



Electrical symbol



Materials
- Body: AISI 316L
- Base: Transparent polyamide
- Contacts: Silver
- Seal: HNBR - MFQ

Technical data
- Max working pressure: 700 bar
- Proof pressure: 1050 bar
- Burst pressure: 2100 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Degree protection: IP66 according to EN 60529 IP69K according to ISO 20653

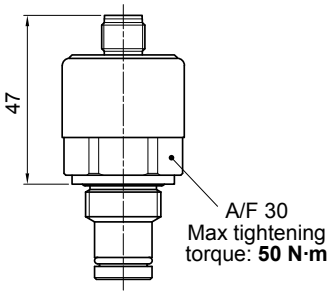
Electrical data

- Electrical connection:	EN 175301-803	
- Type	51	52
- Lamps	24 Vdc	110 Vdc
- Resistive load:	1 A / 24 Vdc	1 A / 110 Vdc

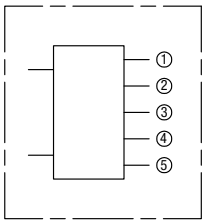
DTA*F70

Electronic Differential Pressure Indicator
Connection: IEC 61076-2-101 D (M12)

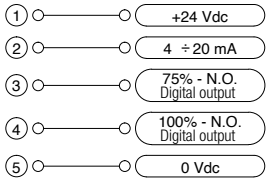
Settings	Ordering code
1.2 bar ±10%	DT A 12 x F 70 P01
2.0 bar ±10%	DT A 20 x F 70 P01
5.0 bar ±10%	DT A 50 x F 70 P01
7.0 bar ±10%	DT A 70 x F 70 P01
9.5 bar ±10%	DT A 95 x F 70 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Internal parts: Brass - Polyamide
- Contacts: Silver
- Seal: HNBR - FPM

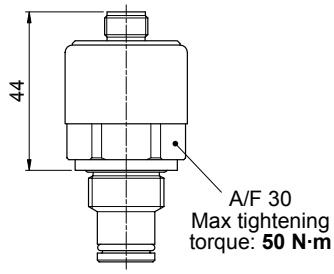
Technical data
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Degree protection: IP67 according to EN 60529

Electrical data
- Electrical connection: IEC 61076-2-101 D (M12)
- Power supply: 24 Vdc
- Analogue output: From 4 to 20 mA
- Thermal lockout: 30 °C (all output signals stalled up to 30 °C)

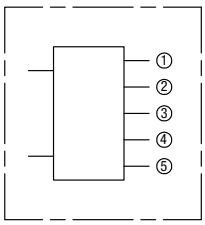
DTI*70

IO-Link Electronic Differential Pressure Indicator
Connection: IEC 61076-2-101 D (M12)

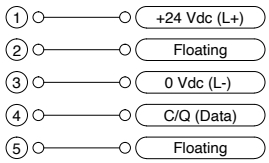
Settings	Ordering code
1.2 bar ±10%	DT I 12 x A 70 P01
2.0 bar ±10%	DT I 20 x A 70 P01
5.0 bar ±10%	DT I 50 x A 70 P01
7.0 bar ±10%	DT I 70 x A 70 P01
9.5 bar ±10%	DT I 95 x A 70 P01



Hydraulic symbol



Electrical symbol



Materials
- Body: Brass
- Internal parts: Brass - Polyamide
- Contacts: Silver
- Seal: HNBR - FPM

Technical data
- Max working pressure: 420 bar
- Proof pressure: 630 bar
- Burst pressure: 1260 bar
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Degree protection: IP67 according to EN 60529

Electrical data
- Electrical connection: IEC 61076-2-101 D (M12)
- Power supply: 24 Vdc

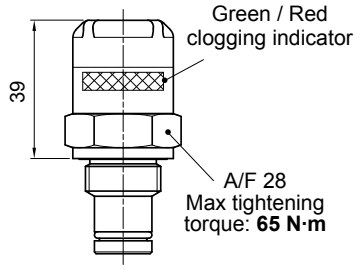
IO-Link data
- Differential pressure [bar]: Float 32/4 byte
- Temperature [°C]: Float 32/4 byte
- State register: Unit 16/2 byte
- Errors register: Unit 16/2 byte

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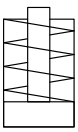
DVA

Visual Differential Pressure Indicator

Settings	Ordering code
1.2 bar ±10%	DV A 12 x P01
2.0 bar ±10%	DV A 20 x P01
5.0 bar ±10%	DV A 50 x P01
7.0 bar ±10%	DV A 70 x P01
9.5 bar ±10%	DV A 95 x P01



Hydraulic symbol



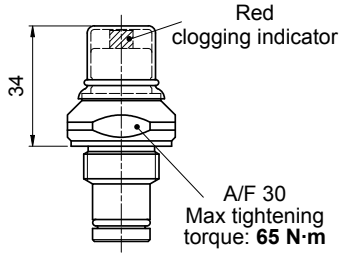
Materials
- Body: Brass
- Internal parts: Brass - Polyamide
- Seal: HNBR - FPM

Technical data
- 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 HFB and HFC according to ISO 2943
- Degree protection: IP65 according to EN 60529

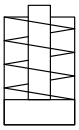
DVM

Visual Differential Pressure Indicator

Settings	Ordering code
1.2 bar ±10%	DV M 12 x P01
2.0 bar ±10%	DV M 20 x P01
5.0 bar ±10%	DV M 50 x P01
7.0 bar ±10%	DV M 70 x P01
9.5 bar ±10%	DV M 95 x P01



Hydraulic symbol



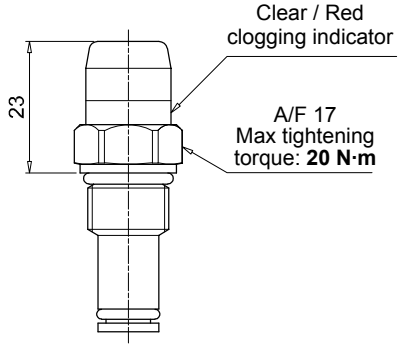
Materials
- Body: Brass
- Internal parts: Brass - Polyamide
- Seal: HNBR - FPM

Technical data
- 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 HFB and HFC according to ISO 2943
- Degree protection: IP65 according to EN 60529

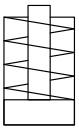
DVS

Visual Differential Pressure Indicator
Connection: EN 175301-803

Settings	Ordering code
1.2 bar ±10%	DV S 12 H P01
2.5 bar ±10%	DV S 25 H P01
4.0 bar ±10%	DV S 40 H P01



Hydraulic symbol



Materials
- Body: Brass
- Internal parts: Brass - Polyamide
- Seal: HNBR

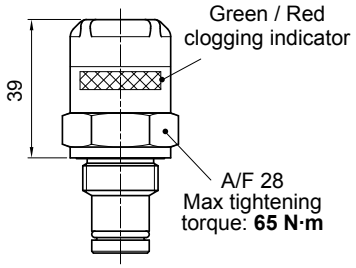
Technical data
- Reset: Automatic reset
- Max working pressure: 35 bar
- Proof pressure: 53 bar
- Burst pressure: 105 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Degree protection: IP67 according to EN 60529

Dimensions

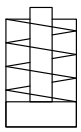
DVX

Visual Differential Pressure Indicator

Settings	Ordering code
1.2 bar ±10%	DV X 12 x P01
2.0 bar ±10%	DV X 20 x P01
5.0 bar ±10%	DV X 50 x P01
7.0 bar ±10%	DV X 70 x P01
9.5 bar ±10%	DV X 95 x P01



Hydraulic symbol



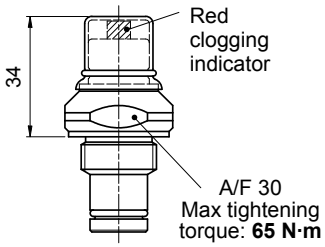
Materials
- Body: AISI 316L
- Internal parts: AISI 316L - Polyamide
- Seal: HNBR - MFQ

Technical data
- 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 HFB and HFC according to ISO 2943
- Degree protection: IP65 according to EN 60529

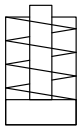
DVY

Visual Differential Pressure Indicator

Settings	Ordering code
1.2 bar ±10%	DV Y 12 x P01
2.0 bar ±10%	DV Y 20 x P01
5.0 bar ±10%	DV Y 50 x P01
7.0 bar ±10%	DV Y 70 x P01
9.5 bar ±10%	DV Y 95 x P01



Hydraulic symbol



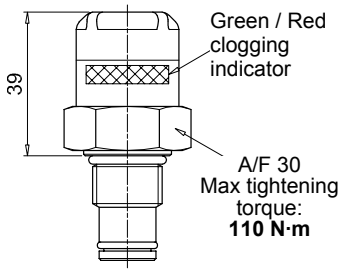
Materials
- Body: AISI 316L
- Internal parts: AISI 316L - Polyamide
- Seal: HNBR - MFQ

Technical data
- 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 HFB and HFC according to ISO 2943
- Degree protection: IP65 according to EN 60529

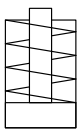
DVZ

Visual Differential Pressure Indicator

Settings	Ordering code
1.2 bar ±10%	DV Z 12 x P01
2.5 bar ±10%	DV Z 25 x P01
5.0 bar ±10%	DV Z 50 x P01
7.0 bar ±10%	DV Z 70 x P01
9.5 bar ±10%	DV Z 95 x P01



Hydraulic symbol



Materials
- Body: AISI 316L
- Internal parts: AISI 316L - Polyamide
- Seal: HNBR - MFQ

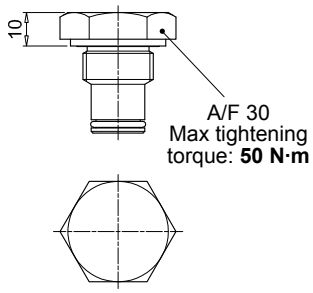
Technical data
- Reset: Automatic reset
- Max working pressure: 700 bar
- Proof pressure: 1050 bar
- Burst pressure: 2100 bar
- Working temperature: From -25 °C to +110 °C
- Compatibility with fluids: Mineral oils, Synthetic fluids HFB and HFC according to ISO 2943
- Degree protection: IP65 according to EN 60529

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T2

Plug

Seal	Ordering code
HNBR	T2 H
FPM	T2 V

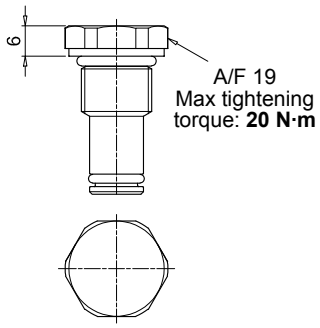


Materials
- Body:
  Phosphatized steel
- Seal:
  HNBR / FPM

T4

Plug

Seal	Ordering code
NBR	T4 A

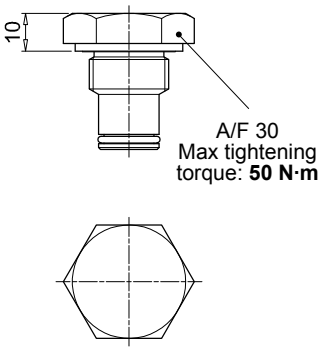


Materials
- Body:
  Anodized aluminium
- Seal:
  NBR

X2

Stainless Steel plug 420 bar

Seal	Ordering code
HNBR	X2 H
FPM	X2 V
MFQ	X2 F

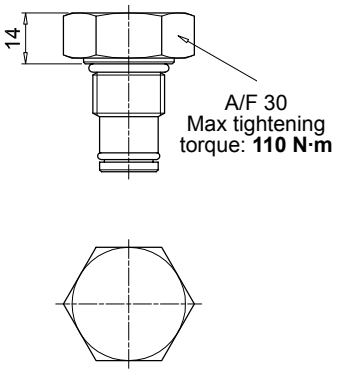


Materials
- Body:
  AISI 316L
- Seal:
  HNBR / FPM / MFQ

X3

Stainless Steel plug 700 bar (only for FZH)

Seal	Ordering code
HNBR	X3 H
FPM	X3 V
MFQ	X3 F



Materials
- Body:
  AISI 316L
- Seal:
  HNBR / FPM / MFQ

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