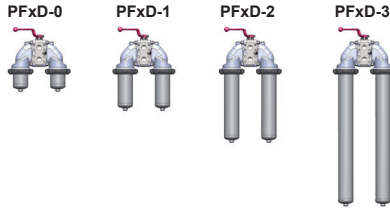


Process Double Inline Filter Medium / High Pressure PFMD / PFHD



Specifications	
Connection:	G 1" / SAE 1"
Q _S max:	120 l/min
p _S max:	100 bar
Filtration ratings:	1 – 2000 μm

1. GENERAL

Product description

- Double stainless-steel filter
- Separation of solid particles from fluids

Filter element technology

- Filter elements of type "SZ"
- Filter materials:
 - Chemicron® metal fibre fleece: 1 to 20 μm
 - Wire mesh: 25 to 250 μm
 - Wedge wire: 50 to 2000 μm

Product advantages

- Filter elements can be cleaned or exchanged during ongoing operation
- Optimum adaptation to the application thanks to different sizes, materials and seal materials
- Clogging monitoring by means of a clogging indicator attached to the filter
 - Visual
 - Electrical
 - Visual-electrical
- Optional ports for absolute pressure display
- Self-bleeding filter
- Pleated filter elements with large filter area (Chemicron® metal fibre fleece and wire mesh)
- Renewable filter elements save costs for disposal and replacement

Technical data – standard models

Series	Size	Mounting dimension	Material Housing and union nut	Seal material	p _S max [bar]	T _S max [°C]	Weight [kg]	Volume [l]
PFMD	0	G 1" SAE 1"	Stainless steel (austenitic Cr-Ni-Mo steel)	FPM / FKM	PN 40	200	14.75	1.7
	1						15.5	2.5
	2						16.7	3.8
	3						19.0	6.4
PFHD	0	G 1" SAE 1"	Stainless steel (austenitic Cr-Ni-Mo steel)	FPM / FKM	PN 100	200	15.4	1.7
	1						16.5	2.5
	2						18.75	3.8
	3						22.8	6.4

Technical specifications of filter elements

Size	Filter area [cm ²]		Filter materials and filtration ratings [μm]				Permissible differential pressure at the filter element [bar]
	Pleated	Wedge wire	Chemicron® metal fibre fleece end caps crimped	Wire mesh end caps crimped	Wedge wire end caps glued	Wedge wire end caps welded	
SZ-0	676	116		25	50		40
SZ-1	1710	262	1	40	100		
			3	60	200		
			5	100	500		
SZ-2	3421	552	10	150	1000		
			20	200	1500		
SZ-3	6842	1133		250	2000		

Max. operating temperatures lower the pressure range:

PFMD: T_S max 200 °C at p_S max = 32 bar

PFHD: T_S max 200 °C at p_S max = 75 bar

* The selection of size depends on the level of contamination in the fluid and on the corresponding filter area load.

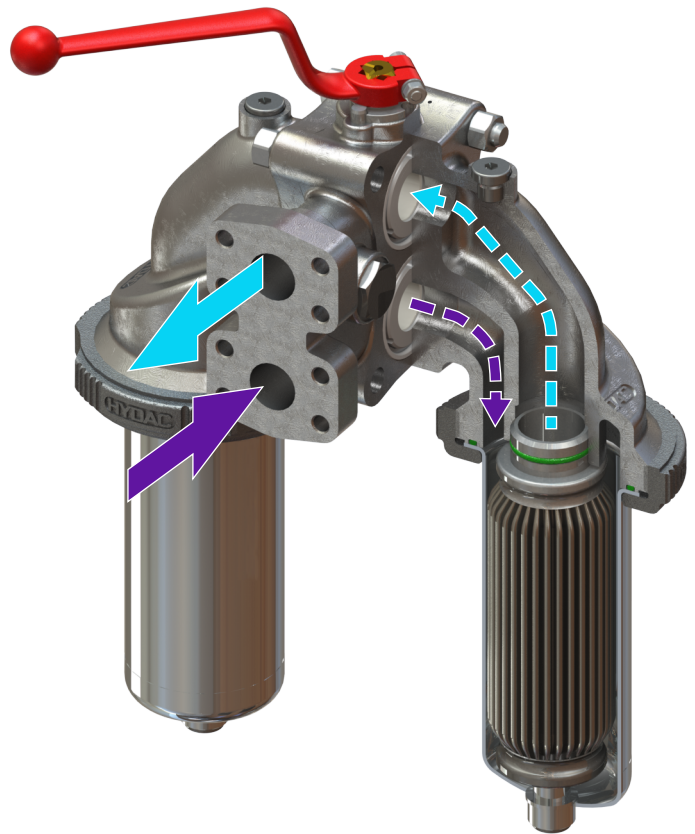
2. FUNCTION AND SPECIAL FEATURES

FUNCTIONAL PRINCIPLE




- Flow through the filter element is from the outside to the inside
- The separated solids remain on the outer side of the filter element
- Particles being deposited during the filtration causes a loss of pressure
- When the maximum differential pressure has been reached, the clean filter side is switched to
- The change-over is performed with almost no pressure surge
- The contaminated filter element can be exchanged / cleaned while filtration continues via the fresh filter element

SPECIAL FEATURES

- The special filter design eliminates the need to remove air from the filter
- Change-over with almost no pressure surge while filtration is in progress
- An absolute pressure indicator can be connected on each filter side



3. CLOGGING INDICATORS*

Type	Image	Description
Clogging indicator / differential pressure monitoring		
Visual PVD x B.x		<ul style="list-style-type: none"> • Visual display with green / red field • Automatic reset
Electrical PVD x C.x		<ul style="list-style-type: none"> • Electrical signal when trigger point is reached • Switch type: normally closed or normally open • Automatic reset
Visual-electrical PVD x D.x /-L...		<ul style="list-style-type: none"> • Lamp for visual display • Electrical signal (normally closed or normally open) • Automatic reset

* For clogging indicators, see also separate data sheet.

4. FILTER CALCULATION*

CHECKLIST FOR FILTER CALCULATION

STEP 1: REQUIRED OPERATING DATA

- Observe Pressure Equipment Directive PED 23/97/EC
- Type of operating medium
- Viscosity
- Operating pressure
- Operating temperature
- Flow rate
- Desired filtration rating
- Type of solid particles to be separated
- Solid particle content

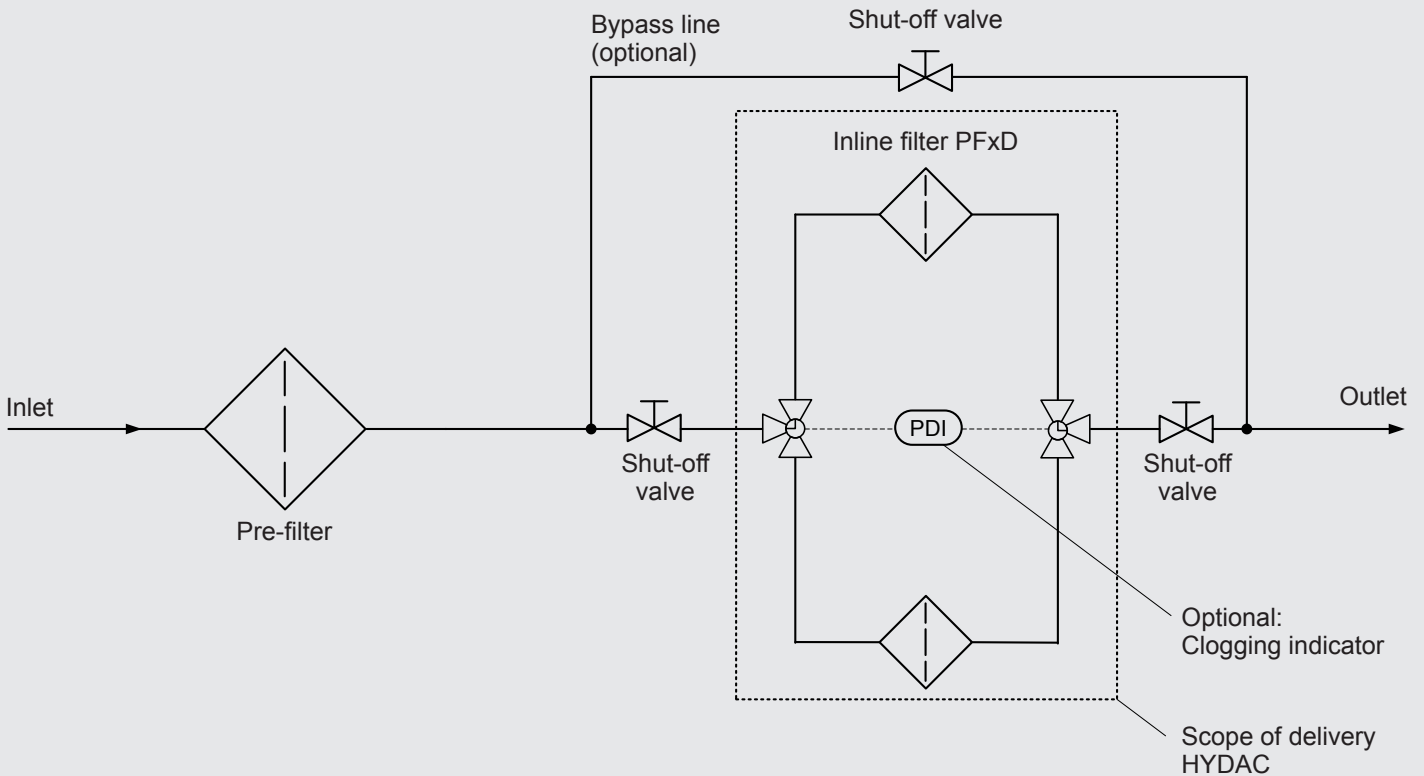
STEP 2: FILTER SIZING

- Configured on basis of pressure drop curves
- The flow velocity of 4 m/s at the flange inlet should not be exceeded

STEP 3: DETERMINING THE FILTRATION RATING

- **As a basic rule:**
as coarse as possible – as fine as necessary!

CIRCUIT DIAGRAM

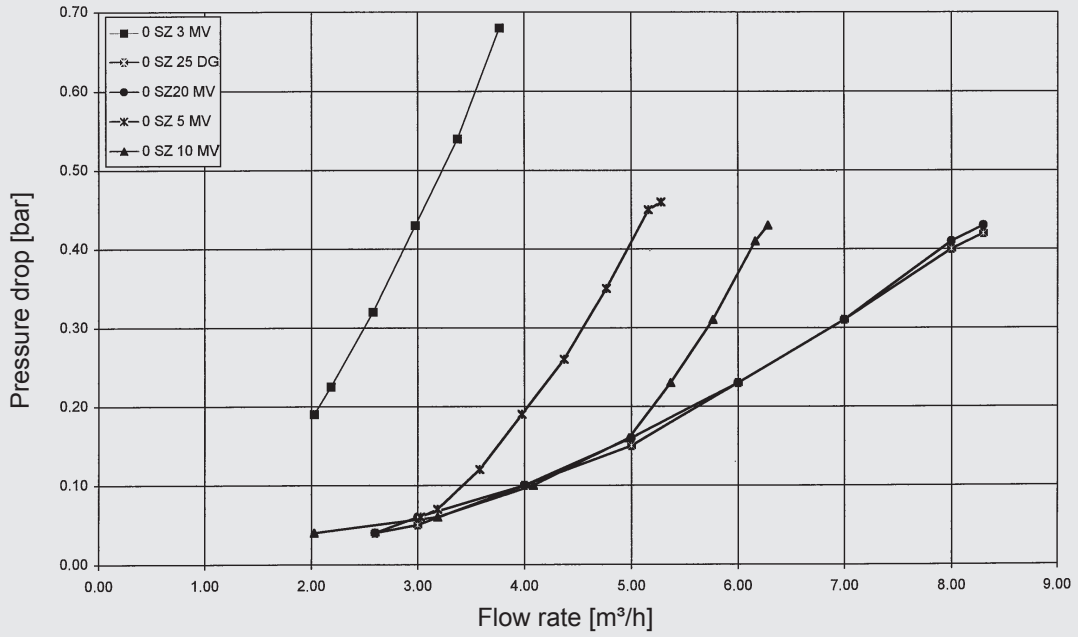


* Please contact our Head Office if you have any queries regarding filter calculation.

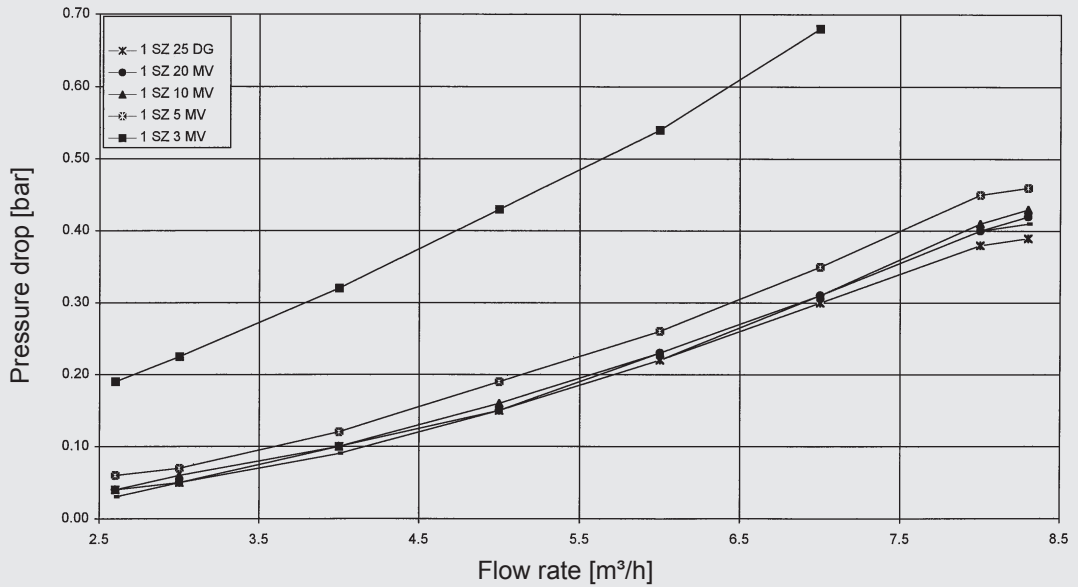
PRESSURE DROP CURVE

(applies for water at 20 °C or for media up to 15 mm²/s)

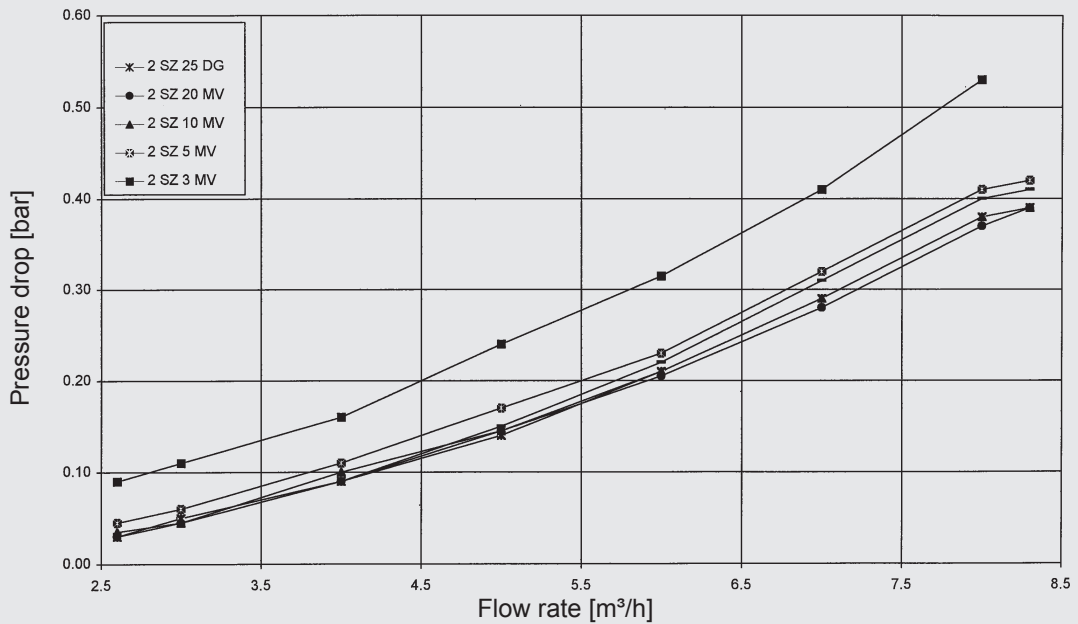
PFMD / PFHD
Size 0



PFMD / PFHD
Size 1



PFMD / PFHD
Size 2 / 3*



*A longer service life can be expected for size 3.

5. FILTER CONFIGURATION*

	Standard	Optional
Flange connections	<ul style="list-style-type: none"> • Threaded connection G 1", ISO 228 • SAE 1" 	<ul style="list-style-type: none"> • SAE 1" optionally with counter flange • DIN EN flange • ANSI flange
Sealing materials	<ul style="list-style-type: none"> • FPM / FKM • EPDM • NBR • FEP-coated O-ring 	<ul style="list-style-type: none"> • Other sealing materials on request
Differential pressure monitoring	<ul style="list-style-type: none"> • Visual • Electrical • Visual-electrical 	Optionally with cooling line for $T_{S \max} > 100 \text{ }^{\circ}\text{C}$
Filter elements / filter material	<ul style="list-style-type: none"> • M = Chemicron® metal fibre fleece, end caps crimped • D = wire mesh, end caps crimped • S = wedge wire, end caps glued 	<ul style="list-style-type: none"> • MS = Chemicron® metal fibre fleece with support spring, end caps crimped • DS = wire mesh with support spring, end caps crimped • SW = wedge wire, end caps welded
Documentation	Operating and maintenance instructions	<ul style="list-style-type: none"> • Manufacturer inspection certificate in accordance with DIN EN 55350 Part 18 concerning construction, pressure and function test • Material certificates 3.1 according to DIN EN 10204

* Other versions and customised special solutions after consultation with our Head Office.

6. MODEL CODE

MODEL CODE PFMD / PFHD

PFMD - 1 - SC - 2 - V - 0 - L24 / ES - So

Type

PFMD = filter PN 40
PFHD = filter PN 100

Size

0
1
2
3

Connection code

G = threaded connection 1"
S = SAE connection 1"
SC = SAE connection 1" with counter flange (welding collar)

Clogging indicator version

0 = none
1 = visual CI (PVD 2 B.1)
2 = visual-electrical CI (PVD 2 D.0/-L...)
6 = electrical CI (PVD 2 C.0)
Permissible temperature range for clogging indicators: -20 °C to +100 °C

Sealing material

V = FPM / FKM, (from -20 °C to +200 °C)
E = EPDM (from -60 °C to +150 °C)
N = NBR (from -30 °C to +110 °C)
T = FEP-coated O-ring (from -20 °C to +200 °C)
Other seals on request

Modification number

0 = the latest version is always supplied – currently "0"

Supplementary details

L24 = max. switching voltage depending on lamp element, lamp 24V
L48 = max. switching voltage depending on lamp element, lamp 48V
L110 = max. switching voltage depending on lamp element, lamp 110V
L220 = max. switching voltage depending on lamp element, lamp 230V
Applies for visual-electrical CI (PVD 2 D.0/-L...)

Type code – filter element

Further supplementary details

So = code number for special equipment

TYPE CODE – FILTER ELEMENT SZ

SZ - 1 - 20 - M - V

Filter element type

Size

0
1
2
3

Filtration rating in µm

Chemicon® metal fibre fleece 1 / 3 / 5 / 10 / 20
Wire mesh 25 / 40 / 60 / 100 / 150 / 200 / 250
Wedge wire 50 / 100 / 200 / 300 / 500 / 1000 / 2000

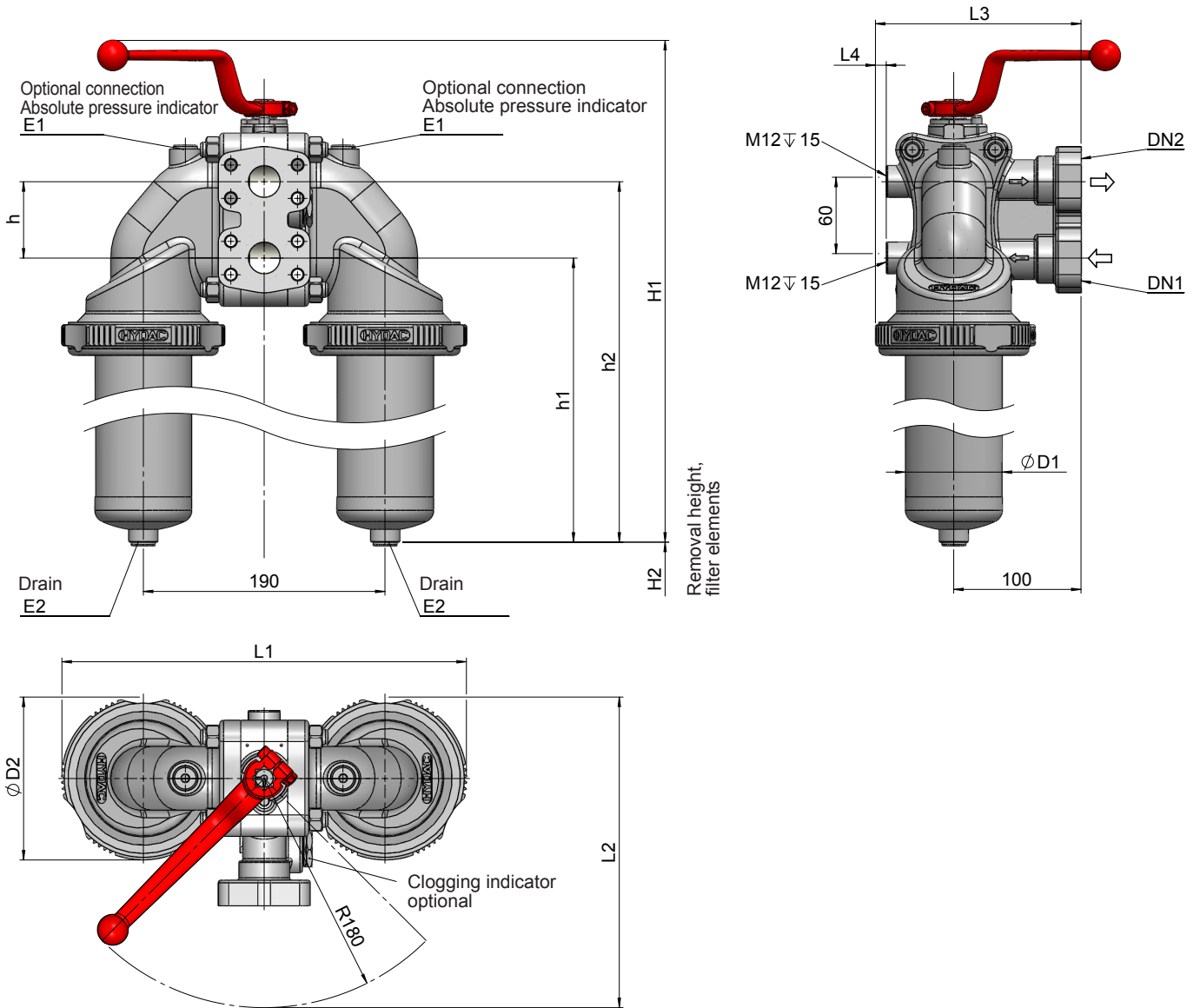
Filter material

M = Chemicon® metal fibre fleece, end caps crimped
MS = Chemicon® metal fibre fleece with support spring, end caps crimped
D = wire mesh, end caps crimped
DS = wire mesh with support spring, end caps crimped
S = wedge wire, end caps glued
SW = wedge wire, end caps welded

Sealing material

V = FPM / FKM (from -20 °C to +200 °C)
E = EPDM (from -60 °C to +150 °C)
N = NBR (from -30 °C to +110 °C)
T = FEP-coated O-ring (from -20 °C to +200 °C)
Other seals on request

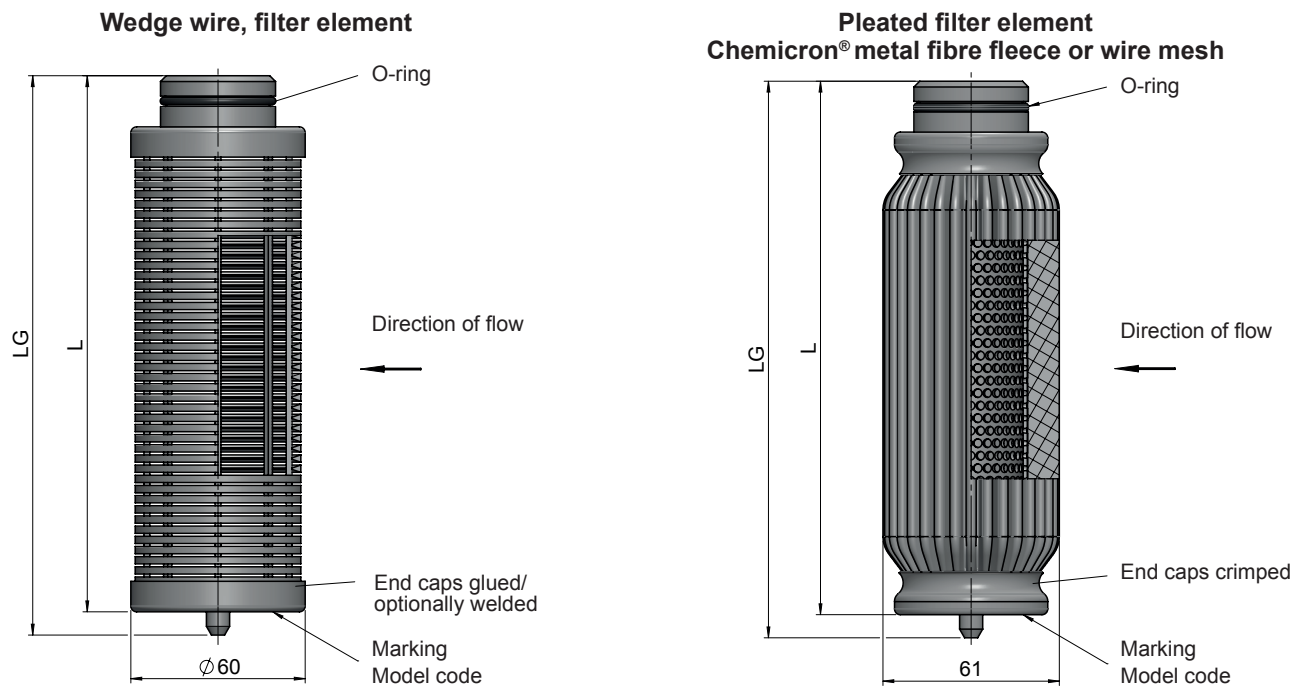
7. DIMENSIONS, FILTER



The dimensions quoted are approximations, given in mm. Subject to technical modifications.

Size	h	h1	h2	D1	D2	DN1	DN2	H1	H2	L1	L2	L3	L4	E1	E2
0	60	165	225	76	130	SAE 1" 3000 psi or G 1"	SAE 1" 3000 psi or G 1"	329	35	320	248	165	12	G 1/4"	G 1/4"
1		265	325					429							
2		425	485					589							
3		750	810					914							

7. DIMENSIONS, FILTER ELEMENTS

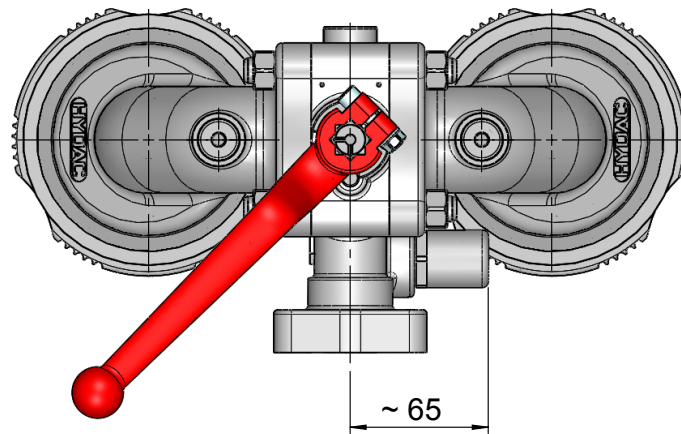


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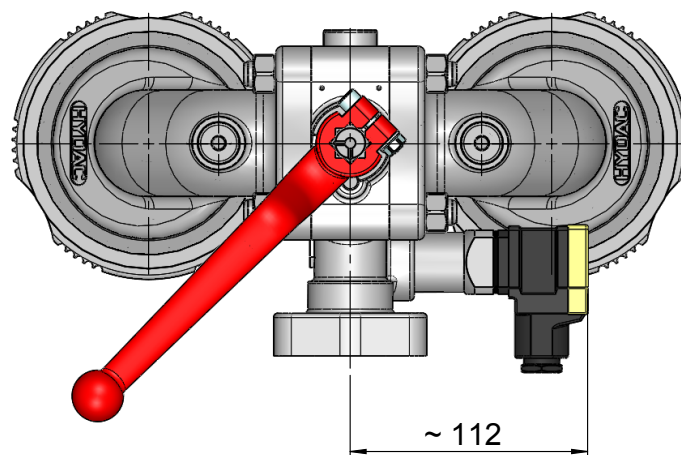
Size	L	LG
0	88	96
1	185	193
2	347	355
3	672	680

8. DIMENSIONS, CLOGGING INDICATORS

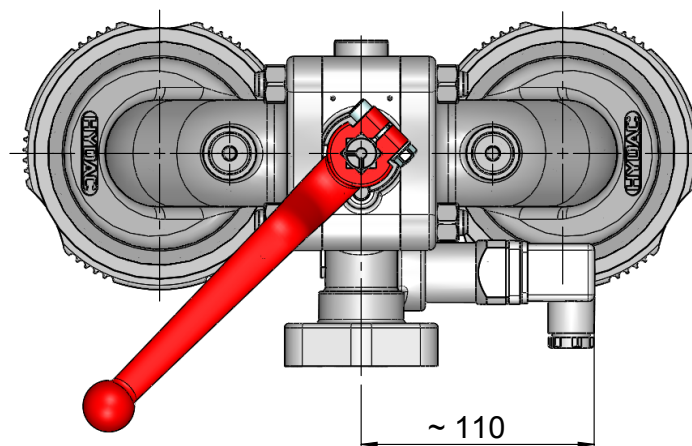
Visual clogging indicator



Visual-electrical clogging indicator



Electrical clogging indicator



The dimensions quoted are approximations, given in mm.
Subject to technical modifications.

NOTE

The information in this brochure relates to the operating conditions and applications described.
For applications or operating conditions not described, please contact the relevant technical department.
Subject to technical modifications.

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