

HYDAC INTERNATIONAL



Flexmicron Premium (FM-P)

Description

The filter elements of the FlexMicron Premium (FM-P) product line are durable elements, manufactured in meltblown or high-quality fibreglass using pleat technology.

They are designed particularly for use in applications requiring high levels of cleanliness.

Applications

- High-end industrial part washing systems (water-based & hydrocarbon cleaning fluids up to 100 °C)
- Flushing rigs (downstream of part washing systems)
- Test rigs (fuel injection, braking and steering systems)
- Superfinishing with cooling lubricants (honing, grinding, turning, milling, deburring)
- Offline filtration in large hydraulic systems
- Offline filtration in lubrication systems
- Filling systems used in cleanliness applications
- Mining and metallurgy
- Metal-forming (e.g. hydroforming)

Special features

- β -values up to 20,000
- Filtration efficiency up to 99.99%
- Filtration rating 1 ... 90 μm
- Very low initial Δp
- High differential pressure stability
- Excellent filtration efficiency, also under pulsation conditions (pressure and flow rate pulsation)
- Wide range of adapters
- Materials: polyester, glass fibre
- Pleat technology
- Broad range of fluid compatibility
- Market-standard element geometry

Technical specifications

General data	
Length	10", 13", 20", 30", 40"
Filtration rating	1 to 90 μm up
β_x -values	to 20,000 up
Filtration efficiency	to 99.99%

Model code

N 40 FM-P 005 - PES 1 F

Element length

10 = 10"
13 = 13"
20 = 20"
30 = 30"
40 = 40"

Element type

FM-P = Flexmicron P (Premium)

Filtration rating

001 = 1 µm
003 = 3 µm
005 = 5 µm
010 = 10 µm
020 = 20 µm
030 = 30 µm
040 = 40 µm
050 = 50 µm
070 = 70 µm
090 = 90 µm

Filter material

PES = Polyester
GF = Glass fibre

End cap type

1 = plug-in adapter (1x 222 O-ring), flat end cap, element Ø 64 mm
2 = plug-in adapter (2x 222 O-ring), flat end cap, element Ø 64 mm
3 = plug-in adapter (2x 222 O-ring), flat end cap, element Ø 70 mm
5 = plug-in adapter (2x 222 O-ring), locating spigot, element Ø 70 mm
7 = bayonet (2x 226 O-ring), locating spigot, element Ø 70 mm
10 = open flat seal (DOE), element Ø 64 mm
12 = adapter for suspended elements, element Ø 64 mm
others on request

Seal material

N = NBR
F = FKM (FPM, Viton®)
E = EPDM

Other types of element on request

R (Resistance) factors

		Water-based fluids	Oils	
		PES*	PES*	GF**
1 µm		32.0	10.4	5.4
3 µm		24.0	7.5	-
5 µm		18.0	4.4	4.3
10 µm		17.0 1.8		3.2
20 µm		15.0	1.8	-
30 µm		14.0	0.9	-
40 µm		14.0	0.9	-
50 µm		11.0	0.7	-
70 µm		9.0	0.7	-
90 µm		8.0	0.5	-

* β > 5,000

** β > 20,000

Maximum differential pressure Δp_{max} and permitted temperature range across the element:

Fluid temperature	Filter material
	PES, GF
-10 to 30°C	8 bar
-10 to 60°C	6.5 bar
-10 to 100°C	5 bar

Sizing

The total pressure loss of the filter at a certain flow rate is the sum of the housing Δp and the element Δp_E. The housing pressure drop can be determined using the pressure drop curves in the filter housing datasheet. The pressure drop of the elements is calculated using the R factors.

The following calculation is based on clean filter elements.

$$\Delta p_E [\text{bar}] = \frac{R \cdot V (\text{mm}^2/\text{s}) \cdot Q (\text{l/min})}{n \cdot L (\text{inch}) \cdot 1000}$$

Δp_E = Element pressure drop [bar]

R = R factor

V = Viscosity (mm²/s)

Q = Flow rate (l/min)

n = No. of elements

L = Element length (inch)

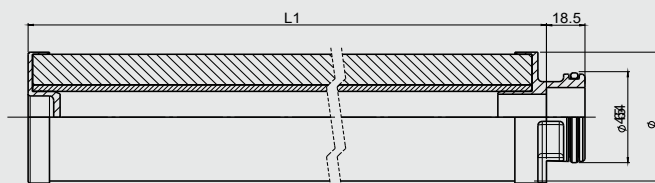
Maximum permitted flow rate for 1 mm²/s

Element length	Maximum permitted flow rate
10"	20 l/min
13"	26 l/min
20"	40 l/min
30"	60 l/min
40"	80 l/min

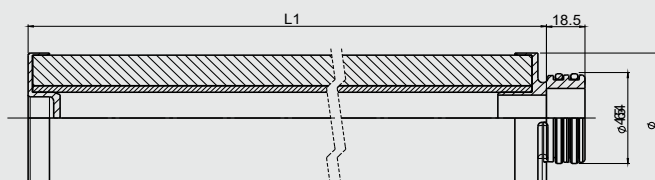
Other flow rates on request.

Dimensions of Flexmicron Premium Elements

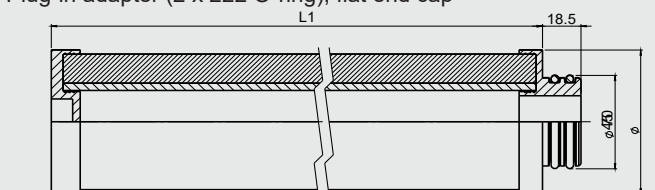
Type 1: Plug-in adapter (1 x 222 O-ring), flat end cap



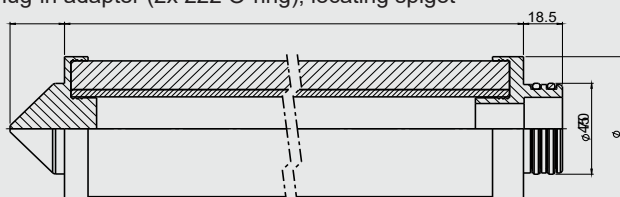
Type 2: Plug-in adapter (2 x 222 O-ring), flat end cap



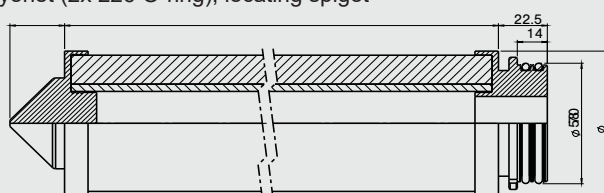
Type 3: Plug-in adapter (2 x 222 O-ring), flat end cap



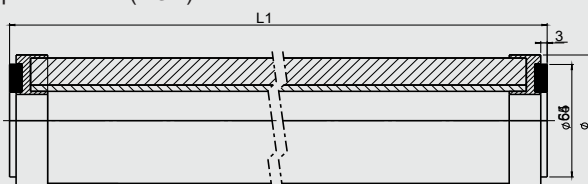
Type 5: Plug-in adapter (2x 222 O-ring), locating spigot
25.5 L1



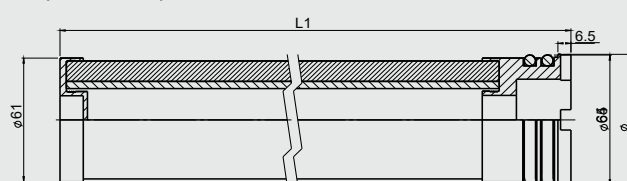
Type 7: Bayonet (2x 226 O-ring), locating spigot
25.5 L1



Type 10: Open flat seal (DOE)



Type 12: Adapter for suspended elements



Code	L1 in mm
N10FM-P...	263
N13FM-P...	339
N20FM-P...	517
N30FM-P...	771
N40FM-P...	1025

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N40FM-P...	1025

Code	L1 in mm
N10FM-P...	241
N13FM-P...	317
N20FM-P...	495
N30FM-P...	749
N40FM-P...	1003

Code	L1 in mm
N10FM-P...	254
N13FM-P...	330
N20FM-P...	508
N30FM-P...	762
N40FM-P...	1016
N40FM-P...-990	988

Code	L1 in mm
N37FM-P...	977

Note

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

HYDAC FILTER SYSTEMS GMBH
Industriegebiet

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