Flexmicron Standard
(FM-S)

Description
The Flexmicron Standard (FM-S) filter elements are spun-spray depth filter elements, manufactured using melt-blown technology.

They are used particularly in applications where a high level of fluid cleanliness is required.

Applications
- Industrial part washing systems (water-based up to 60 °C)
- Transmission test rigs, hydraulic test rigs
- Superfinishing with cooling lubricants
- Cooling circuits on machinery
- Filling systems
- Refineries, chemical industry
- Semiconductor industry
- Offline filtration in large hydraulic systems
- Offline filtration in lubrication systems

Special features
- Filtration performance 99.8%
- Filtration rating 1 ... 90 µm
- Material purity
- End caps welded, not glued
- Wide range of adapters
- Good price/performance ratio
- Materials: polypropylene, polyamide
- Spun-spray technology
- Broad range of fluid compatibility
- Market-standard element geometry
- High degree of separation due to graduated depth filter construction
- High contamination retention resulting from effectiveness of depth type filter material
- Silicone-free

Technical specifications

General data	
Length	10", 20", 30", 40"
Filtration rating	1 ... 90 µm
Filtration efficiency	99.8 %

Model code

N 40 FM-S 005 - PP 1 F

Element length
10 = 10"
20 = 20"
30 = 30"
40 = 40"

Element type
FM-S= Flexmicron Standard

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
PP = Polypropylene
PA = Polyamide

End cap type
0 = compression ring (DOE), no cap or seal, element Ø 63 mm
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
10 = gasket (DOE), element Ø 63 mm
13 = plug-in adapter (2x 222 O-ring), locating spigot, element Ø 64 mm
14 = bayonet (2x 226 O-ring), locating spigot, element Ø 64 mm
others on request

Seal material
N = NBR
F = FKM (FPM, Viton®)
E = EPDM
PP = polypropylene (compulsory for end cap type 10)
Z = without seal (compulsory for end cap type 0)

Other types of element on request

R (Resistance) factors

Filtration rating	Water-based fluids		Oil	
	PA	PP	PA	PP
1 µm	274	321	30	240
3 µm	116	186	20	105
5 µm	42	132	18	70
10 µm 15 11		99	15	50
20 µm		54	12	20
30 µm	6 16		9	9
40 µm	3.8	12	6	7
50 µm	1.9	10	4	4
70 µm	1.1	8	3	3
90 µm	0.6	6	3	2

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

Fluid temperature	Filter material	
	PA	PP
-10..30 °C	7 bar	4 bar
-10...60 °C	5.5 bar	2 bar
-10...100 °C	3.5 bar	–

Sizing

The total pressure drop of the filter at a certain flow rate is the sum of the housing Δp and the element ΔpE. 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.

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

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)

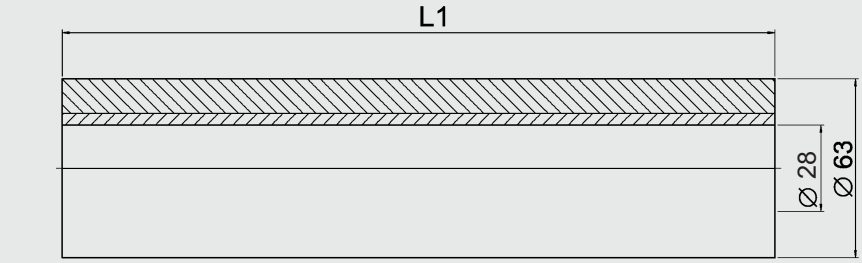
Maximum permitted flow rate for 1 mm²/s

Element length Maximum permitted flow rate	
10"	15 l/min
20"	30 l/min
30"	45 l/min
40" 60 l/min	

Other flow rates on request.

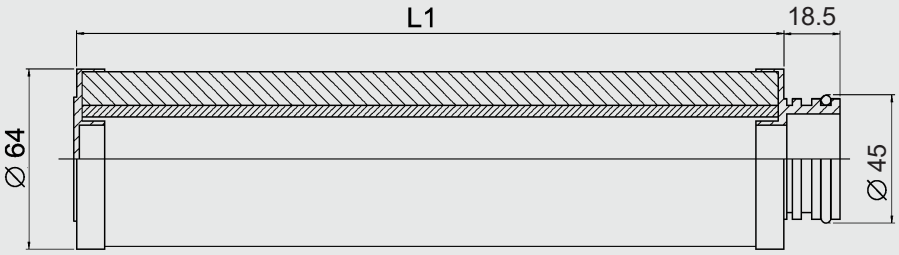
Dimensions of Flexmicron Standard Elements

Type 0: Compression ring (DOE), no cap or seal



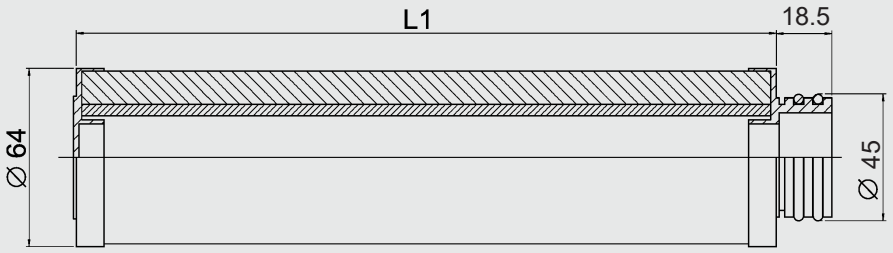
Code	L1 in mm
N10FM-S...	254
N20FM-S...	508
N30FM-S...	762
N40FM-S...	1016

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



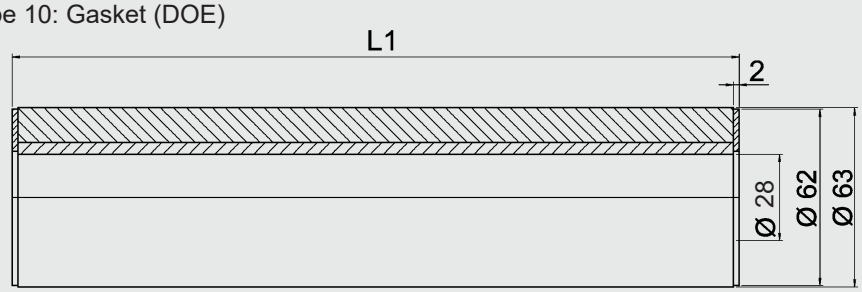
Code	L1 in mm
N10FM-S...	263
N20FM-S...	517
N30FM-S...	771
N40FM-S...	1025

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



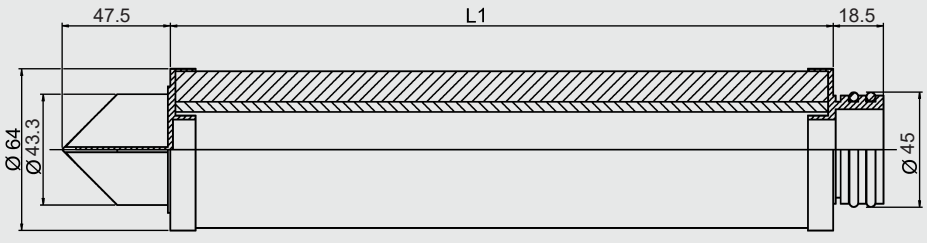
Code	L1 in mm
N10FM-S...	263
N20FM-S...	517
N30FM-S...	771
N40FM-S...	1025

Type 10: Gasket (DOE)



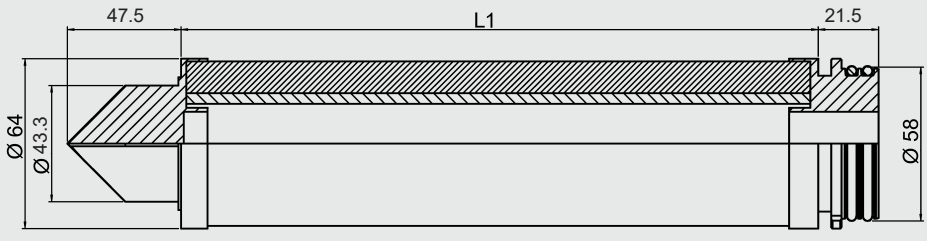
Code	L1 in mm
N10FM-S...	254
N20FM-S...	508
N30FM-S...	762
N40FM-S...	1016

Type 13: Plug-in adapter (2x 222 O-ring), locating spigot



Code	L1 in mm
N10FM-S...	263
N20FM-S...	517
N30FM-S...	771
N40FM-S...	1025

Type 14: Bayonet (2x 226 O-ring), locating spigot



Code	L1 in mm
N10FM-S...	241
N20FM-S...	495
N30FM-S...	749
N40FM-S...	1003

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