Flexmicron Economy
(FM-E)

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

They are used particularly in applications where an average level of fluid cleanliness is required and they provide a cost-effective solution.

Applications
- Industrial part washing systems (water-based up to 60 °C)
- Cooling circuits on machinery
- Refineries, chemical industry
- Processes using cooling lubricants

Special features
- Filtration performance 95%
- Filtration rating 1 ... 90 µm
- Material purity
- End caps welded, not glued
- Wide range of adapters
- Cost-effective
- 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 to 90 µm
Filtration performance	95%

Model code

N 40 FM-E 005 - PP 1 F

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

Element type
FM-E= Flexmicron Economy

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 (only PP as Seal material)
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
P = 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	Oil PA fluids			
		PP	PA	PP
1 µm	22	37	16	28
3 µm	21	29	15	23
5 µm	21	20	14	18
10 µm	16 11		13	14
20 µm	15	8	12	10
30 µm	14 7		10	8
40 µm	12	5	9	6
50 µm	10 4		8	5
70 µm	9	3	6	4
90 µm	8	2	4	2

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

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

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

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)

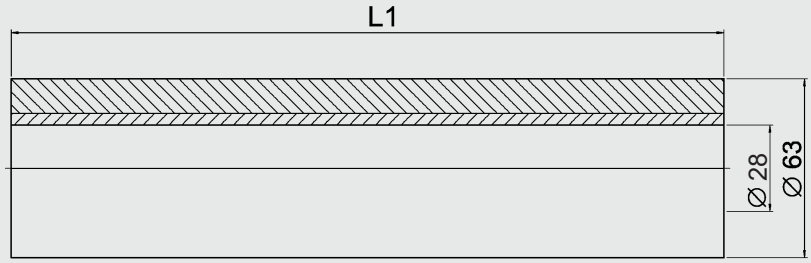
Maximum permitted flow rate for 1 mm²/s

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.

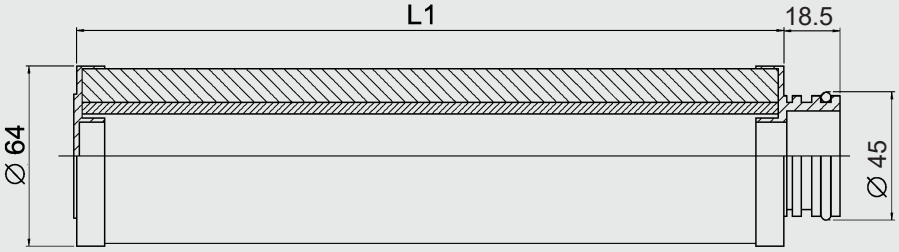
Dimensions of Flexmicron Economy Elements

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



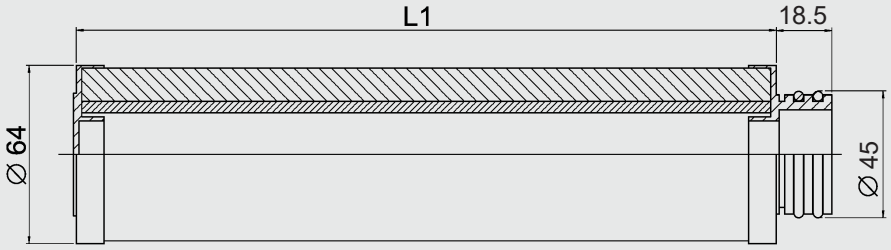
Code	L1 in mm
N10FM-E...	254
N20FM-E...	508
N30FM-E...	762
N40FM-E...	1016

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



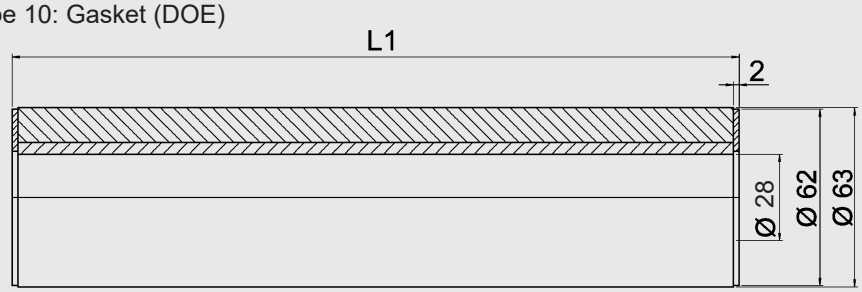
Code	L1 in mm
N10FM-E...	263
N20FM-E...	517
N30FM-E...	771
N40FM-E...	1025

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



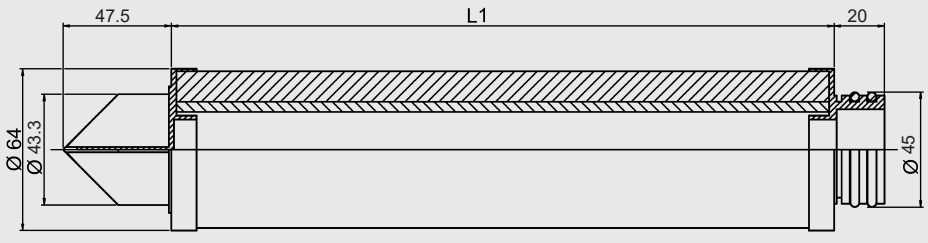
Code	L1 in mm
N10FM-E...	263
N20FM-E...	517
N30FM-E...	771
N40FM-E...	1025

Type 10: Gasket (DOE)



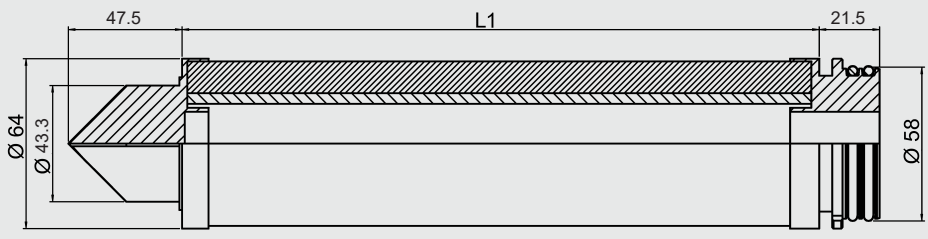
Code	L1 in mm
N10FM-E...	254
N20FM-E...	508
N30FM-E...	762
N40FM-E...	1016

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



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

Type 14: Bayonet (2x 266 O-ring), locating spigot



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

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