



## 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 fluids		Oil	
	PA	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  $\Delta p_{\max}$  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  $\Delta p$  and the element  $\Delta p_E$ . 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.

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

$\Delta p_E$  = Element pressure drop [bar]

R = R factor

V = Viscosity (mm<sup>2</sup>/s)

Q = Flow rate (l/min)

n = No. of elements

L = Element length (inch)

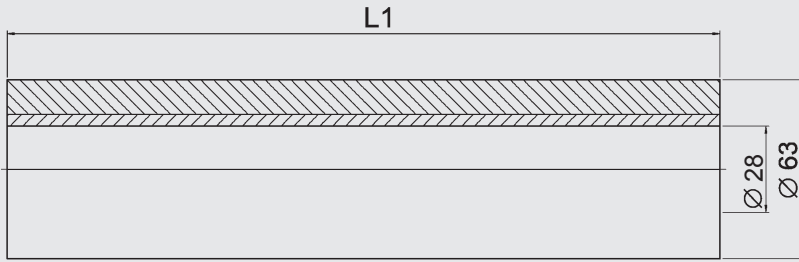
## Maximum permitted flow rate for 1 mm<sup>2</sup>/s

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.

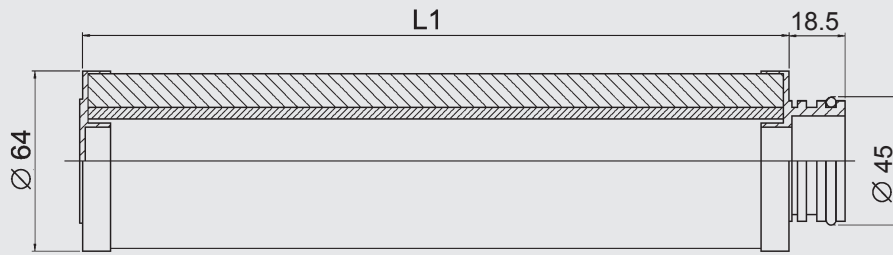
## Dimensions of Flexmicron Economy Elements

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



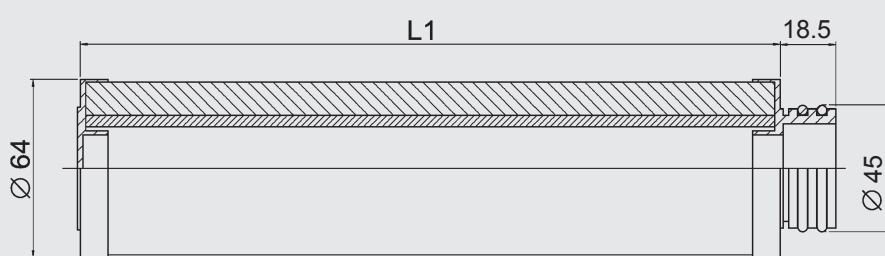
Code	L1 in mm
N10FM-E...	254
N20FM-E...	508
N30FM-E...	762
N40FM-E...	1016

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



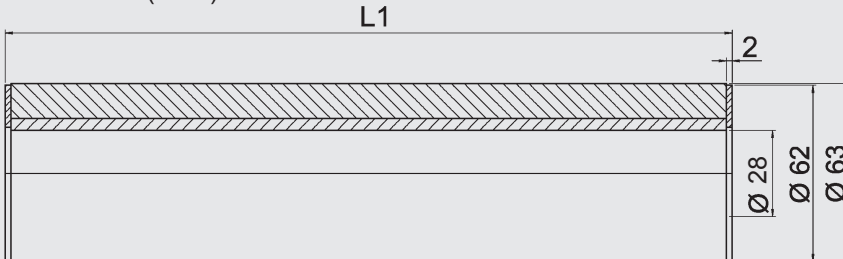
Code	L1 in mm
N10FM-E...	263
N20FM-E...	517
N30FM-E...	771
N40FM-E...	1025

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



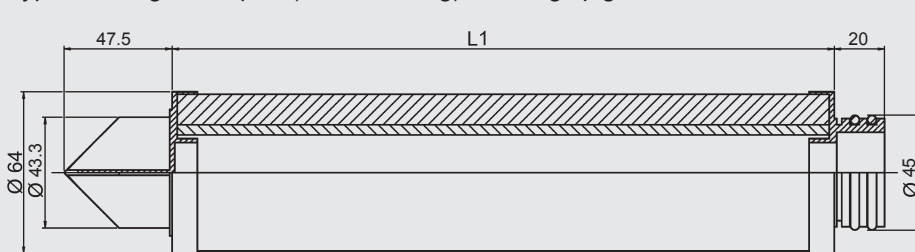
Code	L1 in mm
N10FM-E...	263
N20FM-E...	517
N30FM-E...	771
N40FM-E...	1025

Type 10: Gasket (DOE)



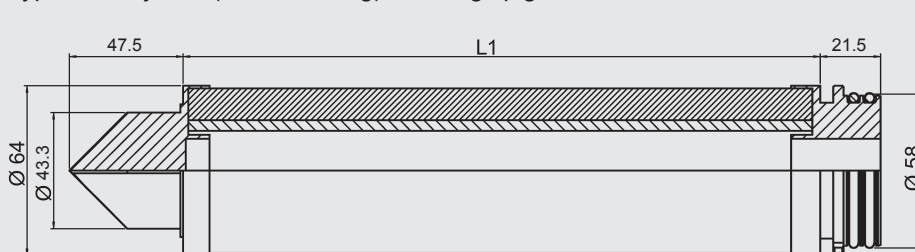
Code	L1 in mm
N10FM-E...	254
N20FM-E...	508
N30FM-E...	762
N40FM-E...	1016

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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