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Pall Corporation

DFA Compact Capsule Filters for the Microelectronics Industry

Description

The DFA filter assembly is a handy, easy-to-use and cost-effective capsule filter designed for relatively low flow rates and small volume batch processes.

Flexibility in filter media and connector options allow for a wide range of general industry applications.

Features and Benefits

- Wide variety of media materials (PTFE, nylon 6,6, hydrophilic PVDF, HDPE, polypropylene)
- Broad range of connector options (Swagelok[1], Pillarfitting[2], NPT, flare style)
- All-polymeric construction
- O-ring free design
- Allows for easy customization of filtration systems to accommodate various flow rates and removal rating requirements
- Able to vent and drain quickly and easily
- Low hold-up volume

[1] Trademark of Swagelok Co.
[2] Trademark of Nippon Pillar Packing Co., Ltd.



DFA1



DFA4201 DFA6402

Specifications

		Emflon®	Ultipor® N66	Ultipleat® P-Nylon	Fluorodyne®
Materials	Filter Medium	PTFE (hydrophobic)	Nylon 6,6 (hydrophilic)	Nylon 6,6 (hydrophilic)	PVDF (hydrophilic)
	Other Components	Polypropylene	Polyester, Polypropylene	HDPE, Polypropylene	Polypropylene
Removal Ratings		0.05 µm, 0.1 µm, 0.2 µm, 0.45 µm	0.1 µm, 0.2 µm	10 nm, 20 nm, 40 nm, 0.15 µm	0.1 µm, 0.2 µm
Maximum operating temperature		38 ˚C / 100 ˚F	38 ˚C / 100 ˚F	38 ˚C / 100 ˚F	38 ˚C / 100 ˚F
Maximum operating pressure (38 ˚C / 100 ˚F)	Liquid	0.49 MPaG	0.49 MPaG	0.49 MPaG	0.49 MPaG
	Gas	0.34 MPaG	0.34 MPaG	0.34 MPaG	0.34 MPaG
Maximum differential pressure (38 ˚C / 100 ˚F)		0.34 MPa	0.34 MPa	0.34 MPa	0.34 MPa
Main applications		Vent air Process gas Organic solvents	Photoresist Developer DI Water	Photoresist Developer DI Water	Ultrapure DI Water Aqueous chemicals
Minimum order quantity		6 pcs	6 pcs	6 pcs	6 pcs

*Filtration. Separation. Solution.*SM

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Specifications

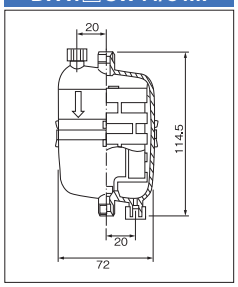
		P Emflon®	PE-Kleen	HDC® II	Profile® Star
Materials	Filter Medium	PTFE (hydrophobic)	HDPE	Polypropylene	Polypropylene
	Other Components	HDPE, Polypropylene	HDPE, Polypropylene	Polypropylene	Polypropylene
Removal Ratings		0.05 µm, 0.1 µm, 0.2 µm	5 nm[3], 10 nm, 30 nm 0.05 µm, 1 µm	0.6 µm, 1.2 µm, 2.5 µm, 4.5 µm 6 µm, 10 µm, 20 µm, 40 µm, 70 µm	0.8 µm, 1 µm 1.5 µm, 3 µm, 5 µm
Maximum operating temperature		38 ˚C / 100 ˚F	38 ˚C / 100 ˚F	38 ˚C / 100 ˚F	38 ˚C / 100 ˚F
Maximum operating pressure (38 ˚C / 100 ˚F)	Liquid	0.49 MPaG	0.49 MPaG	0.49 MPaG	0.49 MPaG
	Gas	0.34 MPaG	0.34 MPaG	0.34 MPaG	0.34 MPaG
Maximum differential pressure (38 ˚C / 100 ˚F)		0.34 MPa	0.34 MPa	0.34 MPa	0.34 MPa
Main applications		Photoresist Organic solvents Chemicals	Photoresist Organic solvents Chemicals	Acids, bases DI Water Solvents	Suspensions High viscosity fluids Coatings
Minimum order quantity		6 pcs	6 pcs	6 pcs	6 pcs

[3] 5 nm is available for DFA1, DFA2 and DFA6402.

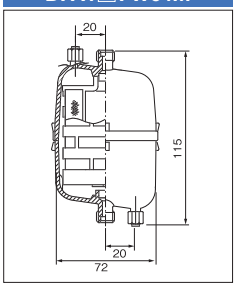
Configuration and Dimensions

DFA1, 2 Series

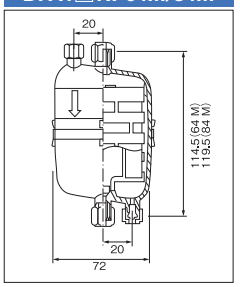
DFA1□SW44/84M



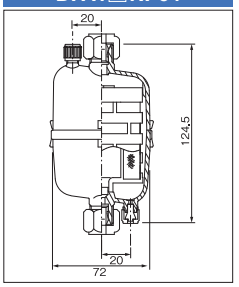
DFA1□FW64M



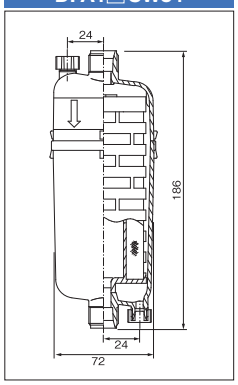
DFA1□NP64M/84M



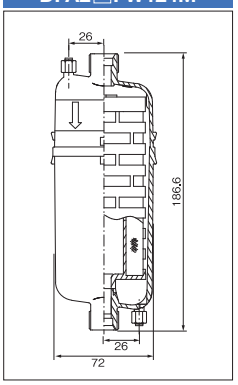
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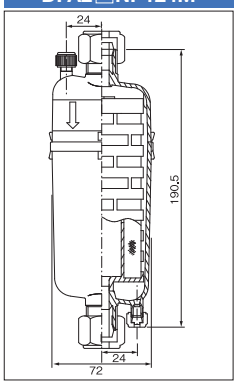
DFA1□SW84



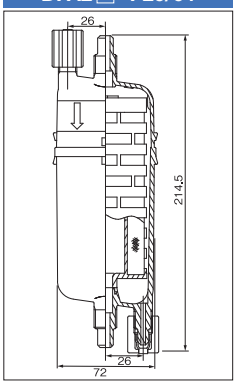
DFA2□FW124M



DFA2□NP124M



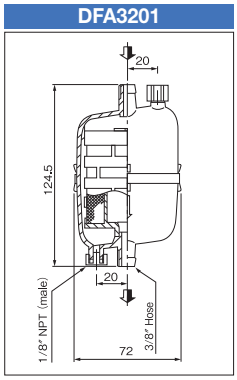
DFA2□* FL6/64



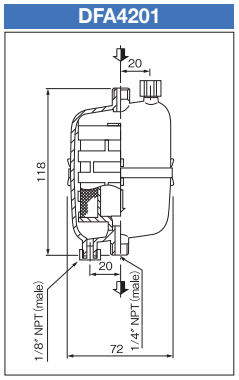
* Without vent / drain.

DFA3201, 4201, 5301, 6402 Series

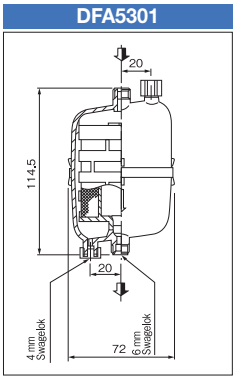
DFA3201



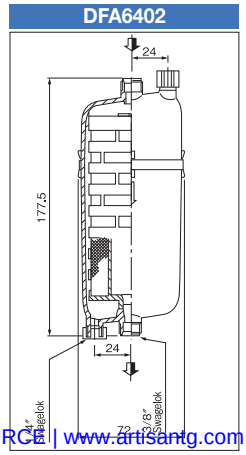
DFA4201



DFA5301



DFA6402



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Part Numbers / Ordering Information (DFA1, 2 Series)

DFA [1] [2] [3]

Table 1 : Configurations

1	for low flow rates
2	for medium flow rates

Table 3 : Connector options

	Code	Inlet / Outlet		Vent / Drain	
		Size	Connections	Size	Connections
DFA1	SW44	1/4"	Swagelok	1/4"	Swagelok
DFA1	SW84M	8 mm	Swagelok	4 mm	Swagelok
DFA1	FW64M	6 mm	Flowell 20 (series)	4 mm	Flowell 20 (series)
DFA1	NP64	3/8"	Pillarfitting	4 mm	Pillarfitting
DFA1	NP64M	6 mm	Pillarfitting	4 mm	Pillarfitting
DFA1	NP64MR[4]	6 mm	Pillarfitting	4 mm	Pillarfitting
DFA1	NP84M	8 mm	Pillarfitting	4 mm	Pillarfitting
DFA1	NP84MR[4]	8 mm	Pillarfitting	4 mm	Pillarfitting
DFA2	FL6	3/8"	Flare style	nil	nil
DFA2	FL64	3/8"	Flare style	1/4"	Flare style
DFA2	F6N4	3/8"	Flare style	1/4"	NPT
DFA2	FW124M	12 mm	Flowell 20 (series)	4 mm	Flowell 20 (series)
DFA2	NP64	3/8"	Pillarfitting	1/4"	Pillarfitting
DFA2	NP84M	8 mm	Pillarfitting	4 mm	Pillarfitting
DFA2	NP124M	12 mm	Pillarfitting	4 mm	Pillarfitting
DFA2	NP124MR[4]	12 mm	Pillarfitting	4 mm	Pillarfitting
DFA2	SW84	1/2"	Swagelok	1/4"	Swagelok

[4] R option is for repeat order products without sleeves and nuts on inlet/outlet.
[5] Contact Pall for other fitting options.

Table 2 : Options for filter media and removal ratings[6]

Emflon [8]		Ultipor N$_{66}$		Ultipleat P-Nylon		Fluorodyne		P Emflon		PE-Kleen		HDC II [7]		Profile Star [7]	
Code	Removal ratings	Code	Removal ratings	Code	Removal ratings	Code	Removal ratings	Code	Removal ratings	Code	Removal ratings	Code	Removal ratings	Code	Removal ratings
FDE☐[8]	0.05 µm	NIEY	0.1 µm	AN01E	10 nm	V001EY	0.1 µm	UFDE	0.05 µm	UG5E	5 nm	J006☐[7]	0.6 µm	A008☐[7]	0.8 µm
FTE☐[8]	0.1 µm	NAEY	0.2 µm	ANME	20 nm	V002EY	0.2 µm	UFTE	0.1 µm	UG001E	10 nm	J012☐[7]	1.2 µm	A010☐[7]	1 µm
FRE☐[8]	0.2 µm			ANDE	40 nm			UFRE	0.2 µm	UG003E	30 nm	J025☐[7]	2.5 µm	A015☐[7]	1.5 µm
				AN15E	0.15 µm					UG005E	0.05 µm	J045☐[7]	4.5 µm	A030☐[7]	3 µm
										UG100E	1 µm	J060☐[7]	6 µm	A050☐[7]	5 µm
												J100☐[7]	10 µm		
												J200☐[7]	20 µm		
												J400☐[7]	40 µm		
												J700☐[7]	70 µm		

[6] The E in the the part number stands for an electronic grade product.
[7] Extra rinsing option (F) is available for HDC II and Profile Star filters.
[8] S-grade option is treated to have very low initial extractables.

< notes > Part numbers in combination with all codes are not always available. Please contact Pall for part number availability.

Minimum order quantity and packaging unit	6 pcs

Representative example part numbers

DFA1FRESSW44
DFA1FTESNP64M
DFA1FTESNP84M
DFA1FDESNP64M
DFA1FDESNP84M
DFA1ANDENP64M
DFA2ANDEFL64
DFA2ANDENP64R
DFA1ANMENP64M
DFA2ANMENP64R
DFA1UNIENP64M
DFA1UNIENP84M
DFA2UNIEFL64
DFA1UNDENP64M
DFA1UNDNP84M
DFA2UNDEFL64
DFA2UNDENP64R
DFA2UNDENP84M
DFA2UNMENP84M
DFA2UNMENP64R
DFA2NUMEFL64
DFA1NAEYSW44
DFA1NIEYNP64M
DFA1NIEYNP84M
DFA1NIEYSW44
DFA1V001EYSW44
DFA2UG001EFL64

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Part Numbers / Ordering Information (DFA3201, 4201, 5301, 6402 Series)

DFA | 4 | 5

Table 4 : Connector options

Fittings Code	Inlet / Outlet		Vent / Drain	
	Size	Connections	Size	Connections
3201	3/8"	Hose	1/8"	NPT male
4201	1/4"	NPT male	1/8"	NPT male
5301	6 mm	Swagelok	4 mm	Swagelok
6402	3/8"	Swagelok	1/4"	Swagelok

Table 5 : Options for filter media and removal ratings[9]

Emflon [11]		Ultipor N66		Ultipleat P-Nylon		Fluorodyne		P Emflon		PE-Kleen		HDC II [10]		Profile Star [10]	
Code	Removal ratings	Code	Removal ratings	Code	Removal ratings	Code	Removal ratings	Code	Removal ratings	Code	Removal ratings	Code	Removal ratings	Code	Removal ratings
FDE □[11]	0.05 µm	NIEY	0.1 µm	AN01E	10 nm	V001EY	0.1 µm	UFDE	0.05 µm	UG5E	5 nm	J006 □[10]	0.6 µm	A008 □[10]	0.8 µm
FTE □[11]	0.1 µm	NAEY	0.2 µm	ANME	20 nm	V002EY	0.2 µm	UFTE	0.1 µm	UG001E	10 nm	J012 □[10]	1.2 µm	A010 □[10]	1 µm
FRE □[11]	0.2 µm			ANDE	40 nm			UFRE	0.2 µm	UG003E	30 nm	J025 □[10]	2.5 µm	A015 □[10]	1.5 µm
FXE □[11]	0.45 µm			AN15E	0.15 µm					UG005E	0.05 µm	J045 □[10]	4.5 µm	A030 □[10]	3 µm
										UG100E	1 µm	J060 □[10]	6 µm	A050 □[10]	5 µm
												J100 □[10]	10 µm		
												J200 □[10]	20 µm		
												J400 □[10]	40 µm		
												J700 □[10]	70 µm		

[9] The E in the the part number stands for an electronic grade product.
[10] Extra rinsing option (F) is available for HDC II and Profile Star.
[11] S-grade option is treated to have very low initial extractable.
[12] There will be an indication as P in □ for 4201J012, 4201J025 and DFA3201, however the performance is unchanged.

< notes > Part numbers in combination with all codes are not always available. Please contact Pall for the part number availability.

Minimum order quantity and packaging unit	6 pcs

Representative example part numbers

DFA4201FRES
DFA4201FTES
DFA6402FTES
DFA4201FDES
DFA6402FDE
DFA6402FDES

DFA6402ANDE
DFA6402ANME

DFA4201UNAE
DFA4201UNIE
DFA6402UNAE
DFA6402UNIE
DFA6402UNDE

DFA6402NAEY
DFA6402NIEY

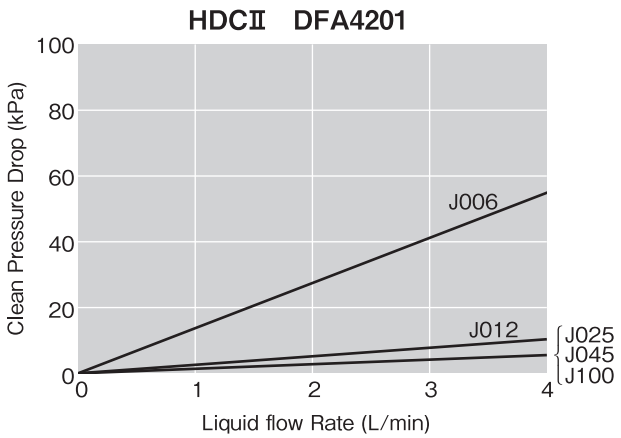
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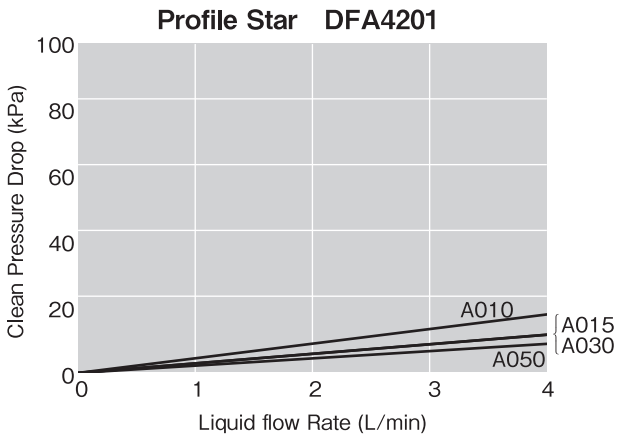
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DFA4201UG007E
DFA6402UG007E
DFA4201UG005E
DFA6402UG005E
DFA6402UG003E

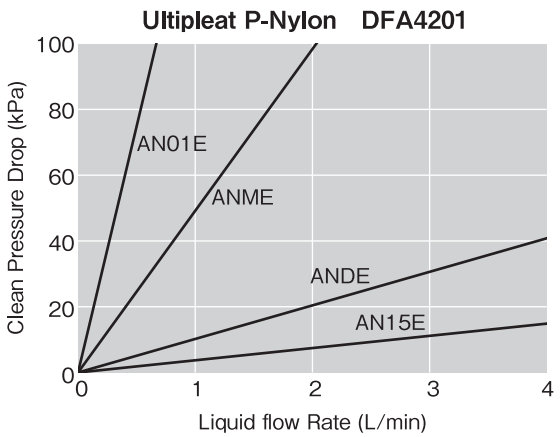
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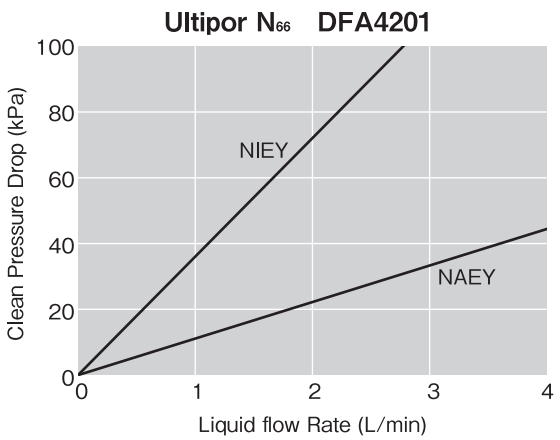
Pressure Drop vs. Liquid Flow Rate[13] (Water [1mPa•s] at 20 °C)

DFA4201

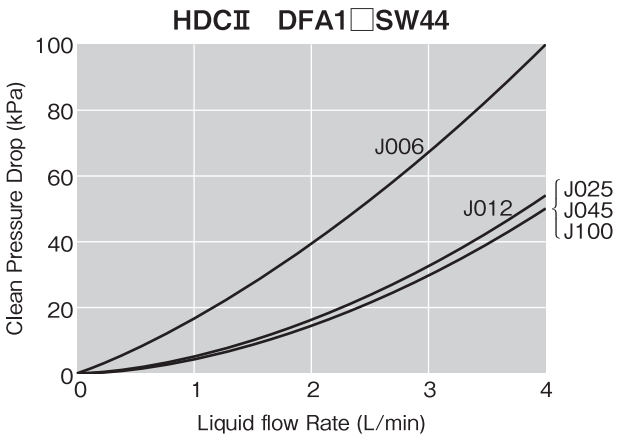


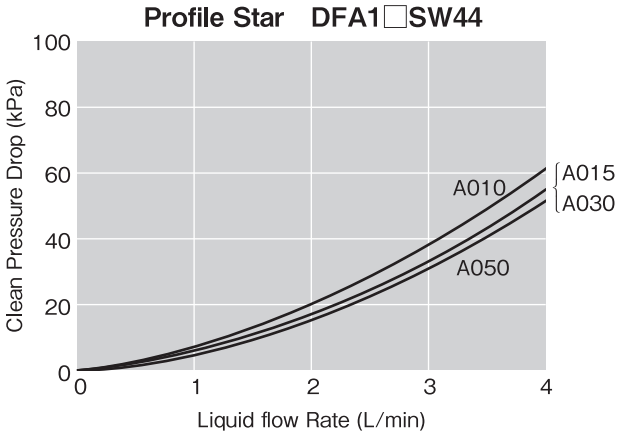


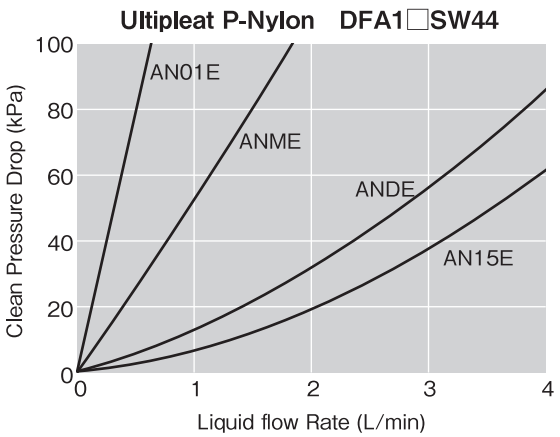


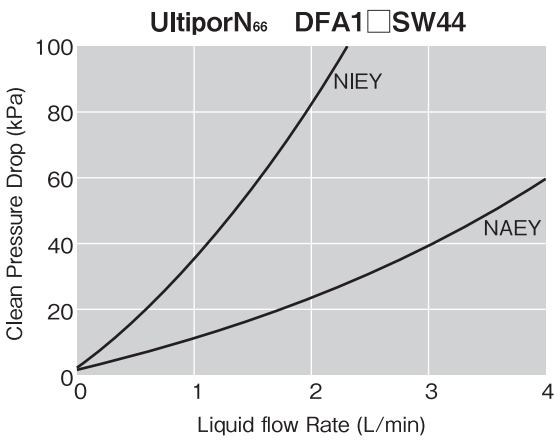


DFA1□SW44







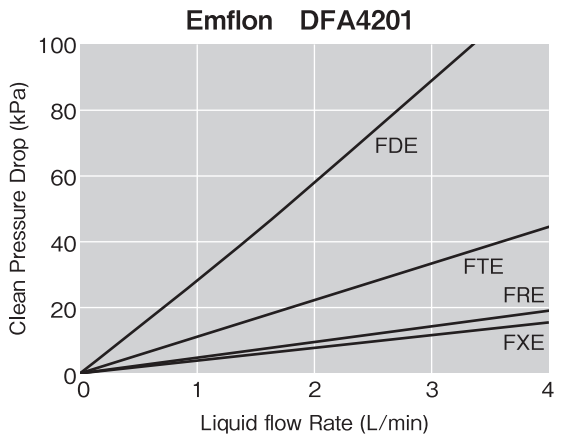


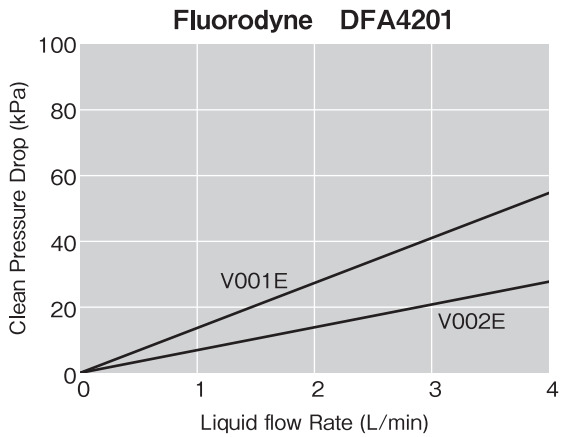
[13] For liquids with viscosity differing from water, multiply the pressure drop by the viscosity in mPa•s.

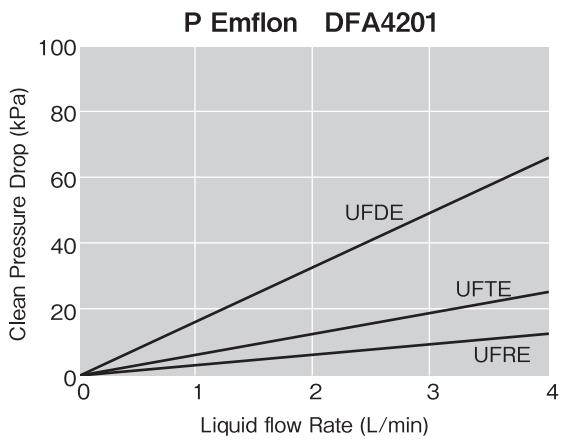
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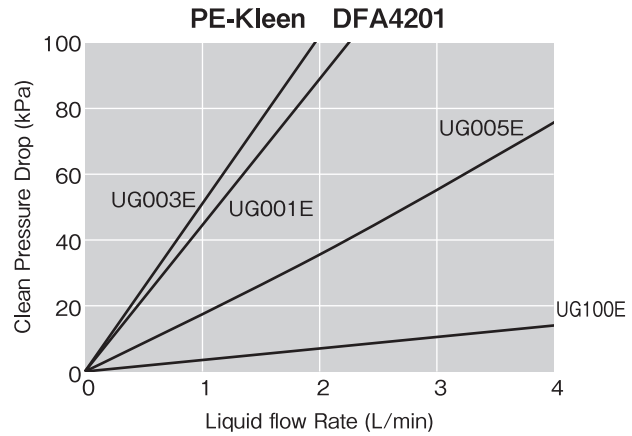
Pressure Drop vs. Liquid Flow Rate[13] (Water [1mPa•s] at 20 °C)

DFA4201

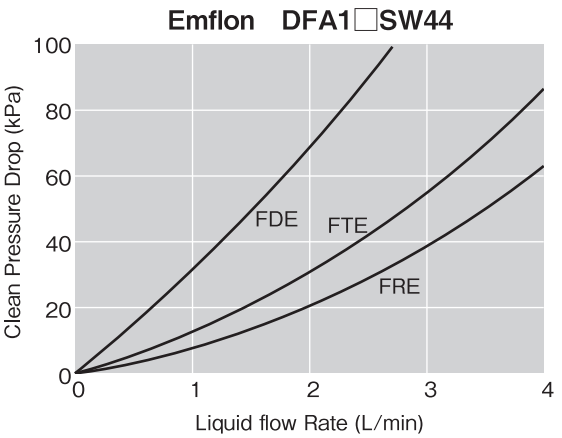


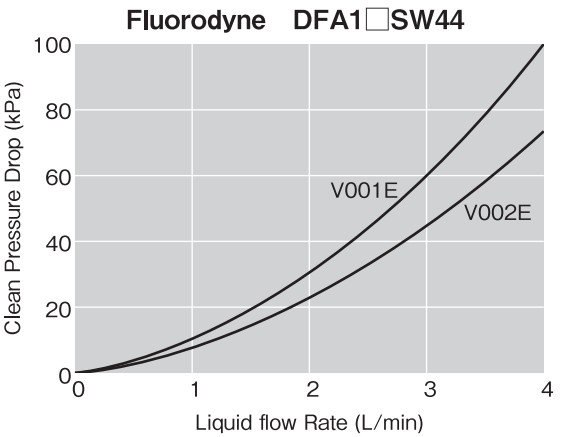


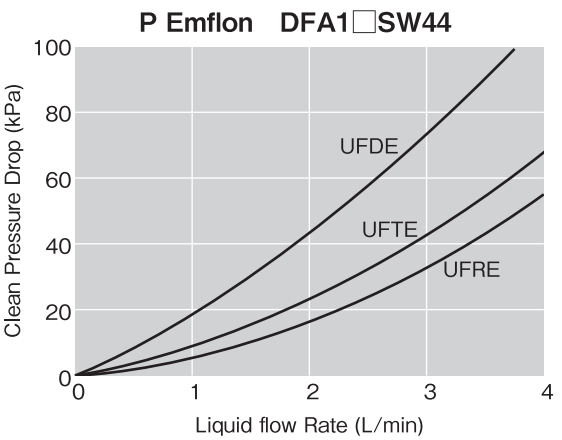


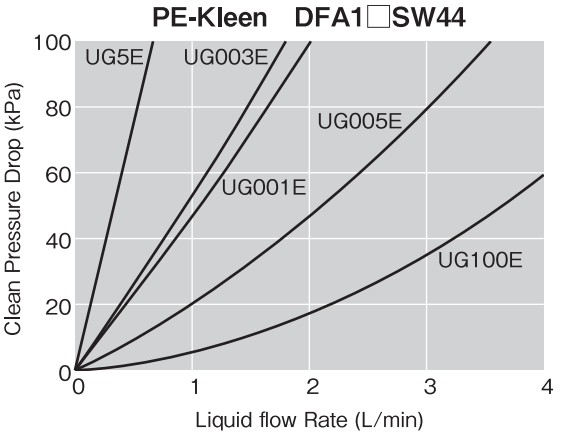


DFA1□SW44









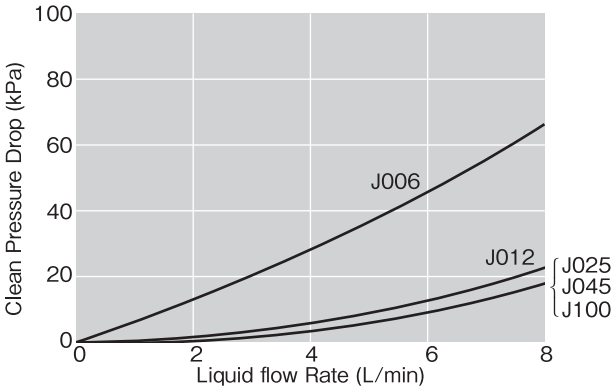
[13] For liquids with viscosity differing from water, multiply the pressure drop by the viscosity in mPa•s.

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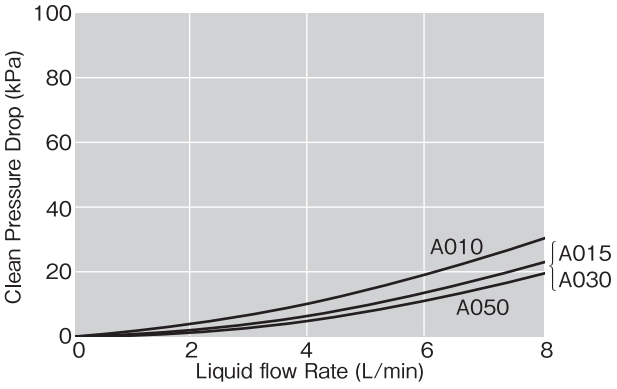
Pressure Drop vs. Liquid Flow Rate[13] (Water [1mPa•s] at 20 °C)

DFA6402, DFA2

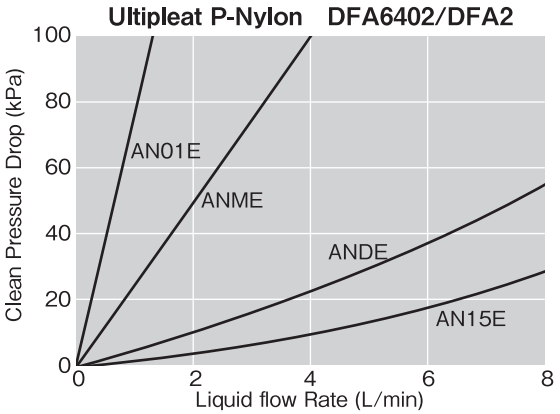
HDCⅡ DFA6402/DFA2



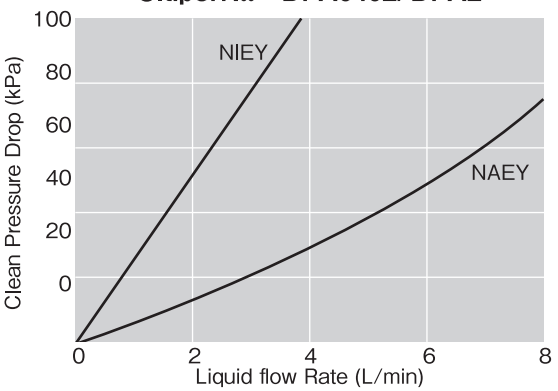
Profile Star DFA6402/DFA2



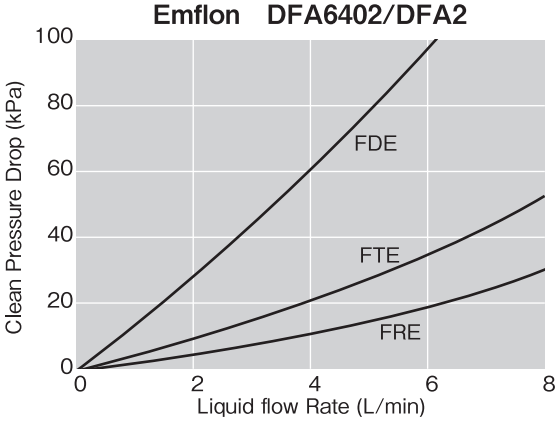
Ultipleat P-Nylon DFA6402/DFA2



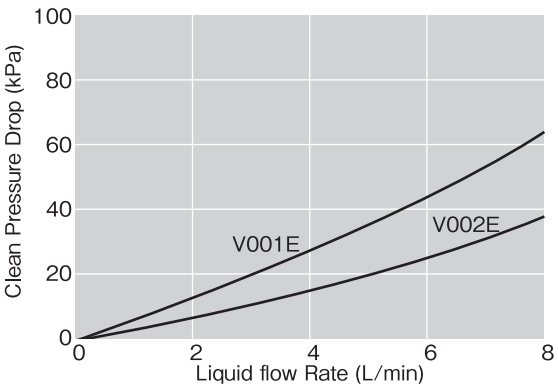
UltiporN66 DFA6402/DFA2



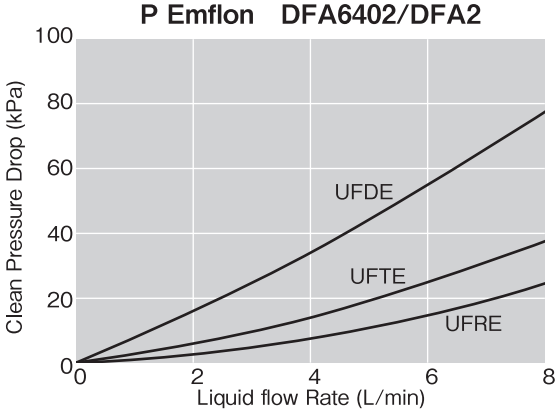
Emflon DFA6402/DFA2



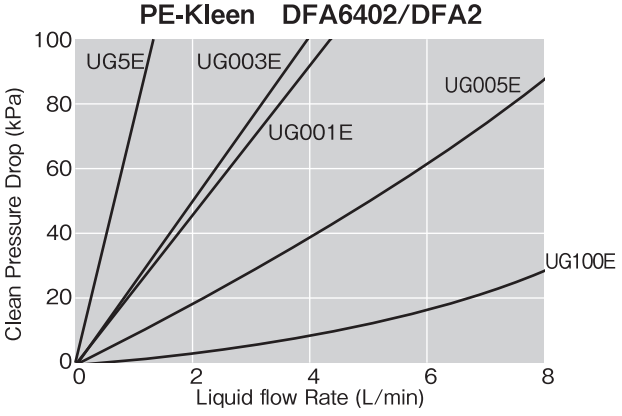
Fluorodyne DFA6402/DFA2



P Emflon DFA6402/DFA2



PE-Kleen DFA6402/DFA2



[13] For liquids with viscosity differing from water, multiply the pressure drop by the viscosity in mPa•s.

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