

DFN

Low Pressure Duplex Filter Assembly

Designed to maintain continuous filtration, even throughout element servicing, the DFN series filter assemblies provide a compact and user-friendly 4-way, 2 position housing completely sealed from the atmosphere. Remove particulate and water from a variety of fluids including hydrogen seal, oil, turbine lube oil, bearing lube oil, and FD-ID-PA fan lube.

Ideal for systems where filters must be serviced without system interruption such as hydraulic, gearbox, wind turbine, boiler feed pump, mechanical/electro hydraulic control, and servo systems.

Max Operating Pressure: 888 psi (61.2 bar)



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Two positions, one result.

DFN housings provide unmatched in-line filtration with incredible ease of use. With a squeeze of the trigger and turn of the wrist, you'll introduce a new element to your fluid while simultaneously valving the used element out of service to easily change and replace, all while your system continues operating at full capacity.



All duplexes are not created equal.

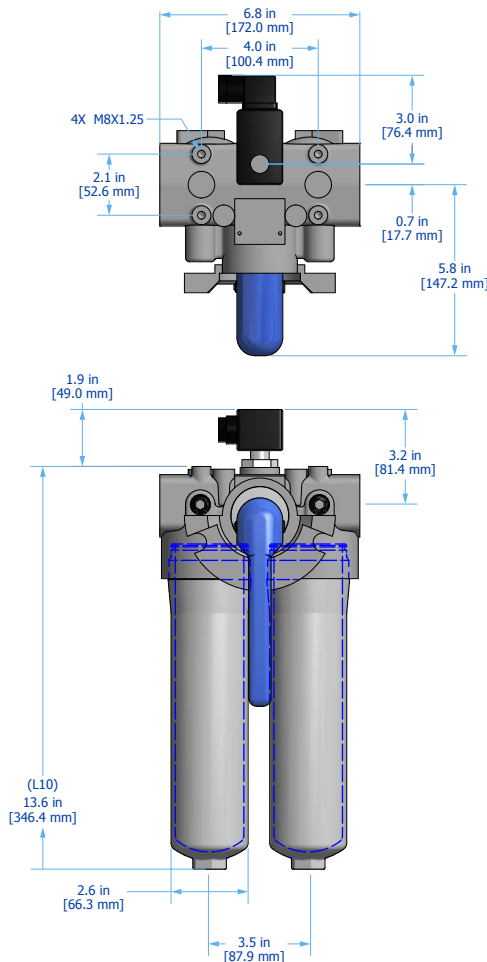
Air in any lube system can quickly cause failure and force you to take your system down for maintenance. DFN assemblies utilize internal equalization and external vent ports to automatically push oil into and purge air out from the unused housing without any added effort.

Elements that go beyond industry standard.

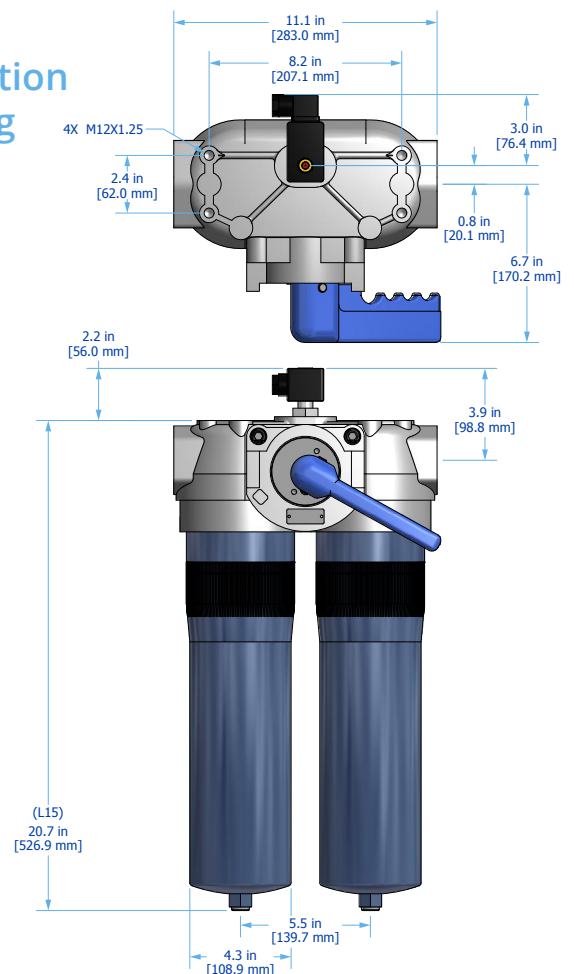
DFE rated advanced media technologies provide the highest level of particulate capture and retention capabilities so your equipment operates unimpeded by contamination. With media options down to $\beta_{3[\text{C}]} \geq 4000$ + water absorption, you get the perfect element for your application, every time.



DFN19 Installation Drawing



DFN39 Installation Drawing



DFN Specifications

Dimensions See Installation Drawing on page 251 for model specific dimensions.

Operating Temperature	Fluid Temperature	Ambient Temperature
	30°F to 225°F (0°C to 105°C)	-4°F to 140°F (-20C to 60C)

Operating Pressure	DFN19	DFN39
	888 psi (61.2 bar) max	350 psi (24.1 bar) max

ΔP Indicator Trigger 32 psid (2.21 bard)

Element Collapse Rating	Normal Collapse (Collapse Option N)	High Collapse (Collapse Option H)
	450 psid (31.0 bard)	3000 psid (206.8 bard)

Materials of Construction	Head	Bowl	Interior Coating
	Aluminum	L10 – Aluminum L15 – Steel	Anodized

Media Description	M	A	W
	G8 Dualglass, our latest generation of DFE rated, high performance glass media for all hydraulic & lubrication fluids. $\beta_{x_{[c]}} \geq 4000$	G8 Dualglass high performance media combined with water removal scrim. $\beta_{x_{[c]}} \geq 4000$	Stainless steel wire mesh media $\beta_{x_{[c]}} \geq 2$ ($\beta_x \geq 2$)

Replacement Elements To determine replacement elements, use corresponding codes from your assembly part number:

Series Code	Filter Element Part Number	Example
19	HP19[Collapse Code] L [Length Code] – [Media Selection Code][Seal Code]	HP19HL6-10MB
39	HP39[Collapse Code] L [Length Code] – [Media Selection Code][Seal Code]	HP39NL6-6AV

Fluid Compatibility Biodegradable and mineral based fluids. For high water based of specified synthetics, consult factory.

Filter Assembly Sizing¹ Filter assembly clean element ΔP after actual viscosity correction should not exceed 10% of filter assembly bypass setting. See below for viscosity correction formula. For applications with extreme cold start condition contact Hy-Pro for sizing recommendations.

Step 1: Calculate ΔP coefficient for actual viscosity

Using Saybolt Universal Seconds (SUS)

$$\Delta P \text{ Coefficient} = \frac{\text{Actual Operating Viscosity}^1 \text{ (SUS)}}{150} \times \frac{\text{Actual Specific Gravity}}{0.86}$$

Using Centistokes (cSt)

$$\Delta P \text{ Coefficient} = \frac{\text{Actual Operating Viscosity}^1 \text{ (cSt)}}{32} \times \frac{\text{Actual Specific Gravity}}{0.86}$$

Step 2: Calculate actual clean filter assembly ΔP at both operating and cold start viscosity

$$\text{Actual Assembly Clean } \Delta P = \text{Flow Rate} \times \Delta P \text{ Coefficient (from Step 1)} \times \text{Assembly } \Delta P \text{ Factor (from sizing table)}$$

ΔP Factors ¹	Model	Length	Units	Media						
				1M	3M	6M	10M	16M	25M	**W
DFN19N	L10		psid/gpm	1.4943	1.2610	1.0420	0.7820	0.6489	0.6250	0.3130
			bard/lpm	0.0272	0.0230	0.0190	0.0142	0.0118	0.0114	0.0057
DFN39N	L15		psid/gpm	0.4633	0.3910	0.3010	0.2660	0.2180	0.2100	0.1170
			bard/lpm	0.0084	0.0071	0.0055	0.0048	0.0040	0.0038	0.0021

Max flow rates and ΔP factors assume u = 150 SUS, 32 cSt. See filter assembly sizing guideline for viscosity conversion formula on page 22 for viscosity change.

DFN Part Number Builder

DFN -

Series Connection Collapse Length Bypass ΔP Indicator Media Seal

Series

19 25 gpm (95 lpm) max flow rate¹
39 70 gpm (265 lpm) max flow rate¹

Connection

DFN19 **DFN39**
F16² 1" Code 61 flange **F24**² 1½" Code 61 flange

Collapse Rating

H 3000 psid (206.8 bard)
N 450 psid (31.0 bard)

Element Length

DFN19 **DFN39**
10 10" (25 cm) nominal length filter element and housing **15** 15" (38 cm) nominal length filter element and housing

Bypass

3 Integrated bypass – 50 psid (3.4 bard)
X No bypass

ΔP Indicator

D Visual with electric switch (DIN connection)
V Visual/Mechanical
X No indicator (port plugged)

Media Selection

G8 Dualglass	G8 Dualglass + water removal	Stainless wire mesh
1M $\beta_{3, [C]} \geq 4000$	3A ³ $\beta_{5, [C]} \geq 4000$	25W 25μ nominal
3M $\beta_{5, [C]} \geq 4000$	6A ³ $\beta_{7, [C]} \geq 4000$	40W 40μ nominal
6M $\beta_{7, [C]} \geq 4000$	10A ³ $\beta_{12, [C]} \geq 4000$	74W 74μ nominal
10M $\beta_{12, [C]} \geq 4000$	25A ³ $\beta_{22, [C]} \geq 4000$	149W 149μ nominal
16M $\beta_{17, [C]} \geq 4000$		
25M $\beta_{22, [C]} \geq 4000$		

Seals

B Nitrile (Buna)
V Fluorocarbon

¹When selected, must be paired with Seal option "V." Contact factory for more information or assistance in fluid compatibility.

²Metric threads for flange connection bolts. See Appendix for exact connection sizes and specifications.

³Water Removal Media available only with Collapse option "N."

For all up to date option details and compatibilities, please reference our [Contamination Solutions Price List](#) or contact customer service.

Want to find out more? Get in touch.

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