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.

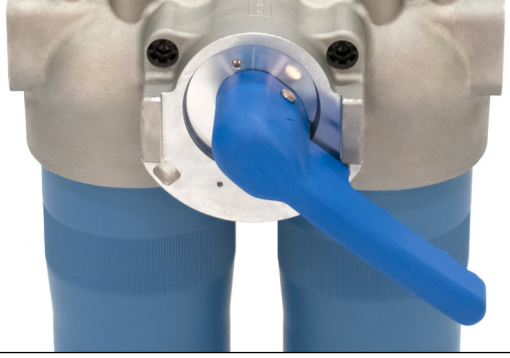
Max Operating Pressure: 888 psi (61.2 bar)

Donaldson HY-PRO™

hyprofiltration.com/

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.



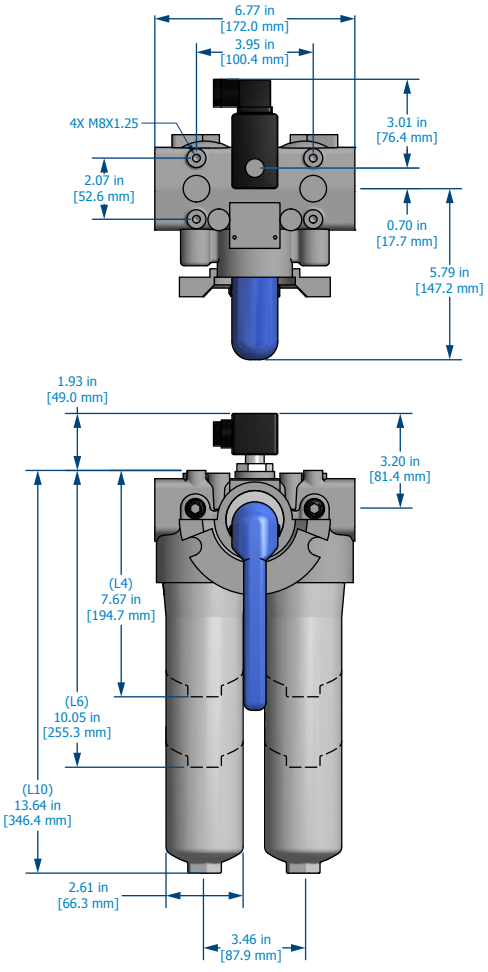
All duplexes are not created equal.

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.

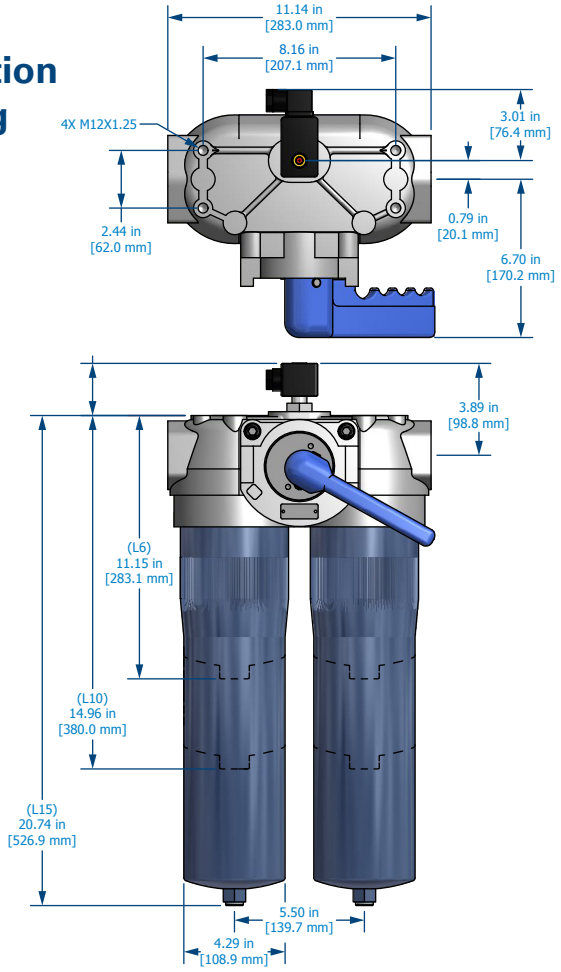
Elements that go beyond industry standard.

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 $\beta 3_{[C]} \geq 4000$ + water absorption, you get the perfect element for your application, every time.

DFN19 Installation Drawing



DFN39 Installation Drawing



DFN Specifications

Dimensions

See Installation Drawing for model specific dimensions.

Operating Temperature

Fluid Temperature
30°F to 225°F
(0°C to 105°C)

Ambient Temperature
-4°F to 140°F
(-20C to 60C)

Operating Pressure

DFN19
888 psi (61.2 bar) max

DFN39
350 psi (24.1 bar) max

ΔP Indicator Trigger

32 psid (2.21 bard)

Element Collapse Rating

Normal Collapse (Collapse Option N)
450 psid (31.0 bard)

High Collapse (Collapse Option H)
3000 psid (206.8 bard)

Materials of Construction

Head
Aluminum

Bowl
L10 – Aluminum
L15 – Steel

Interior Coating
Anodized

Media Description

M
G8 Dualglass, our latest generation of DFE rated, high performance glass media for all hydraulic & lubrication fluids. $\beta x_{[C]} \geq 4000$

A
G8 Dualglass high performance media combined with water removal scrim. $\beta x_{[C]} \geq 4000$

W
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 Sizing[1]

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 Donaldson Hy-Pro for sizing recommendations.

Step 1: Calculate ΔP coefficient for actual viscosity

Using Saybolt Universal Seconds (SUS)

$$\text{ΔP Coefficient} = \frac{\text{Actual Operating Viscosity1 (SUS)}}{150} \times \frac{\text{Actual Specific Gravity}}{0.86}$$

Using Centistokes (cSt)

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

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

Actual Assembly Clean ΔP = Flow Rate X ΔP Coefficient (from Step 1) X Assembly ΔP 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

[1] Max flow rates and ΔP factors assume υ = 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 rate[1]
39	70 gpm (265 lpm) max flow rate[1]

Connection

DFN19		DFN39	
F16[2]	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

1M	$\beta 3_{[C]} \geq 4000$
3M	$\beta 5_{[C]} \geq 4000$
6M	$\beta 7_{[C]} \geq 4000$
10M	$\beta 12_{[C]} \geq 4000$
16M	$\beta 17_{[C]} \geq 4000$
25M	$\beta 22_{[C]} \geq 4000$

G8 Dualglass + water removal

3A[3]	$\beta 5_{[C]} \geq 4000$
6A[3]	$\beta 7_{[C]} \geq 4000$
10A[3]	$\beta 12_{[C]} \geq 4000$
25A[3]	$\beta 22_{[C]} \geq 4000$

Stainless wire mesh

25W	25µ nominal
40W	40µ nominal
74W	74µ nominal
149W	149µ nominal

Seals

B	Nitrile (Buna)
V	Fluorocarbon

[1]When selected, must be paired with Seal option "V." Contact factory for more information or assistance in fluid compatibility.
[2]Metric threads for flange connection bolts. See Appendix for exact connection sizes and specifications.
[3]Water Removal Media available only with Collapse option "N."

For all up to date option details and compatibilites, please reference our Contamination Solutions Price List or contact customer service.

Want to find out more? Get in touch.
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Donaldson HY-PRO™

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