

DFH

High Pressure Duplex Filter Assembly

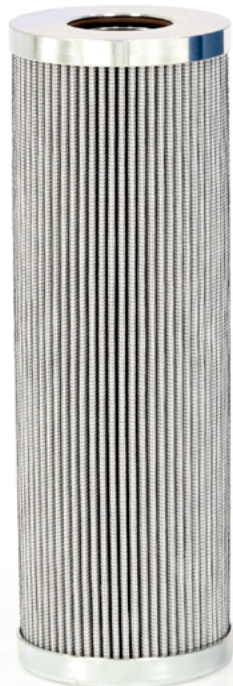
The DFH series is designed to remove particulate and water from a variety of fluids including hydrogen seal oil, turbine lube oil, bearing lube oil, and FD-ID-PA fan lube. Applicable for wind turbine, boiler feed pump, mechanical/electro hydraulic control, and fuel handling systems.

Ideal for systems where filters must be serviced while continuous operation is not interrupted such as hydraulic, gearbox, and servo systems.

Max Operating Pressure: 3600 psi (248 bar)

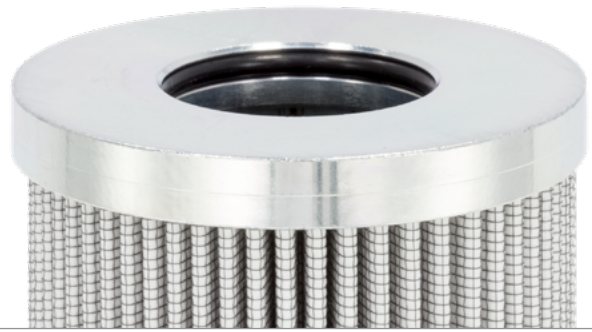


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Elements that go beyond industry standard.

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.



Two positions, one result.

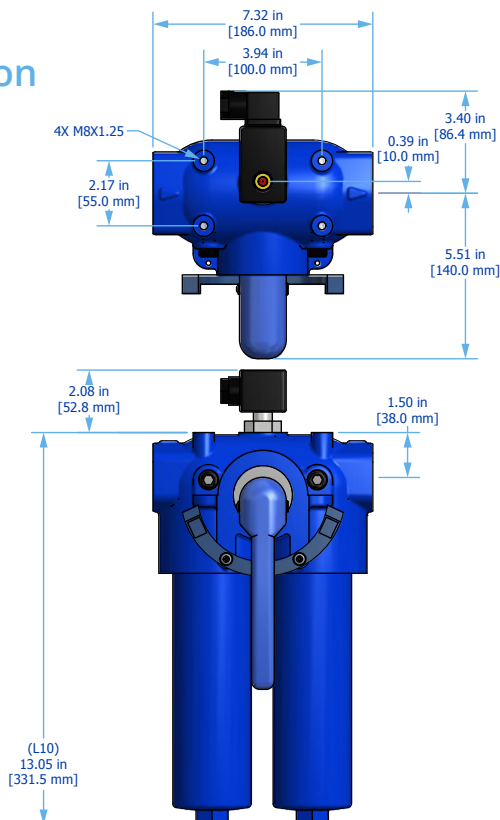
DFH housings provide unmatched in-line filtration with incredible ease of use. With a squeeze of the trigger and turn of the wrist, you'll introduce a new element to your fluid while simultaneously valving the used element out of service to easily change and replace, all while your system continues operating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

All duplexes are not created equal.

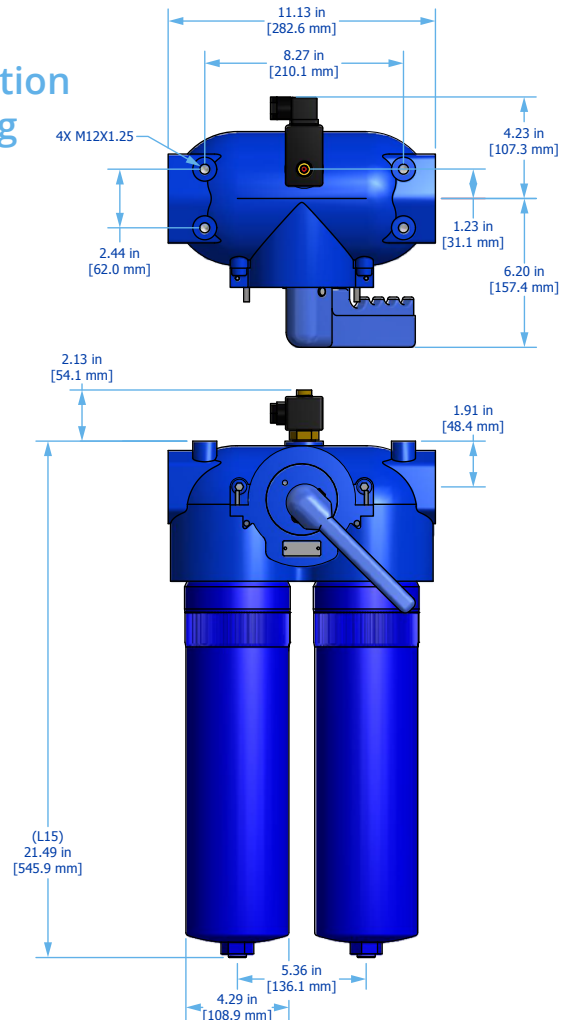
Air in any lube system can quickly cause failure and force you to take your system down for maintenance. DFN assemblies utilize internal equalization and external vent ports to automatically push oil into and purge air out from the unused housing without any added effort.



DFH19 Installation Drawing



DFH39 Installation Drawing



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DFH Specifications

Dimensions	See Installation Drawing on previous page 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	DFH19 3600 psi (248.2 bar) max					DFH39 3000 psi (206.8 bar) max																				
ΔP Indicator Trigger	73 psid (5 bard)																									
Element Collapse Rating	450 psid (31.0 bard)																									
Materials of Construction	Head Cast steel			Bowl Cast steel			Housing Bypass Valve Steel																			
Media Description	M G8 Dualglass, our latest generation of DFE rated, high performance glass media for all hydraulic & lubrication fluids. β _{x_[c]} ≥ 4000			A G8 Dualglass high performance media combined with water removal scrim. β _{x_[c]} ≥ 4000			W Stainless steel wire mesh media β _{x_[c]} ≥ 2 (β _x ≥ 2)																			
Replacement Elements	To determine replacement elements, use corresponding codes from your assembly part number: <table><tr><td>Series Code</td><td>Filter Element Part Number</td><td>Example</td></tr><tr><td>19</td><td>HP19[Collapse Code] L [Length Code] – [Media Selection Code][Seal Code]</td><td>HP19HL6-10MB</td></tr><tr><td>39</td><td>HP39[Collapse Code] L [Length Code] – [Media Selection Code][Seal Code]</td><td>HP39NL6-6AV</td></tr></table>										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							
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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 Hy-Pro for sizing recommendations. Step 1: Calculate ΔP coefficient for actual viscosity <table><tr><th colspan="4">Using Saybolt Universal Seconds (SUS)</th><th colspan="4">Using Centistokes (cSt)</th></tr><tr><td>ΔP Coefficient</td><td>=</td><td>$\frac{\text{Actual Operating Viscosity}^1 \text{ (SUS)}}{150}$</td><td>$\times \frac{\text{Actual Specific Gravity}}{0.86}$</td><td>ΔP Coefficient</td><td>=</td><td>$\frac{\text{Actual Operating Viscosity}^1 \text{ (cSt)}}{32}$</td><td>$\times \frac{\text{Actual Specific Gravity}}{0.86}$</td></tr></table> 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)										Using Saybolt Universal Seconds (SUS)				Using Centistokes (cSt)				ΔP Coefficient	=	$\frac{\text{Actual Operating Viscosity}^1 \text{ (SUS)}}{150}$	$\times \frac{\text{Actual Specific Gravity}}{0.86}$	ΔP Coefficient	=	$\frac{\text{Actual Operating Viscosity}^1 \text{ (cSt)}}{32}$	$\times \frac{\text{Actual Specific Gravity}}{0.86}$
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ΔP Factors ¹	Model	Length	Units	Media	1M	3M	6M	10M	16M	25M	**W															
	DFH19	L10	psid/gpm bard/lpm		1.494 0.0272	1.261 0.0230	1.042 0.0190	0.782 0.0142	0.649 0.0118	0.625 0.0114	0.313 0.0057															
	DFH39	L15	psid/gpm bard/lpm		0.463 0.0084	0.391 0.0071	0.301 0.0055	0.266 0.0048	0.218 0.0040	0.210 0.0038	0.117 0.0021															

¹Max 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.

DFH Part Number Builder

DFH -

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 **DFH19**
F16² 1" Code 61 flange

DFH39
F24² 1½" Code 61 flange

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

Element Length **DFH19**
10 10" (25 cm) nominal length filter element and housing

DFH39
15 15" (38 cm) nominal length filter element and housing

Bypass **7** 102 psid (7 bard) bypass
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 β ₃ ≥ 4000	G8 Dualglass + water removal	Stainless wire mesh
3M β ₅ ≥ 4000	3A³ β ₅ ≥ 4000	25W 25μ nominal
6M β ₇ ≥ 4000	6A³ β ₇ ≥ 4000	40W 40μ nominal
10M β ₁₂ ≥ 4000	10A³ β ₁₂ ≥ 4000	74W 74μ nominal
16M β ₁₇ ≥ 4000	25A³ β ₂₂ ≥ 4000	149W 149μ nominal
25M β ₂₂ ≥ 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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