

**W451**

Max Flow: 150 gpm (568 lpm)



W451 In-Line Cartridge Filters

Working Pressures to: 4,500 psi
31,027 kPa
310 bar

Rated Static Burst to: 13,500 psi
93,100 kPa
931 bar

Fatigue Pressure Rating: 3000 psi
20,700 kPa
207 bar

Flow Range To: 150 gpm
568 lpm

Applications

- High Pressure Circuits
- In-Plant Systems
- Meets HF4 Specification
- Mobile Equipment



Features

The W451 base-mounted filter series provides for easy servicing featuring top cover access for filter changeout. The ductile iron filter head design provides for SAE ports along with optional space saving manifold mounting. This product features the popular HF4 automotive filter. DT 4-layer media is offered in a variety of designs. Four different media grades are offered. Filter core collapse options range from 150 to 3,000 psi. The differential pressure indicator line is designed to work with the wide assortment of bypass valves. Thermal lockout and surge control are two key features available in many of the differential pressure indicators.

- Conforms to HF4 specifications
- High collapse filter available for use with non-bypass applications
- Wide range of indicator options
- Three housing length options for design flexibility
- Base & cover material: cast iron
- Cylinder material: steel
- Drain plug in base
- Bleed/fill plug in cover

Beta Rating

- Performance to $\beta_{5(c)} = 1000$

Porting Size Options

- SAE-24 O-ring
- 1½" SAE 4-Bolt Flange Code 61 or 62
- Manifold Mounting

Replacement Filter Lengths

- 9.12" / 231.8mm
- 18.20" / 462.3mm
- 27.66" / 702.5mm

Operating Temperatures

- -45° to 250°F (-43° to 121°C)

Standard Bypass Ratings

- 50 psi / 345 kPa / 3.5 bar
- 90 psi / 621 kPa / 6.2 bar
- No Bypass

Assembly Weight

- 9.28": 56 lbs / 25.4 kg
- 18.32": 82 lbs / 37.5 kg
- 27.75": 109 lbs / 49.5 kg

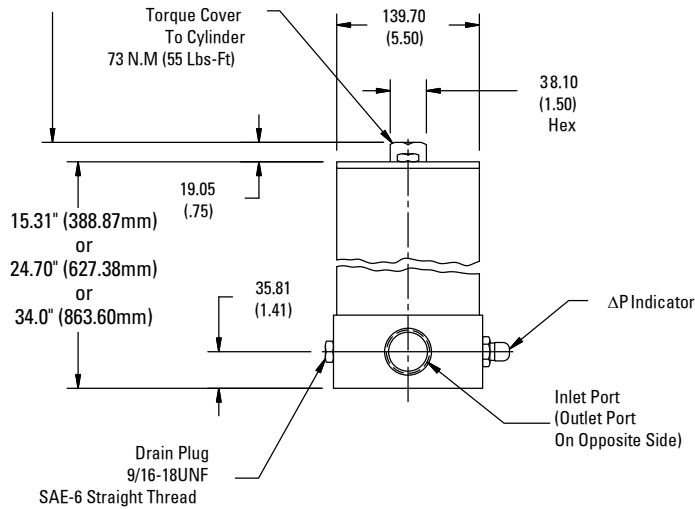
Filter Collapse Ratings

- 150 psi / 1034 kPa / 10.3 bar (standard)
- 3000 psi / 20,700 kPa / 206.8 bar (high collapse)

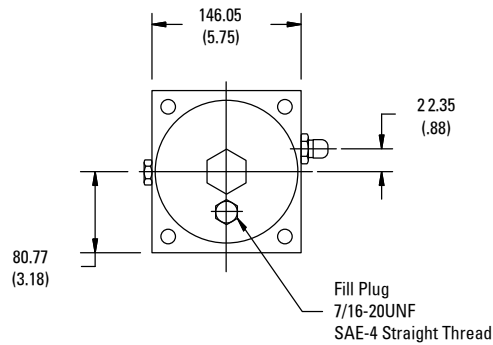
W451 Specification Illustrations

All dimensions are shown in millimeters [inches].

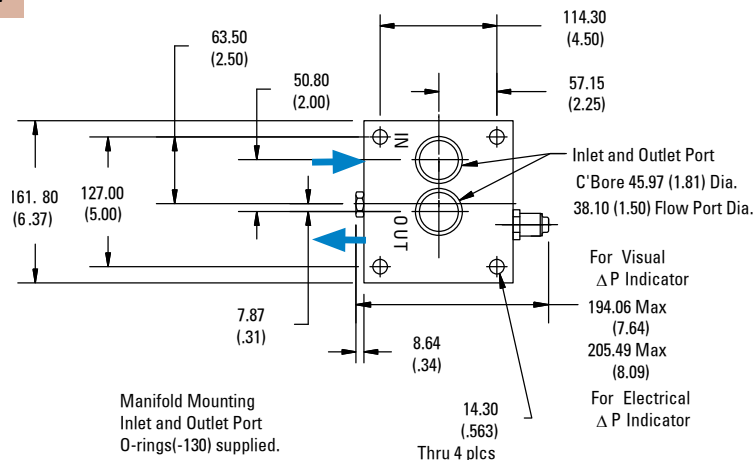
Assembly - Side View



Head - Side View



Head - Bottom View





W451
Max Flow: 150 gpm (568 lpm)



W451 Components

High-Performance DT Filter Choices

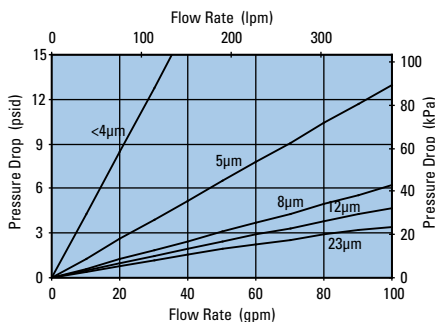
Media Type	$\beta_{x(c)} = 2$ Rating based on ISO 16889	$\beta_{x(c)} = 1000$	Length in mm	Donaldson Part No.	Comments
DT Synteq		2 μm	9.04 230	P568816	DT-HF4-9-2UM
Synthetic		5 μm	9.28 236	P566270	DT-HF4-9-5UM
		8 μm	9.28 236	P566271	DT-HF4-9-8UM
		12 μm	9.28 236	P566272	DT-HF4-9-14UM
		23 μm	9.28 236	P566273	DT-HF4-9-25UM
		5 μm	9.27 229	P566412	DT-HF4HC-9-5UM, High collapse
		12 μm	9.27 229	P566413	DT-HF4HC-9-14UM, High collapse
		2 μm	18.19 232	P568817	DT-HF4-18-2UM
		5 μm	18.32 465	P566274	DT-HF4-18-5UM
		8 μm	18.32 465	P566275	DT-HF4-18-8UM
		12 μm	18.32 465	P566276	DT-HF4-18-14UM
		23 μm	18.32 465	P566277	DT-HF4-18-25UM
		23 μm	18.60 472	P572309	DT-HF4HC-18-5UM, High collapse
		23 μm	18.60 472	P572310	DT-HF4HC-18-14UM, High collapse
		2 μm	27.47 698	P568818	DT-HF4-27-2UM
		5 μm	27.75 705	P566278	DT-HF4-27-5UM
		8 μm	27.75 705	P566279	DT-HF4-27-8UM
		12 μm	27.75 705	P566280	DT-HF4-27-14UM
		23 μm	27.75 705	P566281	DT-HF4-27-25UM
		23 μm	27.93 709	P572311	DT-HF4HC-27-5UM, High collapse
	23 μm	27.93 709	P572312	DT-HF4HC-27-14UM, High collapse	
Water Absorbing	10 μm		9.27 236	P569527	Absorbs 250 ml water @ 25 psid

Filter Notes

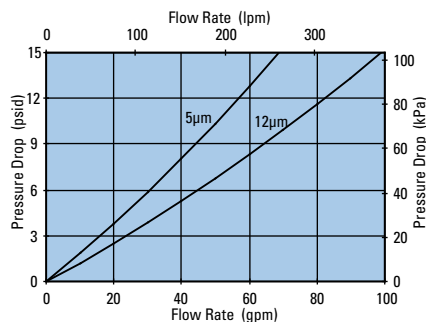
All Donaldson DT filters utilize glass fiber media with an epoxy-based resin system for the ultimate in chemical compatibility. All Donaldson DT filters are potted with epoxy-based adhesives. Standard collapse DT designs are double wire-backed using epoxy-coated steel mesh for maximum pleat support and dirt capacity. High collapse designs are double wire-backed using stainless steel mesh. High collapse designs are also potted into machined aluminum end caps for greater filter integrity in critical applications. May be stacked with two or three 9" long filters (P167324). Viton® seals are standard on all Donaldson DT filters. Viton® is a registered trademark of E. I. DuPont de Nemours and Company.

Performance Data

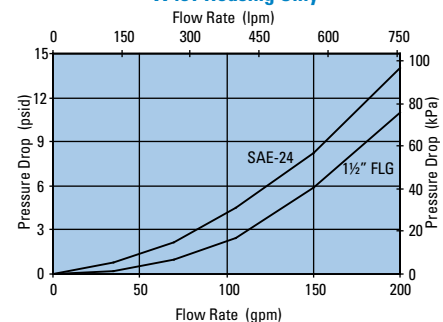
W451 9" DT Filter Only
DT-HF-9, 9.13"/231.8mm



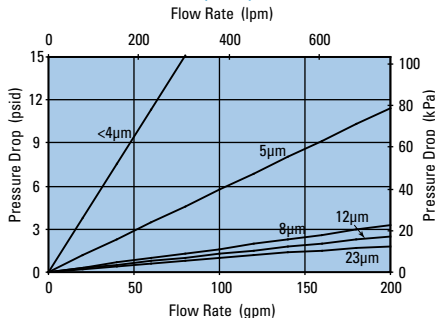
W451 9" DT High Collapse Filter Only
DT-HF4HC-9, 9.19"/233.5mm



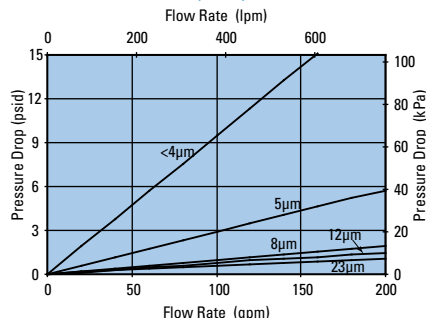
W451 Housing Only



W451 18" DT Filter Only
DT-HF4-18, 18.20"/462.3mm



W451 27" DT Filter Only
DT-HF4-27, 27.66"/702.5mm





Filter Assembly Choices

Port Size	Bypass Rating	Seal Material	Indicator Style & Location	Housing Length	Assembly Length	Donaldson Part No.
SAE-24 O-ring	50 psi / 3.45 bar	Buna-N	Port Machined & Plugged	9" (228.6mm)	15.31" (338.9mm)	P574220
SAE-24 O-ring	50 psi / 3.45 bar	Buna-N	Port Machined & Plugged	18" (457.2mm)	24.7" (627.3mm)	P574221
SAE-24 O-ring	50 psi / 3.45 bar	Buna-N	Port Machined & Plugged	27" (685.8mm)	34.0" (863.6mm)	P574222
1-1/2" SAE 4 Bolt Flange, Code 61	50 psi / 3.45 bar	Buna-N	Port Machined & Plugged	18" (457.2mm)	24.7" (627.3mm)	P574223
1-1/2" SAE 4 Bolt Flange, Code 61	50 psi / 3.45 bar	Buna-N	Port Machined & Plugged	27" (685.8mm)	34.0" (863.6mm)	P574224
1-1/2" SAE 4 Bolt Flange, Code 61	90 psi / 6.21 bar	Buna-N	Port Machined & Plugged	18" (457.2mm)	24.7" (627.3mm)	P574225
1-1/2" SAE 4 Bolt Flange, Code 62	50 psi / 3.45 bar	Buna-N	Port Machined & Plugged	18" (457.2mm)	24.7" (627.3mm)	P574226
Manifold Mount	50 psi / 3.45 bar	Buna-N	Port Machined & Plugged	18" (457.2mm)	24.7" (627.3mm)	P574227
Manifold Mount	50 psi / 3.45 bar	Buna-N	Port Machined & Plugged	27" (685.8mm)	34.0" (863.6mm)	P574228
Manifold Mount	None	Buna-N	Port Machined & Plugged	9" (228.6mm)	15.31" (338.9mm)	P574229
Manifold Mount	None	Buna-N	Port Machined & Plugged	18" (457.2mm)	24.7" (627.3mm)	P574230
SAE-24 O-ring	None	Viton	Port Machined & Plugged	18" (457.2mm)	24.7" (627.3mm)	P575915
SAE-24 O-ring	None	Viton	Port Machined & Plugged	27" (685.8mm)	34.0" (863.6mm)	P575916
SAE-24 O-ring	None	Viton	Port Machined & Plugged	9" (228.6mm)	15.31" (338.9mm)	P575917
1-1/2" SAE 4 Bolt Flange, Code 61	None	Viton	Port Machined & Plugged	18" (457.2mm)	24.7" (627.3mm)	P575918
1-1/2" SAE 4 Bolt Flange, Code 61	90 psi / 6.21 bar	Viton	Port Machined & Plugged	9" (228.6mm)	15.31" (338.9mm)	P575919

Indicator Choices

Indicator Pressure Setting	Connector Style	Seal Material	Donaldson Part No.	Thermal Lockout	Surge Control	Reset
Visual Pop-up Models						
35 psi / 241 kPa	NA	Buna-N	P572347	No	No	Auto
35 psi / 241 kPa	NA	Buna-N	P572348	Yes	Yes	Manual
35 psi / 241 kPa	NA	Viton	P567456	Yes	Yes	Manual
70 psid / 482 kPa	NA	Buna-N	P572319	Yes	Yes	Manual
70 psid / 482 kPa	NA	Viton	P567457	Yes	Yes	Manual
100 psid / 690 kPa	NA	Buna-N	P572353	Yes	Yes	Manual
100 psid / 690 kPa	NA	Viton	P572354	Yes	Yes	Manual
Electrical / Visual Models						
35 psi / 241 kPa	Hirschman	Buna-N	P572327	No	No	Auto
35 psi / 241 kPa	Brad Harrison	Buna-N	P572329	No	No	Auto
35 psi / 241 kPa	Hirschman	Buna-N	P572384	Yes	Yes	Manual
35 psi / 241 kPa	Hirschman	Viton	P567458	Yes	Yes	Manual
35 psi / 241 kPa	Brad Harrison	Buna-N	P572385	Yes	Yes	Manual
35 psi / 241 kPa	3 wire flying leads	Buna-N	P572349	No	No	Auto
70 psi / 482 kPa	Hirschman	Buna-N	P572320	Yes	Yes	Manual
70 psi / 482 kPa	Brad Harrison	Buna-N	P567459	Yes	Yes	Manual
70 psi / 482 kPa	Hirschman	Buna-N	P572373	Yes	No	Manual
70 psi / 482 kPa	Hirschman	Viton	P569639	Yes	No	Manual
100 psi / 690 kPa	Hirschman	Buna-N	P572387	Yes	Yes	Manual
Electrical Models						
35 psi / 241 kPa	Hirschman	Buna-N	P572359	No	No	Auto
35 psi / 241 kPa	Brad Harrison	Buna-N	P572361	No	No	Auto
70 psi / 482 kPa	Hirschman	Buna-N	P572369	No	No	Auto

Head/Bowl/Housing Seal Kits

Donaldson Part No.	Material
X011174	Buna
X011175	Viton