

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 $\beta_{5(\mu)}=1000$

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

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

Operating Temperatures

- -45° to 250°F (-43° to 121°C)

Filter Collapse Ratings

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



W451

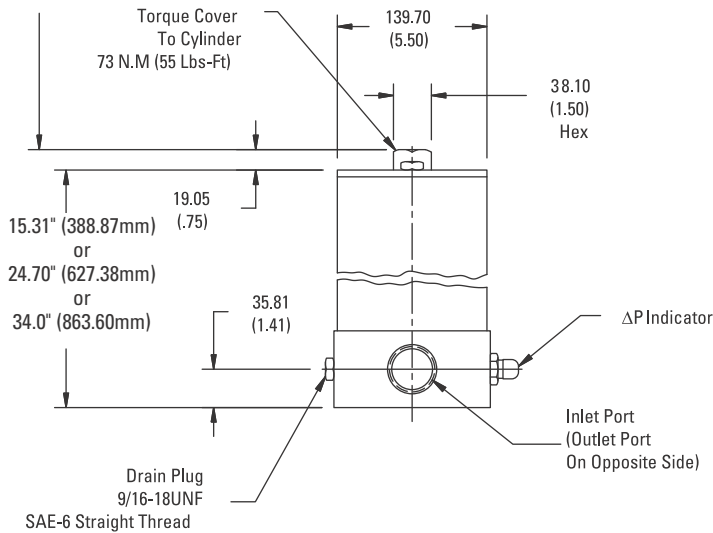
Max Flow: 150 gpm (568 lpm)



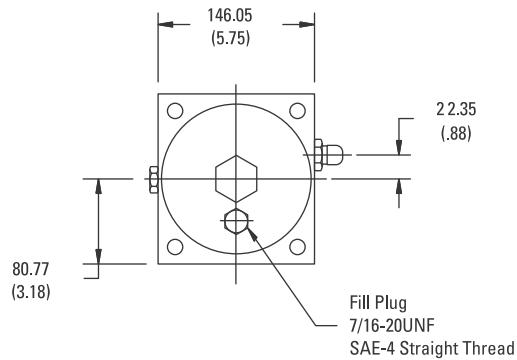
W451 Specification Illustrations

ASSEMBLY - SIDE VIEW

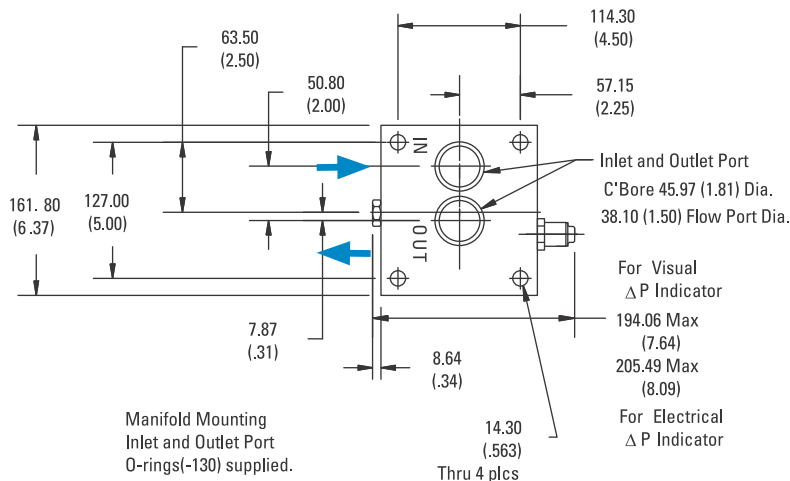
All dimensions are shown in millimeters [inches].



HEAD - SIDE VIEW



HEAD - BOTTOM VIEW



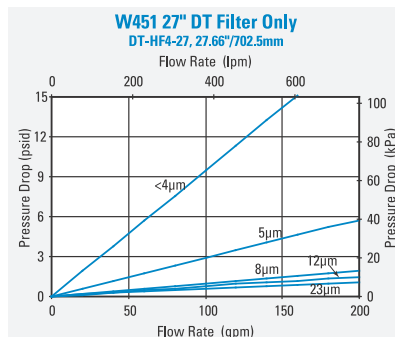
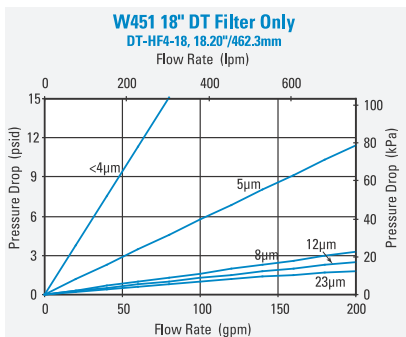
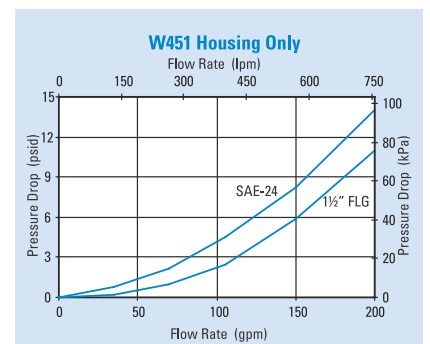
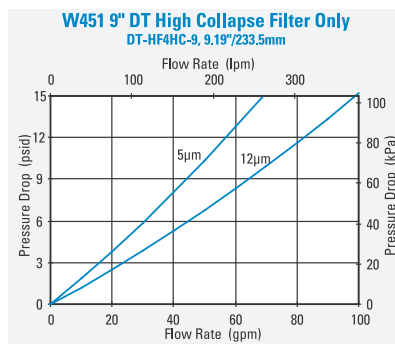
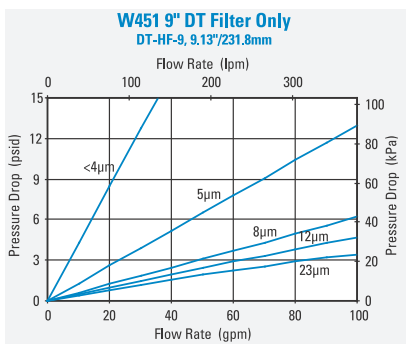
W451 Components

Filter Choices

Media Type	$\beta_{x(c)} = 2$	$\beta_{x(c)} = 1000$	Length		Part No.	Comments
	Rating based on ISO 16889		in	mm		
DT Synthetic		<4 μm	9.04	230	P568816	DT-HF4-9-2UM
		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
		<4 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
		5 μm	18.60	472	P572309	DT-HF4HC-18-5UM, High collapse
		12 μm	18.60	472	P572310	DT-HF4HC-18-14UM, High collapse
		<4 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
		5 μm	27.93	709	P572311	DT-HF4HC-27-5UM, High collapse
	12 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). Fluorocarbon seals are standard on all Donaldson DT filters.

Performance Data





W451

Max Flow: 150 gpm (568 lpm)



Filter Assembly Choices

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

Indicator Choices

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

Service Part Choices

Part No.	Description
X011174	Head/Bowl/Housing seal kit - nitrile
X011175	Head/Bowl/Housing seal kit - fluorocarbon