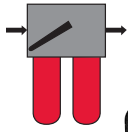


LOW PRESSURE FILTERS

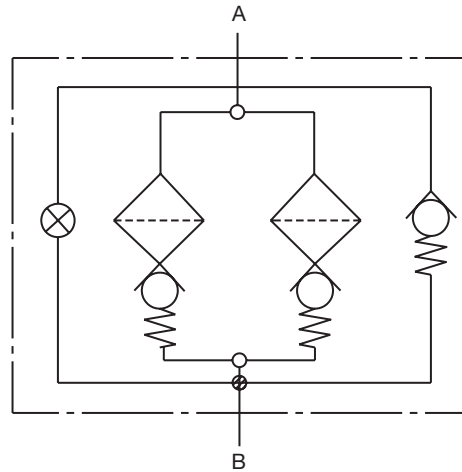
FLND Series

Inline Duplex Filters

360 psi • up to 100 gpm



Hydraulic Symbol



Features

- Lightweight duplex filter constructed of aluminum.
- Aluminum alloy is water tolerant - anodization is not required for high water based fluids (HWBF).
- The filter housings are designed to withstand pressure surges as well as high static pressure loads.
- The screw-in bowl allows the filter element to be easily removed for replacement or cleaning.
- A visual (pop-up), electrical, electrical/visual (lamp), or electronic differential type clogging indicator are possible.
- The standard model is supplied with vent and drain plugs, and also a connection for differential clogging indicator.
- The pressure is equalized between chambers by raising the change-over lever prior to switching it to the relevant filter side. Thus, the filter contains an integrated equalization valve.
- CRN Approval Available. (Canadian Registration Number)
- Bypass versions of FLND filters have the bypass valve located in the filter head.
- This filter can be modified to meet the requirements of DIN 24550* as follows:
 - Filter size 0160 with G 1-1/4" port selection
 - Filter size 0250 with G 1-1/2" port selection
 - Filter size 0400 with SAE-DN 38 1-1/2" Flange

*Note - SO882 design does not meet DIN 24550.

Technical Specifications

Mounting Method		4 mounting holes - filter head
Port Connection		Inlet / Outlet 1-1/4" Threaded – SAE 20, 1-1/4" BSPP 1-1/2" Threaded – SAE 24, 1-1/2" BSPP 1-1/2" Flange-SAE-DN 38 Code 61
Flow Direction		Inlet: Side Outlet: Opposite Side
Construction Materials		Head Bowl
Left-to-Right Flow (std)		Aluminum Aluminum
Right-to-Left (RL code)		Cast Iron Aluminum
Flow Capacity		
160		42 gpm (160 lpm)
250		66 gpm (250 lpm)
400		105 gpm (400 lpm)
Housing Pressure Rating		
Max. Operating Pressure		360 psi (25 bar)
Fatigue Pressure		360 psi (25 bar)
Burst Pressure		1450 psi (100 bar)
Element Collapse Pressure Rating		
BN4HC, W/HC		290 psid (20 bar)
Fluid Temperature Range		14°F to 212°F (-10°C to 100°C)
		Consult HYDAC for applications below 14°F (-10°C)
Fluid Compatibility		Compatible with all hydrocarbon based, synthetic, water glycol, oil/water emulsion, and high water based fluids when the appropriate seals are selected.
Indicator Trip Pressure		
ΔP = 36 psid (2.5 bar) -10%		
ΔP = 72 psid (5 bar) -10%		
ΔP = 116 psid (8 bar) -10% (non-bypass)		
Bypass Valve Cracking Pressure		
ΔP = 50.75 psid (3.5 bar) +10%		
ΔP = 102 psid (7 bar) +10%		

Applications



Automotive



Gearboxes



Industrial



Power Generation



Pulp & Paper



Shipbuilding



Steel / Heavy Industry

Model Code

FLND BN/HC 250 D D F 10 B 1 . X / 12 - V - SO882 - B3.5

Filter Type _____
FLND = Inline duplex filter

Element Media _____
BN/HC = Betamicon® (Low Collapse) W/HC = Wire Mesh

Size _____
160, 250, 400

Operating Pressure _____
D = 360 psi (25 bar)

Type of Change-Over _____
D = segment valve

Port Type / Size _____
E = 1-1/4" SAE or BSPP Threaded
F = 1-1/2" SAE or BSPP Threaded
K = 1-1/2" Flange-SAE-DN 38 Code 61 Flange

Filtration Rating (micron) _____
3, 6, 10, 25 = BN/HC 25, 50, 100, 200 = W/HC

Type of ΔP Clogging Indicator _____
A, B, BM, C, D (Others available upon request, see Clogging Indicators section.)

Type Code _____
1

Modification Number (latest version is always supplied) _____

Port Configuration _____
(omit) = SAE DN Flange
0 = BSPP Threaded inlet/outlet
12 = SAE straight thread inlet/outlet

Seals _____
(omit) = Nitrile rubber (NBR)
V = Fluorocarbon elastomer (FKM) (standard)

Version _____
DIN = meets DIN 24550
SO882 = Quality Protection Design (standard)

Bypass Valve _____
(omit) = no bypass (optional)
B3.5 = 50.75 psid (3.5 bar) (standard)
B7 = 101.5 psid (7 bar) (optional)

Supplementary Details _____
L24, L48, L110, L220 = Lamp for D-type clogging indicator (LXX, XX = voltage)
RL = Flow Path reversed - Right inlet/Left outlet CRN = CRN Approval
EM = Air Bleed Valves SFREE = Element specially designed to minimize electrostatic charge generation
VKD = Drain Valves cRUus = Electrical Indicator with underwriter's approval
SO263 = Modification of elements for Skydrol or HYJET phosphate ester fluids
SO376 = Modification of ON and W/HC elements for HFA, HFB, HFC, and HFD flame retardant liquids

Replacement Element Model Code

0250 DN 010 BN4HC / V SO882

Size _____
0160, 0250, 0400

Type _____
DN

Filtration Rating (micron) _____
3, 6, 10, 25 = BN4HC
25, 50, 100, 200 = W/HC

Element Media _____
BN4HC, W/HC

Seals _____
(omit) = Nitrile rubber (NBR)
V = Fluorocarbon elastomer (FKM) (standard)

Version _____
(omit) = meets DIN 24550
SO882 = Quality Protection Design

Supplementary Details _____
SO263 = (same as above)
SFREE = (same as above)
SO376 = (same as above)

Clogging Indicator Model Code

VM 2.5 B . X / V

Indicator Prefix _____
VM = G 1/2 3000 psi

Trip Pressure _____
2.5 = 36 psid (2.5 bar) (optional)
5 = 72 psid (5 bar)

Type of Indicator _____
A = no indicator, plugged port
B = pop-up indicator (auto reset)
BM = pop-up indicator (manual reset)
C = Electric switch – SPDT
D = Electric switch and light – SPDT

Modification Number _____

Supplementary Details _____
Seals _____
(omit) = Nitrile rubber (NBR)
V = Fluorocarbon elastomer (FKM) (standard)

Light Voltage (D type indicators only) _____
L24 = 24V L110 = 110V

Thermal Lockout (VM, VD types C, D, J, and J4 only) _____
T100 = Lockout below 100°F

Underwriters Approval (VM, VD types C, D, J, and J4 only) _____
cRUus = Electrical Indicator with underwriter's approval

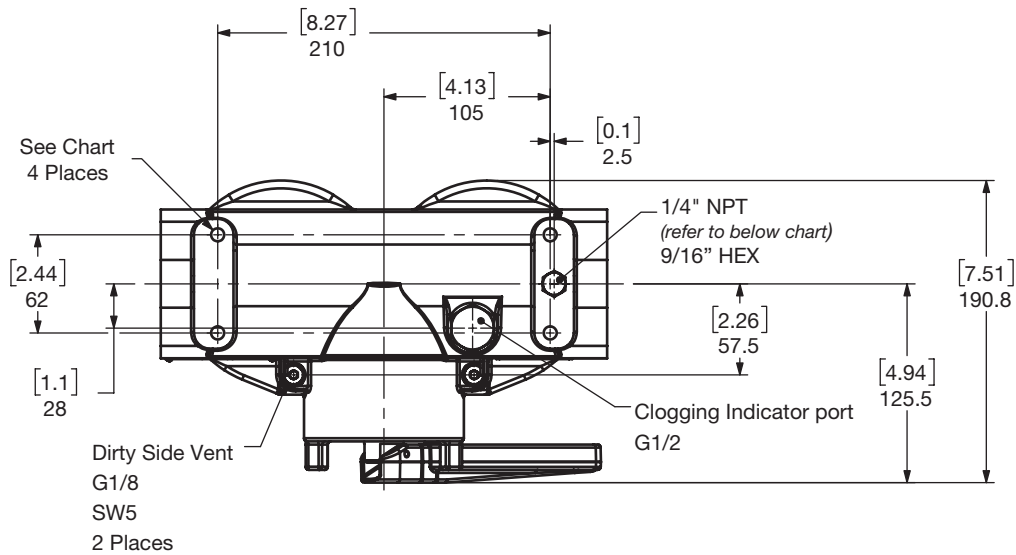
(For additional details and options, see Clogging Indicators section.)

Model Codes Containing RED are non-stock items — Minimum quantities may apply — Contact HYDAC for information and availability

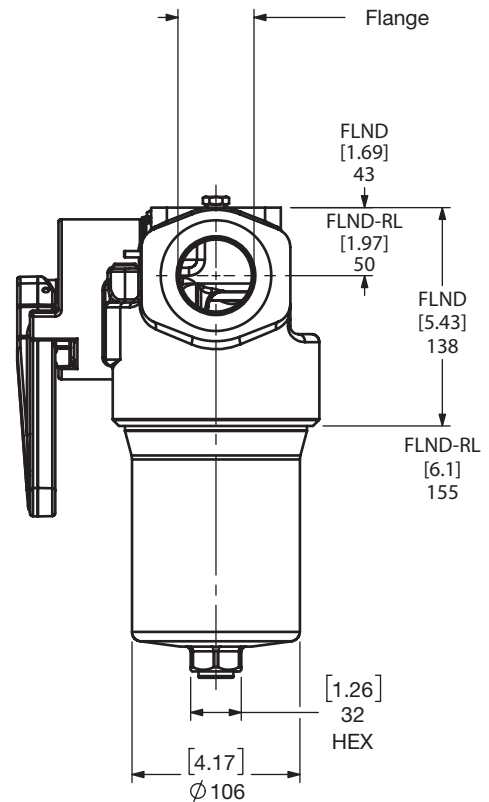
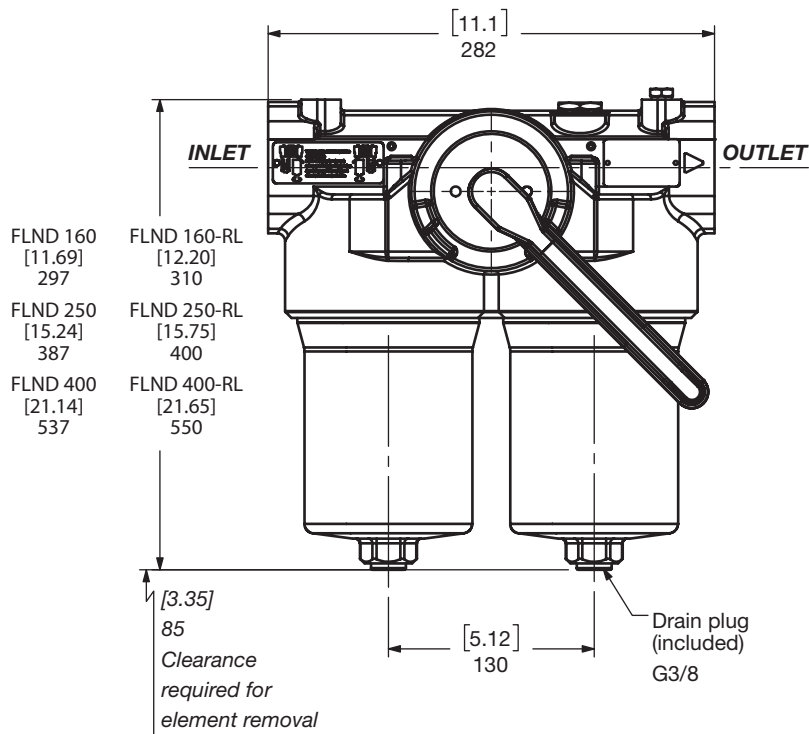
LOW PRESSURE FILTERS

Dimensions

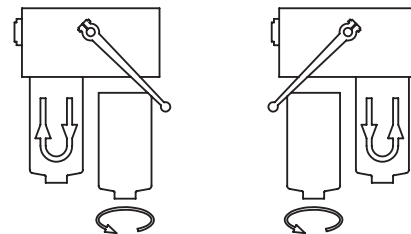
FLND



-DDE
1 5/8"-12UN-2B
SAE-20
OR
-DDF
1 7/8"-12UN-2B
SAE-24
OR
-DDK
1 1/2" SAE DN 38
Flange



Model	Mounting Hole	1/4" Sample Port
FLND160-400DDE/0	M10-1.5 x 19mm Deep	No
FLND160-400DDE/12	3/8-24UNF x 9/16" Deep	Yes
FLND160-400DDF/0	M10-1.5 x 19mm Deep	No
FLND160-400DDF/12	3/8-24UNF x 9/16" Deep	Yes
FLND160-400DDK	3/8-24UNF x 9/16" Deep	Yes
FLND160-400DDE/12-RL	3/8-24UNF x 9/16" Deep	No
FLND160-400DDF/12-RL	3/8-24UNF x 9/16" Deep	No
FLND160-400DDK/-RL	M12-1.75 x 19mm Deep	No



Before changing the element, relieve pressure in the filter housing.

Size	160	250	400
Weight (lbs.)	20.1	21.2	26.5

Dimensions shown are [inches] millimeters for general information and overall envelope size only. Weights listed include element. For complete dimensions please contact HYDAC to request a certified print.

Sizing Information

Total pressure loss through the filter is as follows:

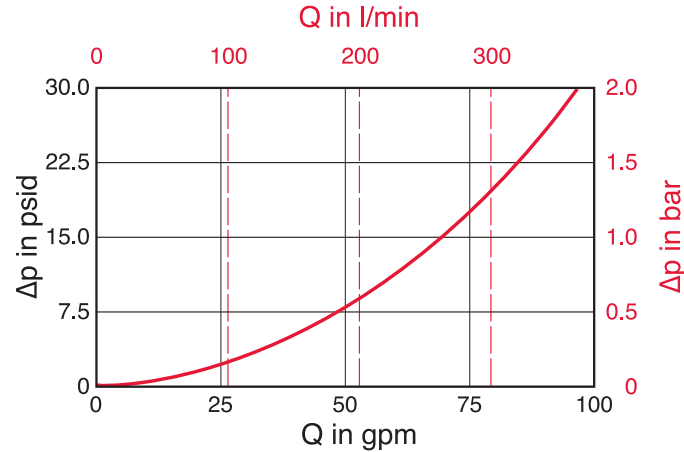
Assembly ΔP = Housing ΔP + Element ΔP

Housing Curve:

Pressure loss through housing is as follows:

Housing ΔP = Housing Curve $\Delta P \times \frac{\text{Actual Specific Gravity}}{0.86}$

Adjustments must be made for viscosity & specific gravity of the fluid to be used! (see "Sizing HYDAC Filter Assemblies" in Section B - Overview)



Element K Factors

$\Delta P \text{ Elements} = \text{Elements (K)} \times \text{Flow Rate (gpm)} \times \frac{\text{Actual Viscosity (SUS)}}{141 \text{ SUS}} \times \frac{\text{Actual Specific Gravity}}{0.86}$
(From Tables Below)

BN4HC	...DN...BN4HC (Betamicon Low Collapse)			
Size	3 μm	6 μm	10 μm	25 μm
0160 DN XXX BN4HC	0.434	0.280	0.187	0.143
0250 DN XXX BN4HC	0.280	0.176	0.115	0.099
0400 DN XXX BN4HC	0.176	0.110	0.071	0.055

W/HC	...DN...W/HC (Betamicon Low Collapse)			
Size	25 μm	50 μm	100 μm	200 μm
0160 DN XXX W/HC	0.009	0.009	0.009	0.009
0250 DN XXX W/HC	0.006	0.006	0.006	0.006
0400 DN XXX W/HC	0.004	0.004	0.004	0.004

All Element K Factors in psi / gpm.

FLND 160/250/400

