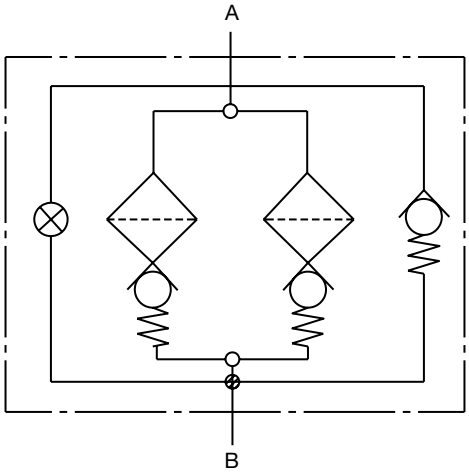
FLND Series

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.

Applications



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		
SN, 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%		

PN#02081318 / 04.26 / FIL1907-2109

Model Code

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

Filter Type
FLND = Inline duplex filter

Element Media
SN = Sustainmicron 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, 5, 10, 20 = SN 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
EM = Air Bleed Valves
VKD = Drain Valves
CRN = CRN Approvel
SFREE = Element specially designed to minimize electrostatic charge generation
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 SN / V SO882

Size
0160, 0250, 0400

Type
DN

Filtration Rating *(micron)*
3, 5, 10, 20 = SN
25, 50, 100, 200 = W/HC

Element Media
SN, 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

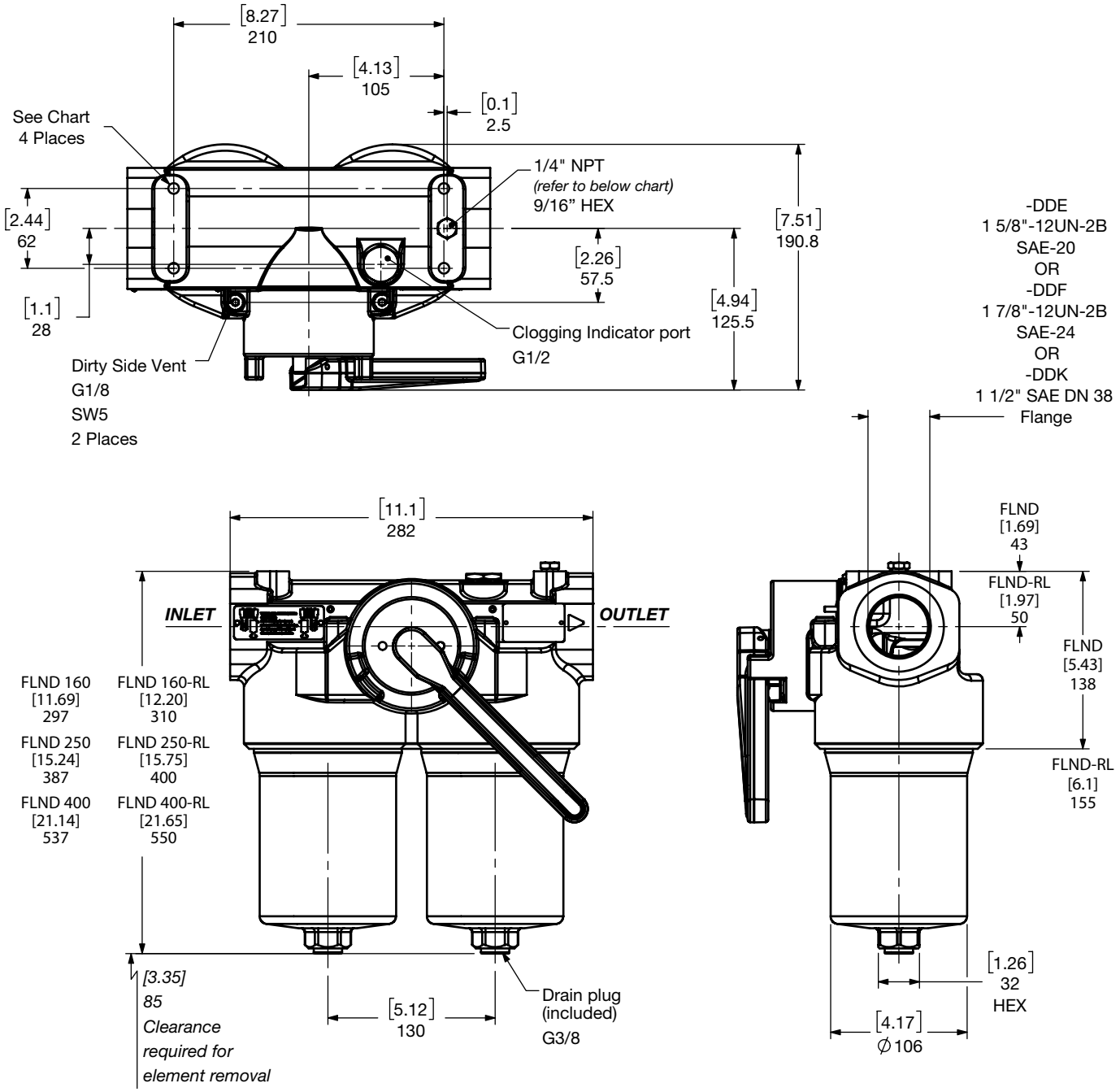
Thermal Lockout *(VM, VD types C, D, J, and J4 only)*
T100 = Lockout below 100°F

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

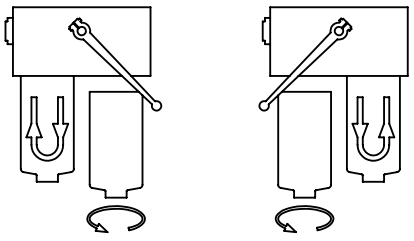
(For additional details and options, see Clogging Indicators section.)

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

Dimensions
FLND



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:

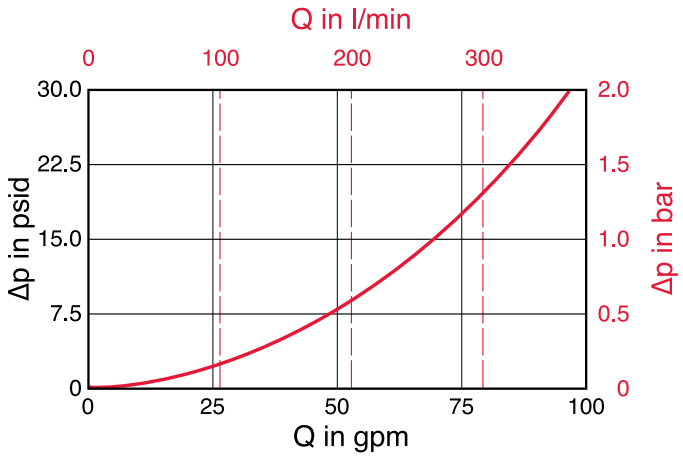
Assembly ΔP = Housing ΔP + Element ΔP

Housing Curve:

Pressure loss through housing is as follows:

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

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

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

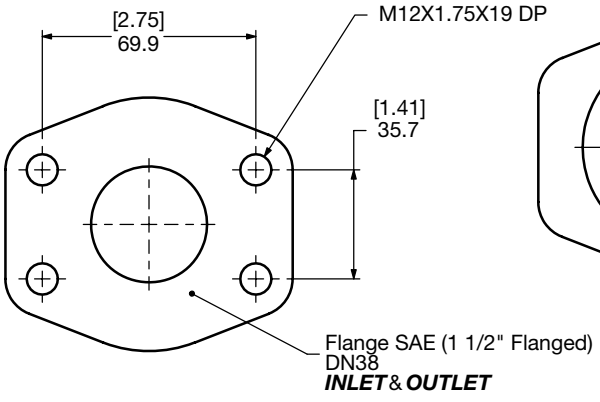
Sustainmicron	...DN...SN			
Size	3 µm	5 µm	10 µm	20 µm
0160 DN XXX SN	0.434	0.280	0.187	0.143
0250 DN XXX SN	0.280	0.176	0.115	0.099
0400 DN XXX SN	0.176	0.110	0.071	0.055

W/HC	...DN...W/HC			
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

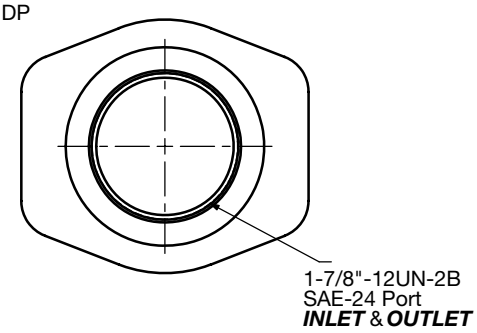
All Element K Factors in psi / gpm.

FLND 160/250/400

FLND 160/250/400 DDK



FLND 160/250/400 DDF



FLND 160/250/400 DDE

