Medium Pressure Filter RLD

Features and Benefits

- Lightweight duplex filter constructed of aluminum
- High chromium content aluminum alloy is water tolerant – anodization is not required for high water-based fluids (HWBF)
- Filter housings are designed to withstand pressure surges as well as high static pressure loads
- Screw-in bowl allows the filter element to be easily removed for replacement or cleaning
- Standard model supplied with upstream and downstream pressure ports and drain plugs
- Standard Viton® seal on filter housing
- Filter contains an integrated equalization valve
- Pressure is equalized between filters by raising the change-over lever prior to switching it to the relevant filter side

100 gpm
380 L/min
350 psi
24 bar

Model No. of filter in photograph is RLD25DNZ6S24DW.

Applications

INDUSTRIAL

AUTOMOTIVE MANUFACTURING

MACHINE TOOL

STEEL MAKING

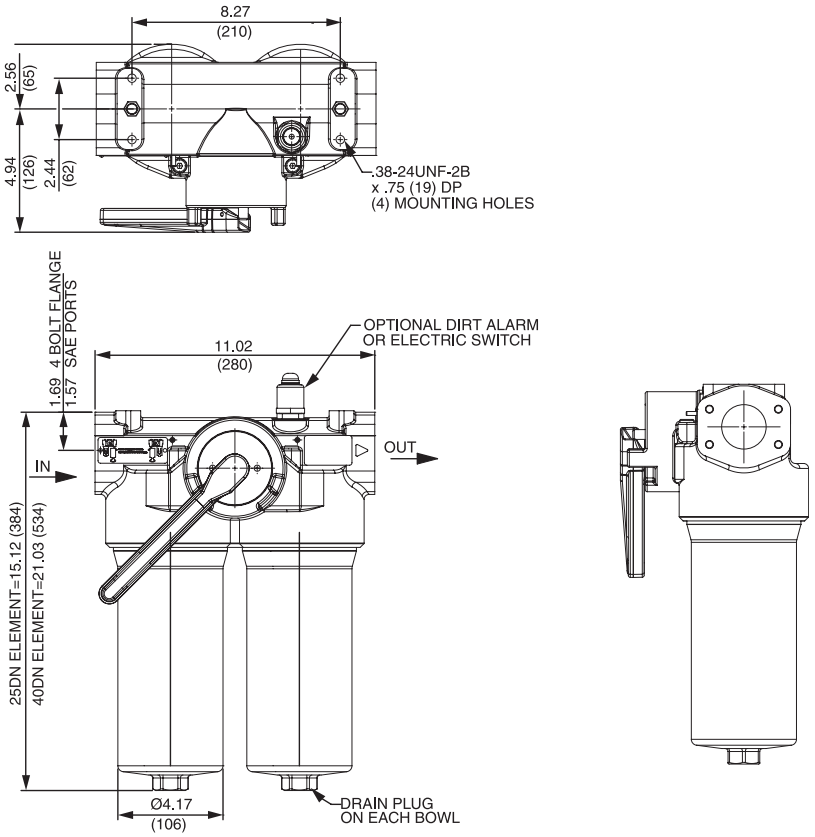
PULP & PAPER

POWER GENERATION

Filter Housing Specifications

Flow Rating:	Up to 100 gpm (380 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	350 psi (24 bar)
Min. Yield Pressure:	Contact factory
Rated Fatigue Pressure:	350 psi (24 bar)
Temp. Range:	-22°F to 250°F (-30°C to 121°C)
Bypass Setting:	Standard: 102 psi (7 bar) Optional: 43 psi (3.0 bar)
Porting Head: Element Case:	Aluminum Aluminum
Weight of RLD-25DN: Weight of RLD-40DN:	26 lbs. (11.8 kg) 29 lbs. (13.0 kg)
Element Change Clearance:	**25DN:** 3.5" (89 mm) **40DN:** 3.5" (89 mm)

RLD Medium Pressure Filter



Metric dimensions in ( ).

Element Performance Information

Element	Filtration Ratio Per ISO 4572/NFPA T3.10.8.8 Using automated particle counter (APC) calibrated per ISO 4402			Filtration Ratio wrt ISO 16889 Using APC calibrated per ISO 11171	
	$ß_x \geq 75$	$ß_x \geq 100$	$ß_x \geq 200$	$ß_{x(c)} \geq 200$	$ß_{x(c)} \geq 1000$
25/40DNZ3	<1.0	<1.0	<2.0	<4.0	4.8
25/40DNZ6	2.5	3.0	4.0	4.8	6.3
25/40DNZ10	7.4	8.2	10.0	8.0	10.0
25/40DNZ25	18.0	20.0	22.5	19.0	24.0

Dirt Holding Capacity

Element	DHC (gm)	Element	DHC (gm)
25DNZ3	57	40DNZ3	105
25DNZ6	62	40DNZ6	115
25DNZ10	52	40DNZ10	104
25DNZ25	48	40DNZ25	94

Element Collapse Rating: 290 psid (20 bar)

Flow Direction: Outside In

Element Nominal Dimensions: 3.0" (75 mm) O.D. x 14.5" (370 mm) long

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Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All Z-Media® (synthetic)
High Water Content	All Z-Media® (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® (synthetic)
Water Glycols	3, 6, 10 and 25 µ Z-Media® (synthetic)

Element Selection
Based on Flow Rate

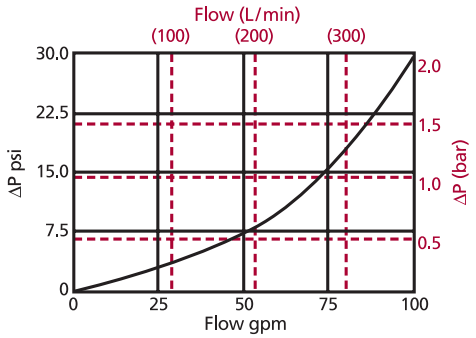
Pressure	Element Series	Part No.	Element selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid and a 102 psi (7 bar) bypass valve.
To 350 psi (24 bar)	Z-Media®	25DNZ3 & 40DNZ3	25DNZ3 / 40DNZ3
		25DNZ6 & 40DNZ6	25DNZ6 / 40DNZ6
		25DNZ10 & 40DNZ10	25DNZ10 / 40DNZ10
		25DNZ25 & 40DNZ25	25DNZ25 / 40DNZ25
	Flow	gpm	0 20 40 60 80 100
		(L/min)	0 50 100 150 250 380

Shown above are the elements most commonly used in this housing.

Pressure Drop Information
Based on Flow Rate and Viscosity

$\Delta P_{housing}$

RLD $\Delta P_{housing}$ for fluids with sp gr = 0.86:



sp gr = specific gravity

$\Delta P_{element}$

$\Delta P_{element}$= flow x element ΔP factor x viscosity factor

El. ΔP factors @ 150 SUS (32 cSt):

25DNZ3	.28	**40DNZ3**	.18
25DNZ6	.18	**40DNZ6**	.11
25DNZ10	.12	**40DNZ10**	.07
25DNZ25	.09	**40DNZ25**	.06

If working in units of bars & L/min, divide above factor by 54.9.

Viscosity factor: Divide viscosity by 150 SUS (32 cSt).

Sizing of elements should be based on element flow information provided in the Element Selection chart above.

Notes

$\Delta P_{filter} = \Delta P_{housing} + \Delta P_{element}$

Exercise:

Determine ΔP at 40 gpm (150 L/min) for 40DNZ6 using 200 SUS (44 cSt) fluid.

Solution:

$\Delta P_{housing}$ = 5.0 psi [.34 bar]

$\Delta P_{element}$ = 40 x .11 x (200÷150) = 5.9 psi
or
= [150 x (.11÷54.9) x (44÷32) = .40 bar]

ΔP_{total} = 5.0 + 5.9 = 10.9 psi
or
= [.34 + .40 = .73 bar]

RLD Medium Pressure Filter

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder RLD:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7
RLD						

Example: *NOTE: One option per box*

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	
RLD	25	DNZ3	V	F24	40	VM	**= RLD25DNZ3VF2440VM**

BOX 1

Filter Series
RLD

BOX 2

Length of Elements (cm)
25
40

BOX 3

Element Size and Media
DNZ3 = DN size 3 µ synthetic media
DNZ10 = DN size 10 µ synthetic media
DNZ25 = DN size 25 µ synthetic media
DNM25 = DN size 25 µ M media (reuseable metal)
DNM50 = DN size 50 µ M media (reuseable metal)
DNM100 = DN size 100 µ M media (reuseable metal)
DNM200 = DN size 200 µ M media (reuseable metal)

BOX 4

ELement Seal Material
Omit = Buna N
V = Viton®

BOX 5

Porting
F24 = 1½" SAE 4-bolt flange Code 61
S24 = SAE-24 (1½")

BOX 6

Bypass Setting
Omit = 102 psi cracking
40 = 43 psi cracking

BOX 7

Dirt Alarm® Options	
	Omit = None
Visual	VM = Visual pop-up w/manual reset
Electrical	DW = AC/DC 3-wire (NO or NC)

VM = Manual Reset

DW = AC/DC 3-wire
(NO or NC)

NOTES:

Box 2. Replacement element part numbers are a combination of Boxes 2, 3 and 4. Example: 40DNZ10

Box 4. Filter housings are supplied with standard Viton seals. Seal designation in Box 4 applies to element only. Viton® is a registered trademark of DuPont Dow Elastomers.