

# 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

Model No. of filter in photograph is RLD25DNVZ5F24DW.



INDUSTRIAL



AUTOMOTIVE  
MANUFACTURING



MACHINE  
TOOL



STEEL  
MAKING



POWER  
GENERATION



MARINE



PAPER  
INDUSTRY

**100 gpm**  
**380 L/min**  
**350 psi**  
**24 bar**

ST  
SKB  
Housings  
MTA  
MTB  
ZT  
KT  
RT  
RTI  
KFT  
LRT  
BFT  
QT  
KTK  
LTK

## Applications

Accessories  
for Tank-  
Mounted  
Filters

PAF1  
MAF1  
MF2  
TF1  
KF3  
LF1—2"

MLF1  
SRLT  
RLT

## Filter Housing Specifications

**KF8**  
K9  
2K9  
3K9  
QF15  
QLF15  
SSQLF15  
QFD5

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)

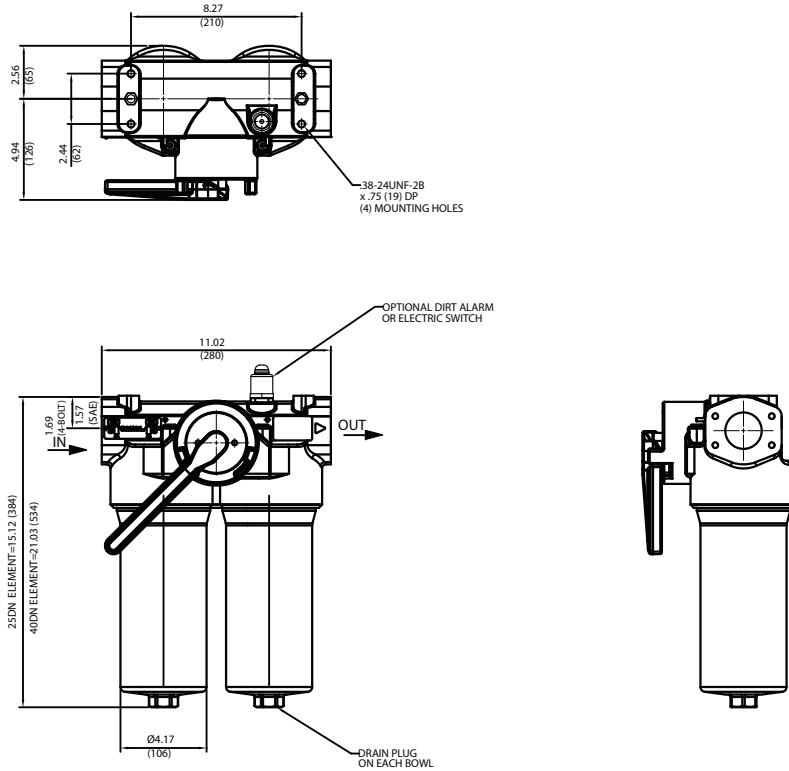
Bypass Setting: Cracking: 102 psi (7 bar)  
Full Flow: 44 psi (3.0 bar)

Porting Head: Aluminum  
Element Case: Aluminum

Weight of RLD-25DN: 26 lbs. (11.8 kg)

Weight of RLD-40DN: 29 lbs. (13.0 kg)

Element Change Clearance: 25DN: 3.5" (89 mm)  
40DN: 3.5" (89 mm)



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	
	$\beta_x \geq 75$	$\beta_x \geq 100$	$\beta_x \geq 200$	$\beta_{x(c)} \geq 200$	$\beta_{x(c)} \geq 1000$
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

# Medium Pressure Filter **RLD**

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

## Fluid Compatibility

ST  
SKB  
Housings  
MTA  
MTB  
ZT  
KT  
RT  
RTI  
KFT  
LRT  
BFT  
QT  
KTK  
LTK

Pressure	Element		Element selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid and a 102 psi (7 bar) bypass valve.				
	Series	Part No.	25DNZ3		40DNZ3		
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

## Element Selection Based on Flow Rate

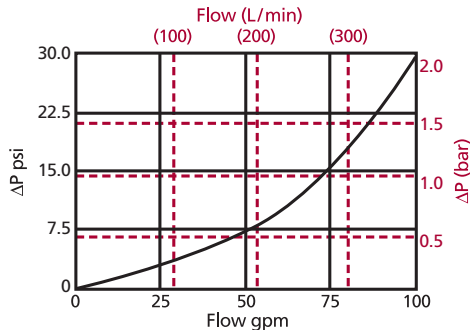
Shown above are the elements most commonly used in this housing.

Note: Contact factory regarding use of E Media in High Water Content, Invert Emulsion and Water Glycol Applications. For more information, refer to Fluid Compatibility: Fire Resistant Fluids, pages 19 and 20.

Accessories  
for Tank-  
Mounted  
Filters

## ΔP<sub>housing</sub>

RLD ΔP<sub>housing</sub> for fluids with sp gr = 0.86:



sp gr = specific gravity

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

## ΔP<sub>element</sub>

ΔP<sub>element</sub> = flow x element ΔP factor x viscosity factor

El. ΔP factors @ 150 SUS (32 cSt):

25DNZ3	.280	40DNZ3	.178
25DNZ6	.177	40DNZ6	.111
25DNZ10	.117	40DNZ10	.071
25DNZ25	.093	40DNZ25	.055

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

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

## Pressure Drop Information

Based on  
Flow Rate  
and Viscosity

PAF1  
MAF1  
MF2  
TF1  
KF3  
LF1—2"  
MLF1  
SRLT  
RLT  
KF8  
K9  
2K9  
3K9  
QF15  
QLF15  
SSQLF15  
QFD5

## Notes

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

### Exercise:

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

### Solution:

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

$$\begin{aligned} \Delta P_{\text{element}} &= 40 \times .11 \times (200 \div 150) = 5.9 \text{ psi} \\ &\text{or} \\ &= [150 \times (.11 \div 54.9) \times (44 \div 32)] = .40 \text{ bar} \end{aligned}$$

$$\begin{aligned} \Delta P_{\text{total}} &= 5.0 + 5.9 = 10.9 \text{ psi} \\ &\text{or} \\ &= [.34 + .40] = .73 \text{ bar} \end{aligned}$$

# 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	BOX 2	BOX 3	BOX 4
<b>Filter Size</b>	<b>Length of Elements (in)</b>	<b>Element Size and Media</b>	
RLD	25 40	DNZ3 = DN size 3 μ Excellement® Z media (synthetic) DNZ6 = DN size 6 μ Excellement Z media (synthetic) DNZ10 = DN size 10 μ Excellement Z media (synthetic) DNZ25 = DN size 25 μ Excellement Z media (synthetic)	
		<b>Seal Material</b>	
		Omit = Buna N V = Viton®	

BOX 5	BOX 6	BOX 7
<b>Porting</b>	<b>Bypass Setting</b>	<b>Dirt Alarm® Options</b>
F24 = 1½" SAE 4-bolt flange Code 61 S24 = SAE-24 (1½")	Omit = 102 psi cracking 40 = 43 psi cracking	Omit = None
		Visual VM = Visual pop-up w/manual rest
		Electrical 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 trade mark of DuPont Dow Elastomers.