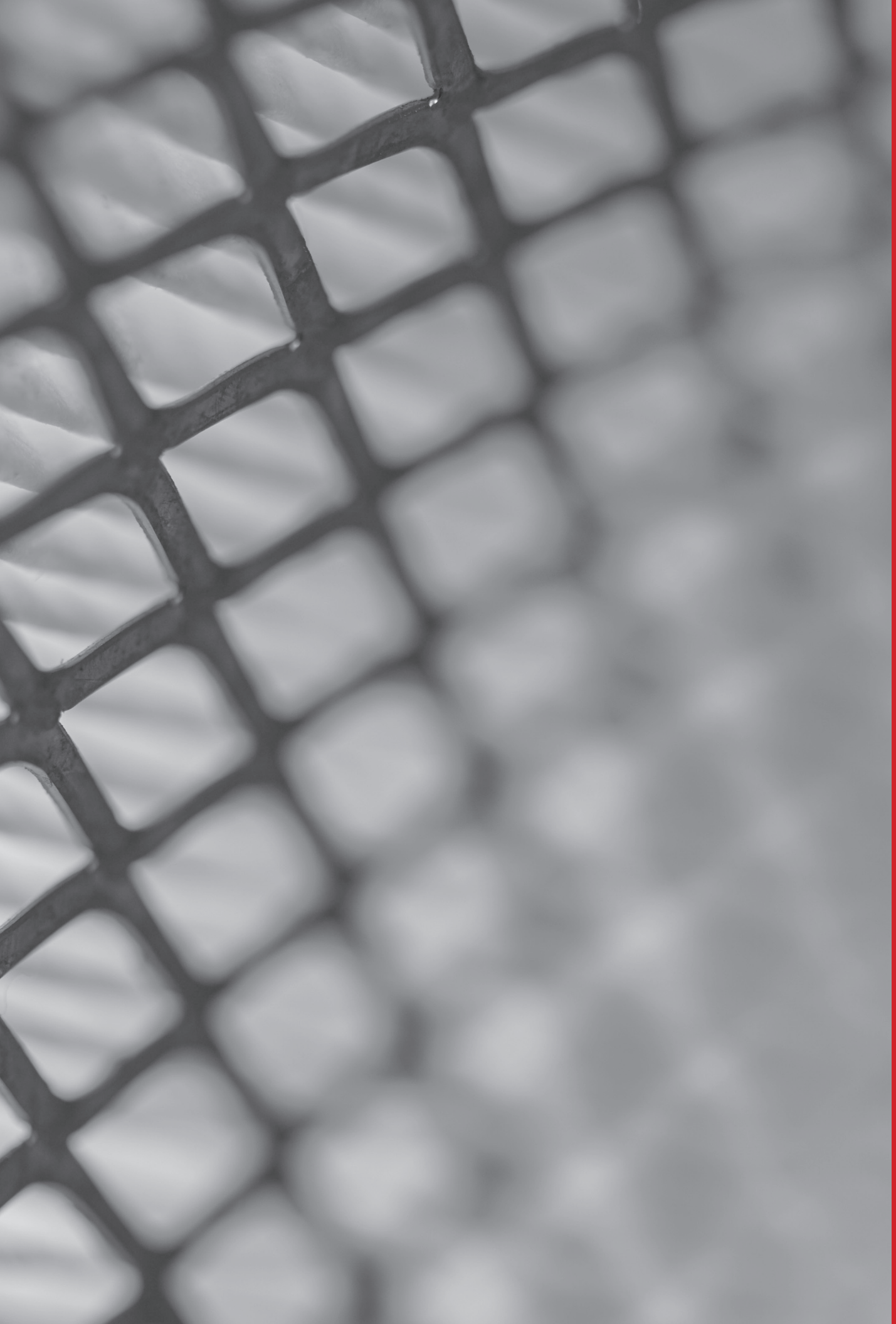


Section 6:

MINING PRODUCTS



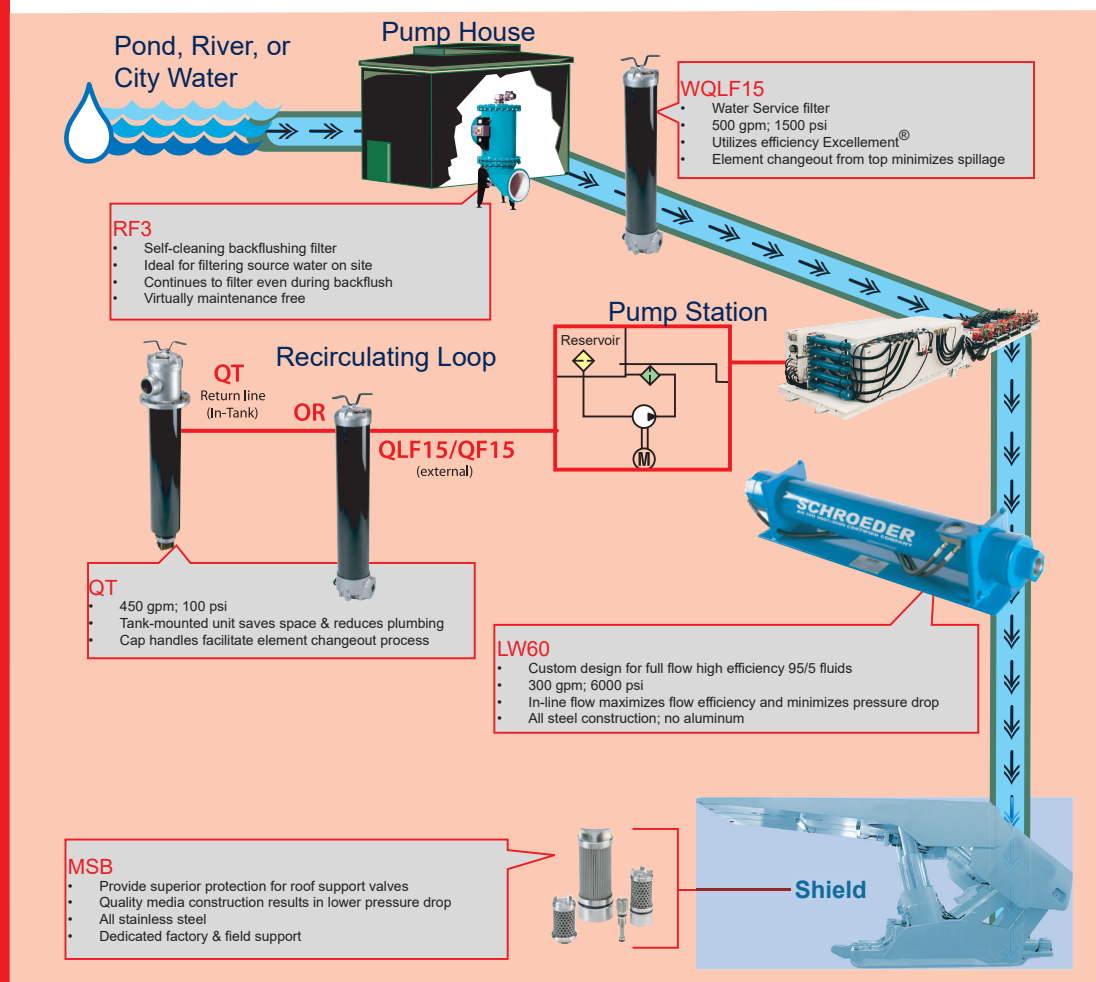
Mining Products

Introduction

For 65 years, Schroeder Industries has been providing superior filtration solutions to the mining industry. With the addition of the Longwall High Pressure Filter (LW60) and numerous BestFit™ elements for longwall shields and pump cars (MSB and SBF) to its product line, Schroeder is your turnkey filtration supplier for all mining applications.

Detailed product information on the LW60 and the BestFits for lining applications is provided on the following pages. For information on the RF3 backflushing filter, consult Schroeder's Process Filtration Catalog (L-2728). For information on the WQLF15, QT and QLF15/QF15, please consult Schroeder's Filtration Products Catalog (L-2520).

Turnkey Filtration



Mining Products

Schroeder Industries currently manufactures over 1,800 BestFit™ performance replacement elements. In addition, Schroeder produces all of the technical data to support the sale of these products. The BestFit™ family consists of standard elements, cartridge repair elements and the new SchroederSpun process filtration elements, as well as, mining specific elements. The following products are currently available for the mining industry:

Longwall Pump Car BestFits™

Schroeder BestFit™ P/N	Micron Rating
MSB-1394-2050B	50
MSB-1394-20100B	100
MSB-1394-20200B	200
SBF-SALL-40Z150B	150
SBF-SALL-40Z10B	10
SBF-WS3L-150PSB	150
SBF-WS3L-M150B	150
SBF-PF3L-Z12B	12
SBF-WE3L-Z60B	60
SBF-SALL-100PSB	100
SBF-SALL-250PSB	250

Shield Element BestFits™

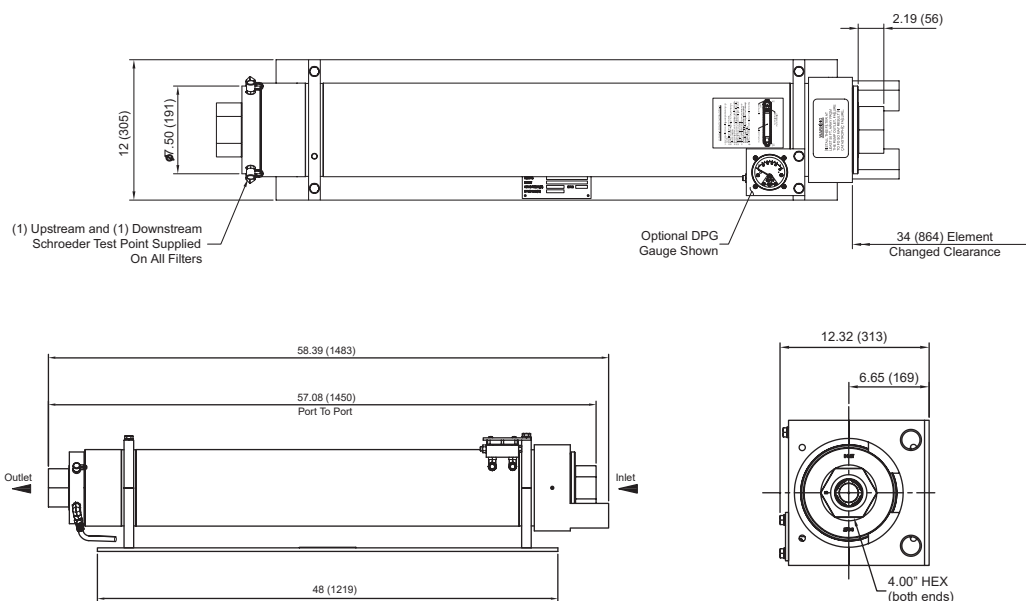
Schroeder BestFit™ P/N	Micron Rating
MSB-05841-340B	40
MSB-1298-280B	80
MSB-1330-3100B	100
MSB-1330-325B	25
MSB-1330-340B	40
MSB-1330-380B	80
MSB-3060-340B	40
MSB-3070-2100	100
MSB-3070-225	25
MSB-3070-240	40
MSB-3070-280	80
MSB-3077-525B	25
MSB-3077-540B	40
MSB-3176-225B	25
MSB-3185-425B	25
MSB-10266-5100B	100

LW60

Longwall Filter

300 gpm
1135 L/min

6000 psi
400 bar



Filter Housing Specifications

Flow Rate:	Up to 300 gpm (1135 L/min) for use with 95/5 fluids
Max. Operating Pressure:	6,000 psi (400 bar)
Min. Yield Pressure:	18,000 psi (1240 bar)
Rated Fatigue Pressure:	4500 psi (310 bar)
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 50 psi (3.4 bar) LWN60 non-bypassing model available with high crush element
Porting Cap & Housing Cap:	Steel
Element Change Clearance:	34.0" (864 mm)
Weight:	550 lb (250 kg)

Element Performance Information

Element	Abs. Rating wrt ISO 16889 Using APC calibrated per ISO 11171 B _x (c) 1000	Dirt Holding Capacity (gm)
39ZPZ3V	5.1	449
39ZPZ5V	6.1	359
39ZPZ10V	12.1	429
39ZPZ25V	17.7	284

Element Collapse Rating: 150 psi (10 bar)

Flow Direction: Outside In

Element Nominal Dimensions: 50" (127 mm) O.D. x 38" (365 mm) long

Fluid Compatibility

Specifically designed for use with 95/5 fluids in mining longwall applications

- Horizontal alignment allows straight-through flow, maximizing efficiency and minimizing pressure drop
- Proprietary synthetic media designed specifically for the mining industry, Excellement®-MD, provides level of filtration not achievable using alternative wire mesh elements because of their lack of absolute ratings
- Two-inch BSPP ports are easily adaptable to Super Stecko fittings commonly used underground
- Stainless steel bypass valve that ensures smooth integration with 95/5 fluid
- Non-bypassing version available with high crush (4500 psid) cleanable metal mesh (25 micron) element

Features

LW60

Excellement MD

Mining
Specific
Elements

Pressure	Series	Element Part No.	Element selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid and a 50 psi (3.4 bar) bypass valve.					
6000 psi	Z Media	39ZPZ3V						
		39ZPZ5V						
		39ZPZ10V						
		39ZPZ25V						
Flow	gpm	0	100	150	200	250	300	
	(L/min)	0	400	600	800	1000	1150	

Element Selection Based on Flow Rate

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

Exercise:

Determine ΔP at 250 gpm (950 L/min) LW6039ZPZ3VB32 using 150 SUS (32 cSt) fluid.

Solution:

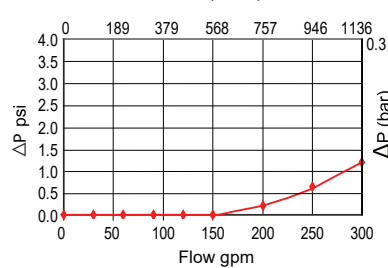
$$\Delta P_{\text{housing}} = 0.7 \text{ psi } [0.05 \text{ bar}]$$

$$\begin{aligned} \Delta P_{\text{element}} &= 250 \times .06 \times (150 \div 150) = 15.0 \text{ psi} \\ \text{or} \\ &= [950 \times (.06 \div 54.9) \times (32 \div 32) = 1.1 \text{ bar}] \end{aligned}$$

$$\begin{aligned} \Delta P_{\text{total}} &= 0.7 + 15.0 = 15.7 \text{ psi} \\ \text{or} \\ &= [0.05 + 1.1 = 1.15 \text{ bar}] \end{aligned}$$

$$\Delta P_{\text{housing}}$$

LW60 $\Delta P_{\text{housing}}$ for fluids with sp gr = 0.86:
Flow (L/min)



sp gr = specific gravity

$$\Delta P_{\text{element}}$$

$$\Delta P_{\text{element}} = \text{flow} \times \text{element } \Delta P \text{ factor} \times \text{viscosity factor}$$

El. ΔP factors @ 150 SUS (32 cSt):

39ZPZ3V	.06
39ZPZ5V	.05
39ZPZ10V	.04
39ZPZ25V	.01

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

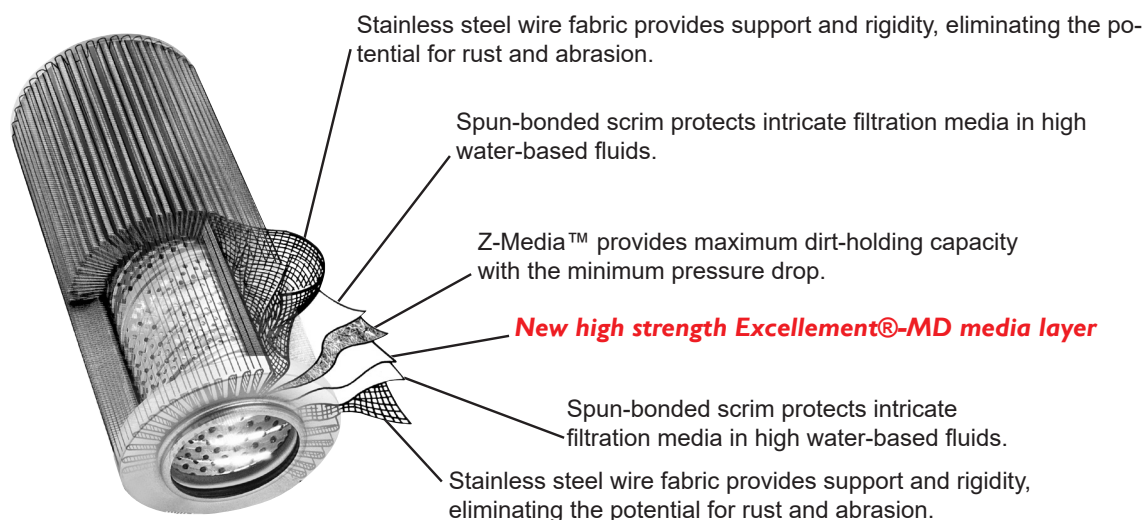
Sizing of elements should be based on element flow information provided in the Element Selection chart above. Please note that 95/5 fluid has a lower viscosity than 150 SUS and therefore pressure drops for 95/5 will actually be lower.

Filter Series	Element Part Number	Porting	Bypass Setting	Dirt Alarm
LW60	39ZPZ3V 39ZPZ5V 39ZPZ10V 39ZPZ25V	B32=ISO 228 G-2" (2-11 BSPP)	(Omit)= 50 psi Cracking 30 = 30 psi cracking	DPG= Differential Pressure Gauge
LWN60	39ZPMX25V	B32=ISO 228 G-2" (2-11 BSPP)	(Omit)= Blocked	DPG= Differential Pressure Gauge

Filter Model Number Selection

Mining Specific Elements

The multiple layer construction shown below has evolved from comprehensive laboratory testing to provide extended element life and system protection. Each successive layer performs a distinct and necessary function. The outermost layer is designed to maintain element integrity. Beyond this layer, is a spun-bonded scrim, offering coarse filtration and protection for the more delicate filtering layers within. Multiple sheets of fine filtering media follow, providing intricate passageways for the entrapment of dirt particles. When combined, the layers of the Excellement®-MD filter media provide the ideal formulation for filtration performance used in severe mine duty applications. Through the addition of new materials, the strength of our media has been improved when applied in water based fluids. Soak testing in 95/5 fluids proves that Excellement-MD media scrim and wire mesh maintain their integrity. This new media will provide better protection for the valves on the longwall shields and extend the pilot element's service life in any longwall application.



Element Performance Information

Element	Abs. Rating wrt ISO 16889 Using APC calibrated per ISO 11171 B _x (c) 1000	Dirt Holding Capacity (gm)
39ZPZ3V	5.1	449
39ZPZ5V	6.1	359
39ZPZ10V	12.1	429
39ZPZ25V	17.7	284

Element Collapse Rating: 150 psid (10 bar)

Flow Direction: Outside In

Element Nominal Dimensions: 5.0" (127 mm) O.D. x 38" (965 mm) long

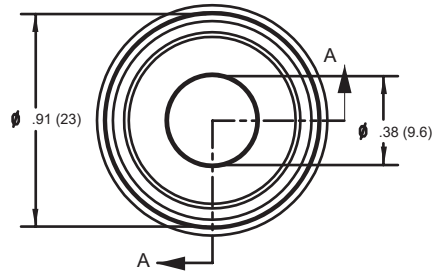
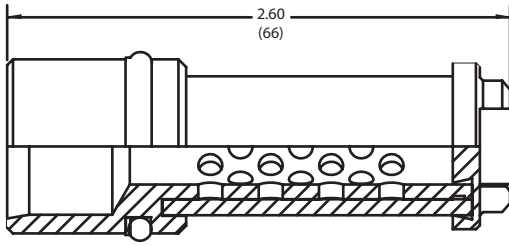
*Elements also used in LW60

Mining Specific Elements

Schroeder Part Number: **MSB-1298-280B (80 μ)**

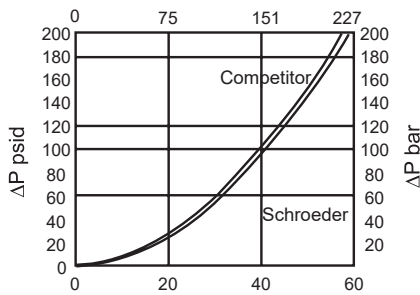
LW60

Excellement MD



**Mining
Specific
Elements**

Pressure Drop

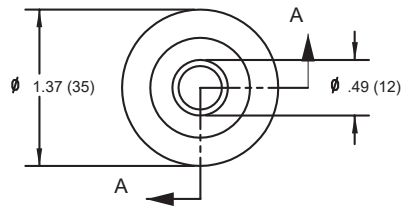
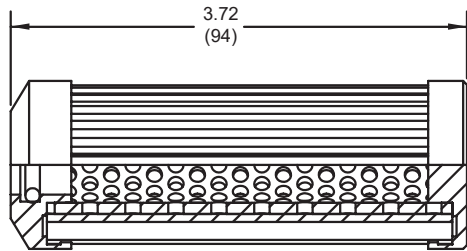


*Contact factory for additional filter ratings

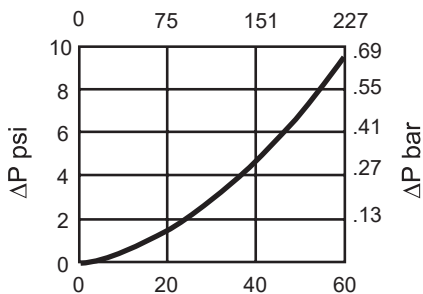
Max Pressure:	6,000 psi (400 bar)
Max Differential Pressure:	6,000 psid (400 bar)
Crush Rating:	> 6,000 psid
End Caps:	Stainless Steel
Support Tubes:	Stainless Steel
Metal Mesh:	Stainless Steel Wrap
O-Ring:	Buna N
Back-up Ring:	Nylon
Flow Rating:	See Graph
Filter Rating:	80 micron

Specifications

Schroeder Part Number: **MSB-05841-340B (40 μ)**



Pressure Drop



*Contact factory for additional filter ratings

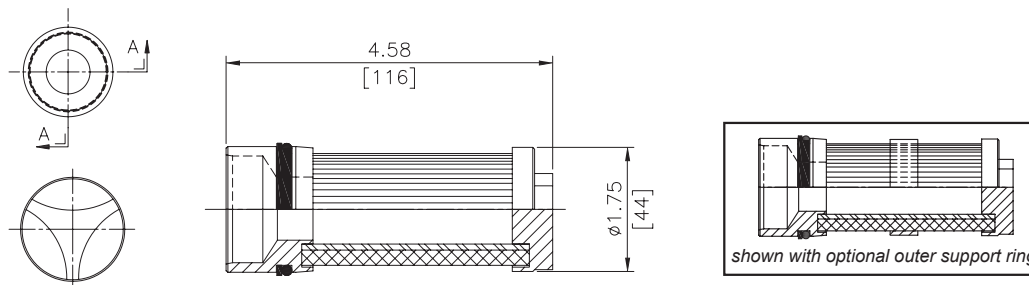
Max Pressure:	6,000 psi (400 bar)
Max Differential Pressure:	6,000 psid (400 bar)
Crush Rating:	>6,000 psid
End caps:	Stainless Steel
Support Tubes:	Stainless Steel
Metal Mesh:	Stainless Steel
O-Ring:	Buna N
Flow Rating:	See Graph
Filter Rating:	40 micron

Specifications

Mining Specific Elements



Schroeder Part Numbers: MSB-3077-525B (25µ) & MSB-3077-540B (40 µ)

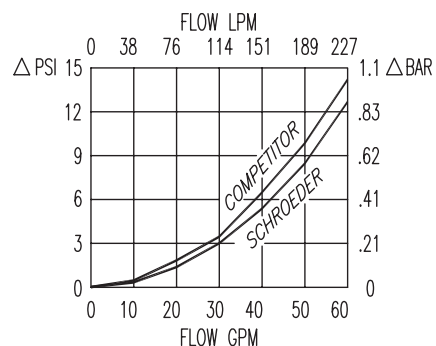


Specifications

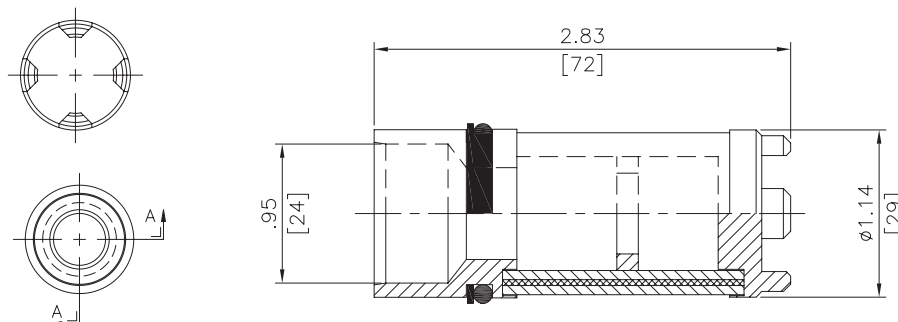
Max Pressure:	5,000 psi (350 bar)
Max Flow Rate:	40 gpm (150 L/min)
Filter Rating:	25/40 Micron
End caps:	Stainless Steel
Support Tubes:	Stainless Steel
Metal Mesh:	Stainless Steel Pleated
O-Ring:	Buna N
Back-up Ring:	Nylon

*Contact factory for additional filter ratings

Pressure Drop



Schroeder Part Number: MSB-1330-325B (25 µ), MSB-1330-340B (40 µ), MSB-1330-380B (80 µ) & MSB-1330-100B (100 µ).

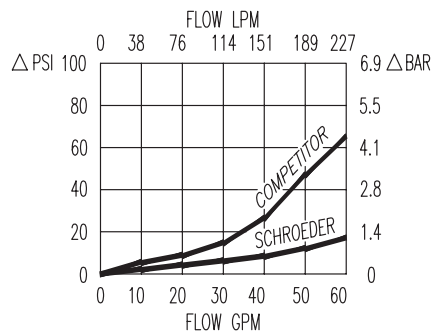


Specifications

Max Pressure:	6,000 psi (400 bar)
Max Differential Pressure:	5000 psid (350 bar)
Max Flow Rate:	48 gpm (180 L/min)
Filter Rating:	25/40/80/100 Micron
End Caps:	Stainless Steel
Support Tubes:	Stainless Steel
Metal Mesh:	Stainless Steel Wrap
O-Ring:	Buna N
Back-Up Ring:	Nylon
Support Ring:	Stainless Steel

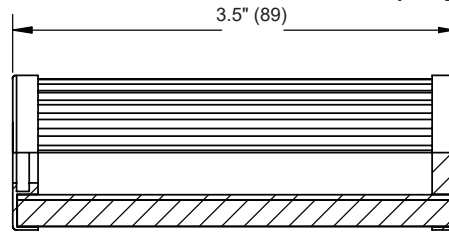
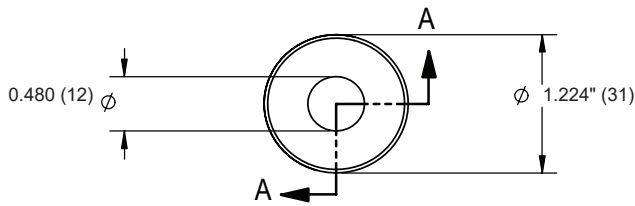
*Contact factory for additional filter ratings

Pressure Drop



Mining Specific Elements

Schroeder Part Number: MSB-3060-340B (40 μ)



SECTION A-A

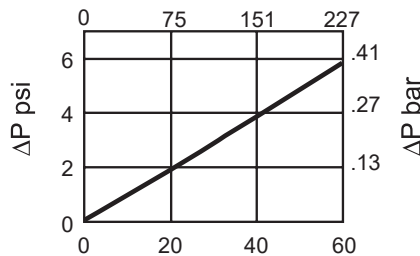


LW60

Excellement MD

Mining
Specific
Elements

Pressure Drop



Micron Rating: 40 micron

Max Pressure: 4,500 psi (310 bar)

Max Differential Pressure: 4,000 psid (310 bar)

Crush Rating: >4500 psid

End caps: Stainless Steel

Support Tubes: Stainless Steel

Metal Mesh: Stainless Steel

O-Ring: Buna N

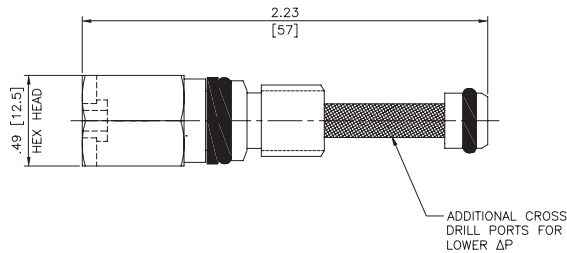
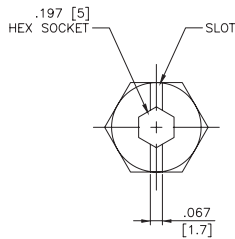
Flow Rating: See Graph

Filter Rating: 40 micron

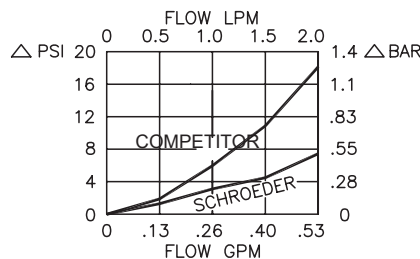
*Contact factory for additional filter ratings

Specifications

Schroeder Part Number: MSB-3176-225B (25 μ)



Pressure Drop



Max Pressure: 5,000 psi (350 bar)

Max Differential Pressure: 5,000 psid (350 bar)

Competition fails at: 1500 psid (103 bar)

Max Flow Rate: 0.5 gpm (2 L/min)

Filter Rating: 25 Micron

Body: Stainless Steel

Metal Mesh: Stainless Steel Wrap

O-Ring: Buna N

Back-Up Ring: Nylon

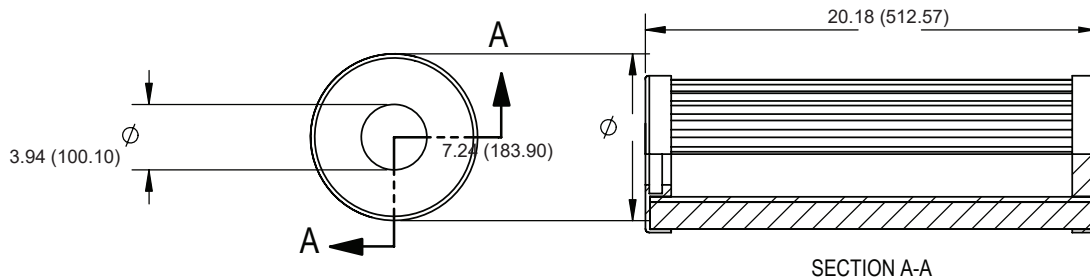
*Contact factory for additional filter ratings

Specifications

Mining Specific Elements



Schroeder Part Numbers: SBF-WS3L-150PSB (150 µm) & SBF-WE3L-Z10B (10 µm)



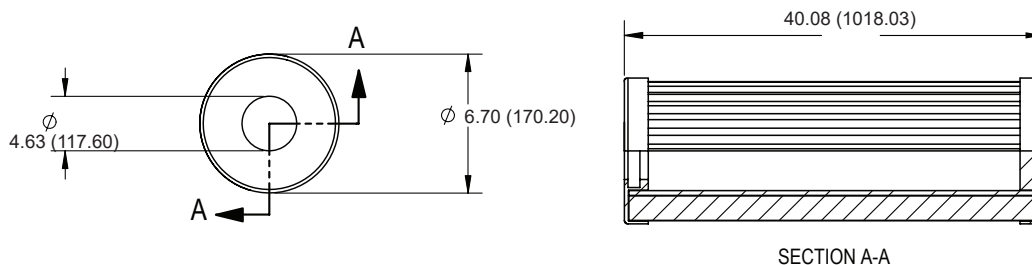
Specifications

Micron Rating:	SBF-WS3L-150PSB: 150µm SBF-WE3L-Z10B: 10µm
Collapse Rating:	150 psid (min)
End Cap:	Anodized Aluminum
Outer Support Tube:	Stainless Steel
Filter Media:	SBF-WS3L-150PSB: 150µm synthetic SBF-WE3L-Z10B: 150µm synthetic
O-Ring:	Buna N

*Contact factory for additional filter ratings

Schroeder BestFit™ P/N
SBF-PF3L-Z12B
SBF-WE3L-Z60B
SBF-WS3L-Z10B
Seebach Element P/N
SA12MB-PF3L-95/5
SA75FBWE3L-Water
SA12MB-WS3LP-95/5
Seebach Filter
Triple "L" Filter
Triple "L" Filter
Triple "L" Filter

Schroeder Part Number: SBF - SALL - 40Z150B & SBF - SALL - 40Z10B



Specifications

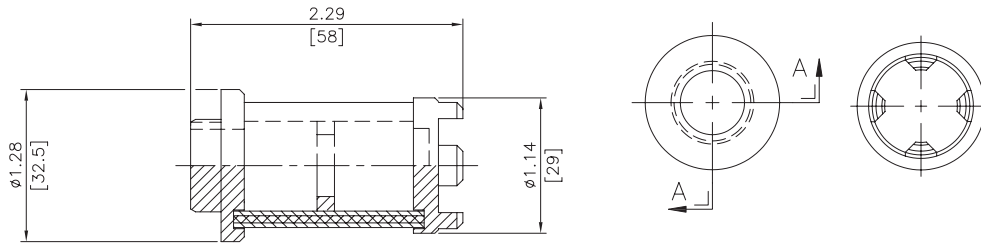
Micron Rating:	SBF-SALL-40Z150B: 150µm SBF-SALL-40Z10B: 10µm
Collapse Rating:	Not Rated
End Caps:	Anodized Aluminum
Support Tube:	None
Filter Media:	SBF-SALL-40Z150B: 150µm synthetic SBF-SALL-40Z10B: 10µm synthetic
O-Ring:	Buna N

*Contact factory for additional filter ratings

Schroeder BestFit™ P/N
SBF-SALL-40Z150B
SBF-SALL-40Z10B
Seebach Element P/N
SALL40FB-150-Water
SALL40G010-95/5
Seebach Filter
2UC3230-000
2UC3230-000

Mining Specific Elements

**Schroeder Part Numbers: MSB-3070-225 (25 μ),
MSB-3070-240 (40 μ), MSB-3070-280 (80 μ) & MSB-3070-2100 (100 μ)**

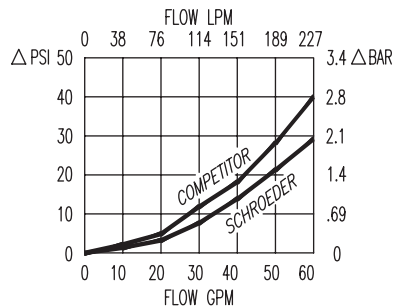


LW60

Excellement MD

**Mining
Specific
Elements**

Pressure Drop

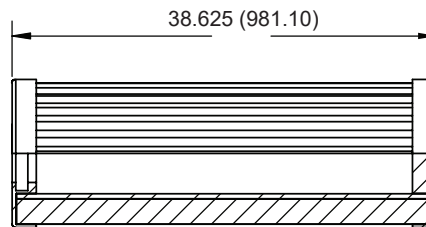
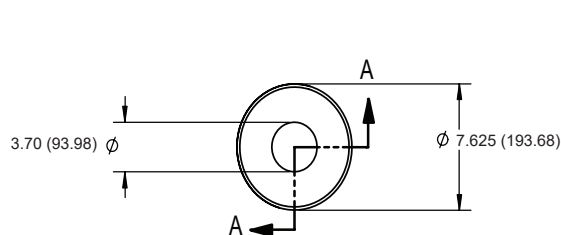


Max Pressure:	5,000 psi (350 bar)
Max Differential Pressure:	5,000 psid (350 bar)
Max Flow Rate:	52 gpm (200/L/min)
Filter Rating:	25/40/80/100 Micron
End Caps:	Stainless Steel
Support Tubes:	Stainless Steel
Metal Mesh:	Stainless Steel Wrap
Support Ring:	Stainless Steel

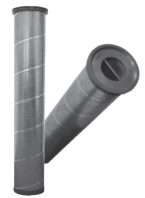
*Contact factory for additional filter ratings

Specifications

Schroeder Part Numbers: SBF-PF3L-Z12B (12 μ m) & SBF-WE3L-Z60B (60 μ m)



SECTION A-A



Specifications

Schroeder BestFit™ P/N
SBF-PF3L-Z12B
SBF-WE3L-Z60B
Seebach Element P/N
SA12MB-PF3L-95/5
SA75FBWE3L-Water
Seebach Filter
Triple "L" Filter
Triple "L" Filter

Micron Rating:	SBF-PF3L-Z12B: 12 μ m SBF-WE3L-Z60B: 60 μ m
Collapse Rating:	150 psid (min)
End Cap:	Anodized Aluminum
Support Tube:	SBF-PF3L-Z12B: Cold Roll Steel SBF-WE3L-Z60B: Stainless Steel
Filter Media:	SBF-PF3L-Z12B: 12 μ m synthetic SBF-WE3L-Z60B: 150 μ m synthetic
O-Ring:	Buna N

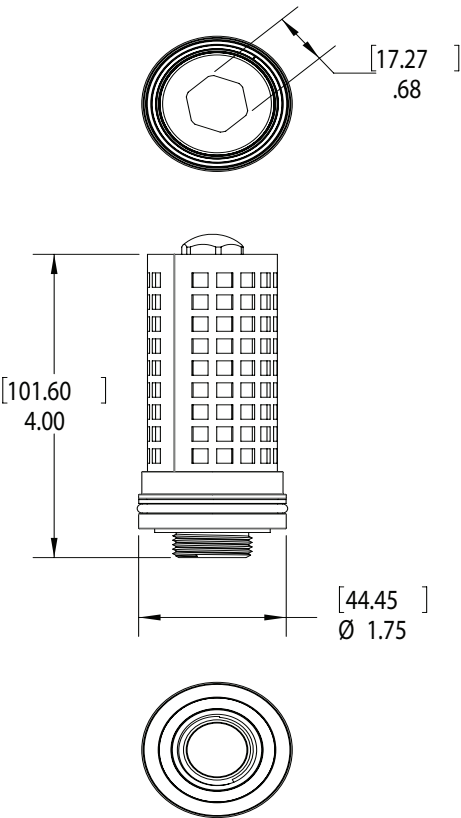
Z

*Contact factory for additional filter ratings

Mining Specific Elements



Schroeder Part Number: MSB-3185-425B (25 µ)



Specifications

Max pressure:	5000 psi (350 bar)
Max Differential Pressure:	5000 psid (350 bar)
Max flow Rate:	105 gpm (400 l/min.)
Filter Rating:	25 micron
Material:	Body - Stainless Steel Metal Mesh - Stainless Steel Wrap O-Ring - Buna N Back-Up Ring - Nylon

*Contact factory for additional filter ratings