



Features and Benefits

- Two or three QF5 filters supplied in series as a single filter assembly providing in-line single pass particulate and water filtration
- Element changeout from the top minimizes oil spillage
- Available with optional core assembly to accommodate coreless elements
- Offered with standard Q, QPML deep-plated and QCLQF coreless elements in 16" and 39" lengths with standard Viton® seals
- Offered in pipe, SAE straight thread, and flange porting
- Inlet and outlet test points
- Various Dirt Alarm® options

300 gpm
1135 L/min
500 psi
35 bar

GH
 RLT
 KF5
 SRLT
 K9
 2K9
 3K9
 QF5
 QF5i

2QF5/3QF5

Model No. of filter in photograph is 2QF539QEDBP40P40 and 3QF539QEDBP40P40

Flow Rating:	Up to 300 gpm (1135 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	500 psi (35 bar)
Min. Yield Pressure:	2500 psi (172 bar), per NFPA T2.6.1-R1-2005
Rated Fatigue Pressure:	Contact Factory
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 30 psi (2.1 bar) Full Flow: 55 psi (3.8 bar)
Porting Base:	Cast Aluminum
Element Case:	Steel
Cap:	Ductile Iron
Element Change Clearance:	33.8" (859 mm)

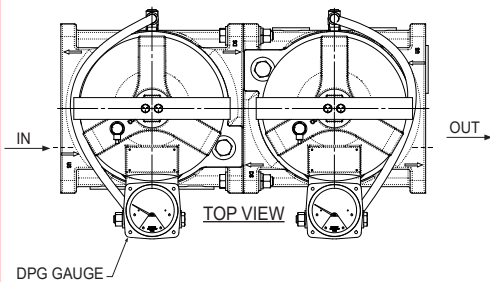
Filter Housing Specifications

QFD5
 QF15
 QLF15
 SSQLF15

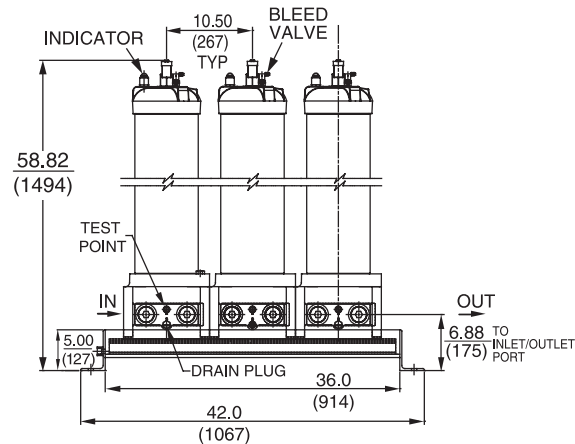
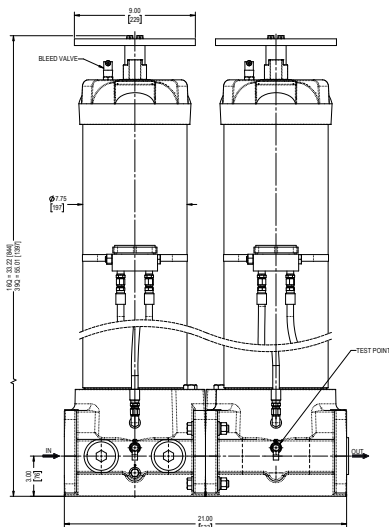
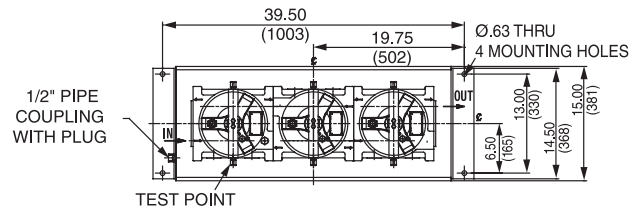
Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All Z-Media® and ASP® media (synthetic)
High Water Content	All Z-Media® and ASP® media (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® and 10 µ ASP® media (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® and all ASP® Media (synthetic)
Phosphate Esters	All Z-Media® (synthetic) with H (EPR) seal designation and all ASP® media (synthetic)
Skydrol®	3, 5, 10 and 25 µ Z-Media® (synthetic) with H.5 seal designation (EPR seals and stainless steel wire mesh in element, and light oil coating on housing exterior) and all ASP® media (synthetic)

Fluid Compatibility

2QF5



3QF5



Metric dimensions in ().
 Dimensions shown are inches (millimeters) for general information and overall envelope size only.
 For complete dimensions please contact Schroeder Industries to request a certified print.

Element Performance Information & Dirt Holding Capacity

Element	Filtration Ratio Per ISO 4572/NFPA T3.10.8.8 Using automated particle counter (APC) calibrated per ISO 4402			Filtration Ratio per ISO 16889 Using APC calibrated per ISO 11171	
	$\beta_x \geq 75$	$\beta_x \geq 100$	$\beta_x \geq 200$	$\beta_x(c) \geq 200$	$\beta_x(c) \geq 1000$
39Q Z1/CLQFZ1/PMLZ1	<1.0	<1.0	<1.0	<4.0	4.2
Z3/CLQFZ3/PMLZ3	<1.0	<1.0	<2.0	<4.0	4.8
Z5/CLQFZ5/PMLZ5	2.5	3.0	4.0	4.8	6.3
Z10/CLQFZ10/PMLZ10	7.4	8.2	10.0	8.0	10.0
Z25/CLQFZ25/PMLZ25	18.0	20.0	22.5	19.0	24.0

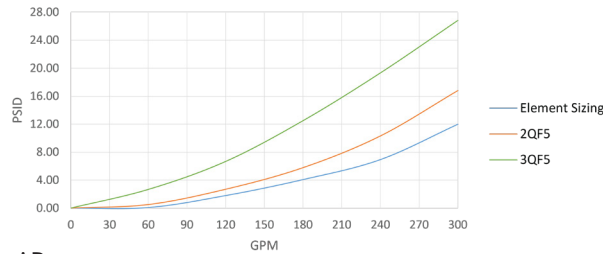
Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)
39Q Z1	974	CLQFZ1	1259	PMLZ1	1485
Z3	1001	CLQFZ3	1293	PMLZ3	1525
Z5	954	CLQFZ5	1302	PMLZ5	1235
Z10	940	CLQFZ10	1214	PMLZ10	1432
Z25	853	CLQFZ25	1102	PMLZ25	1299

Element Collapse Rating: Q and QPML: 150 psid (10 bar), QCLQF: 100 psid (7 bar)

Flow Direction: Outside In

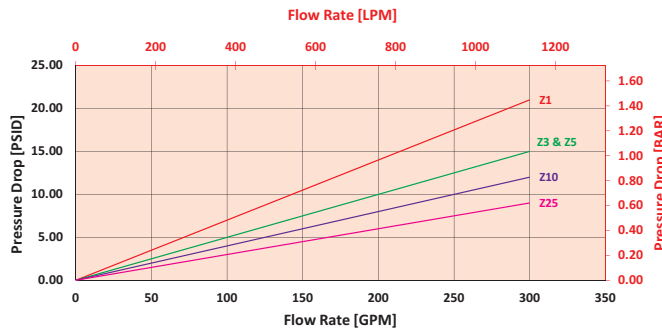
Element Nominal Dimensions: 39Q: 6.0" (150 mm) O.D. x 38.70" (985 mm) long
 39QCLQF: 6.0" (150 mm) O.D. x 40.01" (1016 mm) long
 39QPML: 6.0" (150 mm) O.D. x 37.80" (960 mm) long

$\Delta P_{\text{housing}}$
2QF5/3QF5 $\Delta P_{\text{housing}}$ for fluids with sp gr (specific gravity) = 0.86:
Housing Pressure Drop

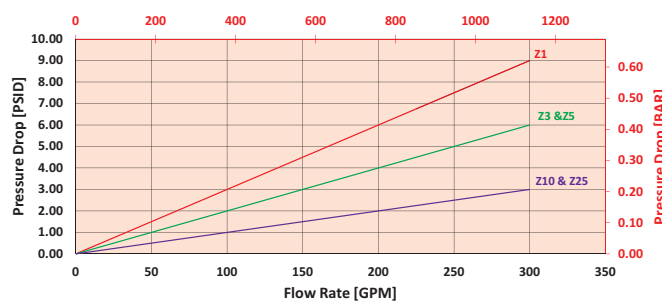


For each individual housing pressure, place the singular QF5 housing pressure curve indicated here

$\Delta P_{\text{element}}$
16QCLQF
Element Pressure Drop versus Flow Rate at 32 cSt (150 SUS)



39QCLQF
Element Pressure Drop versus Flow Rate at 32 cSt (150 SUS)



$$\Delta P_{\text{filter}} = \Delta P_{\text{housing}} + (\Delta P_{\text{element}} * \mathbf{V}_f)$$

Exercise:

Determine ΔP_{filter} at 100 gpm (379 L/min) for 3QF539QEDBVP32P3250DPG using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{\text{housing}}$ at 100 gpm. In this case, $\Delta P_{\text{housing}}$ is 5.5 psi (.39 bar) on the graph for the 3QF5 housing.

Use the element pressure curve to determine $\Delta P_{\text{element}^1}$ at 100 gpm for the first element. In this case, $\Delta P_{\text{element}}$ is 1 psi (.07 bar) according to the graph for the 39QZ25 element.

Use the element pressure curve to determine $\Delta P_{\text{element}^2}$ at 100 gpm for the first element. In this case, $\Delta P_{\text{element}}$ is 1 psi (.07 bar) according to the graph for the 39QZ10 element.

Use the element pressure curve to determine $\Delta P_{\text{element}^3}$ at 100 gpm for the first element. In this case, $\Delta P_{\text{element}}$ is 1 psi (.07 bar) according to the graph for the 39QZ3 element.

Because the viscosity in this sample is 160 SUS (34 cSt), we determine the **Viscosity Factor (\mathbf{V}_f)** by dividing the **Operating Fluid Viscosity** with the **Standard Viscosity** of 150 SUS (32 cSt). To best determine your Operating Fluid Viscosity, please reference the chart in Appendix D.

Finally, the overall filter pressure differential, ΔP_{filter} , is calculated by adding $\Delta P_{\text{housing}}$ with the true element pressure differential, $(\Delta P_{\text{element}} * \mathbf{V}_f)$. The $\Delta P_{\text{element}}$ from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

Solution:

$$\Delta P_{\text{housing}} = 5.5 \text{ psi } [.39 \text{ bar}] \mid \Delta P_{\text{element}^1} = 1 \text{ psi } [.07 \text{ bar}] \mid \Delta P_{\text{element}^2} = 1 \text{ psi } [.07 \text{ bar}] \mid \Delta P_{\text{element}^3} = 1 \text{ psi } [.07 \text{ bar}]$$

$$\mathbf{V}_f = 160 \text{ SUS (34 cSt)} / 150 \text{ SUS (32 cSt)} = 1.1$$

$$\Delta P_{\text{filter}} = 5.5 \text{ psi} + (1 \text{ psi} * 1.1) + (1 \text{ psi} * 1.1) + (1 \text{ psi} * 1.1) = 8.8 \text{ psi}$$

OR

$$\Delta P_{\text{filter}} = .39 \text{ bar} + (.07 \text{ bar} * 1.1) + (.07 * 1.1) + (.07 * 1.1) = .62 \text{ bar}$$

Pressure Drop Information Based on Flow Rate and Viscosity

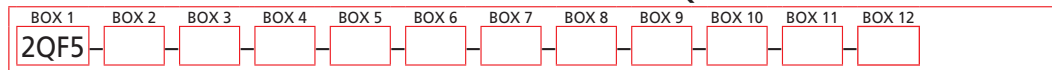
Note:

If your element is not graphed, use the following equation:
 $\Delta P_{\text{element}} = \text{Flow Rate} \times \Delta P_f$ Plug this variable into the overall pressure drop equation.

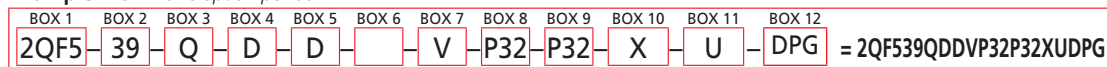
Ele.	ΔP	Ele.	ΔP	Ele.	ΔP
16QAS3V	0.04	16QPMLZ1	0.08	39QZ1	0.03
16QAS5V	0.04	16QPMLZ3	0.05	39QZ3	0.01
16QAS10V	0.03	16QPMLZ5	0.05	39QZ5	0.01
16QPMLAS3V	0.05	16QPMLZ10	0.04	39QZ10	0.01
16QPMLASSV	0.05	16QPMLZ25	0.02	39QZ25	0.01
16QPMLAS10V	0.04	39QAS3V	0.01	39QPMLZ1	0.03
16QZ1	0.09	39QAS5V	0.01	39QPMLZ3	0.02
16QZ3	0.04	39QAS10V	0.01	39QPMLZ5	0.02
16QZ5	0.04	39QPMLAS3V	0.02	39QPMLZ10	0.01
16QZ10	0.03	39QPMLAS5V	0.02	39QPMLZ25	0.01
16QZ25	0.01	39QPMLAS10V	0.01		

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder 2QF5:



Example: NOTE: One option per box



BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6
Filter Series	Element Length (in)	Element Style	1st Housing Element Media	2nd Housing Element Media (2QF5 & 3QF5)	3rd Housing Element Media (3QF5 only)
2QF5	16	Q	A = Z1 B = Z3 C = Z5 D = Z10 E = Z25 F = W G = AS3 H = AS5 J = AS10	A = Z1 B = Z3 C = Z5 D = Z10 E = Z25 F = W G = AS3 H = AS5 J = AS10	A = Z1 B = Z3 C = Z5 D = Z10 E = Z25 F = W G = AS3 H = AS5 J = AS10
3QF5	39	QCLQF QPML			

BOX 7

Housing Seal Material

Omit = Buna N
H = EPR
V = Viton®

BOX 8

"IN" Porting

P32 = 2" NPTF
P40 = 2½" NPTF
P48 = 3" NPTF
S32 = SAE-32
F32 = 2" SAE 4-bolt flange Code 61
F40 = 2½" SAE 4-bolt flange Code 61
F48 = 3" SAE 4-bolt flange Code 61

BOX 9

"OUT" Porting

P32 = 2" NPTF
P40 = 2½" NPTF
P48 = 3" NPTF
S32 = SAE-32
F32 = 2" SAE 4-bolt flange Code 61
F40 = 2½" SAE 4-bolt flange Code 61
F48 = 3" SAE 4-bolt flange Code 61

BOX 10

Bypass Setting

Omit = 30 psi cracking
50 = 50 psi cracking
X = Blocked bypass

BOX 11

Options

U = Test point in cap (upstream)

BOX 12

Dirt Alarm® Options

None	Omit = None
Visual	DPG = Standard differential pressure gauge D5 = Visual pop-up D5C = D5 in cap D5R = D5 mounted opposite standard location
Visual with Thermal Lockout	D8 = Visual w/ thermal lockout D8C = D8 in cap D8R = D8 mounted opposite standard location
Electrical	MS5 = Electrical w/ 12 in. 18 gauge 4-conductor cable MS5LC = Low current MS5 MS10 = Electrical w/ DIN connector (male end only) MS10LC = Low current MS10 MS11 = Electrical w/ 12 ft. 4-conductor wire MS12 = Electrical w/ 5 pin Brad Harrison connector (male end only) MS12LC = Low current MS12 MS16 = Electrical w/ weather-packed sealed connector MS16LC = Low current MS16 MS17LC = Electrical w/ 4 pin Brad Harrison male connector
Electrical with Thermal Lockout	MS5T = MS5 (see above) w/ thermal lockout MS5LCT = Low current MS5T MS10T = MS10 (see above) w/ thermal lockout MS10LCT = Low current MS10T MS12T = MS12 (see above) w/ thermal lockout MS12LCT = Low current MS12T MS16T = MS16 (see above) w/ thermal lockout MS16LCT = Low current MS16T MS17LCT = Low current MS17T
Electrical Visual	MS13 = Supplied w/ threaded connector & light MS14 = Supplied w/ 5 pin Brad Harrison connector & light (male end)
Electrical Visual with Thermal Lockout	MS13DCT = MS13 (see above), direct current, w/ thermal lockout MS13DCLCT = Low current MS13DCT MS14DCT = MS14 (see above), direct current, w/ thermal lockout MS14DCLCT = Low current MS14DCT

NOTES:

Box 2. Replacement element part numbers are a combination of Boxes 2, 3, and 4, plus the letter V.
Example: 39QZ10V

Box 3. QCLQF are CoreCentric® coreless elements – housing includes rigid metal core. QPML are deep-pleated elements with more media and higher dirt holding capacity.

Box 4. For option F, Box 3 must equal Q.

Box 7. All elements for this filter are supplied with Viton® seals. Seal designation in Box 5 applies to housing only. Viton® is a registered trademark of DuPont Dow Elastomers.