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
- The QCLCF, coreless elements, are not interchangeable with the Q & QPML elements and vice versa

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

300 gpm
1135 L/min
500 psi
35 bar

Filter Housing Specifications

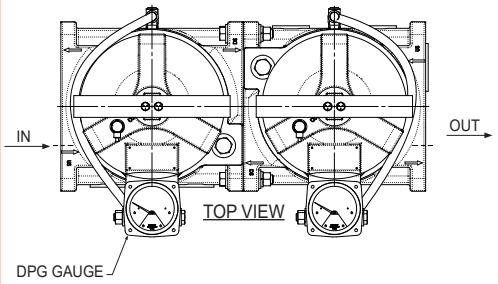
Flow Rating:	Up to 300 gpm (1135 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	500 psi (35 bar)
Min. Yield Pressure:	2500 psi (172 bar), per NFPA T2.6.1-R1-2005
Rated Fatigue Pressure:	Contact Factory
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 30 psi (2.1 bar)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

Fluid Compatibility

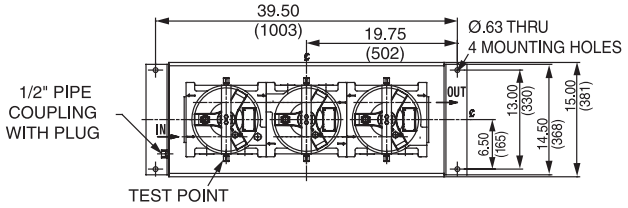
Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All Z-Media® and ASP® media (synthetic)
High Water Content	All Z-Media® and ASP® media (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® and 10 µ ASP® media (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® and all ASP® Media (synthetic)
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)

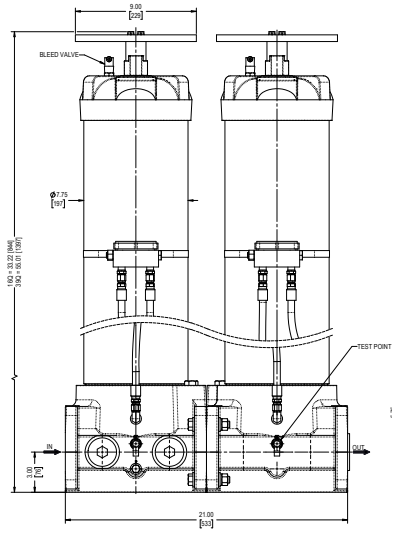
2QF5/3QF5 In-Line Filter

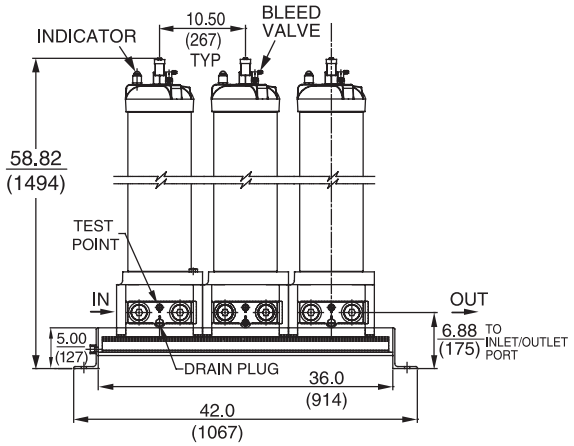
2QF5



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)

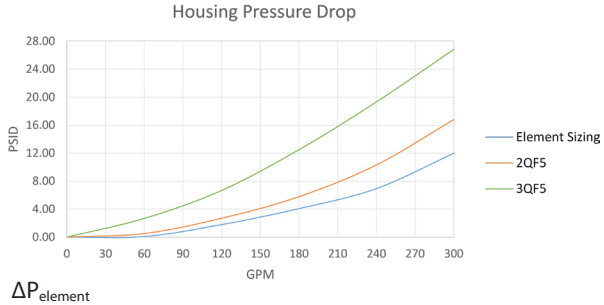
Flow Direction: Outside In

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

Pressure Drop Information
Based on Flow Rate and Viscosity

$\Delta P_{housing}$

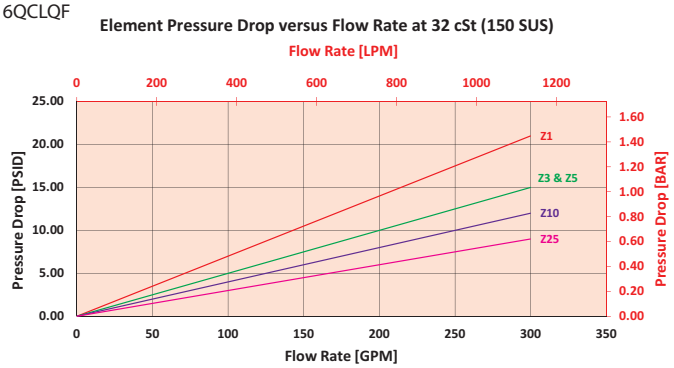
2QF5/3QF5 $\Delta P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:



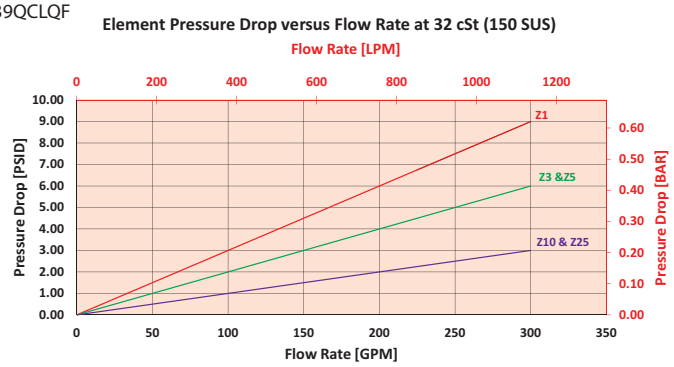
For each individual housing pressure, place the singular QF5 housing pressure curve indicated here

$\Delta P_{element}$

16QCLQF



39QCLQF



$$\Delta P_{filter} = \Delta P_{housing} + (\Delta P_{element} * V_f)$$

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

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

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

Use the element pressure curve to determine $\Delta P_{element^3}$ at 100 gpm for the first element. In this case, $\Delta P_{element}$ 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 (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 $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). The $\Delta P_{element}$ from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

Solution:

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

V_f = 160 SUS (34 cSt) / 150 SUS (32 cSt) = 1.1

ΔP_{filter} = 5.5 psi + (1 psi * 1.1) + (1 psi * 1.1) + (1 psi * 1.1) = 8.8 psi

OR

ΔP_{filter} = .39 bar + (.07 bar * 1.1) + (.07 * 1.1) + (.07 * 1.1) = .62 bar

Note:
If your element is not graphed, use the following equation:
$\Delta P_{element}$ = Flow Rate x ΔP_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
16QPML-AS3V	0.05	16QPMLZ10	0.04	39QZ10	0.01
16QPML-AS5V	0.05	16QPMLZ25	0.02	39QZ25	0.01
16QPML-AS10V	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	39QPMLAS-3V	0.02	39QPMLZ10	0.01
16QZ10	0.03	39QPMLAS-5V	0.02	39QPMLZ25	0.01
16QZ25	0.01	39QPMLAS-10V	0.01		

2QF5/3QF5 In-Line Filter

Filter Model Number Selection

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

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11	BOX 12
2QF5 –		–		–		–		–		–	

Example: NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10	BOX 11	BOX 12	
2QF5 –	39 –	Q –	D –	D –	–	V –	P32 –	P32 –	X –	U –	DPG	= 2QF539QDDVP32P32XUDPG

BOX 1 – Filter Series

2QF5
3QF5

BOX 2 – Element Length (in)

16
39

BOX 3 – Element Style

Q
QCLQF
QPML

BOX 4 – 1st Housing Element Media

A = Z1
B = Z3
C = Z5
D = Z10
E = Z25
F = W
G = AS3
H = AS5
J = AS10

BOX 5 – 2nd Housing Element Media (2QF5 & 3QF5)

A = Z1
B = Z3
C = Z5
D = Z10
E = Z25
F = W
G = AS3
H = AS5
J = AS10

BOX 6 – 3rd Housing Element Media (3QF5 only)

A = Z1
B = Z3
C = Z5
D = Z10
E = Z25
F = W
G = AS3
H = AS5
J = AS10

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 – Test Points

Omit = None
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.

Boc 10. When X is paired with a standard filter series, a standard bushing and spring plate will be used.