In-Line Filter   QF5

GH

RLT

KF5

SRLT

K9

2K9

3K9

QF5

QF5i

3QF5

QFD2

QFD5

QF15

QLF15

SSQLF15

Features and Benefits

- 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
- Optional inlet and outlet test points
- WQF5 model for water service also available
- Various Dirt Alarm® options

300 gpm
1135 L/min
500 psi
35 bar

Model No. of filter in photograph is QF539QZ10P32.

Filter Housing Specifications
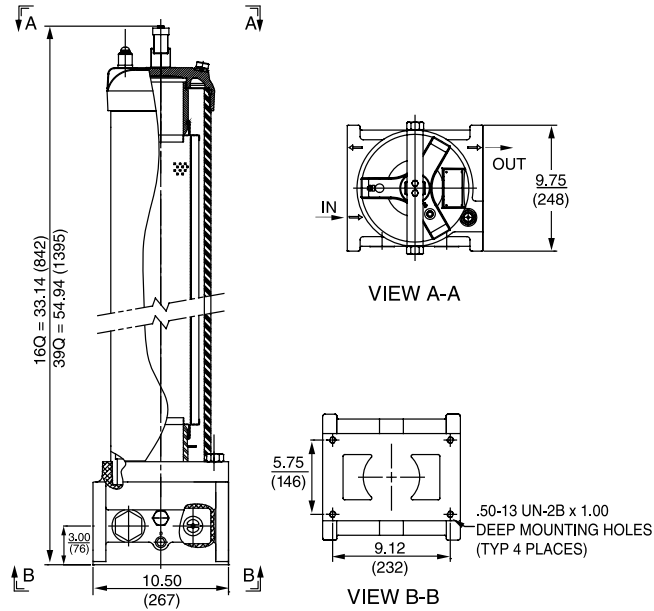
Flow Rating:	Up to 300 gpm (1135 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	500 psi (35 bar)
Min. Yield Pressure:	2500 psi (172 bar), per NFPA T2.6.1-R1-2005
Rated Fatigue Pressure:	Contact Factory
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 30 psi (2.1 bar) Full Flow: 55 psi (3.8 bar)
Porting Base:	Cast Aluminum
Element Case:	Steel
Cap:	Ductile Iron
Weight of QF516: Weight of QF539:	85 lbs. (39 kg) 120 lbs. (55 kg)
Element Change Clearance:	16Q 12.0" (205 mm) 39Q 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)

A ◢ A ▼

16Q = 33.14 (842)
39Q = 54.94 (1395)

OUT
9.75
(248)
IN

VIEW A-A

5.75
(146)

.50-13 UN-2B x 1.00
DEEP MOUNTING HOLES
(TYP 4 PLACES)

3.00
(76)

9.12
(232)

B ▲ B ▲

10.50
(267)

VIEW B-B

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	
		$\beta_X \geq 75$	$\beta_X \geq 100$	$\beta_X \geq 200$	$\beta_X(c) \geq 200$	$\beta_X(c) \geq 1000$
16Q	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
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

| Element		DHC (gm)	Element	DHC (gm)	Element	DHC (gm)
16Q	Z1	276	CLQFZ1	307	PMLZ1	307
	Z3	283	CLQFZ3	315	PMLZ3	315
	Z5	351	CLQFZ5	364	PMLZ5	364
	Z10	280	CLQFZ10	306	PMLZ10	330
	Z25	254	CLQFZ25	278	PMLZ25	299
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:
16Q: 6.0" (150 mm) O.D. x 16.85" (430 mm) long
16QCLQF: 6.0" (150 mm) O.D. x 18.21" (463 mm) long
16QPML: 6.0" (150 mm) O.D. x 16.00" (405 mm) long
39QCLQF: 6.0" (150 mm) O.D. x 40.01" (1016 mm) long
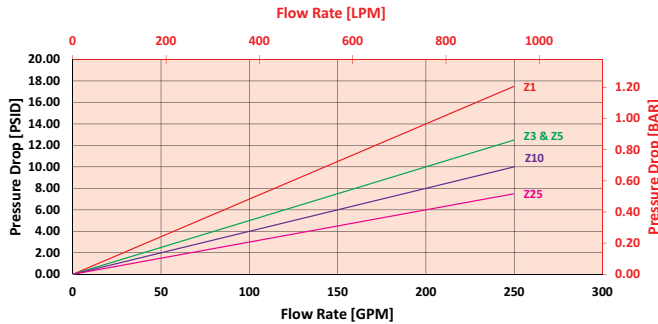39QPML: 6.0" (150 mm) O.D. x 37.80" (960 mm) long

$\triangle \mathbf{P}_{housing}$

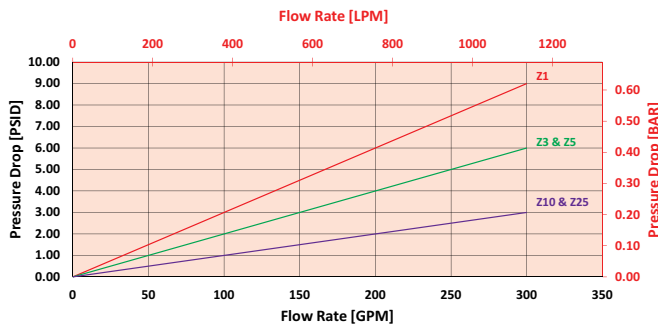QF5 $\triangle P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:
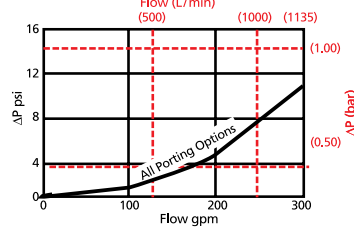
$\triangle \mathbf{P}_{element}$

16QCLQFZ

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

39QCLQFZ

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

$$\triangle \mathbf{P}_{filter} = \triangle \mathbf{P}_{housing} + (\triangle \mathbf{P}_{element} * V_f)$$

Exercise:

Determine $\triangle \mathbf{P}_{filter}$ at 100 gpm (379 L/min) for QF539QZ3P32UDPG using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine $\triangle \mathbf{P}_{housing}$ at 100 gpm. In this case, $\triangle \mathbf{P}_{housing}$ is 2 psi (.14 bar) on the graph for the QF5 housing.

Use the element pressure curve to determine $\triangle \mathbf{P}_{element}$ at 100 gpm. In this case, $\triangle \mathbf{P}_{element}$ 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, $\triangle \mathbf{P}_{filter}$, is calculated by adding $\triangle \mathbf{P}_{housing}$ with the true element pressure differential, ($\triangle \mathbf{P}_{element}*V_f$). The $\triangle \mathbf{P}_{element}$ from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

Solution:

$\triangle \mathbf{P}_{housing}$ = 2 psi [.14 bar] | $\triangle \mathbf{P}_{element}$ = 1 psi [.07 bar]

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

$\triangle \mathbf{P}_{filter}$ = 2 psi + (1 psi * 1.1) = 3.1 psi

   OR

$\triangle \mathbf{P}_{filter}$ = .14 bar + (.07 bar * 1.1) = .22 bar

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Pressure Drop Information
Based on Flow Rate and Viscosity

GH

RLT

KF5

SRLT

K9

2K9
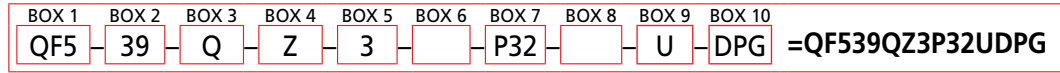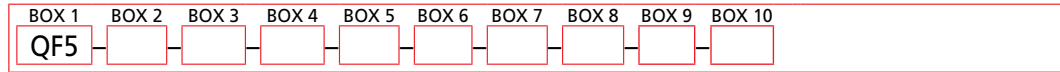
3K9

QF5

QF5i

3QF5

QFD2

QFD5

QF15

QLF15

SSQLF15

Note:
If your element is not graphed, use the following equation:
$\triangle \mathbf{P}_{element}$ = Flow Rate x $\triangle \mathbf{P}_f$. Plug this variable into the overall pressure drop equation.

Ele.	$\triangle$P	Ele.	$\triangle$P	Ele.	$\triangle$P
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		

In-Line Filter

Filter Model Number Selection

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

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

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10
QF5	39	Q	Z	3		P32		U	DPG	**=QF539QZ3P32UDPG**

BOX 1
Filter Series

QF5

WQF5
(Water)

BOX 2
Element Length (in)

16

39

BOX 3
Element Style

Q

QCLQF

QPML

BOX 4
Media Type

Z = Excellement® Z-Media®
(synthetic)

AS = Anti-Stat Pleat media
(synthetic)

W = W Media (water removal)

Water System Element Options

QM25 = Q size 25 µ M media
(resuable metal)

QM60 = Q size 60 µ M media
(resuable metal)

QM150 = Q size 150 µ M media
(resuable metal)

BOX 5
Micron Rating

1 = 1 µ Z-Media®
3 = 3 µ AS and Z-Media®
5 = 5 µ AS and Z-Media®
10 = 10 µ AS and Z-Media®
25 = 25 µ Z-Media®

BOX 6
Housing Seal Material

Omit = Buna N

H = EPR

V = Viton®

BOX 7
Porting

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

BOX 8
Bypass Setting

Omit = 30 psi cracking

50 = 50 psi cracking

X = Blocked bypass

BOX 9
Options

U = Test point in cap (upstream)

UU = Test points in block (upstream and downstream)

BOX 10

	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, 4 and 5 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 W, Box 3 must equal Q.

Box 6. All elements for this filter are supplied with Viton® seals. Seal designation in Box 6 applies to housing only. Viton® is a registered trademark of DuPont Dow Elastomers.