

# In-Line Filter

# QF15



## Features and Benefits

- Also available in L-ported version
- Element changeout from the top minimizes oil spillage
- Available with optional core assembly to accommodate coreless elements
- Offered with standard Q, QPML deep-pleated and QCLQF coreless elements in 16" and 39" lengths with Viton® seals as the standard
- Offered in pipe, SAE straight thread, and flange porting
- Integral inlet and outlet test points are standard on all models
- WQF15 model for water service also available – refer to Section 7 of this catalog
- Various Dirt Alarm® options

**450 gpm**  
**1700 L/min**  
**1500 psi**  
**100 bar**

GH

RLT

KF5

SRLT

K9

2K9

3K9

QF5

Viton® is a registered trademark of DuPont Dow Elastomers.

3QF5

Model No. of filter in photograph is QF1516QZ10P24MS10AC.



INDUSTRIAL



AUTOMOTIVE  
MANUFACTURING



MACHINE  
TOOL



STEEL  
MAKING



MINING  
TECHNOLOGY



POWER  
GENERATION



PULP & PAPER



MOBILE  
VEHICLES

## Applications

QFD2

QFD5

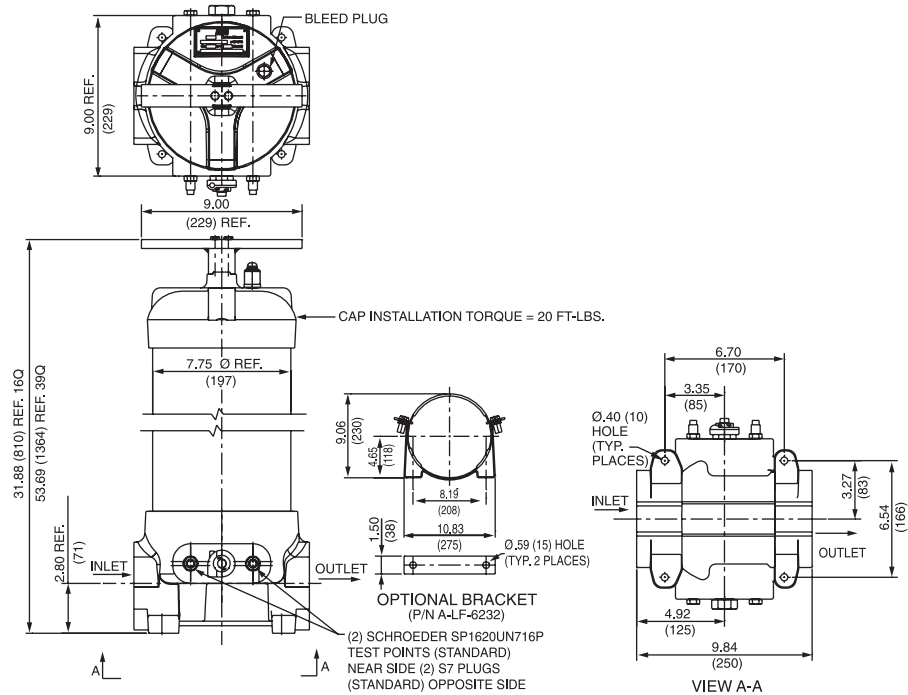
**QF15**

QLF15

SSQLF15

Flow Rating:	Up to 450 gpm (1700 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	1500 psi (100 bar)
Min. Yield Pressure:	4900 psi (340 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	800 psi (55 bar), per NFPA T2.6.1-R1-2005
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 & Cap:	Ductile Iron
Element Case:	Steel
Weight of QF15-16Q:	139.0 lbs. (63.0 kg)
Weight of QF15-39Q:	198.0 lbs. (90.0 kg)
Element Change Clearance:	16Q 12.0" (305 mm) 39Q 33.8" (859 mm)

## Filter Housing Specifications



## 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		
	$\beta_x \geq 75$	$\beta_x \geq 100$	$\beta_x \geq 200$	$\beta_{x(c)} \geq 200$	$\beta_{x(c)} \geq 1000$	
16Q	Z1/CLQFZ1/PMLZ1	<1.0	<1.0	<1.0	<4.0	4.2
	Z3/CLQFZ3/PMLZ3/AS3V/PMLAS3V	<1.0	<1.0	<2.0	<4.0	4.8
	Z5/CLQFZ5/PMLZ5/AS5V/PMLAS5V	2.5	3.0	4.0	4.8	6.3
	Z10/CLQFZ10/PMLZ10/AS10V/PMLAS10V	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/AS3V/PMLAS3V	<1.0	<1.0	<2.0	<4.0	4.8
	Z5/CLQFZ5/PMLZ5/AS5V/PMLAS5V	2.5	3.0	4.0	4.8	6.3
	Z10/CLQFZ10/PMLZ10/AS10V/PMLAS10V	7.4	8.2	10.0	8.0	10.0
	Z25/CLQFZ25/PMLZ25	18.0	20.0	22.5	19.0	24.0

## Dirt Holding Capacity

Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)	
16Q	Z1	276	CLQFZ1	307	PMLZ1	307
	Z3/AS3V	283	CLQFZ3	315	PMLZ3/PMLAS3V	315
	Z5/AS5V	351	CLQFZ5	364	PMLZ5/PMLAS5V	364
	Z10/AS10V	280	CLQFZ10	306	PMLZ10/PMLAS10V	330
	Z25	254	CLQFZ25	278	PMLZ25	299
39Q	Z1	974	CLQFZ1	1259	PMLZ1	1485
	Z3/AS3V	1001	CLQFZ3	1293	PMLZ3/PMLAS3V	1525
	Z5/AS5V	954	CLQFZ5	1302	PMLZ5/PMLAS5V	1235
	Z10/AS10V	940	CLQFZ10	1214	PMLZ10/PMLAS10V	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  
 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

### Type Fluid Appropriate Schroeder Media

Petroleum Based Fluids	All E media (cellulose), 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)

### Fluid Compatibility

GH  
RLT  
KF5

Pressure	Series	Element	Element selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid and 3" flange porting with a 30 psi (2.1 bar) bypass valve.				
		Part No.	16QZ1		39QZ1		
To 1500 psi (100 bar)	Z- Media®	16 & 39QZ1	16QZ1		39QZ1		
		16 & 39QZ3	16QZ3		39QZ3		
		16 & 39QZ5	16QZ5		39QZ5		
		16 & 39QZ10	16QZ10		39QZ10		
		16 & 39QZ25	16QZ25 & 39QZ25				
		16 & 39QCLQFZ1	16QCLQFZ1		39QCLQFZ1		
		16 & 39QCLQFZ3	16QCLQFZ3		39QCLQFZ3		
		16 & 39QCLQFZ5	16QCLQFZ5		39QCLQFZ5		
		16 & 39QCLQFZ10	16QCLQFZ10		39QCLQFZ10		
		16 & 39QCLQFZ25	16QCLQFZ25		39QCLQFZ25		
		16 & 39QPMLZ1	16QPMLZ1		39QPMLZ1		
		16 & 39QPMLZ3	16QPMLZ3		39QPMLZ3		
		16 & 39QPMLZ5	16QPMLZ5		39QPMLZ5		
		16 & 39QPMLZ10	16QPMLZ10		39QPMLZ10		
		16 & 39QPMLZ25	16QPMLZ25		39QPMLZ25		
Flow	gpm	0	100	200	300	400	450
	(L/min)	0	500	1000	1500	1700	

### Element Selection

Based on Flow Rate

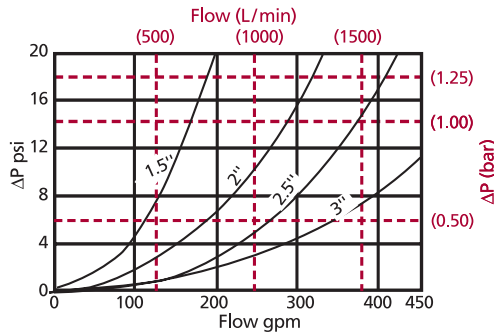
SRLT  
K9  
2K9  
3K9  
QF5  
3QF5  
QFD2

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.

### ΔP<sub>housing</sub>

QF15 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.

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

### Exercise:

Determine ΔP at 150 gpm (570 L/min) for QF1516QZ3VF40D5 using 200 SUS (44 cSt) fluid.

### Solution:

$$\Delta P_{\text{housing}} = 1 \text{ psi } [.07 \text{ bar}]$$

$$\Delta P_{\text{element}} = 150 \times .04 \times (200 \div 150) = 8.0 \text{ psi}$$

$$\text{or}$$

$$= [570 \times (.04 \div 54.9) \times (44 \div 32) = .57 \text{ bar}]$$

$$\Delta P_{\text{total}} = 1.0 + 8.0 = 9.0 \text{ psi}$$

$$\text{or}$$

$$= [.07 + .57 = .64 \text{ bar}]$$

### ΔP<sub>element</sub>

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

El. ΔP factors @ 150 SUS (32 cSt):

16QZ1	.09	39QZ1	.03
16QZ3/16QAS3V	.04	39QZ3/39QAS3V	.01
16QZ5/16QAS5V	.04	39QZ5/39QAS5V	.01
16QZ10/16QAS10V	.03	39QZ10/39QAS10V	.01
16QZ25	.01	39QZ25	.01
16QCLQFZ1	.07	39QCLQFZ1	.03
16QCLQFZ3	.05	39QCLQFZ3	.02
16QCLQFZ5	.05	39QCLQFZ5	.02
16QCLQFZ10	.04	39QCLQFZ10	.01
16QCLQFZ25	.03	39QCLQFZ25	.01
16QPMLZ1	.08	39QPMLZ1	.03
16QPMLZ3/		39QPMLZ3/	
16QPMLAS3V	.05	39QPMLAS3V	.02
16QPMLZ5/		39QPMLZ5/	
16QPMLAS5V	.05	39QPMLAS5V	.02
16QPMLZ10/		39QPMLZ10/	
16QPMLAS10V	.04	39QPMLAS10V	.01
16QPMLZ25	.02	39QPMLZ25	.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

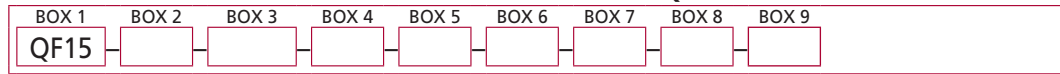
QF15

QLF15

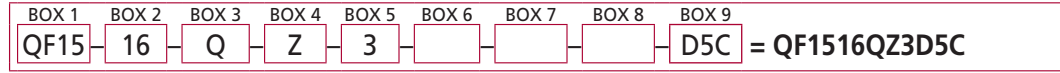
SSQLF15

## Filter Model Number Selection

### How to Build a Valid Model Number for a Schroeder QF15:



Example: NOTE: One option per box



BOX 1	BOX 2	BOX 3	BOX 4	BOX 5
<b>Filter Series</b>	<b>Element Length (in)</b>	<b>Element Style</b>	<b>Media Type</b>	<b>Micron Rating</b>
QF15	16 39	Q QQLQF QPML	Z = Excellence® Z-Media® (synthetic) AS = Anti-Stat Pleat media (synthetic) W = W media (water removal)	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	BOX 7	BOX 8
<b>Housing Seal Material</b>	<b>Porting</b>	<b>Bypass Setting</b>
Omit = Buna N V = Viton®	P24 = 1½" NPTF P32 = 2" NPTF P40 = 2½" NPTF P48 = 3" NPTF  S32 = SAE-32  B24 = ISO 228 G-1½" B32 = ISO 228 G-2" B40 = ISO 228 G-2½" B48 = ISO 228 G-3"	F24 = 1½" SAE 4-bolt flange Code 61 F32 = 2" SAE 4-bolt flange Code 61 F40 = 2½" SAE 4-bolt flange Code 61 F48 = 3" SAE 4-bolt flange Code 61  F24M = 1½" SAE 4-bolt flange Code 61 F32M = 2" SAE 4-bolt flange Code 61 F40M = 2½" SAE 4-bolt flange Code 61 F48M = 3" SAE 4-bolt flange Code 61
		Omit = 30 psi cracking 50 = 50 psi cracking X = Blocked bypass

BOX 9	
Dirt Alarm® Options	
	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: 16QZ1V

Box 3. QQLQF 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.

Box 7. F24M, F32M, F40M and F48M are supplied with metric flange mounting holes.

Integral inlet and outlet test points are standard on all models.