

# 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 5 of this catalog
- Various Dirt Alarm® options

Model No. of filter in photograph is QF1516QZ10P24MS10AC.

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

ST  
SKB  
Housings  
MTA  
MTB  
ZT  
KT  
RT  
RTI  
KFT  
LRT  
BFT  
QT  
KTK  
LTK

Viton is a registered trademark of DuPont Dow Elastomers.



INDUSTRIAL



AUTOMOTIVE  
MANUFACTURING



MACHINE  
TOOL



MINING  
TECHNOLOGY



POWER  
GENERATION



STEEL  
MAKING



PAPER  
INDUSTRY



MOBILE  
VEHICLES

## Applications

Accessories  
for Tank-  
Mounted  
Filters

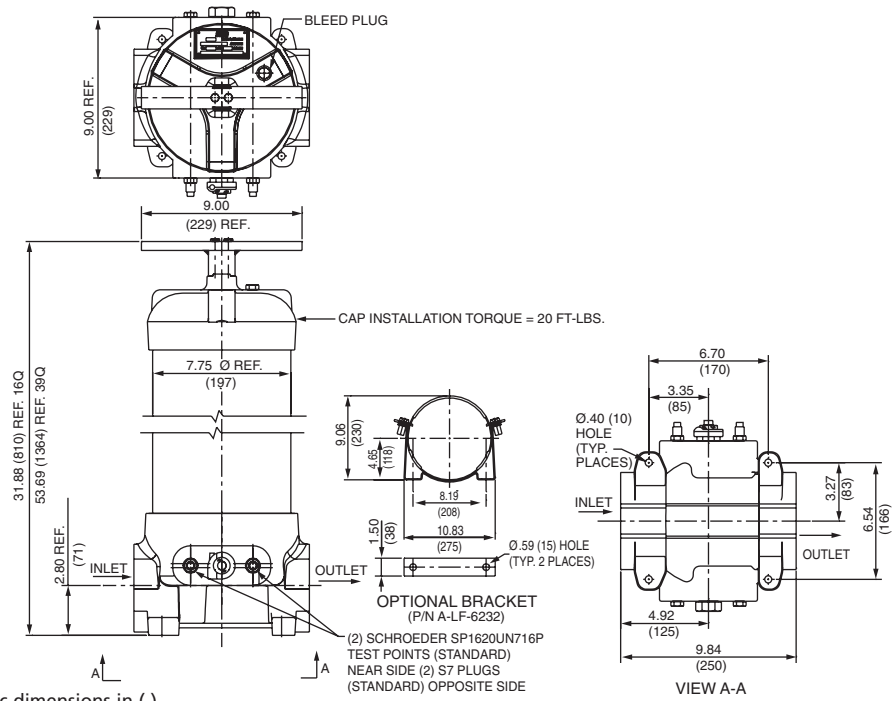
PAF1  
MAF1  
MF2  
TF1  
KF3  
LF1—2"  
MLF1  
SRLT  
RLT

## Filter Housing Specifications

KF8  
K9  
2K9  
3K9  
**QF15**  
QLF15  
SSQLF15  
QFD5

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)
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)

# QF15 In-Line Filter



## 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	<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
	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	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  
 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

# In-Line Filter **QF15**

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All E (cellulose) and Z (synthetic) media
High Water Content	All Z (synthetic) media
Invert Emulsions	10 and 25 μ Z (synthetic) media
Water Glycols	3, 5, 10 and 25 μ Z (synthetic) media
Phosphate Esters	All Z (synthetic) media with H (EPR) seal designation

## Fluid Compatibility

ST  
SKB  
Housings

MTA

MTB

ZT

KT

RT

RTI

KFT

LRT

BFT

QT

KTK

LTK

Accessories  
for Tank-  
Mounted  
Filters

PAF1

MAF1

MF2

TF1

KF3

LF1—2"

MLF1

SRLT

RLT

KF8

K9

2K9

3K9

**QF15**

QLF15

SSQLF15

QFD5

## Element Selection Based on Flow Rate

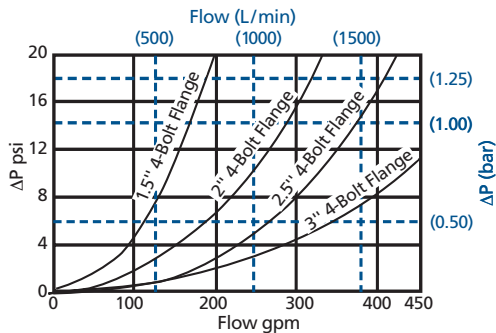
Pressure	Series	Element	Element selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid and 3" flange porting with a 30 psi (2.1 bar) bypass valve.			
		Part No.	16QZ1		39QZ1	
To 1500 psi (100 bar)	Z Media	16 & 39QZ1	16QZ1		39QZ1	
		16 & 39QZ3	16QZ3		39QZ3	
		16 & 39QZ5	16QZ5		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

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

### ΔP<sub>element</sub>

ΔP<sub>element</sub> = flow x element ΔP factor x viscosity factor

El. ΔP factors @ 150 SUS (32 cSt):

16QZ1	.09	39QZ1	.03
16QZ3	.04	39QZ3	.01
16QZ5	.04	39QZ5	.01
16QZ10	.03	39QZ10	.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	.05	39QPMLZ3	.02
16QPMLZ5	.05	39QPMLZ5	.02
16QPMLZ10	.04	39QPMLZ10	.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

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:

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

$$\begin{aligned} \Delta P_{\text{element}} &= 150 \times .04 \times (200 \div 150) = 8.0 \text{ psi} \\ &\text{or} \\ &= [570 \times (.04 \div 54.9) \times (44 \div 32) = .57 \text{ bar}] \end{aligned}$$

$$\begin{aligned} \Delta P_{\text{total}} &= 1.0 + 8.0 = 9.0 \text{ psi} \\ &\text{or} \\ &= [.07 + .57 = .64 \text{ bar}] \end{aligned}$$

### Notes

# QF15 In-Line Filter

## Filter Model Number Selection

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

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8
QF15	-	-	-	-	-	-	-

**Example:** NOTE: One option per box

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8				
QF15	-	16	-	Q	-	Z3	-	P48	-	D5C	= QF1516QZ3P48D5C

BOX 1	BOX 2	BOX 3	BOX 4
<b>Filter Series</b>	<b>Element Length (in)</b>	<b>Element Style</b>	<b>Element Media</b>
QF15	16 39	Q QLQF QPML	Z1 = 1 µ Excellement® Z media (synthetic) Z3 = 3 µ Excellement Z media (synthetic) Z5 = 5 µ Excellement Z media (synthetic) Z10 = 10 µ Excellement Z media (synthetic) Z25 = 25 µ Excellement Z media (synthetic) W = W media (water removal)

BOX 5	BOX 6	BOX 7
<b>Housing Seal Material</b>	<b>Porting</b>	<b>Bypass Setting</b>
Omit = Buna N H = EPR V = Viton®	P24 = 1½" NPTF P32 = 2" NPTF P40 = 2½" NPTF P48 = 3" NPTF  S24 = SAE-24 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 8

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 MS15DC = Electrical, direct current normally open, for DC use only MS15DCNC = Electrical, direct current normally closed, for DC use only 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: 16QZ1V
  - Box 3. QLQF 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 5. 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.
  - Box 6. F24M, F32M, F40M and F48M are supplied with metric flange mounting holes.
- Integral inlet and outlet test points are standard on all models.