

Tank-Mounted Filter

QT



Features and Benefits

- Low pressure tank-mounted filter
- Designed for high return line flows
- Tank-mounted unit saves space, reduces plumbing
- Cap handles provide for easy element changeout
- Offered with standard Q, QW, and QPML deep-pleated elements in 16" and 39" lengths with Viton® seals as the standard seal option

450 gpm
1700 L/min
100 psi
7 bar

IRF
TF1
KF3
KL3
LF1-2"
MLF1
RLD
GRTB
MTA
MTB
ZT

Viton® is a registered trademark of DuPont Dow Elastomers.

Model No. of filter in photograph is QT39QZ10P48D5C.



**AUTOMOTIVE
MANUFACTURING**



**MACHINE
TOOL**



**MINING
TECHNOLOGY**

Applications

KFT
RT
RTI
LRT
ART
BFT
QT

KTK
LTK

MRT

Accessories
for Tank-
Mounted
Filters

PAF1

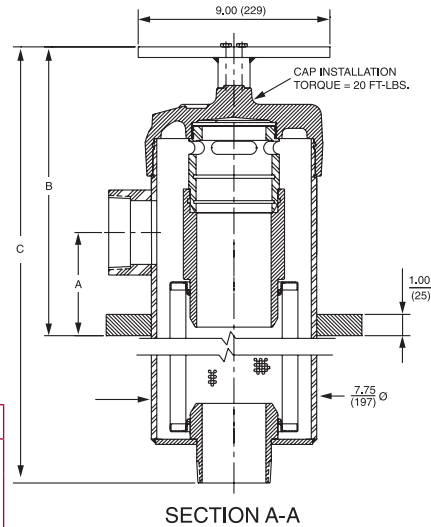
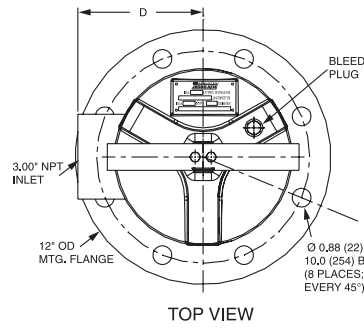
MAF1

MF2

Flow Rating:	Up to 450 gpm (1700 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	100 psi (7 bar)
Min. Yield Pressure:	300 psi (21 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	100 psi (7 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 Head:	Steel
Element Case:	Steel
Min. Weight of QT-16Q:	100.0 lbs. (46 kg)
Min. Weight of QT-39Q:	158.0 lbs. (72 kg)
Element Change Clearance:	16Q 12.0" (305 mm) 39Q 33.8" (859 mm)

Filter Housing Specifications

Tank-Mounted Filter



INLET PORT SIZE*	DIMENSIONS			
	A	B	C	D
3"	4.85 (123)	14.62 (371)	16Q: 30.43 (773) 39Q: 52.25 (1327)	5.88 (149)
	5.75 (146)	16.12 (409)	16Q: 30.43 (773) 39Q: 52.25 (1327)	6.13 (156)

*Outlet port is always 3".

Metric dimensions in ().

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/PMLZ1	<1.0	<1.0	<1.0	<4.0	4.2
	Z3/PMLZ3/AS3V/PMLAS3V	<1.0	<1.0	<2.0	<4.0	4.8
	Z5/PMLZ5/AS5V/PMLAS5V	2.5	3.0	4.0	4.8	6.3
	Z10/PMLZ10/AS10V/PMLAS10V	7.4	8.2	10.0	8.0	10.0
	Z25/PMLZ25	18.0	20.0	22.5	19.0	24.0
39Q	Z1/PMLZ1	<1.0	<1.0	<1.0	<4.0	4.2
	Z3/PMLZ3/AS3V/PMLAS3V	<1.0	<1.0	<2.0	<4.0	4.8
	Z5/PMLZ5/AS5V/PMLAS5V	2.5	3.0	4.0	4.8	6.3
	Z10/PMLZ10/AS10V/PMLAS10V	7.4	8.2	10.0	8.0	10.0
	Z25/PMLZ25	18.0	20.0	22.5	19.0	24.0

Dirt Holding Capacity

Element	DHC (gm)	Element	DHC (gm)	
16Q	Z1	276	PMLZ1	307
	Z3/AS3V	283	PMLZ3/PMLAS3V	315
	Z5/AS5V	351	PMLZ5/PMLAS5V	364
	Z10/AS10V	280	PMLZ10/PMLAS10V	330
	Z25	254	PMLZ25	299
39Q	Z1	974	PMLZ1	1485
	Z3/AS3V	1001	PMLZ3/PMLAS3V	1525
	Z5/AS5V	954	PMLZ5/PMLAS5V	1235
	Z10/AS10V	940	PMLZ10/PMLAS10V	1432
	Z25	853	PMLZ25	1299

Element Collapse Rating: Q and QPML: 150 psid (10 bar)

Flow Direction: Outside In

Element Nominal Dimensions: 16Q: 6.0" (150 mm) O.D. x 16.85" (430 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
 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

IRF
TF1
KF3
KL3

Pressure	Element		Element selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid and a 30 psi (2.1 bar) bypass valve.			
	Series	Part No.				
To 100 psi (7 bar)	Z- Media®	16 & 39QZ1	16QZ1	39QZ1		
		16 & 39QZ3	16QZ3	39QZ3		
		16 & 39QZ5	16QZ5	39QZ5		
		16 & 39QZ10	16QZ10	39QZ10		
		16 & 39QZ25	16QZ25 & 39QZ25			
		16 & 39QPMLZ1	16QPMLZ1	39QPMLZ1		
		16 & 39QPMLZ3	16QPMLZ3	39QPMLZ3		
		16 & 39QPMLZ5	16QPMLZ5	39QPMLZ5		
		16 & 39QPMLZ10	16QPMLZ10	39QPMLZ10		
		16 & 39QPMLZ25	16QPMLZ25	39QPMLZ25		
Flow	gpm	0	150	200	300	450
	(L/min)	0	500	1000	1500	1700

Element Selection Based on Flow Rate

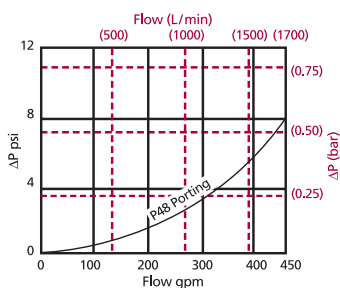
LF1-2"
MLF1
RLD
GRTB
MTA
MTB
ZT

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_{housing}

QT ΔP_{housing} 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 200 gpm (757 L/min) for QT39QZ3VP48D5C using 200 SUS (44 cSt) fluid.

Solution:

$$\begin{aligned} \Delta P_{\text{housing}} &= 1.5 \text{ psi [}.10 \text{ bar]} \\ \Delta P_{\text{element}} &= 200 \times .04 \times (200 \div 150) = 10.7 \text{ psi} \\ &\text{or} \\ &= [757 \times (.04 \div 54.9) \times (44 \div 32) = .76 \text{ bar]} \\ \Delta P_{\text{total}} &= 1.5 + 10.7 = 12.2 \text{ psi} \\ &\text{or} \\ &= [.10 + .76 = .86 \text{ bar}] \end{aligned}$$

ΔP_{element}

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

El. ΔP factors @ 150 SUS (32 cSt):

16QZ1	.09	39QZ1	.03
16QZ3/ 16QAS3V	.04	39QZ3/ 39QAS3V	.02
16QZ5/ 16QAS5V	.04	39QZ5/ 39QAS5V	.02
16QZ10/ 16QAS10V	.03	39QZ10/ 39QAS10V	.01
16QZ25	.01	39QZ25	.01
16QPMLZ1	.08	39QPMLZ1	.03
16QPMLZ3/ 16QPMLAS3V	.05	39QPMLZ3/ 39QPMLAS3V	.02
16QPMLZ5/ 16QPMLAS5V	.05	39QPMLZ5/ 39QPMLAS5V	.02
16QPMLZ10/ 16QPMLAS10V	.04	39QPMLZ10/ 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

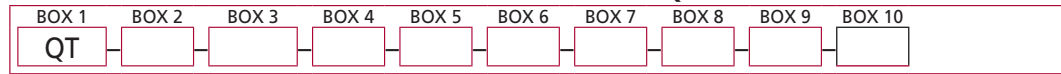
RTI
LRT
ART
BFT
QT
KTK
LTK
MRT

Accessories for Tank-Mounted Filters

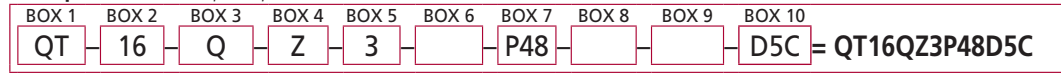
PAF1
MAF1
MF2

Filter Model Number Selection

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



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	Media Type	Micron Rating	Housing Seal Material
QT	16 39	Q QCLQF QPML	Z = Excellerent® Z-Media® (synthetic) W = W media (water removal) AS = Anti-Stat Pleat media (synthetic)	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®	Omit = Buna N H = EPR V = Viton®

BOX 7
Inlet Porting
P48 = 3" NPTF P64 = 4" NPTF

BOX 8
Bypass Setting
Omit = 30 psi cracking 15 = 15 psi cracking 50 = 50 psi cracking X = Blocked bypass

BOX 9
Outlet Porting
Omit = 3" NPT Male C = Check valve D = Diffuser CD = Check valve and diffuser

BOX 10	
Dirt Alarm® Options	
Omit = None	
Visual	D5C = Visual pop-up in cap
Visual with Thermal Lockout	D8C = Visual w/ thermal lockout in cap
Electrical	MS5C = Electrical w/ 12 in. 18 gauge 4-conductor cable in cap MS5LCC = Low current MS5 in cap MS10C = Electrical w/ DIN connector (male end only) in cap MS10LCC = Low current MS10 in cap MS11C = Electrical w/ 12 ft. 4-conductor wire in cap MS12C = Electrical w/ 5 pin Brad Harrison connector (male end only) in cap MS12LCC = Low current MS12 in cap MS16C = Electrical w/ weather-packed sealed connector in cap MS16LCC = Low current MS16 in cap MS17LCC = Electrical w/ 4 pin Brad Harrison male connector in cap
Electrical with Thermal Lockout	MS5T = MS5 (see above) w/ thermal lockout in cap MS5LCT = Low current MS5T in cap MS10TC = MS10 (see above) w/ thermal lockout in cap MS10LCTC = Low current MS10T in cap MS12TC = MS12 (see above) w/ thermal lockout MS12LCTC = Low current MS12T in cap MS16TC = MS16 (see above) w/ thermal lockout in cap MS16LCTC = Low current MS16T in cap MS17LCTC = Low current MS17T in cap
Electrical Visual	MS13C = Supplied w/ threaded connector & light in cap MS14C = Supplied w/ 5 pin Brad Harrison connector & light (male end) in cap
Electrical Visual with Thermal Lockout	MS13DCTC = MS13 (see above), direct current, w/ thermal lockout in cap MS13DCLCTC = Low current MS13DCT in cap MS14DCTC = MS14 (see above), direct current, w/ thermal lockout in cap MS14DCLCTC = Low current MS14DCT in cap

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. QCLQF element are not available in ASP media.
- Box 4. E media elements are also available for the QT filter housing. Contact factory for more information.
- Box 4. For Option W, Box 3 must equal Q.
- Box 6. Viton® is a registered trademark of DuPont Dow Elastomers. All elements for this filter are supplied with Viton® seals. Seal designation in Box 6 applies to housing only.