

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

Model No. of filter in photograph is QT39QZ10P48.

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 & Cap:	Ductile Iron
Element Case:	Steel
Min. Weight of QT-16Q:	160.0 lbs. (72 kg)
Min. Weight of QT-39Q:	215.0 lbs. (97 kg)
Element Change Clearance:	16Q 12.0" (305 mm) 39Q 33.8" (859 mm)

Filter Housing Specifications

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

Accessories For Tank-Mounted Filters

IRF

TF1

KF3

KL3

LF1

MLF1

RLD

GRTB

MTA

MTB

ZT

AFT

KFT

RT

RTI

LRT

ART

BRT

TRT

BFT

QT

KTK

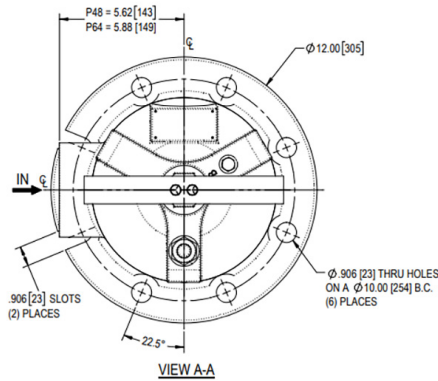
LTK

MRT

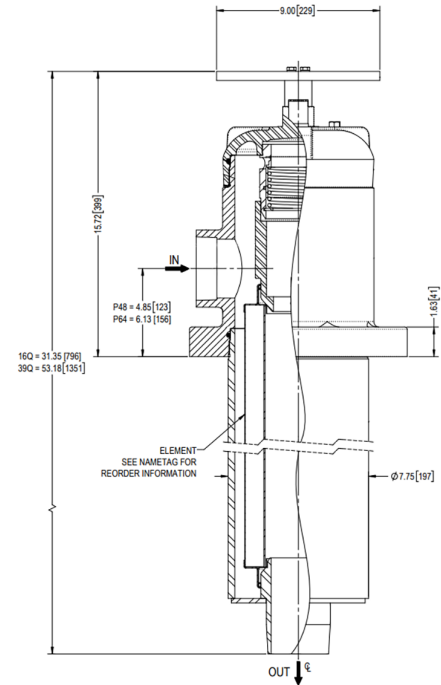
PAF1

MAF1

MF2



*Outlet port is always 3".
Metric dimensions in [].



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	
		$\beta_1 \geq 75$	$\beta_1 \geq 100$	$\beta_1 \geq 200$	$\beta_1(c) \geq 200$	$\beta_1(c) \geq 1000$
16Q	Z1/PMLZ1	<1.0	<1.0	<1.0	<4.0	4.2
	Z3/PMLZ3	<1.0	<1.0	<2.0	<4.0	4.8
	Z5/PMLZ5	2.5	3.0	4.0	4.8	6.3
	Z10/PMLZ10	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	<1.0	<1.0	<2.0	<4.0	4.8
	Z5/PMLZ5	2.5	3.0	4.0	4.8	6.3
	Z10/PMLZ10	7.4	8.2	10.0	8.0	10.0
	Z25/PMLZ25	18.0	20.0	22.5	19.0	24.0

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

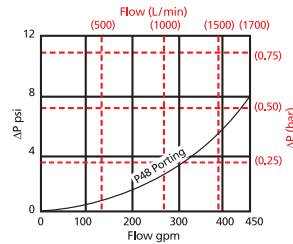
Element Collapse Rating: Q and QPML: 150 psid (10 bar)

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

$\Delta P_{\text{housing}}$

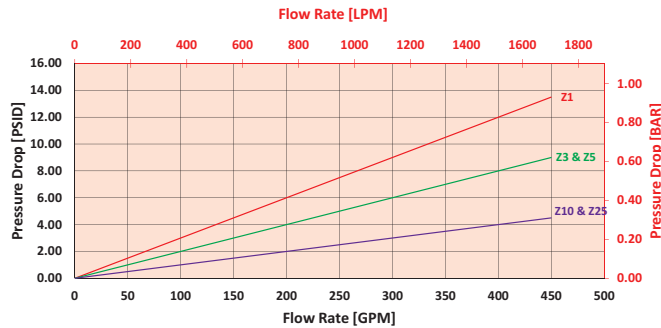
QT $\Delta P_{\text{housing}}$ for fluids with sp gr (specific gravity) = 0.86:



$\Delta P_{\text{element}}$

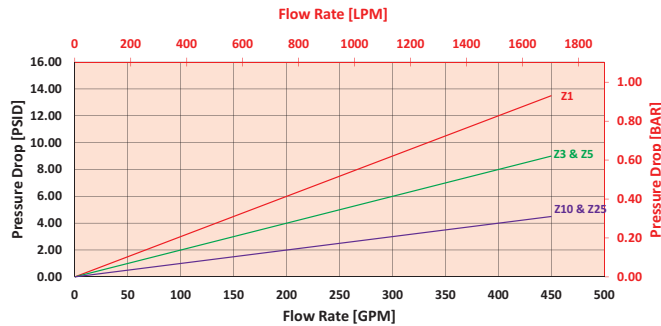
39QZ

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



39QPMLZ

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



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

Exercise:

Determine ΔP_{filter} at 200 gpm (758 L/min) for QT16QZ3P48D5C using 160 SUS (34 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{\text{housing}}$ at 200 gpm. In this case, $\Delta P_{\text{housing}}$ is 2 psi (.14 bar) on the graph for the QT housing.

Use the element pressure curve to determine $\Delta P_{\text{element}}$ at 200 gpm. In this case, $\Delta P_{\text{element}}$ is 8 psi (.55 bar) according to the graph for the 16QZ3 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 $\Delta P_{\text{housing}}$ with the true element pressure differential, $(\Delta P_{\text{element}} * V_f)$. The $\Delta P_{\text{element}}$ from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

Solution:

$$\Delta P_{\text{housing}} = 2 \text{ psi } [.14 \text{ bar}] \mid \Delta P_{\text{element}} = 8 \text{ psi } [.55 \text{ bar}]$$

$$V_f = 160 \text{ SUS (34 cSt)} / 150 \text{ SUS (32 cSt)} = 1.1$$

$$\Delta P_{\text{filter}} = 2 \text{ psi} + (8 \text{ psi} * 1.1) = 10.8 \text{ psi}$$

OR

$$\Delta P_{\text{filter}} = .14 \text{ bar} + (.55 \text{ bar} * 1.1) = .75 \text{ bar}$$

Pressure Drop Information
Based on Flow Rate and Viscosity

Note:

If your element is not graphed, use the following equation:
 $\Delta P_{\text{element}} = \text{Flow Rate} \times \Delta P_f$ Plug this variable into the overall pressure drop equation.

Ele.	ΔP	Ele.	ΔP
16QAS3V	0.04	16QPMLZ1	0.08
16QAS5V	0.04	16QPMLZ3	0.05
16QAS10V	0.03	16QPMLZ5	0.05
16QPMLAS3V	0.05	16QPMLZ10	0.04
16QPMLAS5V	0.05	16QPMLZ25	0.02
16QPMLAS10V	0.04	39QAS3V	0.01
16QZ1	0.09	39QAS5V	0.01
16QZ3	0.04	39QAS10V	0.01
16QZ5	0.04	39QPMLAS3V	0.02
16QZ10	0.03	39QPMLAS5V	0.02
16QZ25	0.01	39QPMLAS10V	0.01

Filter
Model
Number
Selection

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

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	BOX 10
QT									

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
QT	16	Q	Z	3		P48			D5C

= QT16QZ3P48D5C

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 = Excellement® Z-Media® (synthetic) W = W media (water removal) AS = Anti-Static 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 = EPDM V = Viton®

BOX 7	BOX 10
Inlet Porting	Dirt Alarm® Options
P48 = 3" NPTF P64 = 4" NPTF	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.