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

Model No. of filter in photograph is QT39QZ10P48D5C.

450 gpm
1700 L/min
100 psi
7 bar

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Applications

AUTOMOTIVE MANUFACTURING

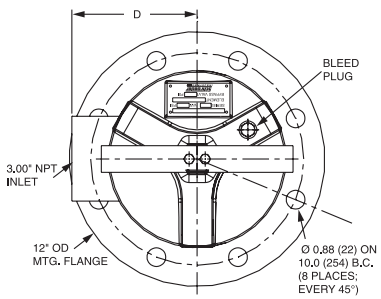
MACHINE TOOL

MINING TECHNOLOGY

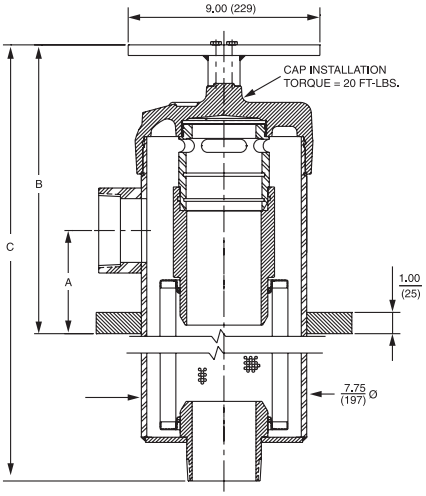
Filter Housing Specifications

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: Element Case:	Steel Steel
Min. Weight of QT-16Q: Min. Weight of QT-39Q:	100.0 lbs. (46 kg) 158.0 lbs. (72 kg)
Element Change Clearance:	16Q 12.0" (305 mm) 39Q 33.8" (859 mm)

QT Tank-Mounted Filter



TOP VIEW



SECTION A-A

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)
4"	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

Fluid Compatibility

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)

Element Selection
Based on Flow Rate

Pressure	Element Series	Element Part No.	Element selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid and a 30 psi (2.1 bar) bypass valve.
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	0 150 200 300 400 450
		(L/min)	0 500 1000 1500 1700

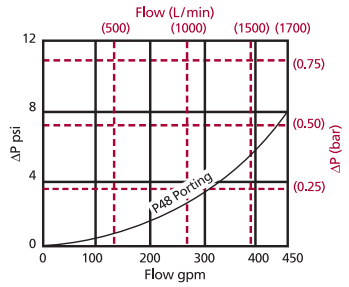
Shown above are the elements most commonly used in this housing.

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.*

Pressure Drop Information
Based on Flow Rate and Viscosity

$\Delta P_{housing}$

QT $\Delta P_{housing}$ 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.

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

Exercise:

Determine ΔP at 200 gpm (757 L/min) for QT39QZ3VP48D5C using 200 SUS (44 cSt) fluid.

Solution:

$\Delta P_{housing}$ = 1.5 psi [.10 bar]

$\Delta P_{element}$ = 200 x .04 x (200÷150) = 10.7 psi
or
= [757 x (.04÷54.9) x (44÷32) = .76 bar]

ΔP_{total} = 1.5 + 10.7 = 12.2 psi
or
= [.10 + .76 = .86 bar]

$\Delta P_{element}$

$\Delta P_{element}$ = flow x element ΔP factor x 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/ 36QPMLAS10V**	.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).

QT Tank-Mounted Filter

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 — Filter Series

QT

BOX 2 — Element Length (in)

16
39

BOX 3 — Element Style

Q
QCLQF
QPML

BOX 4 — Media Type

Z = Excellement® Z-Media® (synthetic)
W = W media (water removal)
AS = Anti-Stat Pleat media (synthetic)

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 — 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.