In-Line Filter QFD2

Features and Benefits

- Duplex filter design
- 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
- Integral inlet and outlet test points are standard on all models
- Various Dirt Alarm® options
- Also available in 4, 6 or 8 housing modular designs

Model No. of filter in photograph is QFD216QZ10FA48.

300 gpm
1135 L/min
200 psi
14 bar

Applications


INDUSTRIAL


AUTOMOTIVE MANUFACTURING


STEEL MAKING

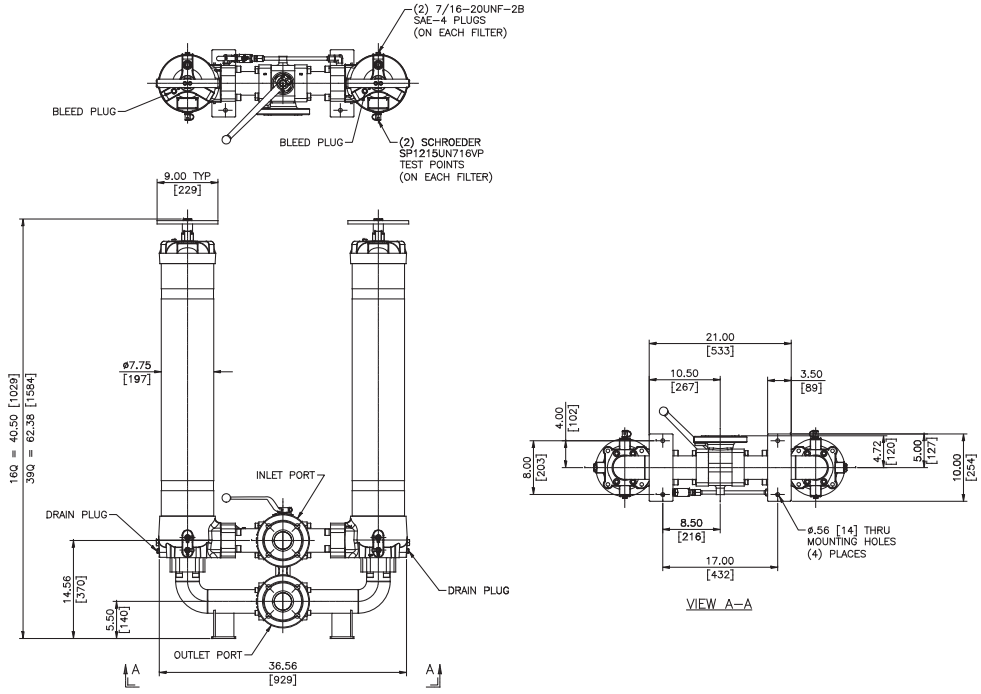

POWER GENERATION


PULP & PAPER

Filter Housing Specifications

Flow Rating:	Up to 300 gpm (1135 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	200 psi (14 bar)
Min. Yield Pressure:	600 psi (41 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	Contact Factory
Temp. Range:	-15°F to 200°F (-26°C to 93°C)
Bypass Setting:	Cracking: 30 psi (2.1 bar) Full Flow: 38 psi (2.6 bar)
Porting Base & Cap:	Ductile Iron
Element Case & Transfer Valve:	Steel
Weight of QFD2-16Q:	375 lbs. (170 kg)
Weight of QFD2-39Q:	500 lbs. (227 kg)
Element Change Clearance:	16Q 12.00" (305 mm) 39Q 33.80" (859 mm)

QFD2 In-Line Filter



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/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

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
Petroleum Based Fluids	All Z-Media® and ASP media (synthetic)
High Water Content	All Z-Media® and ASP media (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® (synthetic), 10 µ ASP media (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® (synthetic) and all ASP media (synthetic)

Element Selection
Based on Flow Rate

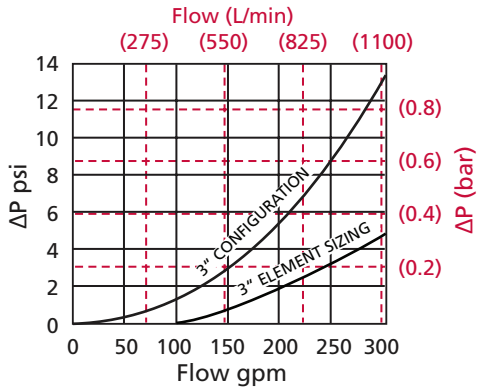
Pressure	Series	Element Part No.	Element selections are predicated on the use of 150 SUS (32 cSt) petroleum based fluid and 3" flange porting with a 30 psi (2.1 bar) bypass.
To 200 psi (14 bar)	Z-Media®	16 & 39QZ1	16QZ1 / 39QZ1
		16 & 39QZ3	16QZ3 / 39QZ3
		16 & 39QZ5	16QZ5 / 39QZ5
		16 & 39QZ10	16QZ10 / 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
	Flow	gpm	0 — 200 — 300
		(L/min)	0 — 500 — 1000

Shown above are the elements most commonly used in this housing.
Note: *For more information, refer to Fluid compatibility: Fire Resistant Fluids, Pages 19 and 20*

Pressure Drop Information
Based on Flow Rate and Viscosity

$\Delta P_{housing}$

QFD2 $\Delta P_{housing}$ 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.

$\Delta P_{element}$

$\Delta P_{element}$ = 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).

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

Exercise:
Determine ΔP at 150 gpm (570 L/min) for QFD216QZ3FA48D5C using 200 SUS (44 cSt) fluid.

Solution:

$\Delta P_{housing}$ = 2.5 psi [.17 bar]

$\Delta P_{element}$ = 150 x .04 x (200÷150) = 8.0 psi
or
= [570 x (.04÷54.9) x (44÷32) = .57 bar]

ΔP_{total} = 2.5 + 8.0 = 10.5 psi
or
= [.17 + .57 = .74 bar]

Notes

QFD2 In-Line Filter

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder QFD2:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9
QFD2								

Example: *NOTE: One option per box*

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	BOX 8	BOX 9	
QFD2	16	Q	Z	3		FA48		D5C	= QFD216QZ3FA48D5C

BOX 1 – Filter Series

QFD2

BOX 2 – Element Length (in)

16
39

BOX 3 – Element Style

Q
QCLQF
QPML

BOX 4 – Media Type

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

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

BOX 7 – Porting

FA48 = 3" ANSI 150# flange

BOX 8 – Bypass Setting

Omit = 30 psi cracking
50 = 50 psi cracking

BOX 9 – Dirt Alarm® Options

	Omit = None
Visual	DPG = Standard differential pressure gauge D5 = Visual pop-up D5C = D5 in cap
Visual with Thermal Lockout	D8 = Visual w/ thermal lockout D8C = D8 in cap
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. QCLQF are 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 6 applies to housing only.

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