Top-Ported Pressure Filter CTF60

Model No. of filter in photograph is CTF608CTZ10F20D9.

Features and Benefits

- Top-ported high pressure filter
- High cyclic fatigue performance (6000 psi)
- Available with non-bypass option with high collapse element
- Offered in pipe, SAE straight thread, flange and ISO 228 porting
- Thread on bowl with optional drain plug for easy element service

75 gpm
284 L/min
6000 psi
415 bar

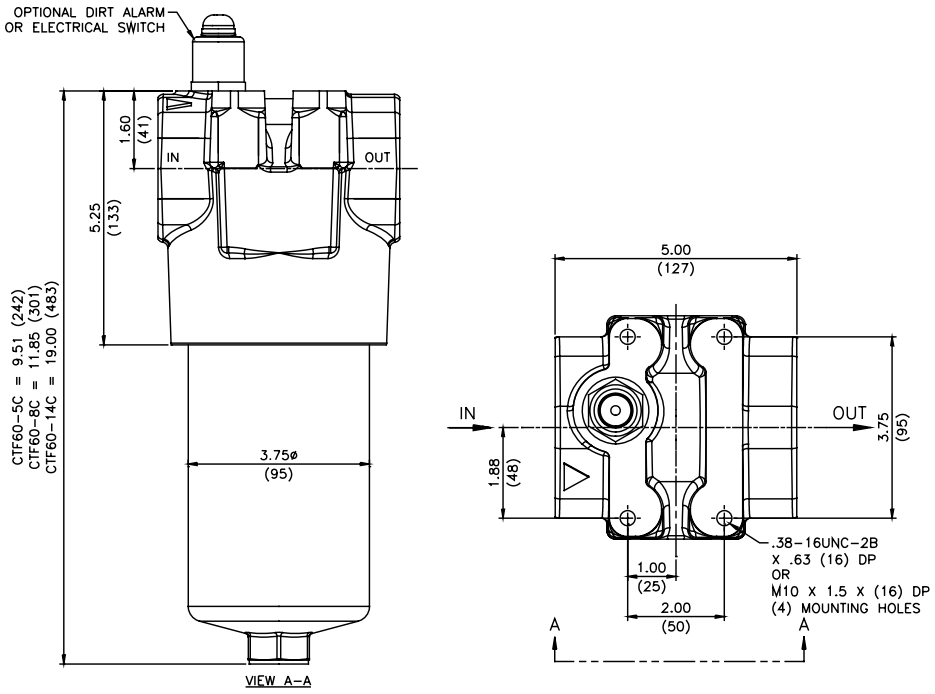
Filter Housing Specifications

Flow Rating:	Up to 75 gpm (284 L/min) for 150 SUS (32 cSt) fluids
Max. Operating Pressure:	6000 psi (415 bar)
Min. Yield Pressure:	18,000 psi (1241 bar), per NFPA T2.6.1
Rated Fatigue Pressure:	6000 psi (415 bar), per NFPA T2.6.1-R1-2005 (only with F20 4-bolt flange porting)
Temp. Range:	-20°F to 225°F (-29°C to 107°C)
Bypass Setting:	Cracking: 50 psi (3.4 bar) Full Flow: 83 psi (5.7 bar) Non-bypassing model has a blocked bypass.
Porting Head: Element Case:	Ductile Iron Steel
Weight of CTF60-5CT: CTF60-8CT: CTF60-14CT:	25 lbs. (11.4 kg) 29 lbs. (13.2 kg) 38 lbs. (17.3 kg)
Element Change Clearance:	4.0" (103 mm)

Fluid Compatibility

Type Fluid	Appropriate Schroeder Media
High Water Content	All Z-Media® (synthetic)
Invert Emulsions	10 and 25 µ Z-Media® (synthetic)
Water Glycols	3, 5, 10 and 25 µ Z-Media® (synthetic)
Phosphate Esters	All Z-Media® (synthetic) with H (EPR) seal designation

CTF60 Top-Ported Pressure Filter



Metric dimensions in ( ).
Dimensions shown are inches (millimeters) for general information and overall envelope size only.
For complete dimensions please contact Schroeder Industries to request a certified print.

Element Performance Information & Dirt Holding Capacity

	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	
Element	$\beta_x \geq 75$	$\beta_x \geq 100$	$\beta_x \geq 200$	$\beta_{x(c)} \geq 200$	$\beta_{x(c)} \geq 1000$
CTZ1/CTZX1	<1.0	<1.0	<1.0	<4.0	4.2
CTZ3/CTZX3	<1.0	<1.0	<2.0	<4.0	4.8
CTZ5/CTZX5	2.5	3.0	4.0	4.8	6.3
CTZ10/CTZX10	7.4	8.2	10.0	8.0	10.0
CTZ25/CTZX25	18.0	20.0	22.5	19.0	24.0

Element	DHC (gm)	Element	DHC (gm)	Element	DHC (gm)
5CTZ1	19	8CTZ1	31	14CTZ1	66
5CTZ3	16	8CTZ3	27	14CTZ3	57
5CTZ5	18	8CTZ5	30	14CTZ5	64
5CTZ10	21	8CTZ10	34	14CTZ10	72
5CTZ25	17	8CTZ25	28	14CTZ25	60
5CTZX1	14	8CTZX1	24	14CTZX1	53
5CTZX3	11	8CTZX3	18	14CTZX3	41
5CTZX5	10	8CTZX5	17	14CTZX5	38
5CTZX10	12	8CTZX10	20	14CTZX10	44
5CTZX25	11	8CTZX25	18	14CTZX25	39

Element Collapse Rating: 150 psid (10 bar) for standard elements
3000 psid (210 bar) for high collapse (ZX) versions

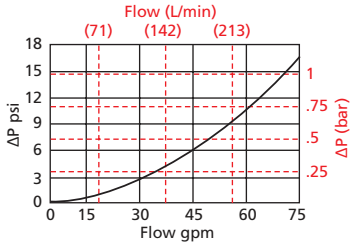
Flow Direction: Outside In

Element Nominal Dimensions:
5CT : 2.64" (67 mm) O.D. x 4.88" (124 mm) long
8CT : 2.64" (67 mm) O.D. x 7.25" (184 mm) long
14CT : 2.64" (67 mm) O.D. x 14.38" (365 mm) long

Pressure Drop Information
Based on Flow Rate and Viscosity

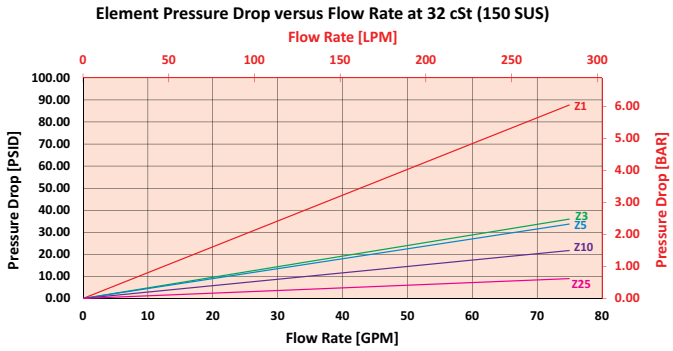
$\Delta P_{housing}$

CTF60 $\Delta P_{housing}$ for fluids with sp gr (specific gravity) = 0.86:

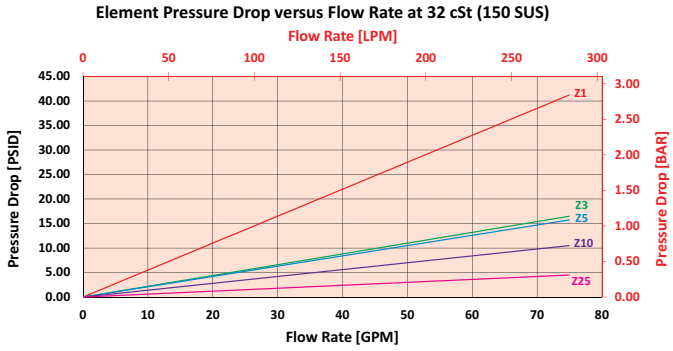


$\Delta P_{element}$

8CTZ



14CTZ



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

Exercise:

Determine ΔP_{filter} at 50 gpm (189 L/min) for CTF608CTZ5S20D9 using 200 SUS (42.6 cSt) fluid.

Use the housing pressure curve to determine $\Delta P_{housing}$ at 50 gpm. In this case, $\Delta P_{housing}$ is 7 psi (.48 bar) on the graph for the CTF60 housing.

Use the element pressure curve to determine $\Delta P_{element}$ at 50 gpm. In this case, $\Delta P_{element}$ is 22 psi (1.5 bar) according to the graph for the 8CTZ5 element.

Because the viscosity in this sample is 200 SUS (42.6 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 $\Delta P_{housing}$ with the true element pressure differential, ($\Delta P_{element} * V_f$). The $\Delta P_{element}$ from the graph has to be multiplied by the viscosity factor to get the true pressure differential across the element.

Solution:

$\Delta P_{housing}$ = 7 psi [.48 bar] | $\Delta P_{element}$ = 22 psi [1.5 bar]

V_f = 200 SUS (42.6 cSt) / 150 SUS (32 cSt) = 1.3

ΔP_{filter} = 7 psi + (22 psi * 1.3) = 35.6 psi

OR

ΔP_{filter} = .48 bar + (1.5 bar * 1.3) = 2.4 bar

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

Ele.	ΔP	Ele.	ΔP	Ele.	ΔP
5CTZ1	1.87	5CTZX1	1.64	8CTZX1	1.00
5CTZ3	0.77	5CTZX3	0.96	8CTZX3	0.59
5CTZ5	0.72	5CTZX5	0.68	8CTZX5	0.41
5CTZ10	0.46	5CTZX10	0.46	8CTZX10	0.28
5CTZ25	0.19	5CTZX25	0.25	8CTZX25	0.15
14CTZX1	0.46	14CTZX3	0.27	14CTZX5	0.19
14CTZX10	0.13	14CTZX25	0.07		

CTF60 Top-Ported Pressure Filter

Filter Model Number Selection

How to Build a Valid Model Number for a Schroeder CTF60:

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7
CTF60 –		–		–		–

BOX 1	BOX 2	BOX 3	BOX 4	BOX 5	BOX 6	BOX 7	
CTF60 –	8	– CTZ5		– S20		– D9	= CTF608CTZ5S20D9

BOX 1 – Filter Series

CTF60
CTFN60 (Non-bypassing: requires ZX high collapse elements)

BOX 2 – Element Length (in.)

5
8
14

BOX 3 – Element Part Number

CTZ1	= 1 µ Excellement® Z-Media® (synthetic)
CTZ3	= 3 µ Excellement® Z-Media® (synthetic)
CTZ5	= 5 µ Excellement® Z-Media® (synthetic)
CTZ10	= 10 µ Excellement® Z-Media® (synthetic)
CTZ25	= 25 µ Excellement® Z-Media® (synthetic)
CTZX1	= 1 µ Excellement® Z-Media® (high collapse center tube)
CTZX3	= 3 µ Excellement® Z-Media® (high collapse center tube)
CTZX5	= 5 µ Excellement® Z-Media® (high collapse center tube)
CTZX10	= 10 µ Excellement® Z-Media® (high collapse center tube)
CTZX25	= 25 µ Excellement® Z-Media® (high collapse center tube)

BOX 4 – Seal Material

Omit	= Buna N
V	= Viton®
H	= EPR

BOX 5 – Inlet Port

P20	= 1¼" NPTF
S20	= SAE-20
F20	= 1¼" SAE 4-bolt flange Code 62
B20	= ISO 228 G-1¼"

BOX 6 – Options

Omit	= None
UU	= Series 1215 7/16" UNF Schroeder Check Test Points installed in the filter head (upstream & downstream)
DR	= Drain on bowl
30	= 30 psi bypass setting
40	= 40 psi bypass setting

BOX 7 – Dirt Alarm® Options

	Omit =	None
Visual	D9 =	Visual pop-up
Electrical	MS5SS =	Electrical w/ 12 in. 18 gauge 4-conductor cable
	MS5SSLC =	Low current MS5
	MS10SS =	Electrical w/ DIN connector (male end only)
	MS10SSLC =	Low current MS10
	MS11SS =	Electrical w/ 12 ft. 4-conductor wire
	MS12SS=	Electrical w/ 5 pin Brad Harrison connector (male end only)
	MS12SSLC =	Low current MS12
	MS16SS =	Electrical w/ weather-packed sealed connector
	MS16SSLC =	Low current MS16
	MS17SSLC =	Electrical w/ 4 pin Brad Harrison male connector
Electrical with Thermal Lockout	MS5SST =	MS5 (see above) w/ thermal lockout
	MS5SSLCT =	Low current MS5T
	MS10SST =	MS10 (see above) w/ thermal lockout
	MS10SSLCT =	Low current MS10T
	MS12SST =	MS12 (see above) w/ thermal lockout
	MS12SSLCT =	Low current MS12T
	MS16SST =	MS16 (see above) w/ thermal lockout
	MS16SSLCT =	Low current MS16T
	MS17SSLCT =	Low current MS17T
Electrical Visual	MS13DC =	Supplied w/ threaded connector & light
	MS14DC =	Supplied w/ 5 pin Brad Harrison connector & light (male end)
Electrical Visual with Thermal Lockout	MS13SSDCT =	MS13 (see above), direct current, w/ thermal lockout
	MS13SSDCLCT =	Low current MS13DCT
	MS14SSDCT =	MS14 (see above), direct current, w/ thermal lockout
	MS14SSDCLCT =	Low current MS14DCT

NOTES:

Box 2. Replacement element part numbers are identical to contents of Boxes 2, 3 and 4.

Box 4. Viton® is a registered trademark of DuPont Dow Elastomers.

Box 5. B porting option supplied with metric mounting holes.

Box 7. All Dirt Alarm® Indicators must be Stainless Steel. Standard indicator setting is 50 psi. For replacement indicators, contact the factory.