



In-Line Bulk Fuel Coalescing Filter

*Coalescing Elements Patent-Pending

16 gpm
60 L/min

150 psi
10 bar

Applications



POINT OF USE FUEL DISPENSING



FLEET FILL / BULK FUEL TRANSFER



BULK FUEL UNLOADING



PROTECTION FOR HIGH-FLOW FUEL INJECTION SYSTEMS



BULK TANK KIDNEY LOOP / RECIRCULATION

Features and Benefits

- Patent-pending, three-phase, particulate and fuel/water separation media technology
- A revolutionary element designed for the highest single-pass water and particulate removal efficiencies in today's ultra-low sulfur diesel (ULSD) fluids
- Protects expensive Tier III and Tier IV engine components against failures caused by particulate and water transferred from bulk fuel tanks to the vehicle
- Allows users to achieve or exceed the particulate and water removal specifications of the injection system OEMs
- Previously acceptable industry standard products no longer provide the high-efficiency separation needed in today's ULSD fluids
- Housing design allows for field upgrade of any available option
- Schroeder Anti-Static Pleat® Media (ASP) is standard for all coalescing elements
- Pressure bypass indicator setting at 36 psi, with bypass valve cracking at 40 psi, allows for early indication before bypass of filter for advanced maintenance notice
- In applications >32°F (0°C) complete automation is achievable with fail-safe auto-drain feature using a remote 5 gallon (18L) or 20 gallon (75L) sump with alarm and auto shutdown
- Now available as a UL Certified, marine specific, fuel filter (ICFM)



Model no. of filter in photograph is: ICFV516LEP



Model no. of filter in photograph is: ICFM

Markets



INDUSTRIAL



MOBILE VEHICLES



MARINE



MINING TECHNOLOGY



AGRICULTURE



POWER GENERATION



COMMON RAIL INJECTOR SYSTEMS



FLEET



RAILROAD



BULK FUEL FILTRATION

In-Line Bulk Fuel Coalescing Filter

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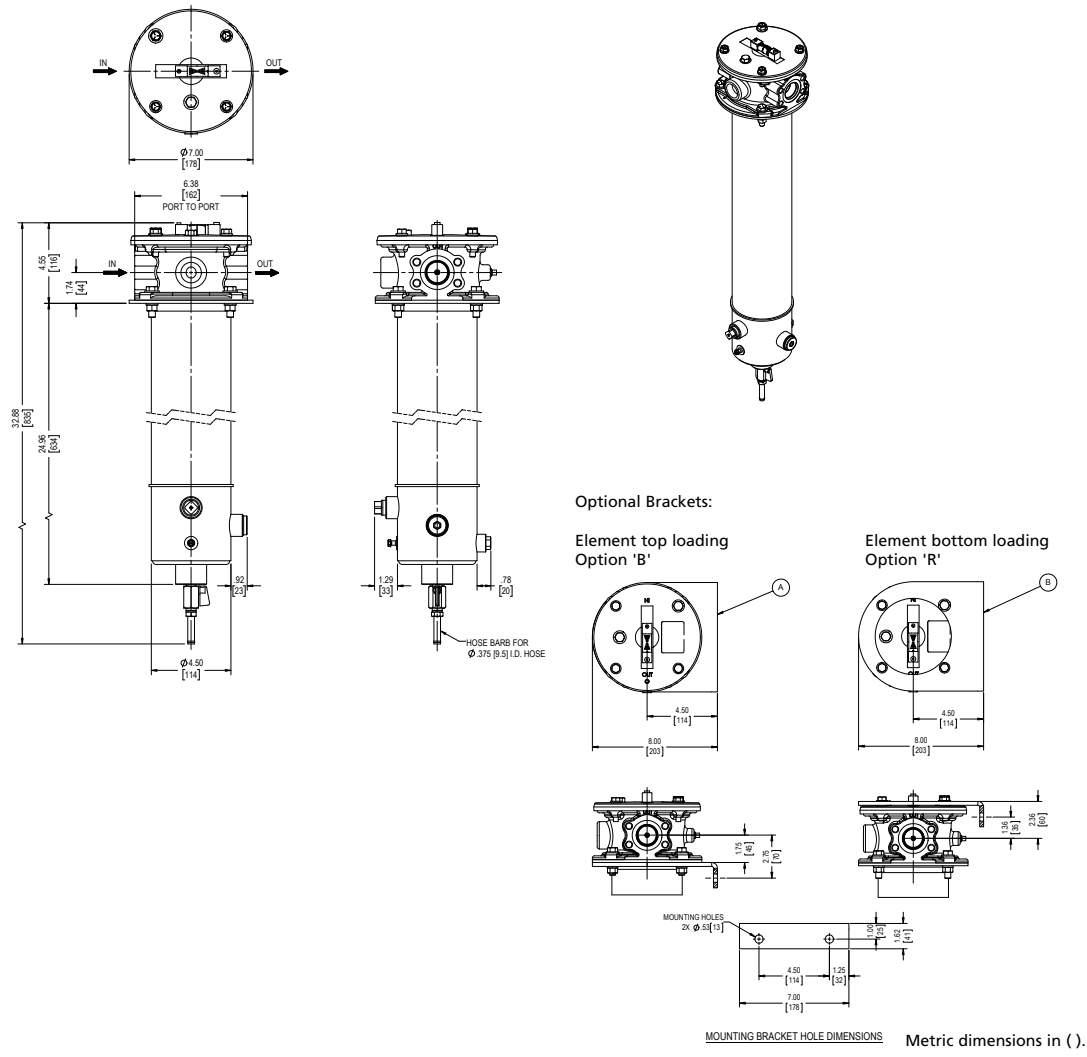
Flow Rating:	Up to 16 gpm (60 L/min) for ULSD15
Inlet/Outlet Connection:	1 1/2" NPTF Standard, -16 (ORB) SAE J1926 Optional
Max. Operating Pressure:	150 psi (10 bar)
Min. Yield Pressure:	450 psi (31 bar)
Rated Fatigue Pressure:	90 psi (6 bar), per NFPA T2.6.1-2005
Temp. Range:	32°F to 165°F (0°C to 74°C) standard and AWD option -20°F to 165°F (-29°C to 74°C) H option
Bypass Indication:	36 psi (2.5 bar) (Lower indication options available)
Bypass Valve Cracking:	40 psi (2.8 bar)
Porting Head/Cap:	Aluminum - Coating Option see Box 7
Element Bowl:	Steel - Epoxy Paint w/ High-phos Electroless Nickel Plating (Standard)
Filter Housing Weight:	15 lbs (6.8 kg) - Base unit without options or element
Element Change Clearance:	Access from top (remove cap) - 18" (457.2 mm) Access from below (remove bowl) - 2.5" (63.5 mm)
Housing Sump:	32 oz. (0.95 L)
Optional:	External water sump and non-immersion heater (power 120VAC, 235W), Sight glass, bracket, water in fuel sensor w/ or w/out remote mount light and 6' lead

*Note: For other electrical options, contact factory
Element sold separately

Filter Housing Specifications



- BDF
- B DFA
- BDA
- GHPF
- GHCF
- QCF
- BDS
- BDS2
- BDS3
- BDS4
- L VH-F
- L VH-C
- BDFC
- BDFP
- BDC
- HDP
- HDPD
- BCC





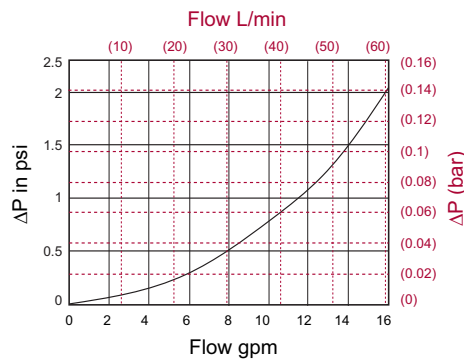
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Pressure Drop Information Based on Flow Rate and Viscosity

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

ICF $\Delta P_{\text{housing}}$ for fluids with sp gr= 0.86



sp gr = specific gravity

Notes

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

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

El. ΔP factors @ 37 SUS (3 cSt).

C184Z3V = 0.2

C184Z5V = 0.2

C184Z7VE = 0.09

If working in units of bars & L/min, divide above factor by 54.9.

Viscosity factor: Divide viscosity by 37 SUS (3 cSt).

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

Exercise: Determine ΔP at 16 gpm (60 L/min) for ICFVP24LEP

Solution:

$\Delta P_{\text{housing}} = 2.05 \text{ psi} = [0.14 \text{ bar}]$

$\Delta P_{\text{coalescing element}} = 16 \times 0.2 = 3.2 \text{ psi} [0.22 \text{ bar}]$

$\Delta P_{\text{total}} = 2.05 + 3.2 = 5.25 \text{ psi} [0.36 \text{ bar}]$

Filter Element Selection Coalescing Element Performance Information
Elements Sold Separately

Coalescing Element	Pressure Side Coalescing	
	Recommended Flow	Single Pass Water Removal Efficiency
C184Z5V	16 gpm	≥ 99.5%
C184Z3V	16 gpm	≥ 99.5%
C184Z7VE	16 gpm	Contact Factory for Element Data

Flow Direction: Inside Out

Element Nominal Dimensions: 4.0" (102 mm) O.D. x 18.5" (470 mm) long

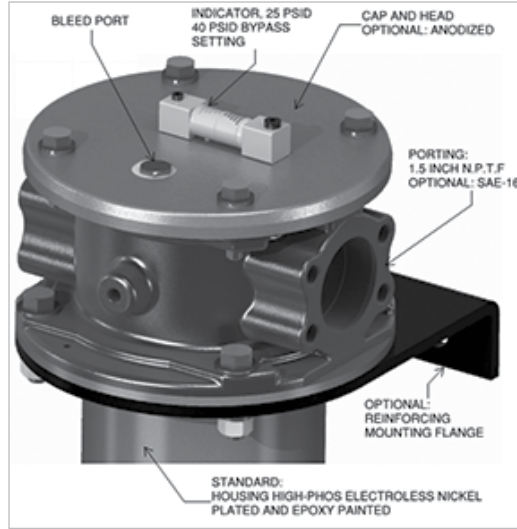
*Schroeder Anti-Static Pleat Media (ASP®) is standard

*NOTE: Efficiency based on ULSD15 with 27 Dynes/cm surface tension and 0.25% (2500 ppm) water injection. Discharge water concentration of <100 ppm free and emulsified water.

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NOTES: Water in fuel sensor (WIF) supplied w/ or w/out remote mount indicator light to show full filter housing sump
 T Option = WIF sensor only w/out filter housing sump full indication light or control panel
 I Option = WIF sensor w/ remote mount filter housing sump full indicator light and NEMA 4X control panel supplied

NOTES: Filter Sump Heater Control Panel dimension:
 6.5" W x 5.5" H x 6.5" D
 (165 W x 140 H x 165 D)
 Automatic Water Drain Control Panel dimension:
 10" W x 8" H x 12" D
 (254 W x 203.20 H x 304.80 D)
 *For use above 32°F (0°C) only
 Electrical cable length (Control Panel to ICF): 4 ft. (1.22m)
 Hose length for Automatic Water Drain feature (ICF to Tank): 6 ft. (1.83m)
 All control panels "NEMA 4X" rated

Metric dimensions in ().

NOTES: Remote Tank dimension:
 5 Gallon Tank: 22" W x 9.25" L x 7.125" H
 (558.80 W x 234.95 L x 180.97 H)
 20 Gallon Tank: 15" W x 11" L x 31" H
 (381 W x 279.40 L x 787.40 H)
 Power supply for tank high level LED light: 9 VDC (battery included) Supplied w/ 9 VDC terminal for customer wiring provided.

Metric dimensions in ().

ICF Options

Filter Cap Assembly BDF
 BDFA

BDA

GHPF

GHCF

QCF

BDS

BDS2

Available Options BDS3

BDS4

LVH-F

LVH-C

BDFC

Panel & Control for Automatic Drain with Safety Features BDFP
 BDC
 HDP
 HDPD

BCC

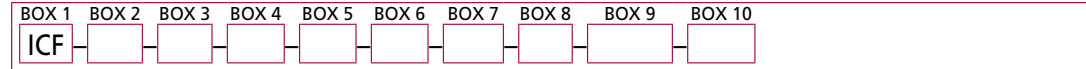
Shown w/ Automatic Sump (Manual Remote Sump is Optional but tank is the same)



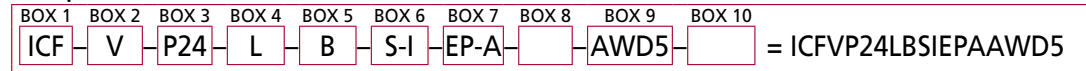
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How to Build a Valid Model Number for a Schroeder ICF without element:



Example: NOTE:



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BOX 1	BOX 2	BOX 3	BOX 4
Filter Series	Sealing Material	Porting	Coalescing Element Change Indicator
ICF	V = Viton®	P24 = 1½" NPTF (standard) S16 = -16 (ORB) SAE J1926	L = In cap bar indicator

BOX 5	BOX 6	BOX 7
Mounting Option	Filter Housing Sump Level Indicator Option	Coating Option
B = Bracket (Element top loading) R = Bracket (Element bottom loading) Omit = None	S = Sight Glass I = Water In Fuel sensor w/ remote mount light indicator and 6' lead for use in factory supplied control panel T = Water In Fuel sensor w/out remote light for use in customer supplied control panel Omit = None	EP = Epoxy paint and plating (standard) A = Anodized cap & head (optional)

BOX 8	BOX 9	BOX 10
Heating Option	Automatic Drain & Remote Sump Options	Optional Manual Drain Remote Sump
H = Filter Sump Heater Omit = None	AWD5 = Auto water drain 5 gal tank w/ failsafe (only offered for applications above 32°F (0°C) and units ordered without heater) AWD20 = Auto water drain 20 gal tank w/ failsafe (only offered for applications above 32°F (0°C) and units ordered without heater) Omit = None	S5 = 5gal sump tank S20 = 20gal sump tank Omit = None

NOTES:

- For details on how to order the UL Listed ICFM, Contact Factory
- Unless automatic drain option is specified, ICF units will come standard with manual drain
- Coalescing element sold separately and selected below
- Box 2. Viton® is a registered trademark of DuPont Dow Elastomers
- Box 6 and 7. Only two boxes that allow combination of options (S + I or EP + A)
- Box 8. Filter sump heater option only available when ordered w/out automatic water drain (AWD5 or AWD20)
- Box 9. AWD fail safe is shown on page 25 (ICF)

Element Part Number Selection

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Element Part Number	Pressure Side Coalescing	
	Max Flow	Single Pass Water Removal Efficiency
C184Z5V	16 gpm	≥ 99.5%
C184Z3V	16 gpm	≥ 99.5%
C184Z7VE	16 gpm	Contact Factory for Element Data

NOTE: Efficiency based on ULSD15 with 27 Dynes/cm surface tension and 0.25% (2500 ppm) water injection. Discharge water concentration of <100 ppm free and emulsified water.

Flow Direction: Inside Out

Element Nominal Dimensions: 4.0" (102 mm) O.D. x 18.5" (470 mm) long

*Schroeder Anti-Static Pleat Media (ASP®) is standard

Fuel Oils

- ULSD15, low sulfur diesel and high sulfur diesel
- Biodiesel blends
- Synthetic diesel and blends
- No. 2 fuel oil and heating oil

Fluid Compatibility