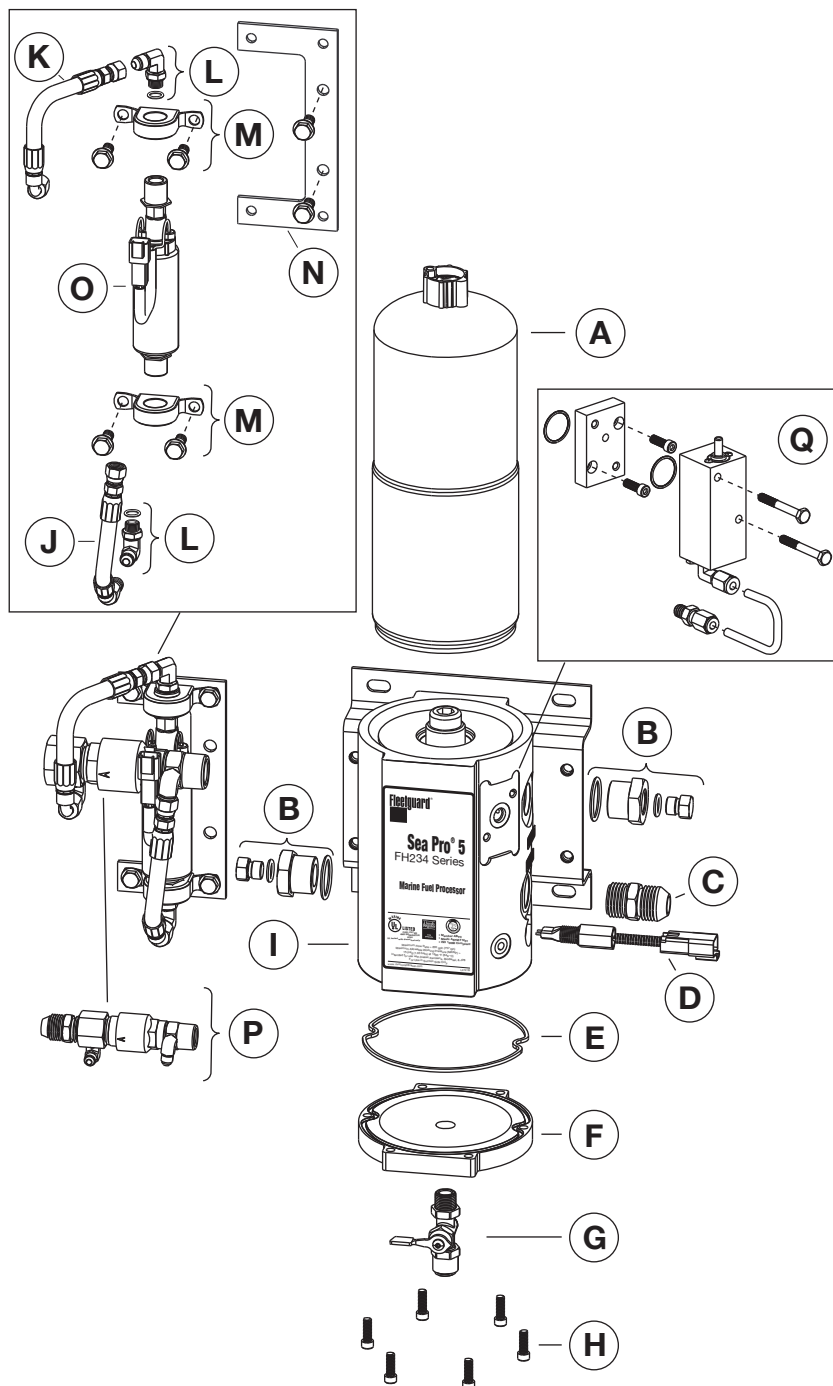




Sea Pro® 5 FH234 Series Filter/Separator Installation Instructions

Sea Pro® 5 Single



Parts List

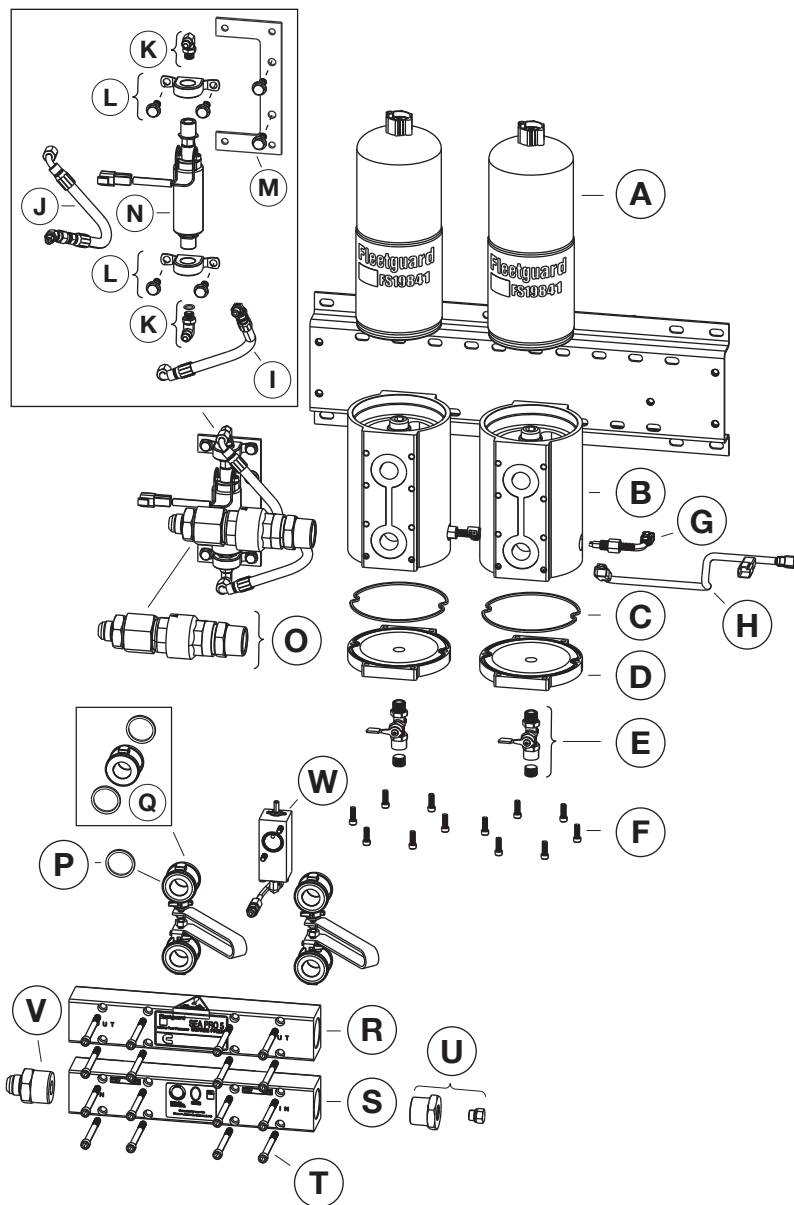
Part	Description	Fleetguard® Part Number	Cummins Part Number
A*	Spin-On Filter	FS19841	—
B	SAE 3/4" Plug with M14 Diagnostic Port and O-Ring Seal	Not Service Replaceable	
C	SAE #12 Flare Adapter (Standard SAE J514 or MIL-F-18866 Fitting)	3981119 S	4919995
D	Water-In-Fuel (WIF) Sensor	3960826 S	4919917
E	Bottom Seal	3970958 S	4919920
F	Bottom Plate	3970959 S	4919921
G	Drain Valve	3954131 S	4919916
H	Bottom Bolts (6)	3946704 S	4919915
I*	Sea Pro® 5	See page 5	
J	Lift Pump Inlet Hose	3974116 S	4919983
K	Lift Pump Outlet Hose	3974117 S	4919984
L	90° Fittings and O-Ring Seals	Not Service Replaceable	
M	Vibration Isolators	3946691 S	4919914
N	Lift Pump Bracket and Bolts	Not Service Replaceable	
O	Primer Pump	3946995 S	4919922
P	Primer Pump Fitting Set for Single Units	3961296 S	4919918
Q	Delta Pressure (DP) Gauge Kit for Single Body Units	3966456 S	4919919

* Order this part directly from Fleetguard.

Note: Remove plug from water drain valve prior to operation.

CAUTION: These instructions are intended for use by professional mechanics who are trained in the proper use of power and hand tools, using appropriate safety precautions (including eye protection).

Sea Pro® 5 Dual/Duplex



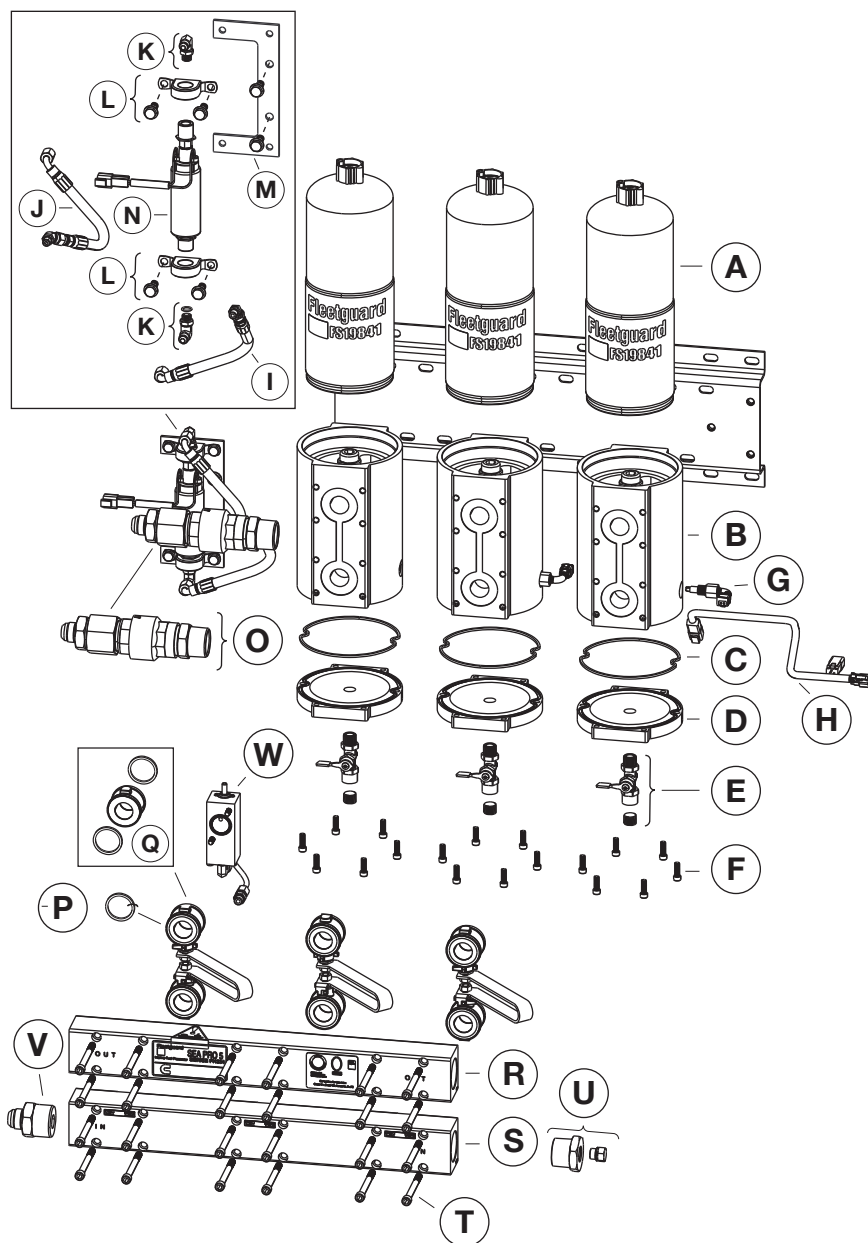
Parts List

Part	Description	Fleetguard® Part Number	Cummins Part Number
A*	Spin-On Filter	FS19841	—
B*	Sea Pro® 5	See page 5	
C	Bottom Seal	3970958 S	4919920
D	Bottom Plate	3970959 S	4919921
E	Drain Valve	3954131 S	4919916
F	Bottom Bolts (6)	3946704 S	4919915
G	Water-In-Fuel (WIF) Sensor - Dual Duplex	3960826 S 3966459 S	4919917 4919928
H	Dual Water-In-Fuel (WIF) Harness (Duplex only)	3966458 S	4919927
I	Lift Pump Inlet Hose	3974116 S	4919983
J	Lift Pump Outlet Hose	3974117 S	4919984
K	90° Fittings and O-Ring Seals	Not Service Replaceable	
L	Vibration Isolators	3946691 S	4919914
M	Lift Pump Bracket and Bolts	Not Service Replaceable	
N	Primer Pump	3946995 S	4919922
O	Primer Pump Fitting Set for Dual/Duplex/Triple/Triplex Units	3961295 S	4919925
P	Shut-Off Valve Kit (for Assemblies with Valves only): Two Valve Kit	3970753 S	4919937
Q	Manifold Spacer Seal for Assemblies without Valves	3968209 S	4919932
R	Dual/Duplex Outlet Manifold w/ Plug	3968211 S	4919934
S	Dual/Duplex Inlet Manifold w/ Plug	3968210 S	4919933
T	Manifold Capscrew (12)	3968205 S	4919930
U	SAE 3/4" Plug with M14 Diagnostic Port and O-Ring Seal	Not Service Replaceable	
V	SAE #12 Flare Adapter (Standard SAE J514 or MIL-F-18866 Fitting)	3968203 S	4919929
W	Delta Pressure (DP) Gauge Kit for Multiple Body Units	3966457 S	4919926

* Order this part directly from Fleetguard.

Note: Remove plug from water drain valve prior to operation.

Sea Pro® 5 Triple/Triplex



Parts List

Part	Description	Fleetguard® Part Number	Cummins Part Number
A*	Spin-On Filter	FS19841	—
B*	Sea Pro® 5	See page 5	—
C	Bottom Seal	3970958 S	4919920
D	Bottom Plate	3970959 S	4919921
E	Drain Valve	3954131 S	4919916
F	Bottom Bolts (6)	3946704 S	4919915
G	Water-In-Fuel (WIF) Sensor - Triple Triplex	3960826 S 3966459 S	4919917 4919928
H	Dual Water-In-Fuel (WIF) Harness (Triplex only)	3966458 S	4919927
I	Lift Pump Inlet Hose	3974116 S	4919983
J	Lift Pump Outlet Hose	3974117 S	4919984
K	90° Fittings and O-Ring Seals	Not Service Replaceable	—
L	Vibration Isolators	3946691 S	4919914
M	Lift Pump Bracket and Bolts	Not Service Replaceable	—
N	Primer Pump	3946995 S	4919922
O	Primer Pump Fitting Set for Dual/Duplex/Triple/Triplex Units	3961295 S	4919925
P	Shut-Off Valve Kit (for Assemblies with Valves only): Three Valve Kit	3968207 S	4919931
Q	Manifold Spacer Seal for Assemblies without Valves	3968209 S	4919932
R	Triple/Triplex Outlet Manifold w/ Plug	3968213 S	4919936
S	Triple/Triplex Inlet Manifold w/ Plug	3968212 S	4919935
T	Manifold Capscrew (12)	3968205 S	4919930
U	SAE 3/4" Plug with M14 Diagnostic Port and O-Ring Seal	Not Service Replaceable	—
V	SAE #12 Flare Adapter (Standard SAE J514 or MIL-F-18866 Fitting)	3968203 S	4919929
W	Delta Pressure (DP) Gauge Kit for Multiple Body Units	3966457 S	4919926

* Order this part directly from Fleetguard.

Note: Remove plug from water drain valve prior to operation.

Sea Pro® 5 Installation

⚠ WARNING: When diesel fuel is circulated through an operating engine, it can become very hot. To prevent personal injury:

⚠ Scalding hazard! Do not allow heated liquid fuel to come in contact with eyes or unprotected skin. Always allow the engine and fuel to cool to ambient temperature before replacing the fuel filter or performing service operations which could result in the spillage of fuel from the fuel system. If this is not possible, protective clothing (face shield, insulated hat, gloves, apron) must be worn.

⚠ Heated diesel fuel can form combustible vapor mixtures in the area around the fuel source. To eliminate the potential for fire, keep open flames, sparks or other potential ignition sources away from the work area, and do not smoke during filter replacement or service operations which could result in the escape of diesel fuel or fuel vapors.

⚠ Always perform engine or vessel fuel system maintenance in a well ventilated area that is kept free of bystanders.

Installation Steps

1. Mount the Sea Pro in the desired location, keeping the following points in mind:
 - a. **Mounting the Sea Pro directly on the engine is NOT RECOMMENDED.**
 - b. Mount vertically with the filter pointing up.
 - c. Make sure there is enough top and side clearance for the filter to be conveniently removed for replacement.
2. To change the side of the inlet/outlet connection:
 - a. Remove the fitting from the manifold.
 - b. Insert plug where the fitting was removed.
 - c. Apply Teflon® pipe sealant to the fitting threads and install in the manifold in the new location.
 - d. Tighten to a maximum of 40-45 ft-lb (54-61 N·m).
3. Route the fuel supply line from the outlet of the Stage 0 filtration device to the Sea Pro inlet (see Figure 1). (If no Stage 0 filtration device is present, route the fuel supply line from the outlet

of the fuel tank.) Route a fuel line from the Sea Pro 5 outlet to the fuel pump inlet.

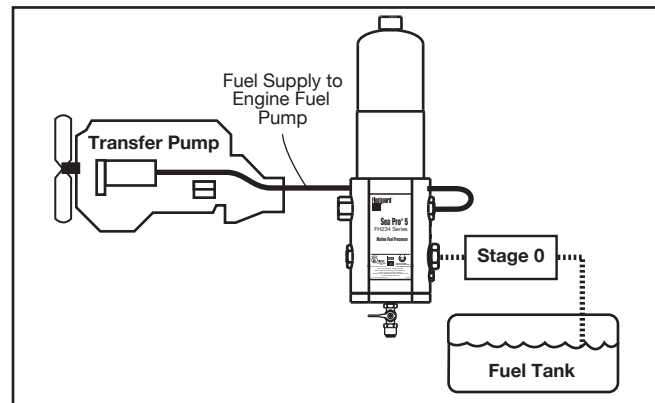


Figure 1 - Sea Pro Connections

4. Outlet check valves are included with Dual/Duplex and Triple/Triplex systems. Check valves must be used to maintain prime and prevent drainback. The outlet check valve is necessary to prime the housing properly as it prevents the priming pump from pumping back into the unit.
5. To minimize restrictions, observe the following guidelines when plumbing the system.
 - a. Keep the fuel line routing as smooth as possible with no low hanging loops which can trap water.
 - b. Use 90° elbows only when necessary.
 - c. If the fuel hoses are made up to length on the job, be sure that the inner liner of the fuel hose is not cut by the fitting, creating potential check valve effects. Also make sure hoses are clean and free of debris before installing.
6. Apply Teflon® pipe sealant to the inlet and outlet hose threads and connect the hoses to the unit. Tighten to a maximum of 50-60 ft-lb (68-81 N·m).

⚠ CAUTION: To avoid damaging the aluminum fuel housing, do not overtighten fuel lines or fuel line fittings.

7. Plug the Lift Pump and the WIF sensor electrical connectors into the on-engine harness. The connectors on the on-engine harness are labeled as shown in Figure 2.

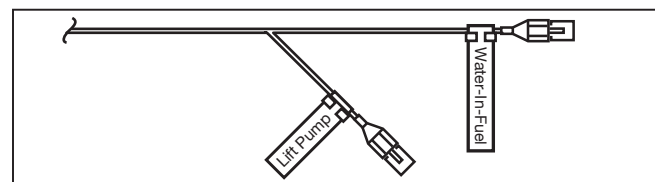


Figure 2 – Wiring Harness Connectors

Filter Change Procedure

To change the filter, refer to the correct Operation and Maintenance manual for your engine type, as shown below and use replacement filter **FS19841, Stratapore™ 7 Micron Spin-On Filter**.

Table 2 - Operation and Maintenance Manuals

Engine Family	Manual Number
QSK19 MCRS	3666120
QSK38/50 MCRS	3810497
QSK60 MCRS	3666260

Delta Pressure (DP) Gauge

The Cummins Filtration® Delta Pressure (DP) gauge measures the difference in pressure across the inlet and outlet of the fuel housing (through the filter). The indicator stem of the gauge pops up when there

is a pressure difference greater than 6-8 in Hg (20-27 kPa). When the red indicator stem is popped up, the filter is considered plugged and a filter change must be performed.

Suggested Preventive Maintenance

Daily:

1. Check DP gauge indicator.
2. Drain water from each filter housing.

Every 12 Months - Check fuel fittings for leaks.

Ordering Information

Housing Part Number	Type	Filter Element	Filter Element Type	Micron Rating ¹	Fuel Flow gal/hr (L/hr)	Primer Pump	DP ¹ Gauge	WIF	Drain	Fuel In & Fuel Out	Fuel In & Fuel Out Port Size	Fuel In & Fuel Out Port Size ² (metric)
Sea Pro® 5 (Dual & Triple - No shutoff valve • Duplex & Triplex - Includes shutoff valve)												
FH23460	Single	FS19841	Spin-On	7 ⁴	200 (757)	Yes	No	Yes	Yes	In Right/Out Left	SAE #12 (37° Flare, 1-1/16"-12)	N/A
FH23473	Single	FS19841	Spin-On	7 ³	200 (757)	Yes	Yes	Yes	Yes	In Right/Out Left	SAE #12 (37° Flare, 1-1/16"-12)	N/A
FH23461	Dual	FS19841	Spin-On	7 ⁴	400 (1514)	Yes	No	Yes	Yes	In Left/Out Left	SAE #12 (37° Flare, 1-1/16"-12)	N/A
FH23469	Dual	FS19841	Spin-On	7 ³	400 (1514)	Yes	Yes	Yes	Yes	In Left/Out Left	SAE #12 (37° Flare, 1-1/16"-12)	N/A
FH23465	Duplex	FS19841	Spin-On	7 ⁴	400 (1514)	Yes	No	Yes	Yes	In Left/Out Right	SAE #12 (37° Flare, 1-1/16"-12)	N/A
FH23472	Duplex	FS19841	Spin-On	7 ³	400 (1514)	Yes	Yes	Yes	Yes	In Left/Out Left	SAE #12 (37° Flare, 1-1/16"-12)	N/A
FH23463	Duplex	FS19841	Spin-On	7 ³	400 (1514)	No	No	Yes	Yes	In Left/Out Left	SAE #12 (37° Flare, 1-1/16"-12)	N/A
FH23462	Triplex	FS19841	Spin-On	7 ⁴	600 (2271)	Yes	No	Yes	Yes	In Left/Out Left	SAE #12 (37° Flare, 1-1/16"-12)	N/A
FH23470	Triplex	FS19841	Spin-On	7 ³	600 (2271)	Yes	Yes	Yes	Yes	In Left/Out Left	SAE #12 (37° Flare, 1-1/16"-12)	N/A
FH23464	Triplex	FS19841	Spin-On	7 ⁴	600 (2271)	Yes	No	Yes	Yes	In Left/Out Left	SAE #12 (37° Flare, 1-1/16"-12)	N/A
FH23471	Triplex	FS19841	Spin-On	7 ³	600 (2271)	Yes	Yes	Yes	Yes	In Left/Out Left	SAE #12 (37° Flare, 1-1/16"-12)	N/A

¹ DP = Differential Pressure

² Metric connections require metric adapter fittings. For M26 x 1.5 fittings, use part no. **3954136 S** (which includes an outlet M26 x 1.5 outlet fitting, M26 x 1.5 inlet fitting with check valve body, check valve ball, check valve retainer, and check valve spring) and install to inlet and outlet ports of housing. For M42 x 2 fittings, use part no. **3956561 S** (which contains two M42 x 2 fittings) and install to inlet and outlet ports of assembly.

³ For proper protection of the Cummins High Pressure Common Rail fuel system, it is absolutely vital that the 7 micron filter be used and that no other filter micron rating is substituted.

Sea Pro® 5 Specifications

Specification	Single	Dual	Duplex	Triple	Triplex
Height Overall	22.27" (566 mm)	22.27" (566 mm)	22.27" (566 mm)	22.27" (566 mm)	22.27" (566 mm)
Depth Overall	7.24" (184 mm)	10.64" (270 mm)	10.64" (270 mm)	10.64" (270 mm)	10.64" (270 mm)
Width, max	11.98" (304 mm)	25.36" (644 mm)	25.36" (644 mm)	31.37" (797 mm)	31.37" (797 mm)
Mt. Brkt. Centers (Horiz.)	5.20" (132 mm)	6.60" (168 mm)	6.60" (168 mm)	6.60" (168 mm)	6.60" (168 mm)
Mt. Brkt. Centers (Vert.)	4.25" (108 mm)	6.76" (172 mm)	6.76" (172 mm)	6.76" (172 mm)	6.76" (172 mm)
Weight (Dry)	15.2 lbs (6.9 kg)	50.33 lbs (22.83 kg)	53.57 lbs (24.30 kg)	68.28 lbs (73.14 kg)	73.14 lbs (33.18 kg)
Fuel Capacity (w/o filter)	0.71 gal (2.7 L)	1.42 gal (5.4 L)	1.42 gal (5.4 L)	2.13 gal (8.1 L)	2.13 gal (8.1 L)
Fuel Connections	SAE #12 (37° Flare, 1-1/16"-12)	SAE #12 (37° Flare, 1-1/16"-12)	SAE #12 (37° Flare, 1-1/16"-12)	SAE #12 (37° Flare, 1-1/16"-12)	SAE #12 (37° Flare, 1-1/16"-12)
Water Trap Capacity	11.0 fl oz (325 ml)	22.0 fl oz (650 ml)	22.0 fl oz (650 ml)	33.0 fl oz (976 ml)	33.0 fl oz (976 ml)
Filter Service Clearance	Min. 1.5" (38.1 mm)	Min. 1.5" (38.1 mm)	Min. 1.5" (38.1 mm)	Min. 1.5" (38.1 mm)	Min. 1.5" (38.1 mm)
Fuel Types	Compatible for use with Diesel #1, Diesel #2, Kerosene, Biodiesel, and JP8				

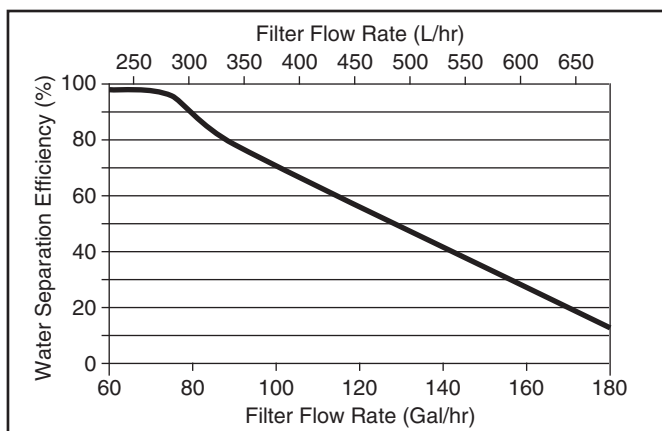
Specifications subject to change without notice.

Primer Pump Specifications

Specification	Primer Pump
Voltage	24 VDC \pm 0.1
Connector	Deutsch DT04-2P-E004
Flow	32 gal/min @ 44 lbs/in ² (121 L/min @ 3.0 bar)
Max Current Draw	6 A
Max Pressure	90 lb/in ² (6.2 bar)
Max Air Leakage	1.5 cc/min @ 80 lb/in ² (3.5 x 10 ⁻⁴ ft ³ /min @ 5.5 bar)
Min Dry Vacuum	10" Hg (33.69 kPa)
Temperature Range	-20 °F (-29 °C) to 250 °F (120 °C)

Specifications subject to change without notice.

Emulsified Water Removal Performance



WIF Specifications

Specification	WIF 3960826 S (4919917)	Dual WIF 3966459 S (4919928) (qty 2)
Resistance Across Pins	82 k Ω \pm 2% (at 25° C)	165 k Ω \pm 2% (at 25° C)
Voltage Rating	5 – 50 VDC or VAC	5 – 50 VDC or VAC
Signal Type	Analog	Analog
Thread	1/2" 20 UNF-2A	1/2" 20 UNF-2A
Output Deutsch Connector	EDLRDT13-2PR-002	EDLRDT13-2PR-002
WIF Harness Deutsch Connector	DT04-2P	DT06-2S
Height to Water Sensing (Switch is in ON Position)	1.21" (30.73 mm)	1.21" (30.73 mm)
Overall Length (WIF Body)	1.94" (49.28 mm)	1.94" (49.28 mm)
Distance Between Blades (Center to Center)	0.168" (4.27mm)	0.168" (4.27mm)

Specifications subject to change without notice.



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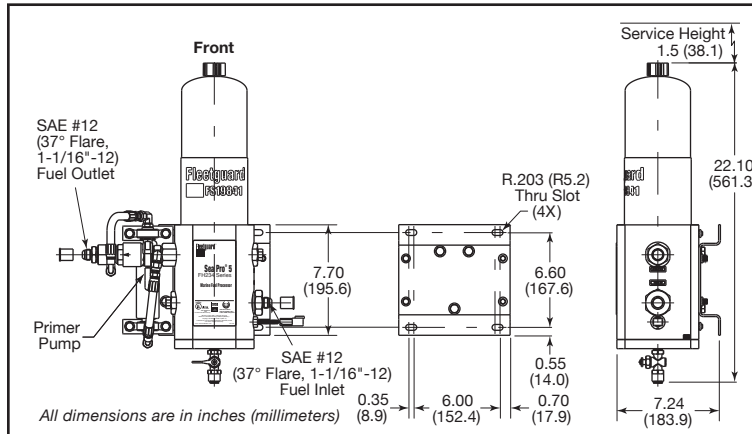


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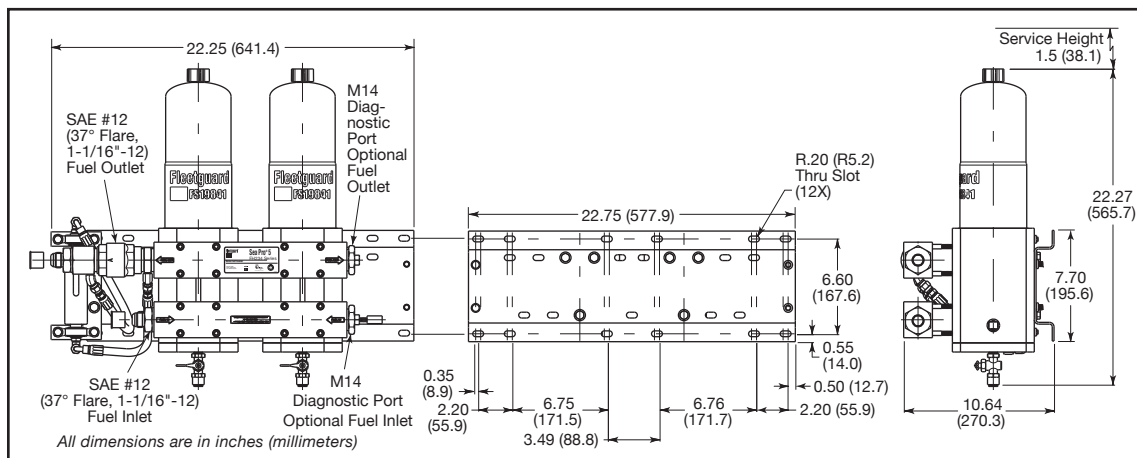
Also meets the following standards: USCG, ANSI 1105, ASTM F1201
For additional agency approvals, see TB07/05-2 Certification Matrix Bulletin

Dimensions

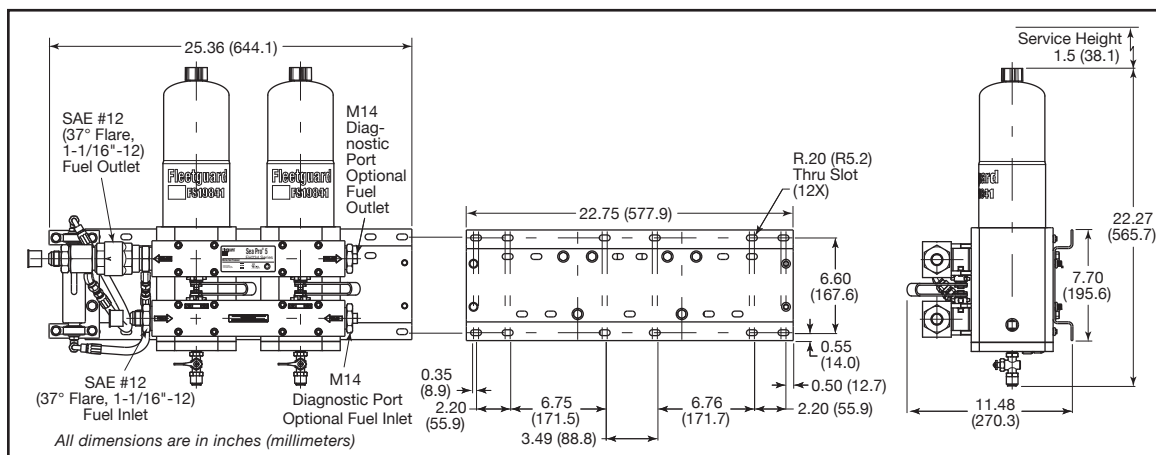
Sea Pro 5 Single with Pump



Sea Pro 5 Dual with Pump

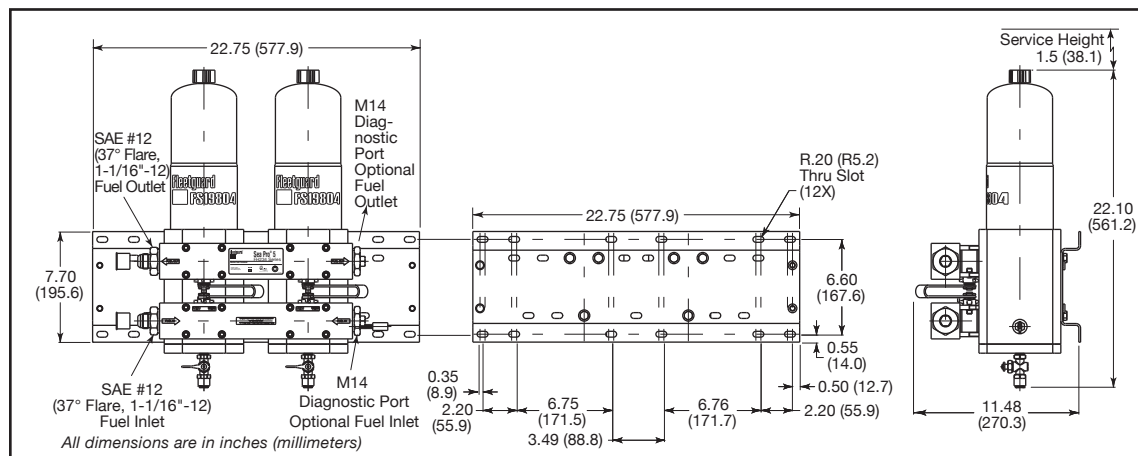


Sea Pro 5 Duplex with Pump

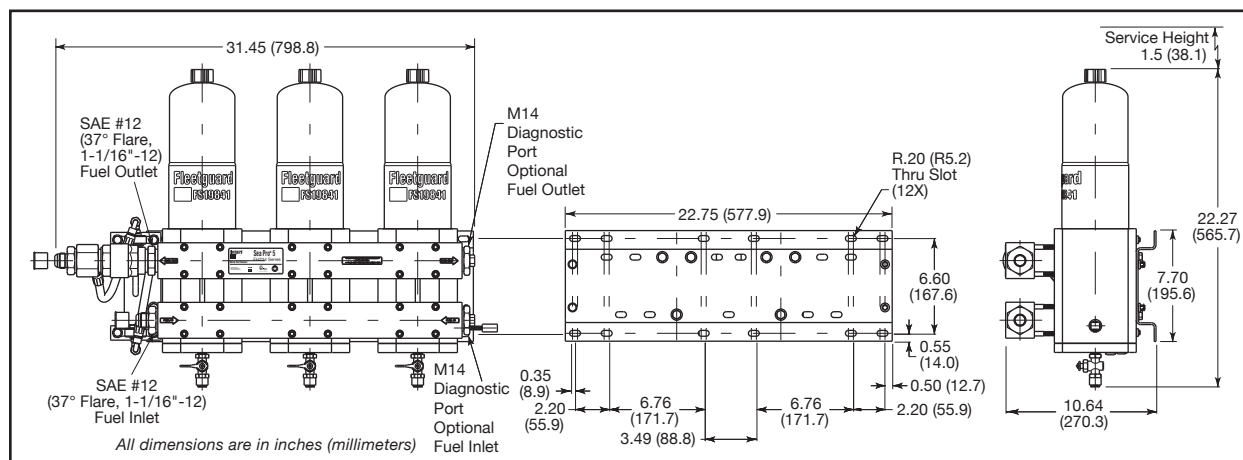


Dimensions

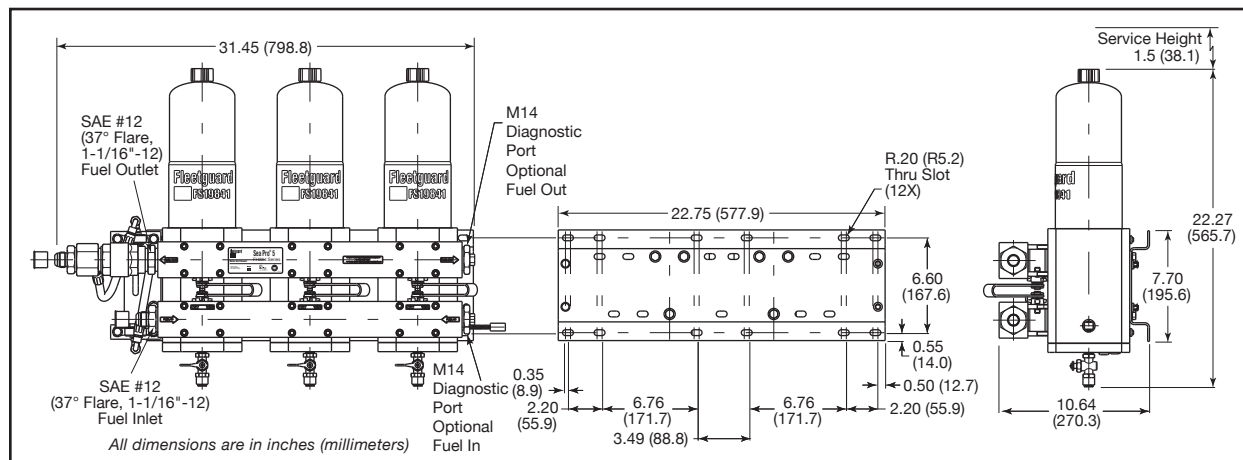
Sea Pro® 5 Duplex



Sea Pro 5 Triple with Primer Pump



Sea Pro 5 Triplex with Primer Pump



Filtration

For more information, visit
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