



# Quality Filtration Solutions for the Marine Industry

Fuel Filtration | Crankcase Ventilation | Air Filtration | Coolant

MARINE



# Fleetguard in the Marine Industry



## Quality, You Can Depend On

Cummins Filtration offers a full line of filters under the well-known Fleetguard brand – specifically engineered for a wide range of systems. With advanced design and high quality performance, Fleetguard heavy-duty filters give customers the ultimate protection for all of their equipment.

Fleetguard engineers all products to meet or exceed OEM specifications to ensure engines and other systems get maximum life. With the most inclusive and comprehensive warranty in the industry, customers can have total confidence in their purchase.

Over 8,300 Fleetguard products cover the widest range of air, lube, fuel and hydraulic filters in the heavy duty industry. We are a comprehensive supplier to support the maintenance of systems from fuel to cooling systems. Cummins Filtration is the only filter manufacturer that is part of an engine company. Being a member of the Cummins family enables us to leverage 100 years of experience in building engines.

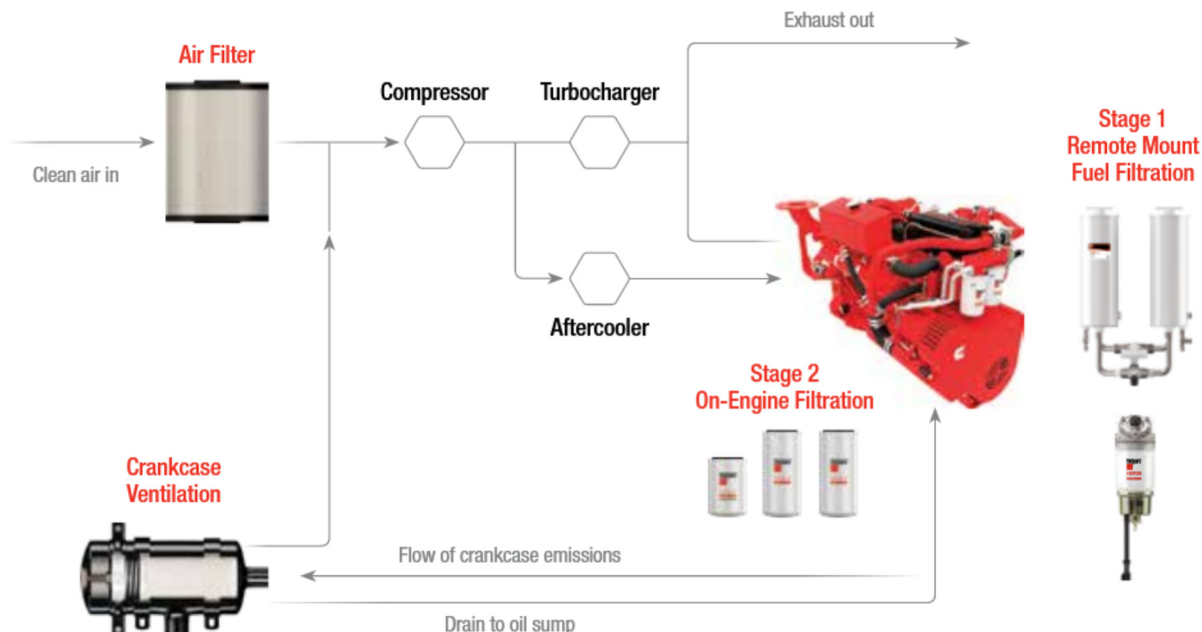
## Marine Expertise and Support

Present in over 190 countries and territories, Cummins and its subsidiaries have the most extensive service network in the world with over 600 servicing distributor locations. Plus, our regional response teams ensure service and application expertise is available when and where it's needed, even in the most remote operating locations.

Qualified Marine Technicians keep you up and running once in service. Cummins employs an experienced team of technical and market experts focused on the marine industry and its customers. Factory trained Marine Application Engineers will help you select the right specifications for your vessel.

Cummins offers a complete line of propulsion, generating set and auxiliary power solutions designed specifically for the challenges of marine applications. Because we understand customer needs and operating conditions vary, we also offer custom generator set packaging through our distribution channel.

## Schematics of a Modern Diesel Engine



# Fuel Filtration: Stage 0

## Fuel Storage Tank Filtration – Critical to Avoid Costly Components Damage

The fuel supply, which includes the processing, transportation and long-term storage of diesel fuel, is a critical stage that can lead to contamination and degradation of the fuel. Studies show that today's fuel is not clean enough and only 43% of all fuel distributed worldwide meets the particle concentration of 18/16/13 which should be achieved in the storage tank. Failure to meet this requirement can lead to severe fuel system component damage because the on-engine fuel filtration will not be able to accomplish the target fuel cleanliness of 12/9/6 which equates to less than 4,000 particles of 4µm © and greater.



### The Fleetguard Product Solution

To minimize fuel contamination in a storage tank, Fleetguard fuel storage tank filtration is the effective and cost efficient way to meet the ISO4406 standard for fuel cleanliness and to protect costly fuel components, minimize operational cost and maximize equipment uptime.

A Fleetguard fuel filter in conjunction with a filter head, integrated in your pump filling system, is the key to high quality fuel in your storage tank.

Part #	Type	Micron rating	Flow Rate l/ min	Thread Size	OD mm	Length mm
FF5601	Spin-On	10	16	1-1/2 16 UNF	129	272
FF5618	Spin-On	25	16	1-1/2 16 UNF	129	272
FF5474	Spin-On	5	30	1-1/2 16 UNF	129	272
FS1284	Spin-On	10	56	1-12 UNF	94	136
FS19745	Spin-On	10	67	1-12 UNF	94	220
FS19748	Spin-On	30	67	1-12 UNF	94	220
FS19746	Spin-On	10	70	1-3/8-12 UNF	94	220
FS19749	Spin-On	30	70	1-3/8-12 UNF	94	220
FS19742	Spin-On	10	95	1-1/2-16 UNF	94	136
FS19744	Spin-On	30	95	1-1/2-16 UNF	94	136
FS1286	Cartridge	30	110	N/A	122	230
FS1283	Spin-On	10	113	1-1/2 16 UNF	128	279
FF5450	Spin-On	10	150	1-1/2 16 UNF	128	279
FS1285	Spin-On	30	150	1-1/2 16 UNF	128	279

### Standard Fuel Filter Heads

Part #	Port Size	Thread Size	Flow Rate l/ min
HH6943	3/4" NPT	1" – 12 UNF	up to 67l/min*
HH6951	1 5/16" NPT	1 1/2" – 16 UNF	up to 150l/min*
HH6957	1" NPT	1 1/2" – 16 UNF	up to 150l/min*
HH6962	1 1/4" NPT	1 1/2" – 16 UNF	up to 150l/min*
HH6967	1 1/2" NPT	1 1/2" – 16 UNF	up to 150l/min*
HH6973	1 5/8" NPT	1 1/2" – 16 UNF	up to 150l/min*

\* performance will vary depending upon which filter is used and the constraints of the rest of the system/installation.

# Fuel Filtration: Stage 1

## All-In-One Fuel Filter, Water Separator & Priming Pump

### Integrated Manual Priming Pump

- ▣ Easy to deair after filter changes

### Vent Screw

- ▣ Easy to facilitate priming

### Spin-On Filter

- ▣ StrataPore™ media is Fleetguard's proprietary multi-layer synthetic media, providing higher efficiency and extended service intervals without compromising filter life
- ▣ Spin-on filter is the only part that needs replacement during service - clear bowl and drain valve can be reused
- ▣ Works with 10 and 25 micron filter media, making it versatile for multiple applications

### Optional Electric Heater

- ▣ Safe and reliable bottom positioned 200 W /24V PTC (Positive Temperature Coefficient) heater
- ▣ Can be used in low temperature environments to prevent filter plugging and to facilitate cold engine start

### Clear Bowl

- ▣ Makes it easy to check for water and sediment and see when to drain
- ▣ Made of environmentally friendly, high quality polymer for longer life, preventing corrosion from water, alcohol, blended fuel, additives or UV light

### Specifications

Initial Restriction at rated flow (SAE J905)	≤13 kPa
Efficiency (SAE J1985)	≥ 10 μ 99%
FWS Efficiency (ISO 4020)	99%
Maximum Operating Pressure	200 kPa
Port Thread Size	M16x1.5
Drain	Manual





## Product Ordering Information

Part Number	FH22171	FH22146	FH22151	FH22178	FH22145	FH22182
Rated Flow	228 l/h	228 l/h	228 l/h	340 l/h	340 l/h	340 l/h
Priming Pump	Yes	Yes	Yes	Yes	Yes	Yes
Heater (24 V, 200 W)	No	Yes	Yes	No	Yes	Yes
WIF (82 Ω)	No	Yes	No	No	Yes	No
Length (L)	147 mm	147 mm	147 mm	147 mm	147 mm	147 mm
Width (W)	111,5 mm	111,5 mm	111,5 mm	111,5 mm	111,5 mm	111,5 mm
Height (H)	301 mm	315 mm	315 mm	332 mm	346 mm	346 mm
Filter Element (10 micron)	FS36226	FS36226	FS36226	FS36215	FS36215	FS36215

Part Number	FH22185	FH22192	FH22149	FH22193	FH22144	FH22148
Rated Flow	456 l/h	456 l/h	456 l/h	600 l/h	600 l/h	600 l/h
Priming Pump	Yes	Yes	Yes	Yes	Yes	Yes
Heater (24 V, 200 W)	No	Yes	Yes	No	Yes	Yes
WIF (82 Ω)	No	Yes	No	No	Yes	No
Length (L)	147 mm	147 mm	147 mm	147 mm	147 mm	147 mm
Width (W)	111,5 mm	111,5 mm	111,5 mm	111,5 mm	111,5 mm	111,5 mm
Height (H)	386 mm	400 mm	400 mm	377 mm	390 mm	390 mm
Filter Element (10 micron)	FS36216	FS36216	FS36216	FS36220	FS36220	FS36220

## Available Options

### Filter element at different micron ratings

- ▣ FH delivered standard with 10 Micron StrataPore element
- ▣ 25 Micron (cellulose) elements:
  - ▣ **FS36244** for 228 l/h flow rate
  - ▣ **FS36231** for 340 l/h flow rate
  - ▣ **FS36234** for 456 l/h flow rate
  - ▣ **FS36230** for 600 l/h flow rate

### WIF sensor (integrated in clear bowl)

- ▣ DEUTSCH connector
- ▣ WIF connector: DT04-2P
- ▣ Mating connector: DT06-2S
- ▣ Mating WIF harness: 3965504S \*
- ▣ Clear bowl with WIF sensor & heater: SP121700
- ▣ Clear bowl with WIF sensor: SP121800
- ▣ Clear bowl: SP121900

### Heater with thermostat (integrated in clear bowl)

- ▣ 200 W, 24 VDC
- ▣ DELPHI connector
- ▣ Heater switch-on temperature +7°C
- ▣ Heater switch-off temperature +24°C
- ▣ Heater connector: 15300002
- ▣ Mating connector: 15300027
- ▣ Mating heater harness: 3934304S \*

\* not included in standard version – to be ordered separately

- ▣ Other configurations are only available upon request
- ▣ Specifications subject to change without notice

Sea Pro®



## Fuel Filtration: Stage 1

# Sea Pro®

Water in fuel (particularly emulsified water) is a severe issue in the marine environment worldwide. The fuel quality – depending on the place the vessel is fueled – is (at best) inconsistent and (in many instances) insufficient. Fuel handling and fuel storage is the breeding ground for multiple threats to the fuel injection system including organic filter plugging, microbial growth and wax & ice crystal filter plugging.

As a result, more original equipment manufacturers are specifying advanced fuel filter/water separators for their marine diesel engines. The Sea Pro FH240 fuel processor series provides maximum efficiency and optimum performance with the use of premium NanoNet™ media. NanoNet traps and retains contaminants even under real world vibration and flow surge.

### SeaPro® Ordering Information

Housing Part #	Filter Element	Unit Type	WIF KIT Available	Drain	Bracket Included	Fuel In / Fuel Out	Port Size
FH24000	FS53021	Single Short	Yes*	Yes	No	Bottom In / Bottom Out	1-5/16"-12 UN/UNF-2A 37° Flare
FH24001	FS53022	Single Tall	Yes*	Yes	No	Bottom In / Bottom Out	1-5/16"-12 UN/UNF-2A 37° Flare
FH24002	FS53021	Duplex Short	Yes**	Yes	Yes	Bottom In / Top Out	1-5/16"-12 UN/UNF-2A 37° Flare
FH24003	FS53022	Duplex Tall	Yes**	Yes	Yes	Bottom In / Top Out	1-5/16"-12 UN/UNF-2A 37° Flare

Optional: Compound Pressure Gauge => (single units): SP1639 => (dual units): SP1531

### SeaPro® Sizing

Engine Displacement (litres)	Flow Rate (litres/hour)	Flow Rate (gal/h)	Sea Pro® Single	Sea Pro® Double
5-19	150-380	40-100	FH24000	FH24002
20-38	381-580	101-153	FH24000	FH24002
39-50	581-780	154-206	FH24001	FH24003
51-60	781-1,000	207-264	FH24001	FH24003

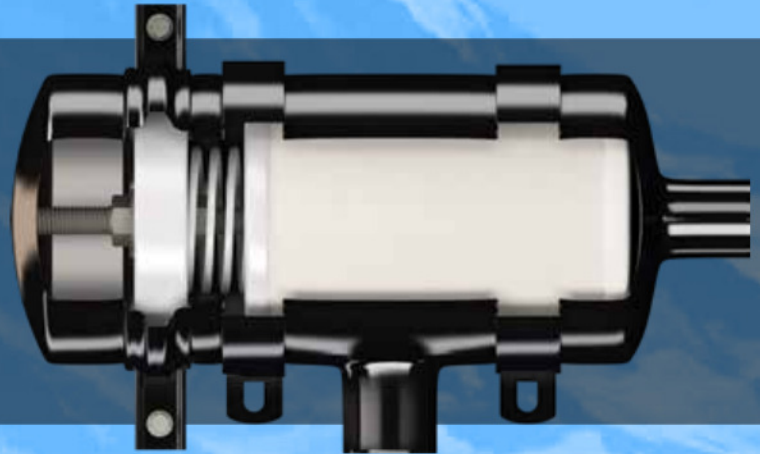
### SeaPro® Specifications



Specification	Single Short	Single Tall	Duplex Short	Duplex Tall
Height Overall	488 mm	678 mm	627 mm	818 mm )
Depth Overall	222 mm	222 mm	282 mm	282 mm
Width, max	208 mm)	208 mm	660 mm	660 mm
Weight (Dry)	14.1 kg	19.5 kg	36.3 kg	46.7 kg
Fuel Capacity (w/o filter)	4,6 l	9,3 l	9,2 l	18,6 l
Fuel Connections	1-5/16" - 12 UN/UNF-2A	1-5/16" - 12 UN/UNF-2A	1-5/16" - 12 UN/UNF-2A	1-5/16" - 12 UN/UNF-2A
Fuel Flow Rate	1,363 l/hr	2,044 l/hr	2,725 l/hr	4,088 l/hr
Water Holding Capacity	1,970 ml	1,970 ml	3,940 ml	3,940 ml
Service Clearance (Min)	270 mm	465 mm	270 mm	465 mm
Fuel Types	Compatible for use with Diesel #1, Diesel #2, Kerosene, Biodiesel B20, and JP8			



Ecovent





# Crankcase Ventilation

## Ecovent

### EcoVent™ Function

The Fleetguard EcoVent Recirculator removes oil mist coming from the engine crankcase vent, providing a cleaner, healthier and safer environment. Engine room maintenance costs are also reduced. Cummins Filtration pioneered the development of crankcase ventilation filters, formerly known as Crankcase Emission Absorbers (CEAs), over 40 years ago. The name has changed to EcoVent Recirculator, but the product is the same dependable and proven design. Today they are used on nearly every major make of industrial diesel and natural gas engine in Europe and North America.

They have been used and specified by:

- ▣ Yacht Owners and Ship Builders
- ▣ Engine Builders and Packagers for both Marine and Industrial Applications
- ▣ U.S. Navy
- ▣ Coast Guard
- ▣ Natural Gas Compression Packagers

These filters were originally developed to prevent oily crankcase fumes from fouling the intake air filters and coating the engine room walls, but now offer many other advantages.

### EcoVent Specifications

Part Number	Element Part #	Diameter mm (inch)	Length mm (inch)	Outer Diameter inlet/ outlet	Max. Crankcase Emission flow rate with clean element m <sup>3</sup> /h (cfm)
93195A	88467A	152 (6.0")	584 (23.0")	38 (1.5")	13.6 (8)
93194A	88365A	218 (8.6")	767 (30.2")	45 (1.8")	25.5 (15)
93192A	88465A	218 (8.6")	968 (38.1")	57 (2.2")	42.5 (25)

For large engines or engines with multiple crankcase vents, several units can be used in parallel to balance the flow and/or provide capacity for applications exceeding 25cfm (42.5 m<sup>3</sup>/h)

### Cleaner Environment

The Fleetguard EcoVent Recirculator removes 99% of oil mist and airborne particles. This makes it possible to duct the now clean blow-by fumes into the air cleaner for a completely closed crankcase ventilation system. The closed system removes 100% of blow-by mists and gases from the atmosphere without danger to the engine.

### Reduced Oil Consumption

After the oil droplets are removed from the gases, they pass through an absorbent depth media, which cleans them so they can safely be returned to the oil sump.

### Easy Maintenance

Because the separation of air and oil is accomplished through a static absorbent filter, there are no moving parts or periodic cleaning necessary, only changing of the filter element. These systems are applicable to marine, industrial, diesel, gasoline or natural gas engines.

CVM



## Crankcase Ventilation

# Crankcase Ventilation Manager

### Fleetguard Crankcase Ventilation Management

For optimal engine performance and to support emissions regulations compliance, your diesel engine blow-by should contain minimal oil aerosol before routing to the engine intake air system (closed) or direct to the atmosphere (open). Cummins Filtration's Fleetguard CVM Series of crankcase ventilation (CV) solutions ensure crankcase ventilation systems for your emissions-certified engines do not compromise engine performance or the environment with oil mist and drips. The CV product line offers the industry's highest blow-by oil mist separation efficiency in a cost effective and versatile package.

Crankcase emissions can significantly contribute to the total engine particulate emissions. Cummins Filtration employs analysis and testing to develop solutions that properly remove oil mist from the engine blow-by.

The leading industry approach is the proposed ISO 20564 test method which utilizes an oil droplet size distribution similar to the blow-by gas of most turbocharged diesel engines. Cummins Filtration is participating in the development of new test methods and is uniquely positioned with OEM engine makers to ensure the highest CV management performance and system functionality.

### Superior Crankcase Ventilation Management

- Offers the highest oil & particle removal efficiency
- High saturated efficiency is key to emissions regulation compliance, long service intervals and reliability of the engine air handling components
- Maintains superior saturated oil removal efficiency for the droplet (aerosol) sizes that comprise blow-by gases
- The saturated condition of the crankcase ventilation system accounts for up to 95% of the total service life

#### Advanced oil separation – StrataPore CV:

Unique polymer webs are arranged in a gradient structure for optimal particle capture to protect the environment and/or the intake air system.

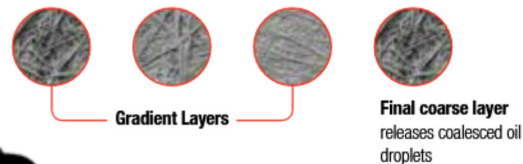
**Threaded collar** for quick and easy removal of the reusable nylon shell at the time of service without the need to disconnect hoses

**Integral aluminum mounting bracket** with 154 mm x 65 mm (6" x 2.5") bolt pattern

**Clean blow-by gas outlet (25.4 mm hose barb):** Returns clean blow-by to the atmosphere, or engine air intake (variable orientation)

**Crankcase pressure sensor (FCI/Apex® 3-pin connector):** Optimize service intervals

**Blow-by gas inlet (25.4 mm hose barb):** Blow-by inlet from engine



Gradient Layers

Final coarse layer releases coalesced oil droplets

**Glass reinforced nylon shell** for light weight, heat resistant containment of the oil coalescing element (bottom access also available)

**Crankcase Depression Regulation (CDR) valve** protects the crankcase from excess vacuum in a closed configuration

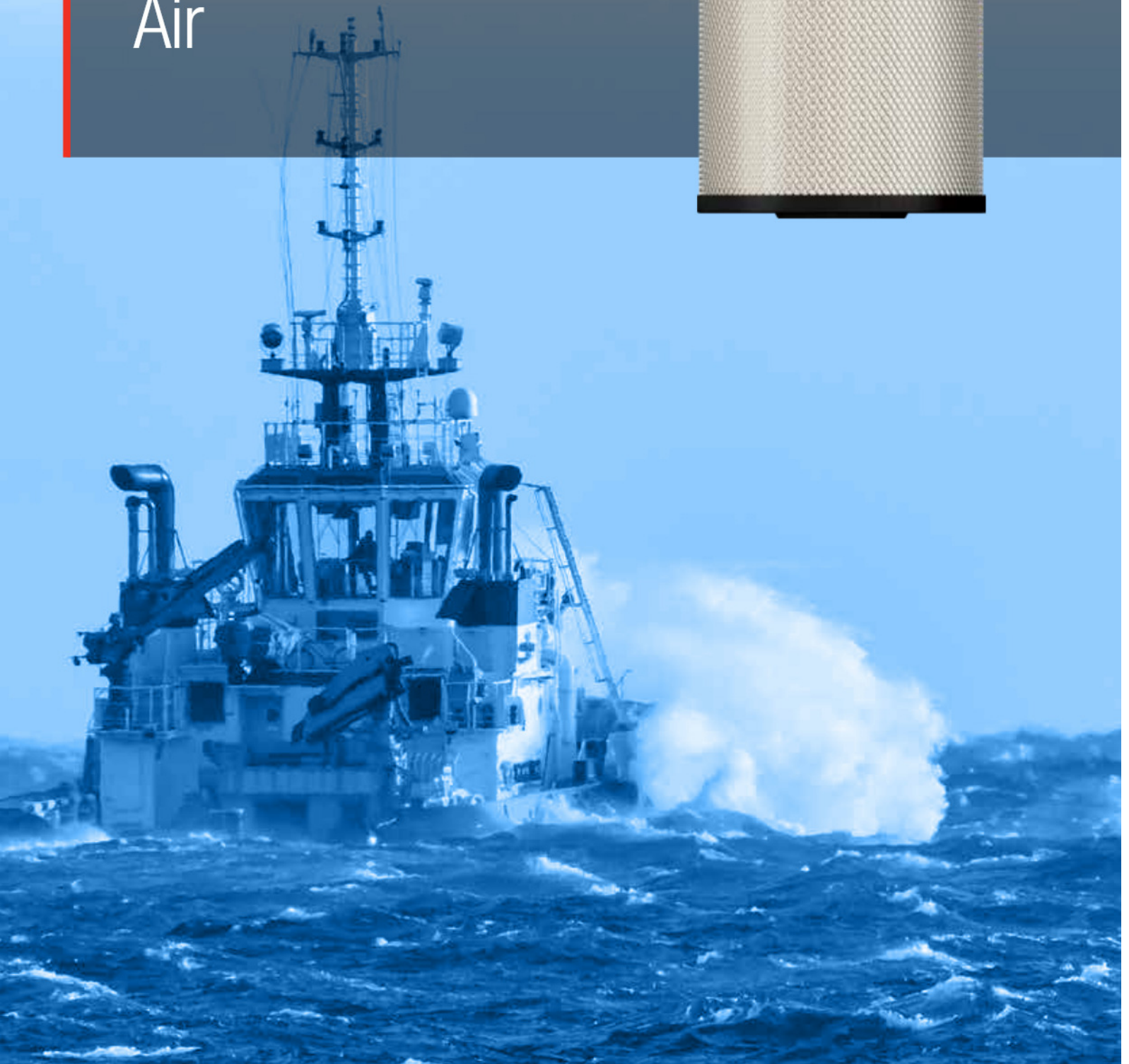
**Oil drain port (10 mm hose barb)** routes separated oil back to the oil sump

**Optional heating system** available for cold environments





Air





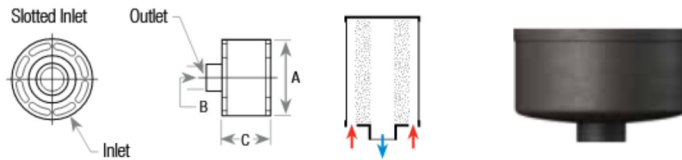
## Air Filtration

# Disposable Air Cleaners

for Light & Medium-Duty Engines as well as Gas & Diesel-Powered Vehicles and Equipment

## ECC Style

### Disposable Housings and Filters



Part Number	Body Dia. mm (inch)	Outlet Dia. mm (inch)	Length mm (inch)	Airflow cfm			Airflow m <sup>3</sup> /min			Media Type
	A	B	C	4" H <sub>2</sub> O	6" H <sub>2</sub> O	8" H <sub>2</sub> O	1.0 kPa	1.5 kPa	2.0 kPa	
AH1107	215.9 (8.5")	76.2" (3)	241.35 (9.5")	170	205	245	4.81	5.80	6.94	C
AH1138	215.9 (8.5")	76.2" (3)	127.0 (5")	150	180	215	4.25	5.10	6.09	C
AH1140	266.7 (10.5")	101.6 (4")	152.4 (6")	325	400	480	9.20	11.32	13.59	A
AH1190	215.9 (8.5")	63.5 (2.5")	165.1(6.5")	130	165	188	3.68	4.67	5.32	C
AH1196	266.7 (10.5")	101.6 (4")	266.7 (10.5")	400	500	620	11.33	14.16	17.56	A
AH1198	215.9 (8.5")	63.5 (2.5")	101.6 (4")	112	145	170	3.17	4.11	4.81	C
AH1199	215.9 (8.5")	63.5 (2.5")	241.3 (9.5")	135	170	195	3.82	4.81	5.52	C
AH19000	139.7 (5.5")	44.45 (1.75")	101.6 (4")	64	82	94	1.81	2.32	2.66	C
AH19001	114.3 (4.5")	38.1 (1.5")	114.3 (4.5")	42	55	64	1.19	1.56	1.81	C
AH19220	317.5 (12.5")	127.0 (5")	279.4 (11")	485	620	760	13.73	17.55	21.52	A
AH19232	165.1 (6.5")	50.8 (2")	190.5 (7.5")	108	137	162	3.05	3.87	4.58	C

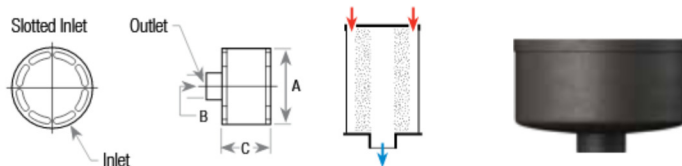
A = Standard

B = Treated or higher humidity (i.e. Marine applications)

C = Reinforced to withstand higher pulsation applications

## ECD Style

### Disposable Housings and Filters

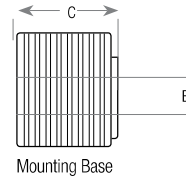
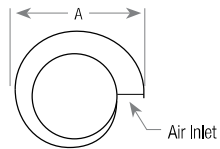


Part Number	Body Dia. mm (inch)	Outlet Dia. mm (inch)	Length mm (inch)	Airflow cfm			Airflow m <sup>3</sup> /min			Media Type
	A	B	C	4" H <sub>2</sub> O	6" H <sub>2</sub> O	8" H <sub>2</sub> O	1.0 kPa	1.5 kPa	2.0 kPa	
AH19228	114.3 (4.5")	38.1 (1.5")	114.3 (4.5")	44	56	65	1.24	1.58	1.84	—
AH1138	215.9 (8.5")	76.2 (3")	127.0 (5")	150	180	215	4.25	5.10	6.09	C

## ECB Style

### Disposable Housings and Filters

- ▣ Disposable "Throw-Away" Plastic Housing
- ▣ Over 99% Efficiency
- ▣ Wide Range of Low to Medium Dust Concentration Applications
- ▣ Low Initial Cost
- ▣ Fiber Elements Included

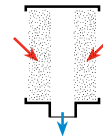
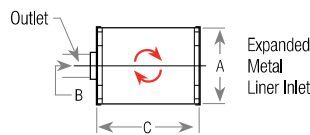


Part Number	Body Dia. mm (inch)	Outlet Dia. mm (inch)	Length mm (inch)	Airflow cfm			Airflow m <sup>3</sup> /min			Media Type
	A	B	C	6" H <sub>2</sub> O	8" H <sub>2</sub> O	10" H <sub>2</sub> O	1.5 kPa	2.0 kPa	2.5 kPa	
AH1100	442 (17.4")	140 (5.5")	370 (14.6")	700	820	920	19.8	23.2	26.0	—
AH1101	503 (19.8")	140 (5.5")	453 (17.8")	798	920	1040	22.6	26.0	29.4	—

## ECB Style

### Replaces Donaldson® ECB Duralite™ Style Disposable Housings and Filters

- ▣ Light and Medium Duty Engines
- ▣ Gas and Diesel Powered Vehicles and Equipment



Part Number	Body Dia. mm (inch)	Outer Dia. mm (inch)	Length mm (inch)	Airflow cfm			Airflow m <sup>3</sup> /min			Media Type
	A	B	C	4" H <sub>2</sub> O	6" H <sub>2</sub> O	8" H <sub>2</sub> O	1.0 kPa	1.5 kPa	2.0 kPa	
AH1136	215.9 (8.5")	76.2 (3")	279.4 (11")	275	335	390	7.79	9.94	11.04	A
AH1141	215.9 (8.5")	101.6 (4")	279.4 (11")	280	400	470	7.93	11.33	13.30	A
AH1185	215.9 (8.5")	76.2 (3")	76.2 (3")	83	124	150	2.36	3.52	4.24	A
AH1188	215.9 (8.5")	76.2 (3")	215.9 (8.5")	176	256	300	4.90	7.25	8.50	A
AH19002	215.9 (8.5")	101.6 (4")	279.4 (11")	280	400	470	7.93	11.33	13.30	B
AH19003	215.9 (8.5")	76.2 (3")	279.4 (11")	275	335	390	7.20	9.16	11.89	B
AH19004	266.7 (10.5")	101.6 (4")	266.7 (10.5")	380	440	480	10.76	12.46	13.59	B
AH19037	266.7 (10.5")	101.6 (4")	266.7 (10.5")	450	590	680	12.74	16.70	19.25	A
AH19042	317.5 (12.5")	152.4 (6")	381.0 (15")	500	650	800	14.15	18.40	22.65	C

A = standard

B = Treated or higher humidity (i.e. Marine applications)

C = reinforced to withstand higher pulsation applications

# Coolant



# Cooling System

## Coolant

Heavy-duty diesel engines represent an extreme environment for a cooling system to perform well and protect the engine. In comparison to light-duty applications, cooling systems for heavy-duty applications experience an environment which is five to ten times more severe in terms of cooling system dynamics like heat rejection, flow rate, usage rate, and engine load factor (Table 1).

Heavy-duty diesel engines must run up to five times as long as a light-duty engine, and the likelihood of rebuilding is much greater for the heavy-duty engine. With 40 percent of engine problems for heavy-duty applications being related to the performance of the cooling system, the importance of maintaining good cooling system performance cannot be ignored if maximum fleet reliability and reduced overall maintenance costs are to be achieved. A heavy-duty coolant must be used for a heavy-duty application in order to achieve maximum engine reliability and lower overall operating costs.

**Table 1:** Requirements for typical light-duty and heavy-duty engine

Application	Heat rejecting through Cooling System (kcal/hr)	Engine load factor (%)	Usage rate (km/yr)	Engine life (km)
Light Duty	35,000	25	25,000	300,000
Heavy Duty	136,000	70	250,000	1,500,000

## Coolants & Additives



### ES Compleat™

- Fully formulated life-of-the-engine hybrid coolant with 1,600,000km useful life under normal conditions
- Test at 250,000km, 4,000 hours or once/year; only add SCA when needed
- Maximum corrosion and liner pitting protection with conventional heavy-duty chemical inhibitors and organic acids
- Fully meets requirements of ASTM D-6210, Cummins CES14603, CES14439, AFNOR NF R15-601
- Meets many leading OEM requirements including: Case New Holland, CAT, Cummins, DDC, EMD, Freightliner, International, John Deere, Komatsu, Kubota, Mack, Mitsubishi, PACCAR, Volvo, Waukesha

	EG Concentrate	*EG PreMix 50/50	*EG PreMix 40/60	PG Concentrate	*PG PreMix 50/50
5 Liter	CC2747M	CC2748M	N/A	CC2751M	CC2752M
20 Liter	CC2749M	CC2750M	N/A	CC2753M	CC2754M
208 Liter (Drum)	CC2821M	CC2826M	CC2919ESD	CC2831M	CC2836M
1.000 Liter (Tote)	CC2851M	CC2852M	CC2219EST	CC2853M	CC2854M
Bulk	CC2822M	CC2827M	N/A	CC2832M	CC2837M

\* The first number indicates % glycol followed by the % water.





## Fleetcool™ OAT

- Life-of-the-engine coolant with 1,600,000km useful life under normal operating conditions
- Fully meets ASTM D-3306, D-6210, D-4985 and Cummins CES14603, 14439 and 14636 performance requirements
- Specifically designed to meet OEM performance requirements of: DAF, MAN 324NF, Mercedes-Benz, Renault, Scania, Volvo and Volkswagen
- Superior deposit, scale, corrosion and erosion protection
- Optimizes cooling system performance and water pump life
- Contains proprietary scale inhibitors to ensure optimum heat transfer

Size	EG Concentrate	*EG PreMix
5 Liter	CC36137M	CC36142M
20 Liter	CC36138M	CC36143M
208 Liter (Drum)	CC36139M	CC36144M
1.000 Liter (Tote)	CC36140M	CC36145M
Bulk	CC36141M	CC36146M

\* All PreMix part numbers are 50% glycol / 50% water (50/50) unless otherwise noted.



## Liquid Supplemental Coolant Additives (SCAs): DCA4™

- Superior liner pitting, scale & corrosion protection using Phosphate/Molybdate based Inhibitor package

Units / Size	DCA4™
20 / 1,9 Liter	DCA65L
200 / 18,9 Liter	DCA75L
2200 / 208 Liter	DCA80L

## Cooling System Cleaners

Cummins Filtration offers two types of cleaners to keep your cooling system in top condition. Both Restore™ and Restore Plus™ remove contaminants without harming metal surfaces, gaskets, hoses or plastic parts. They are also approved by Cummins as the preferred product for cleaning contaminated cooling systems under warranty maintenance.



### Restore

- Alkaline-based cleaner
- Most effective cooling system oil/fuel contamination-cleaning agent on market
- 10 times more effective than automotive distributor detergent powders
- Safe for use in aluminum radiators and heaters
- Removes silicate gel



### Restore Plus

- Mild acid-based chelating cleaner
- Safely removes rust, corrosion, scale, and solder bloom – without disassembling your cooling system

Size	Restore	Restore Plus
5 Liter	CC2610EDJ	CC2638EDJ
20 Liter	CC2611	—
208 Liter	CC2612	CC2637

# Coolant Filtration

Coolant filtration is proven to reduce wear and to maintain all cooling system components and can provide a convenient, reliable method for delivering supplemental coolant additives into the cooling system to improve performance and extend coolant service life.



## Extended Service Water Filters

- Easy Maintenance every 12 months, 250,000 km or 4,000 hours
- Patented slow-release mechanism replenishes chemicals depleted by use
- StrataPore multi-layer media offers superior durability, efficiency and capacity
- Improved mechanical design for increased durability and corrosion resistance

Part #	Slow Release Coolant Additive	Thread Size
WF2121	15 units DCA 4	11/16-16 UN- 2B
WF2124	15 units DCA 4	3/4-20 UNEF- 2B
WF2128	15 units DCA 4	M16 X 1.5-6H INT
WF2126	8 units DCA 4	M36 X 2-6G INT
WF2131	15 units DCA 2	11/16-16 UN-2B
WF2133	15 units DCA 2	3/4-20 UNEF-2B
WF2138	15 units DCA 2	M16 X 1.5-6H INT
WF2136	15 units DCA 2	1-16 UN-2B

Part #	Extended Service Coolant Additive	Thread Size
WF2122	Non-Chemical	11/16-16 UN- 2B
WF2129	Non-Chemical	M16 X 1.5-6H INT
WF2134	Non-Chemical	3/4-20 UNEF- 2B
WF2123	Non-Chemical	11/16-16 UN- 2B
WF2130	Non-Chemical	M16 X 1.5-6H INT
WF2139	Non-Chemical	11/16-16 UN- 2B
WF2127	Non-Chemical	M36 X 2-6G INT
WF2137	Non-Chemical	1-16 UN-2B



## Standard Service Water Filters

- For use up to 500 hours or 40,000 km
- Immediate release SCA for use with any coolant at standard service interval
- High quality filtration for efficient removal of harmful contaminants

Part #	Immediate Release Coolant Additive	Thread Size
WF2093	5 units DCA4	11/16-16 UN- 2B
WF2070	2 units DCA4	11/16-16 UN- 2B
WF2071	4 units DCA4	11/16-16 UN- 2B
WF2072	6 units DCA4	11/16-16 UN- 2B
WF2073	8 units DCA4	11/16-16 UN- 2B
WF2087	9 units DCA4	11/16-16 UN- 2B
WF2151	4 units DCA4	11/16-16 UN- 2B
WF2015	8 units DCA4	3/4-20 UNEF- 2B
WF2074	12 units DCA4	5.43 (137.92)
WF2075	15 units DCA4	11/16-16 UN- 2B
WF2076	23 units DCA4	11/16-16 UN- 2B
WF2083	4 units DCA4	3/4-20 UNF-2B
WF2104	15 units DCA4	11/16-16 UN- 2B
WF2106	4 units DCA4	11/16-16 UN- 2B

Part #	Immediate Service Coolant Additive	Thread Size
WF2108	8 units DCA4	M16 X 1.5-6H INT
WF2022	11 units DCA4	1-16 UN-2B
WF2082	6 units DCA4	1-16 UN-2B
WF2051	4 units DCA2	11/16-16 UN- 2B
WF2088	6 units DCA2	11/16-16 UN- 2B
WF2054	15 units DCA2	11/16-16 UN- 2B
WF2144	12 units DCA2	11/16-16 UN- 2B
WF2096	4 units DCA2	M16 X 1.5-6H INT
WF2145	18 units DCA2	11/16-16 UN- 2B
WF2053	8 units DCA2	11/16-16 UN- 2B
WF2055	23 units DCA2	11/16-16 UN- 2B
WF2091	14 units DCA2	11/16-16 UN- 2B
WF2056	34 units DCA2	11/16-16 UN- 2B



## Non-Chemical Filters

- ▢ For use up to 500 hours or 40,000 km (25,000 miles)
- ▢ High quality filtration for efficient removal of harmful contaminants

Part #	Thread Size
WF2077	11/16-16 UN- 2B
WF2078	11/16-16 UN- 2B
WF2101	11/16-16 UN- 2B

Part #	Thread Size
WF2109	M16 X 1.5-6H INT
WF2084	11/16-16 UN- 2B
WF2107	11/16-16 UN- 2B



## Filter Head Assembly

- ▢ Head assembly for installation on engines without water filtration capability
- ▢ Assemblies provide everything needed to achieve benefits of coolant filtration

Part #*	Description	Style	Port Size	Thread Size
204163 S	Water Filter Spin-On Head	Aluminum	3/8" NPT	11/16-16 UN- 2B
215617 S	Dual Water Filter Spin-On Heads	Aluminum	1/2" NPT	11/16-16 UN- 2B
256535 S	Filter Head Mounting Bracket	N/A	N/A	N/A
257715 S	Water Filter Head (204163 S) and Mounting Bracket Assembly	Aluminum Head	3/8" NPT	11/16-16 UN- 2B
3904378 S	Severe-Duty Water Filter Head	Steel (thread)	3/8" NPT	11/16-16 UN- 2B

\* Severe-Duty Filter Head is recommended for most applications.





## Duplex Filtration Units

- ▣ 3 options available
  - Remote main lube oil
  - Remote main fuel
  - Remote FWS
- ▣ Major application: QSB7 marine engine
- ▣ Possible to use on many other applications, especially marine and gensets

Part Number	Description
LH100	Duplex Filter Head for Lube Filter
FH125	Duplex Filter Head for Fuel Filter (main)
FH12600	Duplex Filter Head for Fuel Filter (FWS)

Part Number	Inlet / Outlet Port Size	Examples Of Filters That Can Be Fitted	Applications
LH100	Female thread per SAE J1926/1 Inlet 1 3/16"-12; Outlet 1 1/16"-12	LF3970 (thread size 1 1/8"-16)	Remote mount duplex lube oil head for QSB7 marine and other QSB and smaller engines
FH125	Female thread per SAE J1926/1 Inlet 7/8"-14; Outlet 3/4"-16	FF5421, FF5485, FF5612 (thread size M20 x 1,5)	Remote mount duplex fuel head for midrange and HD engines
FH126	Female thread per SAE J1926/1 Inlet 7/8"-14; Outlet 3/4"-16)	FS1009, FS1065, FS19732, FS1003, FS1000, FS1015B (thread size 1"-14)	Remote mount duplex fuel head for midrange and HD engines

## Racor

### Cross-Reference

Racor	Fleetguard
R12P	FS19627
R12S	FS19628
R12T	FS19802
R15P	FS19824
R20P	FS19996
R25P	FS19704
R25S	FS19779
R25T	FS19778
R26P	FS1247
R26S	FS1274
R26T	FS1234
R45P	FS19775
R45S	FS1084
R45T	FS19734
R60P-D-MAX	FS19895
R60T-D-MAX	FS19866
R60T	FS19687
R60P	FS1287 or FS19930

Racor	Fleetguard
R90P	FS19532 or FS19932
R90T	FS19551 or FS19933
R90S	FS20028
R90T-D-MAX	FS19950
R120P	FS19754
R120T	FS19591 or FS19934
R120S	FS20162
R160P	FS19737
R160P-D-MAX	FS19949
R160T	FS19914
R260P	FS19735
R260T	FS19926
S3201	FS1242B
S3201P	FS1212
S3201T	FS19738
S3204	FS1220

Racor	Fleetguard
S3204S	FF196
S3207T	FS19946
S3207S	FS20036
S3211	FS19776
2010PM	FS20103
2010SM	FS20101
2010TM	FS20102
2020PM	FS20203
2020SM	FS20201
2020TM	FS20202
2040PM	FS20403
2040SM	FS20401
2040TM	FS20402
CCV5524808	CV55017
CCV5527408	CV55018
CCV5522208	CV55019

## Seapar

### Cross-Reference

Seapar	Fleetguard
00530	FS19733
00560S	FS19615
00530/50	FS1081
00530/50H	FS1082
01030H	FS1083
00530/50V	FS20054
01030	FS19605
01830	FS19752
04030	FS19803
20102	FS20101
20110	FS20102
20130	FS20103
20202	FS20201
20210	FS20202
20402	FS20401
20410	FS20402