

# RACOR®

# 7480G Catalog



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# Biodiesel

## Introduction to Biodiesel



### Renewable Fuels Overview

Biodiesel is a diesel fuel produced by the chemical refining of vegetable oils into “fatty acid methyl esters”, or FAME. Glycerin is removed in the refining process, lowering the oil viscosity to match diesel fuel. Pure biodiesel is most often added to diesel fuel in a 2, 5, or 20% blend, and is referred to as B2, B5, or B20 respectively.

Other renewable “biofuels” available are raw oils or recycled greases that have not been transformed into biodiesel. These products require extra heat, filtration, and other vehicle modifications to burn in diesel engines.

### Challenges and Solutions

Racor fuel filters and heaters are uniquely suited for filtering and conditioning biodiesel and biofuels for use in diesel engines.

Biodiesel tends to dissolve the natural fuel “tar” deposits coating the inside of diesel tanks, piping, and hoses. The dissolved deposits are carried to fuel filters, causing shortened fuel filter life. Most biodiesels have a low “interfacial tension”. This

means that water easily disperses and dissolves in the fuel. Low interfacial tension greatly reduces water separation efficiency for all types of water separators and coalescers. Removal of water from a fuel system is necessary for proper engine performance.

Racor recommends using the largest filter practical for the application. A larger filter adds more filtration media surface area, which lowers the flow velocity going to each square inch of the media. This extends filter life and increases water removal efficiency. When specifying a new biodiesel fuel system, de-rate fuel filter flow by 50% and install on the vacuum side of any pumps, where possible. Pure biodiesel has high cloud and pour points, necessitating the use of electric and/or coolant heaters in cold weather. Lower percentage blends (B20) act more like standard diesel fuel, but some lower fuel blends have been known to cause problems. Other biofuels of raw oil or recycled grease have high viscosity as well as cloud and pour points, and must be heated to high temperatures to be used.

Racor recommends using at least 200 watts of thermostatically controlled electric heating in the head and/or filter bowl to help avoid biofuel waxing and gelling. Pour point suppressants and biocides are necessary for reliable operation. A coolant heat exchanger is required to heat the fuel in extreme cold weather conditions.

Biodiesel is known to attack certain synthetic rubber compounds, making them swell and soften, or the opposite, shrink and harden. Racor uses very high quality synthetic rubber compounds that perform equally well in biodiesel as in standard diesel. Seals subject to biodiesel exposure are generally replaced at the same time as the replacement filter. Racor uses all materials compatible with up to 20% biodiesel blend. Above 20% may require material changes to dynamic seals that are not normally replaced at element change-outs.



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# Biodiesel

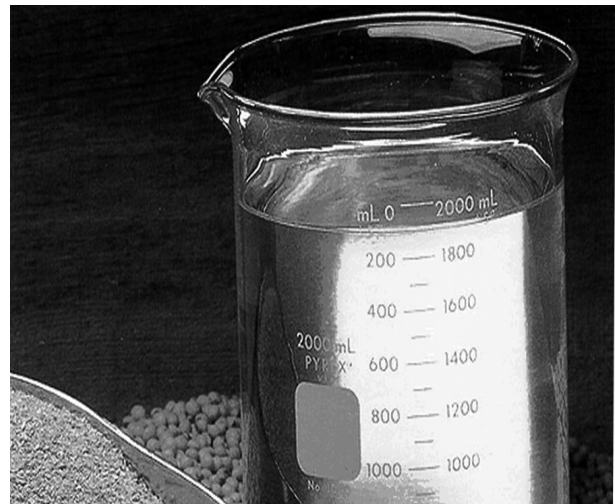


## Biodiesel and Biofuel Filtration Specification Considerations

1. Large primary and secondary filters at 50% of their rated flow.
2. High quality, corrosion resistant materials in construction.
3. High quality, synthetic rubber compounds for seals and hoses.
4. Efficient coolant and/or electric heating.
5. Fuel source with high efficiency fuel dispensing.

## Racor Engineering Leadership

Racor has participated in several biodiesel filtration field tests with major OEMs. Racor is actively participating in industry wide research and development on biodiesel fuel filtration and water separation challenges. Development of technology to support the use of all biofuels is on-going at Racor Division.













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# Biodiesel

## Fuel Filtration Systems Recommended for Biodiesel/Biofuels

Fuel Dispensing	Electric Heated Primary Filtration	Coolant Heated Primary Filtration	Electric Heated Secondary Filtration	Coolant and Electric Heaters
<p><b>FBO</b></p>  <p>See Page 397</p>	<p><b>6120R1230</b></p>  <p>See Page 101</p>	<p><b>390RC1230</b></p>  <p>See Page 63</p>	<p><b>690R122</b></p>  <p>See Page 101</p>	<p><b>320HTR4</b></p>  <p>See Page 758</p>
<p><b>RVFS</b></p>  <p>See Page 413</p>	<p><b>1000FH1230</b></p>  <p>See Page 211</p>	<p><b>525</b></p>  <p>See Page 89</p>	<p><b>6120R122</b></p>  <p>See Page 101</p>	<p><b>Nomad 14287</b></p>  <p>See Page 756</p>

- Notes:** 1. See bulletin **7529** for additional information on these products.  
 2. Marine rated versions are available—consult factory.  
 3. Also available—Thermoline Heaters, 300 and 500 watt, 12 and 24 volt.



# Air Separation

## The Phenomena of Air Separation in Diesel Fuel

**Fact #1:** There is AIR entrained in diesel fuel.

**Fact #2:** A very slight pressure drop can cause air to form visible bubbles.

**Fact #3:** Air can cause problems.

**Fact #4:** Air entrained in diesel fuel is not the same as diesel fuel vapor.

**Fact #5:** Air, once freed from fuel, will not go back into solution. Fuel vapor, however, CAN go back into solution (solid fuel).

there is a term called IEB (Interrupted Exhaust Beat). One cause of IEB is air bubbles passing into the fuel injection system; other causes are not relevant here.

For small engines, the problem will often result in an engine shutdown, because the amount of fuel for each injection is so small that the air bubble lasts during too many injections and the engine will stall before solid fuel reenters the system.

With the advent of electronic controls, the problem can become even greater. In some of those systems, the air bubble may be sensed as “fuel exhaustion” and the engine goes into shutdown mode.

Many smaller engines, however, use rotary distributor type fuel injection pumps and these, due to their design, can often handle the incoming air bubble. The air escapes into the governor cavity before being metered to the high pressure pumping plungers.

### The Problem

When fuel is in storage and quiescent, air is not visible. Depending on how much air is present in molecular form, more or less will separate from fuel as it moves through any torturous path, such as a fuel filter, and collects in any high point in its path.

If this collection point is above the outlet of the filter, the air will collect until the bubble is large enough to reach down to the outlet. The air will begin to extend beyond the outlet orifice due to its surface tension until forces are great enough to break part of the air bubble free. It then passes into the outlet line as a significant size bubble.

In the past, the average size engine never noticed air bubbles passing through its injection system because the absence of solid fuel was of such a short duration, the kinetic forces kept the engine running while missing a few power strokes until solid fuel reentered the injection system. In the vocabulary of diesel fuel injection engineering

### The Solution

The simplest and best solution is to use a filter head that has the outlet line exiting directly from the top, with no place for air bubbles to collect. In this solution, air is not stopped from coming out of fuel, but as each minute bubble forms, or coalesces on the downstream side of the filter media and passes to the top side of the element, it will pass out of the filter as a very tiny bubble. These bubbles seen in clear tubing may appear in a minuscule stream as champagne type gas bubbles.



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# Air Separation

## The Phenomena of Air Separation in Diesel Fuel

**Note:** fuel lines leading to the injection system must not have any areas where air can collect or the solution will be defeated.

Racor has two filter assemblies available that will solve the problem. The 600 Series has an outlet directly on top that, when connected with an orifice fitting, will send any air directly to the return system. An air vent must be fitted with an orifice between 0.020 to 0.040 inches (0.5 to 1.0 mm). This filter series is available in four sizes and can handle flow rates up to 120 GPH (454 LPH).

Models 325 and 330 provide a location for an air vent fitting that is designed to do the same thing. The air vent must be fitted with an orifice as mentioned above. These models will handle flow rates up to 75 GPH (284 LPH).

If it is not convenient to change to a different filter head, another solution is to provide a tee fitting in the outlet or outlet line with one of the tee's ports aiming straight up and connected to a line leading to the return system. This air venting port of the tee fitting must be fitted with an orifice as mentioned above.

### Simple Illustration of the Phenomena

Many years ago this writer was challenged by two separate customers on two different occasions to prove that a filter from which they could see air bubbles exiting, did not have leaks allowing air to be drawn into the filter. The demonstration consisted of using an open top 50 gallon drum filled with diesel fuel to submerge the filter in. The filter inlet had no fittings, but was simply exposed to the fuel in which the filter was submerged. The outlet was connected by means of a clear line to the inlet side of an electric fuel pump as planned to be used in the production vehicle. The outlet of the pump was directed to the top of the drum

of fuel. After completely filling the test filter with fuel, the filter was turned upside down so that the sediment collection bowl was on the top end of the assembly in the drum of fuel. The prediction that in 20 minutes the fuel filter assembly would float to the top of the drum was met with skepticism. But in about 20 minutes, up it came! The customer's engineers were finally convinced that the bubbles were the result of entrained air being coalesced out of the fuel, and not from leaks.

Some visible bubbles can be the result of fuel going into a vapor. Depending on the fuel temperature, at about 12 inches of mercury, diesel fuel will begin to vaporize and a stream of bubbles may be seen emanating from the point of the lowest negative pressure. Fuel vapor bubbles disappear as soon as the negative pressure is removed or after the fuel is pressurized on the pressure side of the transfer pump. The proof that air bubbles are air and not vapor is that they appear when there is very little negative pressure involved. They also do not disappear after being pressurized by a lift pump, unless of course the pressure is high enough to compress them beyond the point of visibility (about 50 microns or less).

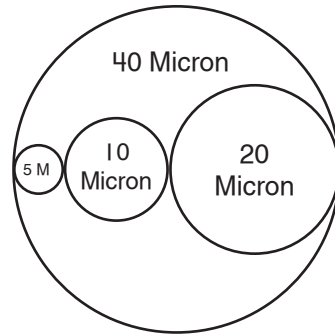
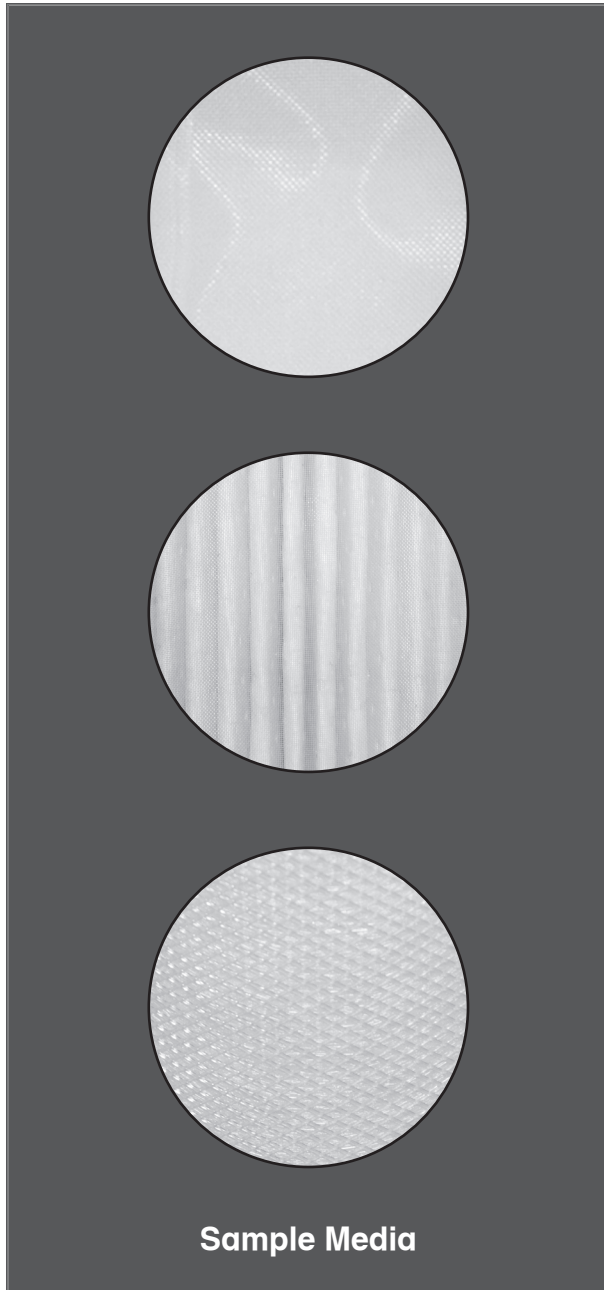
By David Hodgkins  
(40 years in diesel fuel system engineering)

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# Micron Rating

## The Micron Rating for Fluid Filters



### Relationship of Particle Sizes by Diameter

- 1 Micron = 1 Millionth of a Meter.
- 1 Micron = 1 Thousandth of a Millimeter.
- 1 Micron = 39 Millionth of an Inch (0.000039).
- 25.4 Micron = 1 Thousandth of an Inch (0.001).
- 40 Microns = Visible with Magnification.
- 40 to 90 Microns = Diameter of a Human Hair.

A micron rating for a fluid filter is a generalized way of indicating the ability of the filter to remove contaminants by the size of the particles. **AIR FILTERS ARE NOT RATED BY MICRON SIZE.** The micron rating does not properly or fully describe either the efficiency or the contaminant-holding capacity of the filter.

What does the word micron mean? It is a unit of linear measure in the metric system used to measure distance from one point to another. It is used like the inch, foot, centimeter and millimeter to measure the length, width, or diameter of objects.



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# Micron Rating

A filter that is marked “10 microns” has some capability in capturing particles as small as 10 microns. However, there is no one accepted method to measure and describe the size of particles that a filter can capture or the total amount of particles that the filter can hold. When you see the filter marked “10 microns”, you will not know exactly what this means unless you also have a description of the test and standards used to determine the filter rating.

Filter micron ratings are often based on one of these methods, but with many possible variations:

## A. Nominal Micron Rating (NMR)

NMR usually means the filter can capture a given percentage of particles of the stated size. For example, a filter might be said to have a nominal rating of 90% at 10 micron.

## B. Absolute Micron Rating (AMR)

AMR is a single pass test and is obtained by passing fluid containing glass beads through a flat sheet of filter material. Any beads that pass through are captured and measured.

## C. Multi-Pass Beta Rating (MPBR)

The MPBR has been accepted by many machinery manufacturers, as well as filter manufacturers (but not used in a public way by most of them to identify or specify their filters), especially for filters used in fluid power applications; hydraulics, controls, transmissions, power steering and so forth.

Single/Multi-Pass tests use contaminant specially graded by particle sizes added regularly in measured quantities to the fluid which is pumped continuously through the filter. Measured samples

of fluid are taken at timed intervals upstream and downstream of the filter. The contaminant in these samples is measured for particle sizes and the quantity of each size or ranges of sizes.

## Some suggestions:

1. Use filters of high quality.
2. Obtain filters by catalog listing, not just by “micron rating”. Other important qualities should also be considered.
3. Pay close attention to service intervals and good service practices for best economy of operation.

**Above article used by permission of the Filter Manufacturers Council, Research Triangle Park, NC.**

## Filter Testing (from Racor brochure #7550).

The Diesel Fuel Filtration Industry has a guiding engineering society in every country that manufactures diesel engines or diesel fuel filters. In the United States, this is known as the SAE (Society of Automotive Engineers); in Europe, it is the ISO (International Standards Organization). Each society publishes test method procedures for: Filtration Efficiency, Filter Capacity or Life, Media Migration, and Water Separation.

The most recognized and utilized test methods are: SAE J905, SAE J1488, SAE J1839 (in North America), and ISO 4020 (in Europe and Asia). All of these test methods require complex and sophisticated test equipment and, therefore, are outside the scope of this publication.

# Micron Rating

Most filter manufacturers follow these test methods, but several use test methods of their own design. The current SAE and ISO published test methods do not take the effects of engine vibration into consideration. They also measure capacity in grams of test dust collected instead of gallons of diesel fuel to determine filter life.

## Filtration Efficiency

Fuel filters are supplied for various applications and, therefore, there is a need for different levels of filtration efficiency in the removal or retention of particles. The hydraulic industry uses a rating method that uses the term "Beta Ratio" to describe a filtration efficiency level. The diesel fuel filtration industry generally uses simple filtration efficiency as the method of rating a fuel filter. Since there is no such thing as a fuel that provides absolute filtration of the particle sizes that are cause for concern, the industry uses terms like 96% at 5 microns. This term means, that when tested to SAE or ISO test methods the filter will retain 96% of all 5 micron size and larger particles.

Racor makes filters with various filtration efficiencies, but its standards for non-OEM (Original Equipment Manufacturer) are 2, 10, and 30 micron filter elements. The actual efficiency ratings for these are 98%, 95%, and 90% respectively. Racor also makes use of a 7 and 20 micron filter medium which are used to meet certain engine manufacturer's requirements for a final filter and a primary filter.

Racor's 2 micron filter medium should only be used in final or secondary filters where the fuel is first filtered by a primary filter. The primary filter for a 2 micron final filter should use a 10 micron medium. The exception in using a 2 micron filter in place of a primary filter is to obtain high-efficiency water separation, and is usually used in marine applications where the fuel supply may be cleaner but also may contain water more often. If the installation can allow the use of a filter large enough, then a 2 micron filter can serve in a system as the only filter in that system.

New high pressure common rail fuel injection systems require high efficiency in removal of small particles. The requirement is 95% for 3 micron particles. Racor fuel filters have a medium designed for these applications. Replacement elements should state, "For Use With Common Rail Fuel Injection Systems." Dirt levels in fuel also direct the level of efficiency required. Since the filters removes a percentage of dirt particles, it follows that when a much greater amount of dirt is present in the fuel, a greater number of particles will pass through the filter. Diesel engines used in earth moving or agriculture should use fuel filters that have higher efficiency than those for over-the-road or marine.

The planning must also take into consideration whether the filter is to be installed on the engine or the chassis and whether on the vacuum or pressure side of the system. Filter installations on the engine make the filter subject to high frequency vibrations which reduces the efficiency level, (as do spill port metering injection pumps).

**See Racor brochure #7550 for additional information.**



# Section 1



***Mobile Fuel  
Filtration***

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# Section I - Mobile Fuel Filtration

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## 025-MBL-02B

Water and contaminants in diesel fuel have been a problem for decades. More than ever, today's high performance diesel engines require clean, dry fuel. Standard fuel filters simply don't offer the improved features and peace-of-mind that come with Racor fuel filter/water separators.

These compact heavy-duty filters install quickly and remove solid contaminants and water from diesel fuel. Typical applications for the 025-MBL-02B include: small gensets, snow machines, lawn mowers, pressure washers and small diesel engines up to 50 HP.

Specifications	025-MBL-02B
Maximum Flow Rate	25 GPH (95 LPH)
Inlet/Outlet Port Size	¼"-18 NPTF
Housing Material	Die-cast aluminum head with clear, reusable plastic bowl.
Replacement Element	S2502
Micron Rating	10 (nominal)
Minimum Service Clearance (below filter)	3.0 in. (7.6 cm)
Height	4.3 in. (10.9 cm)
Depth	2.1 in. (5.3 cm)
Width	2.3 in. (5.8 cm)
Weight (dry)	0.3 lbs (0.14 kg)
Maximum Working Pressure <sup>1</sup>	100 PSI (6.9 bar)
H <sub>2</sub> O Removal Efficiency	99%
Clean Pressure Drop	0.35 PSI (0.02 bar)
Operating Temperature	-10° to +180°F (-23° to +82°C)



Special Notes:<sup>1</sup> Pressure installations acceptable up to maximum PSI shown. Vacuum installations are recommended.



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# Mobile Fuel Filtration

## 025-MBL-02B

### Installation Instructions

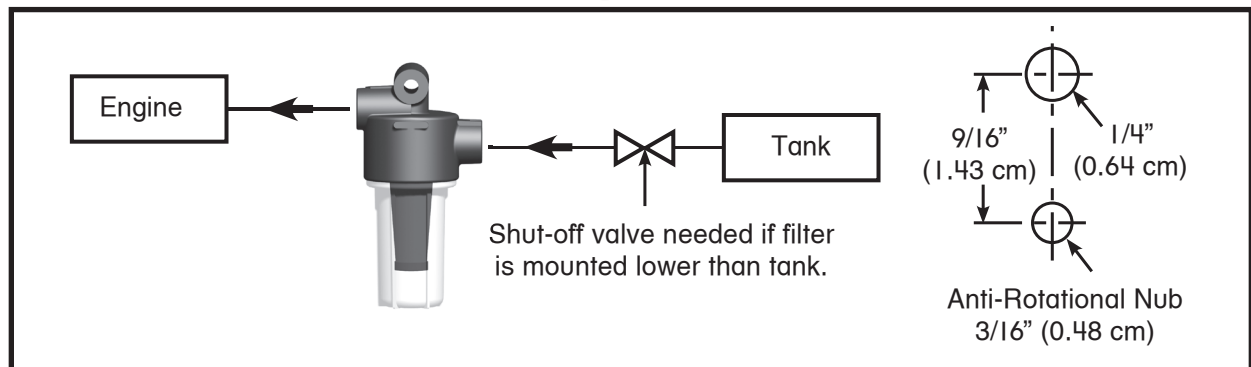
The following customer supplied materials should be on hand before beginning:

- Two 1/4" NPT fittings.
- 1/4" hose (or larger) and hose clamps.
- Thread sealant (no thread tapes).
- 1/4" bolt (or lag bolt).

These filters are designed and recommended to be installed on suction side applications; pressure side installations are acceptable up to 100 PSI (690 kPa). Do not smoke or allow open flames around fuel or filters.

1. Make sure engine is off and cool to touch.
2. Apply thread sealant to 1/4" NPT fittings (do not use thread tapes as particles may break off and contribute to clogging element).
3. Thread fittings into fuel ports and tighten snugly.
4. Mount filter vertically in a protected area and away from heat sources. Maintain at least 3 inches of clearance below filter for servicing. Follow mounting instructions below and use a 1/4" bolt to secure filter to engine.
5. Attach fuel lines to filter.
6. Start engine and check for leaks. Correct as necessary with engine off.

### Mounting Instructions



### Service Instructions

1. When water is visible in clear bowl or engine performance is reduced, service is required.
2. Make sure engine is off and cool to touch.
3. Spin clear bowl off of mounting head by turning in a counter-clockwise motion.
4. Replace used element with new element (part number S2502).
5. Lubricate clear bowl o-ring with motor oil.
6. Thread clear bowl onto mounting head and tighten hand tight only - do not use tools.
7. Start engine and check for leaks. Correct as necessary with engine off.

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## 025-MBL-02B

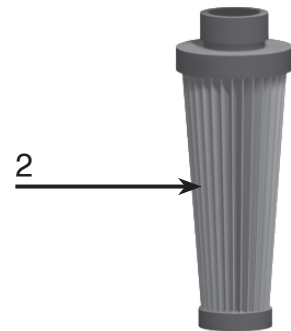
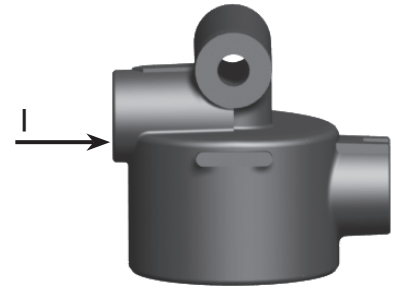
### Replacement Parts

Part Number	Description
1. N/A <sup>1</sup>	Mounting Head (1/4"-18 NPT ports)
2. <b>S2502</b>	Filter Element (10 micron Aquabloc® II) (includes #3)
3. <b>RK31213</b>	Bowl Gasket
4. <b>RK31391</b>	Clear Bowl Kit (includes #3)

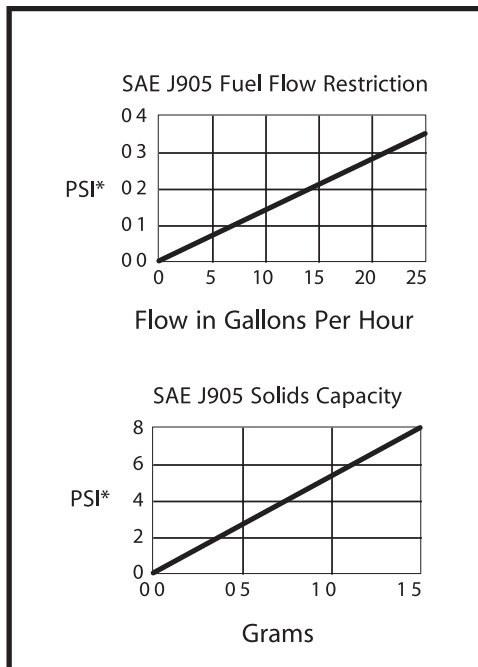
Additional Parts (not shown)

**12988** Installation Instructions

<sup>1</sup>Mounting head kit not available due to high cost; it is cheaper to buy a whole new assembly.



### Test Data



\*PSI X 2.036 = inHg / PSI X 6.895 = kPa  
(Test results are from controlled laboratory testing. Field results may vary.)



## PSI20-02 Strainer/Prefilter

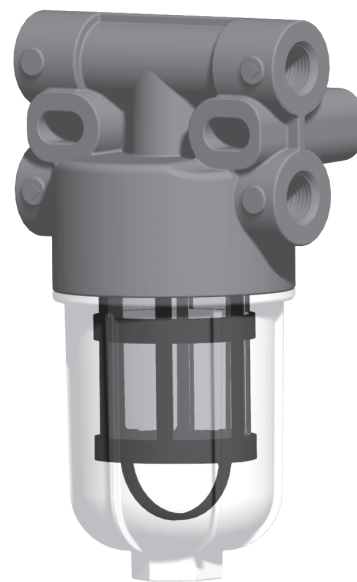
From personal watercraft to agricultural equipment, the PSI20-02 high-flow diesel or gasoline strainer/prefilter is designed to protect fuel pumps, carburetors, injectors and related fuel system components.

This innovative strainer/prefilter features a heavy-duty die-cast aluminum mounting head with 3/8" NPTF fuel ports, 4 port mounting versatility, a 200-260 micron cleanable nylon mesh screen and a reusable see-thru water and sediment collection bowl.

The PSI20-02 is ideal for equipment in environments with severe contamination and must be installed prior to, and in conjunction with, a Racor fuel filter/water separator. Strainers remove large droplets of free water and contaminants down to 200 micron.

When used prior to engine fuel filter/water separator, extended element life is realized. Equipment owners and operators appreciate the peace-of-mind that comes with installing Racor filters. Racor filters are easy to use, easy to service and save valuable time and money.

<b>Specifications</b>	<b>PSI20-02</b>
<b>Maximum Flow Rate</b>	120 GPH (454 LPH)
<b>Port Size (SAE J476)</b>	3/8" NPTF
<b>Replacement Strainer</b>	R51216
<b>Micron Rating</b>	200-260
<b>Minimum Service Clearance (below assembly)</b>	3.0 in. (7.6 cm)
<b>Height</b>	7.0 in. (17.8 cm)
<b>Width</b>	4.0 in. (10.2 cm)
<b>Depth</b>	3.1 in. (7.9 cm)
<b>Maximum Pressure</b>	30 PSI (2.07 bar)
<b>Clean Pressure Drop</b>	0.9 PSI (0.062 bar)
<b>Weight (dry)</b>	1.25 lb (0.57 kg)
<b>Temperature Rating</b>	-40° to +225°F (-40° to +170°C)



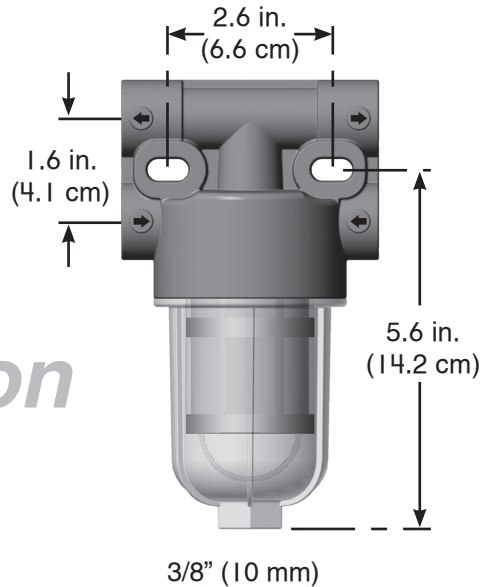
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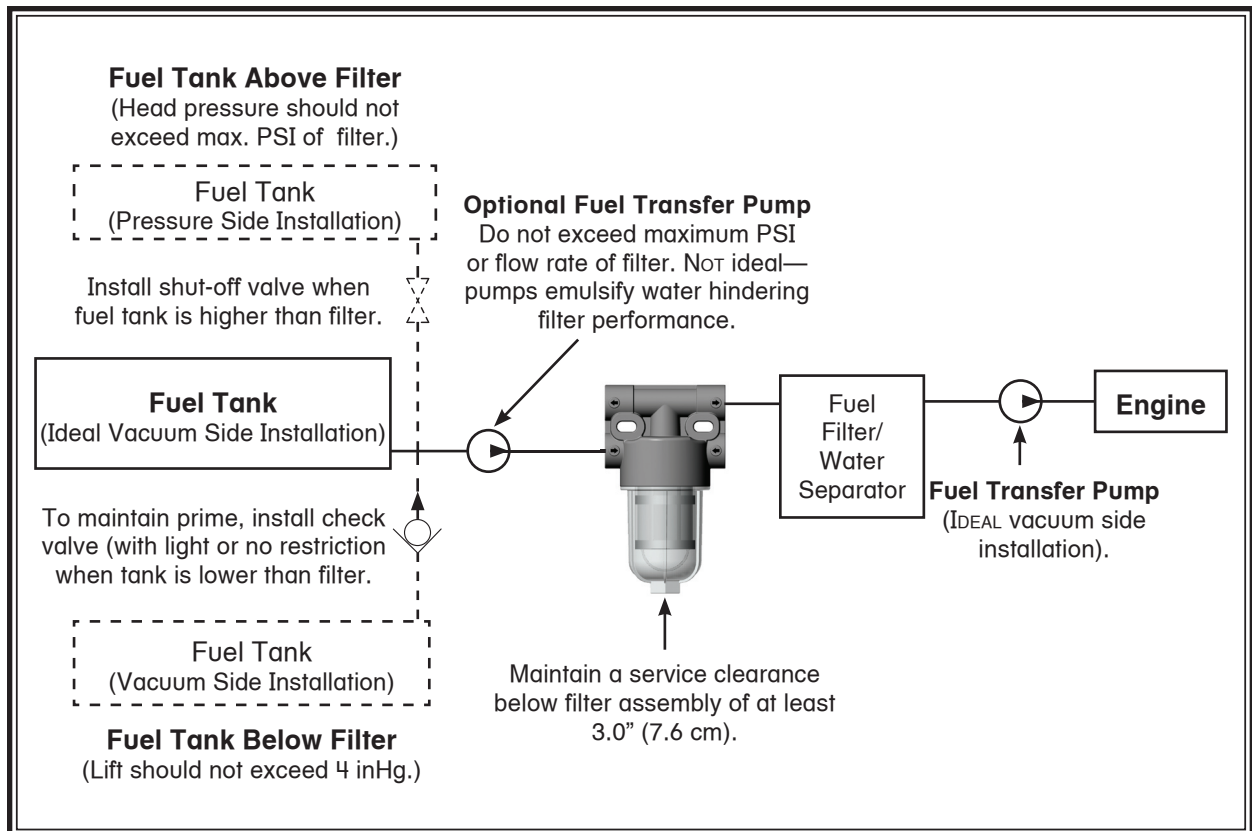
# Mobile Fuel Filtration

## PSI20-02 Strainer/Prefilter

### Mounting Information



### Installation Diagram



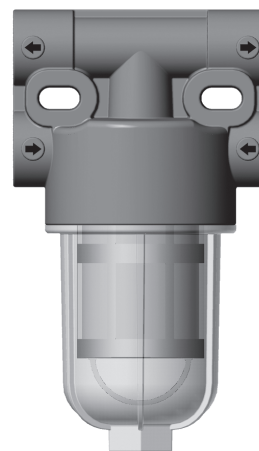
## PSI20-02 Strainer/Prefilter

### Installation Instructions

Exercise great caution when installing a PSI20-02 strainer/prefilter to avoid a fire hazard. Do not smoke, allow open flame or excessive heat which could ignite a fire. Perform installation in a well ventilated area.

Refer to Mounting Information and Installation Diagram and install as follows:

1. Make sure engine is off and cool to touch.
2. Apply thread sealant to 3/8" NPTF fittings (do not use thread tapes as particles may break off and contribute to clogging element).
3. Thread fittings into appropriate fuel ports and tighten snugly. Plug unused ports with port plugs and tighten snugly.
4. Mount strainer/prefilter vertically prior to fuel filter/water separator and in protected area away from heat sources. Maintain at least 3" (7.6 cm) of clearance below filter for servicing.
5. Attach fuel lines. Avoid tight bends and rubbing areas when routing hose.
6. Prime fuel system as instructed in engine manufacturers owner's manual.
7. Start engine and check for leaks. Correct as necessary with engine off.



miles, every other oil change, annually, or at first indication of power loss, whichever occurs first. Replace if mesh screen is damaged. Always carry extra replacement screens and fuel filter elements as one tankful of excessively dirty fuel can quickly plug a prefilter and a fuel filter/water separator element.

1. Make sure engine is off and cool to touch.
2. Close all fuel valves, if applicable, to make sure excess fuel does not spill during servicing.
3. With a collection pan in place, slowly remove clear bowl and mesh screen.
4. Clean screen with solvent and soft brush (or replace with new).
5. Lube bowl o-ring with motor oil or clean fuel.
6. Re-install mesh screen and clear bowl and tighten by hand only—do not use tools.
7. Open all fuel valves, if applicable.
8. Prime fuel system as instructed in engine manufacturers owner's manual.
9. Start engine and check for leaks. Correct as necessary with engine off.

### Service Instructions

Mesh screen cleaning/replacement frequency is determined by contamination level in fuels. Fuel flow to engine becomes restricted as screen gradually plugs with contaminants, resulting in noticeable power loss and/or hard starting. As a guideline, clean screen every 500 hours, 10,000

# Mobile Fuel Filtration

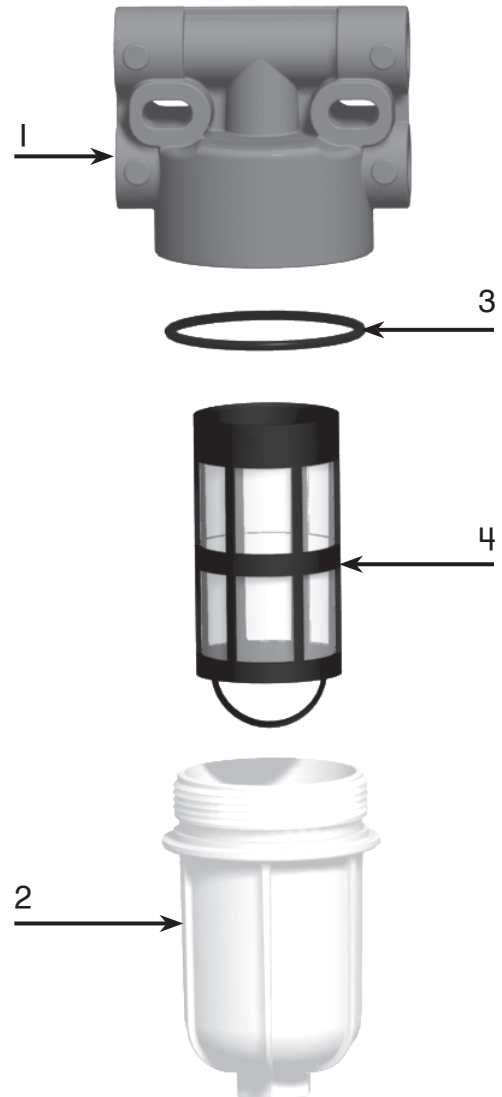
## PSI20-02 Strainer/Prefilter

### Replacement Parts

<u>Part Number</u>	<u>Description</u>
1. <b>RK51215-02</b>	Mounting Head Kit (3/8" NPTF ports)
2. <b>RK51217-01</b>	Clear Bowl Kits (includes bowl and bowl o-ring)
3. <b>RK51218-01</b>	Bowl O-ring Kit
4. <b>R51216</b>	Mesh Screen (200-260 micron)

Additional Parts (not shown)

<b>22231</b>	Metal Port Plug Kit (includes two 3/8" NPTF plugs)
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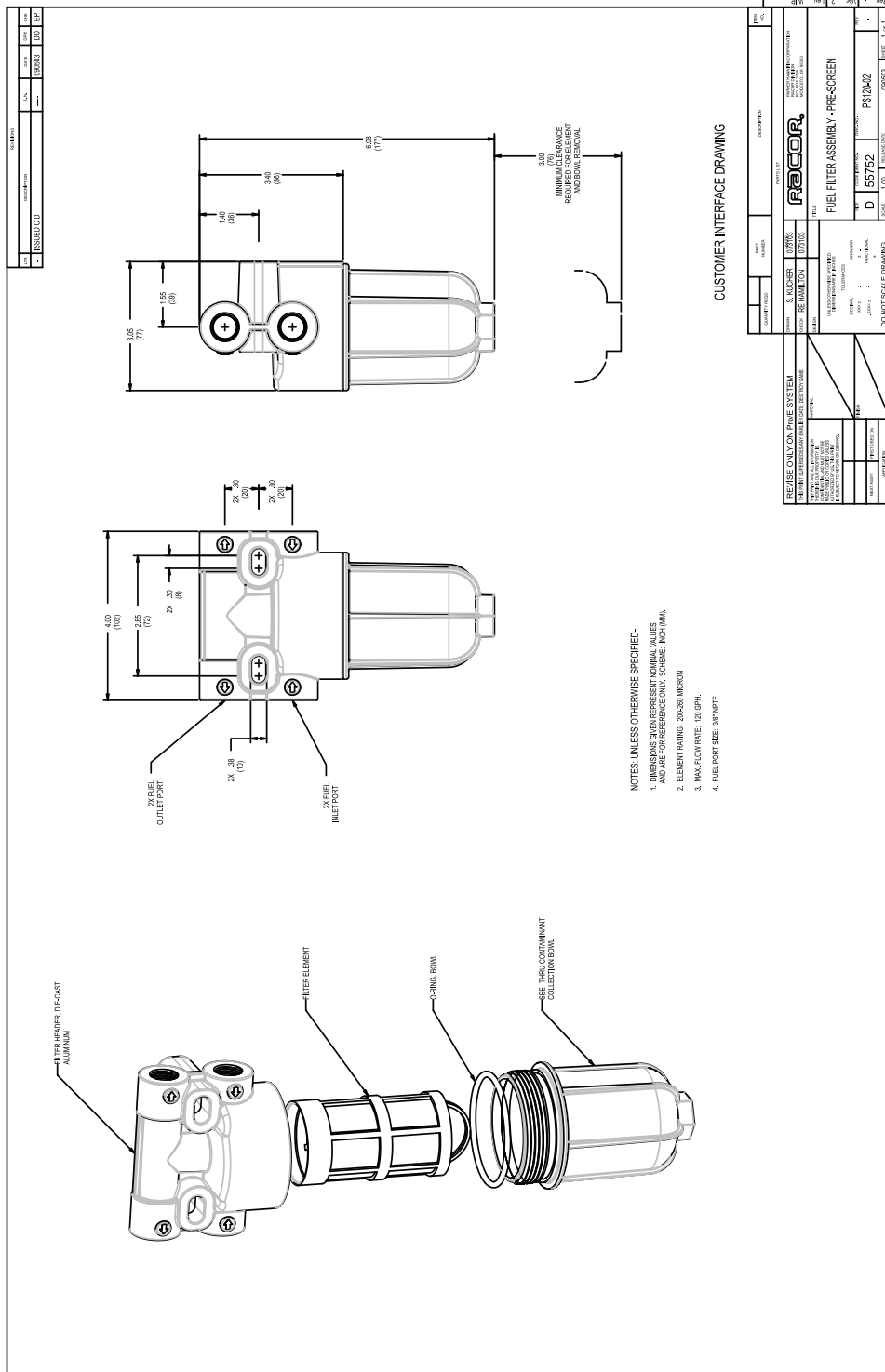
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800.344.3286 ext. 7555  
racortech@parker.com

# Customer Interface Drawing

# Mobile Fuel Filtration

1







# Mobile Fuel Filtration

1

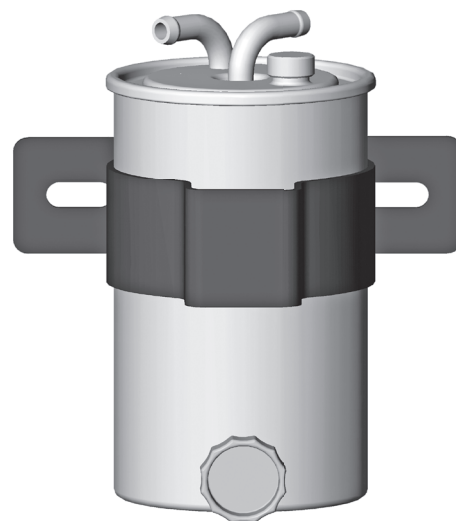
## 045-RAC-35I

The 045-RAC-35I fuel filter/water separator is assembled with our legendary 10 micron Aquabloc®II media, a plated steel housing, a vent plug and a lateral drain. This filter is designed to be installed on the suction (or vacuum) side of the fuel system with a maximum flow rate of 35 GPH (132 LPH) with diesel fuel and 45 GPH (170 LPH) with gasoline. This fuel filter assembly

is extremely effective in removing better than 93% of free water normally found in fuel due to condensation and removes 95% of particulate matter down to 10 micron (nominal).

Typical applications for the 045-RAC-35I include: generator sets, agriculture equipment, construction equipment, or any engine up to 220 HP.

Specifications	045-RAC-35I
<b>Maximum Flow Rate:</b> (with diesel fuel) (with gasoline)	35 GPH (132 LPH) 45 GPH (170 LPH)
<b>Inlet and Outlet Size</b>	5/16" Hose Bead
<b>Replacement Element</b>	R3228I
<b>Micron Rating (nominal)</b>	10
<b>Height</b>	6.2 in. (15.7 cm)
<b>Width</b>	5.6 in. (14.2 cm)
<b>Depth</b>	4.9 in. (12.4 cm)
<b>Weight (dry)</b>	1.5 lb (0.68 kg)
<b>Minimum Service Clearance (above assembly)</b>	5.0 in. (12.7 cm)
<b>Contaminant Capacity</b>	6.3 oz (180 g)
<b>Maximum Pressure Drop</b>	4 in/hg (13.5 kPa)
<b>Maximum Working Pressure</b>	30 PSI (2.07 bar)
<b>Operating Temperature</b>	-40° to +194°F (-40° to +90°C)
<b>Water Removal Efficiency</b>	93%



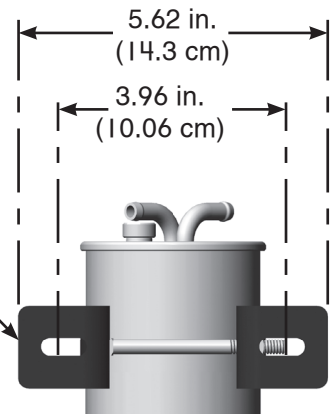
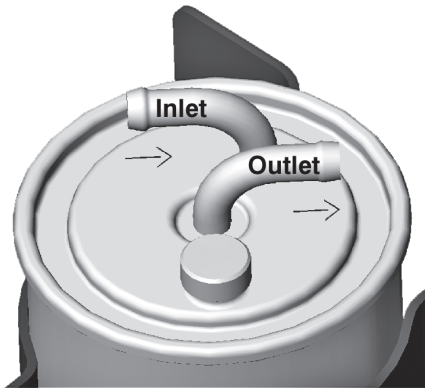
**Parker Hannifin Corporation**  
Racor Division, PO Box 3208  
Modesto, CA 95354 USA  
Phone: 800.344.3286  
Fax: 209.529.3278  
E-mail: racor@parker.com  
www.parker.com/racor

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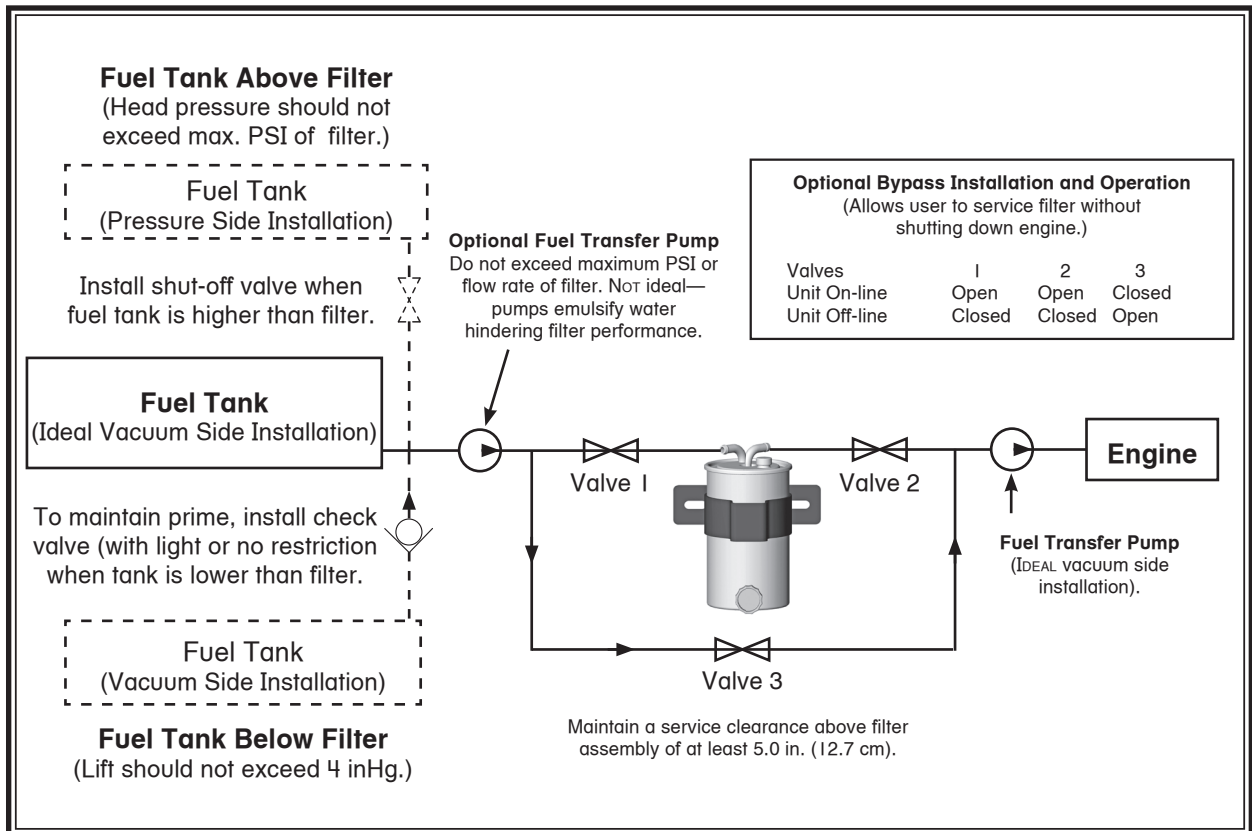
# Mobile Fuel Filtration

045-RAC-35 I

## Mounting Information



## Installation Diagram



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racortech@parker.com

## 045-RAC-35 I

### *Installation Information*

- Obtain good ventilation and lighting.
- The engine must be off for installation.
- Do NOT smoke or allow open flames near installation.
- Keep fuel line restrictions to a minimum. Locate filter assembly between horizontal planes of bottom of fuel tank and inlet of fuel pump, if possible. If filter assembly is installed in an application where fuel tank is higher than filter, a shut-off valve must be installed between tank and filter assembly INLET. This will be used when servicing replacement elements.
- Filter assemblies should be installed vertically on vacuum side of fuel transfer pump for optimum water separating efficiency. See Installation Diagram on previous page.
- Install filter in a location which provides accessibility, protection from heat or flames and accidental impacts. Always adhere to applicable local piping regulations or codes. Use maximum hose size possible and avoid reducers and elbows in order to keep restriction values as low as possible.
- Attach fuel hose (5/16", customer supplied) to inlet and outlet hose beads with hose clamps. When routing hose, avoid surfaces that move, have sharp edges, or get hot (such as exhaust piping).
- Prime filter according to engine manufacturer's fuel system priming instructions.

### *Draining Water*

Water is heavier than fuel and settles to bottom of filter. Check for water frequently, daily if poor fuel source is suspected.

With engine off, open drain valve to evacuate water and contaminants. When fuel begins flowing out of drain, close drain valve. CAUTION! If drain valve is left open too long, entire contents of filter will drain out. Note: In some applications it may be necessary to open vent plug on top of filter to 'break vacuum' within filter. Remember to close vent plug after water has drained. Follow priming instructions.

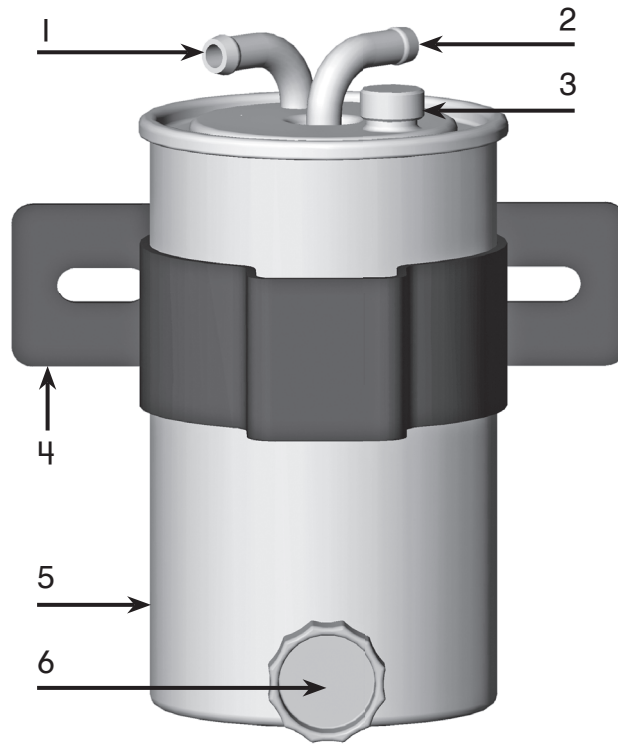
### *Change-outs*

Filter replacement frequency is determined by contamination levels in fuels. Fuel flow to engine becomes restricted as filter gradually plugs with contaminants, resulting in noticeable power loss and/or hard starting. As a guideline, change filter every 500 hours, 10,000 miles, every other oil change, annually, or at first indication of power loss, whichever occurs first. Always carry extra replacement filters as one tankful of excessively dirty fuel can plug a filter.

1. Open vent plug.
2. Drain filter completely by opening drain valve.
3. Disconnect hoses.
4. Loosen carriage bolt on bracket.
5. Slide filter up and out of bracket. Dispose properly.
6. Reverse steps to install new filter.
7. Follow priming instructions.

# Mobile Fuel Filtration

045-RAC-35 I



## Replacement Parts

	<u>Part Number</u>	<u>Description</u>
1.	N/A	Inlet (5/16" hose bead)
2.	N/A	Outlet (5/16" hose bead)
3.	N/A	Vent Plug (see #5)
4.	RK32274	Bracket Kit (includes bracket and carriage bolt)
5.	R32281	Filter (includes vent plug and drain valve)
6.	N/A	Drain Valve (see #5)

Additional Parts (not shown)

32282 Installation Instructions

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racortech@parker.com

## I 100 Series

### Introduction

The Racor I 100 Series features a variety of compact sizes to fit the most cramped engine compartments. All units feature 1/4"-18 NPTF inlet and outlet fuel ports and a unitized mounting bracket (except the I 40R which may be hard piped and supported by the piping).

### Elements

All I 100 Series assemblies feature spin-on, high-capacity, Aquabloc®II replaceable filter elements which stop water, remove solid contamination, and are available in 2, 10, and 30 micron (model I 10A is a cartridge element and is available with a 10 micron element only). Filtration needs should be based on application, fuel quality, operating climates, and maintenance schedules.



I 10A



I 20A

### Clear Bowls

All units feature spin-on contaminant collection bowls. The clear bowls used with these models will not discolor from alcohol, additives, or UV light and have a leak-proof, positive seal drain for easy servicing (except the I 10A). Water and contamination levels can be seen easily at a glance.

### Options

I 100 Series optional accessories include: water detection kits, vacuum or compound gauges and metal bowls. Metal bowls should be specified when filtering fuels in hazardous locations where equipment is exposed to flying gravel and debris.



I 20B



I 40R

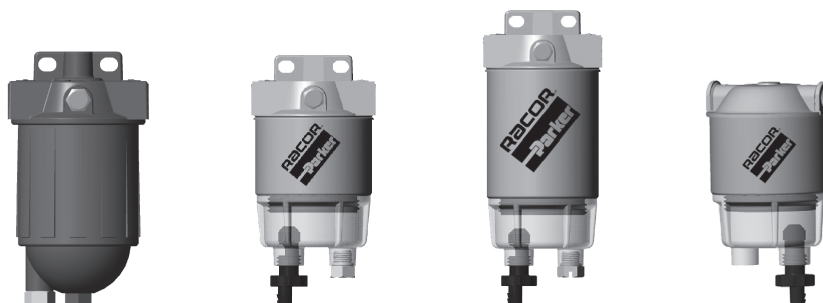


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**RACOR**®

# Mobile Fuel Filtration

## I 00 Series



Specifications	I 10A	I 20A	I 20B	I 40R
<b>Maximum Flow Rate:</b> (with diesel fuel) (with gasoline)	15 GPH (57 LPH) 35 GPH (132 LPH)	15 GPH (57 LPH) N/A	20 GPH (76 LPH) N/A	15 GPH (57 LPH) N/A
<b>Port Size: (SAE J476)</b>	¼"-18 NPTF	¼"-18 NPTF	¼"-18 NPTF	¼"-18 NPTF
<b>Total Number of Ports:</b> (total inlets) (total outlets)	4 2 2	4 2 2	4 2 2	2 1 1
<b>Minimum Service Clearance</b>	2.0 in. (5.1 cm)	2.0 in. (5.1 cm)	2.0 in. (5.1 cm)	2.0 in. (5.1 cm)
<b>Center Threads</b>	N/A	M18 x 1.5	M18 x 1.5	M18 x 1.5
<b>Height</b>	6.0 in. (15.2 cm)	6.5 in. (16.5 cm)	8.0 (20.3 cm)	6.0 in. (15.2 cm)
<b>Depth</b>	3.3 in. (8.4 cm)	3.2 in. (8.1 cm)	3.2 in. (8.1 cm)	3.2 in. (8.1 cm)
<b>Width</b>	3.2 in. (8.1 cm)	3.2 in. (8.1 cm)	3.2 in. (8.1 cm)	3.2 in. (8.1 cm)
<b>Weight (dry)</b>	1.3 lb (0.59 kg)	1.1 lb (0.50 kg)	1.2 lb (0.54 kg)	1.1 lb (0.50 kg)
<b>Clean Pressure Drop</b>	0.15 PSI (0.01 bar)	0.15 PSI (0.01 bar)	0.15 PSI (0.01 bar)	0.01 PSI (0.0007 bar)
<b>Max. Allowable Pressure<sup>1</sup></b>	100 PSI (6.9 bar)	7.0 PSI (0.48 bar)	7.0 PSI (0.48 bar)	7.0 PSI (0.48 bar)
<b>Available Options:<sup>2</sup></b> (water sensor probe) (heater)	Yes No	Yes No	Yes No	No No
<b>Water in Bowl Capacity</b>	1.2 oz. (36 ml)	1.8 oz. (52 ml)	1.8 oz. (53 ml)	1.8 oz. (53 ml)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%	99%	99%	99%
<b>Operating Temperature</b>	-40° to +255°F (-40° to +123°C)			

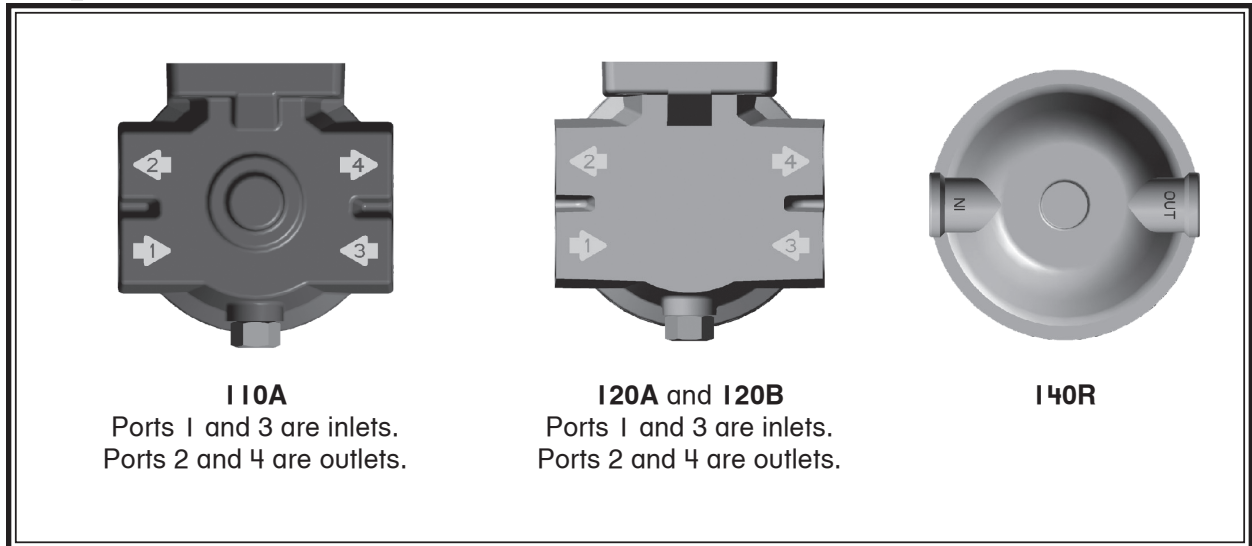
**Special Notes:** <sup>1</sup> Pressure installations are applicable up to maximum PSI shown. Vacuum installations are recommended. <sup>2</sup> Not for use with gasoline applications.

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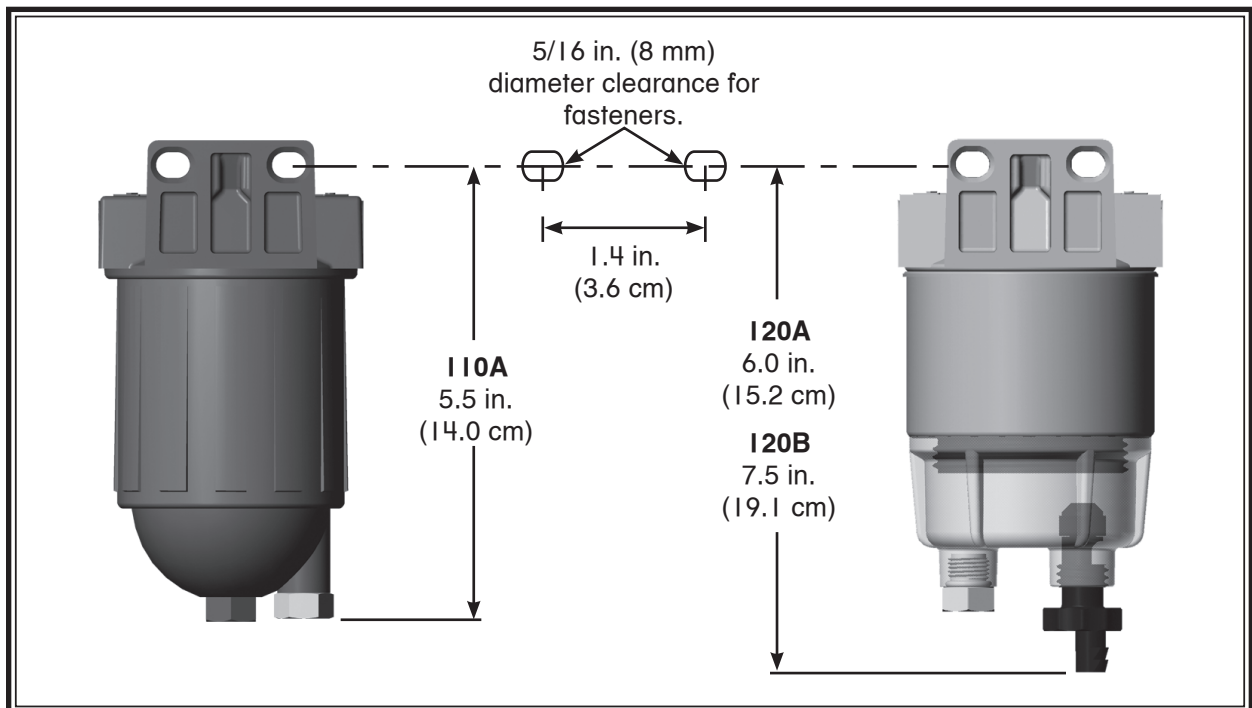
Technical Support:  
800.344.3286 ext. 7555  
racortech@parker.com

## I 100 Series

### Top View



### Back View

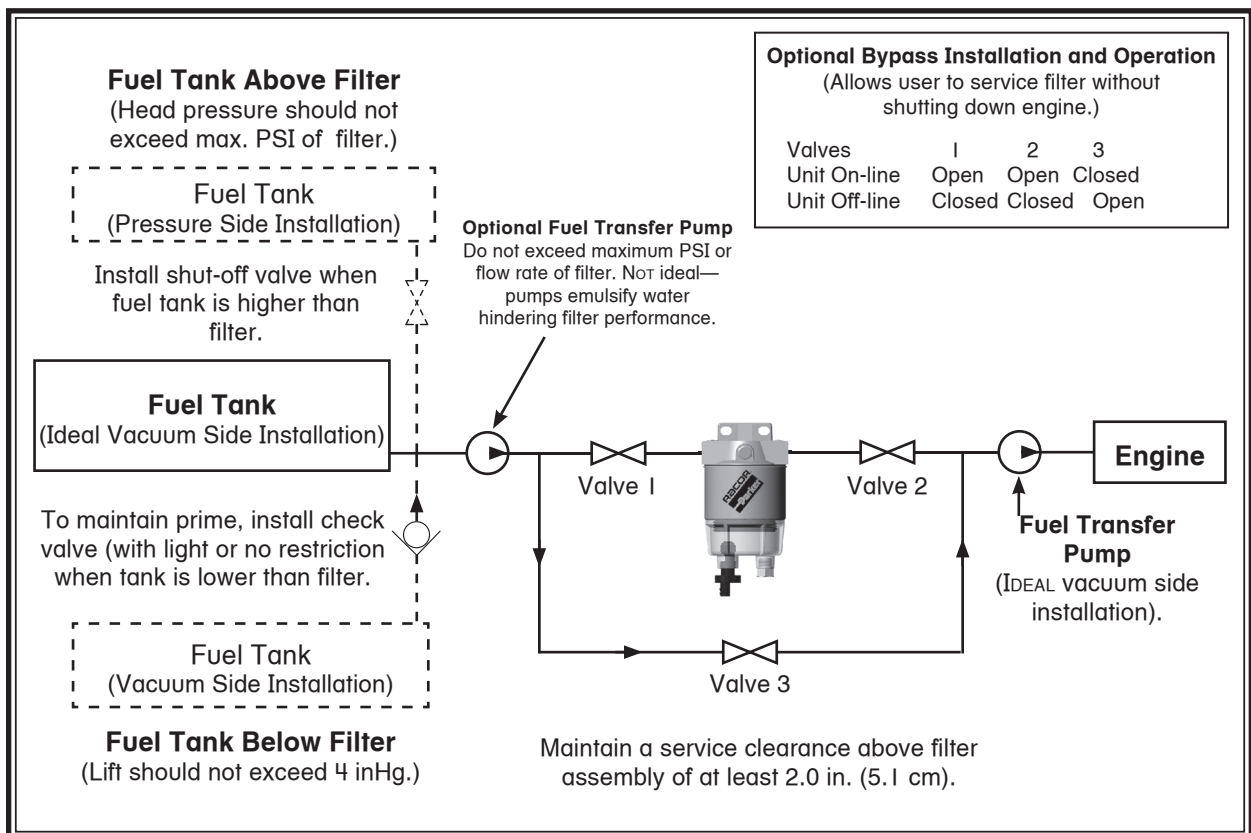




# Mobile Fuel Filtration

## I 100 Series

### Installation Diagram



Installation diagram applies to all I 100 Series filters. Model I20A shown above. Racor offers hose and fittings to complete this installation—see Accessories.

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## I 00 Series

### *Installation*

**Note:** exercise great caution when installing a I 00 Series fuel filter/water separator to avoid a fire hazard. Do not smoke, or allow any open flame or excessive heat which could ignite a fire. Perform installation in a well ventilated area.

Refer to mounting instructions and installation diagram and install as follows:

1. Make sure engine is off and cool to touch.
2. Apply thread sealant to 1/4" NPTF fittings.

**Warning:** do not use thread tape as particles may break off and contribute to clogging element. Also, tape particles on outlet side of filter will jam or foul injectors.

3. Thread fittings into appropriate fuel ports and tighten snugly. Plug unused ports, if any, with port plugs and tighten snugly.
4. Mount filter vertically in a protected area and away from heat sources. Maintain at least 2 in. (5.1 cm) of clearance below filter for servicing.
5. Attach fuel lines to filter. Avoid tight bends and rubbing areas when routing fuel hose.
6. Follow priming instructions on next page.

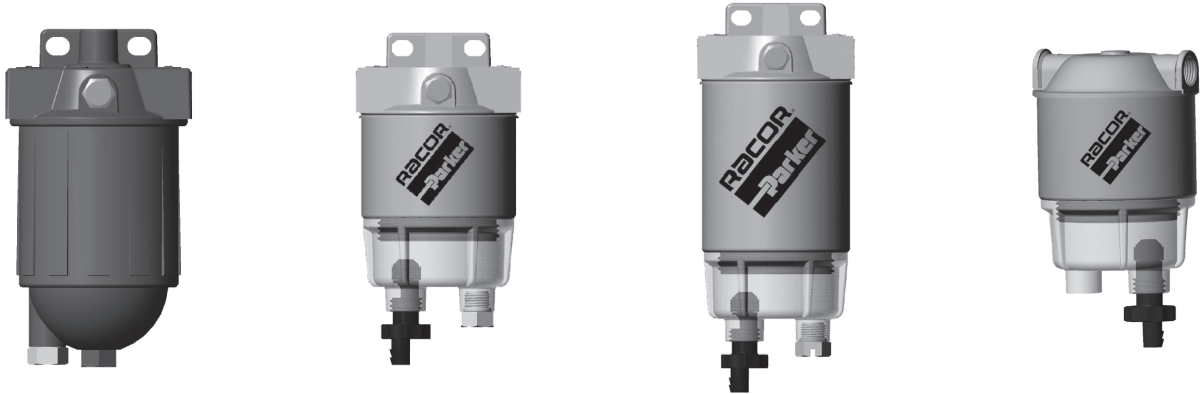
### *Service*

Element replacement frequency is determined by contamination level in fuels. Fuel flow to engine becomes restricted as element gradually plugs with contaminants, resulting in noticeable power loss and/or hard starting. As a guideline, change element every 500 hours, 10,000 miles, every other oil change, annually, or at first indication of power loss, whichever occurs first. Always carry extra replacement elements as one tankful of excessively dirty fuel can quickly plug a filter.

1. Make sure engine is off and cool to touch.
2. Close all fuel valves, if applicable, to ensure excess fuel does not spill during servicing.
3. Open vent plug on mounting head, if applicable.
4. Drain unit of fuel.
5. Remove bowl and element. Dispose of element properly. Bowl is reusable.
6. Lubricate new element seals with motor oil or clean fuel and install new element.
7. Re-install bowl and tighten by hand only - do not use tools.
8. Close vent plug, if applicable and tighten snugly.
9. Open all fuel valves, if applicable.
10. Follow priming instructions on the next page.

# Mobile Fuel Filtration

## I 100 Series



## Draining

Water is heavier than fuel and will settle to bottom of bowl and appear different in color if collected in a clear jar. In high humidity environments, check bowl frequently (daily if a poor fuel source is suspected). I 100 Series bowls are equipped with a water sensor port that accepts a water probe (sold separately) and alerts operator of a high water condition in the filter (except I 40R—no water probe port available).

**Warning! Do NOT use water probe electronics in gasoline applications—an explosion could occur.**

1. Make sure engine is off and cool to touch.
2. Open vent plug, if applicable.
3. Drain water from filter by opening self-venting drain (I 10A users: remove probe plug). Close as soon as all water has evacuated. **Note:** if drain is open too long, the entire filter assembly may drain completely of water *and* fuel.
4. Close and tighten vent plug snugly.
5. Follow priming instructions.

## Priming

1. Remove bowl and element together, and fill with clean fuel.
2. Re-install bowl and element.
3. Verify all other connections are tight.
4. Start engine and check for leaks. Correct as necessary with engine off.

## Trouble Shooting

If a I 100 Series filter fails to hold prime, first check vent plug, drain plug, fittings and head/element/ bowl are properly tightened. Next, check fuel line connections and verify that they are free of pinches or unnecessary bends and check to see if fuel tank strainer (or pick-up tube) is clogged. If problems persist and element is new, call Racor Technical Support at 1.800.344.3286 ext. 7555.

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## I 100 Series

# Replacement Parts

### I 100A

- | Part No.          | Description   |
|-------------------|---|
| 1. <b>RK21361</b> | Head Kit (includes #'s 2 and 3)<br>(1/4"-18 NPTF Ports) |
| 2. <b>RK10110</b> | Metal Vent Plug Kit<br>(3/8"-24 UNF)                    |
| 3. <b>RK21363</b> | Gasket/O-ring Kit                                       |
| 4.                | Replacement Element (includes #3)                       |
| <b>RIIS</b>       | 2 Micron  |
| <b>RIIT</b>       | 10 Micron   |
| 5. <b>RK21364</b> | Housing Kit<br>(includes #'s 5 and 6)                   |
| 6. <b>RK20022</b> | Metal Plug Kit<br>(1/2"-20 UNF)                         |

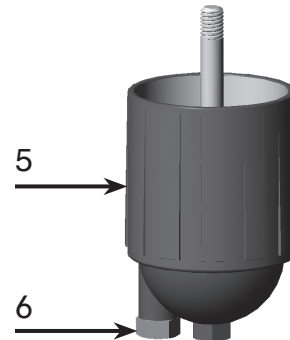
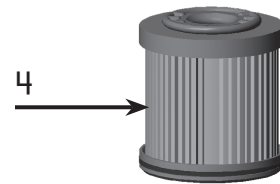
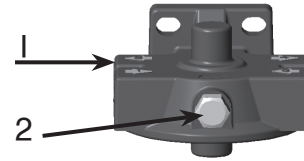
Additional Parts (not shown)

**RK30964**<sup>1</sup> Water Probe

**RK30817** Port Plug Kit  
(2 plugs per kit)

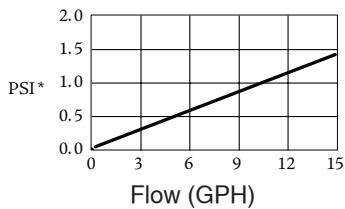
**21410** Installation Instructions

<sup>1</sup> Do not use on gasoline applications. Water probe must be used with a water detection module—see Accessories.

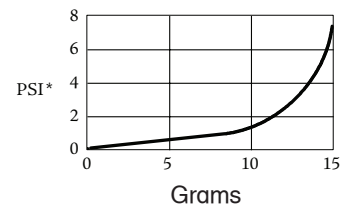


# Test Data

(Test results are from controlled laboratory testing. Field results may vary.)



SAE J905 Fuel Flow Restriction



SAE J905 Solids Capacity

(using SOFTC-2A; RI IT Element)

PSI X 2.036 = inHg. / PSI X 6.895 = kPa

# Mobile Fuel Filtration

## I 00 Series

### How To Order

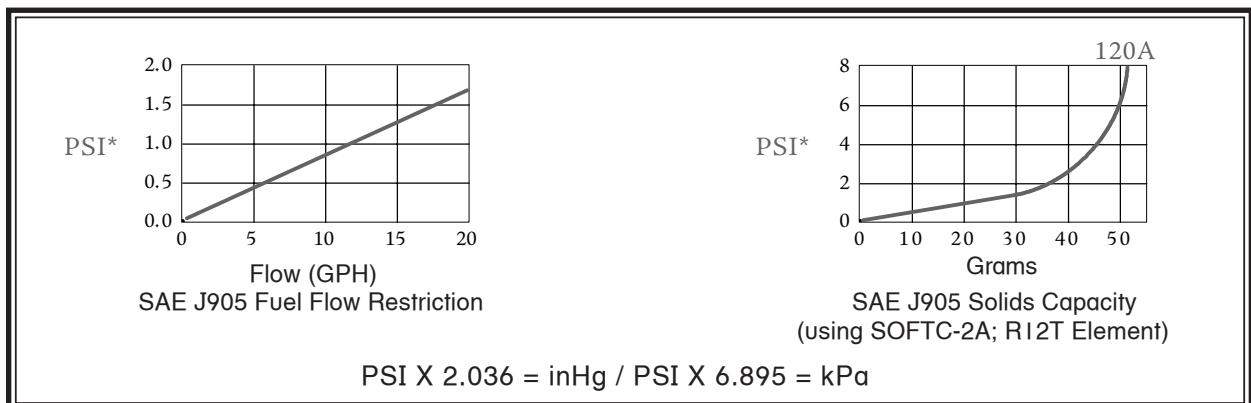
(The example below shows how a part number is constructed.)

I 20A	S
Specify a model: <b>I 20A</b> for 15 GPH (57 LPH) <b>I 20B</b> for 20 GPH (76 LPH)	Specify a micron rating: <b>S</b> for 2 micron <b>T</b> for 10 micron <b>P</b> for 30 micron



I 20B

### Test Data



(Test results are from controlled laboratory testing. Field results may vary.)

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## I 00 Series

# Replacement Parts

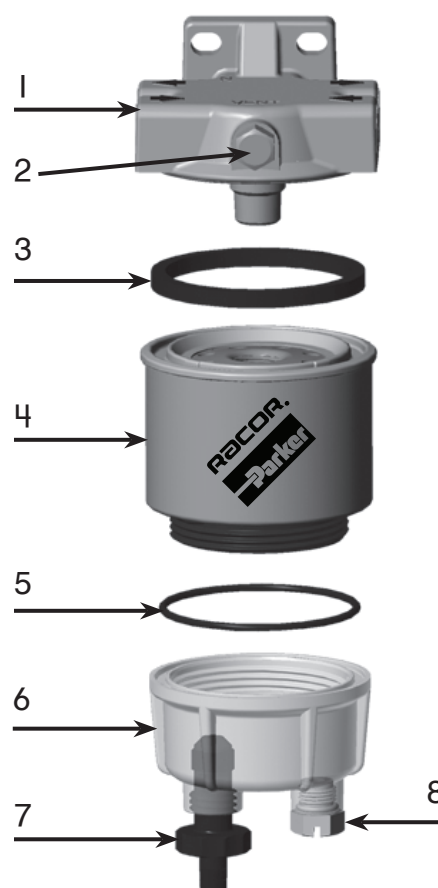
### I20A and I20B

<u>Part Number</u>	<u>Description</u>
1. <b>RK10214</b>	Mounting Head Kit (1/4"-18 NPTF ports)
2. <b>RK10110</b>	Metal Vent Plug Kit (3/8"-24 SAE threads)
3. <b>RK10503</b>	Head Gasket Kit
4. Replacement Element (includes #'s 3 and 5)	
<b>R12S</b>	I20A: 2 micron
<b>R12T</b>	I20A: 10 micron
<b>R12P</b>	I20A: 30 micron
<b>R13S</b>	I20B: 2 micron
<b>R13T</b>	I20B: 10 micron
<b>R13P</b>	I20B: 30 micron
5. <b>RK10012</b>	Bowl O-ring Kit
6. <b>RK10215</b>	Clear Bowl Kit
7. <b>RK30476</b>	Self-venting Drain Kit
8. <b>RK20126</b>	Plastic Plug Kit (1/2"-20 SAE threads)

### Additional Parts (not shown)

<b>RK30964</b> <sup>1</sup>	Water Probe Kit
<b>RK10109</b>	Metal Bowl Kit
<b>I0219</b>	Installation Instructions

<sup>1</sup> Do not use on gasoline applications. Water probe must be used with a water detection module—see accessories.



# Mobile Fuel Filtration

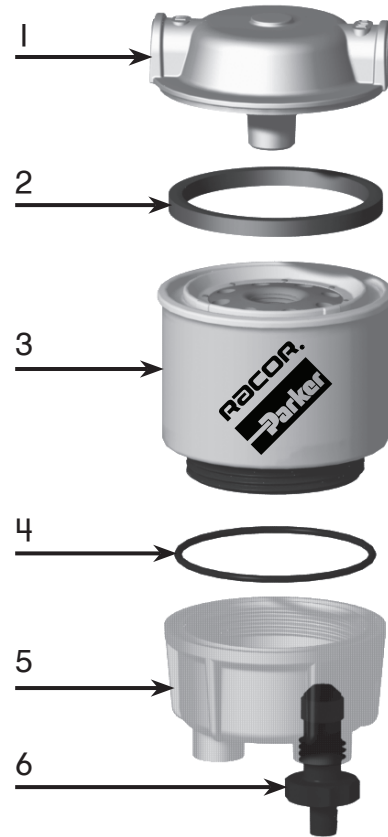
## I00 Series

### Replacement Parts

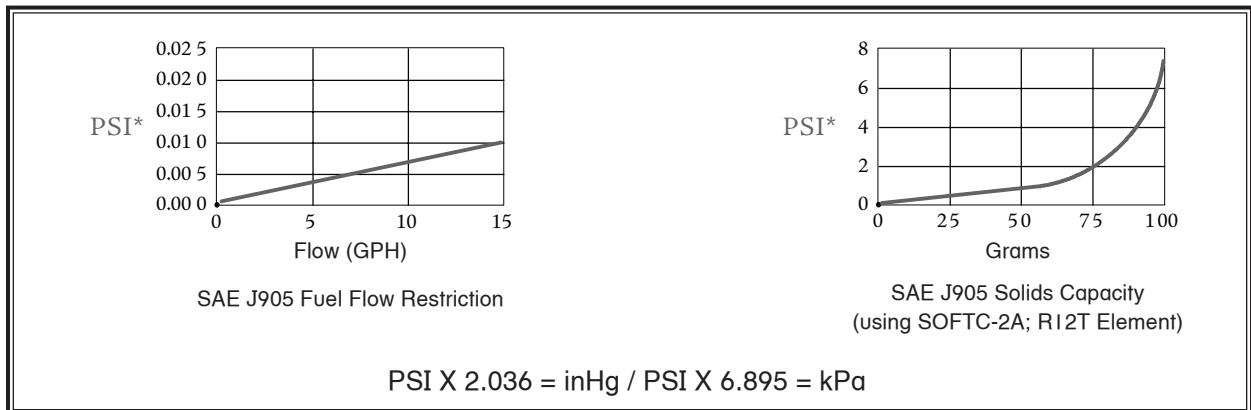
I40R

Part Number	Description
1. RK10177	Mounting Head Kit (1/4"-18 NPTF ports)
2. RK10503	Head Gasket Kit
3. Replacement Element (includes #'s 2 and 4)	
R12S	2 micron
R12T	10 micron
R12P	30 micron
4. RK10012	Bowl O-ring Kit
5. RK10215	Clear Bowl with Drain Kit
6. RK30476	Self-venting Drain Kit

Additional Parts (not shown)  
 10192 Installation Instructions



### Test Data



(Test results are from controlled laboratory testing. Field results may vary.)

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## Customer Interface Drawing

REV	DATE	DESCRIPTION
1	1/15/03	RELEASED DRAWING
2	5/20/03	REVISED NOTES
3	10/26/03	REVISED

**NOTES: UNLESS OTHERWISE SPECIFIED:**  
 1. DIMENSIONS GIVEN REPRESENT NOMINAL VALUES AND ARE FOR REFERENCE ONLY. INCH AND MM  
 2. SPECIFICATIONS:  
 A. MAX. FLOW RATE: 15 GPM FOR DIESEL  
 B. MAX. FLOW RATE: 57 GPM FOR GASOLINE  
 C. MAXIMUM OPERATING PRESSURE: 25 PSI (1.72 BAR)  
 D. MAXIMUM SHOCKING PRESSURE: 50 PSI (3.45 BAR)  
 E. PORT SIZES: STANDARD IS 1/4" NPT, 4 P.L.C.  
 F. NET WEIGHT: 3.0 LBS (1.36 KG)  
 G. GROSS WEIGHT: 3.5 LBS (1.59 KG)  
 H. TEMPERATURE RANGE: 40° TO 125°F  
 3. REPLACEMENT ELEMENT P/N: 8111  
 A. ELEMENT RATING: 10 MICRON  
 B. SOLIDS CAPACITY: 10 GRAMS @ 1.0 MIC.  
 C. MAXIMUM WORKING PRESSURE: 40 PSI (2.76 BAR)  
 D. CLEAN ELEMENT PRESSURE DROP: 0.15 PSI  
 4. CONSTRUCTION MATERIALS:  
 ALL ALUMINUM ALLOY BODY WITH ZINC CHROMATE PLATED STEEL FASTENERS  
 BUBBLE BLOWN POLYMER MEDIA  
 MATERIAL: FLUOROCARBON (FPM) OR NYLON (NBR)  
 FINISH: 1.4 MILS OF POWDER COATING.  
 5. PACKAGING:  
 STANDARD IS SINGLE CARTONED AND PACKAGED TO PROTECT ELEMENTS FROM DAMAGE (2 X 6.5 X 8.5")  
 APPROXIMATE WEIGHT: 8 LBS.

**CUSTOMER INTERFACE DRAWING**

DATE	11/20/03	DESIGNER	
DRAWN BY		CHECKED BY	
APP'D BY		REVISIONS	
REVISIONS		BY	DATE
1			
2			
3			
4			
5			
PAPER TITLE		PART NAME	
FFWS ASSEMBLY-110A		FFWS ASSEMBLY-110A	
REV	DATE	DESCRIPTION	BY
D	5/5/02		
A			







## 200 Series

The Racor diesel spin-on 200 Series features a variety of compact sizes to fit in the most cramped engine compartments. All models are standard with 1/4"-18 NPTF (SAE J476) inlet and outlet fuel ports (1/4M ports also available) and a unitized mounting bracket. They also include an in-head primer pump which allows the operator to hand prime the filter and simplifies service procedures.

All 200 Series filters feature spin-on, high-capacity, Aquabloc®II replaceable filter elements which separate water, remove solid contamination, and are available in 2, 10, and 30 micron. Filtration needs should be based on application, fuel quality, operating climates and

maintenance schedules. All models also have a spin-on contaminant collection bowl. The see-through bowls used with these models will not discolor from alcohol, additives, or UV light and have a leak-proof, positive seal, self-venting drain for easy servicing. Water and contamination levels can be seen easily at a glance.

Options for the 200 Series filters include: water detection kits (for diesel applications only), vacuum or compound gauges, 12 or 24 volt dc (200 watt) heaters, hose and fittings, and metal bowls. Metal bowls should be specified when filtering fuels in hazardous locations where equipment is exposed to flying gravel and debris.



215R



230R



245R



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Modesto, CA 95354 USA  
Phone: 800.344.3286  
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# Mobile Fuel Filtration

## 200 Series



Specifications	215R	230R	245R
<b>Maximum Flow Rate</b>	15 GPH (57 LPH)	30 GPH (114 LPH)	45 GPH (170 LPH)
<b>Port Size</b>	1/4"-18 NPTF	1/4"-18 NPTF	1/4"-18 NPTF
<b>Total Number of Ports</b> (total inlets) (total outlets)	3 1 2	3 1 2	3 1 2
<b>Minimum Service Clearance</b>	2.0 in. (5.1 cm)	2.0 in. (5.1 cm)	2.0 in. (5.1 cm)
<b>Element Threads</b>	1"-14	1"-14	1"-14
<b>Height</b>	8.3 in. (21.1 cm)	9.0 in. (22.9 cm)	10.5 in. (26.7 cm)
<b>Depth</b>	4.0 in. (10.2 cm)	4.0 in. (10.2 cm)	4.0 in. (10.2 cm)
<b>Width</b>	3.9 in. (9.9 cm)	3.9 in. (9.9 cm)	3.9 in. (9.9 cm)
<b>Weight (dry)</b>	1.8 lb (0.82 kg)	2.0 lb (0.91 kg)	2.2 lb (1.0 kg)
<b>Clean Pressure Drop</b>	0.12 PSI (0.008 bar)	0.31 PSI (0.02 bar)	0.61 PSI (0.04 bar)
<b>Max. Allowable Pressure<sup>1</sup></b>	30 PSI (2.07 bar)	30 PSI (2.07 bar)	30 PSI (2.07 bar)
<b>Available Options:<sup>2</sup></b> (water sensor) (heater)	Yes Yes	Yes Yes	Yes Yes
<b>Water in Bowl Capacity</b>	2.2 oz. (65 ml)	2.2 oz. (65 ml)	2.2 oz. (65 ml)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%	99%	99%
<b>Operating Temperature</b>	-40° to +200°F (-40° to +93°C)		

# Mobile Fuel Filtration

1

## 200 Series

### How To Order

(The example below illustrates how part numbers are constructed.)

*	230R	M	12	2
Add * for 14 mm fuel ports. (omit if not desired)	Specify a model number: <b>215R</b> , <b>230R</b> , or <b>245R</b> .	Add <b>M</b> for a metal bowl. (omit if not desired)	Add <b>12</b> or <b>24</b> for a 12 or 24 volt dc heater <sup>1</sup> . (omit if not desired)	Specify a micron rating: <b>2</b> , <b>10</b> , or <b>30</b> .
<sup>1</sup> Use with Racor rely kit—see Accessories. Standard fuel ports are 1/4"-18 NPTF (SAE J476). Mounting head includes in-head primer pump.				

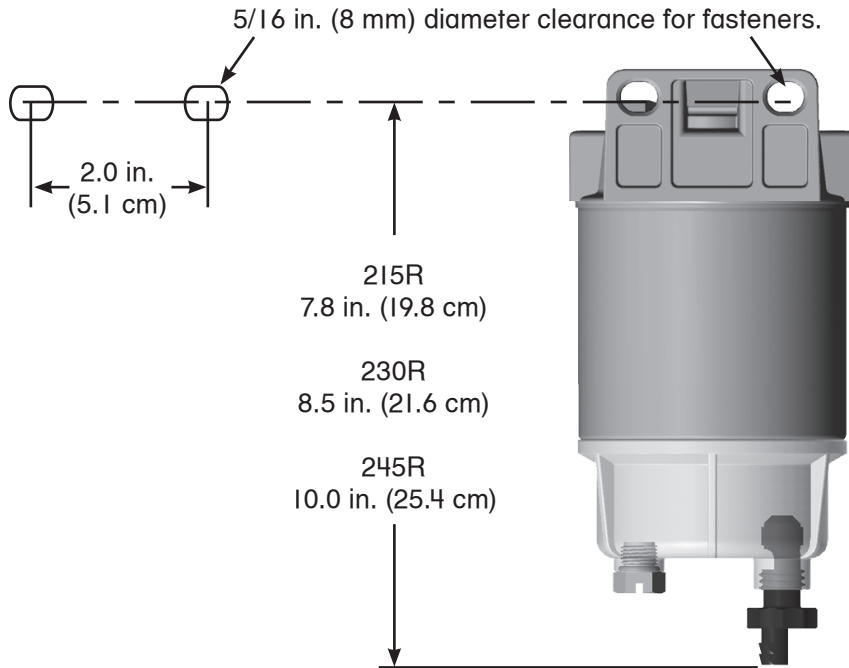
Replacement Elements (seals included)			
Model Number	2 Micron (Final Filtration)	10 Micron (Secondary Filtration)	30 Micron (Primary Filtration)
215R	R15S	R15T	R15P
230R	R20S	R20T	R20P
245R	R25S	R25T	R25P



# Mobile Fuel Filtration

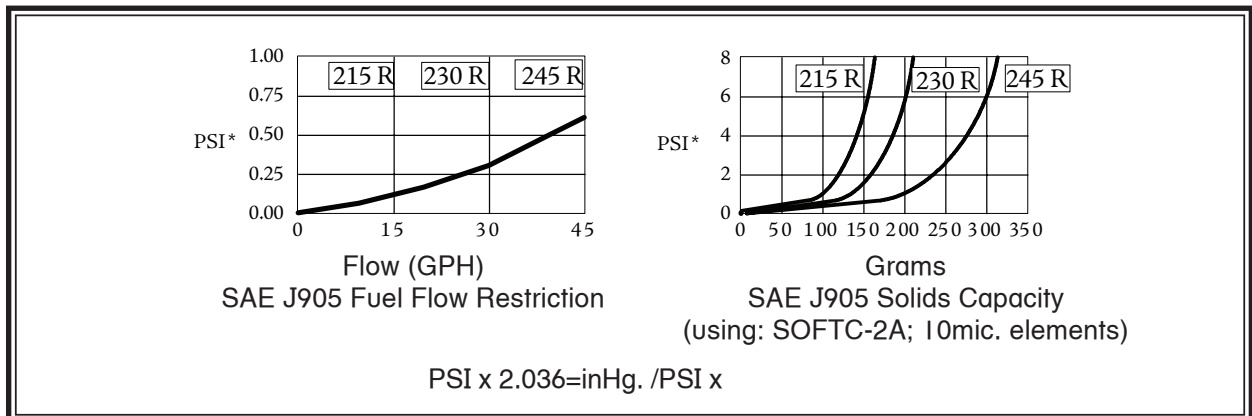
## 200 Series

### Mounting Information



### Test Data

(Test results are from controlled laboratory testing. Field results may vary by application.)

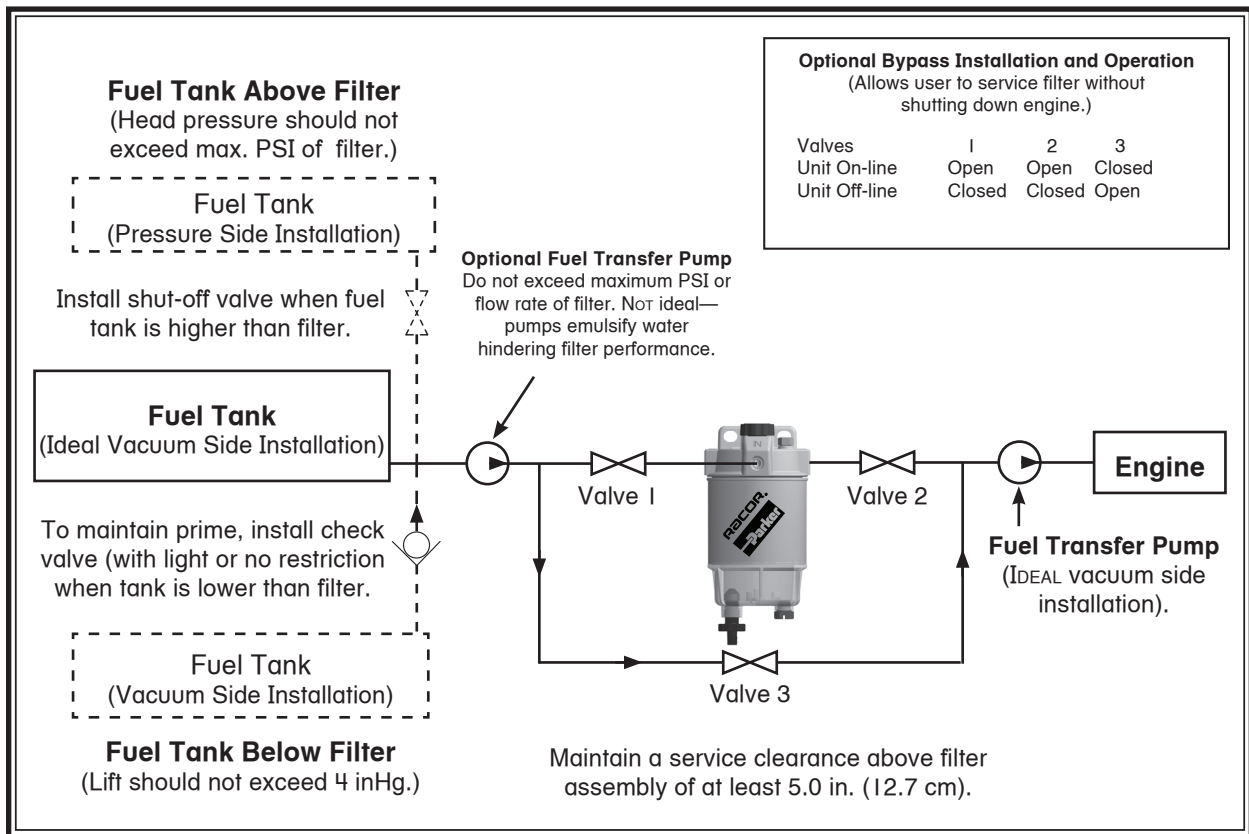


# Mobile Fuel Filtration

1

## 200 Series

### Installation Diagram



Installation diagram applies to all 200 Series filters. Model **215R** shown above. Racor offers hose and fittings to complete this installation. See Accessories.

# Mobile Fuel Filtration

## 200 Series

### Installation

Exercise great caution when installing a 200 Series filter to avoid a fire hazard. Do not smoke, allow open flame or excessive heat which could ignite a fire. Perform installation in a well ventilated area. Refer to Mounting Instructions and Installation Diagram and install as follows:

1. Make sure engine is off and cool to touch.
2. Apply thread sealant to 1/4" NPTF fittings.

**Warning:** do not use thread tape as particles may break off and contribute to clogging element. Also, tape particles on **outlet** side of filter could jam or foul injectors.

3. Thread fittings into appropriate fuel ports and tighten snugly. Plug unused port, if any, with port plug and tighten snugly.
4. Mount filter vertically in a protected area and away from heat sources. Maintain at least 2.0 in. (5.1 cm) of clearance below filter for servicing.
5. Attach fuel lines to filter. Avoid tight bends and rubbing areas when routing hose.
6. Connect water probe and heater wires, if equipped.
7. Open vent plug and operate hand primer pump until fuel purges from vent.
8. Close vent plug and start engine. Correct as necessary with engine off.

### Service

Element replacement frequency is determined by contamination level in fuels. Fuel flow to engine becomes restricted as element gradually plugs with contaminants, resulting in noticeable power loss and/or hard starting. As a guideline, change element every 500 hours, 10,000 miles, every other oil change, annually, or at first indication of power loss, whichever occurs first. Always carry extra replacement elements as one tankful of excessively dirty fuel can quickly plug a filter.

1. Make sure engine is off and cool to touch.
2. Close all fuel valves, if applicable, to make sure excess fuel does not spill during servicing.
3. Disconnect water probe and heater connectors.
4. Drain unit of fuel.
5. Remove bowl and set aside for rebuild. Dispose of used element properly.
6. Lubricate new element seals with motor oil or clean fuel and install onto new element.
7. Attach bowl to new element and install both onto mounting head. Tighten by hand only.
8. Connect water probe and heater connectors.
9. Open all fuel valves, if applicable.
10. Open vent plug and operate hand primer pump until fuel purges from vent.
11. Close vent plug and start engine. Correct as necessary with engine off.

**RACOR**<sup>®</sup>

Technical Support:  
800.344.3286 ext. 7555  
racortech@parker.com

## 200 Series

### *Draining*

Water is heavier than fuel and will settle to bottom of bowl and appear different in color if collected in a clear jar. In high humidity environments, check bowl frequently (daily if a poor fuel source is suspected). 200 Series bowls are equipped with a water sensor port that will accept a water probe (sold separately) and will alert operator of a high water condition in the filter.

**Warning!** Do NOT use water probe electronics in gasoline applications - an explosion could occur.

1. Make sure engine is off and cool to touch.
2. Open vent plug.
3. Drain water from filter by opening self-venting drain. Close as soon as all water has evacuated.

**Note:** if drain is open too long, the entire filter may drain completely of water and fuel.

4. Tighten probe port plug or water probe snugly.
5. Follow priming instructions below.

### *Priming*

1. Prime filter by removing bowl and element and filling with clean fuel.
2. Re-install bowl and element.
3. Verify all other connections are tight.
4. Start engine and check for leaks. Correct as necessary with engine off.

### *Trouble Shooting*

If a 200 Series filter fails to hold prime, first check vent plug, drain valve, fittings and head/element/bowl are properly tightened. Next, check fuel line connections and verify that they are free of pinches or unnecessary bends and check to see if fuel tank strainer (or pick-up tube) is clogged. If problems persist and element is new, call Racor Technical Support at the number listed below.





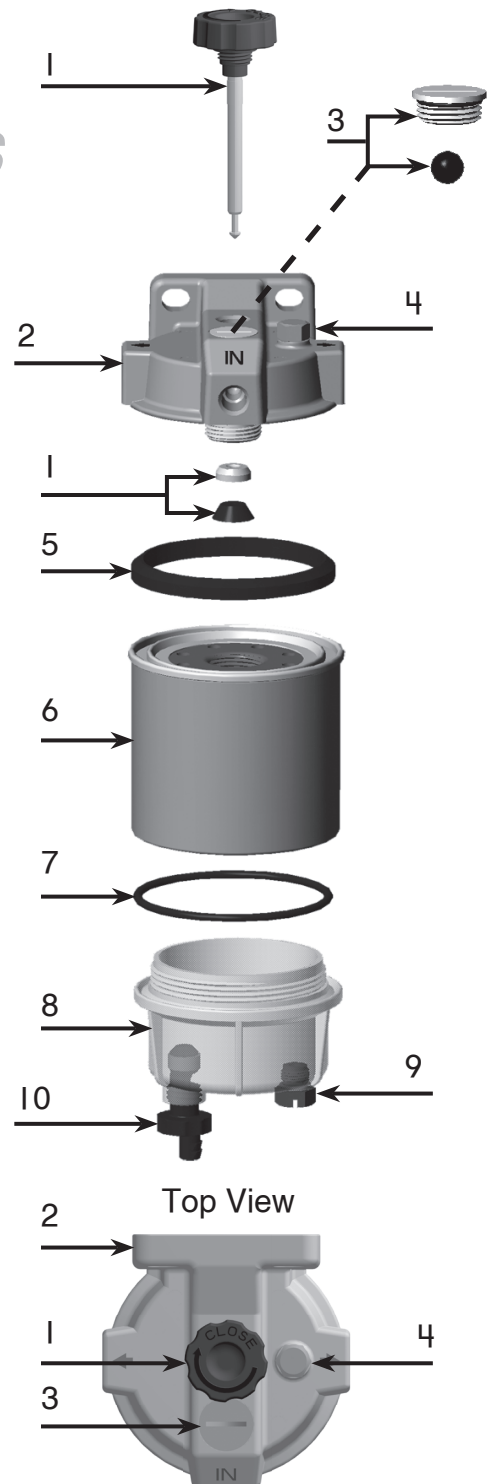
# Mobile Fuel Filtration

## 200 Series

### Replacement Parts

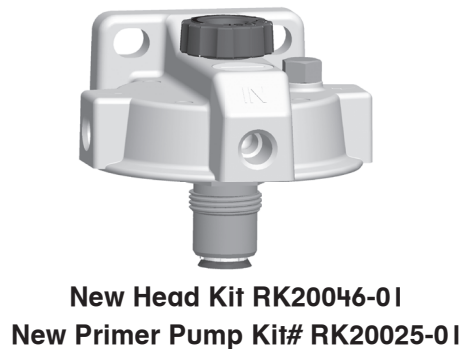
Part Number	Description
1. <b>RK20025-01</b>	Primer Pump Assembly Kit (includes #3)
2. <b>RK20046-01</b>	Mounting Head Kit (with 1/4"-18 NPTF Ports)
<b>RK20049-01</b>	Mounting Head Kit (with 14 mm x 1.5 Ports)
3. <b>RK20011</b>	Check Ball and Plastic Cap Kit
<b>RK20742</b>	Optional Metal Cap Kit
4. <b>RK10110</b>	Metal Vent Plug Kit (3/8"-24 SAE threads)
5. <b>22061</b>	Beveled Gasket
6. (various)	Spin-on Elements (see Replacement Element chart)
7. <b>RK22244</b>	Bowl O-ring Kit
8. <b>RK22350-02</b>	Clear Bowl Kit (includes #'s 7-10)
<b>RK22354-01</b> <sup>1</sup>	(same as above plus a 200 watt, 12 volt dc heater)
<b>RK22354-02</b> <sup>1</sup>	(same as above plus a 200 watt, 24 volt dc heater)
<b>RK22368</b>	Metal Bowl Kit (includes drain plug and O-ring)
<b>RK30499-01</b> <sup>1</sup>	(same as above plus a 200 watt, 12 volt dc heater)
<b>RK30499-02</b> <sup>1</sup>	(same as above plus a 200 watt, 24 volt dc heater)
9. <b>RK20022</b>	Metal Plug (1/2"-20 SAE threads)
<b>RK20126</b>	Plastic Plug (1/2"-20 SAE threads)
10. <b>RK30476</b>	Self-venting Drain Kit
Additional Parts (not shown)	
<b>RK12041</b>	Metal Port Plug Kit (1/4"-18 NPTF threads)
<b>RK30876</b> <sup>1</sup>	Heater Connector Kit
<b>RK20075</b>	Complete Seal Service Kit
<b>22360</b>	Installation Instructions

<sup>1</sup> Do not use on gasoline applications.



## 200 Series

### Hand Primer Pump Upgrade



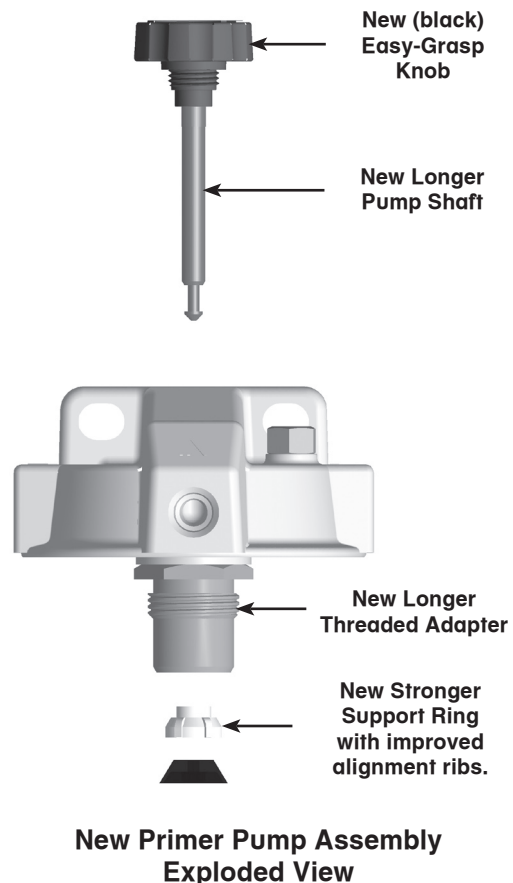
#### Benefits

- Up to 37% increase in volume of fuel pumped per stroke
- Improved strength and alignment
- Improved ease of operation
- Reduced restriction in fuel flow
- Changeable in the field

This enhancement is possible by increasing the stroke length, by about 1/2", on the pump shaft and the element threaded adapter. Additionally, the knob and support ring have been redesigned to be more robust.

This change also affects replacement kits for the primer pump and head assemblies. The new style primer pump requires an additional 0.5 inch of space above the assembly (2 inches total) to utilize the added length of stroke; however, the primer pump will perform as always without any mounting modifications.

The new easy-grasp pump knob is larger than current knobs and the color will be changed from white to black to make a clear visual change between current pumps and newer versions.





## 300 Series

Racor 300 Series fuel filter/water separators are available in a variety of sizes to fit most engine applications. The 325R and 330R filters are standard with 3/8"-18 NPTF fuel ports and the 3150R and 3250R filters are standard with 7/8"-14 UNF inlet and outlet fuel ports.

collection bowls that will not discolor from alcohol, additives, or UV light and have a leak-proof, positive seal, self-venting drain for easy servicing. Water and contamination levels can be seen easily at a glance.

All 300 Series assemblies feature a unitized mounting bracket and a spin-on, high-capacity, Aquabloc® II replaceable element which separates water, removes solid contamination, and is available in 10 or 30 micron. Filtration needs are based on application, fuel quality, operating climates and maintenance schedules. Also included are clear spin-on contaminant

## Options

Optional accessories for 300 Series filters may include: water detection kits (for diesel applications only), vacuum or compound gauges, vacuum switches, hose and fittings, and fuel heaters; see Mobile Fuel Accessories section of this catalog.



325R



330R



3150R



3250R



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# Mobile Fuel Filtration

## 300 Series



Specifications	325R	330R	3150R	3250R
<b>Maximum Flow Rate</b>	60 GPH (227 LPH)	75 GPH (284 LPH)	150 GPH (568 LPH)	250 GPH (946 LPH)
<b>Port Size</b>	3/8"-18 NPTF (SAE J476)	3/8"-18 NPTF (SAE J476)	7/8"-14 UNF (SAE J1926)	7/8"-14 UNF (SAE J1926)
<b>Total Number of Ports:</b> Inlets Outlets	2   	2   	2   	2   
<b>Min. Service Clearance</b>	2.0 in. (5.1 cm)	2.0 in. (5.1 cm)	2.0 in. (5.1 cm)	2.0 in. (5.1 cm)
<b>Element Threads</b>	1"-14	1"-14	1 1/4"-12	1 1/4"-12
<b>Height</b>	9.7 in. (24.6 cm)	11.0 in. (27.9 cm)	13.6 in. (34.5 cm)	17.3 in. (43.9 cm)
<b>Depth</b>	4.8 in. (12.2 cm)	4.8 in. (12.2 cm)	5.5 in. (14.0 cm)	5.5 in. (14.0 cm)
<b>Width</b>	4.4 in. (11.2 cm)	4.4 in. (11.2 cm)	4.75 in. (12.1 cm)	4.75 in. (12.1 cm)
<b>Weight (dry)</b>	3.1 lb (1.4 kg)	3.2 lb (1.5 kg)	3.6 lb (1.6 kg)	4.6 lb (2.1 kg)
<b>Clean Pressure Drop</b>	0.17 PSI (0.01 bar)	0.39 PSI (0.03 bar)	0.68 PSI (0.05 bar)	1.0 PSI (0.07 bar)
<b>Max. Allowable Pressure <sup>1</sup></b>	15 PSI (1.03 bar)	15 PSI (1.03 bar)	7 PSI (0.48 bar)	7 PSI (0.48 bar)
<b>Water in Bowl Capacity (with heater) <sup>2,3</sup></b>	2.7 oz (82 ml) 2.3 oz (70 ml)	2.7 oz (82 ml) 2.3 oz (70 ml)	2.7 oz (82 ml) 2.3 oz (70 ml)	2.7 oz (82 ml) 2.3 oz (70 ml)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%	99%	99%	99%
<b>Operating Temperature</b>	-40° to +255°F (-40° to +124°C)			

<sup>1</sup>Pressure installations are OK up to maximum PSI shown. Vacuum installations are recommended.

<sup>2</sup>Not for use with gasoline applications.

<sup>3</sup>Maximum power requirements for 3150R and 3250R in-bowl heater option: 12 volt dc (200 watt) = 16.6 amps, 24 volt dc (200 watt) = 8.3 amps. See Accessories for heater relay kits.

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# Mobile Fuel Filtration

1

## 300 Series

### How to Order

(The examples below illustrate how part numbers are constructed)

325R	12	-10
Specify a model number: 325R or 330R	Filter includes a 12 volt dc (150 watt) heater <sup>1</sup> . 12 must be in the part number	Specify a micron rating: -10 or -30
Standard fuel ports are 3/8"-18 NPTF (SAE J476). <sup>1</sup> Use with Racor relay kit - see Accessories.		

3150R		
Specify a model number: 3150R or 3250R	12 volt dc (200 watt) heaters <sup>1</sup> available in a bowl kit (sold separately) - see Replacement Parts	10 micron element included as standard with these filters.
Standard fuel ports are 7/8"-14 UNF (SAE J1926). <sup>1</sup> Use with Racor relay kit. - see Accessories.		

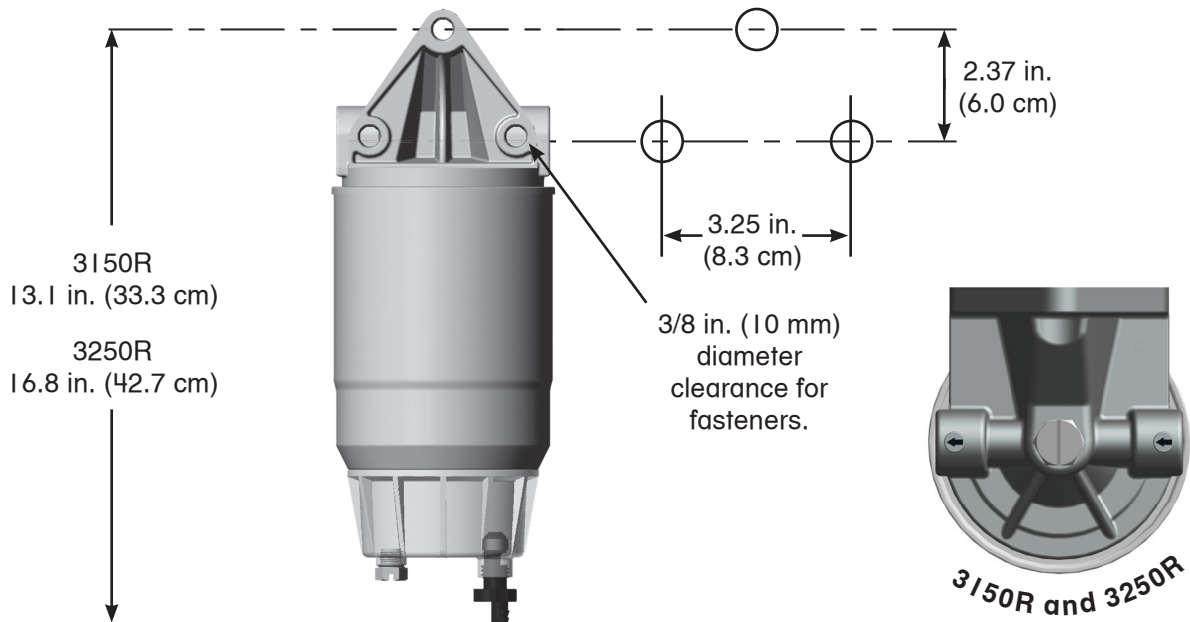
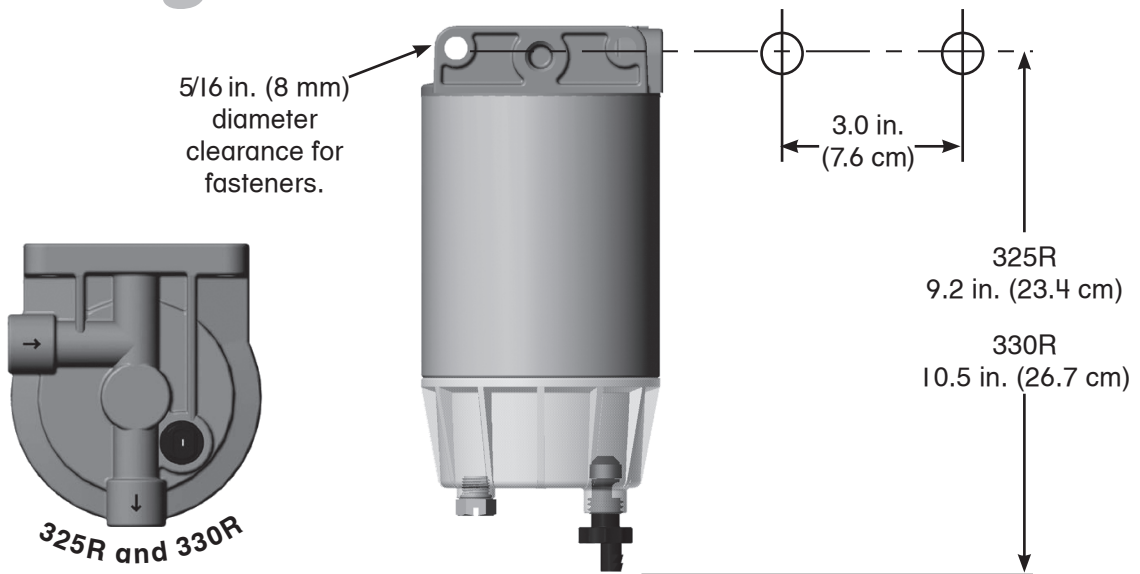
Replacement Elements			
Model Number	2 Micron (Final Filtration)	10 Micron (Secondary Filtration)	30 Micron (Primary Filtration)
325R	S3225S	S3225T	S3225P
330R	S3226S	S3226T	S3226P
3150R	N/A	S3238	S3238P
3250R	S3207S	S3207T	S3207P



# Mobile Fuel Filtration

## 300 Series

### Mounting Instructions

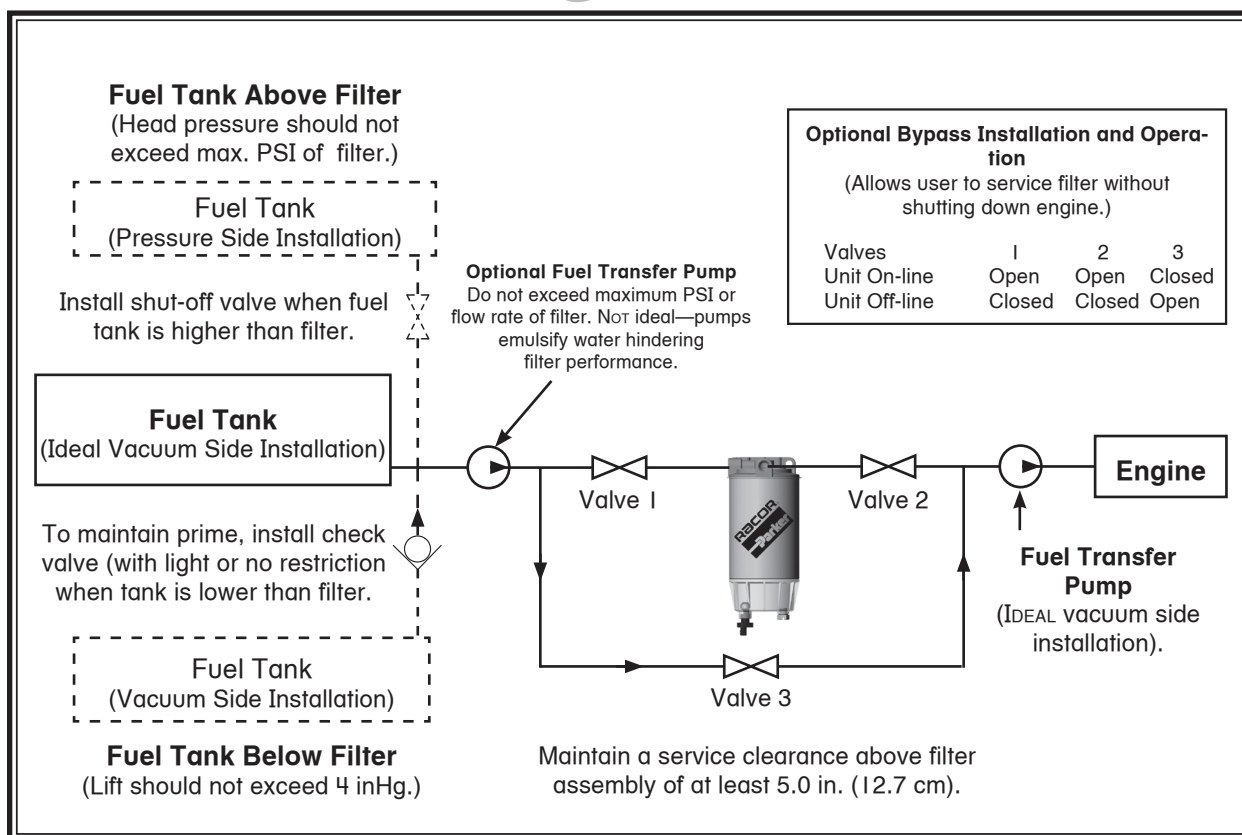


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## 300 Series

### Installation Diagram



Installation diagram applies to all 300 Series filters. Model 325R shown above. Racor offers hose and fittings to complete this installation - see Accessories.



# Mobile Fuel Filtration

## 300 Series

### *Installation*

Exercise great caution when installing 300 Series filters to avoid fire hazards. Do not smoke, allow open flame or excessive heat which could ignite a fire. Perform installation in a well ventilated area.

Refer to Mounting Instructions and Installation Diagram and install as follows:

1. Make sure engine is off and cool to touch.
2. Apply thread sealant to NPTF fittings (do not use thread tapes as particles may break off and contribute to clogging element). Apply motor oil or diesel fuel to UNF fitting O-rings. See Accessories for hose and fitting options.
3. Thread fittings into appropriate fuel ports and tighten snugly.
4. Mount filter vertically in a protected area and away from heat sources. Maintain at least 2 inches of clearance below filter for servicing.
5. Attach fuel lines to filter. Avoid tight bends and rubbing areas when routing hose.
6. Prime filter by removing element and bowl together and filling with fuel. Reinstall and tighten snugly by hand only.
7. Connect water probe and heater wires, if equipped.
8. Verify all connections are tight and start engine. Correct as necessary with engine off.

### *Service*

Element replacement frequency is determined by contamination level in fuels. Fuel flow to engine becomes restricted as element gradually plugs with contaminants, resulting in noticeable power loss and/or hard starting. As a guideline, change element every 500 hours, 10,000 miles, every other oil change, annually, or at first indication of power loss, whichever occurs first. Always carry extra replacement elements as one tankful of excessively dirty fuel can quickly plug a filter.

1. Make sure engine is off and cool to touch.
2. Close all fuel valves, if applicable, to make sure excess fuel does not spill during servicing.
3. Disconnect water probe and heater connectors.
4. Open vent plug on mounting head, if equipped.
5. Open drain on bottom of bowl to drain filter.
6. Remove bowl and element; dispose properly.
7. Lubricate new seals with motor oil or clean fuel.
8. Attach bowl to new element.
9. Prime filter by filling element (with bowl attached) with fuel.
10. Re-install element and bowl and tighten by hand only - do not use tools.
11. Connect water probe and heater connectors.
12. Open all fuel valves, if applicable.
13. Verify all connections are tight and start engine. Correct as necessary with engine off.

## 300 Series

### *Draining*

Water is heavier than fuel and will settle to bottom of bowl and appear different in color if collected in a clear jar. In high humidity environments, check bowl frequently (daily if a poor fuel source is suspected). 300 Series bowls are equipped with a water probe port (water probe sold separately). A water sensing kit will alert the operator of a high water condition in the filter.

**Warning!** Do NOT use water probe electronics in gasoline applications - an explosion could occur.

1. Make sure engine is off and cool to touch.
2. Open vent plug, if equipped.
3. Drain water from filter by opening self-venting drain on bottom of bowl. Close as soon as all water has evacuated. Note: if drain is open too long, the entire filter assembly may drain completely of water and fuel.
4. Tighten drain and vent plug snugly.
5. Follow Priming Instructions.

### *Priming*

1. Prime filter by removing bowl and element (together) and filling with clean fuel.
2. Re-install bowl and element and tighten by hand only - do not use tools.
3. Verify all other connections are tight.
4. Start engine and check for leaks. Correct as necessary with engine off.

### *Trouble Shooting*

If a 300 Series filter fails to hold prime, first check vent plug (if equipped), drain valve, fittings and head/element/bowl are properly tightened. Next, check fuel line connections and verify that they are free of pinches or unnecessary bends and check to see if fuel tank strainer (or pick-up tube) is clogged. If problems persist and element is new, call Racor Technical Support at the number listed below.



# Mobile Fuel Filtration

## 300 Series

### *Optional Accessories*

#### (for models 325R and 330R)

**Warning!** Racor electrical options are for use on diesel fuel applications ONLY.

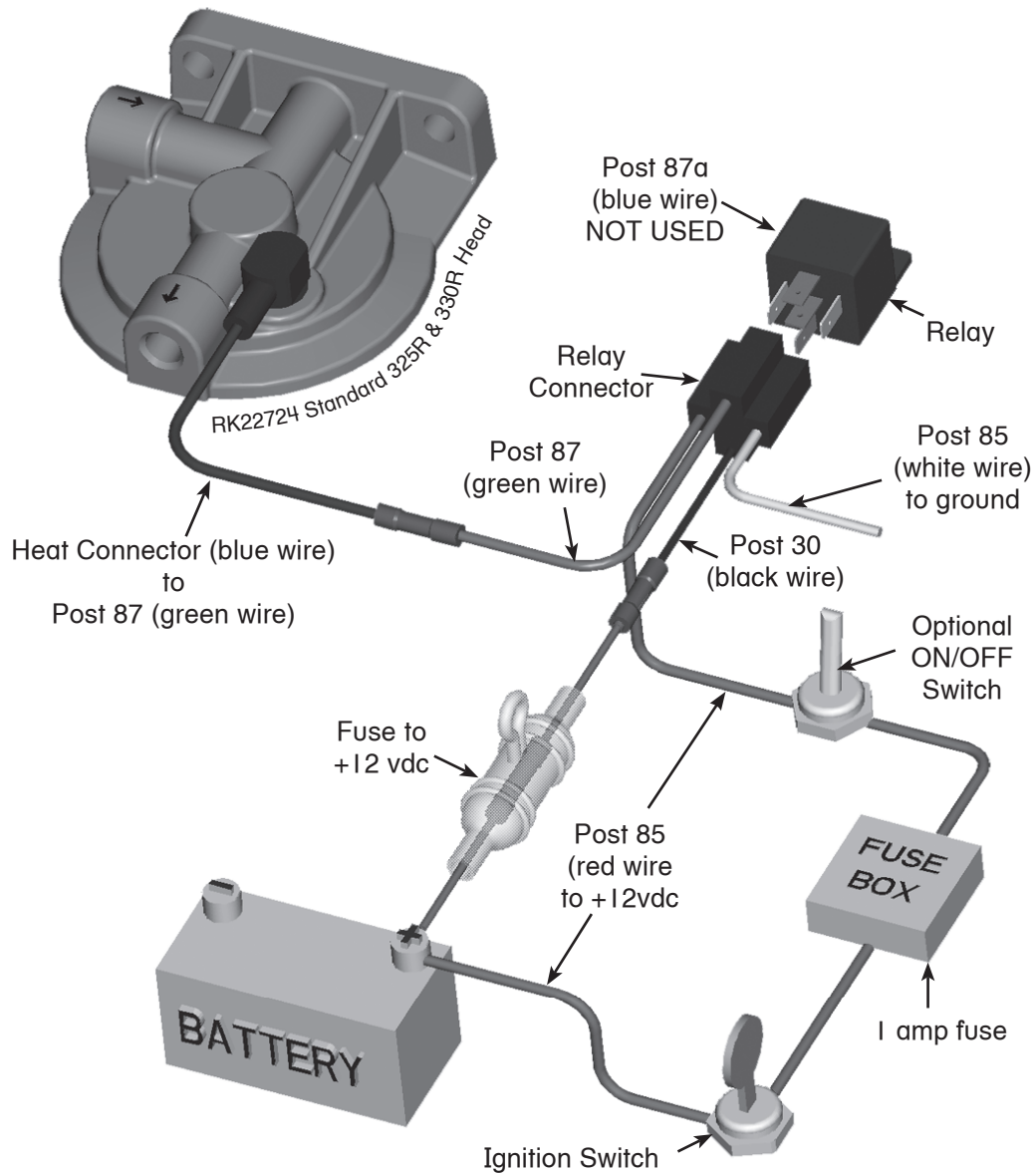
#### **In-head 150 Watt PTC Heater**

The in-head 150 watt heater is a cold weather starting aid and is thermostatically controlled when power is provided. The heater will automatically turn ON if the fuel temperature drops below 45°F (7°C) and will automatically turn OFF at about 75°F (24°C). Heat is supplied just below the inlet port to melt the wax crystals and allow fuel to efficiently pass through the element. The heater is operated by turning the ignition switch on for a minimum of five minutes prior to starting the engine. See installation diagram on this page.

- **Note:** do not smoke or allow open flames near installation to reduce potential for fire.
- All wires should be 14 AWG (minimum).
- Wire/terminal connections should be soldered and crimped.
- Run wires in protected locations; avoid hot surfaces and places that may pinch or rub on wires.
- Disconnect battery ground cable before beginning installation.
- If vehicle has fused and ignition switch activated terminal on fuse block, then route 14 AWG wire to heater connector wire. This terminal should be capable of 16 amp load and be dedicated only to Racor heater.
- A Racor relay is recommended for safest method of installation. Use RK11861 for 12 vdc applications and RK11862 for 24 vdc applications. These kits include an in-line fuse and holder.
- An ON/OFF toggle switch may be used to control power to heater relay. This allows operator to cut power during summer use.
- Ground Racor filter to chassis by adding a ground wire, if necessary.

## 300 Series

### Heater Installation



# Mobile Fuel Filtration

## 300 Series

### Optional Accessories

#### RK11-1570

(Water Sensor and Element Restriction Gauge)

This optional kit alerts the operator in the event accumulated water (about 80 ml) reaches the water probe or when element restriction has reached 7 inches of mercury. The gauge will illuminate either the 'DRAIN WATER' or 'CHANGE FILTER' lamps, respectively. An audible buzzer will sound for 2 seconds and then go off. The light(s) will remain on until the condition has been corrected. The sequence will repeat upon each initial power-up. After 2 seconds, both the lights and buzzer will go off (if no water or restriction is present). The gauge resets itself automatically.

- Mount gauge in instrumentation panel (2 in. [5.1 cm] diameter hole required for mounting) or locate within instrumentation proximity.
- Attach wires as shown using provided hardware.
- Use provided wire ties to route wires neatly and away from heat or moving surfaces.

### Testing the Installation

With the battery reconnected, turn the ignition switch to 'ON'. The self-diagnosis sequence will occur. Disconnect the vacuum switch and ground the terminal inside the connector. After a short delay, the gauge will activate. Remove the water probe and jump the sensor tips, again the gauge should activate. Failures usually are due to poor connections.



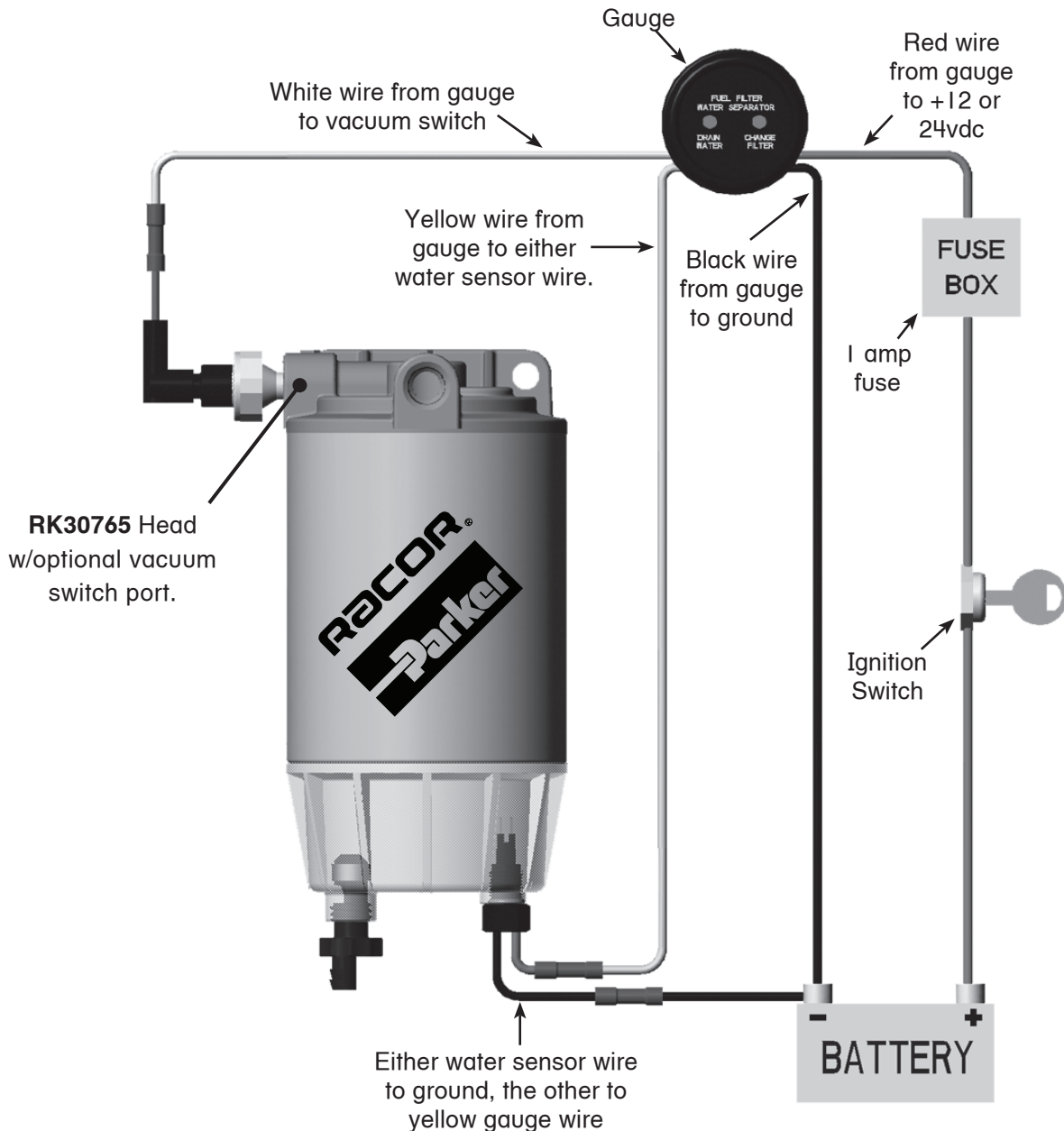
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racortech@parker.com

## Installation

### 300 Series

- Vacuum Switch
- Water Sensor Probe/Gauge
- Element Restriction Gauge



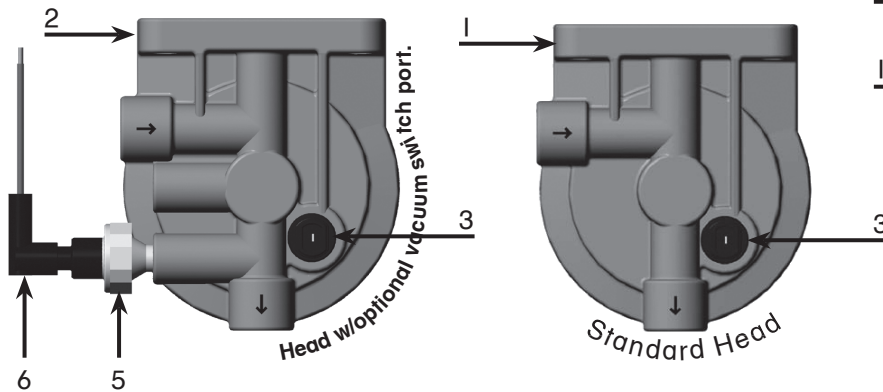
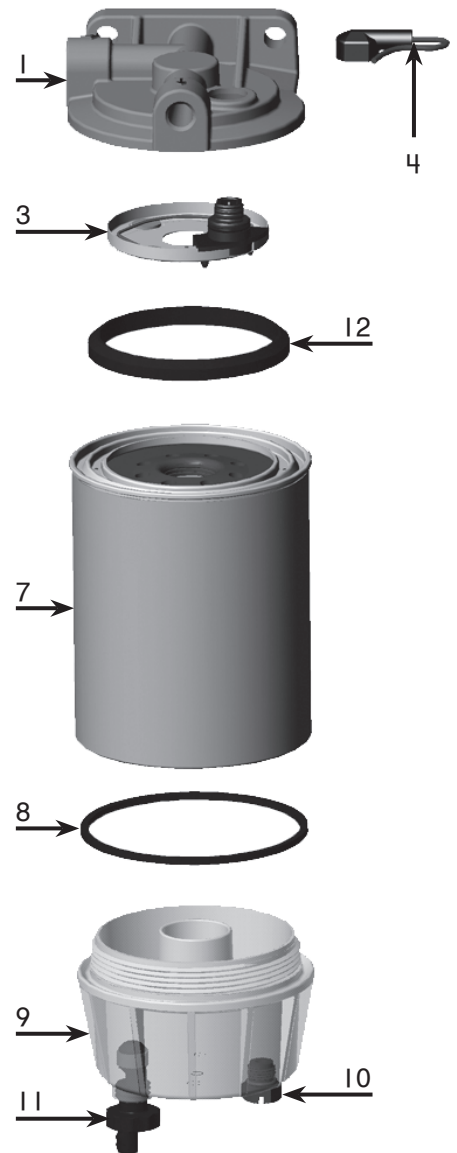
# Mobile Fuel Filtration

## 300 Series

### Replacement Parts

325R and 330R

Part Number	Description
1. <b>RK22724</b>	Standard Mounting Head Kit
2. <b>RK30765</b>	Mounting Head Kit (with optional vacuum switch port)
3. <b>RK22010</b>	In-head Heater Kit 12 vdc (150 watt)
4. <b>RK20366</b>	Heater Connector Kit
5. <b>RK20163</b>	Optional Vacuum Switch Kit (preset at 7 inHg)
6. <b>RK21030</b>	Vacuum Switch Connector Kit
7. (various)	Spin-on Elements (includes #'s 8 & 12) See "Replacement Element" chart
8. <b>RK30965</b>	Bowl O-ring Kit
9. <b>RK30063</b>	Clear Bowl Kit (with self-venting drain, probe plug and O-ring)
10. <b>RK20126</b>	Plastic Probe Plug Kit (1/2"-20 UNF threads)
11. <b>RK30476</b>	Self-venting Drain Kit (includes seal)
Additional Part (not shown)	
<b>RK30803</b>	Complete Seal Service Kit
<b>30762</b>	Installation Instructions



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## 300 Series

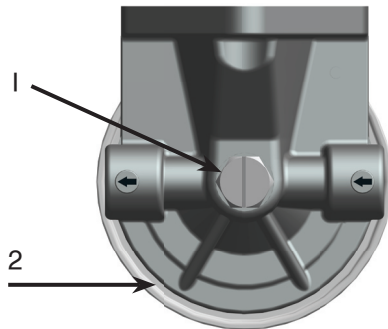
### Replacement Parts

3150R and 3250R

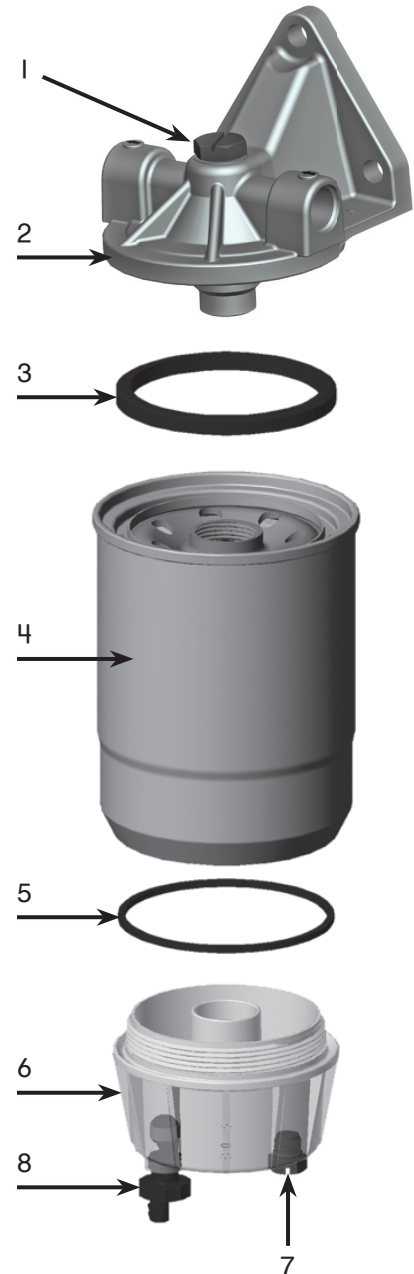
Part Number	Description
1. <b>22100</b>	Vent Plug Kit (3/4"-16 UNF threads)
2. <b>RK31547</b>	Mounting Head Kit
3. <b>30604</b>	Head Gasket
4. (various)	Spin-on Elements (includes #'s 3 & 5)
5. <b>RK30965</b>	Bowl O-ring Kit
6. <b>RK30063</b>	Clear Bowl Kit (with self-venting drain, probe plug and O-ring)
<b>RK30900</b>	Same as RK30063 Plus a 12 vdc (200 watt) Heater
<b>RK30925</b>	Same as RK30063 Plus a 24 vdc (200 watt) Heater
7. <b>RK20126</b>	Plastic Probe Plug Kit (1/2"-20 UNF threads)
8. <b>RK30476</b>	Self-venting Drain Kit (includes seal)

Additional Parts (not shown)

**30942** Installation Instructions



Top View



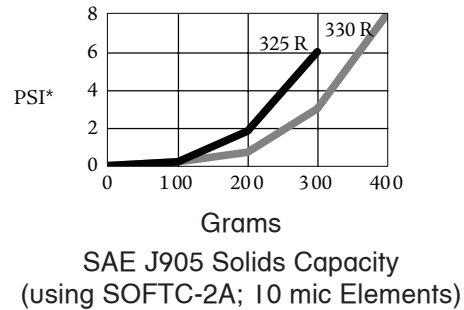
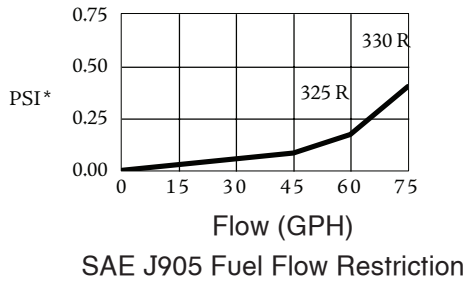


# Mobile Fuel Filtration

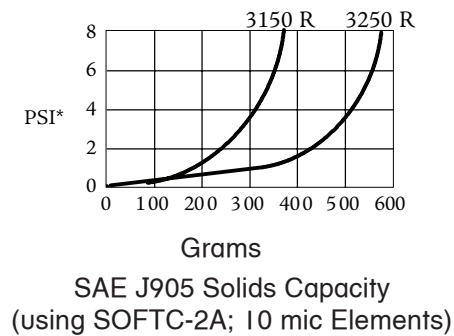
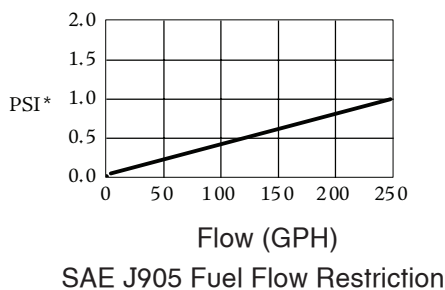
## 300 Series

### Test Data

#### 325R and 330R



#### 3150R and 3250R



(Test results are from controlled laboratory testing. Field results may vary.)  
(PSI X 2.036 = inHG) (PSI X 6.895 = kPa)

## 300RC Series

Racor's 300RC Series Fuel Filter/ Heater/ Water Separators are specifically designed to handle today's tough fuel system problems. These units feature a standard high efficiency coolant heat exchanger to heat incoming fuel and are only different in flow capacity and element size.

These units are recommended for suction (vacuum) side installations however the unit may be installed on the pressure side up to 30 PSI maximum. The die-cast aluminum mounting head features standard 3/8" NPTF fuel ports. The coolant heater features hose beads to accept standard 5/8" I.D. hose. Additionally, the coolant heat exchanger may be rotated 360° for installation versatility simply by loosening the center cap at the top of the unit. Either port may serve as the inlet or outlet.

Engines will benefit from near 100% water separation and fuel filtration with Racor's proprietary Aquabloc® II water repelling media. The replaceable spin-on filter elements are available in three micron ratings: 2, 10 and 30.

**Always keep extra replacement elements on hand as one tank of poor quality fuel can clog a filter.**

The reusable clear contaminant collection bowl allows the operator to check contamination build-up at a glance. When water is present, rotate the drain valve open to evacuate contaminants.

## Options

**In-Bowl Heater:** Besides the standard built-on head coolant heat exchanger, a powerful 12 or 24 vdc 200 watt in-bowl heater option is available to quickly warm the element fuel thus providing easier starting and optimum operating efficiency in cold weather or climates.

**Water Sensor Probe:** When used with a Racor Water Detection Kit, the in-cab module will alert the operator when it's time to drain the bowl. See Accessories.

**Note:** These electrical accessories are not intended for use with gasoline applications.



345RC



360RC



390RC



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# Mobile Fuel Filtration

## 300RC Series



Specifications	345RC	360RC	390RC
<b>Maximum Flow Rate</b>	45 GPH (170 LPH)	60 GPH (227 LPH)	90 GPH (341 LPH)
<b>Fuel Port Size</b> (SAE J476) <b>Coolant Port Size</b>	3/8"-18 NPTF Fits 5/8" I.D. Hose	3/8"-18 NPTF Fits 5/8" I.D. Hose	3/8"-18 NPTF Fits 5/8" I.D. Hose
<b>Total Number of Ports:</b> <b>Fuel Inlet</b> <b>Fuel Outlet</b> <b>Coolant Inlet</b> <b>Coolant Outlet</b>	4       	4       	4       
<b>Min. Service Clearance</b> <i>Above</i> <i>Below</i>	5.0 in. (12.7 cm) 2.0 in. (5.1 cm)	5.0 in. (12.7 cm) 2.0 in. (5.1 cm)	5.0 in. (12.7 cm) 2.0 in. (5.1 cm)
<b>Element Center Threads</b>	1"-14 SAE	1"-14 SAE	1"-14 SAE
<b>Height</b>	9.3 in. (23.6 cm)	11.0 in. (27.9 cm)	11.8 in. (29.9 cm)
<b>Depth</b>	4.8 in. (12.2 cm)	4.8 in. (12.2 cm)	4.8 in. (12.2 cm)
<b>Width</b>	4.4 in. (11.2 cm)	4.4 in. (11.2 cm)	4.4 in. (11.2 cm)
<b>Weight (dry)</b>	2.5 lb (1.1 kg)	2.7 lb (1.2 kg)	2.9 lb (1.3 kg)
<b>Clean Pressure Drop</b>	0.10 PSI (0.69 kPa)	0.22 PSI (1.52 kPa)	0.76 PSI (5.24 kPa)
<b>Maximum Pressure</b>	30 PSI (207 kPa)	30 PSI (207 kPa)	30 PSI (207 kPa)
<b>Water in Bowl Capacity</b> <i>(with heater)</i>	4.0 oz (118 ml) 3.5 oz (104 ml)	4.0 oz (118 ml) 3.5 oz (104 ml)	4.0 oz (118 ml) 3.5 oz (104 ml)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%	99%	99%
<b>Operating Temperature</b>	-40° to +255°F (-40° to +124°C)		

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# Mobile Fuel Filtration

1

## 300RC Series

### How to Order

(The examples below illustrate how part numbers are constructed)

345RC	12	2
Basic Unit: Specify a model number <b>345RC, 360RC, or 390RC</b>	Filter includes a 12 or 24 volt dc (200 watt) heater <sup>1</sup> . <b>12</b> or <b>24</b> must be in the part number (omit if desired)	Specify a micron rating: <b>2, 10, or 30</b>
Recommended for use with Racor Heater Relay Kit. See Accessories		

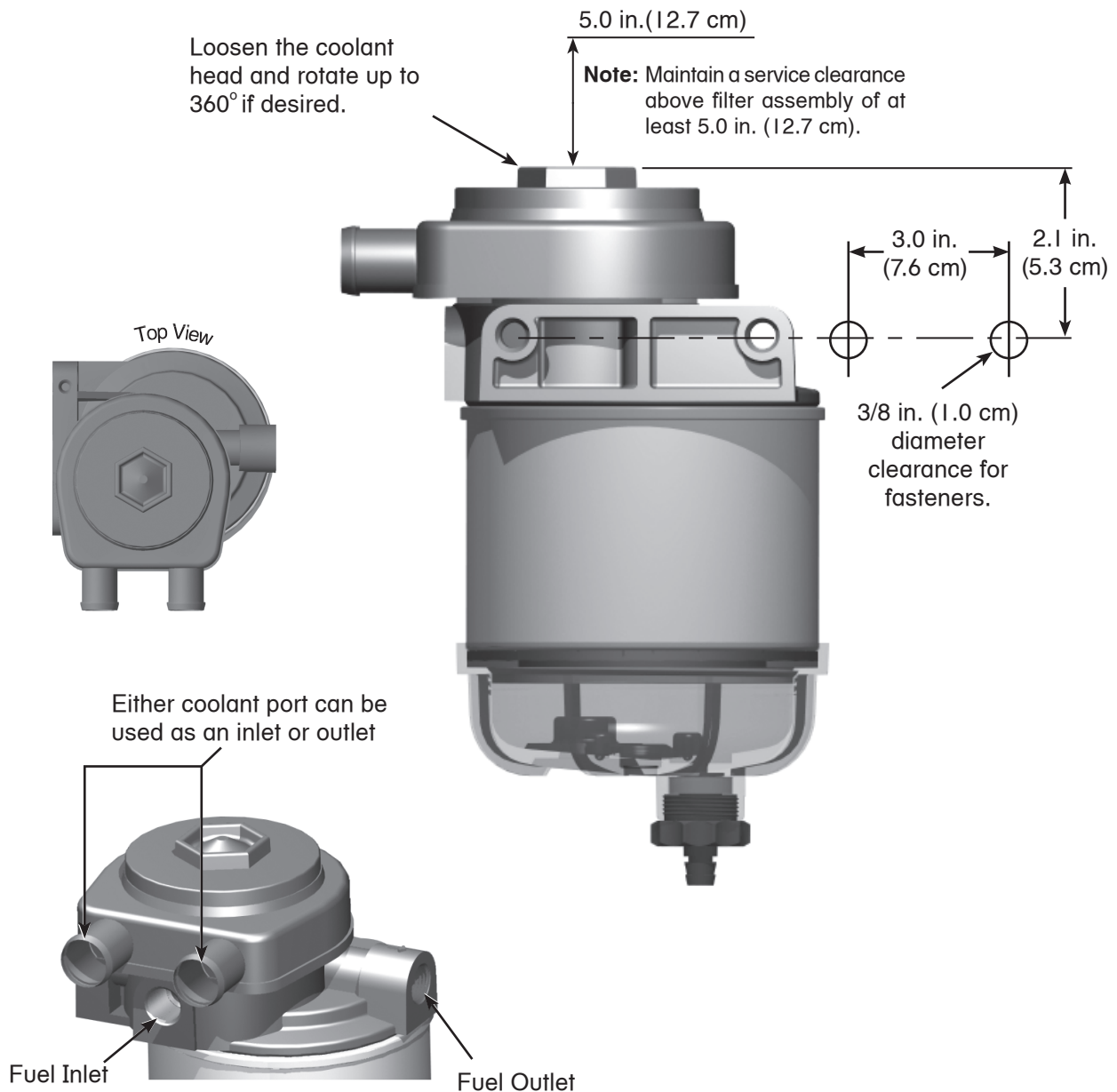
Replacement Elements			
Model Number	2 Micron (Final Filtration)	10 Micron (Secondary Filtration)	30 Micron* (Primary Filtration)
345RC	R45S	R45T	R45P
360RC	R60S	R60T	R60P
390RC	R90S	R90T	R90P
*A secondary/final filter is required downstream.			



# Mobile Fuel Filtration

## 300RC Series

### Mounting Instructions



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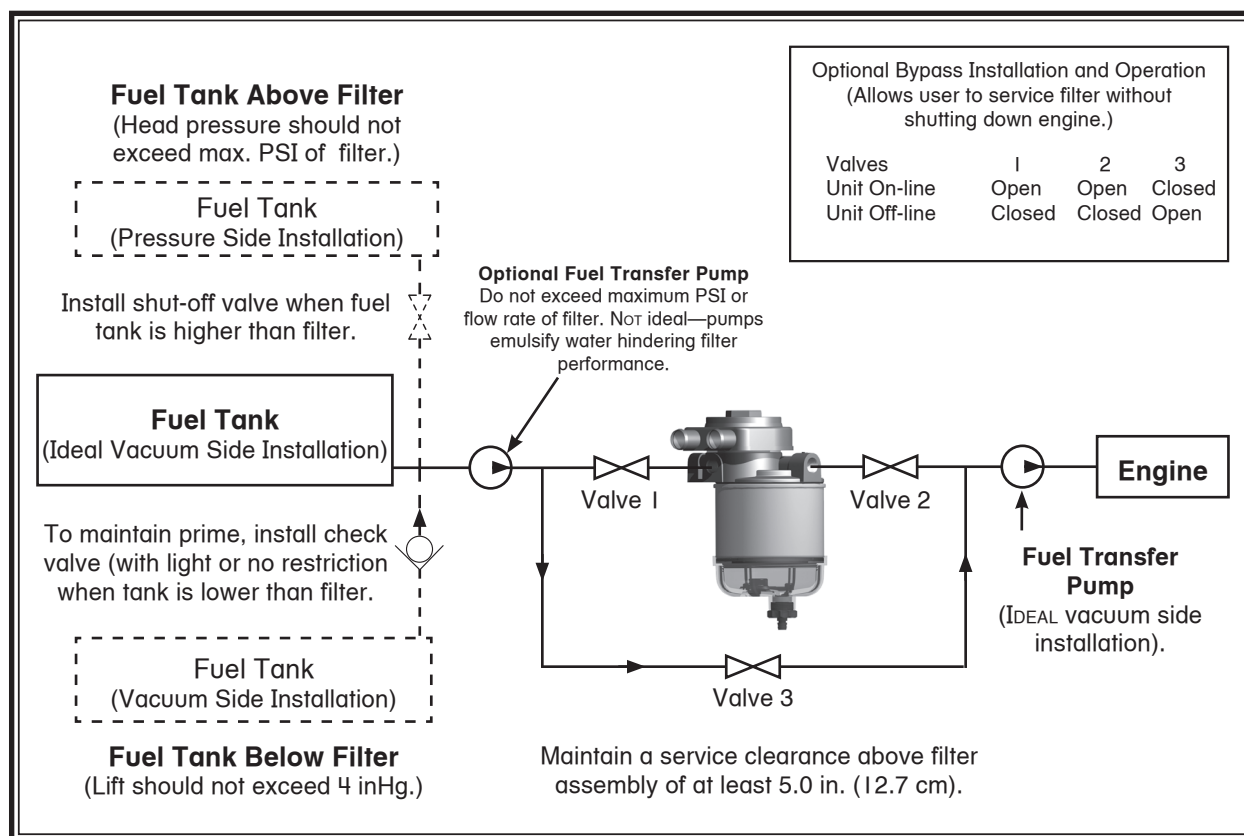
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# Mobile Fuel Filtration

1

## 300RC Series

### Installation Diagram



Installation diagram applies to all 300RC Series filters. Model 345RC shown above.

### In-bowl 12 or 24 vdc Heater

The in-bowl 200 watt heater is a cold weather starting aid with an internal automatic thermostat that turns the heater on if the fuel temperature drops below 45°F (7°C). Heat is supplied just below the replacement element to melt the wax crystals and allow fuel to efficiently pass through the element. The heater will automatically turn off at about 75°F (24°C). The heater is operated by turning on the ignition switch for a minimum of five minutes prior to starting the engine. see Replacement Part list.



# Mobile Fuel Filtration

## 300RC Series

### Coolant Hose Routing Instructions

The Racor coolant heat exchanger is plumbed from the pressure side of the coolant pump and coolant is returned to the suction side of the pump. If a coolant port is not available in the pump or engine block, the coolant may be supplied by tapping into the cab heater coolant supply as shown below. The heat exchanger head may be rotated to facilitate installation by loosening the center cap on top of the unit.

Either heat exchanger port may be used for the inlet or outlet (Valves are customer supplied).

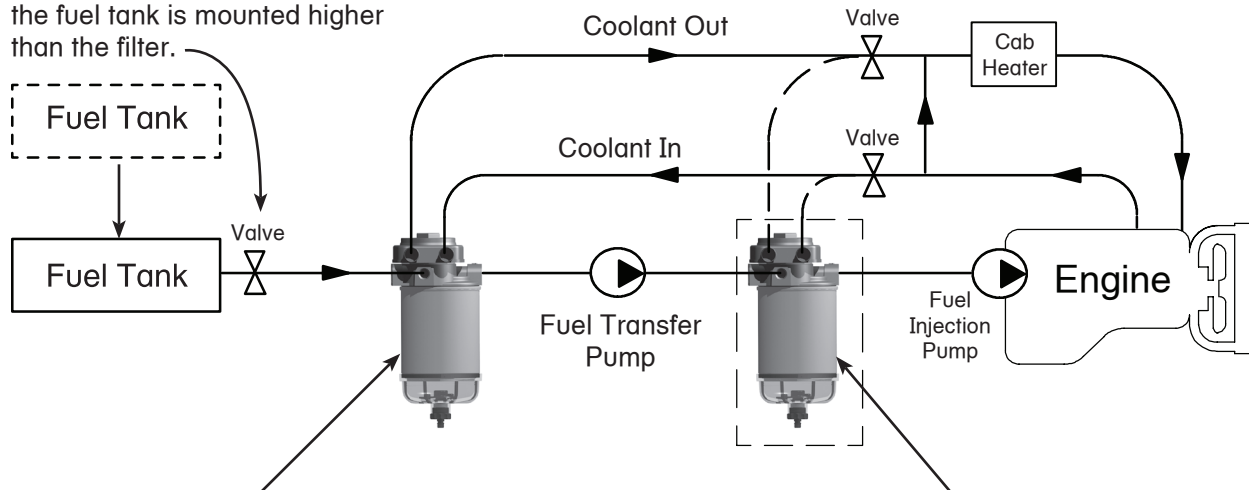
**Note:** Because of the high heat exchange efficiency of these units, customer supplied manual shut-off valves should be used to regulate coolant to the Racor unit.

#### Valve Positions:

**Open:** About equal flow through Racor and cab heater.

**Closed:** All coolant to the cab heater.

Note: A fuel shut-off valve (customer supplied) is recommended when the fuel tank is mounted higher than the filter.



Recommended Location: Suction Side  
Filtration: Primary (first) filter - use 30 micron  
(If it is the only filter in the system, use 10 or 2 micron)

Acceptable Location: Pressure Side (Must not exceed 30 PSI)  
Filtration: Secondary/Final (10 or 2 micron)

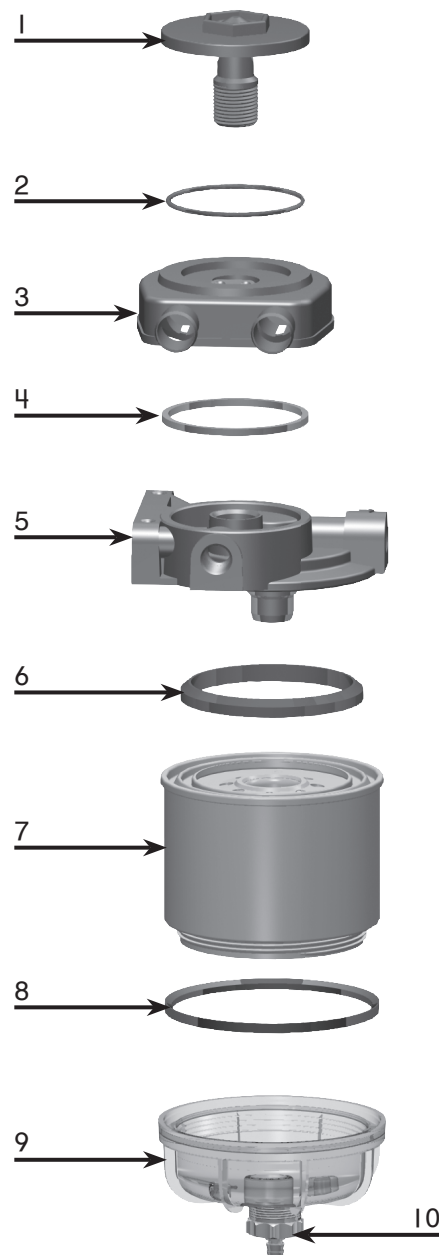
## 300RC Series

### Replacement Parts

#### 345RC, 360RC and 390RC

<u>Part Number</u>	<u>Description</u>
1. <b>RK30234</b>	Heat Exchanger Cap Kit
2. <b>RK10012</b>	Cap / Heat Exchanger O-ring
3. <b>RK30235-02</b>	Heat Exchanger Kit
4. <b>30237</b>	Square-cut Gasket
5. <b>RK22365-01</b>	Head Kit
6. <b>21501</b>	Gasket Pack
Replacement Elements (includes #6)	
7. <b>R45S</b>	2 micron
<b>R45T</b>	10 micron
<b>R45P</b>	30 micron
<b>R60S</b>	2 micron
<b>R60T</b>	10 micron
<b>R60P</b>	30 micron
<b>R90S</b>	2 micron
<b>R90T</b>	10 micron
<b>R90P</b>	30 micron
8. <b>RK22333</b>	Bowl gasket Kit
9. <b>RK21113-13-06</b>	Clear Bowl Kit, 9/16" SAE Ports
<b>RK21113-13</b>	Bowl Kit with Probe 9/16" SAE Ports
<b>RK22266-01</b>	Bowl Kit with Probe & 12 vdc Heater
<b>RK22266-02</b>	Bowl Kit with Probe & 24 vdc Heater
<b>RK22266-03</b>	Bowl Kit with Heater 12 vdc
<b>RK22266-04</b>	Bowl Kit with Heater 24 vdc
10. <b>RK22329</b>	Water Drain Kit
Additional Parts (not shown)	
<b>RK21199</b>	Water Sensor Connector Kit
<b>RK22323</b>	Heater Connector Kit
<b>RK22493</b>	Complete Seal Service Kit
<b>RK21145<sup>1</sup></b>	Water Probe Only 9/16" SAE
<b>RK11-1679</b>	Port Plug 9/16" SAE

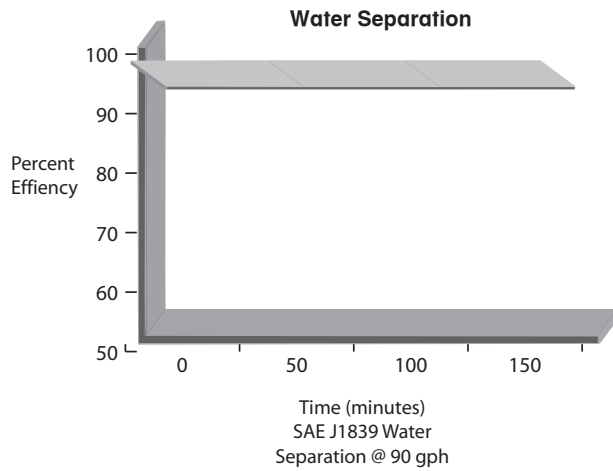
<sup>1</sup>Must be used with a Water Detection Kit. see Accessories section.



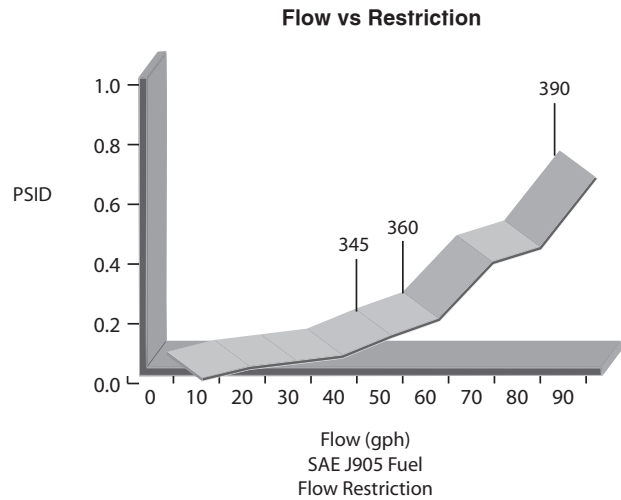
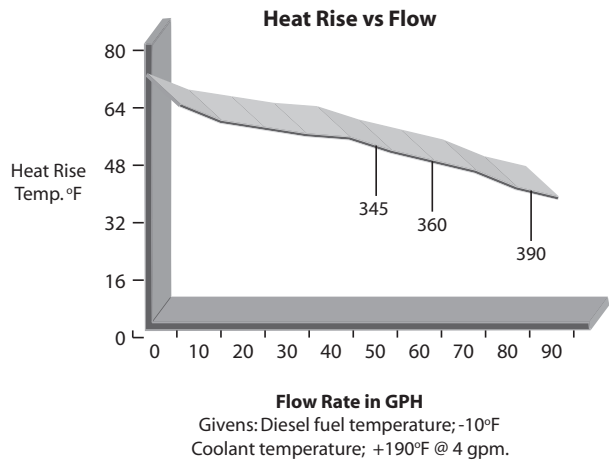


# Mobile Fuel Filtration

## 300RC Series



## Test Data



(Test results are from controlled laboratory testing. Field results may vary.)  
(PSI X 2.036 = inHG) (PSI X 6.895 = kPa)

## 400 Series



All 400 Series spin-on fuel filter/water separators feature a hand (palm) operated fuel priming pump which simplifies service procedures and yields extremely low flow resistance due to its unique pump bypass characteristic. These filters also feature multiple fuel ports (two inlets and two outlets) and a unitized mounting bracket for installation convenience. Inlet and outlet threads are 3/8"-18 NPTF (SAE J476) for the 445R, 460R and 490R and 3/4"-16 UNF (SAE J1926) for the 4120R. These filter assemblies provide flexibility during mounting to fit any engine application.

Additional 400 Series features include spin-on, high-capacity, Aquabloc® II replaceable filter elements which stop water, remove solid

contamination, and are available in 2, 10 and 30 micron. Filtration needs should be based on application, fuel quality, operating climates, and maintenance schedules. Also included are spin-on contaminant collection bowls. The clear bowls used with these filters will not discolor from alcohol, additives, or UV light and have a leak-proof, positive seal, self-venting drain for easy servicing. Water and contamination levels can be seen easily at a glance.

Options for the 400 Series filters include: water detection kits (for diesel applications only), vacuum or compound gauges and 12 or 24 volt dc, 200 watt fuel heaters.



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# Mobile Fuel Filtration

## 400 Series



Specifications	445R	460R	490R	4120R
<b>Maximum Flow Rate</b>	45 GPH (170 LPH)	60 GPH (227 LPH)	90 GPH (341 LPH)	120 GPH (454 LPH)
<b>Port Size</b>	3/8"-18 NPTF (SAE J476)	3/8"-18 NPTF (SAE J476)	3/8"-18 NPTF (SAE J476)	3/4"-16 SAE (SAE J1926)
<b>Total Number of Ports:</b> (total inlets) (total outlets)	4 2 2	4 2 2	4 2 2	4 2 2
<b>Min. Service Clearance</b>	2.0 in. (5.1 cm)	2.0 in. (5.1 cm)	2.0 in. (5.1 cm)	2.0 in. (5.1 cm)
<b>Center Threads</b>	1"-14	1"-14	1"-14	1"-14
<b>Height</b>	9.3 in. (23.6 cm)	11.0 in. (27.9 cm)	11.8 in. (30.0 cm)	15.0 in. (38.1 cm)
<b>Width</b>	4.5 in. (11.4 cm)	4.5 in. (11.4 cm)	4.5 in. (11.4 cm)	4.5 in. (11.4 cm)
<b>Depth</b>	4.8 in. (12.1 cm)	4.8 in. (12.1 cm)	4.8 in. (12.1 cm)	4.8 in. (12.1 cm)
<b>Weight (dry)</b>	2.5 lb (1.1 kg)	2.7 lb (1.2 kg)	2.9 lb (1.3 kg)	3.9 lb (1.8 kg)
<b>Clean Pressure Drop</b>	0.17 PSI (0.01 bar)	0.39 PSI (0.03 bar)	0.95 PSI (0.07 bar)	0.85 PSI (0.06 bar)
<b>Max. Allowable Pressure<sup>1</sup></b>	30 PSI (2.07 bar)	30 PSI (2.07 bar)	30 PSI (2.07 bar)	15 PSI (1.03 bar)
<b>Available Options:<sup>2</sup></b> (water sensor) (heater) <sup>3</sup>	Yes Yes	Yes Yes	Yes Yes	Yes Yes
<b>Bowl Capacity (water)</b> (with heater)	4.0 oz. (118 ml) 3.5 oz. (104 ml)	4.0 oz. (118 ml) 3.5 oz. (104 ml)	4.0 oz. (118 ml) 3.5 oz. (104 ml)	2.8 oz. (82 ml) 2.4 oz. (70 ml)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%			
<b>Operating Temperature</b>	-40° to +255°F (-40° to +124°C)			

<sup>1</sup> Pressure installations are applicable up to maximum PSI shown. Vacuum installations are recommended.

<sup>2</sup> Do not use with gasoline applications.

<sup>3</sup> Maximum power requirements for in-bowl heater option: 12 vdc (200 watt) = 16.6 amps, 24 vdc (200 watt) = 8.3 amps. See Accessories section for heater relay kits, if needed.

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## 400 Series

### How to Order

(The examples below illustrate how part numbers are constructed)

*	490R	12	2
Add an * for optional 16 mm fuel ports <sup>1</sup> (omit if not desired)	Specify a model number: 445R, 460R, 490R, or 4120R.	Add 12 or 24 for a 12 or 24 volt dc heater <sup>2</sup> . (omit if not desired)	Specify a micron rating: 2, 10, or 30.
<sup>1</sup> Standard fuel ports are 3/8"-18 NPTF (445R, 460R and 490R) and 3/4"-16 UNF (4120R).			
<sup>2</sup> Use with Racor relay kit - see Accessories.			

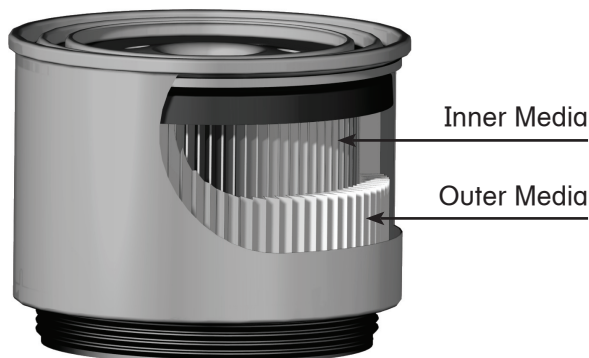
Replacement Elements			
Model Number	2 Micron (Final Filtration)	10 Micron (Secondary Filtration)	30 Micron (Primary Filtration)
445R	R45S or R47S	R45T	R45P
460R	R60S	R60T	R60P
490R	R90S	R90T	R90P
4120R	R120S	R120T	R120P

### Optional Dual Media Filter

Dual-Layer media offers enhanced high dirt-holding capacity, and extended filter life. Dual-Layer media ensures more complete removal of all size contaminants. The R47S filter replaces the R45S

Spin-on element, and provides removal efficiencies of 99.98% nominal on 2 micron particles. Still much greater than the 50-90% efficiency of most single-stage filters.

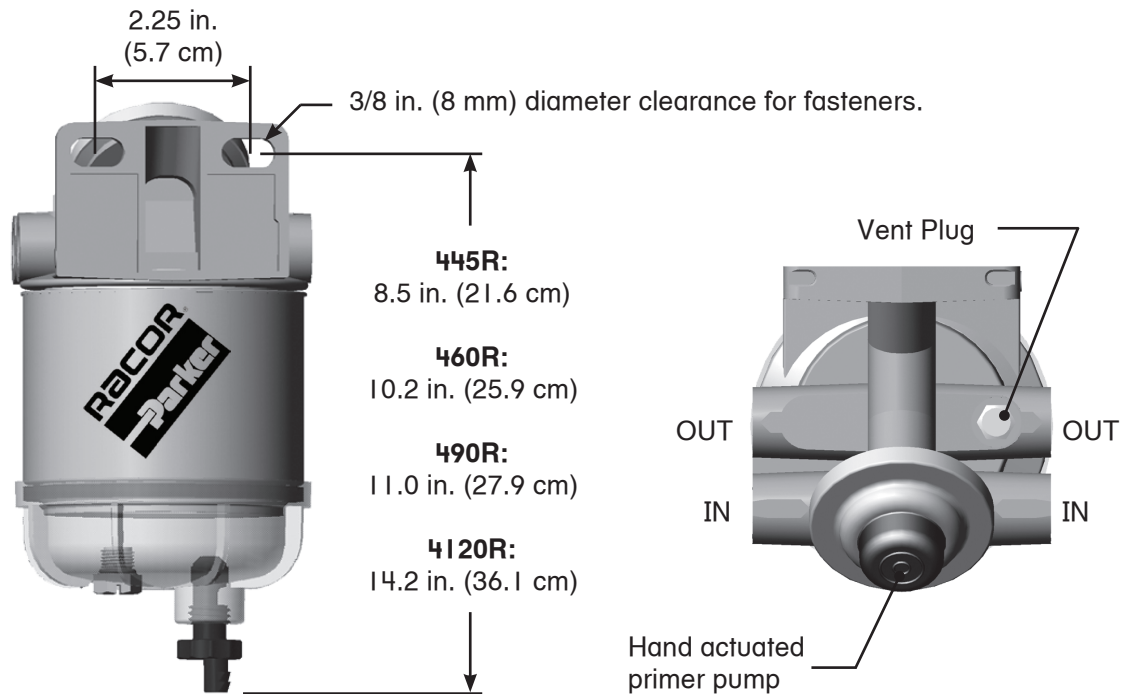
**R47S Dual Media Filter**



# Mobile Fuel Filtration

## 400 Series

### Mounting Information



### Installation Instructions

Refer to Mounting Instructions and Installation Diagram and install as follows:

1. Make sure engine is off and cool to touch.
2. 445R, 460R and 490R: Apply thread sealant to NPT fittings (do not use thread tapes as particles may break off and contribute to clogging element). 4120R: Apply motor oil or diesel fuel to O-ring on UNF fittings.
3. Thread fittings into appropriate fuel ports and tighten snugly. Plug unused ports (if any) with port plugs and tighten snugly.
4. Mount filter vertically in a protected area and away from heat sources. Maintain at least 2.0" (5.1 cm) of clearance below filter for draining water and servicing element.
5. Attach fuel lines to filter. Avoid tight bends and rubbing areas when routing hose.
6. Connect water probe and heater wires (if equipped).
7. Open vent plug and operate hand primer pump until fuel purges from vent.
8. Close vent plug and start engine. Correct as necessary with engine off.

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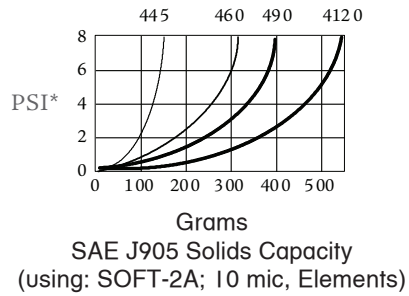
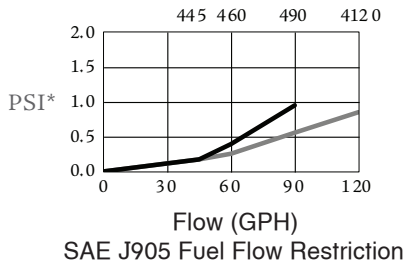
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## 400 Series

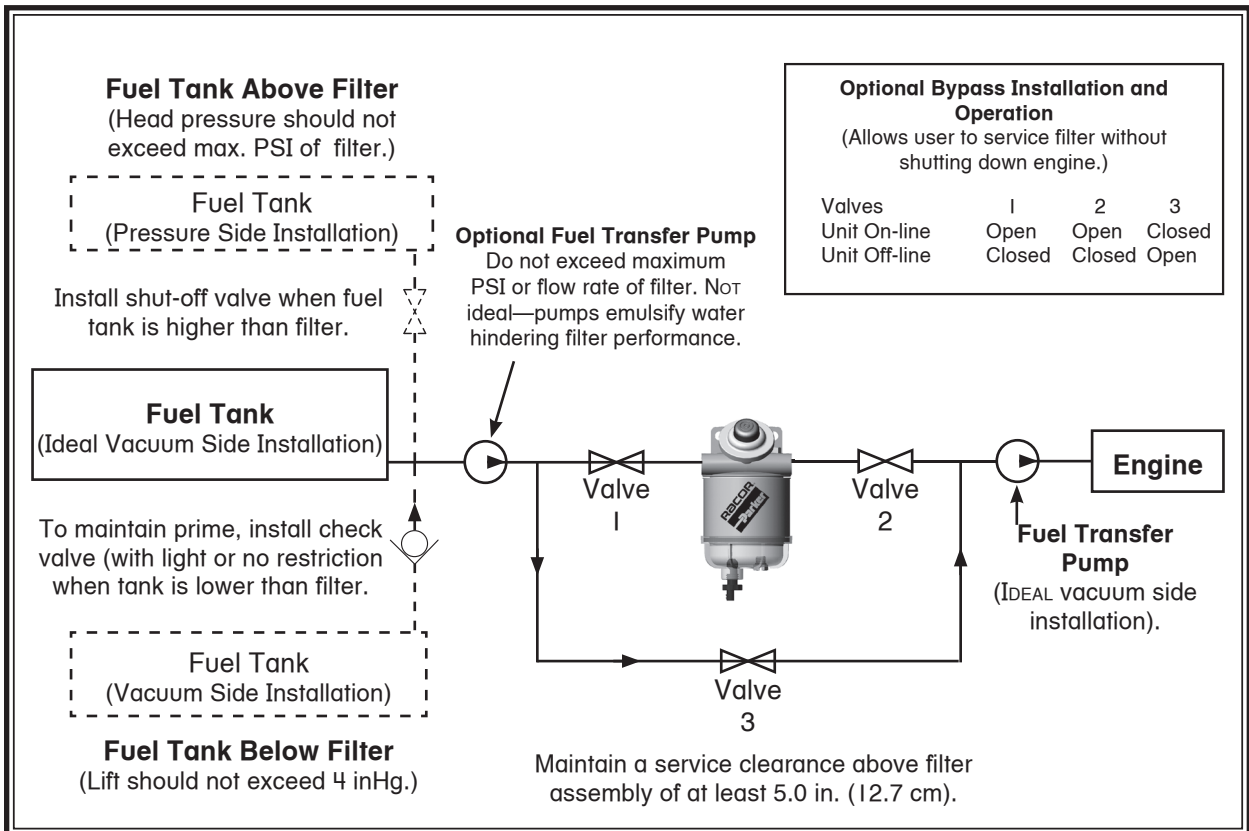
### Test Data

(Test results are from controlled laboratory testing. Field results may vary.)

\*PSI X 2.036 = inHg. (PSI X 6.895 = kPa)



### Installation Diagram



Installation diagram applies to all 400 Series filters. Model 445R shown above. Racor offers hose and fittings to complete this installation - see Accessories.

# Mobile Fuel Filtration

## 400 Series

### Service Instructions

Element replacement frequency is determined by contamination level in fuels. Fuel flow to engine becomes restricted as element gradually plugs with contaminants, resulting in noticeable power loss and/or hard starting. As a guideline, change element every 500 hours, 10,000 miles, every other oil change, annually, or at first indication of power loss, whichever occurs first. Always carry extra replacement elements as one tankful of excessively dirty fuel can quickly plug a filter.

1. Make sure engine is off and cool to touch.
2. Close all fuel valves, if applicable, to make sure excess fuel does not spill during servicing.
3. Disconnect water probe and heater connectors, if equipped.
4. Open vent plug on mounting head.
5. Drain unit of fuel.
6. Remove bowl and element. Dispose element properly. Bowl is reusable.
7. Lubricate new element seals with motor oil or clean fuel and install only with new element.
8. Re-install bowl and tighten by hand only - do not use tools.
9. Connect water probe and heater connectors, if equipped.
10. Open all fuel valves, if applicable.
11. Operate hand primer pump until fuel purges from vent.
12. Close vent plug and start engine. Correct as necessary with engine off.

#### Draining the Collection Bowl

Water is heavier than fuel and will settle to bottom of bowl and appear different in color if collected in a clear jar. In high humidity environments, check bowl frequently (daily if a poor fuel source is

suspected). 400 Series bowls are equipped with a water sensor port that will accept a water probe (sold separately) and will alert operator of a high water condition in the filter.

**Do NOT** use water probe electronics in gasoline applications - an explosion could occur.

1. Make sure engine is off and cool to touch.
2. Open vent plug.
3. Drain water from filter by opening self-venting drain. Close as soon as all water has evacuated.

If drain is open too long, the entire filter may drain completely of water and fuel

4. Follow priming instructions.

#### Priming Instructions

1. Prime filter by operating hand primer pump until fuel spills out of vent port.
2. Close vent plug snugly.
3. Verify all other connections are tight.
4. Start engine and check for leaks. Correct as necessary with engine off.

## Trouble Shooting

If a 400 Series filter fails to hold prime, first check vent plug, drain valve, fittings, head, element and bowl are properly tightened. Next, check fuel line connections and verify that they are free of pinches or unnecessary bends and check to see if fuel tank strainer (or pick-up tube) is clogged. If problems persist and element is new, call Racor Technical Support at the number listed below.

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## Replacement Parts

445R, 460R and 490R

Part Number	Description
1. <b>RK10110</b>	Metal Vent Plug Kit (3/8"-24 SAE)
2. <b>RK22425</b>	Mounting Head Kit (3/8"-18 NPTF) (includes head, #1, #3 and #4)
<b>RK22168-05BP</b>	Mounting Head Kit (16 mm X 1.5) (includes same as RK22425)
3. <b>RK22798</b>	Bypass Valve Kit
4. <b>RK22998</b>	Element Gasket Kit
5.	See Replacement Element Chart
6. <b>RK22333</b>	Bowl Gasket Kit
7. Replacement Bowl Kits (includes bowl #6, #8 and #9)	
<b>RK21113-13-11</b>	Clear Bowl Kit
<b>RK22616-01<sup>1</sup></b>	Heated Clear Bowl Kit (same as above, 12 vdc heater)
<b>RK22616-02<sup>1</sup></b>	Heated Clear Bowl Kit (same as above, 24 vdc heater)
8. <b>RK20126</b>	Plug Kit (1/2"-20 SAE)
9. <b>RK30476</b>	Self-Venting Drain Kit
10. <b>RK30964<sup>2</sup></b>	Water Probe Kit
Additional Parts (not shown)	
<b>RK22323<sup>1</sup></b>	Heater Connector Kit
<b>22209</b>	Installation Instructions

<sup>1</sup> In-bowl heater may require a Heater Relay Kit. Power requirements (maximum) are: 12 vdc = 16.6 amps, 24 vdc = 8.3 amps.

<sup>2</sup> Water probe must be used with a Water Detection Kit - see Accessories. Do not use on gasoline applications.

## 400 Series





# Mobile Fuel Filtration

## 400 Series

### Replacement Parts

#### 4120R

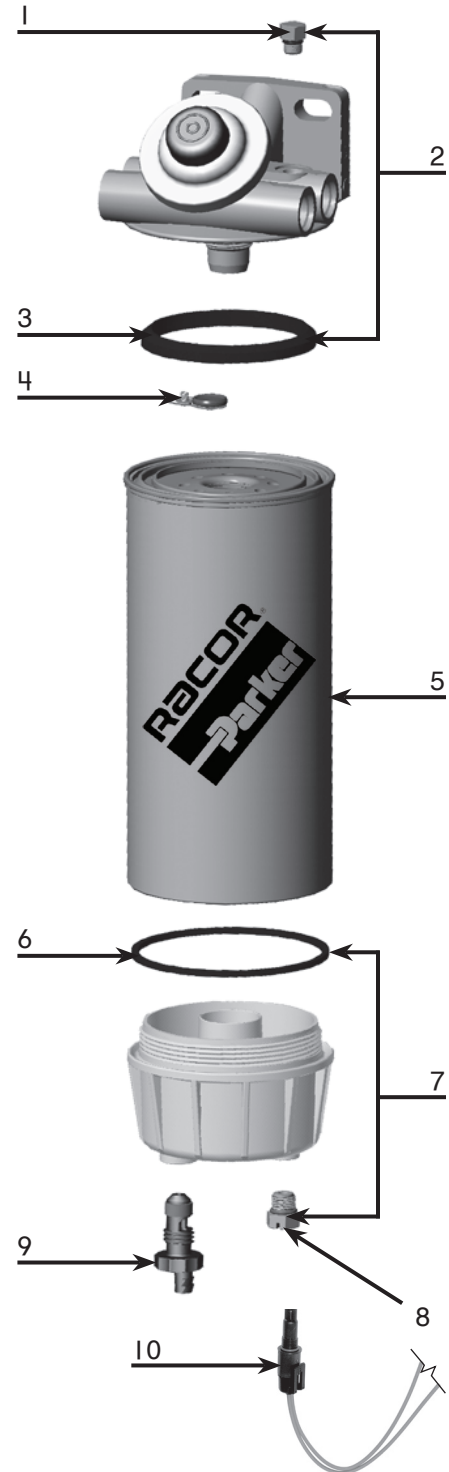
Part Number	Description
1. <b>RK10110</b>	Metal Vent Plug Kit (3/8"-24 SAE)
2. <b>RK22168</b>	Mounting Head Kit (3/4"-16 SAE) (includes head, #1, #3 and #4)
3. <b>RK22998</b>	Element Gasket (includes #3 and #6)
4. <b>RK22798</b>	By-Pass Valve Kit
5. Replacement Elements:	
<b>RI20S</b>	2 micron
<b>RI20T</b>	10 micron
<b>RI20P</b>	30 micron
6. <b>RK22998</b>	Bowl O-ring
7. Replacement Bowl Kits (includes bowl #6, #8 and #9)	
<b>RK30063</b>	Clear Bowl Kit
<b>RK30900</b> <sup>1</sup>	Heated Clear Bowl Kit (same as above, 12 vdc heater)
<b>RK30925</b> <sup>1</sup>	Heated Clear Bowl Kit (same as above, 24 vdc heater)
8. <b>RK20126</b>	Plug Kit (1/2" SAE)
9. <b>RK30476</b>	Self-Venting Drain Kit
10. <b>RK30964</b> <sup>2</sup>	Water Probe Kit

#### Additional Parts (not shown)

**22209** Installation Instructions

<sup>1</sup> In-bowl heater may require a Heater Relay Kit. Power requirements (maximum) are: 12 vdc = 16.6 amps and 24 vdc = 8.3 amps - see Accessories.

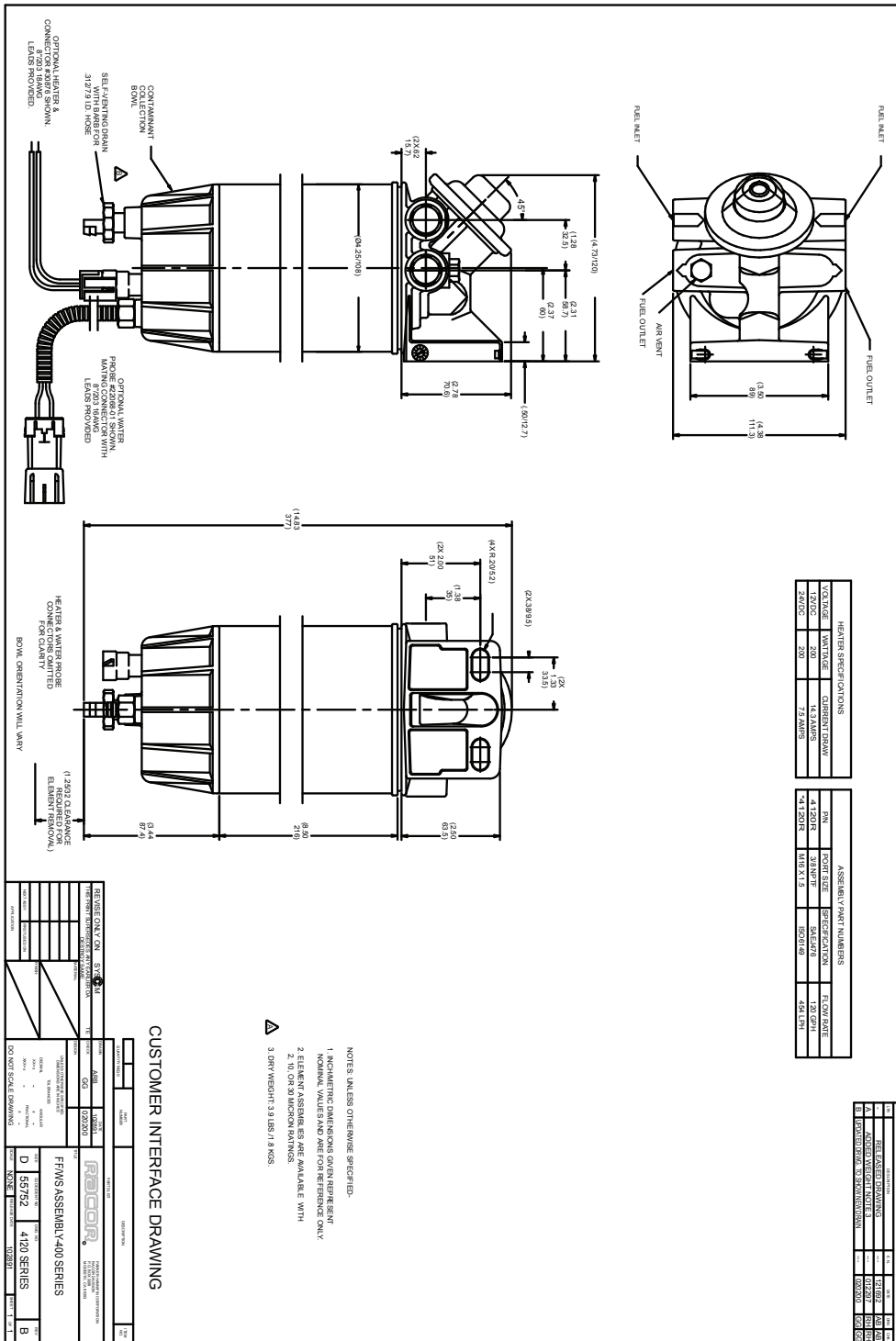
<sup>2</sup> Water probe must be used with a Water Detection Kit - see Accessories. Do not use on gasoline applications.





# Mobile Fuel Filtration

## Customer Interface Drawing



## 424 Series

Want proven reliability? A Racor 424 Fuel Heater/Water Separators are for today's high performance heavy-duty and smaller midrange engines. These lightweight aluminum units use engine coolant to produce a 47° F rise in fuel temperature, eliminating the need for fuel blending.

A 424's three-stage water separation process is more than 99% effective in eliminating water from fuel under SAE J1839 test parameters.

Stage 1: A self-cleaning stripper screen removes water and solid contaminants from the fuel, so no primary fuel filter is required.

Stage 2: Fuel contaminants and water are drained by the driver through the unit's self-venting drain valve.

Stage 3: A floating check ball valve system guards against loss of prime during service.

424 units require no scheduled servicing, other than periodic water draining. The screen filtration system is also self-cleaning eliminating the need for additional maintenance. Separated water is quickly and easily eliminated through an integral self-venting drain valve with no loss of prime.



WFH424



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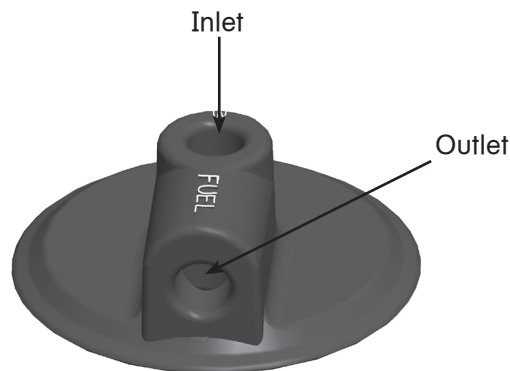


# Mobile Fuel Filtration

## 424 Series



Specifications	WFH424
Flow Rate	60 GPH (227 LPH)
Fuel Port Size	1/2 NPT
Coolant Port Size	1/2 NPT
Width	5.3 in. (13.5 cm)
Depth	5.9 in. (15.0 cm)
Height <sup>1</sup>	10.0 in. (25.4 cm)
Weight (dry)	6.3 lbs (2.9 kg)
H <sub>2</sub> O Removal Efficiency	99%
Operating Temperature	-40° to +255°F (-40° to +124°C)
<sup>1</sup> Allow 4" additional space for screen removal.	

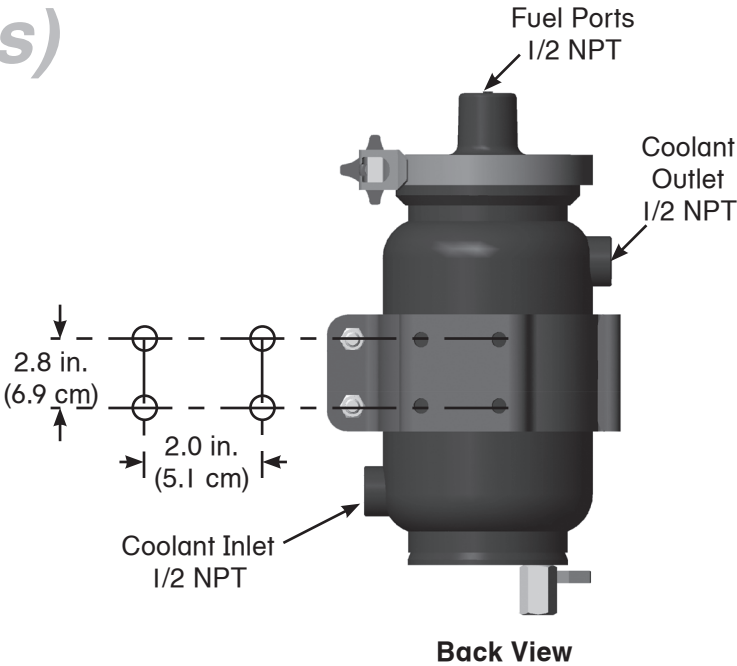
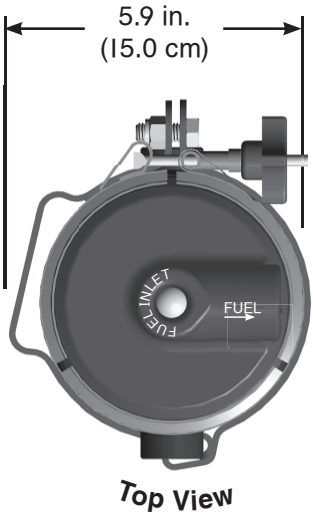


## 424 Series

### How To Order

WFH424
Basic Model Comes standard with a 70 Micron Stripper Screen and Mounting Brackets.

### Mounting Information (all models)



# Mobile Fuel Filtration

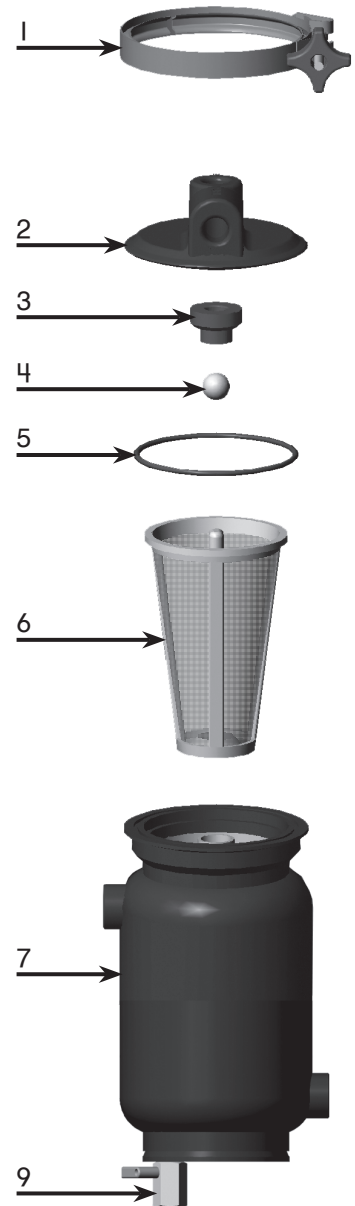
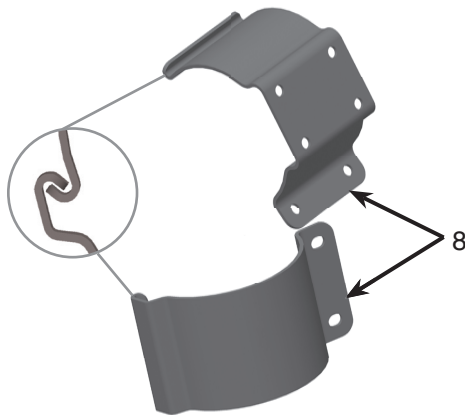
## 424 Series

### Replacement Parts

<u>Part Number</u>	<u>Description</u>
1. <b>WFH5760</b>	Cover Clamp Kit
2. <b>WFH5726</b>	424 Cover Kit
3. <b>WFH5731C</b>	Stopper Seal Kit
4. <b>WFH5731K</b>	Check Ball Kit
5. <b>WFH5730P</b>	O-ring Kit
6. <b>WFH4732</b>	70 Micron Screen Kit (includes #5)
7. <b>WFH4738</b>	424 Body Kit
8. <b>WFH4736</b>	Mounting Bracket Kit
9. <b>WFH5742</b>	Ball Valve Kit

Additional Parts (not shown)

<b>BK38100L</b>	Bolt Kit
<b>WFH4750K</b>	424 Complete Rebuild Kit

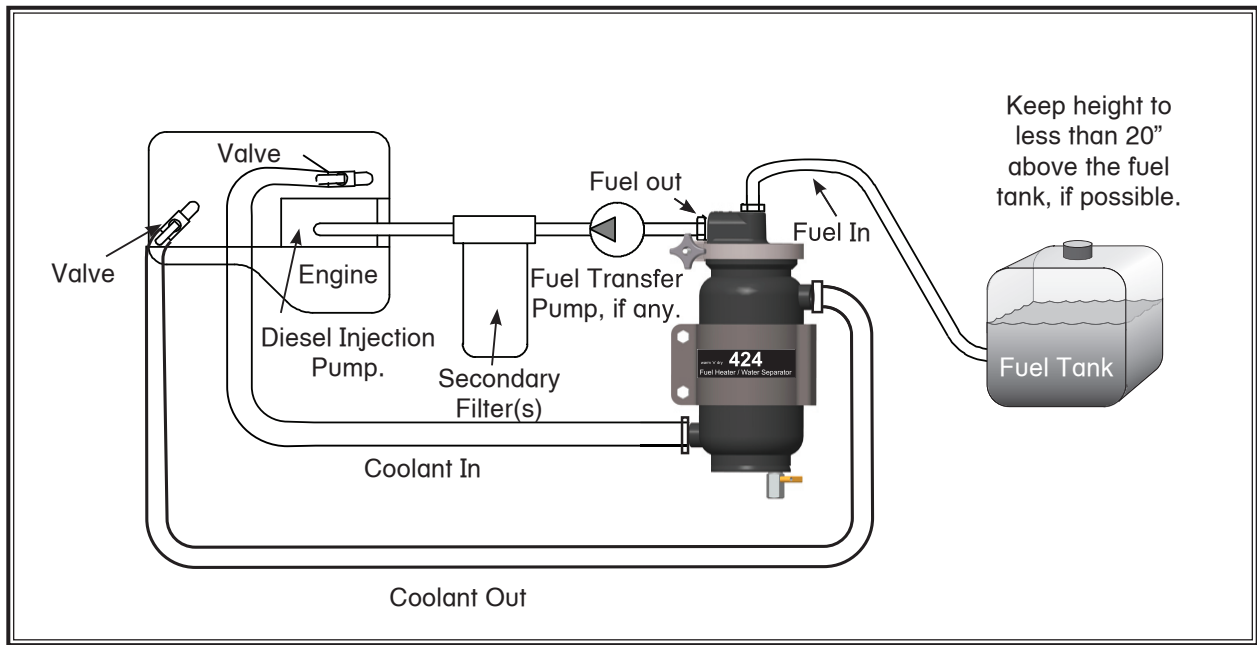


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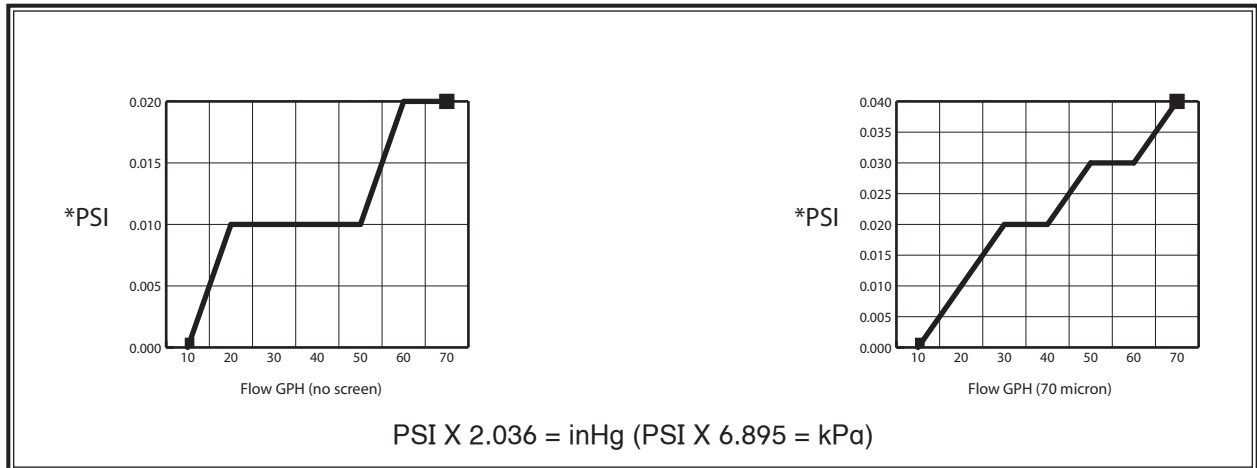
## 424 Series

### Installation Diagram



### Test Data

Test results are from controlled laboratory testing. Field results may vary by application.





# Mobile Fuel Filtration

## 424 Series

### Features & Benefits

- A. **Fuel Inlet:** Fuel flows in and is cleaned and heated before returning to engine.
- B. **Fuel Outlet:** Warm fuel escapes and is consumed by engine.
- C. **Cover Clamp:** Allows cover to be rotated 180° for ease and versatility of installation. Do not use tools, hand-tighten clamp only.
- D. **Cover:** The self piloting no thread clamp-on design allows the top cover to be positioned in any direction for fuel routing. The cover may be removed with fuel line intact, and without tools.
- E. **Internal Check Valve:** The floating check ball (check ball moves up and down through tube to ensure prime is not lost) valve system guards against loss of prime during fuel system service. Delaying the check ball for four and a half seconds allows time for any foreign matter to clear the valve seat area, ensuring a tight seat.
  - 1. Engine Off
  - 2. Engine Running
- F. **Stripper Screen:** The 424 has a self-flushing screen that will not allow water to pass through, and it acts as a prefilter removing contaminants to 70 micron. Eliminating the need for a primary fuel filter.
- G. **Coolant Outlet:** Coolant that was circulating through unit is now returning to engine.
- H. **Self Venting Drain Valve:** Unique one-valve system for fast and simple water draining, it is easy for operators to drain unit.
- I. **Coolant Inlet:** Coolant enters unit to warm fuel and exits through outlet.
- J. **Mounting Bracket:** Two piece design, mount filter vertically only.

### The 3-stage process.

- Stage 1.** Fuel enters the 424 through the cover's center port. The fuel travels down the isolator tube, pushing the check ball down, then passes through fuel slots on the bottom. The fuel changes direction and travels up and around the diffuser plate. The entire time it is being warmed by the surrounding hot water jacket.
- Stage 2.** Fuel then passes through the self flushing stripper screen where the contaminants and water are left behind to fall to the top of the diffuser plate. Their, the contaminates settle below incoming fuel and collect at the base of the unit, were the contaminants and water are drained.
- Stage 3.** Finally the clean, dry, and warm fuel exits the 424 unit through the cover's side port and than is ingested by the engine.

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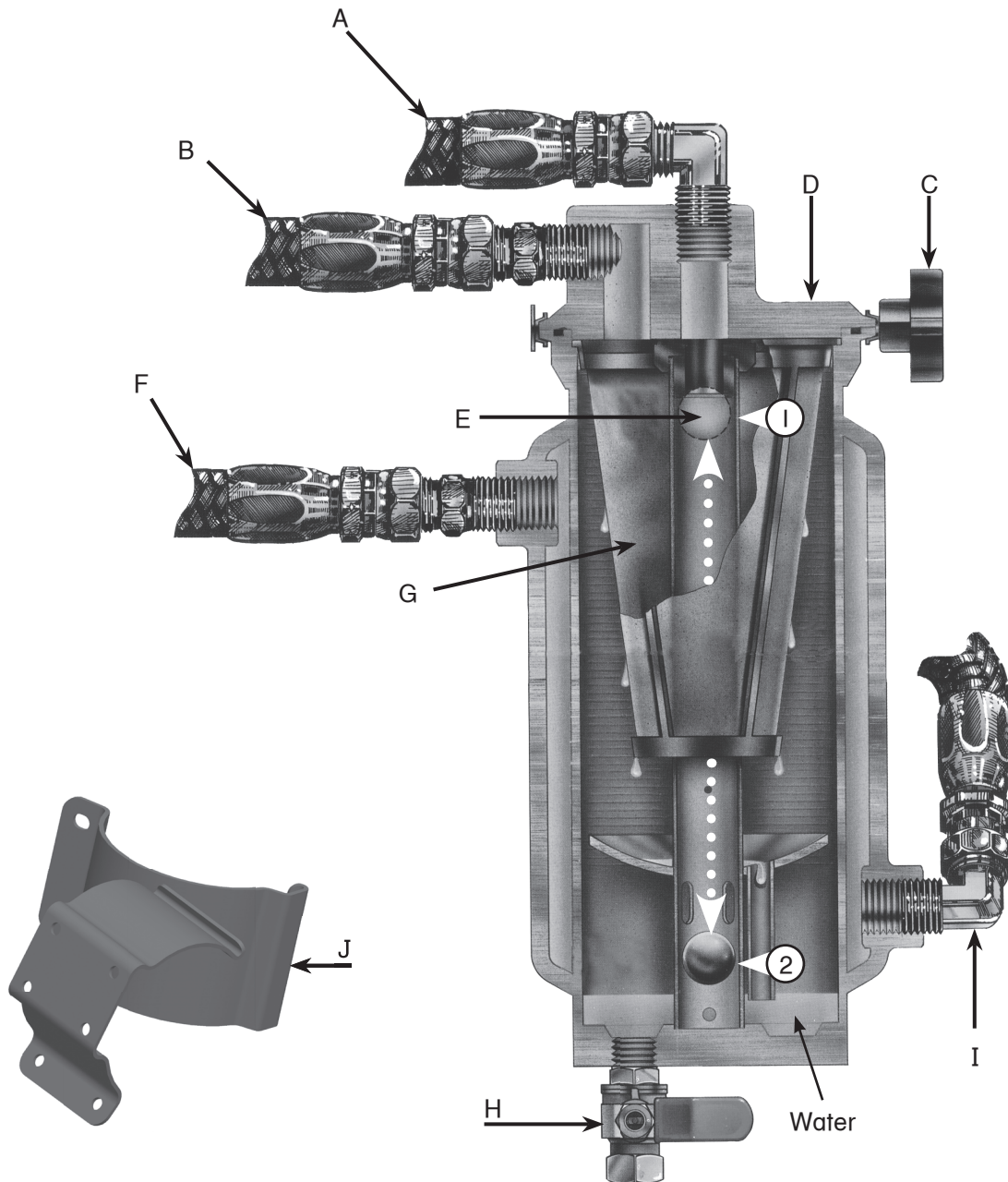
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# Mobile Fuel Filtration

1

## 424 Series





## 500 Series

Want proven reliability? A Racor 500 Series Fuel Heater/Water Separators are for today's high performance heavy-duty and smaller midrange engines. These lightweight aluminum units use engine coolant to produce a 47° F rise in fuel temperature, eliminating the need for fuel blending.

A 500 Series three-stage water separation process is more than 99% effective in eliminating water from fuel under SAE J1839 test parameters.

**Stage 1:** A self-cleaning stripper screen removes water and solid contaminants from the fuel, so no primary fuel filter is required.

**Stage 2:** Fuel contaminants and water are drained by the driver through the unit's self-venting drain valve.

**Stage 3:** A floating check ball valve system guards against loss of prime during service.

500 Series units require no scheduled servicing, other than periodic water draining. The screen filtration system is also self-cleaning eliminating the need for additional maintenance. Separated water is quickly and easily eliminated through an integral self-venting drain valve with no loss of prime.

500 Series units are available with either a 12 volt or 120 volt preheater and optional thermostat. The unit cover rotates 360° for ease of installation on any existing engine configuration.

**WFH500** has no coolant inlet or outlet, this unit will separate water and contaminants down to 70 micron and will remove 99% of free water.



WFH500



WFH525



WFH525/ACV



525EHA



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# Mobile Fuel Filtration

## 500 Series

### Features & Benefits

- A. **Fuel Inlet:** Fuel flows in and is cleaned and heated before returning to engine.
- B. **Fuel Outlet:** Warm fuel escapes and is consumed by engine.
- C. **Cover Clamp:** Allows cover to be rotated 180° for ease and versatility of installation. Do not use tools, hand-tighten clamp only.
- D. **Cover:** The self piloting no thread clamp-on design allows the top cover to be positioned in any direction for fuel routing. The cover may be removed with fuel line intact, and without tools.
- E. **Internal Check Valve:** The floating check ball (check ball moves up and down through tube to ensure prime is not lost) valve system guards against loss of prime during fuel system service. Delaying the check ball for four and a half seconds allows time for any foreign matter to clear the valve seat area, ensuring a tight seat.
  1. Engine Off
  2. Engine Running
- F. **Stripper Screen:** The 500 has a self-flushing screen that will not allow water to pass through, and it acts as a prefilter removing contaminants to 70 micron. Eliminating the need for a primary fuel filter, the assembly also comes with a 30 micron screen.
- G. **Coolant Outlet:** Coolant that was circulating through unit is now returning to engine.
- H. **Self Venting Drain Valve:** Unique one-valve system for fast and simple water draining, it is easy for operators to drain unit.
- I. **Coolant Inlet:** Coolant enters unit to warm fuel and exits through outlet.
- J. **Automatic Coolant Valve (ACV):** Shuts off coolant supply at 80° F (26.6 c) to protect electronic engine controls from over heating.
- K. **Mounting Bracket:** Two piece design, mount filter vertically only.
- L. **Optional:** 12 vdc 200 watt preheater cartridge (part number CH4.5).
- M. **Optional:** 120 vdc 63 watt electric preheater (part number CH2.75-1).

### The 3-stage process

- Stage 1.** Fuel enters the 500 through the cover's center port. The fuel travels down the isolator tube, pushing the check ball down, then passes through fuel slots on the bottom. The fuel changes direction and travels up and around the diffuser plate. The entire time it is being warmed by the surrounding hot water jacket.
- Stage 2.** Fuel then passes through the self flushing stripper screen where the contaminants and water are left behind to fall to the top of the diffuser plate. Their, the contaminates settle below incoming fuel and collect at the base of the unit, were the contaminants and water are drained.
- Stage 3.** Finally the clean, dry, and warm fuel exits the 500 unit through the cover's side port and than is ingested by the engine.

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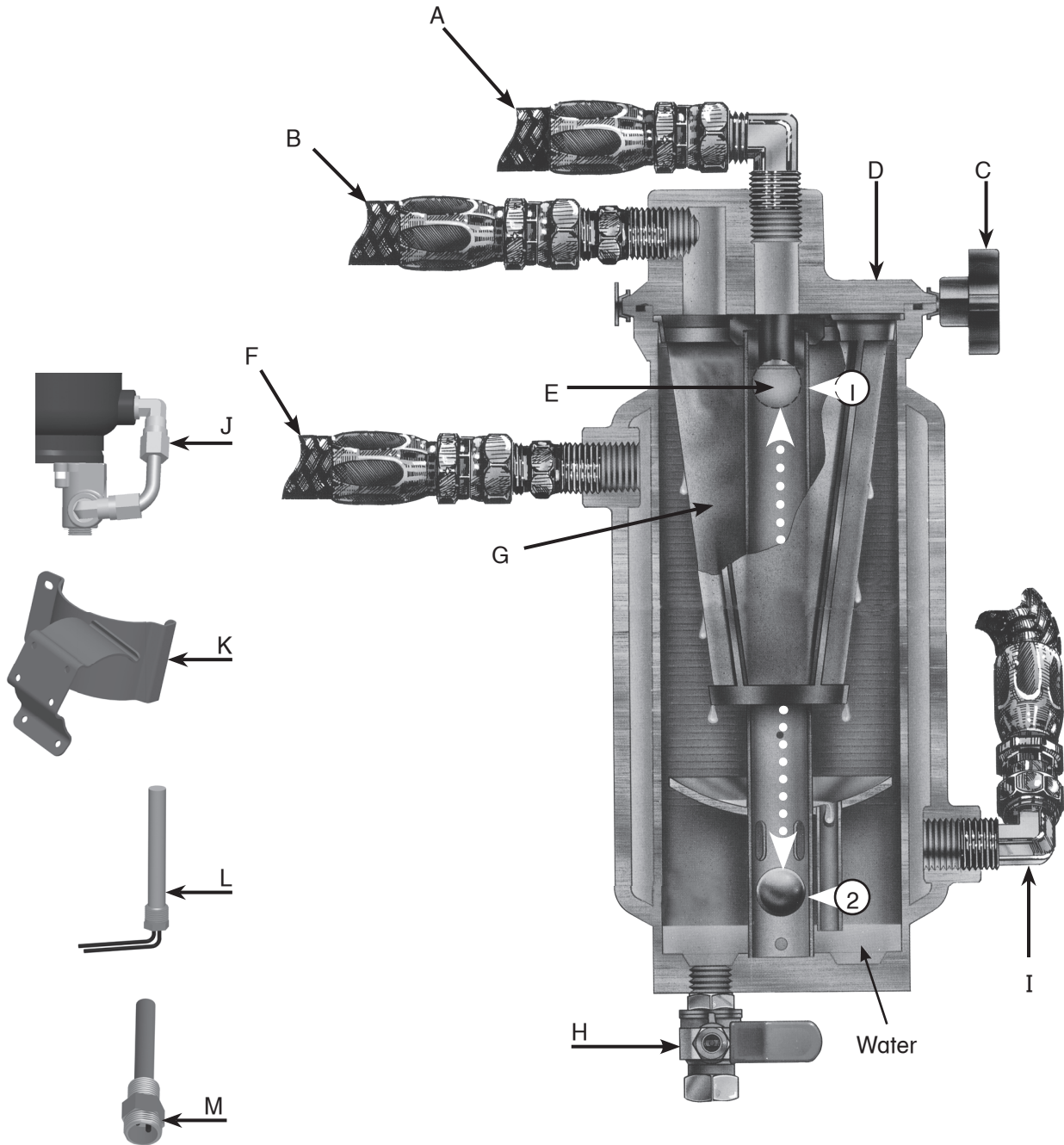
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# Mobile Fuel Filtration

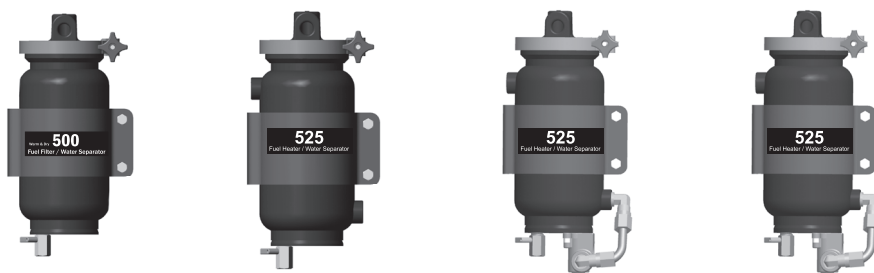
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## 500 Series



# Mobile Fuel Filtration

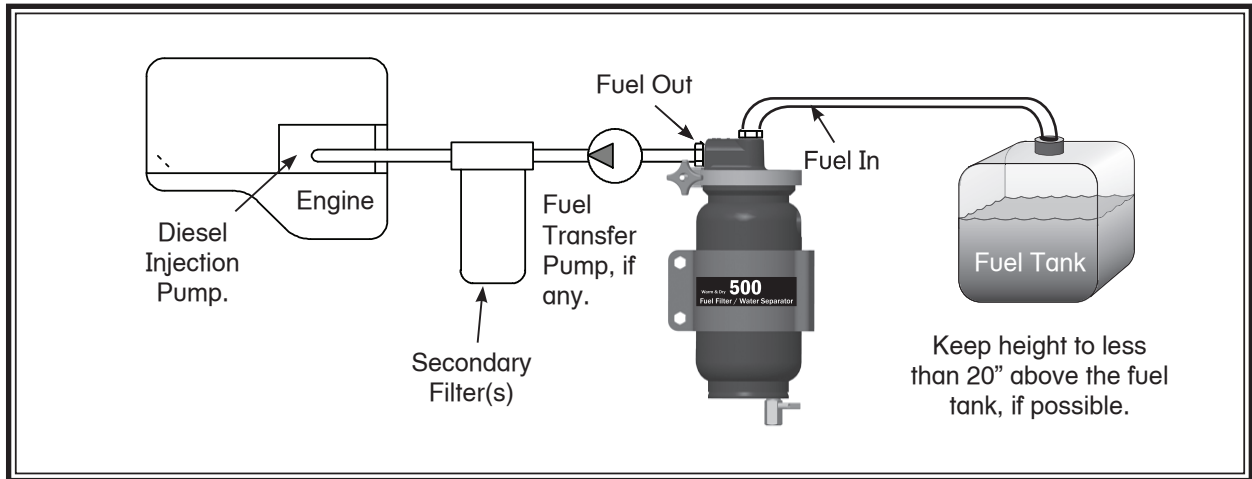
## 500 Series



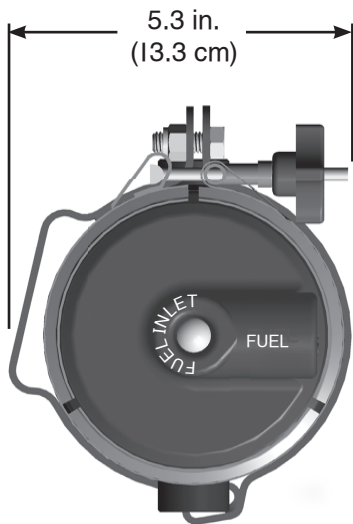
Specifications	WFH500	WFH525	WFH525/ACV	525EHA
<b>Flow Rate</b>	120 GPH (454 GPH)	120 GPH (454 GPH)	120 GPH (454 GPH)	120 GPH (454 GPH)
<b>Fuel Port Size</b>	1/2 NPT	1/2 NPT	1/2 NPT	1/2 NPT
<b>Coolant Port Size</b>	N/A	1/2 NPT	1/2 NPT	1/2 NPT
<b>Width</b>	5.3 in. (13.5 cm)	5.3 in. (13.5 cm)	5.3 in. (13.5 cm)	5.3 in. (13.5 cm)
<b>Depth</b>	5.3 in. (13.5 cm)	5.3 in. (13.5 cm)	5.3 in. (13.5 cm)	5.3 in. (13.5 cm)
<b>Height</b>	15.8 in. (40.1 cm)	15.8 in. (40.1 cm)	15.9 in. (40.3 cm)	15.9 in. (40.3 cm)
<b>H<sub>2</sub>O Removal</b>	99%	99%	99%	99%
<b>Coolant Ports</b>	No	Yes	Yes	Yes
<b>Heater Ports</b>				
12 vdc Pre-heater	Yes	No	No	No
120 vdc Pre-heater	No	No	No	Yes
<b>Automatic Coolant Valve (ACV)</b>	No	No	Yes	Yes
<b>Service Element</b>	4 in.	4 in.	4 in.	4 in.
<b>Operating Temperature</b>	-40° to +255°F (-40° to +124°C)			

## 500 Series

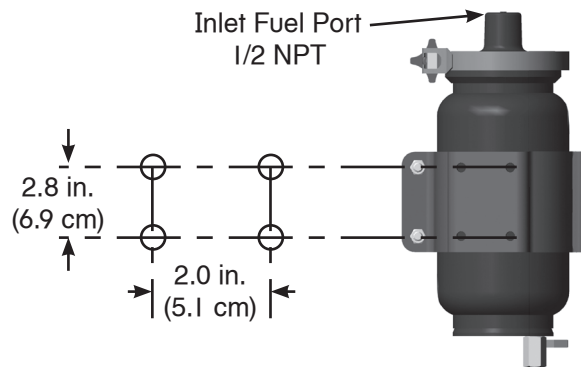
### Installation Diagram



### Mounting Information



Top View



Back View



# Mobile Fuel Filtration

## 500 Series

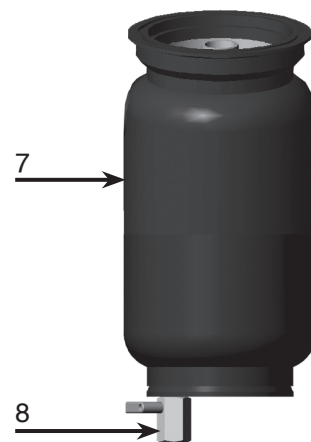
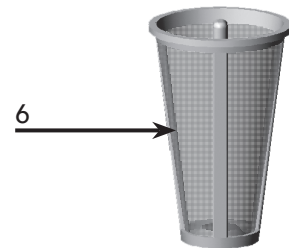
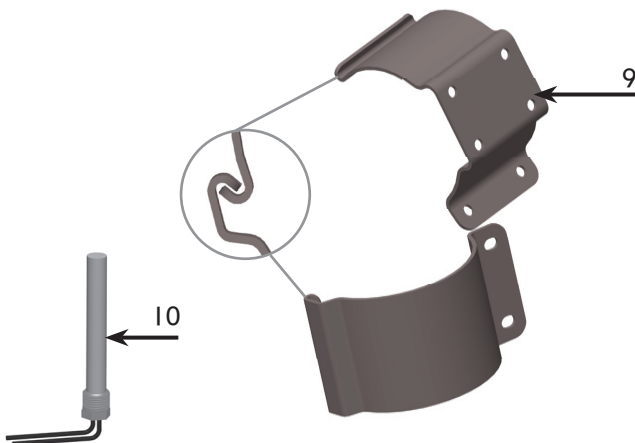
### Replacement Parts

#### WFH500

Part Number	Description
1. WFH5760	Cover Clamp Kit
2. WFH5726B	500 Cover Kit
3. WFH5731P	Check Seal Kit
4. WFH5731K	Check Ball Kit
5. WFH5730P	O-ring Kit (includes 6 o-rings)
6. WFH5732	70 Micron Stripper Screen Kit (includes o-ring)
7. WFH5038X	500 Body Kit
8. WFH5742	Drain Valve Kit
9. WFH5736	Mounting Bracket Kit
10. N/A	12 vdc 200 watt Cartridge Heater

Additional Parts (not shown)

525B/V	Bolt Kit
WFH5750K	Rebuild Kit 70 Micron (fits all 500 series)
WFH5750K/30	Rebuild Kit 30 Micron (fits all 500 series)



# Mobile Fuel Filtration

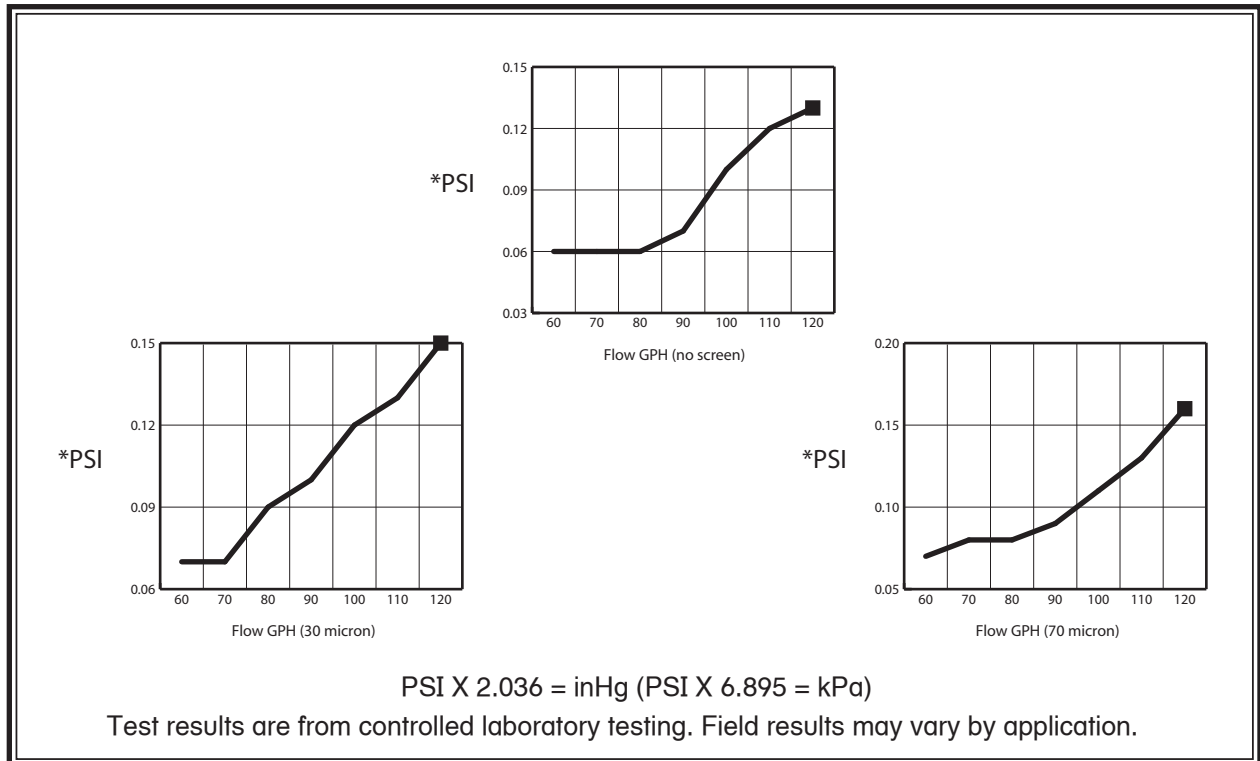
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## 500 Series

### How To Order

WFH525	/ACV	/30
Basic Model Comes standard with a <b>70 Micron Stripper Screen</b> and mounting brackets.	Specify: <b>/ACV</b> for a Automatic Coolant Valve. (omit if not desired)	Specify: <b>/30</b> for a 30 micron Stripper Screen (omit if not desired)

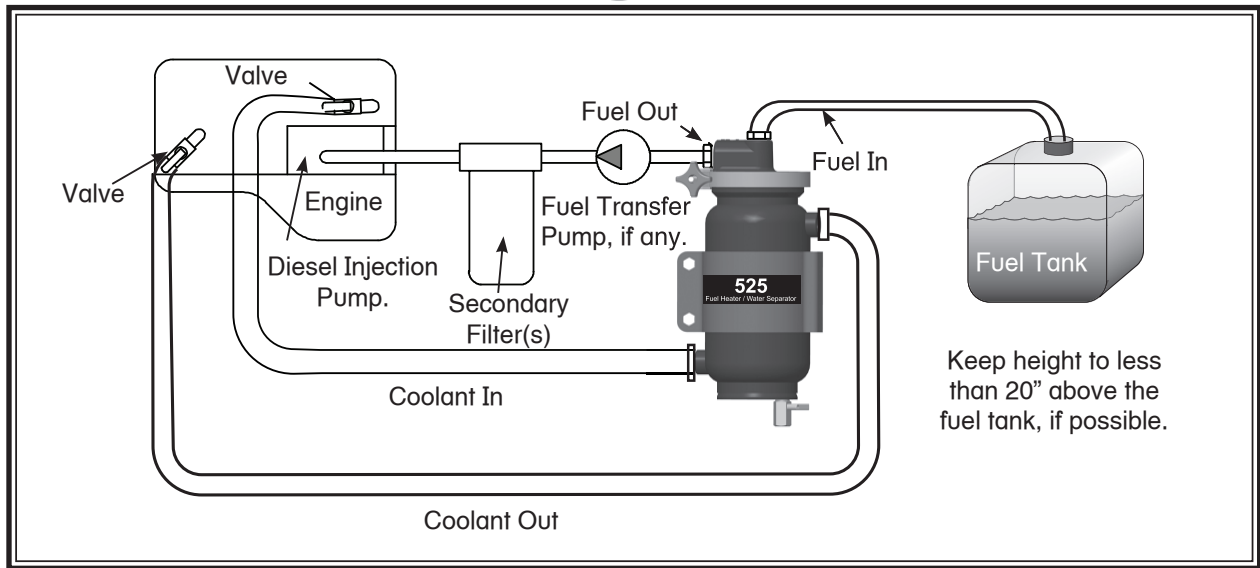
### Test Data



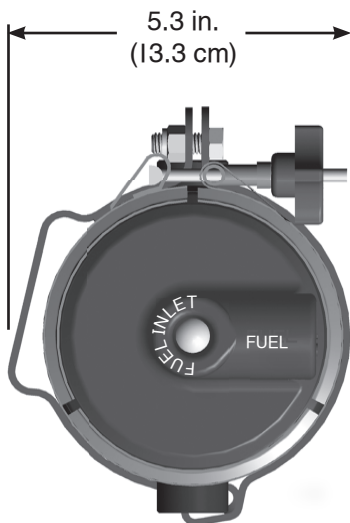
# Mobile Fuel Filtration

## 500 Series

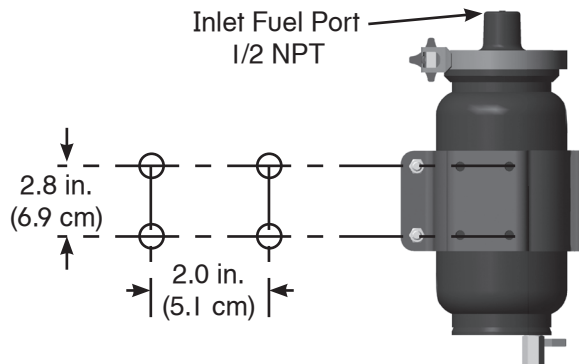
### Installation Diagram



### Mounting Information



Top View



Back View

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## 500 Series

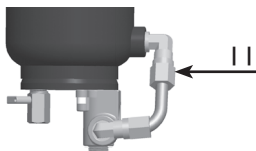
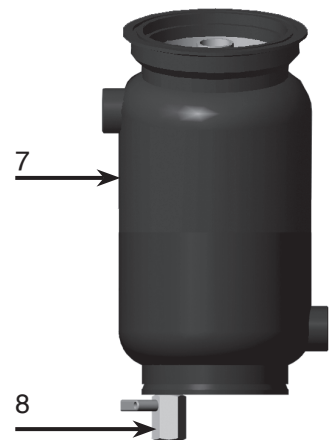
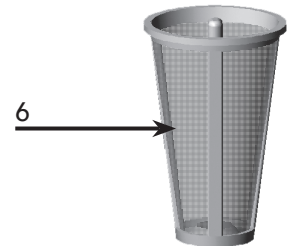
### Replacement Parts

#### WFH525/WFH525ACV

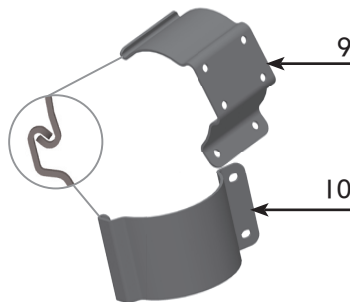
Part Number	Description
1. <b>WFH5760X</b>	Cover Clamp Kit
2. <b>WFH5726X</b>	525 Cover Kit
3. <b>WFH5731C</b>	Stopper Seal Kit
4. <b>WFH5731B</b>	Check Ball Kit
5. <b>WFH5730X</b>	O-ring Kit
6. <b>WFH5732</b>	70 Micron Screen Kit
<b>WFH5732FX</b>	30 Micron Screen Kit
7. <b>WFH5738X</b>	525 Body Kit
8. <b>WFH5742X</b>	Ball Valve Kit
9. <b>WFH5736S</b>	(back) Mounting Bracket Kit
10. <b>WFH5736R</b>	(front) Mounting Bracket Kit
11. <b>ACV4500</b>	Automatic Coolant Shutoff Valve

#### Additional Parts (not shown)

<b>BK38100L</b>	Bolt Kit
<b>WFH5750K</b>	Rebuild Kit 70 Micron (all 500 series #'s 3-6)
<b>WFH5750K/30</b>	Rebuild Kit 30 Micron (all 500 series #'s 3-6)



Optional ACV  
(automatic coolant valve).

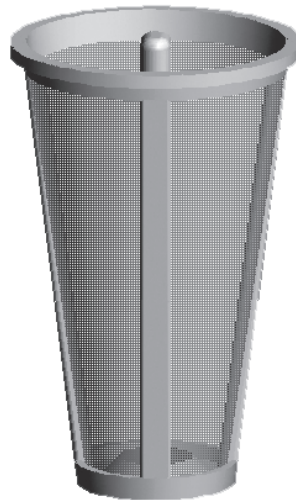


# Mobile Fuel Filtration

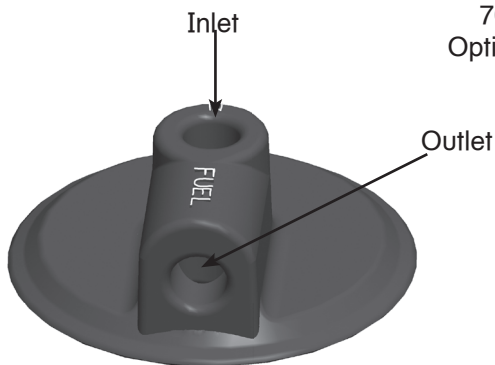
## 500 Series

### How to Order

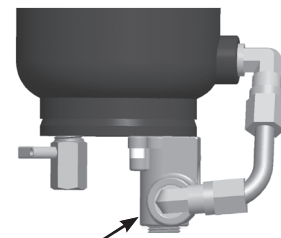
525EHA	30
Basic Model Comes standard with a <b>70</b> Micron Stripper Screen and mounting brackets and a 120 vdc electric heater and <b>ACV</b> valve.	Specify: <b>30</b> for a 30 micron Stripper Screen (omit if not desired)



70 Micron Stripper Screen  
Optional 30 Micron is Available.



Lid showing Fuel Ports



ACV  
(automatic coolant valve).

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## 500 Series

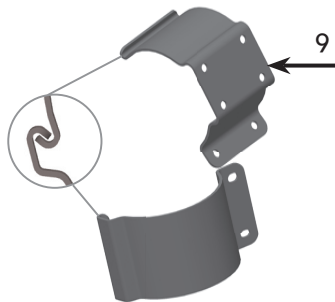
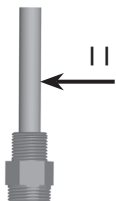
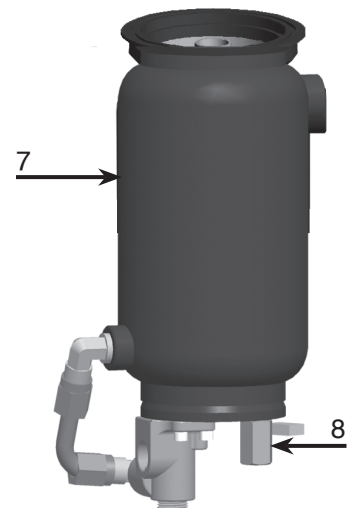
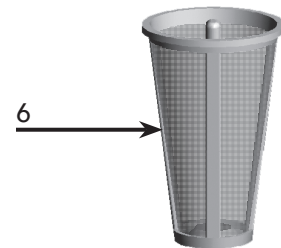
### Replacement Parts

#### 525EHA/525EHA30

Part Number	Description
1. WFH5760	Cover Clamp Kit
2. WFH5726B	525 Cover Kit
3. WFH573IP	Stopper Seal Kit
4. WFH573IK	Check Ball Kit
5. WFH5730P	O-ring Kit (includes 6 o-rings)
6. WFH5732	70 Micron Stripper Screen Kit (includes o-ring)
WFH5732FX	30 Micron Stripper Screen Kit (includes o-ring)
7. WFH5738VX	525 Body Kit (with ACV Kit)
8. WFH5742UX	Ball Valve Kit
9. WFH5736	Mounting Bracket Kit
10. EH10	10 Foot Heater Cord 120 vdc
11. CH2.75	120 vdc 63 watt Electric Pre Heater

#### Additional Parts (not shown)

BK38100L	Bolt Kit
EH10Y	10 Foot Y-Cord Kit 120 vdc (optional)
EH14YK	14 Foot Y-Cord Kit 120 vdc (optional)
WFH5750K	Rebuild Kit 70 Micron (all 500 series #'s 3-6)
WFH5750K/30	Rebuild Kit 30 Micron (all 500 series #'s 3-6)





## 600 Series

All 600 Series spin-on fuel filter/water separators feature multiple fuel ports (4 inlets and 3 outlets) and a unitized mounting bracket for installation convenience. Inlet and outlet threads are 3/8"-18 NPTF for all models. These filter assemblies provide flexibility during mounting and fit any engine application.

Additional 600 Series features include spin-on high capacity, Aquabloc® II replaceable filter elements which stop water, remove solid contamination, and are available in 2, 10 and 30 micron. Filtration needs should be based on application, fuel quality, operating climates, and maintenance schedules.

Also included are spin-on contaminant collection bowls. The clear bowls used with these filters will not discolor from alcohol, additives, or UV light and have a leak-proof, positive seal and self-venting drain for easy servicing. Water and contamination levels can be seen easily at a glance.

Options for the 600 Series filters include: water detection kits (for diesel applications only), vacuum or compound gauges and 12 or 24 volt dc, 200 watt fuel heaters. All units may be ordered with an in-bowl water probe to alert the operator of water and contamination. The bowl is then drained of water at the earliest convenience.



645R



660R



690R



6120R



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# Mobile Fuel Filtration

## 600 Series



Specifications	645R	660R	690R	6120R
<b>Maximum Flow Rate</b>	45 GPH (170 LPH)	60 GPH (227 LPH)	90 GPH (341 LPH)	120 GPH (454 LPH)
<b>Port Size (SAE J476)</b>	3/8"-18 NPTF	3/8"-18 NPTF	3/8"-18 NPTF	3/8"-18 NPTF
<b>Total Number of Ports:</b> (total inlets) (total outlets)	7 4 3	7 4 3	7 4 3	7 4 3
<b>Min. Service Clearance</b>	2.0 in. (5.1 cm)	2.0 in. (5.1 cm)	2.0 in. (5.1 cm)	2.0 in. (5.1 cm)
<b>Center Threads</b>	1"-14	1"-14	1"-14	1"-14
<b>Height</b>	8.5 in. (21.6 cm)	10.2 in. (25.9 cm)	11.2 in. (28.4 cm)	14.1 in. (35.8 cm)
<b>Depth</b>	4.5 in. (11.4 cm)	4.5 in. (11.4 cm)	4.5 in. (11.4 cm)	4.5 in. (11.4 cm)
<b>Width</b>	4.5 in. (11.4 cm)	4.5 in. (11.4 cm)	4.5 in. (11.4 cm)	4.5 in. (11.4 cm)
<b>Weight (dry)</b>	2.4 lb (1.09 kg)	2.6 lb (1.18 kg)	2.7 lb (1.22 kg)	3.9 lb (1.8 kg)
<b>Clean Pressure Drop</b>	0.01 PSI (0.001 bar)	0.05 PSI (0.003 bar)	0.29 PSI (0.02 bar)	2.65 PSI (0.18 bar)
<b>Max. Allowable Pressure<sup>1</sup></b>	30 PSI (2.07 bar)	30 PSI (2.07 bar)	30 PSI (2.07 bar)	15 PSI (1.03 bar)
<b>Available Options:<sup>2</sup></b> (water sensor) (heater) <sup>3</sup>	Yes Yes	Yes Yes	Yes Yes	Yes Yes
<b>Bowl Capacity (water)</b> (with heater)	4.0 oz. (118 ml) 3.5 oz. (104 ml)	4.0 oz. (118 ml) 3.5 oz. (104 ml)	4.0 oz. (118 ml) 3.5 oz. (104 ml)	2.8 oz. (82 ml) 2.4 oz. (70 ml)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%			
<b>Operating Temperature</b>	-40° to +255°F (-40° to +124°C)			

<sup>1</sup> Pressure installations are applicable up to maximum PSI shown. Vacuum installations are recommended.

<sup>2</sup> Not for use with gasoline applications.

<sup>3</sup> Maximum power requirements for in-bowl heater option: 12 vdc (200 watt) = 16.6 amps, 24 vdc (200 watt) = 8.3 amps - see Accessories section for heater relay kits, if needed.

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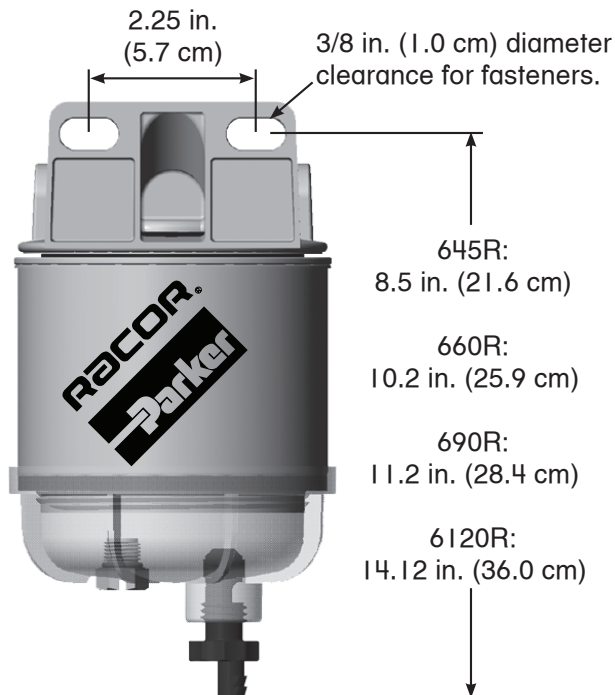
Technical Support:  
800.344.3286 ext. 7555  
racortech@parker.com

## 600 Series

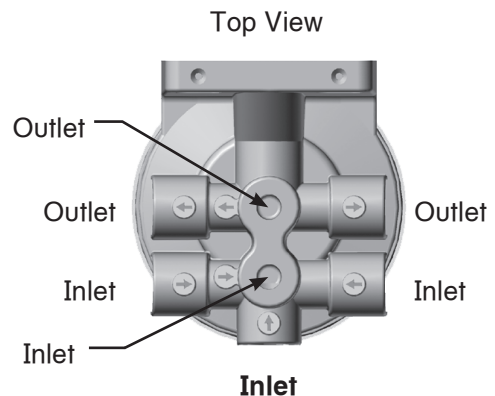
### How to Order

*	645R	12	2
Add an * for optional 16 mm fuel ports <sup>1</sup> . (omit if not desired)	Specify a model number: 645R, 660R, 690R, or 6120R.	Add 12 or 24 for a 12 or 24 volt dc heater <sup>2</sup> . (omit if not desired)	Specify a micron rating: 2, 10, or 30.
<sup>1</sup> Standard fuel ports are 3/8"-18 NPTF. <sup>2</sup> Use with Racor relay kit - see Accessories.			

Replacement Elements			
Model Number	2 Micron (Final Filtration)	10 Micron (Secondary Filtration)	30 Micron (Primary Filtration)
645R	R45S	R45T	R45P
660R	R60S	R60T	R60P
690R	R90S	R90T	R90P
6120R	R120S	R120T	R120P



### Mounting Information



# Mobile Fuel Filtration

## 600 Series

### Replacement Parts

#### 645R, 660R and 690R

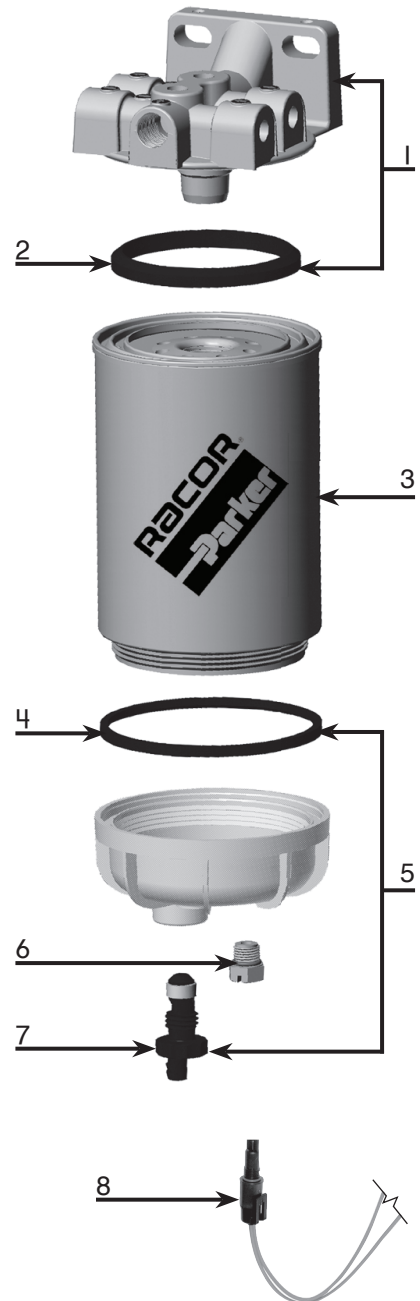
Part Number	Description
1. <b>RK22738-01</b>	Mounting Head Kit (3/8"-18 NPTF) (includes #2 & Plug Kit 3/8" NPT)
<b>RK22423</b>	Mounting Head Kit (Metric) (16 mm X 1.5) (includes #2)
2. <b>RK22998</b>	Element Gasket Kit
3.	See Replacement Element Chart
4. <b>RK22333</b>	Bowl Gasket Kit
5.	Replacement Bowl Kits (includes bowl, #4, #6 and #7)
<b>RK21113-13-11<sup>1</sup></b>	Clear Bowl Kit
<b>RK22616-01<sup>2</sup></b>	Heated Clear Bowl Kit (same as above, 12 vdc heater)
<b>RK22616-02<sup>2</sup></b>	Heated Clear Bowl Kit (same as above, 24 vdc heater)
6. <b>RK20126</b>	Bowl Plug Kit (1/2" SAE)
7. <b>RK30476</b>	Drain Valve Assembly Kit
8. <b>RK30964<sup>3</sup></b>	Water Probe Kit

#### Additional Parts Not Shown

<b>01SP-6S</b>	Metal Plug (3/8" NPTF)
<b>22231</b>	Plug Kit 3/8" NPT
<b>RK22323</b>	Heater Connector Kit
<b>22249</b>	Installation Instructions

#### Notes:

- <sup>1</sup> Includes water probe port plug 1/2" SAE.
- <sup>2</sup> In-bowl heater may require a Heater Relay Kit.  
Maximum power requirements are: 12 vdc = 16.6 amps,  
24 vdc = 8.3 amps.
- <sup>3</sup> Water probe must be used with a Water Detection Kit  
- see Accessories. Do not use on gasoline applications.



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## 600 Series

## Replacement Parts

### 6120R

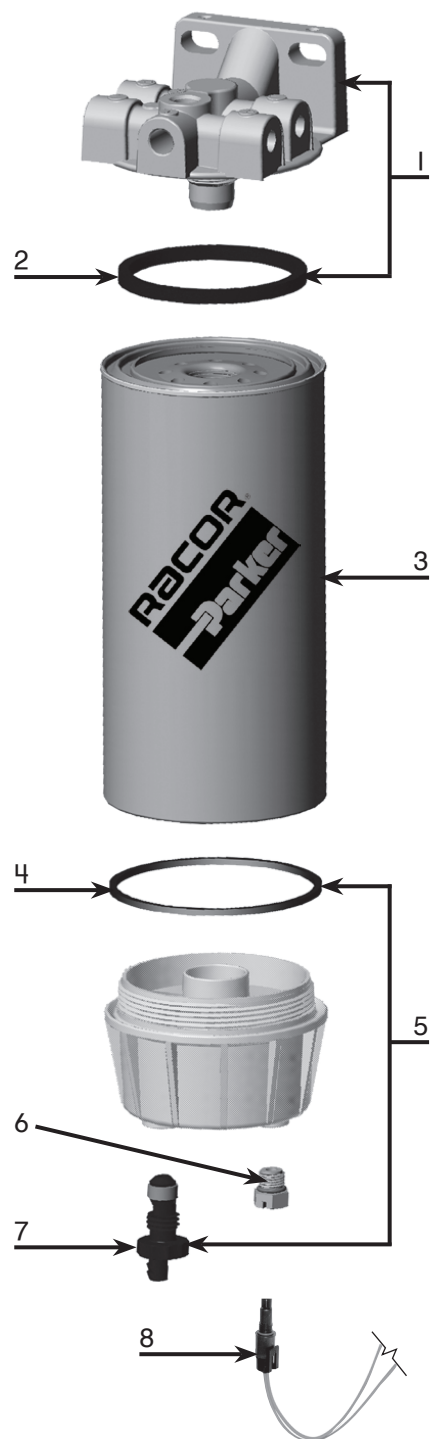
Part Number	Description
1. <b>RK22738-01</b>	Mounting Head Kit (3/8"-18 NPTF) (includes #2 & Plug Kit 3/8" NPT)
<b>RK22423</b>	Mounting Head Kit (Metric) (16 mm X 1.5 ) (includes #2)
2. <b>RK22998</b>	Element Gasket Kit
3.	See Replacement Element Chart
4. <b>RK30965</b>	Bowl Gasket Kit
5.	Replacement Bowl Kits (includes Bowl, #4, #6 and #7)
<b>RK30063</b> <sup>1</sup>	Clear Bowl Kit
<b>RK30900</b> <sup>2</sup>	Heated Clear Bowl Kit (same as above, 12 vdc heater)
<b>RK30925</b> <sup>2</sup>	Heated Clear Bowl Kit (same as above, 24 vdc heater)
6. <b>RK20126</b>	Bowl Plug Kit (1/2" SAE)
7. <b>RK30476</b>	Self-Venting Drain Kit
8. <b>RK30964</b> <sup>3</sup>	Water Probe Kit

Additional Parts (not shown)

<b>01SP-6S</b>	Metal Plug (3/8" NPTF)
<b>22231</b>	Plug Kit 3/8" NPT
<b>RK30876</b>	Heater Connector Kit
<b>RK30058</b>	Drain Valve Seal Kit
<b>22249</b>	Installation Instructions

### Notes:

- <sup>1</sup> Includes water probe port plug 1/2" SAE.
- <sup>2</sup> In-bowl heater may require a Heater Relay Kit.  
Maximum power requirements are: 12 vdc = 16.6 amps,  
24 vdc = 8.3 amps.
- <sup>3</sup> Water probe must be used with a Water Detection Kit  
- see Accessories. Do not use on gasoline applications.

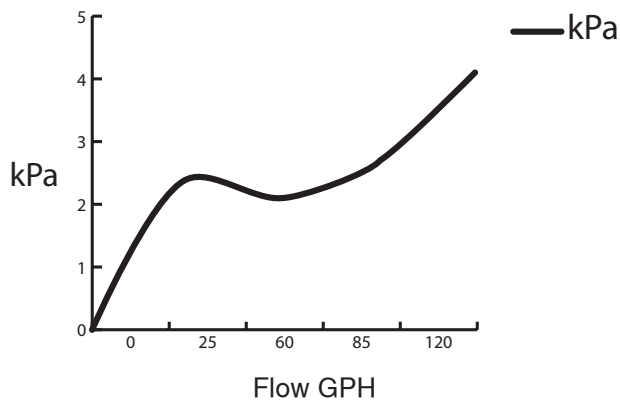


# Mobile Fuel Filtration

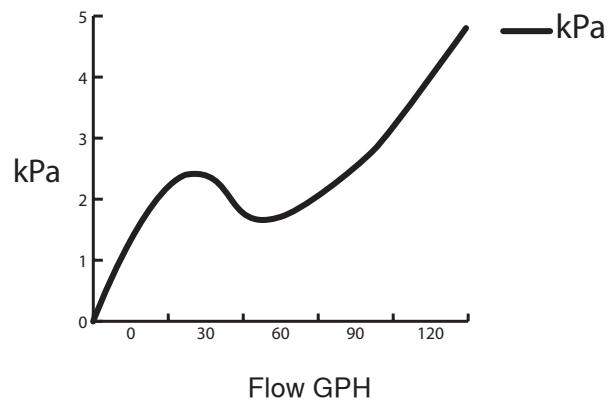
## 600 Series

### Test Data

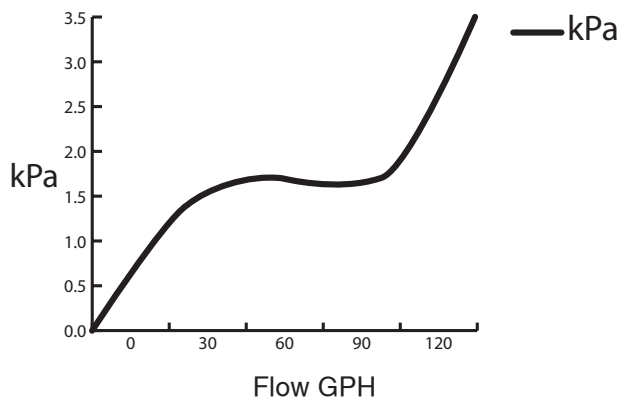
645R



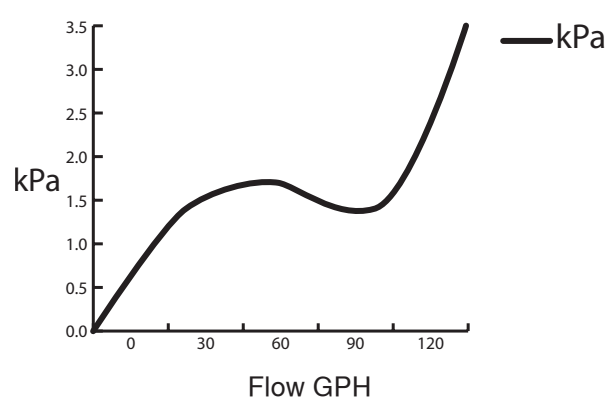
660R



690R



6120R

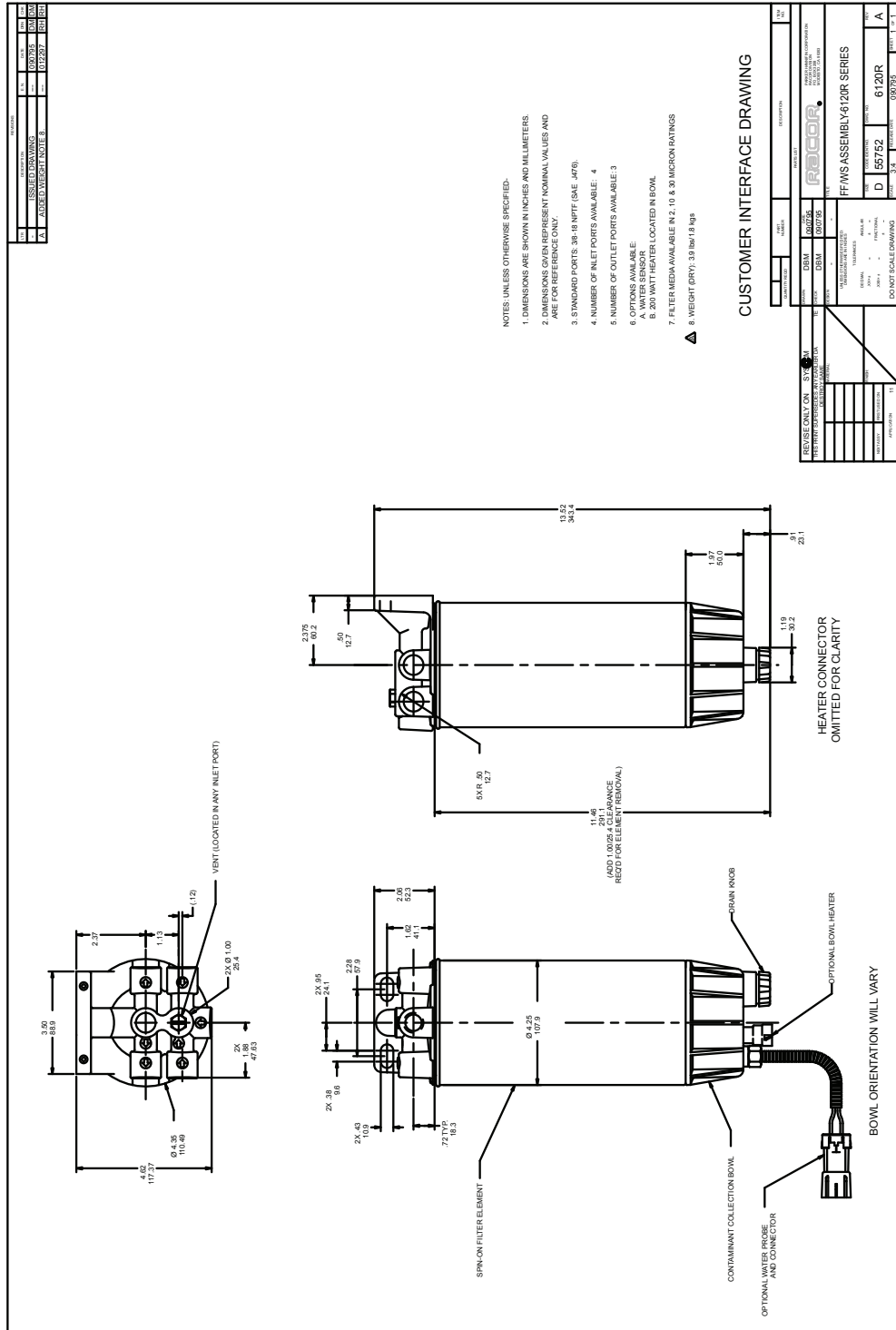


Test results are from controlled laboratory testing. Field results may vary.  
(PSI X 2.036 = inHG) (PSI X 6.895 = kPa)

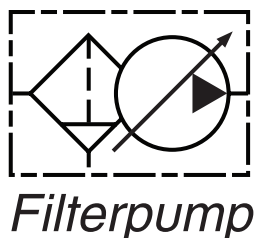
# Customer Interface Drawing

# Mobile Fuel Filtration

1

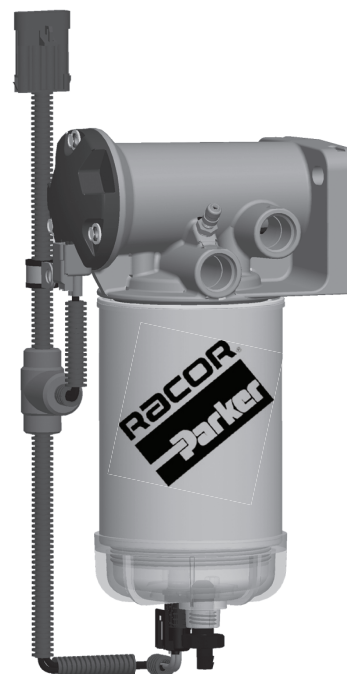






## 700 Series

The **700 series** fuel filter/water separator assembly is a two-stage filtration and repriming system featuring a 12 volt solid-state controlled electronic priming pump, a vent valve to purge air, a 100 micron prefilter screen, a 30 micron Aquabloc®II spin-on element, a water sensor probe, a clear collection bowl and a weather proof control box. This complete fuel management system isolates contaminants present in diesel fuels and traps them prior to reaching the fuel injection system, protecting the engine's fuel system from costly and premature failure.



Specifications	745R30	760R30	790R30
<b>Maximum Flow Rate</b>	45 GPH (170 LPH)	60 GPH (227 LPH)	90 GPH (341 LPH)
<b>Port Size (SAE J1926)</b>	7/8"-14 UNF	7/8"-14 UNF	7/8"-14 UNF
<b>Replacement Element</b>	R45P	R60P	R90P
<b>Micron Rating</b>	30 micron	30 micron	30 micron
<b>Height</b>	10.8 in. (25.7 cm)	11.8 in. (28.4 cm)	12.8 in. (32.5 cm)
<b>Width</b>	4.3 in. (11.0 cm)	4.3 in. (11.0 cm)	4.3 in. (11.0 cm)
<b>Depth</b>	6.5 in. (16.5 cm)	6.5 in. (16.5 cm)	6.5 in. (16.5 cm)
<b>Weight (dry)</b>	4.5 lbs (2.0 kg)	5.5 lbs (2.5 kg)	6.5 lb (3.0 kg)
<b>Clean Pressure Drop</b>	0.25 PSI (1.7 kPa)	0.25 PSI (1.7 kPa)	0.25 PSI (1.7 kPa)
<b>H<sub>2</sub>O Removal Efficiency</b>	99.9%		
<b>Operating Temperature</b>	-40° to +225°F (-40° to +107°C)		



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# Mobile Fuel Filtration

## 700 Series

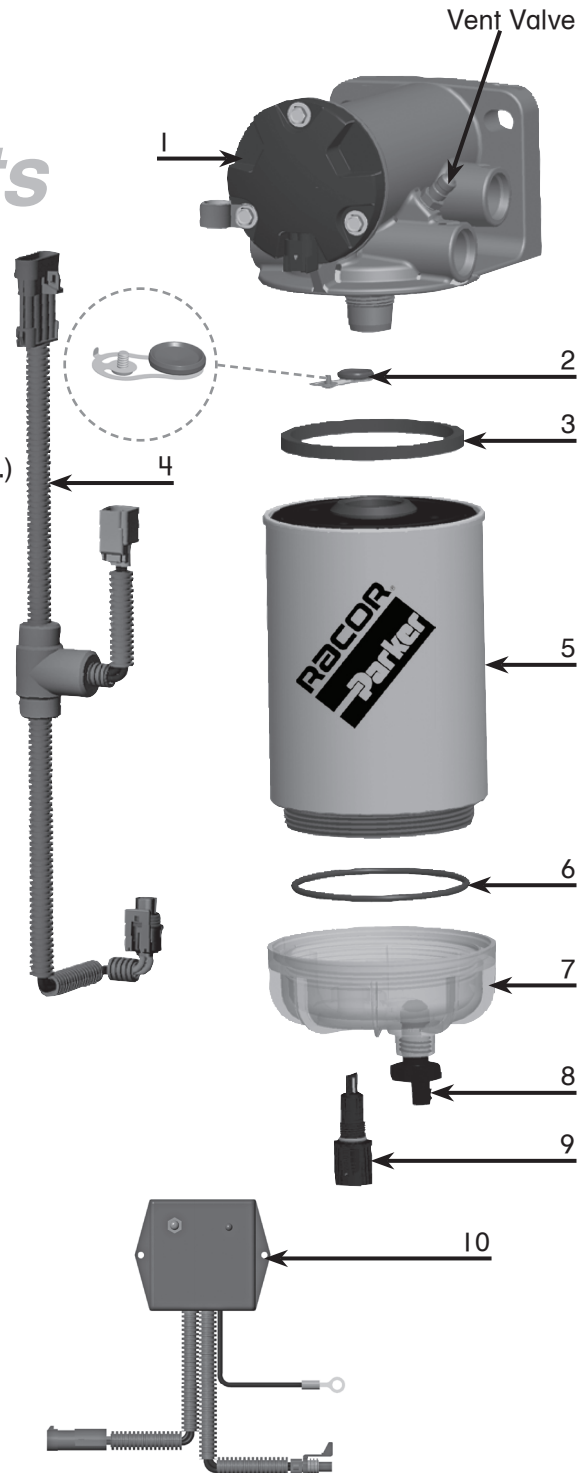
### Replacement Parts

745R30, 760R30 & 790R30

Part Number	Description		
1. <b>RK22933</b>	Complete Primer Pump Kit (includes 12 volt pump, pump cover, O-rings, screws, prescreen element and more. Does not include mounting head.)		
<b>RK22934</b>	Prescreen Element Kit (100 micron see page 119 #8)		
2. <b>RK22798</b>	Bypass Valve Kit		
3. <b>RK22998</b>	Gasket Kit (includes #'s 3 & 6)		
4. <b>RK22902</b>	Wire Harness Kit		
5. Replacement Elements (includes #'s 6 & 7)			
<b>Model</b>	<b>2 Micron</b>	<b>10 Micron</b>	<b>30 Micron</b>
745R	R45S	R45T	R45P
760R	R60S	R60T	R60P
790R	R90S	R90T	R90P
6. <b>RK22998</b>	Gasket Kit (includes #'s 3 & 6)		
7. <b>RK21113-13-11</b>	Bowl Kit (includes #'s 6 & 8)		
8. <b>RK30476</b>	Self-venting Drain Kit		
9. <b>RK30902</b>	Water Sensor Kit		
10. <b>RK22943</b>	Control Panel Kit		

Additional Parts (not shown)

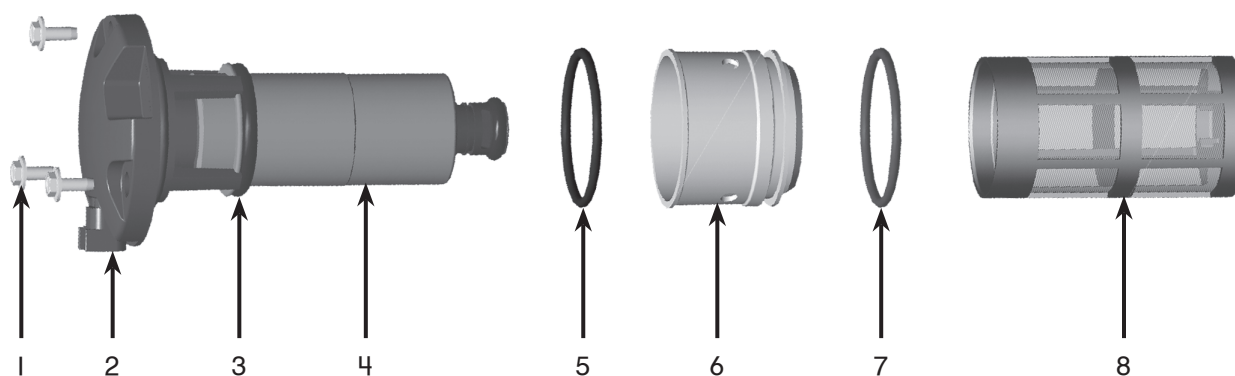
**22909** Installation Instructions



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## Primer Pump Kit



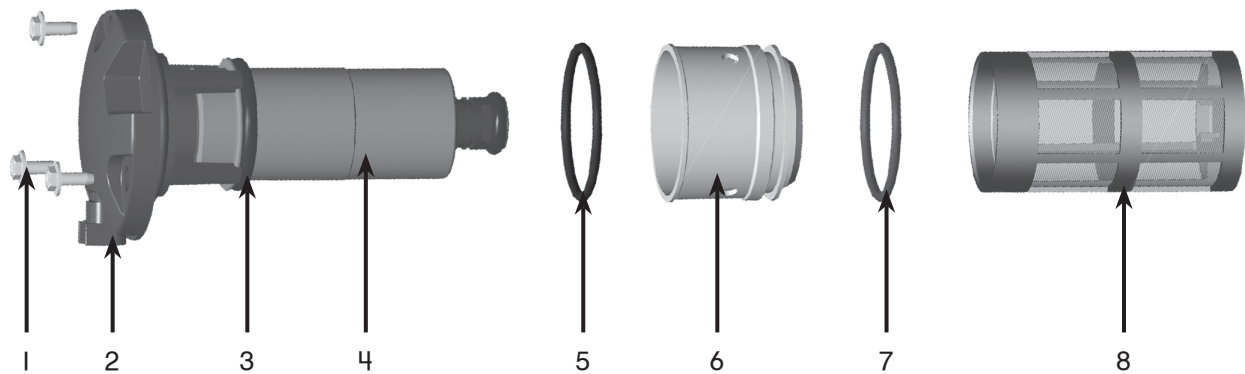
## Replacement Parts

RK22933 Primer Pump Kit includes all parts shown above.

<u>Part Number</u>	<u>Description</u>
1. N/A	Screws (3)
2. N/A	Pump Cover
3. N/A	Body O-ring
4. N/A	Pump Sub Assembly
5. N/A	Cover O-ring
6. N/A	Pump Seal Adapter
7. N/A	Adapter O-ring
8. N/A	Prescreen 100 micron
<b>RK22934</b>	Prescreen Element Kit 100 micron (includes numbers 5, 7 & 8)

# Mobile Fuel Filtration

## Primer Pump Kit



## Installation Instructions

Please read ALL instructions before beginning installation. See installation diagram on page 122 for reference and additional information.

Maintain a safe working environment. Obtain good ventilation and do not smoke or allow open flame near the installation.

The engine must be off and cool to touch before beginning installation.

This filter assembly will replace stand-alone primary fuel filters that may be installed on the engine. Remove existing primary filter, if applicable, and dispose of properly.

Apply thread sealant to fittings, lubricant to o-rings and install fittings into the appropriate inlet and outlet ports. Tighten snugly. Install port plugs in unused ports and tighten snugly.

Connect fuel hose to the inlet/outlet fittings and use hose clamps where appropriate.

### Notes:

Completely drain assembly. Tear-down is performed in numerical order shown above (1-8). Rebuild assembly in reverse order (8-1), substituting new parts for old. On rebuild, lubricate all O-rings with motor oil or clean diesel fuel and tighten screws to 50 in. lbs (maximum).

**Important:** Insure inside face of cover is flush with pump body and all flat surfaces are clean (free of scratches and debris).

Prescreen element can be cleaned and inspected before replacement.

Clean in solvent bath with a soft brush. Flush with diesel fuel. Gently blow dry with air, if necessary.

Prime the system and check for leaks. Correct as necessary with engine off.

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## Primer Pump Kit

### *Maintenance*

#### **Operation For Repriming Unit:**

(for initial installation, repriming, or to restart after running out of fuel).

1. Turn ignition to ON position; do not start engine.
2. Remove cap from vent valve. Press and hold PRIME button on control panel; this will activate primer pump and yellow 'prime' LED will illuminate.
3. Press and hold vent valve open to release excess air from filter. Release vent valve at first indication of fuel. Warning! If vent valve is kept open too long, a pressurized stream of fuel will exit creating a potentially hazardous situation. Continue to hold PRIME button for about 30 seconds (or until unit is primed) and release. Note: fuel flow will bypass pump when not in use.
4. Start engine and run at high idle for about three minutes. Note: The engine may run rough while remaining air is forced through the fuel system.

#### **Draining Water:**

Frequency of water draining or element replacement is determined by the contamination level of the fuel. Drain bowl frequently if contaminated fuel is suspected or when remote water-in-fuel lamp illuminates.

#### **Element Replacement:**

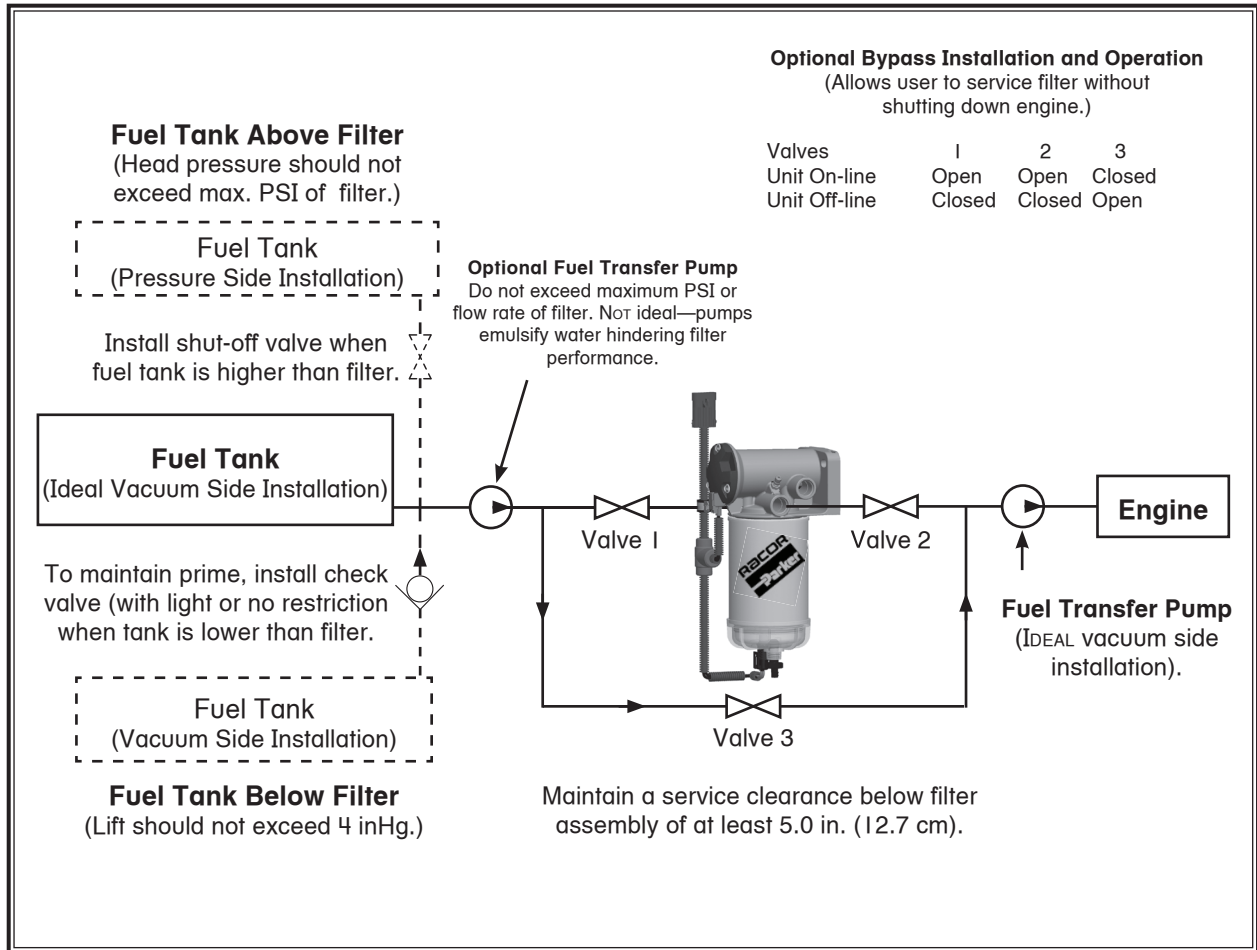
Replace element every 10,000 miles, 500 hours, every other oil change, if power loss is noticed, or annually, whichever occurs first. Note: Always carry extra replacement elements as one tankful of excessively dirty fuel can plug a filter. To replace element:

1. Disconnect water sensor connector and drain any water from the see-thru bowl.
2. With a collection pan in place, remove element and bowl assembly from mounting head.
3. Remove see-thru bowl from element and dispose of element properly. Bowl is reusable.
4. Lubricate gasket on new element with motor oil or diesel fuel and spin new element (without bowl) onto mounting head. Hand tighten only.
5. Clean bowl of debris. Lubricate new bowl O-ring, place in gland of bowl and spin bowl onto new element. Hand tighten only.
6. Reattach water sensor connector.
7. Open fuel tank outlet valve, if applicable, and follow Operation instructions to reprime system.

# Mobile Fuel Filtration

## 700 Series

### Installation Diagram



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## 700 Series

### *Installing the Control Panel*

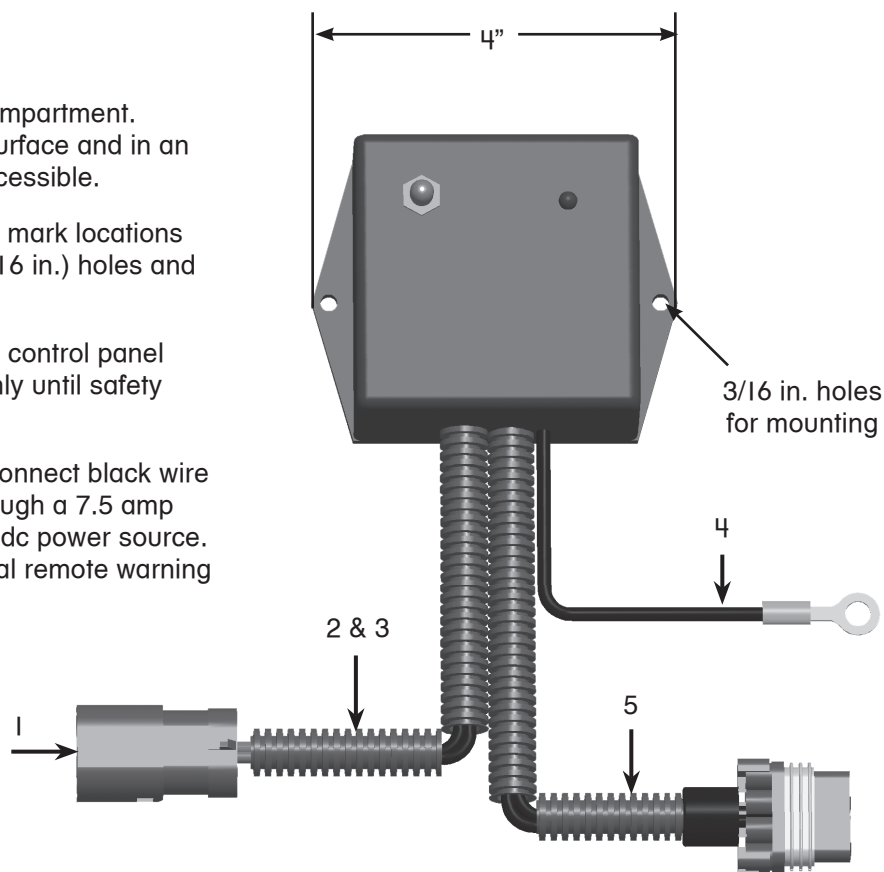
- 1. Monaco Connector:**  
(cut off if installing on any other application).
- 2. Green Wire:**  
To remote warning light or cap off.
- 3. Red Wire:**  
To 7.5 amp fuse, then to +12 volt dc power.
- 4. Black Wire:**  
To ground.
5. To Filter Connector.

Install control panel in engine compartment.  
Mount control panel on a solid surface and in an area that is visible and easily accessible.

Use control box as a template to mark locations for mounting holes. Drill Two (3/16 in.) holes and mount control box.

Route the filter wiring harness to control panel and attach connectors; push firmly until safety lock engages.

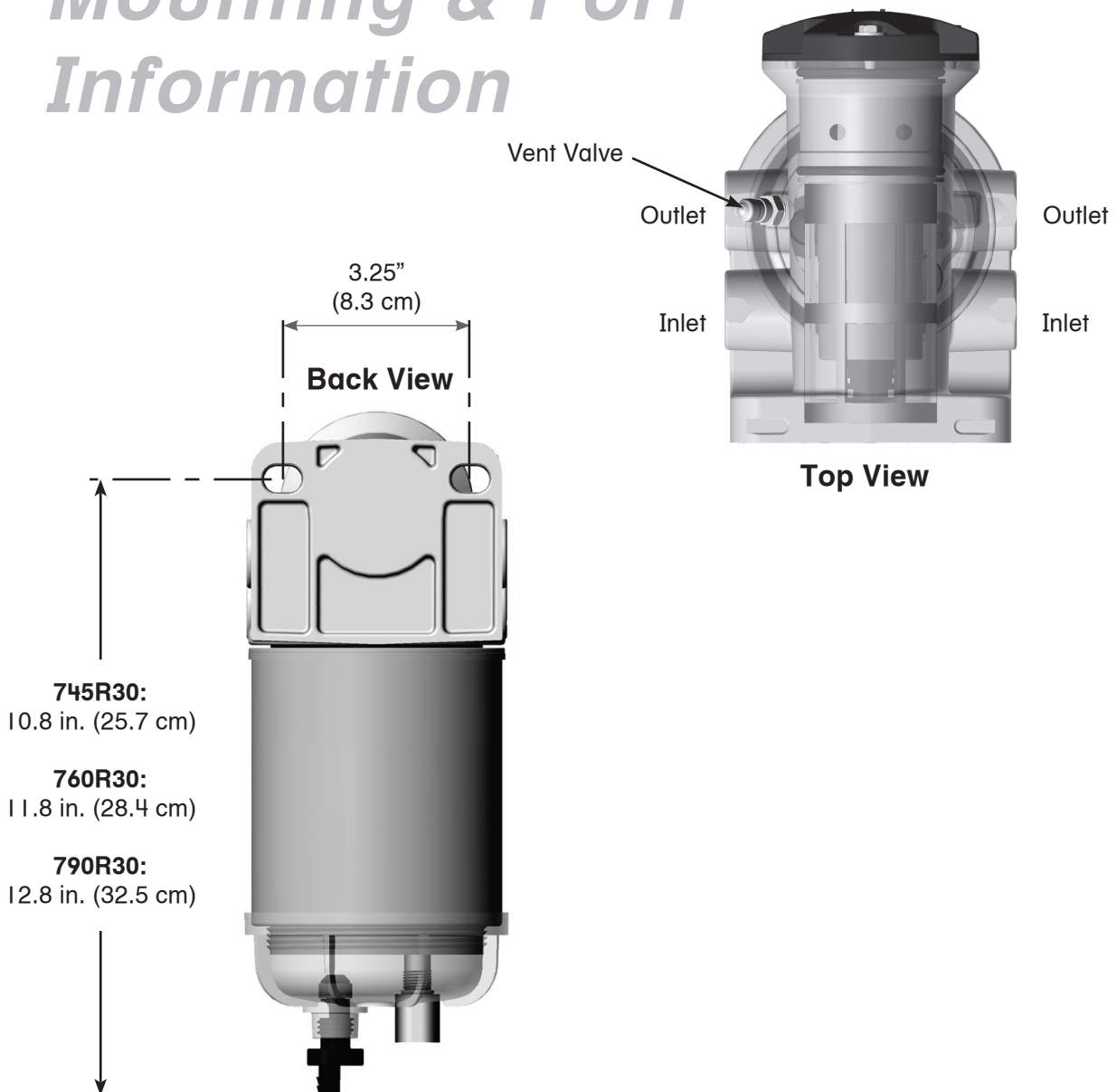
Use wire ties to secure wiring. Connect black wire to ground. Connect red wire through a 7.5 amp in-line fuse to a constant 12 volt dc power source. Connect green wire to an optional remote warning light, if equipped, or cap off.



# Mobile Fuel Filtration

## 700 Series

### *Mounting & Port Information*



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The 777R assembly is a complete fuel filtration system that removes contaminants from fuel using the following two stage process:

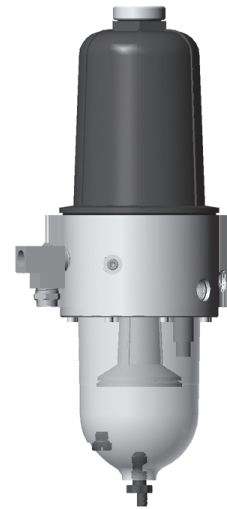
**Stage 1:** As fuel enters the assembly, it moves through the centrifuge and spins off large solids and water droplets, which are heavier than fuel, and fall to the bottom of the collection bowl.

**Stage 2:** Proprietary Aquabloc® II cartridge elements repel water and remove contaminants from fuel down to 2 micron. They are waterproof and effective longer than water absorbing elements.

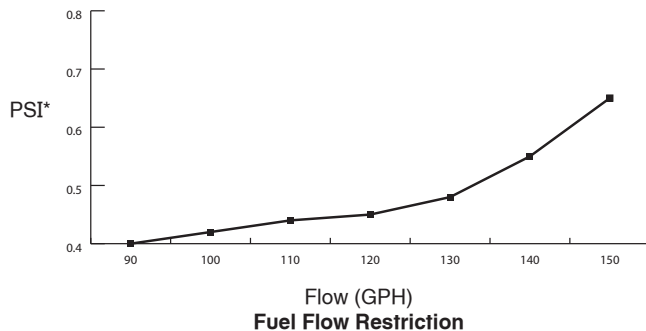
The 777R assembly features an internal thermostat to protect electric engine controls from overheating by the fuel heater and regulates fuel temperature automatically; warm fuel in the winter, cool fuel in the summer (thermostat setting: on at 40°F (4°C), off at 61°F (16°C).

This filter also offers temperature controlled fuel heating with return fuel or engine coolant; thermostat valve open to 95°F (35°C). Other features include a fuel primer port on top of the assembly, an internal check valve that guards against loss of prime, a heavy-duty integrated mounting bracket that is part of its one-piece billet machined body, a clear bottom bowl that allows the operator to check for water and solid contamination at a glance, and a self-venting drain. Optional accessories include a vacuum gauge and a water detection system.

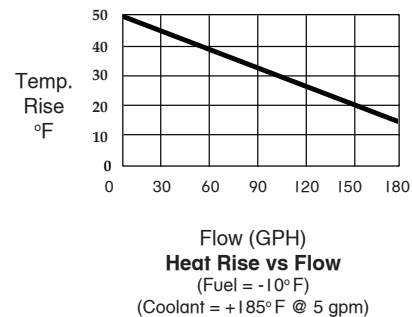
## 777R



Specifications	777R
<b>Maximum Flow Rate</b>	150 GPH (568 LPH)
<b>Port Size (fuel &amp; fluid heat)</b>	½" NPT
<b>Height</b>	18.8 in. (47.8 cm)
<b>Width</b>	8.1 in. (20.6 cm)
<b>Depth</b>	6.8 in. (17.3 cm)
<b>Weight (dry)</b>	12.0 lb (5.4 kg)
<b>Maximum Working Pressure</b>	30 PSI (2.1 bar)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%
<b>Maximum Temperature</b>	-40° to +255°F (-40° to +124°C)



\* PSI X 2.036 = inHg. / PSI X 6.895 = kPa



(Coolant = +185°F @ 5 gpm)



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# Mobile Fuel Filtration

777R

## How to Order

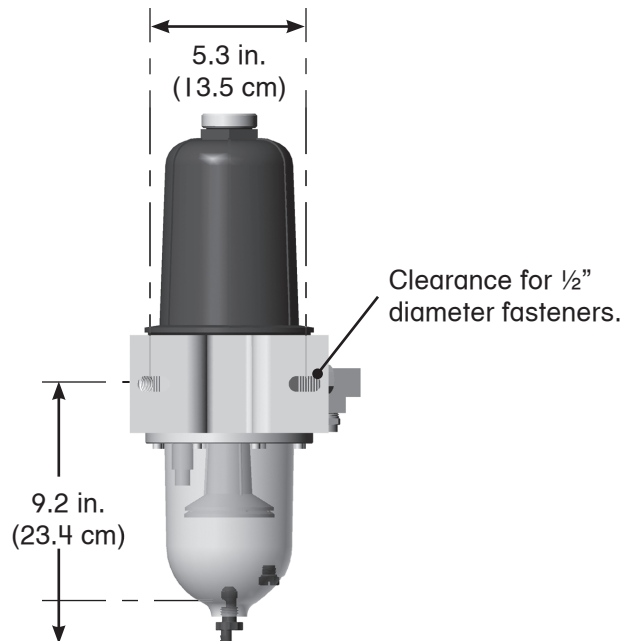
(The example below illustrates how part numbers are constructed.)

777R	I2	02
Basic Model Number	I2 must be in part # for 12 vdc heater (omit if not desired)	Specify: 02 for 2 micron 10 for 10 micron 30 for 30 micron

Replacement Elements		
2 micron (Final Filtration)	10 micron (Secondary Filtration)	30 micron (Primary Filtration)
6732S	6732T	6732P
Maintain 6 in. (15.2 cm) overhead clearance for servicing.		



## Mounting Information



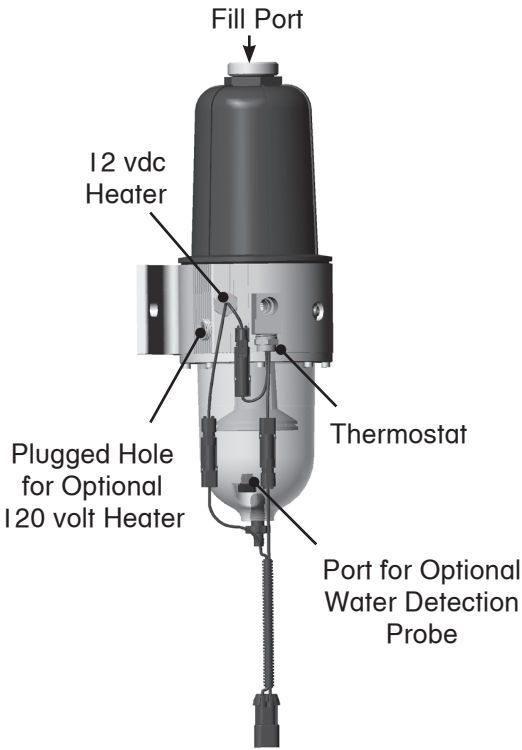
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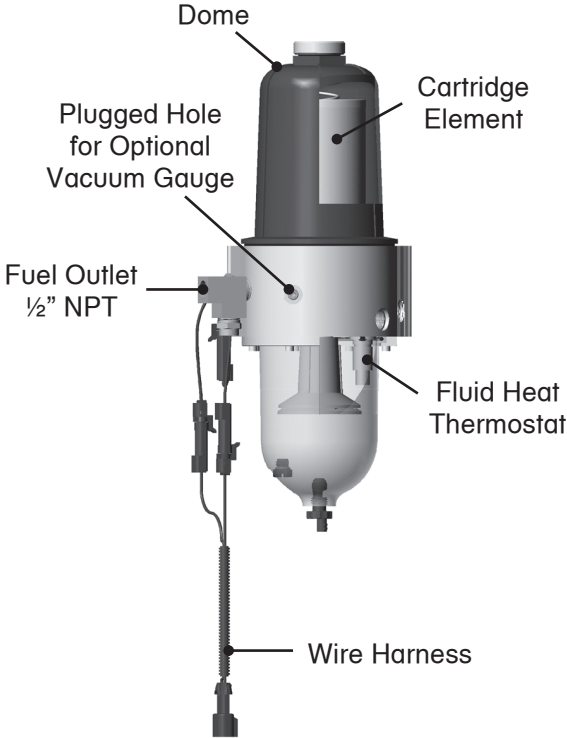
# Mobile Fuel Filtration

1

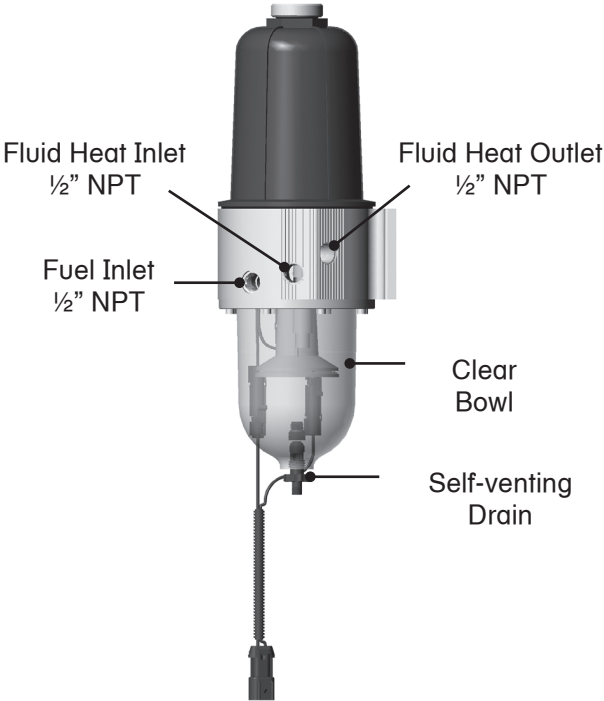
## 777R



Left Side View



Front View



Right Side View

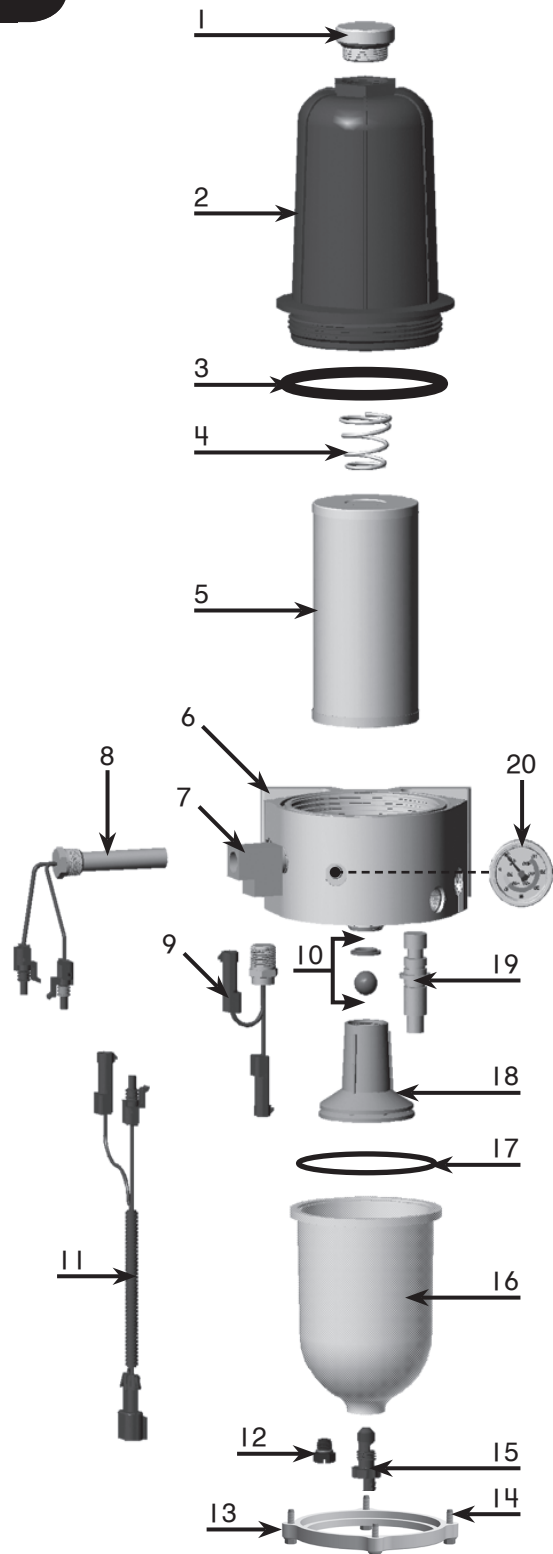


# Mobile Fuel Filtration

## 777R

# Replacement Parts

Part Number	Description
1. <b>6707</b>	Priming Plug Kit (includes o-ring)
2. <b>RK23007</b>	Top Dome Kit (includes #'s 1 to 4)
3. <b>6706P</b>	Dome Gasket (kit includes 3 gaskets)
4. <b>RK6733</b>	Element Spring
5. Replacement Element	
<b>6732S</b>	2 Micron
<b>6732T</b>	10 Micron
<b>6732P</b>	30 Micron
6. N/A	Machined Billet Body
7. <b>RK012T-8-8</b>	Tee Fitting
8. <b>RK23017</b>	Heater Assembly Kit (12 vdc, 180 watt)
9. <b>RK23018</b>	Thermostat Assembly Kit (12 vdc)
10. <b>RK23046</b>	Check Valve Kit (includes checkball and checkball gasket)
11. <b>RK23019</b>	Heater Wire Harness (12 vdc)
12. <b>RK20126</b>	Sensor Plug Kit (1/2" SAE)
13. <b>RK23080</b>	Bowl Retaining Ring Kit
14. <b>RK11542</b>	Capscrew Kit (4 capscrews)
15. <b>RK30476</b>	Self Venting Drain Kit
16. <b>RK11-1938</b>	Bottom Bowl Kit (includes #'s 12, 15, 16 & 17)
17. <b>11007</b>	Bowl Seal Kit
18. N/A	Turbine Centrifuge Kit
19. <b>RKSV700A</b>	Thermostat Kit
20. <b>RKVFG80</b>	Vacuum Gauge Kit
Additional Parts (not shown)	
<b>RK23045</b>	Optional 120 volt Heater Kit
<b>EH10</b>	120 volt Power Cord (10')
<b>RK32204</b>	Optional Water Sensor Kit
<b>23013</b>	Installation Instructions



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## RK12963

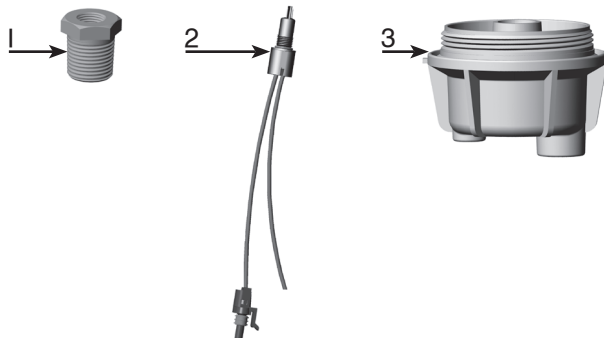
### Retrofit Kit

The RK12963 is a one-time retrofit kit for 90S1230C Integrated assemblies which incorporates a high quality water probe (with connectors), an indestructible metal bowl and a high-capacity 30 micron element. Once the retrofit from a 200200 element is complete, customers would then purchase the S3230P replacement element for their next service.

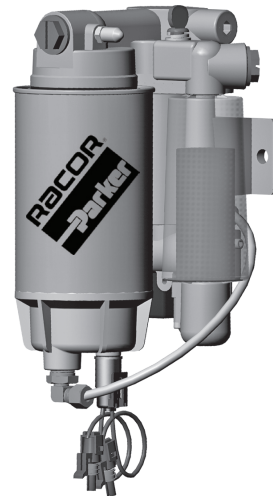
The 90S1230C Integrated assemblies are two-stage filtration and repriming systems featuring a solid-state controlled electronic priming pump, electronic air purge, a cleanable pre-filter with a stainless steel element and a fuel filter/water separator. These complete fuel management systems isolate contaminants present in diesel fuel and trap them prior to reaching the fuel injection system, protecting the engine's fuel system from costly and premature failure.

Pictured below are some of the components included with this kit. Detailed teardown and rebuild instructions are also included.

	Part Number	Description
1.	0102-6-2	Bushing
2.	30899	Water Sensor
3.	30745	Metal Bowl



Integrated Assembly  
Before Retrofit



Integrated Assembly  
After Retrofit



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## 800 Series Recyclers

Racor 800 Series recyclers offer large diesel engine operators both ease of maintenance and continuous engine operation. Continuous operations include filter change-outs and the draining of accumulated water from standard, clear, high impact bowls. Manifold systems have sufficient fuel flow for prime or standby power operations, commercial marine engines, or other large engine applications.

This recycling series includes the 806, 812, the dual manifolded 75812 and the triple manifolded 79812. The 800 Series is designed to filter water and solid contaminants from diesel fuel.

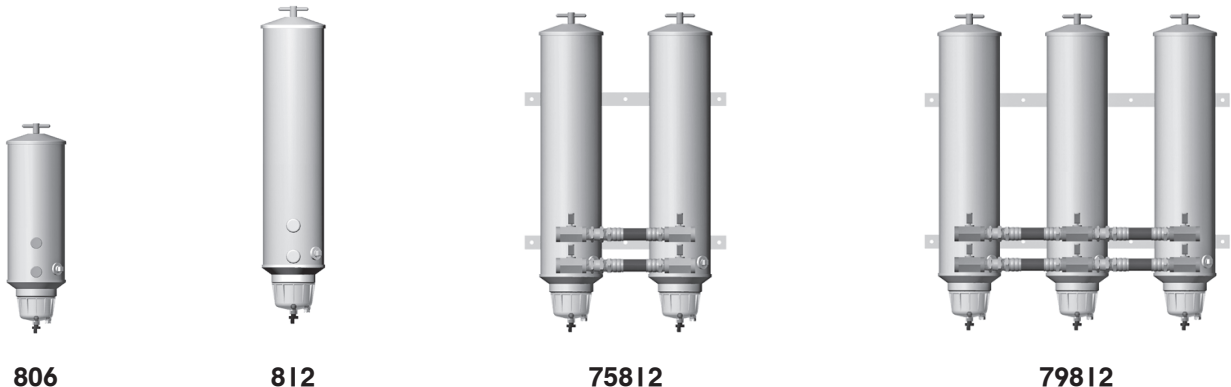
These assemblies utilize proven Racor technology with Aquabloc®II filtration, which filters down to 40 micron, to purify diesel fuel before OEM engine filters are used. Protecting high tolerance injection components keeps engines running at peak performance and lowers maintenance costs. Large inlet and outlet ports allow for improved flow and less fuel flow restriction.

Features and options may include clear contaminant collection bowls, water sight glasses, manual drains and vacuum or compound gauges.

### DETERMINE THE FUEL FLOW RATE

Selection should be made by considering the primary use for the unit. Recycling/filtering the fuel in storage tanks cleans the fuel while removing particulates and sediment accumulations. The fuel may be recycled numerous times, depending on the severity of contamination. Filter/recycling clock times can be reduced by selecting a larger capacity unit. Severely contaminated tanks may require more than one 'cycle' to clean them properly.

For example, the 812 filters up to 720 gallons per hour or 12 gallons per minute. It would take about 8.5 minutes to filter 100 gallons. To cycle the tank 3 times would take about 26 minutes. One cycle of 100 gallons of fuel with a 75812 would take approximately 4 minutes.

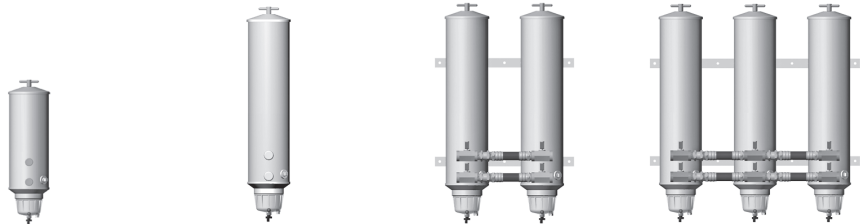


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# Mobile Fuel Filtration

## 800 Series Recyclers



Specifications	806	812	75812	79812
<b>Maximum Flow Rate</b> (one unit online) (two units online) (three units online)	360 GPH (1360 LPH) N/A N/A	720 GPH (2725 LPH) N/A N/A	720 GPH (2725 LPH) 1440 GPH (5450 LPH) N/A	720 GPH (2725 LPH) 1440 GPH (5450 LPH) 2160 GPH (8175 LPH)
<b>Port Size</b>	1" NPT	1" NPT	1" NPT	1" NPT
<b>Replacement Elements</b>	RK22788 <sup>1</sup>	RK22610 <sup>1</sup>	RK22610 <sup>1</sup>	RK22610 <sup>1</sup>
<b>Micron Rating nominal):</b> (upper element) (lower element)	40 Coalescer	40 Coalescer	40 Coalescer	40 Coalescer
<b>Height</b>	24.6 in. (62.5 cm)	34.0 in. (86.4 cm)	34.0 in. (86.4 cm)	34.0 in. (86.4 cm)
<b>Width</b>	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	21.75 in. (17.8 cm)	33.25 in. (84.5 cm)
<b>Depth</b>	9.0 in. (22.9 cm)	9.0 in. (22.9 cm)	16.0 in. (40.6 cm)	16.0 in. (40.6 cm)
<b>Weight (dry)</b>	24.0 lb (10.9 kg)	36.0 lb (16.3 kg)	89.0 lb (40.4 kg)	133.0 lb (60.4 kg)
<b>Min. Service Clearance:</b> (above assembly) (below assembly)	6.0 in. (15.2 cm) 4.0 in. (10.2 cm)	12.0 in. (30.5 cm) 4.0 in. (10.2 cm)	12.0 in. (30.5 cm) 4.0 in. (10.2 cm)	12.0 in. (30.5 cm) 4.0 in. (10.2 cm)
<b>Max. Working Pressure</b>	30 PSI (2.07 bar)	30 PSI (2.07 bar)	30 PSI (2.07 bar)	30 PSI (2.07 bar)
<b>Differential Pressure</b>	2.1 PSI (0.14 bar)	3.2 PSI (0.22 bar)	3.3 PSI (0.23 bar)	6.0 PSI (0.41 bar)
<b>Water Capacity:</b> (with one bowl) (with two bowls) (with three bowls)	1.0 gal (3.7 L) N/A N/A	1.0 gal (3.7 L) N/A N/A	1.0 gal (3.7 L) 2.0 gal (7.4 L) N/A	1.0 gal (3.7 L) 2.0 gal (7.4 L) 3.0 gal (11.1 L)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%	99%	99%	99%
<b>Operating Temperature</b>	-10° to +180°F (-23° to +80°C)			

<sup>1</sup> RK22788 element kits include a lid gasket, T-handle O-ring, one 40 micron element and one coalescer element. 75812 assemblies require two RK22610 element kits and the 79812 requires three.

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## 800 Series Recyclers

### Installation Instructions

**Before installing the filter assembly:**

- Obtain good ventilation and lighting.
- Maintain a safe working environment.
- The engine must be off for installation.
- DO NOT smoke or allow open flames near the installation.

**When positioning the filter assembly:**

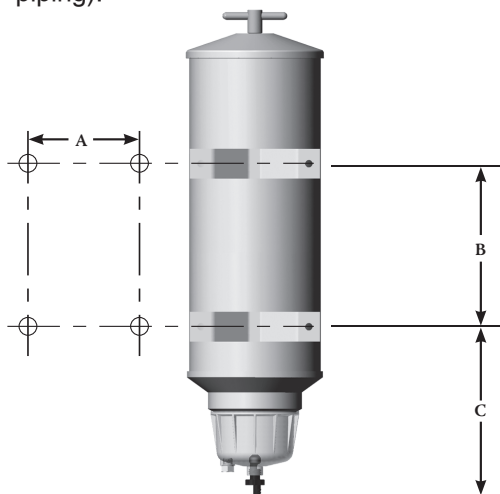
- Filter assemblies should be installed on vacuum side of fuel transfer pump for optimum water separating efficiency. See Installation Diagram.
- Keep fuel line restrictions to a minimum. Locate filter assembly between horizontal planes of bottom of fuel tank and inlet of fuel pump, if possible. If filter assembly is installed in an application where fuel tank is higher than filter, a shut-off valve must be installed between tank

and filter assembly INLET. This will be used when servicing replacement elements.

**Installing the filter assembly:**

- Install the unit in a location which provides accessibility and protection from heat, flames, or accidental impacts. Always adhere to applicable local piping regulations or codes. Use the maximum line size possible and avoid reducers and elbows in order to keep restriction values as low as possible.
- Apply thread sealant (do not use thread tapes) to inlet and outlet fittings prior to installing onto filter assembly.
- When routing hose, avoid surfaces that move, have sharp edges, or get hot (such as exhaust piping).

### Mounting Information



A:
806: 5.45 in. (13.8 cm)
812: 5.45 in. (13.8 cm)
75812: 17.25 in. (51.4 cm)
79812: 28.75 in. (80.6 cm)

B:
806: 8.25 in. (20.9 cm)
812: 15.43 in. (39.2 cm)
75812: 15.50 in. (39.4 cm)
79812: 15.50 in. (39.4 cm)

C:
806: 8.52 in. (21.6 cm)
812: 9.72 in. (24.7 cm)
75812: 9.69 in. (24.6 cm)
79812: 9.69 in. (24.6 cm)



# Mobile Fuel Filtration

## 800 Series Recyclers

### *Priming Instructions*

1. Close inlet fuel valve, if applicable.
2. Remove T-handle(s) and lid(s) from top of filter assembly.
3. Fill filter assembly with clean fuel.
4. Lubricate lid gasket(s) and T-handle O-ring(s) with clean fuel or motor oil.
5. Replace lid(s) and T-handle(s) and tighten snugly by hand only - do not use tools.
6. Open inlet fuel valve, if applicable.
7. Start engine and check for leaks. Correct as necessary with engine off.

#### **Draining Water:**

Check the collection bowl daily. Drain water and contaminants by opening the self-venting drain. If more than 1.4 oz (40 ml) of fluid is drained, follow priming instructions above. Otherwise, start engine and allow air to purge from system prior to operating equipment at normal loads.

#### **Element Replacement:**

Frequency of element replacement is determined by the contamination level in fuel. Recommended service intervals are as follows: every 10,000 miles, 500 hours, every other oil change, annually, or at the first indication of power loss, whichever comes first.

Foul smelling fuel is an indication of microbiological contamination. A change of fuel source and Racor fuel additives are recommended. Always carry extra replacement elements as one tankful of excessively dirty fuel can plug a filter quickly.

1. Close inlet fuel valve, if applicable, and completely drain filter assembly.
2. Remove T-handle(s), lid(s) and lid gasket(s).
3. Remove elements from inside housing(s) and dispose properly.

4. Lubricate new element(s) seals with clean fuel or motor oil and insert coalescer element(s) first, then the 40 micron paper element(s).

Insert new elements SLOWLY with a slight twisting motion. Inserting them too quickly may dislodge element seals.

5. Install new lid gasket(s), supplied with new elements, into lid groove.
6. Follow priming instructions above.

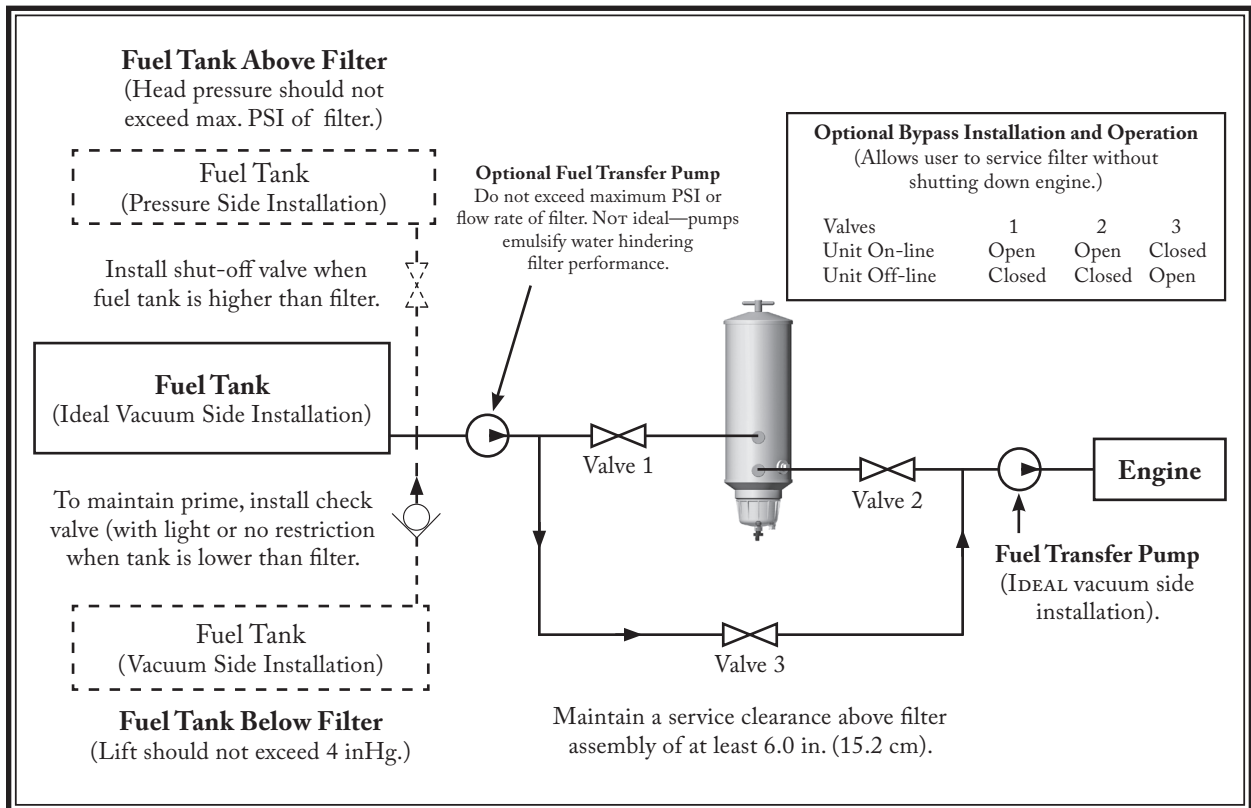
#### **Recycling and Filtering:**

Recycling or filtering fuel in storage tanks cleans the fuel while removing particulates and sediment accumulations. Fuel should be recycled numerous times, depending on the severity of contamination. Filter/recycling clock times can be reduced by selecting a larger capacity unit.

Severely contaminated fuel may require several cleaning cycles to clean the fuel properly. Cycle time (the amount of time it takes to clean an entire tank of fuel one time) can be reduced by installing a duplex (75812) or triplex (79812) recycling system. For example, the 812 recycler filters up to 720 gallons per hour (GPH) or 12 gallons per minute. The cycle time for a 100 gallon tank of fuel would be about 8.3 minutes. Depending of the contamination level of the fuel, one cycle may be enough to clean the fuel properly. If the fuel requires additional cleaning (more cycles), cleaning the fuel can become time consuming, especially if your filtering tanks larger than 100 gallons. By installing a 75812 (maximum flow rate is 1440 GPH), the same 100 gallons of fuel can be clean in a little over 4 minutes (one cycle); a 79812 would cut the cycle time down to around 3 minutes. If time is the issue, installing a duplex or triplex recycling system is the answer.

## 800 Series Recyclers

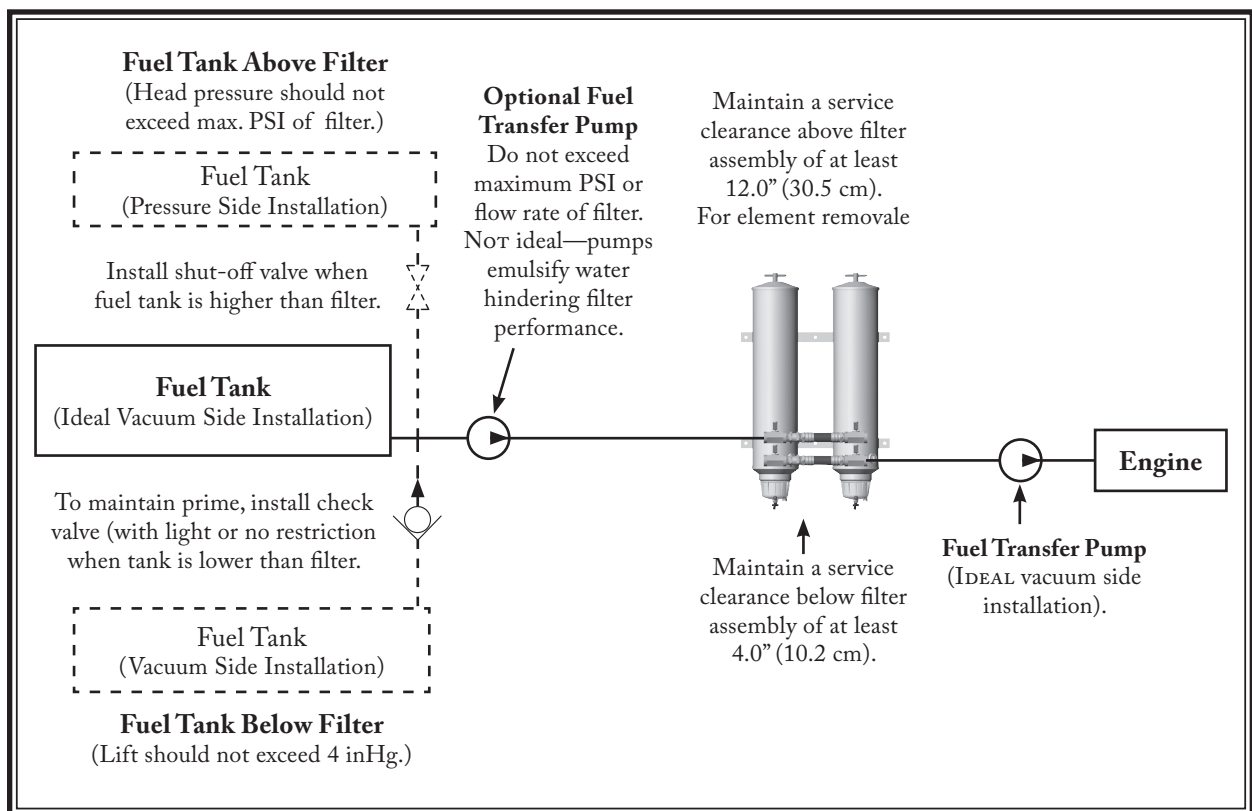
### Installation Diagram for 806 and 812



# Mobile Fuel Filtration

## 800 Series Recyclers

### *Installation Diagram for 75812 and 79812*



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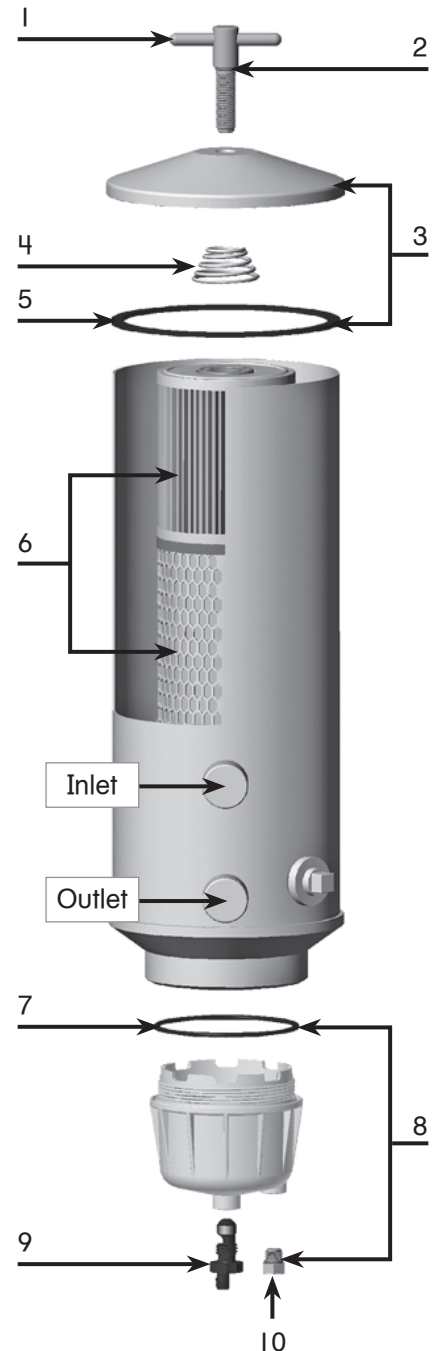
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## 800 Series Recyclers

### Replacement Parts

806 and 812

Part Number	Description
1. <b>RK22688</b>	T-handle Kit (includes #2)
2. <b>11350</b>	T-handle O-ring
3. <b>RK22682</b>	Lid Kit (includes lid, #4 and #5)
<b>RK22609</b>	Lid Seal Kit (includes #2 and #5 - not shown)
4. <b>N/A</b>	Spring (call Racor)
5. <b>22609</b>	Lid Gasket
6. <b>RK22788</b>	806 Element Kit
<b>RK22610</b>	812 Element Kit (these kits include one 40 micron element, one coalescer element and #5)
7. <b>11036</b>	Bowl O-ring
8. <b>RK16017</b>	Bowl Kit (includes bowl, #7, #9 and #10)
9. <b>RK30476</b>	Drain Valve Kit
10. <b>RK20126</b>	Plug Kit (water probe port)



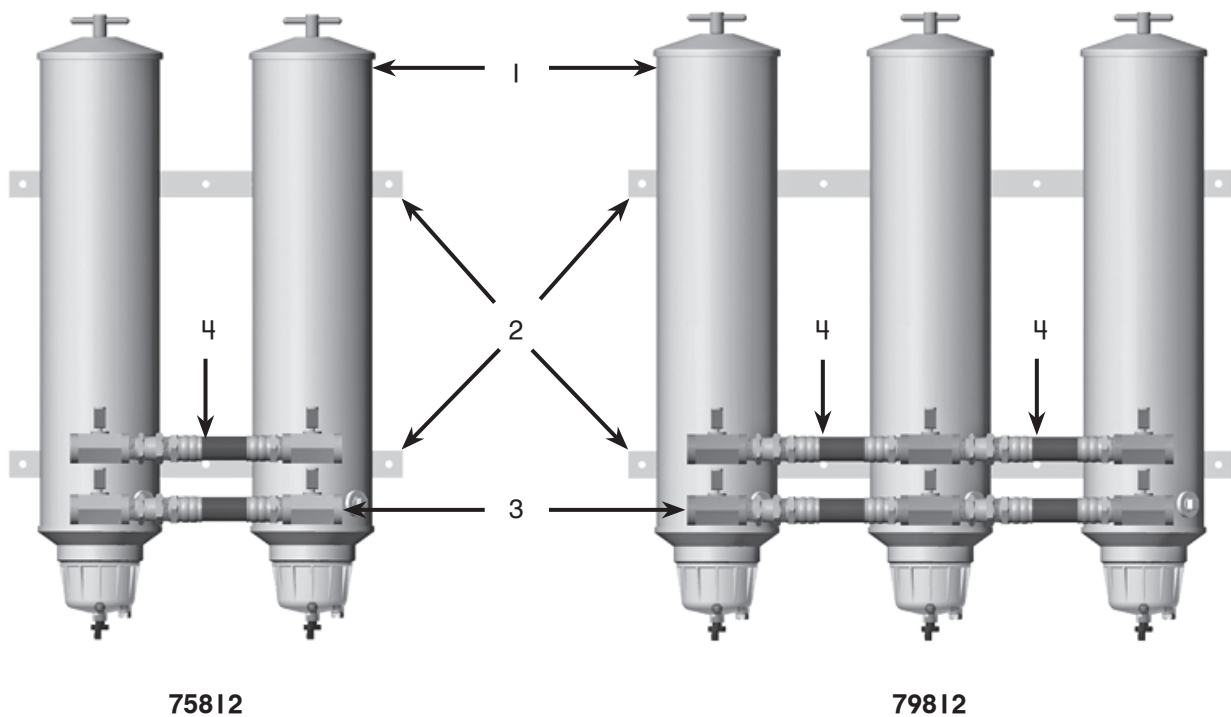
# Mobile Fuel Filtration

## 800 Series Recyclers

### Replacement Parts

#### 75812 and 79812

Part Number	Description
1. <b>812</b>	(See 812 Replacement Part List)
2. N/A	Mounting Bracket (call Racor)
3. <b>RK22898</b>	Ball Valve Kit (includes one 1" NPTF ball valve and one 1" NPTF straight pipe adapter)
4. <b>RK22897</b>	Hose and Fitting Kit (includes one 1" NPTF straight pipe adapter, one hose assembly and one 1" NPTF pipe tee)

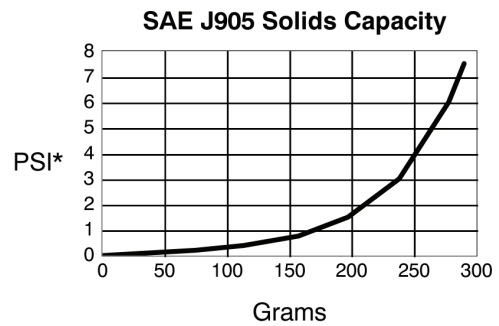
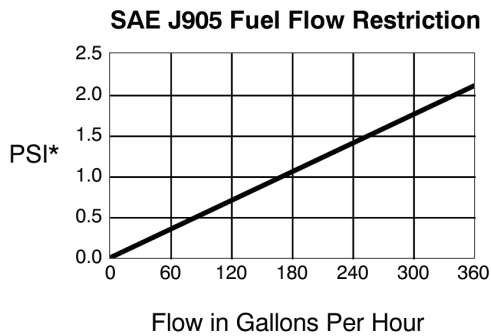


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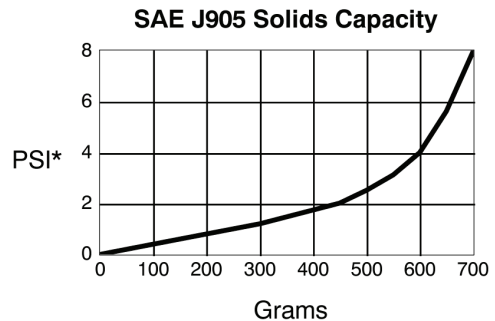
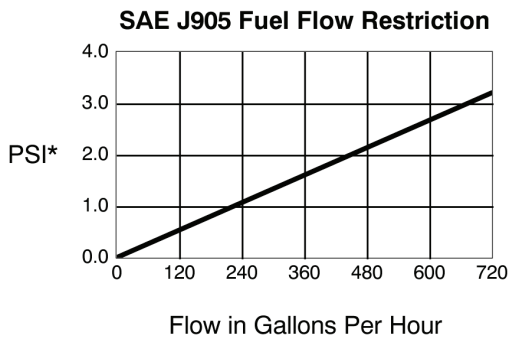
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## 800 Series Recyclers

### 806 Test Data



### 812 Test Data



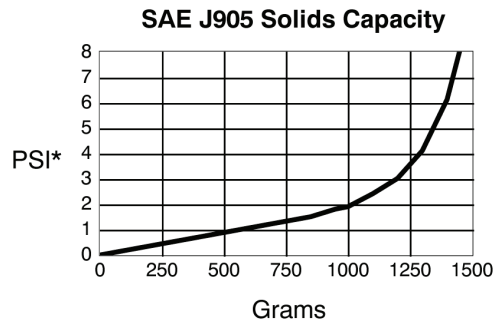
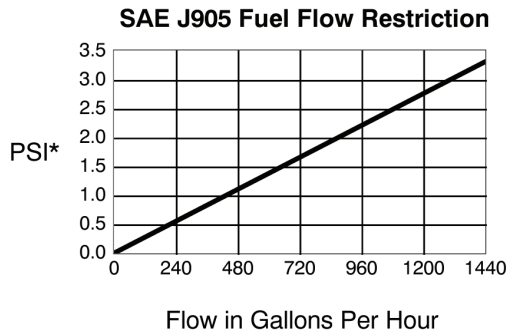
PSI X 2.036 = inHg (PSI X 6.895 = kPa)

Test results are from controlled laboratory testing. Field results may vary by application.

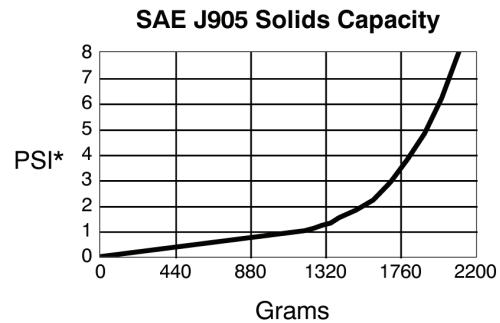
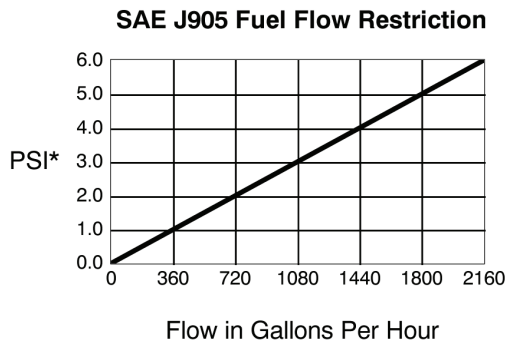
# Mobile Fuel Filtration

## 800 Series Recyclers

### 75812 Test Data



### 79812 Test Data



PSI X 2.036 = inHg (PSI X 6.895 = kPa)

Test results are from controlled laboratory testing. Field results may vary by application.

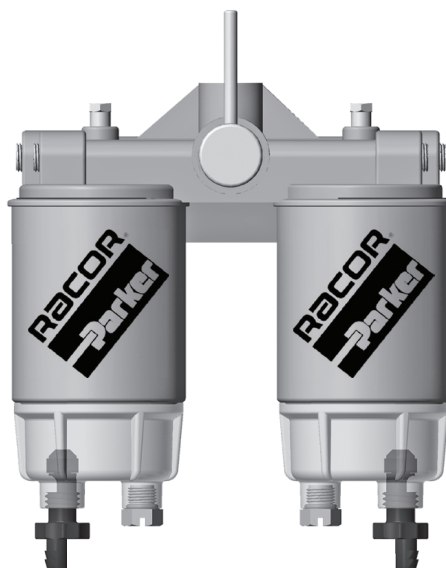
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## Dual Spin-on Series



75/B32009



75/B32016

The Racor Dual Spin-on Series provides twice the filtering capacity in one compact and robust package. A shut-off valve located in the mounting head can switch to the clean filter so that the dirty filter may be serviced (servicing filters is not possible while engine is running).

These assemblies feature Aquabloc® II replaceable filter elements that stop water, remove solid contamination, and are available in 2, 10 and 30 micron. Filtration needs should be based on application, fuel quality, operating climates, and maintenance schedules. Also included are spin-on contaminant collection

bowls. The clear bowls used with these filters will not discolor from alcohol, additives, or UV light and have a leak-proof, positive seal and self-venting drain for easy servicing. Water and contamination levels can be seen easily at a glance. When the on-line filter gets dirty, switch to the clean one. Servicing filters is not possible while engine is running.

**Optional accessories may include:**

Fuel heaters, water detection kits, hoses, fittings, and more. See Accessories section for more information.



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# Mobile Fuel Filtration

## Dual Spin-on Series

Specifications	75/B32009	75/B32016
<b>Maximum Flow Rate:</b> (one filter on-line) (two filters online)	60 GPH (227 LPH) 120 GPH (454 LPH)	20 GPH (75 LPH) 40 GPH (151 LPH)
<b>Port Size (UNF JIC)<sup>1</sup></b>	7/8"-14	3/4"-16
<b>Height</b>	12.4 in. (31.5 cm)	10.3 in. (26.2 cm)
<b>Width</b>	8.4 in. (21.3 cm)	7.6 in. (19.3 cm)
<b>Depth</b>	5.3 in. (13.5 cm)	4.9 in. (12.4 cm)
<b>Center Threads</b>	16mm X 1.5	16mm X 1.5
<b>Solids Capacity:</b> (with one filter) (with two filters)	13.7 oz. (388 g) 27.4 oz. (777 g)	6.4 oz. (182 g) 12.8 oz. (363 g)
<b>Available Options:</b> (water sensor) (heater)	Yes Yes	Yes Yes
<b>Operating Temperature</b>	-40° to +255°F (-40° to +124°C)	

<sup>1</sup> Units are standard with M18 X 1.5 (ISO9974-1) O-ring face seal fuel ports. The 75/B32016 includes two adapter fittings to 3/4"-16 UNF JIC and the 75/B32009 includes two adapter fittings to 7/8"-14 UNF JIC.

## The Selection Valve



Do not service filters with engine on.

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## Dual Spin-on Series

### How to Order

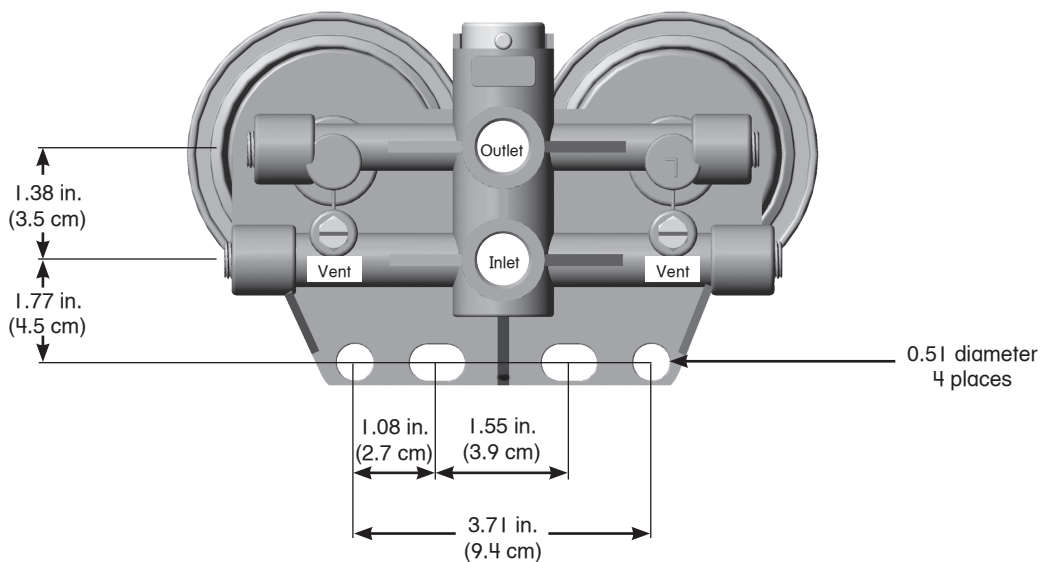
75/B32009	M	-10
Select an assembly by flow rate: 75/B32016: 40 GPH (151 LPH) 75/B32009: 120 GPH (454 LPH)	Specify M for a metal bowl. <sup>1</sup> (omit if not desired)	Specify a micron rating: -2 for 2 micron, -10 for 10 micron, or -30 for 30 micron.
<sup>1</sup> Use metal bowls on gasoline applications.		

### Replacement Elements

Model	2 micron (Final)	10 micron (Secondary)	30 micron* (Primary)
75/B32016	S3216S	S3216T	S3216P
75/B32009	S3209S	S3209T	S3209P

\* A secondary/final filter is required downstream.

### Mounting Information



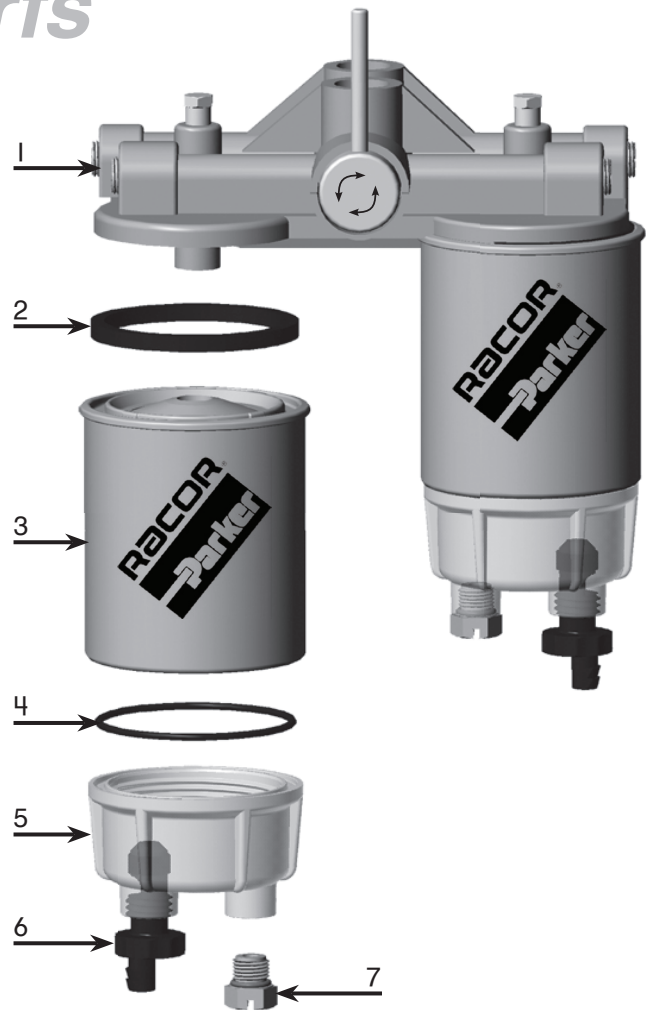
# Mobile Fuel Filtration

## Dual Spin-on Series

### Replacement Parts

75/B32009 and 75/B32016

<u>Part Number</u>	<u>Description</u>
1. <b>30628</b>	Dual Filter Head
2. <b>RK10503</b>	Element Gasket Kit
3.	See Replacement Element Chart
4. <b>RK30076</b> <sup>1</sup>	Bowl O-ring Kit
<b>RK10012</b> <sup>2</sup>	Bowl O-ring Kit
5.	Replacement Bowl Kits (includes bowl, #'s 4 to 7)
<b>RK30051</b> <sup>1</sup>	Clear Bowl Kit
<b>RK30473</b> <sup>1</sup>	Metal Bowl Kit (no probe port)
<b>RK10215</b> <sup>2</sup>	Clear Bowl Kit
<b>RK10109</b> <sup>2</sup>	Metal Bowl Kit (no probe port)
6. <b>RK30476</b>	Drain Valve Kit
7. <b>RK20126</b>	1/2" SAE Plug with O-ring
Additional Parts (not shown)	
<b>30837</b> <sup>1</sup>	Adapter Fitting (7/8"-14 UNF JIC)
<b>30945</b> <sup>2</sup>	Adapter Fitting (3/4"-16 UNF JIC)



Note:

<sup>1</sup> For 75/B32009 assembly.

<sup>2</sup> For 75/B32016 assembly.

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## Engine Spin-on Series

Racor quality in one easy spin! The Racor Engine Spin-on Series is designed to directly replace existing engine fuel filters and features high-capacity Aquabloc® II elements that remove contaminants and water. Optional accessories may include: mounting heads, fuel heaters, water detection kits, hose, fittings and more. A wide variety of Engine Spin-on Series assemblies are available to fit most applications.



And many more...



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# Mobile Fuel Filtration

## Engine Spin-on Series

### How to Order

B120	S
Basic Model Number (includes element & bowl)	Specify a micron rating: S (2 micron) T (10 micron) P (30 micron)

Specifications	B120
<b>Maximum Flow Rate</b>	120 GPH (454 LPH)
<b>Replacement Element:</b> (2 micron) (10 micron) (30 micron)	R120S R120T R120P
<b>Element Height</b>	8.5 in. (22 cm)
<b>Bowl and Element Height</b>	12 in. (30 cm)
<b>Diameter</b>	4.38 in. (11 cm)
<b>Center Threads</b>	1" - 14
<b>Solids Capacity</b>	18.2 oz. (515 grams)
<b>Case Quantity</b>	6
<b>H<sub>2</sub>O Removal Efficiency</b>	99%
<b>Operating Temperature</b>	-40° to +255°F (-40° to 124°C)



B120S  
Assembly

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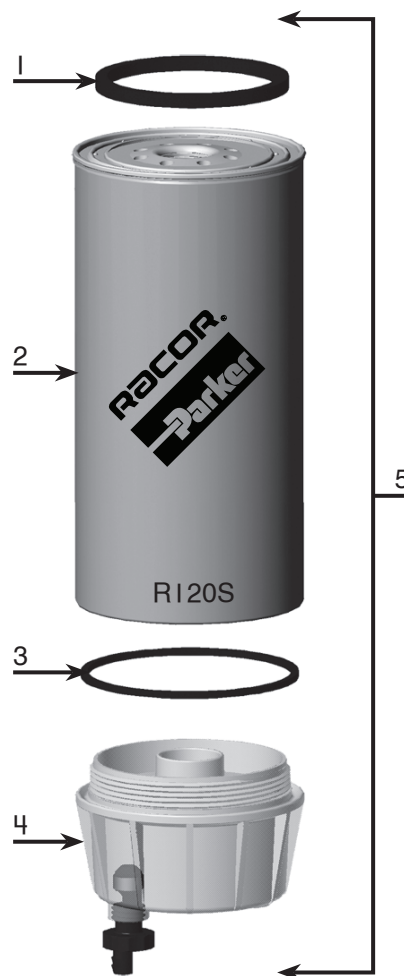
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## Engine Spin-on Series

### Replacement Parts

#### B120

	<u>Part Number</u>	<u>Description</u>
1.	<b>20505</b>	Element Gasket
2.	Replacement Elements:	
	<b>R120S</b>	2 micron
	<b>R120T</b>	10 micron
	<b>R120P</b>	30 micron
3.	<b>30965</b>	Bowl O-ring
4.	<b>RK30480</b>	Standard Bowl Assembly (no water sensor port - see note below)
	<b>RK30063</b>	Clear Bowl Kit (non-heated)
	<b>RK30900</b>	Heated, Clear Bowl Kit (12 volt dc, 200 watt, no water sensor port)
	<b>RK30925</b>	Heated, Clear Bowl Kit (24 volt dc, 200 watt, no water sensor port)
5.	Bowl and Element Assembly (includes #'s 1 - 4)	
	<b>B120S</b>	2 micron
	<b>B120T</b>	10 micron
	<b>B120P</b>	30 micron
	Additional Parts (not shown)	
	<b>RK30880</b>	Water Detection Kit (other kits are available - see Accessories)
	<b>RK21539</b>	Gasket Pack (includes #'s 1 and 3)



The standard B120 bowl does not have a water sensor port. Bowls with water sensor ports are available as replacement kits (see item #4 above). Do not use water sensors on gasoline applications.

# Mobile Fuel Filtration

## Engine Spin-on Series

### How to Order

S3201	S
Basic Model Number (includes element and bowl)	Specify a micron rating: S (2 micron) T (10 micron) P (30 micron)



S3201S  
Filter

Specifications	S3201
<b>OEM Applications</b>	Cummins or ThermoKing
<b>Maximum Flow Rate</b>	90 GPH (341 LPH)
<b>Element Height</b>	7.4 in. (18.8 cm)
<b>Bowl and Element Height</b>	10.6 in. (26.9 cm)
<b>Diameter</b>	3.82 in. (9.7 cm)
<b>Center Threads</b>	1"-14
<b>Solids Capacity</b>	11.6 oz. (329 grams)
<b>Case Quantity</b>	12
<b>H<sub>2</sub>O Removal Efficiency</b>	99%
<b>Operating Temperature</b>	-40° to +255°F (-40° to 124°C)

### Cross References

All Racor S3201 replacement elements meet or exceed OEM specifications and replace all of the following filter numbers:

OEM	AC	Baldwin	Fleetguard	Fram	Purolator	Wix
Cummins: 138627 154709 156172 202893	TP619 TP629 TP811 TP972	BF7557 BF948 BF948D BF957 BF957D	FF104 FF105 FF105C/D FS1212 FF213	P1101PL	6683776 6694036 PER15 PER23-1 PER23-2	33107

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## Engine Spin-on Series

### Replacement Parts

#### S3201

- | Part Number                                   | Description  |
|---|--|
| 1. <b>RK30287</b>                             | Optional Mounting Head Kit (7/8"-14 UNF Ports)                   |
| 2. <b>30563</b>                               | Thread Gasket  |
| 3. <b>10503</b>                               | Element Gasket   |
| 4. Replacement Elements (includes #'s 2 to 5) |  |
| <b>S3201S</b>                                 | (2 micron)   |
| <b>S3201T</b>                                 | (10 micron)  |
| <b>S3201P</b>                                 | (30 micron)  |
| 5. <b>30076</b>                               | Bowl O-ring  |
| 6. <b>RK30475</b>                             | Optional Clear Bowl Kit (no water sensor port - see note below)  |
| <b>RK30051</b>                                | Non-heated, Clear Bowl Kit                                       |
| <b>RK30895</b>                                | Heated, Clear Bowl Kit (12 vdc, 200 watt, no water sensor port)  |
| <b>RK30924</b>                                | Heated, Clear Bowl Kit (24 vdc, 200 watt, no water sensor port)  |
| <b>RK30745-01</b>                             | Non-heated, Metal Bowl Kit                                       |
| 7. <b>RK30880</b>                             | Water Detection Kit (other kits are available - see Accessories) |

Additional Parts (not shown)

- |              |  |
|--------------|--|
| <b>30562</b> | Gasket Pack (includes #'s 2, 3, and 5) |
|--------------|--|



The standard S3201 bowl does not have a water sensor port. Bowls with water sensor ports are available as replacement kits (see item #6 above). Do not use water sensors on gasoline applications.



# Mobile Fuel Filtration

## Engine Spin-on Series

Specifications	B32002
<i>OEM Applications</i>	Detroit Diesel
<i>Maximum Flow Rate</i>	90 GPH (341 LPH)
<i>Replacement Element: (30 micron)</i>	S3202
<i>Element Height</i>	7.4 in. (18.8 cm)
<i>Bowl and Element Height</i>	10.6 in. (26.9 cm)
<i>Diameter</i>	3.82 in. (9.7 cm)
<i>Center Threads</i>	1"-12
<i>Solids Capacity</i>	19.6 oz. (557 grams)
<i>Case Quantity</i>	12
<i>H<sub>2</sub>O Removal Efficiency</i>	99%
<i>Operating Temperature</i>	-40° to +255°F (-40° to 124°C)



B32002  
Assembly

## Cross References

All Racor B32002/S3202 replacement elements meet or exceed OEM specifications and replace all of the following filter numbers:

OEM	AC	Baldwin	Fleetguard	Fram	Purolator	Wix
DDA: 6438839	T815 T915	BF580	FF207 FS1213	P1146	PER96	33118

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## Engine Spin-on Series

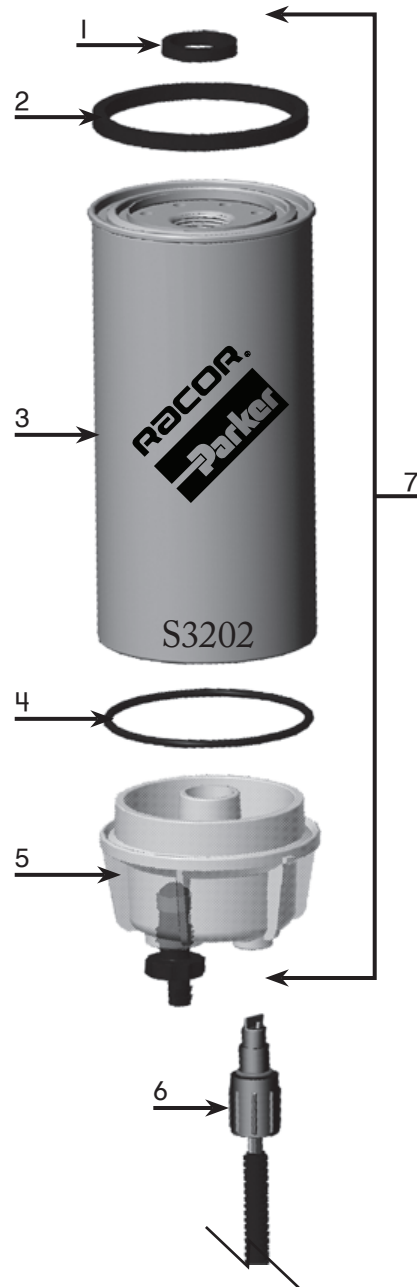
### Replacement Parts

#### B32002/S3202

Part Number	Description
1. <b>30563</b>	Thread Gasket
2. <b>20505</b>	Element Gasket
3. Replacement Element (includes #'s 1 to 4) <b>S3202</b>	(30 micron)
4. <b>30076</b>	Bowl O-ring
5. <b>RK30475</b>	Clear Bowl Kit (no water sensor port - see note below)
<b>RK30051</b>	Clear, Non-heated Bowl Kit
<b>RK30745-01</b>	Non-heated, Metal Bowl Kit
<b>RK30895</b>	Heated, Clear Bowl Kit (12 volt dc, 200 watt, no water sensor port)
<b>RK30924</b>	Heated, Clear Bowl Kit (24 volt dc, 200 watt, no water sensor port)
6. <b>RK30880</b>	Water Detection Kit (other kits are available - see Accessories)
7. Bowl and Element Assembly (includes #'s 1 - 5) <b>B32002</b>	(30 micron)

#### Additional Parts (not shown)

<b>21381</b>	Gasket Pack (includes #'s 1, 2, and 4)
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The standard B32002 bowl has no water sensor port. Bowls with water sensor ports are available as replacement kits (see item #5 above). Do not use water sensors on gasoline applications.

# Mobile Fuel Filtration

## Engine Spin-on Series

Specifications	B32003
<b>OEM Applications</b>	Caterpillar or Navistar
<b>Maximum Flow Rate</b>	90 GPH (341 LPH)
<b>Replacement Element: (2 micron)</b>	S3203
<b>Element Height</b>	5.5 in. (14.0 cm)
<b>Bowl and Element Height</b>	8.7 in. (22.1 cm)
<b>Diameter</b>	3.82 in. (9.7 cm)
<b>Center Threads</b>	1"-14
<b>Solids Capacity</b>	7.1 oz. (201 grams)
<b>Case Quantity</b>	12
<b>H<sub>2</sub>O Removal Efficiency</b>	99%
<b>Operating Temperature</b>	-40° to +255°F (-40° to 124°C)



B32003  
Assembly

## Cross References

All Racor B32003/S3203 replacement elements meet or exceed OEM specifications and replace all of the following filter numbers:

OEM	AC	Baldwin	Fleetguard	Fram	Purolator	Wix
Caterpillar: 1P2299 6L7440	TP619 TP877	BF957 BF970 BF979	FF5020 FS104 FS1212	P1101PL P1104 P1118	PER15 PER35 PER39 PER53	33107 33341 33352
Cummins: 138627			FS1214 FS1215			
International: 625627C1			FS1225 FS185			

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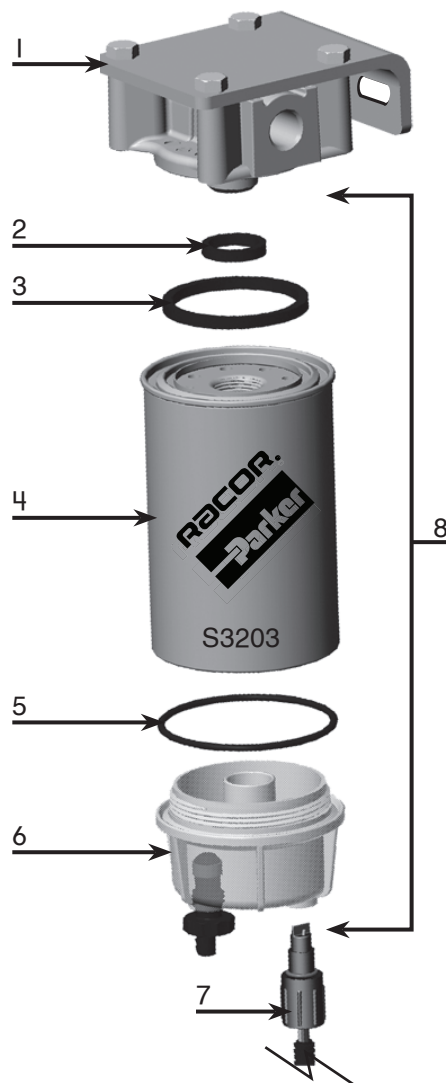


## Engine Spin-on Series

### Replacement Parts

#### B32003/S3203

<u>Part Number</u>	<u>Description</u>
1. <b>RK30287</b>	Optional Mounting Head Kit (7/8"-14 UNF ports)
2. <b>30563</b>	Thread Gasket
3. <b>10503</b>	Element Gasket
4. Replacement Element (includes #'s 2 to 5) <b>S3203</b>	(2 micron)
5. <b>30076</b>	Bowl O-ring
6. <b>RK30475</b>	Clear Bowl Kit (no water sensor port - see note below)
<b>RK30051</b>	Clear, Non-heated Bowl Kit
<b>RK30745-01</b>	Non-heated, Metal Bowl Kit
<b>RK30895</b>	Heated, Clear Bowl Kit (12 volt dc, 200 watt, no water sensor port)
<b>RK30924</b>	Heated, Clear Bowl Kit (24 volt dc, 200 watt, no water sensor port)
7. <b>RK30880</b>	Water Detection Kit (other kits are available, see Accessories)
8. Bowl and Element Assembly (includes #'s 2 - 6) <b>B32003</b>	(2 micron)
Additional Parts (not shown)	
<b>30562</b>	Gasket Pack (includes #'s 2, 3, and 5)



The standard B32003 bowl has no water sensor port. Bowls with water sensor ports are available as replacement kits (see item #6 above). Do not use water sensors on gasoline applications.

# Mobile Fuel Filtration

## Engine Spin-on Series

### How to Order

B32004	S
Basic Model Number (includes element & bowl)	Specify a micron rating: S (2 micron) T (10 micron) P (30 micron)

Specifications	B32004
<b>OEM Applications</b>	Navistar
<b>Maximum Flow Rate</b>	40 GPH (151 LPH)
<b>Replacement Element:</b> (2 micron) (10 micron) (30 micron)	S3204S S3204T S3204P
<b>Element Height</b>	4.0 in. (10.2 cm)
<b>Bowl and Element Height</b>	7.2 in. (18.3 cm)
<b>Diameter</b>	3.82 in. (9.7 cm)
<b>Center Threads</b>	1"-14
<b>Solids Capacity</b>	9.0 oz. (255 grams)
<b>Case Quantity</b>	12
<b>H<sub>2</sub>O Removal Efficiency</b>	99%
<b>Operating Temperature</b>	-40° to +255°F (-40° to 124°C)



B32004S  
Assembly

### Cross References

All Racor B32004/S3204 replacement elements meet or exceed OEM specifications and replace all of the following filter numbers:

OEM	AC	Baldwin	Fleetguard	Fram	Purolator	Wix
International: 625625C1	TP807	BF984	FF196 FS1220	P1117 P3767	PER35	33239

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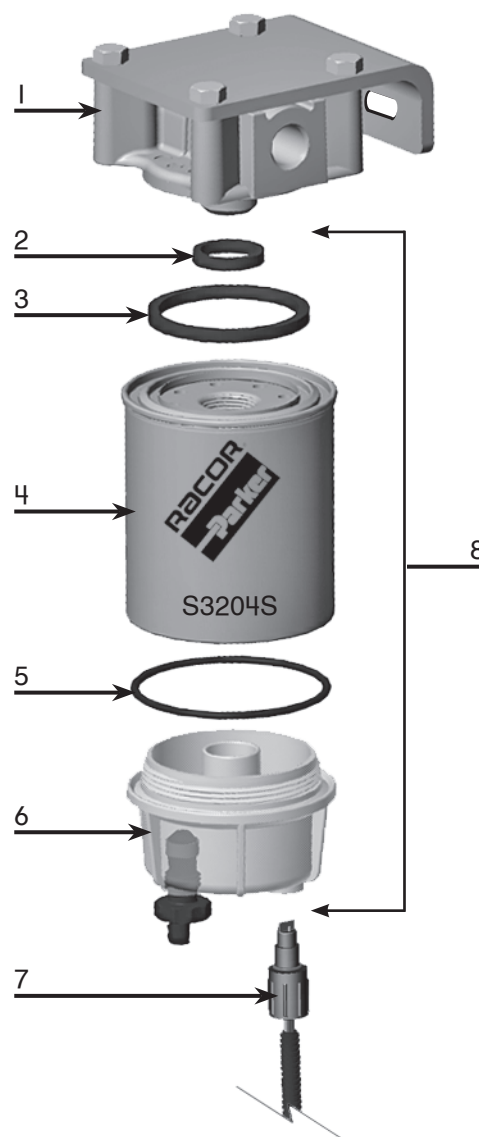


## Engine Spin-on Series

# Replacement Parts

### B32004/S3204

<u>Part Number</u>	<u>Description</u>
1. <b>RK30287</b>	Optional Mounting Head Kit (7/8"-14 UNF ports)
2. <b>30563</b>	Thread Gasket
3. <b>10503</b>	Element Gasket
4. Replacement Elements (includes #'s 2 to 5)	
<b>S3204S</b>	(2 micron)
<b>S3204T</b>	(10 micron)
<b>S3204P</b>	(30 micron)
5. <b>30076</b>	Bowl O-ring
6. <b>RK30475</b>	Clear Bowl Kit (no water sensor port - see note below)
<b>RK30051</b>	Clear, Non-heated Bowl Kit
<b>RK30745-01</b>	Non-heated, Metal Bowl Kit
<b>RK30895</b>	Heated, Clear Bowl Kit (12 volt dc, 200 watt, no water sensor port)
<b>RK30924</b>	Heated, Clear Bowl Kit (24 volt dc, 200 watt, no water sensor port)
7. <b>RK30880</b>	Water Detection Kit (other kits are available - see Accessories)
8. Bowl and Element Assembly (includes #'s 2 - 6)	
<b>B32004S</b>	(2 micron)
<b>B32004T</b>	(10 micron)
<b>B32004P</b>	(30 micron)
Additional Parts (not shown)	
<b>30562</b>	Gasket Pack (includes #'s 2, 3, and 5)



The standard B32004 bowl has no water sensor port. Bowls with water sensor ports are available as replacement kits (see item #6 above). Do not use water sensors on gasoline applications.

# Mobile Fuel Filtration

## Engine Spin-on Series

Specifications	S3205
<i>OEM Applications</i>	Mack
<i>Maximum Flow Rate</i>	90 GPH (341 LPH)
<i>Replacement Element: (30 micron)</i>	S3205
<i>Element Height</i>	6.3 in. (16.0 cm)
<i>Bowl and Element Height</i>	9.8 in. (24.9 cm)
<i>Diameter</i>	4.38 in. (11.1 cm)
<i>Center Threads</i>	1"-14
<i>Solids Capacity</i>	19.1 oz. (541 grams)
<i>Case Quantity</i>	6
<i>H<sub>2</sub>O Removal efficiency</i>	99%
<i>Operating Temperature</i>	-40° to +255°F (-40° to 124°C)



S3205  
Element

## Cross References

All Racor S3205 replacement elements meet or exceed OEM specifications and replace all of the following filter numbers:

OEM	AC	Baldwin	Fleetguard	Fram	Purolator	Wix
Mack: 483GB219A	TP635	BF877	FF172 FS1219	F1109	PER31	33219

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## Engine Spin-on Series

### Replacement Parts

#### S3205

<u>Part Number</u>	<u>Description</u>
1. <b>10503</b>	Element Gasket
2. Replacement Elements (includes #'s 1 to 3) <b>S3205</b>	(30 micron)
3. <b>30965</b>	Bowl O-ring
4. <b>RK30480</b>	Optional Clear Bowl Kit (no water sensor port - see note below)
<b>RK30063</b>	Non-heated, Clear Bowl Kit
<b>RK21640</b>	Non-heated, Metal Bowl Kit
<b>RK30900</b>	Heated, Clear Bowl Kit (12 volt dc, 200 watt, no water sensor port)
<b>RK30925</b>	Heated, Clear Bowl Kit (24 volt dc, 200 watt, no water sensor port)
5. <b>RK30880</b>	Optional Water Detection Kit (other kits are available - see Accessories)

Additional Parts (not shown)

**22310** Gasket Pack  
(includes #'s 1 and 3)





# Mobile Fuel Filtration

## Engine Spin-on Series

Specifications	S3206
<i>OEM Applications</i>	Caterpillar
<i>Maximum Flow Rate</i>	90 GPH (341 LPH)
<i>Replacement Element: (2 micron)</i>	S3206
<i>Element Height</i>	8.5 in. (21.6 cm)
<i>Bowl and Element Height</i>	12.0 in. (30.5 cm)
<i>Diameter</i>	4.38 in. (11.1 cm)
<i>Center Threads</i>	1"-14
<i>Solids Capacity</i>	18.2 oz. (515 grams)
<i>Case Quantity</i>	6
<i>H<sub>2</sub>O Removal Efficiency</i>	99%
<i>Operating Temperature</i>	-40° to +255°F (-40° to 124°C)



S3206  
Element

## Cross References

All Racor S3206 replacement elements meet or exceed OEM specifications and replace all of the following filter numbers:

OEM	AC	Baldwin	Fleetguard	Fram	Purolator	Wix
Caterpillar: 4N5823	TP-920	BF-584	FF211 FS1218	P3376	PER85	33384

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## Engine Spin-on Series

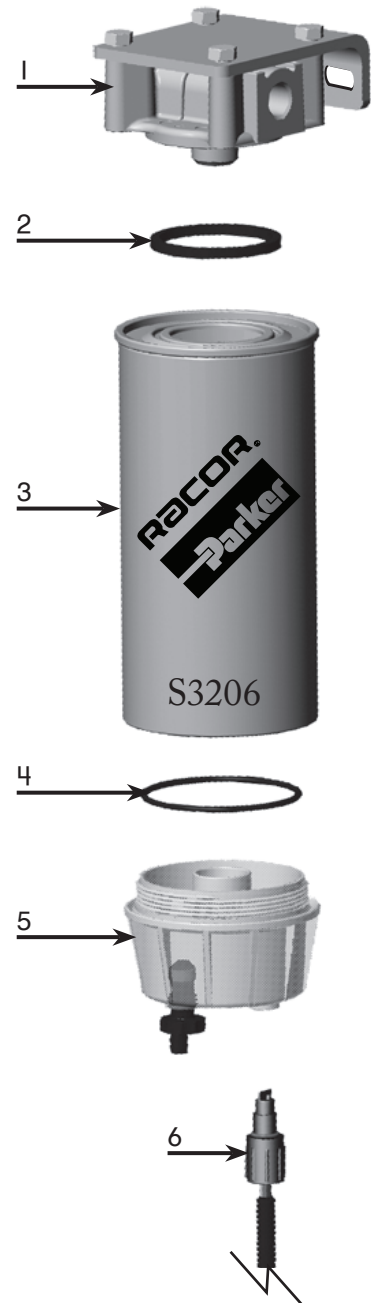
### Replacement Parts

#### S3206

- | Part Number                                   | Description   |
|---|---|
| 1. <b>RK30287</b>                             | Optional Mounting Head Kit (7/8"-14 UNF ports)                            |
| 2. <b>I0503</b>                               | Element Gasket  |
| 3. Replacement Elements (includes #'s 2 to 4) |   |
| <b>S3206</b>                                  | (2 micron)  |
| 4. <b>30965</b>                               | Bowl O-ring   |
| 5. <b>RK30480</b>                             | Optional Clear Bowl Kit (no water sensor port - see notes below)          |
| <b>RK30063</b>                                | Non-heated, Clear Kit   |
| <b>RK21640</b>                                | Non-heated, Metal Bowl  |
| <b>RK30900</b>                                | Heated, Clear Bowl (12 volt dc, 200 watt, no water sensor port)           |
| <b>RK30925</b>                                | Heated, Clear Bowl (24 volt dc, 200 watt, no water sensor port)           |
| 6. <b>RK30880</b>                             | Optional Water Detection Kit (Other kits are available - see Accessories) |

Additional Parts (not shown)

- |              |                                    |
|--------------|------------------------------------|
| <b>22310</b> | Gasket Pack (includes #'s 2 and 4) |
|--------------|------------------------------------|



# Mobile Fuel Filtration

## Engine Spin-on Series

### How to Order

<b>B32007</b>	<b>P</b>
Basic Model Number (includes element & bowl)	Specify a micron rating <b>P</b> (30 micron)

<b>Specifications</b>	<b>B32007</b>
<b>OEM Applications</b>	Cummins
<b>Maximum Flow Rate</b>	180 GPH (68 l LPH)
<b>Replacement Element: (30 micron)</b>	S3207P
<b>Element Height</b>	9.9 in. (25.1 cm)
<b>Bowl and Element Height</b>	13.5 in. (34.3 cm)
<b>Diameter</b>	5.09 in. (12.9 cm)
<b>Center Threads</b>	1/4" -14
<b>Solids Capacity</b>	28.4 oz. (804 grams)
<b>Case Quantity</b>	6
<b>Operating Temperature</b>	-40° to +255°F (-40° to 124°C)



B32007P  
Assembly

### Cross References

All Racor B32007P/S3207P replacement elements meet or exceed OEM specifications and replace all of the following filter numbers:

<b>OEM</b>	<b>AC</b>	<b>Baldwin</b>	<b>Fleetguard</b>	<b>Fram</b>	<b>Purolator</b>	<b>Wix</b>
Cummins: 299202	TP-917	BF-596	FF202 FS1216	P3430	PER134	33116

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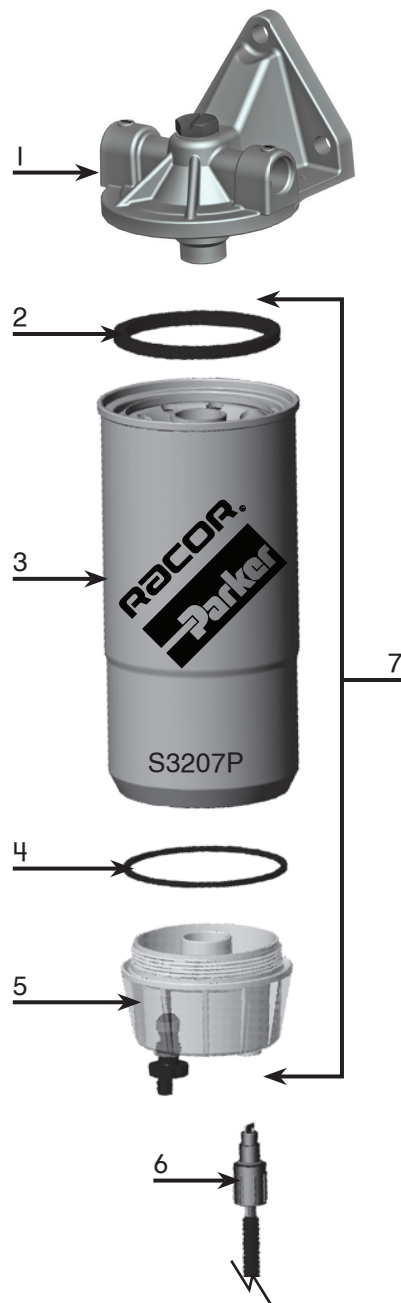


## Engine Spin-on Series

### Replacement Parts

#### B32007P/S3207P

Part Number	Description
1. 31547-16	Optional Mounting Head Kit (7/8"-14 UNF ports)
2. 30604	Element Gasket
3. Replacement Elements (includes #'s 2 to 4)	
<b>S3207P</b>	(30 micron)
4. 30965	Bowl O-ring
5. <b>RK30480</b>	Clear Bowl Kit (no water sensor port - see note below)
<b>RK30063</b>	Non-heated, Clear Bowl Kit
<b>RK21640</b>	Non-heated, Metal Bowl Kit
<b>RK30900</b>	Heated, Clear Bowl Kit (12 volt dc, 200 watt, no water sensor port)
<b>RK30925</b>	Heated, Clear Bowl Kit (24 volt dc, 200 watt, no water sensor port)
6. <b>RK30880</b>	Water Detection Kit (other kits are available - see Accessories)
7. Bowl and Element Assembly (includes #'s 2 - 5)	
<b>B32007P</b>	(30 micron)
Additional Parts (not shown)	
<b>22311</b>	Gasket Pack (includes #'s 2 and 4)



The standard B32007 bowl has no water sensor port. Bowls with water sensor ports are available as replacement kits (see item #5 above). Do not use water sensors on gasoline applications.

# Mobile Fuel Filtration

## Engine Spin-on Series

### How to Order

B32008	P
Basic Model Number (includes element & bowl)	Specify a micron rating: P (30 micron)

Specifications	B32008
<b>OEM Applications</b>	Deutz or Volvo
<b>Maximum Flow Rate</b>	30 GPH (114 LPH)
<b>Replacement Element:</b> (2 micron) (10 micron) (30 micron)	S3208P
<b>Element Height</b>	5.25 in. (13.3 cm)
<b>Bowl and Element Height</b>	7.25 in. (18.4 cm)
<b>Diameter</b>	2.85 in. (7.2 cm)
<b>Center Threads</b>	16mm X 1.5
<b>Solids Capacity</b>	9.7 oz. (275 grams)
<b>Case Quantity</b>	12
<b>H<sub>2</sub>O Removal Efficiency</b>	99%
<b>Operating Temperature</b>	-40° to +255°F (-40° to 124°C)



B32008P  
Assembly

### Cross References

All Racor B32008P/S3208P replacement elements meet or exceed OEM specifications and replace all of the following filter numbers:

OEM	AC	Baldwin	Fleetguard	Fram	Purolator	Wix
Deutz: Q1H4117 Volvo: 243004	TP-961	BF-993	FF1221 FF202	P4102	PC-42	33195 336P

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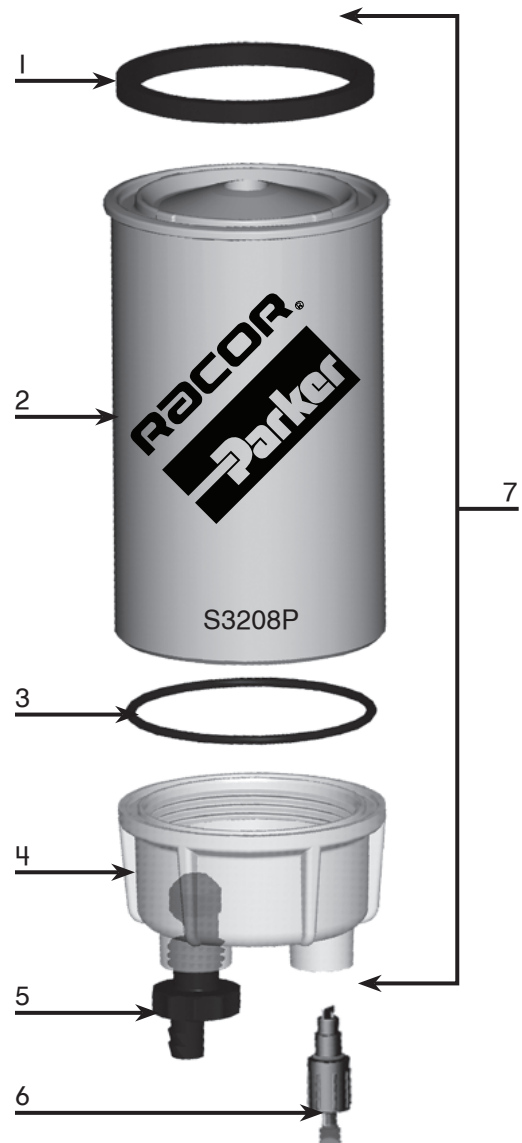


## Engine Spin-on Series

### Replacement Parts

#### B32008P/S3208P

Part Number	Description
1. <b>10503</b>	Element Gasket
2. Replacement Elements (includes #'s 1 to 3) <b>S3208P</b>	(30 micron)
3. <b>10012</b>	Bowl O-ring
4. <b>RK21544</b>	Clear Bowl Kit (no water sensor port - see notes below)
<b>RK10215</b>	Non-heated, Clear Bowl Kit
<b>RK10109</b>	Non-heated Metal Bowl Kit
5. <b>10054</b>	Self-venting Drain
6. <b>RK30880</b>	Water Detection Kit (other kits are available - see Accessories)
7. Bowl and Element Assembly (includes #'s 1 - 4) <b>B32008P</b>	(30 micron)



The standard B32008 bowl has no water sensor port. Other bowls with water sensor ports are available as replacement kits (see item #4 above). Water sensors are not for use with gasoline applications.

# Mobile Fuel Filtration

## Engine Spin-on Series

### How to Order

B32009	S
Basic Model Number (includes element & bowl)	Specify a micron rating: S (2 micron) T (10 micron) P (30 micron)

Specifications	B32009
<b>OEM Applications</b>	Mann
<b>Maximum Flow Rate</b>	60 GPH (227 LPH)
<b>Replacement Element:</b> (2 micron) (10 micron) (30 micron)	S3209S S3209T S3209P
<b>Element Height</b>	5.5 in. (14.0 cm)
<b>Bowl and Element Height</b>	8.8 in. (22.4 cm)
<b>Diameter</b>	3.82 in. (9.7 cm)
<b>Center Threads</b>	16mm X 1.5
<b>Solids Capacity</b>	13.7 oz. (388 grams)
<b>Case Quantity</b>	12
<b>Operating Temperature</b>	-40° to +255°F (-40° to 124°C)



B32009S  
Assembly

### Cross References

All Racor B32009/S3209 replacement elements meet or exceed OEM specifications and replace all of the following filter numbers:

OEM	AC	Baldwin	Fleetguard	Fram	Purolator	Wix
Mann: WK962/4 DAF: 247138	N/A	BF980	FF4070	PS6837	PC45	33449

**RACOR**

Technical Support:  
800.344.3286 ext. 7555  
racortech@parker.com

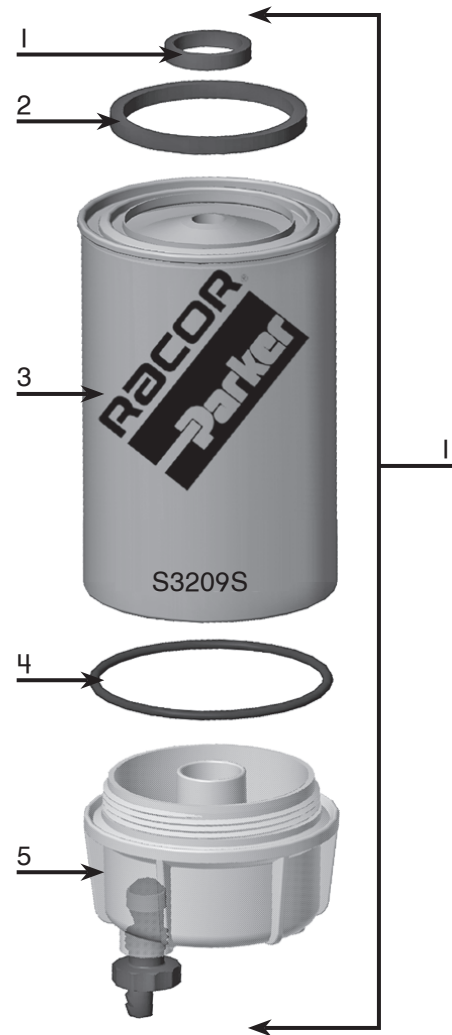


## Engine Spin-on Series

# Replacement Parts

### B32009/S3209

<u>Part Number</u>	<u>Description</u>
1. <b>30563</b>	Thread Gasket
2. <b>10503</b>	Element Gasket
3. Replacement Elements (includes #'s 1 to 4)	
<b>S3209S</b>	(2 micron)
<b>S3209T</b>	(10 micron)
<b>S3209P</b>	(30 micron)
4. <b>30076</b>	Bowl O-ring
5. <b>RK30475</b>	Clear Bowl Kit (no water sensor port - see note below)
<b>RK30051</b>	Non-heated, Clear Bowl Kit
<b>RK30745-01</b>	Non-heated, Metal Bowl Kit
<b>RK30895</b>	Heated, Clear Bowl Kit (12 vdc, 200 watt no water sensor port)
<b>RK30924</b>	Heated, Clear Bowl Kit (24 vdc, 200 watt no water sensor port)
6. Bowl and Element Assembly (includes #'s 1 - 5)	
<b>B32009S</b>	(2 micron)
<b>B32009T</b>	(10 micron)
<b>B32009P</b>	(30 micron)
Additional Parts (not shown)	
<b>RK30880</b>	Water Detection Kit (other kits are available - see Accessories)
<b>30562</b>	Gasket Pack (includes #'s 1, 2, and 4)



The standard B32009 bowl has no water sensor port. Bowls with water sensor ports are available as replacement kits (see item #5 above). Do not use water sensors on gasoline applications.



# Mobile Fuel Filtration

## Engine Spin-on Series

Specifications	B32012
<b>OEM Applications</b>	GM or Detroit Diesel
<b>Maximum Flow Rate</b>	90 GPH (341 LPH)
<b>Replacement Element: (30 micron)</b>	S3212
<b>Element Height</b>	4.0 in. (10.2 cm)
<b>Bowl and Element Height</b>	7.3 in. (18.5 cm)
<b>Diameter</b>	3.82 in. (9.7 cm)
<b>Center Threads</b>	1"-12
<b>Solids Capacity</b>	8.2 oz. (233 grams)
<b>Case Quantity</b>	12
<b>Operating Temperature</b>	-40° to +255°F (-40° to 124°C)



B32012  
Assembly

## Cross References

All Racor B32012/S3212 replacement elements meet or exceed OEM specifications and replace all of the following filter numbers:

OEM	AC	Baldwin	Fleetguard	Fram	Purolator	Wix
N/A	TP-936	BF-592	FF235	P2594	PER227F	33121

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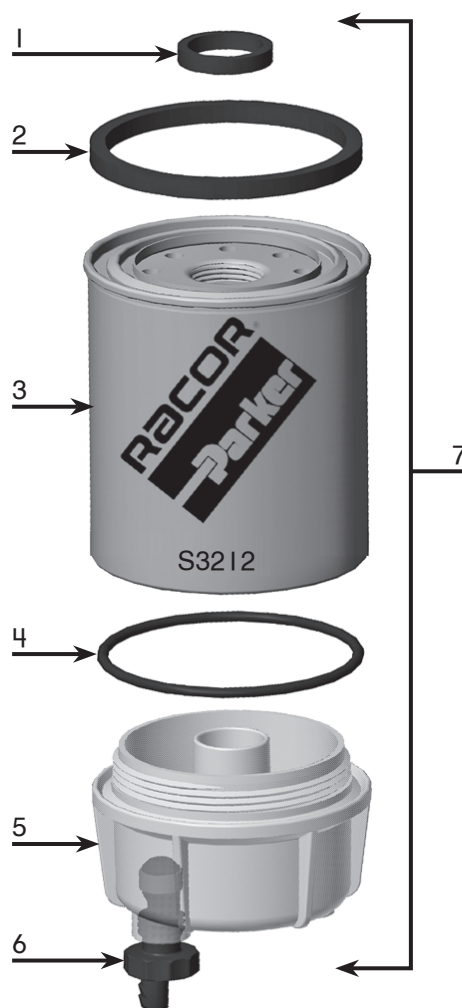


## Engine Spin-on Series

### Replacement Parts

#### B320012/S3212

Part Number	Description
1. <b>30563</b>	Thread Gasket
2. <b>20505</b>	Element Gasket
3. Replacement Elements (includes #'s 1 to 4) <b>S3212</b>	(30 micron)
4. <b>30076</b>	Bowl O-ring
5. <b>RK30475</b>	Clear Bowl Kit (no water sensor port - see note below)
<b>RK30051</b>	Non-heated, Clear Bowl Kit
<b>RK30745-01</b>	Non-heated, Metal Bowl Kit
<b>RK30895</b>	Heated, Clear Bowl Kit (12 vdc, 200 watt, no water sensor port)
<b>RK30924</b>	Heated, Clear Bowl Kit (24 vdc, 200 watt, no water sensor port)
6. <b>RK30476</b>	Self Venting Drain Kit
7. Bowl and Element Assembly (includes #'s 1 - 5) <b>B32012</b>	(30 micron)
Additional Parts (not shown)	
<b>RK30880</b>	Water Detection Kit (other kits are available - see Accessories)
<b>21381</b>	Gasket Pack (includes #'s 1, 2, and 4)



The standard B32012 bowl has no water sensor port. Bowls with water sensor ports are available as replacement kits (see item #5 above). Do not use water sensors on gasoline applications.

# Mobile Fuel Filtration

## Engine Spin-on Series

### How to Order

B32016	S
Basic Model	Specify a micron rating: S (2 micron) T (10 micron) P (30 micron)

Specifications	B32016
<b>Maximum Flow Rate</b>	20 GPH (76 LPH)
<b>Replacement Element:</b> (2 micron) (10 micron) (30 micron)	S3216S S3216T S3216P
<b>Element Height</b>	4.0 in. (10.2 cm)
<b>Bowl and Element Height</b>	5.85 in. (14.9 cm)
<b>Diameter</b>	2.85 in. (7.2 cm)
<b>Center Threads</b>	16 mm X 1.5
<b>Solids Capacity</b>	6.4 oz. (182 grams)
<b>Case Quantity</b>	12
<b>Operating Temperature</b>	-40° to +255°F (-40° to 124°C)



B32016S  
Assembly

### Cross References

All Racor B32016/S3216 replacement elements meet or exceed OEM specifications and replace all of the following filter numbers:

OEM	AC	Baldwin	Fleetguard	Fram	Purolator	Wix
N/A	N/A	BF1267	N/A	N/A	N/A	33392

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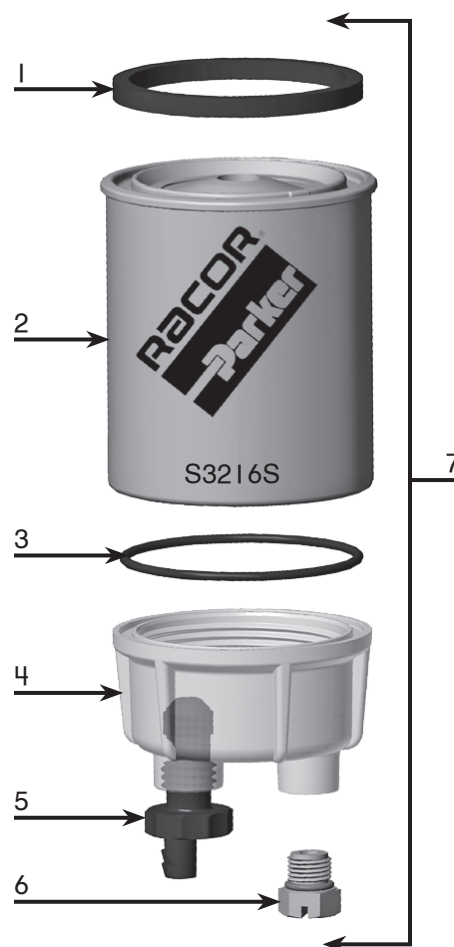


## Engine Spin-on Series

### Replacement Parts

#### B32016/S3216

Part Number	Description
1. <b>10503</b>	Element Gasket
2. Replacement Elements (includes #'s 1 to 3)	
<b>S3216S</b>	(2 micron)
<b>S3216T</b>	(10 micron)
<b>S3216P</b>	(30 micron)
3. <b>10012</b>	Bowl O-ring
4. <b>RK21544</b>	Clear Bowl Kit
<b>RK10215</b>	Non-heated, Clear Bowl Kit
<b>RK10109</b>	Non-heated, Metal Bowl Kit
5. <b>RK30476</b>	Self Venting Drain Kit
6. <b>20126</b>	Water Sensor Port Plug ½" SAE (includes O-ring)
7. Bowl and Element Assembly (includes #'s 1 and 3)	
<b>B32016S</b>	(2 micron)
<b>B32016T</b>	(10 micron)
<b>B32016P</b>	(30 micron)
Additional Parts (not shown)	
<b>RK30880</b>	Water Detection Kit
(other kits are available - see Accessories)	



Do not use water sensors on gasoline applications.

# Mobile Fuel Filtration

## Engine Spin-on Series

Specifications	S3229
<i>Maximum Flow Rate</i>	90 GPH (341 LPH)
<i>Replacement Element: (10 micron)</i>	S3229
<i>Element Height</i>	7.3 in. (18.5 cm)
<i>Bowl and Element Height</i>	10.6 in. (26.9 cm)
<i>Diameter</i>	3.82 in. (9.7 cm)
<i>Center Threads</i>	1"-12
<i>Case Quantity</i>	12
<i>Operating Temperature</i>	-40° to +255°F (-40° to 124°C)

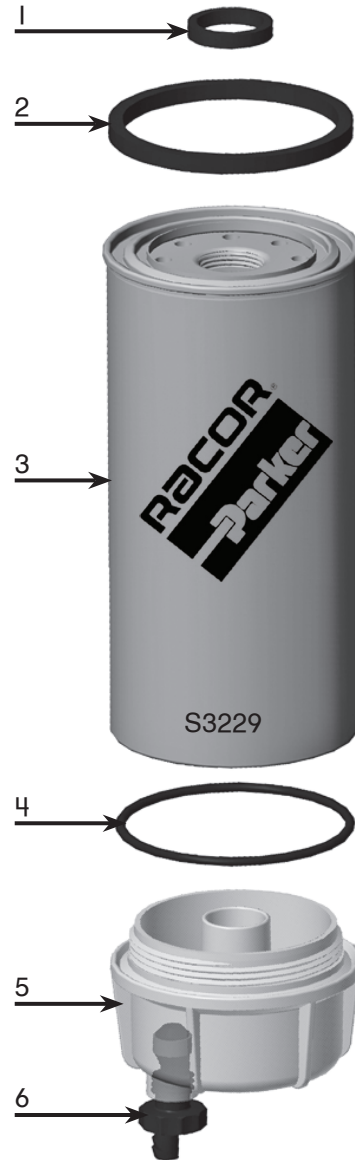


## Engine Spin-on Series

### Replacement Parts

#### S3229

- | Part Number  | Description  |
|--|--|
| 1. <b>30563</b>  | Thread Gasket  |
| 2. <b>20505</b>  | Element Gasket   |
| 3. Replacement Element (includes #'s 1 to 4)<br><b>S3229</b> | (10 micron)  |
| 4. <b>30076</b>  | Bowl O-ring  |
| 5. <b>RK30475</b>  | Standard Bowl Kit<br>(no water sensor port - see notes below)      |
| <b>RK30051</b>   | Non-heated, Clear Bowl Kit   |
| <b>RK30745-01</b>  | Non-heated, Metal Bowl Kit   |
| <b>RK30895</b>   | Heated, Clear Bowl Kit<br>(12 vdc, 200 watt, no water sensor port) |
| <b>RK30924</b>   | Heated, Clear Bowl Kit<br>(24 vdc, 200 watt, no water sensor port) |
| 6. <b>RK30476</b>  | Self Venting Drain Kit   |
- Additional Parts (not shown)
- RK30880** Water Detection Kit  
(other kits are available - see Accessories)
  - 21381** Gasket Pack  
(includes #'s 1, 2, and 4)



The standard B32029 bowl has no water sensor port. Bowls with water sensor ports are available as replacement kits (see item #5 above). Do not use water sensors on gasoline applications.

# Mobile Fuel Filtration

## Engine Spin-on Series

Specifications	S3238
<i>Maximum Flow Rate</i>	150 GPH (568 LPH)
<i>Element Height</i>	6.4 in. (16.3 cm)
<i>Bowl and Element Height</i>	9.9 in. (25.1 cm)
<i>Diameter</i>	4.38 in. (11.1 cm)
<i>Center Threads</i>	1 1/4"-12
<i>Case Quantity</i>	6
<i>Operating Temperature</i>	-40° to +255°F (-40° to 124°C)



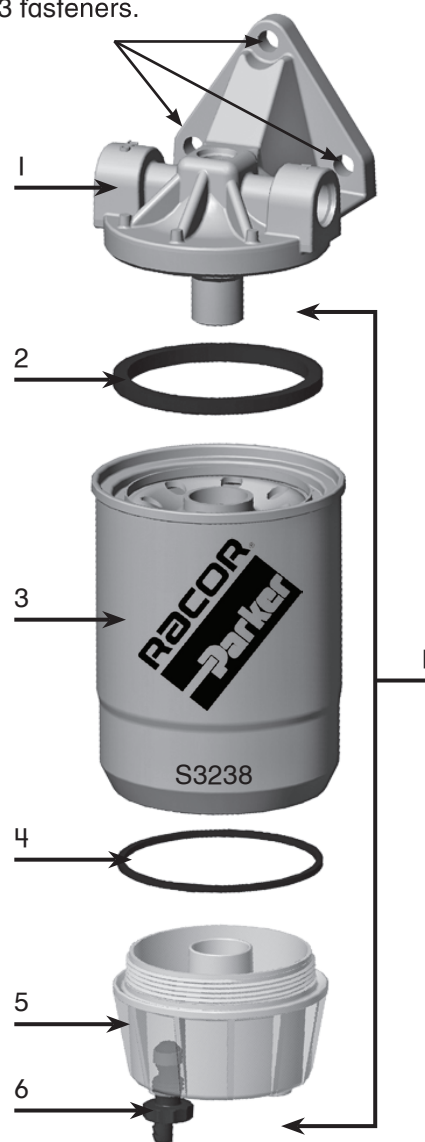
## Engine Spin-on Series

3.25 in. (8.3 cm) diameter  
clearance for 3 fasteners.

### Replacement Parts

#### S3238

- | Part Number   | Description  |
|---|--|
| 1. <b>RK31547</b>   | Optional Mounting Head Kit<br>(7/8"-14 UNF port)                       |
| 2. <b>30604</b>   | Element Gasket   |
| 3. Replacement Elements (includes #'s 2 to 4)<br><b>S3238</b>       | (10 micron)  |
| 4. <b>30965</b>   | Bowl O-ring  |
| 5. <b>RK30480</b>   | Clear Bowl Kit<br>(no water sensor port - see note below)              |
| <b>RK30063</b>  | Non-heated, Clear Bowl Kit   |
| <b>RK21640</b>  | Non-heated, Metal Bowl Kit   |
| <b>RK30900</b>  | Heated, Clear Bowl Kit<br>(12 volt dc, 200 watt, no water sensor port) |
| <b>RK30925</b>  | Heated, Clear Bowl Kit<br>(24 volt dc, 200 watt, no water sensor port) |
| 6. Bowl and Element Assembly (includes #'s 2 - 5)<br><b>B32038T</b> | (10 micron)  |
| Additional Parts (not shown)  |  |
| <b>RK30880</b>  | Water Detection Kit<br>(other kits are available - see Accessories)    |
| <b>22311</b>  | Gasket Pack<br>(includes #'s 2 and 4)                                  |



The standard B32038 bowl has no water sensor port. Bowls with water sensor ports are available as replacement kits (see item #5 above). Do not use water sensors on gasoline applications.

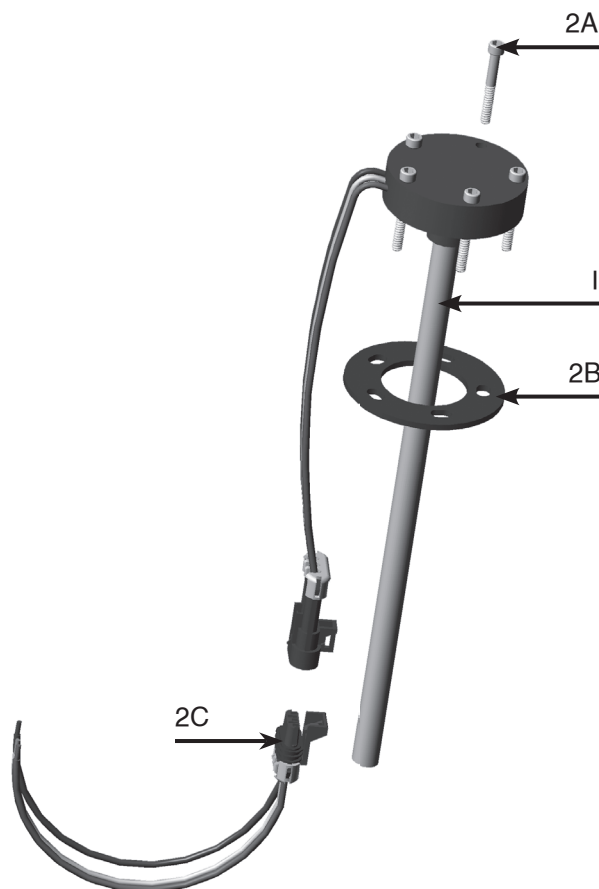




## FS240 Series Fuel Senders

Racor FS240 Series Electronic Fuel Senders are rugged and reliable, 100% solid state and designed for use in any 12 or 24 volt petroleum based product. They provide a continuous readout of the fuel level in the tank, and eliminate the need to continuously replace mechanical senders. FS240 Fuel Senders can be used in either stand alone application or they can be integrated with our Hot STK fuel heaters.

The FS240 Electronic Fuel Sender consist of a sensor probe and an amplifier which is located in the mounting plate assembly. All components are encapsulated in an epoxy resin to seal out moisture and other contaminants which could affect the operation of the unit. The mounting plate assembly uses the same standard, 5 hole SAE mounting bolt pattern as mechanical float sending units. They fit 12" to 30" tanks and are compatible with 0-33 ohm fuel gauges or (meters). The meter (receiving unit) can either be remotely located close by, or in your dash. FS240 Series Fuel Senders can drive either one or two meters simultaneously (switching between the meters is not required).



## How to Order

(The examples below illustrate how part numbers are constructed).

FS240/	20
Basic Model Number	Specify a Tank Diameter: 20, 21, 22, 23, 24, 25, 26, or 27
Note: Additional lengths and styles are available; contact Racor Technical Support.	

### FS240 Replacement Part List

Part No.	Description
1. FS240/	Basic Fuel Sender Assembly
2. FS2703K	Mounting Kit
	Includes:
	A. (5) 10/32" x 1.5" Screws
	B. (1) Adaptor Plate Gasket
	C. (1) Female Pigtail



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 www.parker.com/racor



# Mobile Fuel Filtration

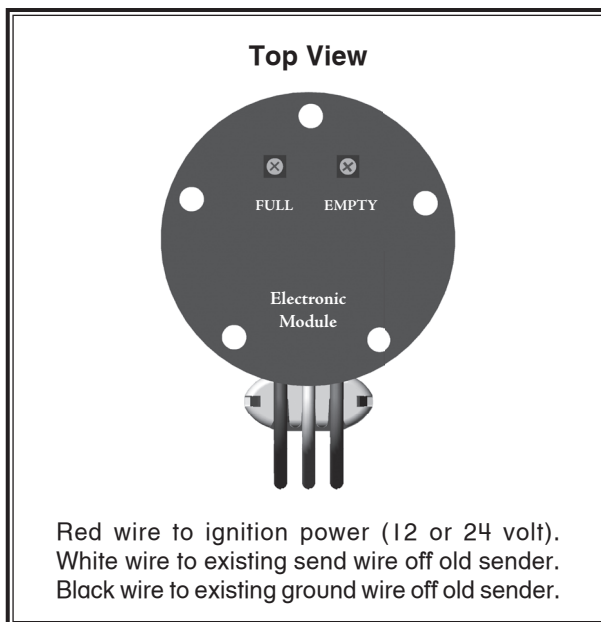
## FS240 Series Fuel Senders

### General Instructions

Disconnect battery before beginning. Do not over-tighten mounting bolts; torque to a MAXIMUM of 15 in. lbs. This unit is calibrated at the factory for the EMPTY setting. The FULL setting may require a slight adjustment. Adjustment screws are located on top of module. Note: When ignition switch is on, fuel sender will show FULL for a few seconds, then drop back to the actual fuel level.

### Wiring Instructions

Ground existing wire directly to frame using appropriate fasteners and ring terminals.



Note: If excess water is present in fuel tank, sender will show a false FULL reading until excess water is removed.

### Re-calibration Instructions

Racor Electronic Fuel Senders are preset at the factory. Due to variance in fuel gauges and fuel tank filler neck placement, the fuel gauge may not show exactly FULL. The EMPTY level is nonadjustable. Note: Re-calibrate FULL level ONLY if needle variance is too extreme.

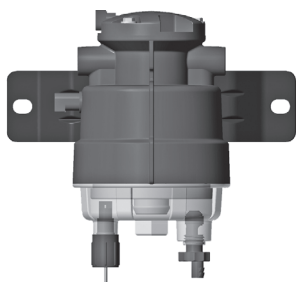
1. Calibration procedures require two people (one to monitor fuel gauge, another to set adjustment screw). Note: Verify tank is full of fuel.
2. Turn ignition switch on.
3. Make adjustments carefully with small Phillips screwdriver. It may be necessary to remove silicone sealant from adjustment screw before adjustments are possible. Caution: Be careful when removing silicone sealant to avoid damage to adjustment screw.
4. Carefully turn FULL adjustment screw to full clockwise position.
5. Turn adjustment screw counter-clockwise very slowly, as a small rotation will cause a large needle movement. Keep turning until desired location is obtained on fuel gauge. If needle passes desired location, repeat procedure by turning screw clockwise until needle moves above desired position and then turn adjustment screw counter-clockwise again. Always set as needle is falling.
6. After calibration is complete, seal adjustment screws with a generous coat of a silicone sealant.

Warning: Use of other than Racor components can cause damage and voids warranty.

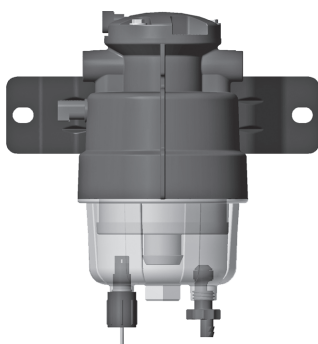
**RACOR**

Technical Support:  
800.344.3286 ext. 7555  
racortech@parker.com

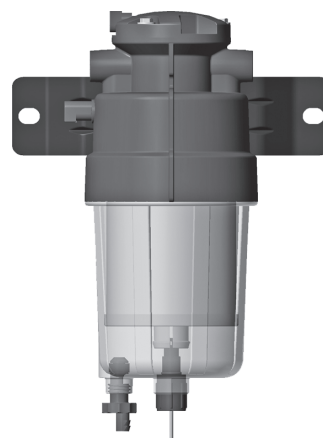
## P Series



P3



P4



P5

The Racor P Series filter assemblies are designed and manufactured to provide the highest possible value to the diesel engine, vehicle and equipment. The innovative and modular design of the P Series incorporates all of the low pressure fuel components required by the latest generation of electronically-controlled fuel injection systems. The consistent pressure and volume delivery of pure fuel under various engine speed, load and environmental conditions, are absolutely essential to achieve the efficiency levels required in today's engines. The modular design of the P Series allows features to be added or deleted independent of one another – providing a new level of design flexibility.

The P Series assemblies are available in three sizes and all feature 3/8" NPT inlet and outlet fuel ports and clear collection bowls.

### Features and Benefits

- A durable, 12 vdc roller-cell electric fuel pump offers the benefit of an electric, on demand priming pump. Fuel flow will bypass pump when not in use
- A thermostatically controlled PTC style electric (150 watt) heater for cold weather starting.
- The high performance Aquabloc®II cartridge style filter media has greater contaminant holding capacity, is environmentally friendly and can be incinerated.
- A clear removable and reusable contaminant collection bowl is standard on all models.
- A self-venting drain makes draining water quick and easy.
- A water-in-fuel (WIF) sensor alerts the operator when service is required.
- A under-dash control module for pump and water sensor operation is included with pump option.

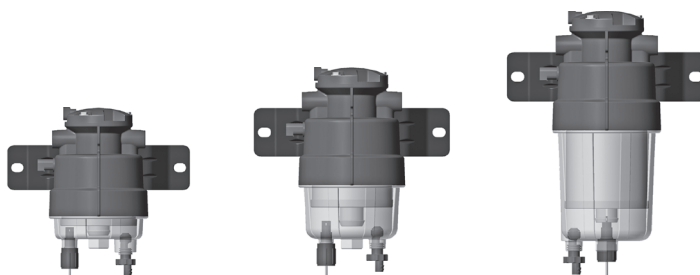


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# Mobile Fuel Filtration

## P Series



Specifications	P3	P4	P5
<b>Maximum Flow Rate</b>	30 GPH (114 LPH)	40 GPH (170 LPH)	50 GPH (227 LPH)
<b>Clean Pressure Drop</b>	0.4 PSI (2.8 kPa)	0.5 PSI (3.4 kPa)	0.8 PSI (5.5 kPa)
<b>Maximum Pump Output (at 14.4 volts)</b>	40 GPH (151 LPH)	40 GPH (151 LPH)	40 GPH (151 LPH)
<b>Standard Fuel Port Size (SAE J476)</b>	3/8"-18 NPT	3/8"-18 NPT	3/8"-18 NPT
<b>Number of Ports Available:</b> (fuel inlets) (fuel outlets)	2   	2   	2   
<b>Replacement Elements:</b> (2 micron) (10 micron) (30 micron)	R58060-02 R58060-10 R58060-30	R58095-02 R58095-10 R58095-30	R58039-02 R58039-10 R58039-30
<b>Minimum Service Clearance</b>	2.5 in. (2.8 cm)	2.5 in. (2.8 cm)	2.5 in. (2.8 cm)
<b>Height</b>	7.7 in. (19.6 cm)	9.0 in. (23.0 cm)	11.5 in. (29.2 cm)
<b>Depth</b>	5.2 in. (13.2 cm)	5.2 in. (13.2 cm)	5.2 in. (13.2 cm)
<b>Width (with bracket)</b>	8.8 in. (22.4 cm)	8.8 in. (22.4 cm)	8.8 in. (22.4 cm)
<b>Weight (dry)</b>	3.4 lb (1.5 kg)	3.8 lb (1.7 kg)	4.2 lb (1.9 kg)
<b>Maximum Pump Outlet Pressure</b>	10 PSI (0.7 bar)	10 PSI (0.7 bar)	10 PSI (0.7 bar)
<b>Features:<sup>1</sup></b> Water Sensor Heater Pressure Regulator (10 PSI) Pump By-pass Flow Valve	Standard Standard Standard Standard	Standard Standard Standard Standard	Standard Standard Standard Standard
<b>H<sub>2</sub>O Removal Efficiency</b>	99%		
<b>Operating Temperature</b>	-40° to +255°F (-40° to +124°C)		

Vacuum installations are recommended. <sup>1</sup> Do not use on gasoline applications.

**RACOR**<sup>®</sup>

Technical Support:  
800.344.3286 ext. 7555  
racortech@parker.com

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**Parker**

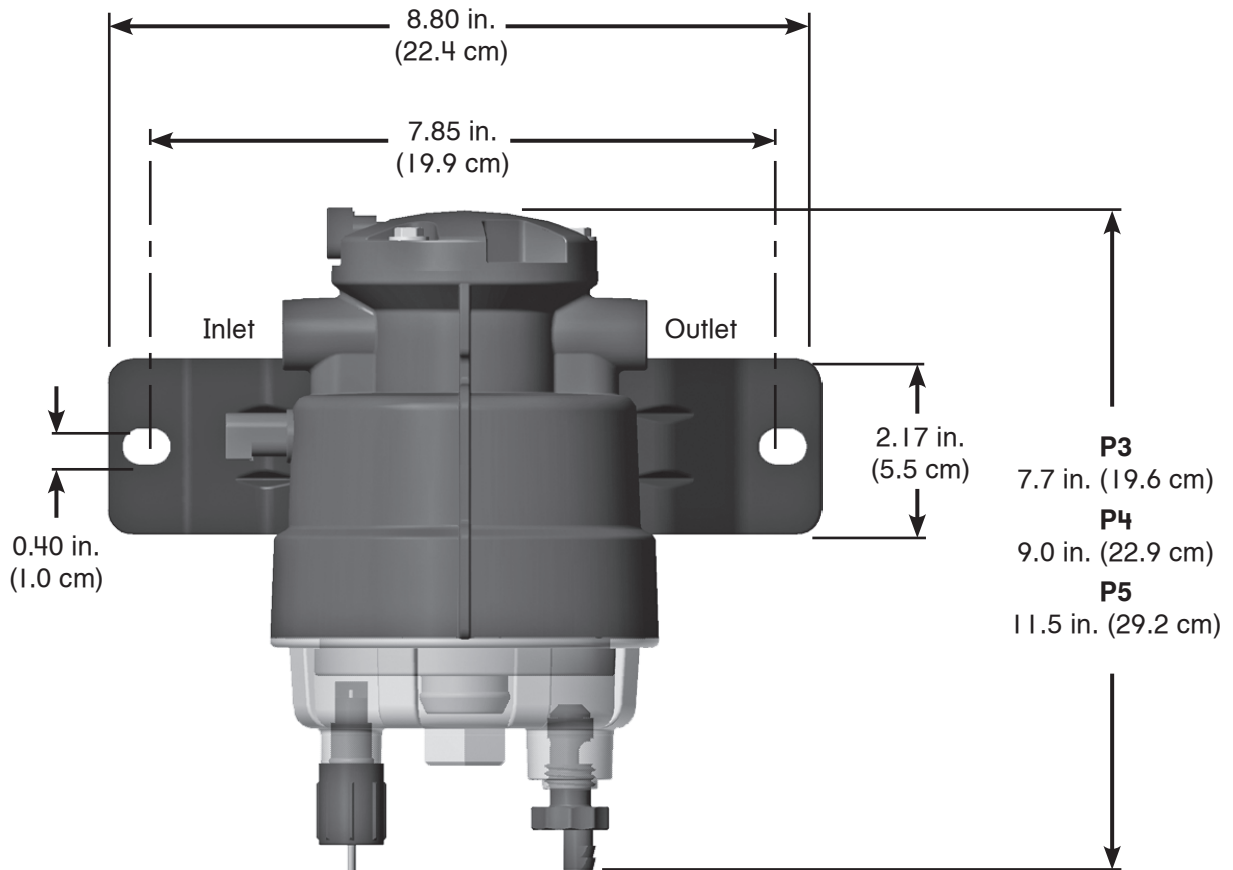
## P Series

### How to Order

P4	2	10	N	H
Specify a flow rate: P3 for 30 GPH, P4 for 40 GPH, or P5 for 50 GPH	2 must be in the part number. (It specifies a 12 vdc pump)	Specify micron rating: 02 for 2 micron, 10 for 10 micron, or 30 for 30 micron	N must be in the part number. (It specifies standard 3/8" NPT ports)	H must be in the part number. (It specifies a 12 vdc, 150 watt heater)

For continuous run pump operation, contact Technical Support at number listed below.

### Mounting Information



# Mobile Fuel Filtration

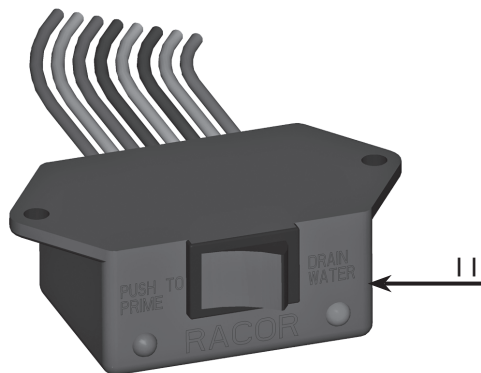
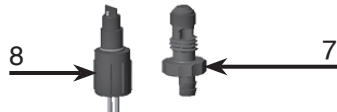
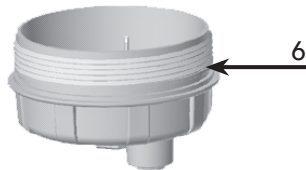
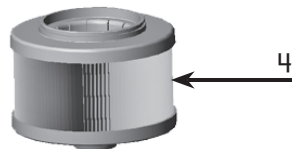
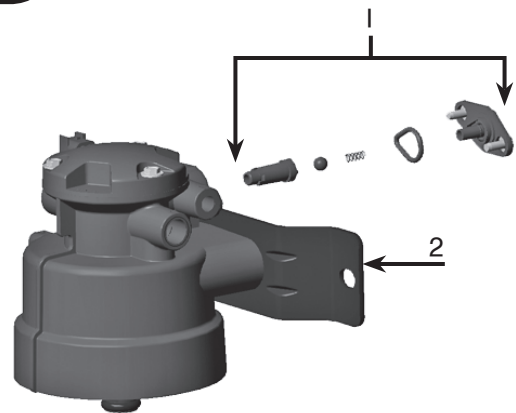
## P Series

### Replacement Parts

P3, P4 and P5

Part Number	Description
1. <b>RK58075</b> <sup>1</sup>	Pressure Regulator
2. <b>RK58109</b> <sup>1</sup>	Bracket Kit
3. <b>58066</b> <sup>1</sup>	Element O-ring
4. Replacement Elements (see Specifications chart) (includes #3)	
5. <b>22099</b> <sup>1</sup>	Bowl O-ring
6. Clear Bowls (includes #'s 5 to 8)	
<b>58179</b>	P3 (shown)
<b>58180</b>	P4
<b>58181</b>	P5
7. <b>RK30476</b> <sup>1</sup>	Drain Valve Kit (includes # 5)
8. <b>RK21069</b> <sup>1</sup>	Water Probe Kit
9. <b>RK58107</b> <sup>1</sup>	6-Way Electrical Harness Kit (includes #9)
10. <b>58137</b> <sup>1</sup>	Mating Connector Harness
11. <b>58132</b> <sup>1</sup>	Under-dash Control Panel

**Notes:** <sup>1</sup> For use with all models.



**RACOR**

Technical Support:  
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racortech@parker.com

## ParFit™ Products

For on/off highway vehicles and stationary equipment, ParFit fuel filter products protect expensive system components not only from microscopic solid contaminants, but from damaging water as well. ParFit products are engineered and manufactured to meet stringent quality requirements and Original Equipment Manufacturer (OEM) specifications for service life and efficiency.

When you specify ParFit filters, you know you're doing everything you can to protect your equipment, extend its life-cycle and effectiveness, and improve your bottom line. Models are available for direct spin-on replacement and with integral, die cast aluminum heads. The complete ParFit series includes OEM replacement filter/separators for the most popular diesel engines including: Navistar, Cummins, Detroit Diesel, Ford and Caterpillar. This means that you get the engine protection you want at a very competitive price.



And many more...



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[www.parker.com/racor](http://www.parker.com/racor)





# Mobile Fuel Filtration

**ParFit™** Products

## 100 Series

Specifications	PF101
<b>Maximum Flow Rate</b>	65 GPH (246 LPH)
<b>Maximum Working Pressure:</b>	25 PSI (172 kPa)
<b>Element Part Number:</b> (2 micron) (10 micron) (30 micron)	N/A PF101-10 N/A
<b>Height</b>	3.25 in. (8.3 cm)
<b>Diameter</b>	4.25 in. (10.8 cm)
<b>Weight (dry)</b>	0.4 lb (0.2 kg)
<b>Operating Temperature</b>	-50° to +225°F (-45° to +107°C)



## 200 Series

Specifications	PF201
<b>Maximum Flow Rate</b>	120 GPH (454 LPH)
<b>Maximum Working Pressure:</b>	25 PSI (172 kPa)
<b>Element Part Number:</b> (2 micron) (10 micron) (30 micron)	PF201-02 PF201-10 PF201-30
<b>Height</b>	4.6 in. (11.7 cm)
<b>Diameter</b>	6.1 in. (10.8 cm)
<b>Weight (dry)</b>	1.0 lb (0.5 kg)
<b>Operating Temperature</b>	-50° to +225°F (-45° to +107°C)



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**ParFit™** Products

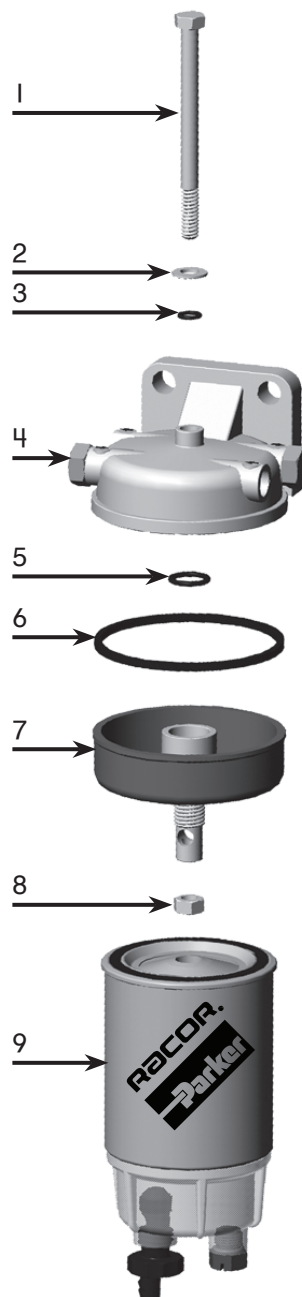
## *PFCAV Filter Adapter Kit*

Filter adapter kit PFCAV converts old C.A.V. filter head canister and glass bowl units into a spin-on filter assembly. This kit allows the use of Racor B32008 or B32016 spin-on filters that feature patented clear spin-on contaminant collection bowls and self-venting drains.

**Fits:**

- Ford
- Perkins
- Massey
- Saab
- Volvo-Penta
- Ford Lehman engines, up to 70 HP.

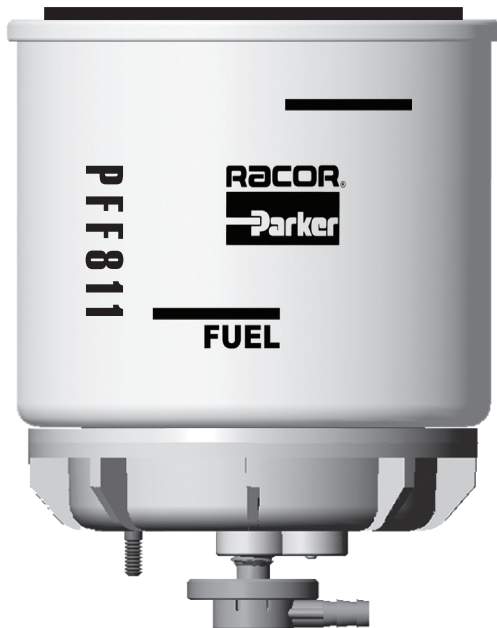
PFCAV Adapter Kit includes numbers 1, 2, 3, 5, 6, 7, and 8. Number 4 is the CAV mounting head and number 9 is a Racor B32016 filter assembly.



# Mobile Fuel Filtration

Par*Fit*™ Products

## PFBF811



Specifications	PFBF811
<i>Application</i>	6.9L Ford E & F Series Diesel Engines
<i>Maximum Flow Rate</i>	20 GPH (75.7 LPH)
<i>Maximum Working Pressure</i>	30 PSI (2.1 bar)
<i>Element Part Number</i>	PFF811 (7 micron)
<i>Height (with metal bowl)</i>	5.5 in. (14 cm)
<i>Diameter</i>	4.3 in. (11.0 cm)
<i>Center Threads</i>	□-14 UNS
<i>Solids Capacity</i>	12.3 oz (350 g)
<i>Weight (dry)</i>	1.2 lb (0.5 kg)
<i>H<sub>2</sub>O Removal Efficiency</i>	99%
<i>Operating Temperature</i>	-50° to +225°F (-45° to +107°C)

## Cross Reference

Ford	Navistar	Motorcraft
E3TZ-9155-A	1804459-C1	FD-811

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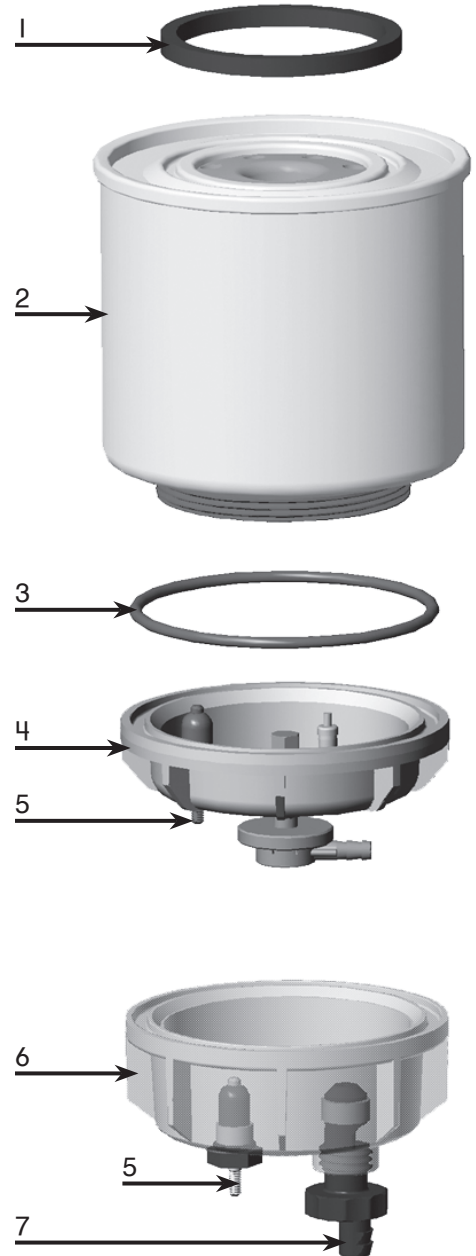


**ParFit™** Products

## Replacement Parts

### PFBF811

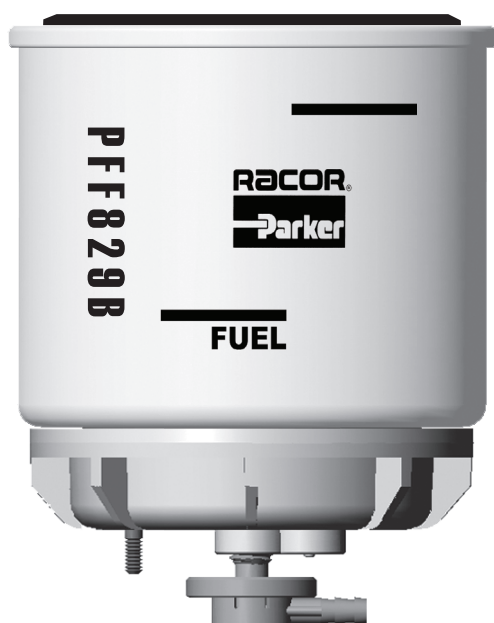
	Part Number	Description
1.	<b>RK10503</b>	Element Gasket Kit
2.	<b>PFF811</b>	Replacement Element (includes #'s 1 & 3)
3.	<b>RK21156</b>	Bowl O-ring Kit
4.	<b>PFRK20567</b>	Metal Bowl Kit (includes #'s 3, 4 & 5)
5.	<b>20234</b>	Water Probe
6.	<b>PFRK21057</b>	Optional Clear Bowl Kit (includes #'s 3, 5, 6 & 7)
7.	<b>RK30476</b>	Self-venting Drain Kit



# Mobile Fuel Filtration

Par*Fit*™ Products

## PFF829B



Specifications	PFF829B
<b>Application</b>	Navistar 7.3L Diesel Engines in Ford E & F Series Vehicles
<b>Maximum Flow Rate</b>	20 GPH (75.7 LPH)
<b>Maximum Working Pressure</b>	30 PSI (2.1 bar)
<b>Element Part Number</b>	PFF829B (2 micron)
<b>Height (with metal bowl)</b>	5.5 in. (14 cm)
<b>Diameter</b>	4.3 in. (11.0 cm)
<b>Center Threads</b>	1-14 UNS
<b>Solids Capacity</b>	12.3 oz (350 g)
<b>Weight (dry)</b>	1.2 lb (0.5 kg)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%
<b>Operating Temperature</b>	-50° to +225°F (-45° to +107°C)

## Cross Reference

Fleet Guard	Wix	Luber Finer	Baldwin	Donaldson	Fram
FS1278 FS1281	33217 33217MP	LFF5824 LFF5824B	BF1222 BF1222SP	P553375	PS6554 PS6554A

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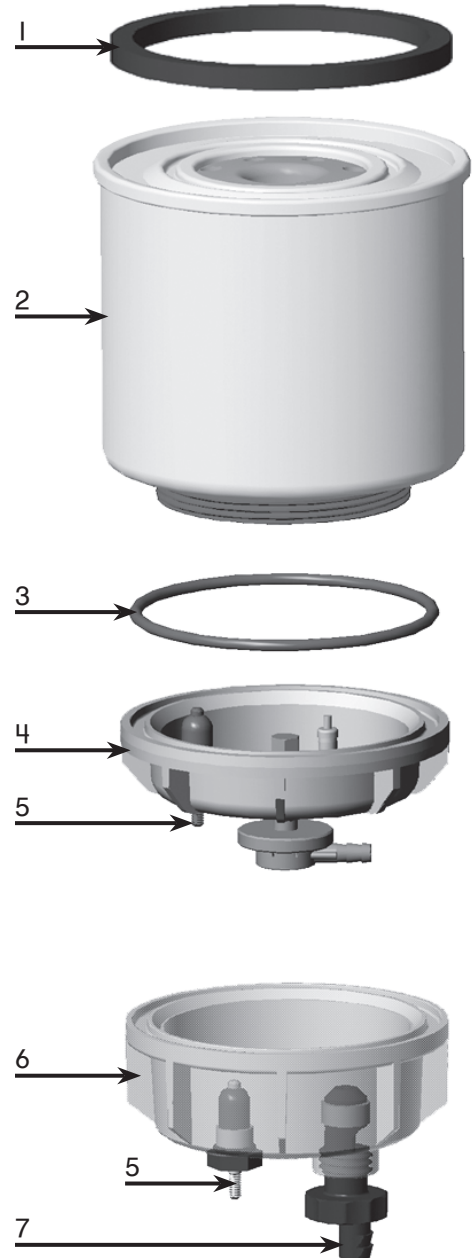


ParFit™ Products

## Replacement Parts

### PFF829B

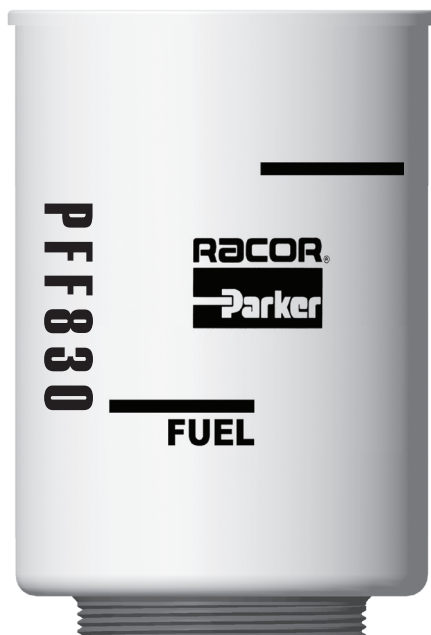
	<u>Part Number</u>	<u>Description</u>
1.	<b>RK22061</b>	Element Gasket Kit
2.	<b>PFF829B</b>	Replacement Element (includes #'s 1 & 3)
3.	<b>RK21156</b>	Bowl O-ring Kit
4.	<b>PFRK20567</b>	Metal Bowl Kit (includes #'s 3, 4 & 5)
5.	<b>20234</b>	Water Probe
6.	<b>PFRK21057</b>	Optional Clear Bowl Kit (includes #'s 3, 5, 6 & 7)
7.	<b>RK30476</b>	Self-venting Drain Kit



# Mobile Fuel Filtration

ParFit™ Products

## PFF830



Specifications	PFF830
<b>Application</b>	Navistar 7.3L medium duty trucks & buses with diesel engines.
<b>Maximum Flow Rate</b>	30 GPH (114 LPH)
<b>Maximum Working Pressure</b>	30 PSI (2.1 bar)
<b>Micron Rating</b>	40 micron
<b>Height:</b> (with bowl) (without bowl)	6.0 in. (15.2 cm) 5.25 in. (13.3 cm)
<b>Diameter</b>	4.3 in. (11.0 cm)
<b>Center Threads</b>	1-14 UNS
<b>Solids Capacity</b>	13.9 oz (395 g)
<b>Weight (dry)</b>	1.2 lb (0.5 kg)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%
<b>Operating Temperature</b>	-50° to +225°F (-45° to +107°C)

## Cross Reference

Fleet Guard	Wix	Luber Finer	Baldwin	Donaldson	Fram
FS1291 FS19547 FS79551	33232 33411	LFF3579 LFF1223 LFF3290 LFF3292	BF1345 BF1345SP BF1223 BF1329 BF1348, BF1349	P550729	PS8186 PS7713 PS7170

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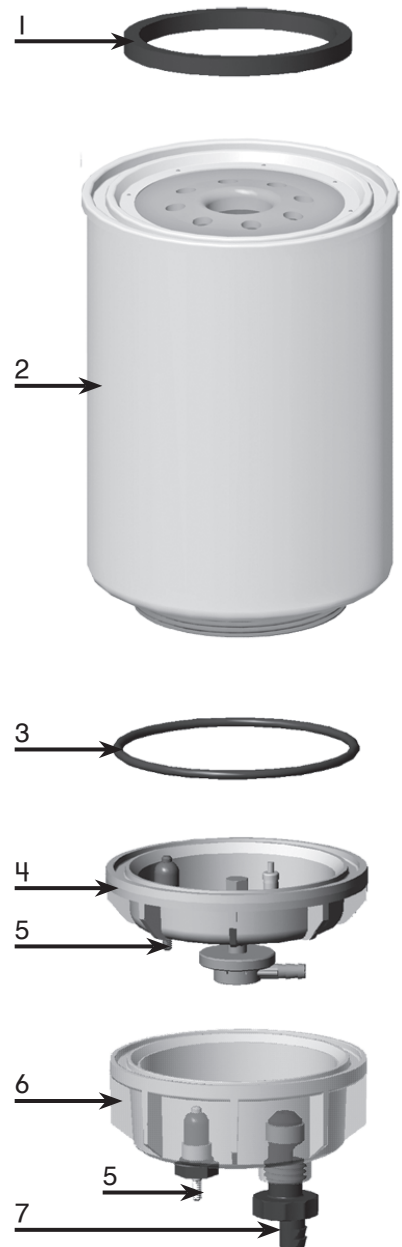


**ParFit™** Products

## Replacement Parts

### PFF830

	<u>Part Number</u>	<u>Description</u>
1.	<b>21370</b>	Element Gasket
2.	<b>PFF830</b>	Replacement Element (includes #'s 1, 2 & 3)
3.	<b>RK21156</b>	Bowl O-ring
4.	<b>PFRK20567</b>	Optional Metal Bowl Kit (includes #'s 3, 4 & 5)
5.	<b>20234</b>	Water Probe
6.	<b>PFRK21057</b>	Optional Clear Bowl Kit (includes #'s 3, 5, 6 & 7)
7.	<b>RK30476</b>	Self-venting Drain Kit

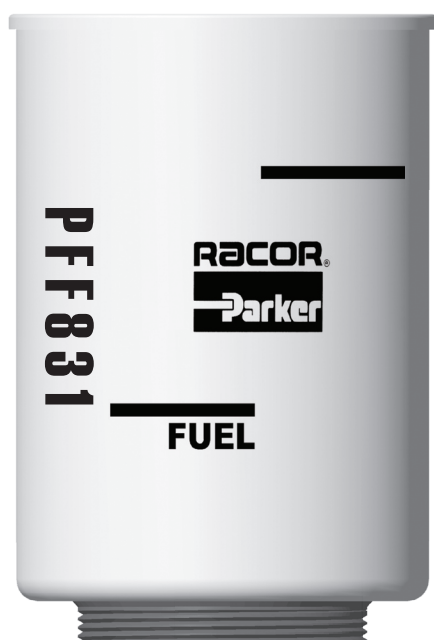




# Mobile Fuel Filtration

**ParFit™** Products

## PFF831



Specifications	PFF831
<b>Application</b>	Navistar 6400 Series with diesel engines
<b>Maximum Flow Rate</b>	30 GPH (114 LPH)
<b>Maximum Working Pressure</b>	30 PSI (2.1 bar)
<b>Micron Rating</b>	40 micron
<b>Height:</b> (with bowl) (without bowl)	5.5 in. (14 cm) 4.0 in. (10.2 cm)
<b>Diameter</b>	4.3 in. (11.0 cm)
<b>Center Threads</b>	1-14 UNS
<b>Solids Capacity</b>	13.9 oz (395 g)
<b>Weight (dry)</b>	1.2 lb (0.5 kg)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%
<b>Operating Temperature</b>	-50° to +225°F (-45° to +107°C)

## Cross Reference

Fleet Guard	Wix	Luber Finer	Baldwin	Donaldson	Fram
FS1287 FS19532 FS19551	33231 33411	LFF3345 LFF5766 LFF8038 LFF8063 LFF8957	BF1223 BF1223SP	P550730	PS7716 PS8187 PS8486

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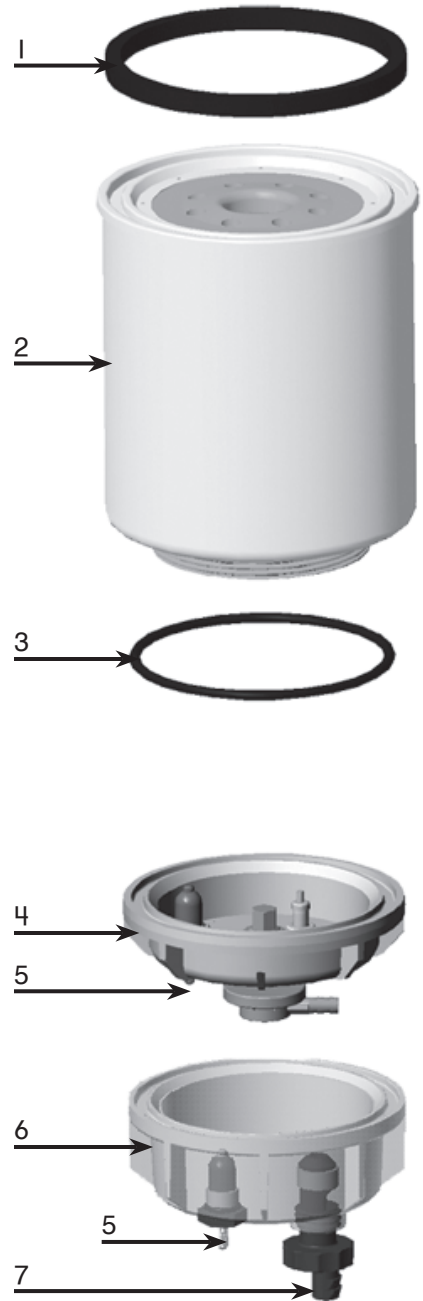


ParFit™ Products

## Replacement Parts

### PFF83I

	<u>Part Number</u>	<u>Description</u>
1.	<b>21370</b>	Element Gasket
2.	<b>PFF83I</b>	Replacement Element (includes #'s 1, 2 & 3)
3.	<b>RK21156</b>	Bowl O-ring
4.	<b>PFRK20567</b>	Optional Metal Bowl Kit (includes #'s 3, 4 & 5)
5.	<b>20234</b>	Water Probe
6.	<b>PFRK21057</b>	Optional Clear Bowl Kit (includes #'s 3, 5, 6 & 7)
7.	<b>RK30476</b>	Self-venting Drain Kit



# Mobile Fuel Filtration

**ParFit™** Products

## Fuel Dispensing Elements



Specifications	PFFDW3525	PFFDW3825	PFFDW51125
<b>Maximum Flow Rate</b>	450 GPH (1703 LPH)	900 GPH (3406 LPH)	3000 GPH (11356 LPH)
<b>Max. Working Pressure</b>	100 PSI (689.6 kPa)	100 PSI (689.6 kPa)	100 PSI (689.6 kPa)
<b>Micron Rating</b>	25	25	25
<b>Height</b>	5.0 in. (12.7 cm)	8.0 in. (20.3 cm)	11.0 in. (27.9 cm)
<b>Diameter</b>	4.0 in. (10.2 cm)	4.0 in. (10.2 cm)	5.0 in. (12.7 cm)
<b>Center Threads</b>	1"-12	1"-12	1.5"-16
<b>Solids Capacity</b>	0.5 oz. (15.6 g)	1.0 oz. (28.7 g)	2.0 oz (56.5 g)
<b>Water Capacity</b>	8.4 oz. (0.2 L)	15.4 oz. (0.5 L)	30.3 oz (0.9 L)
<b>Weight (dry)</b>	1.2 lb (0.5 kg)	1.5 lb (0.7 kg)	2.8 lb (1.3 kg)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%		
<b>Operating Temperature</b>	-50° to +225°F (-45° to +107°C)		

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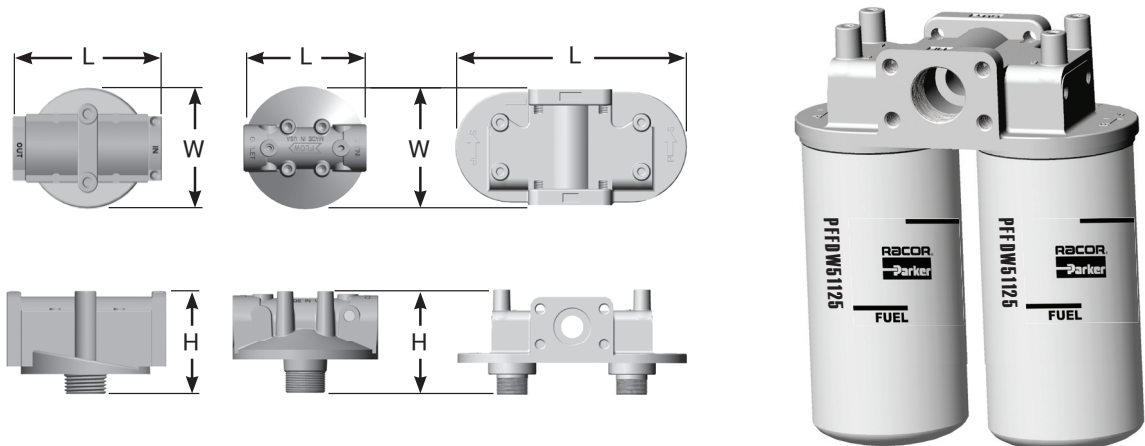
**ParFit™** Products

## Optional Mounting Heads



Specifications	PFHH07500	PFFDH12500	23179001**
<b>Maximum Flow Rate</b>	900 GPH (3,406 LPH)	3000 GPH (11,356 LPH)	6000 GPH (22,712 LPH)
<b>Fuel Ports</b>	0.75" NPT	1.25" NPT	1.5" NPT
<b>Height</b>	2.5 in. (6.4 cm)	3.5 in. (8.9 cm)	4.5 in. (11.4 cm)
<b>Length</b>	3.8 in. (9.7 cm)	5.3 in. (13.5 cm)	11.3 in. (28.7 cm)
<b>Width</b>	3.0 in. (7.6 cm)	5.3 in. (13.5 cm)	5.5 in. (14.0 cm)
<b>Weight</b>	0.7 lb (0.3 kg)	1.3 lb (0.6 kg)	6.0 lb (2.7 kg)
<b>Gasket Pack (5 pc)</b>	N/A	INGCSG100	INGCSG100
<b>Operating Pressure</b>	100 PSI (6.9 bar)	100 PSI (6.9 bar)	100 PSI (6.9 bar)

\*\*23179001 dual head. Please call Racor Hydraulic Division to order (209-521-7860).



# Mobile Fuel Filtration

**ParFit™** Products

## PFF19528



Specifications	PFF19528
<b>Application</b>	1998 & 1999 Dodge Trucks w/Cummins Diesel Engines
<b>Maximum Working Pressure</b>	30 PSI (2.1 bar)
<b>Micron Rating</b>	2 micron
<b>Height</b>	4.4 in. (11.2 cm)
<b>Diameter</b>	3.6 in. (9.1 cm)
<b>Solids Capacity</b>	5.1 oz (144 g)
<b>Weight (dry)</b>	0.4 lb (0.2 kg)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%
<b>Operating Temperature</b>	-50° to +225°F (-45° to +107°C)

## Cross Reference

Fleet Guard	Wix	Luber Finer	Baldwin	Donaldson	Fram
FS19522 FS19528	33349	L5021F	PF7610 PF7651 PF7751	P551310	CS8323

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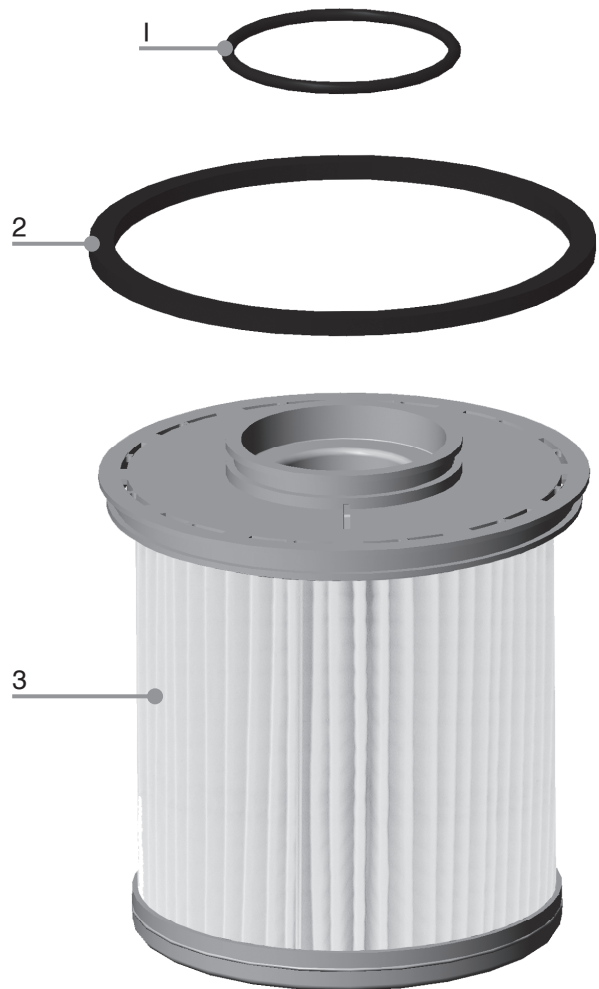
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**ParFit™** Products

## Replacement Parts

### PFF19528

	<u>Part Number</u>	<u>Description</u>
1.	<b>54009</b>	Element O-ring
2.	<b>54010</b>	Housing Gasket
3.	<b>PFF19528</b>	Replacement Element (includes #'s 1 & 2)
	Additional Parts (not shown)	
	<b>54039</b>	Gasket Pack (includes #'s 1 & 2)



# Mobile Fuel Filtration

ParFit™ Products

## PFF32423



Specifications	PFF32423
<b>Application</b>	International DT466, DT570 and HT570 Engines
<b>Cross References</b>	Navistar: 1822588C1 Fleetguard: FFO526904
<b>Maximum Flow Rate</b>	45 GPH (173 LPH)
<b>Working Pressure</b>	60 PSI (4.1 bar)
<b>Micron Rating</b>	2 micron
<b>Height</b>	7.5 in. (19.1 cm)
<b>Diameter</b>	4.4 in. (11.2 cm)
<b>Solids Capacity</b>	14.1 oz (400 g)
<b>Weight (dry)</b>	1.5 lb (0.7 kg)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%
<b>Operating Temperature</b>	-50° to +225°F (-45° to +107°C)

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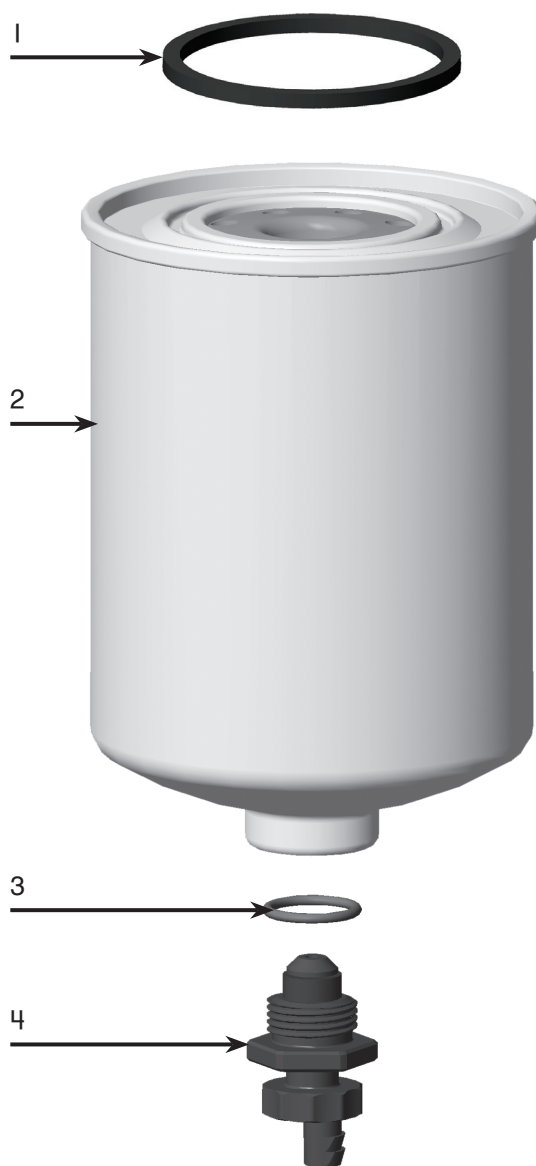
## Replacement Parts

### PFF32423

	<u>Part Number</u>	<u>Description</u>
1.	<b>RK10503</b>	Element Gasket
2.	<b>PFF32423</b>	Replacement Element (includes #'s 1, 2, 3 & 4)
3.	<b>RK11340</b>	Drain O-ring Kit
4.	<b>RK30488</b>	Drain Kit (includes #3)

Additional Parts (not shown)

**32427** Gasket Pack  
(includes #'s 1, 3 & 4)





# Mobile Fuel Filtration

**ParFit™** Products

## PFF4595



Specifications	PFF4595
<b>Application</b>	7.3L Navistar T444E Powerstroke: 1994 - 1999
<b>Micron Rating</b>	2 micron
<b>Maximum Flow Rate</b>	20 GPH (76 LPH)
<b>Height</b>	4.0 in. (10.2 cm)
<b>Diameter</b>	3.5 in. (8.9 cm)
<b>Weight (dry)</b>	0.4 lb (5.8 oz.)
<b>Solids Capacity</b>	12.3 oz (350 g)
<b>Lid Gasket Part Number</b>	31226
<b>H<sub>2</sub>O Removal Efficiency</b>	99%
<b>Operating Temperature</b>	-50° to +225°F (-45° to +107°C)

## Cross Reference

Fleet Guard	Wix	Luber Finer	Baldwin	Donaldson	Fram	Motorcraft
FS1298	33517	L3508F	PF7578 PF7678	P550966	CS8323	FD4595

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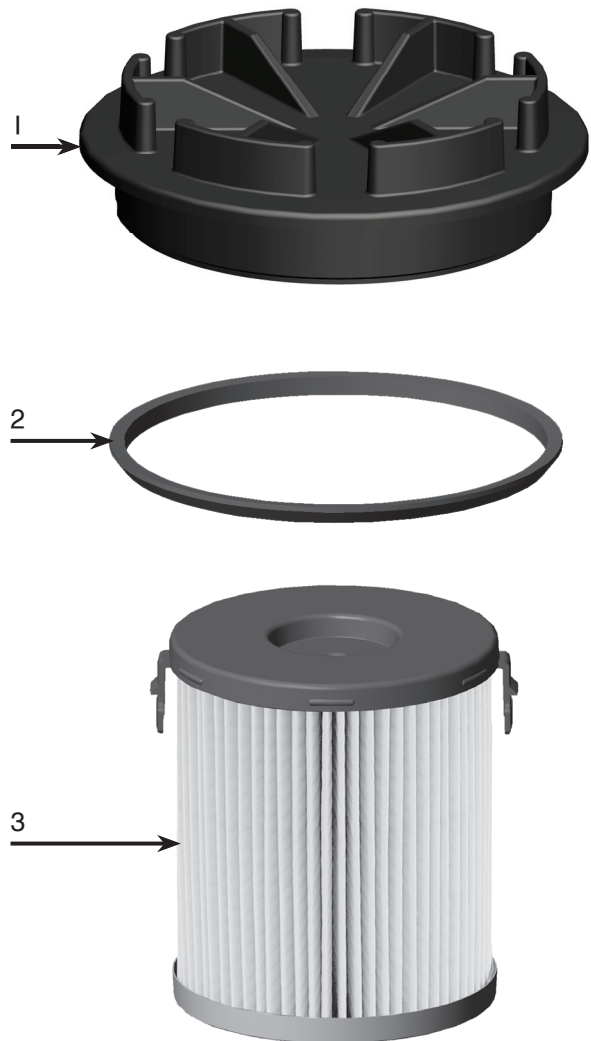
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## Replacement Parts

### PFF4595

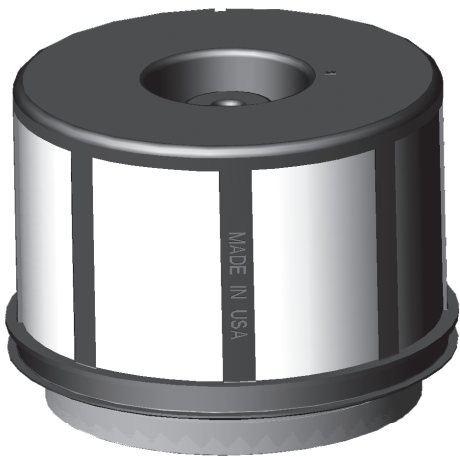
	<u>Part Number</u>	<u>Description</u>
1.	<b>RK31449</b>	Filter Cap Kit
2.	<b>31025</b>	Gasket
3.	<b>PFF4595</b>	Element



# Mobile Fuel Filtration

**ParFit™** Products

## PFF4596



Specifications	PFF4596
<b>Application</b>	7.3L Navistar T444E Powerstroke: 1999 - current
<b>Maximum Flow Rate</b>	20 GPH (76 LPH)
<b>Maximum Working Pressure</b>	30 PSI (2.1 bar)
<b>Micron Rating</b>	7 micron
<b>Height</b>	2.8 in. (7.1 cm)
<b>Diameter</b>	3.6 in. (9.1 cm)
<b>Solids Capacity</b>	12.3 oz (350 g)
<b>Weight (dry)</b>	0.3 lb (0.1 kg)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%
<b>Operating Temperature</b>	-50° to +225°F (-45° to +107°C)

## Cross Reference

Fleet Guard	Wix	Luber Finer	Baldwin	Donaldson	Fram	Motorcraft
FF5418	33518	L4596F L5788F	PF7698	P550437	CS8629	FD4596

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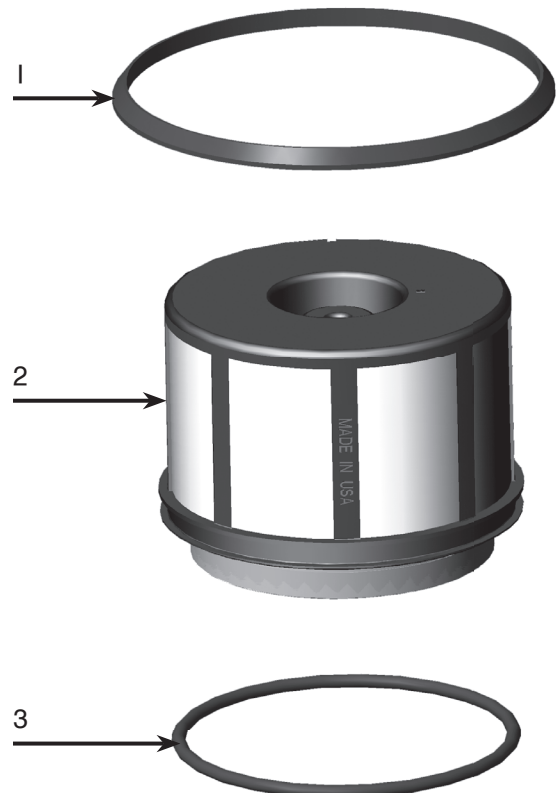
**ParFit™** Products

## Replacement Parts

### PFF4596

- |    | Part Number    | Description                                   |
|----|----------------|---|
| 1. | <b>31025</b>   | Element Gasket                                |
| 2. | <b>PFF4596</b> | Replacement Element<br>(includes #'s 1 and 2) |
| 3. | <b>20151-B</b> | Element O-ring                                |

Additional Parts (not shown)  
**31749** Gasket Pack



# Mobile Fuel Filtration

**ParFit™** Products

## PFF4604



(includes both elements)

Specifications	Secondary Fuel Filter	Primary Fuel Filter
<b>Application</b>	Ford 6.0L Powerstroke Engines. Model Years 2003 to 2006	
<b>Maximum Flow Rate</b>	34 GPH (130 LPH)	34 GPH (130 LPH)
<b>Maximum Working Pressure</b>	58 PSI (4.0 bar)	58 PSI (4.0 bar)
<b>Micron Rating</b>	2 micron	10 micron
<b>Height</b>	2.6 in. (6.6 cm)	4.4 in. (11.2 cm)
<b>Diameter</b>	2.3 in. (5.8 cm)	3.4 in. (8.6 cm)
<b>Weight (dry)</b>	0.1 lb (0.05 kg)	0.3 lb (0.1 kg)
<b>Solids Capacity (with both filters)</b>	0.2 oz (5.7 g)	
<b>Gasket Pack</b>	21746	
<b>H<sub>2</sub>O Removal Efficiency</b>	99%	
<b>Operating Temperature</b>	-50° to +225°F (-45° to +107°C)	

## Cross Reference

Fleet Guard	Wix	Luber Finer	Baldwin	Donaldson	Motorcraft
N/A	33599	N/A	PF7812KIT	P550527	FD4604

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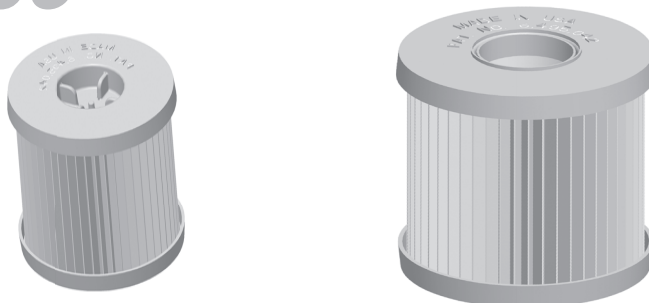


# Mobile Fuel Filtration

1

**ParFit™** Products

## PFF4606



(includes both elements)

Specifications	Secondary Fuel Filter	Primary Fuel Filter
Application	Ford 6.0L Powerstroke Engines. Model Years 2003 to 2006	
Micron Rating	4 Micron	10 Micron
Height	2.5 in. (6.4 cm)	2.5 in. (6.4 cm)
Diameter	2.3 in. (5.8 cm)	3.6 in. (9.1 cm)
Weight (dry)	1.8 oz	4.6 oz
Gasket Pack	Included	
Filter Life	15,000 miles	
H <sub>2</sub> O Removal Efficiency	99%	
Operating Temperature	-40° to +250°F (-40° to +121°C)	

## Cross Reference

Amsoil	Wix	Honeywell	Baldwin	Napa	Carquest	Hastings	Champion Lab
FFK60	33600	CS98153	168153	3600	86600	FF1158	L4606F

# Mobile Fuel Filtration

**ParFit™** Products

## PFF5500

Specifications	PFF5500
<b>Application</b>	Detroit Diesel (secondary filter)
<b>Max. Working Pressure</b>	60 PSI (4.1 bar)
<b>Micron Rating (98% nominal)</b>	10 micron
<b>Height</b>	6.9 in. (17.4 cm)
<b>Diameter</b>	3.8 in. (9.5 cm)
<b>Center Threads</b>	13/16-12 UNS 2B
<b>Weight (dry)</b>	1.5 lb (0.7 kg)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%
<b>Operating Temperature</b>	-50° to +225°F (-45° to +107°C)



## Cross Reference

Fleet Guard	Wix	Luber Finer	Baldwin	Donaldson	Fram	Detroit	AC
FF5206 FF206 FF5227	33120	LFP816FN LFF3291 LFP816F LFP816FN	BF5810 BF581 BF5815 BF7612 BF7640	P556916 P169091	P1147G PS8479 P3823	23518530	TP916D

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# Mobile Fuel Filtration

1

ParFit™ Products

## PFF5501

Specifications	PFF5501
<b>Application</b>	Caterpillar (primary filter)
<b>Max. Working Pressure</b>	60 PSI (4.1 bar)
<b>Micron Rating (98% nominal)</b>	10 micron
<b>Height</b>	10.2 in. (25.8 cm)
<b>Diameter</b>	4.3 in. (11.0 cm)
<b>Center Threads</b>	1-14 UNS-2B
<b>Weight (dry)</b>	2.4 lb (1.1 kg)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%
<b>Operating Temperature</b>	-50° to +225°F (-45° to +107°C)



## Cross Reference

Fleet Guard	Wix	Luber Finer	Baldwin	Donaldson	Fram	Caterpillar
FF211	33384	LFF5823 LFP5823	BF584 BF584B	P555823 EFF9092 EFF9092S FFP170823 FFP555823	P3376	4N-5823





# Mobile Fuel Filtration

**ParFit™** Products

## PFF5502

Specifications	PFF5502
<b>Application</b>	Cummins, Freightliner
<b>Max. Working Pressure</b>	60 PSI (4.1 bar)
<b>Micron Rating (98% nominal)</b>	5 micron
<b>Height</b>	9.7 in. (24.6 cm)
<b>Diameter</b>	3.7 in. (9.4 cm)
<b>Center Threads</b>	1-14 UNS-2B
<b>Weight (dry)</b>	1.6 lb (0.7 kg)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%
<b>Operating Temperature</b>	-50° to +225°F (-45° to +107°C)



## Cross Reference

Fleet Guard	Wix	Luber Finer	Baldwin	Donaldson	Fram
FS1000	33406 33405	LFF1000	BF1259	P551000	PS8048
FS1212		LFF5D	BF1212	P170212	PCS5059
FS1009		LFF8000	BF1282	P550691	PCS5059M
		LFF8011	BF957D	P558000	PCS5062
		LFF8020		P558020	PS3712

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# Mobile Fuel Filtration

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ParFit™ Products

## PFF5503

Specifications	PFF5503
<b>Application</b>	Detroit Diesel (primary filter)
<b>Max. Working Pressure</b>	60 PSI (4.1 bar)
<b>Micron Rating (98% nominal)</b>	30 micron
<b>Height</b>	8.2 in. (20.8 cm)
<b>Diameter</b>	3.8 in. (9.7 cm)
<b>Center Threads</b>	1-12 UNS-2B
<b>Weight (dry)</b>	1.5 lb (0.7 kg)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%
<b>Operating Temperature</b>	-50° to +225°F (-45° to +107°C)



## Cross Reference

Fleet Guard	Wix	Luber Finer	Baldwin	Donaldson	Fram	Detroit	AC
FF5207 FF207	33118	LFP815F LFP815FN	BF580 BF5800	P556915 P550915 FFP170915 FFP550915	P1146 P1146G	23517471	T915D

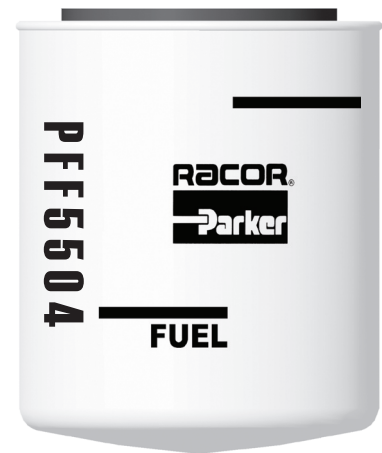


# Mobile Fuel Filtration

**ParFit™** Products

## PFF5504

Specifications	PFF5504
<i>Center Threads</i>	M16 X 1.5
<i>Maximum Flow Rate</i>	GPH ( LPH)
<i>Maximum Working Pressure</i>	30 PSI (2.1 bar)
<i>Micron Rating</i>	10 micron
<i>Height</i>	4 in. (10 cm)
<i>Diameter</i>	3.3 in. (8.3 cm)
<i>Solids Capacity</i>	12.3 oz (350 g)
<i>Weight (dry)</i>	1.0 lb (0.5 kg)
<i>H<sub>2</sub>O Removal Efficiency</i>	99%
<i>Operating Temperature</i>	-50° to +225°F (-45° to +107°C)



## Cross Reference

Fleet Guard	Wix	Luber Finer	Baldwin	Donaldson	Fram
FF5095	33195	LFF3806	BF790	P555095	P6503

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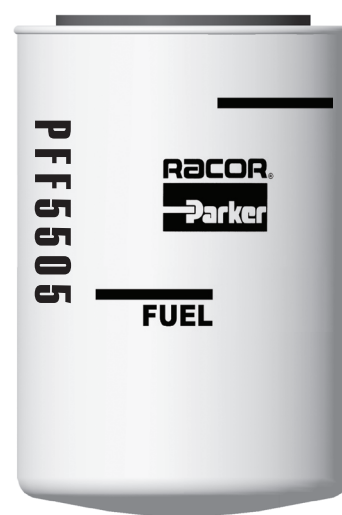
# Mobile Fuel Filtration

1

ParFit™ Products

## PFF5505

Specifications	PFF5505
<b>Center Threads</b>	M16 x 1.5
<b>Maximum Flow Rate</b>	GPH ( LPH)
<b>Maximum Working Pressure</b>	30 PSI (2.1 bar)
<b>Micron Rating</b>	10 micron
<b>Height</b>	4.9 in. (12.3 cm)
<b>Diameter</b>	3.3 in. (8.3 cm)
<b>Solids Capacity</b>	12.3 oz (350 g)
<b>Weight (dry)</b>	1.0 lb (0.5 kg)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%
<b>Operating Temperature</b>	-50° to +225°F (-45° to +107°C)



## Cross Reference

Fleet Guard	Wix	Luber Finer	Baldwin	Donaldson	Fram
FF5018	33358	FP586F G6353 LFF3521 LFF3506	BF7689 BF788 BF900 BF983 BF988 BF993	P550272 P550440 P554620 FFP550440 FFP553004	P7513 P4102 P4102A
FF231					
FF5046					
FF50502					
FF5074					
FF5167					
FF5494					



# Mobile Fuel Filtration

**ParFit™** Products

## PFF5509

Specifications	PFF5509
<b>Application</b>	Cummins, Ford, GM, Dodge, Kenworth and Hino Trucks (secondary filter)
<b>Max. Working Pressure</b>	60 PSI (4.1 bar)
<b>Micron Rating (98% nominal)</b>	7 micron
<b>Height</b>	5.3 in. (13.5 cm)
<b>Diameter</b>	3.7 in. (9.4 cm)
<b>Center Threads</b>	1-14 UNS-2B
<b>Weight (dry)</b>	1.2 lb (0.5 kg)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%
<b>Operating Temperature</b>	-50° to +225°F (-45° to +107°C)



## Cross Reference

Fleet Guard	Wix	Luber Finer	Baldwin	Donaldson	Fram	Cummins
FF105	33109	LFF5 LFF8012	BF957 BF5801 BF957B	P550105 P550106 FFP170105 FFP550105 FFP550106 PI6909	P3528 P3538A PI101	154709

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# Mobile Fuel Filtration

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Par $\diamond$ Fit™ Products

## PFF5525

Specifications	PFF5525
<i>Application</i>	Hydraulic Spin-on
<i>Max. Working Pressure</i>	100 PSI (6.9 bar)
<i>Micron Rating (98% nominal)</i>	25 micron
<i>Height</i>	8.8 in. (22.4 cm)
<i>Diameter</i>	3.8 in. (9.7 cm)
<i>Center Threads</i>	1-12 UNF - 2b
<i>Weight (dry)</i>	1.9 lb (0.9 kg)
<i>H<sub>2</sub>O Removal Efficiency</i>	99%
<i>Operating Temperature</i>	-50° to +225°F (-45° to +107°C)



# Mobile Fuel Filtration

ParFit™ Products

## PFF5527



Specifications	PFF5527
<b>Application</b>	Ford F550, F650 Trucks
<b>Maximum Flow Rate</b>	30 GPH (114 LPH)
<b>Maximum Working Pressure</b>	40 PSI (2.8 bar)
<b>Micron Rating</b>	30 micron
<b>Height</b>	4.0 in. (10.2 cm)
<b>Diameter</b>	3.6 in. (9.1 cm)
<b>Center Threads</b>	1"-14 UNS-2A
<b>Solids Capacity</b>	10.0 oz (277 g)
<b>Weight (dry)</b>	0.7 lb (0.3 kg)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%
<b>Operating Temperature</b>	-50° to +225°F (-45° to +107°C)

## Cross Reference

Fleet Guard	Wix	Luber Finer	Baldwin	Donaldson	Fram
N/A	33736	L4597F	N/A	N/A	PS91110

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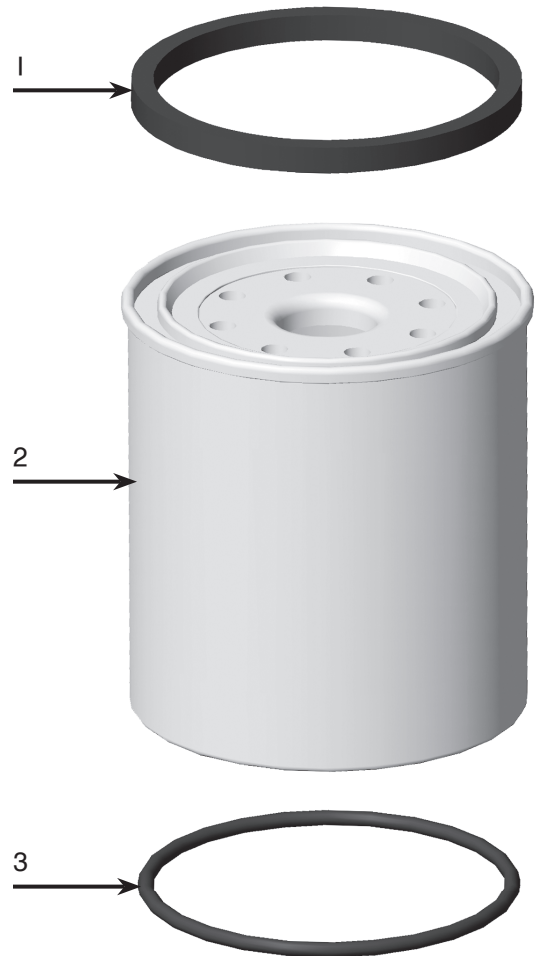


**ParFit™** Products

## Replacement Parts

### PFF5527

	<u>Part Number</u>	<u>Description</u>
1.	<b>20506</b>	Element Gasket
2.	<b>PFF5527</b>	Replacement Element (includes #'s 1, 2 & 3)
3.	<b>20707</b>	O-ring Kit (includes #'s 1 & 3)





# Mobile Fuel Filtration

**ParFit™** Products

## PFF5544

Specifications	PFF5544
<b>Application</b>	GMT 560 & 800 Diesel Engines
<b>Maximum Flow Rate</b>	50 GPH (189 LPH)
<b>Maximum Working Pressure</b>	30 PSI (206 kPa)
<b>Micron Rating</b>	2 micron Dual Media
<b>Height</b>	6.5 in. (16.5 cm)
<b>Diameter</b>	4.0 in. (10.1 cm)
<b>Center Threads</b>	3/8" - 8 Buttress
<b>Solids Capacity</b>	4.2 oz (120 g)
<b>Weight (dry)</b>	0.9 lbs (0.4 kg)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%
<b>Operating Temperature</b>	-50° to +225°F (-45° to +107°C)



## Cross Reference

Champion	Fram	Mighty Auto Parts	Purolator	GM	Luber Finer	Carquest	Napa
LFF8736B	PS9059	GF4598A	6945562	97385488	LFF8736	86910	3910

Wix	Fleet Guard	Hasting	Baldwin	Isuzu	Donaldson	Honeywell
33910 33810	FF5501	FF1220	BF7827 BF7727	8973854880	P550743 P550517	PS9059A

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**Par**◊**Fit**™ Products

## *PFFG01 Filter Glove*

### **Application**

The Racor Filter Glove fits most marine and auto filters. The Filter Glove fits conveniently onto the bottom of spin-on filters.

### **Product**

The Racor Filter Glove is made with a durable, soft poly-blend material that is not effected by fuel, oil, heat or cold. The Filter Glove allows for easy cleaning and reusing every time you service a filter or element.

### **How It Works**

Push the Filter Glove firmly on to most filters (3" to 4" in diameter). The Filter Glove is designed with 10 tapered fingers to allow that the Filter Glove fits snugly on the filter. Unscrew the filter or element (a bowl or strap wrench might be needed). When the filter is broken loose, the oil or fuel will leak down the sides and will be caught in the bottom of the Filter Glove. This process will help you avoid mess in bilges, driveways and help protect our environment.



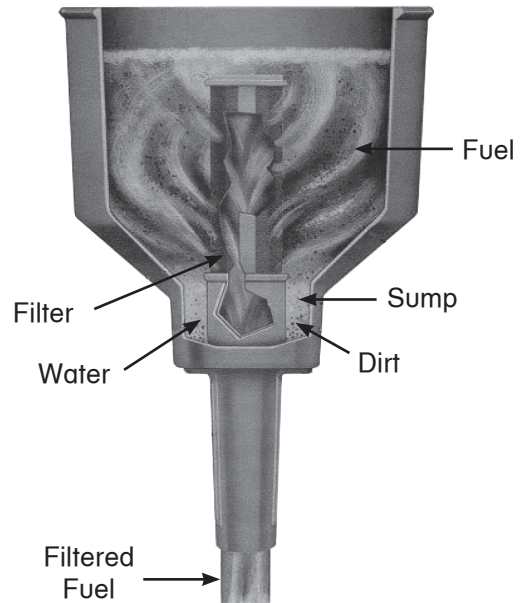
**PFFG01 Filter Glove**



## RFF Filter Funnels

Racor RFF funnels include stainless steel filters that are permanently attached and designed to work with hydrocarbon fuels only. Other liquids may compromise the effectiveness of the filter. The purpose of this product is to remove solid contamination down to 0.005 inch and free water.

Free water is the collection of water molecules in the bottom of gas cans, tanks, or drums formed when fuel is stored for even short periods of time. The free water formation is due to condensation in the air and/or the separation of water molecules from fuel. Water may be present in hydrocarbon fuels as free water or as an emulsion, small droplets of water suspended in the fuel. Water may be emulsified in fuel by vibration or by emulsifying additives such as alcohol, or detergents. The RFF filter will not remove emulsified water. Install Racor fuel filter/water separators to remove emulsified water from your engine's fuel system. Always dispose of water, contaminants, or dirty fuel in a proper manner.



Specifications	RFF1C	RFF3C	RFF8C	RFF15C
<b>Max. Flow Rate</b>	2.7 GPM (10 LPM)	3.9 GPM (14 LPM)	5 GPM (19 LPM)	15 GPM (56 LPM)
<b>Micron Rating</b>	100 micron	100 micron	100 micron	74 micron
<b>Height</b>	6.0 in. (15.2 cm)	9.0 in. (22.9 cm)	10.0 in. (25.4 cm)	10.0 in. (25.4 cm)
<b>Diameter</b>	3.5 in. (8.9 cm)	5.5 in. (14.0 cm)	8.5 in. (21.6 cm)	8.5 in. (21.6 cm)
<b>Weight</b>	0.2 lb (0.09 kg)	0.3 lb (0.1 kg)	0.6 lb (0.3 kg)	1.0 lb (0.5)

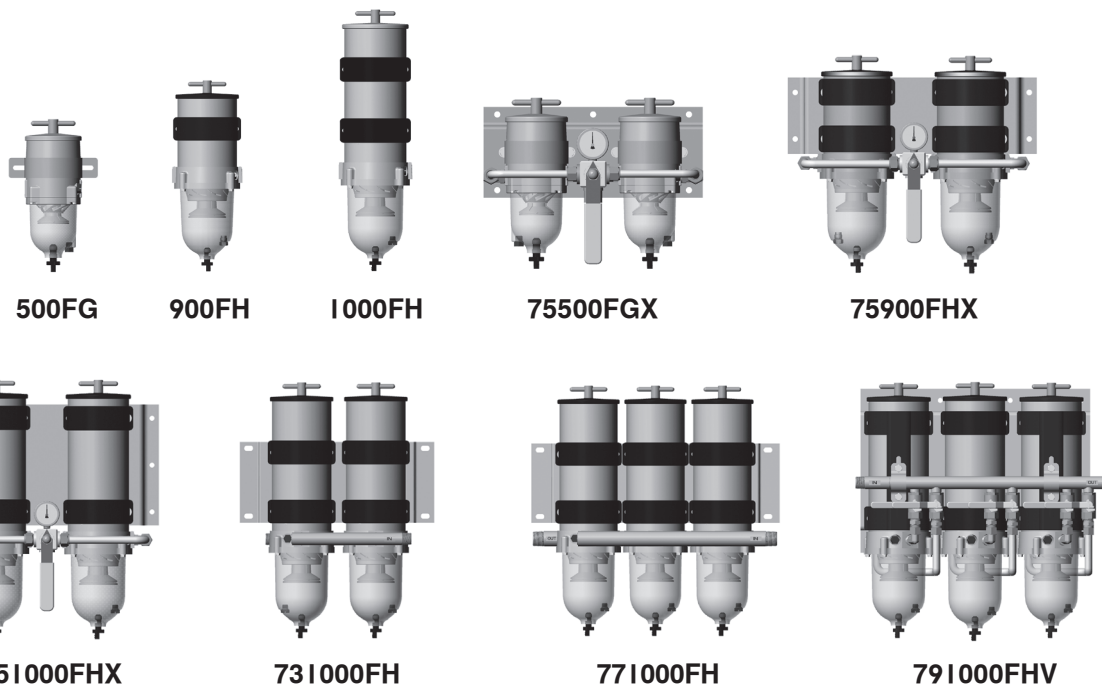


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## Turbine Series



### Turbine Series

Turbine Series filter assemblies are designed to be installed on the vacuum side of the fuel transfer pump for best efficiency and protect precision engine components from dirt, rust, algae, asphaltines, varnishes, and especially water, which is prevalent in engine fuels. They remove contaminants from fuel using the following legendary three stage process:

#### Stage One: Separation

As fuel enters the filter assembly, it moves through the centrifuge and spins off large solids and water droplets which fall to the bottom of the collection bowl.

#### Stage Two: Coalescing

Small water droplets bead-up on the surface of the conical baffle and cartridge element. When heavy enough, they too fall to the bottom of the bowl.

### Stage Three: Filtration

Proprietary Aquabloc®II cartridge elements repel water and remove contaminants from fuel down to two micron (nominal). They are waterproof and effective longer than water absorbing elements.

### Features and Benefits

- Available in several sizes to fit any application.
- Heavy duty construction.
- Installs quickly.
- Available in 2, 10, and 30 micron.
- Easy to service.
- Clear collection bowl.
- Self-venting water drain.

Optional accessories may include: water detection kits, 12 or 24 volt dc heaters, heavy-duty fuel hose and fittings. see Accessories section.

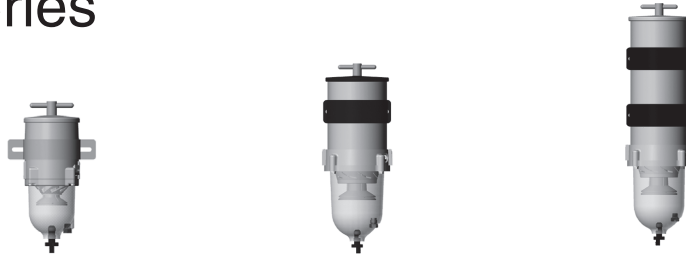


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# Mobile Fuel Filtration

## Turbine Series



Specifications	500FG	900FH	1000FH
<b>Maximum Flow Rate:</b> (one unit online) (two units online) (three units online)	60 GPH (227 LPH) N/A N/A	90 GPH (341 LPH) N/A N/A	180 GPH (681 LPH) N/A N/A
<b>Port Size (female threads)</b>	3/4"-16 UNF (SAE J1926)	7/8"-14 UNF (SAE J1926)	7/8"-14 UNF (SAE J1926)
<b>Min. Service Clearance:</b> (above assembly) (below assembly)	5.0 in. (12.7 cm) 2.0 in. (5.1 cm)	7.5 in. (19.1 cm) 2.0 in. (5.1 cm)	10.0 in. (25.4 cm) 2.0 in. (5.1 cm)
<b>Replacement Element:</b> (2 micron) (10 micron) (30 micron)	(1 Per Assembly) 2010SM-OR 2010TM-OR 2010PM-OR	(1 Per Assembly) 2040SM-OR 2040TM-OR 2040PM-OR	(1 Per Assembly) 2020SM-OR 2020TM-OR 2020PM-OR
<b>Height</b>	11.5 in. (29.2 cm)	17.0 in. (43.2 cm)	22.0 in. (55.9 cm)
<b>Depth</b>	4.8 in. (12.2 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)
<b>Width</b>	5.8 in. (14.7 cm)	6.0 in. (15.2 cm)	6.0 in. (15.2 cm)
<b>Weight (dry)</b>	4.0 lb (1.8 kg)	6.0 lb (2.7 kg)	10.0 lb (4.5 kg)
<b>Clean Pressure Drop</b>	0.25 PSI (1.7 kPa)	0.30 PSI (2.1 kPa)	0.43 PSI (3.0 kPa)
<b>Maximum Pressure<sup>1</sup></b>	15 PSI (1 bar)	15 PSI (1 bar)	15 PSI (1 bar)
<b>Water In Bowl Capacity: (per bowl)</b>	3.7 oz (109 ml)	10.3 oz (305 ml)	10.3 oz (305 ml)
<b>Available Options:<sup>2</sup></b> (water detection kit) (12 or 24 volt dc heater) (vacuum gauge)	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes
<b>H<sub>2</sub>O Removal Efficiency</b>	99%		
<b>Operating Temperature</b>	-40° to +255°F / -40° to +124°C		
<sup>1</sup> Pressure installations are applicable up to the maximum PSI shown. Vacuum installations are recommended. <sup>2</sup> Not for use on gasoline applications. <b>Note:</b> Units with 1/2" NPT ports are available, contact the factory.			

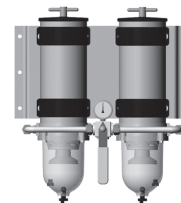
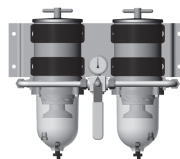
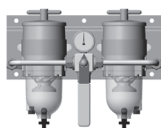
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# Mobile Fuel Filtration

1

## Turbine Series



Specifications	75500FGX	75900FHX	751000FHX
<b>Maximum Flow Rate:</b> (one unit online) (two units online) (three units online)	60 GPH (227 LPH) 120 GPH (454 LPH) N/A	90 GPH (341 LPH) 180 GPH (681 LPH) N/A	180 GPH (681 LPH) 360 GPH (1363 LPH) N/A
<b>Port Size (female threads)</b>	3/4"-16 UNF (SAE J1926 female threads)	7/8"-14 UNF (SAE J514 male threads)	7/8"-14 UNF (SAE J514 male threads)
<b>Min. Service Clearance:</b> (above assembly) (below assembly)	5.0 in. (12.7 cm) 2.0 in. (5.1 cm)	7.5 in. (19.1 cm) 2.0 in. (5.1 cm)	10.0 in. (25.4 cm) 2.0 in. (5.1 cm)
<b>Replacement Element:</b> (2 micron) (10 micron) (30 micron)	(2 Per Assembly) 2010SM-OR 2010TM-OR 2010PM-OR	(2 Per Assembly) 2040SM-OR 2040TM-OR 2040PM-OR	(2 Per Assembly) 2020SM-OR 2020TM-OR 2020PM-OR
<b>Height</b>	11.5 in. (29.2 cm)	17.0 in. (43.2 cm)	22.0 in. (55.9 cm)
<b>Depth</b>	9.5 in. (24.1 cm)	11.0 in. (27.9 cm)	11.0 in. (27.9 cm)
<b>Width</b>	14.5 in. (36.8 cm)	18.8 in. (47.8 cm)	18.8 in. (47.8 cm)
<b>Weight (dry)</b>	17.0 lb (7.7 kg)	23.0 lb (10.4 kg)	30.0 lb (13.6 kg)
<b>Clean Pressure Drop</b>	0.7 PSI (4.8 kPa)	1.7 PSI (11.7 kPa)	3.7 PSI (25.5 kPa)
<b>Maximum Pressure<sup>1</sup></b>	15 PSI (1 bar)	15 PSI (1 bar)	15 PSI (1 bar)
<b>Water In Bowl Capacity: (per bowl)</b>	3.7 oz (109 ml)	10.3 oz (305 ml)	10.3 oz (305 ml)
<b>Available Options:<sup>2</sup></b> (water detection kit) (12 or 24 volt dc heater) (vacuum gauge)	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes
<b>H<sub>2</sub>O Removal Efficiency</b>	99%		
<b>Operating Temperature</b>	-40° to +255°F / -40° to +124°C		

<sup>1</sup> Pressure installations are applicable up to the maximum PSI shown. Vacuum installations are recommended.  
<sup>2</sup> Not for use on gasoline applications.  
**Note:** Units with 1/2" NPT ports are available, contact the factory.



# Mobile Fuel Filtration

## Turbine Series

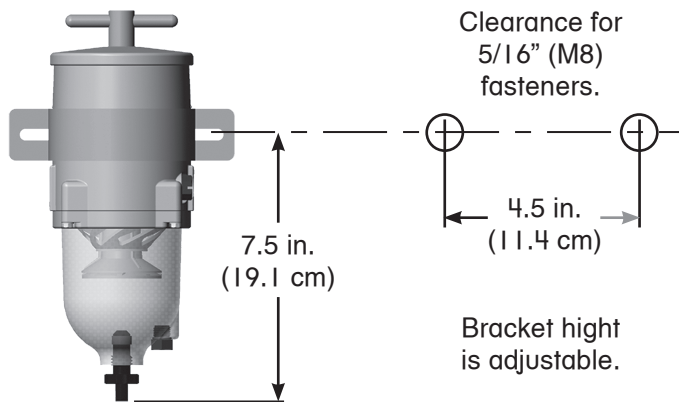
### How to Order

(The example below illustrates how part numbers are constructed.)

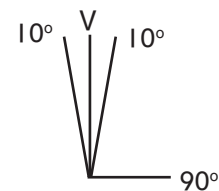
500FG	12	2
Specify <b>500FG</b> for 3/4"-16 UNF ports or * <b>500FG</b> for 16M ports.	Add <b>12</b> for a 12 volt dc heater or <b>24</b> for a 24 volt dc heater <sup>1</sup> . (omit if not desired)	Specify a micron rating: <b>2, 10, or 30.</b>
<sup>1</sup> 150 watt heater, use with a Racor relay kit - see Accessories.		

Replacement Elements (seals included)		
2 micron (Final Filtration)	10 micron (Secondary Filtration)	30 micron (Primary Filtration)
2010SM-OR	2010TM-OR	2010PM-OR

### Mounting Instructions



Note: Mount filter assembly as close to vertical (V) as possible. For best efficiency, do not exceed 10° from V.



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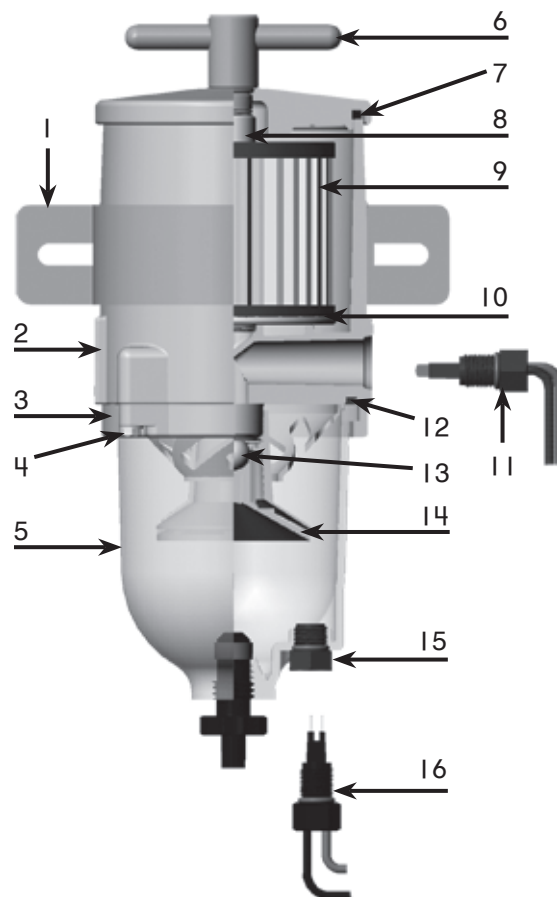


## Turbine Series

### Replacement Parts

#### 500FG

Part Number	Description
1. <b>RK15378</b> <b>RK11838</b>	Mounting Bracket Kit Bracket Hardware Kit (5/16"-18, not shown)
2. <b>RK15377-01</b> <b>RK15377-02</b>	Body Kit (3/4"-16 UNF Ports) Body Kit (1.6M X 1.5 Ports)
3. <b>RK15035</b>	Bowl Ring Kit
4. <b>RK15081</b>	Hex Head Capscrews Kit (includes 4, 10-24 x 7/8")
5. <b>RK15405</b>	Clear Bowl Kit (includes bowl, drain, bowl gasket and probe plug)
<b>RK15301</b>	Metal Bowl Kit (not shown) (includes 1/4" NPT drain)
6. <b>RK11-1945</b>	T-handle and O-ring Kit (9/16"-18 UNF threads)
<b>11350</b>	T-handle O-ring
7. <b>RK15078</b> <b>15005</b>	Lid and Lid Gasket Kit Lid Gasket
8. <b>RK15397</b>	Return Tube Kit
9. (Replacement elements include seals) <b>2010SM-OR</b> <b>2010TM-OR</b> <b>2010PM-OR</b>	2 Micron Element 10 Micron Element 30 Micron Element
10. (Heater kits include item #11) <b>RK15383-01</b> <sup>1</sup> <b>RK15383-02</b> <sup>1</sup>	Heater Kit (12 vdc, 150 watt) Heater Kit (24 vdc, 150 watt)
11. <b>RK21067</b> <b>RK11-1679</b>	Feed-thru Assy Kit (for heater) Feed-thru Plug Kit (not shown)
12. <b>15374</b>	Bowl Gasket
13. <b>RK15010B</b>	Check Ball with Seal Kit
14. <b>RK15013D</b>	Centrifuge/Conical Baffle Kit
15. <b>RK20126</b>	Water Probe Port Plug Kit
16. <b>RK21069</b> <sup>2</sup>	Water Sensor Probe Kit
Additional Parts (not shown)	
<b>RK15211</b>	Complete Seal Service Kit



#### Notes:

<sup>1</sup> In-filter heater kits require a Heater Relay Kit - see Accessories section of this catalog. Maximum power requirements for in-filter heaters are: 12.5 amps for 12 vdc and 6.3 amps for 24 vdc.

<sup>2</sup> Water probe must be used with Water Detection Kit - see Accessories section of this catalog.

# Mobile Fuel Filtration

## Turbine Series

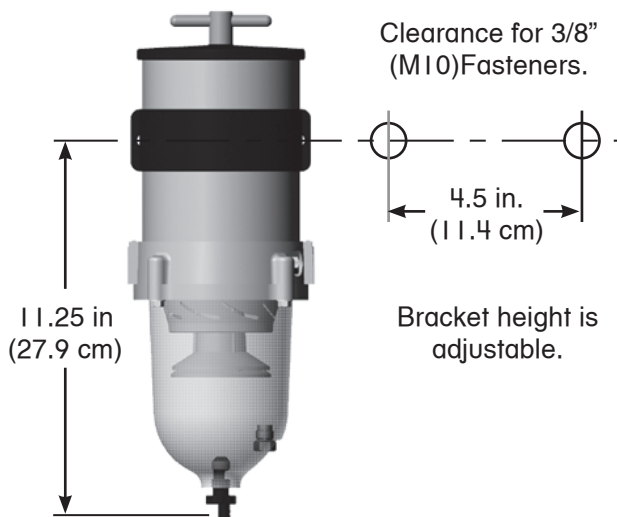
### How to Order

(The example below illustrates how part numbers are constructed.)

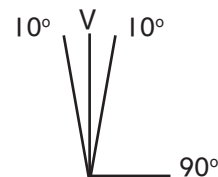
900FH	312	2
Specify <b>900FH</b> for 7/8"-14 UNF ports or <b>902FH</b> for 22M ports.	Add <b>312</b> for a 12 volt dc heater or <b>324</b> for a 24 volt dc heater <sup>1</sup> . (omit if not desired)	Specify a micron rating: <b>2, 10, or 30.</b>
<sup>1</sup> 300 watt heater, use with a Racor relay kit - see Accessories.		

Replacement Elements (seals included)		
2 micron (Final Filtration)	10 micron (Secondary Filtration)	30 micron (Primary Filtration)
2040SM-OR	2040TM-OR	2040PM-OR

### Mounting Instructions



Note: Mount filter assembly as close to vertical (V) as possible. For best efficiency, do not exceed 10° from V.



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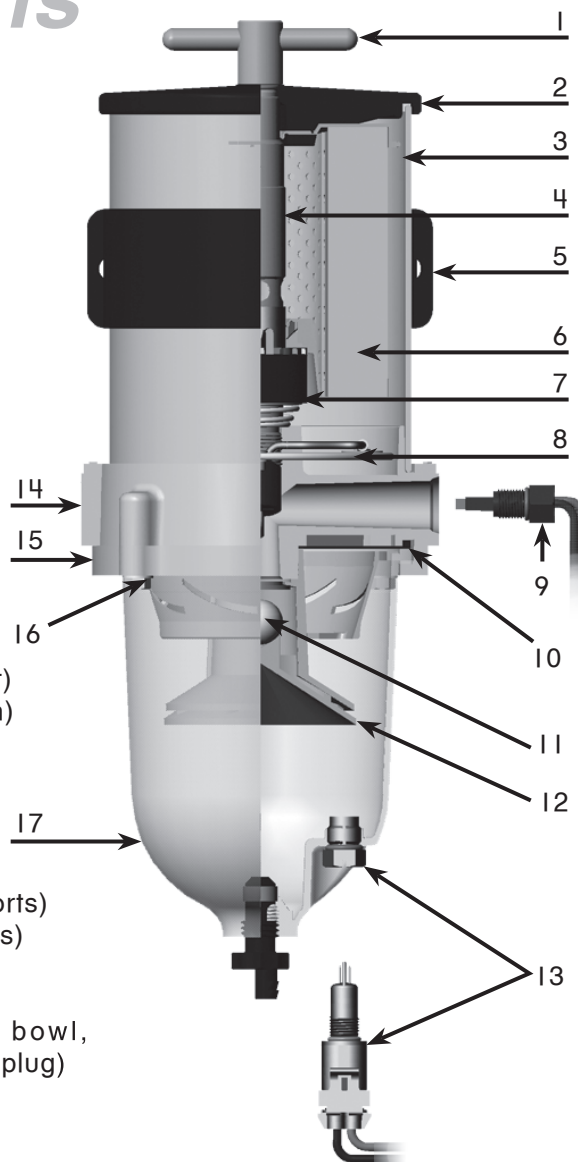
Technical Support:  
800.344.3286 ext. 7555  
racortech@parker.com

## Turbine Series

### Replacement Parts

#### 900FH

Part Number	Description
1. <b>RK11-1945</b>	T-handle and O-ring Kit (9/16"-18 UNF Threads)
<b>11350</b>	T-handle O-ring
2. <b>RK11-1927-01</b>	Lid and Lid Gasket Kit
<b>11007</b>	Lid (and Bowl) Gasket
3. <b>RK19002-03</b>	Outer Cylinder Kit
4. <b>RK11-1931</b>	Return Tube Kit
5. <b>RK11815-103</b>	Mounting Bracket (hardware included)
6. (All replacement elements include seals)	
<b>2040SM-OR</b>	2 Micron Element
<b>2040TM-OR</b>	10 Micron Element
<b>2040PM-OR</b>	30 Micron Element
7. <b>RK11-1953</b>	Valve, Spring & O-ring Kit (Heater kits include item #9)
8. <b>RK11-1800-01<sup>1</sup></b>	Heater Kit (12 vdc, 300 watt)
<b>RK11-1800-02<sup>1</sup></b>	Heater Kit (24 vdc, 300 watt)
9. <b>RK21067</b>	Feed-thru Assy Kit (for heater)
<b>RK11-1679</b>	Feed-thru Plug Kit (not shown)
10. <b>11007</b>	Bowl (and Lid) Gasket
11. <b>RK11028B</b>	Check Ball with Seal Kit
12. <b>RK11-1939</b>	Centrifuge/Conical Baffle Kit
13. <b>RK32204<sup>2</sup></b>	Water Sensor Probe Kit
<b>RK22838</b>	Water Probe Port Plug Kit
14. <b>RK11-1776-01</b>	Body Kit (with 7/8"-14 UNF ports)
<b>RK11-1776-02</b>	Body Kit (with 22M X 1.5 Ports)
15. <b>RK11037A</b>	Bowl Ring Kit (5" Diameter)
16. <b>RK11542</b>	Capscrew Kit (quantity - 4)
17. <b>RK11-1938</b>	Clear Bowl Kit (includes bowl, drain, bowl gasket and probe plug)
Additional Parts (not shown)	
<b>RK11-1952</b>	Complete Seal Service Kit



#### Notes:

- <sup>1</sup> In-filter heater kits require a Heater Relay Kit - see Accessories section of this catalog. Maximum power requirements for in-filter heaters are: 25 amps for 12 vdc and 12.5 amps for 24 vdc.
- <sup>2</sup> Water probe must be used with Water Detection Kit - see Accessories section of this catalog. Water probe features a detachable harness connector.

# Mobile Fuel Filtration

## Turbine Series

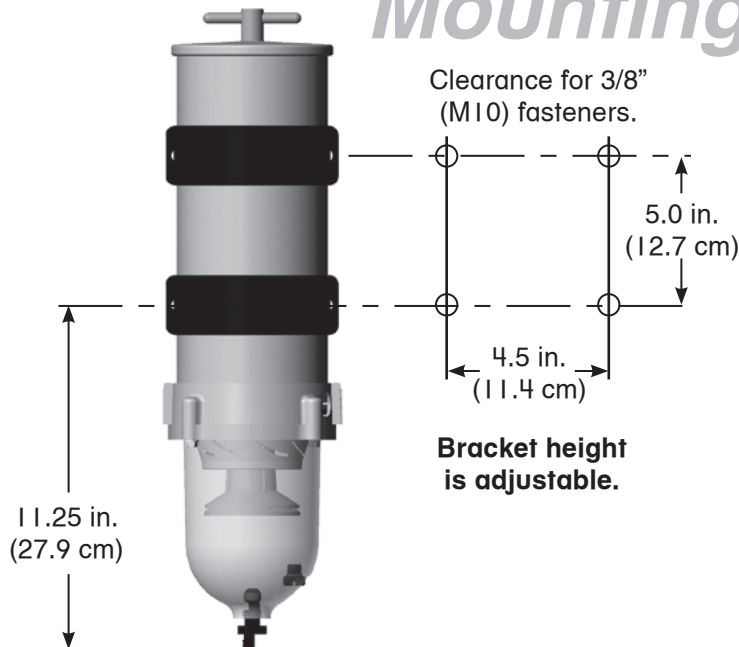
### How to Order

(The example below illustrates how part numbers are constructed.)

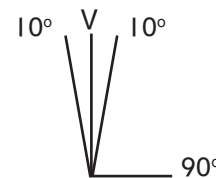
1000FH	312	2
Specify <b>1000FH</b> for 7/8"-14 UNF ports or <b>1002FH</b> for 22M ports.	Add <b>312</b> for a 12 volt dc heater or <b>324</b> for a 24 volt dc heater <sup>1</sup> . (omit if not desired)	Specify a micron rating: <b>2, 10, or 30.</b>
<sup>1</sup> 300 watt heater, use with a Racor relay kit - see Accessories.		

Replacement Elements (seals included)		
2 micron (Final Filtration)	10 micron (Secondary Filtration)	30 micron (Primary Filtration)
2020SM-OR	2020TM-OR	2020PM-OR

## Mounting Instructions



Note: Mount filter assembly as close to vertical (V) as possible. For best efficiency, do not exceed 10° from V.



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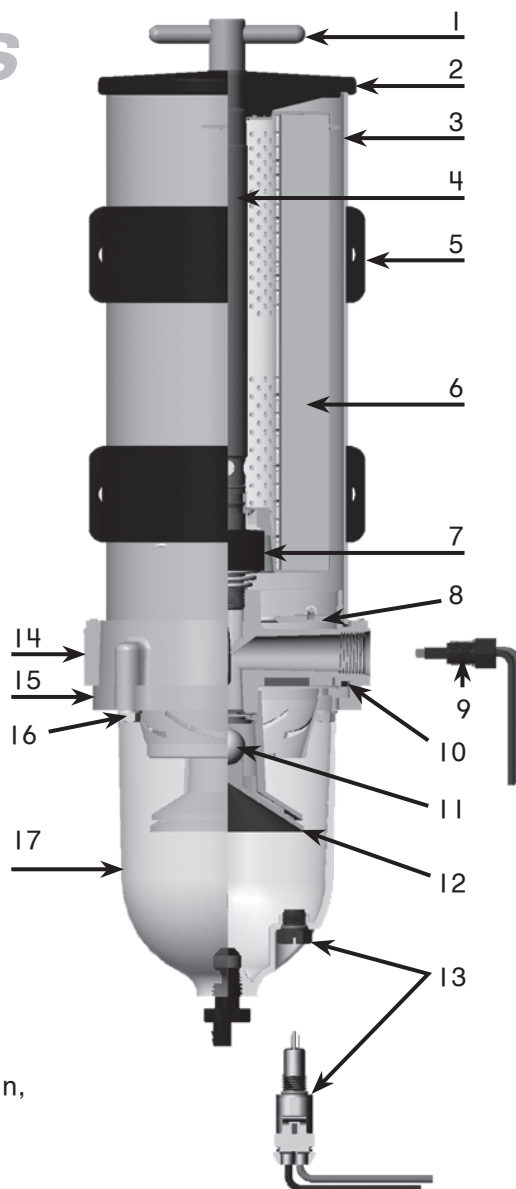
Technical Support:  
800.344.3286 ext. 7555  
racortech@parker.com

## Turbine Series

### Replacement Parts

#### 1000FH

Part Number	Description
1. <b>RK11-1945</b>	T-handle and O-ring Kit (9/16"-18 UNF Threads)
<b>11350</b>	T-handle O-ring
2. <b>RK11-1927-01</b>	Lid and Gasket Kit
<b>11007</b>	Lid (and Bowl) Gasket
3. <b>RK11021-03</b>	Outer Cylinder Kit
4. <b>RK11-1930</b>	Return Tube Kit
5. <b>RK11815-103</b>	Mounting Bracket (includes bracket hardware)
6. (All replacement elements include seals)	
<b>2020SM-OR</b>	2 Micron Element
<b>2020TM-OR</b>	10 Micron Element
<b>2020PM-OR</b>	30 Micron Element
7. <b>RK11-1953</b>	Valve, Spring & O-ring Kit
8. (Heater kits include item #9)	
<b>RK11-1800-01<sup>1</sup></b>	Heater (12 vdc, 300 watt)
<b>RK11-1800-02<sup>1</sup></b>	Heater (24 vdc, 300 watt)
9. <b>RK21067</b>	Feed-thru Assy (for heater)
<b>RK11-1679</b>	Feed-thru Plug (not shown)
10. <b>11007</b>	Bowl (and Lid) Gasket
11. <b>RK11028B</b>	Check Ball with Seal
12. <b>RK11-1939</b>	Centrifuge/Conical Baffle
13. <b>RK32204<sup>2</sup></b>	Water Sensor Probe
<b>RK22838</b>	Water Probe Port Plug
14. <b>RK11-1776-01</b>	Body Kit (with 7/8"-14 UNF Ports)
<b>RK11-1776-02</b>	Body Kit (with 22M X 1.5 Ports)
15. <b>RK11037A</b>	Bowl Ring (5" diameter)
16. <b>RK11542</b>	Capscrew Kit (quantity - 4)
17. <b>RK11-1938</b>	Clear Bowl Kit (includes bowl, drain, bowl gasket and probe plug)
Additional Parts (not shown)	
<b>RK11-1952</b>	Complete Seal Service Kit



#### Notes:

- <sup>1</sup> In-filter heater kits require a Heater Relay Kit - see Accessories section of this catalog. Maximum power requirements for in-filter heaters are: 25 amps for 12 vdc and 12.5 amps for 24 vdc.
- <sup>2</sup> Water probe must be used with Water Detection Kit - see Accessories section of this catalog. Water probe features a detachable harness connector.

# Mobile Fuel Filtration

## Turbine Series

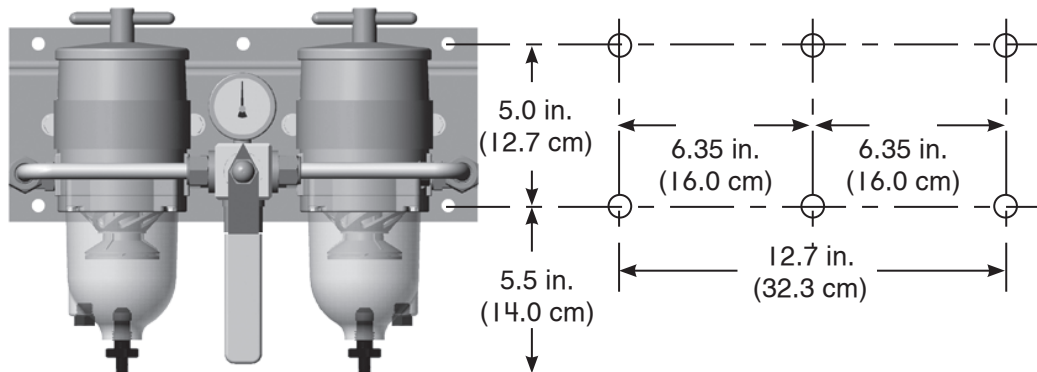
### How to Order

(The example below illustrates how part numbers are constructed.)

75500FGX	12	2
Base model with 3/4"-16 UNF fuel ports (SAE J1926)	Add <b>12</b> for a 12 volt dc heater or <b>24</b> for a 24 volt dc heater <sup>1</sup> . (omit if not desired)	Specify a micron rating: <b>2, 10, or 30.</b>
<sup>1</sup> 150 watt heater, use with a Racor relay kit - see Accessories.		

Replacement Elements (seals included)		
2 micron (Final Filtration)	10 micron (Secondary Filtration)	30 micron (Primary Filtration)
2010SM-OR	2010TM-OR	2010PM-OR
Note: 75500FGX assemblies use TWO elements (one per 500FG housing).		

### Mounting Instructions



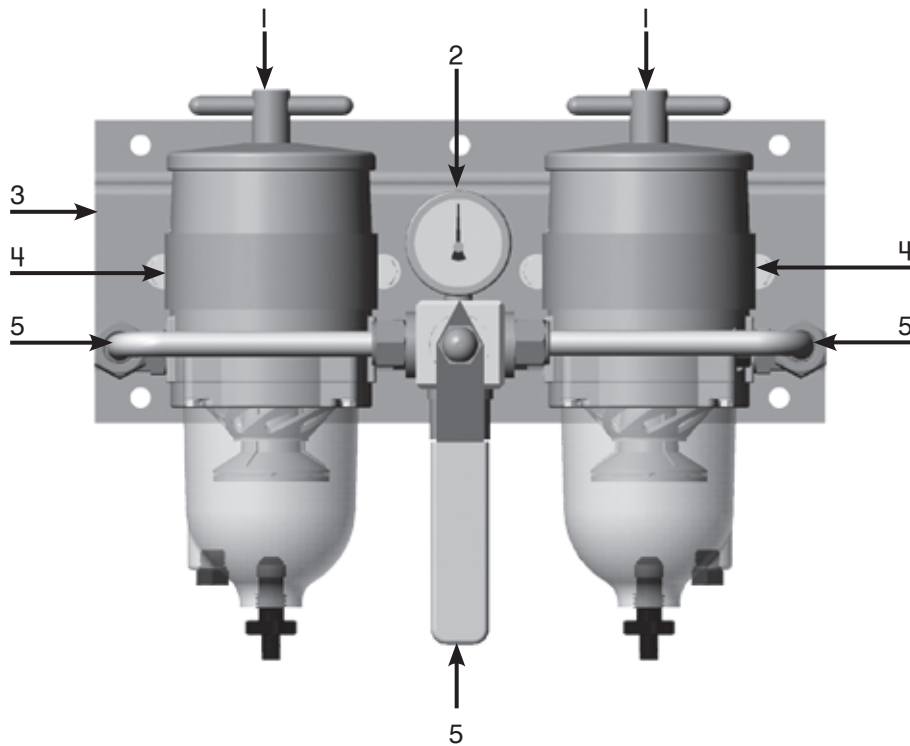
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## Turbine Series



## Replacement Parts

### 75500FGX

<u>Part Number</u>	<u>Description</u>
1. <b>500FG</b>	See 500FG Replacement Parts List
2. <b>RK19476</b>	Gauge Assembly Kit
3. <b>RK15329</b>	Main Bracket Kit
4. <b>RK15378</b> <b>RK11838</b>	Housing Bracket Housing Bracket Hardware (5/16"-18, not shown)
5. <b>RK15391</b>	Rigid Tubing and Fittings Kit
6. <b>RK15390</b>	Heavy-Duty Valve Assembly Kit



# Mobile Fuel Filtration

## Turbine Series

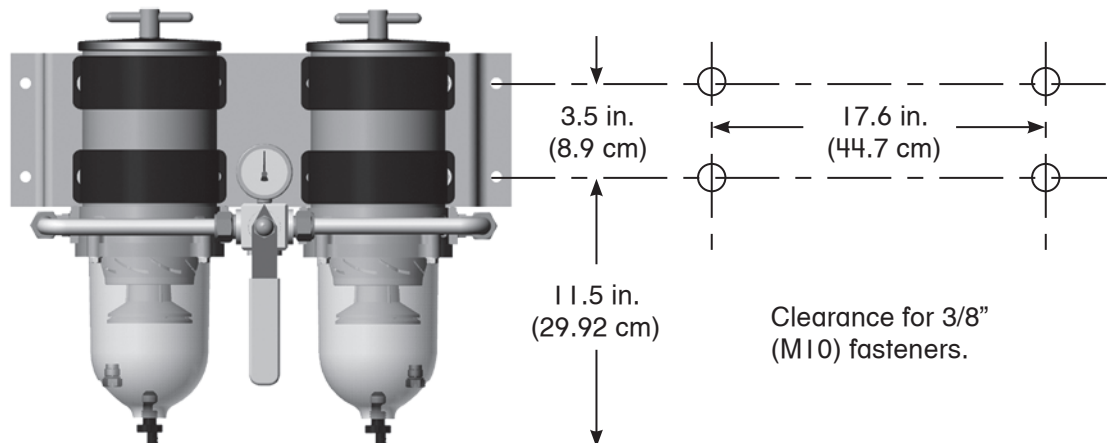
### How to Order

(The example below illustrates how part numbers are constructed.)

75900FHX	312	2
Base model with 7/8"-14 UNF fuel ports (SAE J514)	Add <b>312</b> for a 12 volt dc heater or <b>324</b> for a 24 volt dc heater <sup>1</sup> . (omit if not desired)	Specify a micron rating: <b>2, 10, or 30.</b>
<sup>1</sup> 300 watt heater, use with a Racor relay kit - see Accessories.		

Replacement Elements (seals included)		
2 micron (Final Filtration)	10 micron (Secondary Filtration)	30 micron (Primary Filtration)
2040SM-OR	2040TM-OR	2040PM-OR
Note: 75900FHX assemblies use TWO elements (one per 900FH housing).		

### Mounting Instructions



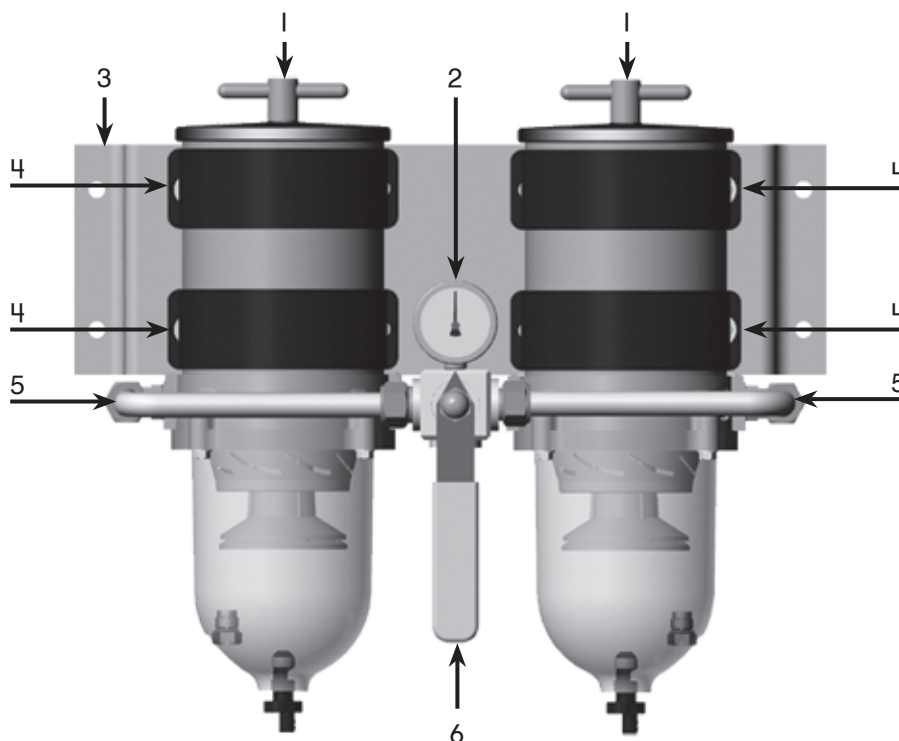
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## Turbine Series



## Replacement Parts

### 75900FHX

<u>Part Number</u>	<u>Description</u>
1. 900FH	See 900FH Replacement Parts List
2. RK19476	Gauge Assembly Kit
3. RK19486	Main Bracket Kit
4. RK11815-103	Housing Bracket (includes hardware)
5. RK19475	Rigid Tubing and Fittings Kit
6. RK19473	Valve Assembly Kit
RK19506	Valve Service Kit (not shown)

# Mobile Fuel Filtration

## Turbine Series

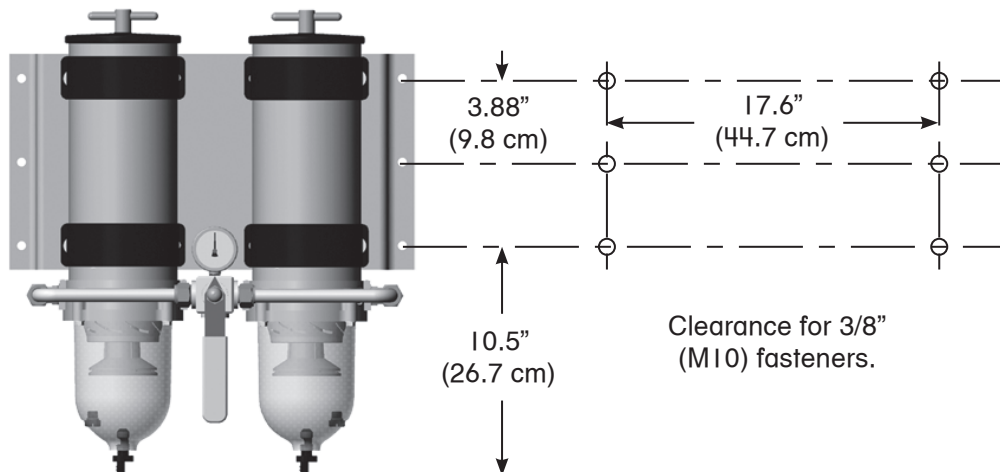
### How to Order

(The example below illustrates how part numbers are constructed.)

751000FHX	312	2
Model with 7/8"-14 UNF fuel ports (SAE J514).	Add <b>312</b> for a 12 volt dc heater or <b>324</b> for a 24 volt dc heater <sup>1</sup> . (omit if not desired)	Specify a micron rating: <b>2, 10, or 30.</b>
<sup>1</sup> 300 watt heater, use with a Racor relay kit - see Accessories.		

Replacement Elements (seals included)		
2 micron (Final Filtration)	10 micron (Secondary Filtration)	30 micron (Primary Filtration)
2020SM-OR	2020TM-OR	2020PM-OR
Note: 751000FHX assemblies use TWO elements (one per 1000FH housing).		

### Mounting Instructions



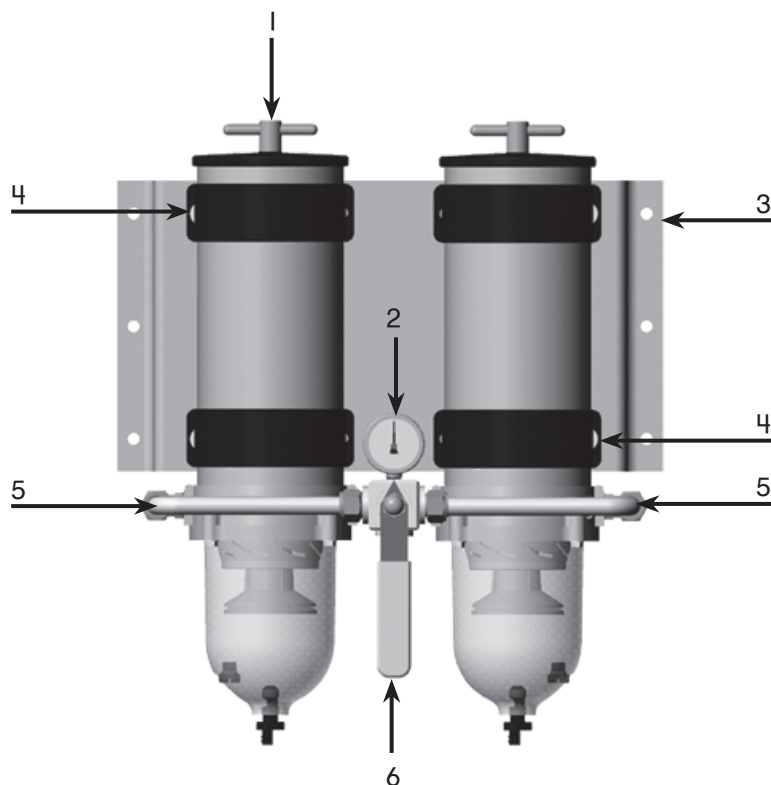
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## Turbine Series



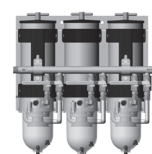
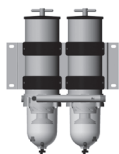
## Replacement Parts

### 751000FHX

	<u>Part Number</u>	<u>Description</u>
1.	<b>1000FH</b>	See 1000FH Replacement Part List
2.	<b>RK19476</b>	Gauge Assembly Kit
3.	<b>RK11-1777</b>	Main Bracket Kit
4.	<b>RK11815-103</b>	Housing Bracket (includes hardware)
5.	<b>RK19475</b>	Rigid Tubing and Fittings Kit
6.	<b>RK19473</b>	Valve Assembly Kit
	<b>RK19506</b>	Valve Service Kit (not shown)

# Mobile Fuel Filtration

## Turbine Series



Specifications	731000FH	771000FH	791000FHV
<b>Maximum Flow Rate:</b> (one unit online) (two units online) (three units online)	N/A 360 GPH (1363 LPH) N/A	N/A N/A 540 GPH (2044 LPH)	180 GPH (681 LPH) 360 GPH (1363 LPH) 540 GPH (2044 LPH)
<b>Port Size (male threads)</b>	3/4"-14 NPT (SAE J476)	1"-11.5 NPT (SAE J476)	3/4"-14 NPT (SAE J476)
<b>Min. Service Clearance:</b> (above assembly) (below assembly)	10.0 in. (25.4 cm) 2.0 in. (5.1 cm)	10.0 in. (25.4 cm) 2.0 in. (5.1 cm)	10.0 in. (25.4 cm) 2.0 in. (5.1 cm)
<b>Replacement Element:</b> (2 micron) (10 micron) (30 micron)	(2 Per Assembly) 2020SM-OR 2020TM-OR 2020PM-OR	(3 Per Assembly) 2020SM-OR 2020TM-OR 2020PM-OR	(3 Per Assembly) 2020SM-OR 2020TM-OR 2020PM-OR
<b>Height</b>	22.0 in. (55.9 cm)	22.0 in. (55.9 cm)	22.0 in. (55.9 cm)
<b>Depth</b>	12.0 in. (30.5 cm)	12.0 in. (30.5 cm)	11.8 in. (30.0 cm)
<b>Width</b>	16.5 in. (41.9 cm)	21.5 in. (54.6 cm)	21.5 in. (54.6 cm)
<b>Weight (dry)</b>	26.0 lb (11.8 kg)	39.0 lb (17.7 kg)	52.0 lb (23.6 kg)
<b>Clean Pressure Drop</b>	1.7 PSI (11.7 kPa)	1.7 PSI (11.7 kPa)	2.5 PSI (17.2 kPa)
<b>Maximum Pressure<sup>1</sup></b>	15 PSI (1 bar)	15 PSI (1 bar)	15 PSI (1 bar)
<b>Water (per bowl) Capacity:</b>	10.3 oz (305 ml)	10.3 oz (305 ml)	10.3 oz (305 ml)
<b>Available Options:<sup>2</sup></b> (water detection kit) (12 or 24 vdc heater) (vacuum gauge)	Yes Yes Yes	Yes Yes Yes	Yes Yes Yes
<b>H<sub>2</sub>O Removal Efficiency</b>	99%		
<b>Operating Temperature</b>	-40° to +255°F / -40° to +124°C		
<sup>1</sup> Pressure installations are applicable up to the maximum PSI shown. Vacuum installations are recommended. <sup>2</sup> Not for use on gasoline applications. <b>Note:</b> Units with 1/2" NPT ports are available, contact the factory.			

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## Turbine Series

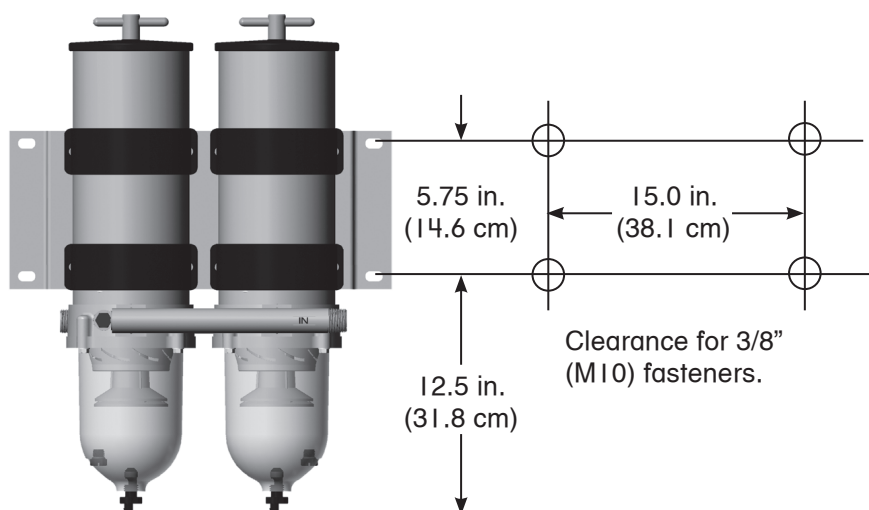
### How to Order

(The example below illustrates how part numbers are constructed.)

731000FH	312	2
Base model with 7/8"-14 UNF fuel ports (SAE J514).	Add <b>312</b> for a 12 volt dc heater or <b>324</b> for a 24 volt dc heater <sup>1</sup> . (omit if not desired)	Specify a micron rating: <b>2, 10, or 30.</b>
<sup>1</sup> 300 watt heater, use with a Racor relay kit - see Accessories.		

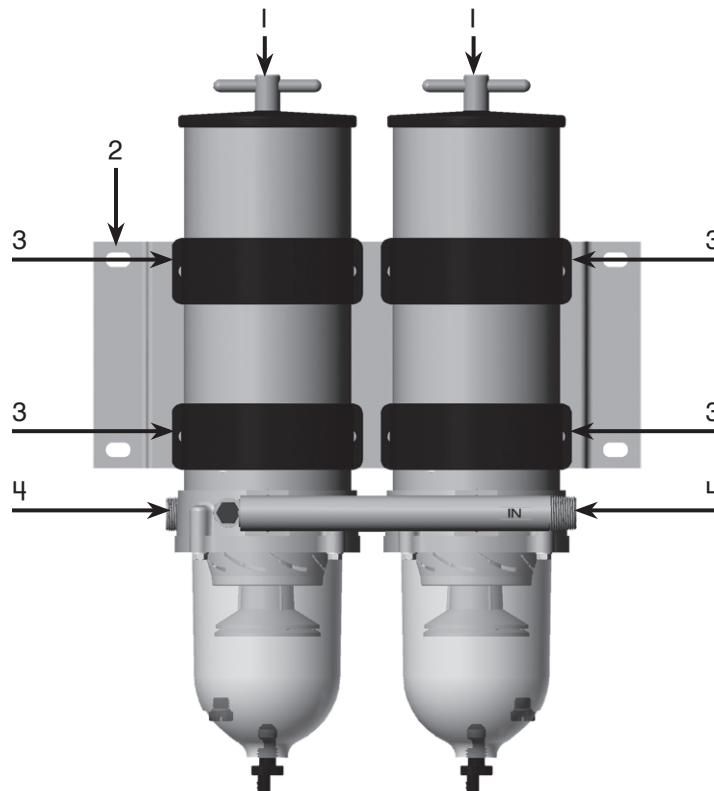
Replacement Elements (seals included)		
2 micron (Final Filtration)	10 micron (Secondary Filtration)	30 micron (Primary Filtration)
2020SM-OR	2020TM-OR	2020PM-OR
Note: 731000FH assemblies use TWO elements (one per 1000FH housing).		

### Mounting Instructions



# Mobile Fuel Filtration

## Turbine Series



## Replacement Parts

### 731000FH

	<u>Part Number</u>	<u>Description</u>
1.	<b>1000FH</b>	See 1000FH Replacement Parts List
2.	<b>11065</b>	Main Bracket
3.	<b>RK11815-103</b>	Housing Bracket (includes hardware)
4.	<b>RK11892</b>	Inlet or Outlet Manifold Tube (with 3/4"-16 NPT threads)

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## Turbine Series

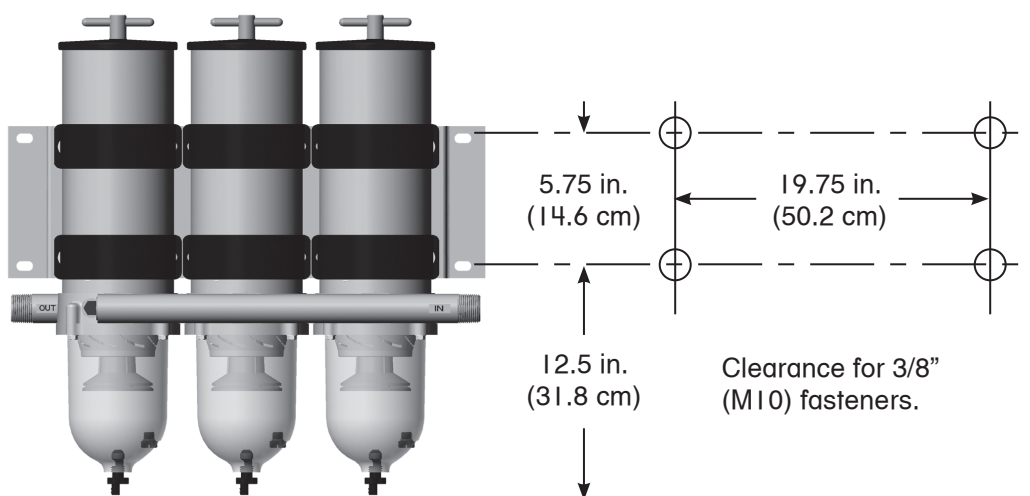
### How to Order

(The example below illustrates how part numbers are constructed.)

771000FH	312	2
Base metal with 1"-11 1/2 NPT fuel ports (SAE J476).	Add <b>312</b> for a 12 volt dc heater or <b>324</b> for a 24 volt dc heater <sup>1</sup> . (omit if not desired)	Specify a micron rating: <b>2, 10, or 30.</b>
<sup>1</sup> 300 watt heater, use with a Racor relay kit - see Accessories.		

Replacement Elements (seals included)		
2 micron (Final Filtration)	10 micron (Secondary Filtration)	30 micron (Primary Filtration)
2020SM-OR	2020TM-OR	2020PM-OR
Note: 771000FH assemblies use THREE elements (one per 1000FH housing).		

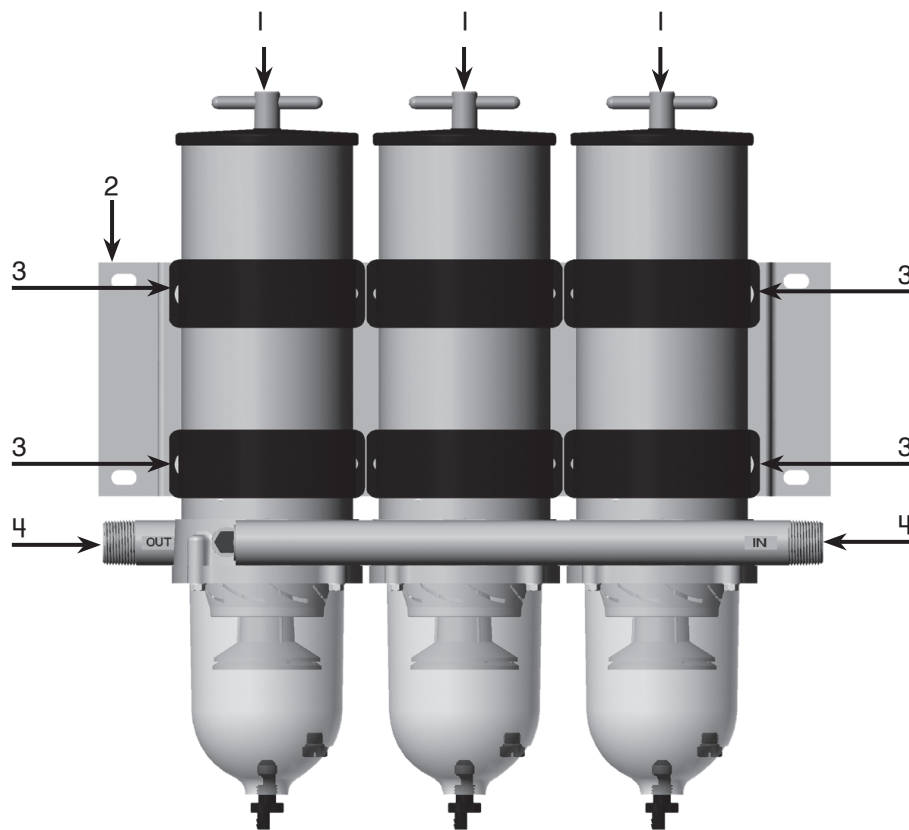
### Mounting Instructions





# Mobile Fuel Filtration

## Turbine Series



## Replacement Parts

### 771000FH

Part Number	Description
1. 1000FH	See 1000FH Replacement Parts List
2. 18998	Main Bracket Kit
3. RK11815-103	Housing Bracket (includes hardware)
4. 11076	Inlet or Outlet Manifold Tube (with 1"-11 1/2 NPT threads)

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## How to Order

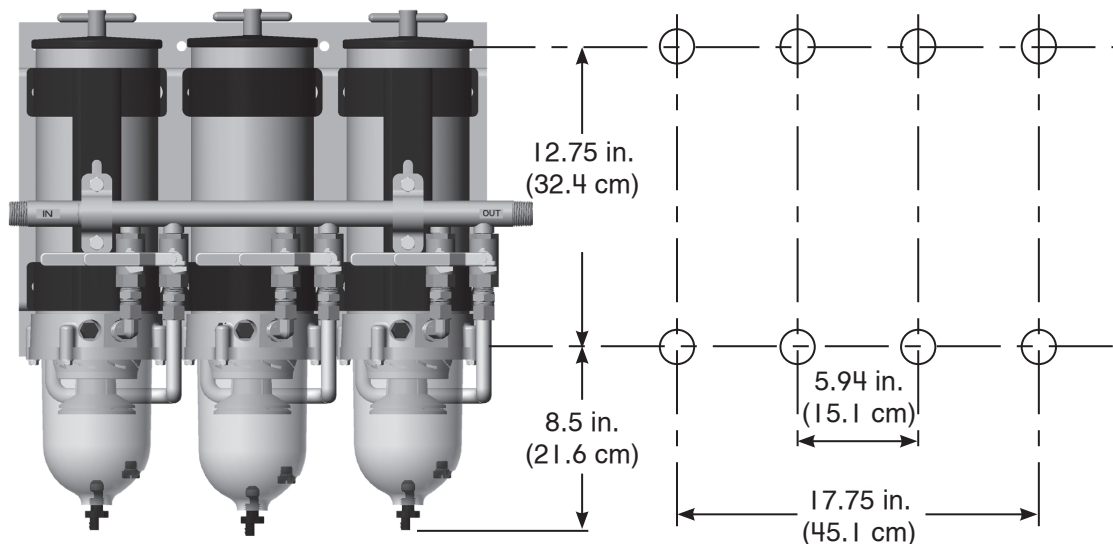
## Turbine Series

(The example below illustrates how part numbers are constructed.)

791000FHV	312	2
Base model with 3/4"-14 NPT fuel ports (SAE J476).	Add <b>312</b> for a 12 volt dc heater or <b>324</b> for a 24 volt dc heater <sup>1</sup> . (omit if not desired)	Specify a micron rating: <b>2, 10, or 30.</b>
<sup>1</sup> 300 watt heater, use with a Racor relay kit - see Accessories.		

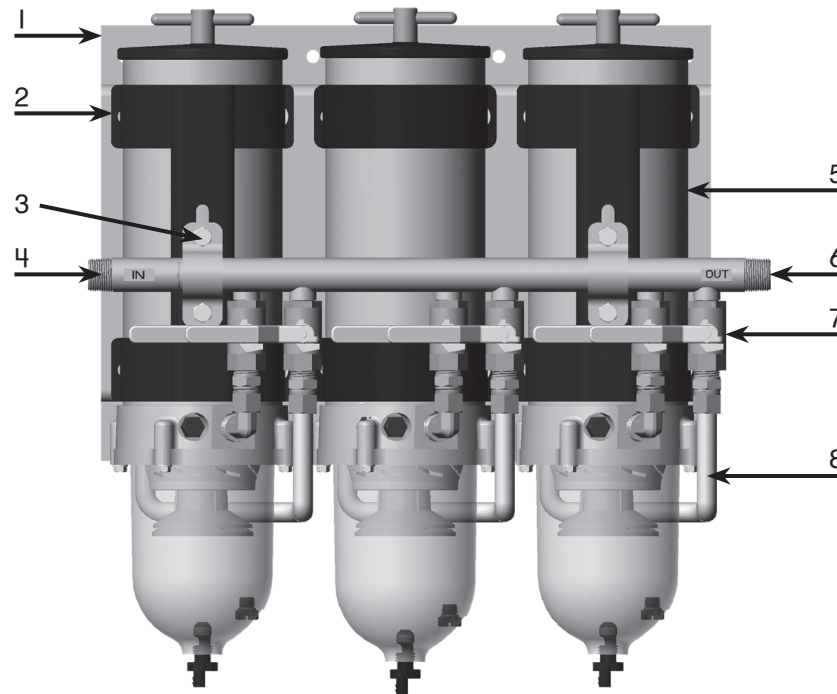
Replacement Elements (seals included)		
2 micron (Final Filtration)	10 micron (Secondary Filtration)	30 micron (Primary Filtration)
2020SM-OR	2020TM-OR	2020PM-OR
Note: 791000FHV assemblies use THREE elements (one per 1000FH housing).		

## Mounting Instructions



# Mobile Fuel Filtration

## Turbine Series



## Replacement Parts

791000FHV

<u>Part Number</u>	<u>Description</u>
1. 11-1632	Main Bracket
2. 11895	Clamp Bracket Kit
3. 11-1761	'U' Bracket Kit
4. 19460	Inlet Manifold Kit
5. 1000FH	See 1000FH Replacement Parts List
6. 19461	Outlet Manifold Kit
7. RK11073	1/2" Ball Valve Kit
8. 11-1626	Formed Tubing Kit

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## Turbine Series

# Troubleshooting

New filter installations must be filled with fuel and the fuel system must be adequately primed following the engine manufacturer's recommendations. Existing installation difficulties are usually associated with improper priming procedures or damage to the unit or fuel system. The result is either internal air suction or external fuel leakage. Diagnose with the following steps:

1. Check fuel tank level and verify fuel delivery valves are open.
2. Verify T-handle, bowl fasteners and fuel fittings are tight and bowl drain is closed.
3. If element is new, check potential restriction at fuel tank draw tube. An in-tank strainer may be plugged.
4. Review other troubleshooting instructions to uncover other solutions.

Correct external fuel leaks immediately! These conditions result in reduced engine performance such as: hard starting, stalling, reduced power and fire hazards.

### Correct Application

It is very important that Turbine Series filter assemblies are not 'under specified' for the application. The maximum fuel flow rating of the filter assembly must not be exceeded; doing so will reduce efficiency and de-gas (pull air from) the fuel.

### Filter Elements

Replacement elements are available in 2, 10 and 30 micron ratings (nominal). Filtration needs are based on application, fuel quality, maintenance schedules and operating climates. A simple rule to remember is... the finer the filtration, the more frequent the filter change interval.

Always carry extra replacement elements with your equipment as one tankful of excessively contaminated fuel can plug an element quickly.

When clogged to maximum capacity, elements will have a brown to black color or tar like contaminants may be present - this is normal. An appearance of a multi-colored slime (which may have a foul odor) is an indication of microbiological contamination. This condition must be treated immediately. Racor offers a wide variety of gasoline and diesel additives to prevent and treat these

problems; see 'Additives' section of this catalog. Severe conditions must be corrected by a repair facility.

Never operate a filter assembly without the element in place. The element safety valve on the fuel return tube will not expose the outlet hole if the element is removed. Instead, punch the emergency tab on the top of the element and leave in place.

Warning! Puncturing the emergency tab will bypass all filtration and send unfiltered fuel to your engine. Service the element as soon as possible to avoid harmful contaminants flowing downstream to the engine.

### Water Sensors

This feature alerts the operator of a high-water condition. The bowl must be drained of water at the earliest convenience. A Racor water detection module is needed to work with the in-bowl sensor. The unit should activate when the water reaches the sensor tips (and when they measure below 47,000 or 100,000 ohms of resistance, depending on the detection module used). If not, the tips may be fouled with a coating. Remove the sensor and clean the tips with a cloth. Run a jumper wire between the tips with the ignition ON to test the system. Difficulties usually lie in the wire connections, power source, or an independent ground.

### Heaters

In-filter heaters are starting aids only, but may be left on during cold operations to supply additional heat. The 150 and 300 watt heaters are an extremely reliable option, but MUST be powered via a relay switch due to the initial amperage surge at start-up: 25 amps at 12 vdc and 12.5 amps at 24 vdc. They do not activate unless the fuel is below 50°F (10°C) and automatically deactivate at 80°F (28°C).

### Heater Testing

The heater can only be tested when the thermostat is closed (fuel temperature is below 50°F or 10°C). With a voltmeter attached to external wiring, and engine off, power should drop when heater is switched on. (Option - remove the heater and place in a freezer until the temperature is under 50°F (10°C). Remove the heater and repeat the above test).

# Mobile Fuel Filtration

## Turbine Series

# Troubleshooting

All Racor Turbine Series filters are 100% tested to ensure a leak-proof, quality product.

Apply Parker Super O-lube (part number RK31605) or equivalent to all seals at major attachment points to maintain integrity, seal elasticity, to fill small voids and provide protection from degradation. Perform the following checks with the engine OFF (and applicable valves closed). For replacement parts, refer to the appropriate 'Replacement Parts' section of this catalog.

**Damaged, worn, or dirty seals will allow air ingestion. Inspect and replace all seals as needed. Lube all seals with Parker Super O-Lube. Clean sealing surfaces thoroughly of dirt and debris every time an element is replaced.**

Hand tighten T-handle; do not use tools!

If element is changed or assembly drained for any reason, repriming assembly (filling with fuel) may be necessary. Fill to just above top of element before replacing lid.

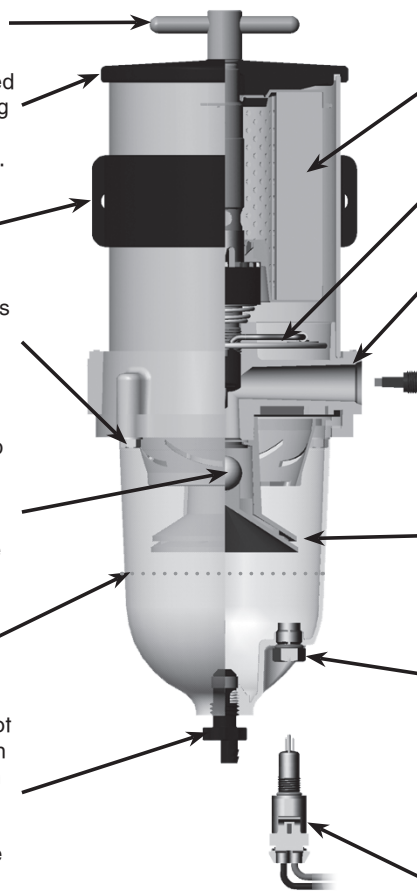
Do not overtighten carriage bolt as this may distort cylinder roundness.

Do not overtighten self-taping screws; this may strip the threads. After disassembly, start screws by hand prior to using tools. Specifications: 55-65in. lbs.

The hollow aluminum check-ball floats up against the seal when the fuel is stopped thus preventing fuel bleed-back. If your unit loses prime, inspect upstream hose connections first, otherwise, disassemble the unit and inspect the seal and ball.

Drain water before it reaches this level.

Air bubbles or fuel leakage appearing from drain may indicate that the drain is not closed completely or that a seal has been clogged with contaminants. Tighten drain and inspect. If self-venting drain will not work when opened, it may be clogged. Cycle drain (open close) or attach a hose and briefly apply air (<2-3 PSI, with T-handle and lid removed) to dislodge any contaminants that may be stuck.



Element should be replaced every 10,000 miles or every 500 hours, or every other oil change, annually, or at first indication of power loss, which ever comes first. Construction and agricultural equipment should change element every 300 hours.

See 'Heaters' on previous page.

SAE O-ring ports should have a smooth angled seat for sealing. Do not scratch surface. Check O-ring for damage. Replace if necessary.

Heater feed-thru O-ring must not be damaged or swollen. Tighten snugly. Specifications; 15-20 in. lbs.

Air bubbles appearing from turbine are an indication of an upstream leak between Racor inlet and fuel tank pick-up tube.

A water sensor plug is standard equipment on new assemblies. Water sensor kits are available as accessories; see 'Accessories' section of this catalog. Tighten plug or water sensor snugly. Specification; 15-20 in. lbs.

Water sensors activate when water contacts the sensor tips. Air bubbles or fuel leakage appearing from sensor area may indicate that it is loose or O-ring is damaged. Tighten or disassemble and inspect. Specification; 15-20 in. lbs.

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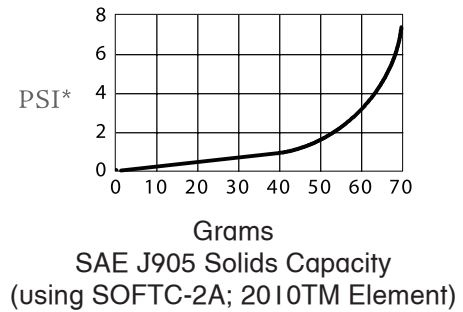
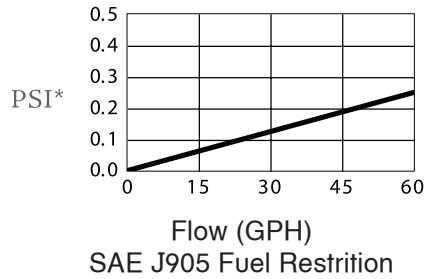
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## Turbine Series

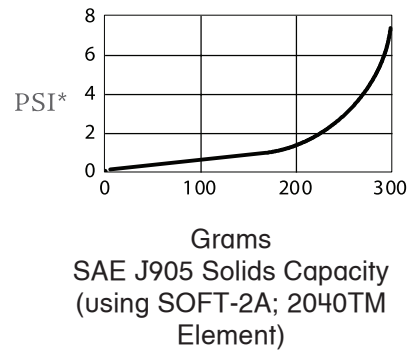
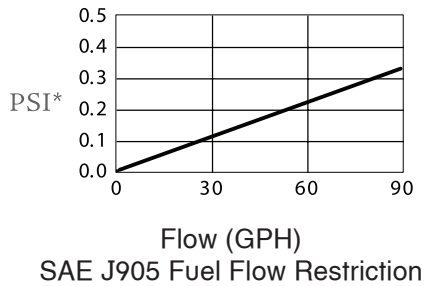
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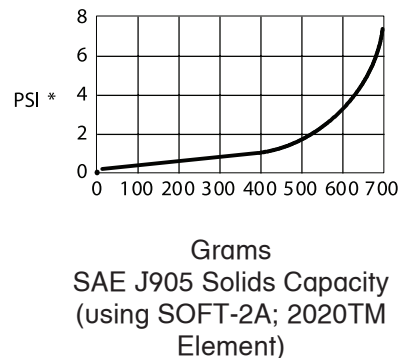
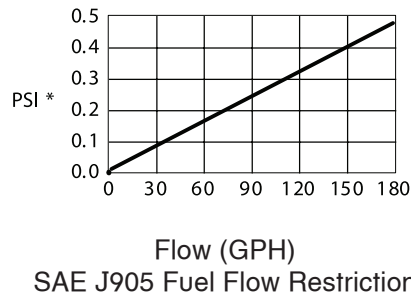
500FG



900FH



1000FH



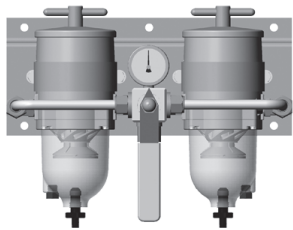
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(PSI X 2.036 = inHg) (PSI X 6.895 = kPa)

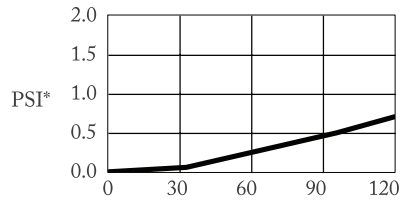
# Mobile Fuel Filtration

## Turbine Series

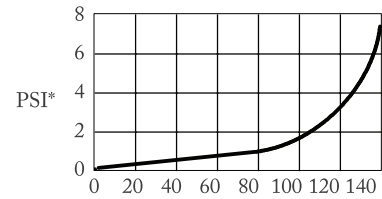
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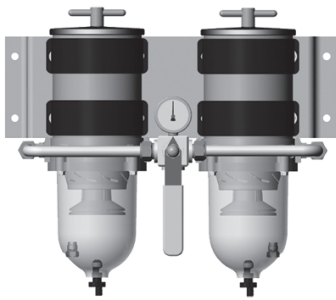
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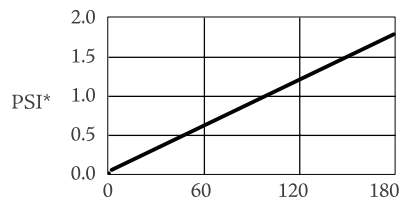
Flow (GPH)  
SAE J905 Fuel Flow Restriction



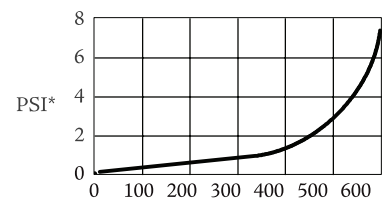
Grams  
SAE J905 Solids Capacity  
(using SOFT-2A; 2010TM Element)



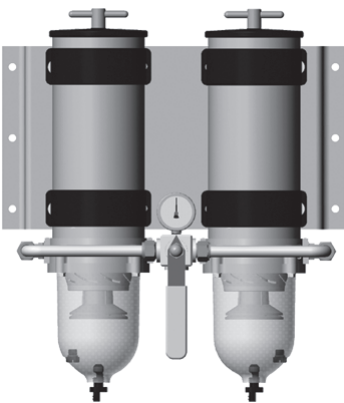
75900FHX



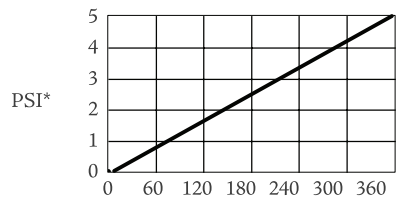
Flow (GPH)  
SAE J905 Fuel Flow Restriction



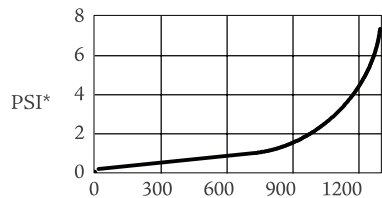
Grams  
SAE J905 Solids Capacity  
(using SOFT-2A; 2040TM Element)



751000FHX



Flow (GPH)  
SAE J905 Fuel Flow Restriction



Grams  
SAE J905 Solids Capacity  
(using SOFT-2A; 2020TM Element)

(Controlled laboratory test. Field results may vary.)

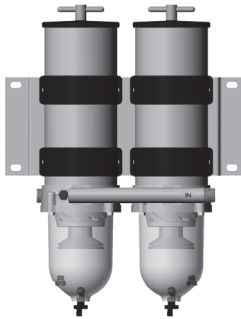
(PSI X 2.036 = inHg) (PSI X 6.895 = kPa)

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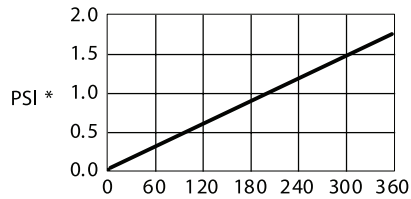
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## Turbine Series

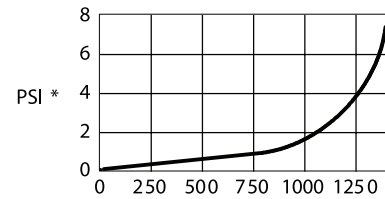
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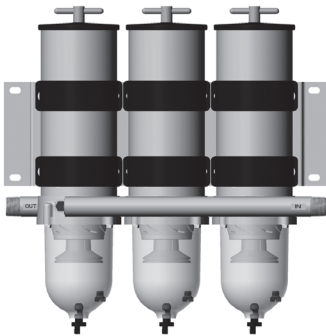
731000FH



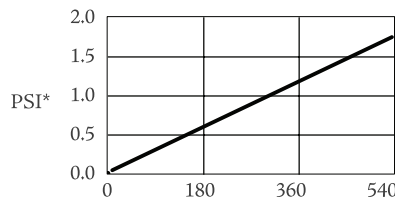
SAE J905 Fuel Flow Restriction



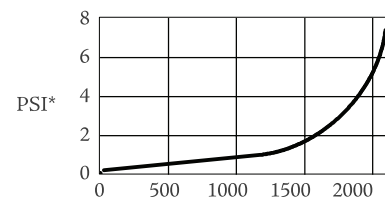
SAE J905 Solids Capacity  
(using SOFT-2A; 2020TM Element)



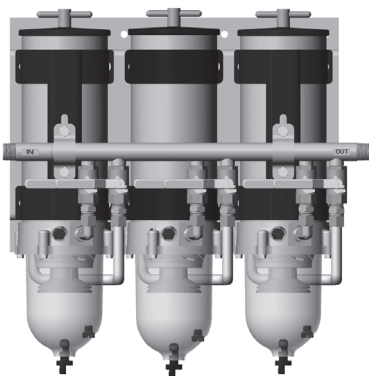
771000FH



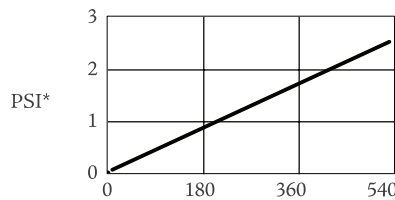
SAE J905 Fuel Flow Restriction



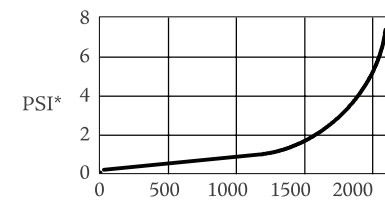
SAE J905 Solids Capacity  
(using SOFT-2A; 2020TM Element)



791000FHV



SAE J905 Fuel Flow Restriction



SAE J905 Solids Capacity  
(using SOFT-2A; 2020TM Element)

(Controlled laboratory test. Field results may vary.)

(PSI X 2.036 = inHg) (PSI X 6.895 = kPa)





## Accessories

### RK22936 No Spill Filler Spout

These versatile filler spouts have unlimited uses. They fit many Racor products including additives bottles and the flexible design allows users to bend the spout for flow control. This kit includes 4 hanging strips with 12 pieces on each strip; that's a total of 48 pieces per kit.

### RK31605 Parker Super O-lube

Another great product that helps with the installation of our filter assemblies and ensures a correct seal. Parker Super O-lube has a silicone base and will not harm O-rings, seals and other gaskets. Available in a 2 oz. tube which gives you plenty to go around. One 2 oz. tube per kit.



### RK22628 Bowl Wrench

Racor offers a hand wrench to remove all metal and see-thru spin-on bowls that feature external ribs. By simply fitting the wrench over the bowl ribs, the bowl can be removed from the replaceable spin-on element, or filter housing with little effort. The wrench is made of a corrosion proof, high-impact, high-strength engineered polymer. One bowl wrench per kit.



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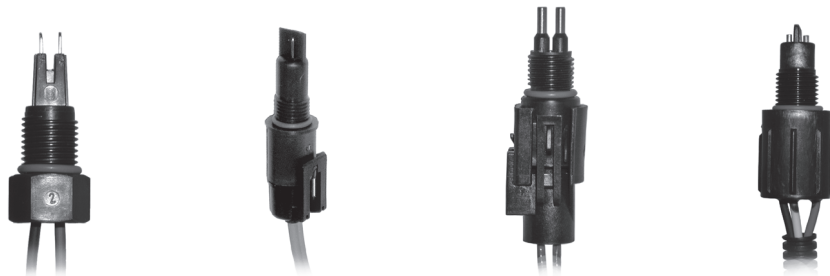
# Mobile Fuel Filtration

## Accessories

### Water Probe Kits

Racor offers a wide selection of water probes, each designed for use with particular models and installation requirements. These probes are available in various configurations to fit every Racor filter/separator. The water probe is only a component in the water detection system and will not work without a Racor electronic detection module (see next two pages).

The **RK30880** has the electronic detection module built-in to its design and has the simplest installation procedure. Multiplex units must use one probe for each collection bowl but only one water detection module is needed. Wiring instructions are supplied with each water detection module sold. Use the guide below to find the correct probe for your application.



Specifications	RK21069	RK30964	RK22371	RK30880
<b>Threads</b>	½"-20 Threads	½"-20 Threads	⅜"-18 Threads	½"-20 Threads
<b>Description</b>	One piece design with two wires. Requires a detection module.	Includes detachable 2-wire connector. Requires a detection module.	Includes detachable 2-wire connector. Requires a detection module.	Includes detachable 3-wire connector, built-in detection electronics and under-dash warning light. Probe sends ground signal to light.
<b>Voltage</b>	12 or 24 vdc	12 or 24 vdc	12 or 24 vdc	12 or 24 vdc
<b>Power Draw: (12 volt) (24 volt)</b>	N/A	N/A	N/A	5 Milliamps 10 Milliamps
<b>Maximum Load</b>	N/A	N/A	N/A	1 Amp
<b>Weight</b>	0.03 lb (0.01 kg)	0.02 lb (0.01 kg)	0.1 lb (0.05 kg)	0.4 lb (0.2 kg)

Caution: Never wire a water probe directly to voltage or another brand of detection module.

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# Mobile Fuel Filtration

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## Accessories

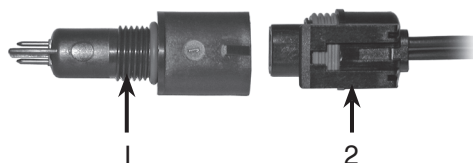
### RK21069 Replacement Part List

RK21069 Water Probe  
(one piece design)



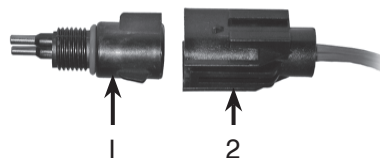
### RK30964 Replacement Part List

1. RK30902 Water Probe  
2. RK30904 Connector



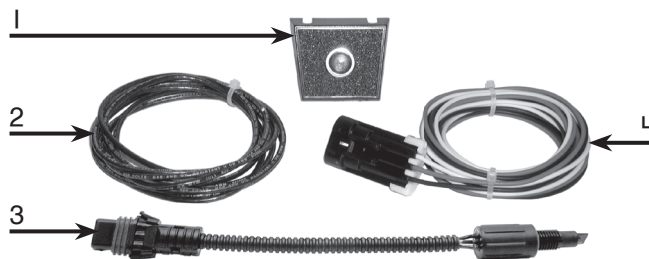
### RK22371 Replacement Part List

1. RK21145 Water Probe  
2. RK21199 Connector



### RK30880 Replacement Part List (individual components NOT sold separately)

1. Light Panel  
2. 14GA Black Wire  
3. Water Probe with Male Connector  
4. Three Wire Female Connector



# Mobile Fuel Filtration

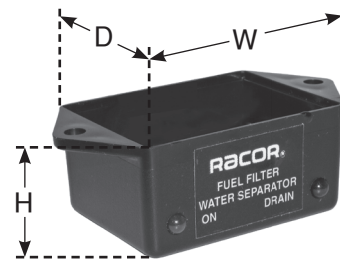
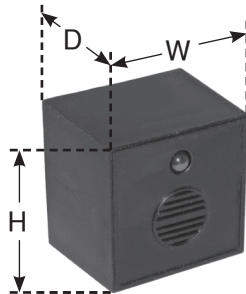
## Accessories

### Water Detection Modules

Racor Water Detection Kits are available in a wide selection for various installation requirements. Under dash, in-dash and remote mount, these solid-state units may be used with any Racor fuel filter/water separator and water probe. They are manufactured using the highest quality materials and are all 100% electrically tested.

An electric detection module analyzes electrical resistance at the water probe and determines if water is present. If so, the detection module operates to indicate water, based on its features listed below. All units reset automatically after water is removed (unless specified). All water detection module kits include an **RK21069** water probe.

*Under Dash*



Specifications	RK12870	RK12871	RK20725	RK20725-24
<b>Voltage</b>	12 vdc	24 vdc	12 vdc	24 vdc
<b>Features</b>	Light and Buzzer	Light and Buzzer	Light Only	Light Only
<b>Description</b>	Lamp illuminates and buzzer sounds when water is detected. Water must be drained to reset light and stop buzzer.	Same as RK12870	Green ON lamp illuminates with power and red DRAIN lamp illuminates when water is detected. Includes initial power-up self diagnosis feature & circuit protection.	Same as RK20725
<b>Dimensions</b>	1.4" H x 1.25" D x 1.4" W	1.4" H x 1.25" D x 1.4" W	1.0" H x 1.5" D x 2.0 W	1.0" H x 1.5" D x 2.0 W
<b>Power Draw</b>	1 Milliamp	1 Milliamp	10 Milliamps	10 Milliamps
<b>Max. Internal Load</b>	30 Milliamps	30 Milliamps	30 Milliamps	30 Milliamps
<b>Weight</b>	0.2 lb (0.1 kg)	0.2 lb (0.1 kg)	0.4 lb (0.2 kg)	0.4 lb (0.2 kg)

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## Accessories

### *In-Dash Water Detection Modules*



Specifications	RK20726	RK11-1570
<b>Voltage</b>	12 or 24 vdc	12 or 24 vdc
<b>Features</b>	Light & Buzzer	Light & Buzzer
<b>Description</b>	Red DRAIN lamp illuminates continuously and buzzer sounds momentarily when water is detected. Power-up self diagnosis feature and circuit protection included.	Includes pre-set vacuum switch (7in. Hg.), connector and outlet adapter fitting. The red DRAIN or CHANGE FILTER lamps illuminate continuously and buzzer sounds momentarily when water is detected.
<b>Dimensions<sup>1</sup></b>	2.2" Diameter x 3.2" Depth	2.2" Diameter x 2.0" Depth
<b>Power Draw: (12 volt) (24 volt)</b>	3 Milliamps 13 Milliamps	3 Milliamps 14 Milliamps
<b>Max. Internal Load</b>	30 Milliamps	30 Milliamps
<b>Weight</b>	0.4 lb (0.2 kg)	0.9 lb (0.4 kg)
<sup>1</sup> Cut 2.0" diameter hole to mount gauges in instrument panel.		

# Mobile Fuel Filtration

## Accessories

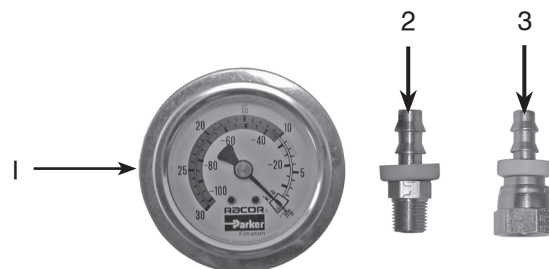
### Remote-Mount Water Detection Modules



Specifications	RKI4329	RKI4321	I4332
<b>Voltage</b>	12 vdc	24 vdc	12 vdc
<b>Features</b>	Sends Hot (+) Signal	Sends Hot (+) Signal	Sends Ground (-) Signal
<b>Description</b>	Receives a signal from a water probe or vacuum switch (not included) and then sends a signal to a horn or lamp. Must be used with a relay if power draw is over 1 amp.	Same as RKI4329 but sends 24 vdc hot (+) signal.	Same as RKI4329 but sends 12 vdc ground (-) signal
<b>Dimensions</b>	0.7" H x 2.5" D x 2.8" W	1.0" H x 1.5" D x 2.0 W	1.0" H x 1.5" D x 2.0 W
<b>Power Draw</b>	14 Milliamps	10 Milliamps	10 Milliamps
<b>Max. Internal Load</b>	30 Milliamps	30 Milliamps	30 Milliamps
<b>Weight</b>	0.3 lb (0.1 kg)	0.4 lb (0.2 kg)	0.4 lb (0.2 kg)

## I606B Part List

- 1. RKI1233 Vacuum Gauge
- 2. 7232-4 Adapter Fitting  
(1/8" NPTM x #4 (1/4") hose)
- 3. 7234-4 Adapter Fitting  
(1/4" swivel x #4 (1/4") hose)
- 11-1115 Installation Instructions



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## Accessories

### Vacuum Gauges

Vacuum gauges are available to monitor element condition and as the filter element slowly becomes clogged with contaminants the restriction (resistance to flow) increases. The fuel pump still tries to draw fuel (suction) but because of this restriction less fuel is delivered to the engine and instead more air is pulled from it (fuel de-gassing). These results can cause the engine to lose power and eventually stall.

By installing a vacuum gauge in your fuel system (at the outlet side of the Racor filter) visual monitoring of element condition is possible at a glance. At the first indication of decreased performance, note the dial reading or apply the 'red line' decal provided with most kits. This will assist in knowing when to change the filter at the next interval.



Specifications	RK11233	1606B	RK11-1676
<b>Description</b>	Silicone dampened, 0-30 inHg. Instrument panel installation.	Includes gauge and two fittings (see below). Instrument panel installation.	Silicone dampened, 0-30 inHg.
<b>Threads</b>	¼" NPT back bracket mount.	¼" NPT back bracket mount.	¼" NPT bottom boss mount.
<b>Dimensions</b>	2.0" W x 1.9" D	2.0" W x 1.9" D	2.0" W x 1.1" D
<b>Dial</b>	2 in.	2 in.	2 in.
<b>Weight</b>	0.4 lb (0.2 kg)	0.4 lb (0.2 kg)	0.3 lb (0.1 kg)
<p>Special Notes: For severe vibration applications, mount the gauge on a stable, remote location and connect to the source using flexible tubing. After September 1999, Racor converted many liquid-filled gauges to new silicone dampened movement. This new (dry) technology provides a vibration resistant design that never leaks fluid or requires adjustments due to temperature or altitude variations.</p>			



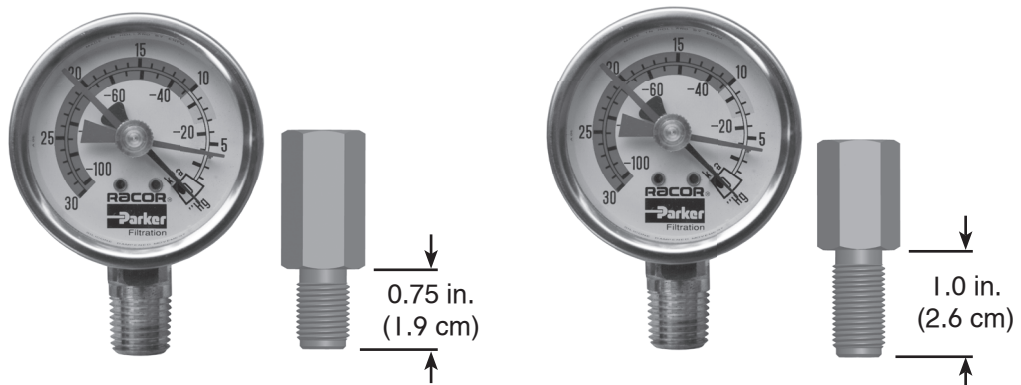
# Mobile Fuel Filtration

## Accessories

### T-handle Vacuum Gauge

T-handle vacuum gauges are available to monitor element condition and as the filter element slowly becomes clogged with contaminants the restriction (resistance to flow) increases. The fuel pump still tries to draw fuel (suction) but because of this restriction less fuel is delivered to the engine and instead more air is pulled from it (fuel de-gassing). These results can cause the engine to lose power and eventually stall.

By installing a vacuum gauge in your fuel system (at the outlet side of the Racor filter) visual monitoring of element condition is possible at a glance. At the first indication of decreased performance, note the dial reading or apply the 'red line' decal provided with most kits. This will assist in knowing when to change the filter at the next interval.



Specifications	RK11-1969	RK11-1669
<b>Description</b>	<b>500FG units only.</b> T-handle vacuum gauge kit includes gauge & 11-1969 Fitting 9/16"-18 UNF	<b>For 900FH &amp; 1000FH units only.</b> T-handle vacuum gauge kit includes gauge & 11-1668 Fitting, 9/16"-18 UNF
<b>Threads</b>	1/4" NPT bottom boss mount.	1/4" NPT bottom boss mount.
<b>Dimensions</b>	2.0" W x 1.1" D	2.0" W x 1.1" D
<b>Dial</b>	2 in.	2 in.
<b>Weight</b>	0.3 lb (0.1 kg)	0.3 lb (0.1 kg)

Special Notes: For severe vibration applications, mount the gauge on a stable, remote location and connect to the source using flexible tubing. After September 1999, Racor converted many liquid-filled gauges to new silicone dampened movement. This new (dry) technology provides a vibration resistant design that never leaks fluid or requires adjustments due to temperature or altitude variations.

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## Accessories

### Compound Gauge Kits

Compound gauges are recommended for applications where pressure is occasionally present. These conditions are typically a result of 'head' pressure which is present in overhead fuel tank installations. Whatever the reason, compound gauges should be used because damage may result if a straight vacuum only gauge is used. Liquid filled (glycerin) gauges are recommended for high-vibration and pulsation applications (not engine mounted).



Specifications	RK18-1104	RK18-1551	RK19476
<b>Description</b>	Liquid Filled, 0-30 inHg / 0-30 PSI.	Liquid Filled, 0-30 inHg / 0-30 PSI.	0-25 inHg / 0-15 PSI.
<b>Threads</b>	¼"NPT back mount.	¼"NPT back mount.	¼"NPT bottom mount.
<b>Dimensions</b>	2" W x 1.9" D	2.5" W x 2.2" D	2.0" W x 1.1" D
<b>Dial</b>	2 in.	2.5 in.	2 in.
<b>Weight</b>	0.4 lb (0.2 kg)	0.5 lb (0.2 kg)	0.2 lb (0.1 kg)
Special Notes: For severe vibration applications, mount the gauge on a stable, remote location and connect to the source using flexible tubing.			

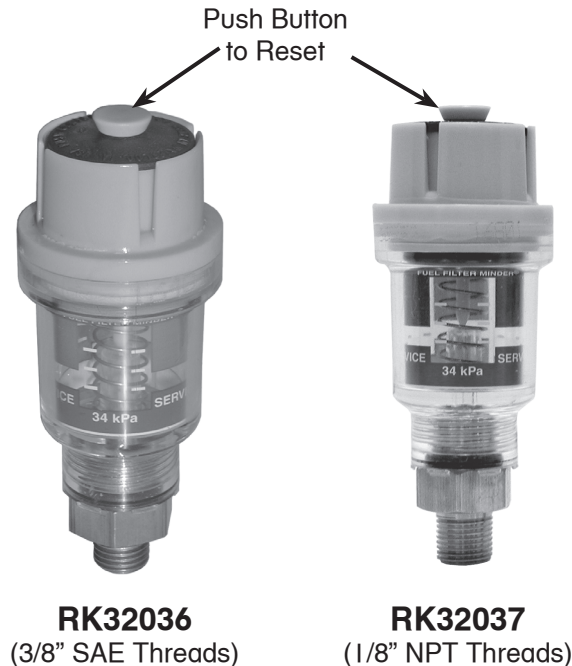
# Mobile Fuel Filtration

## Accessories

### *Vacuum Restriction Indicators*

#### **RK32036 and RK32037**

Vacuum restriction indicators monitor element condition as the filter slowly becomes clogged with contaminants. As the element gets dirty, restriction increases and less fuel is delivered to your engine causing the engine to lose power and eventually stall. By installing a vacuum indicator in your fuel system, visual monitoring of element condition is possible at a glance, increasing fuel system troubleshooting efficiency, eliminating guess work, and lengthening element change intervals.



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## Accessories

### Filter “Block-off” Caps

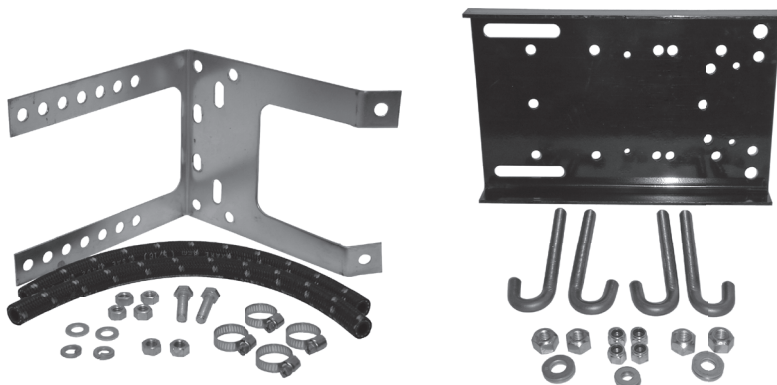


Specifications	22021	11548
<b>Description</b>	Ford Spin-on Cap Assembly (not a filter)	Cummins Spin-on Cap Assembly (not a filter)
<b>Threads</b>	1"-14	1"-14
<b>Gasket Outside Diameter</b>	3.60" x 0.25" thick	2.83" x 0.22" thick
<b>Dimension</b>	3.63" diameter, 3.5" long	3.63" diameter, 3.5" long
<b>Weight</b>	0.3 lb (0.1 kg)	0.3 lb (0.1 kg)

# Mobile Fuel Filtration

## Accessories

### *Mounting Bracket Kits*



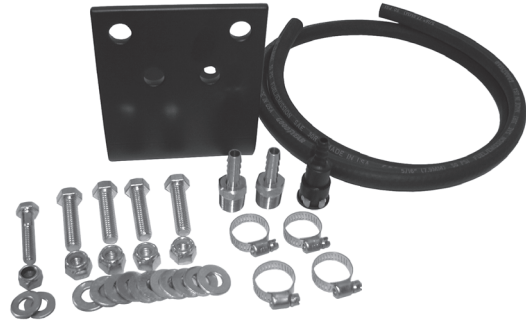
<b>Specifications</b>	<b>15205</b>	<b>RK11-1518</b>
<b>Description</b>	Automobile & Light Truck Mounting Kit. Features flexible plated 14 gauge steel arms that can be cut and formed to fit many surfaces. Includes mounting hardware.	Frame Rail Mounting Bracket Kit. Features an adjustable powder coated 10 gauge steel design to fit frame rails up to 10" X 3 3/4" and 13/16" thick. Includes mounting hardware.
<b>Weight</b>	1.8 lb (0.8 kg)	6.0 lb (2.7 kg)

## Accessories

### OEM Kits

#### RK31923

F540/550 Bracket, Hose and Fittings Kit:  
 This kit is designed for use with 1999 and newer 2 wheel drive (2WD) and 4 wheel drive (4WD) vehicles. For this application the 645R30 model fuel filter/water separator (30 micron primary filter element) is suggested - order separately. For colder climate applications, the heated version is recommended: 645R1230 (this model includes a 12 vdc, 200 watt in-bowl heater - order relay kit number RK11861 unless your vehicle can



#### RK32313

DMAX Primary Fuel Filter Kit:  
 This primary fuel filter kit was designed specifically for General Motors pickups (extended cab and crew cab only) with 6.6L Duramax Diesel engines.

Kit Includes:

Qty	Part No.	Description
1	11-1962	Primary Filter Label
1	RK11861	12v Heater Relay Kit
4	11801	3/8"-16 X 1.5 Capscrews
8	11080	3/8" SAE Flat Washers
4	11901	3/8"-16 Self-locking Hexnuts
12	11114	6 3/4" Plastic Wire Ties
2	11-1220	3/8" Ring Terminals
2	12252	Wire Splice Connectors
2	911-N6-H8	3/8" NPT X 1/2" Hose Fittings
2	32280	1/2" Hose X 1/2" Tube Fittings
4	50016	#10 Hose Clamps
1	660R1210	Fuel Filter/Water Separator
1	32312	#8 X 36" Rubber Hose
1	32311	Filter Bracket
1	32314	Water Sensor/Harness Kit

Illustration does not show all components.

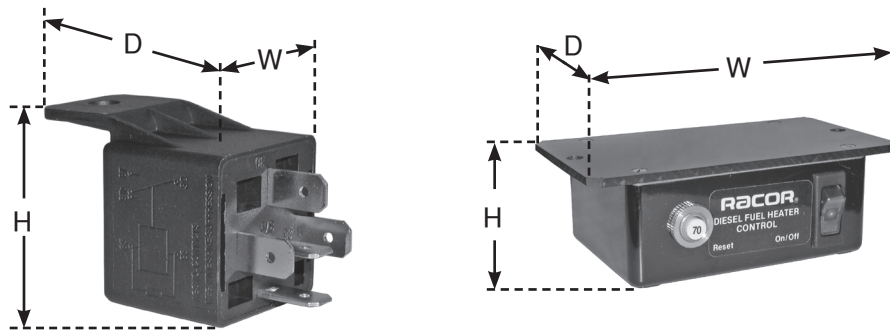


# Mobile Fuel Filtration

## Accessories

### *Electrical Heater Relay Kits*

The following relay kits may be necessary when installing Racor Heater Kits due to the power demand. Standard OE fuses, wiring and alternators may be unable to carry the load without overheating or potential shorting, creating a serious condition.



Specifications	RK11861	RK11862	RK19490-12	RK19490-24
<b>Description</b>	Heater Relay Kit, Includes fuse and holder.	Heater Relay Kit, Includes fuse and holder.	Heavy-Duty Relay Kit	Heavy-Duty Relay Kit
<b>Voltage</b>	12 vdc	24 vdc	12 vdc	24 vdc
<b>Detection Module</b>	Remote Mount	Remote Mount	Under Dash	Under Dash
<b>Maximum Watts</b>	300	360	600	900
<b>Maximum Amps</b>	25	15	50	37
<b>Dimensions</b>	1.3" H x 1.6" D x 1.1" W	1.3" H x 1.6" D x 1.1" W	1.7" H x 2.9" D x 5.1" W	1.7" H x 2.9" D x 5.1" W
<b>Weight</b>	0.3 lb (0.1 kg)	0.3 lb (0.1 kg)	1.6 lb (0.7 kg)	1.6 lb (0.7 kg)
Caution: If you are uncertain if your electrical system can provide the additional power draw, consult your equipment dealer or qualified electrician.				

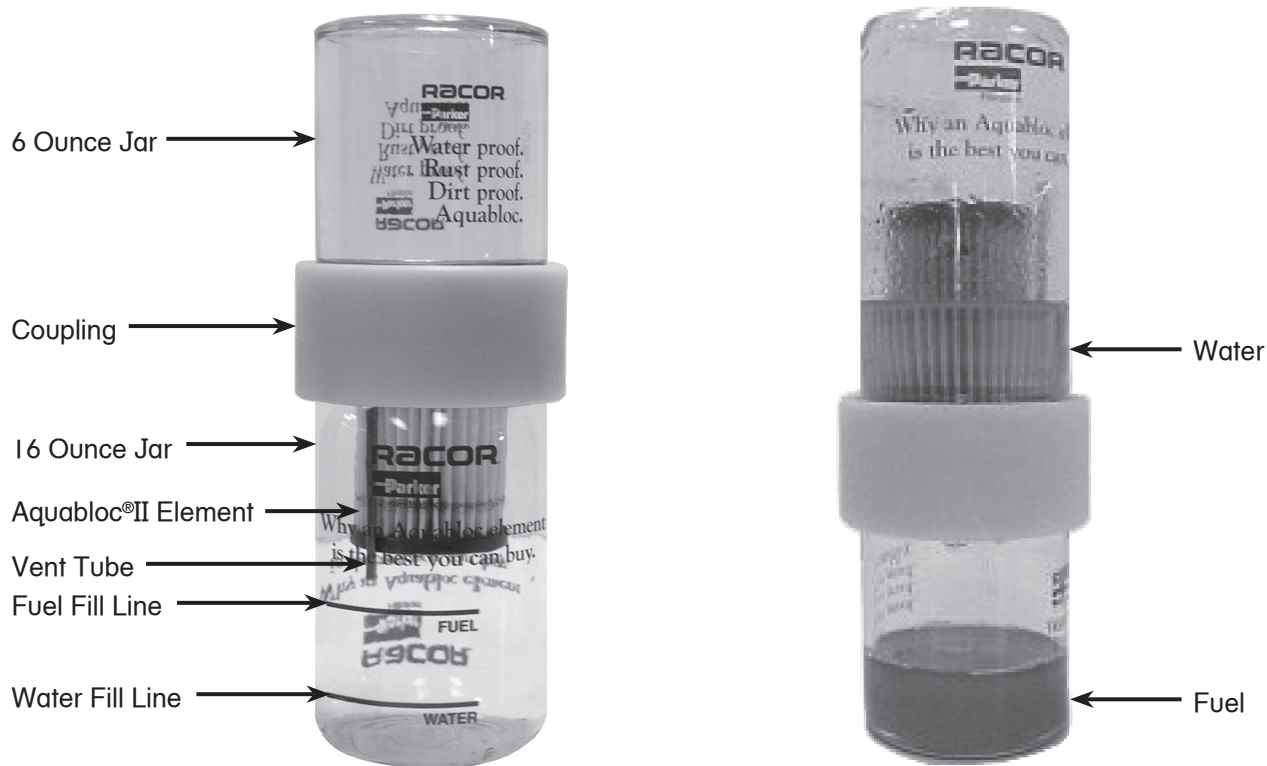
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800.344.3286 ext. 7555  
racortech@parker.com

## Accessories

### *12879 Aquabloc®II Demonstration Unit*

The Racor Attache Aquabloc®II Demonstration Unit is a unique way of showing the exceptional water separation capabilities of our Aquabloc®II paper media. This demonstration will show that our Aquabloc®II paper media will easily separate a fuel/water mixture and allow fuel to pass through the element while water is blocked and held back. This demonstration can be repeated many times with the same element and will prove that Racor Aquabloc®II elements are far superior than other elements on the market.



Before Demonstration

Completed Demonstration





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WFH5750K .....	94, 97, 99
WFH5750K/30 .....	94, 97, 99
WFH5760 .....	84, 94, 99
WFH5760X .....	97, 99

### X

N/A

### Y

N/A

### Z

N/A

# Notes

Lined area for taking notes, consisting of numerous horizontal lines.

# Section 2



## **Marine Fuel Filtration**

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**Section 2 - Marine Fuel Filtration**

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# Marine Certifications

## Fuel Standards

The identities below are part of a Type Approval System and may be applicable to many Racor products. Marine certifications that are specific to certain Racor models are listed below their respective logo and certification number (or program).



American Bureau of Shipping (ABS),  
Product Type Approval  
(Certification #00-SF37508-X)

Diesel Fuel Filter/Water Separators:  
500MA, 900MA, 1000MA, 731000MA,  
75500MAX, 75900MAX, 751000MAX,  
771000MA and 791000MAV.



BUREAU  
VERITAS

Bureau Veritas Marine,  
Product Type Approval  
(05634/BXBV)

Racor Fuel Filter/Water Separators:  
500MA, 900MA, 1000MA, 731000MA,  
75500MAX, 75900MAX, 751000MAX,  
771000MA, 791000MAV, 812, 75812  
and 79812.



US Coast Guard Approved

United States Coast Guard accepted for  
use aboard inspected vessels per 33  
CFR (Code of Federal Regulations).

500MA, 900MA, 900MAM, 1000MA,  
1000MAM, 731000MA, 731000MAM and  
771000MA.



American Boat and Yacht Council (ABYC),  
Inc., Individual Standard, H-33 (diesel fuel  
systems) and H-24 (gasoline fuel systems).



UL Recognized Component

Marine Electrical and Fuel Systems

**Diesel fuel filter cartridges:**

B32001M to B32012M, S3201UL to  
S3212UL and S3234UL.

**Gasoline fuel filter cartridges:**

S3201UL, S3204UL, S3220UL, S3221UL,  
S3228UL, S3232UL, B32020MAM and  
B32021MAM.

**Diesel/Gasoline filter cartridges:**

R12SUL, S3201UL, S3204UL, R24SUL,  
R26SUL, R15TUL, R20TUL and R25TUL.



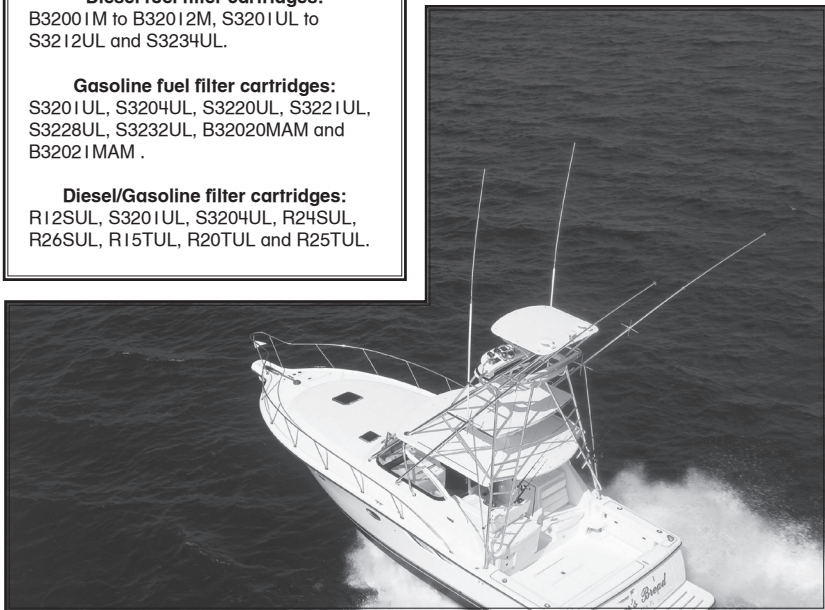
See next page.



American Society for Testing and Materials  
(ASTM), ASTM F-1201.



National Marine Manufacturing Association  
(NMMA), member.



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Fax: 209.529.3278  
E-mail: racor@parker.com  
www.parker.com/racor



# Marine Certifications

## Fuel Standards



Underwriters Laboratories (UL), Inc. UL classified for CE systems.  
In accordance with ISO 11088.

### Diesel fuel filters/water separators:

110, 110A, 120RMAM, 220CMAM, 220RMAM, 225CMAM, 225RMAM, 445MAM, 460MAM, 490MAM, 4120MAM, 500MA, 500MAM, 900MA, 900MAM, 1000MA, 1000MAM, 75900MA, 75900MAM, 75900MAV, 731000MA, 731000MAM, 751000MA, 751000MAM, 751000/MAV, 751000MAVM, 771000MA, 771000MAM, 791000MA, 791000MAM, 791000MAV, 800D-12, 850, 320R-MAM-01, 320R-MAM-04, 75500MAX, 75500MAXM, 75900MAX, 75900MAXM, 751000MAX, 751000MAXM, 215RMAM, 230RMAM and 245RMAM.

### Diesel fuel filters/water separators additionally classified in accordance with ISO 10088:

110, 110A, 120RMAM, 220CMAM, 220RMAM, 225CMAM, 225RMAM, 445MAM, 460MAM, 75900MA, 75900MAM, 75900MAV, 731000MA, 731000MAM, 751000MA, 751000MAM, 751000/MAV, 751000MAVM, 751000MAX, 751000MAXM, 771000MA, 771000MAM, 791000MA, 791000MAM, 791000MAV, 800D-12, 850, 320R-MAM-01, 320R-MAM-04, 75500MAX, 75500MAXM, 75900MAX, 75900MAXM, 500MA, 500MAM, 900MA, 900MAM, 1000MA and 1000MAM.

### Gasoline fuel filters/water separators:

110, 110A, 120RMAM, 220MAMG, 225MAMG, 500MAM, 900MAM, 1000MAM, 731000MAM, 75900MAM, 751000MAM, 751000MAVM, 771000MAM, 791000MAM, 791000MAVM, 32ORMAM-01, 32ORMAM-04, 320R-RAC-02, 660RRAC02, 75500MAXM, 75900MAXM, 751000MAXM, 3120R-RAC-32 and 120R-RAC-02.

### Gasoline fuel filters/water separators additionally classified in accordance with ISO 10088:

110, 110A, 120RMAM, 220MAMG, 225MAMG, 500MAM, 900MAM, 1000MAM, 731000MAM, 75900MAM, 751000MAM, 751000MAVM, 771000MAM, 791000MAM, 32ORMAM-01, 32ORMAM-04, 320R-RAC-02, 660RRAC02, 75500MAXM, 75900MA, 75900MAXM, 751000MAXM and 791000MAVM.

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# Marine Fuel Filtration

## In-line Gasoline Series

2

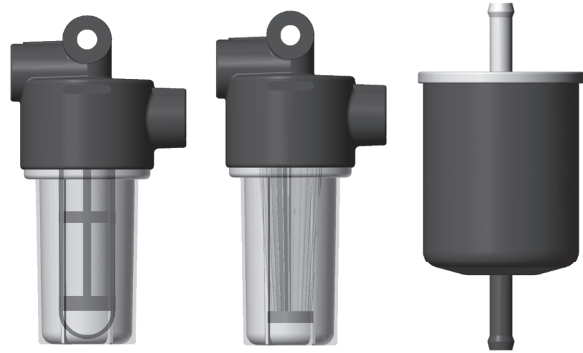
The 025-RAC In-line Gasoline Filter Series keeps your fuel clean and dry, because having grime and water in your fuel spells disaster. More than ever, today's high performance gasoline engines require clean, dry fuel. Standard fuel filters simply succumb from normal usage, and don't offer the improved features, durability and peace-of-mind that comes with Racor fuel filters. Experienced sailors trust their engines, their livelihood, and even their lives to Racor's high quality marine products. Shouldn't you?

### Features and Benefits

- Installs quickly.
- Filters gasoline or gasoline/oil blended fuels.
- Separates water (025-RAC-02 model only).
- Compact design.
- Heavy duty construction.
- Easy to service.

### Applications

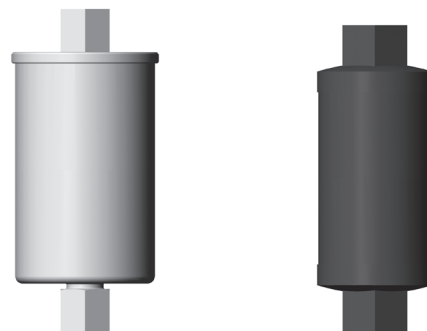
- Small outboard engines.
- Personal watercraft.
- Small gensets.
- Snow machines.
- Lawn mowers.
- Any small gasoline engine.



025-RAC-01

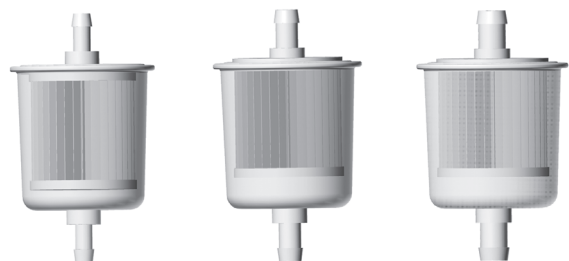
025-RAC-02

025-RAC-05



025-RAC-09

025-RAC-10A



025-RAC-11

025-RAC-12

025-RAC-13



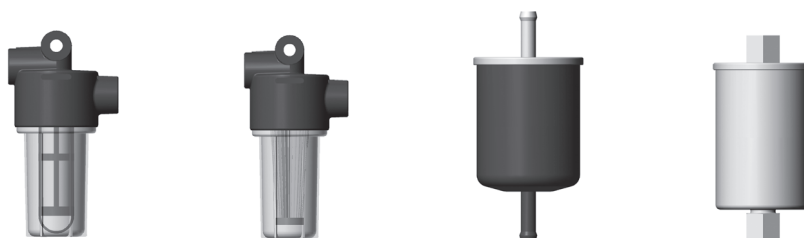
**Parker Hannifin Corporation**  
Racor Division, PO Box 3208  
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Fax: 209.529.3278  
E-mail: [racor@parker.com](mailto:racor@parker.com)  
[www.parker.com/racor](http://www.parker.com/racor)





# Marine Fuel Filtration

## In-line Gasoline Series



Specifications	025-RAC-01	025-RAC-02	025-RAC-05	025-RAC-09
<b>Maximum Flow Rate</b>	25 GPH (95 LPH)	25 GPH (95 LPH)	25 GPH (95 LPH)	35 GPH (132 LPH)
<b>Application</b>	Outboard	Outboard	Inboard	Inboard
<b>Port Size</b>	1/4"-18 NPT	1/4"-18 NPT	5/16" Hose Bead	3/8" NPT
<b>Housing Material</b>	<sup>1</sup> Anodized diecast aluminum head with clear, reusable plastic bowl.	<sup>1</sup> Anodized diecast aluminum head with clear, reusable plastic bowl. Separates water.	All steel with black "E" coating for corrosion resistance.	All stainless steel.
<b>Replacement Element</b>	S2501 (straining element)	S2502 (Aquabloc <sup>®</sup> II element)	N/A	N/A
<b>Micron Rating</b>	250	10	10	116
<b>Min. Service Clearance</b>	3.0 in. (7.6 cm)	3.0 in. (7.6 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)
<b>Height</b>	4.3 in. (10.9 cm)	4.3 in. (10.9 cm)	4.8 in. (12.1 cm)	4.5 in. (11.4)
<b>Diameter</b>	2.1 in. (5.3 cm)	2.1 in. (5.3 cm)	2.3 in. (5.7 cm)	2.2 in. (5.6 cm)
<b>Weight (dry)</b>	0.3 lb (0.14 kg)	0.3 lb (0.14 kg)	0.3 lb (0.14 kg)	0.3 lb (0.14 kg)
<b>Max. Working Pressure<sup>2</sup></b>	100 PSI (690 kPa)	100 PSI (690 kPa)	30 PSI (207 kPa)	30 PSI (207 kPa)
<b>H<sub>2</sub>O Removal Efficiency</b>	N/A	99%	N/A	N/A
<b>Case Quantity</b>	6	6	12	6
<b>Operating Temperature</b>	-10° to +180°F (-23° to +82°C)			
<b>Special Notes:</b> <sup>1</sup> Anodizing is a chemical process that provides corrosion resistance. <sup>2</sup> Pressure installations acceptable up to maximum amount shown - vacuum installations recommended.				

**RACOR**<sup>®</sup>

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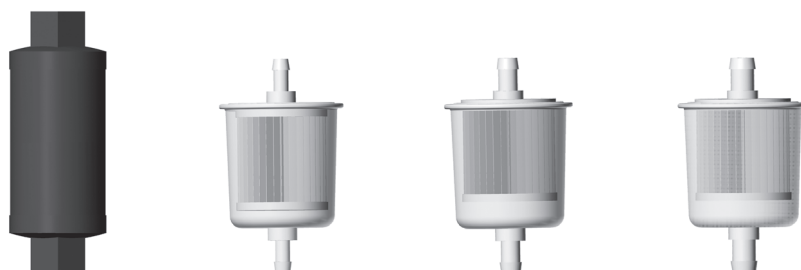
270



# Marine Fuel Filtration

## In-line Gasoline Series

2



Specifications	025-RAC-10A	025-RAC-11	025-RAC-12	025-RAC-13
<b>Maximum Flow Rate</b>	35 GPH (132 LPH)	12 GPH (45 LPH)	12 GPH (45 LPH)	12 GPH (45 LPH)
<b>Application</b>	Inboard	Outboard	Outboard	Outboard
<b>Port Size</b>	½" NPT	¼" Hose Bead	5/16" Hose Bead	3/8" Hose Bead
<b>Housing Material</b>	All steel, painted black.	Plastic	Plastic	Plastic
<b>Replacement Element</b>	N/A	N/A	N/A	N/A
<b>Micron Rating</b>	104	12	12	12
<b>Min. Service Clearance</b>	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)
<b>Height</b>	4.2 in. (10.7 cm)	3.5 in. (8.9 cm)	3.5 in. (8.9 cm)	3.5 in. (8.9 cm)
<b>Diameter</b>	1.9 in. (4.8 cm)	2.1 in. (5.3 cm)	2.1 in. (5.3 cm)	2.1 in. (5.3 cm)
<b>Weight (dry)</b>	0.6 lb (0.27 kg)	0.1 lb (0.05 kg)	0.1 lb (0.05 kg)	0.1 lb (0.05 kg)
<b>Max. Working Pressure<sup>1</sup></b>	100 PSI (690 kPa)	10 PSI (69 kPa)	10 PSI (69 kPa)	10 lb (69 kPa)
<b>H<sub>2</sub>O Removal Efficiency</b>	N/A	N/A	N/A	N/A
<b>Case Quantity</b>	6	1	1	1
<b>Operating Temperature</b>	-10° to +180°F (-23° to +82°C)			
<b>Special Notes:</b> <sup>2</sup> Pressure installations acceptable up to maximum amount shown - vacuum installations recommended.				

# Marine Fuel Filtration

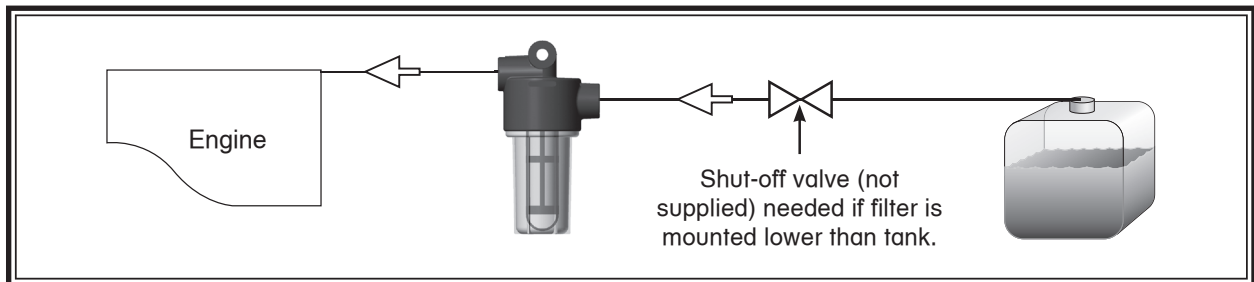
## In-line Gasoline Series

### How to Order

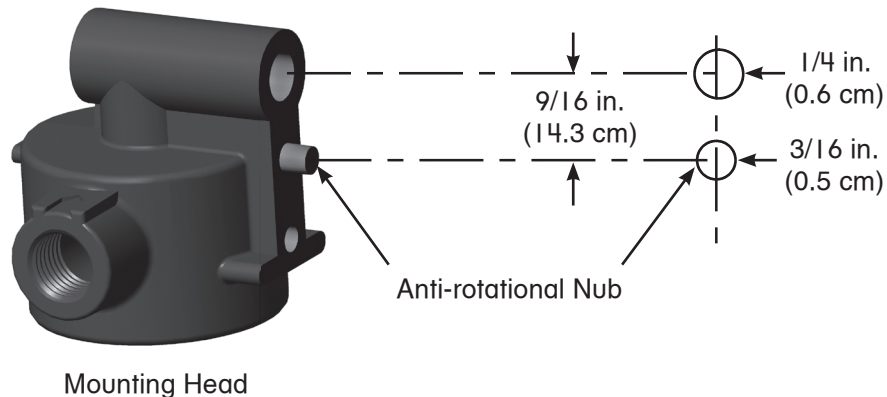
(The example below illustrates how a part number is constructed).

025-RAC	-02
<b>025-RAC</b> (Basic Model Number)	Specify a Micron Rating: <b>-01</b> (for 250 micron) or <b>-02</b> (for 10 micron)
Warning! For outboard engines, personal watercraft and other applications, do not use this filter with inboard engines or stern drive boats; use Racor U.L. listed marine filters.	

### Mounting Instructions



### Mounting Bolt Pattern



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 racortech@parker.com

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# Marine Fuel Filtration

## In-line Gasoline Series

2

### Replacement Parts

#### 025-RAC-01 and 025-RAC-02

Part No.	Description
1. <b>RK31390-05-03</b>	Mounting Head Kit ( $\frac{1}{4}$ "-18 NPT Ports) (includes #4)

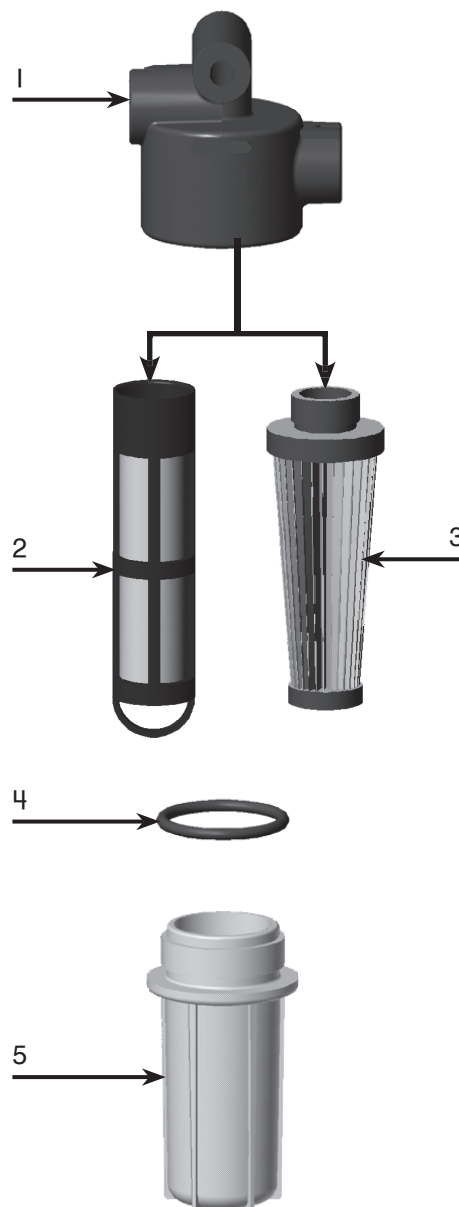
#### Replacement Elements (includes #4)

2. <b>S2501</b>	250 micron
3. <b>S2502</b>	10 micron
4. <b>31213</b>	Bowl O-ring
5. <b>RK31391</b>	Clear Bowl Kit (includes #4)

#### Note:

**025-RAC-05, 025-RAC-09, 025-RAC-10A  
025-RAC-11, 025-RAC-12, and 025-RAC-13**

No replacement parts available. Order complete assembly for replacement.



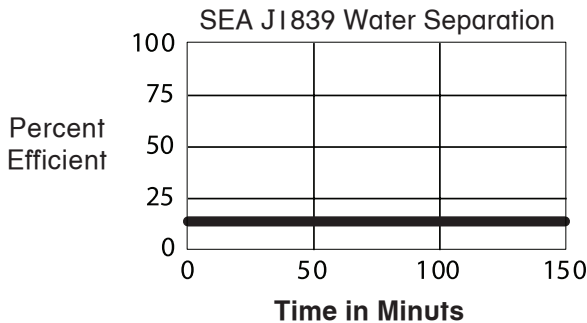
# Marine Fuel Filtration

## In-line Gasoline Series

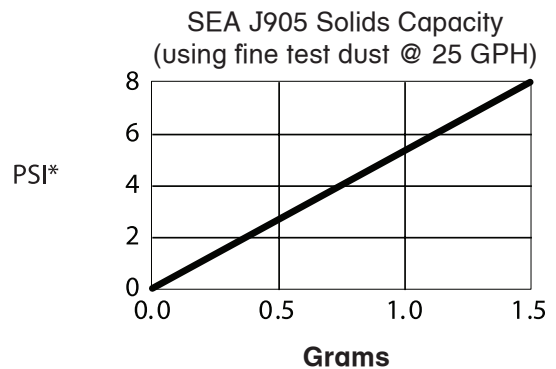
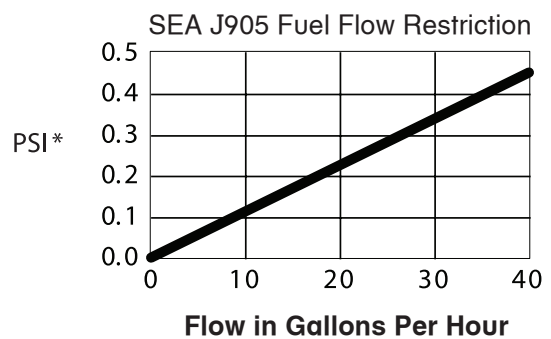
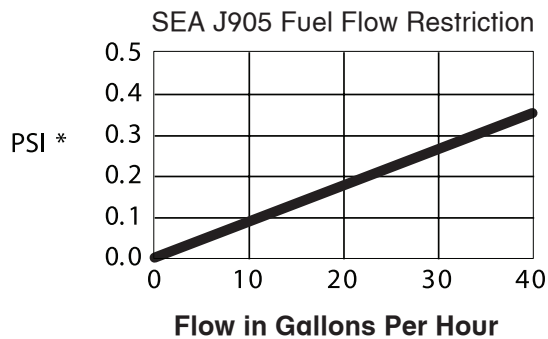
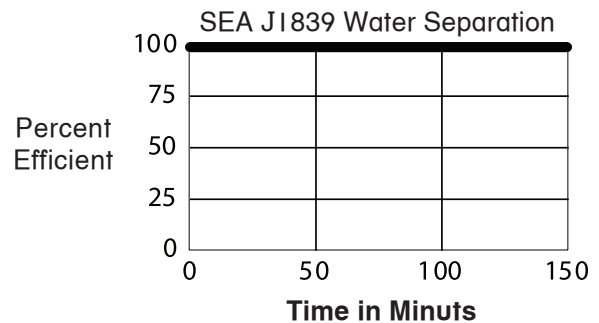
### Test Data

Test data not available for all assemblies.

#### 025-RAC-01 only



#### 025-RAC-02 only



(PSI X 2.036 = inHg) (PSI X 6.895 = kPa)

Test results are from controlled laboratory testing. Field results may vary.

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# Marine Fuel Filtration

## OEM Gasoline Series

2

Now, owners of inboard or outboard engines can get smoother operation and longer life - all in one easy spin onto their existing engine filter heads. There's a choice of rugged, reusable clear bowl with a self-venting drain or a metal bowl with drain plug for inboard applications. Metal bowls are UL-listed and USCG accepted, clear bowls are for outboard applications only. These filters also feature high capacity Aquabloc®II elements that remove 99% of free water, and sediment down to 10 micron.

These OEM spin-on gasoline filters were designed to fit most Quicksilver, MerCruiser and OMC applications. See Specification chart on next page for more information.

- Inboard gasoline engines must use filters equipped with metal bowls (MAM models).
- Outboard gasoline engines use either clear or metal bowls.



B32013



B32014



B32020MAM



B32021MAM



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# Marine Fuel Filtration

## OEM Gasoline Series



Specifications	B32013	B32014	B32020MAM	B32021MAM
<b>Typical Application</b>	Quicksilver	OMC	MerCruiser	OMC
<b>Engine Type</b>	Outboard (only)	Outboard (only)	Inboard/Outboard	Inboard/Outboard
<b>UL Recognized Component</b>	No	No	Yes	Yes
<b>Maximum Flow Rate</b>	60 GPH (227 LPH)	60 GPH (227 LPH)	60 GPH (227 LPH)	60 GPH (227 LPH)
<b>Replacement Element</b>	S3213	S3214	S3220UL	S3221UL
<b>Center Threads</b>	1 1/16"-16	1"-12	1 1/16"-16	1"-12
<b>Height</b>	7.2 in. (18.2 cm)	7.2 in. (18.2 cm)	6.5 in. (16.7 cm)	6.5 in. (16.7 cm)
<b>Diameter</b>	3.8 in. (9.5 cm)	3.8 in. (9.5 cm)	3.8 in. (9.5 cm)	3.8 in. (9.5 cm)
<b>Weight (dry)</b>	1.2 lb (0.5 kg)	1.2 lb (0.5 kg)	1.6 lb (0.7 kg)	1.6 lb (0.7 kg)
<b>Clean Pressure Drop</b>	0.6 PSI (4.32 kPa)	0.6 PSI (4.32 kPa)	0.6 PSI (4.32 kPa)	0.6 PSI (4.32 kPa)
<b>Under Bowl Clearance</b>	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)
<b>Bowl Type</b>	Clear	Clear	Metal	Metal
<b>Water Removal Efficiency</b>	99%	99%	99%	99%
<b>Case Quantity</b>	12	12	12	12
<b>Operating Temperature</b>	-40° to +255°F (-40° to +121°C)			

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# Marine Fuel Filtration

## OEM Gasoline Series

2

### *B32013 Cross-Reference*

Aquapower	Baldwin	Fram	Quicksilver	OMC	Sierra	Wix	Yamaha
6001	BF791	PS3808	35-805269-1 35-807172	-	18-7845	33225	ABA-FUEL- FLTR

### *B32014 Cross-Reference*

Aquapower	Baldwin	Fram	Quicksilver	OMC	Sierra	Wix	Yamaha
6040	-	-	-	502905	-	-	-





# Marine Fuel Filtration

## OEM Gasoline Series

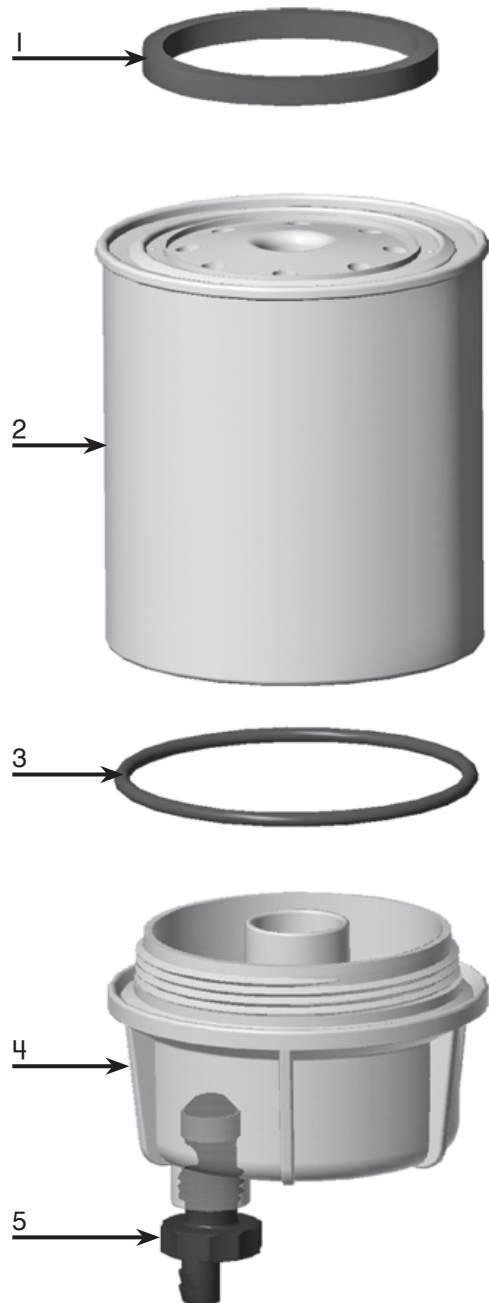
### Replacement Parts

#### B32013 and B32014

<u>Part Number</u>	<u>Description</u>
1. <b>30768</b>	Square Cut Gasket
2. Replacement Elements (includes #'s 1 and 3)	
<b>S3213</b>	For B32013 (10 micron)
<b>S3214</b>	For B32014 (10 micron)
3. <b>RK30076</b>	Bowl O-ring
4. <b>RK30747</b>	Clear Bowl Kit (includes #'s 3 and 5)
5. <b>RK30476</b>	Self-venting Drain Kit

#### Additional Parts (not shown)

<b>22099</b>	Drain Gasket
<b>22313</b>	O-ring/Gasket Pack (includes #'s 1 and 3)



# Marine Fuel Filtration

## OEM Gasoline Series

2

### *B32020MAM Cross-Reference*

Aquapower	Baldwin	Fram	Quicksilver	OMC	Sierra	Volvo	Wix
6031	BF791	PS3808	35-807172 35-60494-1	-	1807850	855686-0/-2	33225
Yamaha: MAR-23452-00-00 (S3220UL - no bowl)							

### *B32021MAM Cross-Reference*

Aquapower	Baldwin	Fram	Quicksilver	OMC	Sierra	Volvo	Wix
6040	-	-	-	174144	-	-	-



# Marine Fuel Filtration

## OEM Gasoline Series

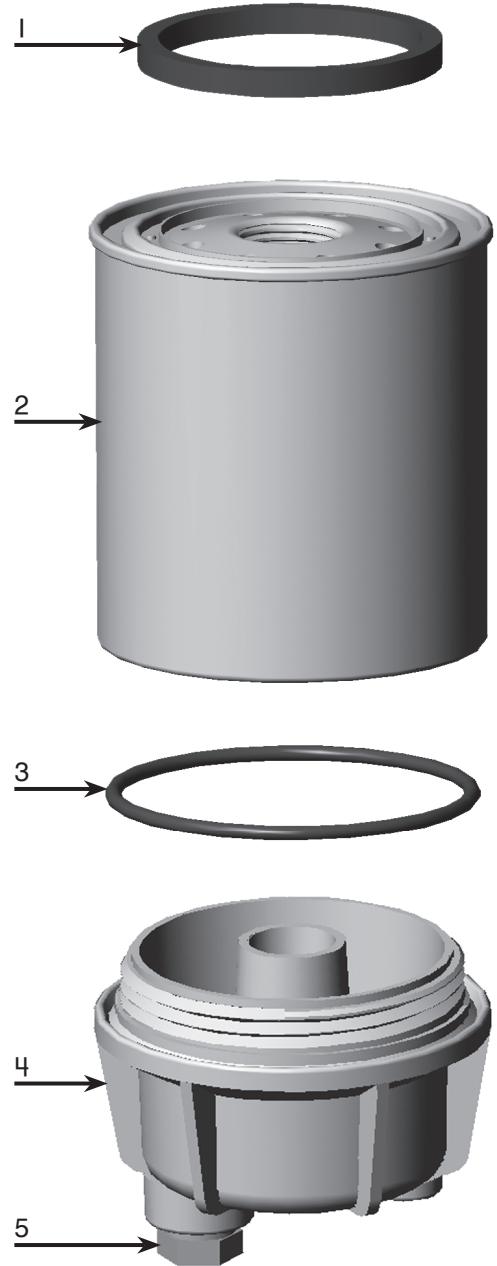
### Replacement Parts

#### B32020MAM and B32021MAM

Part Number	Description
1. <b>30768</b>	Square Cut Gasket
2. Replacement Elements (includes #'s 1 and 3)	
<b>S3220UL</b>	For B32020MAM (10 micron)
<b>S3221UL</b>	For B32021MAM (10 micron)
3. <b>RK30076</b>	Bowl O-ring
4. <b>RK30473-02</b>	Metal Bowl Kit (includes #'s 3 and 5)
5. <b>918-N6</b>	Metal Plug (1/2" NPT)

#### Additional Parts (not shown)

<b>22313</b>	O-ring/Gasket Pack (includes #'s 1 and 3)
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# Marine Fuel Filtration

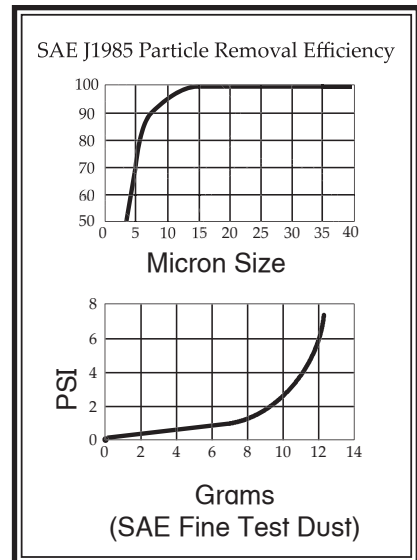
ParFit™ Products

The PFF5510 gasoline fuel filter/water separator replaces standard fuel filters found on most Mercury, Mercruiser, Yamaha, Suzuki, Honda and Tohatsu marine gasoline applications. It fits these popular engine applications with its 1 1/16"-16 center threads and features 10 micron Aquabloc®II media to outperform other gasoline fuel filters in inboard or outboard, two or four cycle applications. In fact, the PFF5510 performance exceeds all OEM requirements, and is suitable for all low or high pressure injection systems.

Developed by Racor engineers, the PFF5510 provides a durable, high performance filter element that is treated inside and out with a highly corrosion resistant coating to eliminate rust-through. Just by installing Racor filters, you know you're doing everything you can to protect your equipment, extend its life cycle and effectiveness, and improve your bottom line.



Specifications	PFF5510
Micron Rating	10
Center Threads	1 1/16"-16
Height	4.2 in (10.7 cm)
Diameter	3.6 in. (9.1 cm)
Weight (dry)	0.9 lb (0.4 kg)
H <sub>2</sub> O Removal Efficiency	99%
Operating Temperature	-40o to +255oF (-40o to +124oC)



Cross Reference Information					
Fleet Guard	Wix	Luber Finer	Baldwin	Donaldson	Fram
PF5059	33225	LFF3808	BF791	P550677	PS3808



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 E-mail: racor@parker.com  
 www.parker.com/racor





# Marine Fuel Filtration

## Gasoline Spin-on Series

2

Don't be caught in the water without one of these Racor gasoline spin-on series filters. These filters are designed for high performance applications, and with flow rates between 30 and 120 GPH your engine will perform better than ever with clean, water-free fuel. These filters are coated with a durable electrostatically applied powder coating for superior corrosion resistance. That's the quality you've learned to expect and get only from Racor.

This series features a high capacity Aquabloc®II filter element that removes sediment down to 10 micron and 99% of water. This spin-on filter design is simple to replace and the reusable clear plastic or metal contaminant collection bowls feature a self-venting drain, or metal plug, for removing unwanted muck and water.



120R-RAC-01



120R-RAC-02



320R-RAC-01



320R-RAC-02



490R-RAC-01



660R-RAC-01



660R-RAC-02



3120R-RAC-32



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www.parker.com/racor



# Marine Fuel Filtration

## Gasoline Spin-on Series



Specifications	120R-RAC-01	120R-RAC-02	320R-RAC-01	320R-RAC-02
<b>Application:</b> Inboard Outboard	No Yes	Yes Yes	No Yes	Yes Yes
<b>Max. Flow Rate</b>	30 GPH (114 LPH)	30 GPH (114 LPH)	60 GPH (227 LPH)	60 GPH (227 LPH)
<b>Center Threads</b>	M18 x 1.5	M18 x 1.5	1"-14	1"-14
<b>Port Size</b>	¼"-18 NPTF	¼"-18 NPTF	¼"-18 NPTF	¼"-18 NPTF
<b>Number of Ports:</b> Inlets Outlets	2 2	2 2	2 1	2 1
<b>Height</b>	6.5 in. (16.5 cm)	6.0 in. (15.2 cm)	9.3 in. (23.6 cm)	9.0 in. (22.8 cm)
<b>Width</b>	3.2 in. (8.1 cm)	3.2 in. (8.1 cm)	4.0 in. (10.2 cm)	4.0 in. (10.2 cm)
<b>Depth</b>	3.2 in. (8.1 cm)	3.2 in. (8.1 cm)	4.0 in. (10.2cm)	4.0 in. (10.2cm)
<b>Weight (dry)</b>	1.1 lb (0.5 kg)	1.1 lb (0.5 kg)	2.0 lb (0.90 kg)	2.0 lb (0.90 kg)
<b>Clean Pressure Drop</b>	0.15 PSI (1.03 kPa)	0.15 PSI (1.03 kPa)	0.61 PSI (4.23 kPa)	0.61 PSI (4.23 kPa)
<b>Max. Pressure</b>	7 PSI (0.5 bar)	7 PSI (0.5 bar)	7 PSI (0.5 bar)	7 PSI (0.5 bar)
<b>Underbowl Clearance</b>	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%	99%	99%	99%
<b>Operating Temperature</b>	-40° to +255°F (-40° to +124°C)			

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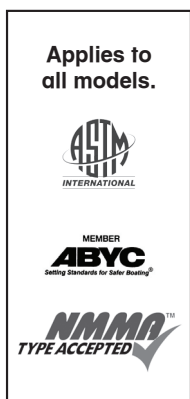
284



# Marine Fuel Filtration

## Gasoline Spin-on Series

2



Specifications	490R-RAC-01	660R-RAC-01	660R-RAC-02	3120R-RAC-32
<b>Application:</b> Inboard Outboard	No Yes	No Yes	Yes Yes	Yes Yes
<b>Max. Flow Rate</b>	90 GPH (340 LPH)	90 GPH (340 LPH)	90 GPH (340 LPH)	120 GPH (454 LPH)
<b>Center Threads</b>	1"-14	1"-14	1"-14	1"-14
<b>Port Size</b>	3/8"-18 NPTF	3/8"-18 NPTF	3/8"-18 NPTF	1/2"-14 NPTF
<b>Number of Ports:</b> Inlets Outlets	2 2	2 2	2 2	1 1
<b>Height</b>	9.9 in. (25.1 cm)	11.0 in. (27.9 cm)	10.5 in. (26.7 cm)	10.4 in. (26.4 cm)
<b>Width</b>	4.5 in. (11.4 cm)	4.2 in. (10.7 cm)	4.2 in. (10.7 cm)	4.0 in. (10.2 cm)
<b>Depth</b>	4.8 in. (12.1 cm)	4.5 in. (11.4 cm)	4.5 in. (11.4 cm)	5.0 in. (12.7 cm)
<b>Weight (dry)</b>	2.6 lb (1.2 kg)	3.0 lb (1.4 kg)	3.0 lb (1.4 kg)	2.0 lb (0.90 kg)
<b>Clean Pressure Drop</b>	0.95 PSI (6.5 kPa)	0.61 PSI (4.23 kPa)	0.61 PSI (4.23 kPa)	0.15 PSI (1.03 kPa)
<b>Max. Pressure</b>	7 PSI (0.5 bar)	7 PSI (0.5 bar)	7 PSI (0.5 bar)	7 PSI (0.5 bar)
<b>Underbowl Clearance</b>	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%	99%	99%	99%
<b>Operating Temperature</b>	-40° to +255°F (-40° to +124°C)			



# Marine Fuel Filtration

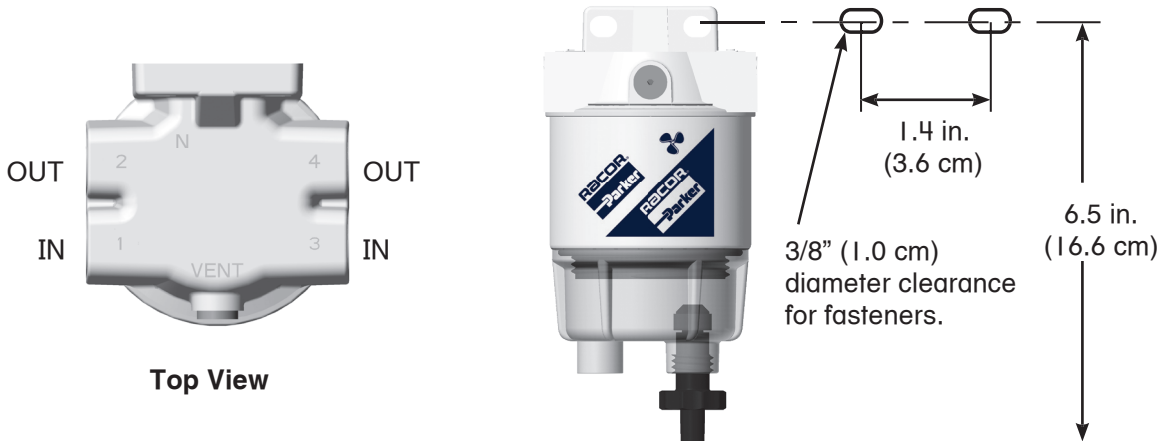
## Gasoline Spin-on Series

### How to Order

(The example below illustrates how a part number is constructed).

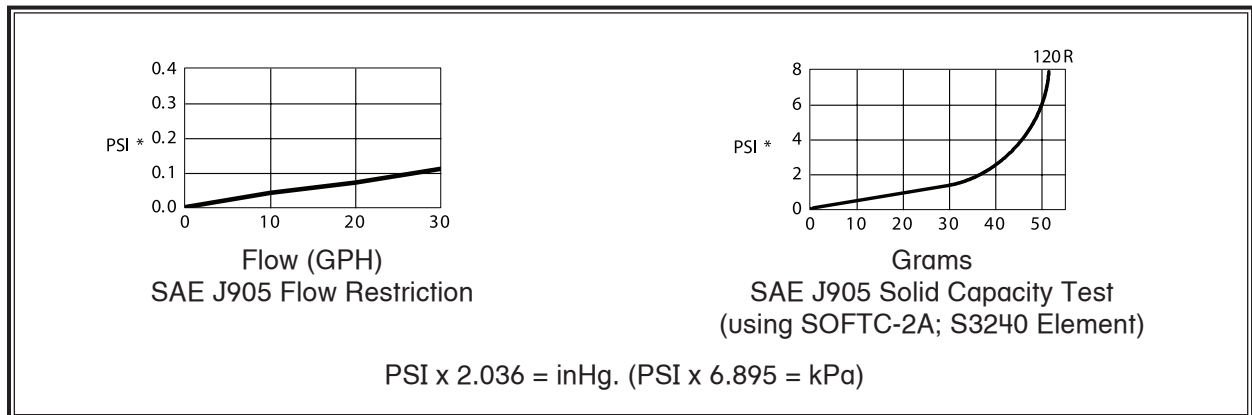
I20R-RAC	-01
Basic Model Number	-01 (for clear bowl) -02 (for metal bowl)

### Mounting Information



### Test Data

(Test results are from controlled laboratory testing. Field results may vary.)



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# Marine Fuel Filtration

## Gasoline Spin-on Series

2

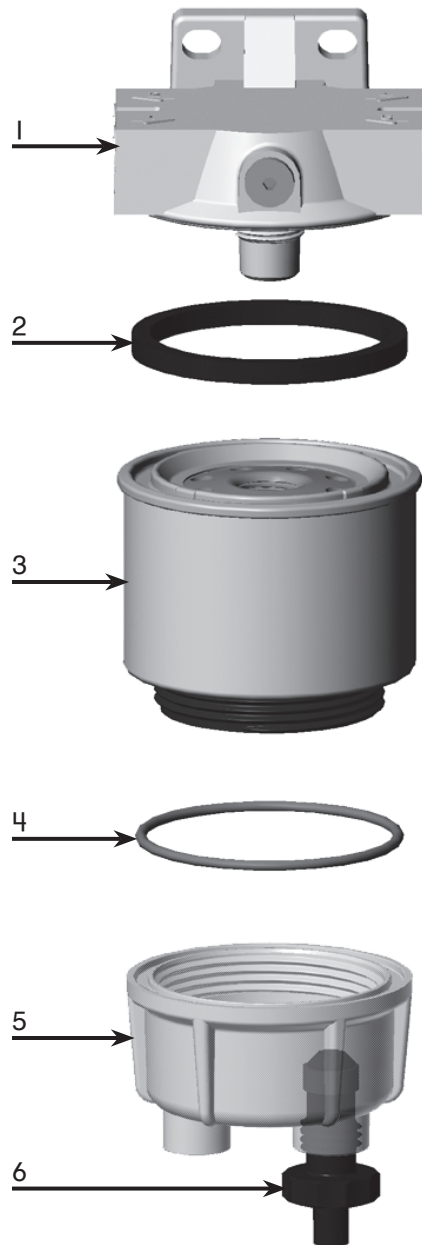
### Replacement Parts

#### I20R-RAC-01

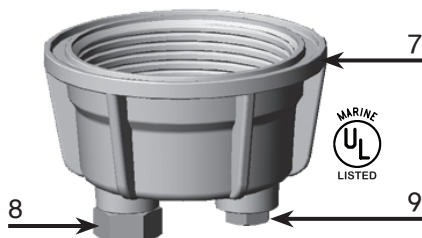
Part Number	Description
1. <b>RK10214-01</b> <b>I0224</b>	Head Kit (includes #2) 3/8" SAE Plug
2. <b>RK10503</b>	Gasket Kit
3. Replacement Element (includes #2) <b>S3240</b>	10 micron
4. <b>RK10012</b>	Bowl O-ring Kit
5. <b>RK10222</b>	Clear Bowl Kit (includes #'s 4 and 6)
6. <b>RK30476</b>	Self-venting Drain Kit
7. <b>I0553</b>	Metal Bowl (includes #'s 4, 6 and 7)
8. <b>20022</b>	Drain Port Plug
9. <b>01SP-2S</b>	Probe Port Plug

Additional Parts (not shown)

**I0223** Installation Instructions



### Metal Bowl Kit



# Marine Fuel Filtration

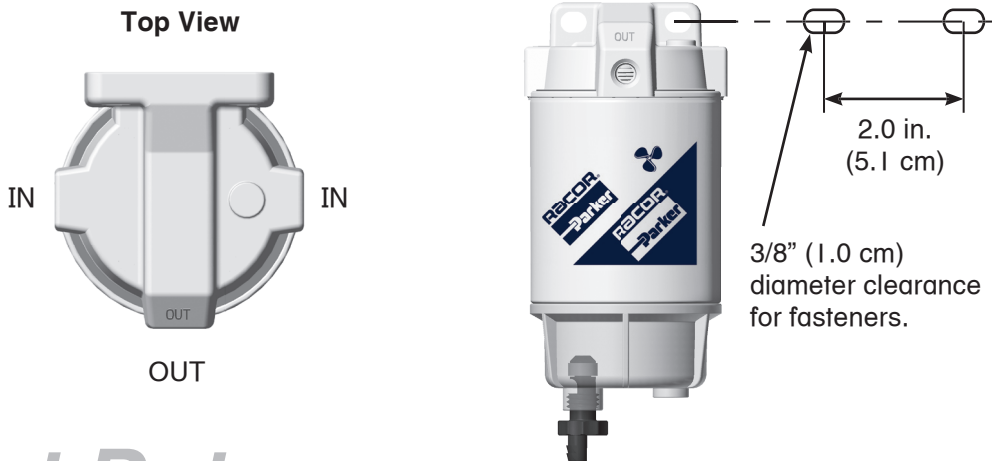
## Gasoline Spin-on Series

### How to Order

(The example below illustrates how a part number is constructed).

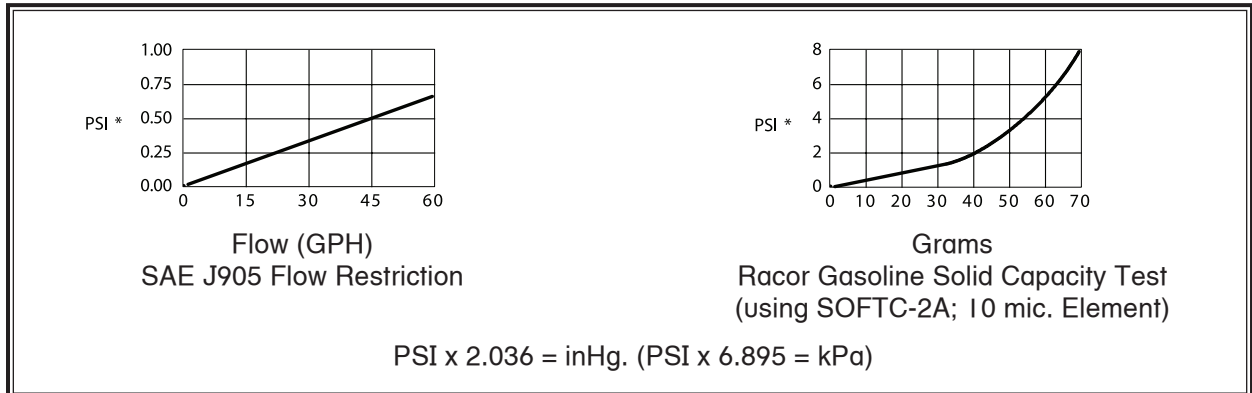
<b>320R-RAC</b>	<b>-01</b>
Basic Model Number	<b>-01</b> (for clear bowl) <b>-02</b> (for metal bowl)

### Mounting Information



### Test Data

(Test results are from controlled laboratory testing. Field results may vary.)



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# Marine Fuel Filtration

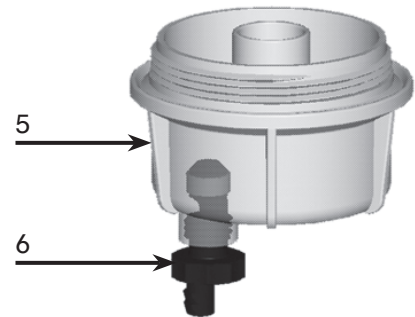
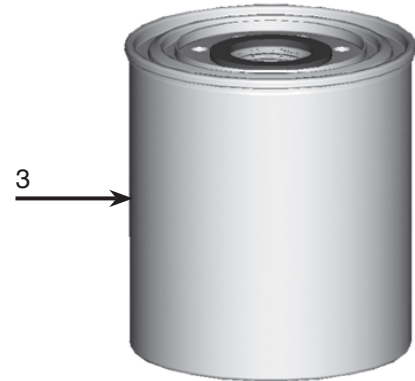
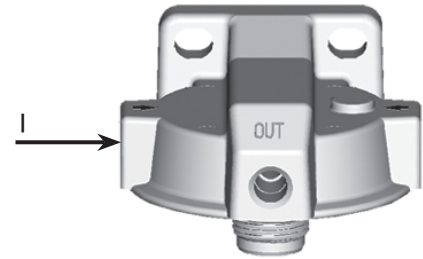
## Gasoline Spin-on Series

2

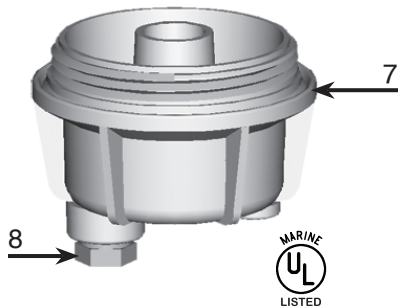
### Replacement Parts

#### 320R-RAC-01

	<u>Part Number</u>	<u>Description</u>
1.	<b>RK20180</b>	Mounting Head Kit
2.	<b>20707</b>	Gasket Kit
3.	Replacement Elements	
	<b>S3227</b>	10 Micron
	<b>S3228UL</b>	10 Micron (UL Marine)
4.	<b>RK22244</b>	Bowl O-ring Kit
5.	<b>RK30475</b>	Clear Bowl Kit
6.	<b>RK30476</b>	Self-venting Drain Kit
7.	<b>RK30473-02</b>	Metal Bowl Kit
8.	<b>918-N6</b>	Steel Port Plug
	Additional Parts (not shown)	
	<b>22237</b>	Installation Instructions



### Metal Bowl Kit



# Marine Fuel Filtration

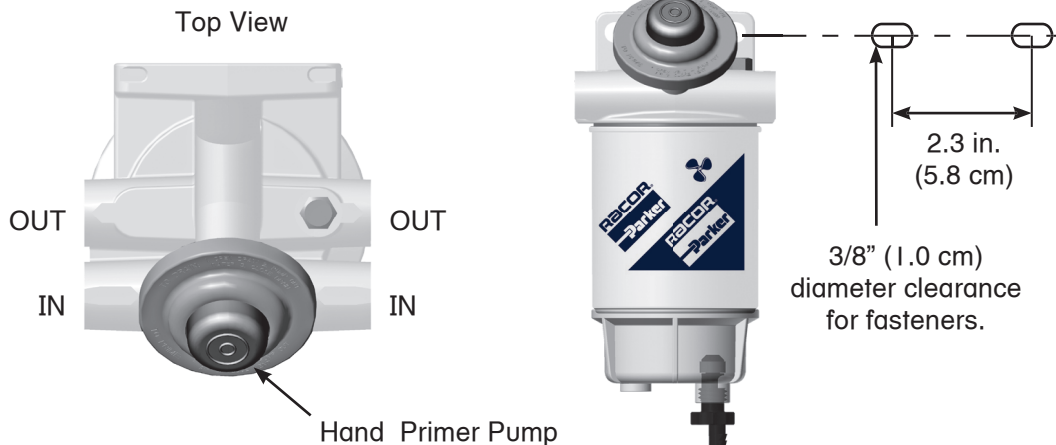
## Gasoline Spin-on Series

### How to Order

(The example below illustrates how a part number is constructed).

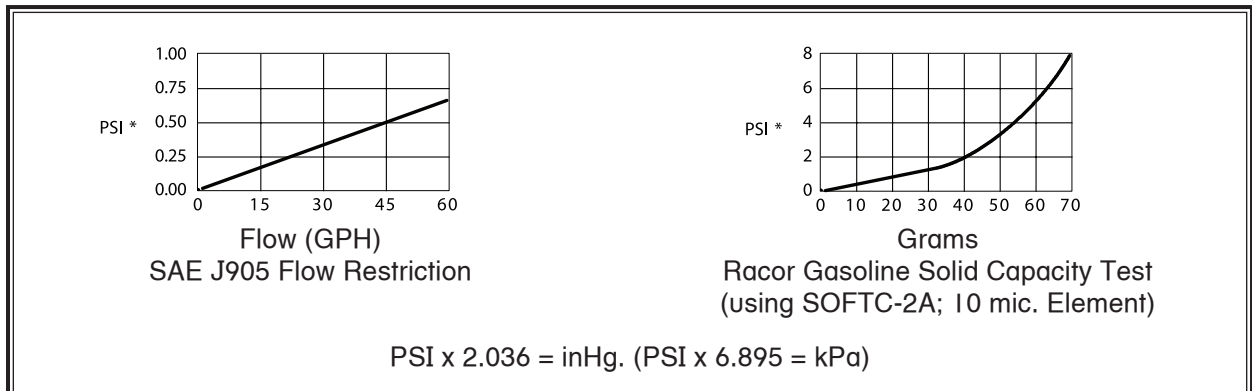
<b>490R-RAC</b>	<b>-01</b>
Basic Model Number	-01 (for clear bowl)

### Mounting Information



### Test Data

(Test results are from controlled laboratory testing. Field results may vary.)



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# Marine Fuel Filtration

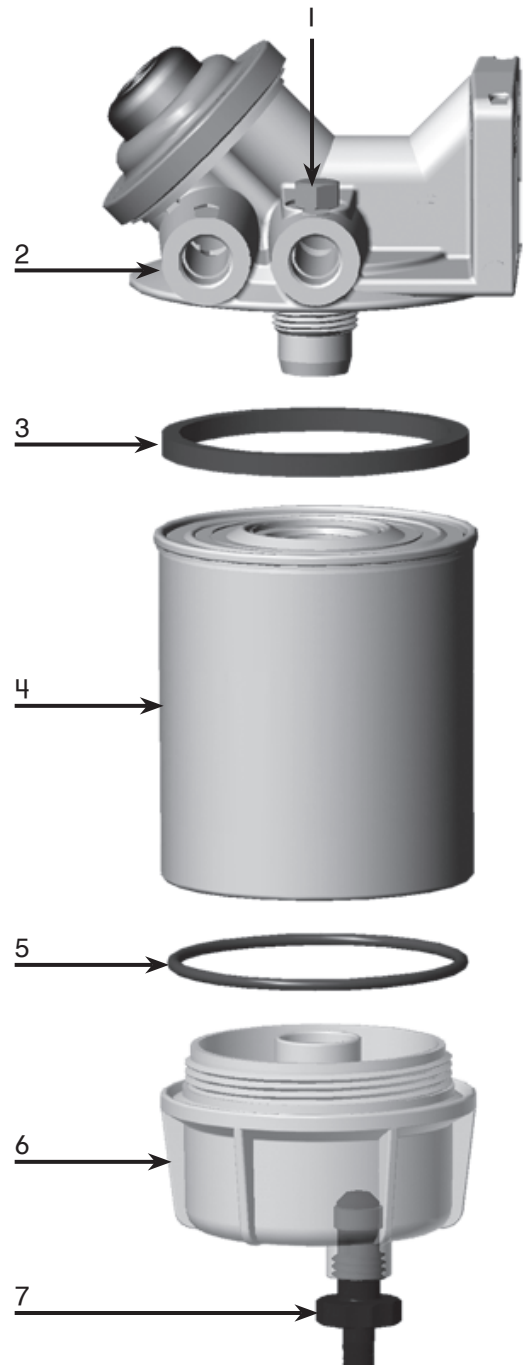
## Gasoline Spin-on Series

2

### Replacement Parts

#### 490R-RAC-01

Part No.	Description
1. 10110	Vent Plug (3/8" SAE)
2. RK24000	Mounting Head Kit (3/8"-18 NPTF ports) (includes #'s 1-3)
3. 20505	Gasket Kit
4. Replacement Elements (includes #'s 3-5) S3227	10 Micron
5. 30076	Bowl O-ring Kit
6. RK30475	Clear Bowl Kit (includes #'s 5-7)
7. RK30476	Self-venting Drain Kit
Additional Parts (not shown) 14345	Installation Instructions



# Marine Fuel Filtration

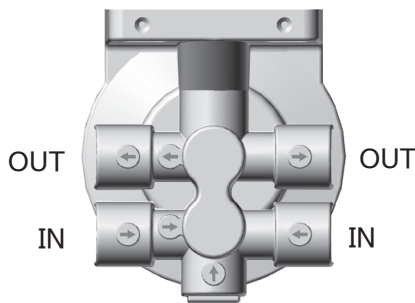
## Gasoline Spin-on Series

### How to Order

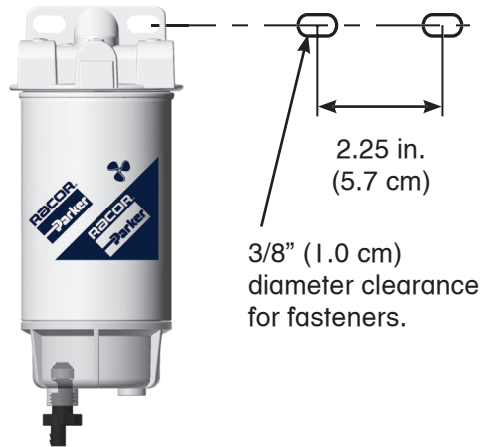
(The example below illustrates how a part number is constructed).

<b>660R-RAC</b>	<b>-01</b>
Basic Model Number	<b>-01</b> (For Clear Bowl) <b>-02</b> (For Metal Bowl)

### Mounting Information

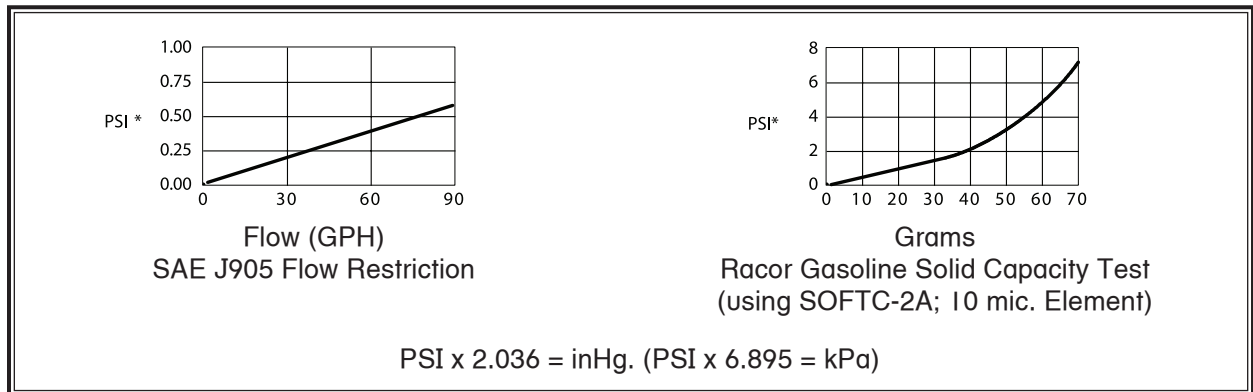


Top View



### Test Data

(Test results are from controlled laboratory testing. Field results may vary.)



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# Marine Fuel Filtration

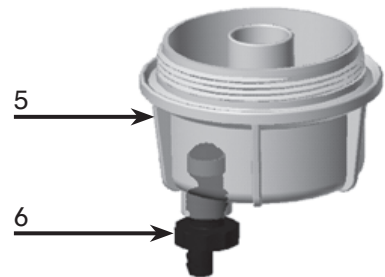
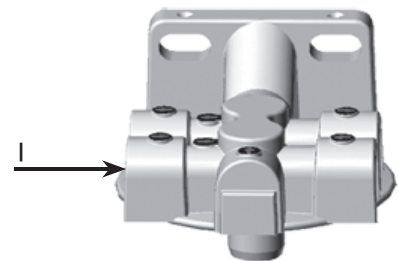
## Gasoline Spin-on Series

2

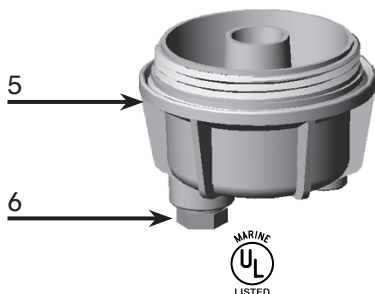
### Replacement Parts

660R-RAC-01 and 660R-RAC-02

	Part Number	Description
1.	<b>RK21411</b>	Mounting Head Kit
2.	<b>20707</b>	Gasket Kit
3.	Replacement Elements	
	<b>S3232</b>	10 Micron
	<b>S3232UL</b>	10 Micron (02)
4.	<b>RK22244</b>	Bowl O-ring Kit
5.	<b>RK30747</b>	Clear Bowl Kit
	<b>RK30473-02</b>	Metal Bowl Kit (02)
6.	<b>RK30476</b>	Self-venting Drain Kit
	<b>918-N6</b>	Steel Port Plug (02)



### Metal Bowl Kit





# Marine Fuel Filtration

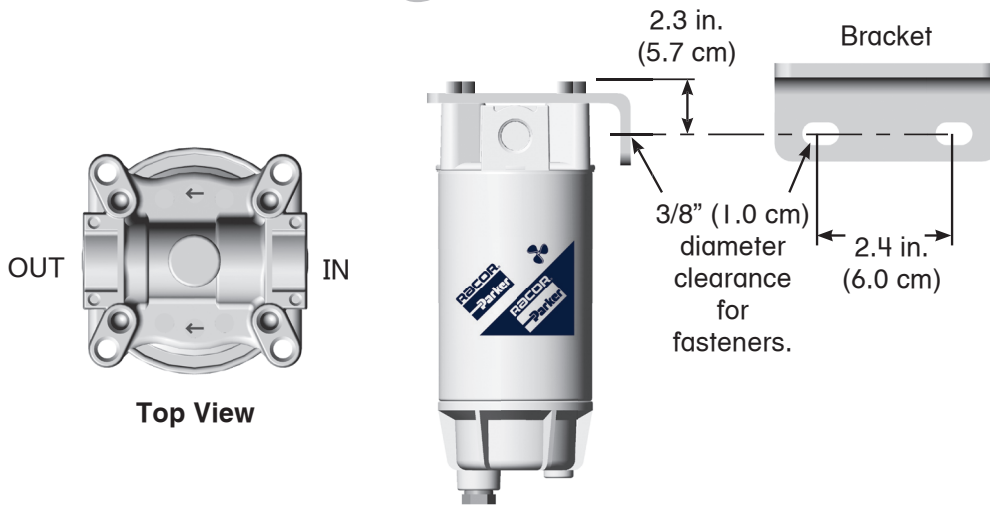
## Gasoline Spin-on Series

### How to Order

(The example below illustrates how a part number is constructed).

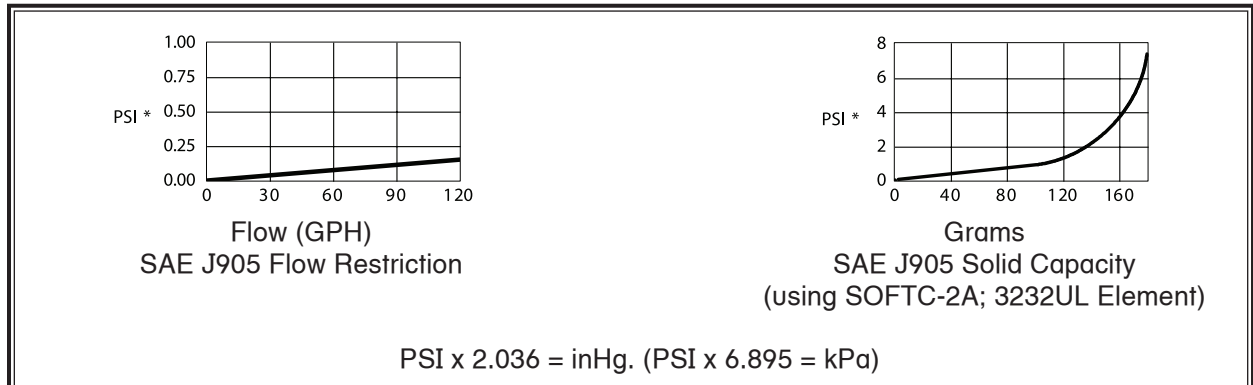
<b>3120R-RAC</b>	<b>-32</b>
Basic Model Number	120 GPH (454 LPH)

### Mounting Information



### Test Data

(Test results are from controlled laboratory testing. Field results may vary.)



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# Marine Fuel Filtration

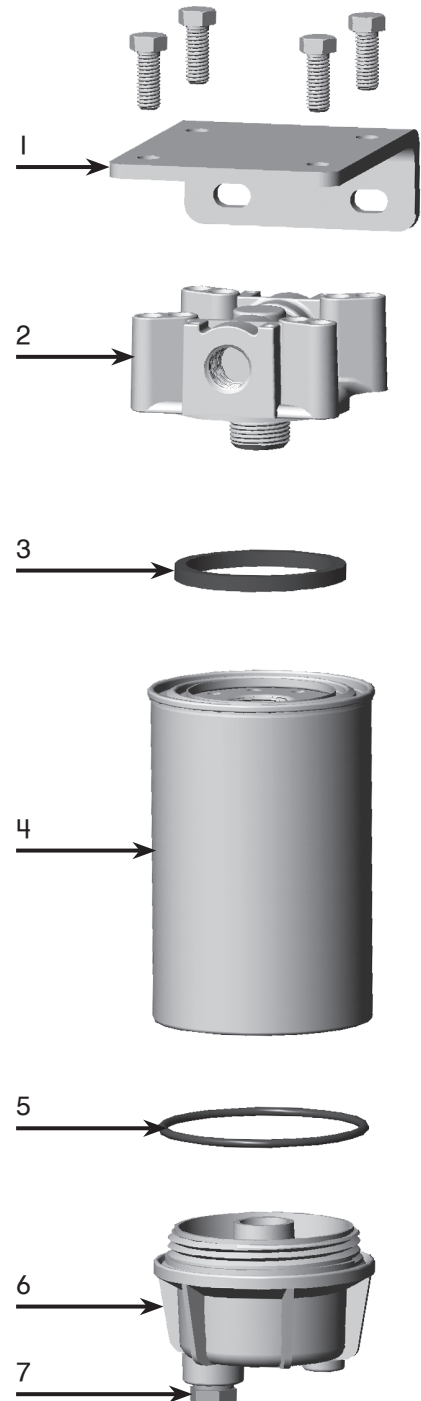
## Gasoline Spin-on Series

2

### Replacement Parts

#### 3120R-RAC-32

Part Number	Description
1. <b>RK21329</b>	Mounting Bracket Kit (includes (4) 3/8"-16x1 fasteners)
2. <b>RK30308-01</b>	Mounting Head Kit (includes #3)
3. <b>30768</b>	Gasket Kit
4. Replacement Element (includes #3 and 5) <b>S3232UL</b>	10 Micron
5. <b>RK30076</b>	Bowl O-ring Kit
6. <b>RK30473-02</b>	Metal Bowl Kit (includes #'s 5 and 7)
7. <b>918-N6</b>	Steel Plug, 38" NPT
Additional Parts (not shown) <b>30941</b>	Installation Instructions





# Marine Fuel Filtration

## I20RMAM

The I20RMAM fuel filter/water separator features 1/4"-18 NPTF inlet and outlet fuel ports and a unitized mounting bracket for mounting versatility. It also features an Aquabloc®II replacement element that repels water and removes solid contamination down to 2 micron. This rugged, compact filter assembly fits a variety of engine applications and comes with the peace-of-mind you've learned to expect from Racor filters. Experienced sailors trust their engines, their livelihood, and even their lives to Racor. Shouldn't you?

An optional UL Recognized petcock drain valve is also available to aid in the removal of water and contaminants. See Marine Accessories section.



I20RMAM



## How to Order

(The example below illustrates how a part number is constructed.)

I20RMAM	2
Basic Model	Specify a micron rating: 2 (for 2 micron) 30 (for 30 micron)



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 www.parker.com/racor



# Marine Fuel Filtration

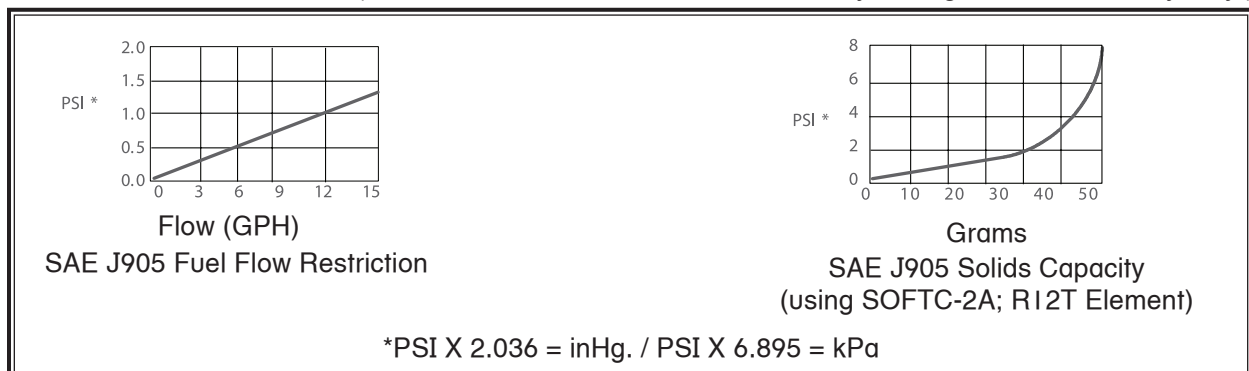
## I20RMAM

Specifications	I20RMAM
<b>Maximum Flow Rate:</b>	15 GPH (57 LPH)
<b>Port Size (SAE J476)</b>	¼" -18 NPTF
<b>Number of Ports:</b>	
<b>Inlets</b>	2
<b>Outlets</b>	2
<b>Replacement Element:</b>	
<b>2 Micron</b>	RI2SUL
<b>30 Micron</b>	RI2PUL
<b>Center Threads</b>	M18 x 1.5
<b>Height</b>	5.7 in. (14.5 cm)
<b>Width</b>	3.2 in. (8.1 cm)
<b>Depth</b>	3.2 in. (8.1 cm)
<b>Weight</b>	1.4 lb (0.6 kg)
<b>Clean Pressure Drop</b>	0.15 PSI (1.08 kPa)
<b>Maximum Operating Pressure</b>	7 PSI (48 kPa)
<b>Bowl Capacity</b>	1.8 oz (52 ml)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%
<b>Operating Temperature</b>	-40° to +255°F (-40° to +121°C)



## Test Data

(Test results are from controlled laboratory testing. Field results may vary.)



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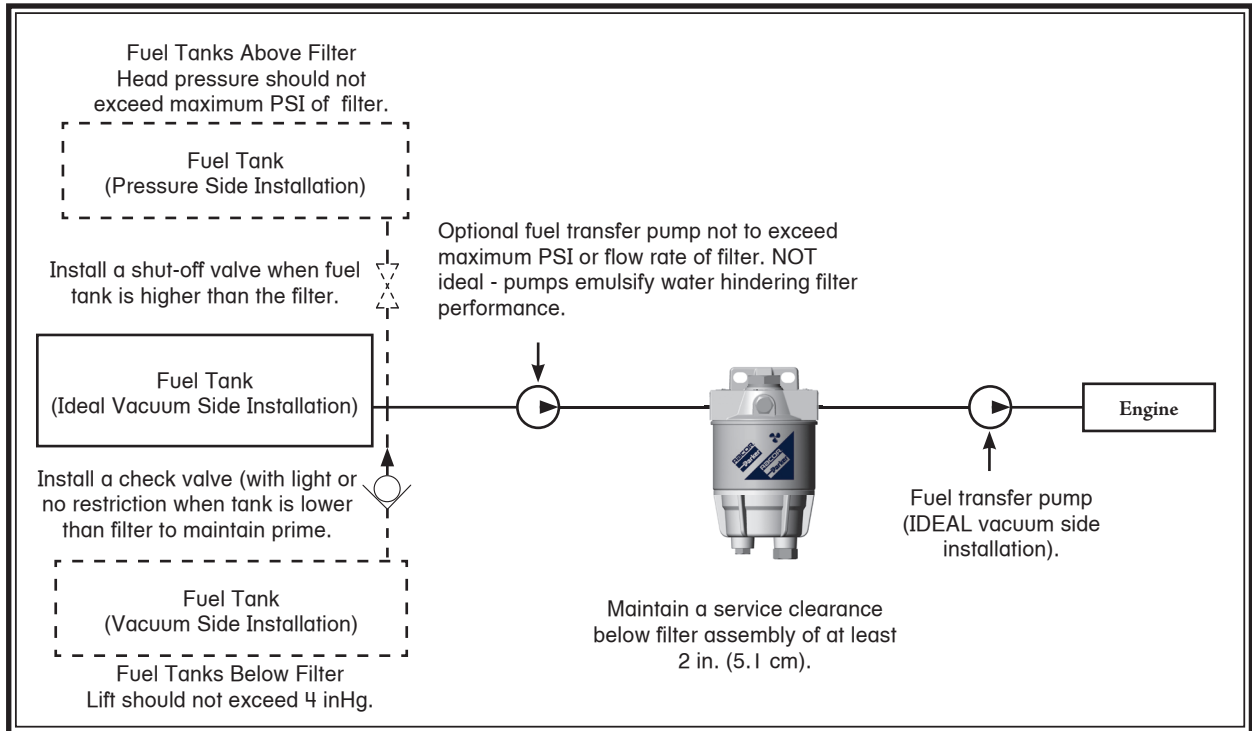


# Marine Fuel Filtration

## I20RMAM

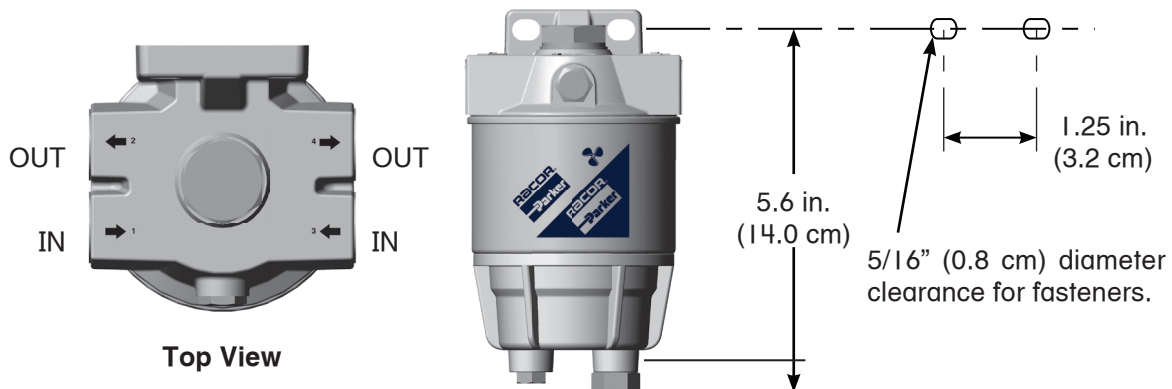
2

### Installation Diagram



Racor offers hose and fittings to complete an installation. See Marine Accessories.

### Mounting Information



# Marine Fuel Filtration

## I20RMAM

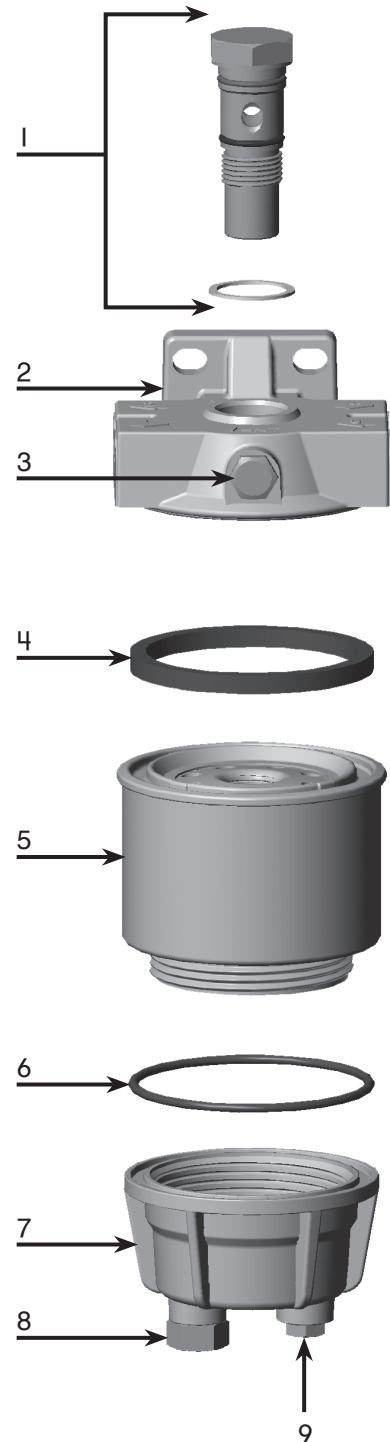
### Replacement Parts

#### I20RMAM

Part Number	Description
1. RK10006	Head Bolt Assembly Kit (includes washer and o-rings)
2. RK10117	Head Kit (1/4"-18 NPTF Ports) (includes #'s 3 and 4)
3. RK10110	Metal Vent Plug Kit (3/8"-24 UNF)
4. RK10503	Element Gasket Kit
5. Replacement Element (includes #'s 4 and 6)	
R12SUL	(2 Micron) UL Recognized
R12PUL	(30 Micron) UL Recognized
6. RK10012	Bowl O-ring Kit
7. RK10109	Metal Bowl Kit (includes #'s 6, 8 and 9)
8. RK20022	Metal Plug Kit (1/2"-20 UNF)
9. 0ISP-2S	Steel Drain Plug (1/8" NPT)

Additional Parts (not shown)

RK10063	Gasket and O-ring Kit
10210	Installation Instructions



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300



# Marine Fuel Filtration

## 200 Series

2

Racor's Marine Spin-on 200 Series fuel filter/water separators are available in three sizes to fit any engine compartment. All three assemblies feature 1/4"-18 NPTF inlet and outlet fuel ports, a unitized mounting bracket for mounting versatility, an in-head primer pump for quick fuel system priming, a metal sediment and water collection bowl (safe for inboard use), a vent plug to easily evacuate trapped air, and a 10 micron Aquabloc®II filter element which repels nearly 100% of all free water found in fuel.

If quality is what you want and filtration is what you need, than a Racor 200 Series fuel filter/water separator is the answer. Experienced sailors trust their engines, their livelihood and even their lives to Racor. Shouldn't you?



215RMAM



230RMAM



245RMAM



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[www.parker.com/racor](http://www.parker.com/racor)





# Marine Fuel Filtration

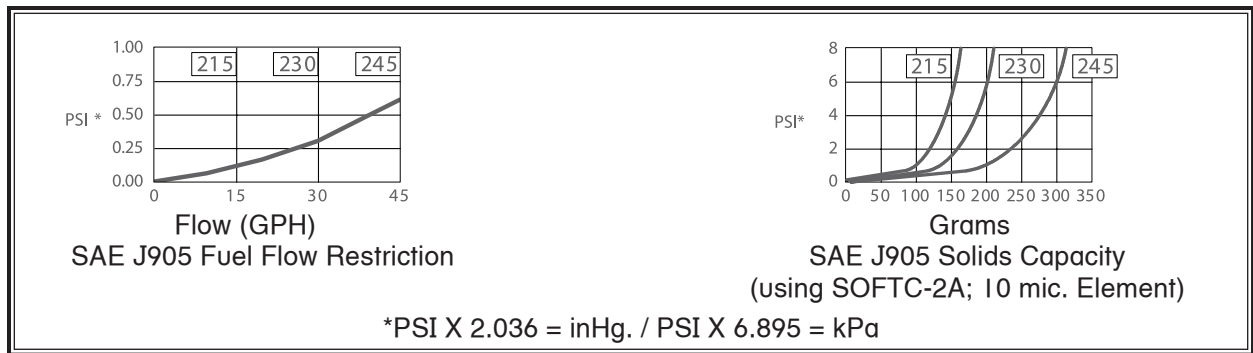
## 200 Series



Specifications	215RMAM	230RMAM	245RMAM
<b>Maximum Flow Rate</b>	15 GPH (57 LPH)	30 GPH (114 LPH)	45 GPH (170 LPH)
<b>Port Size</b>	¼"-18 NPTF	¼"-18 NPTF	¼"-18 NPTF
<b>Number of Ports:</b> Inlets Outlets	1 2	1 2	1 2
<b>Replacement Element</b>	R15TUL	R20TUL	R25TUL
<b>Center Threads</b>	1"-14	1"-14	1"-14
<b>Height</b>	8.3 in. (21.1 cm)	9.0 in. (22.9 cm)	10.5 in. (26.7 cm)
<b>Width</b>	4.0 in. (10.2 cm)	4.0 in. (10.2 cm)	4.0 in. (10.2 cm)
<b>Depth</b>	4.0 in. (10.2 cm)	4.0 in. (10.2 cm)	4.0 in. (10.2 cm)
<b>Weight</b>	1.8 lb (0.8 kg)	2.0 lb (0.9 kg)	2.2 lb (1.0 kg)
<b>Clean Pressure Drop</b>	0.12 PSI (0.83 kPa)	0.31 PSI (2.14 kPa)	0.61 PSI (4.21 kPa)
<b>Maximum Operating Pressure</b>	30 PSI (207 kPa)	30 PSI (207 kPa)	30 PSI (207 kPa)
<b>Bowl Capacity</b>	2.0 oz (58 ml)	2.0 oz (58 ml)	2.0 oz (58 ml)
<b>Water Removal Efficiency</b>	99%	99%	99%
<b>Operating Temperature</b>	-40° to +255°F (-40° to +121°C)		

## Test Data

(Test results are from controlled laboratory testing. Field results may vary.)



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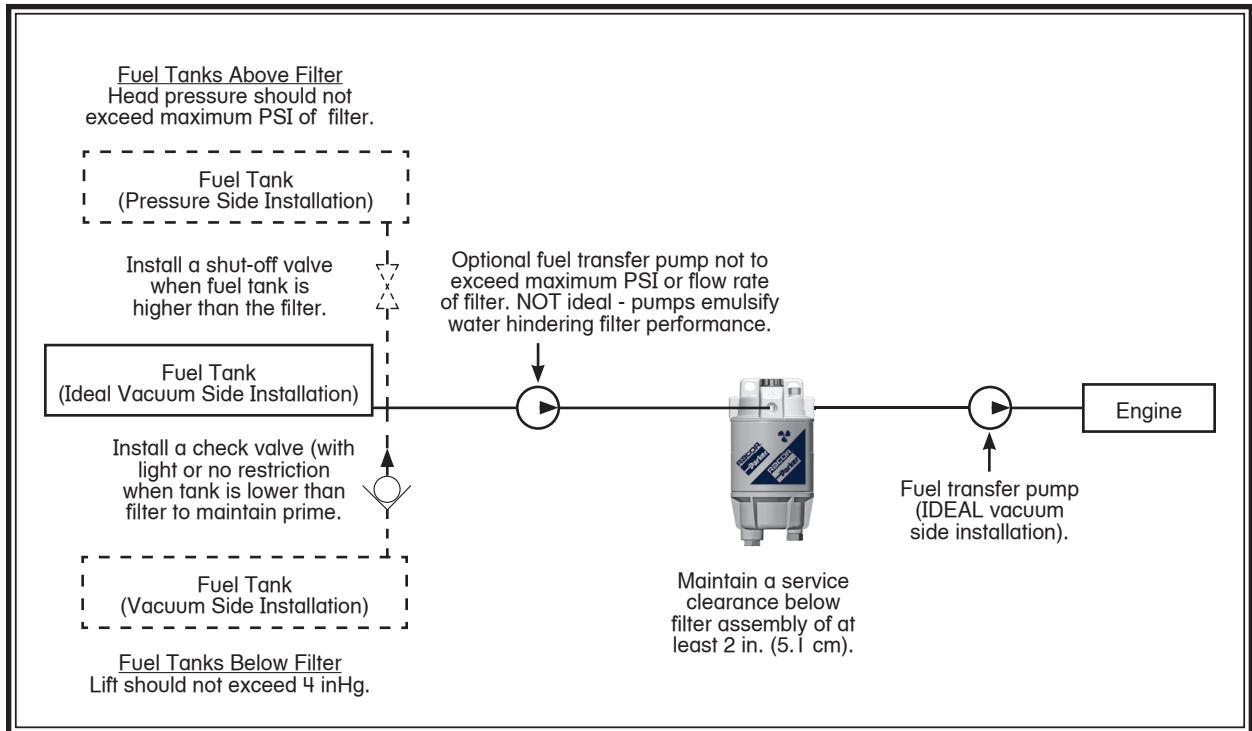


# Marine Fuel Filtration

## 200 Series

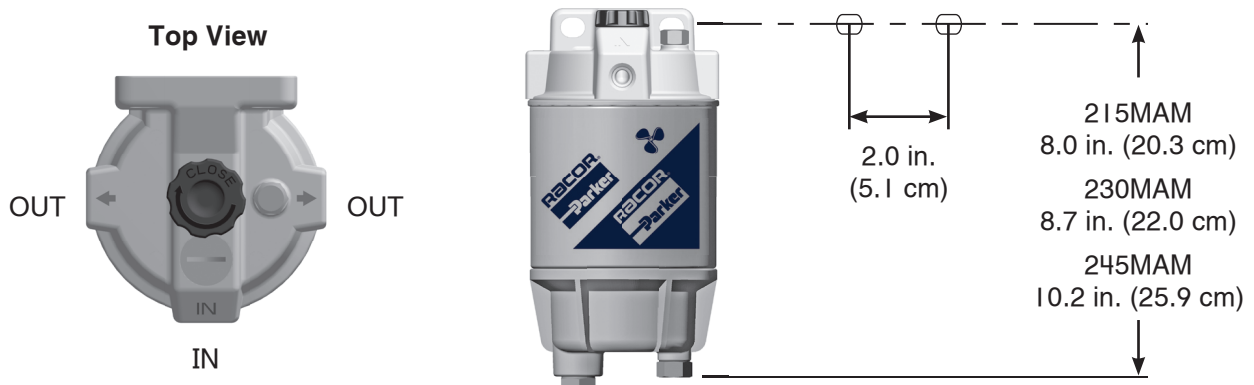
2

### Installation Diagram



Installation diagram applies to all 200 Series filters. Model 215RMAM shown above. Racor offers hose and fittings to complete this installation. See Marine Accessories.

### Mounting Information



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# Marine Fuel Filtration

## 200 Series

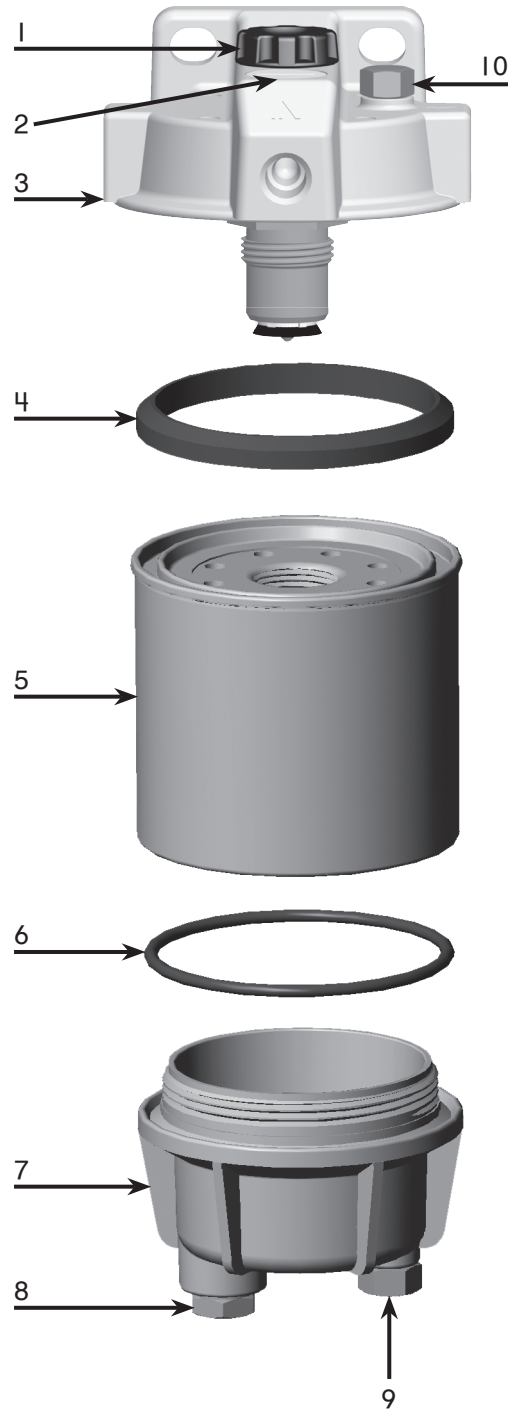
### Replacement Parts

#### 215RMAM, 230RMAM and 245RMAM

- | Part No.  | Description  |
|---|--|
| 1. <b>RK20025-01</b>  | Primer Pump Kit  |
| 2. <b>RK20011</b><br><b>RK20742</b>   | Checkball Kit with Plastic Cap<br>Metal Cap Kit  |
| 3. <b>RK20046-01</b>  | Head Kit (1/4" NPTF Ports)<br>(includes #'s 1-4)   |
| 4. <b>RK22061</b>   | Gasket Kit   |
| 5. Replacement Elements (includes #'s 4 and 6)<br><b>R15TUL</b><br><b>R20TUL</b><br><b>R25TUL</b> | 10 Micron (UL Recognized)<br>10 Micron (UL Recognized)<br>10 Micron (UL Recognized)          |
| 6. <b>RK22244</b>   | Bowl O-ring Kit  |
| 7. <b>RK22368</b>   | Metal Bowl Kit<br>(includes #'s 6, 8 and 9)<br>(3/8" NPT drain Plug)<br>(1/2"-20 probe port) |
| 8. <b>918-N6</b>  | Steel Plug (3/8" NPT)  |
| 9. <b>RK20022</b>   | Metal Plug Kit (1/2"-20 UNF)   |
| 10. <b>RK10110</b>  | Metal Vent Plug Kit<br>(3/8"-16 UNF)   |

Additional Parts (not shown)

- |                |                           |
|----------------|---------------------------|
| <b>RK20075</b> | Compleat Seal Service Kit |
| <b>RK12041</b> | Port Plug Kit (1/4" NPT)  |
| <b>22360</b>   | Installation Instructions |



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# Marine Fuel Filtration

## 200 Series

2

### Hand Primer Pump Upgrade



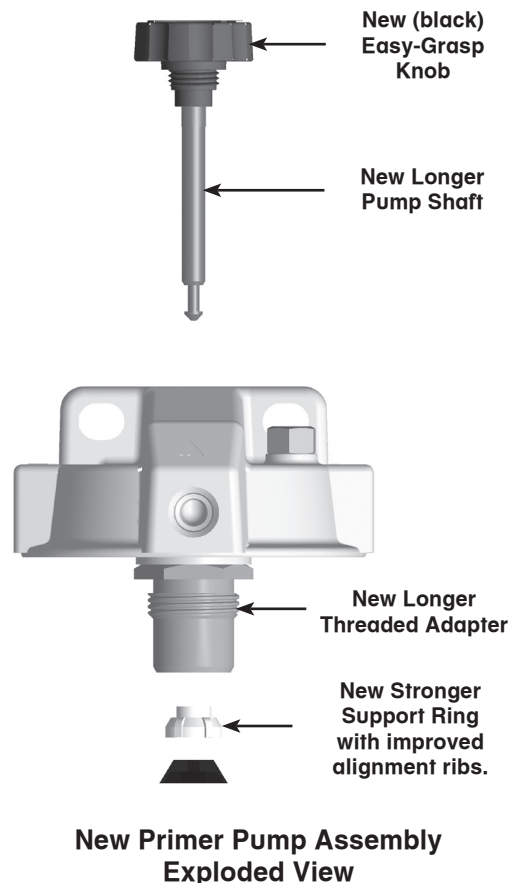
#### Benefits

- Up to 37% increase in volume of fuel pumped per stroke
- Improved strength and alignment
- Improved ease of operation
- Reduced restriction in fuel flow
- Changeable in the field

This enhancement is possible by increasing the stroke length, by about 1/2", on the pump shaft and the element threaded adapter. Additionally, the knob and support ring have been redesigned to be more robust.

This change also affects replacement kits for the primer pump and head assemblies. The new style primer pump requires an additional 0.5 inch of space above the assembly (2 inches total) to utilize the added length of stroke; however, the primer pump will perform as always without any mounting modifications.

The new easy-grasp pump knob is larger than current knobs and the color will be changed from white to black to make a clear visual change between current pumps and newer versions.





# Marine Fuel Filtration

## 400 Series

Marine 400 Series spin-on fuel filter/water separators are available in 4 sizes to fit any engine compartment. 400 Series mounting heads feature 4 ports (2 inlets and 2 outlets), a unitized mounting bracket for mounting versatility and a built-in, hand operated fuel priming pump to simplify servicing and repriming procedures.

Also featured on these assemblies are Aquabloc®II water repelling elements that remove sediment down to 10 micron, a vent plug to remove trapped air and a metal water and sediment collection bowl. Experienced sailors trust their engines, their livelihood, and even their lives to Racor. Shouldn't you?



445MAM10



460MAM10



490MAM10



4120MAM10



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# Marine Fuel Filtration

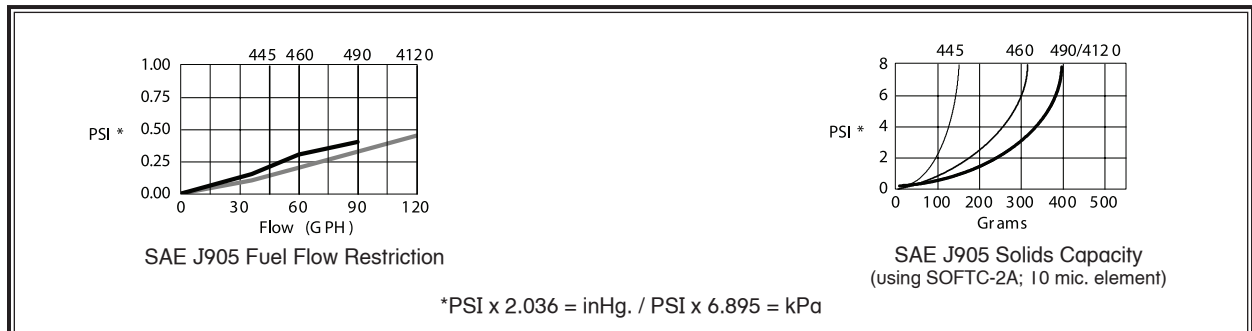
## 400 Series



Specifications	445MAM10	460MAM10	490MAM10	4120MAM10
<b>Maximum Flow Rate</b>	45 GPH (170 LPH)	60 GPH (227 LPH)	90 GPH (341 LPH)	120 GPH (454 LPH)
<b>Port Size</b>	3/8" NPTF	3/8" NPTF	3/8" NPTF	3/4" UNF
<b>Number of Ports:</b> Inlet Outlet	2 2	2 2	2 2	2 2
<b>Replacement Element</b>	S3204TUL	S3211TUL	S3201TUL	S3201TUL
<b>Center Threads</b>	1"-14	1"-14	1"-14	1"-14
<b>Height</b>	9.4 in. (23.9 cm)	10.8 in. (27.4 cm)	12.8 in. (32.5 cm)	12.8 in. (32.5 cm)
<b>Width</b>	4.5 in. (11.4 cm)	4.5 in. (11.4 cm)	4.5 in. (11.4 cm)	4.5 in. (11.4 cm)
<b>Depth</b>	4.8 in. (12.2 cm)	4.8 in. (12.2 cm)	4.8 in. (12.2 cm)	4.8 in. (12.2 cm)
<b>Weight</b>	2.9 lb (1.3 kg)	3.1 lb (1.4 kg)	3.3 lb (1.5 kg)	3.3 lb (1.5 kg)
<b>Clean Pressure Drop</b>	0.2 PSI (1.2 kPa)	0.3 PSI (2.1 kPa)	0.4 PSI (2.4 kPa)	0.5 PSI (3.1 kPa)
<b>Max. Operating Pressure</b>	15 PSI (103 kPa)	15 PSI (103 kPa)	15 PSI (103 kPa)	15 PSI (103 kPa)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%	99%	99%	99%
<b>Bowl Capacity</b>	2.0 oz (58 ml)	2.0 oz (58 ml)	2.0 oz (58 ml)	2.0 oz (58 ml)
<b>Operating Temperature</b>	-40° to +255°F (-40° to +121°C)			

## Test Data

(Test results are from controlled laboratory testing. Field results may vary.)



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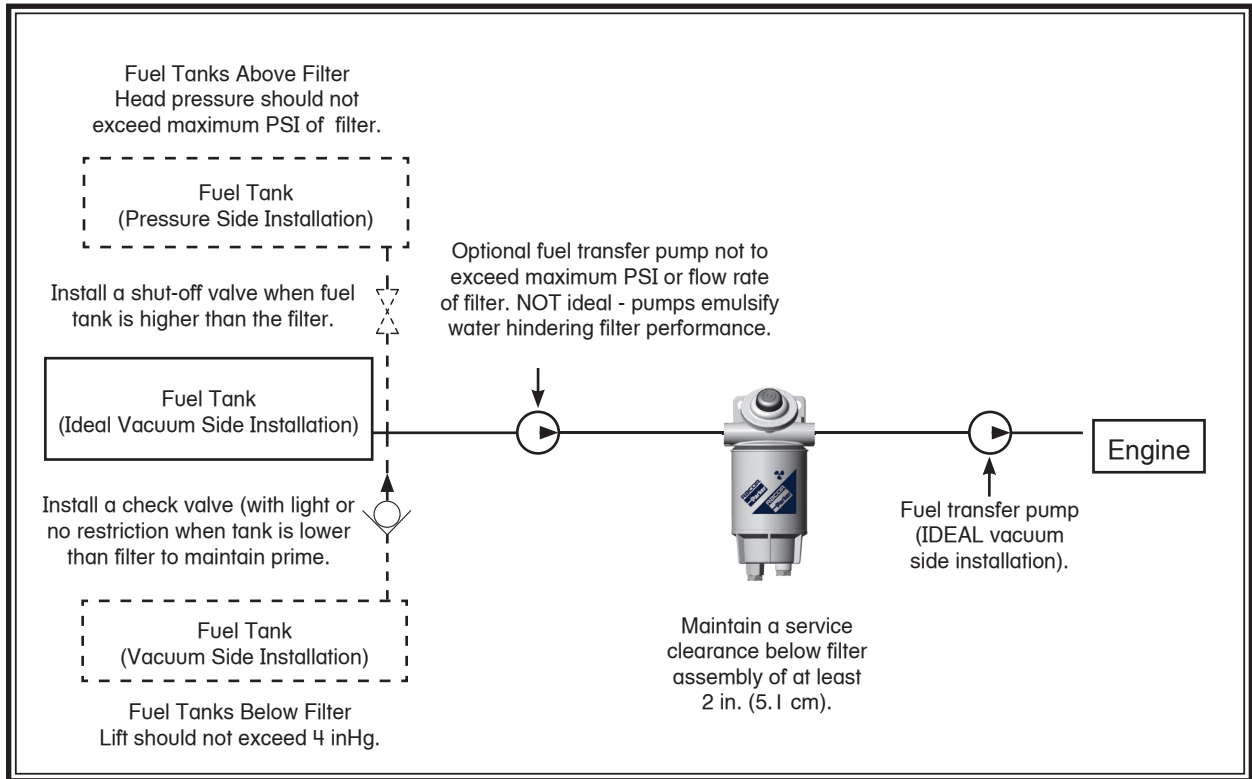


# Marine Fuel Filtration

## 400 Series

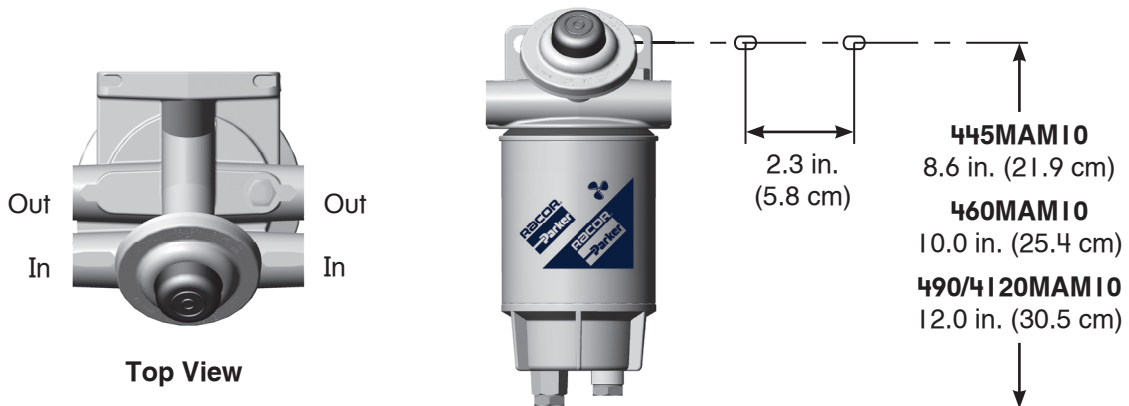
2

# Installation Diagram



Installation diagram applies to all 400 Series filters. Model 445MAM10 shown above. Racor offers hose and fittings to complete this installation. See Marine Accessories.

# Mounting Information





# Marine Fuel Filtration

## 400 Series

### Replacement Parts

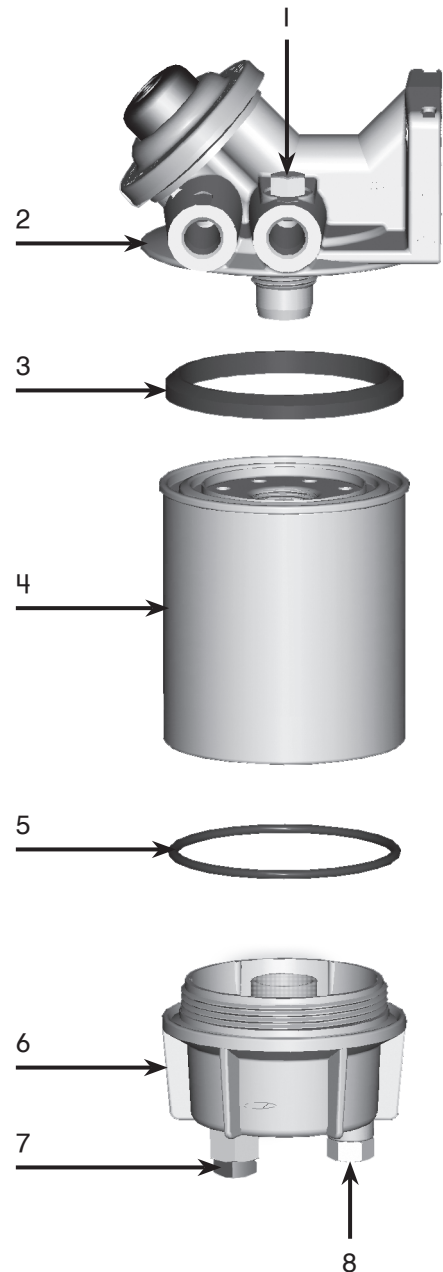
445MAM10, 460MAM10,  
490MAM10 and 4120MAM10

- | Part Number  | Description   |
|--|---|
| 1. <b>RK10110</b>  | Metal Vent Plug Kit   |
| 2. Mounting Head Kits (includes primer pump & #'s 1 & 3)<br><b>RK22425</b>   | with (3/8" NPTF ports) for 445MAM10,<br>460MAM10, 490MAM10    |
| <b>RK22270</b>   | 4120MAM (3/4" UNF ports)                                      |
| 3. <b>RK22061</b>  | Element Gasket Kit  |
| 4. Replacement Elements 10 micron (includes #'s 3 and 5)<br><b>S3204TUL</b><br><b>S3211TUL</b><br><b>S3201TUL</b><br><b>S3201TUL</b> | For 445MAM10<br>For 460MAM10<br>For 490MAM10<br>For 4120MAM10 |
| 5. <b>RK30076</b>  | Bowl O-ring Kit   |
| 6. <b>RK30495</b>  | Metal Bowl Kit (includes #'s 5-8)                             |
| 7. <b>918-N4</b>   | Steel Plug (1/4" NPT)   |
| 8. <b>RK20022</b>  | Metal Plug Kit (1/2"-20 UNF)                                  |

Additional Parts (not shown)

- 01SP-6S** Metal Plug (3/8" NPT)

Applies to  
all models.



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# Marine Fuel Filtration

## Marine 800 Series

Racor Marine 800 Series recyclers offer large diesel engine operators both ease of maintenance and continuous engine operation. Continuous operations include filter change-outs and the draining of accumulated water from the handy drain valve. Manifold systems have sufficient fuel flow for prime or standby power operations, commercial marine engines, or other large engine applications.

This recycling series includes the 812MA, the dual manifolded 75812MA and the triple manifolded 79812MA. The Marine 800 Series is designed to filter water and solid contaminants from diesel fuel.

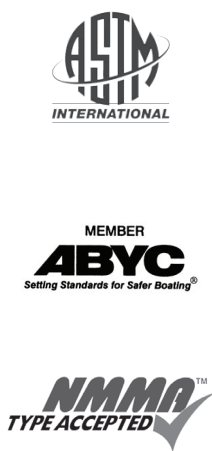
These assemblies utilize proven Racor technology with Aquabloc®II filtration, which filters down to 40 micron, to purify diesel fuel before OEM engine filters are used. Protecting high tolerance injection components keeps engines running at peak performance and lowers maintenance costs. Large inlet and outlet ports allow for improved flow and less fuel flow restriction.

Features and options may include clear contaminant collection bowls; but not marine units, water sight glasses, manual drains and vacuum or compound gauges the marine units are powder coated white.

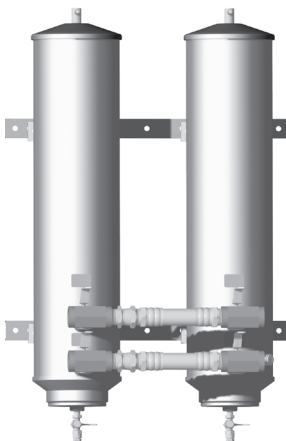
### DETERMINE THE FUEL FLOW RATE

Selection should be made by considering the primary use for the unit. Recycling/filtering the fuel in storage tanks cleans the fuel while removing particulates and sediment accumulations. The fuel may be recycled numerous times, depending on the severity of contamination. Filter/recycling clock times can be reduced by selecting a larger capacity unit. Severely contaminated tanks may require more than one "cycle" to clean them properly.

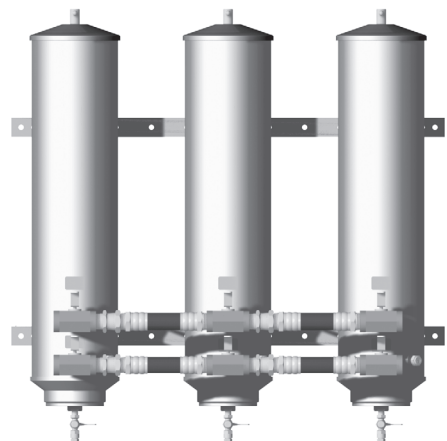
For example, the 812MA filters up to 720 gallons per hour or 12 gallons per minute. It would take about 8.5 minutes to filter 100 gallons. To cycle the tank 3 times would take about 26 minutes. One cycle of 100 gallons of fuel with a 75812MA would take approximately 4 minutes.



812MA



75812MA



79812MA

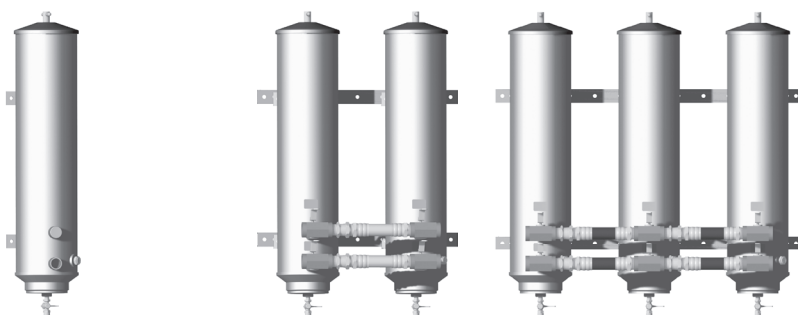


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# Marine Fuel Filtration

## Marine 800 Series



Specifications	812MA	75812MA	79812MA
<b>Maximum Flow Rate</b> (one unit online) (two units online) (three units online)	720 GPH (2725 LPH) N/A N/A	720 GPH (2725 LPH) 1440 GPH (5450 LPH) N/A	720 GPH (2725 LPH) 1440 GPH (5450 LPH) 2160 GPH (8175 LPH)
<b>Port Size</b>	1" NPT	1" NPT	1" NPT
<b>Replacement Elements</b>	RK22610	RK22610 <sup>1</sup>	RK22610 <sup>1</sup>
<b>Micron Rating nominal):</b> (upper element) (lower element)	40 Coalescer	40 Coalescer	40 Coalescer
<b>Height</b>	33.2 in. (84.3 cm)	33.2 in. (84.3 cm)	33.2 in. (84.3 cm)
<b>Width</b>	6.6 in. (16.8 cm)	21.8 in. (55.4 cm)	33.3 in. (84.6 cm)
<b>Depth</b>	8.8 in. (22.4 cm)	16.0 in. (40.6 cm)	16.0 in. (40.6 cm)
<b>Weight (dry)</b>	36.0 lb (16.3 kg)	89.0 lb (40.4 kg)	133.0 lb (60.4 kg)
<b>Min. Service Clearance:</b> (above assembly) (below assembly)	12.0 in. (30.5 cm) 4.0 in. (10.2 cm)	12.0 in. (30.5 cm) 4.0 in. (10.2 cm)	12.0 in. (30.5 cm) 4.0 in. (10.2 cm)
<b>Max. Working Pressure</b>	30 PSI (2.07 bar)	30 PSI (2.07 bar)	30 PSI (2.07 bar)
<b>Differential Pressure</b>	3.2 PSI (0.22 bar)	3.3 PSI (0.23 bar)	6.0 PSI (0.41 bar)
<b>H<sub>2</sub>O Removal Efficiency</b>	99%	99%	99%
<b>Operating Temperature</b>	-10° to +180°F (-23° to +80°C)		

<sup>1</sup> 75812MA assemblies require two RK22610 element kits and the 79812MA requires three.

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# Marine Fuel Filtration

## Marine 800 Series

2

### Installation Instructions

#### Before installing the filter assembly:

- Obtain good ventilation and lighting.
- Maintain a safe working environment.
- The engine must be off for installation.
- DO NOT smoke or allow open flames near the installation.

#### When positioning the filter assembly:

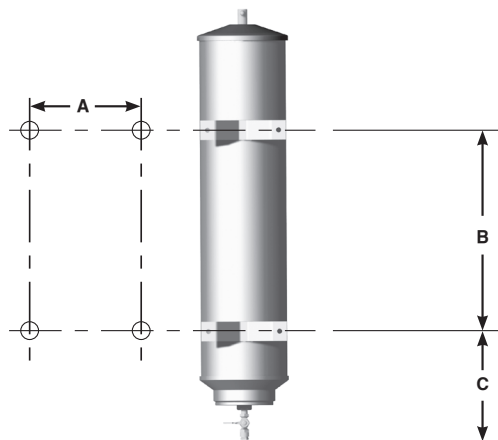
- Filter assemblies should be installed on vacuum side of fuel transfer pump for optimum water separating efficiency. See Installation Diagram.
- Keep fuel line restrictions to a minimum. Locate filter assembly between horizontal planes of bottom of fuel tank and inlet of fuel pump, if possible. If filter assembly is installed in an application where fuel tank is higher than filter, a shut-off valve must be installed

between tank and filter assembly INLET. This will be used when servicing replacement elements.

#### Installing the filter assembly:

- Install the unit in a location which provides accessibility and protection from heat, flames, or accidental impacts. Always adhere to applicable local piping regulations or codes. Use the maximum line size possible and avoid reducers and elbows in order to keep restriction values as low as possible.
- Apply thread sealant (do not use thread tapes) to inlet and outlet fittings prior to installing onto filter assembly.
- When routing hose, avoid surfaces that move, have sharp edges, or get hot (such as exhaust piping).

### Mounting Information



A:

812MA: 5.5 in. (13.8 cm)  
75812MA: 20.3 in. (51.4 cm)  
79812MA: 31.8 in. (80.8 cm)

B:

812MA: 15.5 in. (39.2 cm)  
75812MA: 15.5 in. (39.2 cm)  
79812MA: 16.0 in. (40.6 cm)

C:

812MA: 8.3 in. (21.0 cm)  
75812MA: 8.6 in. (21.8 cm)  
79812MA: 8.1 in. (20.6 cm)



# Marine Fuel Filtration

## Marine 800 Series

### Priming Instructions

1. Close inlet fuel valve, if applicable.
2. Remove T-handle(s) and lid(s) from top of filter assembly.
3. Fill filter assembly with clean fuel.
4. Lubricate lid gasket(s) and T-handle O-ring(s) with clean fuel or motor oil.
5. Replace lid(s) and T-handle(s) and tighten snugly by hand only - do not use tools.
6. Open inlet fuel valve, if applicable.
7. Start engine and check for leaks. Correct as necessary with engine off.

### Draining Water

Drain water and contaminants by opening the self-venting drain. If more than 1.4 oz (40 ml) of fluid is drained, follow priming instructions above. Otherwise, start engine and allow air to purge from system prior to operating equipment at normal loads.

### Element Replacement

Frequency of element replacement is determined by the contamination level in fuel. Recommended service intervals are as follows: every 10,000 miles, 500 hours, every other oil change, annually, or at the first indication of power loss, whichever comes first.

Foul smelling fuel is an indication of microbiological contamination. A change of fuel source and Racor fuel additives are recommended. Always carry extra replacement elements as one tankful of excessively dirty fuel can plug a filter quickly.

1. Close inlet fuel valve, if applicable, and completely drain filter assembly.
2. Remove T-handle(s), lid(s) and lid gasket(s).

3. Remove elements from inside housing(s) and dispose properly.
4. Lubricate new element(s) seals with clean fuel or motor oil and insert coalescer element(s) first, then the 40 micron paper element(s).

Insert new elements SLOWLY with a slight twisting motion. Inserting them too quickly may dislodge element seals.

5. Install new lid gasket(s), supplied with new elements, into lid groove.
6. Follow priming instructions above.

### Recycling Filtering

Recycling or filtering fuel in storage tanks cleans the fuel while removing particulates and sediment accumulations. Fuel should be recycled numerous times, depending on the severity of contamination. Filter/recycling clock times can be reduced by selecting a larger capacity unit.

Severely contaminated fuel may require several cleaning cycles to clean the fuel properly. Cycle time (the amount of time it takes to clean an entire tank of fuel one time) can be reduced by installing a duplex (75812MA) or triplex (79812MA) recycling system. For example, the 812MA recycler filters up to 720 gallons per hour (GPH) or 12 gallons per minute. The cycle time for a 100 gallon tank of fuel would be about 8.3 minutes. Depending on the contamination level of the fuel, one cycle may be enough to clean the fuel properly. If the fuel requires additional cleaning (more cycles), cleaning the fuel can become time consuming, especially if your filtering tanks larger than 100 gallons. By installing a 75812MA (maximum flow rate is 1440 GPH), the same 100 gallons of fuel can be clean in a little over 4 minutes (one cycle); a 79812MA would cut the cycle time down to around 3 minutes. If time is the issue, installing a duplex or triplex recycling system is the answer.

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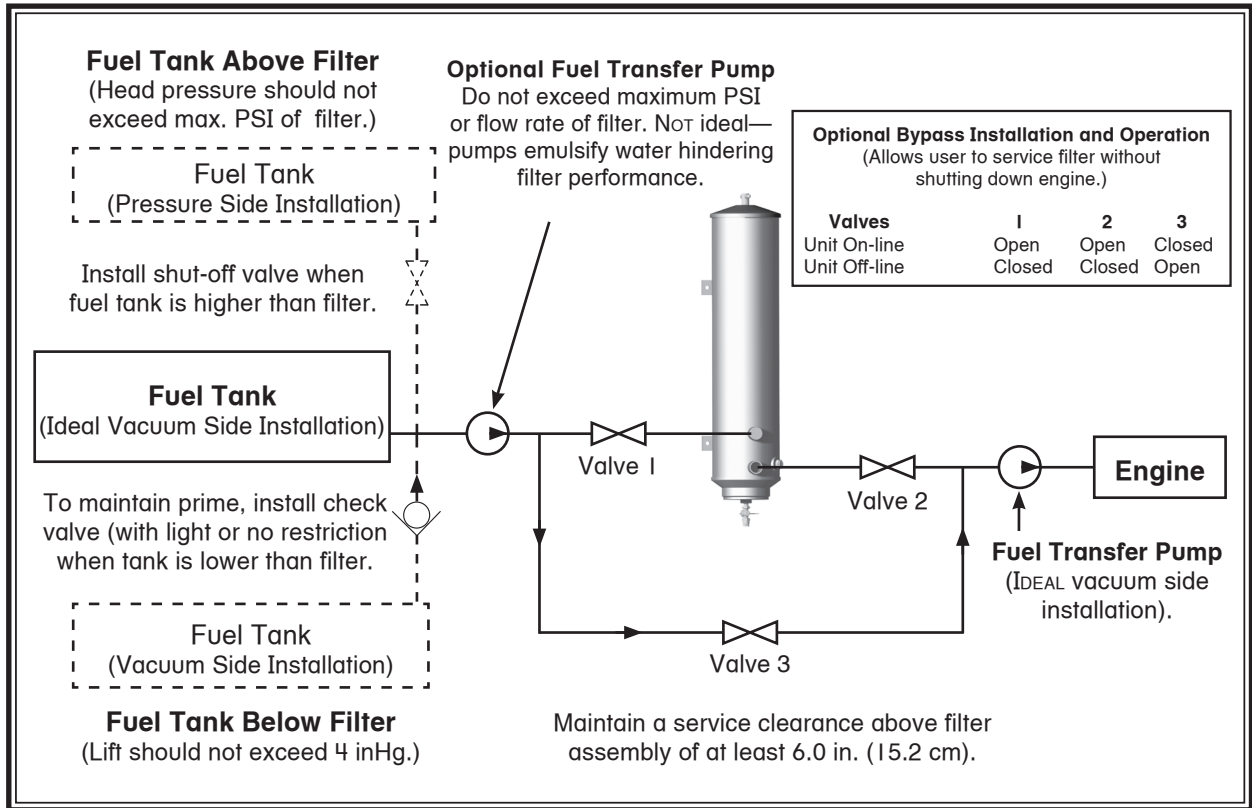


# Marine Fuel Filtration

## Marine 800 Series

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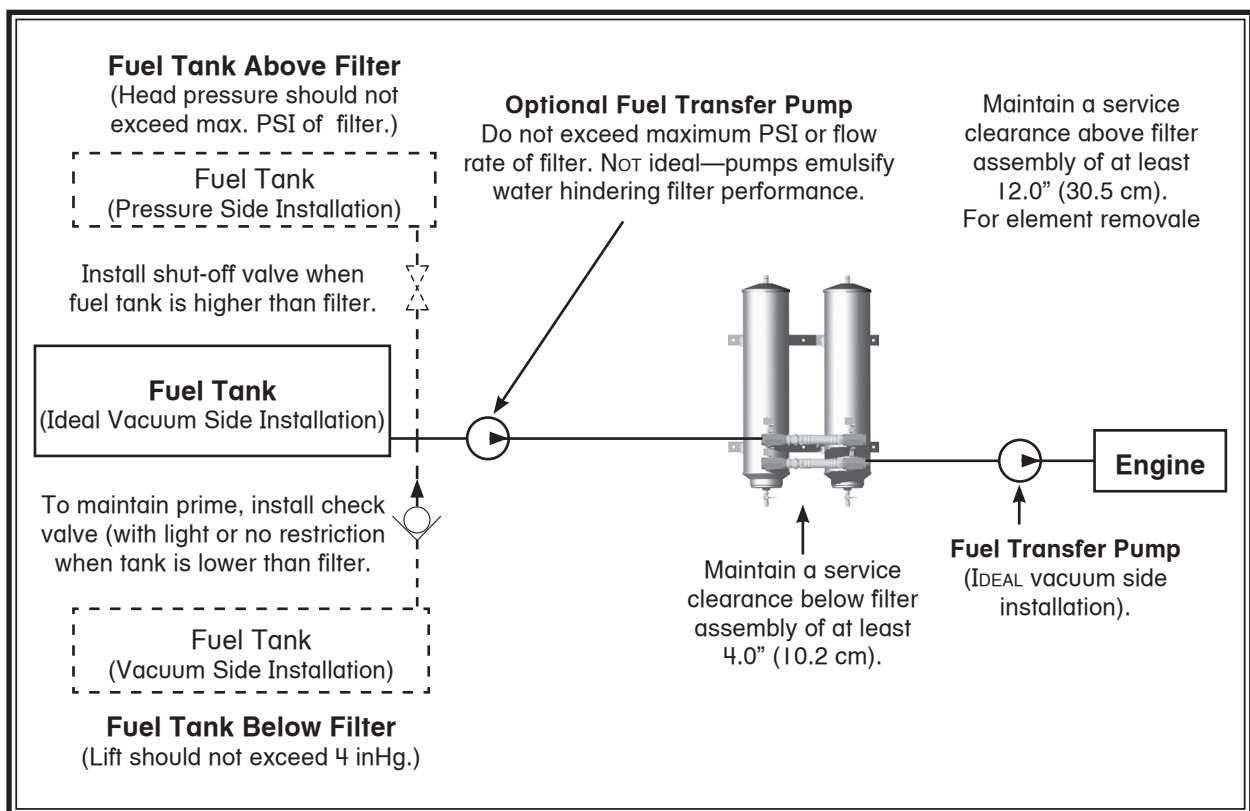
### Installation Diagram for 812MA



# Marine Fuel Filtration

## Marine 800 Series

### *Installation Diagram for 75812MA and 79812MA*



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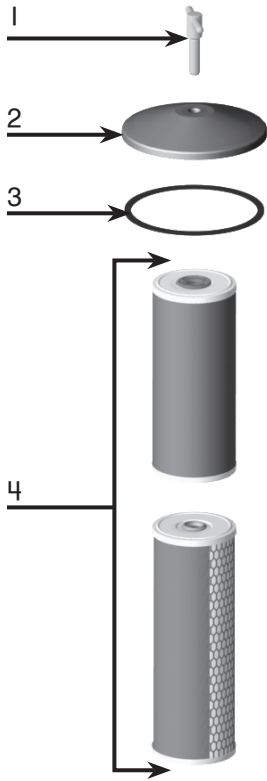
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# Marine Fuel Filtration

## Marine 800 Series

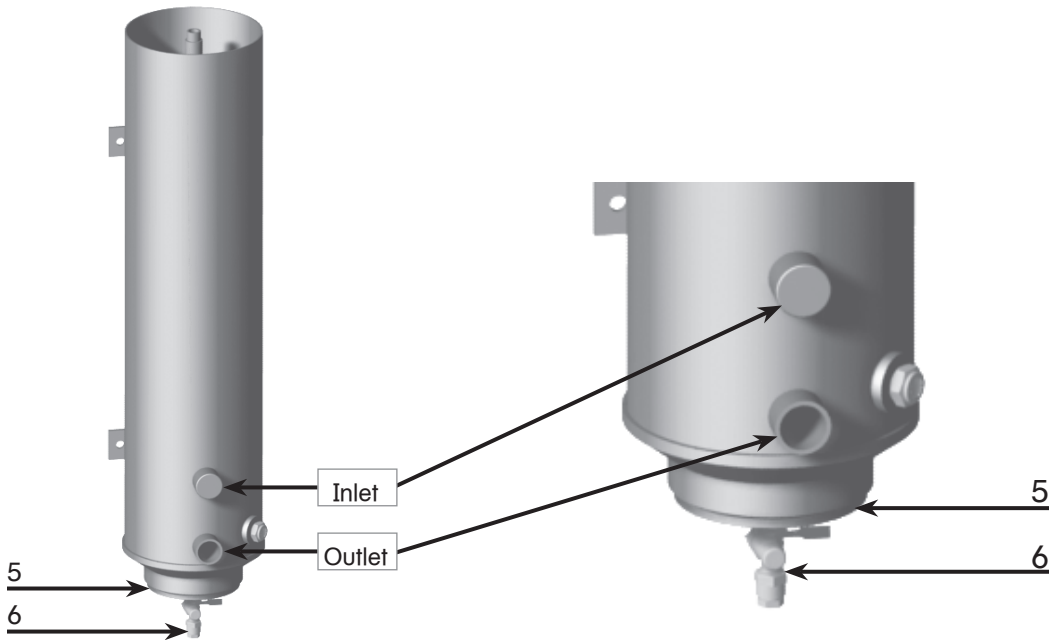
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## Replacement Parts

### 812MA

	<u>Part Number</u>	<u>Description</u>
1.	<b>RK22688</b> <b>11350</b>	T-handle Kit T-handle O-ring
2.	<b>RK22682</b> <b>RK22609</b>	Lid Kit Lid Seal Kit
3.	<b>22609</b>	Lid Gasket
4.	<b>RK 22610</b>	812MA Element Kit (these kits include one 40 micron element, one coalescer element)
5.	<b>22675-B</b>	Metal Collection Cap
6.	<b>RK 19492</b>	Valve Kit





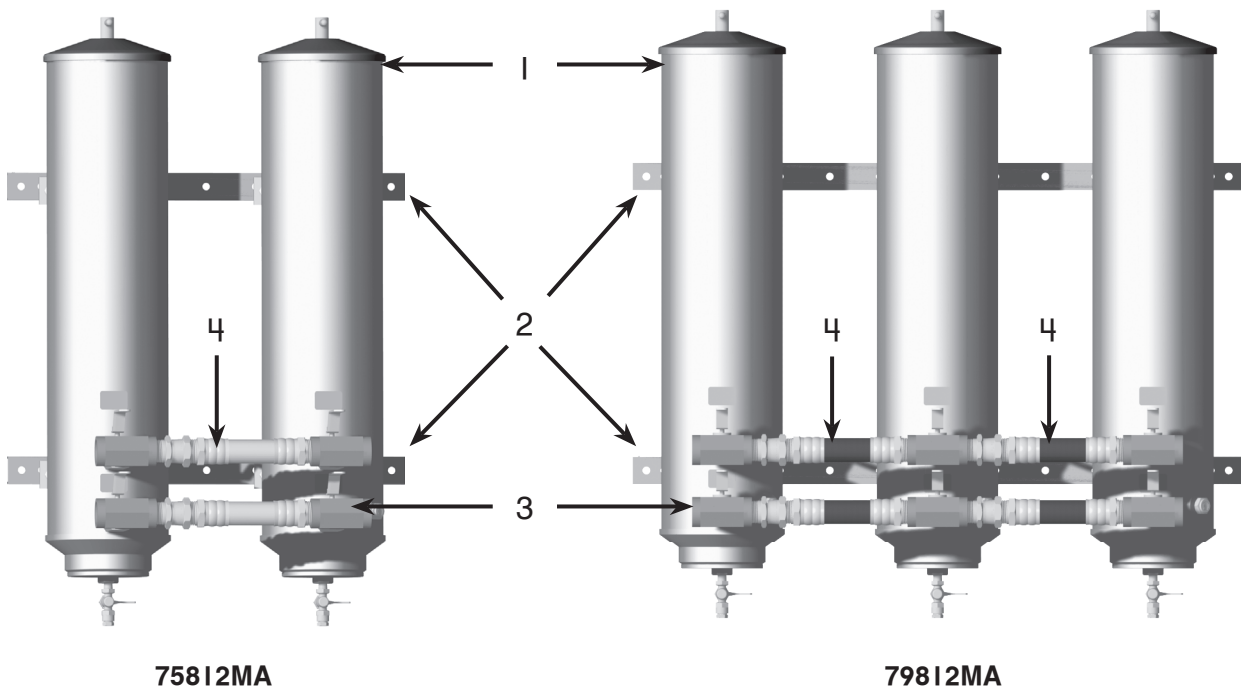
# Marine Fuel Filtration

## Marine 800 Series

### *Replacement Parts*

#### 75812MA and 79812MA

<u>Part Number</u>	<u>Description</u>
1. <b>812MA</b>	(See 812MA Replacement Part List)
2. N/A	Mounting Bracket (call Racor)
3. <b>RK22898</b>	Ball Valve Kit (includes one 1" NPTF ball valve and one 1" NPTF straight pipe adapter)
4. <b>RK22897</b>	Hose and Fitting Kit (includes one 1" NPTF straight pipe adapter, one hose assembly and one 1" NPTF pipe tee)



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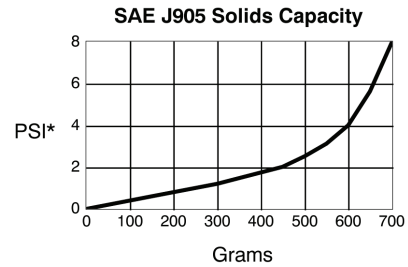
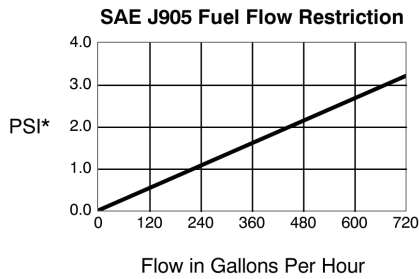
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# Marine Fuel Filtration

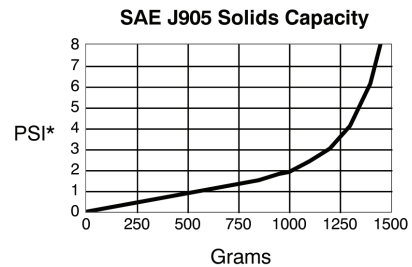
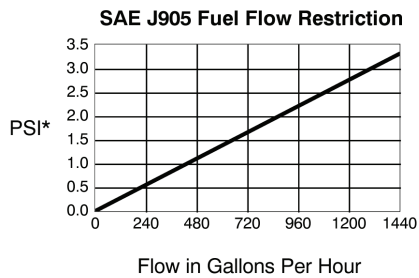
## Marine 800 Series

2

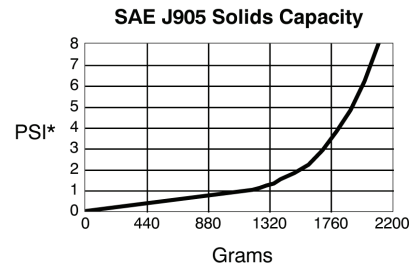
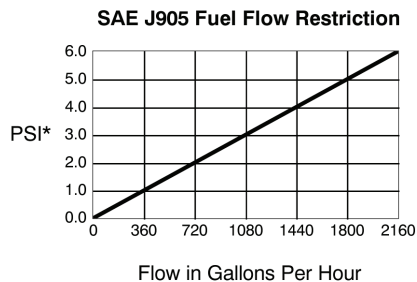
### 812MA Test Data



### 75812MA Test Data



### 79812MA Test Data



PSI X 2.036 = inHg (PSI X 6.895 = kPa)

Test results are from controlled laboratory testing. Field results may vary by application.





# Marine Fuel Filtration

2

## Marine FBO

The Racor Marine FBO assembly is specifically designed to meet the filtration requirements of today's high pressure common rail diesel injection systems. The unit is used for fuel dispensing pumps or as a primary fuel filter/water separator on large diesel engine applications.

Racor's new FBO-10-MA and FBO-14-MA filter assemblies were designed to meet the toughest conditions and offer ease of filter changeouts. The FBO assembly can flow from 10 GPM (38 LPM) to 75 GPM (284 LPM), depending on which model, the element, and the type of fuel to be filtered.

The assembly features a "locking ring collar", which attaches the filter housing to the aluminum die cast filter head with four bolts. The slotted "locking ring collar" allows maintenance personnel to hand loosen the four collar bolts, rotate, and lower the bowl assembly for element changeouts.

With a new element installed, simply raise the bowl and rotate into position on the locking ring and hand tighten evenly (evenly torquing the 4 closure bolts to 100 lb-in is highly recommended).

The closure hardware consists of stainless steel nuts, bolts, and washers with metal hand knobs for ease of maintenance. No wrenches or other special tools are required, allowing one person to easily change the filter element (no V-band clamps are used).

### Features:

- Standard Differential Pressure Gauge
- Optional Water Sight Glass with Bowl
- Standard Mounting Bracket
- Optional Water Sensor Available



FBO-14



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# Marine Fuel Filtration

## Marine FBO

Specifications	Maximum Flow Rates			Clean	Change
	Diesel	Gasoline	Kerosene	Delta P	Delta P
<b>FBO-10-MA</b>					
Microfilter	18 GPM (38 LPM)	52.5 GPM (199 LPM)	35 GPM (132 LPM)	< 2 PSID	15 PSID
Filter Separator	10 GPM (38 LPM)	31.5 GPM (119 LPM)	21 GPM (79 LPM)	< 2 PSID	15 PSID
Absorber	10 GPM (38 LPM)	31.5 GPM (119 LPM)	21 GPM (79 LPM)	< 2 PSID	15 PSID
<b>FBO-14-MA</b>					
Microfilter	25 GPM (95 LPM)	75 GPM (284 LPM)	50 GPM (189 LPM)	< 2 PSID	15 PSID
Filter Separator	15 GPM (57 LPM)	45 GPM (170 LPM)	30 GPM (114 LPM)	< 2 PSID	15 PSID
Absorber	15 GPM (57 LPM)	45 GPM (170 LPM)	30 GPM (114 LPM)	< 2 PSID	15 PSID

Element Chart	Micron Rating	FBO-10-MA (6 X 10 Element)	FBO-14-MA (6 X 14 Element)
Filter Separator	1	FBO-60327	FBO-60336
	5	FBO-60328	FBO-60337
	10	FBO-60353	FBO-60356
	25	FBO-60329	FBO-60338
Microfilter	1	FBO-60330	FBO-60339
	5	FBO-60331	FBO-60340
	10	FBO-60356	FBO-60357
	25	FBO-60332	FBO-60341
Absorptive Filter	1	FBO-60333	FBO-60342
	5	FBO-60334	FBO-60343
	10	FBO-60355	FBO-60358
	25	FBO-60335	FBO-60344



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# Marine Fuel Filtration

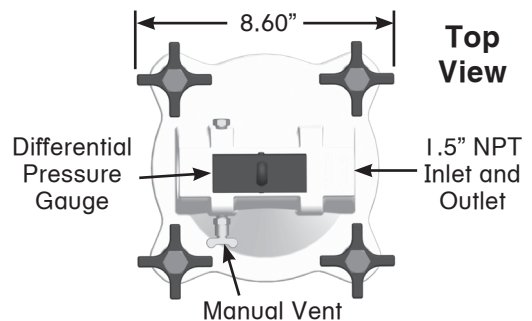
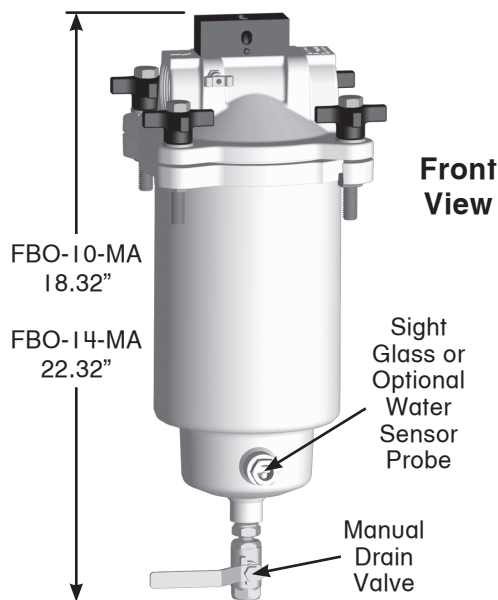
## Marine FBO

2

### How to Order

FBO	-10	-14	-MA
Basic Unit 1.5" NPT Inlet & Outlet Ports	add <b>-10</b> For a 6x10 in. element and flow rate of 10-52 GPM	add <b>-14</b> for a 6x14 in. element and flow rate of 15-75 GPM	add <b>-MA</b> for marine Assembly

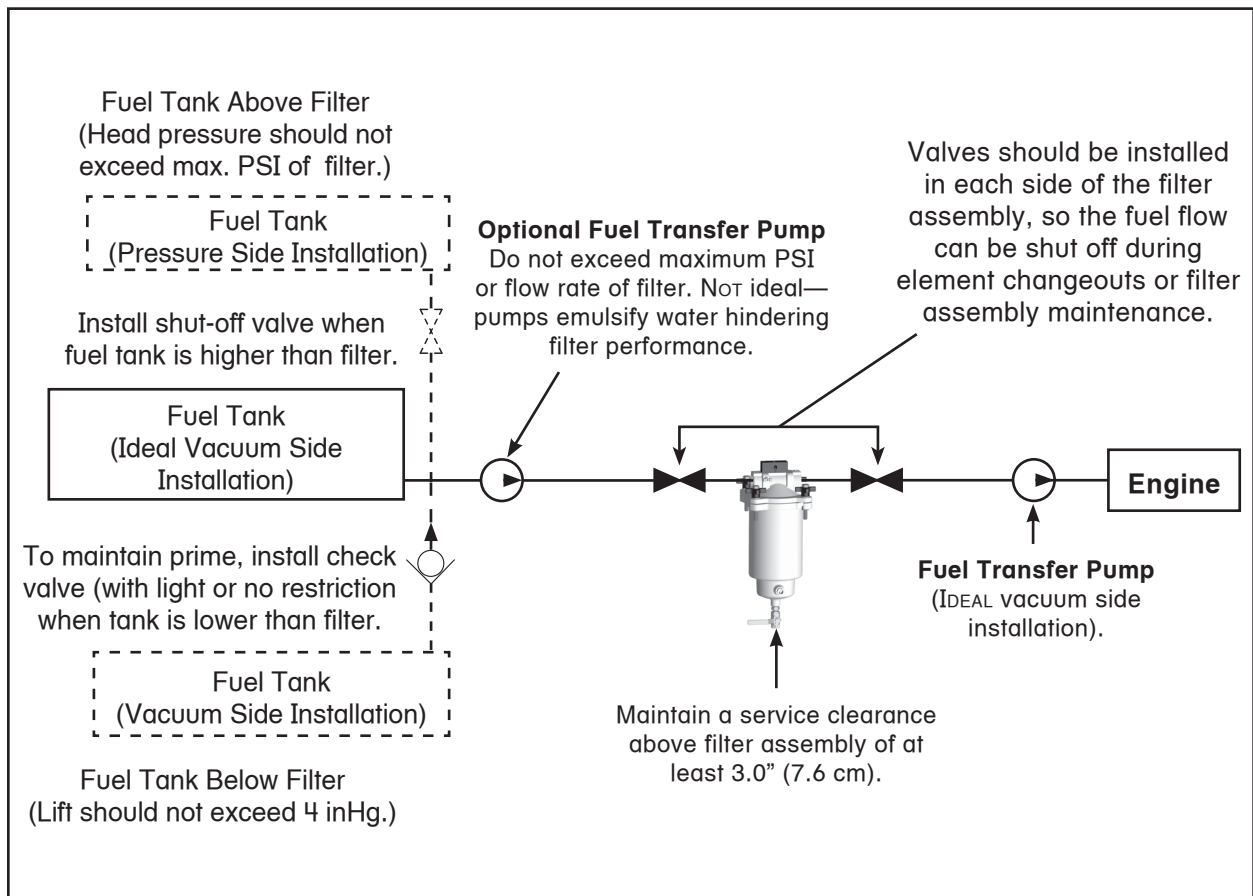
### Mounting Information



# Marine Fuel Filtration

## Marine FBO

### Installation Diagram



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# Marine Fuel Filtration

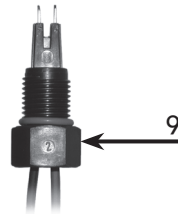
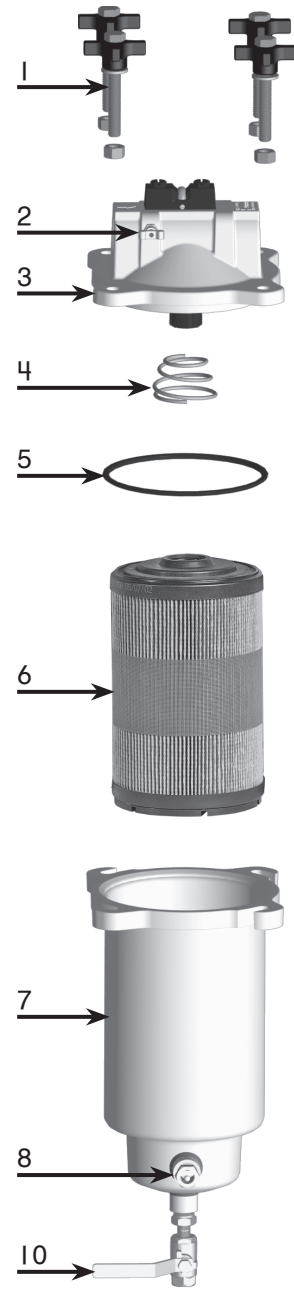
## Marine FBO

2

### Replacement Parts

#### FBO-10-MA & FBO-14-MA

	<u>Part Number</u>	<u>Description</u>
1.	<b>72712</b>	Handle Assembly
2.	<b>72695</b>	Pet Cock Assembly
3.	<b>73152</b>	Head Kit (1.5" NPT Ports)
4.	<b>72368</b>	Spring
5.	<b>72699</b>	O-ring
6.	Replacement Elements (see element chart)	
	<b>FBO-10-MA</b>	Use a (6"x10") Element
	<b>FBO-14-MA</b>	Use a (6"x14") Element
7.	<b>73154</b>	FBO-10-MA Housing Assembly
	<b>73155</b>	FBO-14-MA Housing Assembly
8.	<b>72710</b>	Sight Glass Assembly (.5" NPT)
9.	<b>RK21069</b>	Water Sensor
10.	<b>71943-.25</b>	Ball Valve







# Marine Fuel Filtration

## Marine Turbine Series

Marine Turbine Series filter assemblies are designed to be installed on the vacuum side of the fuel transfer pump for best efficiency and protect precision engine components from dirt, rust, algae, asphaltines, varnishes, and especially water, which is prevalent in engine fuels. They remove contaminants from fuel using the following legendary three stage process:

### Stage One: Separation

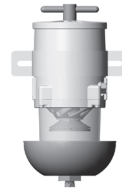
As fuel enters the filter assembly, it moves through the centrifuge and spins off large solids and water droplets which fall to the bottom of the collection bowl.

### Stage Two: Coalescing

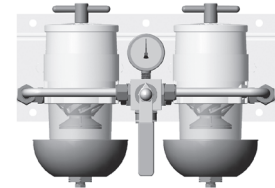
Small water droplets bead-up on the surface of the conical baffle and cartridge element. When heavy enough, they too fall to the bottom of the bowl.

### Stage Three: Filtration

Proprietary Aquabloc®II cartridge elements repel water and remove contaminants from fuel down to 2 micron (nominal). They are waterproof and effective longer than water absorbing elements.



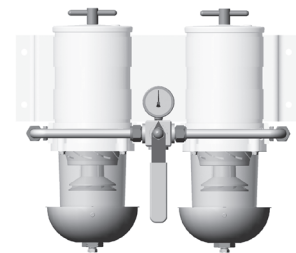
500MA



75500MAX



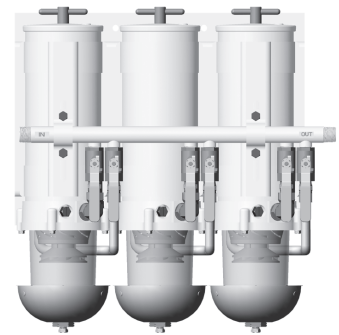
900MA



75900MAX



1000MA



791000MAV

And more...



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# Marine Fuel Filtration

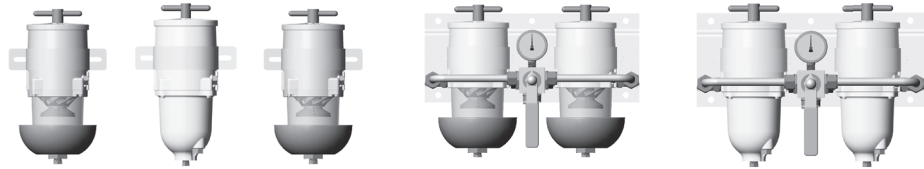
## Marine Turbine Series

Applies to  
all models.



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**ABYC**  
Setting Standards for Safer Boating®

**NMMA**<sup>TM</sup>  
TYPE ACCEPTED



### 500 Series

Specifications	500MA <sup>1</sup>	500MAM	503MA	7550MAX	7550MAXM
<b>Maximum Flow Rate</b> <i>One Filter On-line</i> <i>Two Filters On-line</i>	60 GPH (227 LPH) N/A	60 GPH (227 LPH) N/A	60 GPH (227 LPH) N/A	60 GPH (227 LPH) 120 GPH (454 LPH)	60 GPH (227 LPH) 120 GPH (454 LPH)
<b>Application</b>	Diesel	Gasoline or Diesel	Diesel	Diesel	Gasoline or Diesel
<b>Port Size NPTF</b> <b>Port Size (SAE J1926)</b>	no 3/4"-16	no 3/4"-16	3/8" no	no 3/4"-16	no 3/4"-16
<b>Height</b>	11.5 in. (29.2 cm)	11.0 in. (27.9 cm)	11.5 in. (29.2 cm)	11.5 in. (29.2 cm)	11.0 in. (27.9 cm)
<b>Width</b>	5.8 in. (14.7 cm)	5.8 in. ( 14.7 cm)	5.8 in. (14.7 cm)	14.5 in. (36.8 cm)	14.5 in. (36.8 cm)
<b>Depth</b>	4.8 in. (12.2 cm)	4.8 in. (12.2 cm)	4.8 in. (12.2 cm)	9.5 in. (24.1 cm)	9.5 in. (24.1 cm)
<b>Weight</b>	4.0 lb (1.7 kg)	5.0 lb (2.2 kg)	4.0 lb (1.7 kg)	17 lb (7.7 kg)	18 lb (8.2 kg)
<b>Clean Pressure Drop</b>	0.3 PSI (1.7 kPa)	0.3 PSI (1.7 kPa)	0.3 PSI (1.7 kPa)	0.7 PSI (4.8 kPa)	0.7 PSI (4.8 kPa)
<b>Maximum Pressure</b>	15 PSI (1.0 bar)	15 PSI (1.0 bar)	15 PSI (1.0 bar)	15 PSI (1.0 bar)	15 PSI (1.0 bar)
<b>Water Capacity</b>	3.7 oz (110 ml)	3.7 oz (110 ml)	3.7 oz (110 ml)	7.4 oz (220 ml)	7.4 oz (220 ml)
<b>Overhead Clearance</b>	4.0 in. (10.2 cm)	4.0 in. (10.2 cm)	4.0 in. (10.2 cm)	4.0 in. (10.2 cm)	4.0 in. (10.2 cm)
<b>Water Removal Efficiency</b>	99%	99%	99%	99%	99%
<b>Operating Temperature</b>	-40° to +255°F (-40° to +121°C)				

<sup>1</sup> Optional 16MM ports.

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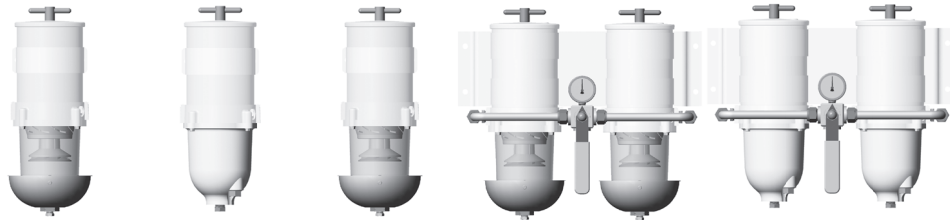
# Marine Fuel Filtration

## Marine Turbine Series

2



### 900 Series



Specifications	900MA	900MAM	903MA	75900MAX	75900MAXM
<b>Maximum Flow Rate:</b> <i>One Filter On-line</i>	90 GPH (341 LPH)	90 GPH (341 LPH)	90 GPH (341 LPH)	90 GPH (341 LPH)	90 GPH (341 LPH)
<i>Two Filter On-line</i>	N/A	N/A	N/A	180 GPH (681 LPH)	180 GPH (681 LPH)
<b>Application</b>	Diesel	Gasoline or Diesel	Diesel	Diesel	Gasoline or Diesel
<b>Port Size</b>	3/8"-14 (SAE J1926)	3/8"-14 (SAE J1926)	BSPT 1/2"-14	3/8"-14 (SAE J514)	3/8"-14 (SAE J514)
<b>Height</b>	17.0 in. ( 43.2 cm)	16.5 in. ( 41.9 cm)	17.0 in. ( 43.2 cm)	17.0 in. (43.2 cm)	16.5 in. (41.9 cm)
<b>Width</b>	6.0 in. ( 15.2 cm)	6.0 in. ( 15.2 cm)	6.0 in. ( 15.2 cm)	18.8 in. (47.6 cm)	18.8 in. (47.6 cm)
<b>Depth</b>	7.0 in. ( 17.8 cm)	7.0 in. ( 17.8 cm)	7.0 in. ( 17.8 cm)	11.0 in. (27.9 cm)	11.0 in. (27.9 cm)
<b>Weight</b>	6.0 lb (2.7 kg)	7.0 lb ( 3.2 kg)	6.0 lb (2.7 kg)	23 lb (10.4 kg)	24 lb (10.9 kg)
<b>Clean Pressure Drop</b>	0.34 PSI (2.4 kPa)	0.34 PSI (2.4 kPa)	0.34 PSI (2.4 kPa)	1.7 PSI (11.7 kPa)	1.7 PSI (11.7 kPa)
<b>Maximum Pressure</b>	15 PSI (1.0 bar)	15 PSI (1.0 bar)	15 PSI (1.0 bar)	15 PSI (1.0 bar)	15 PSI (1.0 bar)
<b>Water Capacity</b>	10.3 oz (305 ml)	10.3 oz (305 ml)	10.3 oz (305 ml)	20.6 oz (610 ml)	20.6 oz (610 ml)
<b>Overhead Clearance</b>	5.0 in. ( 12.7 cm)	5.0 in. ( 12.7 cm)	5.0 in. ( 12.7 cm)	5.0 in. (12.7 cm)	5.0 in. (12.7 cm)
<b>Water Removal Efficiency</b>	99%	99%	99%	99%	99%
<b>Operating Temperature</b>	-40° to +255°F (-40° to +121°C)				



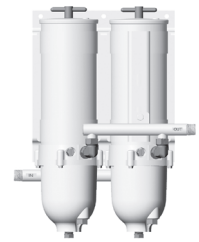
# Marine Fuel Filtration

## Marine Turbine Series

Applies to  
all models.



### 1000 Series



Specifications	1000MA	1000MAM	1003MA	731000MA	731000MAM
<b>Maximum Flow Rate:</b> <i>One Filter On-line</i>	180 GPH (681 LPH)	180 GPH (681 LPH)	180 GPH (681 LPH)	N/A	N/A
<i>Two Filters On-line</i>	N/A	N/A	N/A	360 GPH (1363 LPH)	360 GPH (1363 LPH)
<b>Application</b>	Diesel	Gasoline or Diesel	Diesel	Diesel	Gasoline or Diesel
<b>Port Size</b>	3/8"-14 (SAE J1926)	3/8"-14 (SAE J1926)	BSPT 1/2"-14	3/4"-14 (SAE J476)	3/4"-14 (SAE J476)
<b>Height</b>	22.0 in. (55.9 cm)	21.5 in. (54.5 cm)	22.0 in. (55.9 cm)	22.0 in. (55.9 cm)	21.5 in. (54.5 cm)
<b>Width</b>	6.0 in. (15.2 cm)	6.0 in. (15.2 cm)	6.0 in. (15.2 cm)	16.5 in. (41.9 cm)	16.5 in. (41.9 cm)
<b>Depth</b>	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	12.0 in. (30.5 cm)	12.0 in. (30.5 cm)
<b>Weight</b>	10 lb (4.5 kg)	11 lb (5.0 kg)	10 lb (4.5 kg)	26 lb (11.8 kg)	27 lb (12.2 kg)
<b>Clean Pressure Drop</b>	0.5 PSI (3.4 kPa)	0.5 PSI (3.4 kPa)	0.5 PSI (3.4 kPa)	1.7 PSI (11.7kPa)	1.7 PSI (11.7 kPa)
<b>Maximum Pressure</b>	15 PSI (1.0 bar)	15 PSI (1.0 bar)	15 PSI (1.0 bar)	15 PSI (1.0 bar)	15 PSI (1.0 bar)
<b>Water Capacity</b>	10.3 oz (305 ml)	10.3 oz (305 ml)	10.3 oz (305 ml)	20.6 oz (610 ml)	20.6 oz (610 ml)
<b>Overhead Clearance</b>	10.0 in. (25.4 cm)	10.0 in. (25.4 cm)	10.0 in. (25.4 cm)	10.0 in. (25.4 cm)	10.0 in. (25.4 cm)
<b>Water Removal Efficiency</b>	99%	99%	99%	99%	99%
<b>Operating Temperature</b>	-40° to +255°F (-40° to +121°C)				

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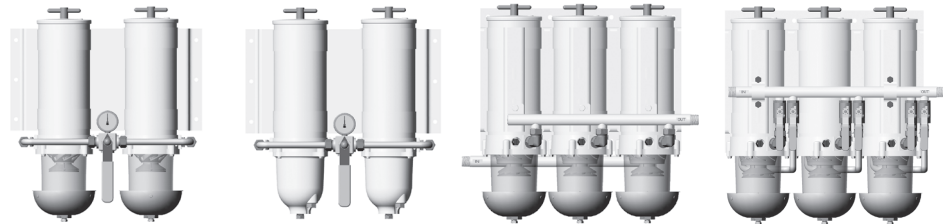
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# Marine Fuel Filtration

## Marine Turbine Series

Applies to  
all models.



### 1000 Series

Specifications	751000MAX	751000MAXM	771000MA	791000MAV
<b>Maximum Flow Rate:</b> <i>One Filter On-line</i> <i>Two Filters On-line</i> <i>Three Filters On-line</i>	180 GPH (681 LPH) 360 GPH (1363 LPH) N/A	180 GPH (681 LPH) 360 GPH (1363 LPH) N/A	N/A N/A 540 GPH (2044 LPH)	180 GPH (681 LPH) 360 GPH (1363 LPH) 540 GPH (2044 LPH)
<b>Application</b>	Diesel	Gasoline or Diesel	Diesel	Diesel
<b>Port Size</b>	3/8"-14 (SAE J514)	3/8"-14 (SAE J514)	1"-11.5 (SAE J476)	3/4"-14 (SAE J476)
<b>Height</b>	22.0 in. (55.9 cm)	21.5 in. (54.6 cm)	22.0 in. (55.9 cm)	22.0 in. (55.9 cm)
<b>Width</b>	18.8 in. (47.6 cm)	18.8 in. (47.6 cm)	21.5 in. (54.6 cm)	21.5 in. (54.6 cm)
<b>Depth</b>	11.0 in. (27.9 cm)	11.0 in. (27.9 cm)	12.0 in. (30.5 cm)	11.8 in. (30.0 cm)
<b>Weight</b>	30 lb (13.6 kg)	31 lb (14.1 kg)	39 lb (17.7 kg)	52 lb (23.6 kg)
<b>Clean Pressure Drop</b>	3.7 PSI (25.5 kPa)	3.7 PSI (25.5 kPa)	1.7 PSI (11.7 kPa)	2.5 PSI (17.2 kPa)
<b>Maximum Pressure</b>	15 PSI (1.0 bar)	15 PSI (1.0 bar)	15 PSI (1.0 bar)	15 PSI (1.0 bar)
<b>Bowl Capacity</b>	20.6 oz (610 ml)	20.6 oz (610 ml)	30.9 oz (915 ml)	30.9 oz (915 ml)
<b>Overhead Clearance</b>	10.0 in. (25.4 cm)	10.0 in. (25.4 cm)	10.0 in. (25.4 cm)	10.0 in. (25.4 cm)
<b>Water Removal Efficiency</b>	99%	99%	99%	99%
<b>Operating Temperature</b>	-40° to +255°F (-40° to +121°C)			



# Marine Fuel Filtration

## Marine Turbine Series

### How to Order

(The example below illustrates how the part numbers are constructed).

500MA	M	10
Basic Model Optional 16MM ports Use model <b>503MA</b> for 3/8" NPTF Pipe Thread	Add <b>M</b> for metal bowl.	Specify: <b>2</b> (for 2 micron) <b>10</b> (for 10 micron) <b>30</b> (for 30 micron)

Replacement Element (seals included)		
2010SM-OR	2 micron	Final
2010TM-OR	10 micron	Secondary
2010PM-OR	30 micron	Primary <sup>1</sup>

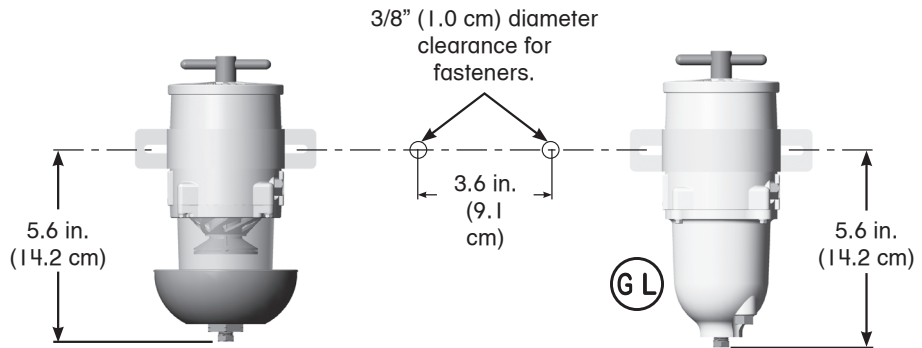
<sup>1</sup> A secondary or final filter is required downstream.

### Mounting Information

500MA  
Certifications



**USCG**



**RACOR**

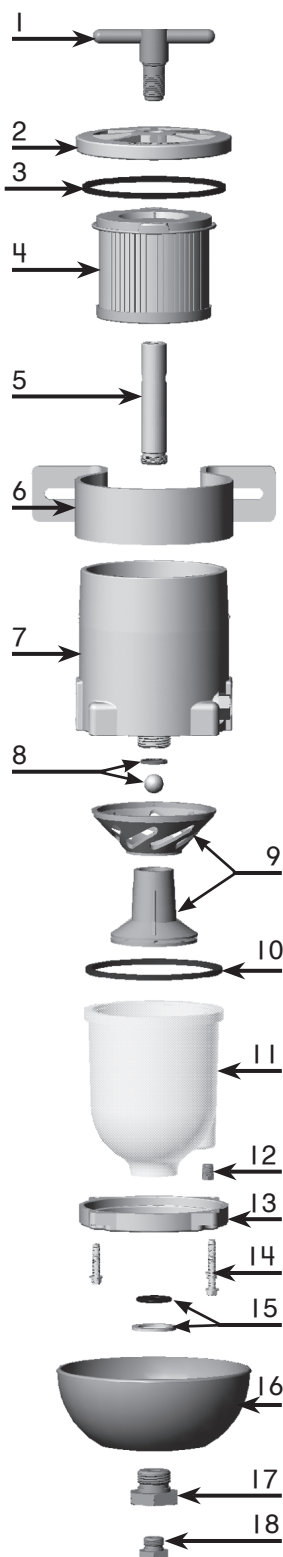
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# Marine Fuel Filtration

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## Marine Turbine Series Replacement Parts



### 500MA and 503MA

Part Number	Description
1. <b>RK11888</b>	T-handle Kit (includes o-ring)
<b>11350</b>	T-handle O-ring
2. <b>RK15078-02</b>	MA Lid Kit (white) (includes #3)
3. <b>15005</b>	Lid Gasket
4. Replacement Elements (includes #3)	
<b>2010SM-OR</b>	2 Micron
<b>2010TM-OR</b>	10 Micron
<b>2010PM-OR</b>	30 Micron
5. <b>RK15079</b>	Return Tube Kit
6. <b>RK15090</b>	Mounting Bracket Kit
7. <b>RK15377-01</b>	Body Kit (3/4"-16 UNF Ports)
<b>15418-09</b>	500MA Body (16MM ports)
<b>15418-10</b>	503MA Body (3/8" NPTF Ports)
8. <b>RK15010B</b>	Checkball Kit (includes seal)
9. <b>RK15013D</b>	Turbine/Centrifuge Kit
10. <b>15374</b>	Bowl Gasket
11. <b>RK15279-01</b>	Clear Bowl Kit (includes #9)
<b>RK15301-01</b>	Metal Bowl Kit (includes #9)
12. <b>RK20022</b>	Port Plug Kit
13. <b>15035-02</b>	Bowl Ring (includes #16)
14. <b>RK15081</b>	Capscrew Kit (10-24 x 7/8") (includes 4 capscrews)
15. <b>RK11340</b>	Drain Fitting O-ring Kit
16. <b>RK15104<sup>1</sup></b>	Heat Deflector Shield Kit (includes #'s 12, 14 & 15)
17. <b>918-N4</b>	Drain plug (1/4" NPT)
18. <b>RK11-1910</b>	Drain Fitting Kit (includes #'s 12 & 15)

### Additional Parts (not shown)

<b>RK11341</b>	Drain Washer
<b>RK19492</b>	Marine Shut-off Valve Kit
<b>RK21069<sup>2</sup></b>	Water Probe Kit
<b>RK15211</b>	Complete Seal Service Kit
<b>15335</b>	Installation Instructions

<sup>1</sup>For replacement only. The Coast Guard does not accept 'FH' units converted to 'MA' configurations.

<sup>2</sup>For diesel service only. Must be used with a water Detection Kit.



# Marine Fuel Filtration

## Marine Turbine Series

### How to Order

(The example below illustrates how the part numbers are constructed).

900MA	M	10
<p>Basic Model Number</p> <p>Use model <b>903MA</b> for 1/2"-14 BSPT pipe thread</p>	<p>Add <b>M</b> for metal bowl.</p>	<p>Specify:</p> <p><b>2</b> (for 2 micron)</p> <p><b>10</b> (for 10 micron)</p> <p><b>30</b> (for 30 micron)</p>

Replacement Element (seals included)		
2040SM-OR	2 micron	Final
2040TM-OR	10 micron	Secondary
2040PM-OR	30 micron	Primary <sup>1</sup>

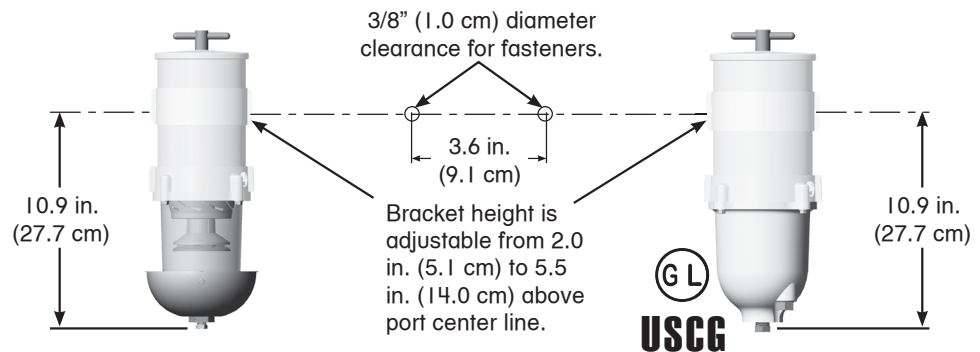
<sup>1</sup> A secondary or final filter is required downstream.

### Mounting Information

900MA  
Certifications



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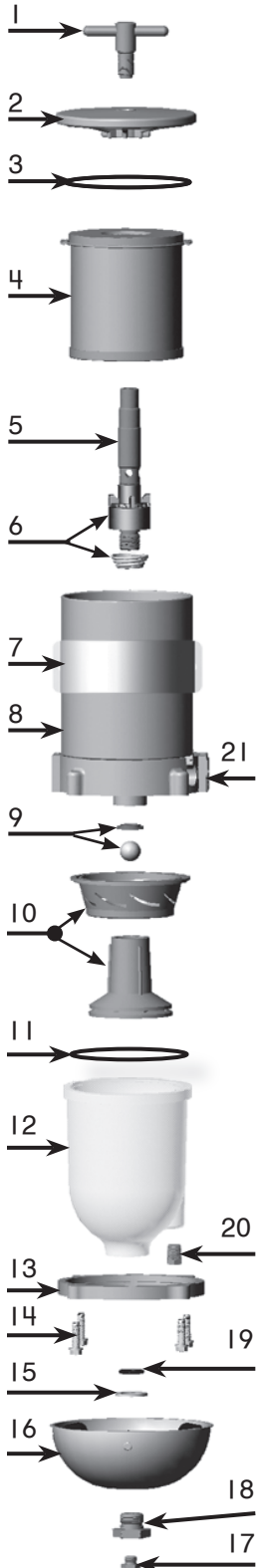


# Marine Fuel Filtration

2

## Marine Turbine Series

# Replacement Parts



### 900MA and 903MA

Part Number	Description
1. RK11888	T-handle Kit (includes o-ring)
11350	T-handle O-ring
2. RK11-1933-04	Lid Kit (includes #3)
3. 11007	Lid O-ring
4. Replacement Element (includes #3)	
2040SMOR	2 Micron Element
2040TMOR	10 Micron Element
2040PMOR	30 Micron Element
5. RK11-1931	Return Tube Kit
6. RK11-1953	Valve, Spring & O-ring Kit
7. RK11815-101	Body Clamp Bracket Kit
8. RK19002	Outer Cylinder Kit (includes #'s 8 and 9)
9. RK11028B	Checkball and Seal Kit
10. RK11026D	Turbine/Centrifuge Kit
11. 11007	Bowl O-ring
12. RK11-1606-1	Clear Bowl Kit (includes #10)
RK11734	Metal Bowl Kit
RK11734-01	Metal Bowl Kit (1/4" NPT)
13. RK11037A	Bowl Ring Kit
14. RK11542	Capscrew Kit (1/4"-20 x 1") (includes 4 capscrews)
15. RK11341	Bowl Drain Gasket Kit
11041	Bowl Drain Washer
16. RK11868 <sup>1</sup>	Heat Deflector Shield (includes #'s 13-16)
17. 918-N4	Bowl Plug (1/4" NPT)
18. RK11-1910	Drain Fitting Kit
19. RK11340	Drain O-ring Kit
20. RK20022	Port Plug Kit
21. 11-1853-16	Base with 1/2"-14 BSPT ports

#### Additional Parts (not shown)

RK19492	Marine Shut-off Valve Kit
RK21069	Water Probe Kit
RK11-1679	Plastic Body Plug Kit
RK11-1404	Complete Seal Service Kit
19526	Installation Instructions

<sup>1</sup>For replacement only. The Coast Guard does not accept 'FH' units converted to 'MA' configurations.

# Marine Fuel Filtration

## Marine Turbine Series

### How to Order

(The example below illustrates how the part numbers are constructed).

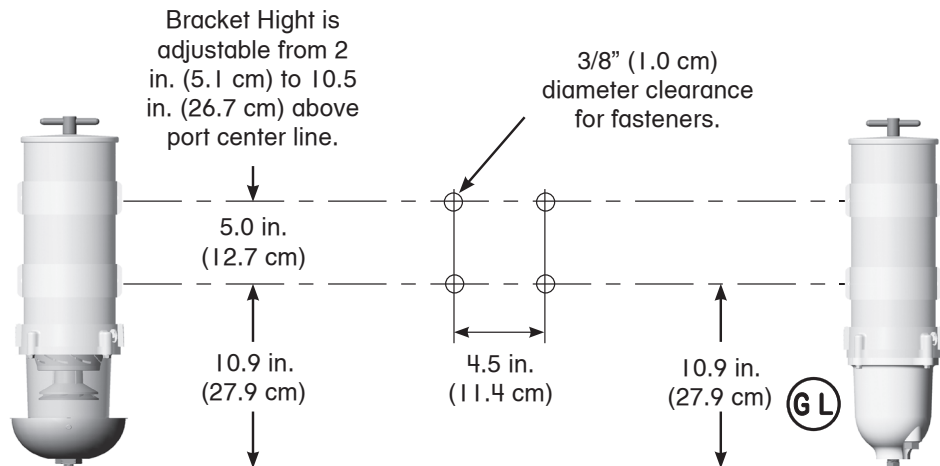
1000MA	M	10
Basic Model  Use model <b>1003MA</b> for 1/2"-14 BSPT pipe thread	Add <b>M</b> for metal bowl.	Add: <b>2</b> (for 2 micron) <b>10</b> (for 10 micron) <b>30</b> (for 30 micron)

Replacement Element (seals included)		
2020SM-OR	2 micron	Final
2020TM-OR	10 micron	Secondary
2020PM-OR	30 micron	Primary <sup>1</sup>

<sup>1</sup> A secondary or final filter is required downstream.

### Mounting Information

1000MA  
Certifications



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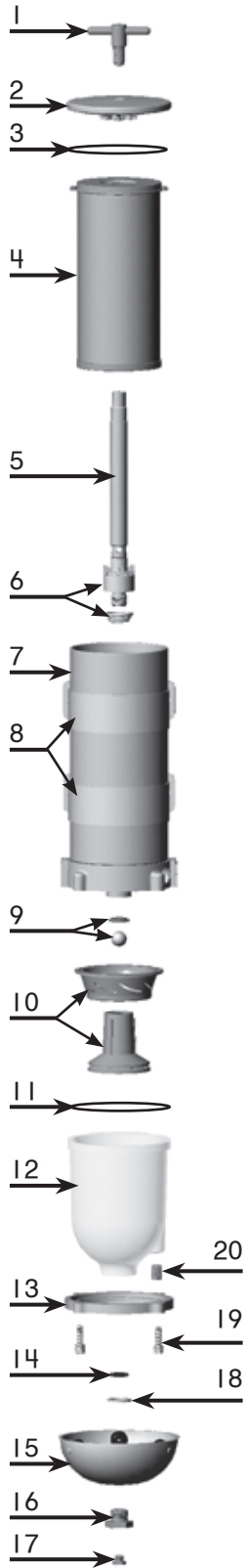


# Marine Fuel Filtration

## Marine Turbine Series

# Replacement Parts

2



### 1000MA and 1003MA

Part Number	Description
1. RK11888	T-handle Kit (includes o-ring)
11350	T-handle O-ring
2. RK11-1933-04	Lid Kit (includes #3)
3. 11007	Lid Gasket
4. Replacement Element (includes #3)	
2020SMOR	2 Micron Element
2020TMOR	10 Micron Element
2020PMOR	30 Micron Element
5. RK11-1930	Return Tube Kit
6. RK11-1953	Valve, Spring & O-ring Kit
7. RK11021	Outer Cylinder Kit (include #'s 3 and 10)
8. RK11815-101	Body Bracket Kit
9. RK11028B	Checkball and Seal Kit
10. RK11026D	Turbine/Centrifuge Kit
11. 11007	Bowl O-ring
12. RK11-1606-1	Clear Bowl Kit (includes #'s 10, 13, 15-17)
RK11734	Metal Bowl Kit
RK11734-01	Metal Bowl (1/4"NPT)
13. RK11037A	Bowl Ring Kit (includes #18)
14. RK11340	Drain Fitting O-ring
15. RK11868 <sup>1</sup>	Heat Deflector Kit (includes #'s 13-17)
16. 918-N4	Bowl Plug (1/4" NPT)
17. RK11-1910	Bowl Drain Fitting Kit
18. RK11341	Bowl Drain Gasket Kit
19. RK11542	Capscrew Kit (4 screws) (1/4"-20 x 1")
20. RK20022	Port Plug Kit
21. 11-1853-16	Base with 1/2"-14 BSPT ports

### Additional Parts (not shown)

RK19492	Shut-off Drain Valve Kit
RK21069 <sup>2</sup>	Water Probe Kit (MA Bowls)
RK11-1679	Plastic Plug Kit
RK11-1404	Complete Service Kit
19526	Installation Instructions

<sup>1</sup>For replacement only. The Coast Guard does not accept 'FH' units converted to 'MA' configurations.

<sup>2</sup>For diesel service only. Must be used with a Water Detection Kit.

# Marine Fuel Filtration

## Marine Turbine Series

### How to Order

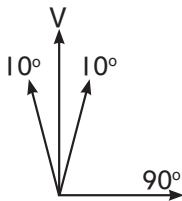
(The example below illustrates how the part numbers are constructed).

731000MA	M	10
Basic Model	Add <b>M</b> for metal bowl	Specify: <b>2</b> (for 2 micron) <b>10</b> (for 10 micron) <b>30</b> (for 30 micron)

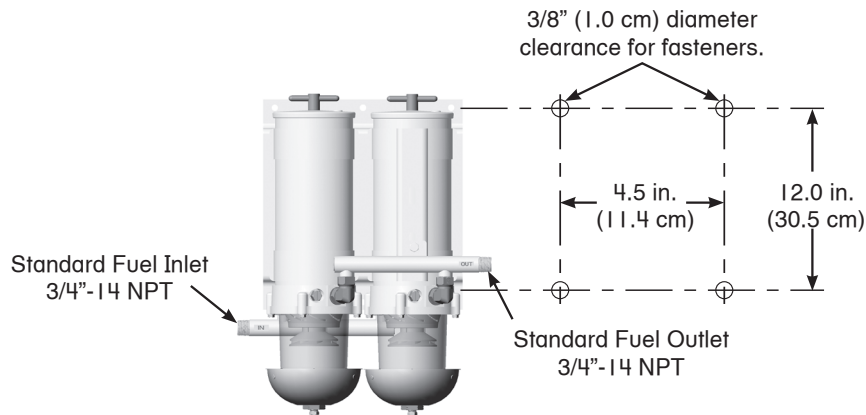
Replacement Element (seals included)		
2020SM-OR	2 micron	Final
2020TM-OR	10 micron	Secondary
2020PM-OR	30 micron	Primary <sup>1</sup>

<sup>1</sup> A secondary or final filter is required downstream.

### Mounting Information



- Note:
1. Mount filter assembly as close to vertical (V) as possible. For best efficiency, do not exceed 10° from V.
  2. Do not remove valve fittings as they are integral components to the valve body.



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# Marine Fuel Filtration

## Marine Turbine Series

2

### Replacement Parts

#### 731000MA

Part Number

Description

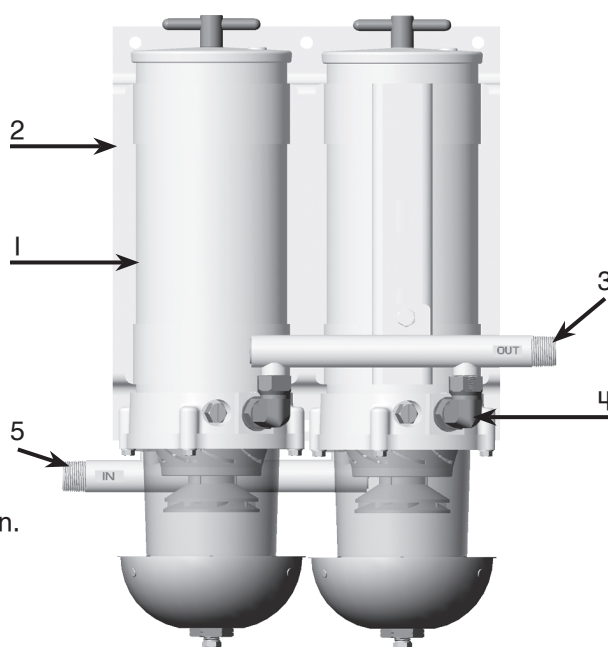
- |   |  |
|---|--|
| 1. <b>1000MA</b>                                    | Refer to model 1000MA for a complete part breakdown.             |
| 2. <b>RK11895</b><br><b>11-1629</b><br><b>11895</b> | Clamp Bracket Kit<br>Dual unit Bracket<br>Clamp Bracket Assembly |
| 3. <b>11923</b>                                     | Outlet Manifold  |
| 4. <b>11072</b>                                     | Elbow Fitting (Parker #2507-10-8)                                |
| 5. <b>11892</b>                                     | Inlet Manifold   |

Additional Parts (not shown)

**RK19492** UL Listed Marine Valve Kit  
(use two for use with this unit)

**19531** Installation Instructions

For water detection kits see the marine Accessories.



731000MA  
Certifications



BUREAU  
VERITAS



# Marine Fuel Filtration

## Marine Turbine Series

### How to Order

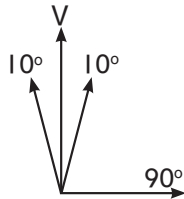
(The example below illustrates how the part numbers are constructed).

75500MAX	M	10
Basic Model	Add <b>M</b> for metal bowl	Add: <b>2</b> (for 2 micron) <b>10</b> (for 10 micron) <b>30</b> (for 30 micron)

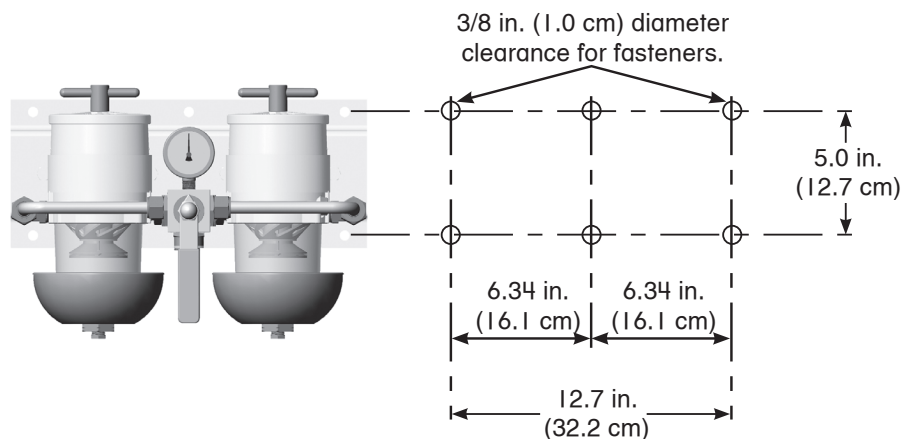
Replacement Element (seals included)		
2010SM-OR	2 micron	Final/Secondary
2010TM-OR	10 micron	Primary/Secondary
2010PM-OR	30 micron	Primary <sup>1</sup>

<sup>1</sup> A secondary/final filter is required downstream.

### Mounting Information



- Note:
1. Mount filter assembly as close to vertical (V) as possible. For best efficiency, do not exceed 10° from V.
  2. Do not remove valve fittings as they are integral components to the valve body.



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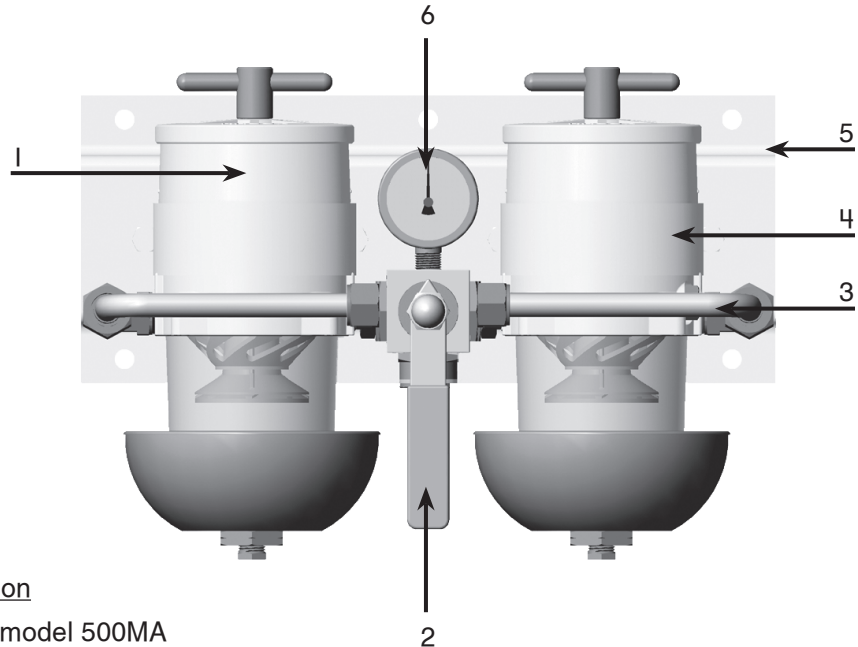


# Marine Fuel Filtration

## Marine Turbine Series

2

### Replacement Parts



#### 75500MAX

Part Number	Description
1. <b>500MA</b>	Refer to model 500MA for a complete part breakdown.
2. <b>RK15390</b> <b>RK11-1959</b>	Valve Kit Valve Replacement Kit
3. <b>RK15391</b>	Rigid Tubing Kit
4. <b>RK15378</b> <b>RK15300</b>	Body Clamp Bracket Kit (One-Piece) Body Clamp Bracket Kit (Three-Piece)
5. <b>RK15329</b>	Main Bracket Kit
6. <b>RK19476</b>	Gauge Kit
Additional Parts (not shown)	
<b>RK19492</b>	UL Listed Marine Drain Kit (two for use with this unit)
<b>15349</b>	Installation Instructions

75500MAX  
Certifications





# Marine Fuel Filtration

## Marine Turbine Series

### How to Order

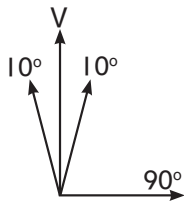
(The example below illustrates how the part numbers are constructed).

75900MAX	M	I0
Basic Model	Add <b>M</b> for metal bowl	Add: <b>2</b> (for 2 micron) <b>10</b> (for 10 micron) <b>30</b> (for 30 micron)

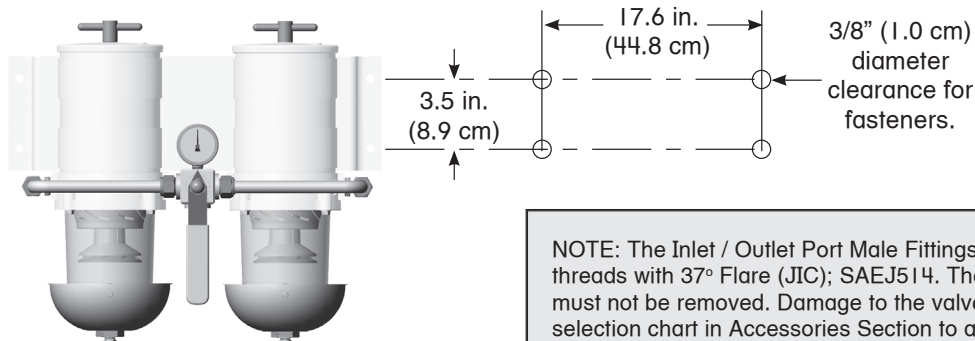
Replacement Element (seals included)		
2040SM-OR	2 micron	Final
2040TM-OR	10 micron	Secondary
2040PM-OR	30 micron	Primary <sup>1</sup>

<sup>1</sup> A secondary or final filter is required downstream.

### Mounting Information



- Note:
1. Mount filter assembly as close to vertical (V) as possible. For best efficiency, do not exceed 10° from V.
  2. Do not remove valve fittings as they are integral components to the valve body.



NOTE: The Inlet / Outlet Port Male Fittings are 7/8"-14 UNF threads with 37° Flare (JIC); SAEJ514. These permanent fittings must not be removed. Damage to the valve may result. See fittings selection chart in Accessories Section to adapt to your fuel system piping requirements.

**RACOR**

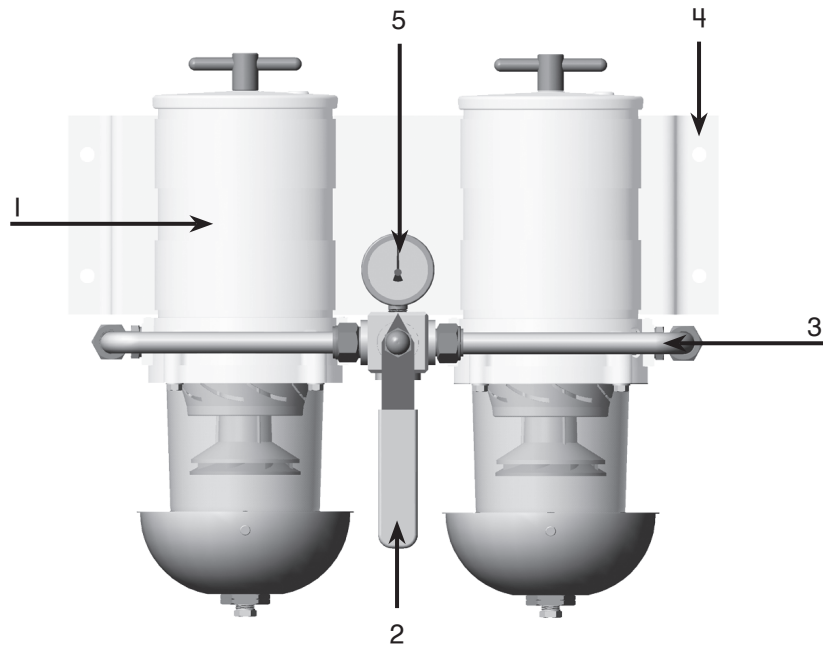
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racortech@parker.com

# Marine Fuel Filtration

## Marine Turbine Series

2

### Replacement Parts



#### 75900MAX

<u>Part Number</u>	<u>Description</u>
1. <b>900MA</b>	Refer to model 900MA for a complete part breakdown.
2. <b>RK19473</b>	Valve Kit
<b>RK19506</b>	Valve Service Kit
3. <b>RK19475</b>	Rigid Tubing Kit
4. <b>RK19486</b>	Dual unit Bracket Kit
5. <b>RK19476</b>	Gauge Assembly Kit

#### 75900MAX Certifications



#### Additional Parts (not shown)

<b>RK19492</b>	UL Listed Marine Valve Kit (two for use with this unit)
<b>19536</b>	Installation Instructions



# Marine Fuel Filtration

## Marine Turbine Series

### How to Order

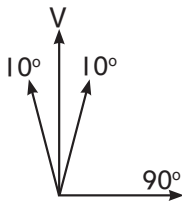
(The example below illustrates how the part numbers are constructed).

751000MAX	M	10
Basic Model	Add <b>M</b> for metal bowl.	Add: <b>2</b> (for 2 micron) <b>10</b> (for 10 micron) <b>30</b> (for 30 micron)

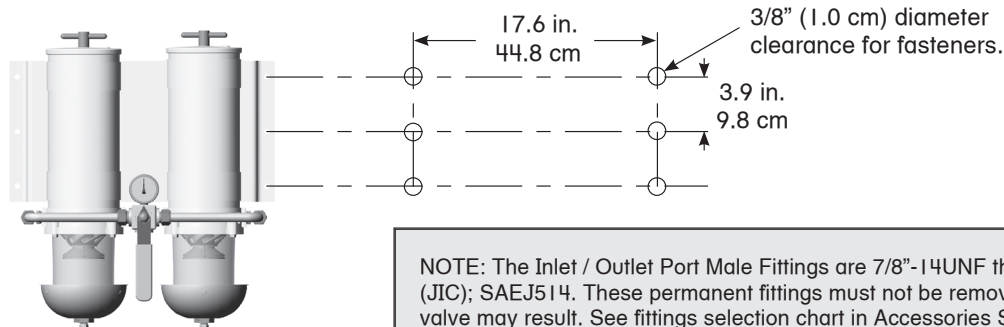
Replacement Element (seals included)		
2020SM-OR	2 micron	Final/Secondary
2020TM-OR	10 micron	Primary/Secondary
2020PM-OR	30 micron	Primary <sup>1</sup>

<sup>1</sup> A secondary or final filter is required downstream.

### Mounting Information



- Note:
1. Mount filter assembly as close to vertical (V) as possible. For best efficiency, do not exceed 10° from V.
  2. Do not remove valve fittings as they are integral components to the valve body.



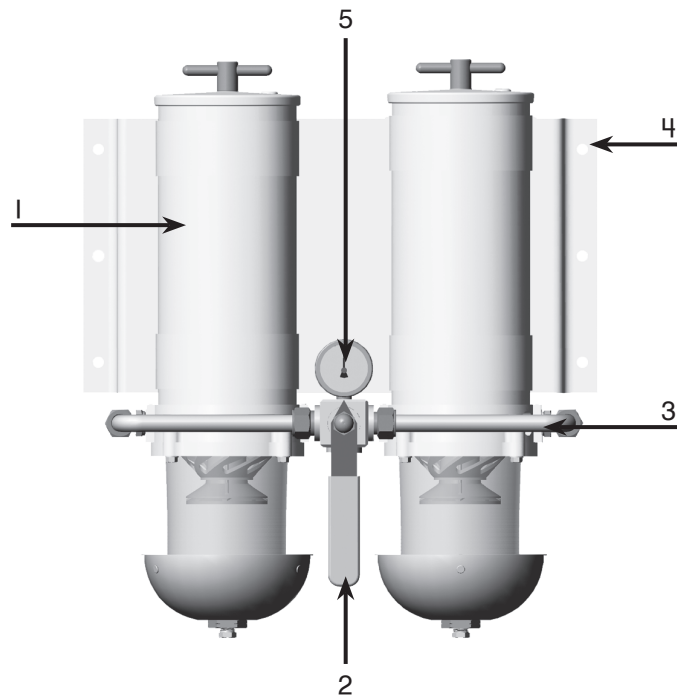
NOTE: The Inlet / Outlet Port Male Fittings are 7/8"-14UNF threads with 37° Flare (JIC); SAEJ514. These permanent fittings must not be removed. Damage to the valve may result. See fittings selection chart in Accessories Section to adapt to your fuel system piping requirements.

# Marine Fuel Filtration

## Marine Turbine Series

2

### Replacement Parts



#### 751000MAX

<u>Part Number</u>	<u>Description</u>
1. <b>1000MA</b>	Refer to model 1000MA for a complete part breakdown.
2. <b>RK19473</b>	Valve Assembly Kit
<b>RK19506</b>	Valve Service Kit
3. <b>RK19475</b>	Rigid Tubing Assembly Kit
4. <b>RK11-1777</b>	Dual unit Bracket Kit
5. <b>RK19476</b>	Gauge Assembly Kit

751000MAX  
Certifications



BUREAU  
VERITAS



#### Additional Parts (not shown)

<b>RK19492</b>	UL Listed Marine Drain Valve Kit (two for use with this unit)
<b>19536</b>	Installation Instructions



# Marine Fuel Filtration

## Marine Turbine Series

### How to Order

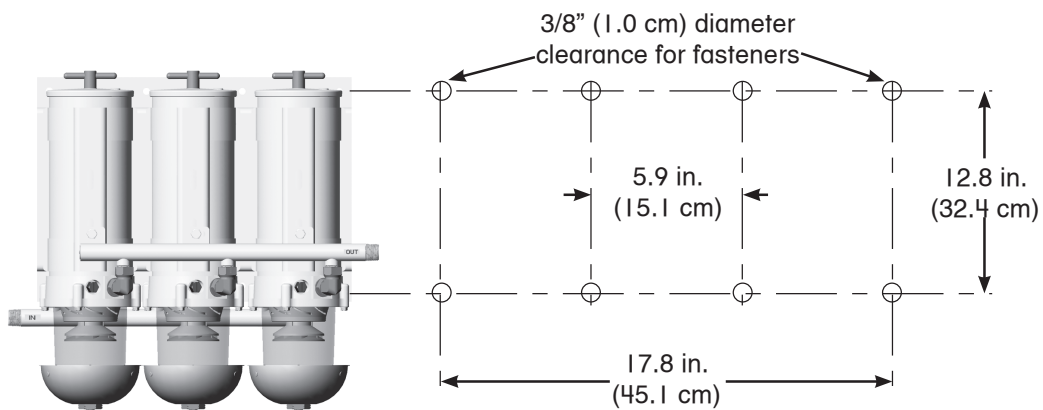
(The example below illustrates how the part numbers are constructed).

771000MA	M	10
Basic Model	Add <b>M</b> for metal bowl.	Add: <b>2</b> (for 2 micron) <b>10</b> (for 10 micron) <b>30</b> (for 30 micron)

Replacement Element (seals included)		
2020SM-OR	2 micron	Final/Secondary
2020TM-OR	10 micron	Primary/Secondary
2020PM-OR	30 micron	Primary <sup>1</sup>

<sup>1</sup> A secondary or final filter is required downstream.

### Mounting Information



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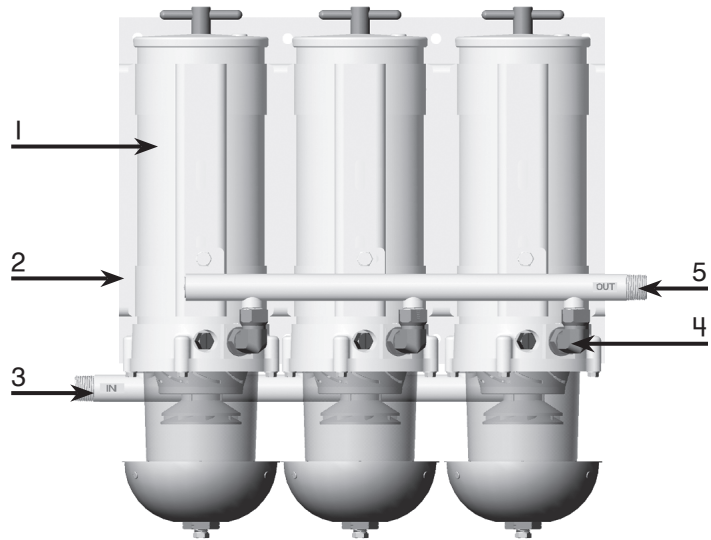


# Marine Fuel Filtration

## Marine Turbine Series

2

### Replacement Parts



#### 771000MA

Part Number	Description
1. <b>1000MA</b>	Refer to model 1000MA for a complete part breakdown.
2. <b>RK11895</b> <b>11-1632</b> <b>11895</b>	Clamp Bracket Kit Triple unit Bracket Clamp Bracket Assembly
3. <b>11893</b>	Inlet Manifold
4. <b>11072</b>	Elbow Fitting (Parker #2507-10-8)
5. <b>11902</b>	Outlet Manifold

#### 771000MA Certifications



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#### Additional Parts (not shown)

<b>RK19492</b>	UL Listed Marine Drain Valve Kit (three for use with this unit)
<b>19531</b>	Installation Instructions

For Water Detection Kits and Manifold Conversion Kits, see the Accessories Section.



# Marine Fuel Filtration

## Marine Turbine Series

### How to Order

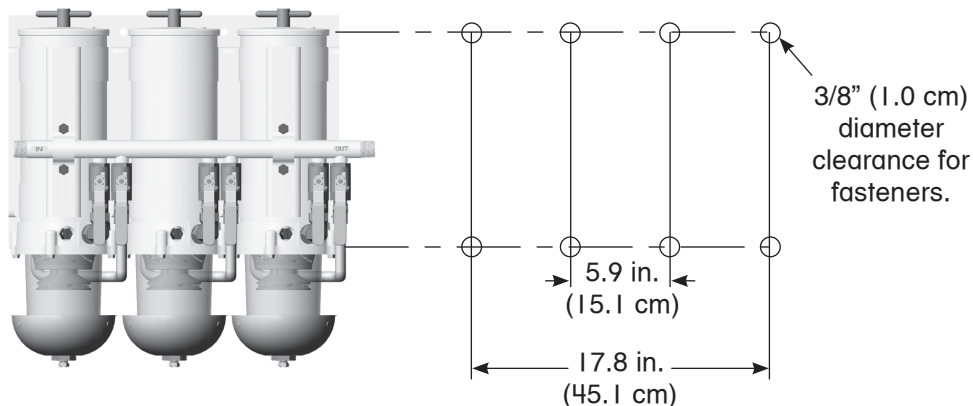
(The example below illustrates how the part numbers are constructed).

791000MAV	M	I0
Basic Model	Add <b>M</b> for metal bowl.	Add: <b>2</b> (for 2 micron) <b>10</b> (for 10 micron) <b>30</b> (for 30 micron)

Replacement Element (seals included)		
2020SM-OR	2 micron	Final
2020TM-OR	10 micron	Secondary
2020PM-OR	30 micron	Primary <sup>1</sup>

<sup>1</sup> A secondary or final filter is required downstream.

### Mounting Information



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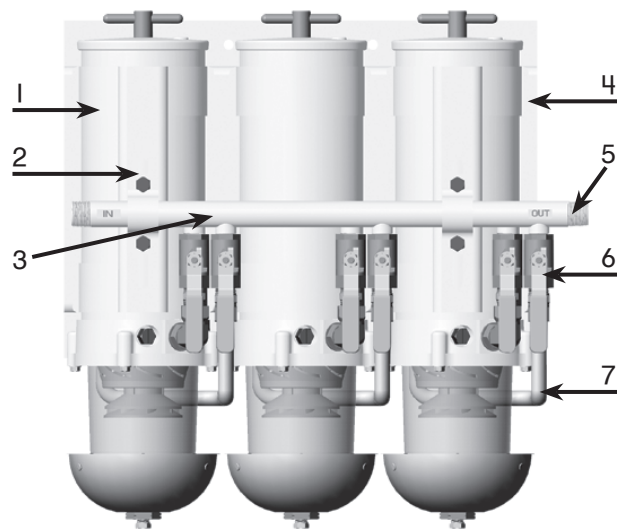


# Marine Fuel Filtration

## Marine Turbine Series

2

### Replacement Parts



#### 791000MAV

	<u>Part Number</u>	<u>Description</u>
1	<b>1000MA</b>	Refer to model 1000MA for a complete part breakdown.
2	<b>11-1632</b>	Triple unit Bracket
3	<b>19460</b>	Inlet Manifold
4	<b>11895</b> <b>11-1761</b>	Clamp Bracket 'U' Bracket
5	<b>19461</b>	Outlet Manifold
6	<b>RK11073</b>	1/2" Ball Valve Kit
7	<b>11-1626</b>	Formed Tubing Assembly

#### Additional Parts (not shown)

**RK19492** UL Listed Marine Drain Valve Kit  
(three for use with this unit)

**19523** Installation Instructions

For water detection kits and manifold conversion kits - see the marine accessories section.

791000MAV  
Certifications



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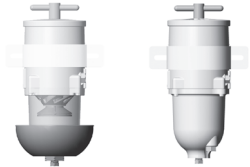


# Marine Fuel Filtration

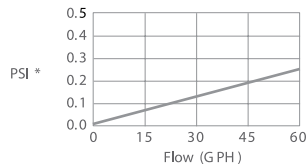
## Marine Turbine Series

### Test Data

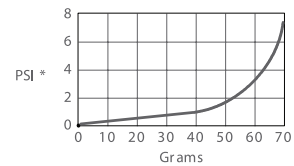
(Test results are from controlled laboratory testing, field results may vary.)



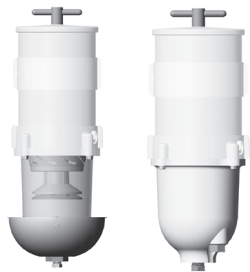
500MA 500MAM



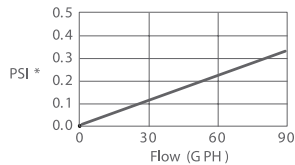
SAE J 905 Fuel Flow Restriction



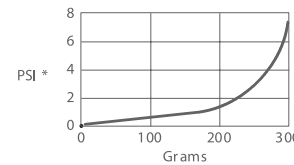
SAE J 905 Solids Capacity  
(using SOFT C-2A; 2010TM Element)



900MA 900MAM



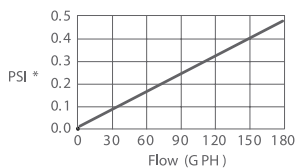
SAE J 905 Fuel Flow Restriction



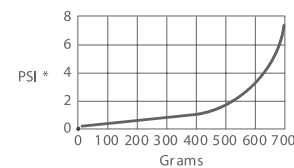
SAE J 905 Solids Capacity  
(using SOFT C-2A; 2040TM Element)



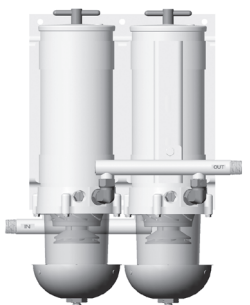
1000MA 1000MAM



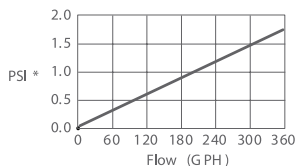
SAE J 905 Fuel Flow Restriction



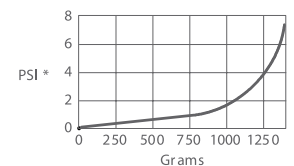
SAE J 905 Solids Capacity  
(using SOFT C-2A; 2020TM Element)



731000MA



SAE J 905 Fuel Flow Restriction



SAE J 905 Solids Capacity  
(using SOFT C-2A; 2020TM Element)

\*PSI X 2.036 = inHg. / PSI X 6.895 = kPa

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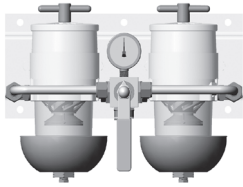
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800.344.3286 ext. 7555  
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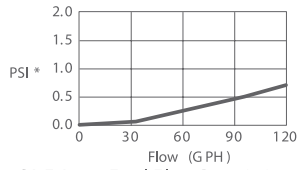
# Marine Fuel Filtration

## Marine Turbine Series

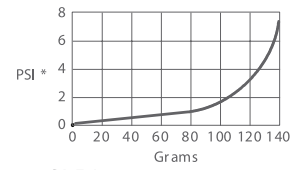
2



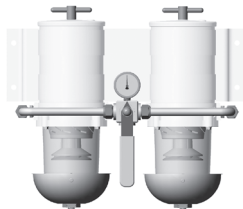
75500MAX



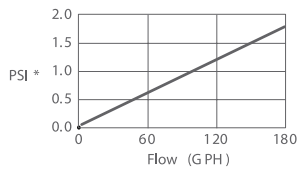
SA E J 905 Fuel Flow Restriction



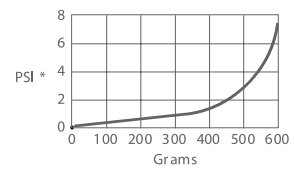
SA E J 905 Solids Capacity  
(using SOFT C-2A; 2010TM Element)



75900MAX



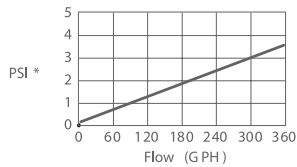
SA E J 905 Fuel Flow Restriction



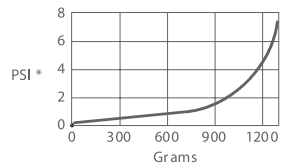
SA E J 905 Solids Capacity  
(using SOFT C-2A; 2040TM Element)



751000MAX



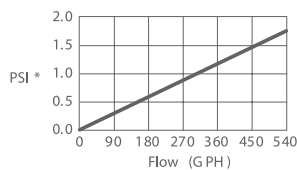
SA E J 905 Fuel Flow Restriction



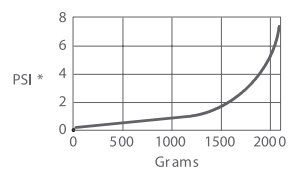
SA E J 905 Solids Capacity  
(using SOFT C-2A; 2020TM Element)



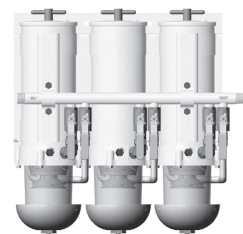
771000MA



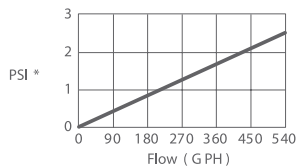
SA E J 905 Fuel Flow Restriction



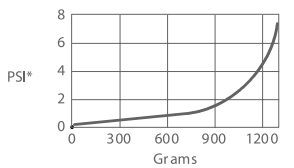
SA E J 905 Solids Capacity  
(using SOFT C-2A; 2020TM Element)



791000MAV



SA E J 905 Fuel Flow Restriction



SA E J 905 Solids Capacity  
(using SOFT C-2A; 2020TM Element)

\*PSI X 2.036 = inHg. / PSI X 6.895 = kPa

# Marine Fuel Filtration

## Marine Turbine Series

### *Installation Instructions*

New filter installations must be filled with fuel and the fuel system must be adequately primed following the engine manufacturer's recommendations. Existing installation difficulties are usually associated with improper priming procedures or damage to the unit or fuel system. The result is either internal air suction or external fuel leakage. Diagnose with the following steps:

1. Check fuel tank level and verify fuel delivery valves are open.
2. Verify T-handle, bowl fasteners and fuel fittings are tight and bowl drain is closed.
3. If element is new, check potential restriction at fuel tank draw tube. An in-tank strainer may be plugged.
4. Review other troubleshooting instructions to uncover other solutions.

Correct external fuel leaks immediately! These conditions result in reduced engine performance such as: hard starting, stalling, reduced power and fire hazards.

#### **Correct Application**

It is very important that Turbine Series filter assemblies are not 'under specified' for the application. The maximum fuel flow rating of the filter assembly must not be exceeded; doing so will reduce efficiency and de-gas (pull air from) the fuel.

#### **Filter Elements**

Replacement elements are available in 2, 10 and 30 micron ratings (nominal). Filtration needs are based on application, fuel quality, maintenance schedules and operating climates. A simple rule to remember is... the finer the filtration, the more frequent the filter change interval.

Always carry extra replacement elements with your equipment as one tankful of excessively contaminated fuel can plug an element quickly.

When clogged to maximum capacity, elements will have a brown to black color or tar like contaminants may be present - this is normal. An appearance of a multi-colored slime (which may have a foul odor) is an indication of microbiological contamination. This condition must be treated immediately. Racor offers a wide variety of gasoline and diesel additives to prevent and treat these problems; see 'Additives' section of this catalog. Severe conditions must be corrected by a repair facility.

Never operate a filter assembly without the element in place.

The element safety valve on the fuel return tube will not expose the outlet hole if the element is removed. Instead, punch the emergency tab on the top of the element and leave in place.

Warning! Puncturing the emergency tab will bypass all filtration and send unfiltered fuel to your engine. Service the element as soon as possible to avoid harmful contaminants flowing downstream to the engine.

#### **Water Sensors**

This feature alerts the operator of a high-water condition. The bowl must be drained of water at the earliest convenience.

A Racor water detection module is needed to work with the in-bowl sensor.

The unit should activate when the water reaches the sensor tips (and when they measure below 47,000 or 100,000 ohms of resistance, depending on the detection module used). If not, the tips may be fouled with a coating. Remove the sensor and clean the tips with a cloth. Run a jumper wire between the tips with the ignition ON to test the system. Difficulties usually lie in the wire connections, power source, or an independent ground.

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# Marine Fuel Filtration

## Marine Turbine Series

2

**All Marine Turbine Series filters are 100% tested to ensure a leak-proof, quality product.**

Apply Parker Super O-lube (part number RK31605) or equivalent to all seals at major attachment points to maintain integrity, seal elasticity, to fill small voids and provide protection from degradation.

Perform the following checks with the engine OFF (and applicable valves closed). For replacement parts, refer to the appropriate 'Replacement Parts' section of this catalog.

**Damaged, worn, or dirty seals will allow air ingestion. Inspect and replace all seals as needed. Lube all seals with Parker Super O-lube. Clean sealing surfaces of dirt or debris every time element is replaced.**

Hand tighten T-handle; do not use tools!

If element is changed or assembly drained for any reason, repriming assembly (filling with fuel) may be necessary. Fill to just above top of

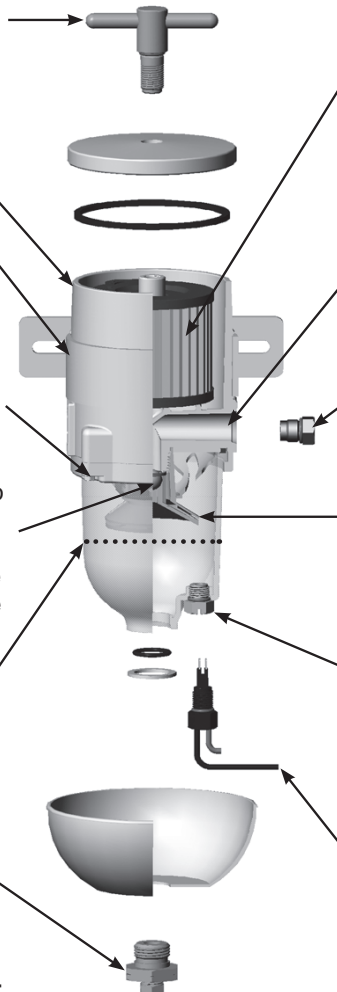
Do not overtighten carriage bolt as this may distort cylinder roundness.

Do not overtighten self-tapping screws; this may strip the threads. After disassembly, start screws by hand prior to using tools. Specification: 55 to 65 in.

The hollow aluminum check-ball floats up against the seal when the fuel is stopped thus preventing fuel bleed-back. If your unit loses prime, inspect upstream hose connections first, otherwise, disassemble the unit and inspect the seal and ball.

Drain water before it reaches this level.

Air bubbles or fuel leakage appearing from drain may indicate that drain is closed completely or that seal has been clogged with contaminants. Tighten drain and inspect: If self-venting drain will not work when opened, it may be clogged. Cycle drain (open-close) or attach a hose and briefly apply air (<2-3 PSI with T-handle and lid removed) to dislodge contaminants.



Element should be replaced every 10,000 miles every 500 hours, every other oil change, annually or at first indication of power loss, whichever occurs first. Construction and agricultural equipment should change element every 300 hours.

SAE O-ring ports should have a smooth angled seat for sealing. Do not scratch this surface. Check O-ring for damage. Replace if necessary.

Heater feed-thru O-ring must not be damaged or swollen. Tighten snugly. Specification: 15 to 20 in. lbs.

Air bubbles appearing from turbine are an indication of an upstream leak between Racor inlet and fuel tank pick-up tube.

A water sensor plug is standard equipment on new assemblies. Water sensor kits are available as accessories; see the 'Accessories' section of this catalog. Tighten plug or water sensor snugly. Specification: 15 to 20 in. lbs.

Water sensors activate when water contacts the sensor tips. Air bubbles or fuel leakage appearing from sensor area may indicate that it is loose or O-ring is damaged. Tighten or disassemble and inspect. Specification: 15 to 20 in. lbs.



**Notes**

Lined area for notes.

# Marine Fuel Filtration

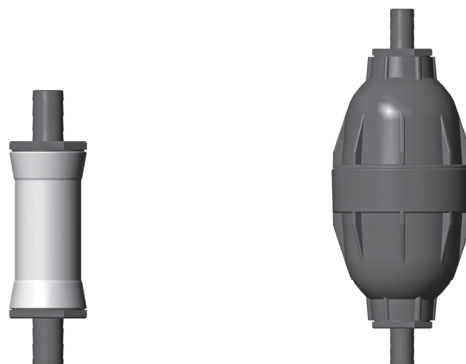
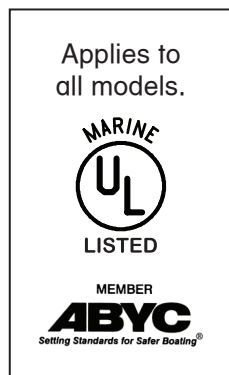
## Fuel/Air Separators

2

### Eliminate Fuel Vent Line Overflow During Refueling!

Next time you fill up, watch your fuel vent line. A typical refueling will send up to a half a gallon of fuel spilling overboard. Fuel spillage is not only expensive, it's absolutely deadly to fragile lakes, rivers and waterways. Also, USCG and other regulations prohibit the discharge of oils and violators could face civil and criminal penalties.

Installed in the fuel tank vent line, the Racor Fuel/Air Separator efficiently separates air from fuel forced into the line. Air is vented, and fuel is returned to the tank. The Fuel/Air Separator captures fuel normally discharged due to agitation and thermal expansion (up to 2.4 PSI). It also eliminates damage to expensive striping and labels and protects finishes from fuel stains.



Specifications	LG50	LG100
<b>Application:</b> Gasoline Diesel	Yes No	Yes Yes
<b>Maximum Air Flow Rate<sup>1</sup></b>	12 CFPM (5.6 LPS)	17 CFPM (8.0 LPS)
<b>Hose Barb Size</b>	5/8"	5/8"
<b>Thermal Expansion</b>	2.4 PSI (0.17 bar)	2.4 PSI (0.17 bar)
<b>Height</b>	6.0 in. (15.2 cm)	9.75 in. (24.8 cm)
<b>Diameter</b>	1.75 in. (4.5 cm)	4.0 in. (10.2 cm)
<b>Weight (dry)</b>	1.2 lb (0.5 kg)	1.6 lb (0.7 kg)
<b>Case Quantity</b>	12	12
<b>Operating Temperature</b>	-40° to +255°F (-40° to +121°C)	

Notes: <sup>1</sup>Flow rates are in cubic feet per minute (CFPM) and liters per second (LPS).



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# Marine Fuel Filtration

## Fuel/Air Separators

### LG50 How It Works

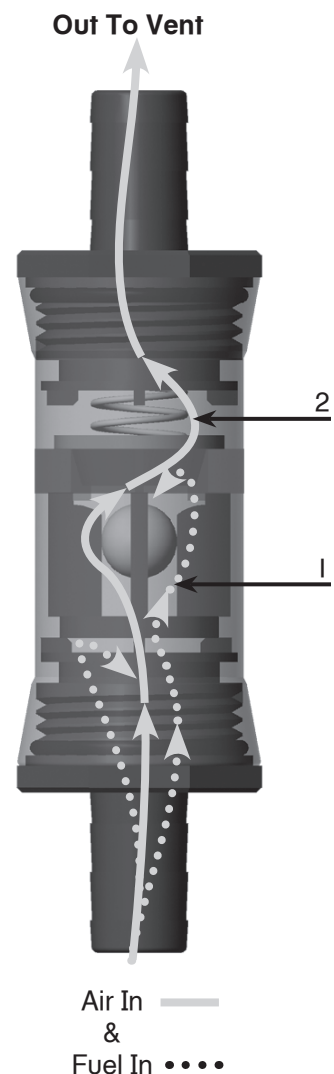
#### Stage One

Venting tank fuel is diffused by the flow diverter and air is allowed to bypass the diverter. Fuel is directed back to the tank.

#### Stage Two

Vapor collects on the interior surfaces and coalesces. The fuel returns downward by gravity and air continues up and out of the unit.

The safety relief valve includes a floating check ball which will not permit a large in-rush of fuel to bypass. In the event of internal pressure reaching 2.4 PSI (0.17 bar), the spring will compress and open the safety seat.



## Troubleshooting

Inspect the fuel system components and overboard vent annually. In the event of severe fuel tank biological or environmental contamination, the unit may be fouled and require inspection or cleaning. Also, flying insects are known to build nest in vent ports which may obstruct the escaping vapors. These situations may be evident by loss of power while underway or premature tripping of the fuel nozzle automatic shut-off during refueling.

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# Marine Fuel Filtration

2

## Fuel/Air Separators

### LG100 How It Works

#### Stage One

Venting tank fuel is deflected by the flow diverter and fuel is directed down to the drain ports. Air is allowed to bypass and continues to travel up and out.

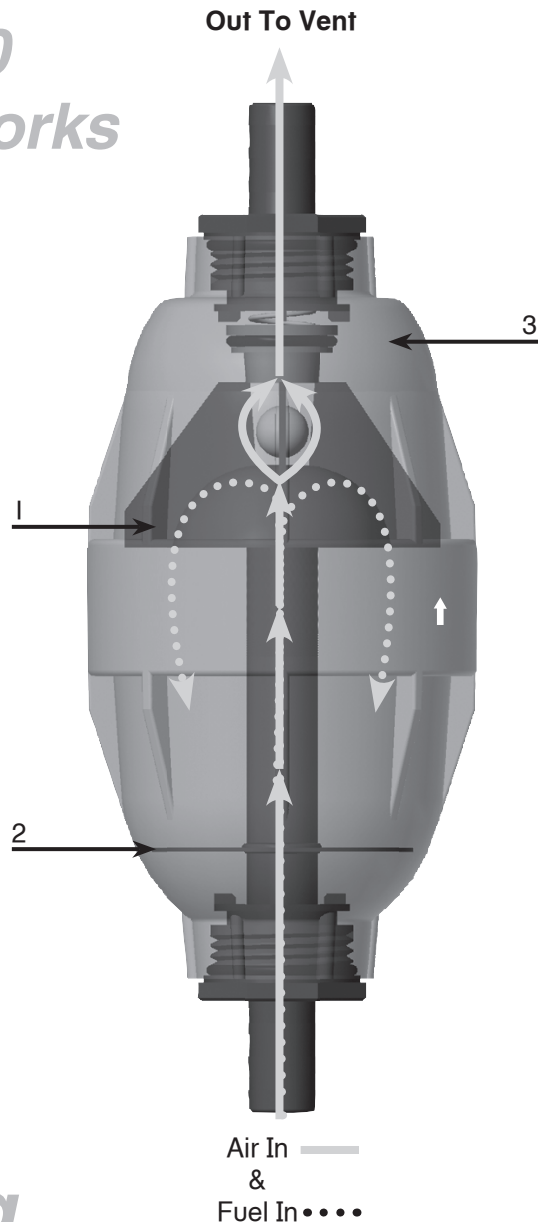
#### Stage Two

Fuel defoams through a fine wire mesh screen which filters out large contaminants. Under the screen, the fuel collects temporarily until it can flow back down to the fuel tank.

#### Stage Three

Vapor collects on the interior surfaces and coalesces. The fuel returns downward by gravity and air continues up and out of the unit.

The safety relief valve includes a floating check ball which will not permit a large in-rush of fuel to bypass. In the event of internal pressure reaching 2.4 PSI (0.17 bar), the spring will compress and open the safety seat.



## Troubleshooting

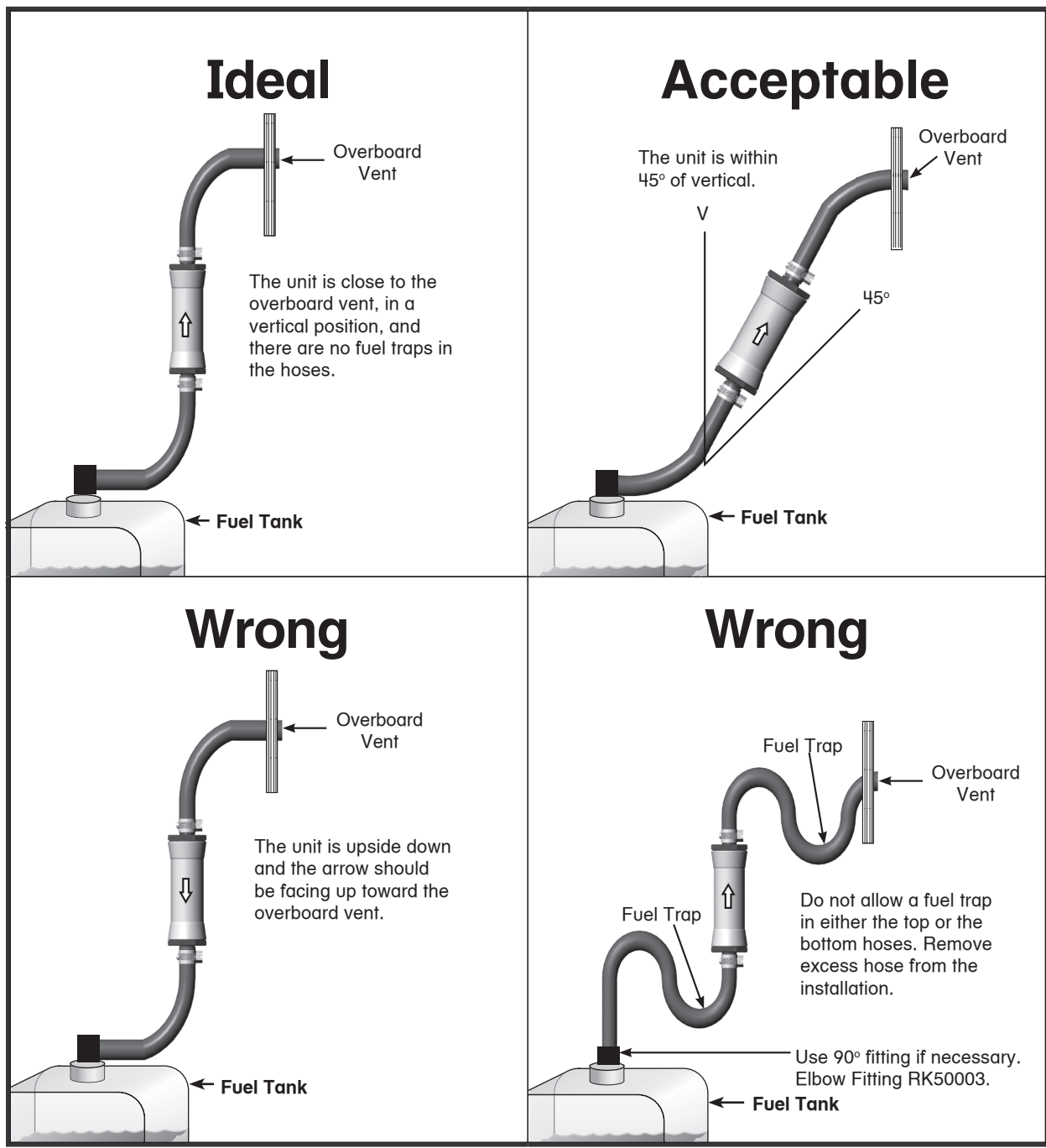
Inspect the fuel system components and overboard vent annually. In the event of severe fuel tank biological or environmental contamination, the unit may be fouled and require inspection or cleaning. Also, flying insects are known to build nest in vent ports which may obstruct the escaping vapors. These situations may be evident by loss of power while underway or premature tripping of the fuel nozzle automatic shut-off during refueling.



# Marine Fuel Filtration

## Fuel/Air Separators

### LG50 Installation



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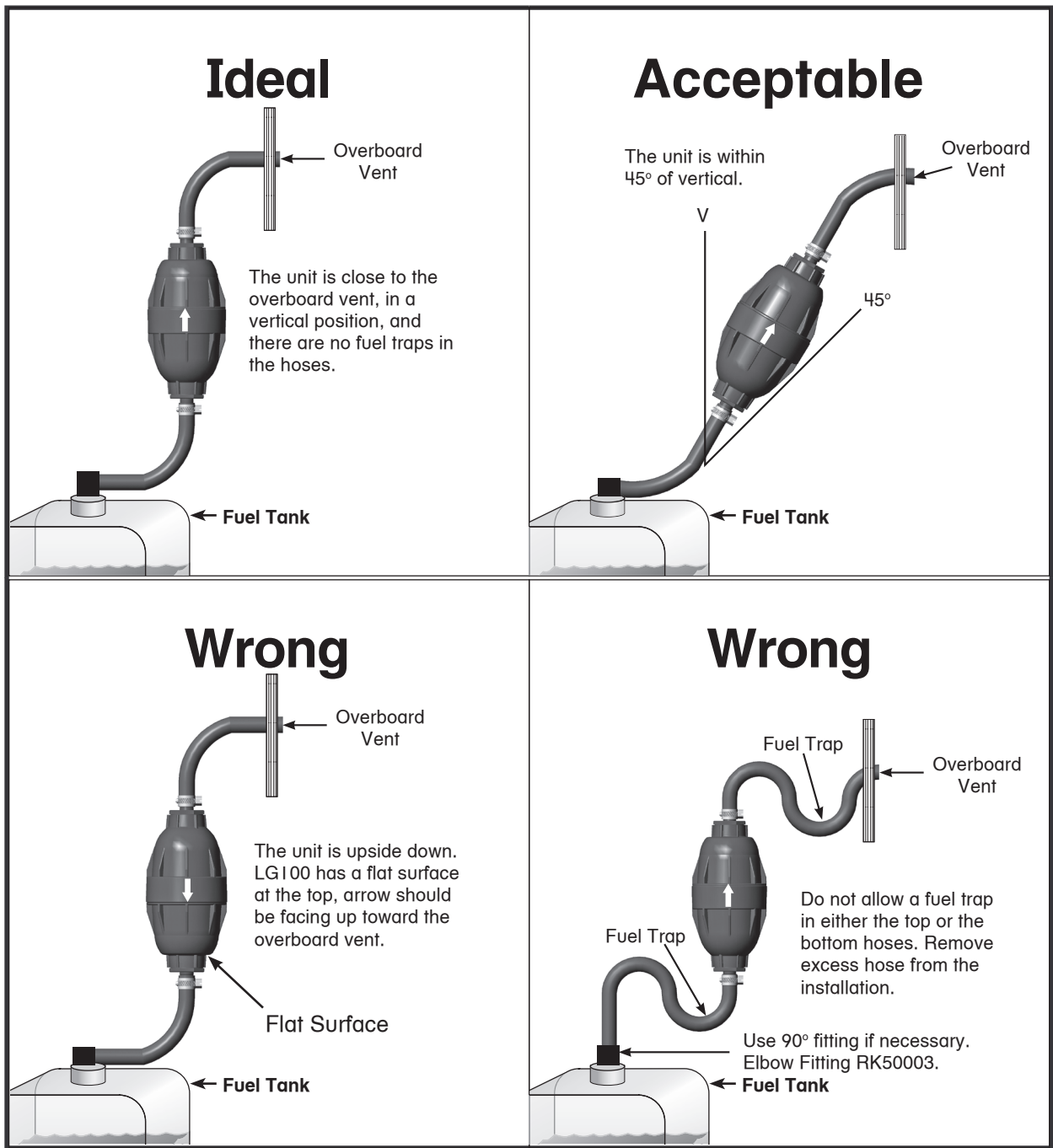
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# Marine Fuel Filtration

## Fuel/Air Separators

2

### LG100 Installation



# Marine Fuel Filtration

## Fuel/Air Separators

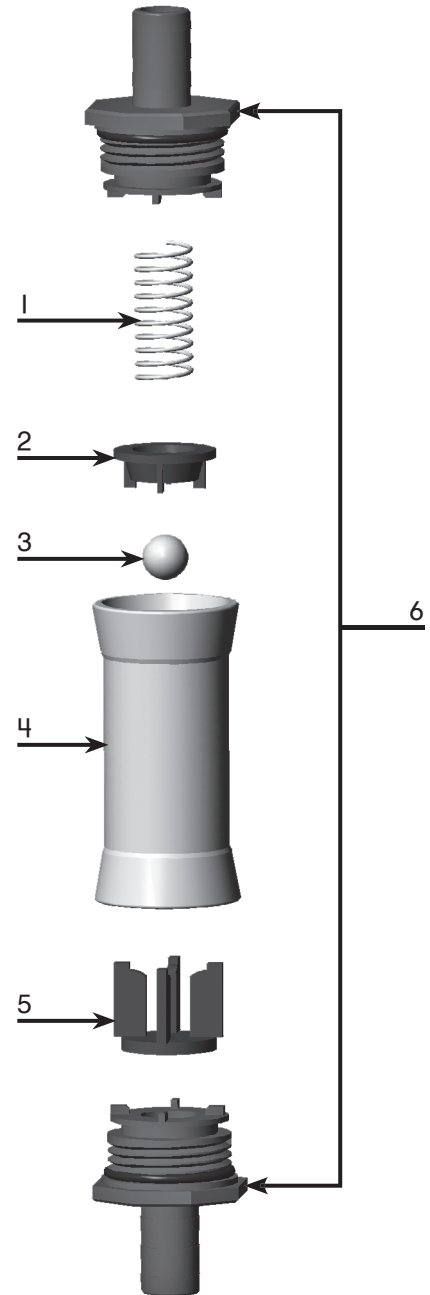
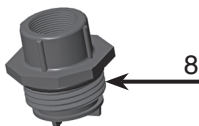
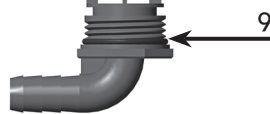
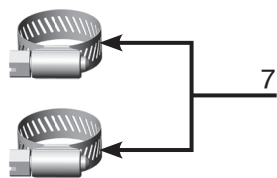
### Replacement Parts

#### LG50

	<u>Part Number</u>	<u>Description</u>
1.	RK50007	Spring Kit
2.	RK50021	Check Valve Kit
3.	RK50009	Check Ball Kit
4.	RK50031	Housing Kit
5.	RK50052	Flow Diverter Kit
6.	RK50002	Straight Hose Fitting Kit (5/8" hose barb)
7.	RK50016	Hose Clamp Kit
8.	RK50033	Straight Fitting Kit (female 1/2" NPT threads)
9.	RK50003	Elbow Fitting Kit (5/8" hose barb)

#### Additional Parts (not shown)

50017 Installation Instructions



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# Marine Fuel Filtration

2

## Fuel/Air Separators

### Replacement Parts

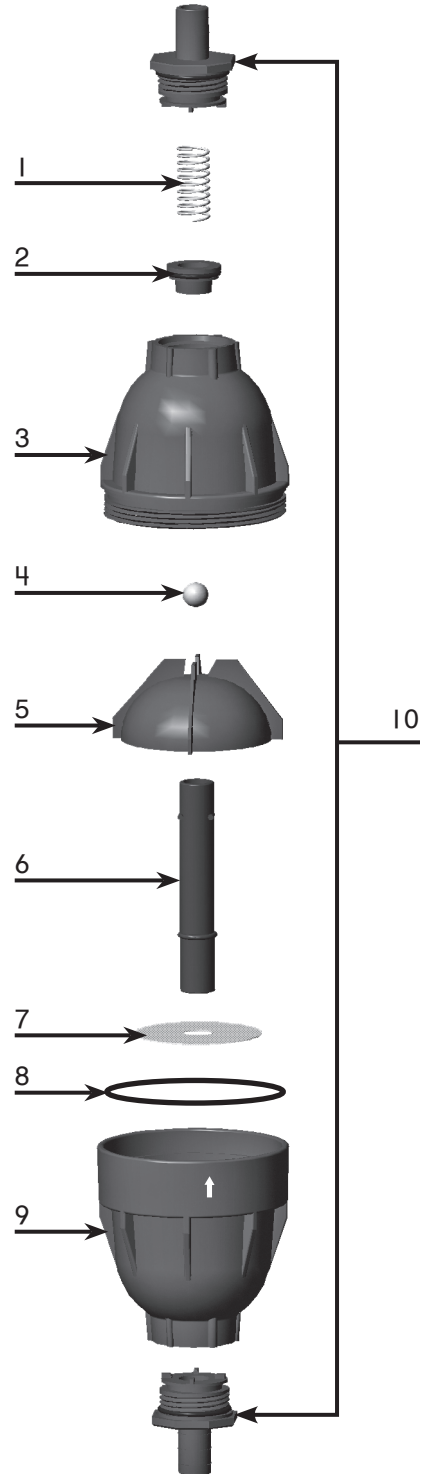
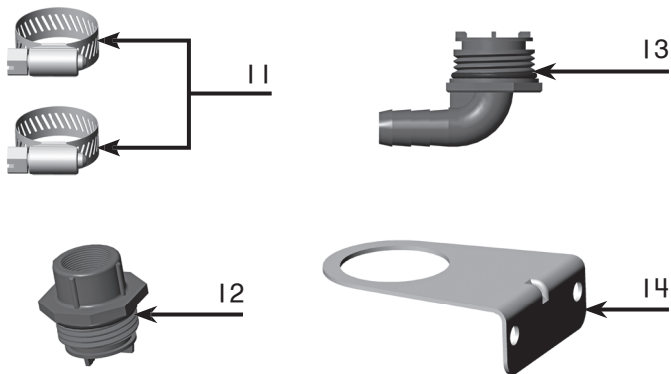
#### LG100

Part Number	Description
1. RK50007	Spring
2. RK50021	Check Valve Kit
3. RK50000	Top Housing Kit (includes #8)
4. RK50009	Check Ball Kit
5. RK50004	Flow Diverter Kit
6. RK50006	Inlet Riser Assembly Kit
7. RK50008	Screen Kit
8. RK50014	Square Cut Gasket
9. RK50001	Bottom Housing Kit (includes #8)
10. RK50002	Straight Hose Fitting Kit (5/8" hose barb)
11. RK50016	Hose Clamp Kit
12. RK50033	Straight Fitting Kit (female 1/2" NPT threads)
13. RK50003	Elbow Fitting Kit (5/8" hose barb)
14. RK50023	Mounting Bracket Kit (includes 2 brackets)

Additional Parts (not shown)

50017

Installation Instructions



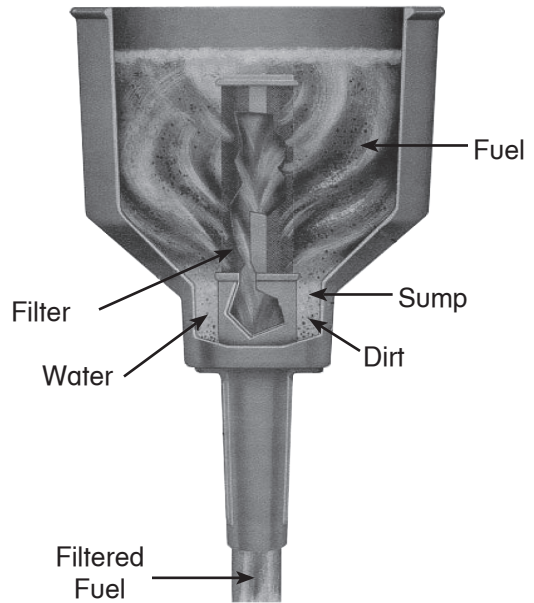


# Marine Fuel Filtration

## RFF Filter Funnels

Racor RFF funnels include stainless steel filters that are permanently attached and designed to work with hydrocarbon fuels only. Other liquids may compromise the effectiveness of the filter. The purpose of this product is to remove solid contamination down to 0.005 inch and free water.

Free water is the collection of water molecules in the bottom of gas cans, tanks, or drums formed when fuel is stored for even short periods of time. The free water formation is due to condensation in the air and/or the separation of water molecules from fuel. Water may be present in hydrocarbon fuels as free water or as an emulsion, small droplets of water suspended in the fuel. Water may be emulsified in fuel by vibration or by emulsifying additives such as alcohol, or detergents. The RFF filter will not remove emulsified water. Install Racor fuel filter/water separators to remove emulsified water from your engine's fuel system. Always dispose of water, contaminants, or dirty fuel in a proper manner.



Specifications	RFF1C	RFF3C	RFF8C	RFF15C
<b>Max. Flow Rate</b>	2.7 GPM (10 LPM)	3.9 GPM (14 LPM)	5 GPM (19 LPM)	15 GPM (56 LPM)
<b>Micron Rating</b>	100 micron	100 micron	100 micron	74 micron
<b>Height</b>	6.0 in. (15.2 cm)	9.0 in. (22.9 cm)	10.0 in. (25.4 cm)	10.0 in. (25.4 cm)
<b>Diameter</b>	3.5 in. (8.9 cm)	5.5 in. (14.0 cm)	8.5 in. (21.6 cm)	8.5 in. (21.6 cm)
<b>Weight</b>	0.2 lb (0.09 kg)	0.3 lb (0.1 kg)	0.6 lb (0.3 kg)	1.0 lb (0.5)



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# Marine Fuel Filtration

## Marine Accessories

2

### RK22936 No Spill Filler Spout

These versatile filler spouts have unlimited uses. They fit many Racor products including additives bottles and the flexible design allows users to bend the spout for flow control. This kit includes 4 hanging strips with 12 pieces on each strip; that's a total of 48 pieces per kit.



### RK22628 Bowl Wrench

Racor offers a hand wrench to remove all metal and see-thru spin-on bowls that feature external ribs. By simply fitting the wrench over the bowl ribs, the bowl can be removed from the replaceable spin-on element, or filter housing with little effort. The wrench is made of a corrosion proof, high-impact, high-strength engineered polymer. One bowl wrench per kit.



### RK31605 Parker Super O-lube

Another great product that helps with the installation of our filter assemblies and ensures a correct seal. Parker Super O-lube has a silicone base and will not harm O-rings, seals and other gaskets. Available in a 2 oz. tube which gives you plenty to go around. One 2 oz. tube per kit.



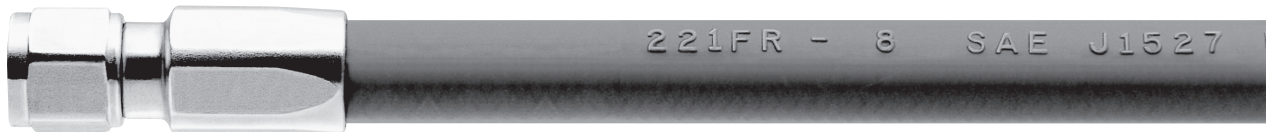
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# Marine Fuel Filtration

## Marine Accessories



## Hose Information

Specifications		CGH-5	CGH-6	CGH-8	CGH-10	CGH-12	CGH-16
Hose I.D.		1/4 in. (6.3 mm)	5/16 in. (8 mm)	13/32 in. (10 mm)	1/2 in. (12.5 mm)	5/8 in. (16 mm)	7/8 in. (22 mm)
Hose O.D.		0.58 in. (15 mm)	0.68 in. (17 mm)	0.77 in. (20 mm)	0.92 in. (23 mm)	1.08 in. (27 mm)	1.23 in. (31 mm)
Working Pressure		500 PSI (34.4 bar)	500 PSI (34.4 bar)	500 PSI (34.4 bar)	500 PSI (34.4 bar)	500 PSI (34.4 bar)	500 PSI (34.4 bar)
Burst Pressure		2000 PSI (137.8 bar)	2000 PSI (137.8 bar)	2000 PSI (137.8 bar)	2000 PSI (137.8 bar)	2000 PSI (137.8 bar)	2000 PSI (137.8 bar)
Minimum Bend Radius		1 in. (2.5 cm)	1 1/4 in. (3.0 cm)	1 3/4 in. (4.5 cm)	2 1/4 in. (5.5 cm)	2 3/4 in. (7.0 cm)	3 1/2 in. (9.0 cm)
Weight per foot		0.19 lb (0.09 kg)	0.23 lb (0.10 kg)	0.28 lb (0.13 kg)	0.39 lb (0.18 kg)	0.47 lb (0.21 kg)	0.41 lb (0.19 kg)
Inches of Mercury	InHg	20 InHg (68 kPa)	20 InHg (68 kPa)	20 InHg (68 kPa)	20 InHg (68 kPa)	20 InHg (68 kPa)	20 InHg (68 kPa)

Racor marine hose for fuel, oil, and hydraulic fluids is fire resistant and meets SAE J1527 Type A class and SAE J1942 standards. This hose delivers test-proven performance in a wide operating temperature range, constant working pressure in popular sizes, long-lasting reinforced construction, kink and cut resistance, and compatibility with a variety of standard I00R5 fittings.

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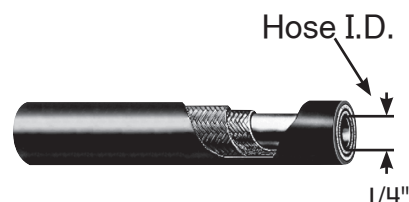
# Marine Fuel Filtration

## Marine Accessories

2

### How to Order

CGH	-5		-50
Basic Part Number	Number	I.D. Size	Standard roll is 350 feet. (add <b>-50</b> for a 50 foot roll.)
	-5	1/4"	
	-6	5/16"	
	-8	13/32"	
	-10	1/2"	
	-12	5/8"	
	-16	7/8"	



#### Construction:

Fuel and oil-resistant synthetic rubber tube with one braid of high-tensile steel wire, and a weather and fire resistant synthetic blue rubber cover. The layline is embossed for permanent identification.

#### No Skive:

1. Assembly of No-Skive hose and fittings does not require removal of outer cover of hose. This eliminates premature hose failure caused by skiving too long or short and protects vulnerable wire wrap during fitting assembly.
2. Cushion grip increases hose life-supporting cushion of compressed rubber between

gripping threads on fitting reduces wire movement, minimizing stress.

3. Corrosion protection-steel wire braid of No-Skive hose is never exposed because outer rubber cover is not removed before assembling fitting.
4. No-Skive fittings are designed to allow socket threads to penetrate outer cover of hose and grip the wire braid of the hose.
5. Simple two step assembly-attached socket to hose, thread nipple to socket.

### Hose Fittings

Part Number	Hose Size
915-W5-R5	SAE-5
915-W6-R6	SAE-6
915-W8-R8	SAE-8
915-W10-R10	SAE-10

#### Application and Temperature Range:

Low pressure service hose for use with gasoline, ethanol blends, diesel fuels, petroleum-base hydraulic fluids and lubricating oils within a temperature range of -40F to 212oF (-20oC to 100oC). Water, water/glycol and water/oil emulsion hydraulic fluids up to 185oF (85oC). Meets Class 1 permeation requirements with gasoline and gasoline/ethanol blends, and passed a 2 1/2 minute fire test. USCG accepted for commercial and recreational vessel applications.



# Marine Fuel Filtration

## Marine Accessories

### Water Probe Kits



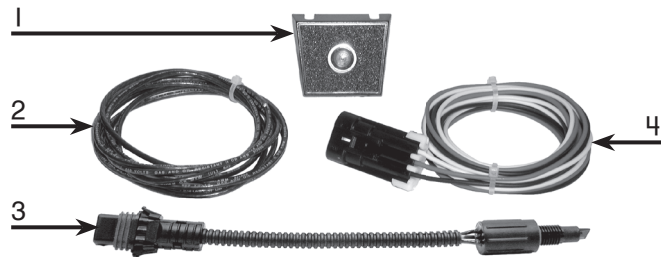
Specifications	RK21069	RK30880
<b>Threads</b>	1/2"-20 Threads	1/2"-20 Threads
<b>Description</b>	One piece design with two wires. Requires a detection module.	Built-in Detection Electronics. Sends a ground signal to the under-dash warning light kit (included - see below).
<b>Voltage</b>	12 or 24 vdc	12 or 24 vdc
<b>Power Draw: (12 volt) (24 volt)</b>	N/A	5 Milliamps 10 Milliamps
<b>Maximum Load</b>	N/A	1 Amp
<b>Weight</b>	0.03 lb (0.01 kg)	0.4 lb (0.2 kg)

Caution: Never wire a water probe directly to voltage or another brand of detection module.

#### RK30880 Part List

(individual components NOT sold separately)

- 1. Light Panel
- 2. 14GA Black Wire
- 3. Water Probe with Male Connector
- 4. Three Wire Female Connector



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# Marine Fuel Filtration

## Marine Accessories

2

# Water Detection Modules

## Under-dash

Specifications	RK20725
<b>Voltage</b>	12 vdc
<b>Features</b>	Light Only
<b>Description</b>	Green ON lamp illuminates with power and red DRAIN lamp illuminates when water is detected. Includes initial power-up self diagnosis feature & circuit protection.
<b>Dimensions</b>	1.0" H x 1.5" D x 2.0 W
<b>Power Draw</b>	10 Milliamps
<b>Max. Internal Load</b>	30 Milliamps
<b>Weight</b>	0.4 lb (0.2 kg)



## In-dash

Specifications	RK20726
<b>Voltage</b>	12 or 24 vdc
<b>Features</b>	Light & Buzzer
<b>Description</b>	Red DRAIN lamp illuminates continuously and buzzer sounds momentarily when water is detected. Power-up self diagnosis feature and circuit protection included.
<b>Dimensions I</b>	2.2" Diameter x 3.2" Depth
<b>Power Draw:</b> (12 volt) (24 volt)	3 Milliamps 13 Milliamps
<b>Max. Internal Load</b>	30 Milliamps
<b>Weight</b>	0.4 lb (0.2 kg)
I Cut 2.0" diameter hole to mount gauges in instrument panel.	



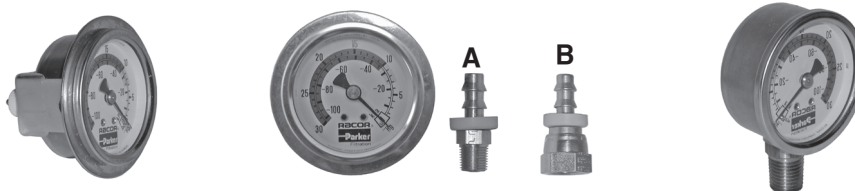
# Marine Fuel Filtration

## Marine Accessories

### Vacuum Gauges

Vacuum gauges are available to monitor element condition and as the filter element slowly becomes clogged with contaminants the restriction (resistance to flow) increases. The fuel pump still tries to draw fuel (suction) but because of this restriction less fuel is delivered to the engine and instead more air is pulled from it (fuel de-gassing). These results can cause the engine to lose power and eventually stall.

By installing a vacuum gauge in your fuel system (at the outlet side of the Racor filter) visual monitoring of element condition is possible at a glance. At the first indication of decreased performance, note the dial reading or apply the 'red line' decal provided with most kits. This will assist in knowing when to change the filter at the next interval.



Specifications	RK11233	1606B	RK11-1676
<b>Description</b>	Silicone dampened, 0-30 inHg. Instrument panel installation.	Includes gauge and two fittings (see below). RK11233 Vacuum Gauge. A. 7232-4 Adapter Fitting 1/8" NPTM x #4 (1/4") hose. B. 7234-4 Adapter Fitting 1/4" swivel x #4 (1/4") hose. 11-1115 Instructions.	Silicone dampened, 0-30 inHg.
<b>Threads</b>	1/4" NPT back bracket mount.	1/4" NPT back bracket mount.	1/4" NPT bottom boss mount.
<b>Dimensions</b>	2.0" W x 1.9" D	2.0" W x 1.9" D	2.0" W x 1.1" D
<b>Dial</b>	2 in.	2 in.	2 in.
<b>Weight</b>	0.4 lb (0.2 kg)	0.4 lb (0.2 kg)	0.3 lb (0.1 kg)

**Special Notes:** For severe vibration applications, mount the gauge on a stable, remote location and connect to the source using flexible tubing. After September 1999, Racor converted many liquid-filled gauges to new silicone dampened movement. This new (dry) technology provides a vibration resistant design that never leaks fluid or requires adjustments due to temperature or altitude variations.

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# Marine Fuel Filtration

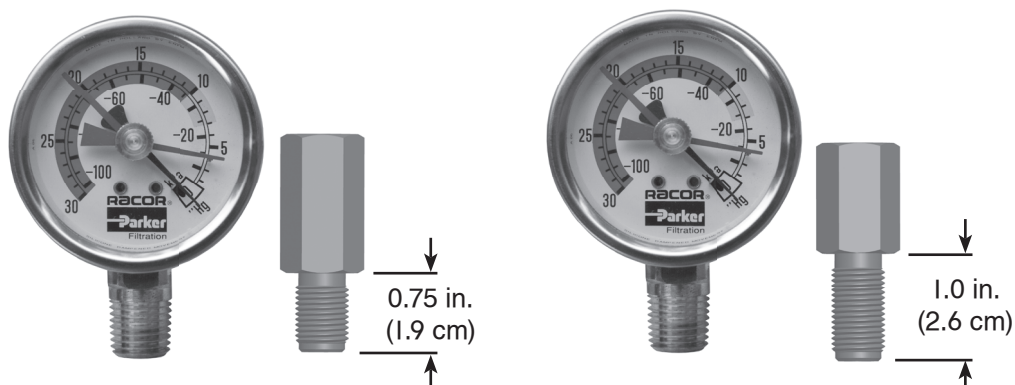
## Marine Accessories

2

### T-handle Vacuum Gauge

T-handle vacuum gauges are available to monitor element condition and as the filter element slowly becomes clogged with contaminants the restriction (resistance to flow) increases. The fuel pump still tries to draw fuel (suction) but because of this restriction less fuel is delivered to the engine and instead more air is pulled from it (fuel de-gassing). These results can cause the engine to lose power and eventually stall.

By installing a vacuum gauge in your fuel system (at the outlet side of the Racor filter) visual monitoring of element condition is possible at a glance. At the first indication of decreased performance, note the dial reading or apply the 'red line' decal provided with most kits. This will assist in knowing when to change the filter at the next interval.



Specifications	RK11-1969	RK11-1669
<b>Description</b>	<b>500 Turbine Series*</b> T-handle vacuum gauge kit includes gauge & <b>11-1969</b> Fitting 9/16"-18 UNF	<b>900 &amp; 1000 Turbine Series*</b> T-handle vacuum gauge kit includes gauge & <b>11-1668</b> Fitting, 9/16"-18 UNF
<b>Threads</b>	1/4" NPT bottom boss mount	1/4" NPT bottom boss mount
<b>Dimensions</b>	2.0" W x 1.1" D	2.0" W x 1.1" D
<b>Dial</b>	2 in. (5.1 cm)	2 in. (5.1 cm)
<b>Weight</b>	0.3 lb (0.1 kg)	0.3 lb (0.1 kg)
<b>Special Notes:</b> For severe vibration applications, mount the gauge on a stable, remote location and connect to the source using flexible tubing. After September 1999, Racor converted many liquid-filled gauges to new silicone dampened movement. This new (dry) technology provides a vibration resistant design that never leaks fluid or requires adjustments due to temperature or altitude variations.		

\* Not for use on 'MA' applications that are used on commercial Vessels.





# Marine Fuel Filtration

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**Parker Hannifin Corporation**  
Racor Division, PO Box 3208  
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# Marine Fuel Filtration

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# Marine Fuel Filtration

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# Marine Fuel Filtration

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N/A



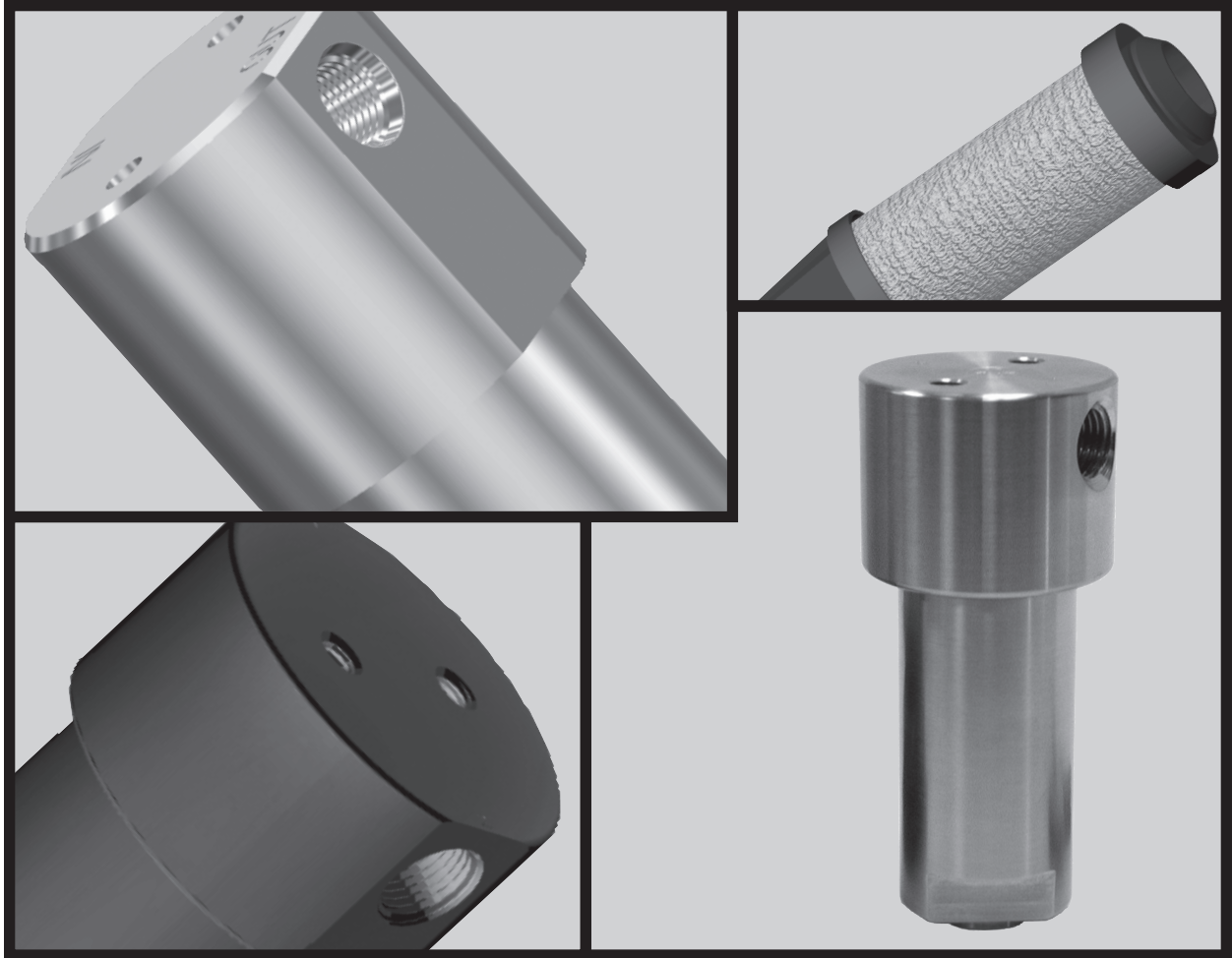
# Marine Fuel Filtration

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**Y**  
N/A

**Z**  
N/A

# Section 3



## ***Alternative Fuel Filtration***



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# Alternative Fuel

## FFC Series

3

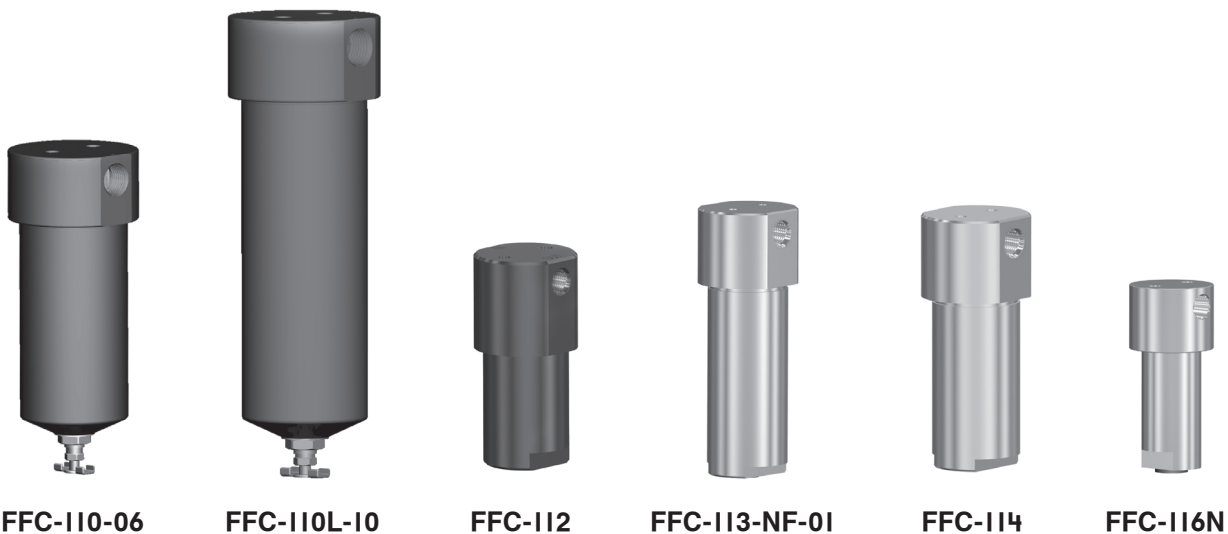
These assemblies are designed and tested for today's new alternative fuels: Compressed Natural Gas (CNG), Liquid Natural Gas (LNG) and Liquid Propane Gas (LPG). CNG, LNG and LPG have the same problems that plague diesel and gasoline, particulate contamination collects during handling, water condenses in tanks, and compressors leak oil into the fuel stream.

The precision components necessary for the efficient operation of an alternative fuel system demand superior filtration. Racor anticipated the need for ultra-fine filtration at the pressures required by compressed natural gas. The answer is the industry's first, most complete and most efficient line of alternative fuel filters/coalescers.

FFC series filters are designed to protect critical engine components in CNG, LNG, and

LPG powered vehicles. Contaminants can be introduced into a vehicle's fuel tank when being fueled or may come from compressors and/or storage facilities. A grade 6 coalescing filter is specifically designed to remove oil, water, and solid contamination from compressed natural gas. The patented coalescing filter removes 99.97% of all aerosols in the 0.3 to 0.6 micron range.

These fuel filter/coalescer elements are produced by a patented process of arranging micro-glass fibers into a tubular form. During operation, fuel is forced through the coalescing media from the inside of a cartridge through a tubular wall to the outside, where large droplets fall to the bottom of the housing. Oily water emulsion accumulates until drained while dirt particles remain trapped and collect on surfaces of fibers.



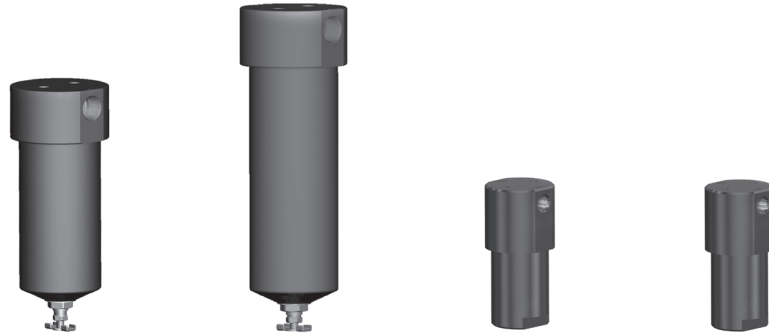
**Parker Hannifin Corporation**  
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Modesto, CA 95354 USA  
Phone: 800.344.3286  
Fax: 209.529.3278  
E-mail: [racor@parker.com](mailto:racor@parker.com)  
[www.parker.com/racor](http://www.parker.com/racor)





# Alternative Fuel

## FFC Series



<b>Specifications</b>	<b>FFC-110-06</b>	<b>FFC-110L-10</b>	<b>FFC-112</b>	<b>FFC-112-SAE</b>
<b>Fuels Used</b>	CNG, LPG	CNG, LNG, LPG	CNG	CNG
<b>Filter Type</b>	Coalescer	Coalescer	Coalescer	Coalescer
<b>Maximum Pressure</b>	500 PSI (3,447 kPa)	500 PSI (3,447 kPa)	3,600 PSI (24,800 kPa)	3,600 PSI (24,800 kPa)
<b>Max Flow Rate</b>	25 SCFM (708 lpm)	50 SCFM (1,416 lpm)	15 SCFM (425 lpm)	15 SCFM (425 lpm)
<b>Port Size</b>	1/4" NPT	1/2" NPT	1/4" NPT	9/16"-8 SAE
<b>Filter Element</b>	CLS110-06	CLS110L-10	CLS112-10	CLS112-10
<b>Length</b>	7.9 in. (18.3 cm)	10.4 in. (26.4 cm)	4.8 in. (12.2 cm)	4.8 in. (12.2 cm)
<b>Diameter</b>	3.1 in. (7.9 cm)	3.1 in. (7.9 cm)	2.3 in. (5.8 cm)	2.3 in. (5.8 cm)
<b>Weight</b>	1.5 lbs (0.7 kgs)	1.8 lbs (0.8 kgs)	1.5 lbs (0.7 kgs)	1.5 lbs (0.7 kgs)
<b>Clean Pressure Drop</b>	1.0 PSI (6.9 kPa)	1.0 PSI (6.9 kPa)	3.0 PSI (20.7 kPa)	3.0 PSI (20.7 kPa)
<b>Sump Capacity</b>	5.0 oz. (148 cc's)	7.0 oz. (207 cc's)	0.5 oz. (15 cc's)	0.5 oz. (15 cc's)
<b>Temperature</b>	-40°/+225° F (-40°/+107° C)			

- Notes:**
1. For accurate flow rates and pressures, consult your engine manual, engine manufactures agent, or the vehicle manufacturer.
  2. Some specifications are the result of tests conducted at the optimum flow rate.
  3. Allow 3.0 in. (7.6 cm) of clearance below assembly for draining and maintenance of element.

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# Alternative Fuel

## FFC Series



3

Specifications	FFC-113-NF-01	FFC-114	FFC-116N
<b>Fuels Used</b>	CNG, LNG	CNG, LPG	CNG
<b>Filter Type</b>	Coalescer	Coalescer	Coalescer
<b>Maximum Pressure</b>	3,600 PSI (24,800 kPa)	3,600 PSI (24,800 kPa)	3,600 PSI (24,800 kPa)
<b>Max Flow Rate</b>	50 SCFM (1,416 lpm)	50 SCFM (1,416 lpm)	8.4 SCFM (238 lpm)
<b>Port Size</b>	3/4" SAE	1/2" NPT	1/4" NPT (SAE J4760)
<b>Filter Element</b>	CLS47133-01	CLS47133-02	CLS116-10
<b>Length</b>	8.0 in. (20.3 cm)	7.0 in. (17.8 cm)	3.9 in. (9.9 cm)
<b>Diameter</b>	3.0 in. (7.6 cm)	3.0 in. (7.6 cm)	1.8 in. (4.6 cm)
<b>Weight</b>	5.5 lbs (2.5 kgs)	5.3 lbs (2.3 kgs)	1.8 lbs (0.8 kgs)
<b>Clean Pressure Drop</b>	1.7 PSI (11.7 kPa)	1.7 PSI (11.7 kPa)	1.3 PSI (8.6 kPa)
<b>Sump Capacity</b>	5.0 oz. (148 cc's)	3.0 oz. (88.0 cc's)	0.3 oz. (7.4 cc's)
<b>Temperature</b>	-40°/+225° F (-40°/+107° C)		-40° to +350°F (-40° to +177°C)

- Notes:**
1. For accurate flow rates and pressures, consult your engine manual, engine manufactures agent, or the vehicle manufacturer.
  2. Some specifications are the result of tests conducted at the optimum flow rate.
  3. Allow 3.0 in. (7.6 cm) of clearance below assembly for draining and maintenance of element.

# Alternative Fuel

## FFC Series

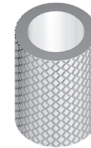
### FFC-110-06

Basic Unit  
25 SCFM (500 PSI)

## Replacement Element

**Height**  
2.5 in.  
(6.4 cm)

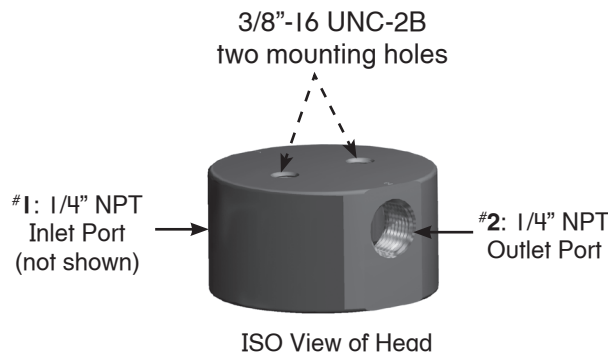
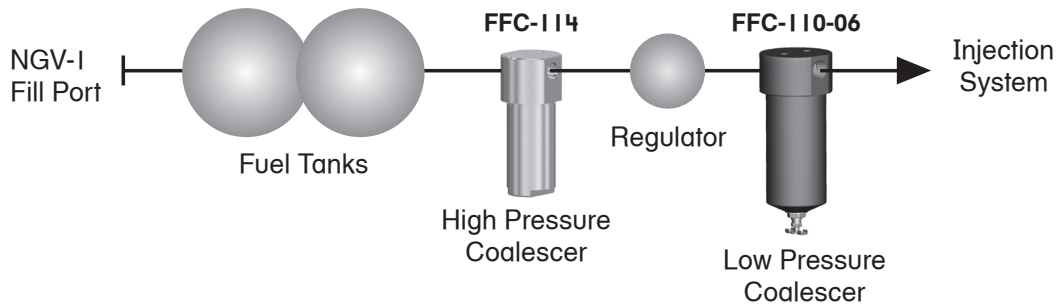
**Diameter**  
1.5 in.  
(3.8 cm)



CLS110-06

## Mounting Information

Typical Installation Layout



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# Alternative Fuel

## FFC Series

# Replacement Element

3

### FFC-110L-10

Basic Unit  
25 SCFM (500 PSI)

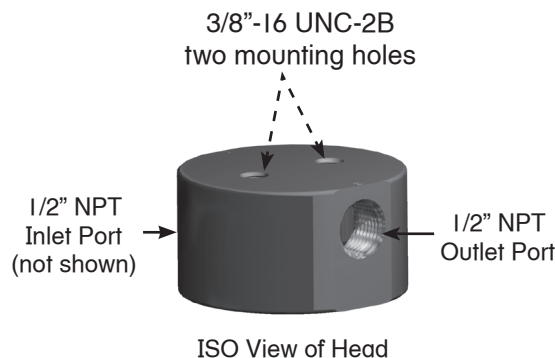
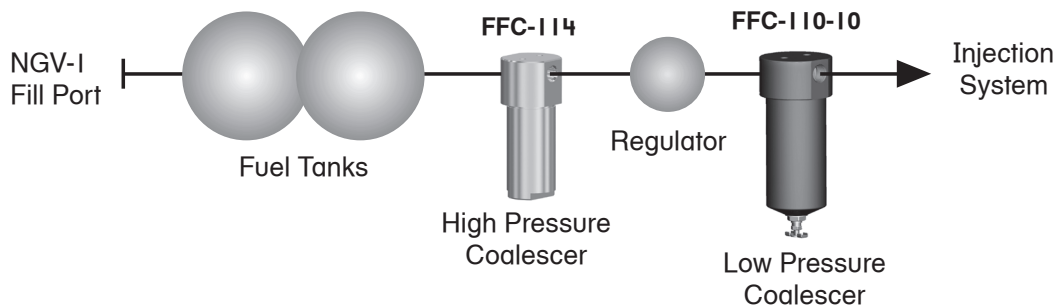
**Height**  
5.0 in.  
(12.7 cm)  
**Diameter**  
1.5 in.  
(3.8 cm)



CLS110L-10

## Mounting Information

Typical Installation Layout





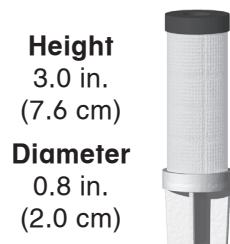
# Alternative Fuel

## FFC Series

# Replacement Element

3

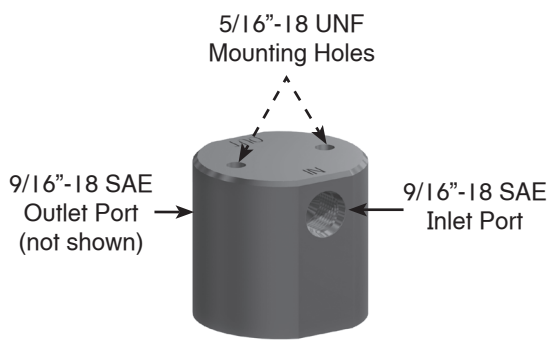
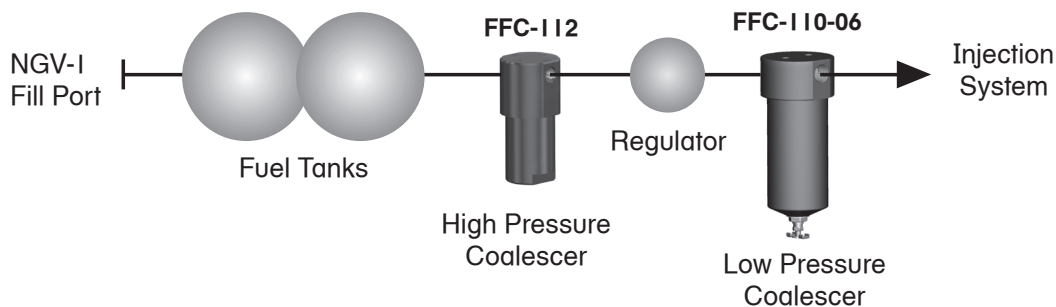
FFC-112	-SAE
Basic unit with 1/4"-18 NPTF ports. 15 SCFM (425 lpm)	Add <b>SAE</b> for 9/16"-18 SAE o-ring ports. 15 SCFM (425 lpm)



CLS112-10

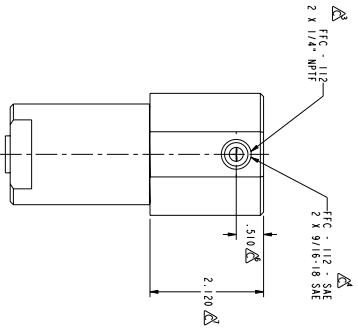
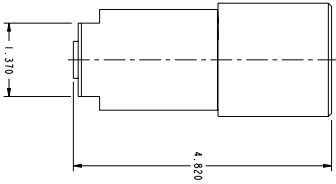
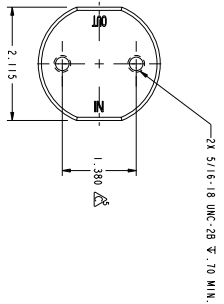
# Mounting Information

Typical Installation Layout

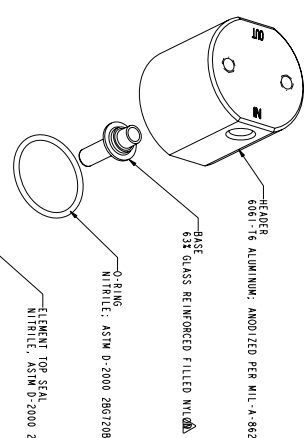


ISO View of Head

# Customer Interface Drawing



- NOTES: UNLESS OTHERWISE SPECIFIED
- WORKING TEMPERATURE:  $-30$  TO  $300$  PSIG
  - SHOCK CAPACITY: 50G
  - RECOMMENDED OPERATION:  $\pm 1$  FT-LB
  - HOUSING TO HEAD: 40 FT-LBS  $\pm$  1 FT-LB
  - FLOW: INSIDE TO OUT ELEMENT
- FILTER ELEMENT: (SPECIFY GRADE 8 OR 10)
- DOW FLOW RATE: 30 SCFH @ 100 PSIG
  - D.P. EFFICIENCY: 95% TO 99% (0.3 MICRON)
  - TYP. ADDITIONAL PRESSURE REQUIRED TO DRAIN COALESCER WHEN OIL WET: 2.0 PSID.
  - MATERIAL: ALUMINUM
  - GRADE 8 - P/N: CLS 112-6



REV	DATE	DESCRIPTION
A	05/24/93	ISSUE DRAWING
B	03/28/96	ADDED SECTIONAL VIEW
C	08/29/00	AMEND
D	02/27/03	AMEND

FCC - 112 - SAE - 6  
FCC - 112 - SAE - 10  
CUSTOMER INTERFACE DRAWING

REVISE ONLY ON P-D/E SYSTEM		FORM 0 - 01A1 032433	
DATE	AMOUNT	DATE	AMOUNT

SCALE	SIZE	DATE	AMOUNT

REV	DATE	DESCRIPTION
A	05/24/93	ISSUE DRAWING
B	03/28/96	ADDED SECTIONAL VIEW
C	08/29/00	AMEND
D	02/27/03	AMEND

SCALE	SIZE	DATE	AMOUNT

# Alternative Fuel

## FFC Series

# Replacement Element

**FFC-113-NF-01**

Basic Unit  
50 SCFM (1,416 lpm)

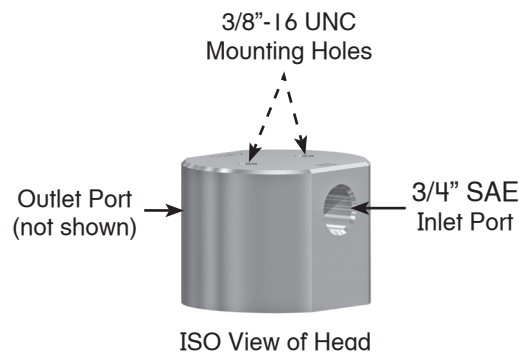
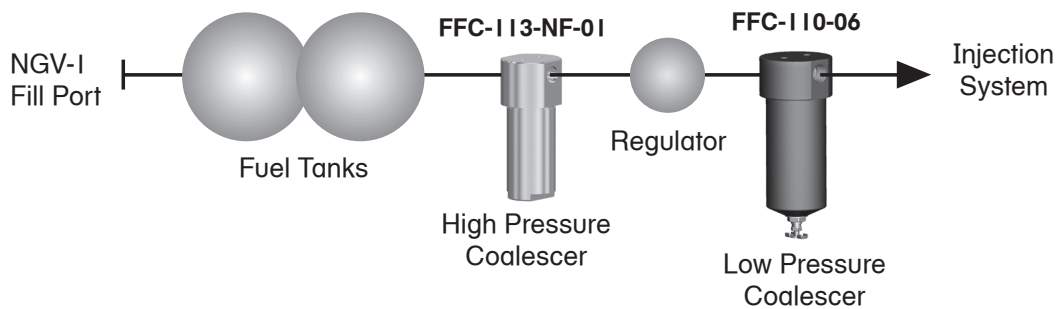
**Height**  
5.0 in.  
(12.7 cm)  
**Diameter**  
1.5 in.  
(3.8 cm)



**RK47133-01**

## Mounting Information

Typical Installation Layout





# Alternative Fuel

## FFC Series

FFC-114
Basic Unit 50 SCFM (1,416 lpm)

## Replacement Element

**Height**  
5.0 in.  
(12.7 cm)

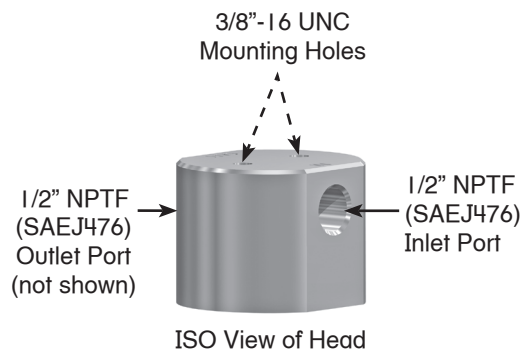
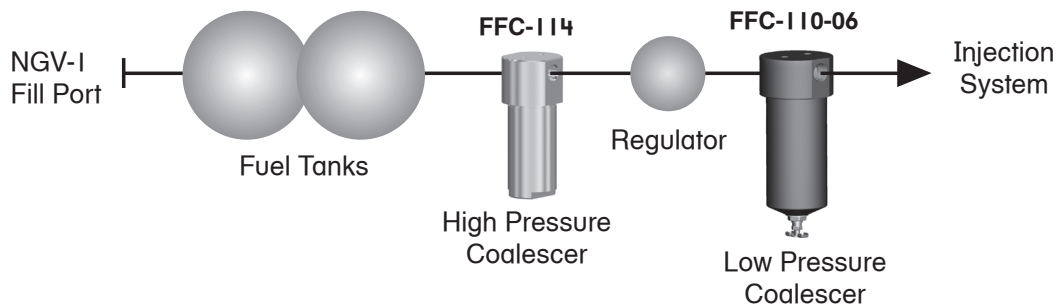
**Diameter**  
1.5 in.  
(3.8 cm)



RK47133-02

## Mounting Information

Typical Installation Layout



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# Customer Interface Drawing



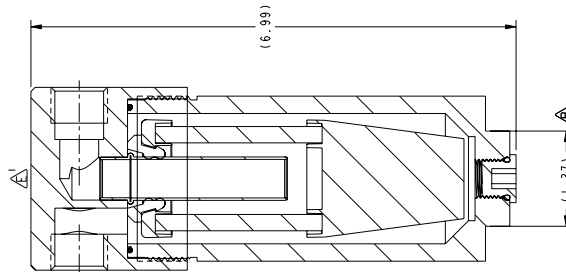
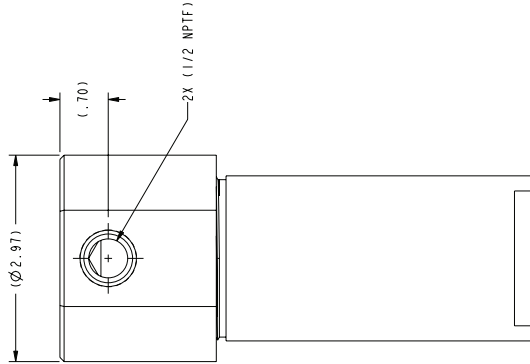
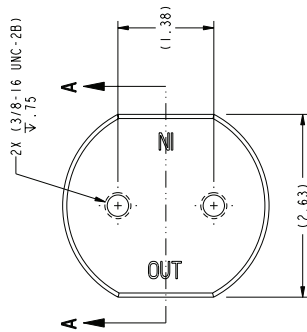
# Alternative Fuel

## FFC Series

REVISIONS			
LT#	DESCRIPTION	E. N.	DATE
-	ISSUE DRAWING		100494 JG WH
A	MODIFIED NOTES		101894 JG DG
B	ADDED DIMENSION AND NOTE 8		102094 JG DG
C	ADDED NOTE 9		102194 JG DG
D	REFERENCE DIMENSIONS		100297 DG DG
E	1. X-Y SECTIONED VIEW 2. NOTE 8 REPLACEMENT WAS CLS-113. NOTE 9 CLEARANCE WAS 3" MIN. DELETED NOTE 10.		100303 SPX RH

**NOTES: UNLESS OTHERWISE SPECIFIED-**

1. DIMENSION IN PARENTHESIS ARE FOR REFERENCE ONLY.
2. MATERIAL: 303 STAINLESS STEEL
3. SERVICE TEMPERATURE: 3,600 PSI
4. WORKING TEMPERATURE: -40 F TO 250° F.
5. SUMP CAPACITY: 307
6. RECOMMENDED TORQUE:  
 DRAIN PLUG: 8FT-LBS ± 1FT-LB  
 BODY TO HEAD: 30FT-LBS ± 1FT-LB
7. FLOW: INSIDE TO OUTSIDE ELEMENT.
8. REPLACEMENT ELEMENT: CLS47133-02
9. ELEMENT REMOVAL CLEARANCE: 5" MIN.
10. DELETED



SECTION A-A

### CUSTOMER INTERFACE DRAWING

QUANTITY REQ	PART NUMBER	DESCRIPTION	REV
	100494		
REVISIONS 100494 JG WH 101894 JG DG 102094 JG DG 102194 JG DG 100297 DG DG 100303 SPX RH			
PARTS LIST <b>RACOR</b> PAPER: HANLEY, W. CORPORATION P.O. BOX 2218 INDUSTRIAL, CA 95233			
TITLE <b>FUEL FILTER/COALESCER                  DDC HIGH PRESSURE</b>			
UNLESS OTHERWISE SPECIFIED: DIMENSIONS ARE IN INCHES			
DECIMAL	ANGULAR	SIZE	REV
TOLERANCES			
± .005	± .005	C 55752	E
± .010	± .010		
± .015	± .015		
± .020	± .020		
± .030	± .030		
± .040	± .040		
± .050	± .050		
± .060	± .060		
± .070	± .070		
± .080	± .080		
± .090	± .090		
± .100	± .100		
± .125	± .125		
± .150	± .150		
± .175	± .175		
± .200	± .200		
± .250	± .250		
± .300	± .300		
± .375	± .375		
± .450	± .450		
± .500	± .500		
± .625	± .625		
± .750	± .750		
± .875	± .875		
± 1.000	± 1.000		
± 1.250	± 1.250		
± 1.500	± 1.500		
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± 8.750	± 8.750		
± 10.000	± 10.000		
± 1.250	± 1.250		

# Alternative Fuel

## FFC Series

### FFC-116N

Basic Unit  
8.4 SCFM (238 lpm)

## Replacement Element

**Height**  
2.3 in.  
(5.8 cm)  
**Diameter**  
0.8 in.  
(2.0 cm)

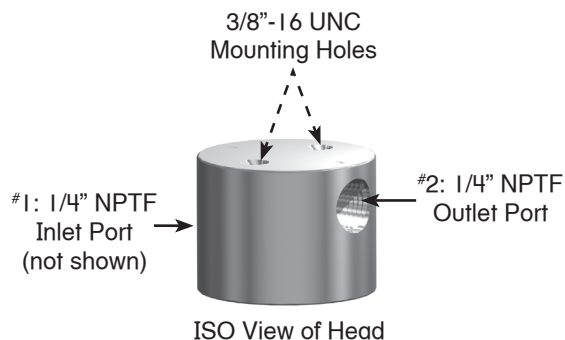
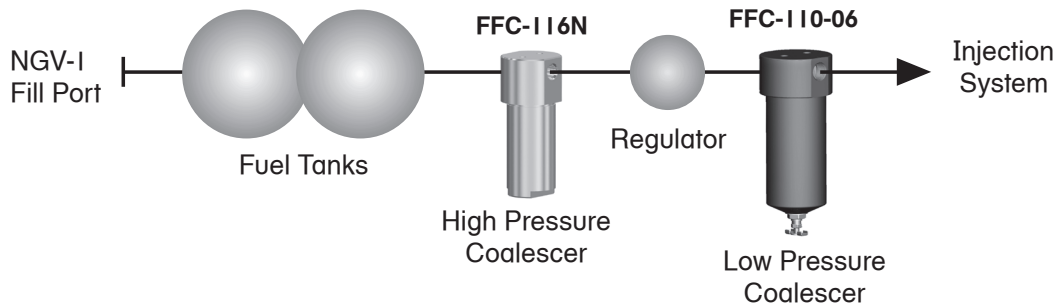


O-ring  
Included  
With  
Element Kit

CLS116-10

## Mounting Information

Typical Installation Layout



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**Parker**

# Alternative Fuel

## Part Number Index

**A**  
N/A

**B**  
N/A

**C**  
CLS110-06 ..... 384  
CLS110L-10 ..... 385  
CLS112-10 ..... 387  
CLS116-10 ..... 392

**D**  
N/A

**E**  
N/A

**F**  
FFC-110-06 ..... 381, 382, 384  
FFC-110L-10 ..... 381, 382, 385  
FFC-112 ..... 381, 382, 387  
FFC-112-SAE ..... 382  
FFC-113-NF-01 ..... 381, 383, 389  
FFC-114 ..... 381, 383, 390  
FFC-116N ..... 381, 383, 392  
FFC Series ..... 381

**G**  
N/A

**H**  
N/A

**I**  
N/A

**J**  
N/A

**K**  
N/A

**L**  
N/A

**M**  
N/A

**N**  
N/A

**O**  
N/A

**P**  
N/A

**Q**  
N/A

**R**  
RK47133-01 ..... 389  
RK47133-02 ..... 390



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# Alternative Fuel

## Part Number Index

**S**

N/A

**T**

N/A

**U**

N/A

**V**

N/A

**W**

N/A

**X**

N/A

**Y**

N/A

**Z**

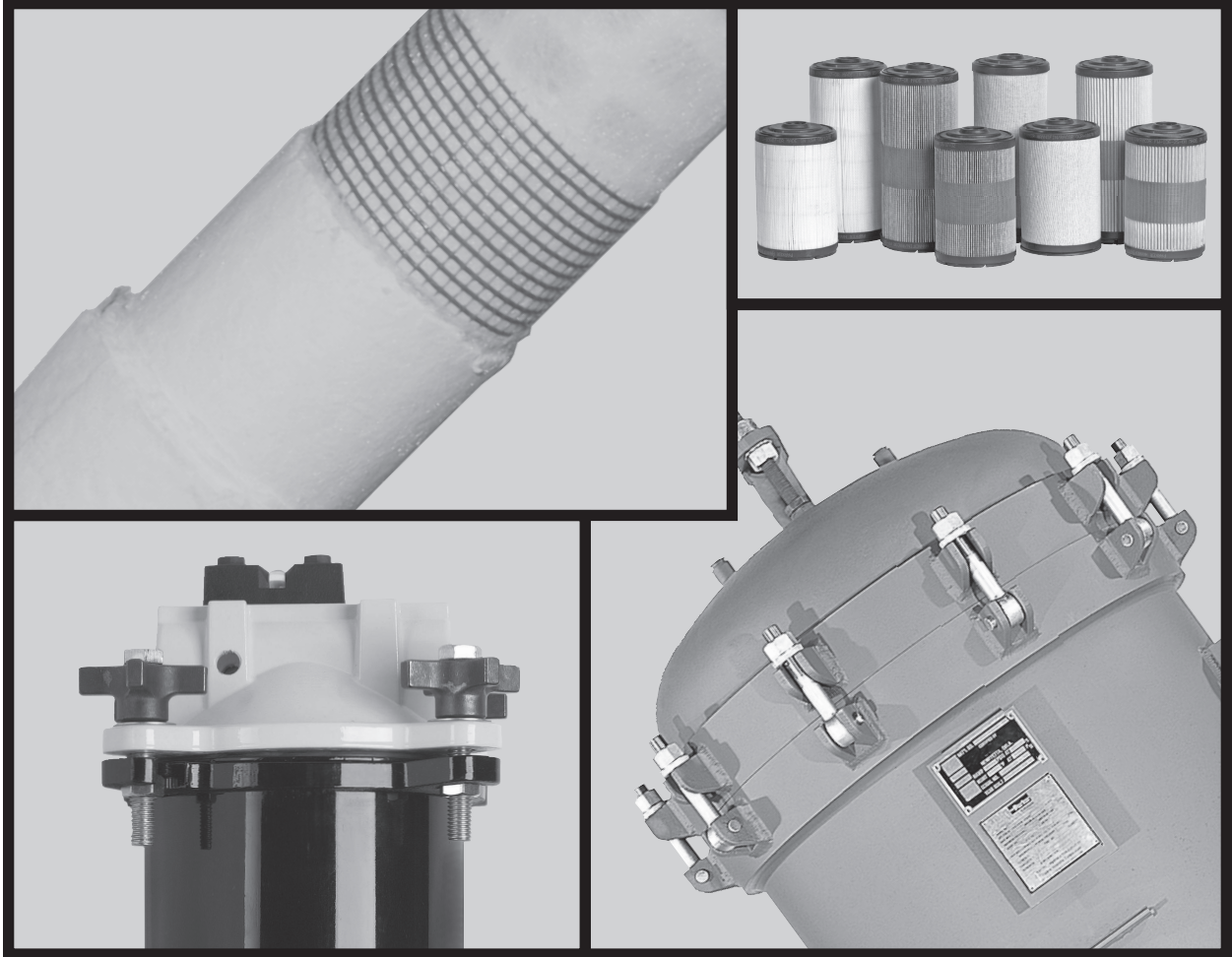
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# Section 4



***Hydrocarbon  
Filtration***

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# Section 4 - Hydrocarbon Filtration

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RVCT Series .....	409
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# Hydrocarbon Filtration

## FBO Assemblies

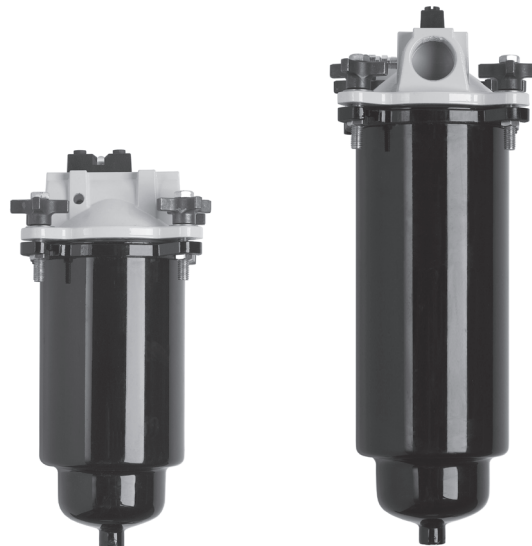
### *FBO Filter Assembly*

Racors FBO-10 and FBO-14 filter assemblies are designed to meet the toughest hydrocarbon refueling conditions and provide for ease of filter change outs. The FBO Assembly can flow 25 gpm (95 lpm) or up to 75 gpm (230 lpm) depending on the model, the elements installed and fuel being filtered. The FBO assembly can be used on mobile refuelers or installed in refueling cabinets. The unit can also be used for diesel fuel dispensing pumps or as a primary fuel filter/water separator for large diesel engines. The assembly features a locking ring collar, which attaches the filter housing to the aluminum die-cast filter head with four bolts. The slotted locking ring collar allows maintenance personnel to hand-loosen the four collar bolts, rotate and lower the bowl assembly for element change outs. With new element installed, simply raise the bowl and rotate into position on the

locking ring and hand tighten evenly. The closure hardware consists of stainless steel nuts, bolts and washers with metal hand knobs for ease of maintenance – one person can easily change the filter element. No wrenches or other special tools are required.

#### Applications:

- Jet fuel, aviation gas, diesel fuel, gasoline, kerosene, JP4, JP5 and JP8.
- Aviation fuel trucks.
- Aviation fueling cabinets.
- Diesel fuel dispensing system.
- Marine fuel docks.
- Fuel systems on large diesel engines.



FBO-10

FBO-14



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# Hydrocarbon Filtration

## FBO Assemblies

### How To Order

FBO	-10	-14	-25M
Basic Unit 1 1/2" Inlet & Outlet Ports	Add <b>-10</b> for a flow rate of 5-40 GPM	Add <b>-14</b> for a flow rate of 10-60 GPM	Add <b>-25M</b> for a 25 micron pre-filter kit

### Performance

<b>FBO-10</b>	Maximum Flow Rates				Clean Dry	Change
	Flow Range	Diesel	Jet Fuel	Gasoline	Delta P	Delta P
<b>Prefilter</b>	5-40 GPM (18.9-151.4 LPM)	20 GPM (75.7 LPM)	40 GPM (151.4 LPM)	50 GPM (189.3 LPM)	Varies w/fluid and flow rate.	20 PSID
<b>Filter Sep</b>	5-35 GPM (18.9-132.5 LPM)	18 GPM (68.1 LPM)	35 GPM (132.5 LPM)	45 GPM (170.3 LPM)	Varies w/fluid and flow rate.	15 PSID
<b>Absorber</b>	5-25 GPM (18.9-94.6 LPM)	18 GPM (68.1 LPM)	35 GPM (132.5 LPM)	45 GPM (170.3 LPM)	Varies w/fluid and flow rate.	30 PSID
<b>FBO-14</b>	Flow Range	Diesel	Jet Fuel	Gasoline	Delta P	Delta P
<b>Prefilter</b>	10-60 GPM (37.9-227.1 LPM)	30 GPM (113.6 LPM)	60 GPM (227.1 LPM)	75 GPM (283.9 LPM)	Varies w/fluid and flow rate.	20 PSID
<b>Filter Sep</b>	10-50 GPM (37.9-189.3 LPM)	25 GPM (94.6 LPM)	50 GPM (189.3 LPM)	65 GPM (246.1 LPM)	Varies w/fluid and flow rate.	15 PSID
<b>Absorber</b>	10-37 GPM (37.9-140.1 LPM)	26 GPM (98.4 LPM)	55 GPM (208.2 LPM)	70 GPM (265.0 LPM)	Varies w/fluid and flow rate.	30 PSID

# Hydrocarbon Filtration

## FBO Assemblies

### FBO-10 (6x10 in. Elements)

<b>Coalescer Separator Kit</b>	FBO 60327	FBO-60328	FBO-60328-V	FBO-60329	FBO-60353
<b>Weight</b>	4.0 lbs (1.8 kg)	4.0 lbs (1.8 kg)	4.0 lbs (1.8 kg)	4.0 lbs (1.8 kg)	4.0 lbs (1.8 kg)
<b>Micron Rating</b>	1	5	N/A	25	10

<b>Pre-Filter Kit</b>	FBO 60330	FBO 60331	FBO 60332	FBO 60354
<b>Weight</b>	4.0 lbs (1.8 kg)	4.0 lbs (1.8 kg)	4.0 lbs (1.8 kg)	4.0 lbs (1.8 kg)
<b>Micron Rating</b>	1	5	25	10

<b>Monitor Kits</b>	FBO-60333	FBO-60334	FBO-60335	FBO-60355
<b>Weight</b>	4.0 lbs (1.8 kg)	4.0 lbs (1.8 kg)	4.0 lbs (1.8 kg)	4.0 lbs (1.8 kg)
<b>Micron Rating</b>	1	5	25	10

### FBO-14 (6x14 in. Elements)

<b>Coalescer Separator Kits</b>	FBO-60336	FBO-60337	FBO-60338	FBO-60356
<b>Weight</b>	5.0 lbs (2.3 kg)	5.0 lbs (2.3 kg)	5.0 lbs (2.3 kg)	5.0 lbs (2.3 kg)
<b>Micron Rating</b>	1	5	25	10

<b>Pre-Filter Kits</b>	FBO-60339	FBO-60340	FBO-60341	FBO-60357
<b>Weight</b>	5.0 lbs (2.3 kg)	5.0 lbs (2.3 kg)	5.0 lbs (2.3 kg)	5.0 lbs (2.3 kg)
<b>Micron Rating</b>	1	5	25	10

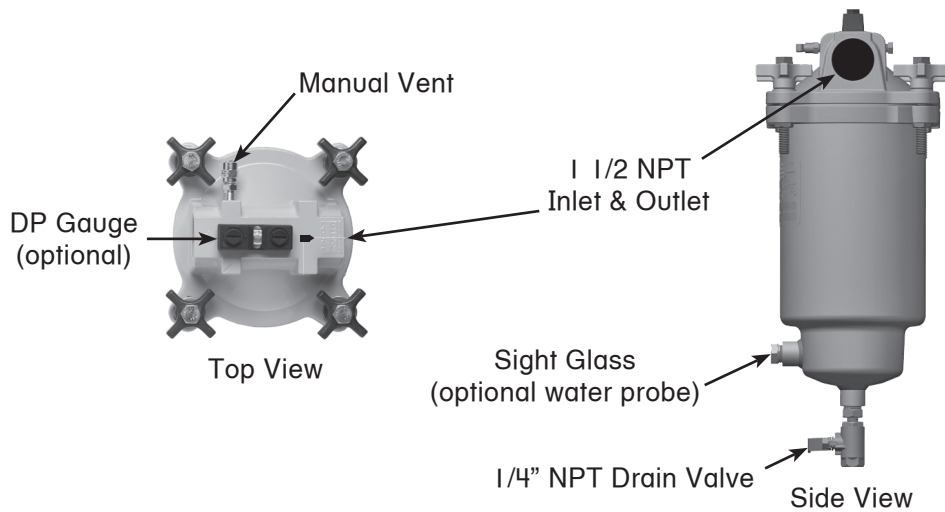
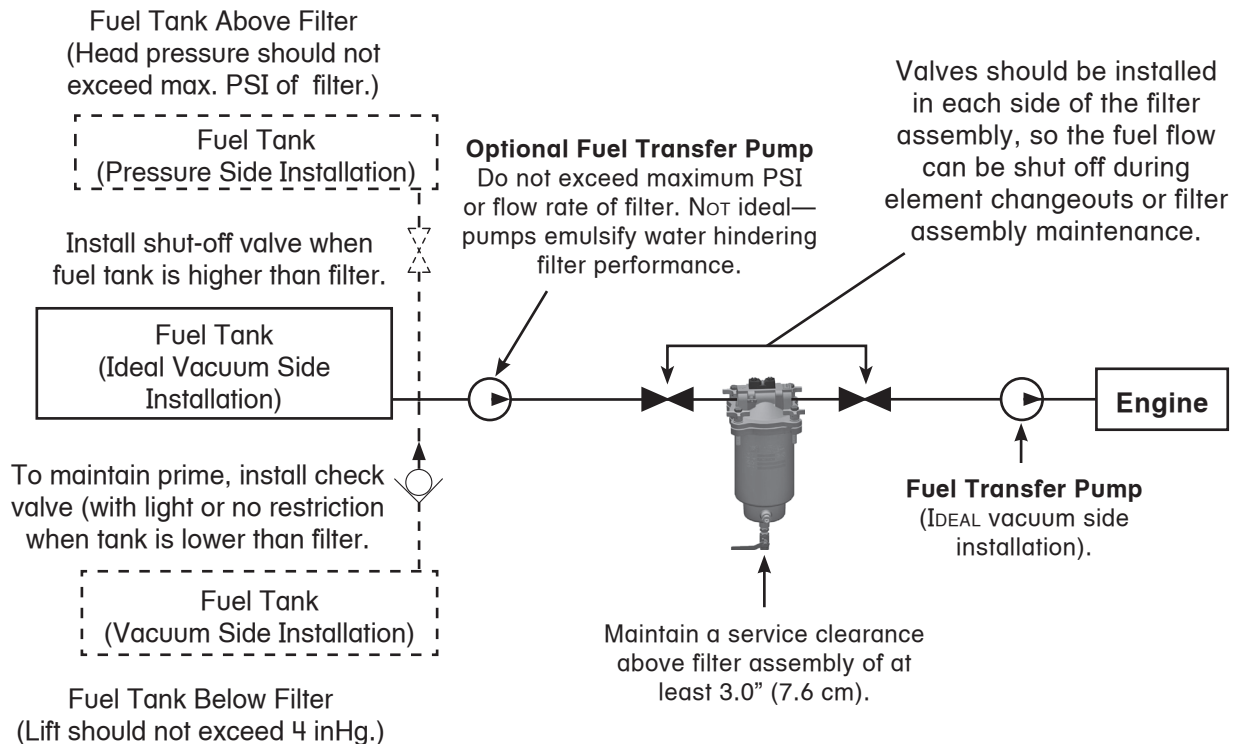
<b>Monitor Kits</b>	FBO-60342	FBO-60343	FBO-60344	FBO-60358
<b>Weight</b>	5.0 lbs (2.3 kg)	5.0 lbs (2.3 kg)	5.0 lbs (2.3 kg)	5.0 lbs (2.3 kg)
<b>Micron Rating</b>	1	5	25	10



# Hydrocarbon Filtration

## FBO Assemblies

### Mounting Information



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# Hydrocarbon Filtration

## FBO Assemblies

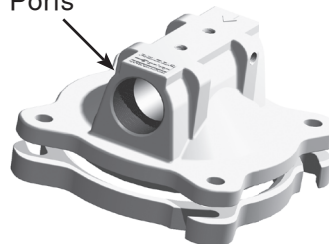
### Replacement Parts

#### FBO-10 and FBO-14

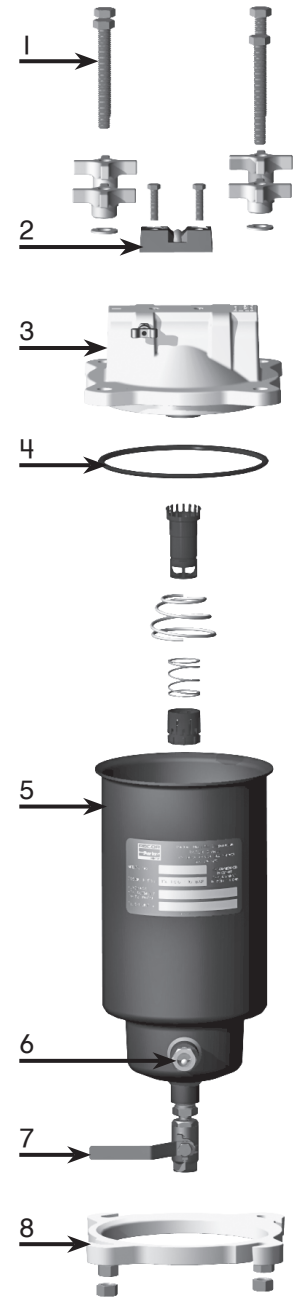
	Part Number	Description
1.	72712	Handle Assembly
2.	<b>Differential Pressure Gauge (DP Gauge)</b> 72694 72783	15 PSI Gauge Kit 30 PSI Gauge Kit
3.	<b>FBO Head Kits</b> 72531	Head Kit with DP Gauge
4.	72699	O-ring
5.	72806 73166	FBO-10 Housing Assembly (includes #'s 5 & 8) FBO-14 Housing Assembly (includes #'s 5 & 8)
6.	72710	1/2 " NPT Sight Glass
7.	71943-.25	1/4 " NPT Ball Valve
8.	72532 7581	Flange Installation Instructions



1 1/2" NPT Inlet  
and Outlet Ports



FBO Head





# Hydrocarbon Filtration

## RHFM Series

### *Fuel Monitor Vessels*

The RHFM Series Horizontal Fuel Monitor Vessels, equipped with the FMI or FM Series Fuel Monitor cartridges, check the entire flow of fuel, collecting solids, absorbing water and ensuring only clean and dry fuel for delivery. Racor Hydrocarbon FMI 2 Inch Series Monitor Cartridges are qualified to the latest edition of API/IP Specifications 1583 Qualification Procedures. The vessels can also be equipped with FM 2 Inch Series cartridges that are qualified to MIL-M-81380. The FMI and FM 2 Inch Series Monitor Cartridges are designed to flow from the outside to inside at a rate of one gallon (3.79 liters) per inch of length. In addition, they are not disarmed when surfactants and fuel additives are present.

#### **Applications:**

- Jet A, Jet A1
- JP4, JP5, JP8
- Diesel Fuel
- Kerosene
- Gasoline

#### **Optional Accessories:**

- Automatic air eliminator
- Pressure relief valve
- Differential pressure gauge
- Sampling probes
- Manual drain valve
- Cover inter-lock safety device

#### **Connections**

- Inlet and Outlet: 150# RF (ANSI) flanged
- Main Drain: 3/4 inch NPT
- Vent and pressure relief connection: 3/4 inch NPT
- Differential pressure gauge connection: 1/4 inch NPT
- Sampling connection: 1/4 inch NPT

#### **Features:**

- Carbon steel construction; other material available
- 150 psi ASME Code, Section VIII construction, stamped and certified
- Yellow zinc plated bolted closures
- Buna-N o-ring cover seal
- Cartridge spider assembly
- 220 psid deckplate hydrotest
- Interior: epoxy-coated MIL-C-4556 E
- Exterior: prime coated
- Mult-position inlet connection and mounting saddles
- Patent Pending design

**Note:** Not recommended for use in aviation fuels with FSII.



RHFM-A-200



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# Hydrocarbon Filtration

## RHFM Series

### How to Order

RHFM-A	-200
Basic Model	add <b>-200</b> for 200 GPM (757 LPM)

### Specifications

Specifications	Flow Rate	Qty.	Element	Liquid Volume	Dry Weight
<b>RHFM-A-200</b>	200 GPM (757 LPM)	10	FMI-20203	7.5 gal (28 ltr)	324 lbs (147 kg)
<b>RHFM-A-300</b>	300 GPM (1136 LPM)	10	FMI-30203	10 gal (38 ltr)	362 lbs (164 kg)
<b>RHFM-A-600</b>	600 GPM (2271 LPM)	20	FMI-30203	20 gal (76 ltr)	395 lbs (179 kg)
<b>RHFM-A-900</b>	900 GPM (3407 LPM)	30	FMI-30203	30 gal (114 ltr)	470 lbs (213 kg)
<b>RHFM-A-1200</b>	1200 GPM (4542 LPM)	40	FMI-30203	40 gal (151 ltr)	503 lbs (228 kg)

### Dimensions

Dimensions	A	B	C	D
<b>RHFM-A-200</b>	8.6 in. (21.8 cm)	39.0 in. (99.1 cm)	6.0 in. (15.2 cm)	8.0 in. (20.3 cm)
<b>RHFM-A-300</b>	8.6 in. (21.8 cm)	49.0 in. (124.5 cm)	6.0 in. (15.2 cm)	8.0 in. (20.3 cm)
<b>RHFM-A-600</b>	12.8 in. (32.5 cm)	51.0 in. (129.5 cm)	7.0 in. (17.8 cm)	10.0 in. (25.4 cm)
<b>RHFM-A-900</b>	14.0 in. (35.6 cm)	53.0 in. (134.6 cm)	7.0 in. (17.8 cm)	11.0 in. (27.9 cm)
<b>RHFM-A-1200</b>	16.0 in. (40.6 cm)	54.0 in. (137.2 cm)	7.0 in. (17.8 cm)	11.0 in. (27.9 cm)

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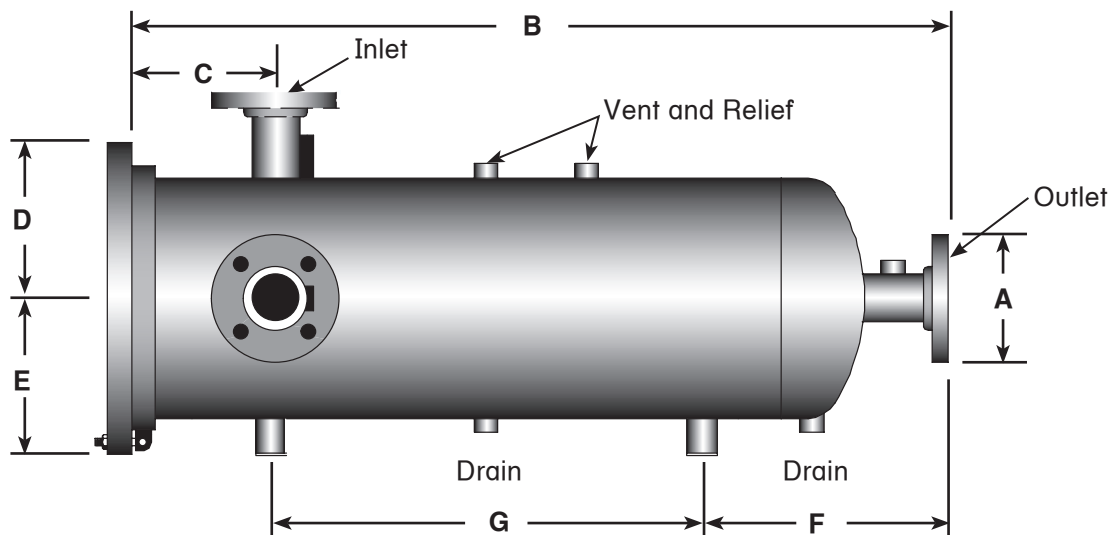
# Hydrocarbon Filtration

## RHFM Series

### Dimensions

4

Dimensions	E	F	G	Inlet/Outlet
<b>RHFM-A-200</b>	7.5 in. (19.1 cm)	13.0 in. (33.0 cm)	19.0 in. (48.3 cm)	3.0 in. (7.6 cm)
<b>RHFM-A-300</b>	7.5 in. (19.1 cm)	13.0 in. (33.0 cm)	29.0 in. (73.7 cm)	3.0 in. (7.6 cm)
<b>RHFM-A-600</b>	10.0 in. (25.4 cm)	14.0 in. (35.6 cm)	28.0 in. (71.1 cm)	4.0 in. (10.2 cm)
<b>RHFM-A-900</b>	10.0 in. (25.4 cm)	15.0 in. (38.1 cm)	26.0 in. (66.0 cm)	6.0 in. (15.2 cm)
<b>RHFM-A-1200</b>	11.0 in. (27.9 cm)	15.0 in. (38.1 cm)	26.0 in. (66.0 cm)	6.0 in. (15.2 cm)







# Hydrocarbon Filtration

## RHFS Series

### *API/EI (IP) 5<sup>th</sup> Edition Horizontal Coalescer Separator Vessel*

4

The RVFS/5 Series Filter Water Separator Vessels are for use with Racor Hydrocarbon ACP and RAC Series Coalescers and SS, ST, RSS and RST Series Separator Cartridges. Racor hydrocarbon RVFS/5 Series two-stage vertical and horizontal coalescer/separator housings are designed to filter solids and separate free water from jet fuel. Using the correct combination of Racor hydrocarbon coalescer cartridges and second stage separator cartridges will provide the highest degree of water and solids removal.

#### Applications

- Jet A, Jet A1
- JP4, JP5, JP8
- Kerosene

#### Installations

- Refineries
- Terminals
- Loading racks
- Hydrant carts and refuelers

#### Connections

- Inlet and Outlet: 150# RF (ANSI) flanged
- Main Drain: NPT
- Vent and pressure relief connection: NPT
- Differential pressure gauge/sample ports: NPT

#### Optional Accessories

- Automatic air eliminator
- Pressure relief valve
- Differential pressure gauge
- Sampling probes
- Manual or automatic water drain valves
- Sump drain line heaters
- Liquid level sight glass
- Water slug control valve
- Pilot control valve
- Rate of flow control valve



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# Hydrocarbon Filtration

## RHFS Series

### Features

- Carbon steel construction; other materials available
- ASME Code, Section VIII construction, stamped and certified
- Zinc-plated swing bolt closure
- Buna-N o-ring cover seal
- Hydraulic jack cover lift
- Inlet and outlet permanently marked
- Interior: epoxy-coated MIL-C-4556E
- Exterior: prime coated
- Knife-edge cartridge mounting seals



<b>Specifications</b>	<b>Flow Rate</b>
<b><i>RHFS-5-100</i></b>	100 GPM (378 LPM)
<b><i>RHFS-5-200</i></b>	200 GPM (757 LPM)
<b><i>RHFS-5-300</i></b>	300 GPM (1135 LPM)
<b><i>RHFS-5-400</i></b>	400 GPH (1514 LPM)
<b><i>RHFS-5-600</i></b>	600 GPM (2271 LPM)
<b><i>RHFS-5-800</i></b>	800 GPM (3028 LPM)
<b><i>RHFS-5-1000</i></b>	1000 GPM (3785 LPM)
<b><i>RHFS-5-1200</i></b>	1200 GPM (4542 LPM)
<b><i>RVFS-D-50</i></b>	50 GPM (189 LPM)

# Hydrocarbon Filtration

## RVCT Series

The RVCT Series Vertical Vessels are used with Racor hydrocarbon clay elements to remove additives and surfactants from jet fuel, gasoline, kerosene and diesel. Carbon elements are used for deoiling industrial water, deodorization and decolorization of hydrocarbon solvents and the removal of chlorine.

### Applications:

- Jet A, Jet A1
- Diesel Fuel
- Kerosene
- Gasoline

### Optional Accessories:

- Automatic air eliminator
- Pressure relief valve
- Differential pressure gauge
- Sampling probes
- Manual drain valves
- Removable bundle assembly



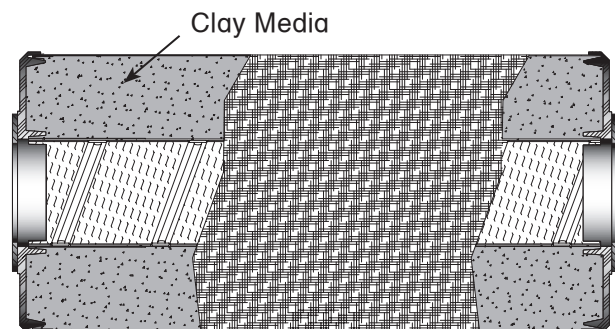
RVCT Unit

### Connections:

- Inlet and Outlet: 150RF (ANSI) flanged
- Main Drain: 2 inch NPT
- Side Drain: 1-1/2 inch NPT
- Vent and pressure relief connections: 3/4 inch NPT
- Differential Pressure Gauge/Sample ports: 1/4 inch NPT

### Features:

- Carbon steel construction; other materials available
- 150 psi ASME Code, Section VIII construction, stamped and certified
- Yellow zinc plated swing bolt closure
- Buna-N o-ring cover seal
- Hydraulic jack cover lift
- Inlet and outlet permanently marked
- Interior: epoxy-coated MIL-C-4556 E
- Exterior: prime coated



(FCC) Clay Canister



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# Hydrocarbon Filtration

## RVCT Series

<i>Model Number</i>	<b>Jet Fuel Flow Rate</b>	<b>Liquid Volume</b>	<b># of Cartridges Required</b>	<b>Dry Weight</b>
<i>RVCT-300</i>	300 GPM (1136 LPM)	250 gal (946 ltr)	45	1700 lbs (771 kg)
<i>RVCT-500</i>	500 GPM (1893 LPM)	450 gal (1703 ltr)	72	3300 lbs (1497 kg)
<i>RVCT-650</i>	650 GPM (2460 LPM)	630 gal (2385 ltr)	93	5200 lbs (2359 kg)
<i>RVCT-850</i>	850 GPM (3217 LPM)	850 gal (3217 ltr)	120	5200 lbs (2359 kg)
<i>RVCT-1050</i>	1050 GPM (3974 LPM)	1028 gal (3891 ltr)	150	6800 lbs (3084 kg)
<i>RVCT-1250</i>	1250 GPM (4731 LPM)	1275 gal (4826 ltr)	180	8200 lbs (3719 kg)

<i>Model Number</i>	<b>Specifications</b>		
	<b>Inlet &amp; Outlet</b>	<b>Bolt Circle</b>	<b>Bolt Hole</b>
<i>RVCT-300</i>	4.0 in. (10.2 cm)	32.5 in. (82.6 cm)	0.8 in. (1.9 cm)
<i>RVCT-500</i>	4.0 in. (10.2 cm)	38.5 in. (97.8 cm)	0.9 in. (2.2 cm)
<i>RVCT-650</i>	6.0 in. (15.2 cm)	44.3 in. (113.0 cm)	1.13 in. (2.9 cm)
<i>RVCT-850</i>	6.0 in. (15.2 cm)	50.0 in. (127.0 cm)	1.13 in. (2.9 cm)
<i>RVCT-1050</i>	8.0 in. (20.3 cm)	56.0 in. (142.2 cm)	1.13 in. (2.9 cm)
<i>RVCT-1250</i>	8.0 in. (20.3 cm)	60.0 in. (152.4 cm)	1.13 in. (2.9 cm)

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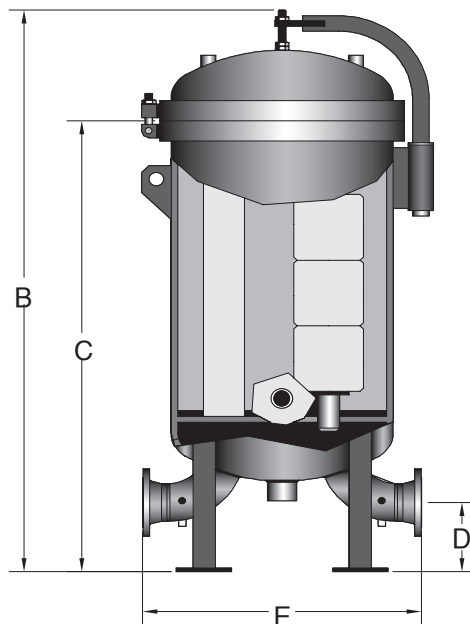


# Hydrocarbon Filtration

## RVCT Series

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Model Number	Dimensions				
	A	B	C	D	E
<b>RVCT-300</b>	35.3 in. (10.2 cm)	126.0 in. (320.0 cm)	87.0 in. (221.0 cm)	6.0 in. (15.2 cm)	32.0 in. (81.3 cm)
<b>RVCT-500</b>	42.0 in. (106.7 cm)	134.0 in. (340.4 cm)	90.0 in. (228.6 cm)	6.0 in. (15.2 cm)	38.0 in. (96.5 cm)
<b>RVCT-650</b>	48.0 in. (121.9 cm)	141.0 in. (358.1 cm)	95.0 in. (241.3 cm)	8.0 in. (20.3 cm)	44.0 in. (111.8 cm)
<b>RVCT-850</b>	54.0 in. (137.2 cm)	145.0 in. (368.3 cm)	97.0 in. (246.4 cm)	8.0 in. (20.3 cm)	50.0 (127.0 cm)
<b>RVCT-1050</b>	60.0 in. (152.4 cm)	153.0 in. (388.8 cm)	103.0 in. (261.6 cm)	9.0 in. (22.9 cm)	56.0 in. (142.2 cm)
<b>RVCT-1250</b>	66.0 in. (167.6 cm)	155.0 in. (393.7 cm)	103.0 in. (261.6 cm)	9.0 in. (22.9 cm)	62.0 in. (157.5 cm)





# Hydrocarbon Filtration

## RVFS Series

### *RVFS Vessels*

Racor RVFS Series filter vessels offer a versatile, economical alternative to any competitor's vessels. Industry applications include removing liquid and solid contaminants from diesel fuel, gasoline, kerosene, aviation gas, jet fuel and other lubricating or hydraulic oils. RVFS vessels utilize proven filter design technology and can be used as coalescers, pre-filters, monitors or separators by changing internal components or flow direction or by selecting optional filter cartridges when ordering.

#### **Optional Accessories:**

- Automatic air eliminator
- Pressure relief valve
- Differential pressure gauge

- Liquid level gauge
- Manual or automatic water drain valves
- Support stand
- Wall mount brackets

#### **Applications:**

- Jet A, Jet A1
- JP4, JP5, JP8
- Diesel Fuel
- Kerosene
- Gasoline



RVFS-1



RVFS-2



RVFS-3



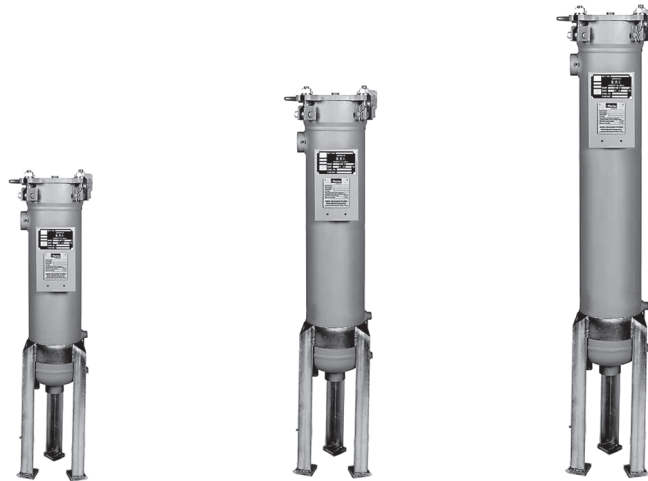
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# Hydrocarbon Filtration

## RVFS Series



<b>Specifications</b>	<b>RVFS-1</b>	<b>RVFS-2</b>	<b>RVFS-3</b>
<b>Max Flow Rate</b>	50 GPM (189 LPM)	100 GPM (378 LPM)	150 GPM (567 LPM)
<b>Inlet &amp; Outlet Port Size NPT</b>	2.0 in. (5.1 cm)	2.0 in. (5.1 cm)	2.0 in. (5.1 cm)
<b>Vent &amp; Relief Ports NPT</b>	0.75 in. (1.9 cm)	0.75 in. (1.9 cm)	0.75 in. (1.9 cm)
<b>Liquid Level Ports NPT</b>	0.50 in. (1.3 cm)	0.50 in. (1.3 cm)	0.50 in. (1.3 cm)
<b>Differential Gauge Ports NPT</b>	0.13 in. (0.33 cm)	0.13 in. (0.33 cm)	0.13 in. (0.33 cm)
<b>Maximum Pressure</b>	250 PSI (17.2 bar)	250 PSI (17.2 bar)	250 PSI (17.2 bar)
<b>Clean Pressure Drop</b>	2 PSID (.14 bar)	2 PSID (.14 bar)	2 PSID (.14 bar)
<b>Dirty Pressure Drop</b>	15 PSID (1.04 bar)	15 PSID (1.04 bar)	15 PSID (1.04 bar)
<b>Height</b>	39.0 in. (99.1 cm)	51.0 in. (129.5 cm)	65.0 in. (165.1 cm)
<b>Width</b>	13.8 in. (35.1 cm)	13.8 in. (35.1 cm)	13.8 in. (35.1 cm)
<b>Depth</b>	13.5 in. (34.3 cm)	13.5 in. (34.3 cm)	13.5 in. (34.3 cm)
<b>Weight dry</b>	100 lbs (45 kg)	115 lbs (52 kg)	130 lbs (59 kg)
<b>Service Clearance Above</b>	16.0 in. (40.6 cm)	32.0 in. (81.3 cm)	47.0 in. (119.4 cm)
<b>Operating Temperature</b>	250° F (121.1° C)		

**Note:** Overall dimensions will vary depending on mounting leg or bulkhead method of installation. Consult factory for flow rates. Factory will require details of the application for proper sizing.

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# Hydrocarbon Filtration

## RVFS Series

### Diesel Fuel

Element	Micron Size	RVFS-1	RVFS-2	RVFS-3
<b>Coalescer</b>	5	OCP-15858	OCP-30858	OCP-44858
	10	OCP-15868	OCP-30868	OCP-44868
	25	OCP-15878	OCP-30878	OCP-44878
<b>Separator-Paper</b>	5	SP-15404	SP-30404	SP-44404
	10	SP-15405	SP-30405	SP-44405
	25	SP-15407	SP-30407	SP-44407
<b>Prefilter-Cellulose</b>	2	FP-14602	FP-30602	FP-44602
	5	FP-14604	FP-30604	FP-44604
	10	FP-14605	FP-30605	FP-44605
	25	FP-14607	FP-30607	FP-44607
<b>Prefilter-Synthetic</b>	5	FS-14604	FS-30404	FS-44604
<b>H<sub>2</sub>O Absorbing</b>	5	(1) FW-61405	(2) FW-61405	(3) FW-61405
	10	(1) FW-61410	(2) FW-61410	(3) FW-61410
	25	(1) FW-61425	(2) FW-61425	(3) FW-61425

### Aviation Fuel

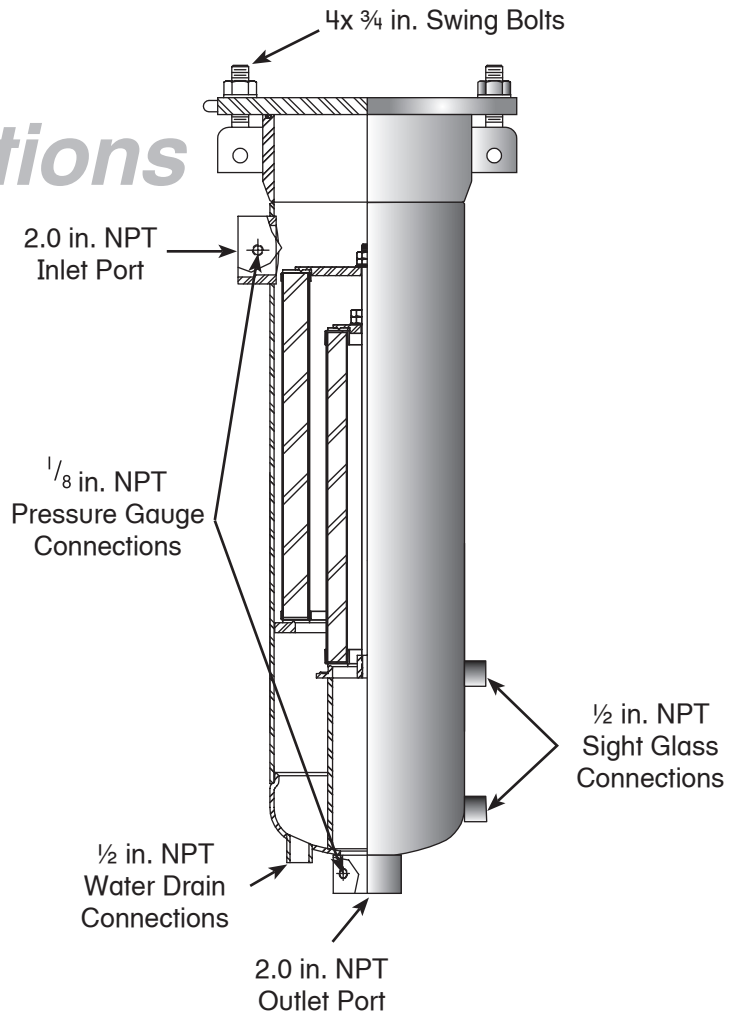
Element	Micron Size	RVFS-1	RVFS-2	RVFS-3
<b>Coalescer</b>	1/2	OCP-15832	OCP-30832	OCP-44832
	1	OCP-15854	OCP-30854	OCP-44854
	2	OCP-15855	OCP-30855	OCP-44855
<b>Separator-Synthetic</b>	N/A	SS-15401	SS-30401	SS-44401
<b>Separator-Cellulose</b>	N/A	ST-15401	ST-30401	ST-44401
	1	FP-14601	FP-30601	FP-44601
	2	FP-14602	FP-30602	FP-44602
	5	FP-14604	FP-30604	FP-44604
<b>Prefilters-Synthetic</b>	1	FS-14601	FS-30601	FS-44601
	5	FS-14604	FS-30604	FS-44604
<b>H<sub>2</sub>O Absorbing</b>	1	FW-61401	FW-61401	FW-60401
	5	FW-61405	FW-61405	FW-61405
<b>Clay Canisters</b>	N/A	N/A	(1) FCC-18701	(2) FCC-18701

# Hydrocarbon Filtration

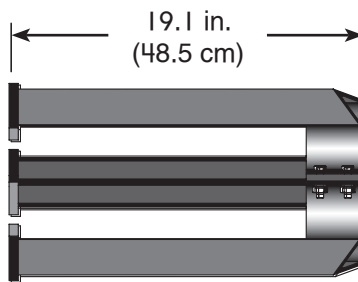
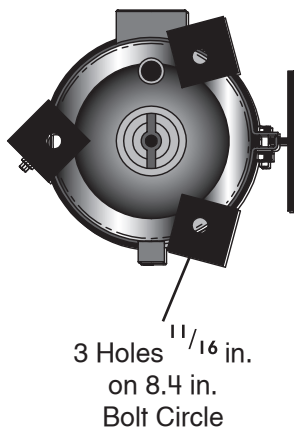
## RVFS Series

### Mounting Options

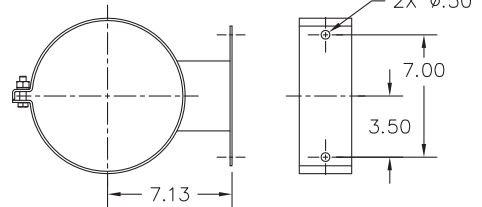
The RVFS has two filter mounting possibilities, one being a bulkhead mounting bracket that is adjustable, and the other is three mounting legs with holes drilled for stabilization.



Bottom View



Mounting Legs



Bulkhead Mounting Bracket

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# Hydrocarbon Filtration

## RVFS Series

### Replacement Parts

4

#### RVFS-1, RVFS-2, RVFS-3

	<u>Part Number</u>	<u>Description</u>
1.		See Replacement Element Chart
2.		Unit Bodies
	<b>RVFS-1</b>	
	<b>RVFS-2</b>	
	<b>RVFS-3</b>	
3.		Mounting Bracket
	<b>71982</b>	Bulkhead Mounting Bracket
	<b>71981</b>	Adjustable Mounting Legs
Additional Parts (not shown)		
	<b>72059</b>	Differential Pressure Gauge
	<b>71679</b>	Stainless Auto Air Eliminator
	<b>71943-.75</b>	Brass Manual Air Vent
	<b>72060-.75</b>	Stainless Manual Air Vent
	<b>71330-.125</b>	Pressure Relief Valve 125 PSI
	<b>72482</b>	Stainless Check Valve
	<b>70906</b>	Brass Water Sight Glass 125 PSI
	<b>72061</b>	Stainless Water Sight Glass 300 PSI
	<b>RK 30880</b>	Water Probe Kit 12 vdc
	<b>71166</b>	Auto Drain Valve
	<b>71943-.5</b>	Brass Manual Drain Valve
	<b>72060-.5</b>	Stainless Manual Drain Valve
	<b>7563</b>	Installation Instructions



# Hydrocarbon Filtration

## RVFS Series

### *Safety Precautions*

***The following precautions are recommended for the safety of the operating personnel:***

1. The fluid being filtered is volatile. No smoking is permitted in the area where the system pumps, storage tanks and filtering equipment are located.
2. Any fluid spill must be cleaned up immediately. Dispose of all contaminated cleaning materials in a fire-safe container.
3. Any clothing contaminated with fluid must be removed immediately and disposed of in a fire-safe container.
4. Fluid resistant gloves must be worn when handling parts that have been in contact with the fluid.
5. When servicing the filtering equipment, allow for maximum ventilation to disperse fumes. An air mask may be worn when servicing the vessel main body.
6. Use only non-sparking tools when performing maintenance on the filtering equipment and on the fuel system components.
7. Avoid any unnecessary contact of fluid to the skin or clothing. Always wear safety gloves and glasses.
8. Avoid any spillage of liquid in the operating area. Any spills must be cleaned up immediately to reduce injury from slipping.
9. Personnel should wash hands thoroughly after any maintenance to the filtering equipment or any of its components. Apply medication to any cuts or abrasions.
10. Secure medical attention for any serious cuts, stomach discomfort or breathing difficulties that may be caused by excessive inhalation of fumes.

# Hydrocarbon Filtration

## RVFS Series

4

### *Fire Hazard*

***Adequate fire fighting equipment should be provided for the operating area before conducting a fluid test and at all times when performing any maintenance or service work in the operating area. Provide “No Smoking” signs in the operating area.***

1. Opening the access cover before the vessel is securely mounted may cause the vessel to become unstable and could result in vessel falling over.
2. Correctly identify the inlet and outlet connections before connecting the vessel in the system. The unit will not perform properly should the connections be reversed.
3. Turn off any heating devices before performing any maintenance or service work.
4. Due to the toxic effects of some of the additives used in liquid hydrocarbon products, care should be taken in handling any parts that have been in contact with liquid product.
5. Filter vessel must be relieved of internal pressure, drained or vented before removal or repair of any accessory option.
6. Do not over-tighten packing nuts or other connections. Stripped threads on the fittings may result in leaky joints. Replace any damaged fittings or parts before the filter vessel is put into operation.



# Hydrocarbon Filtration

## Industrial Filter/Separator Vessels

The RVFS Series Filter/Water Separator Vessels are for use with Racor Hydrocarbon CP Series Coalescers and SP, SS, and ST Series Separator Cartridges. Racor hydrocarbon RVFS Series two-stage vertical coalescer/separator housings are designed to filter solids and separate two immiscible liquids. Using the correct combination of Racor hydrocarbon coalescer cartridges and second stage separator cartridges will provide the highest degree of water and solids removal.

### Applications:

- Jet A, Jet A1, JP4, JP5, JP8
- Kerosene
- Gasoline, Diesel Fuel

### Installations:

- Refineries
- Terminals, Loading racks
- Mobile and marine fuel sites

### Connections:

- Inlet/Outlet: 150# RF (ANSI) flanged
- Main Drain: 1 - 2 inch NPT
- Vent and pressure relief connection: 3/4 inch NPT
- Differential pressure gauge/sample ports: 1/4 inch NPT

### Features:

- Carbon steel construction; other materials available
- 150 psi ASME Code, Section VIII construction, stamped and certified
- Yellow zinc-plated swing bolt closure
- Buna-N o-ring cover seal
- Hydraulic jack cover lift
- Inlet and outlet permanently marked
- Interior: epoxy-coated MIL-C-4556 E
- Exterior: primer coated
- Knife-edge cartridge mounting seals



RVFS-244-233



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# Hydrocarbon Filtration

## RVFS Series

### (FWS) Vertical Coalescer/Separators

Model Number	Maximum Recommended Flow Rates at These Viscosities			
	1 CS	2.2 CS	3 CS	4 CS
	31.0 SSU	33.0 SSU	36.0 SSU	39.0 SSU
<i>RVFS-222-122</i>	145 GPM (549 LPM)	115 GPM (435 LPM)	85 GPM (322 LPM)	65 GPM (246 LPM)
<i>RVFS-244-233</i>	290 GPM (1098 LPM)	240 GPM (908 LPM)	180 GPM (681 LPM)	130 GPM (492 LPM)
<i>RVFS-344-233</i>	435 GPM (1646 LPM)	340 GPM (1287 LPM)	250 GPM (946 LPM)	190 GPM (719 LPM)
<i>RVFS-444-333</i>	580 GPM (2195 LPM)	480 GPM (1817 LPM)	360 GPM (1363 LPM)	260 GPM (984 LPM)
<i>RVFS-456-436</i>	740 GPM (2801 LPM)	615 GPM (2328 LPM)	460 GPM (1741 LPM)	335 GPM (1268 LPM)
<i>RVFS-656-536</i>	1100 GPM (4164 LPM)	915 GPM (3463 LPM)	675 GPM (2555 LPM)	500 GPM (1893 LPM)
<i>RVFS-856-736</i>	1475 GPM (5583 LPM)	1220 GPM (4618 LPM)	915 GPM (3463 LPM)	660 GPM (2498 LPM)
<i>RVFS-1056-936</i>	1850 GPM (7002 LPM)	1530 GPM (5791 LPM)	1150 GPM (4353 LPM)	830 GPM (3142 LPM)
<i>RVFS-1256-1136</i>	2220 GPM (8403 LPM)	1835 GPM (6945 LPM)	1375 GPM (5204 LPM)	995 GPM (3766 LPM)
<i>RVFS-1456-1336</i>	2585 GPM (9784 LPM)	2140 GPM (8100 LPM)	1605 GPM (6075 LPM)	1160 GPM (4391 LPM)
<i>RVFS-1656-1536</i>	2955 GPM (11185 LPM)	2445 GPM (9254 LPM)	1835 GPM (6945 LPM)	1325 GPM (5015 LPM)
<i>RVFS-2056-1936</i>	3695 GPM (13986 LPM)	3060 GPM (11582 LPM)	2295 GPM (8687 LPM)	1655 GPM (6264 LPM)
<i>RVFS-2456-2336</i>	4435 GPM (16786 LPM)	3670 GPM (13891 LPM)	2755 GPM (10428 LPM)	1990 GPM (7532 LPM)
<i>RVFS-2856-2736</i>	5175 GPM (19587 LPM)	4280 GPM (16200 LPM)	3215 GPM (12169 LPM)	2320 GPM (8781 LPM)

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# Hydrocarbon Filtration

## RVFS Series

### (FWS) Vertical Coalescer/Separators

4

Model Number	Maximum Recommended Flow Rates at These Viscosities			
	5 CS	6.2 CS	8 CS	10 CS
	42.0 SSU	45.0 SSU	52.0 SSU	58.0 SSU
<i>RVFS-222-122</i>	50 GPM (189 LPM)	40 GPM (151 LPM)	30 GPM (114 LPM)	25 GPM (95 LPM)
<i>RVFS-244-233</i>	100 GPM (379 LPM)	90 GPM (341 LPM)	60 GPM (227 LPM)	50 GPM (189 LPM)
<i>RVFS-344-233</i>	150 GPM (568 LPM)	125 GPM (473 LPM)	90 GPM (341 LPM)	75 GPM (284 LPM)
<i>RVFS-444-333</i>	200 GPM (757 LPM)	180 GPM (681 LPM)	120 GPM (454 LPM)	100 GPM (379 LPM)
<i>RVFS-456-436</i>	255 GPM (965 LPM)	230 GPM (871 LPM)	155 GPM (587 LPM)	130 GPM (492 LPM)
<i>RVFS-656-536</i>	385 GPM (1457 LPM)	335 GPM (1268 LPM)	230 GPM (871 LPM)	195 GPM (738 LPM)
<i>RVFS-856-736</i>	510 GPM (1930 LPM)	455 GPM (1722 LPM)	305 GPM (1154 LPM)	255 GPM (965 LPM)
<i>RVFS-1056-936</i>	640 GPM (2422 LPM)	570 GPM (2157 LPM)	380 GPM (1438 LPM)	320 GPM (1211 LPM)
<i>RVFS-1256-1136</i>	765 GPM (2896 LPM)	685 GPM (2593 LPM)	455 GPM (1722 LPM)	380 GPM (1438 LPM)
<i>RVFS-1456-1336</i>	895 GPM (3388 LPM)	800 GPM (3028 LPM)	530 GPM (2006 LPM)	445 GPM (1684 LPM)
<i>RVFS-1656-1536</i>	1020 GPM (3861 LPM)	915 GPM (3463 LPM)	610 GPM (2309 LPM)	510 GPM (1930 LPM)
<i>RVFS-2056-1936</i>	1275 GPM (4826 LPM)	1140 GPM (4315 LPM)	760 GPM (2877 LPM)	635 GPM (2403 LPM)
<i>RVFS-2456-2336</i>	1530 GPM (5791 LPM)	1370 GPM (5180 LPM)	915 GPM (3463 LPM)	765 GPM (2896 LPM)
<i>RVFS-2856-2736</i>	1785 GPM (6756 LPM)	1600 GPM (6056 LPM)	1065 GPM (4031 LPM)	895 GPM (3388 LPM)

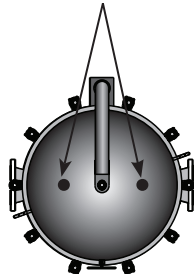
# Hydrocarbon Filtration

## RVFS Series

### Mounting Information

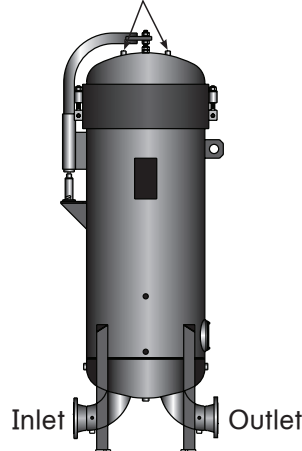
Model Number	Specifications			
	Inlet Outlet	Drain	Weight	Volume
<i>RVFS-222-122</i>	2.0 in. (5.1 cm)	1.0 in. (2.5 cm)	620 lbs (281 kg)	35 gal (132 ltr)
<i>RVFS-244-233</i>	3.0 in. (7.6 cm)	1.0 in. (2.5 cm)	720 lbs (327 kg)	60 gal (227 ltr)
<i>RVFS-344-233</i>	4.0 in. (10.2 cm)	1.0 in. (2.5 cm)	850 lbs (386 kg)	80 gal (303 ltr)
<i>RVFS-444-333</i>	4.0 in. (10.2 cm)	1.0 in. (2.5 cm)	1000 lbs (454 kg)	115 gal (435 ltr)
<i>RVFS-456-436</i>	6.0 in. (15.2 cm)	1.0 in. (2.5 cm)	1100 lbs (499 kg)	140 gal (530 ltr)
<i>RVFS-656-536</i>	6.0 in. (15.2 cm)	1.5 in. (3.8 cm)	1400 lbs (635 kg)	200 gal (757 ltr)
<i>RVFS-856-736</i>	8.0 in. (20.3 cm)	1.5 in. (3.8 cm)	1900 lbs (862 kg)	270 gal (1022 ltr)
<i>RVFS-1056-936</i>	8.0 in. (20.3 cm)	1.5 in. (3.8 cm)	2300 lbs (1043 kg)	365 gal (1382 ltr)
<i>RVFS-1256-1136</i>	8.0 in. (20.3 cm)	1.5 in. (3.8 cm)	2500 lbs (1134 kg)	415 gal (1571 ltr)
<i>RVFS-1456-1336</i>	10.0 in. (25.4 cm)	2.0 in. (5.1 cm)	3400 lbs (1542 kg)	530 gal (2006 ltr)
<i>RVFS-1656-1536</i>	10.0 in. (25.4 cm)	2.0 in. (5.1 cm)	3800 lbs (1724 kg)	580 gal (2195 ltr)
<i>RVFS-2056-1936</i>	12.0 in. (30.5 cm)	2.0 in. (5.1 cm)	4500 lbs (2040 kg)	900 gal (3407 ltr)
<i>RVFS-2456-2336</i>	12.0 in. (30.5 cm)	2.0 in. (5.1 cm)	5700 lbs (2585 kg)	1160 gal (4391 ltr)
<i>RVFS-2856-2736</i>	14.0 in. (35.6 cm)	2.0 in. (5.1 cm)	6500 lbs (2948 kg)	1390 gal (5261 ltr)

3/4 NPT Vent Holes



Top View

3/4 NPT Vent Holes



Inlet Outlet

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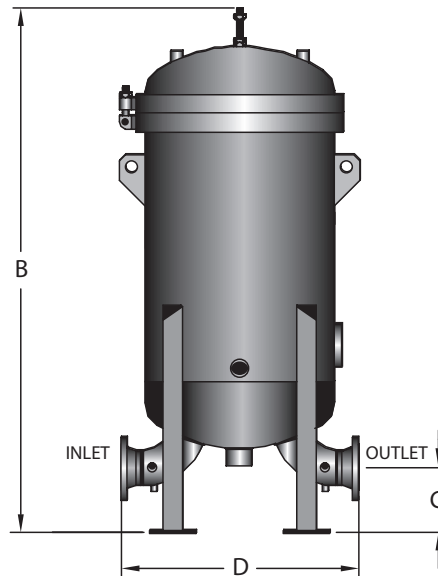
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# Hydrocarbon Filtration

## RVFS Series

### Mounting Information

Model Number	Dimensions			
	A	B	C	D
<b>RVFS-222-122</b>	16.0 in. (40.6 cm)	52.0 in. (132.1 cm)	6.0 in. (15.2 cm)	17.0 in. (43.2 cm)
<b>RVFS-244-233</b>	18.0 in. (45.7 cm)	77.0 in. (195.6 cm)	6.0 in. (15.2 cm)	23.0 in. (58.4 cm)
<b>RVFS-344-233</b>	20.0 in. (50.8 cm)	78.0 in. (198.1 cm)	6.0 in. (15.2 cm)	28.0 in. (71.1 cm)
<b>RVFS-444-333</b>	24.0 in. (61.0 cm)	80.0 in. (203.2 cm)	6.0 in. (15.2 cm)	28.0 in. (71.1 cm)
<b>RVFS-456-436</b>	24.0 in. (61.0 cm)	97.0 in. (246.7 cm)	7.5 in. (19.1 cm)	36.0 in. (91.4 cm)
<b>RVFS-656-536</b>	28.0 in. (71.1 cm)	108 in. (274.3 cm)	7.5 in. (19.1 cm)	36.0 in. (91.4 cm)
<b>RVFS-856-736</b>	32.0 in. (81.3 cm)	114 in. (289.6 cm)	9.0 in. (22.9 cm)	46.0 in. (116.8 cm)
<b>RVFS-1056-936</b>	36.0 in. (91.4 cm)	115 in. (292.1 cm)	9.0 in. (22.9 cm)	48.0 in. (121.9 cm)
<b>RVFS-1256-1136</b>	38.0 in. (96.5 cm)	116 in. (294.6 cm)	9.0 in. (22.9 cm)	48.0 in. (121.9 cm)
<b>RVFS-1456-1336</b>	42.0 in. (106.7 cm)	118 in. (299.7 cm)	10.0 in. (25.4 cm)	54.0 in. (137.2 cm)
<b>RVFS-1656-1536</b>	48.0 in. (121.9 cm)	120 in. (304.8 cm)	10.0 in. (25.4 cm)	60.0 in. (152.4 cm)
<b>RVFS-2056-1936</b>	54.0 in. (137.2 cm)	125 in. (317.5 cm)	12.0 in. (30.5 cm)	69.0 in. (175.3 cm)
<b>RVFS-2456-2336</b>	60.0 in. (152.4 cm)	129 in. (327.7 cm)	12.0 in. (30.5 cm)	71.0 in. (180.3 cm)
<b>RVFS-2856-2736</b>	66.0 in. (167.6 cm)	143 in. (363.2 cm)	14.0 in. (35.6 cm)	80.0 in. (203.2 cm)



# Hydrocarbon Filtration

## RVFS Series

### Replacement Elements

Model Number	Element Information			
	# of Coalescer Elements	# of Separator Elements	Silicone Treated 05 Series	1 Micron
<i>RVFS-222-122</i>	2	1	SP-22605-S	CP-22654-TB
<i>RVFS-244-233</i>	2	2	SP-33605-S	CP-44654-TB
<i>RVFS-344-233</i>	3	2	SP-33605-S	CP-44654-TB
<i>RVFS-444-333</i>	4	3	SP-33605-S	CP-44654-TB
<i>RVFS-456-436</i>	4	4	SP-36605-S	CP-56654-TB
<i>RVFS-656-536</i>	6	5	SP-36605-S	CP-56654-TB
<i>RVFS-856-736</i>	8	7	SP-36605-S	CP-56654-TB
<i>RVFS-1056-936</i>	10	9	SP-36605-S	CP-56654-TB
<i>RVFS-1256-1136</i>	12	11	SP-36605-S	CP-56654-TB
<i>RVFS-1456-1336</i>	14	13	SP-36605-S	CP-56654-TB
<i>RVFS-1656-1536</i>	16	15	SP-36605-S	CP-56654-TB
<i>RVFS-2056-1936</i>	20	19	SP-36605-S	CP-56654-TB
<i>RVFS-2456-2336</i>	24	23	SP-36605-S	CP-56654-TB
<i>RVFS-2856-2736</i>	28	27	SP-36605-S	CP-56654-TB



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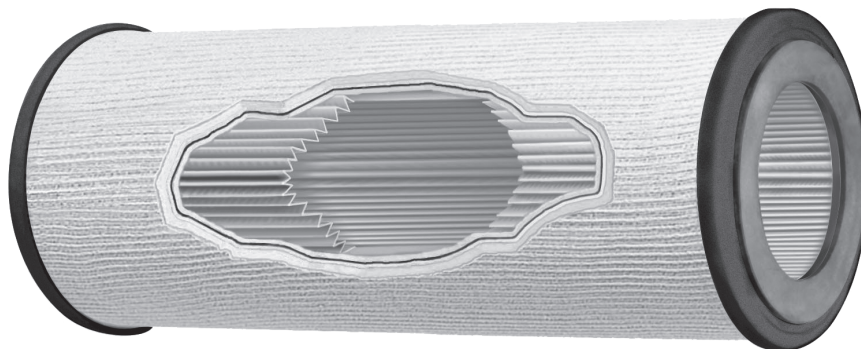
# Hydrocarbon Filtration

## RVFS Series

### Replacement Elements

Model Number	Element Information			
	.5 Micron 32 Series	2 Micron 55 Series	5 Micron 58 Series	25 Micron 78 Series
<b>RVFS-222-122</b>	CP-22632-TB	CP-22655-TB	CP-22658-TB	CP-22678-TB
<b>RVFS-244-233</b>	CP-44632-TB	CP-44655-TB	CP-44658-TB	CP-44678-TB
<b>RVFS-344-233</b>	CP-44632-TB	CP-44655-TB	CP-44658-TB	CP-44678-TB
<b>RVFS-444-333</b>	CP-44632-TB	CP-44655-TB	CP-44658-TB	CP-44678-TB
<b>RVFS-456-436</b>	CP-56632-TB	CP-56655-TB	CP-56658-TB	CP-56678-TB
<b>RVFS-656-536</b>	CP-56632-TB	CP-56655-TB	CP-56658-TB	CP-56678-TB
<b>RVFS-856-736</b>	CP-56632-TB	CP-56655-TB	CP-56658-TB	CP-56678-TB
<b>RVFS-1056-936</b>	CP-56632-TB	CP-56655-TB	CP-56658-TB	CP-56678-TB
<b>RVFS-1256-1136</b>	CP-56632-TB	CP-56655-TB	CP-56658-TB	CP-56678-TB
<b>RVFS-1456-1336</b>	CP-56632-TB	CP-56655-TB	CP-56658-TB	CP-56678-TB
<b>RVFS-1656-1536</b>	CP-56632-TB	CP-56655-TB	CP-56658-TB	CP-56678-TB
<b>RVFS-2056-1936</b>	CP-56632-TB	CP-56655-TB	CP-56658-TB	CP-56678-TB
<b>RVFS-2456-2336</b>	CP-56632-TB	CP-56655-TB	CP-56658-TB	CP-56678-TB
<b>RVFS-2856-2736</b>	CP-56632-TB	CP-56655-TB	CP-56658-TB	CP-56678-TB

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# Hydrocarbon Filtration

## RVMF Series

### Microfilter Vessels

The RVMF Series Vertical Vessels are used with Racor Hydrocarbon FP, FS, and HIF coreless, high efficiency microfilter series cartridges. Racor hydrocarbon filter housings are designed for removing solid contaminants such as dirt, rust, pipe scale and other types of solids from fuels. Racor hydrocarbon vessels are designed for a single pass through the high efficiency cartridges providing clean product downstream.

#### Applications

- Jet A, Jet A1
- JP4, JP5, JP8
- Diesel Fuel
- Kerosene
- Gasoline
- Bio-Diesel

#### Optional Accessories

- Automatic air eliminator

- Differential pressure gauge
- Pressure relief valve
- Manual drain valve
- Sampling probes
- Liquid level sight glass

#### Features

- Carbon steel construction.
- 150 psi ASME Code, Section VIII construction, stamped and certified.
- Zinc-plated swing bolt closure.
- Buna-N o-ring cover seal.
- Hydraulic jack cover lift furnished on 14 inch and larger vessels.
- HIF center tubes when required.
- Inlet and outlet permanently marked.
- Interior: epoxy-coated MIL-C-4556 E.
- Exterior: prime coated.
- Knife-edge cartridge mounting seals.
- Rod mount cartridge hardware.



RVMF-400-2-44



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**RACOR**®



# Hydrocarbon Filtration

## RVMF Series



<b>Specifications</b>	<b>Flow Rate (Jet Fuel)</b>	<b>Flow Rate (Diesel)</b>
<b><i>RVMF-400-2-44</i></b>	400 GPM (1514 LPM)	200 GPM (757 LPM)
<b><i>RVMF-600-3-44</i></b>	600 GPM (2271 LPM)	300 GPM (1135 LPM)
<b><i>RVMF-800-4-44</i></b>	850 GPM (3217 LPM)	425 GPM (1608 LPM)
<b><i>RVMF-1200-6-44</i></b>	1200 GPM (4542 LPM)	600 GPM (2271 LPM)

# Hydrocarbon Filtration

## RMO Series

# Electrostatically Conductive

### 2" Monitor Elements - (*Out to In*)

#### Design Features

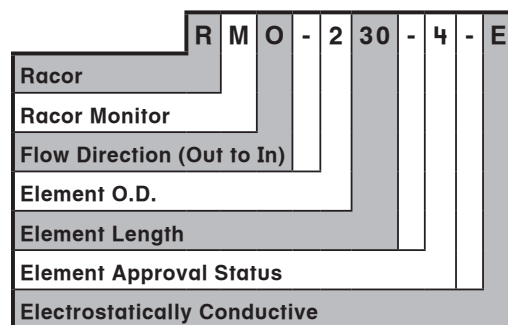
The Racor RMO-E monitors are tested and qualified in accordance with the EI (IP) 1583, 4th edition (Qualification Procedures for Aviation Fuel Filter Monitors with Absorbent Type Elements). Less than 15 ppm of free water in the effluent. Works even in the presence of surfactants and additives in the fuel. Fully interchangeable with other EI (IP) approved elements. Less than 0.26 mg/l average of solids in the effluent.

Filter monitor vessels fitted with monitor elements are used on aircraft refueling vehicles, hydrant dispensers and other mobile fueling equipment.

**This element is qualified to the latest addendum to EI (IP) 1583, 4<sup>th</sup> edition and is electrically conductive to dissipate electrostatic charges!**

**NOTE:** Not recommended for use in aviation fuels with FSII.

#### Element Nomenclature



#### Technical Details

- Tested and qualified to EI (IP) 1583, 4th ed.
- Nominal Filtration: 1 micron
- Changeout differential pressure: 25 psid
- Min. collapse pressure: 175 psid
- Recommended service time: 12 months<sup>1</sup>
- Recommended storage time:<sup>2</sup> 36 months<sup>1</sup>
- Operating temp.: 176°F (max)
- Electrical Resistance: <15 MOhm
- O-ring in NBR (Buna-N)
- Flow direction: Outside to Inside
- Outside diameter: 2"
- Labeling according to EI (IP) 1583, 4<sup>th</sup> Edition (manufacture date, ID-Number, etc.)

<sup>1</sup> Manufacturer recommendation

<sup>2</sup> If in original packaging, at 68°F, and a maximum of 50% humidity after date of shipment from manufacturers stock.

Part Number	Nominal Length (in.)	Flow Rate		Cross Reference	
		GPM	LPM	Velcon	Facet
RMO-205-4-E	5	5	19	CDF-205N	
RMO-210-4-E	10	10	38	CDF-210N	
RMO-215-4-E	15	15	57	CDF-215N	
RMO-220-4-E	20	20	76	CDF-220N	
RMO-225-4-E	25	25	95	CDF-225N	
RMO-230-4-E	30	30	114	CDF-230N	



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# Hydrocarbon Filtration

## RMO Series

### 2" Monitor Elements

*(Out to In)*

#### Design Features

The Racor RMO monitors are tested and qualified in accordance with the EI (IP) 1583, 4th edition (Qualification Procedures for Aviation Fuel Filter Monitors with Absorbent Type Elements). Less than 15 ppm of free water in the effluent. Works even in the presence of surfactants and additives in the fuel. Fully interchangeable with other EI (IP) approved elements. Less than 0.26 mg/l average of solids in the effluent.

Filter monitor vessels fitted with monitor elements are used on aircraft refueling vehicles, hydrant dispensers and other mobile fueling equipment.

#### Technical Details

- Tested and qualified to EI (IP) 1583, 4th ed.
- Nominal Filtration: 1 micron

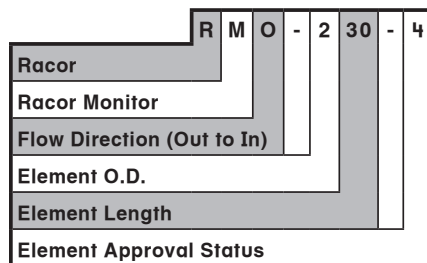
- Changeout differential pressure: 25 psid
- Minimum collapse pressure: 175 psid
- Recommended service time: 12 months<sup>1</sup>
- Recommended storage time:<sup>2</sup> 36 months<sup>1</sup>
- Operating temperature: 176°F (max)
- O-ring in NBR (Buna-N)
- Flow direction: Outside to Inside
- Outside diameter: 2"
- Labeling according to EI (IP) 1583, 4<sup>th</sup> Edition (manufacture date, ID-Number, etc.)

<sup>1</sup> Manufacturer recommendation

<sup>2</sup> If in original packaging, at 68°F, and a maximum of 50% humidity after date of shipment from manufacturers stock.

**NOTE:** Not recommended for use in aviation fuels with FSII.

#### Element Nomenclature



Part Number	Nominal Length (in.)	Flow Rate		Cross Reference	
		GPM	LPM	Velcon	Facet
RMO-205-4	5	5	19	CDF-205K	FG-205-4
RMO-210-4	10	10	38	CDF-210K	FG-210-4
RMO-215-4	15	15	57	CDF-215K	FG-215-4
RMO-220-4	20	20	76	CDF-220K	FG-220-4
RMO-225-4	25	25	95	CDF-225K	FG-225-4
RMO-230-4	30	30	114	CDF-230K	FG-230-4



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# Hydrocarbon Filtration

## RST & RSS Series

### Separator Elements

API/IP Qualified

#### Design Features

**For the separation of water from aviation fuels in accordance with API 1581 3<sup>rd</sup> edition and API/IP 5<sup>th</sup> edition.**

The second stage of the water removal process is completed using either a Teflon™ or synthetic separator element. The fuel flows from the coalescer element and enters the separator element from outside to inside. The separator element is manufactured from hydrophobic material and is designed to repel water droplets that are carried over from the coalescer element. These water droplets are retained on the separator element surface until they become large enough to fall under gravity into the water collection sump.

#### Technical Details

- Tested and qualified to API 1581, 3<sup>rd</sup> Edition, Group II, Class B & C and API/IP 1581 5<sup>th</sup> edition, Category C, Type S.
- Effective water barrier.
- Reusable (when inspection guidelines are followed).
- Flow direction: out to in
- Operating temperature: 176°F (max)
- Seals in NBR (Buna-N)
- Separator screen:
  - Hydrophobic Teflon™ coated stainless steel mesh.
  - Hydrophobic treated fine screen synthetic mesh

#### Element Nomenclature

R	ST	-	6	33	-	AA
Racor						
Separator Type: ST - Teflon SS - Synthetic						
Element O.D.						
Element Nominal Length: 6", 11", 12", 14", 22", 24", 29", 33", 36", 40", 43", 48", 56"						

Endcap Configuration		
Suffix	I.D. Top Endcap	I.D. Bottom Endcap
AA	3 1/2"	3 1/2"
AB	Closed, 1/2" I.D. Hole	3 1/2"
AC	3 1/2"	4.1"
AD	3 1/2"	4 1/2"
CB	Closed, 13mm I.D. Hole	4"
TB	Thread Base	4 1/2"



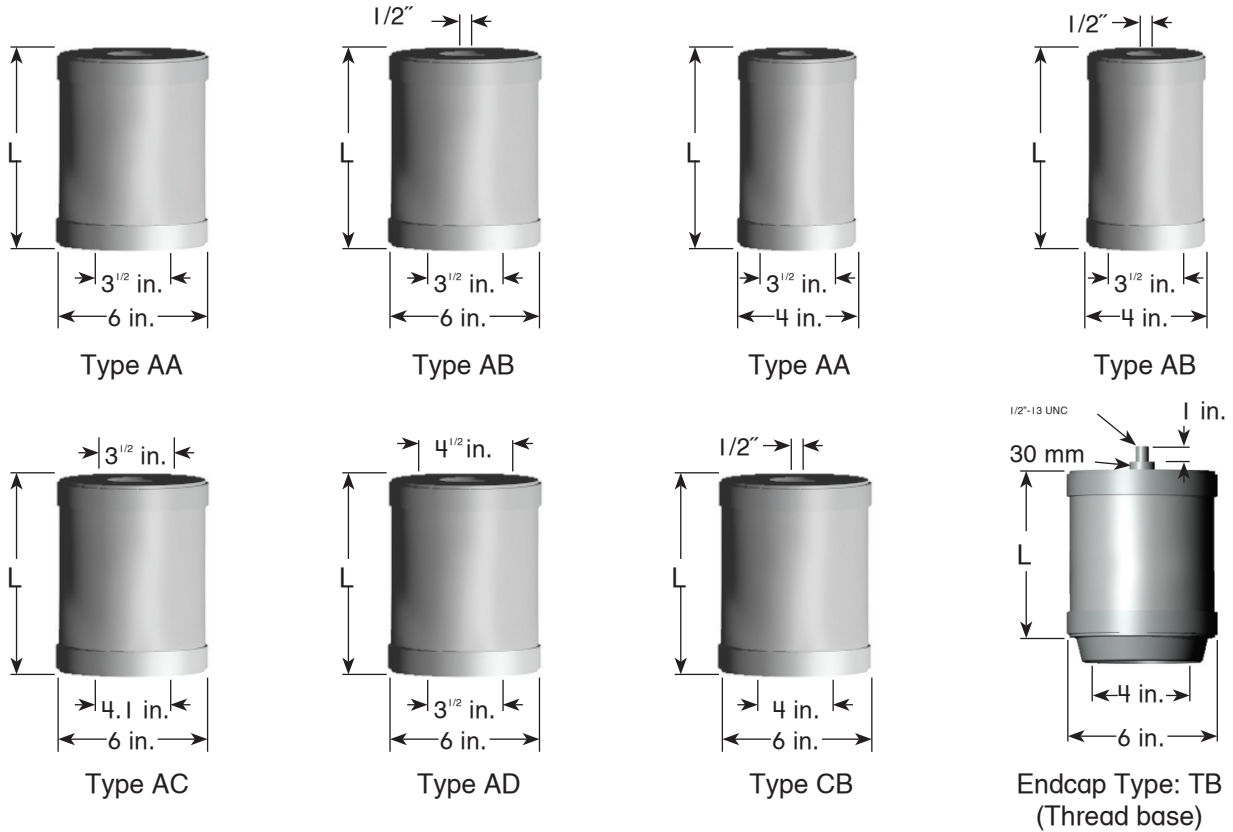
**Parker Hannifin Corporation**  
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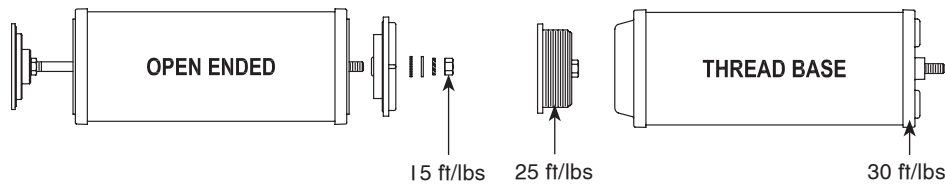
# Hydrocarbon Filtration

## RST & RSS Series

### Separator Elements



#### Torque Settings



#### Conversion Table

ft/lbs	inch/lbs	kg/m	Nm
5	60	0.70	7
15	180	2.07	20
20	240	2.80	27
25	300	3.50	34
30	360	4.15	40

# Hydrocarbon Filtration

## RMI Series

### *(In to Out)*

#### 6" Monitor Elements

##### Design Features

The Racor RMI monitors are tested and qualified in accordance with the EI (IP) 1583, 4th edition (Qualification Procedures for Aviation Fuel Filter Monitors with Absorbent Type Elements). Less than 15 ppm of free water in the effluent. Works even in the presence of surfactants and additives in the fuel. Fully interchangeable with other EI (IP) approved elements. Less than 0.26 mg/l average of solids in the effluent.

Filter monitor vessels fitted with monitor elements are used on aircraft refueling vehicles, hydrant dispensers and other mobile fueling equipment.

##### Technical Details

- Nominal filtration: 1 micron
- Changeout differential pressure: 25 psid
- Min. burst pressure: 175 psid

- Recommended service time: 12 months<sup>1</sup>
- Recommended storage time:<sup>2</sup> 24 months<sup>1</sup>
- Operating temperature: 176°F (max)
- Inner tube in epoxy painted steel
- Seals in NBR (Buna-N)
- Flow direction: Inside to Outside
- Outside diameter: 6"
- Thread base endcaps made out of Polyamide
- Labeling according to EI (IP) 1583, 4<sup>th</sup> ed. (date of manufacturing, ID-Number, etc.) on the endcap

<sup>1</sup> Manufacturer recommendation

<sup>2</sup> Original packaging, 68°F and max. 50% humidity after date of shipment out of manufacturers stock.

##### Element Nomenclature

	R	M	I	-	6	33	-	4	-	TB
Racor										
Element Type Monitor										
Flow Direction (In to Out)										
Element O.D.										
Element Nominal Length										
Element Approval Status										
Endcap Configuration										

**NOTE: Not recommended for use in aviation fuels with FSII.**



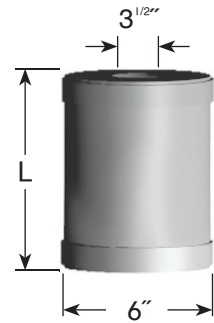
# Hydrocarbon Filtration

## RMI Series

	Racor Part Number	Nominal Length	Flow Rate in GPM	Cross Reference	
				Velcon	Facet
50/65MM	RMI-633-4-50MM	33	132		
	RMI-633-4-65MM	33	132		
Double Open Ende	RMI-611-4	11	44	ACI-61101L	FG-I-611
	RMI-614-4	14	56	ACI-61401L	FG-I-614
	RMI-622-4	22	88	ACI-62201L	FG-I-622
	RMI-628-4	28	114	ACI-62801L	FG-I-628
	RMI-633-4	33	132	ACI-63301L	FG-I-633
	RMI-638-4	38	152	ACI-63801L	FG-I-638
	RMI-643-4	43	173	ACI-64401L	FG-I-644
	RMI-656-4	56	224	ACI-65601L	FG-I-656
Thread Base	RMI-614-4-TB	14	56	ACI-61401LTB	FG-I-614SB
	RMI-622-4-TB	22	88	ACI-62201LTB	FG-I-622SB
	RMI-628-4-TB	28	114	ACI-62801LTB	FG-I-628SB
	RMI-633-4-TB	33	132	ACI-63301LTB	FG-I-633SB
	RMI-638-4-TB	38	152	ACI-63801LTB	FG-I-638SB
	RMI-643-4-TB	43	173	ACI-64401LTB	FG-I-644SB
	RMI-656-4-TB	56	224	ACI-65601LTB	FG-I-656SB

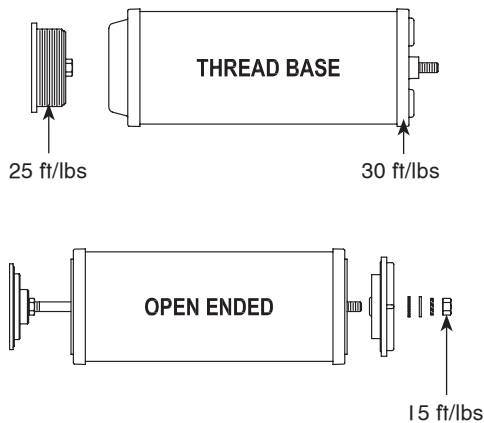


Endcap Type:  
50mm and 65mm

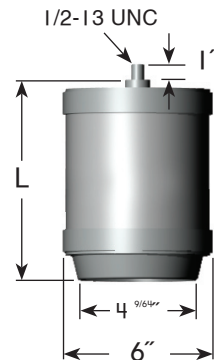


Standard Double  
Open Ended

### Torque Settings



Conversion Table			
ft/lbs	inch/lbs	kg/m	Nm
5	60	0.70	7
15	180	2.07	20
20	240	2.80	27
25	300	3.50	34
30	360	4.15	40



Endcap Type: TB  
(Thread Base)

**RACOR**

Technical Support:  
800.344.3286 ext. 7555  
racortech@parker.com

# Hydrocarbon Filtration

## RAC Series

# Coalescer Elements

## API Qualified

### Design Features

For the Separation of Water and Solids from Aviation Fuels in accordance with API 1581 3<sup>rd</sup> Edition.

API filter water separators are fitted with coalescer elements and separators which are required in jet fuel supply and delivery systems. These include fixed refueling installations, pipe lines and tank farms as well as aircraft refueling vehicles, hydrant dispensers and other mobile fueling equipment. Racor API coalescers and separators are also commonly used in other hydrocarbon fuel streams where high efficiency filtration and water separation are required.

### Technical Details

- Tested and qualified to API 1581, 3<sup>rd</sup> Edition, Group II, Class B & C
- Nominal Filtration: 1 micron

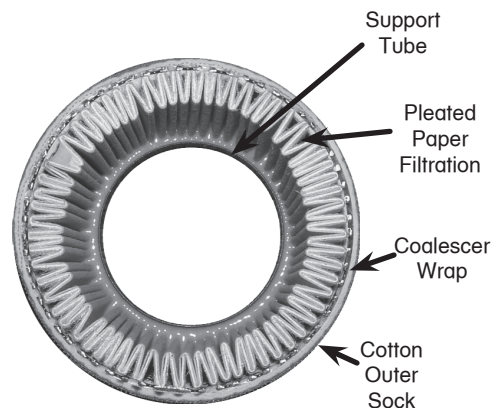
- Changeout Differential Pressure: 15 psid
- Minimum Burst Pressure: 75 psid
- Recommended Service Time: 24 months<sup>1</sup>
- Recommended Storage Time: 36 months<sup>1</sup>
- Operating Temperature: 176°F (max)
- Flow Direction: inside to outside
- Outside Diameter: 6 inch
- Metal parts in epoxy coated steel
- Seals in NBR (Buna-N)
- Thread based endcaps made out of Polyamide
- Labeling according to API (date of manufacture, ID Number, etc.) on the endcap

<sup>1</sup> Manufacturer recommendation

<sup>2</sup> Original packaging, 68°F and max. 50% humidity after date of shipment out of manufacturers stock.

### Element Nomenclature

	R	A	C	-	6	56	-	3	-	TB
Racor										
API Qualified										
Coalescer										
Element O.D.										
Element Nominal Length										
Element Approval Status										
Endcap Configuration										



# Hydrocarbon Filtration

## RAC Series

		Cross Reference		
	Racor Part Number	Length	Velcon	Facet
50 & 65MM	RAC-622-3-65MM	22		CA-22-W
	RAC-633-3-50MM	33		CA-33-A
	RAC-633-3-65MM	33		CA-33-W
	RAC-638-3-65MM	38		CA-38-W
Double Open Ended	RAC-611-3	11	I-61185 or I-61187	CA-11-3 or CAA-11-9
	RAC-614-3	14	I-61485 or I-61487	CA-14-3 or CAA-14-9
	RAC-622-3	22	I-62285 or I-62287	CA-22-3 or CAA-22-9
	RAC-628-3	28	I-62885 or I-62887	CA-28-3 or CAA-28-9
	RAC-633-3	33	I-63385 or I-63387	CA-33-3 or CAA-33-9
	RAC-638-3	38	I-63885 or I-63887	CA-38-3 or CAA-38-9
	RAC-643-3	43	I-64485 or I-64487	CA-43-3 or CAA-43-9
	RAC-656-3	56	I-65685 or I-65687	CA-56-3 or CAA-56-9
Thread Base	RAC-614-3-TB	14	I-61485-TB or I-61487-TB	CA-14-3-SB or CAA-14-9-TB
	RAC-622-3-TB	22	I-62285-TB or I-62287-TB	CA-22-3-SB or CAA-22-9-TB
	RAC-628-3-TB	28	I-62885-TB or I-62887-TB	CA-28-3-SB or CAA-28-9-TB
	RAC-633-3-TB	33	I-63385-TB or I-63387-TB	CA-33-3-SB or CAA-33-9-TB
	RAC-638-3-TB	38	I-63885-TB or I-63887-TB	CA-38-3-SB or CAA-38-9-TB
	RAC-643-3-TB	43	I-64485-TB or I-64487-TB	CA-43-3-SB or CAA-43-9-TB
	RAC-656-3-TB	56	I-65685-TB or I-65687-TB	CA-56-3-SB or CAA-56-9-TB

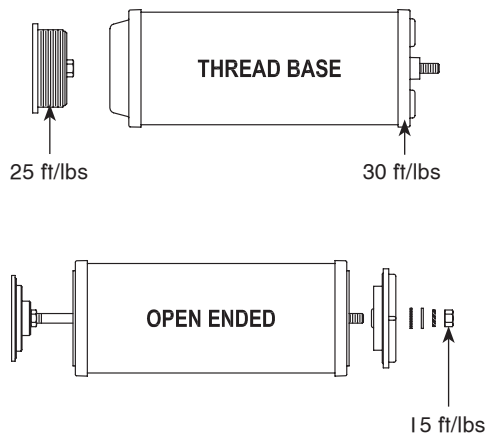


Endcap Type:  
50mm and 65mm

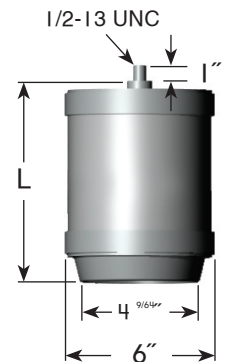


Standard Double  
Open Ended

### Torque Settings



Conversion Table			
ft/lbs	inch/lbs	kg/m	Nm
5	60	0.70	7
15	180	2.07	20
20	240	2.80	27
25	300	3.50	34
30	360	4.15	40



Endcap Type: TB  
(Thread Base)

**RACOR**

Technical Support:  
800.344.3286 ext. 7555  
racortech@parker.com

# Hydrocarbon Filtration

## RAC Series

### Coalescer Elements

#### API/IP Qualified

#### Design Features

For the Separation of Water and Solids from Aviation Fuels in accordance with API/IP 1581 5<sup>th</sup> Edition.

API/IP filter water separators are fitted with coalescer elements and separators which are required in jet fuel supply and delivery systems. These include fixed fueling installations, pipe lines and tank farms as well as aircraft refueling vehicles, hydrant dispensers and other mobile fueling equipment. Racor API/IP coalescers and separators are also commonly used in other hydrocarbon fuel streams where high efficiency filtration and water separation are required.

#### Technical Details

- Tested and qualified to API/IP 1581, 5th Edition, Category C, Type S specifications
- Nominal Filtration: 1 micron

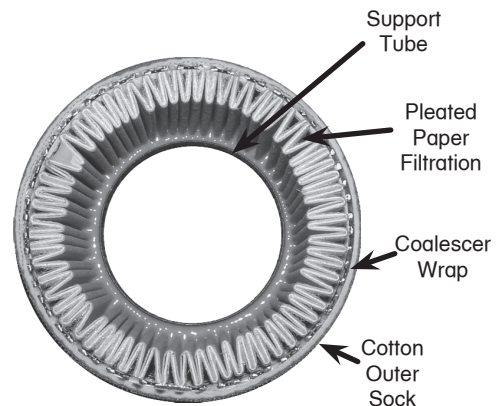
- Changeout Differential Pressure: 15 psid
- Minimum Burst Pressure: 75 psid
- Recommended Service Time: 24 months<sup>1</sup>
- Recommended Storage Time: 36 months<sup>1</sup>
- Operating Temperature: 176°F (max)
- Flow Direction: inside to outside
- Outside Diameter: 6 inch
- Metal parts in epoxy coated steel
- Seals in NBR (Buna-N)
- Thread based endcaps made out of Polyamide
- Labeling according to API/IP (date of manufacture, ID Number, etc.) on the endcap

<sup>1</sup> Manufacturer recommendation

<sup>2</sup> Original packaging, 68°F and max. 50% humidity after date of shipment out of manufacturers stock.

#### Element Nomenclature

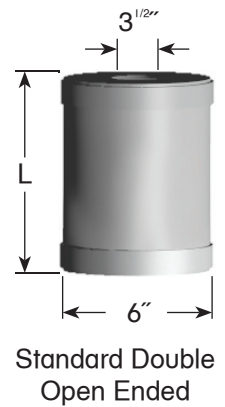
	R	A	C	-	6	56	-	5	-	TB
Racor										
API/IP Qualified										
Coalescer										
Element O.D.										
Element Nominal Length										
Element Approval Status										
Endcap Configuration										



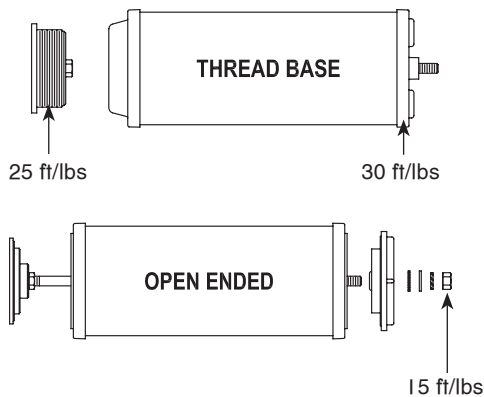
# Hydrocarbon Filtration

## RAC Series

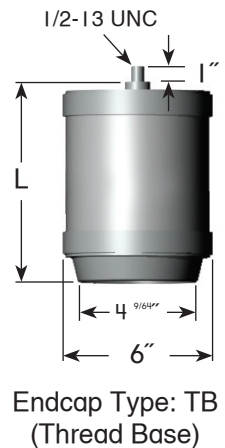
		Cross Reference		
	Racor Part Number	Nominal Length	Velcon	Facet
50 & 65MM	RAC-622-5-65MM	22		
	RAC-633-5-50MM	33		
	RAC-633-5-65MM	33		
	RAC-638-5-65MM	38		
Double Open Ended	RAC-611-5	11	I-611C5	CA-11-5
	RAC-614-5	14	I-614C5	CA-14-5
	RAC-622-5	22	I-622C5	CA-22-5
	RAC-628-5	28	I-628C5	CA-28-5
	RAC-633-5	33	I-633C5	CA-33-5
	RAC-638-5	38	I-638C5	CA-38-5
	RAC-643-5	43	I-644C5	CA-43-5
	RAC-656-5	56	I-656C5	CA-56-5
Thread Base	RAC-614-5-TB	14	I-614C5-TB	CA-14-5-SB
	RAC-622-5-TB	22	I-622C5-TB	CA-22-5-SB
	RAC-628-5-TB	28	I-628C5-TB	CA-28-5-SB
	RAC-633-5-TB	33	I-633C5-TB	CA-33-5-SB
	RAC-638-5-TB	38	I-638C5-TB	CA-38-5-SB
	RAC-643-5-TB	43	I-644C5-TB	CA-43-5-SB
	RAC-656-5-TB	56	I-656C5-TB	CA-56-5-SB



### Torque Settings



Conversion Table			
ft/lbs	inch/lbs	kg/m	Nm
5	60	0.70	7
15	180	2.07	20
20	240	2.80	27
25	300	3.50	34
30	360	4.15	40



**RACOR**

Technical Support:  
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racortech@parker.com

# Hydrocarbon Filtration

## Part Number Index

**0**

N/A

**1**

N/A

**2**

N/A

**3**

N/A

**4**

N/A

**5**

N/A

**6**

N/A

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72783..... 401  
72805 ..... 401  
72806..... 401  
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N/A

**9**

N/A

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ACI-63301L..... 438  
ACI-63301LTB ..... 438  
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ACI-63801LTB ..... 438  
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E-mail: [racor@parker.com](mailto:racor@parker.com)  
[www.parker.com/racor](http://www.parker.com/racor)



# Hydrocarbon Filtration

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N/A

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CAA-28-9 ..... 440  
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racortech@parker.com

# Hydrocarbon Filtration

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N/A

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# Hydrocarbon Filtration

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I-63387-TB .....	440
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N/A

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N/A

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N/A

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**RACOR**

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# Hydrocarbon Filtration

## Part Number Index

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N/A

### Q

N/A

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# Hydrocarbon Filtration

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N/A

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# Hydrocarbon Filtration

## Part Number Index

**X**  
N/A

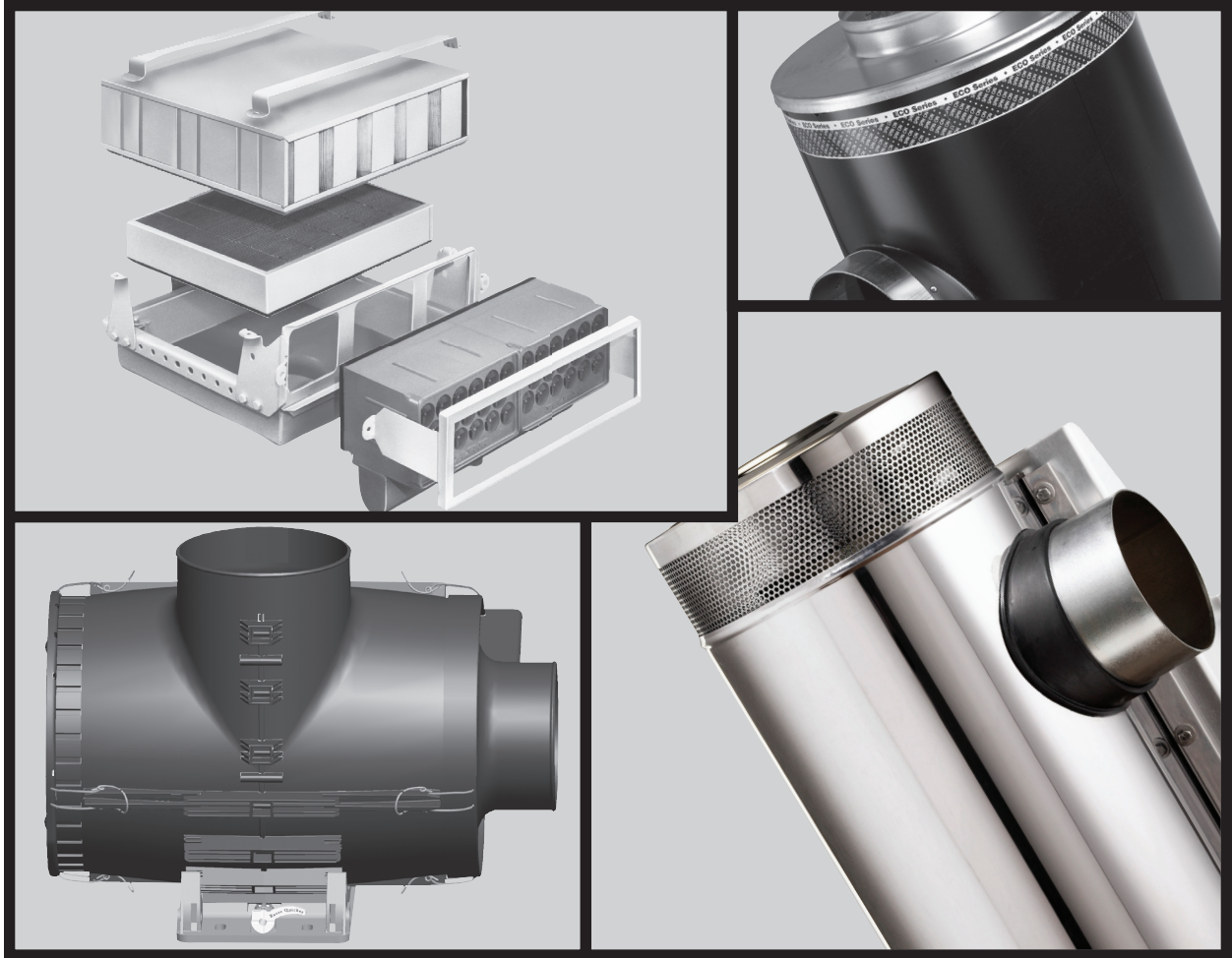
**Y**  
N/A

**Z**  
N/A

**4**



# Section 5



***Air  
Filtration***

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# Air Filtration

## AFAP Series

### *Off Highway Pre-cleaner*

- Air flow rates between 53 and 1411 cubic feet per minute (CFM).
- Outlet 2.5-7.0 in. (6.3-17.7 cm).
- Metal housing.
- Dynamic vane pre-cleaner.
- For agriculture & construction use.



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#### **Applications**

Racor Engine Air Precleaners are designed to be mounted on or connected to the air filter intake of a gasoline or diesel engine air cleaner. Their applications include all slow moving and industrial equipment such as agricultural machinery; earth moving, construction and mining equipment; pumping plants; generator sets; material handling equipment; snow removal equipment and street sweepers.

#### **Features and Benefits**

Removes up to 90% of impurities from intake air before the air enters the filter elements. Extends

engine air filter life. Reduces down time. Prolongs engine and turbocharger life. Saves on fuel costs. Easy to install. Three plastic outlet reduction sleeves are provided with each assembly.

A wide range of applications and flow rates. Steel housing, black powder coat. High air flow, low differential design. The precleaner is self-powered and self-cleaning, requiring no electrical or exhaust gas power to dispose of separated particles. It requires virtually no maintenance and should be inspected occasionally to insure that no foreign material has plugged intake or exhaust port areas.



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# Air Filtration

## AFAP Series

Specifications	AFAP083	AFAP183	AFAP184	AFAP400
<b>Flow Rate CFM</b>	53 to 124 CFM (1.5 to 3.5 m <sup>3</sup> /min)	530 to 776 CFM (15.0 to 22.0 m <sup>3</sup> /min)	530 to 776 CFM (15.0 to 22.0 m <sup>3</sup> /min)	776 to 1059 CFM (22.0 to 30.0 m <sup>3</sup> /min)
<b>Horsepower</b>	30 to 60 HP (22 to 45 KW)	220 to 300 HP (165 to 225 KW)	220 to 300 HP (165 to 225 KW)	300 to 400 HP (225 to 300 KW)
<b>Height</b>	7.7 in. (19.5 cm)	16.14 (410 mm)	15.94 (405 mm)	18.50 (470 mm)
<b>Diameter</b>	7.4 in. (18.8 cm)	13.86 (352 mm)	13.86 (352 mm)	16.57 (421 mm)
<b>Outlet Size</b>	3-2.75-2.5 in. (7.6-7.0-6.3 cm)	5.25-5-4.75-4.5 (133-127-121-114 mm)	6-5.5-5.25-5 (152-140-133-127 mm)	6-5.50-5.25-5 (152-140-133-127 mm)
<b>Weight</b>	3.4 lbs (1.55 kg)	12.70 lbs (5.75 kg)	12.80 lbs (5.80 kg)	16.50 lbs (7.50 kg)

Specifications	AFAP401	AFAP414	AFAP415	AFAP500
<b>Flow Rate CFM</b>	776 to 1059 CFM (22.0 to 30.0 m <sup>3</sup> /min)	124 to 247 CFM (3.5 to 7.0 m <sup>3</sup> /min)	124 to 247 CFM (3.5 to 7.0 m <sup>3</sup> /min)	530 to 776 CFM (15.0 to 22.0 m <sup>3</sup> /min)
<b>Horsepower</b>	300 to 400 HP (225 to 300 KW)	60 to 120 HP (45 to 90 KW)	60 to 120 HP (45 to 90 KW)	220 to 300 HP (165 to 225 KW)
<b>Height</b>	18.11 (460 mm)	12.8 in. (32.5 cm)	13.7 in. (34.8 cm)	16.14 (410 mm)
<b>Diameter</b>	16.57 (421 mm)	8.7 in. (22.1 cm)	8.7 in. (22.1 cm)	13.86 (352 mm)
<b>Outlet Size</b>	7-6.75-6.5-6.25 (178-171-165-159 mm)	3.25-3-2.75-2.5 (8.2-7.6-7.0-6.3 cm)	4-3.75-3.5-3.25 (10.2-9.5-8.9-8.2 cm)	5.25-5-4.75-4.5 (133-127-121-114 mm)
<b>Weight</b>	16.10 lbs (7.30 kg)	5.80 lbs (2.65 kg)	6.30 lbs (2.85 kg)	12.70 lbs (5.75 kg)

**Notes:** cfm = feet<sup>3</sup> per minute  
 cmm = meters<sup>3</sup> per minute

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# Air Filtration

## AFAP Series

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Specifications	AFAP501	AFAP818	AFAP819	AFAP820
<b>Flow Rate CFM</b>	530 to 776 CFM (15.0 to 22.0 m3/min)	247 to 388 CFM (7.0 to 11.0 m3/min)	247 to 388 CFM (7.0 to 11.0 m3/min)	247 to 388 CFM (7.0 to 11.0 m3/min)
<b>Horsepower</b>	220 to 300 HP (165 to 225 KW)	120 to 160 HP (90 to 120 KW)	120 to 160 HP (90 to 120 KW)	120 to 160 HP (90 to 120 KW)
<b>Height</b>	16.14 (410 mm)	13.5 in. (34.2 cm)	13.98 (35.5 cm)	13.86 (35.2 cm)
<b>Diameter</b>	13.86 (352 mm)	10.7 in. (27.1 cm)	10.7 in. (27.1 cm)	10.7 in. (27.1 cm)
<b>Outlet Size</b>	5.25-5-4.75-4.5 (133-127-121-114 mm)	3.25-3-2.75-2.5 (8.2-7.6-7.0-6.3 cm)	4-3.75-3.5-3.25 in. (10.2-9.5-8.9-8.2 cm)	4.5-4.33-4-3.75 in. (11.4-11.0-10.2-9.5 cm)
<b>Weight</b>	12.70 lbs (5.75 kg)	7.7 lbs (3.50 kg)	7.8 lbs (3.55 kg)	8.2 lbs (3.70 kg)

Specifications	AFAP919	AFAP920
<b>Flow Rate CFM</b>	388 to 530 CFM (11.0 to 15.0 m3/min)	388 to 530 CFM (11.0 to 15.0 m3/min)
<b>Horsepower</b>	160 to 220 HP (120 to 165 KW)	160 to 220 HP (120 to 165 KW)
<b>Height</b>	14.25 (36.2 cm)	14.60 (37.1 cm)
<b>Diameter</b>	12.4 in. (31.6 cm)	12.4 in. (31.6 cm)
<b>Outlet Size</b>	4.5-4.33-4-3.75 in. (11.4-11.0-10.2-9.5 cm)	5.25-5-4.75-4.5 in. (13.3-12.7-12.1-11.4 cm)
<b>Weight</b>	9.7 lbs (4.40 kg)	10.1 lbs (4.60 kg)

**Notes:** cfm = feet<sup>3</sup> per minute  
cmm = meters<sup>3</sup> per minute

# Air Filtration

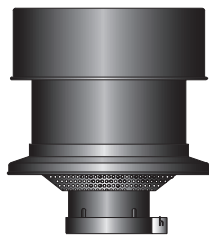
## AFAP Series

### *Part Description*

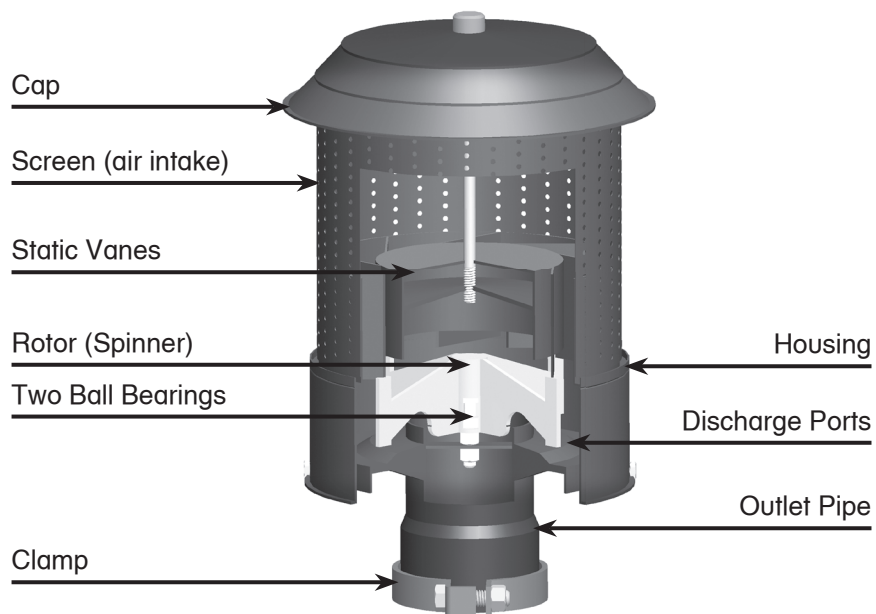
*Two Styles to Chose From*



**AFAP400**



**AFAP083**



# Air Filtration

## AFCS Series

### *Heavy-Duty Combination*

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#### **Dynamic Precleaner / Filters For Off-Highway / Industrial Applications and On-Highway Under Hood Applications.**

Racor AFCS Standard Air Filters are designed to be connected to the air intake of the gasoline or diesel engine.

#### **Applications**

Racor Combination Dynamic Precleaner / Air Filters are specifically designed to be connected to the air intake of gasoline and diesel engines. The advantages of the systems include their compact size and ease of installation. The three-stage air filtration systems are designed with only one connection to the engine.

Their applications include agricultural machinery; earth moving, construction and mining equipment; stationary engines; generator sets; trucks; pick-ups; off-road vehicles; material handling equipment; snow removal equipment and street sweepers.



#### **Typical Applications:**

- Agricultural Machinery
- Earth-Moving Equipment.
- Stationary Engines; Generator Sets.
- Trucks, Buses and Recreational Vehicles.
- Material Handling Equipment.
- Snow Removal Equipment and
- Street Sweepers



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# Air Filtration

## AFCS Series

<i>Specifications</i>	<b>AFCS02 I</b>	<b>AFCS03 I</b>	<b>AFCS05 I</b>	<b>AFCS07 I</b>
<i>Maximum Flow Rate</i>	88 cfm (2.5 cmm)	124 cfm (3.5 cmm)	124 cfm (3.5 cmm)	159 cfm (4.5 cmm)
<i>Maximum Horsepower</i>	50	70	70	70
<i>Replacement Elements: (Primary)/(Safety)</i>	E028	AR6322 / N/A	AR6322 / N/A	AR6060 / AS6121
<i>Length</i>	13.2 in (33.5 cm)	14.6 in. (37.0 cm)	15.0 in. (38.1 cm)	19.3 in. (49.0 cm)
<i>Diameter</i>	6.2 in. (15.7 cm)	6.7 in. (17.0 cm)	7.4 in. (18.8 cm)	7.4 in. (18.8 cm)
<i>Weight</i>	5.7 lb (2.6 kg)	7.3 lb (3.3 kg)	8.6 lb (3.9 kg)	10.4 lb (4.7 kg)
<i>Inlet Diameter</i>	1.6 in. (4.1 cm)	2.3 in. (5.8 cm)	2.5 in. (6.4 cm)	2.5 in. (6.4 cm)
<i>Restriction Indicator</i>	No	No	No	Yes

<i>Specifications</i>	<b>AFCS08 I</b>	<b>AFCS12 I</b>	<b>AFCS18 I</b>	<b>AFCS22 I</b>
<i>Maximum Flow Rate</i>	212 cfm (6.0 cmm)	282 cfm (8.0 cmm)	423 cfm (12.0 cmm)	529 cfm (15.0 cmm)
<i>Maximum Horsepower</i>	80	110	150	180
<i>Replacement Elements: (Primary)/(Safety)</i>	AR6122 / AS6123	AR6144 / AS6180	AR6067 / AS6159	AR234401/AS6182
<i>Length</i>	20.5 in (52.1 cm)	22.2 in. (56.4 cm)	24.3 in. (61.7 cm)	25.5 in. (64.8 cm)
<i>Diameter</i>	8.0 in. (20.3 cm)	9.1 in. (23.1 cm)	10.0 in. (25.4 cm)	11.3 in. (28.7 cm)
<i>Weight</i>	12.7 lb (5.7 kg)	16.5 lb (7.5 kg)	20.0 lb (9.1 kg)	24.2 lb (10.9 kg)
<i>Inlet Diameter</i>	2.8 in. (7.1 cm)	3.0 in. (7.6 cm)	4.0 in. (10.1 cm)	4.0 in. (10.1 cm)
<i>Restriction Indicator</i>	Yes	Yes	Yes	Yes

# Air Filtration

## AFCS Series

5

<b>Specifications</b>	<b>AFCS251</b>	<b>AFCS261</b>	<b>AFCS311</b>
<b>Maximum Flow Rate</b>	706 cfm (20.0 cmm)	741 cfm (21.0 cmm)	988 cfm (28.0 cmm)
<b>Maximum Horsepower</b>	240	260	320
<b>Replacement Elements: (Primary)/(Safety)</b>	AR6277 / AS6316	AR246501 / AS6220	AR6154 / AS6221
<b>Length</b>	28.1 in. (71.4 cm)	30.7 in. (77.9 cm)	30.5 in. (77.5 cm)
<b>Diameter</b>	13.3 in. (33.8 cm)	13.3 in. (33.8 cm)	14.5 in. (36.8 cm)
<b>Weight</b>	30.0 lb (13.6 kg)	31.9 lb (14.5 kg)	36.8 lb (16.7 kg)
<b>Inlet Diameter</b>	5.3 in. (13.5 cm)	5.1 in. (12.9 cm)	6.0 in. (15.2 cm)
<b>Restriction Indicator</b>	Yes	Yes	Yes

<b>Specifications</b>	<b>AFCS351</b>	<b>AFCS431</b>
<b>Maximum Flow Rate</b>	1235 cfm (35.0 cmm)	1517 cfm (43.0 cmm)
<b>Maximum Horsepower</b>	380	450
<b>Replacement Elements: (Primary)/(Safety)</b>	AR2201 / AS2207	AR6324 / AS6323
<b>Length</b>	30.5 in. (77.5 cm)	37.3 in. (94.7 cm)
<b>Diameter</b>	16.1 in. (41.0 cm)	18.4 in. (46.7 cm)
<b>Weight</b>	49.3 lb (22.4 kg)	65.2 lb (29.6 kg)
<b>Inlet Diameter</b>	6.0 in. (15.2 cm)	6.0 in. (15.2 cm)
<b>Restriction Indicator</b>	Yes	Yes

—Notes—

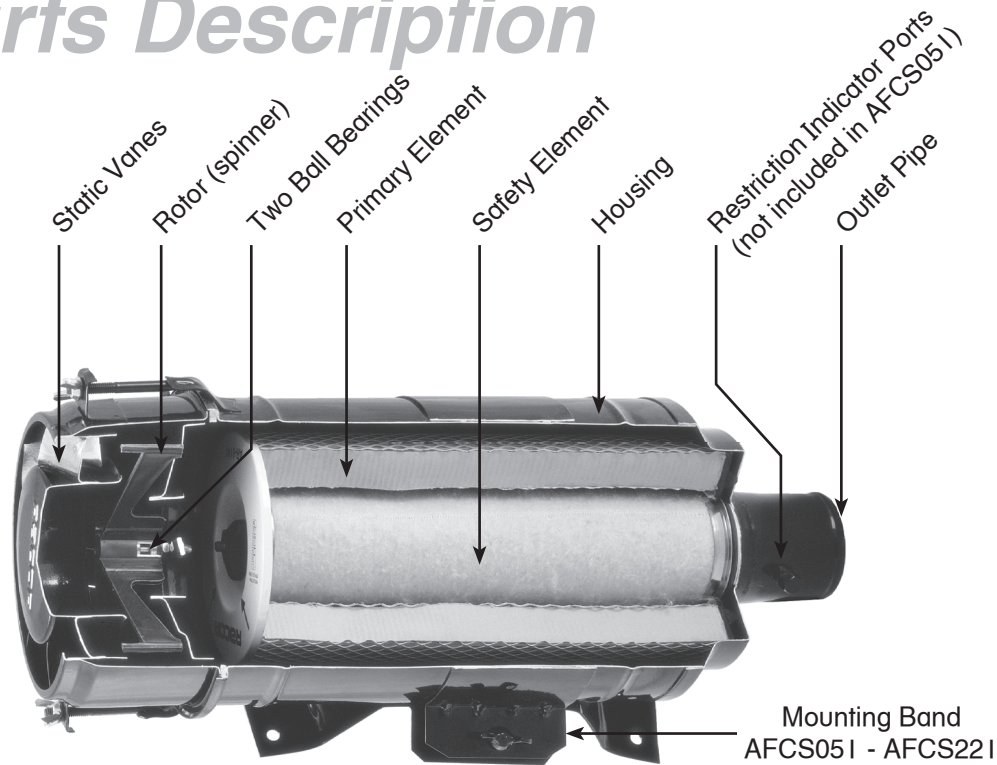
**cfm:**  
feet<sup>3</sup> per minute

**cmm:**  
meters<sup>3</sup> per  
minute

# Air Filtration

## AFCS Series

### Parts Description



*Pressure  
Drop  
at Maximum  
CFM (in. H<sub>2</sub>O)*

Assembly	With Safety Filter	Without Safety Filter
AFCS021	-	0.70
AFCS051	-	7.61
AFCS071	15.54	9.70
AFCS081	16.24	11.74
AFCS121	15.96	11.59
AFCS181	20.76	19.05
AFCS221	17.44	14.35
AFCS251	17.53	14.48
AFCS261	33.54	26.61
AFCS311	19.15	16.65
AFCS351	16.80	15.54
AFCS431	18.61	17.98

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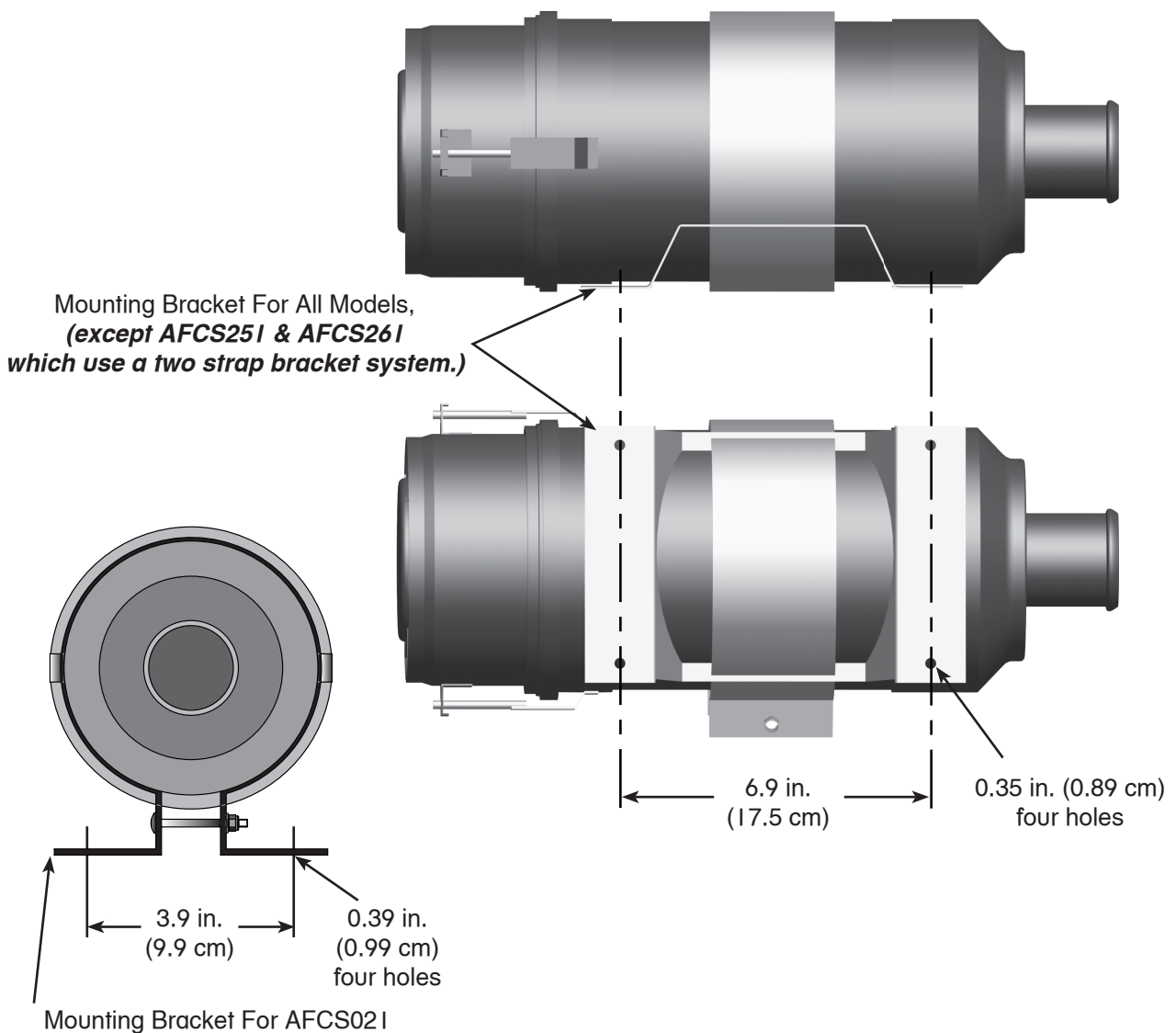


# Air Filtration

## AFCS Series

### Mounting Information

5





# Air Filtration

## AFCS Series

# AFCS Primary Elements

### Style I

- Metal top and bottom end caps
- Interior and exterior screens
- Heavy-duty pleated paper
- Square-cut rubber gasket



<b>Specifications</b>	<b>AR2201</b>	<b>AR6154</b>
<b>Length</b>	18.0 in (45.7 cm)	18.1 in. (46.0 cm)
<b>Diameter</b>	13.8 in. (35.1 cm)	12.1 in. (30.7 cm)
<b>Weight</b>	11.6 lb (5.3 kg)	lb ( kg)
<b>Housing Part Number</b>	AFCS351	AFCS311

<b>Specifications</b>	<b>AR6277</b>	<b>AR6324</b>	<b>AR246501</b>
<b>Length</b>	15.9 in (40.4 cm)	23.8 in. (60.5 cm)	19.2 in. (48.8 cm)
<b>Diameter</b>	10.4 in. (26.4 cm)	14.6 in. (37.1 cm)	9.5 in. (24.1 cm)
<b>Weight</b>	5.2 lb (2.4 kg)	11.0 lb (5.0 kg)	5.5 lb (2.5 kg)
<b>Housing Part Number</b>	AFCS251	AFCS431	AFCS261

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# Air Filtration

## AFCS Series

### AFCS Primary Elements

#### Style 2

- Metal top and bottom end caps
- Interior and exterior screens
- Heavy-duty pleated paper
- Beveled rubber gasket



5

Specifications	AR6060	AR6067
Length	11.2 in. (28.4 cm)	14.8 in. (37.6 cm)
Diameter	4.9 in. (12.4 cm)	7.8 in. (19.8 cm)
Weight	2.2 lb (1.0 kg)	2.8 lb (1.3 kg)
Housing Part Number	AFCS071	AFCS181

Specifications	AR6122	AR6144	AR6322	AR234401
Length	12.3 in. (31.2 cm)	13.3 in. (33.8 cm)	8.3 in. (21.8 cm)	14.5 in. (36.8 cm)
Diameter	5.9 in. (15.0 cm)	6.5 in. (16.5 cm)	4.9 in. (12.4 cm)	8.9 in. (22.6 cm)
Weight	2.6 lb (1.2 kg)	3.5 lb (1.6 kg)	1.5 lb (0.7 kg)	4.4 lb (2.0 kg)
Housing Part Number	AFCS081	AFCS121	AFCS051	AFCS221

# Air Filtration

## AFCS Series

# AFCS Safety Elements

### Style I

- Metal top and bottom end caps
- Interior perforated tube
- Covered with a soft filtering media
- Square-cut & beveled rubber gaskets



<b>Specifications</b>	<b>AS2207</b>	<b>AS6121</b>
<b>Length</b>	22.0 in (55.8 cm)	18.1 in. (46.0 cm)
<b>Diameter</b>	10.2 in. (25.9 cm)	12.1 in. (30.7 cm)
<b>Weight</b>	3.3 lb (1.5 kg)	0.8 lb (0.4 kg)
<b>Housing Part Number</b>	AFCS351	AFCS071

<b>Specifications</b>	<b>AS6123</b>	<b>AS6159</b>	<b>AS6180</b>
<b>Length</b>	12.9 in (32.8 cm)	14.8 in. (37.6 cm)	13.6 in. (34.5 cm)
<b>Diameter</b>	2.7 in. (6.8 cm)	3.9 in. (9.9 cm)	3.3 in. (8.4 cm)
<b>Weight</b>	1.3 lb (0.6 kg)	1.5 lb (0.7 kg)	1.3 lb (0.6 kg)
<b>Housing Part Number</b>	AFCS081	AFCS181	AFCS121

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# Air Filtration

## AFCS Series

### AFCS Safety Elements

#### Style 2

- Metal top and bottom end caps
- Interior and exterior screens
- Heavy-duty pleated paper
- Square-cut & beveled rubber gaskets



5

Specifications	AS6182	AS6220
Length	15.0 in (38.1 cm)	18.8 in. (47.8 cm)
Diameter	4.4 in. (11.2 cm)	5.0 in. (12.7 cm)
Weight	1.7 lb (0.8 kg)	2.2 lb (1.0 kg)
Housing Part Number	AFCS221	AFCS261

Specifications	AS6221	AS6316	AS6320	AS6323
Length	17.6 in. (44.7 cm)	14.9 in (37.8 cm)	15.2 in. (36.6 cm)	22.0 in. (55.9 cm)
Diameter	7.2 in. (18.3 cm)	5.5 in. (13.9 cm)	5.6 in. (14.2 cm)	10.2 in. (25.9 cm)
Weight	2.4 lb (1.1 kg)	1.7 lb (0.8 kg)	1.5 lb (0.7 kg)	3.3 lb (1.5 kg)
Housing Part Number	AFCS311	AFCS251	-	AFCS431



# Air Filtration

## AFHP Series

### *On Highway Pre-cleaner*

- Air flow rates between 35 and 1411 cubic feet per minute (CFM).
- Outlet 2.0-8.0 in. (5.0-20.3 cm).
- Metal housing.
- Dynamic vane pre-cleaner.
- For agriculture & construction use.



5

#### Applications

Racor Engine Air Precleaners are designed to be mounted on or connected to the air filter intake of a gasoline or diesel engine air cleaner. Their applications include all fast moving mobile equipment such as trucks, buses and recreational vehicles.

AFHP Series Precleaners consist of a steel housing with static vanes and a rust-proof rotor mounted on dual ball bearings. The perforated metal pre-screen at the inlet is standard. The outlet tube can be adapted with the supplied reducing sleeves for a variety of outlet choices. Racor Engine Air Precleaners are powder coated for a durable, corrosion-resistant finish.

#### How They Work

Racor Engine Air Precleaners are usually installed in place of the rain cap, dust bowl, or aspirated pre-cleaner (exhaust system). In some applications, they can be mounted directly to the air cleaner. Air enters the system through a pre-screen that removes large debris. It then flows through static vanes causing the air to spin. As the air spins, centrifugal force separates dust, dirt, insects, rain and snow from the air stream.

The swirling air drives a high velocity rotor that acts as a blower evacuating contaminants through special discharge ports in the side of the unit. Only purified air flows to the air filter elements. Complete specifications are provided on the reverse of this page.



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# Air Filtration

## AFHP Series

<i>Specifications</i>	<b>AFHP21</b>	<b>AFHP31</b>	<b>AFHP41</b>
<b>Airflow Range CFM</b>	35 to 53 CFM (1.0 to 1.5 m <sup>3</sup> /min)	53 to 124 CFM (1.5 to 3.5 m <sup>3</sup> /min)	124 to 247 CFM (3.5 to 7.0 m <sup>3</sup> /min)
<b>Horsepower Range</b>	30 HP (22 KW)	30 to 60 HP (22 to 45 KW)	60 to 120 HP (45 to 90 KW)
<b>Height</b>	4.0 in. (10.2 cm)	6.1 in. (15.5 cm)	7.0 in. (17.8 cm)
<b>Diameter</b>	5.2 in. (13.2 cm)	7.0 in. (17.8 cm)	8.5 in. (21.6 cm)
<b>Outlet Size</b>	2.0 in. (5.0 cm)	2.5-3.0 in. (6.3-7.6 cm)	2.5-3.2 in. (6.3-8.1 cm)
<b>Weight</b>	1.3 lbs (0.6 kg)	2.4 lbs (1.1 kg)	3.4 lbs (1.5 kg)

<i>Specifications</i>	<b>AFHP42</b>	<b>AFHP81</b>	<b>AFHP82</b>
<b>Airflow Range CFM</b>	124 to 247 CFM (3.5 to 7.0 m <sup>3</sup> /min)	247 to 388 CFM (7.0 to 11.0 m <sup>3</sup> /min)	247 to 388 CFM (7.0 to 11.0 m <sup>3</sup> /min)
<b>Horsepower Range</b>	60 to 120 HP (45 to 90 KW)	120 to 160 HP (90 to 120 KW)	120 to 160 HP (90 to 120 KW)
<b>Height</b>	7.0 in. (17.8 cm)	7.8 in. (19.8 cm)	7.8 in. (19.8 cm)
<b>Diameter</b>	8.5 in. (21.6 cm)	9.6 in. (24.4 cm)	9.6 in. (24.4 cm)
<b>Outlet Size</b>	4-3.8-3.5-3.3 (10.2-9.5-8.9-8.2 cm)	3.0-3-2.8-2.5 in. (8.2-7.6-7.0-6.3 cm)	4-3.8-3.5-3.3 in. (10.2-9.5-8.9-8.2 cm)
<b>Weight</b>	3.5 lbs (1.6 kg)	4.2 lbs (1.9 kg)	4.3 lbs (2.0 kg)

<i>Specifications</i>	<b>AFHP83</b>	<b>AFHP91</b>	<b>AFHP92</b>
<b>Airflow Range CFM</b>	247 to 388 CFM (7.0 to 11.0 m <sup>3</sup> /min)	388 to 530 CFM (11.0 to 15.0 m <sup>3</sup> /min)	388 to 530 CFM (11.0 to 15.0 m <sup>3</sup> /min)
<b>Horsepower Range</b>	120 to 160 HP (90 to 120 KW)	160 to 220 HP (120 to 165 KW)	220 to 300 HP (165 to 225 KW)
<b>Height</b>	7.8 in. (19.8 cm)	8.2 in. (20.8 cm)	8.2 in. (20.8 cm)
<b>Diameter</b>	9.6 in. (24.4 cm)	11.0 in. (27.9 cm)	11.0 in. (27.9 cm)
<b>Outlet Size</b>	4-3.8-3.5-3.3 in. (10.2-9.5-8.9-8.2 cm)	4.5-4.3-4-3.8 in. (11.4-10.9-10.2-9.7 cm)	5.3-5-4.8-4.5 in. (13.5-12.7-12.2-11.4 cm)
<b>Weight</b>	4.4 lbs (2.0 kg)	5.2 lbs (2.4 kg)	5.5 lbs (2.5 kg)

# Air Filtration

## AFHP Series

<i>Specifications</i>	<b>AFHP111</b>	<b>AFHP112</b>	<b>AFHP211</b>
<b>Airflow Range CFM</b>	530 to 776 CFM (15.0 to 22.0 m <sup>3</sup> /min)	530 to 776 CFM (15.0 to 22.0 m <sup>3</sup> /min)	776 to 1059 CFM (21.0 to 30.0 m <sup>3</sup> /min)
<b>Horsepower Range</b>	220 to 300 HP (165 to 225 KW)	220 to 300 HP (165 to 225 KW)	300 to 400 HP (225 to 300 KW)
<b>Height</b>	7.9 in. (20.1 cm)	7.9 in. (20.1 cm)	9.1 in. (23.1 cm)
<b>Diameter</b>	12.2 in. (31.0 cm)	12.2 in. (31.0 cm)	14.2 in. (36.1 cm)
<b>Outlet Size</b>	5.3-5-4.8-4.5 in. (13.5-12.7-12.2-11.4 cm)	6-5.5-5.3-5 in. (15.2-14.0-12.7 cm)	6-5.5-5.3-5 in. (15.2-14.0-12.7 cm)
<b>Weight</b>	6.5 lbs (2.9 kg)	6.6 lbs (3.0 kg)	8.4 lbs (3.8 kg)

<i>Specifications</i>	<b>AFHP212</b>	<b>AFHP411</b>	<b>AFHP412</b>
<b>Airflow Range CFM</b>	776 to 1059 CFM (21.0 to 30.0 m <sup>3</sup> /min)	1059 to 1411 CFM (30.0 to 40.0 m <sup>3</sup> /min)	1059 to 1411 CFM (30.0 to 40.0 m <sup>3</sup> /min)
<b>Horsepower Range</b>	300 to 400 HP (225 to 300 KW)	400 to 550 HP (300 to 410 KW)	400 to 550 HP (300 to 410 KW)
<b>Height</b>	9.1 in. (23.1 cm)	10.4 in. (26.4 cm)	10.4 in. (26.4 cm)
<b>Diameter</b>	14.2 in. (36.1 cm)	17.1 in. (43.4 cm)	17.1 in. (43.4 cm)
<b>Outlet Size</b>	7-6.8-6.5-6.2 in. (17.8-17.3-16.5-15.7 cm)	7-6.8-6.5-6.2 in. (17.8-17.3-16.5-15.7 cm)	8.0 in. (20.3 cm)
<b>Weight</b>	8.8 lbs (4.0 kg)	12.0 lbs (5.4 kg)	12.4 (5.6 kg)

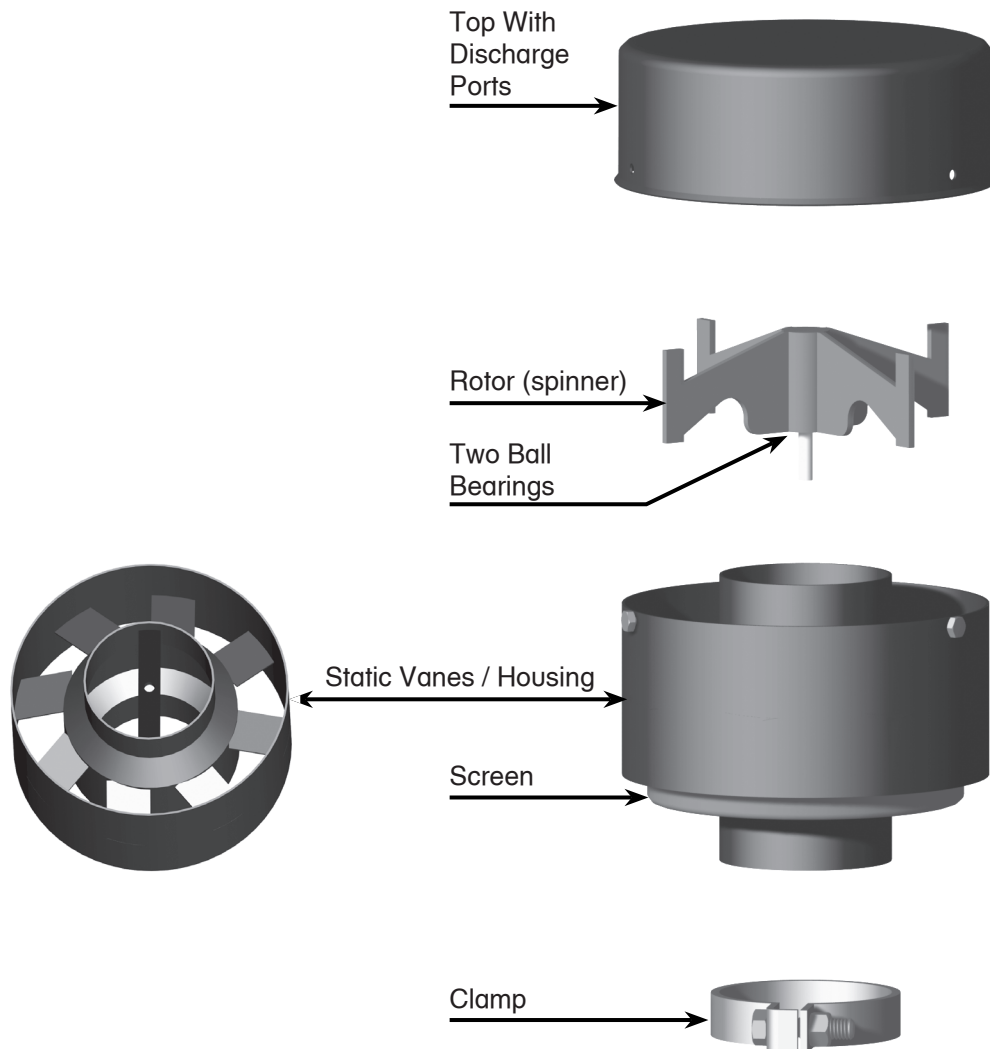
Notes: cfm = feet<sup>3</sup> per minute  
 cmm = meters<sup>3</sup> per minute



# Air Filtration

## AFHP Series

### *Part Description*



# Air Filtration

## AFM Series

### *Marine Air Filters*

- Air flow rates between 800 and 1600 cubic feet per minute (CFM).
- Washable reusable Element.
- Restriction indicator port.
- CCV port.

#### How They Work

The Racor marine air filter/silencer removes contaminants introduced into the air from both outside and inside the vessel. Sand, salt, carpet fibers and other contaminants are trapped in the oil-impregnated filter media. Turbo noise is reduced by the unique design of the air filter/silencer housing. An integral hose connection on the housing routes the clean blow-by from the CCV back into the engine.

#### Application

In order to determine the correct marine air filter application, you will need to know the marine air filter rating (AFR). You will need to provide the hose connection to turbo. Choose the correct marine air filter application per the following guideline: Verify that the marine air filter dimensions will fit into your engine room.



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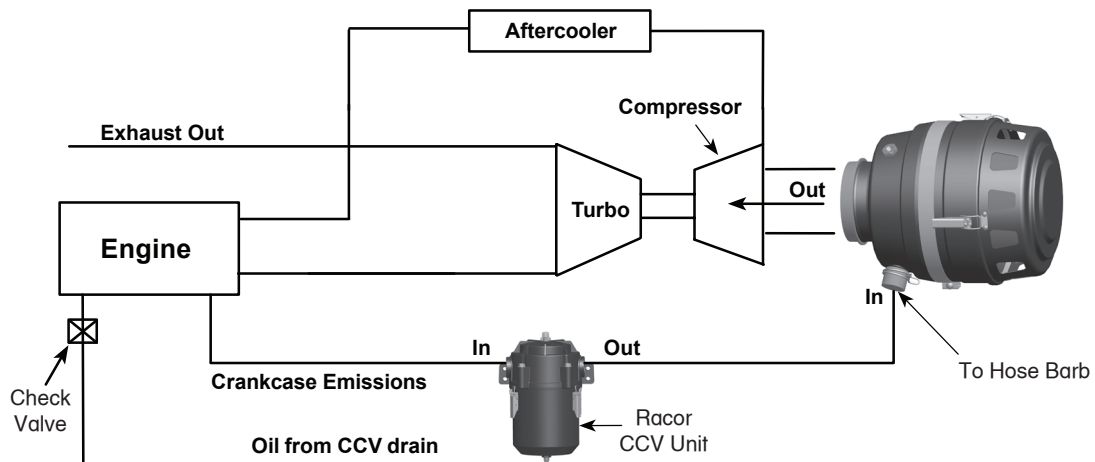
# Air Filtration

## AFM Series



Specifications	AF M408512	AF M501012	AF M601212
Flow Rate CFM	800 cfm (22.7 cmm)	1200 cfm (34.0 cmm)	1600 cfm (45.3 cmm)
Replacement Element	AF M408512	AF M501012	AF M601212
Height	12.5 in. (31.8 cm)	12.5 in. (31.8 cm)	12.5 in. (31.8 cm)
Depth	9.6 in. (24.4 cm)	11.5 in. (29.2 cm)	13.5 in. (34.3 cm)
Outlet Size	4 in. (10.1 cm)	5 in. (12.7 cm)	6 in. (15.2 cm)
Hose Barb (inlet)	1.0 in. (2.5 cm)	1.3 in. (3.3 cm)	1.3 in. (3.3 cm)
Weight	4.1 lbs (1.9 kg)	5.0 lbs (2.3 kg)	8.0 lbs (3.6 kg)

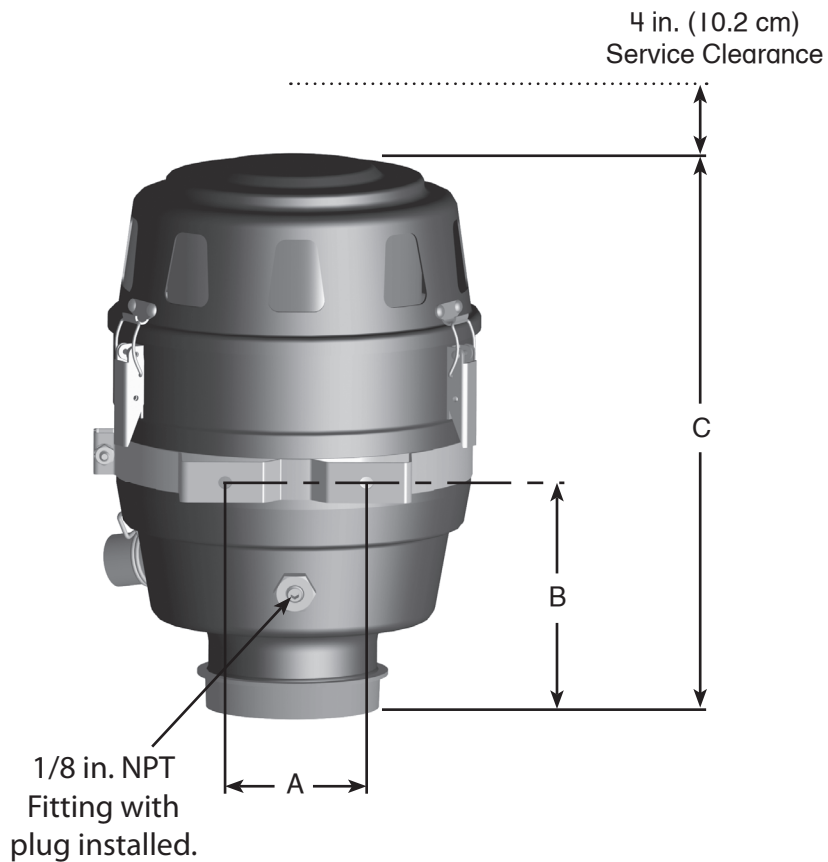
## Installation Diagram



# Air Filtration

## AFM Series

### Mounting Information



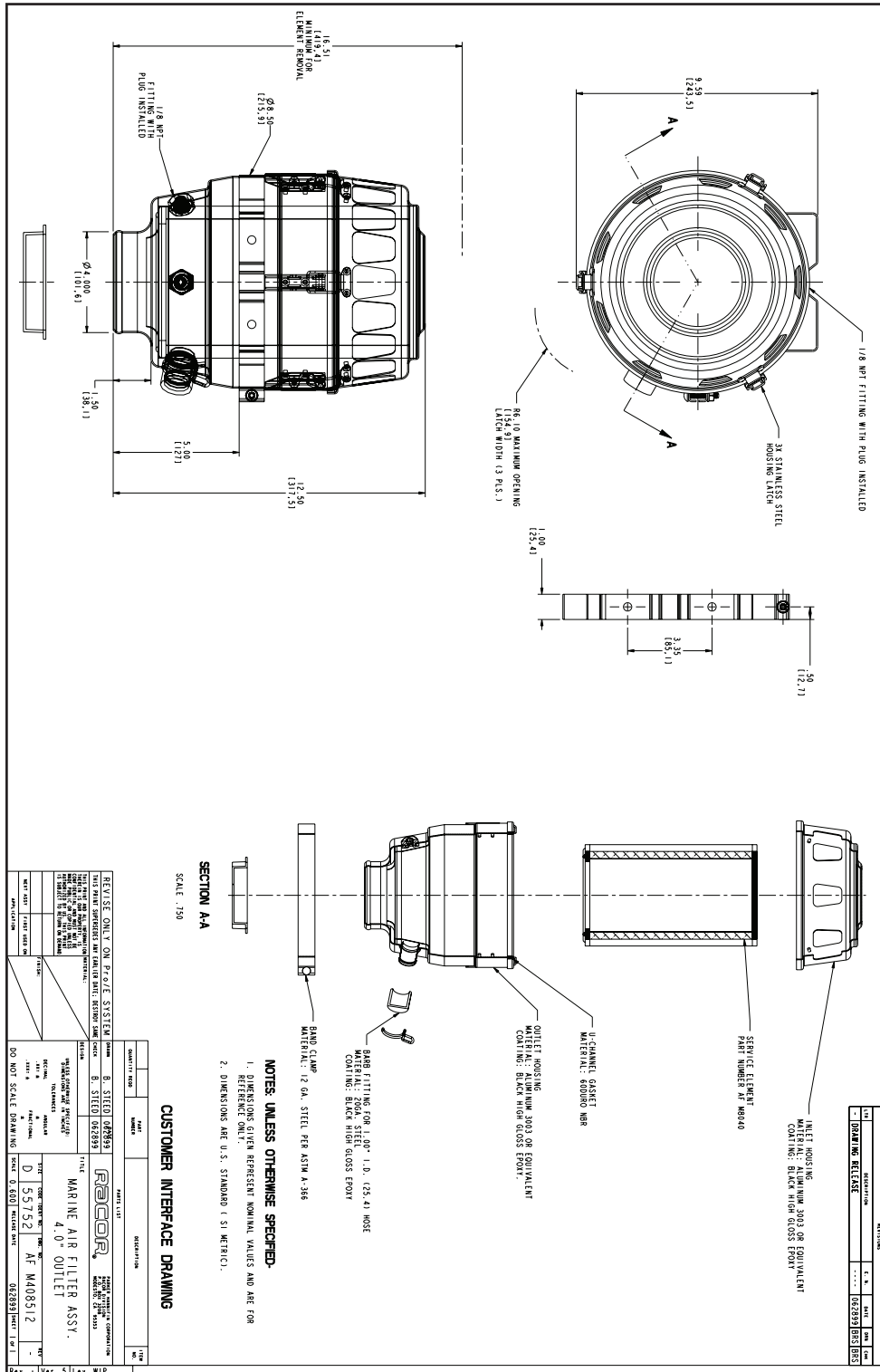
A
<b>AF M408512:</b> 3.4 in. (8.6 cm)
<b>AF M501012:</b> 3.4 in. (8.6 cm)
<b>AF M601212:</b> 6.0 in. (15.2 cm)

B
<b>AF M408512:</b> 5.0 in. (12.7 cm)
<b>AF M501012:</b> 5.0 in. (12.7 cm)
<b>AF M601212:</b> 4.9 in. (12.4 cm)

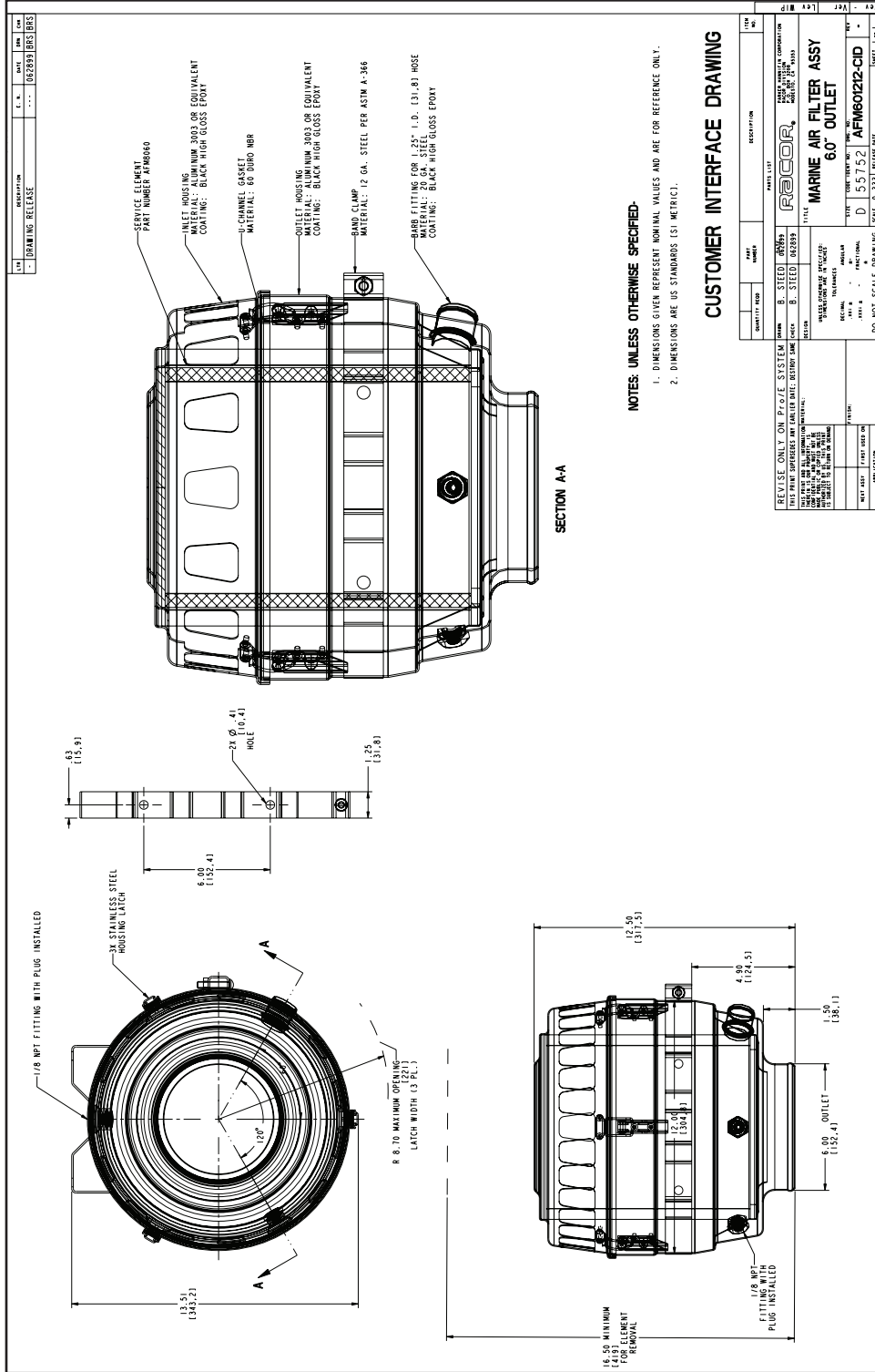
C
<b>AF M408512:</b> 12.5 in. (31.8 cm)
<b>AF M501012:</b> 12.5 in. (31.8 cm)
<b>AF M601212:</b> 12.5 in. (31.8 cm)

# Air Filtration

# Customer Interface Drawing



# Customer Interface Drawing





# Air Filtration

## AFSF Series

### Heavy-Duty Standard Air Filters for On-Highway, Off-Highway and Stationary

#### Applications

Racor AFSF Standard Air Filters are designed to be connected to the air intake of the gasoline or diesel engine.

#### How They Work

Air flows through static vanes (plastic or metal) which causes the air to spin. Centrifugal force separates the heaviest impurities (dust, dirt, insects and other debris) from the air stream. These contaminants are discharged automatically through an integral evacuator valve. Only purified air flows to the air filter elements (primary and safety stages of filtration).

#### Typical Applications:

- Agricultural Machinery
- Earth-Moving Equipment.
- Stationary Engines; Generator Sets.
- Trucks, Buses and Recreational Vehicles.
- Material Handling Equipment.
- Snow Removal Equipment and Street Sweepers



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**RACOR**®



# Air Filtration

## AFSF Series

<b>Specifications</b>	<b>AFSF4</b>	<b>AFSF6</b>	<b>AFSF8</b>	<b>AFSF12</b>
<b>Maximum Flow Rate</b>	159 cfm (4.5 cmm)	212 cfm (6.0 cmm)	282 cfm (8.0 cmm)	423 cfm (12 cmm)
<b>Maximum Horsepower</b>	80	90	120	160
<b>Replacement Elements: (Primary)/(Safety)</b>	AR6060/AS6121	AR6122/AS6123	AR6144/AS6180	AR6067/AS6159
<b>Length</b>	15.2 in (38.6 cm)	16.7 in. (42.4 cm)	17.5 in. (44.5 cm)	18.8 in. (47.8 cm)
<b>Diameter</b>	6.6 in. (16.8 cm)	7.8 in. (19.8 cm)	8.5 in. (21.6 cm)	10.0 in. (25.4 cm)
<b>Weight</b>	8.4 lb (3.8 kg)	10.8 lb (4.9 kg)	11.7 lb (5.3 kg)	16.5 lb (7.5 kg)
<b>Inlet Diameter</b>	2.5 in. (6.4 cm)	3.0 in. (7.6 cm)	3.0 in. (7.6 cm)	4.0 in. (10.2 cm)
<b>Outlet Diameter</b>	2.5 in. (6.4 cm)	2.75 in. (7.0 cm)	3.0 in. (7.6 cm)	4.0 in. (10.2 cm)

<b>Specifications</b>	<b>AFSF15</b>	<b>AFSF18</b>	<b>AFSF20</b>	<b>AFSF21</b>
<b>Maximum Flow Rate</b>	529 cfm (15.0 cmm)	635 cfm (18.0 cmm)	706 cfm (20.0 cmm)	741 cfm (21.0 cmm)
<b>Maximum Horsepower</b>	180	210	250	280
<b>Replacement Elements: (Primary)/(Safety)</b>	AR234401/AS6182	AR6321/AS6320	AR6277/AS6316	AR246501/AS6220
<b>Length</b>	19.3 in (49.0 cm)	22.0 in. (55.9 cm)	21.3 in. (54.1 cm)	24.1 in. (61.2 cm)
<b>Diameter</b>	10.5 in. (26.7 cm)	11.4 in. (29.0 cm)	12.6 in. (32.0 cm)	12.6 in. (32.0 cm)
<b>Weight</b>	21.9 lb (9.9 kg)	27.6 lb (12.5 kg)	31.1 lb (14.1 kg)	33.9 lb (15.4 kg)
<b>Inlet Diameter</b>	4.0 in. (10.2 cm)	4.5 in. (11.4 cm)	5.3 in. (13.5 cm)	5.3 in. (13.5 cm)
<b>Outlet Diameter</b>	4.0 in. (10.2 cm)	4.0 in. (10.2 cm)	5.3 in. (13.5 cm)	5.1 in. (13.0 cm)

<b>Specifications</b>	<b>AFSF310</b>	<b>AFSF350</b>	<b>AFSF430</b>
<b>Maximum Flow Rate</b>	988 cfm (28.0 cmm)	1235 cfm (35.0 cmm)	1517 cfm (43.0 cmm)
<b>Maximum Horsepower</b>	320	380	450
<b>Replacement Elements: (Primary)/(Safety)</b>	AR6154/AS6221	AR2201/AS2207	AR6324/AS6323
<b>Length</b>	23.5 in (59.7 cm)	24.8 in. (63.0 cm)	28.9 in. (73.4 cm)
<b>Diameter</b>	15.4 in. (39.1 cm)	17.4 in. (44.2 cm)	18.0 in. (45.7 cm)
<b>Weight</b>	40.0 lb (18.1 kg)	46.3 lb (21.0 kg)	78.7 lb (35.7 kg)
<b>Inlet Diameter</b>	6.0 in. (15.2 cm)	6.0 in. (15.2 cm)	6.0 in. (15.2 cm)
<b>Outlet Diameter</b>	6.0 in. (15.2 cm)	6.0 in. (15.2 cm)	6.0 in. (15.2 cm)

—Notes—

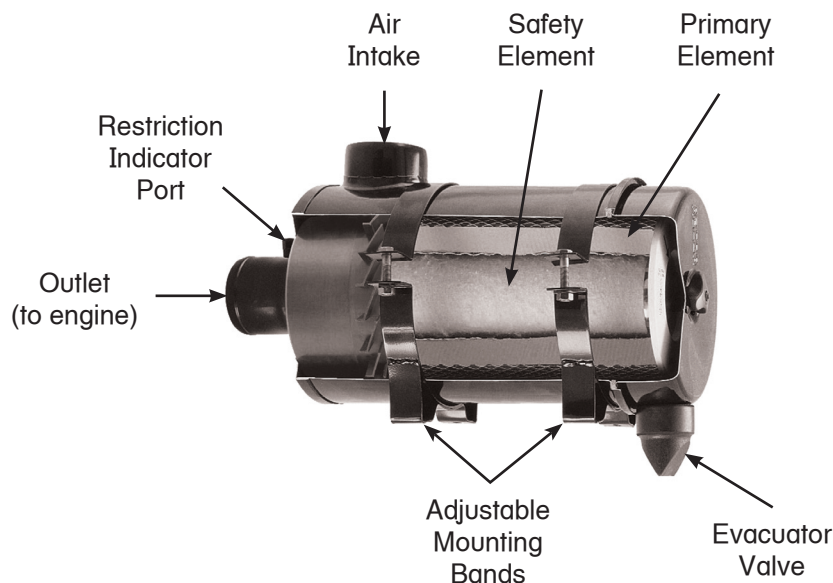
cfm:  
feet<sup>3</sup> per minute

cmm:  
meters<sup>3</sup> per minute

# Air Filtration

## AFSF Series

### Parts Description



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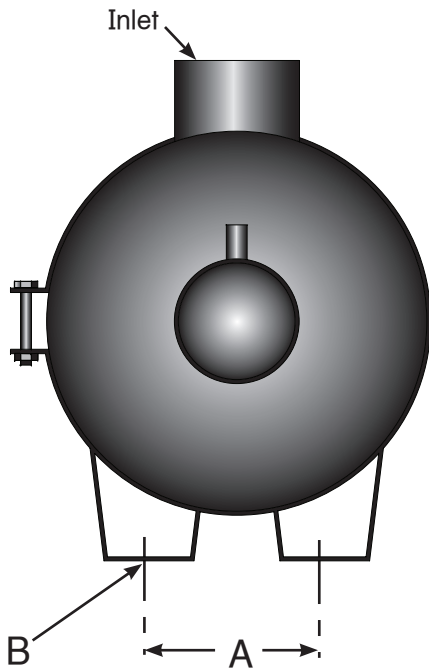
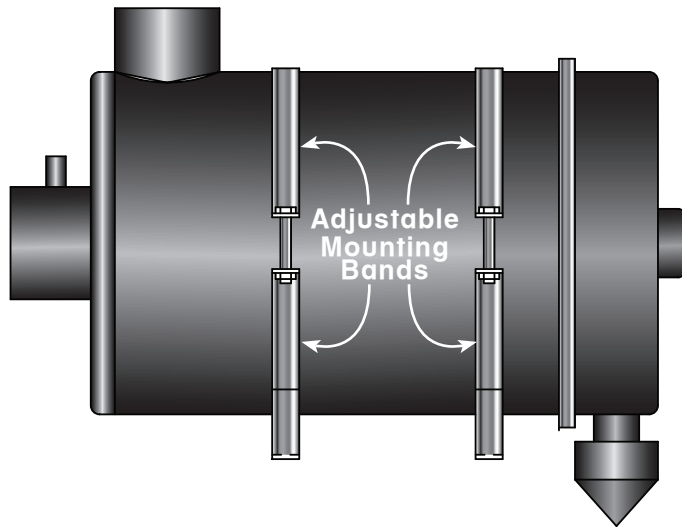
*Pressure Drop at Maximum CFM (in. H<sub>2</sub>O)*

Assembly	With Safety Filter	Without Safety Filter
<b>AFSF4</b>	18.07	12.16
<b>AFSF6</b>	14.80	10.68
<b>AFSF8</b>	17.79	14.04
<b>AFSF12</b>	15.19	12.47
<b>AFSF15</b>	17.37	15.26
<b>AFSF18</b>	15.77	14.98
<b>AFSF20</b>	11.67	9.11
<b>AFSF21</b>	11.43	8.53
<b>AFSF310</b>	13.40	9.67
<b>AFSF350</b>	13.83	12.95
<b>AFSF430</b>	18.52	17.84

# Air Filtration

## AFSF Series

### Mounting Information



AFSF Unit	A	B
AFSF 4	4.7 in. (11.9 cm)	.31 in. (.79 cm)
AFSF 6	4.7 in. (11.9 cm)	.31 in. (.79 cm)
AFSF 8	4.7 in. (11.9 cm)	.31 in. (.79 cm)
AFSF 12	4.7 in. (11.9 cm)	.31 in. (.79 cm)
AFSF 15	5.5 in. (14.0 cm)	.39 in. (.99 cm)
AFSF 18	5.5 in. (14.0 cm)	.39 in. (.99 cm)
AFSF 20	5.5 in. (14.0 cm)	.39 in. (.99 cm)
AFSF 21	5.5 in. (14.0 cm)	.39 in. (.99 cm)
AFSF 310	7.9 in. (20.1 cm)	.39 in. (.99 cm)
AFSF 350	7.9 in. (20.1 cm)	.39 in. (.99 cm)
AFSF 430	7.9 in. (20.1 cm)	.39 in. (.99 cm)

**RACOR**

Technical Support:  
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racortech@parker.com

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# Air Filtration

## AFSF Series

# AFSF Primary Elements

### Style I

- Metal top and bottom end caps
- Interior and exterior screens
- Heavy-duty pleated paper
- Square-cut rubber gasket



<i>Specifications</i>	<b>AR2201</b>	<b>AR6154</b>
<i>Length</i>	18.0 in (45.7 cm)	18.1 in. (46.0 cm)
<i>Diameter</i>	13.8 in. (35.1 cm)	12.1 in. (30.7 cm)
<i>Weight</i>	11.6 lb (5.3 kg)	N/A
<i>Housing Part Number</i>	AFSF350	AFSF310

<i>Specifications</i>	<b>AR6277</b>	<b>AR6324</b>	<b>AR246501</b>
<i>Length</i>	15.9 in (40.4 cm)	23.8 in. (60.5 cm)	19.2 in. (48.8 cm)
<i>Diameter</i>	10.4 in. (26.4 cm)	14.6 in. (37.1 cm)	9.5 in. (24.1 cm)
<i>Weight</i>	N/A	N/A	N/A
<i>Housing Part Number</i>	AFSF20	AFSF430	AFSF21

# Air Filtration

## AFSF Series

### AFSF Primary Elements

#### Style 2

- Metal top and bottom end caps
- Interior and exterior screens
- Heavy-duty pleated paper
- Beveled rubber gasket



5

Specifications	AR6060	AR6067
Length	11.2 in. (28.4 cm)	14.8 in. (37.6 cm)
Diameter	4.9 in. (12.4 cm)	7.8 in. (19.8 cm)
Weight	N/A	N/A
Housing Part Number	AFSF4	AFSF12

Specifications	AR6122	AR6144	AR6321	AR234401
Length	12.3 in. (31.2 cm)	13.3 in. (33.8 cm)	16.9 in. (42.9 cm)	14.5 in. (36.8 cm)
Diameter	5.9 in. (15.0 cm)	6.5 in. (16.5 cm)	9.3 in. (23.6 cm)	8.9 in. (22.6 cm)
Weight	N/A	N/A	N/A	N/A
Housing Part Number	AFSF6	AFSF8	AFSF18	AFSF15

# Air Filtration

## AFSF Series

# AFSF Safety Elements

### Style I

- Metal top and bottom end caps
- Interior perforated tube
- Covered with a soft filtering media
- Square-cut & beveled rubber gaskets



<i>Specifications</i>	<b>AS2207</b>	<b>AS6121</b>
<i>Length</i>	22.0 in (55.8 cm)	18.1 in. (46.0 cm)
<i>Diameter</i>	10.2 in. (25.9 cm)	12.1 in. (30.7 cm)
<i>Weight</i>	3.3 lb (1.5 kg)	0.8 lb (0.4 kg)
<i>Housing Part Number</i>	AFSF350	AFSF4

<i>Specifications</i>	<b>AS6123</b>	<b>AS6159</b>	<b>AS6180</b>
<i>Length</i>	12.9 in (32.8 cm)	14.8 in. (37.6 cm)	13.6 in. (34.5 cm)
<i>Diameter</i>	2.7 in. (6.8 cm)	3.9 in. (9.9 cm)	3.3 in. (8.4 cm)
<i>Weight</i>	1.3 lb (0.6 kg)	1.5 lb (0.7 kg)	1.3 lb (0.6 kg)
<i>Housing Part Number</i>	AFSF6	AFSF12	AFSF8

# Air Filtration

## AFSF Series

### *AFSF Safety Elements*

#### Style 2

- Metal top and bottom end caps
- Interior and exterior screens
- Heavy-duty pleated paper
- Square-cut & beveled rubber gaskets



5

<i>Specifications</i>	<b>AS6182</b>	<b>AS6220</b>
<i>Length</i>	15.0 in. (38.1 cm)	18.8 in. (47.8 cm)
<i>Diameter</i>	4.4 in. (11.2 cm)	5.0 in. (12.7 cm)
<i>Weight</i>	1.7 lb (0.8 kg)	2.2 lb (1.0 kg)
<i>Housing Part Number</i>	AFSF15	AFSF21

<i>Specifications</i>	<b>AS6221</b>	<b>AS6316</b>	<b>AS6320</b>	<b>AS6323</b>
<i>Length</i>	17.6 in. (44.7 cm)	14.9 in. (37.8 cm)	15.2 in. (36.6 cm)	22.0 in. (55.9 cm)
<i>Diameter</i>	7.2 in. (18.3 cm)	5.5 in. (13.9 cm)	5.6 in. (14.2 cm)	10.2 in. (25.9 cm)
<i>Weight</i>	2.4 lb (1.1 kg)	1.7 lb (0.8 kg)	1.5 lb (0.7 kg)	3.3 lb (1.5 kg)
<i>Housing Part Number</i>	AFSF310	AFSF20	AFSF18	AFSF430





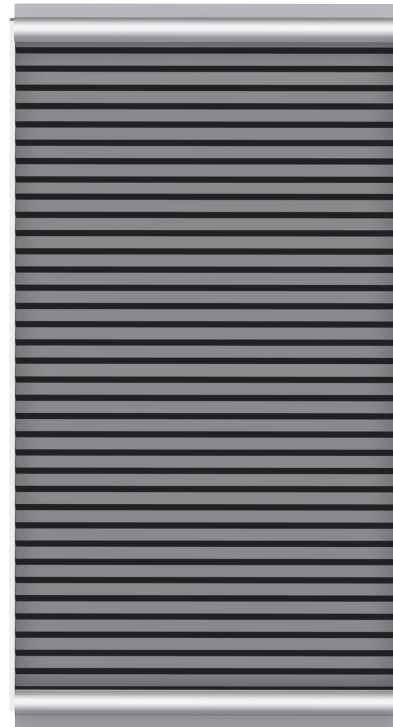
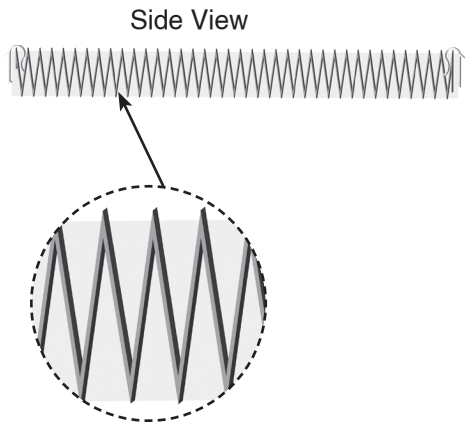
# Air Filtration

## Cabin Air Filters

### Cabin Air Filters

Presently, 40% of all vehicles in use have a cabin air filter installed. These filters are used to remove dust, pollen, mold spores, engine exhaust and other gases from the cabin air. The filter should be changed out every 15,000 miles.

By servicing the filter, the heater and evaporator will be protected from corrosion and the air in the cabin compartment will be more healthy for the occupants.



Specifications	AFC1000	AFC1001	AFC2000	AFC2001
<b>Application</b>	General Motors	General Motors	Ford Motor Co.	Ford Motor Co.
<b>Media</b>	Paper/Carbon	Paper	Paper/Carbon	Paper
<b>Height</b>	5.3 in. (13.5 cm)	5.4 in. (13.7 cm)	10.4 in. (26.4 cm)	10.4 in. (26.4 cm)
<b>Width</b>	9.1 in. (23.1 cm)	9.4 in. (23.9 cm)	9.0 in. (22.9 cm)	9.0 in. (22.9 cm)
<b>Depth</b>	0.9 in. (2.3 cm)	0.9 in. (2.3 cm)	1.1 in. (2.8 cm)	1.1 in. (2.8 cm)



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# Air Filtration

## ECO® Series

### *FRESH AIR*

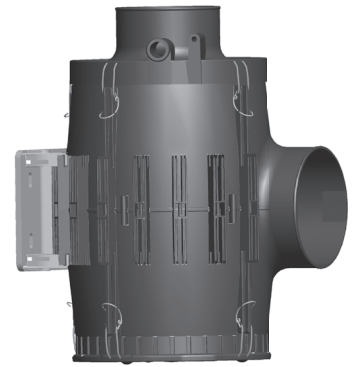
That's what Racor air filtration is all about. Because when engines breathe easy they perform better, and with more power, more torque and with improved fuel economy.

The Racor lineup includes heavy duty air cleaners and pre-cleaners, marine filter/silencers, cabin air filters and replacement filters. All are super high efficiency, with engineered, application-specific media that improves performance as it extends service life.

Whatever your application, there's a Racor Air Filtration System that will help you and your engine breathe easy and save you money.



ECO II

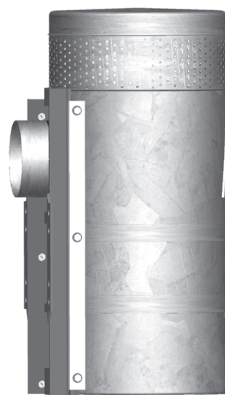


ECO III

5



ECO-BC



ECO-CM



ECO-LL



ECO-SE

And Others ...



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# Air Filtration

## ECO II Series

### *ECO II Series*

#### ECO II Series Features

- The first cone-type filter element that is both tapered and offset.
- Beaded outlet.
- More usable media area than conventional filters.
- Paper pleats are permanently locked in place for reliable performance.
- Water-resistant media provides three to five times longer filter life than conventional designs.
- Media is SAE rated to provide average efficiency of 99.9% (SAE J726C), with no seals or gaskets to replace.

Requires no additional room to service element.

The ECO II is designed to lower the cost of replacing elements, this is due to its two piece design used for an under the hood truck application. The Inlet Adapter is a separate piece, this allows it to stay on the truck. (Inlet Adapter is sold separately).

The ECO II used without the Inlet Adapter has become the standard in the Generator Set market.

Air Flow is outside-in with water drain holes around the perimeter.



# Air Filtration

## ECO II Series

Specifications	071338001	071338001	071338002	071338002
<b>Air Flow Rate</b>	750-1100 cfm (21.2-31.1 cmm)	820-1220 cfm (23.2-34.5 cmm)	920-1380 cfm (26.0-39.1 cmm)	1200-1700 cfm (34.0-48.1 cmm)
<b>Height</b>	24.0 in. (61.0 cm)	24.0 in. (61.0 cm)	24.0 in. (61.0 cm)	24.0 in. (61.0 cm)
<b>Diameter</b>	10 in. (25.4 cm)	10 in. (25.4 cm)	11.0 in. (27.9 cm)	11.0 in. (27.9 cm)
<b>Outlet</b>	6.0 in. (15.2 cm)	6.0 in. (15.2 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)
<b>Inlet Adapter</b>	No	6.0 in. (15.2 cm)	No	7.0 in. (17.8 cm)
<b>Weight</b>	12.5 lbs (5.7 kg)	15.5 lbs (7.1 kg)	16.2 lbs (7.4 kg)	19.2 lbs (8.8 kg)

Specifications	071338003	071338003	071338004	071338004
<b>Air Flow Rate</b>	1120-1600 cfm (31.7-45.3 cmm)	1370-1950 cfm (38.8-55.2 cmm)	1140-1600 cfm (32.3-45.3 cmm)	1350-1800 cfm (38.2-51.0 cmm)
<b>Height</b>	24.0 in. (61.0 cm)	24.0 in. (61.0 cm)	18.0 in. (45.7 cm)	18.0 in. (45.7 cm)
<b>Diameter</b>	13.5 in. (34.3 cm)	13.5 in. (34.3 cm)	13.5 in. (34.3 cm)	13.5 in. (34.3 cm)
<b>Outlet</b>	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)
<b>Inlet Adapter</b>	No	7.0 in. (17.8 cm)	No	7.0 in. (17.8 cm)
<b>Weight</b>	19.0 lbs (8.6 kg)	22.0 lbs (10.0 kg)	16.9 lbs (7.7 kg)	19.9 lbs (9.1 kg)

Specifications	071338005	071338005
<b>Air Flow Rate</b>	1140-1600 cfm (32.3-45.3 cmm)	1350-1800 cfm (38.2-51.0 cmm)
<b>Height</b>	15.0 in. (38.1 cm)	15.0 in. (38.1 cm)
<b>Diameter</b>	13.5 in. (34.3 cm)	13.5 in. (34.3 cm)
<b>Outlet</b>	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)
<b>Inlet Adapter</b>	No	7.0 in. (17.8 cm)
<b>Weight</b>	14.0 lbs (6.3 kg)	17.0 lbs (7.7 kg)

—Notes—

cfm:  
feet<sup>3</sup> per minute

cmm:  
meters<sup>3</sup> per minute

# Air Filtration

## ECO II Series

<i>Specifications</i>	<b>071338007</b>	<b>071338007</b>	<b>071338008</b>
<i>Air Flow Rate</i>	920-1390 cfm (26.0-39.4 cmm)	1200-1700 cfm (34.0-48.1 cmm)	710-1070 cfm (20.1-30.3 cmm)
<i>Height</i>	24.0 in. (61.0 cm)	24.0 in. (61.0 cm)	18.0 in. (45.7 cm)
<i>Diameter</i>	11.0 in. (27.9 cm)	11.0 in. (27.9 cm)	9.8 in. (24.9 cm)
<i>Outlet</i>	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	6.0 in. (15.2 cm)
<i>Inlet Adapter</i>	No	7.0 in. (17.8 cm)	No
<i>Weight</i>	14.5 lbs (6.5 kg)	17.5 lbs (7.9 kg)	9.1 lbs (4.1 kg)

<i>Specifications</i>	<b>071338008</b>	<b>071338009</b>
<i>Air Flow Rate</i>	920-1190 cfm (26.1-33.7 cmm)	1210-1910 cfm (34.3-54.1 cmm)
<i>Height</i>	18.0 in. (45.7 cm)	24.0 in. (61.0 cm)
<i>Diameter</i>	9.8 in. (24.9 cm)	13.5 in. (34.3 cm)
<i>Outlet</i>	6.0 in. (15.2 cm)	7.0 in. (17.8 cm)
<i>Inlet Adapter</i>	6.0 in. (15.2 cm)	No
<i>Weight</i>	12.1 lbs (5.5 kg)	9.0 lbs (4.0 kg)

—Notes—

cfm:  
feet<sup>3</sup> per minute

cmm:  
meters<sup>3</sup> per minute

**RACOR**<sup>®</sup>

Technical Support:  
800.344.3286 ext. 7555  
racortech@parker.com

# Air Filtration

## ECO II Series

### *ECO II Adapters*

- Installs directly on ECO II element.
- Sized by matching element diameter.

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<i>Part Number</i>	<i>Inlet Size</i>	<i>Weight</i>
<i>071656001</i>	11" I.D. 6" Inlet	3.0 lbs (1.4 kg)
<i>071656002</i>	11" I.D. 7" Inlet	3.0 lbs (1.4 kg)
<i>072994000</i>	13" I.D. 7" Inlet	3.0 lbs (1.4 kg)

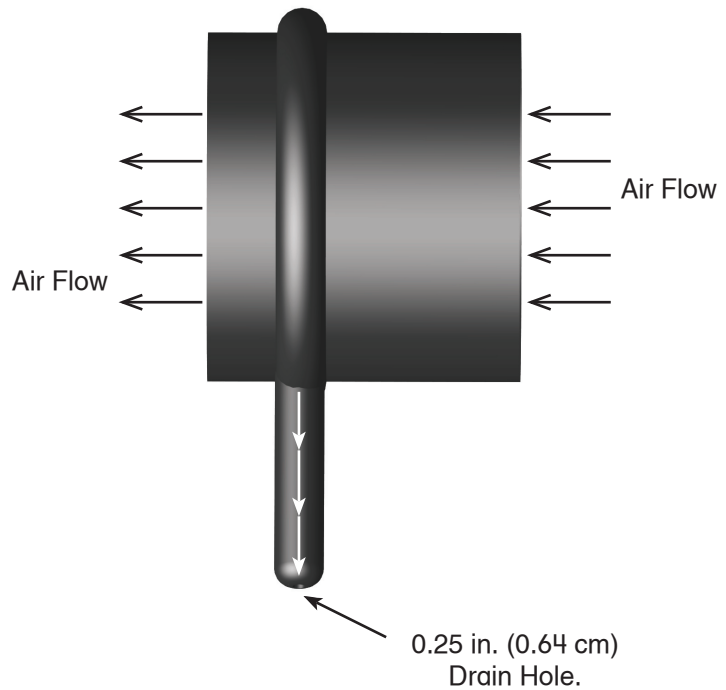


# Air Filtration

## ECO II Series

### *ECO II water separator*

- No service.
- Up to 80% water separation.
- Must be installed horizontal.
- Drain tube installed.



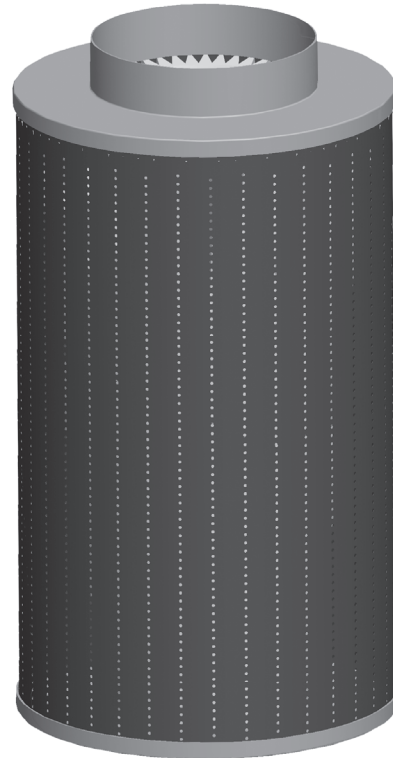
Specification	071335001	071335003
<b>Diameter</b>	7.0 in. (17.8 cm)	6.0 in. (15.2 cm)
<b>Height</b>	12.0 in. (30.5 cm)	12.0 in. (30.5 cm)
<b>Length</b>	6.3 in. (16.0 cm)	6.3 in. (16.0 cm)
<b>Weight</b>	20.0 lbs (9.0 kg)	20.0 lbs (9.0 kg)

# Air Filtration

## ECO II-HC Series

### ECO II-HC

- Flow rates between 1000 and 1800 CFM.
- Perforated outer shell.
- Side inlet.]
- End outlet.
- Molded urethane outlet.
- Water drain holes.
- Moisture-bloc media.



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Specifications	071338013
Air Flow	1000-1800 cfm (28.3-51.0 cmm)
Height	24.0 in. (61.0 cm)
Diameter	13.5 in. (34.3 cm)
Outlet Size	N/A
Inlet Size	N/A
Weight	N/A



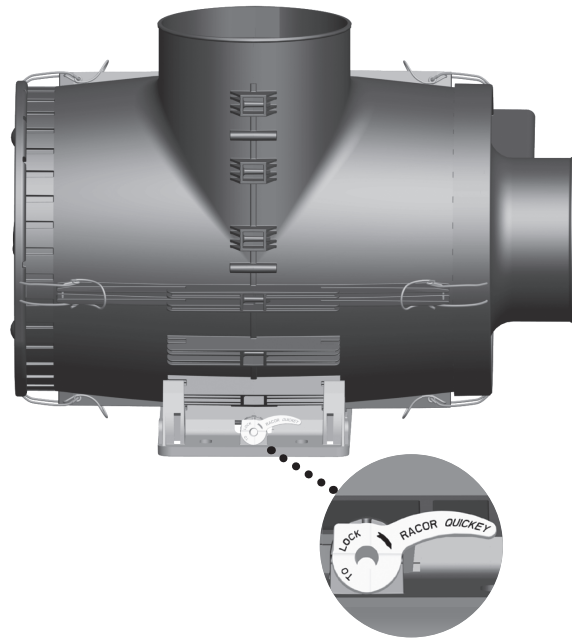
# Air Filtration

## ECO III Series

### ECO III

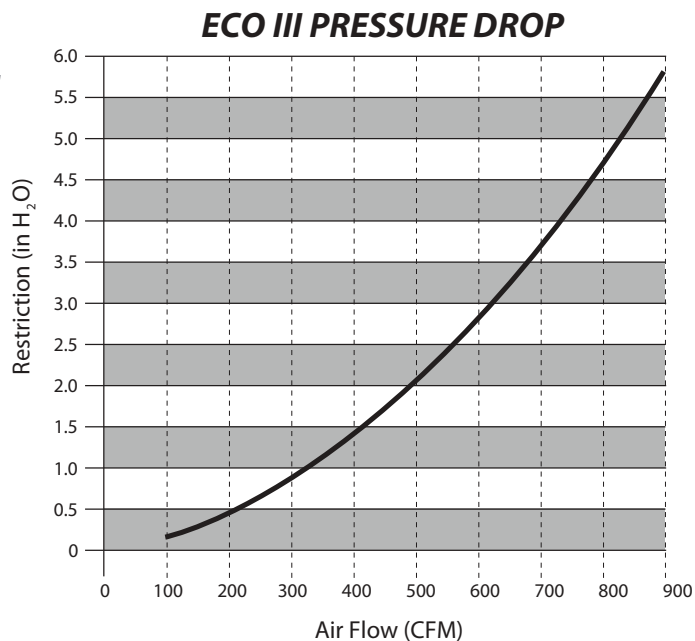
This clean simple toolless design, uses snap clamps to secure the housing and integrated element components together. The ECO III features four levels of sealing for maximum engine protection.

- The entire ECO III system is serviced with four quick release stainless steel parameter clamps.
- The house can be rotated 180° on the base. The outlet port is field reversible, and the orientation of the inlet port is adjustable in 20° increments.
- Reversible base mounting bracket and hardware mounts quickly, in any direction.
- Quick Key, integral to the mounting base securely locks the ECO III housing after the filtration unit has been precisely positioned.



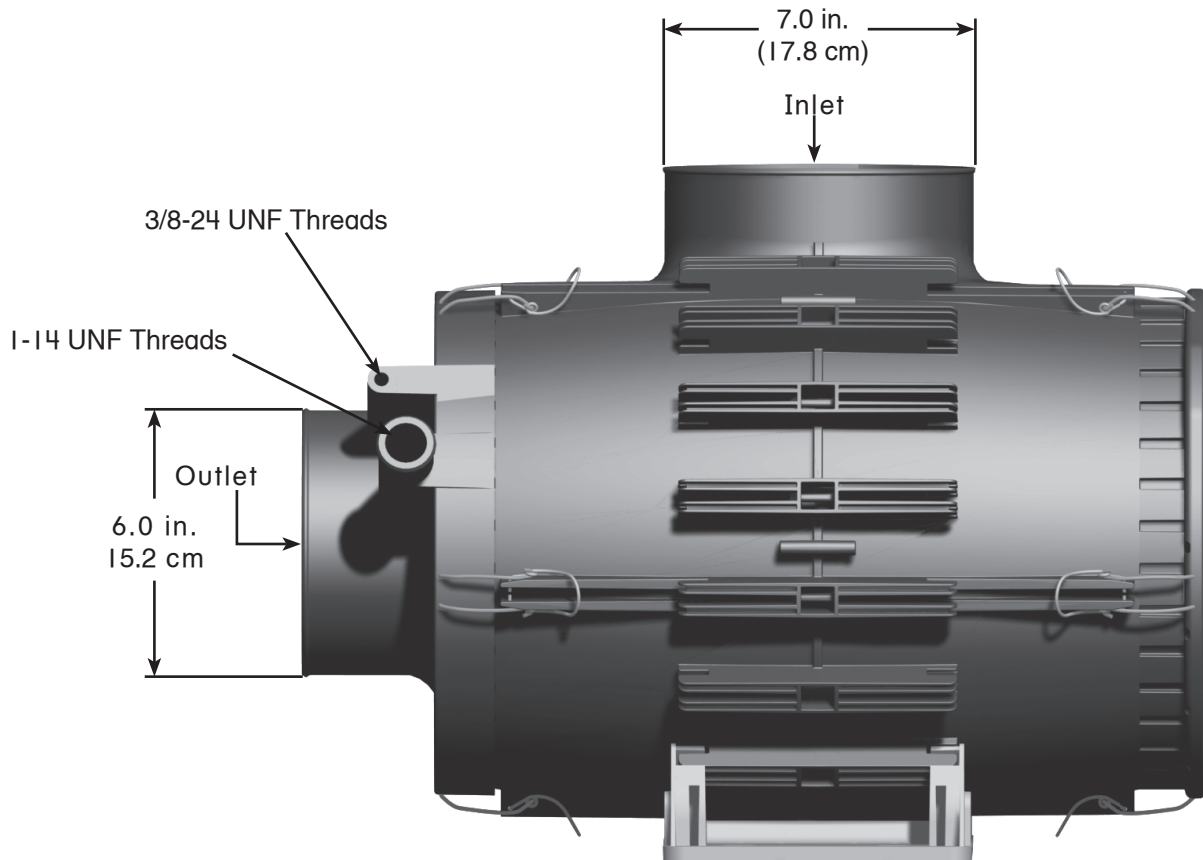
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### Test Data



# Air Filtration

## ECO III Series



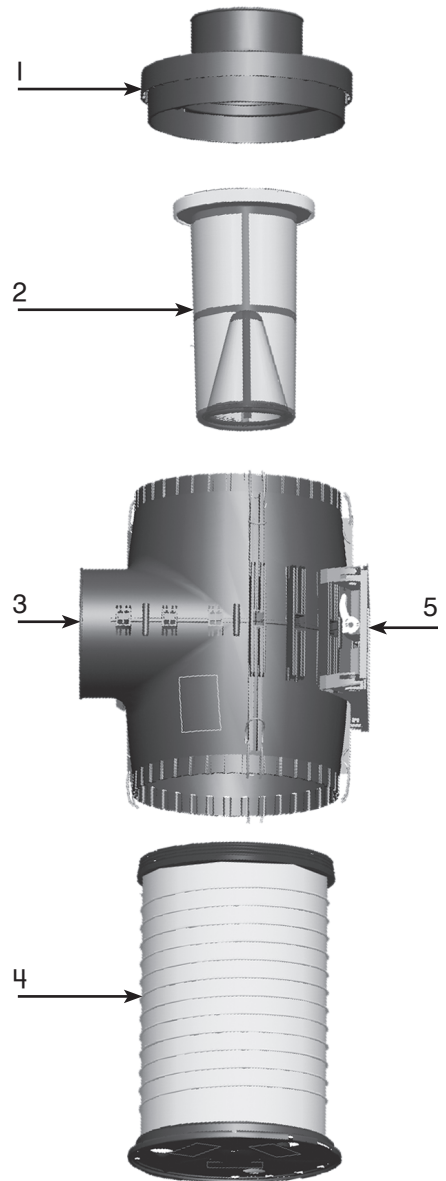
<b>Specifications</b>	<b>500250-012</b>
<b>Air Flow</b>	900 cfm (25.5 cmm)
<b>Inlet Size</b>	7.0 in. (17.8 cm)
<b>Outlet Size</b>	6.0 in. (15.2 cm)
<b>Height</b>	13.6 in. (34.5 cm)
<b>Width</b>	20.6 in. (52.3 cm)
<b>Depth</b>	15.9 in. (40.4 cm)

# Air Filtration

## ECO III Series

### Replacement Parts

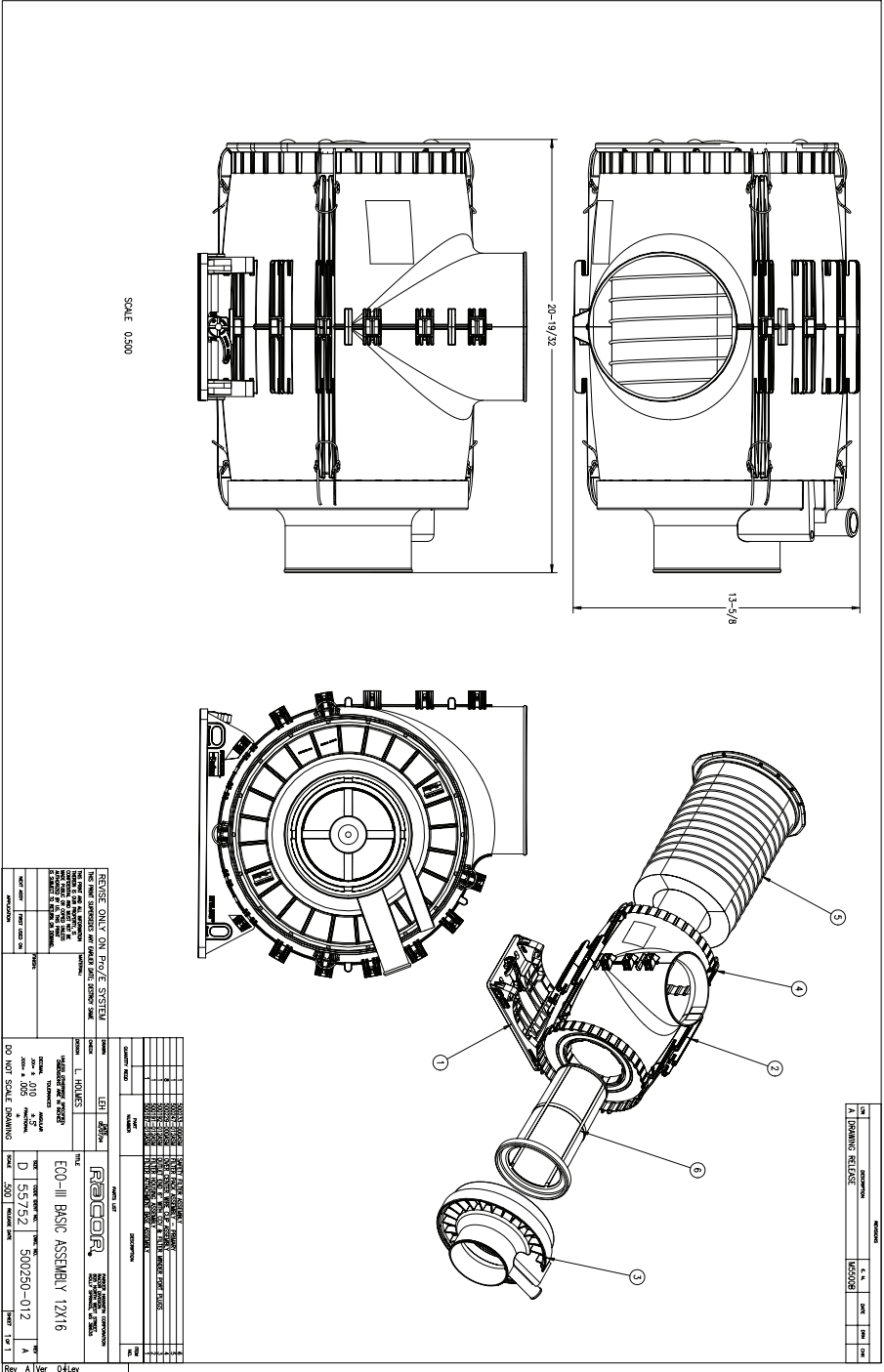
	<u>Part Number</u>	<u>Description</u>
1.	<b>500192012</b>	Outlet Pan
2.	<b>500233000</b>	Safety Element
3.	<b>500250012</b>	Housing
4.	<b>500247012</b>	Primary Element
5.	<b>500187012</b>	Mounting Base
Additional Parts (not shown)		
	<b>500229000</b>	Replacement Clips (8)



# Air Filtration

## ECO III Series

*Customer Interface Drawing*



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# Air Filtration

## ECOLITE Series

### ECOLITE

The original ECO Series product, the ECOLITE is still the only air filter in the industry that you can flow air in either direction. This allows a variety of installation options with the same part number replacement element. The ECOLITE can be mounted in any orientation or convenient location; under the hood or outside, direct or remote.

- Flow rates between 820 and 1900 CFM
- Reversible inlet/outlet (inlet can be at side or end)
- No drain holes
- Moisture-bloc media
- Installs in any position



5

Specifications	062891001	062891002	062891003	062891004
<b>Air Flow</b>	820-1200 cfm (23.2-34.0 cmm)	1100-1650 cfm (31.1-46.7 cmm)	1375-1900 cfm (38.9-53.8 cmm)	1070-1590 cfm (30.3-45.0 cmm)
<b>Height</b>	24.0 in. (61.0 cm)	24.0 in. (61.0 cm)	24.0 in. (61.0 cm)	18.0 in. (45.7 cm)
<b>Diameter</b>	9.8 in. (24.9 cm)	11.0 in. (27.9 cm)	13.5 in. (34.3 cm)	13.5 in. (34.3 cm)
<b>Outlet Size</b>	6.0 in. (15.2 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)
<b>Inlet Size</b>	6.0 in. (15.2 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)
<b>Weight</b>	16.0 lbs (7.3 kg)	19.0 lbs (8.6 kg)	16.3 lbs (7.4 kg)	16.3 lbs (7.4 kg)

Specifications	062891005	062891007	062891010
<b>Air Flow</b>	1375-1900 cfm (38.9-53.8 cmm)	820-1200 cfm (23.2-34.0 cmm)	1025-1540 cfm (29.0-43.6 cmm)
<b>Height</b>	24.0 in. (61.0 cm)	24.0 in. (61.0 cm)	15.0 in. (38.1 cm)
<b>Diameter</b>	13.5 in. (34.3 cm)	9.8 in. (24.9 cm)	13.5 in. (34.3 cm)
<b>Outlet Size</b>	7.0 in. (17.8 cm)	6.0 in. (15.2 cm)	7.0 in. (17.8 cm)
<b>Inlet Size</b>	7.0 in. (17.8 cm)	6.0 in. (15.2 cm)	7.0 in. (17.8 cm)
<b>Weight</b>	27.0 lbs (12.3 kg)	16.0 lbs (7.3 kg)	15.3 lbs (6.9 kg)

—Notes—

cfm:  
feet<sup>3</sup> per minute

cmm:  
meters<sup>3</sup> per  
minute





# Air Filtration

## ECO-BC Series



### ECO-BC

Designed for behind the cab installation on trucks, the ECO-BC must be mounted vertical with inside-out air flow. Also is used for under hood and engine compartment applications. The rubber drain valve in the bottom of the unit allows any ingested water or dirt to drain out.

- Flow rates between 720 and 1750 CFM
- Top inlet
- Side outlet
- Bleed valve in bottom of element
- Moisture-bloc media
- Installs in a vertical position only

5

Specifications	094973001	094973002	094973003	094973004
<b>Air Flow</b>	1120-1600 cfm (31.7-45.3 cmm)	1450-1750 cfm (41.1-49.6 cmm)	875-1250 cfm (24.8-35.4 cmm)	720-1060 cfm (20.4-30.0 cmm)
<b>Height</b>	24.0 in. (61.0 cm)	24.0 in. (61.0 cm)	24.0 in. (61.0 cm)	18.0 in. (45.7 cm)
<b>Diameter</b>	11.0 in. (27.9 cm)	13.5 in. (34.3 cm)	9.8 in. (24.9 cm)	9.8 in. (24.9 cm)
<b>Outlet Size</b>	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	6.0 in. (15.2 cm)	6.0 in. (15.2 cm)
<b>Inlet Size</b>	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	6.0 in. (15.2 cm)	6.0 in. (15.2 cm)
<b>Weight</b>	19.0 lbs (8.6 kg)	27.0 lbs (12.3 kg)	16.0 lbs (7.3 kg)	10.4 lbs (4.7 kg)

Specifications	094973005	094973006	094973007
<b>Air Flow</b>	980-1470 cfm (27.8-41.6 cmm)	810-1200 cfm (22.9-34.0 cmm)	1010-1490 cfm (28.6-42.1 cmm)
<b>Height</b>	15.0 in. (38.1 cm)	18.0 in. (45.7 cm)	18.0 in. (45.7 cm)
<b>Diameter</b>	13.5 in. (34.3 cm)	11.0 in. (27.9 cm)	11.0 in. (27.9 cm)
<b>Outlet Size</b>	7.0 in. (17.8 cm)	6.0 in. (15.2 cm)	7.0 in. (17.8 cm)
<b>Inlet Size</b>	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)
<b>Weight</b>	15.4 lbs (7.0 kg)	12.6 lbs (5.7 kg)	12.5 lbs (5.7 kg)

—Notes—

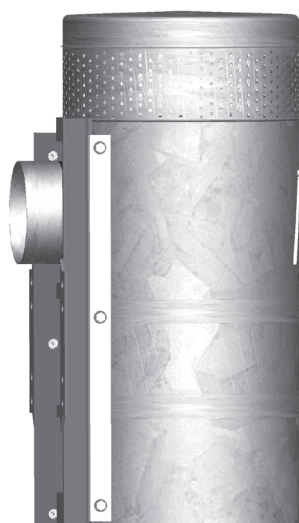
cfm:  
feet<sup>3</sup> per minute

cmm:  
meters<sup>3</sup> per  
minute



# Air Filtration

## ECO-CM Series



### ECO-CM

For cowl-mount installation on conventional style truck cabs.

- U.S. flag logo embossed.
- Polished stainless steel cover.
- Air inlet/rain cap is standard.
- Right- and left-hand versions.
- No bolts or filter gaskets needed to seal housing.
- Fits most existing mounting hole

5

Specifications	400460001*	400460002*	400462001	400462002
<b>Application</b>	Kenworth	Kenworth	Peterbilt	Peterbilt
<b>Diameter</b>	13.5 in. (34.3 cm)	13.5 in. (34.3 cm)	13.5 in. (34.3 cm)	13.5 in. (34.3 cm)
<b>Replacement Element</b>	078897001	078897001	078897001	078897001
<b>Right Side</b>	Yes	No	Yes	No
<b>Left Side</b>	No	Yes	No	Yes

\* For Pre 1981 Kenworth use P/N 093759000 Adaptor Bracket for each Side.

Specifications	400458001	400458002	500155001	500155002
<b>Application</b>	Pre 1987 Peterbilt	Pre 1987 Peterbilt	Peterbilt	Peterbilt
<b>Diameter</b>	13.5 in. (34.3 cm)	13.5 in. (34.3 cm)	15.0 in. (38.1 cm)	15.0 in. (38.1 cm)
<b>Replacement Element</b>	078897001	078897001	400122000	400122000
<b>Right Side</b>	Yes	No	Yes	No
<b>Left Side</b>	No	Yes	No	Yes

# Air Filtration

## ECO-CM Series

Specifications	500156001	500156002
<b>Application</b>	Kenworth	Kenworth
<b>Diameter</b>	15.0 in. (38.1 cm)	15.0 in. (38.1 cm)
<b>Replacement Element</b>	400122000	400122000
<b>Right Side</b>	Yes	No
<b>Left Side</b>	No	Yes

## Replacement Parts

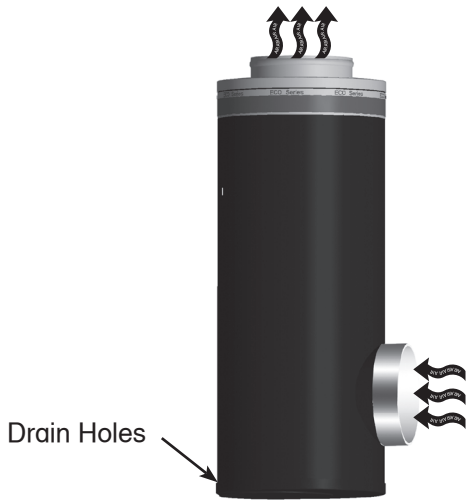
- |    | <u>Part Number</u> | <u>Description</u>  |
|----|--------------------|---|
| 1. |                    | Air Intake and Rain Caps  |
|    | <b>400431000</b>   | 13.5 in. (34.3 cm)  |
|    | <b>400135000</b>   | 15.0 in. (38.1 cm)  |
| 2. |                    | CM - 102 For Kenworth   |
|    | <b>400461001</b>   | 13.5 in. (34.3 cm) Stainless Cover - Right Hand Mount                       |
|    | <b>400461002</b>   | 13.5 in. (34.3 cm) Stainless Cover - Left Hand Mount                        |
|    |                    | CM - 104 and CM - 101 For Peterbilt   |
|    | <b>400463001</b>   | 13.5 in. (34.3 cm) Stainless Cover - Right Hand Mount                       |
|    | <b>400463002</b>   | 13.5 in. (34.3 cm) Stainless Cover - Left Hand Mount                        |
|    |                    | CM - 106 For Peterbilt  |
|    | <b>500157001</b>   | 15.0 in. (38.1 cm) Stainless Cover - Right Hand Mount                       |
|    | <b>500157002</b>   | 15.0 in. (38.1 cm) Stainless Cover - Left Hand Mount                        |
|    |                    | CM - 107 For Kenworth   |
|    | <b>500158001</b>   | 15.0 in. (38.1 cm) Stainless Cover - Right Hand Mount                       |
|    | <b>500158001</b>   | 15.0 in. (38.1 cm) Stainless Cover - Left Hand Mount                        |
| 3. | <b>078950000</b>   | 13.5 in. (34.3 cm) & 15.0 in. (38.1 cm)<br>Replacement Clamping Channel Kit |

# Air Filtration

## ECO-LL Series

### ECO-LL

5



The ECO-LL is similar to the ECO-SM, but is for applications where the customer wants to get the longest life from his air filter. There are also more sizes available. It is also for outside-on air flow only and has drain holes around the perimeter.

- Flow rates between 645 and 1910 CFM.
- Long Life® paper pack.
- Side inlet.
- Top outlet.
- Water drain holes at top and bottom.
- Moisture-bloc media.
- Installs in any position.

Specifications	400820001	400820002	400820003	400820004
<b>Air Flow</b>	985-1475 cfm (27.9-41.8 cmm)	905-1340 cfm (25.6-37.9 cmm)	645-950 cfm (18.3-26.9 cmm)	1295-1910 cfm (36.7-54.1 cmm)
<b>Height</b>	24.0 in. (61.0 cm)	24.0 in. (61.0 cm)	24.0 in. (61.0 cm)	24.0 in. (61.0 cm)
<b>Diameter</b>	11.0 in. (27.9 cm)	11.0 in. (27.9 cm)	11.0 in. (27.9 cm)	13.5 in. (34.3 cm)
<b>Outlet Size</b>	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)
<b>Inlet Size</b>	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)
<b>Weight</b>	19.0 lbs (8.6 kg)	19.0 lbs (8.6 kg)	19.0 lbs (8.6 kg)	21.5 lbs (9.8 kg)

# Air Filtration

## ECO-LL Series

### ECO-LL

Specifications	400820005	400820006	400820007	400820008
<b>Air Flow</b>	1170-1735 cfm (33.1-49.1 cmm)	845-1250 cfm (23.9-35.4 cmm)	1115-1590 cfm (31.6-45.0 cmm)	1100-1545 cfm (31.1-43.7 cmm)
<b>Height</b>	24.0 in. (61.0 cm)	24.0 in. (61.0 cm)	15.0 in. (38.1 cm)	15.0 in. (38.1 cm)
<b>Diameter</b>	13.5 in. (34.3 cm)	13.5 in. (34.3 cm)	13.5 in. (34.3 cm)	13.5 in. (34.3 cm)
<b>Outlet Size</b>	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)
<b>Inlet Size</b>	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)
<b>Weight</b>	21.5 lbs (9.8 kg)	21.5 lbs (9.8 kg)	17.0 lbs (7.7 kg)	17.0 lbs (7.7 kg)

Specifications	400820009	400820010	400820011	400820012
<b>Air Flow</b>	1055-1560 cfm (29.9-44.2 cmm)	1135-1690 cfm (32.1-47.9 cmm)	875-1295 cfm (24.8-36.7 cmm)	820-1215 cfm (23.2-34.4 cmm)
<b>Height</b>	15.0 in. (38.1 cm)	15.0 in. (38.1 cm)	24.0 in. (61.0 cm)	24.0 in. (61.0 cm)
<b>Diameter</b>	13.5 in. (34.3 cm)	13.5 in. (34.3 cm)	9.8 in. (24.9 cm)	9.8 in. (24.9 cm)
<b>Outlet Size</b>	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	6.0 in. (15.2 cm)	6.0 in. (15.2 cm)
<b>Inlet Size</b>	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	6.0 in. (15.2 cm)	6.0 in. (15.2 cm)
<b>Weight</b>	15.1 lbs (7.0 kg)	15.1 lbs (7.0 kg)	13.1 lbs (6.0 kg)	13.1 lbs (6.0 kg)

Specifications	400820013	400820014	400820015	400820016
<b>Air Flow</b>	610-905 cfm (17.3-25.6 cmm)	970-1455 cfm (27.5-41.2 cmm)	715-1075 cfm (20.2-30.4 cmm)	N/A
<b>Height</b>	24.0 in. (61.0 cm)	18.0 in. (45.7 cm)	18.0 in. (45.7 cm)	24.0 in. (61.0 cm)
<b>Diameter</b>	9.8 in. (24.9 cm)	11.0 in. (27.9 cm)	11.0 in. (27.9 cm)	15.0 in. (38.1 cm)
<b>Outlet Size</b>	6.0 in. (15.2 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	8.0 in. (20.3 cm)
<b>Inlet Size</b>	6.0 in. (15.2 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	8.0 in. (20.3 cm)
<b>Weight</b>	13.1 lbs (6.0 kg)	13.5 lbs (6.2 kg)	13.5 lbs (6.2 kg)	N/A

# Air Filtration

## ECO-LL Series

### ECO-LL

Specifications	400820017	400820018	400820019
<b>Air Flow</b>	N/A	N/A	710-1100 cfm (20.1-31.1 cmm)
<b>Height</b>	24.0 in. (61.0 cm)	24.0 in. (61.0 cm)	13.0 in. (33.0 cm)
<b>Diameter</b>	15.0 in. (38.1 cm)	15.0 in. (38.1 cm)	11.0 in. (27.9 cm)
<b>Outlet Size</b>	8.0 in. (20.3 cm)	8.0 in. (20.3 cm)	7.0 in. (17.8 cm)
<b>Inlet Size</b>	8.0 in. (20.3 cm)	8.0 in. (20.3 cm)	7.0 in. (17.8 cm)
<b>Weight</b>	N/A	N/A	10.2 lbs (4.6 kg)

Specifications	400820020	400820021	400820022
<b>Air Flow</b>	820-1230 cfm (23.2-34.8 cmm)	N/A	650-960 cfm (18.4-27.2 cmm)
<b>Height</b>	15.0 in. (38.1 cm)	15.0 in. (38.1 cm)	18.0 in. (45.7 cm)
<b>Diameter</b>	11.0 in. (27.9 cm)	11.0 in. (27.9 cm)	11.0 in. (27.9 cm)
<b>Outlet Size</b>	7.0 in. (17.8 cm)	6.0 in. (15.2 cm)	6.0 in. (15.2 cm)
<b>Inlet Size</b>	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)
<b>Weight</b>	11.5 lbs (5.2 kg)	N/A	12.8 lbs (5.8 kg)

Specifications	400820023	400820024	400820025
<b>Air Flow</b>	720-1060 cfm (20.4-30.0 cmm)	N/A	N/A
<b>Height</b>	13.0 in. (33.0 cm)	24.0 in. (61.0 cm)	24.0 in. (61.0 cm)
<b>Diameter</b>	11.0 in. (27.9 cm)	13.5 in. (34.3 cm)	15.0 in. (38.1 cm)
<b>Outlet Size</b>	6.0 in. (15.2 cm)	8.0 in. (20.3 cm)	8.0 in. (20.3 cm)
<b>Inlet Size</b>	7.0 in. (17.8 cm)	10.0 in. (25.4 cm)	10.0 in. (25.4 cm)
<b>Weight</b>	10.2 lbs (4.6 kg)	N/A	N/A

—Notes—

cfm:  
feet<sup>3</sup> per minute

cmm:  
meters<sup>3</sup> per minute



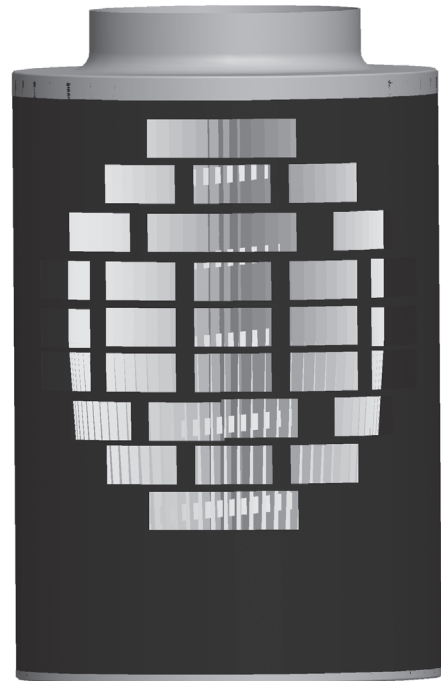


# Air Filtration

## ECO-S2 Series

### ECO-S2

- Flow rates between 1210 and 1910 CFM
- Large single grid opening
- Side inlet
- End outlet
- Molded urethane outlet
- Water drain holes in top and bottom of housing
- Moisture-bloc media
- Installs in any position



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Specifications	400470002
<b>Air Flow</b>	1210-1910 cfm (34.3-54.1 cmm)
<b>Height</b>	15.0 in. (38.1 cm)
<b>Diameter</b>	11.0 in. (27.9 cm)
<b>Outlet Size</b>	7.0 in. (17.8 cm)
<b>Inlet Size</b>	N/A
<b>Weight</b>	N/A

—Notes—

cfm:  
feet<sup>3</sup> per minute

cmm:  
meters<sup>3</sup> per minute

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# Air Filtration

## ECO-SE Series

### ECO-SE

The ECO-SE is designed for small engine applications. It also has two unique features. First, it has a urethane outlet tube which allows the filter to be mounted directly to a metal tube or turbo without an additional rubber connection. Second, the standard unit is a straight through air filter, air goes in one end and out the other. Intake adapters are available if you would like to remotely locate the intake. The side inlet version offers additional mounting flexibility.

- Flow rates between 240 and 1180 CFM
- Back (open) inlet or side inlet
- Top outlet
- Water drain holes at top and bottom
- Moisture-bloc media
- Installs in any position



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Specifications	114500001	114500002	114500003	117122000
<b>Air Flow</b>	240-340 cfm (6.8-9.6 cmm)	355-510 cfm (10.1-14.4 cmm)	610-890 cfm (17.3-25.2 cmm)	780-1180 cfm (22.1-33.4 cmm)
<b>Height</b>	13.8 in. (35.1 cm)	15.8 in. (40.1 cm)	18.8 in. (47.8 cm)	24.0 in. (61.0 cm)
<b>Diameter</b>	6.8 in. (17.3 cm)	7.8 in. (19.9 cm)	9.7 in. (24.6 cm)	11.0 in. (27.9 cm)
<b>Outlet Size</b>	3.0 in. (7.6 cm)	4.0 in. (10.2 cm)	5.0 in. (12.7 cm)	7.0 in. (17.8 cm)
<b>Inlet Size</b>	No	No	No	No
<b>Weight</b>	5.0 lbs (2.3 kg)	6.5 lbs (2.9 kg)	7.9 lbs (3.6 kg)	12.9 lbs (5.9 kg)

Specifications	114880003	114880005	400292000
<b>Air Flow</b>	600-900 cfm (17.0-25.5 cmm)	420-800 cfm (11.9-22.7 cmm)	N/A
<b>Height</b>	16.9 in. (42.9 cm)	15.8 in. (40.1 cm)	15.0 in. (38.1 cm)
<b>Diameter</b>	9.8 in. (24.9 cm)	7.8 in. (19.8 cm)	11.0 in. (27.9 cm)
<b>Outlet Size</b>	5.0 in. (12.7 cm)	4.0 in. (10.2 cm)	N/A
<b>Inlet Size</b>	6.0 in. (15.2 cm)	6.0 in. (15.2 cm)	N/A
<b>Weight</b>	9.0 lbs (4.1 kg)	7.0 lbs (3.2 kg)	N/A

—Notes—

cfm:  
feet<sup>3</sup> per minute

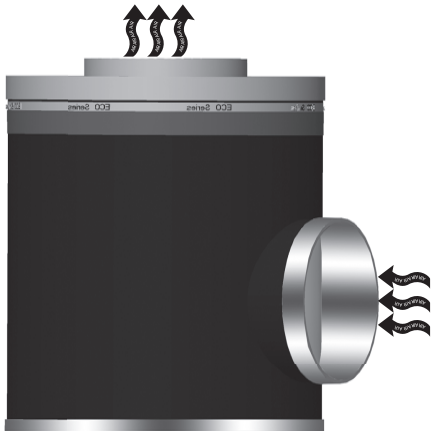
cmm:  
meters<sup>3</sup> per  
minute



# Air Filtration

## ECO-SM Series

### ECO-SM



ECO-SM (Scheduled Maintenance) The ECO-SM was designed to give additional mounting flexibility to the O.E.M. customer, while offering a greater value to the fleet that changes filter elements based on a scheduled maintenance program. Due to the various inlet tube locations, the ECO-SM is ideal for retrofit applications. It is for outside-in air flow only and has drain holes around the perimeter.

- Flow rates between 730 and 1670 CFM.
- Scheduled maintenance paper pack.
- Side inlet.
- Top outlet.
- Water drain holes at top and bottom.
- Moisture-bloc media.
- Installs in any position.

Specifications	099842001	099842002	099842003	099842004
<b>Air Flow</b>	960-1410 cfm (27.2-39.9 cmm)	980-1430 cfm (27.8-40.5)	730-1070 cfm (20.7-30.3 cmm)	1100-1620 cfm (31.1-45.9 cmm)
<b>Height</b>	24.0 in. (61.0 cm)	24.0 in. (61.0 cm)	24.0 in. (61.0 cm)	24.0 in. (61.0 cm)
<b>Diameter</b>	11.0 in. (27.9 cm)	11.0 in. (27.9 cm)	11.0 in. (27.9 cm)	13.5 in. (34.3 cm)
<b>Outlet Size</b>	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)
<b>Inlet Size</b>	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)
<b>Weight</b>	19.0 in. (8.6 kg)	19.0 in. (8.6 kg)	19.0 in. (8.6 kg)	27.0 lbs (12.3 kg)

# Air Filtration

## ECO-SM Series

### ECO-SM

<b>Specifications</b>	<b>099842005</b>	<b>099842006</b>	<b>099842007</b>
<b>Air Flow</b>	1130-1670 cfm (32.0-47.3 cmm)	1030-1500 cfm (29.2-42.5 cmm)	1120-1630 cfm (31.7-46.2 cmm)
<b>Height</b>	24.0 in. (61.0 cm)	24.0 in. (61.0 cm)	18.0 in. (45.7 cm)
<b>Diameter</b>	13.5 in. (34.3 cm)	13.5 in. (34.3 cm)	13.5 in. (34.3 cm)
<b>Outlet Size</b>	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)
<b>Inlet Size</b>	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)
<b>Weight</b>	27.0 lbs (12.3 kg)	27.0 lbs (12.3 kg)	24.0 lbs (10.9 kg)

<b>Specifications</b>	<b>099842008</b>	<b>099842009</b>	<b>099842010</b>
<b>Air Flow</b>	1060-1550 cfm (30.0-43.9 cmm)	1070-1550 cfm (30.3-43.9 cmm)	1060-1550 cfm (30.0-43.9 cmm)
<b>Height</b>	18.0 in. (45.7 cm)	15.0 in. (38.1 cm)	15.0 in. (38.1 cm)
<b>Diameter</b>	13.5 in. (34.3 cm)	13.5 in. (34.3 cm)	13.5 in. (34.3 cm)
<b>Outlet Size</b>	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)
<b>Inlet Size</b>	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)
<b>Weight</b>	24.0 lbs (10.9 kg)	22.5 lbs (10.0 kg)	22.5 lbs (10.0 kg)

—Notes—

cfm:  
feet<sup>3</sup> per minute

cmm:  
meters<sup>3</sup> per minute

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# Air Filtration

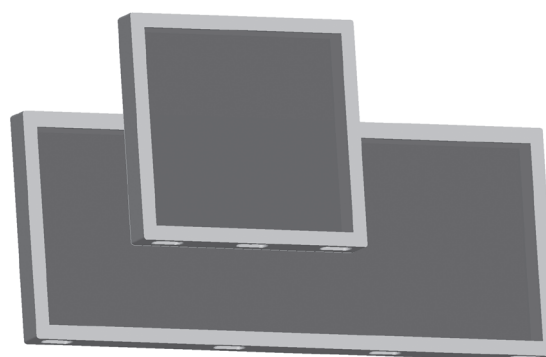
## Ember Separator

Ember protection is extremely important in order to protect fire suppression equipment as well as human life. The Racor Moisture Ember Separator (MES) protects the downstream air filter from embers using a combination of unique flat and crimped metal screens constructed into a galvanized steel frame. This multi-layered screen design traps embers and allows them to burn out before passing through the pack, while creating only minimal air flow restriction through the system.

In the event of fire hot embers may burn holes in the air filter, allowing dirt, sand, smoke and other particles to contaminate and shut down the engine, often beyond repair. Even worse, a burning air filter may lead to a major vehicle fire. Also, large amounts of free water in the cylinders can result in broken pistons or bent rods. The Racor Moisture & Ember Separator is specifically designed to help separate hot embers from entering the engine intake. Meets NFPA guidelines.

Note: Periodic cleaning or replacement of the screen is all that's required after installation.

- Removes embers from air flow.
- One inch thick.
- Can be used as a moisture separator.



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### Specifications

Part Number	Description	Rated Airflow	Construction	Weight
<b>93530-001</b>	Housing with two separators	1600 CFM (2719 CMH)	Mild steel housing and polished stainless steel separators	48.5 lbs (22.0 kg)
<b>58488-010</b>	Replacement ember and moisture separator	800 CFM (1359 CMH)	Polished stainless steel	12.0 lbs (505 kgs)



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# Air Filtration

## Ember Separator

<b>Specifications</b>	<b>123970001</b>	<b>123970002</b>	<b>123970003</b>	<b>123970004</b>
<b>Filtering Area</b>	160.0 in. <sup>2</sup> (1,032.3 cm <sup>2</sup> )	69.0 in. <sup>2</sup> (445.2 cm <sup>2</sup> )	110.0 in. <sup>2</sup> (709.7 cm <sup>2</sup> )	187.0 in. <sup>2</sup> (1206.4 cm <sup>2</sup> )
<b>Height</b>	8.0 in. (20.3 cm)	7.9 in. (20.1 cm)	5.5 in. (14.0 cm)	20.8 in. (52.8 cm)
<b>Width</b>	20.0 in. (50.8 cm)	8.6 in. (21.8 cm)	20.0 in. (50.8 cm)	9.0 in. (22.9 cm)
<b>Depth</b>	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)
<b>Weight</b>	2.5 lbs (1.1 kg)	1.2 lbs (0.6 kg)	2.5 lbs (1.1 kg)	3.0 lbs (1.4 kg)

<b>Specifications</b>	<b>123970005</b>	<b>123970006</b>	<b>123970007</b>	<b>123970008</b>
<b>Filtering Area</b>	114.0 in. <sup>2</sup> (735.5 cm <sup>2</sup> )	99.4 in. <sup>2</sup> (641.3 cm <sup>2</sup> )	233.4 in. <sup>2</sup> (1505.8 cm <sup>2</sup> )	60.0 in. <sup>2</sup> (387.1 cm <sup>2</sup> )
<b>Height</b>	9.5 in. (24.1 cm)	9.3 in. (23.6 cm)	11.3 in. (28.7 cm)	4.0 in. (10.2 cm)
<b>Width</b>	12.0 in. (30.5 cm)	10.8 in. (27.4 cm)	20.8 in. (52.8 cm)	15.0 in. (38.1 cm)
<b>Depth</b>	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)
<b>Weight</b>	2.4 lbs (1.1 kg)	1.6 lbs (0.7 kg)	3.3 lbs (1.5 kg)	1.5 lbs (0.7 kg)

<b>Specifications</b>	<b>123970009</b>	<b>123970010</b>	<b>123970011</b>	<b>123970012</b>
<b>Filtering Area</b>	60.0 in. <sup>2</sup> (387.1 cm <sup>2</sup> )	121.3 in. <sup>2</sup> (782.5 cm <sup>2</sup> )	72.0 in. <sup>2</sup> (464.5 cm <sup>2</sup> )	89.4 in. <sup>2</sup> (576.8 cm <sup>2</sup> )
<b>Height</b>	7.8 in. (19.8 cm)	20.6 in. (52.3 cm)	9.0 in. (22.9 cm)	16.3 in. (41.4 cm)
<b>Width</b>	7.8 in. (19.8 cm)	5.9 in. (15.0 cm)	8.0 in. (20.3 cm)	5.5 in. (14.0 cm)
<b>Depth</b>	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)
<b>Weight</b>	2.6 lbs (1.2 kg)	2.0 lbs (0.9 kg)	1.2 lbs (0.6 kg)	1.6 lbs (0.7 kg)

# Air Filtration

## Ember Separator

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<b>Specifications</b>	<b>123970013</b>	<b>123970014</b>	<b>123970015</b>	<b>123970016</b>
<b>Filtering Area</b>	87.5 in. <sup>2</sup> (564.5 cm <sup>2</sup> )	42.0 in. <sup>2</sup> (271.0 cm <sup>2</sup> )	124.0 in. <sup>2</sup> (800.0 cm <sup>2</sup> )	201.3 in. <sup>2</sup> (1298.7 cm <sup>2</sup> )
<b>Height</b>	3.5 in. (8.9 cm)	12.0 in. (30.5 cm)	8.0 in. (20.3 cm)	23.0 in. (58.4 cm)
<b>Width</b>	25.0 in. (63.5 cm)	3.5 in. (8.9 cm)	15.5 in. (39.4 cm)	8.8 in. (22.4 cm)
<b>Depth</b>	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)
<b>Weight</b>	1.8 lbs (0.8 kg)	1.0 lbs (0.5 kg)	2.0 lbs (0.9 kg)	3.0 lbs (1.4 kg)

<b>Specifications</b>	<b>123970017</b>	<b>123970018</b>	<b>123970019</b>	<b>123970020</b>
<b>Filtering Area</b>	68.0 in. <sup>2</sup> (438.7 cm <sup>2</sup> )	50.8 in. <sup>2</sup> (327.7 cm <sup>2</sup> )	112.0 in. <sup>2</sup> (722.6 cm <sup>2</sup> )	81.8 in. <sup>2</sup> (527.7 cm <sup>2</sup> )
<b>Height</b>	5.3 in. (13.5 cm)	5.3 in. (13.5 cm)	16.0 in. (40.6 cm)	11.9 in. (30.2 cm)
<b>Width</b>	12.8 in. (32.5 cm)	9.5 in. (24.1 cm)	7.0 in. (17.8 cm)	6.8 in. (17.3 cm)
<b>Depth</b>	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)
<b>Weight</b>	1.2 lbs (0.6 kg)	1.0 lbs (0.5 kg)	1.8 lbs (0.8 kg)	1.4 lbs (0.6 kg)

<b>Specifications</b>	<b>123970021</b>	<b>123970022</b>	<b>123970023</b>	<b>123970024</b>
<b>Filtering Area</b>	194.0 in. <sup>2</sup> (1251.6 cm <sup>2</sup> )	89.4 in. <sup>2</sup> (576.8 cm <sup>2</sup> )	55.0 in. <sup>2</sup> (354.8 cm <sup>2</sup> )	N/A
<b>Height</b>	11.4 in. (29.0 cm)	5.5 in. (14.0 cm)	10.0 in. (25.4 cm)	4.0 in. (10.2 cm)
<b>Width</b>	17.1 in. (43.4 cm)	16.3 in. (41.4 cm)	5.5 in. (14.0 cm)	22.0 in. (55.9 cm)
<b>Depth</b>	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)
<b>Weight</b>	2.8 lbs (1.3 kg)	1.6 lbs (0.7 kg)	2.5 lbs (1.1 kg)	1.7 lbs (0.8 kg)



# Air Filtration

## Spinaire Series

### *Spinaire Series*

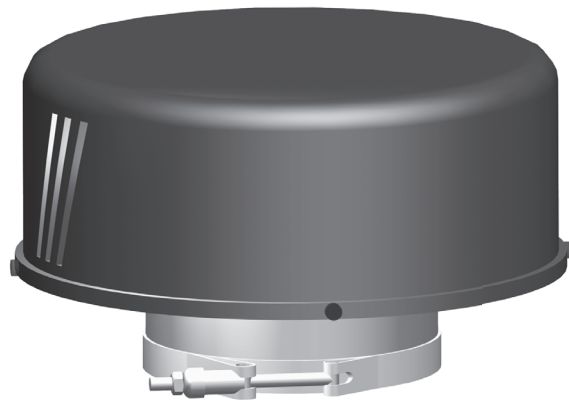
- Air flow rates between 210 and 1850 cubic feet per minute (CFM).
- Outlet 4.0-9.0 in. (10.1-22.8 cm).
- Metal housing.
- Dynamic vane pre-cleaner.

#### **Applications**

Racor Engine Air Precleaners are designed to be mounted on or connected to the air filter intake of a gasoline or diesel engine air cleaner. Their applications include all slow moving and industrial equipment such as agricultural machinery; earth moving, construction and mining equipment; pumping plants; generator sets; material handling equipment; snow removal equipment and street sweepers.

#### **Features and Benefits**

Removes up to 90% of impurities from intake air before the air enters the filter elements. Extends engine air filter life. Reduces down time. Prolongs engine and turbocharger life. Saves on fuel costs.



Easy to install. Three plastic outlet reduction sleeves are provided with each assembly.

A wide range of applications and flow rates. Steel housing, black powder coat. High air flow, low differential design. The pre-cleaner is self-powered and self-cleaning, requiring no electrical or exhaust gas power to dispose of separated particles. It requires virtually no maintenance and should be inspected occasionally to insure that no foreign material has plugged intake or exhaust port areas.



# Air Filtration

## Spinaire Series



—Notes—

cfm:  
feet<sup>3</sup> per minute

cmm:  
meters<sup>3</sup> per minute

<b>Specifications</b>	<b>123583440</b>	<b>123858550</b>	<b>123583660</b>
<b>Maximum Flow Rate</b>	300 CFM (8.5 CMM)	520 CFM (14.7 CMM)	740 CFM (21.0 CMM)
<b>Height</b>	4.8 in. (12.2 cm)	7.1 in. (18.0 cm)	7.1 in. (18.0 cm)
<b>Diameter</b>	8.3 in. (21.1 cm)	10.6 in. (26.9 cm)	12.3 in. (31.2 cm)
<b>Weight</b>	5.0 lbs (2.3 kg)	8.0 lbs (3.6 kg)	9.0 lbs (4.1 kg)
<b>Inlet Diameter</b>	4.0 in. (10.2 cm)	5.0 in. (12.7 cm)	6.0 in. (15.2 cm)

<b>Specifications</b>	<b>123583665</b>	<b>123583770</b>	<b>123583990</b>
<b>Maximum Flow Rate</b>	580 CFM (16.4 CMM)	1190 CFM (33.7 CMM)	1850 CFM (52.4 CMM)
<b>Height</b>	7.1 in. (18.0 cm)	7.3 in. (18.5 cm)	8.1 in. (20.3 cm)
<b>Diameter</b>	10.6 in. (26.9 cm)	14.1 in. (35.8 cm)	17.1 in. (43.4 cm)
<b>Weight</b>	8.0 lbs (3.6 kg)	11.0 lbs (5.0 kg)	14.0 lbs (6.3 kg)
<b>Inlet Diameter</b>	6.0 in. (15.2 cm)	7.0 in. (17.8 cm)	9.0 in. (22.9 cm)

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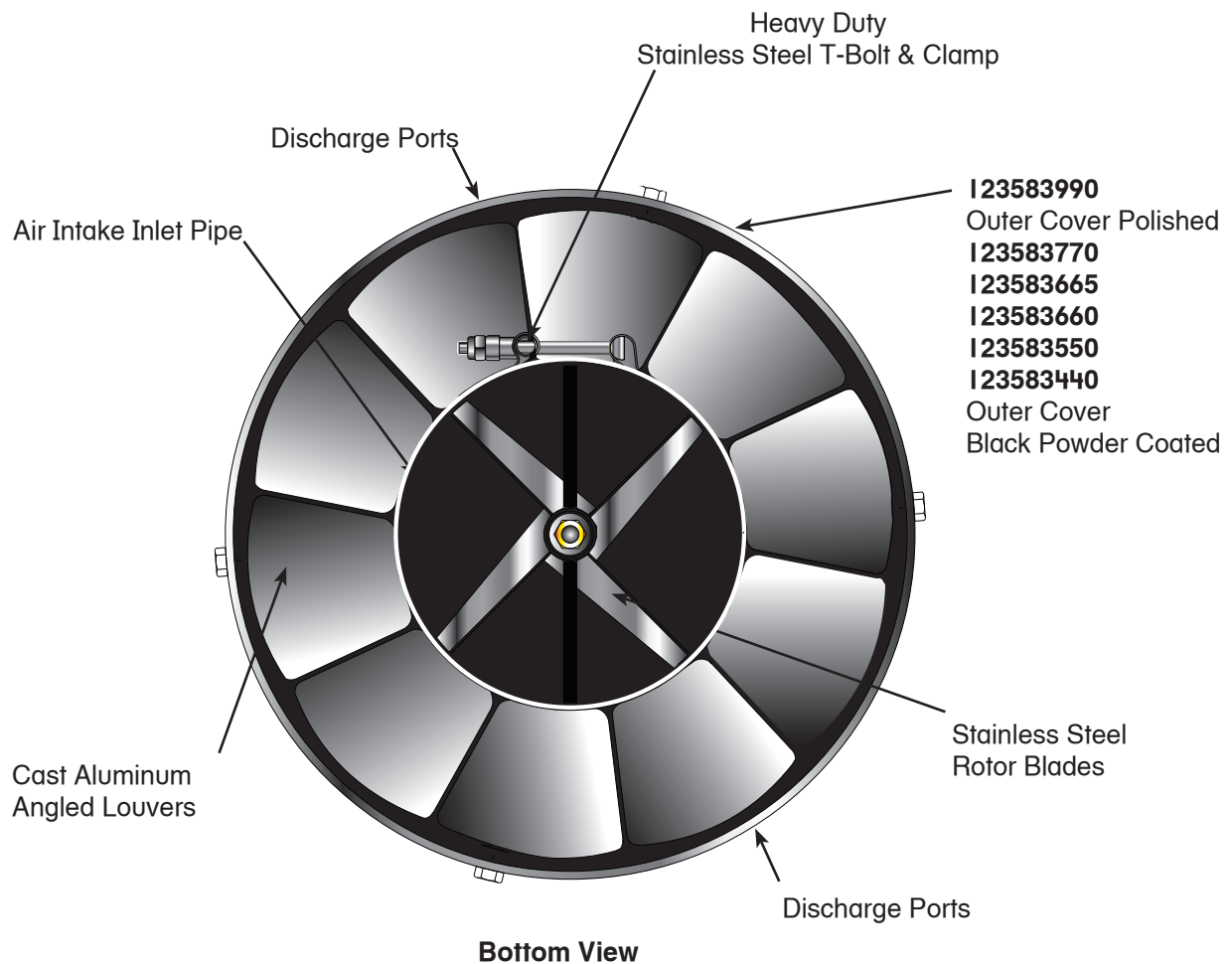


# Air Filtration

## Spinaire Series

### Part Description

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# Air Filtration

## TenKay Elements

5

### Tenkay Elements



Specifications	125154005	125254013	084404000
Description	Tenkay STXL282	Tenkay STL222	Pamic Tenkay
Height	34.4 in. (87.4 cm)	N/A	N/A
Width	11.8 in. (3.0 cm)	N/A	N/A
Weight	19.0 lbs (8.6 kg)	14.0 lbs (6.3 kg)	1.0 lbs (0.5 kg)



Parker Hannifin Corporation  
Racor Division, PO Box 3208  
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# Air Filtration

## Pamic Series



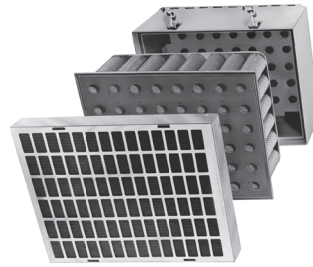
Autopamic Series



Rotopamic Series



Pre-Cleaners



Unipamic Series

The unique construction of the Pamic element with its exclusive mechanical pleat separation, provides more usable filter area than any competitive air cleaner, thus offering longer element life. UniPamic® models feature an efficient moisture separator panel which removes over 90% of the water that may enter the face of the air cleaner. AutoPamic® models can be upgraded to include a gravity-discharged dust pre-cleaner. RotoPamic® models are upgradable to either a compressed air or exhaust-aspirated pre-cleaner. An optional, easy-to-use service indicator tells when to change the filter element assuring maximum usage and lowest operating filter costs.

With its low intake air restriction and its greater effective media area than other dry-type air

cleaners, the Pamic Series offers improved fuel economy and lowers per hour operating costs. No special tools or techniques, dirt is held inside the pleated filter element tubes. The filter is replaced from the dirty side of the air cleaner, reducing the danger of engine contamination. Because it is an integral part of the filter element, there are no separate gaskets to replace.

### Benefits:

- Security Shield.
- Extended Service Life.
- Increased Horsepower.
- Reduced Fuel Consumption.
- Easy To Service.



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# Air Filtration

## Autopamic Series

# Autopamic Series

- Flow rates between 150 and 1280 CFM
- Gravity discharge pre-cleaner inlet
- Vertical tube configuration
- STD with no outlet
- Outlet ordered separately



Specifications	062705001	062705002	062705008
<b>Max Air Flow</b>	150-200 cfm (4.2-5.7 cmm)	175-250 cfm (5.0-7.1 cmm)	350-450 cfm (9.9-12.7 cmm)
<b>HP. Range</b>	75-100	80-125	175-225
<b>Pamic Element</b>	012233003	012233004	012233007
<b>Number of Tubes</b>	9	12	24
<b>High:</b>	3	3	4
<b>Wide:</b>	3	4	6
<b>Outlet Size</b>	3.0	3.0	4.0
<b>Width</b>	8.6 in. (21.8 cm)	10.9 in. (27.7 cm)	15.5 in. (39.4 cm)
<b>Height</b>	8.6 in. (21.8 cm)	8.6 in. (21.8 cm)	10.9 in. (27.7 cm)
<b>Weight</b>	32.3 lbs (14.5 kg)	37.0 lbs (17.0 kg)	58.7 lbs (26.4 kg)

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# Air Filtration

## Autopamic Series

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Specifications	062705010	062705011	062705012
<b>Max Air Flow</b>	450-650 cfm (12.7-18.4 cmm)	600-800 cfm (17.0-22.7 cmm)	700-950 cfm (19.8-26.9 cmm)
<b>HP. Range</b>	225-325	300-400	350-475
<b>Pamic Element</b>	012233008	012233009	012233010
<b>Number of Tubes</b>	32	40	48
<b>High:</b>	4	5	6
<b>Wide:</b>	8	8	8
<b>Outlet Size</b>	5.0 in. (12.7 cm)	5.0 in. (12.7 cm)	6.0 in. (15.2 cm)
<b>Width</b>	20.2 in. (51.3 cm)	20.2 in. (51.3 cm)	20.2 in. (51.3 cm)
<b>Height</b>	10.9 in. (27.7 cm)	13.2 in. (33.5 cm)	15.5 in. (39.4 cm)
<b>Weight</b>	71.0 lbs (32.0 kg)	84.0 lbs (38.1 kg)	93.0 lbs (42.0 kg)

Specifications	062705013	059714000	059716000	059718000
<b>Max Air Flow</b>	950-1280 cfm (26.9-36.2 cmm)	1200-1600 cfm (34.0-45.3 cmm)	1400-1900 cfm (39.6-53.8 cmm)	1900-2500cfm (53.8-70.8 cmm)
<b>HP. Range</b>	475-640	600-800	700-950	950-1280
<b>Pamic Element</b>	012233011	012233009x2	012233010x2	012233011x2
<b>Number of Tubes</b>	64	80 <sup>1</sup>	96 <sup>1</sup>	128 <sup>1</sup>
<b>High:</b>	8	8	8	8
<b>Wide:</b>	8	10	12	16
<b>Outlet Size</b>	6.0 in. (15.2 cm)	5.5x2		
<b>Width</b>	20.2 in. (51.3 cm)	20.2 in. (51.3 cm)	20.2 in. (51.3 cm)	20.2 in. (51.3 cm)
<b>Height</b>	20.2 in. (51.3 cm)	27.8 in. (70.6 cm)	32.4 in. (82.3 cm)	41.8 in. (104.1 cm)
<b>Weight</b>	111.0 lbs (50.3 kg)	160.0 lbs (72.6 kg)	175.0 lbs (79.4 kg)	217.0 lbs (98.4 kg)

<sup>1</sup> Double side by side housing. Two air outlet nozzles required. There are no internal flanges on double housings

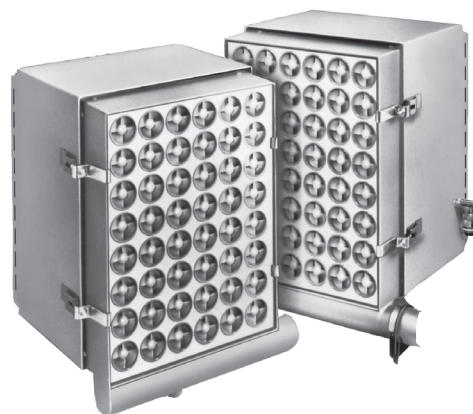


# Air Filtration

## Rotopamic Series

# Rotopamic Series

- Flow rates between 200 and 2200 CFM
- Positive pressure bleed
- Right hand bleed
- Vertical tube configuration
- STD with no outlet
- Outlet ordered separately



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Part Number	Kit Description	Weight
062713003	P24, V RH Bleed, NO Out	59.0 lbs (26.6 kg)
062713007	P32, V RH Bleed, NO Out	70.0 lbs (31.0 kg)
062713009	P40, V RH Bleed, NO Out	82.0 lbs (36.9 kg)
062713011	P48, V RH Bleed, NO Out	92.0 lbs (41.4 kg)
062713013	P64, V RH Bleed, NO Out	111.0 lbs (50.0 kg)
067872000	P80, V RH Bleed, NO Out	145.0 lbs (65.3 kg)
067874000	P96, V RH Bleed, NO Out	165.0 lbs (74.3 kg)
067876000	P128, V RH Bleed, NO Out	206.0 lbs (92.7 kg)

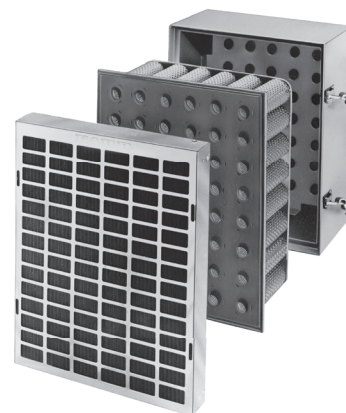


# Air Filtration

## Unipamic Series

### Unipamic Series

- Flow rates between 100 and 3200 CFM
- Moisture separator pre-cleaner
- Vertical tube configuration
- STD with no outlet
- Outlet ordered separately



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Specifications	044430001	059709000	059711000	059713000
<b>Max Air Flow</b>	1255 cfm (35.5 cmm)	1200 - 2000 cfm (34.0-56.6 cmm)	1400 - 2400 cfm (39.6-68.00 cmm)	2000 - 3200 cfm (56.6-90.6 cmm)
<b>Pamic Element (2)</b>	012233-008	012233009	056519004	065619005
<b>Moisture Separator (2)</b>	056519-002	056519003	012233010	012233011
<b>Width</b>	10.3 in. (26.2 cm)	27.8 in. (70.6 cm)	20.2 in. (56.4 cm)	20.2 in. (56.4 cm)
<b>Height</b>	40.2 in. (102.4 cm)	20.2 in. (56.4 cm)	32.4 in. (82.3 cm)	41.7 in. (105.9 cm)
<b>Depth</b>	15.5 in. (39.4 cm)	N/A	N/A	N/A
<b>Weight</b>	116.0 lbs (52.2 kg)	111.0 lbs (50.0 kg)	124.0 lbs (55.8 kg)	148.0 lbs (66.6 kg)

Specifications	062701003	062701004	062701010
<b>Max Air Flow</b>	3200 cfm (90.6 cmm)	3200 cfm (90.6 cmm)	3200 cfm (90.6 cmm)
<b>Number of Tubes</b>	9	12	24
<b>Pamic Element</b>	12233-003	12233-004	012233-007
<b>Moisture Separator</b>	056519-010	056519-011	056519-016
<b>Width</b>	8.6 in. (21.8 cm)	8.6 in. (21.8 cm)	10.9 in. (27.7 cm)
<b>Height</b>	8.6 in. (21.8 cm)	10.9 in. (27.7 cm)	15.5 in. (39.4 cm)
<b>Depth</b>	12.4 in. (31.5 cm)	12.4 in. (31.5 cm)	12.4 in. (31.5 cm)
<b>Weight</b>	25.0 lbs (11.3 kg)	29.6 lbs (13.3 kg)	44.4 lbs (20.0 kg)



# Air Filtration

## Unipamic Series

<b>Specifications</b>	<b>062701012</b>	<b>062701013</b>	<b>062701014</b>
<b>Max Air Flow</b>	3200 cfm (90.6 cmm)	3200 cfm (90.6 cmm)	3200 cfm (90.6 cmm)
<b>Number of Tubes</b>	32	40	48
<b>Pamic Element</b>	12233-008	12233-009	012233-010
<b>Moisture Separator</b>	056519-002	056519-003	056519-004
<b>Width</b>	10.9 in. (27.7 cm)	13.2 in. (33.5 cm)	15.5 in. (39.4 cm)
<b>Height</b>	20.2 in. (51.3 cm)	10.9 in. (27.7 cm)	20.1 in. (51.1 cm)
<b>Depth</b>	12.4 in. (31.5 cm)	12.4 in. (31.5 cm)	12.4 in. (31.5 cm)
<b>Weight</b>	54.7 lbs (24.6 kg)	61.6 lbs (27.7 kg)	68.5 lbs (30.8 kg)

<b>Specifications</b>	<b>062701015</b>	<b>062702001</b>	<b>062702002</b>
<b>Max Air Flow</b>	3200 cfm (90.6 cmm)	3200 cfm (90.6 cmm)	3200 cfm (90.6 cmm)
<b>Number of Tubes</b>	64	4	6
<b>Pamic Element</b>	012233-011	012233-002	012233-012
<b>Moisture Separator</b>	056519-005	056519-007	056519-008
<b>Width</b>	20.2 in. (51.3 cm)	6.3 in. (16.0 cm)	6.3 in. (16.0 cm)
<b>Height</b>	20.2 in. (51.3 cm)	6.3 in. (16.0 cm)	8.6 in. (21.8 cm)
<b>Depth</b>	12.4 in. (31.5 cm)	13.8 in. (35.0 cm)	13.8 in. (35.0 cm)
<b>Weight</b>	78.8 lbs (35.5 kg)	N/A	N/A

<b>Specifications</b>	<b>062702003</b>	<b>062703010</b>
<b>Max Air Flow</b>	3200 cfm (90.6 cmm)	3200 cfm (90.6 cmm)
<b>Number of Tubes</b>	9	40
<b>Pamic Element</b>	012233-003	012233-009
<b>Moisture Separator</b>	056519-010	056519-003
<b>Width</b>	8.6 in. (21.8 cm)	13.2 in. (33.5 cm)
<b>Height</b>	8.6 in. (21.8 cm)	20.2 in. (51.3 cm)
<b>Depth</b>	13.8 in. (35.0 cm)	14.2 in. (36.1 cm)
<b>Weight</b>	N/A	61.6 lbs (27.7 kg)

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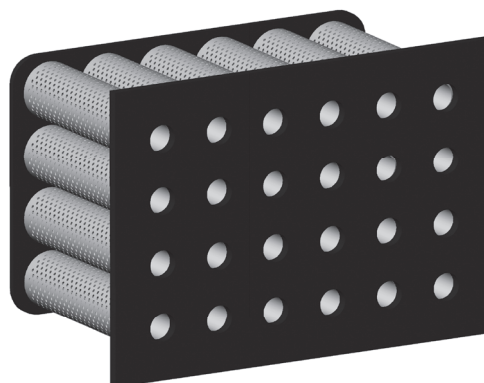


# Air Filtration

## Pamic Series

### *Pamic Series Elements*

- Fits all Pamic Series Housings.
- Moisture Block Media.



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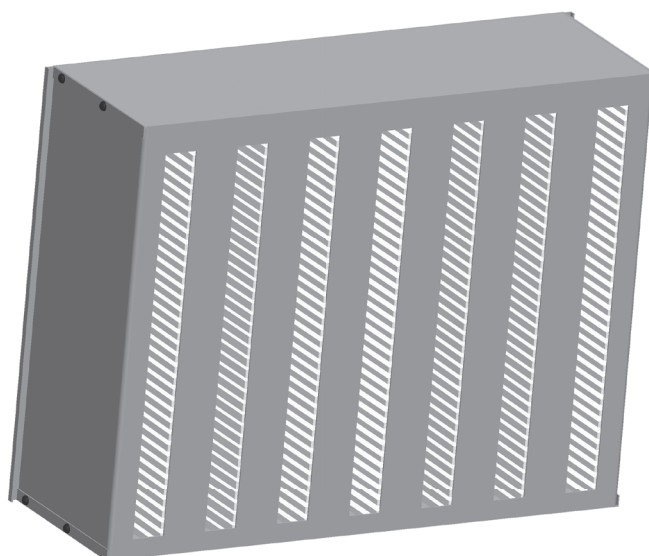
Part Number	Description	Weight
012233001	P-2	0.6 lbs (0.3 kg)
012233002	P-4	1.7 lbs (0.8 kg)
012233012	P-6	2.3 lbs (1.0 kg)
012233003	P-9	2.9 lbs (1.3 kg)
012233004	P-12	3.5 lbs (1.6 kg)
012233014	P-12-26 (2x6)	4.0 lbs (1.8 kg)
012233005	P-16	4.6 lbs (2.1 kg)
012233017	P-18	5.8 lbs (2.6 kg)
012233006	P-20	6.9 lbs (3.1 kg)
012233007	P-24	7.5 lbs (3.4 kg)
012233018	P-16-28 (3x8)	5.2 lbs (2.3 kg)
012233019	P-24-38 (3x8)	8.1 lbs (3.6 kg)
012233008	P-32	8.6 lbs (3.6 kg)
012233009	P-40	10.4 lbs (4.7 kg)
012233010	P-48	12.1 lbs (5.4 kg)
012233011	P-64	15.5 lbs (7.0 kg)

# Air Filtration

## Pamic Series

### *UHD Elements*

Replacement element for UHD systems.



Part Number	Size	Weight
061194000	Primary Filter 100	27.0 lbs (12.2 kg)
061195000	Secondary Filter 100	22.0 lbs (9.9 kg)

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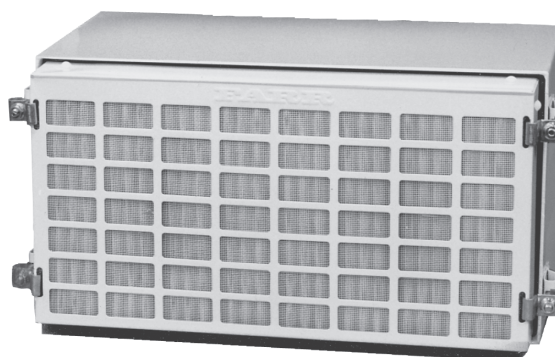
Technical Support:  
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# Air Filtration

## Pamic Series



### *Housing*

5

Part Number	Description	Weight
060450022	P-9	15.0 lbs (6.8 kg)
060450023	P-12	17.3 lbs (7.8 kg)
060450026	P-24	25.3 lbs (11.4 kg)
060450027	P-32	30.5 lbs (13.7 kg)
060450028	P-40	34.0 lbs (15.3 kg)
060450029	P-48	38.0 lbs (17.1 kg)
060450030	P-64	42.0 lbs (18.9 kg)
024811001	P-80	60.0 lbs (27.0 kg)
024811002	P-96	67.0 lbs (30.2 kg)
024811003	P-128	78.0 lbs (35.1 kg)

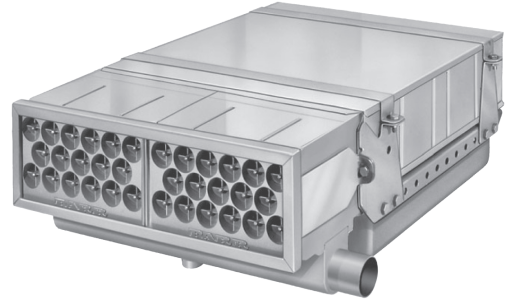
### *Fasteners*

Part Number	Description	Weight
042067000	Auto/Roto Pamic (P6 - P64)	0.4 lbs (0.2 kg)
042160000	Auto/Roto Pamic (P80, P96 and P128)	0.4 lbs (0.2 kg)
042586000	UniPamic (All Models)	0.4 lbs (0.2 kg)

# Air Filtration

## Pamic Series

### Pre-Cleaners



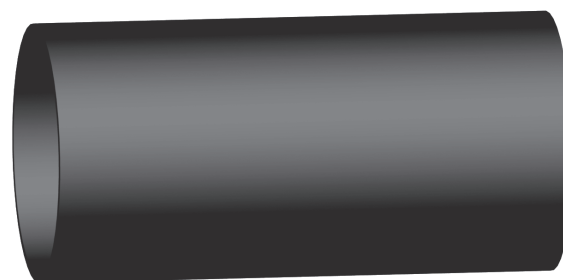
Part Number	Description	Weight
056519010	Unipamic Pre-Cleaner P-9	4.6 lbs (2.1 kg)
056519011	Unipamic Pre-Cleaner P-12	6.3 lbs (2.8 kg)
056519016	Unipamic Pre-Cleaner P-24	8.6 lbs (3.9 kg)
056519002	Unipamic Pre-Cleaner P-32	5.0 lbs (2.3 kg)
056519003	Unipamic Pre-Cleaner P-40/P-80	13.8 lbs (6.2 kg)
056519004	Unipamic Pre-Cleaner P-48/P-96	15.0 lbs (6.8 kg)
056519005	Unipamic Pre-Cleaner P-64/P-128	17.8 lbs (8.0 kg)
035589001	Autopamic Pre-Cleaner P-9	10.0 lbs (4.5 kg)
035589008	Autopamic Pre-Cleaner P-24	21.0 lbs (9.5 kg)
035589010	Autopamic Pre-Cleaner P-32	25.5 lbs (11.5 kg)
035589011	Autopamic Pre-Cleaner P-40/P-80	31.3 lbs (14.1 kg)
035589012	Autopamic Pre-Cleaner P-48/P-96	36.2 lbs (16.3 kg)
035589013	Autopamic Pre-Cleaner P-64/P-128	48.0 lbs (21.6 kg)
060392001	Rotopamic Pre-Cleaner P-24	20.0 lbs (9.0 kg)
060393001	Rotopamic Pre-Cleaner P-32	24.2 lbs (10.9 kg)
060394001	Rotopamic Pre-Cleaner P-40	14.0 lbs (6.3 kg)
060394002	Rotopamic Pre-Cleaner P-40 LH	31.0 lbs (14.0 kg)
060395001	Rotopamic Pre-Cleaner P-48	34.5 lbs (15.5 kg)
060395002	Rotopamic Pre-Cleaner P-48 LH	34.5 lbs (15.5 kg)
060396001	Rotopamic Pre-Cleaner P-64	46.0 lbs (20.7 kg)
060396002	Rotopamic Pre-Cleaner P-64 LH	46.0 lbs (20.7 kg)

# Air Filtration

## Pamic Series

### *Air Outlet Tubes*

- 4 in. length.
- Outlet transition for Pamic housings.



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<i>Specifications</i>	<b>015382200</b>	<b>015382204</b>	<b>015382208</b>	<b>015382210</b>
<b>Length</b>	4.0 in. (10.2 cm)	4.0 in. (10.1 cm)	4.0 in. (10.1 cm)	4.0 in. (10.1 cm)
<b>Width</b>	2.0 in. (5.1 cm)	2.3 in. (5.7 cm)	2.5 in. (6.3 cm)	2.6 in. (6.7 cm)
<b>Weight</b>	2.5 lbs (1.1 kg)	2.5 lbs (1.1 kg)	2.5 lbs (1.1 kg)	2.5 lbs (1.1 kg)

<i>Specifications</i>	<b>015382300</b>	<b>015382308</b>	<b>015382400</b>	<b>015382408</b>
<b>Length</b>	4.0 in. (10.2 cm)	4.0 in. (10.1 cm)	4.0 in. (10.1 cm)	4.0 in. (10.1 cm)
<b>Width</b>	3.0 in. (7.6 cm)	3.5 in. (8.8 cm)	4.0 in. (10.1 cm)	4.5 in. (11.4 cm)
<b>Weight</b>	2.5 lbs (1.1 kg)	3.0 lbs (1.4 kg)	3.0 lbs (1.4 kg)	3.0 lbs (1.4 kg)

<i>Specifications</i>	<b>015382500</b>	<b>015382508</b>	<b>015382600</b>	<b>015382700</b>
<b>Length</b>	4.0 in. (10.2 cm)	4.0 in. (10.1 cm)	4.0 in. (10.1 cm)	4.0 in. (10.1 cm)
<b>Width</b>	5.0 in. (12.7 cm)	5.5 in. (13.9 cm)	6.0 in. (15.2 cm)	7.0 in. (17.7 cm)
<b>Weight</b>	3.0 lbs (1.4 kg)	3.5 lbs (1.6 kg)	3.5 lbs (1.6 kg)	3.5 lbs (1.6 kg)

# Air Filtration

## Pamic Series

### Air Outlet Nozzles

- Outlet transition for pamic housing.
- Lower pressure drop than tubes



Specifications	041199001	041199002	041199003
<b>Length</b>	1.6 in. (4.1 cm)	1.6 in. (4.1 cm)	1.7 in. (4.3 cm)
<b>Maximum Width</b>	4.6 in. (11.7 cm)	5.1 in. (13.0 cm)	5.8 in. (14.7 cm)
<b>Outside Diameter</b>	3.0 in. (7.6 cm)	3.5 in. (8.9 cm)	4.0 in. (10.2 cm)
<b>Mounting Hole Size</b>	3.9 in. (9.9 cm)	4.3 in. (10.9 cm)	5.4 in. (13.7 cm)
<b>Weight</b>	0.7 lbs (0.3 kg)	0.7 lbs (0.3 kg)	1.0 lbs (0.5 kg)

Specifications	041199004	041199005	041199006
<b>Length</b>	2.0 in. (5.1 cm)	2.2 in. (5.6 cm)	2.2 in. (5.6 cm)
<b>Maximum Width</b>	7.2 in. (18.3 cm)	7.8 in. (19.8 cm)	8.3 in. (21.1 cm)
<b>Outside Diameter</b>	5.0 in. (12.7 cm)	5.5 in. (14.0 cm)	6.0 in. (15.2 cm)
<b>Mounting Hole Size</b>	6.1 in. (15.5 cm)	6.9 in. (17.5 cm)	7.4 in. (18.8 cm)
<b>Weight</b>	1.2 lbs (0.5 kg)	1.4 lbs (0.6 kg)	1.6 lbs (0.7 kg)

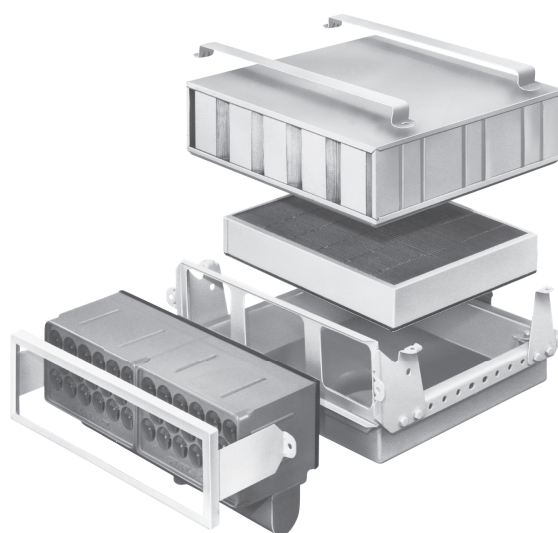
Specifications	041199007	041199807	070025004
<b>Length</b>	2.2 in. (5.6 cm)	2.2 in. (5.6 cm)	2.2 in. (5.6 cm)
<b>Maximum Width</b>	9.4 in. (23.9 cm)	9.4 in. (23.9 cm)	10.4 in. (26.4 cm)
<b>Outside Diameter</b>	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	8.0 in. (20.3 cm)
<b>Mounting Hole Size</b>	8.3 in. (21.1 cm)	8.3 in. (21.1 cm)	9.3 in. (23.6 cm)
<b>Weight</b>	2.5 lbs (1.1 kg)	2.5 lbs (1.1 kg)	1.8 lbs (0.8 kg)

# Air Filtration

## Dynacell Series

Dynacell air cleaners are recommended for engine driven generator sets, pumps, compressors and other similar applications where high efficiency and a low profile are required. Heavy service applications include off-highway and logging trucks, agricultural tractor & graders, as well as construction and mining equipment. Extra heavy service applications include

- Air flow rate from 500 to 1470 CFM.
- Horizontal or vertical installation.
- With or without pre-cleaner.
- Gravity bleed or positive pressure.
- With or without safety.
- Outlet in the center of the pan.



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### T-512

<i>Specifications</i>	<b>058447000</b>	<b>060039000</b>	<b>066386002</b>	<b>066401002</b>
<b>Max Flow Rate</b>	600 cfm (17.0 cmm)	500 cfm (14.2 cmm)	425 cfm (12.0 cmm)	425 cfm (12.0 cmm)
<b>Positive Pressure</b>	No	No	No	No
<b>Gravity Bleed</b>	No	No	Horizontal	Vertical
<b>Safety Element</b>	No	060236000	No	No
<b>Element</b>	049261000	049261000	049261000	049261000
<b>Outlet Size</b>	5.0 in. ( 12.7 cm)	5.0 in. ( 12.7 cm)	5.0 in. ( 12.7 cm)	5.0 in. ( 12.7 cm)
<b>Height</b>	5.0 in. ( 12.7 cm)	7.7 in. (19.6 cm)	11.3 in. (28.7 cm)	11.7 in. (29.7 cm)
<b>Width</b>	11.5 in. (29.2 cm)	11.6 in. (29.5 cm)	11.7 in. (29.7 cm)	11.3 in. (28.7 cm)
<b>Length</b>	15.0 in. (38.1 cm)	15.1 in. (38.4 cm)	15.1 in. (38.4 cm)	15.1 in. (38.4 cm)
<b>Weight</b>	19.0 lbs (8.6 kg)	53.0 lbs (23.9 kg)	55.0 lbs (24.8 kg)	55.0 lbs (24.8 kg)



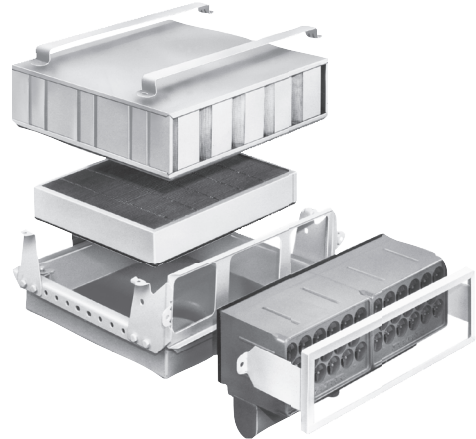
**Parker Hannifin Corporation**  
 Racor Division, PO Box 3208  
 Modesto, CA 95354 USA  
 Phone: 800.344.3286  
 Fax: 209.529.3278  
 E-mail: racor@parker.com  
 www.parker.com/racor





# Air Filtration

## Dynacell Series



### T-512

Part Number	Outlet Size	Weight
058447000	5.0 in. (12.7 cm) Outlet	60.5 lbs (27.2 kg)
060039000	5.0 in. (12.7 cm) Outlet w/Safety	60.5 lbs (27.2 kg)
066386002	5.0 in. (12.7 cm) Outlet h/Grav Bld	53.0 lbs (23.9 kg)
066401002	5.0 in. (12.7 cm) Outlet v/Grav Bld	55.0 lbs (23.9 kg)
066386003	5.0 in. (12.7 cm) Outlet h/Grav Bld/Safety	60.5 lbs (27.2 kg)
066401003	5.0 in. (12.7 cm) Outlet v/Grav Bld/Safety	60.5 lbs (27.2 kg)
066417002	5.0 in. (12.7 cm) Outlet h/Pos Pres Bld	53.0 lbs (23.9 kg)
066430002	5.0 in. (12.7 cm) Outlet v/Pos Pres Bld	55.0 lbs (23.9 kg)
066417003	5.0 in. (12.7 cm) Outlet h/Pos Pres w/Safety	60.5 lbs (27.2 kg)

### T-519

Part Number	Outlet Size	Weight
058447000	5.0 in. (12.7 cm) Outlet	60.5 lbs (27.2 kg)
060039000	5.0 in. (12.7 cm) Outlet w/Safety	60.5 lbs (27.2 kg)
066386002	5.0 in. (12.7 cm) Outlet h/Grav Bld	53.0 lbs (23.9 kg)
066401002	5.0 in. (12.7 cm) Outlet v/Grav Bld	55.0 lbs (23.9 kg)
066386003	5.0 in. (12.7 cm) Outlet h/Grav Bld/Safety	60.5 lbs (27.2 kg)
066401003	5.0 in. (12.7 cm) Outlet v/Grav Bld/Safety	60.5 lbs (27.2 kg)
066417002	5.0 in. (12.7 cm) Outlet h/Pos Pres Bld	53.0 lbs (23.9 kg)
066430002	5.0 in. (12.7 cm) Outlet v/Pos Pres Bld	55.0 lbs (23.9 kg)

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# Air Filtration

## Dynacell Series

# T-528

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<b>Part Number</b>	<b>Outlet Size</b>	<b>Weight</b>
<b>066417003</b>	5.0 in. (12.7 cm) Outlet h/Pos Pres w/Safety	60.5 lbs (27.2 kg)
<b>066430003</b>	5.0 in. (12.7 cm) Outlet v/Pos Pres w/Safety	60.5 lbs (27.2 kg)
<b>060144000</b>	6.0 in. (15.2 cm) Outlet	53.0 lbs (23.9 kg)
<b>060040000</b>	6.0 in. (15.2 cm) Outlet w/Safety	53.0 lbs (23.9 kg)
<b>066386005</b>	6.0 in. (15.2 cm) Outlet h/Grav Bld	53.0 lbs (23.9 kg)
<b>066401005</b>	6.0 in. (15.2 cm) Outletv/Grav Bld	53.0 lbs (23.9 kg)
<b>066386006</b>	6.0 in. (15.2 cm) Outlet h/Grav Bld/Safety	60.5 lbs (27.2 kg)
<b>066401006</b>	6.0 in. (15.2 cm) Outlet v/Grav Bld/Safety	60.5 lbs (27.2 kg)
<b>066417005</b>	6.0 in. (15.2 cm) Outlet h/Pos Pres Bld	52.0 lbs (23.4 kg)
<b>066430005</b>	6.0 in. (15.2 cm) Outlet v/Pos Pres Bld	52.0 lbs (23.4 kg)
<b>066417006</b>	6.0 in. (15.2 cm) Outlet h/Pos Pres Bld/Safety	60.5 lbs (27.2 kg)
<b>066430006</b>	6.0 in. (15.2 cm) Outlet v/Pos Pres Bld/Safety	60.5 lbs (27.2 kg)
<b>060146000</b>	7.0 in. (17.7 cm) Outlet	72.0 lbs (32.4 kg)
<b>060147000</b>	7.0 in. (17.7 cm) Outlet w/Safety	106 lbs (47.7 kg)
<b>066386008</b>	7.0 in. (17.7 cm) Outlet h/Grav Bld	72.0 lbs (32.4 kg)
<b>066430009</b>	7.0 in. (17.7 cm) Outlet v/Pos Bld/Safety	106 lbs (47.7 kg)
<b>066430008</b>	7.0 in. (17.7 cm) Outlet v/Grav Bld/Safety	106 lbs (47.7 kg)
<b>066386009</b>	7.0 in. (17.7 cm) Outlet h/Grav Bld/Safety	106 lbs (47.7 kg)
<b>066417008</b>	7.0 in. (17.7 cm) Outlet h/Pos Press Bld	72.0 lbs (32.4 kg)
<b>066417009</b>	7.0 in. (17.7 cm) Outlet h/Pos Press Bld/Safety	106 lbs (47.7 kg)

# Air Filtration

## Dynacell Series

### Dynacell T-Series Elements



Specifications	016411000	049261000	045800000	051800000
<b>Housing</b>	T-508	T-512	T-519	T-528
<b>Width</b>	19.0 in. (48.2 cm)	11.5 in. ( )	19.0 in. (48.2 cm)	28.5 in. (72.4 cm)
<b>Height</b>	5.0 in. (12.7 cm)	5.0 in. (12.7 cm)	5.0 in. (12.7 cm)	5.0 in. (12.7 cm)
<b>Length</b>	19.0 in. (48.2 cm)	15.0 in. (38.1 cm)	19.0 in. (48.2 cm)	19.0 in. (48.2 cm)
<b>Weight</b>	3.0 lbs (1.4 kg)	9.0 lbs (4.1 kg)	18.0 lbs (8.1 kg)	24.0 lbs (10.8 kg)

Specifications	048976000	049812000	060236000	060237000
<b>Housing</b>	T-519-D	T-528-D	T-512	T-519
<b>Width</b>	19.0 in. (48.2 cm)	28.5 in. (72.4 cm)	10.8 in. (27.4 cm)	14.8 in. (37.6 cm)
<b>Height</b>	5.0 in. (12.7 cm)	5.0 in. (12.7 cm)	1.6 in. (4.1 cm)	2.7 in. (6.9 cm)
<b>Length</b>	19.0 in. (48.2 cm)	19.0 in. (48.2 cm)	9.4 in. (23.9 cm)	16.9 in. (42.9 cm)
<b>Weight</b>	18.0 lbs (8.1 kg)	24.0 lbs (10.8 kg)	2.5 lbs (1.1 kg)	5.3 lbs (2.4 kg)

Specifications	060238000	052711000	060799000
<b>Housing</b>	T-528	T-520-DR	T-529-DR
<b>Width</b>	20.8 in. (52.8 cm)	19.5 in. (49.5 cm)	29.5 in. (74.9 cm)
<b>Height</b>	16.9 in. (42.9 cm)	19.5 in. (49.5 cm)	19.0 in. (48.3 cm)
<b>Depth</b>	3.0 in. (7.6 cm)	5.3 in. (13.5 cm)	5.4 in. (13.7 cm)
<b>Weight</b>	6.5 lbs (2.9 kg)	19.0 lbs (8.6 kg)	24.0 lbs (10.8 kg)

# Air Filtration

## Dynacell Series

Specifications	099930001	099930002	099930003
<b>Housing</b>	RC-250	RC-300	RC-150
<b>Width</b>	5.3 in. (13.5 cm)	5.3 in. (13.5 cm)	5.3 in. (13.5 cm)
<b>Height</b>	14.0 in. (35.8 cm)	14.0 in. (35.8 cm)	14.0 in. (35.8 cm)
<b>Length</b>	36.1 in. (91.7 cm)	45.1 in. (114.6 cm)	22.5 in. (57.2 cm)
<b>Weight</b>	12.5 lbs (5.6 kg)	21.5 lbs (9.7 kg)	26.5 lbs (11.9 kg)

## T-Series Gravity Discharge Superclone Pre-cleaners

Specifications	049470001	049470002	049470003
<b>Bleed</b>	Horizontal Right Hand	Horizontal Left Hand	Vertical Left Hand
<b>Outlet Size</b>	2.5 in. (6.4 cm)	2.5 in. (6.4 cm)	2.5 in. (6.4 cm)
<b>Width</b>	19.0 in. (48.3 cm)	19.0 in. (48.3 cm)	19.0 in. (48.3 cm)
<b>Height</b>	9.6 in. (24.4 cm)	9.6 in. (24.4 cm)	8.6 in. (21.8 cm)
<b>Depth</b>	6.8 in. (17.3 cm)	6.8 in. (17.3 cm)	6.8 in. (17.3 cm)
<b>Weight</b>	8.0 lbs (3.6 kg)	8.0 lbs (3.6 kg)	8.0 lbs (3.6 kg)

Specifications	049470004	049471001	049471002
<b>Bleed</b>	Horizontal Right Hand	Horizontal, Right Hand	Horizontal, Left Hand
<b>Outlet Size</b>	2.5 in. (6.4 cm)	2.0 in. (5.1 cm)	2.0 in. (5.1 cm)
<b>Width</b>	19.0 in. (48.3 cm)	11.5 in. (29.2 cm)	11.5 in. (29.2 cm)
<b>Height</b>	8.6 in. (21.8 cm)	9.1 in. (23.1 cm)	9.1 in. (23.1 cm)
<b>Depth</b>	6.8 in. (17.3 cm)	6.8 in. (17.3 cm)	6.8 in. (17.3 cm)
<b>Weight</b>	8.0 lbs (3.6 kg)	4.0 lbs (1.8 kg)	4.0 lbs (1.8 kg)

Specifications	049471003	049471004	051793001
<b>Bleed</b>	Vertical, Left Hand	Vertical, Right Hand	Horizontal Dual Bleed
<b>Outlet Size</b>	2.5 in. (6.4 cm)	2.0 in. (5.1 cm)	2.7 in. (6.9 cm)
<b>Width</b>	19.0 in. (48.3 cm)	11.5 in. (29.2 cm)	28.5 in. (72.4 cm)
<b>Height</b>	8.1 in. (20.6 cm)	8.1 in. (20.6 cm)	5.7 in. (14.5 cm)
<b>Depth</b>	6.8 in. (17.3 cm)	6.8 in. (17.3 cm)	6.8 in. (17.3 cm)
<b>Weight</b>	8.0 lbs (3.6 kg)	4.0 lbs (1.8 kg)	16.0 lbs (7.2 kg)



# Air Filtration

Dynacell Series

## Positive Pressure Superclones



*T-512*

<b>Specifications</b>	060095001	060095002	061334001	061334002
<b>Air Flow Rate</b>	250-500 cfm (7.1-14.2 cmm)	250-500 cfm (7.1-14.2 cmm)	550-1000 cfm (15.6-28.3 cmm)	550-1000 cfm (15.6-28.3 cmm)
<b>Bleed Connection 1/2" NPT</b>	Horizontal Right Hand	Horizontal Left Hand	Vertical Left Hand	Vertical Right Hand
<b>Comp Air Nozzel</b>	060876000			
<b>Outlet Size</b>	2.0 in. (5.1 cm)	2.0 in. (5.1 cm)	1.5 in. (3.8 cm)	1.5 in. (3.8 cm)
<b>Width</b>	11.5 in. (29.2 cm)	11.5 in. (29.2 cm)	11.5 in. (29.2 cm)	11.5 in. (29.2 cm)
<b>Height</b>	8.9 in. (22.6 cm)	8.9 in. (22.6 cm)	8.9 in. (22.6 cm)	8.9 in. (22.6 cm)
<b>Depth</b>	6.8 in. (17.3 cm)	6.8 in. (17.3 cm)	6.8 in. (17.3 cm)	6.8 in. (17.3 cm)
<b>Weight</b>	5.0 lbs (2.3 kg)	5.0 lbs (2.3 kg)	6.0 lbs (2.7 kg)	6.0 lbs (2.7 kg)

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# Air Filtration

## Dynacell Series

### T-519

<b>Specifications</b>	<b>060096001</b>	<b>060096002</b>	<b>061335001</b>	<b>061335002</b>
<b>Air Flow Rate</b>	500-1000 cfm (14.2-28.3 cmm)	500-1000 cfm (14.2-28.3 cmm)	500-1000 cfm (14.2-28.3 cmm)	500-1000 cfm (14.2-28.3 cmm)
<b>Bleed Connection 1/2" NPT</b>	Horizontal Right Hand	Horizontal Left Hand	Vertical Right Hand	Vertical Left Hand
<b>Comp Air Nozzel</b>	060876000			
<b>Outlet Size</b>	2.0 in. (5.1 cm)	2.0 in. (5.1 cm)	2.0 in. (5.1 cm)	2.0 in. (5.1 cm)
<b>Width</b>	19.0 in. (48.3 cm)	19.0 in. (48.3 cm)	19.0 in. (48.3 cm)	19.0 in. (48.3 cm)
<b>Height</b>	8.9 in. (22.6 cm)	8.9 in. (22.6 cm)	8.9 in. (22.6 cm)	8.9 in. (22.6 cm)
<b>Depth</b>	6.8 in. (17.3 cm)	6.8 in. (17.3 cm)	6.8 in. (17.3 cm)	6.8 in. (17.3 cm)
<b>Weight</b>	9.0 lbs (4.1 kg)	9.0 lbs (4.1 kg)	10.0 lbs (4.5 kg)	10.0 lbs (4.5 kg)

### T-528

<b>Specifications</b>	<b>061336001</b>	<b>061336002</b>
<b>Air Flow Rate</b>	1050 cfm (29.7 cmm)	1050 cfm (29.7 cmm)
<b>Bleed Connection 1/2" NPT</b>	Vertical Left Hand	Vertical Right Hand
<b>Comp Air Nozzel</b>	060876000	
<b>Outlet Size</b>	2.0 in. (5.1 cm)	2.0 in. (5.1 cm)
<b>Width</b>	28.5 in. (72.4 cm)	28.5 in. (72.4 cm)
<b>Height</b>	5.7 in. (14.5 cm)	5.7 in. (14.5 cm)
<b>Depth</b>	6.8 in. (17.8 cm)	6.8 in. (17.8 cm)
<b>Weight</b>	17.0 lbs (7.7 kg)	17.0 lbs (7.7 kg)

# Air Filtration

## Dynacell Series



## Dynacell Accessories

Part Number	Dynacell	Weight
049890001	T-512 Filter Strap	1.0 lbs (0.5 kg)
049890003	T-519 Filter Strap	1.5 lbs (0.7 kg)
051799000	T-528 Filter Strap	2.2 lbs (1.0 kg)
049891000	Dynacell Clamping Bracket	0.5 lbs (0.2 kg)
050073000	Locator Angle	0.2 lbs (0.1 kg)
051884001	T-512 Retaining Frame	1.5 lbs (0.7 kg)
051884002	T-519 Retaining Frame	2.0 lbs (0.9 kg)
051884003	T-528 Retaining Frame	2.5 lbs (1.1 kg)
059599001	T-512 Sealing Frame	1.5 lbs (0.7 kg)
059599002	T-519 Sealing Frame	2.0 lbs (0.9 kg)
059599003	T-528 Sealing Frame	2.5 lbs (1.1 kg)
043910203	Bolt 5/16"	0.1 lbs (0.0 kg)
038105007	Flange Nut 5/16"	0.1 lbs (0.0 kg)
035588000	T-512 Bleed Valve	0.5 lbs (0.2 kg)
049780000	T-519 / T-528 Bleed Valve	0.5 lbs (0.2 kg)
050727000	Vibration Isolator For T-512, T-519 and T-528	0.7 lbs (0.3 kg)

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# Air Filtration

## Washable Filters

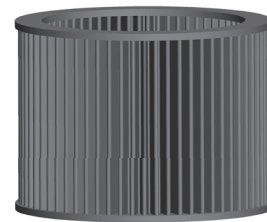
### *Air Filter Replacements*

Parker Hannifin Corporation, Racor Division guarantees that each new Long Life Air Filter Element will provide a minimum of Twice The Life service compared to a conventional pleated paper type air filter element, if it is installed properly and serviced according to the manufacturer's recommended procedures.

If any Long Life Air Filter element fails to provide you with at least (Twice The Life) of a leading conventional pleated paper type air filter element, Racor will replace the air filter, free of charge.

Long life filters use a multi staged depth media with oil impregnated cotton gauze, to be sandwiched between pleated epoxy coated aluminum wire-mesh, and a molded polyurethane sealing surfaces.

- Holds up to 8 times more contaminants than conventional paper filters.
- Provides a minimum of twice the service life of conventional paper filters.
- Increase fuel economy due to lower initial restriction.
- Prevents corrosion by repelling water.



**AF M81xx Series**



**AF M80xx Series**



**AFM82006**  
Air Filter Cleaning Kit



**Parker Hannifin Corporation**  
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Modesto, CA 95354 USA  
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[www.parker.com/racor](http://www.parker.com/racor)

**RACOR**®



# Air Filtration

## Washable Filters

### Washable & Reusable

Racor offers direct replacements for the intake air filter portion of competitive air filters & silencers. Also available is the replacement element for the vacuum limiter air separator.

The filter media for all replacement filters is an oil-impregnated cotton gauze and is sandwiched between pleated, epoxy-coated aluminum wire-mesh polyurethane sealed surfaces. This product is cleanable and must be oiled before re-using



Specifications	AFTFP2062-1	AFTRD1690	AFTFP2056
Application	Chevrolet Air Filter Flat Panel	Chevrolet Air Filter	Air Filter-Dodge Cummins T/d
Description	Turbo/Non Turbo	Turbo/Non Turbo	Ram 1500, 2500, 3500, Turbo
Year	1993 - 1996	1992 - 1995	1994 - 2002
Engine	6.5L V8 Diesel	6.5L V8, 6.2L V8 Diesel	5.9L L6 Diesel

Specifications	AFTRD1023	AFTRD1946	AFTRD1460
Application	Air Filter-Dodge Cummins P/U	Air Filter, Ford F Series P/U	Air Filter, Ford
Description	Turbo	Turbo	Turbo/Non Turbo
Year	1989 - 1993	1994 - 1998	1994 - 1996
Engine	5.9L L6 Diesel	7.3L V8 Diesel	7.3L V8 Diesel

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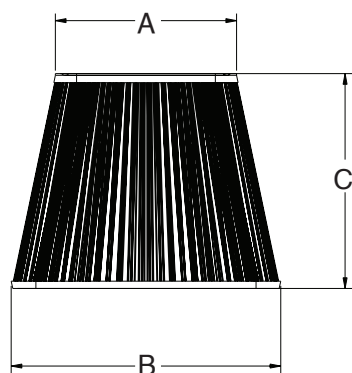
550



# Air Filtration

## Washable Filters

- Directly replaces competitive service elements.
- Marine Direct Replacements.



5

Specifications	AF M8010*	AF M8021	AF M8025
<b>Diameter</b>	<b>A</b>	2.2 in. (5.6 cm)	5.1 in. (13.0 cm)
	<b>B</b>	3.0 in. (7.6 cm)	7.5 in. (19.1 cm)
<b>Height</b>	<b>C</b>	3.2 in. (8.1 cm)	8.0 in. (20.3 cm)
<b>Walker Part #</b>	CD180	CD194	CD125

\* Air Separator Element

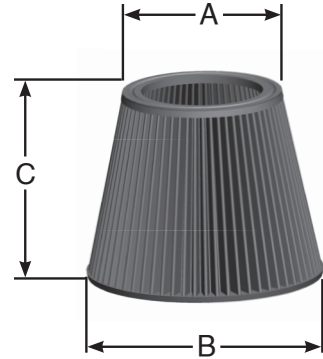
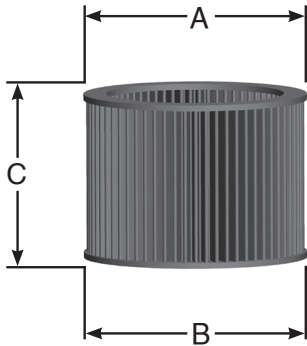
Specifications	AF M8026	AF M8033	AF M8034
<b>Diameter</b>	<b>A</b>	5.1 in. (13.0 cm)	6.9 in. (17.5 cm)
	<b>B</b>	7.5 in. (19.1 cm)	9.0 in. (22.9 cm)
<b>Height</b>	<b>C</b>	10.0 in. (25.4 cm)	9.0 in. (22.9 cm)
<b>Walker Part #</b>	CD190	CD197	CD196

Specifications	AF M8037	AF M8047
<b>Diameter</b>	<b>A</b>	6.9 in. (17.5 cm)
	<b>B</b>	9.0 in. (22.9 cm)
<b>Height</b>	<b>C</b>	14.0 in. (35.6 cm)
<b>Walker Part #</b>	CD184	CD185

# Air Filtration

## Washable Filters

### Washable Filters



Walker Part #		CD169	CD170	CD173
Diameter	A	16.0 in. (40.6 cm)	10.0 in. (25.4 cm)	7.5 in. (19.1 cm)
Diameter	B	16.0 in. (40.6 cm)	10.0 in. (25.4 cm)	7.5 in. (19.1 cm)
Height	C	16.0 in. (40.6 cm)	8.0 in. (20.3 cm)	5.0 in. (12.7 cm)
Racor Part #		N/A	AF M8145	N/A

Walker Part #		CD174	CD175	CD176
Diameter	A	7.5 in. (19.1 cm)	7.5 in. (19.1 cm)	7.5 in. (19.1 cm)
Diameter	B	7.5 in. (19.1 cm)	7.5 in. (19.1 cm)	7.5 in. (19.1 cm)
Height	C	6.0 in. (15.2 cm)	7.0 in. (17.8 cm)	8.0 in. (20.3 cm)
Racor Part #		AF M8121	AF M8122	N/A

Walker Part #		CD177	CD178	CD180
Diameter	A	7.5 in. (19.1 cm)	7.5 in. (19.1 cm)	3.0 in. (7.6 cm)
Diameter	B	7.5 in. (19.1 cm)	7.5 in. (19.1 cm)	3.0 in. (7.6 cm)
Height	C	9.0 in. (22.9 cm)	10.0 in. (25.4 cm)	3.0 in. (7.6 cm)
Racor Part #		AF M8124	AF M8126	AF M8010

# Air Filtration

## Washable Filters



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Competitive Part Numbers	Racor Part Numbers	Dimensions (D x H x W)
CD187	AF M8155	12 x 8 x 12
CD189	N/A	12 x 14 x 12
CD190	AF M8026	7.5 x 10 x 5.125
CD194	AF M8021	7.5 x 6 x 5.125
CD195	AF M8025	7.5 x 8 x 5.125
CD196	AF M8034	9 x 9
CD197	AF M8033	9 x 12
CD200	AF M8134	9 x 9 x 9
CD201	AF M8133	9 x 12 x 9
CD202	AF M8141	10 x 6 x 10
CD203	AF M8151	12 x 6 x 12
CD204	AF M8156	12 x 10 x 12
Detroit Diesel PN.		
23508033	AF M8033	12" Filter
23508034	AF M8034	9" Filter



# Air Filtration

## Air Accessories

Air accessories include all parts that are used in assemblies, filters, units and elements for Racor products. The Racor lineup includes heavy-duty air cleaners and pre-cleaners, marine filter/silencers, cabin air filters and replacement filters. All are super high-efficiency, with engineered, application specific media that improves performance as it extends service life. Whatever your application, there's a Racor Air Filtration System that will help you and your engine breathe easy.

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Restriction Indicators



Rubber Elbows and Fittings



Cleaning Kit  
AFM82006



Hose Clamps



Mounting Clamps



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# Air Filtration

## Air Accessories

### *T-Bolt Clamp*

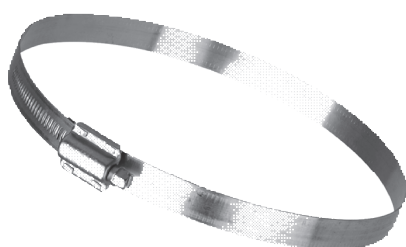


<i>Part Number</i>	<i>Size</i>	<i>Weight</i>
<i>111657004</i>	3.3 in. (8.3 cm) to 3.6 in. (9.1 cm)	0.10 lbs (0.0 kg)
<i>111657006</i>	4.3 in. (10.9 cm) to 4.6 in. (11.6 cm)	0.12 lbs (0.1 kg)
<i>111657008</i>	5.3 in. (13.4 cm) to 5.6 in. (14.2 cm)	0.15 lbs (0.1 kg)
<i>111657009</i>	5.8 in. (14.7 cm) to 6.1 in. (15.4 cm)	0.17 lbs (0.1 kg)
<i>111657010</i>	6.3 in. (16.0 cm) to 6.6 in. (16.7 cm)	0.18 lbs (0.1 kg)
<i>111657011</i>	7.4 in. (18.7 cm) to 7.7 in. (19.5 cm)	0.20 lbs (0.1 kg)
<i>111657012</i>	8.4 in. (21.3 cm) to 8.7 in. (22.0 cm)	0.22 lbs (0.1 kg)
<i>111657013</i>	6.7 in. (17.0 cm) to 7.1 in. (18.0 cm)	0.36 lbs (0.2 kg)
<i>111657014</i>	7.7 in. (19.5 cm) to 8.1 in. (20.5 cm)	0.21 lbs (0.1 kg)
<i>111657015</i>	8.5 in. (21.5 cm) to 8.8 in. (22.3 cm)	0.22 lbs (0.1 kg)
<i>111657016</i>	9.7 in. (24.6 cm) to 10.0 in. (25.4 cm)	0.26 lbs (0.1 kg)

# Air Filtration

## Air Accessories

### Hose Clamp



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Part Number	Size	Weight
004690006	3.5 in. (8.8 cm) to 4.5 in. (11.4 cm)	0.06 lbs (0.0 kg)
004690008	5.1 in. (12.9 cm) to 6.0 in. (15.2 cm)	0.06 lbs (0.0 kg)
004690011	4.1 in. (10.4 cm) to 5.0 in. (12.7 cm)	0.06 lbs (0.0 kg)
004690012	5.6 in. (14.2 cm) to 6.5 in. (16.5 cm)	0.06 lbs (0.0 kg)
004690015	6.8 in. (17.2 cm) to 7.7 in. (19.5 cm)	0.06 lbs (0.0 kg)
004690016	8.3 in. (21.0 cm) to 9.2 (23.3 cm)	0.06 lbs (0.0 kg)
004690018	7.6 in. (19.3 cm) to 8.2 in. (20.8 cm)	0.06 lbs (0.0 kg)
004690019	9.8 in. (24.8 cm) to 10.7 in. (27.1 cm)	0.06 lbs (0.0 kg)



# Air Filtration

## Air Accessories

### Mounting Clamps

- Installs by matching element diameter.
- For the ECO Series.



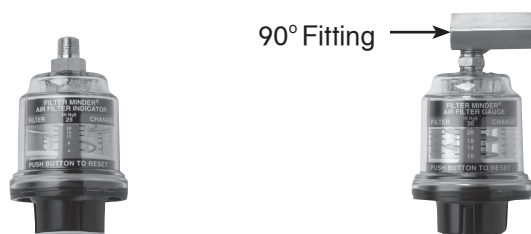
Part Number	Description	Weight
071921001	Clamp Powder Coated ECO 10"	1.3 lbs (0.6 kg)
071921002	Clamp Powder Coated ECO 11"	1.4 lbs (0.6 kg)
071921003	Clamp Powder Coated ECO 13"	1.6 lbs (0.7 kg)
071921004	Clamp Powder Coated ECO 11" (90)	1.4 lbs (0.6 kg)
071921006	Clamp Powder Coated ECO 15"	1.6 lbs (0.7 kg)
099049001	Clamp Powder Coated ECO-SE 6.75"	0.6 lbs (0.3 kg)
099049002	Clamp Powder Coated ECO-SE 7.75"	0.7 lbs (0.3 kg)
099049003	Clamp Powder Coated ECO-SE 9.75"	0.8 lbs (0.4 kg)

# Air Filtration

## Air Accessories

### Restriction Indicators

- Restrictions from 4 to 25 in. H<sub>2</sub>O.
- Direct or remote mount.



Part Number	Range (in H <sub>2</sub> O vac.)	Description
400033015 <sup>1</sup>	3-15"	Direct Mount
400033020 <sup>1</sup>	4-20"	Direct Mount
400033025 <sup>1</sup>	4-25"	Direct Mount
014440001 <sup>1</sup>	4-25"	Direct Mount with 90° fitting
072604000 <sup>2</sup>	4-25"	Remote Mount
076248001 <sup>1</sup>	8-25"	Dash Mount
014439000	4-25"	N/A
039135001	7-25"	Adaptor Kit

<sup>1</sup> Unit standard with a 1/8"-27 NPT straight fitting.

<sup>2</sup> Unit standard with a 90° coupling and 10' hose.

### Filter Monitor

Part Number	Range (in H <sub>2</sub> O vac.)	Description
500198020	20"	Filter Monitor
500198025	25"	Filter Monitor

### Accessories

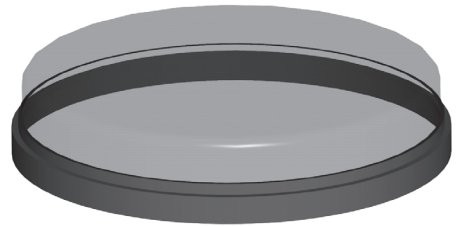
Part Number	Range (in H <sub>2</sub> O vac.)	Description
400034000	90 Degree Fitting	Adapts To Straight Fitting

# Air Filtration

## Air Accessories

### *Inlet Cap*

- Installs by matching element diameter.
- Provides straight through connection



<b>Specifications</b>	<b>111810001</b>	<b>111810002</b>	<b>111810003</b>
<b>Diameter</b>	6.8 in. (17.3 cm)	7.8 in. (19.8 cm)	9.8 in. (24.9 cm)
<b>Inlet Size</b>	4.0 in. (12.7 cm)	5.0 in. (12.7 cm)	6.0 in. (15.2 cm)
<b>Slots</b>	Yes	Yes	Yes
<b>Screen</b>	No	No	No
<b>Weight</b>	0.4 lbs (0.2 kg)	0.4 lbs (0.2 kg)	0.4 lbs (0.2 kg)

<b>Specifications</b>	<b>114088001</b>	<b>114088002</b>	<b>114088003</b>
<b>Diameter</b>	6.8 in. (17.3 cm)	7.8 in. (19.8 cm)	9.7 in. (24.6 cm)
<b>Inlet Size</b>	6.4 in. (16.3 cm)	7.4 in. (18.8 cm)	9.4 in. (23.9 cm)
<b>Slots</b>	No	No	No
<b>Screen</b>	Yes	Yes	Yes
<b>Weight</b>	0.3 lbs (0.1 kg)	0.3 lbs (0.1 kg)	0.4 lbs (0.2 kg)

# Air Filtration

## Air Accessories

### *Fittings, Elbows, and Adapters*

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Low resistance rubber adapters with clamps provide a positive sealing environment, with minimal airflow restriction and easy servicing rubber fittings will save you time and money. Racor rubber air inlet fittings are made of high quality EPDM rubber, and provide minimum airflow restriction between the air cleaner and engine air inlet. The flexibility simplifies both installation and service. Stainless steel adjustable clamps assure a positive seal and ease of service.



# Air Filtration

## Air Accessories

### Intake Couplings



Specifications	015094009	015094010	015094011	015094012
<b>I.D.</b>	3.5 in. (8.9 cm)	4.0 in. (10.2 cm)	5.5 in. (14.0 cm)	7.0 in. (17.8 cm)
<b>O.D.</b>	4.0 in. (10.2 cm)	4.5 in. (11.4 cm)	6.0 in. (15.2 cm)	7.5 in. (19.0 cm)
<b>Width</b>	5.3 in. (13.5 cm)	5.3 in. (13.5 cm)	6.0 in. (15.2 cm)	7.0 in. (17.8 cm)
<b>Weight</b>	1.0 lbs (0.5 kg)	1.2 lbs (0.5 kg)	1.5 lbs (0.7 kg)	2.5 lbs (1.1 kg)

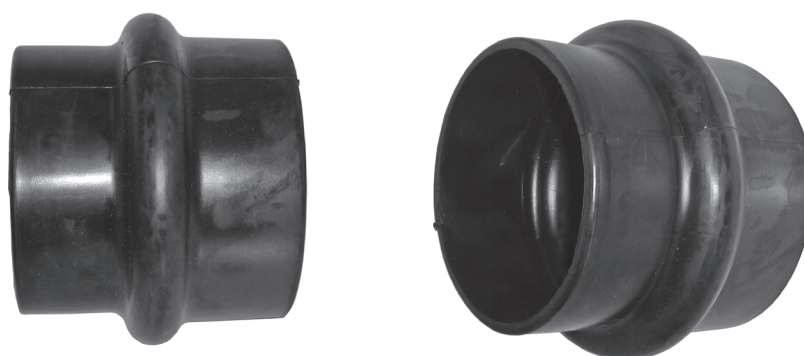
Specifications	015094017	015094018	015094021	015094039
<b>I.D.</b>	5.0 in. (12.7 cm)	6.0 in. (15.2 cm)	8.0 in. (20.3 cm)	3.0 in. (7.6 cm)
<b>O.D.</b>	5.5 in. (14.0 cm)	6.5 in. (16.5 cm)	8.6 in. (21.8 cm)	3.5 in. (8.9 cm)
<b>Width</b>	6.0 in. (15.2 cm)	6.0 in. (15.2 cm)	8.0 in. (20.3 cm)	5.2 in. (13.2 cm)
<b>Weight</b>	1.5 lbs (0.7 kg)	2.0 lbs (0.9 kg)	4.0 lbs (1.8 kg)	1.0 lbs (0.5 kg)

Specifications	015094040	015094046	015094116	015094117
<b>I.D.</b>	10.0 in. (25.4 cm)	4.5 in. (11.4 cm)	5.0 in. (12.7 cm)	8.0 in. (20.3 cm)
<b>O.D.</b>	10.5 in. (26.7 cm)	5.0 in. (12.7 cm)	5.5 in. (14.0 cm)	8.5 in. (21.6 cm)
<b>Width</b>	6.0 in. (15.2 cm)	6.0 in. (15.2 cm)	4.9 in. (12.4 cm)	5.0 in. (12.7 cm)
<b>Weight</b>	4.0 lbs (1.8 kg)	4.0 lbs (1.8 kg)	4.0 lbs (1.8 kg)	4.0 lbs (1.8 kg)

# Air Filtration

## Air Accessories

### Hump Hose Reducer



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Specifications	015094022	015094023	015094024	015094026
<b>I.D.</b>	5.0 in. (12.7 cm) 6.0 in. (15.2 cm)	5.5 in. (14.0 cm) 6.0 in. (15.2 cm)	5.0 in. (12.7 cm) 5.5 in. (14.0 cm)	4.0 in. (10.2 cm) 5.5 in. (14.0 cm)
<b>O.D.</b>	5.5 in. (14.0 cm) 6.5 in. (16.5 cm)	6.0 in. (15.2 cm) 6.5 in. (16.5 cm)	5.5 in. (14.0 cm) 6.0 in. (15.2 cm)	4.5 in. (11.4 cm) 6.0 in. (15.2 cm)
<b>Width</b>	6.0 in. (15.2 cm)	6.0 in. (15.2 cm)	6.0 in. (15.2 cm)	6.0 in. (15.2 cm)
<b>Weight</b>	1.9 lbs (0.9 kg)	2.0 lbs (0.9 kg)	1.7 lbs (0.8 kg)	2.0 lbs (0.9 kg)

Specifications	015094027	015094031	015094032	015094037
<b>I.D.</b>	3.0 in. (7.6 cm) 3.5 in. (8.9 cm)	5.5 in. (14.0 cm) 7.0 in. (17.8 cm)	7.0 in. (17.8 cm) 8.0 in. (20.3 cm)	5.0 in. (12.7 cm) 7.0 in. (17.8 cm)
<b>O.D.</b>	3.5 in. (8.9 cm) 4.0 in. (10.2 cm)	6.0 in. (15.2 cm) 7.5 in. (19.1 cm)	7.5 in. (19.1 cm) 8.5 in. (21.6 cm)	5.5 in. (14.0 cm) 7.5 in. (19.1 cm)
<b>Width</b>	6.0 in. (15.2 cm)	7.0 in. (17.8 cm)	5.0 in. (12.7 cm)	7.0 in. (17.8 cm)
<b>Weight</b>	2.0 lbs (0.9 kg)	5.0 lbs (2.3 kg)	4.5 lbs (2.0 kg)	1.9 lbs (0.9 kg)

# Air Filtration

## Air Accessories

### Hose Reducer

Specifications	015094045	015094060	015094061	015094062
<b>I.D.</b>	6.0 in. (15.2 cm) 7.0 in. (17.8 cm)	2.5 in. (6.4 cm) 3.0 in. (7.6 cm)	3.0 in. (7.6 cm) 4.0 in. (10.2 cm)	8.0 in. (20.3 cm) 10.0 in. (25.4 cm)
<b>O.D.</b>	6.5 in. (16.5 cm) 7.5 in. (19.1 cm)	3.0 in. (7.6 cm) 3.5 in. (8.9 cm)	3.5 in. (8.9 cm) 4.5 in. (11.4 cm)	8.5 in. (21.6 cm) 10.5 in. (26.7 cm)
<b>Width</b>	6.0 in. (15.2 cm)	6.0 in. (15.2 cm)	5.3 in. (13.5 cm)	6.0 in. (15.2 cm)
<b>Weight</b>	4.0 lbs (1.8 kg)	4.0 lbs (1.8 kg)	4.0 lbs (1.8 kg)	4.5 lbs (2.0 kg)

Specifications	015094065	015094073	015094086	015094092
<b>I.D.</b>	4.0 in. (10.2 cm) 5.0 in. (12.7 cm)	4.0 in. (10.2 cm) 4.5 in. (11.4 cm)	5.5 in. (14.0 cm) 8.0 in. (20.3 cm)	6.0 in. (15.2 cm) 8.0 in. (20.3 cm)
<b>O.D.</b>	4.5 in. (11.4 cm) 5.5 in. (14.0 cm)	4.5 in. (11.4 cm) 5.0 in. (12.7 cm)	6.0 in. (15.2 cm) 8.5 in. (21.6 cm)	6.5 in. (16.5 cm) 8.5 in. (21.6 cm)
<b>Width</b>	6.0 in. (15.2 cm)	6.0 in. (15.2 cm)	7.0 in. (17.8 cm)	6.0 in. (15.2 cm)
<b>Weight</b>	1.9 lbs (0.9 kg)	1.9 lbs (0.9 kg)	4.0 lbs (1.8 kg)	4.0 lbs (1.8 kg)

Specifications	015094105	015094106	015094111	015094113
<b>I.D.</b>	3.5 in. (8.9 cm) 4.0 in. (10.2 cm)	4.0 in. (10.2 cm) 6.0 in. (15.2 cm)	2.8 in. (7.1 cm) 3.0 in. (7.6 cm)	2.8 in. (7.1 cm) 4.0 in. (10.2 cm)
<b>O.D.</b>	4.0 in. (10.2 cm) 4.5 in. (11.4 cm)	4.5 in. (11.4 cm) 6.5 in. (16.5 cm)	3.3 in. (8.4 cm) 3.5 in. (8.9 cm)	3.3 in. (8.4 cm) 4.5 in. (11.4 cm)
<b>Width</b>	5.3 in. (13.5 cm)	6.0 in. (15.2 cm)	3.5 in. (8.9 cm)	4.0 in. (10.2 cm)
<b>Weight</b>	1.2 lbs (0.5 kg)	2.9 lbs (1.3 kg)	1.2 lbs (0.5 kg)	1.9 lbs (0.9 kg)

Specifications	015094114	015094115
<b>I.D.</b>	2.5 in. (6.4 cm) 3.5 in. (8.9 cm)	2.4 in. (6.1 cm) 3.0 in. (7.6 cm)
<b>O.D.</b>	3.0 in. (7.6 cm) 4.0 in. (10.2 cm)	2.9 in. (7.4 cm) 3.5 in. (8.9 cm)
<b>Width</b>	6.0 in. (15.2 cm)	7.0 in. (17.8 cm)
<b>Weight</b>	1.9 lbs (0.9 kg)	1.9 lbs (0.9 kg)



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**Parker**

# Air Filtration

## Air Accessories

### Insert Sleeves



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Specifications	015094036	015094043	015094064	015094072
<b>I.D.</b>	5.0 in. (12.7 cm)	5.5 in. (14.0 cm)	5.0 in. (12.7 cm)	4.0 in. (10.2 cm)
<b>O.D.</b>	5.5 in. (14.0 cm)	5.0 in. (12.7 cm)	5.0 in. (12.7 cm)	5.0 in. (12.7 cm)
<b>Width</b>	1.8 in. (4.6 cm)	1.8 in. (4.6 cm)	1.8 in. (4.6 cm)	1.8 in. (4.6 cm)
<b>Weight</b>	1.9 lbs (0.9 kg)	1.9 lbs (0.9 kg)	1.9 lbs (0.9 kg)	1.9 lbs (0.9 kg)

Specifications	015094080	015094081	015094082	015094089
<b>I.D.</b>	3.0 in. (7.6 cm)	6.0 in. (15.2 cm)	8.0 in. (20.3 cm)	2.8 in. (7.1 cm)
<b>O.D.</b>	4.0 in. (10.2 cm)	7.0 in. (17.8 cm)	9.0 in. (22.9 cm)	4.0 in. (10.2 cm)
<b>Width</b>	1.8 in. (4.6 cm)	1.8 in. (4.6 cm)	1.8 in. (4.6 cm)	1.8 in. (4.6 cm)
<b>Weight</b>	1.9 lbs (0.9 kg)	4.0 lbs (1.8 kg)	4.0 lbs (1.8 kg)	4.0 lbs (1.8 kg)

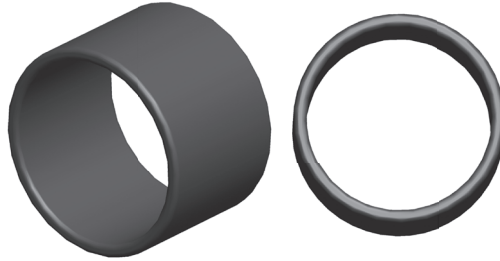
Specifications	015094094	015094096	015094102	015094103	015094104
<b>I.D.</b>	2.3 in. (5.8 cm)	6.3 in. (16.0 cm)	4.5 in. (11.4 cm)	4.0 in. (10.2 cm)	4.0 in. (10.2 cm)
<b>O.D.</b>	2.5 in. (6.4 cm)	7.0 in. (17.8 cm)	5.0 in. (12.7 cm)	5.5 in. (14.0 cm)	4.5 in. (11.4 cm)
<b>Width</b>	1.8 in. (4.6 cm)	1.8 in. (4.6 cm)	1.8 in. (4.6 cm)	1.8 in. (4.6 cm)	1.8 in. (4.6 cm)
<b>Weight</b>	1.2 lbs (0.5 kg)	4.0 lbs (1.8 kg)	4.0 lbs (1.8 kg)	4.0 lbs (1.8 kg)	4.0 lbs (1.8 kg)



# Air Filtration

## Air Accessories

### Sleeves



Specifications	015094047	015094048	015094049	015094050
<b>I.D.</b>	2.8 in. (7.1 cm)	3.5 in. (8.9 cm)	3.5 in. (8.9 cm)	4.8 in. (12.2 cm)
<b>O.D.</b>	3.2 in. (8.1 cm)	4.0 in. (10.2 cm)	4.0 in. (10.2 cm)	5.1 in. (13.0 cm)
<b>Width</b>	2.4 in. (6.1 cm)	2.5 in. (6.1 cm)	3.0 in. (7.6 cm)	3.2 in. (8.1 cm)
<b>Weight</b>	1.2 lbs (0.5 kg)	N/A	1.9 lbs (0.9 kg)	N/A

Specifications	015094051	015094052	015094053	015094054
<b>I.D.</b>	5.5 in. (14.0 cm)	5.5 in. (14.0 cm)	6.0 in. (15.2 cm)	7.0 in. (17.8 cm)
<b>O.D.</b>	6.0 in. (15.2 cm)	6.0 in. (15.2 cm)	6.5 in. (16.5 cm)	7.5 in. (19.1 cm)
<b>Width</b>	3.8 in. (9.7 cm)	4.0 in. (10.2 cm)	3.5 in. (8.9 cm)	5.0 in. (12.7 cm)
<b>Weight</b>	1.9 lbs (0.9 kg)	1.9 lbs (0.9 kg)	4.0 lbs (1.8 kg)	4.0 lbs (1.8 kg)

Specifications	015094070	015094075	015094076	015094077
<b>I.D.</b>	5.0 in. (12.7 cm)	4.0 in. (10.2 cm)	5.0 in. (12.7 cm)	7.0 in. (17.8 cm)
<b>O.D.</b>	5.5 in. (14.0 cm)	4.5 in. (11.4 cm)	5.5 in. (14.0 cm)	7.5 in. (19.1 cm)
<b>Width</b>	2.5 in. (6.4 cm)	3.5 in. (8.9 cm)	3.5 in. (8.9 cm)	3.5 in. (8.9 cm)
<b>Weight</b>	N/A	4.0 lbs (1.8 cm)	1.9 lbs (0.9 kg)	1.9 lbs (0.9 kg)

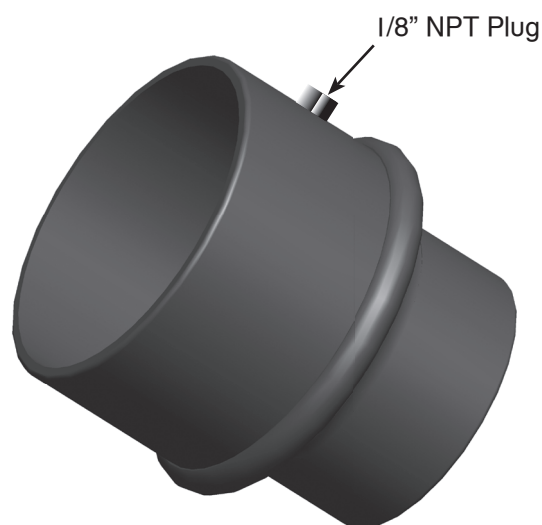
Specifications	015094078	015094079	015094095	015094097
<b>I.D.</b>	8.0 in. (20.3 cm)	9.0 in. (22.9 cm)	6.0 in. (15.2 cm)	4.0 in. (10.2 cm)
<b>O.D.</b>	8.5 in. (21.6 cm)	9.5 in. (24.1 cm)	6.5 in. (16.5 cm)	4.5 in. (11.4 cm)
<b>Width</b>	3.5 in. (8.9 cm)	3.5 in. (8.9 cm)	6.5 in. (16.5 cm)	3.0 in. (7.6 cm)
<b>Weight</b>	4.0 lbs (1.8 cm)	4.0 lbs (1.8 cm)	4.0 lbs (1.8 cm)	1.9 lbs (0.9 kg)

# Air Filtration

## Air Accessories

### Reducing Coupling With Fitting

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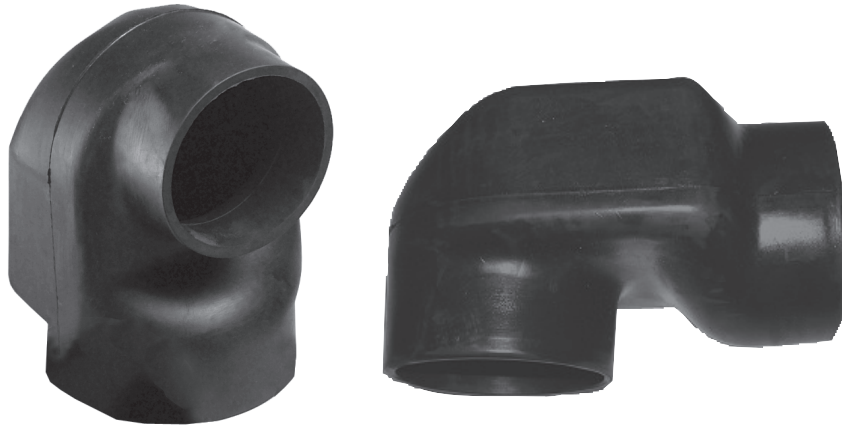


Specifications	I25291001	I25291002	I25291003	I25291004
<b>I.D.</b>	7.0 in. (17.8 cm) 5.0 in. (12.7 cm)	7.0 in. (17.8 cm) 5.5 in. (14.0 cm)	7.0 in. (17.8 cm) 6.0 in. (15.2 cm)	6.0 in. (15.2 cm) 5.0 in. (12.7 cm)
<b>O.D.</b>	7.5 in. (19.1 cm) 5.5 in. (14.0 cm)	7.5 in. (19.1 cm) 6.0 in. (15.2 cm)	7.5 in. (19.1 cm) 6.5 in. (16.5 cm)	6.5 in. (16.5 cm) 5.5 in. (14.0 cm)
<b>Width</b>	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	6.0 in. (15.2 cm)	6.0 in. (15.2 cm)
<b>Steel Plug</b>	1/8" NPTF			
<b>Weight</b>	5.0 lbs (2.3 kg)	5.0 lbs (2.3 kg)	5.0 lbs (2.3 kg)	5.0 lbs (2.3 kg)

# Air Filtration

## Air Accessories

### Cobra Head Elbow



Specifications	401079067	401079068	401079074	401079093
<b>I.D.</b>	4.0 in. (10.2 cm) 2.8 in. (7.1 cm)	3.0 in. (7.6 cm) 3.0 in. (7.6 cm)	4.0 in. (10.2 cm) 5.0 in. (12.7 cm)	6.0 in. (15.2 cm) 5.0 in. (12.7 cm)
<b>O.D.</b>	4.5 in. (11.4 cm)	3.5 in. (8.9 cm) 3.5 in. (8.9 cm)	4.6 in. (11.7 cm) 5.6 in. (14.2 cm)	6.6 in. (16.8 cm) 5.6 in. (14.2 cm)
<b>Height</b>	N/A	7.3 in. (18.5 cm)	9.5 in. (24.1 cm)	15.8 in. (40.1 cm)
<b>Weight</b>	4.0 lbs (1.8 kg)	4.0 lbs (1.8 kg)	4.0 lbs (1.8 kg)	4.0 lbs (1.8 kg)

Specifications	401079069	401079071	401079087	401079083	401079090
<b>I.D.</b>	4.0 in. (10.2 cm) 4.0 in. (10.2 cm)	4.0 in. (10.2 cm) 4.0 in. (10.2 cm)	4.0 in. (10.2 cm) 4.0 in. (10.2 cm)	5.0 in. (12.7 cm) 4.0 in. (10.2 cm)	5.0 in. (12.7 cm) 4.0 in. (10.2 cm)
<b>O.D.</b>	4.5 in. (11.4 cm) 4.5 in. (11.4 cm)	4.5 in. (11.4 cm) 4.5 in. (11.4 cm)	4.5 in. (11.4 cm) 4.5 in. (11.4 cm)	5.5 in. (14.0 cm) 4.5 in. (11.4 cm)	5.5 in. (14.0 cm) 4.5 in. (11.4 cm)
<b>Height</b>	9.1 in. (23.1 cm)	9.1 in. (23.1 cm)	9.7 in. (24.6 cm)	9.7 in. (24.6 cm)	9.0 in. (22.9 cm)
<b>Steel Plug</b>	1/8" NPTF			No	No
<b>Weight</b>	N/A				

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# Air Filtration

## Air Accessories

### 90° Elbow



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Specifications	401403001	401403002	401403003	401403004
I.D.	3.5 in. (8.8 cm) 3.5 in. (8.8 cm)	4.0 in. (10.1 cm) 4.0 in. (10.1 cm)	5.5 in. (13.9 cm) 5.5 in. (13.9 cm)	7.0 in. (17.7 cm) 7.0 in. (17.7 cm)
O.D.	4.0 in. (10.2 cm) 4.0 in. (10.2 cm)	4.5 in. (11.4 cm) 4.5 in. (11.4 cm)	6.0 in. (15.2 cm) 6.0 in. (15.2 cm)	7.6 in. (19.3 cm) 7.6 in. (19.3 cm)
Height	6.9 in. (17.5 cm)	7.8 in. (19.8 cm)	8.8 in. (22.4 cm)	11.1 in. (28.2 cm)
Weight	1.7 lbs (0.8 kg)	2.2 lbs (1.0 kg)	3.9 lbs (1.8 kg)	5.0 lbs 2.3 kg)

Specifications	401403013	401403014	401403019	401403030
I.D.	5.0 in. (12.7 cm) 5.0 in. (12.7 cm)	6.0 in. (15.2 cm) 6.0 in. (15.2 cm)	8.0 in. (20.3 cm) 8.0 in. (20.3 cm)	2.0 in. (5.0 cm) 2.0 in. (5.0 cm)
O.D.	5.5 in. (13.9 cm) 5.5 in. (13.9 cm)	6.5 in. (16.5 cm) 6.5 in. (16.5 cm)	8.8 in. (22.4 cm) 8.8 in. (22.4 cm)	2.4 in. (6.1 cm) 2.4 in. (6.1 cm)
Height	8.6 in. (21.8 cm)	9.8 in. (24.9 cm)	12.5 in. (31.8 cm)	4.5 in. (11.4 cm)
Weight	3.5 lbs (1.6 kg)	1.5 lbs (0.7 kg)	9.0 lbs (4.1 kg)	1.7 lbs (0.8 kg)

Specifications	401403038	401403058	401403063	401403201	401403205
I.D.	3.0 in. (7.6 cm) 3.0 in. (7.6 cm)	2.5 in. (6.4 cm) 2.5 in. (6.4 cm)	10.0 in. (25.4 cm) 10.0 in. (25.4 cm)	4.5 in. (11.4 cm) 4.5 in. (11.4 cm)	6.0 in. (15.2 cm) 6.0 in. (15.2 cm)
O.D.	3.5 in. (8.9 cm) 3.5 in. (8.9 cm)	3.0 in. (7.6 cm) 3.0 in. (7.6 cm)	10.7 in. (27.2 cm) 10.7 in. (27.2 cm)	5.0 in. (12.7 cm) 5.0 in. (12.7 cm)	6.5 in. (16.5 cm) 6.5 in. (16.5 cm)
Height	6.8 in. (17.3 cm)	5.2 in. (13.2 cm)	15.5 in. (39.4 cm)	7.8 in. (19.8 cm)	8.0 in. (20.3 cm)
Weight	1.0 lbs (0.5 kg)	1.0 lbs (0.5 kg)	10.0 lbs (4.5 kg)	2.2 lbs (1.0 kg)	N/A

# Air Filtration

## Air Accessories



### 90° Reducing Elbow

Specifications	401403025	401403029	401403033	401403035
<b>I.D.</b>	6.0 in. (15.2 cm) 5.5 in. (14.0 cm)	7.0 in. (17.8 cm) 5.5 in. (14.0 cm)	7.0 in. (17.8 cm) 5.0 in. (12.7 cm)	6.0 in. (15.2 cm) 5.0 in. (12.7 cm)
<b>O.D.</b>	6.5 in. (16.5 cm) 6.0 in. (15.2 cm)	7.6 in. (18.3 cm) 6.0 in. (15.2 cm)	7.5 in. (19.1 cm) 5.5 in. (14.0 cm)	6.5 in. (16.5 cm) 5.5 in. (14.0 cm)
<b>Height</b>	9.8 in. (24.9 cm)	9.3 in. (23.6 cm)	10.5 in. (26.7 cm)	10.0 in. (25.4 cm)
<b>Weight</b>	4.5 lbs (2.0 kg)	4.5 lbs (2.0 kg)	4.0 lbs (1.8 kg)	1.9 lbs (0.9 kg)

Specifications	401403041	401403044	401403056	401403057
<b>I.D.</b>	6.0 in. (15.2 cm) 5.0 in. (12.7 cm)	7.0 in. (17.8 cm) 6.0 in. (15.2 cm)	5.0 in. (12.7 cm) 4.0 in. (10.2 cm)	4.0 in. (10.2 cm) 3.0 in. (7.6 cm)
<b>O.D.</b>	6.5 in. (16.5 cm) 5.5 in. (14.0 cm)	7.8 in. (19.8 cm) 6.8 in. (17.3 cm)	5.5 in. (14.0 cm) 4.5 in. (11.4 cm)	4.4 in. (11.2 cm) 3.4 in. (8.6 cm)
<b>Height</b>	7.8 in. (19.8 cm)	11.1 in. (28.2 cm)	9.3 in. (23.6 cm)	5.6 in. (14.2 cm)
<b>Weight</b>	5.0 lbs (2.3 kg)	4.0 lbs (1.8 kg)	2.0 lbs (0.9 kg)	2.0 lbs (0.9 kg)

Specifications	401403066	401403091	401403092	401403098
<b>I.D.</b>	4.0 in. (10.2 cm) 3.5 in. (8.9 cm)	7.0 in. (17.8 cm) 6.0 in. (15.2 cm)	8.0 in. (20.3 cm) 7.0 in. (17.8 cm)	4.0 in. (10.2 cm) 3.8 in. (9.7 cm)
<b>O.D.</b>	4.4 in. (11.2 cm) 3.9 in. (9.9 cm)	7.7 in. (19.6 cm) 6.7 in. (17.0 cm)	8.8 in. (22.4 cm) 7.8 in. (19.8 cm)	4.5 in. (11.4 cm) 4.3 in. (10.9 cm)
<b>Height</b>	6.5 in. (16.5 cm)	8.5 in. (21.6 cm)	12.5 in. (31.8 cm)	7.8 in. (19.8 cm)
<b>Weight</b>	4.5 lbs (2.0 kg)	5.0 lbs (2.3 kg)	1.9 lbs (0.9 kg)	1.9 lbs (0.9 kg)

Specifications	401403206	401403207	401403208	401403209	401403219
<b>I.D.</b>	6.0 in. (15.2 cm) 4.0 in. (10.2 cm)	6.0 in. (15.2 cm) 4.0 in. (10.2 cm)	6.0 in. (15.2 cm) 4.0 in. (10.2 cm)	6.0 in. (15.2 cm) 4.0 in. (10.2 cm)	3.0 in. (7.6 cm) 2.4 in. (6.1 cm)
<b>O.D.</b>	6.5 in. (16.5 cm) 4.5 in. (11.4 cm)	6.5 in. (16.5 cm) 4.5 in. (11.4 cm)	6.5 in. (16.5 cm) 4.5 in. (11.4 cm)	6.5 in. (16.5 cm) 4.5 in. (11.4 cm)	3.5 in. (8.9 cm) 2.9 in. (7.4 cm)
<b>Height</b>	9.3 in. (23.6 cm)	7.9 in. (20.1 cm)	7.9 in. (20.1 cm)	9.3 in. (23.6 cm)	4.5 in. (11.4 cm)
<b>Weight</b>	N/A				

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# Air Filtration

## Air Accessories



### 45° Elbow

5

Specifications	401403005	401403006	401403007	401403008	401403015
<b>I.D.</b>	3.5 in. (8.9 cm)	4.0 in. (10.2 cm)	5.5 in. (14.0 cm)	7.0 in. (17.8 cm)	5.0 in. (12.7 cm)
<b>O.D.</b>	4.0 in. (10.2 cm)	4.5 in. (11.4 cm)	6.0 in. (15.2 cm)	7.6 in. (19.3 cm)	5.5 in. (14.0 cm)
<b>Weight</b>	1.7 lbs (0.8 kg)	2.2 lbs (1.0 kg)	1.7 lbs (0.8 kg)	3.0 lbs (1.4 kg)	3.5 lbs (1.6 kg)

Specifications	401403016	401403020	401403059	401403202	401403212
<b>I.D.</b>	6.0 in. (15.2 cm)	8.0 in. (20.3 cm)	3.0 in. (7.6 cm)	10.0 in. (25.4 cm)	4.5 in. (11.4 cm)
<b>O.D.</b>	6.5 in. (16.5 cm)	8.8 in. (22.4 cm)	3.5 in. (8.9 cm)	10.6 in. (26.9 cm)	5.0 in. (12.7 cm)
<b>Weight</b>	2.2 lbs (1.0 kg)	9.0 lbs (4.1 kg)	1.0 lbs (0.5 kg)	9.0 lbs (4.1 kg)	1.7 lbs (0.8 kg)

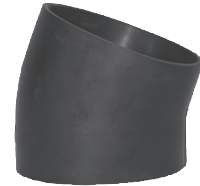
### 45° Reducing Elbow

Specifications	401403043	401403203	401403213
<b>I.D.</b>	7.0 in. (17.8 cm) 6.0 in. (15.2 cm)	6.0 in. (15.2 cm) 5.0 in. (12.7 cm)	6.0 in. (15.2 cm) 5.5 in. (14.0 cm)
<b>O.D.</b>	7.6 in. (19.3 cm) 6.6 in. (16.8 cm)	6.5 in. (16.5 cm) 5.5 in. (14.0 cm)	6.5 in. (16.5 cm) 6.0 in. (15.2 cm)

# Air Filtration

## Air Accessories

### 22° Elbow



Specifications	401403034	401403210	401403214
<b>I.D.</b>	5.5 in. (14.0 cm)	6.0 in. (15.2 cm)	4.0 in. (10.2 cm)
<b>O.D.</b>	6.0 in. (15.2 cm)	6.5 in. (16.5 cm)	4.5 in. (11.4 cm)

### 38° Elbow



Specifications	401403204
<b>I.D.</b>	6.0 in. (15.2 cm)
<b>O.D.</b>	6.5 in. (16.5 cm)

### 54° Elbow



Specifications	401403216	401403217
<b>I.D.</b>	5.5 in. (14.0 cm)	6.0 in. (15.2 cm)
<b>O.D.</b>	6.0 in. (15.2 cm)	6.5 in. (16.5 cm)

# Air Filtration

## Air Accessories

### 63° Elbow



Specifications	401403220
<b>I.D.</b>	8.0 in. (20.3 cm)
<b>O.D.</b>	8.8 in. (22.4 cm)

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### 68° Elbow



Specifications	401403211	401403215	401403218
<b>I.D.</b>	5.5 in. (14.0 cm)	4.5 in. (11.4 cm)	6.0 in. (15.2 cm)
<b>O.D.</b>	6.0 in. (15.2 cm)	5.0 in. (12.7 cm)	6.5 in. (16.5 cm)

### 68° Reducing Elbow

Specifications	401403055
<b>I.D.</b>	7.0 in. (17.8 cm) 6.0 in. (15.2 cm)
<b>O.D.</b>	7.5 in. (19.1 cm) 6.5 in. (16.5 cm)





# Air Filtration

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# Air Filtration

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N/A

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### M

N/A

### N

N/A

### O

N/A

### P

N/A

### Q

N/A

### R

N/A

### S

N/A

### T

N/A

### U

N/A

### V

N/A

# Air Filtration

## Part Number Index

**W**

N/A

**X**

N/A

**Y**

N/A

**Z**

N/A

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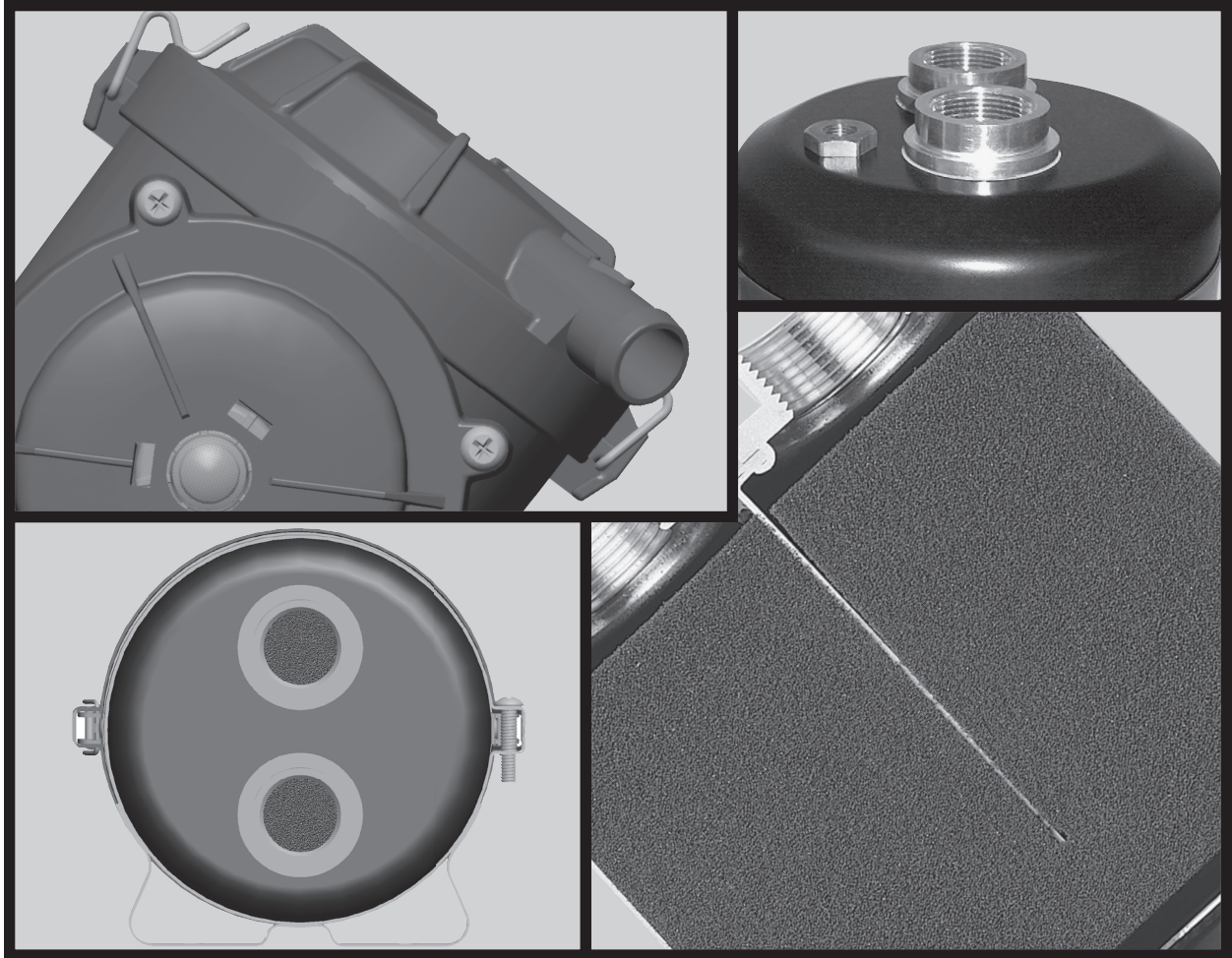
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# Section 6



***Crankcase  
Filtration***

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**Section 6 - Crankcase Filtration**

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# Crankcase Ventilation

## CV Series

Contaminated crankcase emissions are a serious problem for diesel engine owners and the environment. These emissions are created by combustion gases escaping past the piston rings into the crankcase. In the crankcase, these gases are contaminated with oil mist, water, and fuel vapors. These contaminated emissions are vented through the engine breather into the engine compartment or to atmosphere. As oil mist builds up on the engine components such as radiator cores and air filters, it attracts dust, grit, and other airborne contaminants. The accumulation of particles on the components affects the overall efficiency, performance, and reliability of the engine.

Crankcase emissions not only pollute the surrounding environment, they contribute to increased engine maintenance costs and can shorten the life of engine components.

Racor Crankvent crankcase emission systems offer an effective solution to reduce contaminated crankcase emissions and perform the following functions:

- Keeps engine compartments and components clean.
- Protects engine intake and air filters.
- Improves reliability and maintainability of diesel engines.
- More efficient than other products available on the market.
- Reduces oil consumption.
- “Green” element is completely burnable and crushable.
- Reduces smoke and odor in the immediate environment.
- Installed as original equipment by major manufacturers worldwide.



CV820



CV1000



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# Crankcase Ventilation

## CV Series



<i>Specifications</i>	<b>CV820</b>	<b>CV1000</b>
<b>Max. Engine Horsepower Rating</b>	0-350 HP (0-261 KW)	350-600 HP (261-447 KW)
<b>Inlet Port Size</b>	1" NPT	1 1/4" NPT
<b>Outlet Port Size</b>	1" NPT	1 1/4" NPT
<b>Maximum Air Flow</b>	10 CFM (0.28 CMM)	15 CFM (0.42 CMM)
<b>Replacement Element</b>	CV820SK	CV1000SK
<b>Height</b>	7.5 in. (19.1 cm)	8.5 in. (21.6 cm)
<b>Diameter</b>	6.0 in. (15.2 cm)	8.1 in. (20.6 cm)
<b>Weight (dry)</b>	2.0 lbs (0.9 kg)	3.0 lbs (1.4 kg)
<b>Sump Capacity</b>	32 oz (0.94 L)	58 oz (1.72 L)
<b>Operating Temperature</b>	-40° to +255° F (-40° to +121° C)	

### Select the appropriate Crankvent assembly.

- a. CV820 For engines up to 350 HP.
- b. CV1000 For engines up to 600 HP.

**Note:** Engines in excess of 600 HP should use one CV1000 for each 600 HP or fraction thereof.

**Example:** Detroit 8V92DDEC = 750 HP  
Specify two CV1000's

Engines in severe or continuous duty should order up to the next size.

**Example:** 340 HP, continuous duty  
Specify one CV1000

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# Crankcase Ventilation

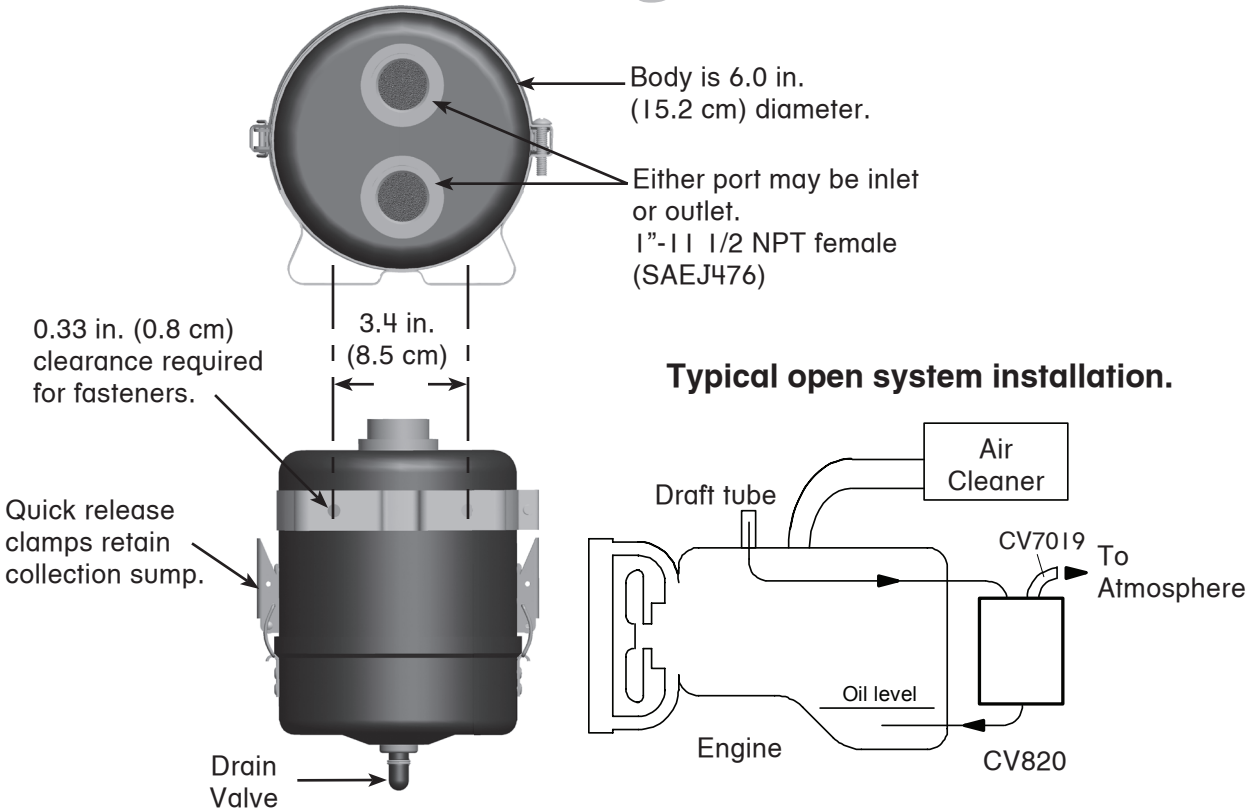
## CV Series

### How To Order

CV820	Features
<p>Basic Unit: Flow Rate 10 CFM</p>	<ul style="list-style-type: none"> <li>- For use with open systems only.</li> <li>- Durable construction.</li> <li>- Compact size allows for installation versatility.</li> <li>- Replaceable filter media.</li> <li>- Removable oil collection sump.</li> </ul>
<p>Note: Assembly is black anodized for long term corrosion resistance.</p>	

6

### Installation Diagram





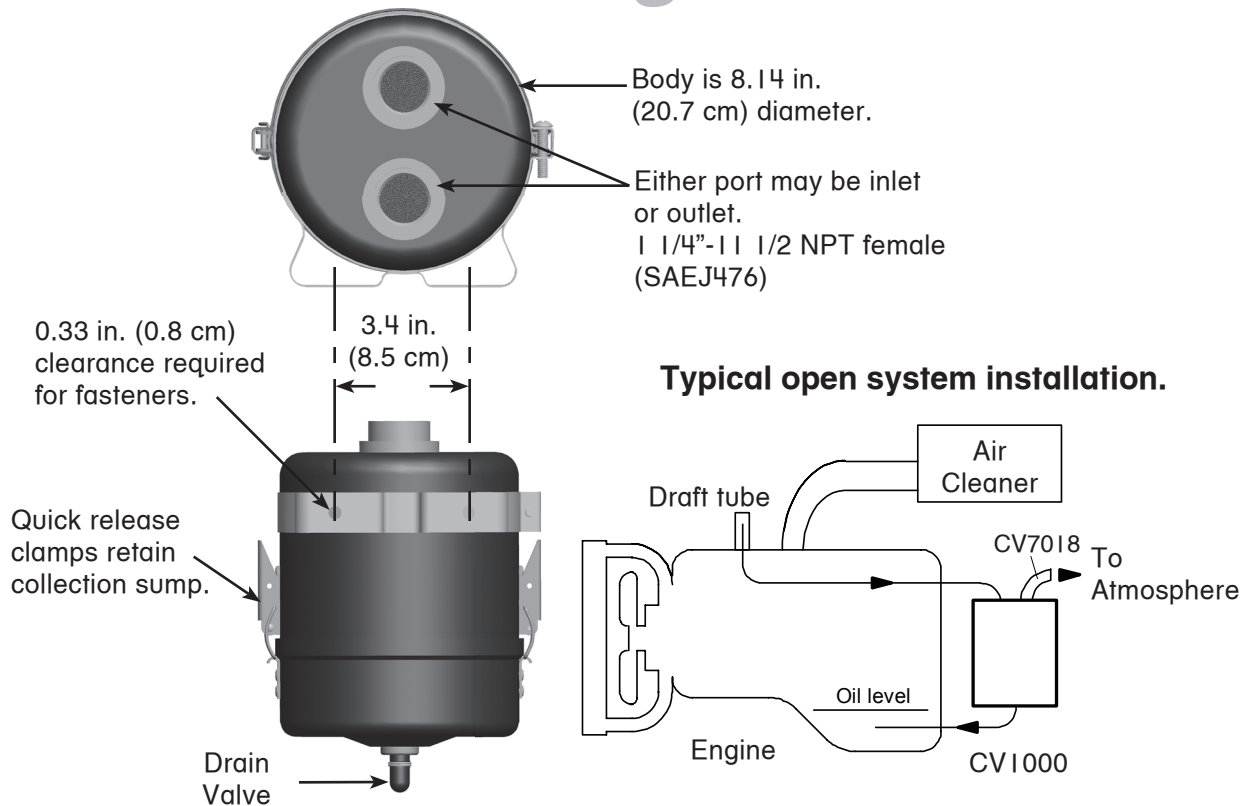
# Crankcase Ventilation

## CV Series

### How To Order

CV1000	Features
<p>Basic Unit: Flow Rate 15 CFM</p>	<ul style="list-style-type: none"> <li>- For use with open systems only.</li> <li>- Durable construction.</li> <li>- Compact size allows for installation versatility.</li> <li>- Replaceable filter media.</li> <li>- Removable oil collection sump.</li> </ul>
<p>Note: Assembly is black anodized for long term corrosion resistance.</p>	

### Installation Diagram



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# Crankcase Ventilation

## CV Accessories

### *Hose Kits*

<u>Part Number</u>	<u>Description</u>
<b>CV1100</b>	5 feet of 1" hose, fittings, clamps and ties
<b>CV2114</b>	7 1/2 feet of 1 1/4" hose, 1 1/4" Tee fitting, fitting, clamps and ties
<b>CV1112</b>	5 feet of 1 1/2" hose, fitting, clamps and ties
<b>CV1200</b>	5 feet of 1 1/2" hose with 2" cuff, fitting, clamps and ties
<b>CV1038</b>	Air Box Drain Hose Kit, 8 feet of 3/8" hose, check valve, fittings, clamps and ties

6

### *Closed System Parts*

<u>Part Number</u>	<u>Description</u>
<b>CV6025</b>	1 1/4" barbed fitting assembly for the "Dirty Side" of the air filter

### *Closed System Kits (Dirty Side)*

<u>Part Number</u>	<u>Description</u>
<b>CV6024CS</b>	CV6024 fitting, 5 feet of 1" hose, fittings, clamps and ties
<b>CV6025CS</b>	CV6025 fitting, 5 feet of hose, fittings, clamps and ties





# Crankcase Ventilation

## CCV® Series

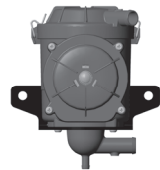
In one robust, compact package, the patented Racor CCV® closed crankcase ventilation filter systems provide superior oil coalescence and crankcase pressure control under the most severe conditions. The only routine maintenance required for the Racor Crankcase Ventilation Filter System is filter replacement. Typical service life of the high-performance filter in diesel applications is 750 hours. Some variations in service life occur depending on load profile, engine wear condition, flow and aerosol mass concentration of crankcase emissions, and soot concentration.

### How to Select the Racor CCV® Assembly

Racor CCV® application is determined by crankcase flow in CFM. CFM on new engines is low but as the engine wears on, the CFM increases. Select the correct Racor CCV® model by dividing the engine horsepower output by 40. Single CCV® units are designed to handle various crankcase flow rates up to 40 CFM. Traditionally, the crankcase flow rate can be calculated as follows: Rated horsepower ÷ 40 = cubic feet per minute (CFM). This formula can only be used as a guide since recent improvements in piston design have produced engines with higher horsepower and lower blow-by flow rates. The blow-by flow rate of a worn engine, at time of overhaul, is generally double the flow rate when the engine is new. The flow rate of a worn engine is factored into the formula.



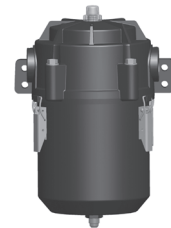
CCV1500



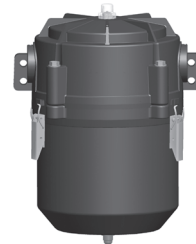
CCV3500



CCV4500



CCV6000



CCV8000

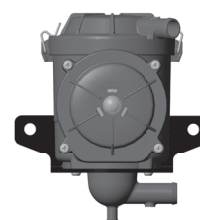


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# Crankcase Ventilation

## CCV<sup>®</sup> Series



<b>Specifications</b>	<b>* CCV1500</b>	<b>CCV3500</b>
<b>Max. Flow Rate</b>	1 CFM (30 LPM)	3 CFM (84 LMP)
<b>Max. Engine Rating</b>	50 HP (37 KW)	125 HP (93 KW)
<b>Height</b>	5.1 in. (13.0 cm)	7.0 in. (17.8 cm)
<b>Opening Width</b>	8.2 in. (20.8 cm)	7.0 in. (17.8 cm)
<b>Depth</b>	5.6 in. (14.2 cm)	6.3 in. (16.0 cm)
<b>Weight</b>	1.5 lbs (0.68 kg)	2.3 lbs (1.0 kg)
<b>Service Clearance</b>	6.0 in. (15.2 cm)	4.6 in. (11.7 cm)
<b>Low Density Element</b>	CCV55365-04	N/A
<b>Medium Density Element</b>	N/A	CCV55304-06
<b>High Density Element</b>	N/A	CCV55304-08
<b>Inlet/Outlet</b>	3/4" hose	3/4" hose
<b>Pressure Regulator</b>	Vacuum Limiting Valve	Integral
<b>Bypass Indicator</b>	N/A	Integral
<b>Return Fitting</b>	N/A	1/4" NPT
<b>Swivel Fitting</b>	N/A	#6 JIC (2pcs)
<b>Oil Drain Hose I.D.</b>	N/A	0.375 in.
<b>Operating Temperature</b>	-40° to +255°F (-40o to +121°C)	

\* The CCV1500 is not recommended for continuous duty applications.

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# Crankcase Ventilation

## CCV<sup>®</sup> Series



Specifications	CCV4500	CCV6000	CCV8000
<b>Max. Flow Rate</b>	10 CFM (283 LPM)	20 CFM (566 LPM)	40 CFM (1132 LPM)
<b>Max. Engine Rating</b>	400 HP (298 KW)	800 HP (597 KW)	1600 HP (1193 KW)
<b>Height</b>	9.3 in. (23.5 cm)	12.0 in. (30.4 cm)	13.9 in. (35.2 cm)
<b>Opening Width</b>	7.5 in. (19.0 cm)	11.3 in. (28.6 cm)	13.3 in. (33.6 cm)
<b>Depth</b>	5.6 in. (14.2 cm)	7.3 in. (18.5 cm)	9.3 in. (23.6 cm)
<b>Weight</b>	3.3 lbs (1.5 kg)	5.0 lbs (2.3 kg)	8.7 lbs (4.0 kg)
<b>Service Clearance</b>	2.3 in. (5.7 cm)	4.0 in. (10.1 cm)	5.0 in. (12.7 cm)
<b>Low Density Element</b>	N/A	N/A	N/A
<b>Medium Density Element</b>	CCV55248-06	CCV55274-06	CCV55222-06
<b>High Density Element</b>	CCV55248-08	CCV55274-08	CCV55222-08
<b>Inlet/Outlet</b>	1 3/16"-12 STOR	1 5/8"-12 STOR	1 7/8"-12 STOR
<b>Pressure Regulator</b>	Integral	Integral	Integral
<b>Bypass Indicator</b>	Integral or Remote	Integral or Remote	Integral or Remote
<b>Return Fitting</b>	1/4" NPT	1/4" NPT	3/8" NPT
<b>Swivel Fitting</b>	#6 JIC (2pcs)	#6 JIC (2pcs)	#8 JIC (2pcs)
<b>Oil Drain Hose I.D.</b>	0.375 in.	0.375 in.	0.5 in.
<b>Operating Temperature</b>	-40° to +240°F (-40 to +116°C)		

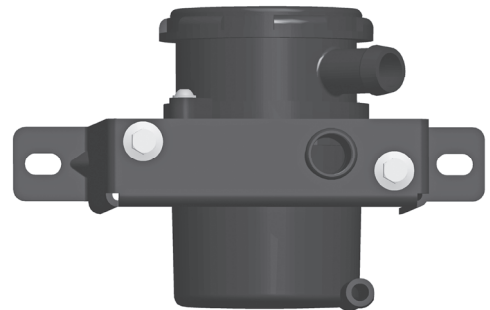
6

# Crankcase Ventilation

CCVI500

## *How to Order*

CCVI500	-04
<b>Basic Unit</b> For closed system applications only	<b>-04</b> is standard for low density element



## *Replacement Element*



CCV55365-04

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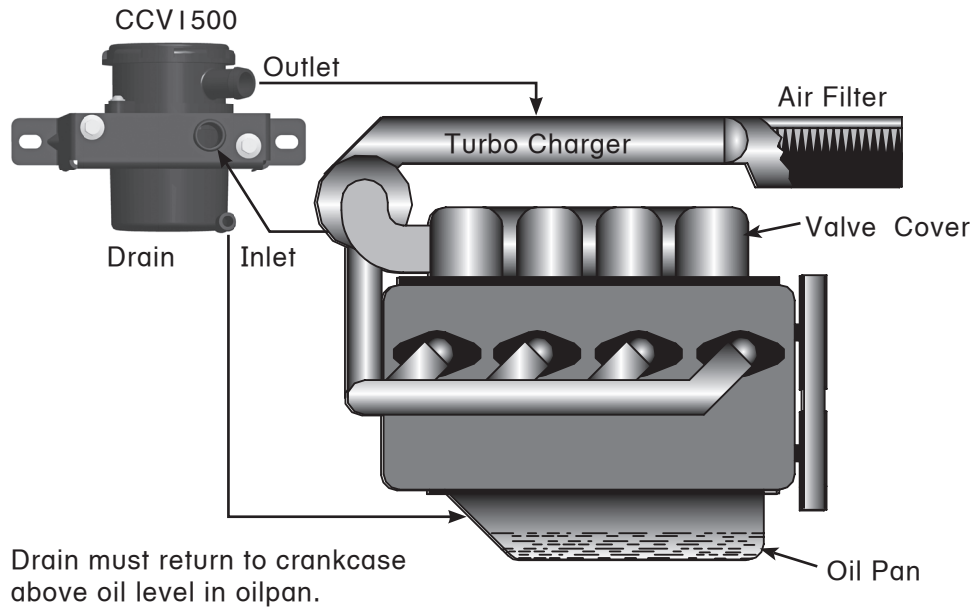
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# Crankcase Ventilation

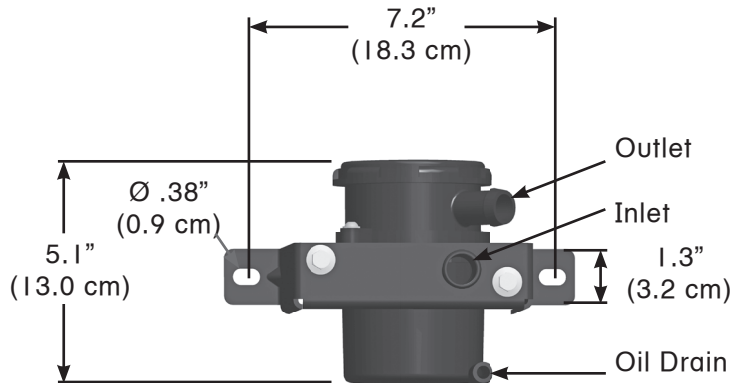
## CCVI500

### Installation Diagram



6

### Mounting Information







# Crankcase Ventilation

## CCV3500 Series

### How to Order

(The examples below illustrate how part numbers are constructed)

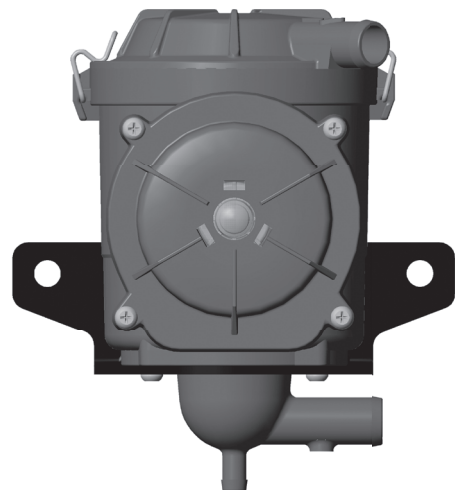
CCV3500	-08	L
<b>Basic Units</b> CCV3500 Continuous Duty CCV3550 Intermittent Duty	Specify -06 for medium density -08 for high density (-08) is standard	Specify "L" for inlet on left side "R" for inlet on right side

6

### Replacement Element



CCV55304-06 (Medium Density)  
CCV55304-08 (High Density)

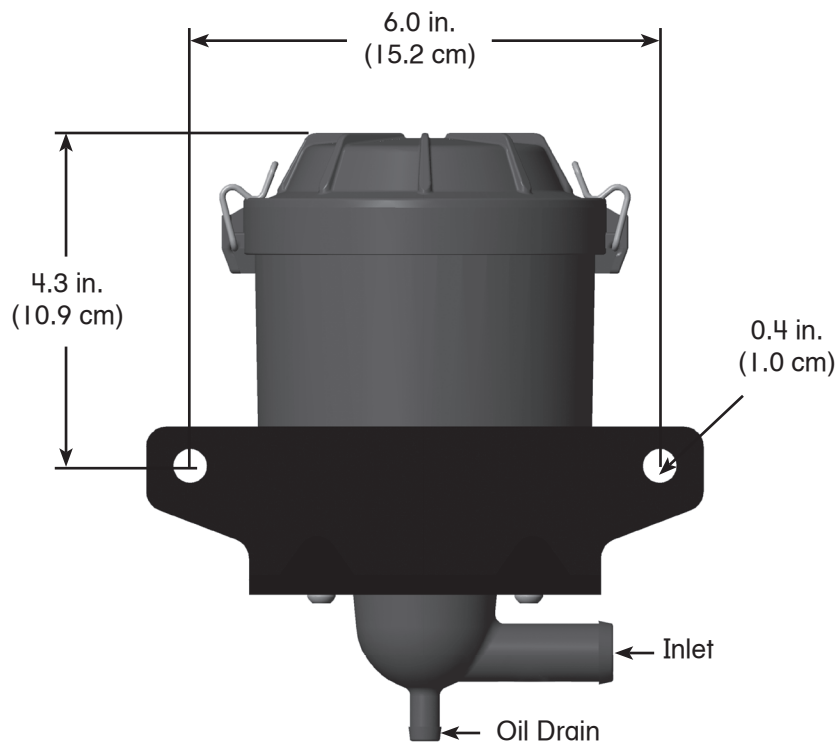


CCV3500

# Crankcase Ventilation

## CCV3500 Series

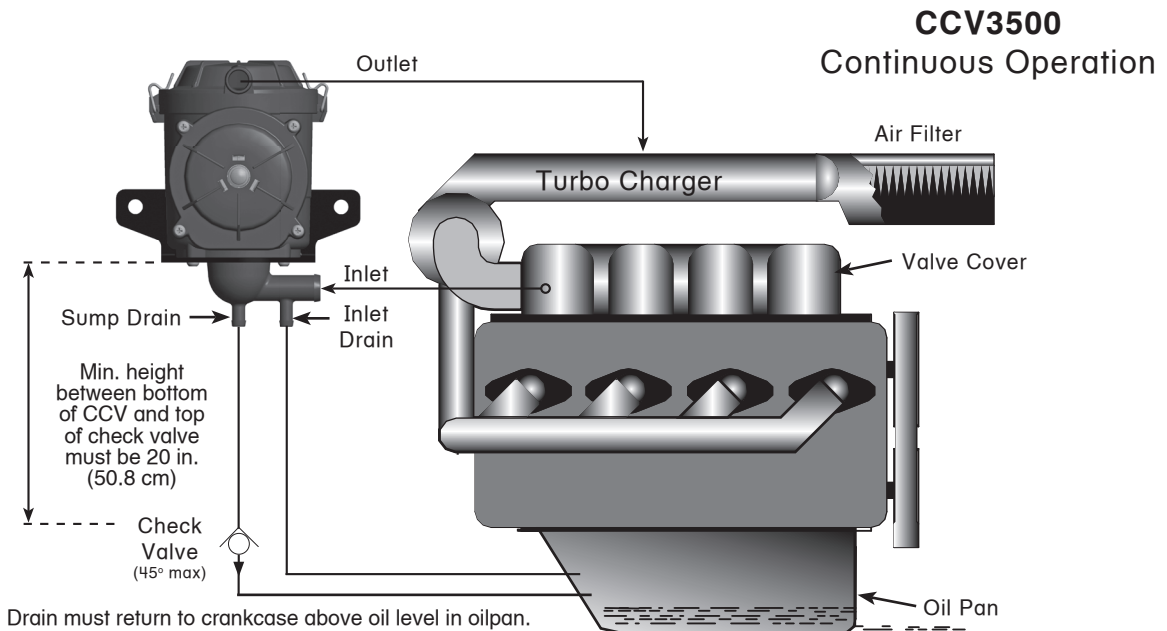
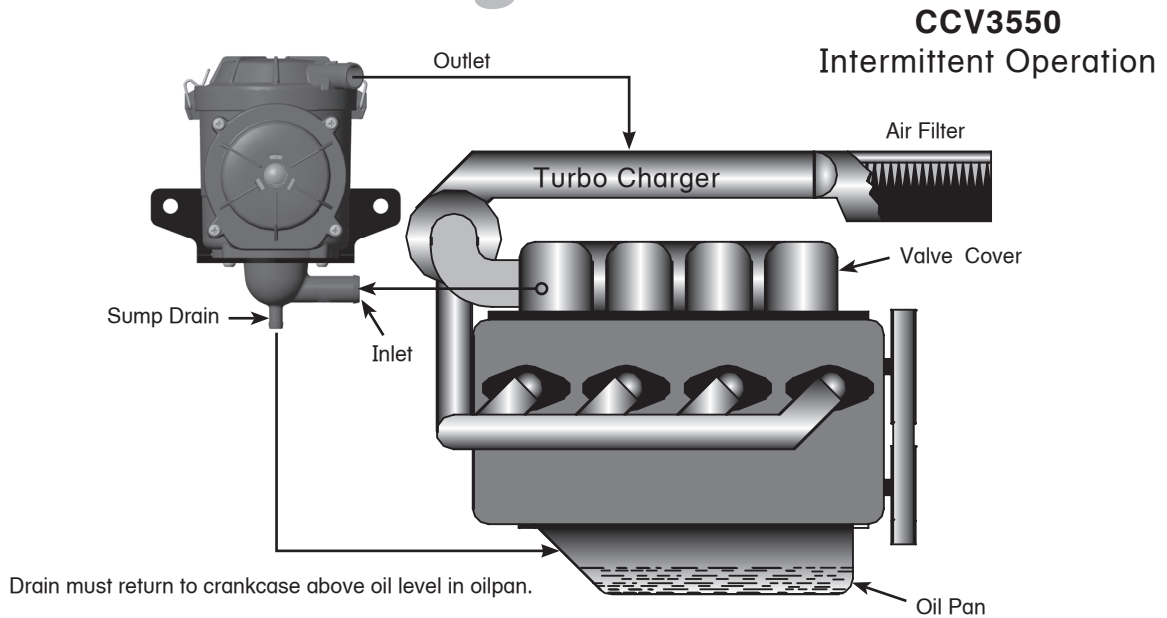
### *Mounting Information*



# Crankcase Ventilation

## CCV3500 Series

### Installation Diagrams





# Crankcase Ventilation

## CCV4500

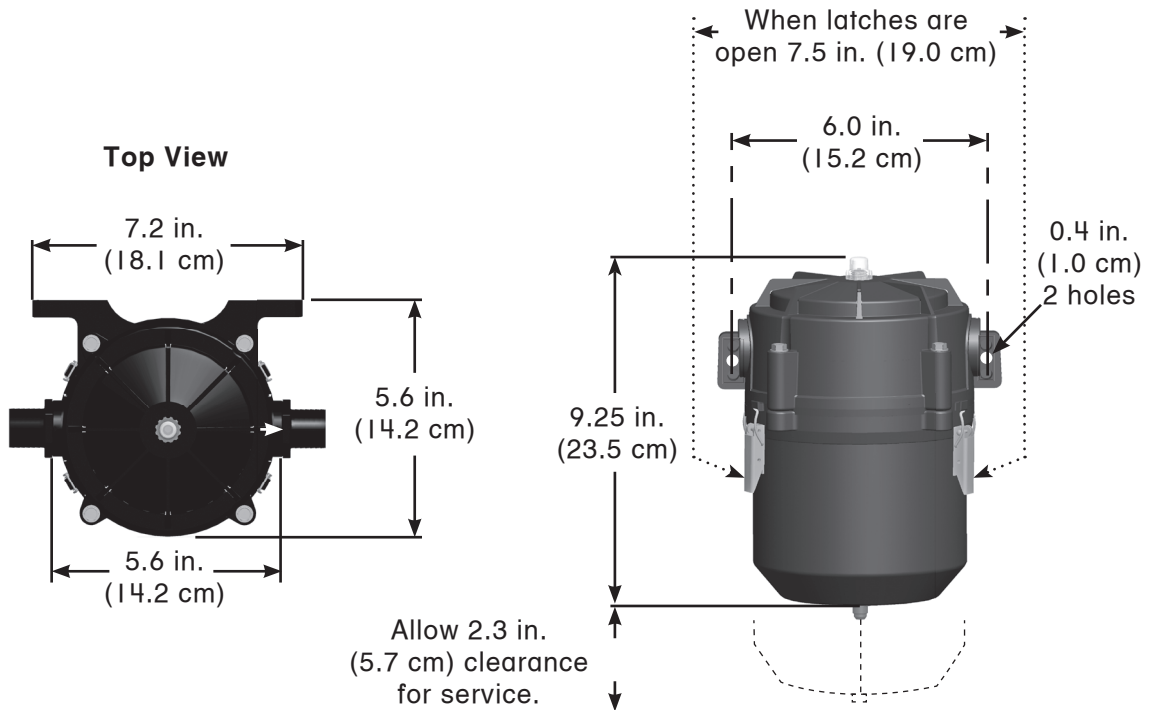
### How to Order

(The examples below illustrate how part numbers are constructed)

CCV4500	-08	L
<p><b>Basic Unit</b> For closed system applications only</p>	<p>Specify -06 for medium density -08 for high density (-08) is standard</p>	<p>Specify “L” for inlet on left side “R” for inlet on right side</p>

6

### Mounting Information

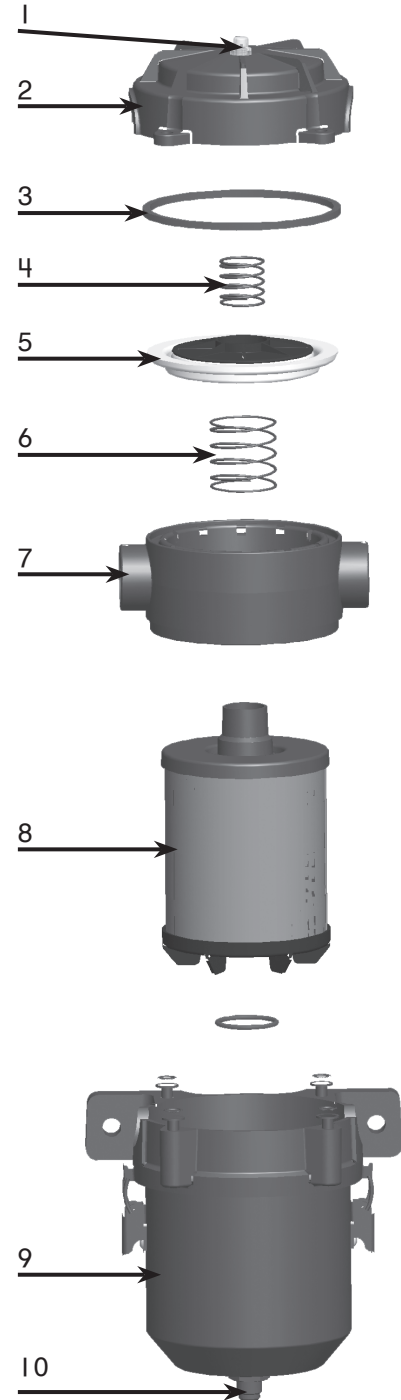


# Crankcase Ventilation

## CCV4500

### Replacement Parts

	<u>Part Number</u>	<u>Description</u>
1.	<b>CCV55081</b>	Bypass Indicator Kit
2.	<b>CCV55246L</b> <b>CCV55246R</b>	Head Assembly Left Head Assembly Right
3.	<b>CCV55283</b>	O-ring Kit
4.	<b>55233</b>	Bypass Spring
5.	<b>CCV55247</b>	Diaphragm Kit
6.	<b>55230</b>	Valve Spring
7.	<b>55227</b>	Valve Body
8.	<b>Replacement Elements</b>	
	<b>CCV55248-06</b>	Medium Density
	<b>CCV55248-08</b>	High Density
9.	<b>CCV55249</b>	Can Assembly (includes bracket)
10.	<b>CCV55279</b>	1/4" MNPT Drain Kit Check Valve Kit
	<b>CCV55245</b>	#4 SAE Drain Check Valve Kit
	<b>CCV55022</b>	Drain Kit
<b>Inlet and Outlet Fittings Kit</b>		
	<b>CCV55250</b>	1" O.D. Hose Barb to 3/16" SAE Fitting
	<b>CCV55251</b>	3/4" O.D. Hose Barb to 1 3/16" SAE Fitting
	<b>CCV55280</b>	1 1/4" O.D. Hose Barb to 1 3/16" SAE Fitting
<b>Hose and Fitting Kits</b>		
	<b>CCV55024</b>	Hose Kit (see CCV Accessories page)
	<b>CCV55025</b>	Hose Kit (see CCV Accessories page)
	<b>CCV55037</b>	Hose Kit (see CCV Accessories page)
	<b>CCV55038</b>	Hose Kit (see CCV Accessories page)
<b>Additional Parts (not shown)</b>		
	<b>CCV55461</b>	Heater Kit
	<b>55021</b>	Installation Instructions



# Crankcase Ventilation

## CCV6000

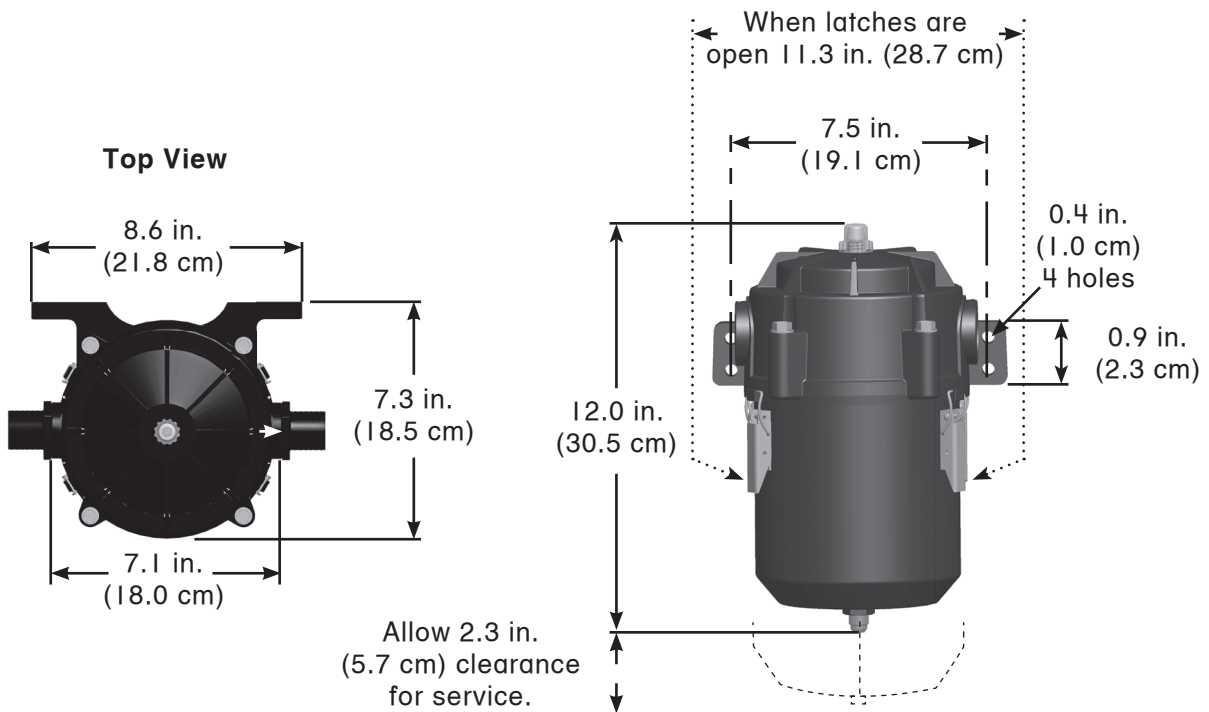
### How to Order

(The examples below illustrate how part numbers are constructed)

CCV6000	-08	L
<p><b>Basic Unit</b> For Closed System applications only.</p>	<p>Specify -06 for medium density -08 for high density (-08) is standard</p>	<p>Specify "L" for inlet on left side "R" for inlet on right side</p>

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### Mounting Information



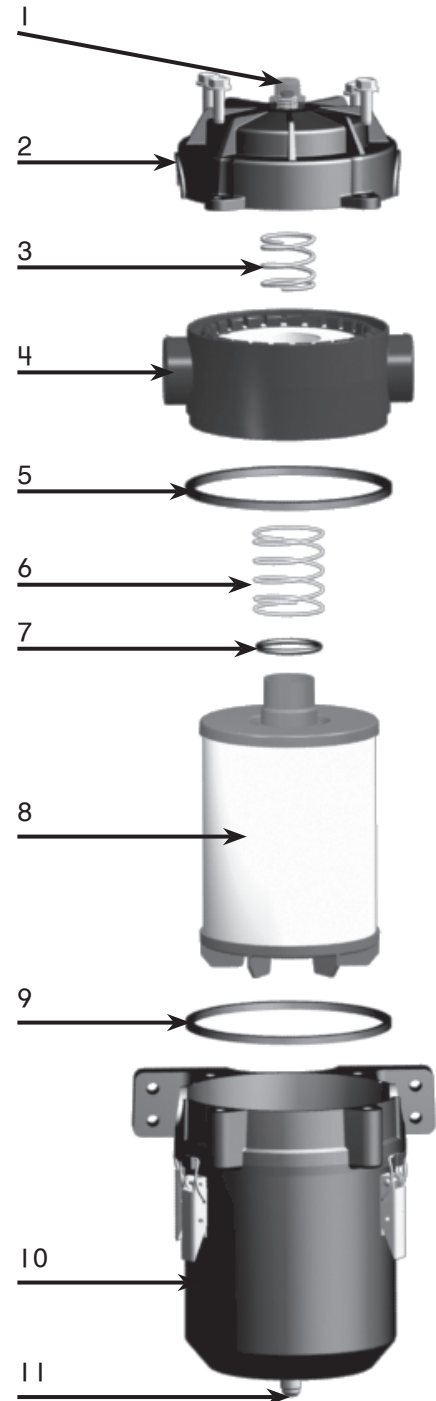


# Crankcase Ventilation

## CCV6000

### Replacement Parts

	<b>CCV6000</b>	
	<u>Part Number</u>	<u>Description</u>
1.	<b>CCV5508 I</b>	Bypass Indicator Kit
2.	<b>CCV55272L</b> <b>CCV55272R</b>	Head Assembly Kits
3.	<b>55259</b>	Bypass Sping
4.	<b>55253-01</b>	Valve Body
5.	<b>55260</b>	Gasket
6.	<b>55256</b>	Valve Spring
7.	<b>55264</b>	Filter O-ring
8.	<b>Replacement Elements</b>	
	<b>CCV55274-06</b>	Medium Density
	<b>CCV55274-08</b>	High Density
9.	<b>55266</b>	Can O-ring
10.	<b>CCV55275</b>	Can Assembly (includes Bracket)
11.	<b>CCV55279</b>	1/4" MNPT Drain Check Valve
	<b>CCV55245</b>	#4 SAE Drain Check Valve
	<b>CCV55022</b>	Drain Kit
	<b>Additional Parts (not shown)</b>	
	<b>5502 I</b>	Installation Instructions
	<b>Inlet and Outlet Fittings</b>	
	<b>CCV55267</b>	1 1/2" O.D. Hose Barb to 1 5/8" SAE Fitting
	<b>CCV55266</b>	1 1/4 O.D. Hose Barb to 1 5/8" SAE Fitting
	<b>Hose and Fitting Kits</b>	
	<b>CCV55046</b>	Hose Kit (see CCV Accessories page)
	<b>CCV55047</b>	Hose Kit (see CCV Accessories page)
	<b>CCV55048</b>	Hose Kit (see CCV Accessories page)
	<b>CCV55049</b>	Hose Kit (see CCV Accessories page)
	<b>Accessories</b>	
	<b>CCV55012</b>	Remote Crankcase Pressure Indicator
	<b>CCV55040</b>	1 1/4" by 1 1/4" by 1 1/4" O.D. Hose Barb
	<b>CCV55464</b>	Heater Kit
	<b>CCV55020</b>	1 1/2" by 1 1/4" Bushing Reducer
	<b>5502 I</b>	Installation Instructions



# Crankcase Ventilation

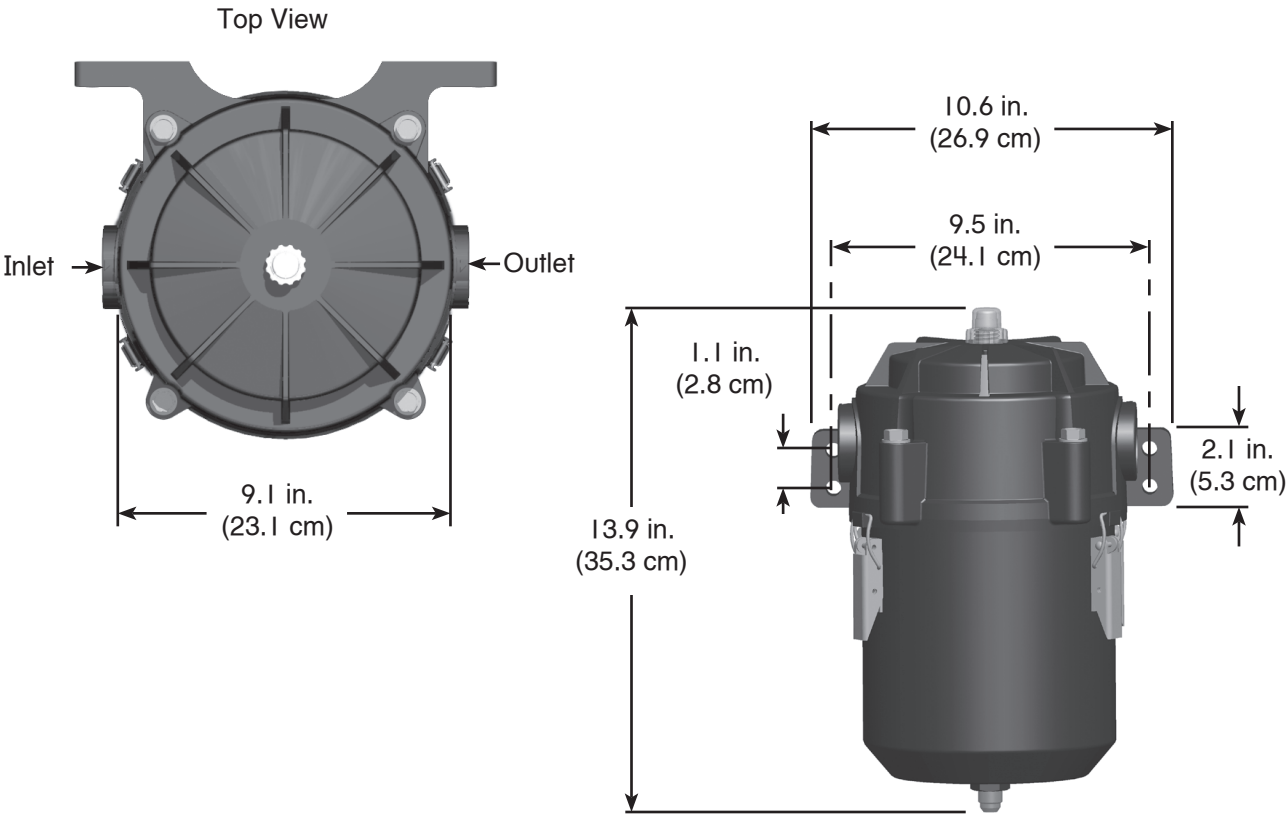
## CCV8000

### How to Order

(The examples below illustrate how part numbers are constructed)

CCV8000	-08	L
<p><b>Basic Unit</b> For Closed System applications only.</p>	<p>Specify -06 for medium density -08 for high density (-08) is standard</p>	<p>Specify "L" for inlet on left side "R" for inlet on right side</p>

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# Crankcase Ventilation

## CCV8000

### Replacement Parts

#### CCV8000

	Part Number	Description
1.	<b>CCV55081</b>	Bypass Indicator
2.	<b>CCV55220L</b> <b>CCV55220R</b>	Left Side Head Assembly Right Side Head Assembly
3.	<b>55207</b>	Bypass Spring
4.	<b>55208</b>	O-ring (Duro Buna) Size 367-70
5.	<b>CCV55221</b>	Diaphragm Kit
6.	<b>55204</b>	Valve Spring
7.	<b>Replacement Elements</b>	
	<b>CCV55222-06</b>	Medium Density
	<b>CCV55222-08</b>	High Density
8.	<b>55214</b>	Can O-ring
9.	<b>55201-01</b>	Valve Body
10.	<b>CCV55223</b>	Can Assembly
11.	<b>CCV55080</b> <b>CCV55288</b> <b>CCV55071</b>	3/8" MNPT Drain Check Valve #8 SAE Drain Check Valve Drain Kit

#### Inlet and Outlet Fittings

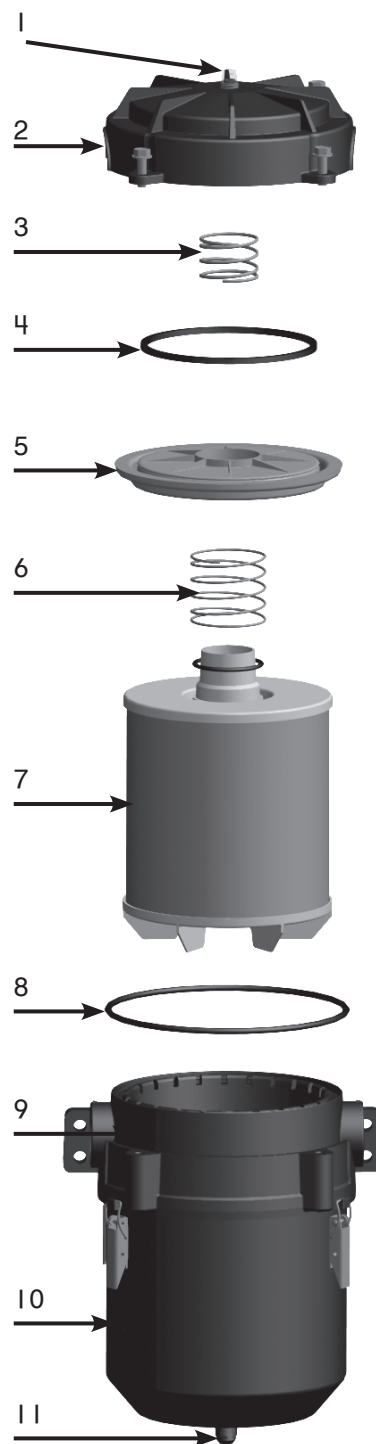
<b>CCV55218</b>	1 1/2" O.D. Hose Barb to 1 7/8" SAE Fitting
-----------------	---

#### Hose and Fittings Kit

<b>CCV55067</b>	Hose Kit (see CCV Accessories page)
<b>CCV55068</b>	Hose Kit (see CCV Accessories page)
<b>CCV55069</b>	Hose Kit (see CCV Accessories page)

#### Accessories

<b>CCV55012</b>	Remote Crankshaft pressure Indicator
<b>CCV55041</b>	1 1/2" by 1 1/2" by 1 1/2" O.D. Hose Barb Tee Fitting
<b>CCV55463</b>	Heater Kit
<b>CCV55021</b>	Installation and Service Instructions



# Crankcase Ventilation

## CCV Accessories

### Tap Sleeves

- Installs inline between element and turbocharger.
- Sized by matching pipe diameter.

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**CCV30100-B**



**CCV40100-B**



**CCV50125-B**



**CCV60125-B**

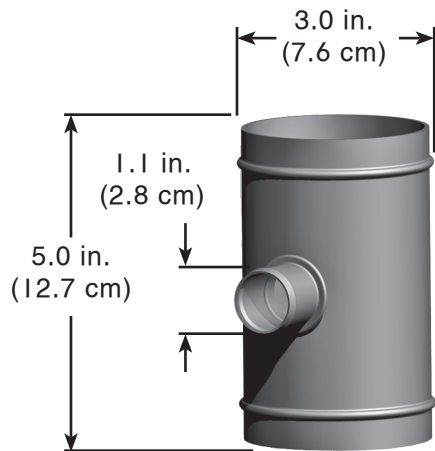
Part Number	Description	Weight
<b>CCV30100-B</b>	5.0 in. (12.7 cm) x 3.0 in. (7.6 cm)	2.0 lbs (0.9 kg)
<b>CCV40100-B</b>	5.0 in. (12.7 cm) x 4.0 in. (10.4 cm)	2.5 lbs (1.1 kg)
<b>CCV50125-B</b>	6.0 in. (15.2 cm) x 5.1 in. (13.0 cm)	2.5 lbs (1.1 kg)
<b>*CCV60125-B</b>	6.0 in. (15.2 cm) x 6.1 in. (15.5 cm)	2.5 lbs (1.1 kg)

\*Note: Includes a 1 1/4" by 1 1/2" bushing reducer (connects to 1 1/2" ID hose) part # **55020**.

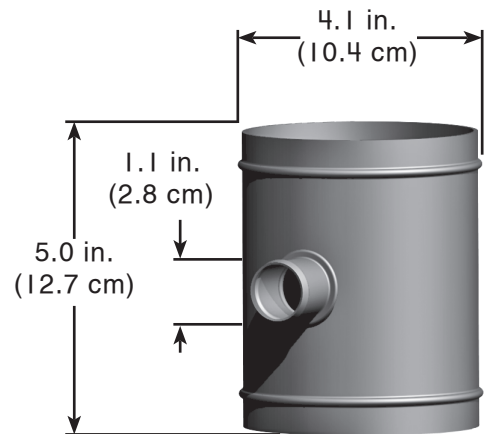
# Crankcase Ventilation

## CCV Accesories

### Tap Sleeves

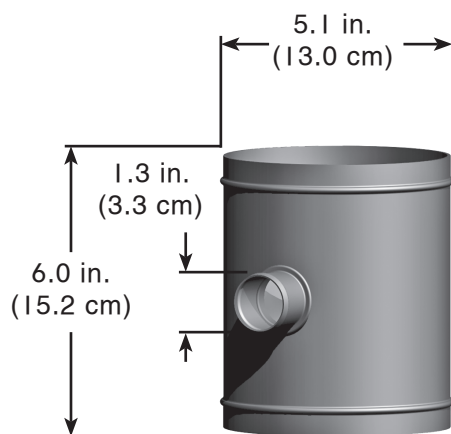
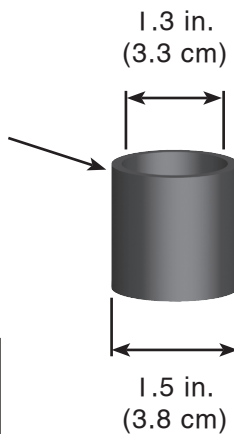


CCV30100-B

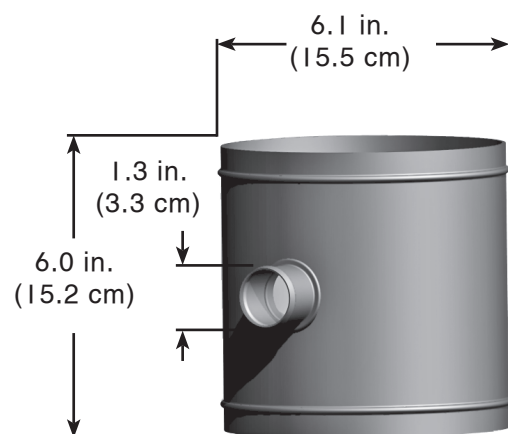


CCV40100-B

Rubber Bushing Reducer



CCV50125-B



CCV60125-B

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**Parker**

# Crankcase Ventilation

## CCV Accessories

### *Hose / Fitting Kits*

Part Number      Description

#### **For Model CCV4500**

- CCV55024**      (1) 3/4" fitting, (1) 1" fitting, (1) 3/4" ID x 4' hose, (1) 1" ID x 4' hose, (4) clamps, and (4) ties.
- CCV55025**      (2) 1" fittings, (1) 1" ID x 8' hose, (4) clamps, and (4) ties
- CCV55037**      (1) 1 1/4" fitting, (1) 1" fitting, (1) 1 1/4" ID x 4' hose, (1) 1" ID x 4' hose, (4) clamps, and (4) ties.
- CCV55038**      (1) 3/4" fitting, (1) 1" fitting, (1) 3/4" ID x 6' hose, (1) 3/4" Tee fitting, (1) 1" ID x 4' hose, (8) clamps, and (8) ties.

#### **For Model CCV6000**

- CCV55046**      (2) 1 1/4" fittings, (1) 1 1/4" ID x 8' hose, (4) clamps, and (4) ties.
- CCV55047**      (2) 1 1/4" fittings, (1) 1 1/4" Tee fitting, (1) 1 1/4" ID x 10' hose, (8) clamps, and (8) ties.
- CCV55048**      (2) 1 1/4" fittings, (1) 1 1/2" ID x 4' hose, (1) bushing reducer, (1) 1 1/4" ID x 4' hose, (4) clamps, and (4) ties.
- CCV55049**      (2) 1 1/4" fittings, (1) 1 1/2" ID x 5' hose with 2" cuff, (1) bushing reducer, (1) 1 1/4" ID x 4' hose, (4) clamps, and (4) ties.

#### **For Model CCV8000**

- CCV55067**      (2) 1 1/2" fittings, (1) 1 1/2" ID x 10' hose, (1) bushing reducer, (4) clamps, and (4) ties.
- CCV55068**      (2) 1 1/2" fittings, (1) 1 1/2" Tee fitting, (1) 1 1/2" ID x 12' hose, (2) bushing reducers, (8) clamps, and (8) ties.
- CCV55069**      (2) 1 1/2" fittings, (1) 1 1/2" ID x 5' hose with 2" cuff, (1) 1 1/2" ID x 5' hose, (4) clamps, and (4) ties.





# Crankcase Ventilation

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**0**

N/A

**1**

N/A

**2**

N/A

**3**

N/A

**4**

N/A

**5**

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**8**

N/A

**9**

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**B**

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# Crankcase Ventilation

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# Crankcase Ventilation

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**I**

N/A

**J**

N/A

**K**

N/A

**L**

N/A

**M**

N/A

**N**

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**O**

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**Y**

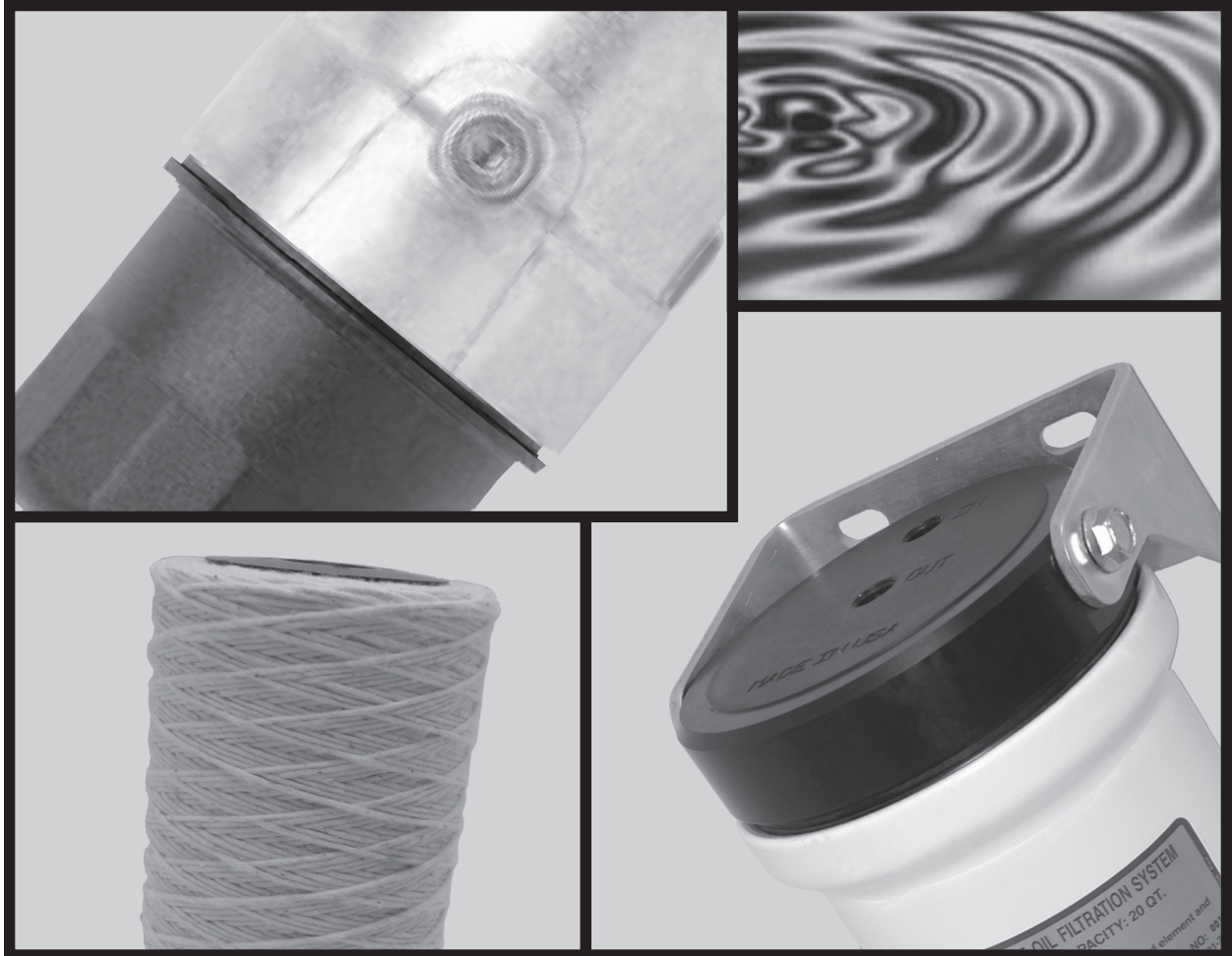
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**Z**

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# Section 7



***Lubrication  
Filtration***

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# Lubrication Filtration

## RK46267

### The New Generation of Top-Load Filters

A permanent assembly houses Racor top-load oil filter. The top-load filters meet the requirements of today's oil-controlled, high pressure fuel injection systems. Racor media meets the variable geometry and variable nozzle turbocharger requirements. An uncompromising, high level of fluid cleanliness is needed to achieve operating efficiency and reach service life. The environmentally-friendly cartridge oil filters are crushable, incinerable and cost-effective to replace. Filter service is from the top of the module and skin contact is minimal due to the unique screw top cap and oil element attachment. The permanent assembly is customized with a patented automatic drain that allows oil to drain back into the sump when

the engine is turned off and the screw top cap is removed for service. This Racor-engineered feature eliminates the waste oil that is left in a standard spin-on filter and thrown away during a filter change. The top-load oil conditioning module is a prime example of value-added system.

A Racor engineering that tailors a filtration system to a specific engine working in a broad range of environments. Development includes detailed analysis of the engine's filtration requirements, change intervals, available mounting space and a cost analysis of the entire program. Racor's investment in rapid prototype equipment provides fit-up assemblies to facilitate the development process.



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# Lubrication Filtration

## RK46267



<i>Specifications</i>	<b>RK46267</b>
<i>Flow Rate</i>	40 GPM (151 LPM)
<i>Application</i>	Engine Oil and Hydraulic Oil
<i>Maximum Pressure</i>	150 PSI (10.3 bar)
<i>Height</i>	11.2 in. (28.4 cm)
<i>Diameter</i>	5.8 in. (14.8 cm)
<i>Weight</i>	6.7 lbs (3.03 kg)

### Environmental Responsibility

Designing products that help protect the environment is a top priority at Racor Division. Thousands of engineering hours are invested to meet OEM specifications with environmentally-friendly products. Racor top-load oil filters are metal free and crushable, taking less disposal space and incinerable, leaving only a trace amount of ash.

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# Lubrication Filtration

## RK46267

### Features

Top-loading filter replacement is user-friendly – cleaner, easier, quicker than servicing under-engine mounted filters.

High performance, high efficiency engineered filter media. Environmentally-friendly, incinerable element.

Optional oil pressure regulator is can be integral into the system.

Oil supply from engine.

Auto drain port.

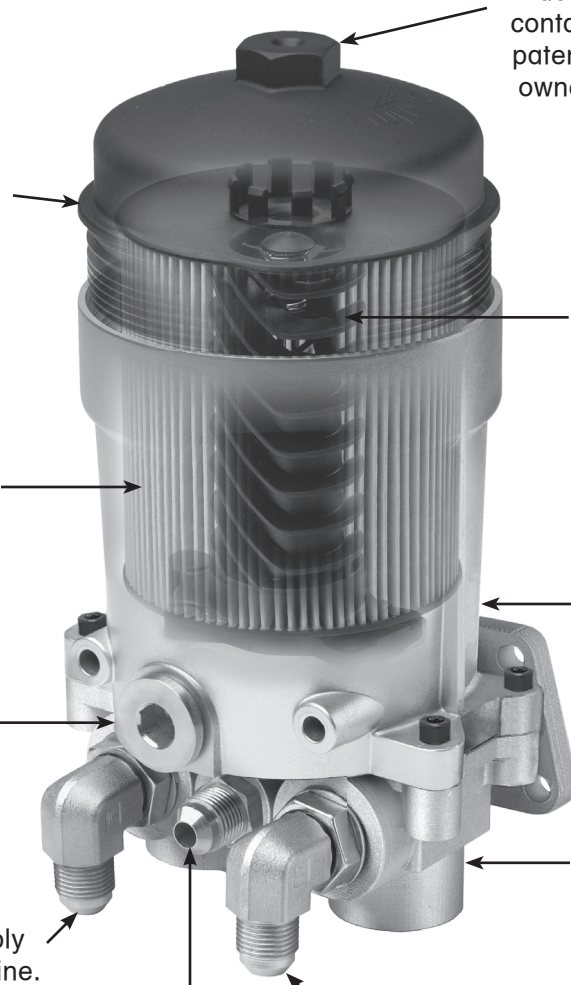
Clean oil to engine.

The filter element and screw top cap are a patented, combination design that minimizes skin contact during service. System patents ensure that equipment owners receive genuine OEM replacement filters.

Patented center tube filter design includes a bypass for engine protection. Because oil is supplied to the engine from the top of the chamber, contaminants collecting at the bottom do not enter the engine.

Rugged, die cast aluminum housing.

Die cast aluminum mounting base.



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# Lubrication Filtration

## LFS 300 Series

The Racor LFS 300 Series Retrofit Kits allow the conversion from a standard metal spin-on disposable canister to a premium cartridge oil filter. These revolutionary systems feature a crushable, burnable replacement cartridge element that offers increased capacity and efficiency.

The Racor 300 Series Lubrication Filtration Systems are unique in their configuration. They feature a spin-on die-cast aluminum canister that mounts directly to the engine in place of the existing spin-on filter.

The engineered design of the Racor cellulose filter element provides for an environmentally clean and efficient oil filter.

### Applications:

The models available will fit most Dodge, Ford, General Motors gasoline engines from 2.5L to 7.5L in trucks and the Dodge /Cummins "B" series 5.9L diesel engine.

### Products:

The retrofit kits come complete with the aluminum canister with the correct mounting thread on the end cap, a filter element in the canister, and a spare element for the next oil change.

### Features:

The LFS 300 Series Retrofit Kits are a three-piece design. They include an aluminum housing which screws directly onto the engine in place of the disposable filter element, a patented premium cellulose filter cartridge and the cartridge mounting end cap.

Simply remove the existing disposable oil filter and screw on the aluminum housing and tighten. This housing will stay on the engine and will not have to be removed to service the filter.

All retrofit kits include bottom and side drain plugs, and by-pass valves.

**Available Threads:** 3/4"-16, M18 x 1.5, 1"-16 UNF



LFS 331



LFS 333



LFS 335



LFS 339



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# Lubrication Filtration

## LFS 300 Series



Specifications	LFS 331	LFS 333	LFS 335	LFS 339
<b>Flow Rate</b>	9 GPM (34 LPM)	9 GPM (34 LPM)	16 GPM (61 LPM)	16 GPM (61 LPM)
<b>Inlet Port Size</b>	3/4"-16 UNF	18 mm X 1.5	3/4"-16 UNF	1"-16 UNF
<b>Mounting Nut Size</b>	1-1/16 in. (2.7 cm)	1-1/16 in. (2.7 cm)	1-1/16 in. (2.7 cm)	1-1/16 in. (2.7 cm)
<b>Engine Application</b>	Dodge Gasoline Truck Model Years 1991-1999	General Motors Gasoline Truck Model Years 1981-1998	Ford Gasoline Truck Model Years 1977-1999	Dodge Truck Diesel Model Years 1986-2000
<b>Replacement Element</b>	LFS 331-3RE	LFS 331-3RE	LFS 335-7RE	LFS 339-41RE
<b>Maximum Pressure</b>	150 PSI (10.03 bar)	150 PSI (10.03 bar)	150 PSI (10.03 bar)	150 PSI (10.03 bar)
<b>Bypass Setting</b>	11.0 PSI (.75 bar)	20.0 PSI (1.4 bar)	11.0 PSI (.75 bar)	20.0 PSI (1.4 bar)
<b>Service Clearance</b>	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	8.0 in. (20.3 cm)	9.0 in. (22.9 cm)
<b>Height</b>	5.6 in. (14.2 cm)	5.6 in. (14.2 cm)	5.9 in. (15.0 cm)	7.1 in. (18.0 cm)
<b>Diameter</b>	3.4 in. (8.6 cm)	3.4 in. (8.6 cm)	4.2 in. (10.7 cm)	4.2 in. (10.7 cm)
<b>Weight (dry)</b>	1.1 lb (0.5 kg)	1.1 lb (0.5 kg)	1.6 lb (0.7 kg)	1.9 lb (0.9 kg)
<b>Operating Temperature</b>	-40° to +255°F (-40° to +121°C)			

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# Lubrication Filtration

## LFS 300 Series

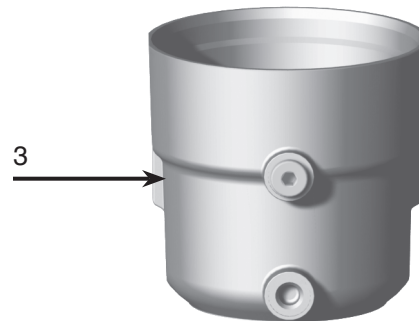
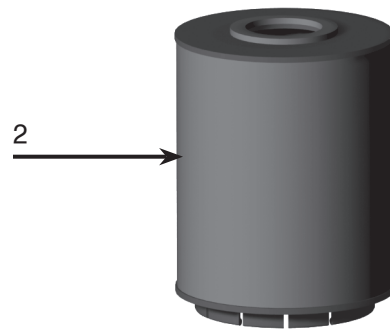
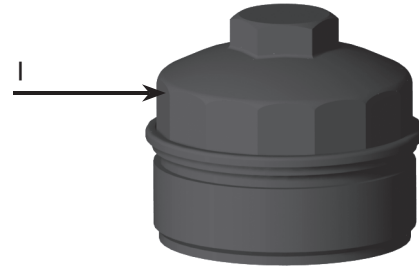
### Replacement Parts

#### LFS 331, LFS 333, LFS 335 and LFS 339

	<u>Part Number</u>	<u>Description</u>
1.	N/A	Lid
2.	Replacement Elements	
	<b>LFS 331-3RE</b>	LFS 331
	<b>LFS 331-3RE</b>	LFS 333
	<b>LFS 335-7RE</b>	LFS 335
	<b>LFS 339-4IRE</b>	LFS 339
3.	N/A	Housing
4.	<b>46313</b>	Seal Kit (LFS 331 & LFS 335)
	<b>46314</b>	Seal kit (LFS 335 & LFS 339)

#### Additional Parts (not shown)

**46311** Installation Instructions



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# Lubrication Filtration

## LFS 800 Series

The Racor Bypass Oil Series removes dirt, varnish, ash, tar, soot and other moisture that full-flow filters cannot remove from your engine's oil.

The system also removes condensed water, which forms component-damaging acids if left in the oil.

The Racor Bypass Oil Series removes contaminants down to one micron, which minimizes wear and extends engine component life. The polishing effect of the Racor Bypass Oil Series and the use of the Racor Oil Analysis system will allow the engine oil service intervals to be extended. By reducing the disposal of waste oil, the system also contributes to preserving the environment.

### Superior Oil Filtration

The winding pattern of the element creates many identical spiral passageways, tapered in cross section so as to trap the larger particles near

the outer portion of the element and the smaller particles as the oil flows inward through the element. Solids are filtered by entrapment in the filter media throughout the entire depth of the element and reduces damaging particle count by 99%.

### Bypass Oil Series Benefits

- Extends the miles/hours between oil changes.
- Saves maintenance costs and downtime.
- Keeps oil cleaner longer, reducing oil consumption and disposal.
- Extends engine life and "rebuild" intervals.
- Keeps engines better lubricated which means reduced wear.
- Removes damaging moisture.



LFS 800A



LFS 801



LFS 802



LFS 820



LFS 825



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# Lubrication Filtration



Specifications	LFS 800A	LFS 801	LFS 802
<b>Engine HP (up to)</b>	150	250	400
<b>Sump Capacity</b>	2.5 Gal (9.5 L)	5.0 Gal (18.9 L)	15.0 Gal (57.0 L)
<b>Oil Flow Rate</b>	0.3 GPM (0.5 LPM)	0.4 GPM (1.4 LPM)	0.5 GPM (1.9 LPM)
<b>Inlet Port Size</b>	1/8 in. NPT	1/4 in. NPT	1/4 in. NPT
<b>Replacement Element</b>	LFS 800ABPE	LFS 801BPE	LFS 802BPE
<b>Seal Kit</b>	LFS RK46581	LFS RK46582	LFS RK46582
<b>Canister Cap</b>	0.13 Gal (0.5 L)	0.3 Gal (0.9 L)	0.5 Gal (1.9 L)
<b>Orifice Size</b>	0.04 in. (0.1 cm)	0.04 in. (0.1 cm)	0.4 in. (1.1 cm)
<b>Max Working Pressure</b>	150 PSI (1034 kPa)	150 PSI (1034 kPa)	150 PSI (1034 kPa)
<b>Height</b>	5.5 in. (1.4 cm)	7.5 in. (19.1 cm)	11.0 in. (27.9 cm)
<b>Width</b>	4.0 in. (10.2 cm)	5.3 in. (13.3 cm)	5.3 in. (13.3 cm)
<b>Depth</b>	4.5 in. (11.4 cm)	5.7 in. (14.5 cm)	5.7 in. (14.5 cm)
<b>Weight (dry)</b>	3.2 lbs (1.5 kg)	5.3 lbs (2.4 kg)	8.0 lbs (3.6 kg)
<b>Operating Temperature</b>	-40° to +255°F (-40° to +121°C)		

- For accurate engine flow rates, consult your engine or equipment manual, manufacturer's agent or a Racor distributor.
- The only accredited way to extend your oil change interval is through a formal lube analysis program.

# Lubrication Filtration



Specifications	LFS 802-S*	LFS 820	LFS 825
Engine HP (up to)	400	500	800
Sump Capacity	15.0 Gal (57.0 L)	30.0 Gal (114.0 L)	45.0 Gal (170.0 L)
Oil Flow Rate	0.5 GPM (1.9 LPM)	1.0 GPM (3.8 LPM)	1.5 GPM (5.7 LPM)
Inlet Port Size	Spin-on	1/2 in. NPT	1/2 in. NPT
Replacement Element	LFS RK46582	LFS 820BPE	LFS 825BPE
Seal Kit	LFS RK755	LFS RK46583	LFS RK46583
Canister Cap	0.5 Gal (1.9 L)	2.5 Gal (9.5 L)	3.5 Gal (13.3 L)
Orifice Size	0.4 in. (1.1 cm)	0.1 in. (0.3 cm)	0.1 in. (0.3 cm)
Max Working Pressure	150 PSI (1034 kPa)	150 PSI (1034 kPa)	150 PSI (1034 kPa)
Height	11.0 in. (27.9 cm)	14.5 in. (36.8 cm)	20.0 in. (50.8 cm)
Width	5.3 in. (13.3 cm)	9.0 in. (22.9 cm)	9.0 in. (22.9 cm)
Depth	5.7 in. (14.5 cm)	9.2 in. (23.3 cm)	9.2 in. (23.3 cm)
Weight (dry)	8.0 lbs (3.6 kg)	13.7 lbs (6.3 kg)	18.9 lbs (8.6 kg)
Operating Temperature	-40° to + 255°F (-40° to + 121°C)		

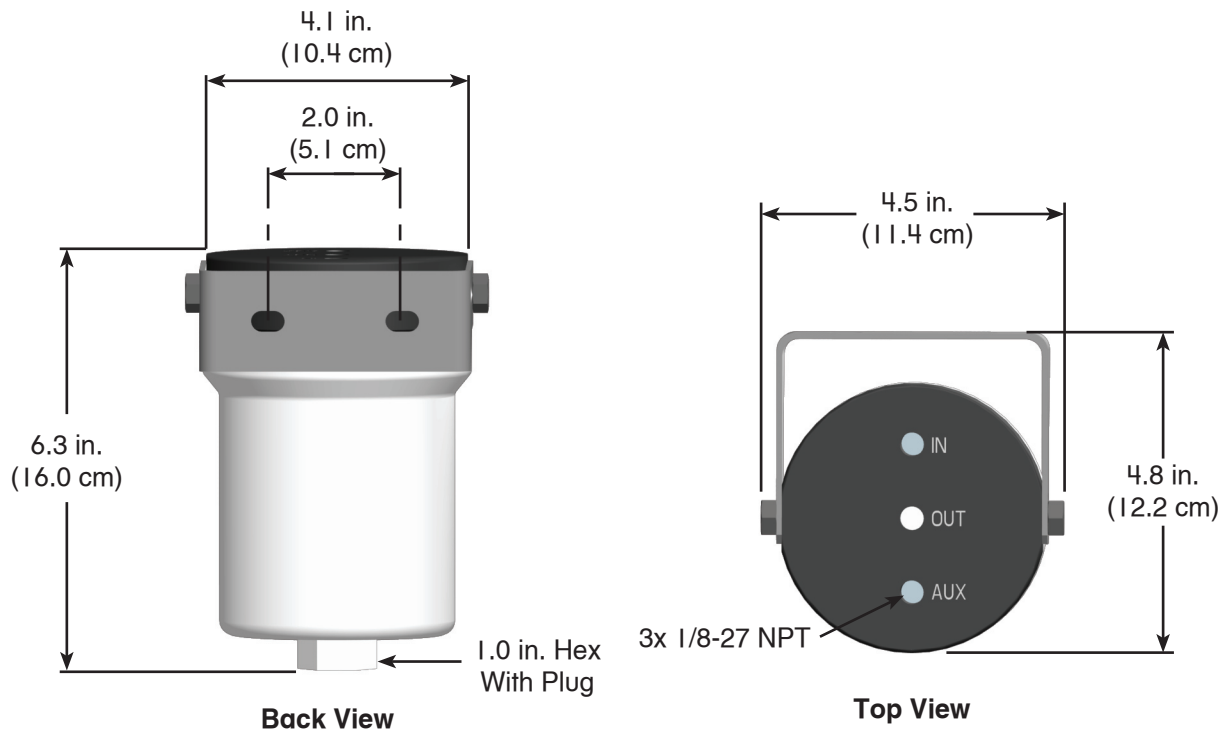
**Notes:** \* The LFS802-S is a replacement spin-on filter for CAT: C10, C12, and C15, 3176 with 1 3/8"-16 NPT threads.



# Lubrication Filtration

## LFS 800A

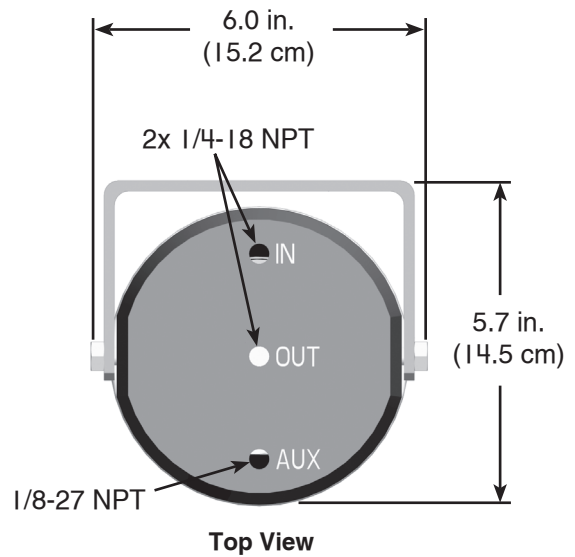
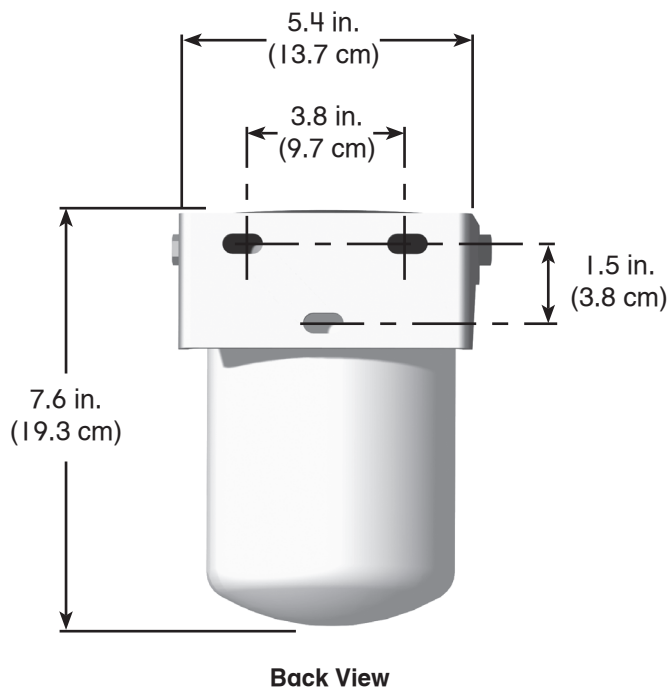
### *Mounting Information*



# Lubrication Filtration

## LFS 80I

### *Mounting Information*

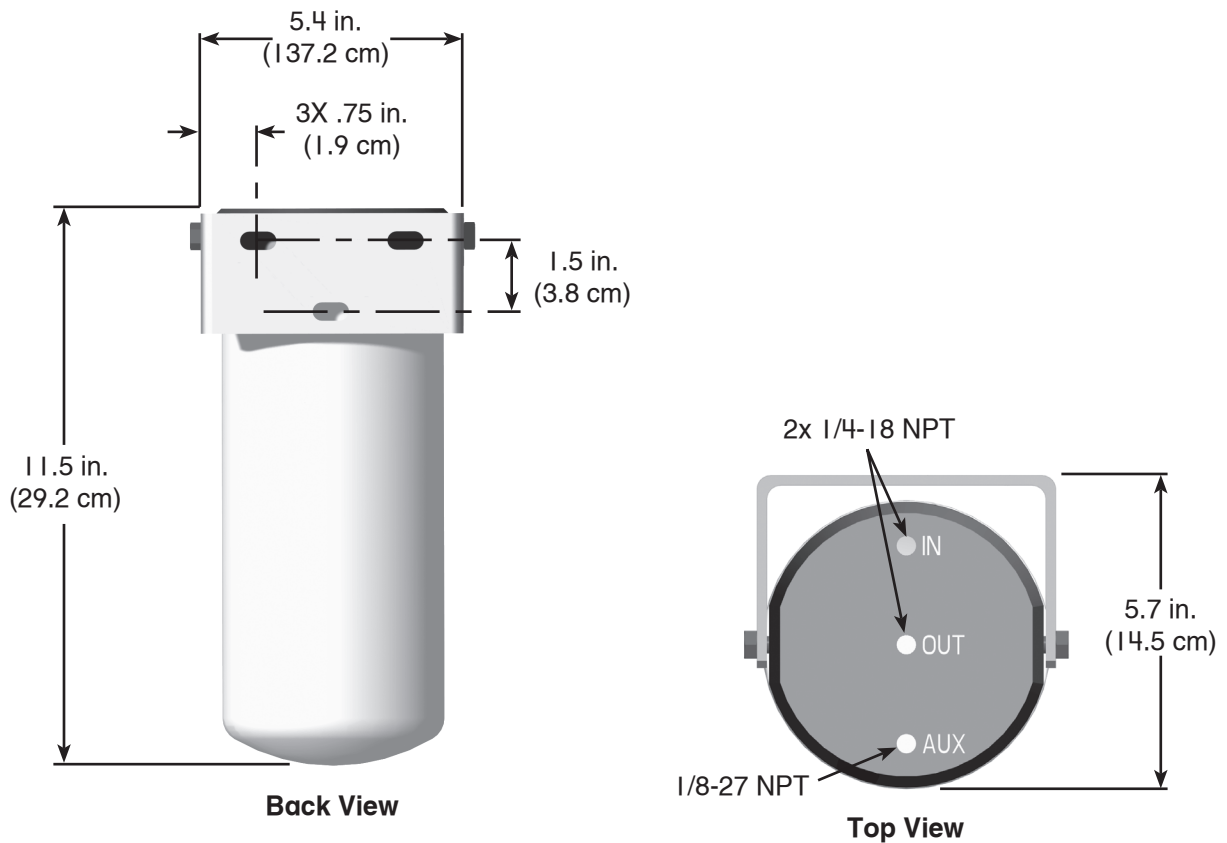


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# Lubrication Filtration

## LFS 802

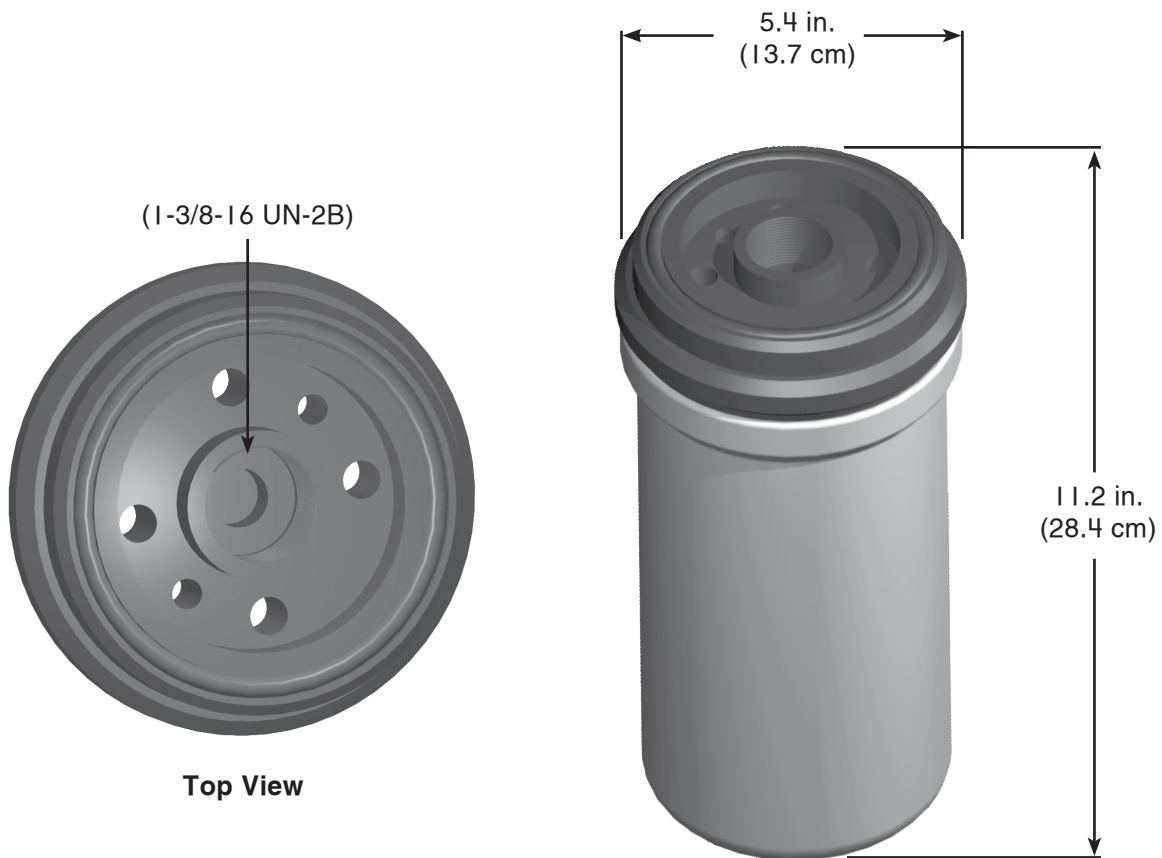
### *Mounting Information*



# Lubrication Filtration

LFS 802-S

## *Spin-on Filter Mounting Information*



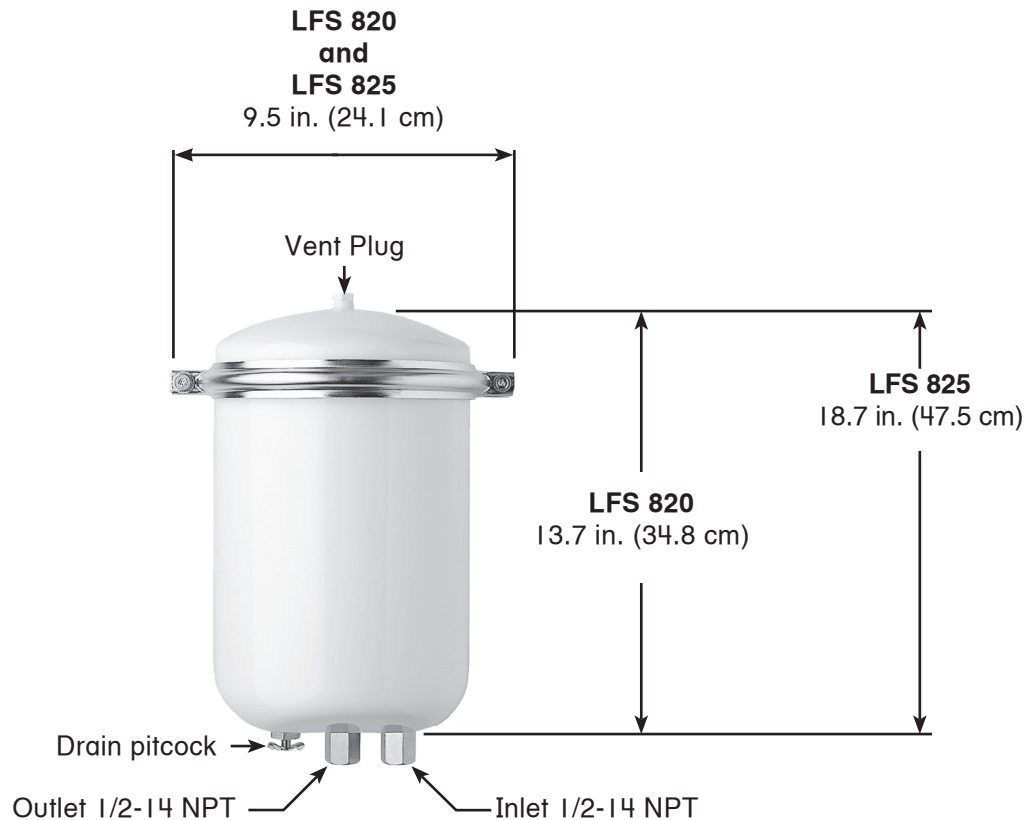
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# Lubrication Filtration

## LFS 820

### *Mounting Information*

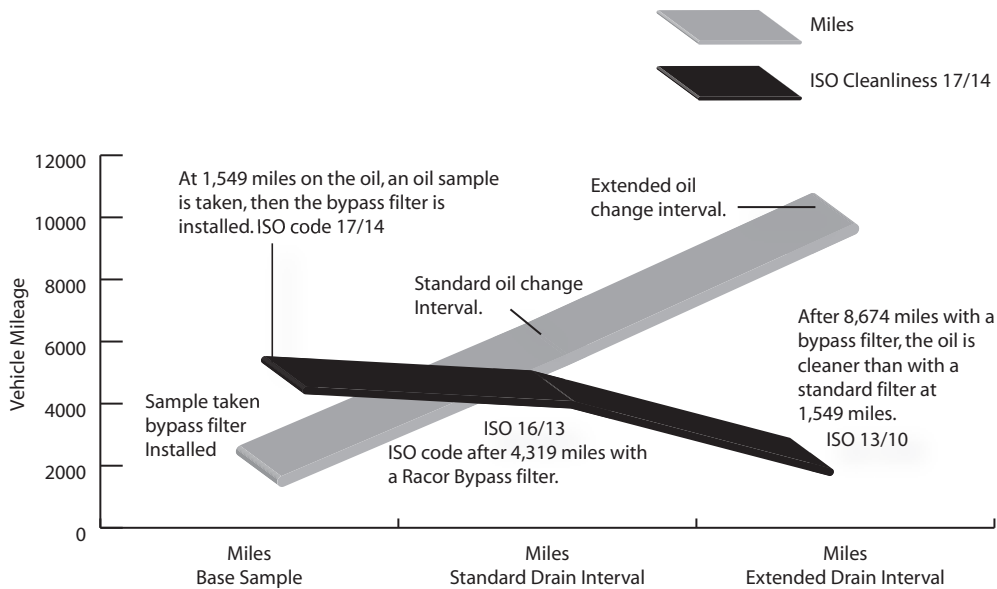
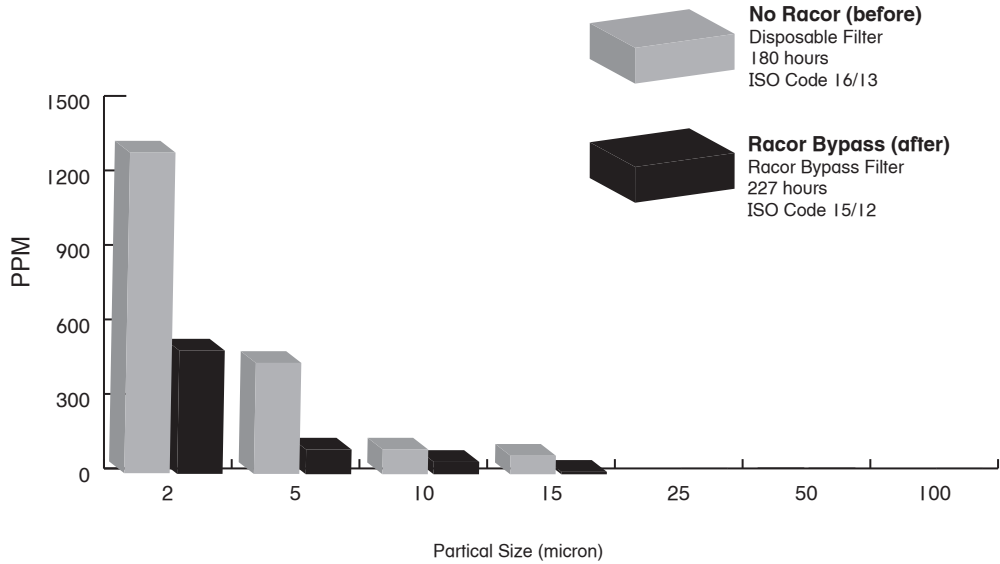
### *LFS 820 & LFS 825*



LFS 820 Shown

# Lubrication Filtration

## Bypass Filter Test Data



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# Lubrication Filtration

## LFS 800A CID

# Customer Interface Drawing

**FRONT VIEW:** Overall width 14.131, top diameter 1.500, mounting hole diameter 0.430, distance between mounting holes 1.000, and a 2x (0.31 x .50) SLOT.

**SIDE VIEW:** Overall height 16.300, showing the MAIN LABEL and HEX NUT RISE.

**TOP VIEW:** Overall diameter 14.750, with ports labeled IN, OUT, and AUX. Port spacing is 11.330. Mounting hole diameter is 1x (0.27) ØPT.

**ISOMETRIC VIEW:** Shows the filter assembly with labels for IN, OUT, and AUX ports, and a note for STAMP PART CODE NUMBER/PCB.

**NOTES - UNLESS OTHERWISE SPECIFIED:**

- 1. MATERIALS:
  - HEAD: BLACK ANODIZED ALUMINUM
  - BRACKET: PLATED STEEL
  - PLATES: PLATED STEEL
  - COILS: COATED ALUMINUM
  - SEALING: NBR ELASTOMER
  - O-RINGS: NBR ELASTOMER

**CUSTOMER INTERFACE DRAWING**

REV	DESCRIPTION	DATE	BY	CHK
1	ISSUED DRAWING	18/12/2018	06/07/2018	001

REV	DESCRIPTION	DATE	BY	CHK
1	ISSUED DRAWING	18/12/2018	06/07/2018	001

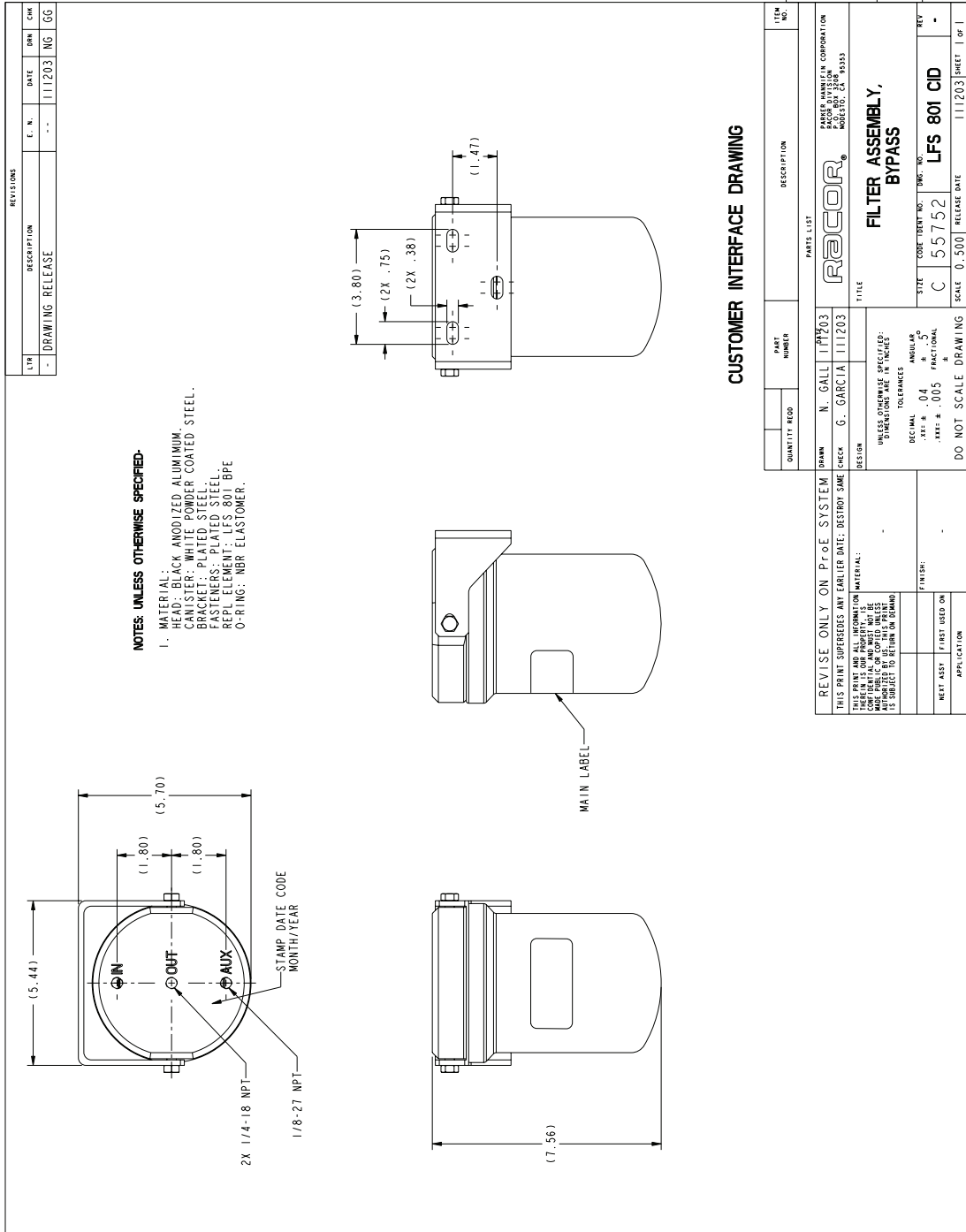
PLEASE ONLY USE FOR THE SYSTEM. DO NOT SCALE DRAWING FROM THIS DRAWING.

**RACOR** FILTER ASSEMBLY, BYPASS, Z OPM, LFS800A

# Customer Interface Drawing

# Lubrication Filtration

## LFS 801 CID

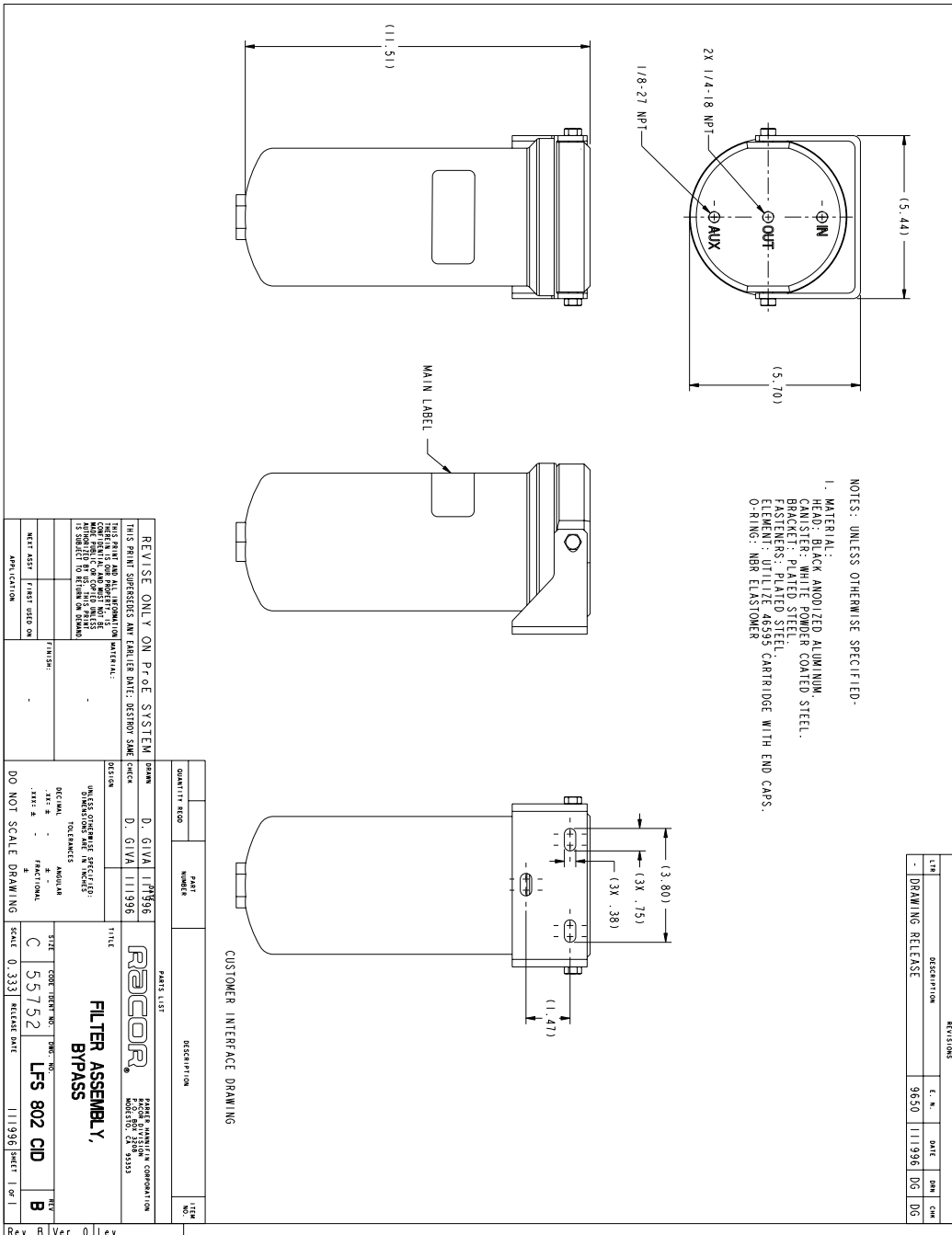




# Lubrication Filtration

## LFS 802 CID

# Customer Interface Drawing



# Lubrication Filtration

## Bypass Kits

The Racor Bypass Oil Series removes dirt, varnish, ash, tar, soot and other contaminants that full-flow filters cannot remove from your engine's oil and hydraulic systems. The system also removes moisture, which forms component-damaging acids if left in the oil. The Racor Bypass Oil Series removes 99.0% of damaging contaminants to minimize wear and extends engine component life. The polishing effect of the Racor Bypass Oil Series and the use of the Racor Oil Analysis system will allow the engine oil or hydraulic fluid service intervals to be extended. By reducing the disposal of waste oil, the system also contributes to preserving the environment.

### Bypass Oil Series Benefits

- Extends the miles between oil changes
- Saves maintenance costs and downtime
- Keeps oil cleaner longer, reducing oil consumption and disposal
- Extends engine life and "re-build" intervals
- Keeps engines better lubricated which means reduced wear
- Removes damaging water



LFS RK873F Shown

### LFS Kits

(GM Duramax 6.6L)  
**LFS RK866G**

(Ford 7.3L)  
**LFS RK873F**

(Dodge/Cummins 5.9L)  
**LFS RK859CL**

(Dodge/Cummins 5.9L)  
**LFS RK859CEB**

(Ford/International 6.0L)  
**LFS RK860F**

(Ford Econoline Van)  
**LFS RK860FE**

(Dodge/Cummins 5.9L)  
**LFS RK859CEA**



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[www.parker.com/racor](http://www.parker.com/racor)



# Lubrication Filtration

## Bypass Kits

Part Number	Application	Year Model
<b>LFS RK859CEA</b>	Dodge/Cummins 5.9L	1993-2002 Drain Plug Return
<b>LFS RK859CEB</b>	Dodge/Cummins 5.9L	1994-2001 Drain Plug Return
<b>LFS RK859CL</b>	Dodge/Cummins 5.9L	1998 ½-Current Filter Cap Return
<b>LFS RK866G</b>	GM Duramax 6.6L	All Models
<b>LFS RK860F</b>	Ford 6.0L	2003-Current
<b>LFS RK860FE</b>	Ford 6 cylinder	Econoline Van
<b>LFS RK873F</b>	Ford 7.3L DI & IDI Engine	1987-2003

## Hose and Fitting Kits

Remote bypass oil filter kits come complete with hose, adapters and all required fittings for a simple installation. The filter is mounted at any angle, using the supplied heavy duty bracket. The oil supply is taken from the engine by means of the unique machined and anodized components. The oil is returned to the crankcase by the filter cap or drain plug adapter.



### LFS RK801BHK

Hose and fittings kit for:

LFS RK859CL  
LFS RK860F  
LFS RK866G

### LFS RK800BHK

Hose and fittings kit for:

LFS RK859CEA  
LFS RK859CEB  
LFS RK873F

**RACOR**

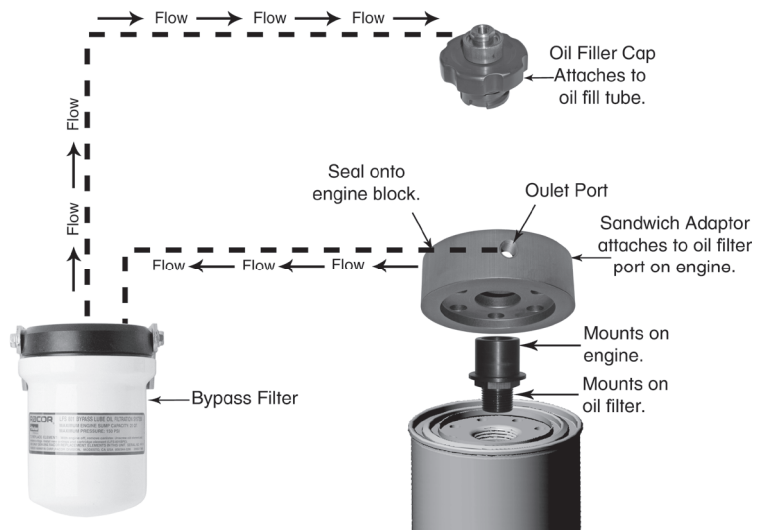
Technical Support:  
800.344.3286 ext. 7555  
racortech@parker.com

# Lubrication Filtration

## Bypass Kits

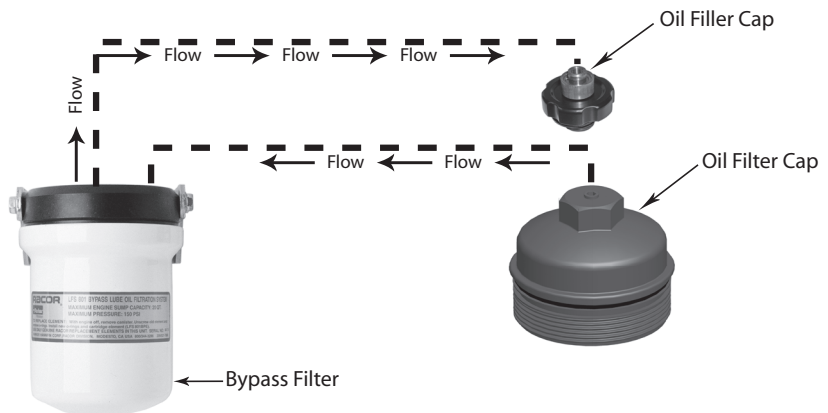
### Installation

**LFS RK866G**  
GM Duramax 6.6L



**LFS RK860F**  
Ford/International 6.0L

**LFS RK860FE**  
Ford Econoline Van

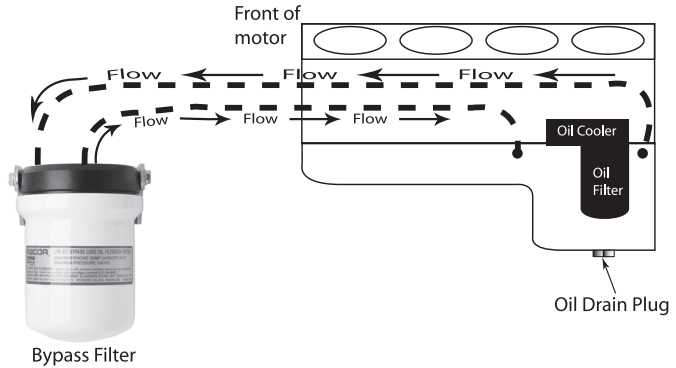


# Lubrication Filtration

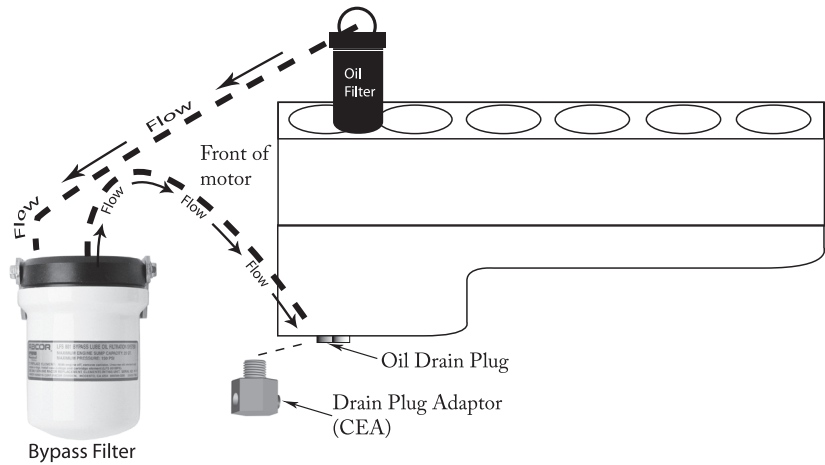
## Bypass Kits

### Installation

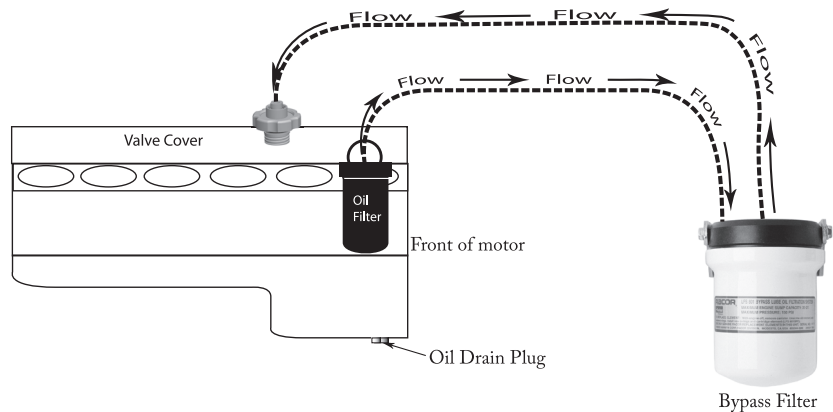
**LFS RK873F**  
Ford 7.3L DI and IDI Engine



**LFS RK859CEA & CEB**  
Dodge/Cummins 5.9L



**LFS RK859CL**  
Dodge/Cummins 5.9L



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# Lubrication Filtration

## DOC System

### DOC19P

DOC19P is a patented maintenance systems that automatically changes the oil as the engine is running. DOC19P systematically removes small amounts of oil from the engine, blends it into the return fuel line and burns it as fuel - in a simple, efficient closed loop system to keep your vehicle out of maintenance shop and on the job. Saves time and fuel costs.

The DOC19P incorporates Racor's proven gravity based Never Lo oil replenishing system to continuously replace the oil withdrawn from the engine and burned by the action of the DOC19P for the ultimate in hands off maintenance. The DOC19P pays for itself in less than a year of average use.



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**RACOR**®

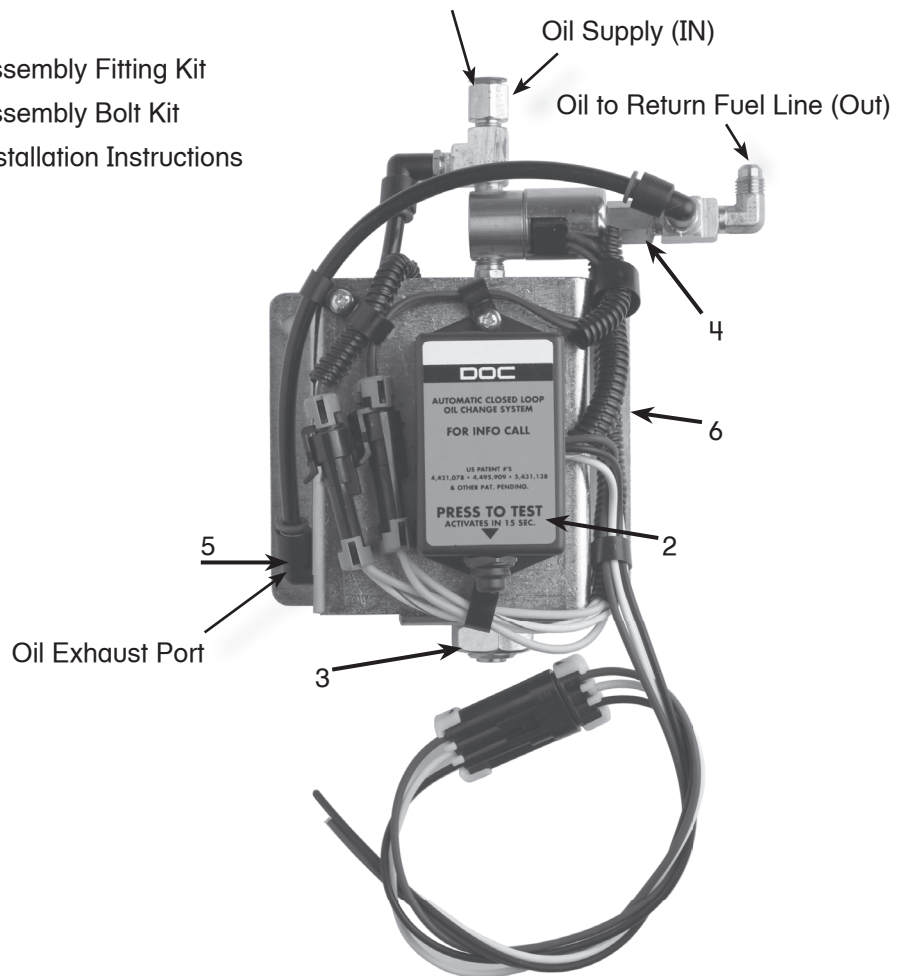
# Lubrication Filtration

## DOC System

### Replacement Parts

<u>Part Number</u>	<u>Description</u>
1 <b>DOC19P</b>	Automatic Oil Change
2 <b>DOC20PORX</b>	Control Module
3 <b>DOC25CPOX</b>	Cylinder Assembly
4 <b>DOC22PO</b>	Top Solenoid Assembly
5 <b>DOC22PC</b>	Bottom Solenoid Assembly
6 <b>DOC28CTAOX</b>	Mounting Bracket
Additional Parts (not shown)	
<b>DOC45K</b>	Assembly Fitting Kit
<b>BK14150</b>	Assembly Bolt Kit
<b>1000152</b>	Installation Instructions

**CAUTION:** This fitting contains a filter screen and removing the fitting will void the warranty.



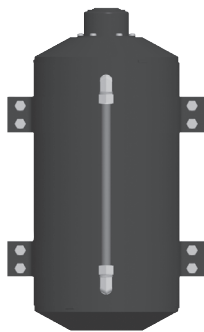
# Lubrication Filtration

## Never Lo Overview

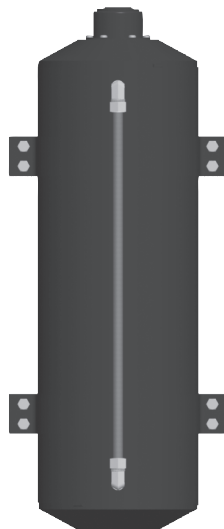
### *Replenishing System*

The Never Lo Oil Replenishing System, automatic or manual, provides a constant supply of fresh clean oil to the engine.

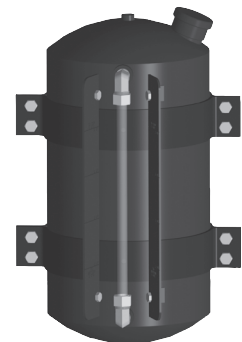
- The AFG Automatic Gravity System continuously monitors engine oil and automatically maintains engine oil at a pre-adjusted level. The system requires no electrical connections and is simple to install.
- The Push-Button Manual Pressurized Remote Fill Oil Replenishing System allows an operator to add oil to the engine by simply depressing a valve button until the desired amount of oil has been added.
- The amount of oil needed is determined by routine dipstick checking. The tank site gauge is calibrated at 2 quart intervals for easy make up.
- When used in conjunction with the DOC19P, the Never Lo Oil Replenishing System provides an automatic supply of fresh oil to the engine.



AFG30R Kit



AFG50R Kit



2MP30R Kit



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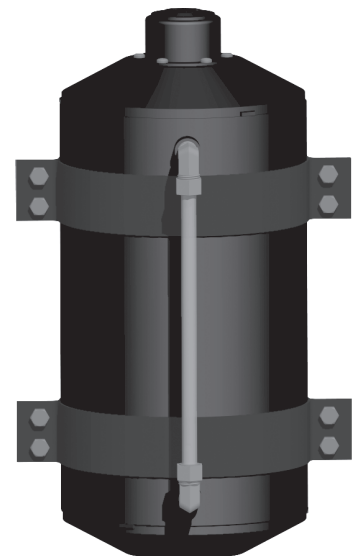
# Lubrication Filtration

## AFG30R Kit

### *Kit Includes*

<u>Part Number</u>	<u>Description</u>	<u>Quantity</u>
<b>3GV14X</b>	Fill Cap Assembly	(1)
<b>3NL52RX</b>	Round Mounting Bracket	(2)
<b>3NL52SX</b>	Square Mounting Bracket	(2)
<b>63PT-8-62</b>	1/2" Hose Insert	(2)
<b>NI1-8ANG</b>	1/2" Nylon Tubing	A/R
<b>23005</b>	Elbow, #8 Tube X 3/8"	(2)
<b>11078</b>	Hex Head Capscrews 3/8" - 16 X 1"	(8)
<b>11901</b>	Hex Nut 3/8" - 16 Self Locking	(8)
<b>AFG10FK</b>	Fitting Kit	(1)
<b>AFG10FK</b>	Universal Bracket	(1)
<b>RKAFGSV12</b>	Optional Solenoid Valve (12 vdc, normally closed, 1/4" NPT ports, 1/4" orifice) Mounting diagram shown in this section.	
<b>RELI230LT</b>	Relay	
<b>AFG30R</b>	Round Reservoir (3 gallon)	
<b>AFG30RSV</b>	3 Gallon With Solenoid Valve	
<b>2104-4-6</b>	90° Elbow Fitting (1/4" NPT by 3/8" male)	(2)
<b>0104-4-6</b>	Straight Fitting (1/4" NPT by 3/8" male)	(2)
<b>3NL4469A</b>	Sensing Chamber	
<b>0104-6-6</b>	Straight fitting (3/8" NPT by 3/8" male)	(1)
<b>145F-6-6</b>	Tee Fitting (3/8" NPT by 3/8" male)	(1)
<b>3NL70LT</b>	Oil Sensor Assembly	

**Note: Not all part numbers are available individually.**



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racortech@parker.com

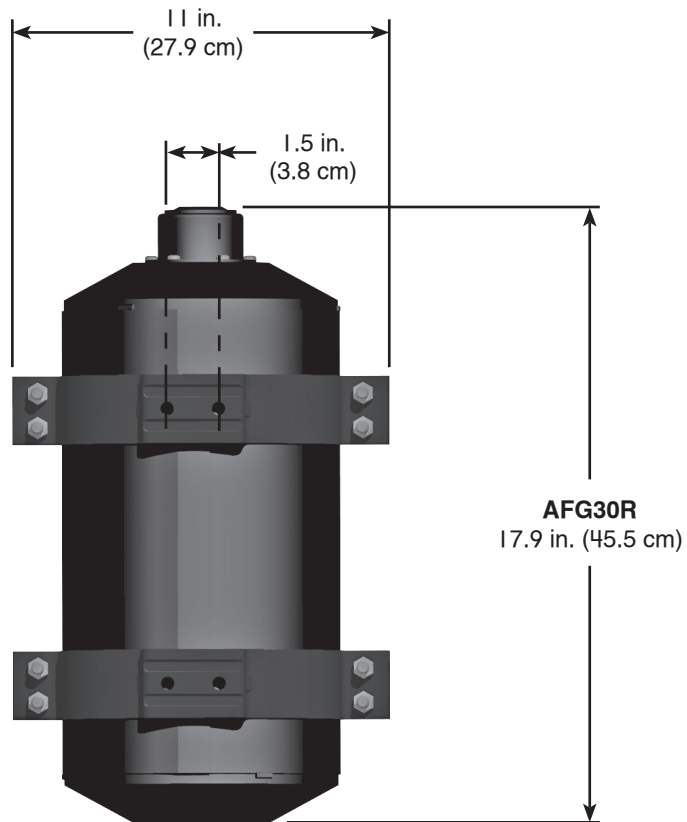
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# Lubrication Filtration

## AFG30R Kit

### *Mounting Information*



AFG30R Back View

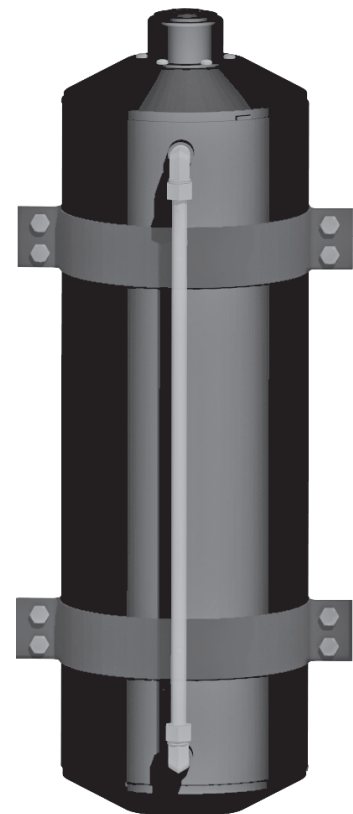
# Lubrication Filtration

## AFG50R Kit

### *Kit Includes*

<u>Part Number</u>	<u>Description</u>	<u>Quantity</u>
<b>3GV14X</b>	Fill Cap Assembly	(1)
<b>3NL52RX</b>	Round Mounting Bracket	(2)
<b>3NL52SX</b>	Square Mounting Bracket	(2)
<b>63PT-8-62</b>	1/2" Hose Insert	(2)
<b>NI1-8ANG</b>	1/2" Nylon Tubing	A/R
<b>23005</b>	Elbow, #8 Tube X 3/8"	(2)
<b>11078</b>	Hex Head Capscrews 3/8" - 16 X 1"	(8)
<b>11901</b>	Hex Nut 3/8" - 16 Self Locking	(8)
<b>AFG10FK</b>	Fitting Kit	(1)
<b>AFG10FK</b>	Universal Bracket	(1)
<b>RKAFGSV12</b>	Optional Solenoid Valve (12 vdc, normally closed, 1/4" NPT ports, 1/4" orifice) Mounting diagram shown in this section.	
<b>RELI230LT</b>	Relay	
<b>AFG50R</b>	Round Reservoir (5 gallon)	
<b>AFG50RSV</b>	5 Gallon With Solenoid Valve	
<b>2104-4-6</b>	90° Elbow Fitting (1/4" NPT by 3/8" male)	(2)
<b>0104-4-6</b>	Straight Fitting (1/4" NPT by 3/8" male)	(2)
<b>3NL4469A</b>	Sensing Chamber	
<b>0104-6-6</b>	Straight fitting (3/8" NPT by 3/8" male)	(1)
<b>145F-6-6</b>	Tee Fitting (3/8" NPT by 3/8" male)	(1)
<b>3NL70LT</b>	Oil Sensor Assembly	

**Note: Not all part numbers are available individually.**



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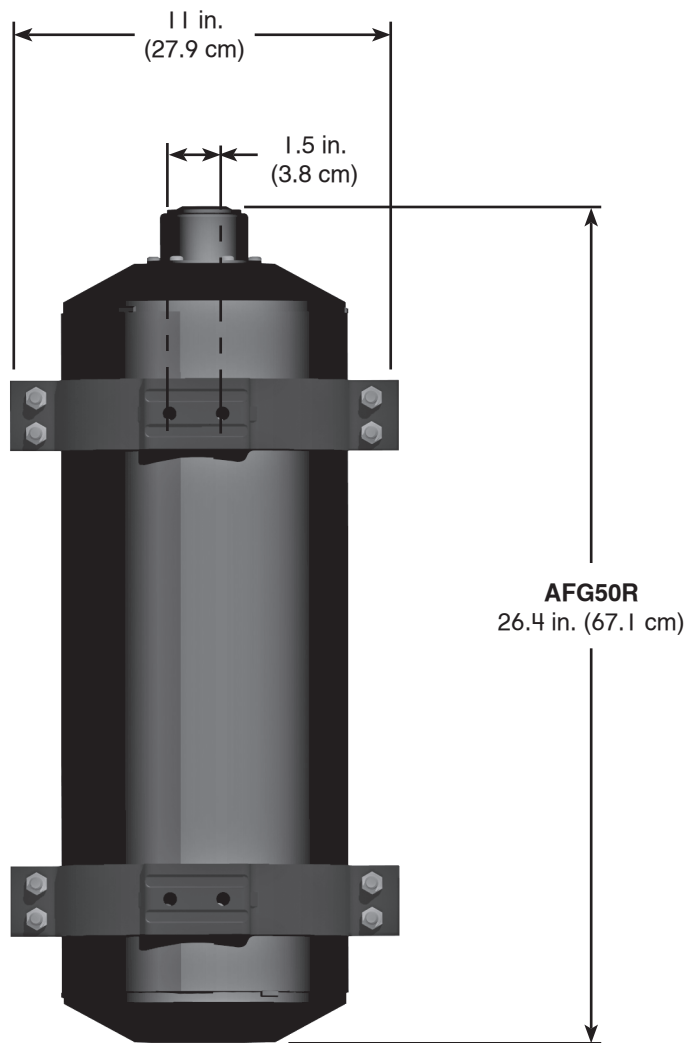
648

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# Lubrication Filtration

## AFG50R Kit

### *Mounting Information*



AFG50R Back View

7

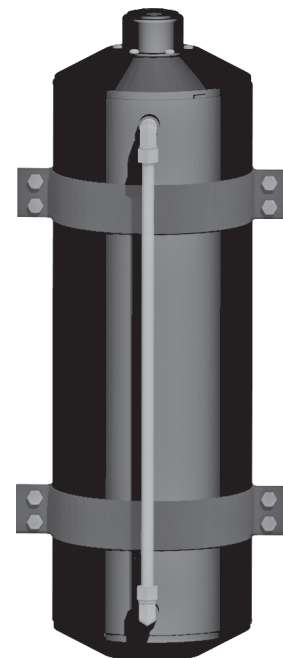
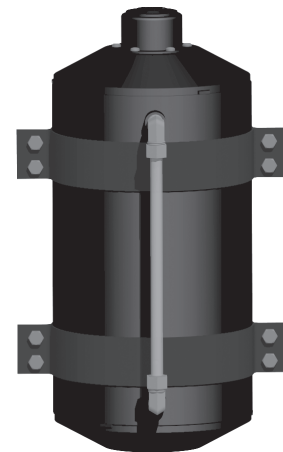
# Lubrication Filtration

## RKAFGV12 Kit

### *Kit Includes*

<u>Part Number</u>	<u>Description</u>	<u>Quantity</u>
<b>0104-4-8</b>	1/4" Adapter Pipe to #8 Hose	(2)
<b>0104-6-6</b>	3/8" Adapter Pipe to #6 Hose	(1)
<b>23063</b>	3/8" Tee Pipe to #8 Hose	(1)
<b>RELI230LT</b>	Relay Assembly	(1)
<b>23060</b>	12 vdc Solenoid Valve Assembly	(1)
<b>23059</b>	Mounting Bracket	(1)
<b>3NL4469A</b>	Sensing Chamber	(1)
<b>3NL70LT</b>	Oil Sensor Assembly	(1)
<b>23061</b>	RELI230LT Mating Harness	(1)
<b>23024</b>	10-32 x 1/2" Capscrew	(2)
<b>11841</b>	5/16"-18 Selflocking Hex Nut	(2)

**Note: Not all part numbers are available individually.**



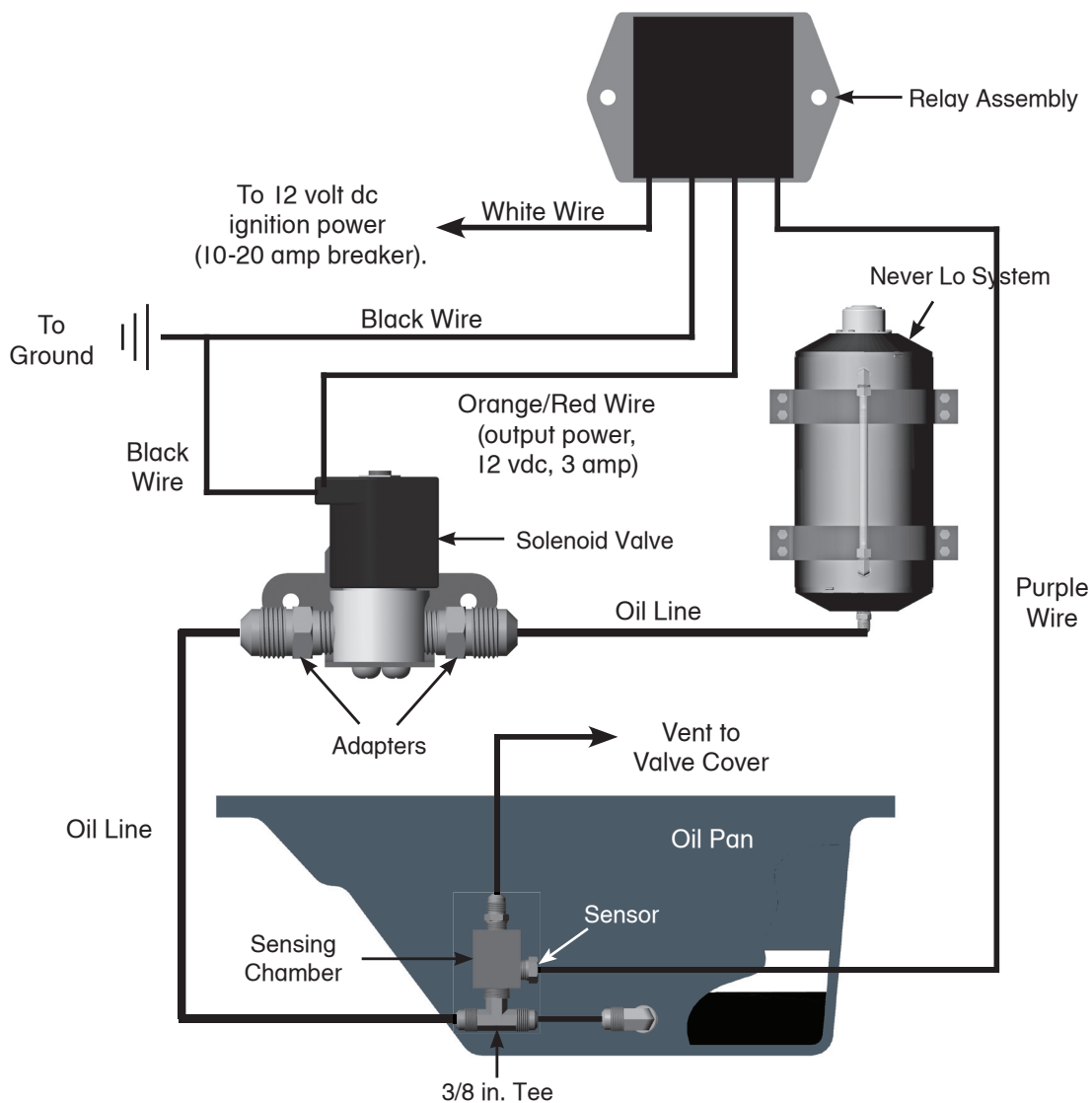
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# Lubrication Filtration

## RKAFGV12 Kit

### *Electronic AFG30R and AFG50R Units*



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# Lubrication Filtration

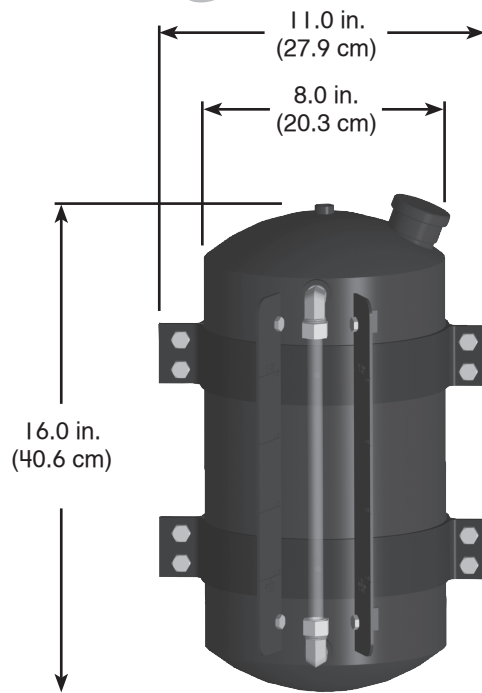
## 2MP30R Pressurized Kit

### *Kit Includes*

<u>Part Number</u>	<u>Description</u>	<u>Quantity</u>
2MP51UX	3 Gallon Pressurized Tank	(1)
3NL56UX	Tank Cap	
23006	Filler Cap Oring	
2MP988LX	Left Side Sight Guard	
2MP988RX	Right Side Sight Gaurd	(1)
3NL52RX	Round Mounting Bracket	(1)
3NL52SX	Square Mounting Bracket	(1)
23005	Elbow, #8 Tube x 3/8" NPT male	(2)
11901	Hex Nut 3/8"-16 Self Locking	(8)
11078	Capscrew 3/8"-16 x 1" Long	(8)
23021	Capscrew 1/4"-20 x 3/8"	(4)
N11-8ANG	1/2" Nylon Tubing	
3MP9400X	Double Valve Push Button	(1)

Note: Not all part numbers shown are available individually.

### *Mounting Information*



2MP30R

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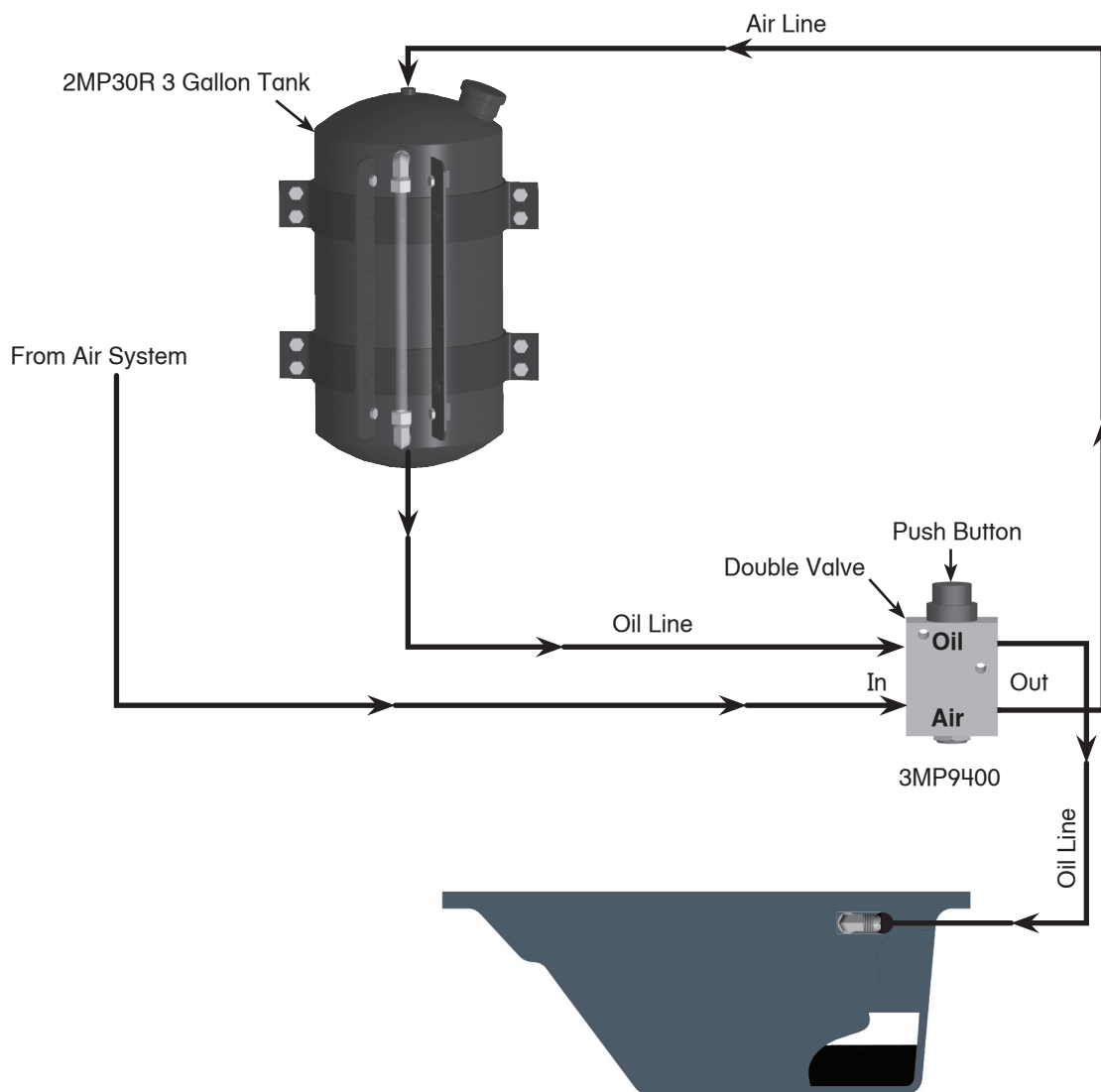
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**Parker**

# Lubrication Filtration

## 2MP30R Pressurized Kit

### *Pressure AFG System*



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# Lubrication Filtration

## Synthetic Engine Oil

### ADT 9332

#### About the Product

This premium fully synthetic engine oil is crafted with the highest quality synthetic base stocks and additive systems which provide superior film strength and oxidation resistance as well as exceptional soot and deposit control. High TBN, coupled with superior performance, High viscosity index, premium detergent and dispersant additives afford engines maximum protection even in the harshest of operating conditions.

#### Features and Benefits

- Prevents Rust & Corrosion
- Resists Oxidation/Reduces Engine Wear
- Extended Drain Intervals
- Provides Low Temperature Protection
- Improves Fuel Economy



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# Lubrication Filtration

## Testing and Analysis



### *Sootcheck™*

#### **LFS RK763**

SootChek™ is a hand held, battery operated diagnostic tool that tests soot concentration levels in diesel engine lubricating oil up to 10%, without sample preparation or solvents. It has been specifically designed for fleet operators, transit authorities, service stations, construction sites, preventative maintenance personnel, or anyone that needs easy, on-site soot measurements to enable them to know exactly when to change the lubricating oil based on soot analysis.



### *Oilcheck™*

#### **LFS RK761**

OilChek™ Portable oil monitor measures the effect of all the contaminants and chemicals that occur in synthetic and petroleum based oils. This is achieved by detecting and measuring the oil's dielectric constant.

By comparing the measurements obtained from used and unused oils of the same make and grade, the oil monitor is able to determine the degree of change in the oil's dielectric constant. Dielectric change is directly related to the contamination level and degradation of the oil and may allow the user to achieve longer intervals between oil changes and immediately detect increased mechanical wear and coolant dilution, resulting in the loss of the oil's lubricating properties.

#### **Fluid Types:**

- Engine Oil
- Transmission Fluid
- Hydraulic Fluid



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## *Analysis Kit*

### **LFS RK760**

Lube oil sampling allows the prediction of oil quality, which can be used to determine optimum maintenance schedules, as well as for early warning signs of internal engine problems.

The Racor LFS RK760 engine lube oil analysis kits comes complete with sample bottle, prepaid mailer, and documents for logging necessary information for the lab to properly analyze and report their findings to the customer.

### **Fluid Types:**

- Engine Oil
- Transmission Fluid
- Hydraulic Fluid

### **Uses:**

- Stop ongoing wear
- Oil condition monitoring
- Failure Diagnosis
- Extended oil drain interval



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# Lubrication Filtration

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N/A



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# Lubrication Filtration

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### F

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### G

N/A

### H

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### J

N/A

### K

N/A

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N/A

### P

N/A

### Q

N/A

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# Lubrication Filtration

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RKAFGSV12..... 646,648  
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**S**

N/A

**T**

N/A

**U**

N/A

**V**

N/A

**W**

N/A

**X**

N/A

**Y**

N/A

**Z**

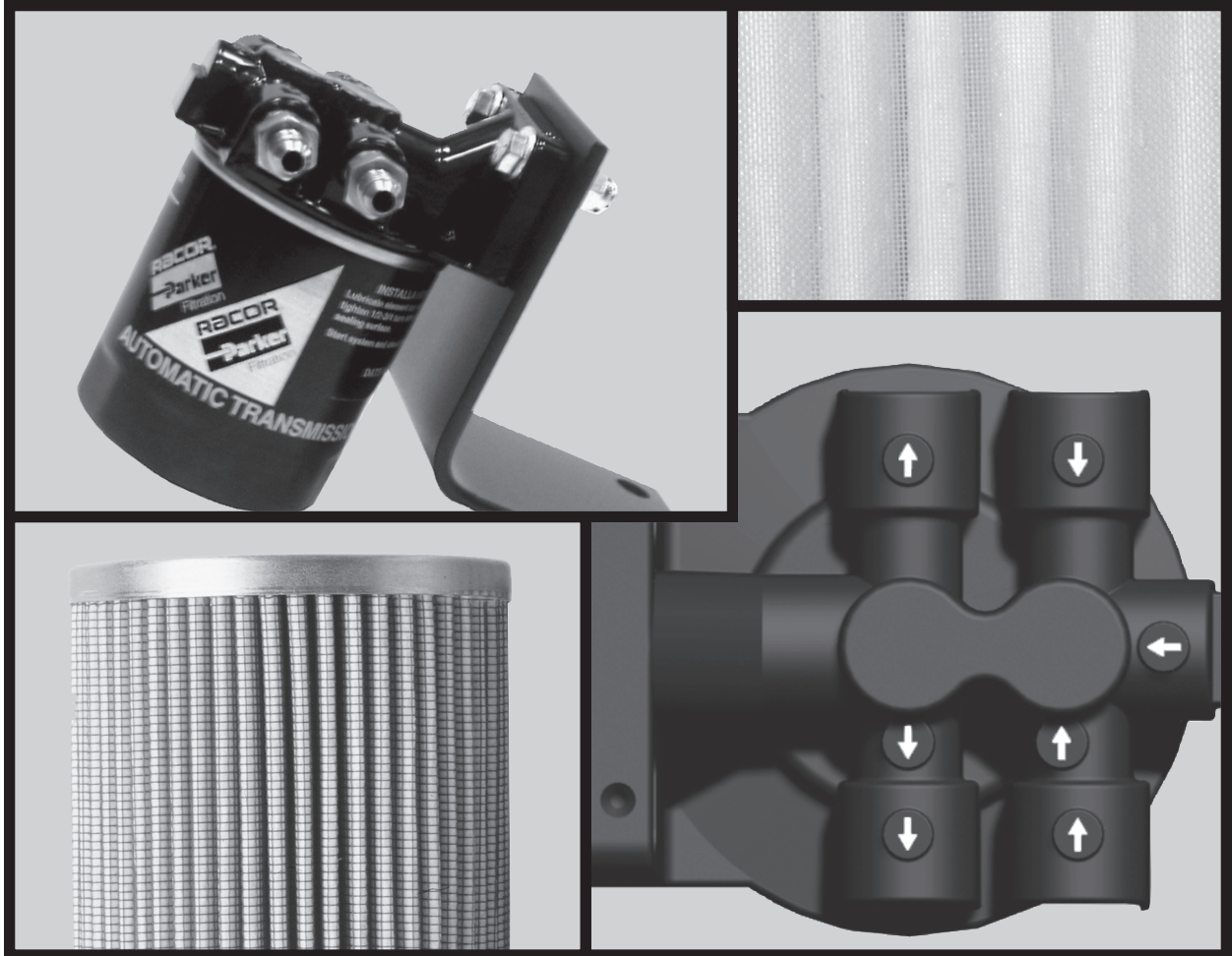
N/A

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# Section 8



***Transmission  
Filtration***

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**Section 8 - LFS Transmissions Filtration**

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# Transmission Filtration

## LFS Transmission Filter

Universal mounting bracket, filter and fittings are easily adapted to fit most any vehicle frame rail or transmission cross-over brace. High quality hose assemblies are available in varying lengths and two different transmission cooler line tube sizes to allow the installation on the most popular automatic transmissions using 5/16" and 3/8" transmission cooler tubes.

### Features

- Heavy 1/4" steel plate mounting bracket, pre-drilled and black powder-coated

- Die-cast aluminum head, powder-coated gloss black with four 3/8" NPT ports
- High efficiency 6 micron micro-glass filter element
- Plated hardware and Parker JIC and Ferulo Flareless fittings
- Steel wire reinforced Parker hydraulic hose

### Benefits

- Extend Transmission Life
- Extend Service Intervals
- Reduce Maintenance Costs



LFS 22825



Transmission Kit



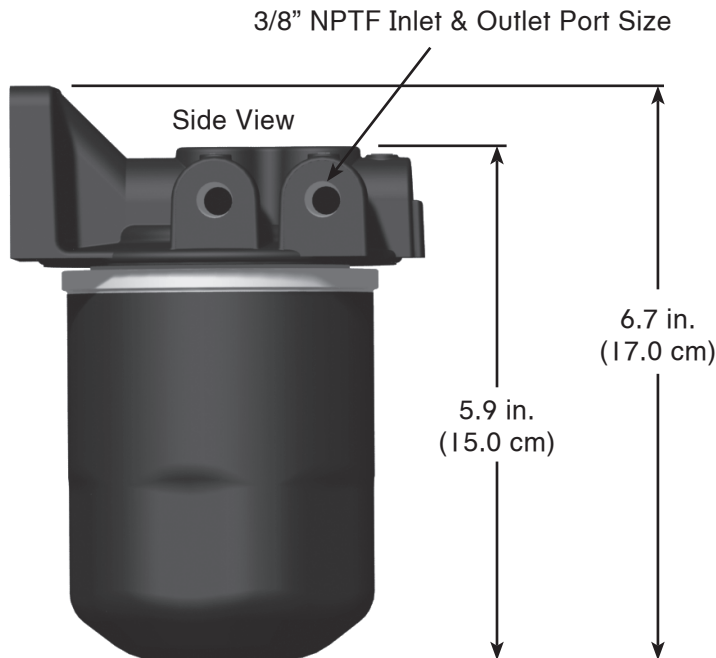
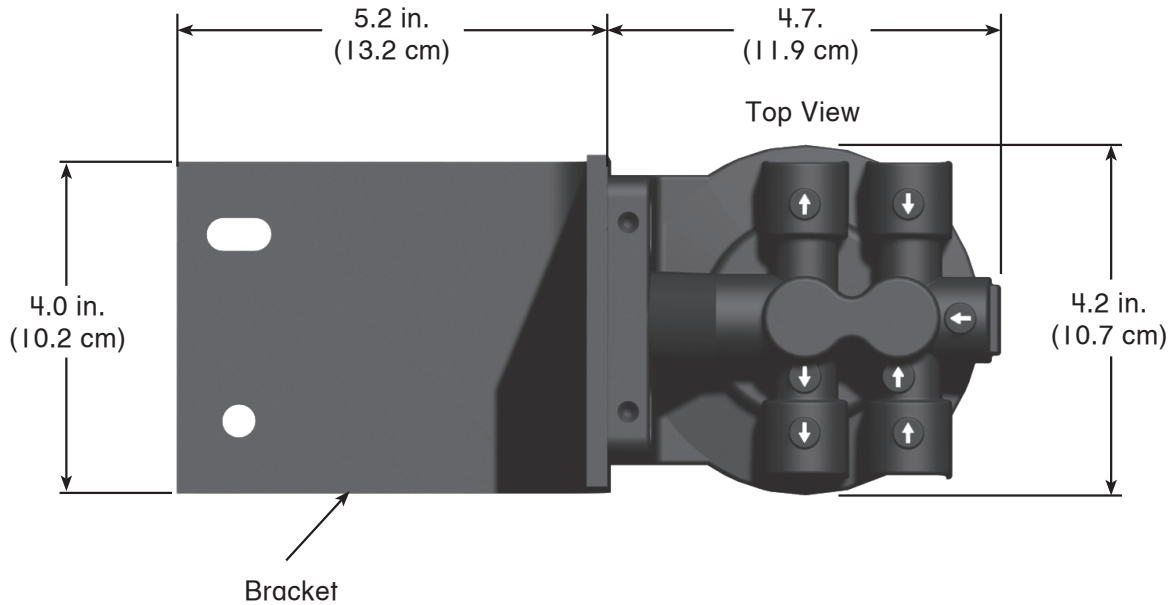
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# Transmission Filtration

## LFS Transmission Kit

### *Mounting Information*



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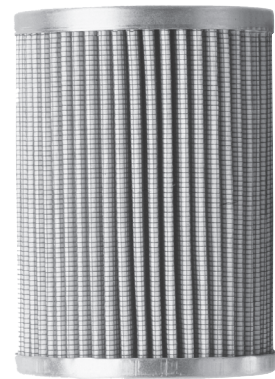
666



# Transmission Filtration

## Element and Hose Kits

### Replacement Element



LFS TF1006RE

### Hose and Fitting Kits

Part Number	Fitting & Hose Size
LFS 22821-01	3/8" x 30"
LFS 22821-02	3/8" x 32"
LFS 22821-03	3/8" x 35"
LFS 22821-04	3/8" x 36"
LFS 22821-05	3/8" x 42"
LFS 22821-06	3/8" x 48"
LFS 22822-01	5/16" x 28"
LFS 22822-02	5/16" x 30"
LFS 22822-03	5/16" x 32"
LFS 22822-04	5/16" x 34"
LFS 22822-05	5/16" x 42"
LFS 22822-06	5/16" x 48"





# Transmission Filtration

## Part Number Index

**0**

N/A

**1**

N/A

**2**

N/A

**3**

N/A

**4**

N/A

**5**

N/A

**6**

N/A

**7**

N/A

**8**

N/A

**9**

N/A

**A**

N/A

**B**

N/A

**C**

N/A

**D**

N/A

**E**

N/A

**F**

N/A

**G**

N/A

**H**

N/A

**I**

N/A

**J**

N/A





# Transmission Filtration

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N/A

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### M

N/A

### N

N/A

### O

N/A

### P

N/A

### Q

N/A

### R

N/A

### S

N/A

### T

N/A

### U

N/A

### V

N/A

### W

N/A

### X

N/A

### Y

N/A

### Z

N/A

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# Section 9



## ***Diesel and Gasoline***

# ***Additives***



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### Section 9 - Additives

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# Additives

## Additive Overview

### *We've Bottled Racor Protection*

Racor additives are performance-enhancing products for all climates and seasons. They mix well with fuels and are not removed by fuel filters. The high concentration of active ingredients allows for higher treatment rates. All Racor fuel additives are alcohol-free.

#### Recommendations

1. For optimum engine protection and efficiency, use a fuel and oil conditioner all the time.
2. For operations in cold climates where diesel fuel may gel, use Diesel Winter Plus+ with Diesel Conditioner Plus+.
3. For operations in high humidity areas or where water in fuel tank bottoms is ever-present, use Diesel Biocide with Diesel Conditioner Plus+.

#### Diesel Additives

- Powershot+™ Diesel Fuel Conditioner
- Diesel Conditioner Plus+
- Diesel Biocide
- Diesel Performance Plus+
- Diesel Winter Plus+

#### Oil Additive

- Lube Oil Treatment

#### Gasoline Additives

- Powershot+™ Gasoline Conditioner
- Gasoline Conditioner Plus+



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# Additives

## Additive Overview



11 oz



16 oz



1 gal



5 gal



55 gal

Part Number	Description	Size	Treat Ratio (up to)
<b>ADT 1111</b>	Powershot+™ Diesel Fuel Conditioner	11 ounces	30 gallons
<b>ADT 1116 ADT 1201 ADT 1555</b>	Diesel Conditioner Plus+	16 ounces 1 gallons 55 gallon drum	320 gallons 2,560 gallons 140,800 gallons
<b>ADT 2116 ADT 2201 ADT 2405 ADT 2555</b>	Diesel Biocide	16 ounces 1 gallons 5 gallons 55 gallon drum	1,280 gallons 10,240 gallons 51,200 gallons 563,200 gallons
<b>ADT 3116</b>	Diesel Performance Plus+	16 ounces	80 gallons
<b>ADT 4116 ADT 4201 ADT 4555</b>	Diesel Winter Plus+	16 ounces 1 gallons 55 gallon drum	128 gallons 1,024 gallons 563,200 gallons
<b>ADT 5111</b>	Powershot+™ Gasoline Conditioner	11 ounces	15 gallons
<b>ADT 5116</b>	Gasoline Conditioner Plus+	16 ounces	320 gallons
<b>ADT 7116</b>	Lube Oil Treatment	16 ounces	2 gallons

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# Additives

## Diesel Biocide

Racor Diesel Biocide is a multi-functional petroleum distillate fuel additive that kills bacteria, fungi, organic reaction and sludge formation. It is used to help maintain color stability and clarity, inhibits corrosion, and disperses existent sludge.

### Benefits

- Kills more forms of algae and bacteria than other brands
- Kills both aerobic and anaerobic fungi
- Concentrated, extended time formula
- EPA approved as both a biocide and aftermarket fuel additive
- Prevents internal corrosion from microbial fouling
- Provides superior mixing with fuel
- Fuel and water soluble
- Does not cause foaming
- Excellent for use with all forms of Biodiesel



Specifications	ADT 2116	ADT 2201	ADT 2405	ADT 2555
<b>Size</b>	16 oz bottle (473 mL)	1 gallon bottle (3.7 L)	5 gallon bottle (18.9 L)	55 gallon drum (208 L)
<b>Treats (up to)</b>	1,280 gallons (4,845 L)	10,240 gallons (38,762 L)	51,200 gallons (193,813 L)	563,200 gallons (2,131,944 L)
<b>Case Quantity</b>	12	4	1	1 drum
<b>Individual Weight</b>	20.6 oz. (0.6 kg)	7.5 lbs (3.4 kg)	39 lbs (17.6 kg)	450 lbs (204 kg)
<b>Case Dimensions</b>	13.5 X 8.5 X 9	14.5 X 10 X 11	10 X 11 X 14	24 dia. X 37
<b>Case Weight</b>	14 lbs (6.3 kg)	32 lbs (14.5 kg)	39 lbs (17.7 kg)	450 lbs (204 kg)

# Additives

## Powershot+™ Diesel Fuel Conditioner

Powershot+™ Diesel Fuel Conditioner can be used in all engine applications using #1 or #2 diesel fuels and is compatible with Biodiesel blends up to B20. This product contains a highly effective detergent/dispersant additive package to remove fuel injector, intake valve, and combustion chamber deposits. This is proven by excellent test results obtained in the Cummins L10 and the Peugeot XUD-9 Nozzle Coking tests. The end user of the treated fuel will appreciate the difference in terms of improved drivability, reduced emissions, longer component life, and reduced operating costs.

Powershot+™ Diesel Fuel Conditioner is the answer for diesel fuel problems and is formulated to provide the following features:

- Increased cetane number resulting in reduced engine knock, improved low temperature starting, smoother idling, shortened warm-up time, and reduced emissions.
- Provides exceptional fuel system cleanliness and increased engine performance.
- Removes deposits from fuel system, injectors, intake, and combustion chamber.
- Provides exceptional fuel lubricity with today's Ultra Low Sulfur Diesel (ULSD), thereby reducing fuel pump and injector wear.
- Improves cold temperature fuel flow and reduces cold temperature fuel filter plugging.
- Improves fuel economy.
- Provides excellent corrosion protection of fuel system components.
- Enhances fuel stability in storage.
- Alcohol free.



Specifications	ADT 1111
Size	11 oz bottle (325 mL)
Treats (up to)	30 gallons (113.6 L)
Case Quantity	24
Individual Weight	0.72 lb (0.33 kg)
Case Dimensions	8 X 7.6 X 12.6
Case Weight	20 lb (9.1 kg)
Meets ULSD Req.	Yes

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# Additives

## Diesel Conditioner Plus+

Racor Diesel Conditioner Plus+ is a multi-functional diesel fuel additive for all season use. Its formulation contains a cetane improver which enhances power delivery, starting, and helps engines run smoother and quieter. Racor Diesel Conditioner Plus+ passes the Cummins L10 superior rating for detergency and the Scruffing BOCLE test for lubricity as demonstrated in low and high sulfur fuel.

Diesel Conditioner Plus+ is the answer for diesel fuel problems and is formulated to provide the following features:

- Cetane improver for added engine performance.
- Dissolves gum and varnishes to keep fuel system clean.
- Reduces rust and corrosion in the fuel system.
- Stabilizes fuel quality during prolonged storage.
- Alcohol free.



Specifications	ADT 1116	ADT 1201	ADT 1555
<b>Size</b>	16 oz bottle (473 mL)	1 gal bottle (3.79 L)	55 gal drum (208 L)
<b>Treats (up to)</b>	320 gal (1211 L)	2,560 gal (9,691 L)	140,800 gal (532,986 L)
<b>Case Quantity</b>	12	4	1 drum
<b>Individual Weight</b>	20.6 oz (0.6 kg)	7.5 lbs (3.4 kg)	450 lb (204 kg)
<b>Case Dimensions</b>	13.5 X 8.5 X 9	14.5 X 10 X 11	24 dia. x 37
<b>Case Weight</b>	14 lb (6.4 kg)	32 lb (14.5 kg)	450 lb (204 kg)
<b>Meets ULSD Req.</b>	Yes	Yes	Yes



# Additives

## Diesel Performance Plus+

Racor Diesel Performance Plus+ has the same engine protection qualities as the Racor Diesel Conditioner Plus+ and has five times the cetane improver to deliver optimal engine performance.

Racor Diesel Performance Plus+ is specially formulated to help your engine reach its optimum performance. Diesel Performance Plus+ will improve horsepower and combustion allowing for better fuel economy and engine life.

The added performance comes with improved lubricity and is alcohol free for better fuel system component protection.

### Benefits

- Five times the cetane improver of Racor Diesel Conditioner Plus+
- Noticeably improves horsepower
- Better fuel economy through more efficient combustion
- Detergency additive extends service intervals
- Eases starting
- Lubricity additive extends component life
- Stabilizes fuel during prolonged storage
- Dissolves gum and varnish to keep fuel systems clean
- Lubricity improver passes HFRR Lubricity test for diesel fuel per ASTM D6079-99
- Stabilizes fuel and prevents corrosion per ASTM D665A
- Alcohol free



Specifications	ADT 3116
<b>Size</b>	16 oz bottle (473 mL)
<b>Treats (up to)</b>	80 gallons (302 L)
<b>Case Quantity</b>	12
<b>Individual Weight</b>	20.6 oz. (0.58 kg)
<b>Case Dimensions</b>	13.5 X 8.5 X 9
<b>Case Weight</b>	14 lb (6.4 kg)
<b>Meets ULSD Req.</b>	Yes

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# Additives

## Diesel Winter Plus+

Racor's Diesel Winter Plus+ is formulated to combat fuel icing and wax buildup. It retards ice formation and coats the system with a slip agent so ice will not cling and form plugs. Its formulation contains a cetane improver which enhances power delivery, starting, and helps engines run smoother and quieter.

### Benefits

- Improves fuel flow and facilitates cold weather starting
- Contains a cetane improver and deicer
- Improves efficiency of fuel filter/water separators through deemulsification
- Smoother, quieter engine operation
- Prevents corrosion
- Depresses the pour point by modifying the diesel wax crystal structure.
- Stabilizes fuel quality during prolonged storage
- Alcohol free
- Excellent for use with all forms of Biodiesel



Specifications	ADT 4116	ADT 4201	ADT 4555
<b>Size</b>	16 oz bottle (473 mL)	1 gallon bottle (3.8 L)	55 gallon drum (208 L)
<b>Treats (up to)</b>	128 gallons (484 L)	1,024 gallons (3,876 L)	563,200 gallons (2,131,944 L)
<b>Case Quantity</b>	12	4	1 drum
<b>Individual Weight</b>	20.6 oz. (0.58 kg)	7.5 lbs (3.4 kg)	450 lbs (204 kg)
<b>Case Dimensions</b>	13.5 X 8.5 X 9	14.5 X 10 X 15	24 dia. X 37
<b>Case Weight</b>	14 lb (6.4 kg)	32 LBS (14.5 kg)	450 lbs (204 kg)
<b>Meets ULSD Req.</b>	Yes		

# Additives

## Powershot+™ Gasoline Conditioner

Racor Powershot+™ Gasoline Conditioner can be used in all types of internal combustion systems and gasoline blends and cleans the engine's fuel injectors or carburetor.

### Benefits

- Safely removes power robbing deposits from fuel system components
- Protects intake system against corrosion
- Lubricates and conditions fuel injection systems
- Prevents accumulation of deposits
- Improves efficiency of fuel filter/water separators through deemulsification
- Improves fuel economy
- Will not harm catalytic converters
- Enhances fuel stability in storage
- Alcohol Free
- Compatible with ethanol blends



Specifications	ADT 5111
<b>Size</b>	11 oz bottle (325 mL)
<b>Treats (up to)</b>	15 gallons (56.8 L)
<b>Case Quantity</b>	24
<b>Individual Weight</b>	20.6 oz. (0.58 kg)
<b>Case Dimensions</b>	8 X 7.6 X 12.6
<b>Case Weight</b>	20 lb (9.1 kg)
<b>Meets ULSD Req.</b>	Yes

# Additives

## Gasoline Conditioner Plus+

Racor Gasoline Conditioner Plus+ enhances engine performance by cleaning the fuel injectors or carburetor and intake systems, providing better combustion and therefore better fuel economy. It can be used with all types of gasoline engines, systems and all gasoline blends.

### Benefits

- Protects intake systems against corrosion
- Prevents accumulation of deposits
- Improves efficiency of fuel filter/water separators through deemulsification
- Will not harm lube oil or catalytic converters
- Stabilizes quality of stored gasoline
- Alcohol Free



Specifications	ADT 5116
<b>Size</b>	16 oz bottle (473 mL)
<b>Treats (up to)</b>	320 gallons (1,211 L)
<b>Case Quantity</b>	12
<b>Individual Weight</b>	20.6 oz. (0.58 kg)
<b>Case Dimensions</b>	13.5 X 8.5 X 9
<b>Case Weight</b>	14 lb (6.4 kg)
<b>Meets ULSD Req.</b>	Yes

# Additives

## Lube Oil Treatment

Racor Lube Oil Treatment is a fluorocarbon oil which contains an advanced, highly effective polymer lubricant. It provides a superior thin coating to protect precision engine parts and does not contain PTFE, which has been known to fall from suspension and clog precision engine components. It may be used with diesel and gasoline engines and is compatible with all engine oils.

### Benefits

- Reduces noise and heat in engines – highly effective additive components enhance the oils lubrication.
- Anti-corrosion formula – designed to help fight against acidity and other corrosive agents.
- Increases mileage, engine life, and performance – added lubricity helps the engines overall performance.
- Reduces friction on cold start up – formulated to maintain a protective film on engine components.
- Prevents premature wear on piston rings and cylinder walls, reducing harmful exhaust emissions – synthetic blend designed to add life.

### Handling and Storage

Blend using conventional equipment and methods for blending finished fluids. Do not heat over 140°F (60°C) for prolonged periods to avoid possible release of alkyl mercaptans and/or hydrogen sulfide.

- Maximum Storage Temperature  
140°F (60°C), 1,300 Viscosity (cSt)
- Recommended Transfer Temperature  
155°F (68°C), 770 Viscosity (cSt)

Caution must be exercised when heating this product. Low pressure steam (preferably 50 PSIG/3.4 ATM) is recommended. If heated, product temperature should be constantly monitored and product should be agitated to avoid localized temperatures above 155°F (68°C).



Specifications	ADT 7116
Size	16 oz bottle (473 mL)
Treats (up to)	2 gallons (7.6 L)
Case Quantity	12
Individual Weight	20.6 oz. (0.58 kg)
Case Dimensions	13.5 X 8.5 X 9
Case Weight	14 lb (6.4 kg)

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racortech@parker.com



# Additives

## Accessories

### *Filler Spouts*

#### **RK22936 No-Spill Filler Spout**

These versatile filler spouts have unlimited uses. They fit many Racor products including additives bottles and the flexible design allows users to bend the spout for flow control. This kit includes 4 hanging strips with 12 pieces on each strip; that's a total of 48 pieces per kit.

#### **ADT RK21644 Spout Extension**

A convenient spout extension is available for quick, clean service for all 16 oz bottles.





# Additives

## Part Number Index

**0**

N/A

**1**

N/A

**2**

N/A

**3**

N/A

**4**

N/A

**5**

N/A

**6**

N/A

**7**

N/A

**8**

N/A

**9**

N/A

**A**

ADT 1111 ..... 676

ADT 1116 ..... 677

ADT 1201 ..... 677

ADT 1555 ..... 677

ADT 2116 ..... 675

ADT 2201 ..... 675

ADT 2405 ..... 675

ADT 2555 ..... 675

ADT 3116 ..... 678

ADT 4116 ..... 679,681,682

ADT 4201 ..... 679

ADT 4555 ..... 679

ADT 5111 ..... 680

**B**

N/A

**C**

N/A

**D**

N/A

**E**

N/A

**F**

N/A

**G**

N/A



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# Additives

## Part Number Index

**H**

N/A

**I**

N/A

**J**

N/A

**K**

N/A

**L**

N/A

**M**

N/A

**N**

M/A

**O**

N/A

**P**

N/A

**Q**

N/A

**R**

RK22936 ..... 683

**S**

N/A

**T**

N/A

**U**

N/A

**V**

N/A

**W**

N/A

**X**

N/A

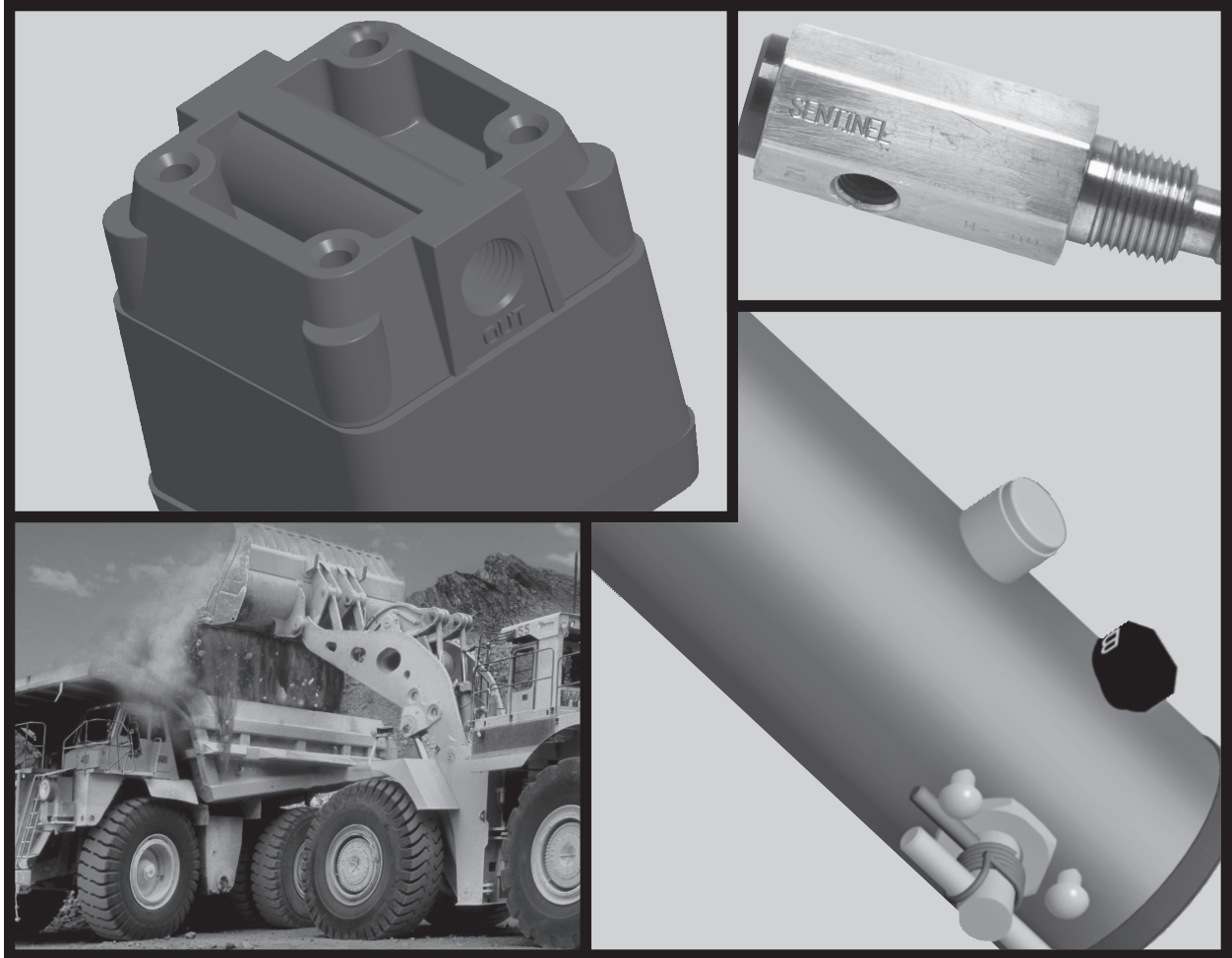
**Y**

N/A

**Z**

N/A

# Section 10



***Sentinel  
Systems***

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# Section 10 - Sentinel Series

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# Sentinel Systems

## Sentinel Overview

When an abnormal condition occurs in a diesel engine, a Sentinel protection system automatically shuts it down or reduces RPMs by controlling the fuel supply. Optional manual or electronic overrides are available.

### ***Sentinel Systems Protect Against:***

- Low oil pressure
- Loss of coolant
- High oil temperature
- High coolant temperature
- High transmission temperature
- Loss of tail pump pressure on irrigation engines

Any of these conditions can quickly lead to damaged camshafts, piston heads, cylinders,

crankshafts, bearings and transmissions, or even result in total engine seizure. When you consider the loss of revenue from damage and downtime, you can't afford to operate without a Sentinel Engine Protection System.

### ***The All-mechanical advantage:***

Electrical shutdown systems are prone to problems with moisture, corrosion, faulty connections and broken indicators. Sentinel systems are entirely mechanical and independent of electrical circuits. This means electrical failure can never induce a failure in your engine protection system.



Coolant Pressure Valve



Master Control



Heat Sensor



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# Sentinel Systems

## The Basic Sentinel System

During normal operation, oil pressure from the engine keeps the ball valve in the Sentinel Master Control in the raised position, allowing fuel to flow to the engine. With a loss of oil pressure, the ball valve drops and fuel flow is cut off or reduced, depending on the type of systems specified.

Often coolant or transmission oil temperature exceeds the setting of the Sentinel Heat Sensor, it's seal opens and dumps oil pressure from under the Master Control piston, causing the ball valve to fail and halt the flow of fuel. Set to activate at any temperature from 180°F to 255°F, the Heat Sensor comes with 1/2" NPTF or 3/8" NPTF threads.

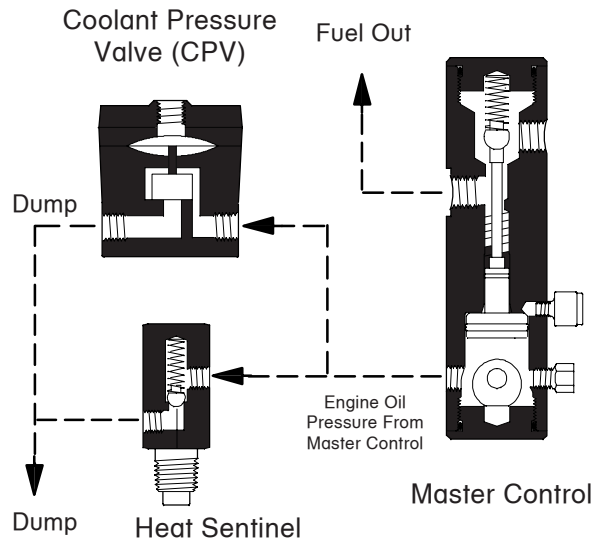
The Sentinel Coolant Loss Valve is kept closed by the flow pressure of the coolant. Loss of pressure causes the valve to open and dump oil pressure from under the Master Control piston, stopping fuel flow.

### **Customized Operation:**

Because the piston design in the Master Control utilizes engine fuel pressure to assist in closing the fuel valve, the Master Control can be closed at a higher working oil pressure than its original low idle setting.

For example, a Sentinel Master Control installed in a Detroit Diesel engine has a primary oil pressure setting of 5 PSI for idle conditions. However, when running at governed speed under load, this engine produces approximately 70 PSI to 80 PSI fuel pressure. Under these conditions, the Sentinel Master Control closes the fuel supply to the engine when diminishing oil pressure reaches 15 PSI, not the primary setting of 5 PSI.

Temperature and pressure shut-off points can be specified within wide limits and various options allow Sentinel systems to be tailored to individual specifications. Settings can be at the factory or on the job by shop mechanic. On suction side applications, the Master Control is installed



between the fuel filter and the injection pump. On injection engines, it can be installed between the final filter and the head.

### **Options:**

There are a number of available option switches that enable you to customize the Sentinel protection system to your specific operating requirements.

### **Master Control for Automatic Torque Reduction:**

A fuel orifice inside the Master Control automatically controls fuel flow under emergency conditions, causing predetermined, reduced RPM. It supplies metered start-up fuel.

### **Master Control with Solenoid Valve:**

A solenoid valve controlled by a remote mounted push button may be used to provide fuel flow in emergency conditions. Full power potential or a predetermined, reduced amount of power can be supplied to a failing engine. It also supplies metered start-up fuel.

### **Pre-Shutdown Alarm:**

A remote mounted light/buzzer gives warning of an imminent shutdown condition.

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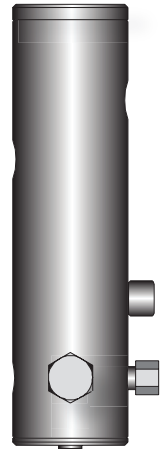
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racortech@parker.com

# Sentinel Systems

## D Series

### D Series Master Controls

The D Series Master Control provides positive fuel shutoff (complete shutdown) with manual override at the control to allow the operator to manually override the valve each time the engine is started.



Specifications	D-5 <sup>1</sup>	D-5V <sup>1</sup>	D-5Y
<b>Engine Make</b>	Detroit Diesel	Detroit Diesel	Cummins Big Cam
<b>Oil Setting Pressure</b>	5 - 25 PSI	5 - 25 PSI	5 - 25 PSI
<b>Fuel Flow</b>	285 GPM	285 GPM	285 GPM
<b>Inlet / Outlet Ports</b>	3/8" NPT	3/8" NPT	3/8" NPT
<b>Override Feature</b>	Yes	No	Yes
<b>Spring Force</b>	5 lbs	5 lbs	8 lbs

Specifications	D-10	D-10V	D-15
<b>Engine Make</b>	All	All	All
<b>Oil Setting Pressure</b>	5 - 25 PSI	5 - 25 PSI	5 - 25 PSI
<b>Fuel Flow</b>	285 GPM	285 GPM	285 GPM
<b>Inlet / Outlet Ports</b>	3/8" NPT	3/8" NPT	3/8" NPT
<b>Override Feature</b>	Yes	No	Yes
<b>Spring Force</b>	10 lbs	10 lbs	15 lbs

Specifications	D-15V	D-20	D-20V	D-25
<b>Engine Make</b>	All	All	All	All
<b>Oil Setting Pressure</b>	5 - 25 PSI	5 - 25 PSI	5 - 25 PSI	5 - 25 PSI
<b>Fuel Flow</b>	285 GPM	285 GPM	285 GPM	285 GPM
<b>Inlet / Outlet Ports</b>	3/8" NPT	3/8" NPT	3/8" NPT	3/8" NPT
<b>Override Feature</b>	No	Yes	No	Yes
<b>Spring Force</b>	15 lbs	20 lbs	20 lbs	25 lbs

<sup>1</sup> Includes #41737 check valve (1/4") for fuel return line. Master Control Mounting Bracket: Order Part Number MB-1.

# Sentinel Systems

## DTF & DTLF Series

# DTF & DTLF Series Master Control Orifice Selection

Unless a specific fuel orifice was ordered, each Model DTF and DTLF Series Master Control has an orifice package (#40810) included with each unit. Each fuel orifice has a letter stamped on the head which are codes to identify the orifice size. An orifice selection chart is supplied with each orifice package. Actual orifice size is determined by the customer. When the Master Control functions as a torque reduction unit, the chart below simplifies selecting the proper orifice.

## Reference

Orifice Letter	B or D	I or J	J or K	f or J	G or J	N/A
Engine Make	ALLIS -CHALM- ERS	CAT: D-330C, D-333C, D-343, D-1693,, D-1140, D-1150, D-1160, D-3304, D-3306	CAT: D-346, D-353, D-348, D-379	CAT: D-342	CAT: D-3204	D-3208, D-3304, D-3306

Orifice Letter	J	D or F	A or B	B	B or D	D or F
Engine Make	D-3406, D-3408, D- 3412	D-3512	In-line: 3-53, 4-53, 6-53, 2-71, 3-71, 4-71, 6-71	8.2 Liter	V-Series: 6V-53, 8V- 53, 6V-71, 8V-71, 12V- 71, 6V-92, 8V-92	16V-71, 12V-92, 16V-92

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# Sentinel Systems

## Orifice Information

### Orifice Information

Orifice Letter	J	B	B or D	B	F	D
Engine Make	12V-149, 16V-149	8360.05 (160 HP), 8220.02 (200 HP)	FIAT - ALLIS All engines	INTERNATIONAL HARVESTER DT-466, 9.0 Liter	D-817B, D-817C	MACK All engines

Orifice Letter	B or D	D or F	B
Engine Make	MERCEDES OM-352-6, OM-355-5	PERKINS All engines	VOLVO In-Line: TD-70E



Part Number	FO-I-A	FO-I-B	FO-I-C	FO-I-D	FO-I-E	FO-I-F
Orifice Size	.0083"	.0100"	.0115"	.0135"	.0156"	.0180"

Part Number	FO-I-G	FO-I-H	FO-I-I	FO-I-J	FO-I-K
Orifice Size	.0200"	.0225"	.0250"	.0280"	.0312"



# Sentinel Systems

## DL Series

### DL Series Master Controls

The DL Series Master Control is the same as the D Series except all units feature larger ports and greater fuel flow capacity. Note: For engines with a fuel flow rate higher than 4.0 GPM, two (2) DL Master Control units are required. One DL unit is installed on each side of engines equipped with a common oil pick-up.



Specifications	DL-5*	DL-5Y	DL-10
<b>Engine Make</b>	<i>Detroit Diesel</i>	<i>Cummins Big Cam</i>	All
<b>Oil Setting Pressure</b>	5-25	5-25	5-25
<b>Fuel Flow</b>	4.0 GPM	4.0 GPM	4.0 GPM
<b>Inlet / Outlet Ports</b>	1/2" NPT	1/2" NPT	1/2" NPT
<b>Override Feature</b>	Yes	Yes	Yes
<b>Spring Force</b>	5	8	10

Specifications	DL-15	DL-20
<b>Engine Make</b>	All	All
<b>Oil Setting Pressure</b>	5-25	5-25
<b>Fuel Flow</b>	4.0 GPM	4.0 GPM
<b>Inlet / Outlet Ports</b>	1/2" NPT	1/2" NPT
<b>Override Feature</b>	Yes	Yes
<b>Spring Force</b>	15	20

\*Includes GM-2 check valve (3/8" ) for fuel return line. Master Control Mounting Bracket:  
Order Part Number MB-1.

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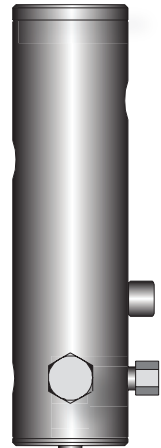
# Sentinel Systems

## DTF Series

### DTF Series Master Controls

The DTF Series Master Control provides engine RPM (torque) reduction and does not create fuel shutoff (complete shutdown) like D and DL Series units. This tamper proof design includes a built-in, fixed by-pass to reduce RPM to idle when a loss of oil pressure is detected. Like the D and DL Series, a manual override at the control allows for full power. This unit does not provide protection at idling RPM.

**Note:** The override valve will allow starting the engine without manually overriding the DTF.



Specifications	DTF-5 <sup>*</sup>	DTF-5V <sup>*</sup>	DTF-5Y	DTF-10
<b>Engine Make</b>	<i>Detroit Diesel</i>	<i>Detroit Diesel</i>	Cummins Big Cam	<i>All</i>
<b>Oil Setting Pressure</b>	5-25	5-25	5-25	5-25
<b>Fuel Flow</b>	2.85 GPM	2.85 GPM	2.85 GPM	2.85 GPM
<b>Inlet / Outlet Ports</b>	3/8" NPT	3/8" NPT	3/8" NPT	3/8" NPT
<b>Override Feature</b>	Yes	No	Yes	Yes
<b>By-pass Feature</b>	Yes	No	Yes	Yes
<b>Spring Force</b>	5	5	8	10

Specifications	DTF-10V	DTF-15	DTF-20	DTF-25
<b>Engine Make</b>	<i>All</i>	All	All	All
<b>Oil Setting Pressure</b>	5-25	5-25	5-25	5-25
<b>Fuel Flow</b>	2.85 GPM	2.85 GPM	2.85 GPM	2.85 GPM
<b>Inlet / Outlet Ports</b>	3/8" NPT	3/8" NPT	3/8" NPT	3/8" NPT
<b>Override Feature</b>	No	Yes	Yes	Yes
<b>By-pass Feature</b>	No	Yes	Yes	Yes
<b>Spring Force</b>	10	15	20	25

<sup>\*</sup> Includes #41737 check valve (1/4" ) for fuel return line. Master Control Mounting Bracket: Order Part Number MB-1.



# Sentinel Systems

## DTLF Series

### DTLF Series Master Controls

The DTLF Series Master Control is the same as the DTF Series except all units feature the by-pass and have a greater fuel flow capacity. Note: For engines with a fuel flow rate higher than 4.0 GPM, two (2) DL Master Control units are required. One DTLF unit is installed on each side of engines equipped with a common oil pick-up. The fuel inlet and outlet ports are 1/2" NPT.



Specifications	DTLF-5 <sup>1</sup>	DTLF-5Y	DTLF-10
<b>Engine Make</b>	Detroit Diesel	Cummins Big Cam	All
<b>Oil Setting Pressure</b>	5-25	5-25	5-25
<b>Fuel Flow</b>	4.0 GPM	4.0 GPM	4.0 GPM
<b>Inlet / Outlet Ports</b>	1/2" NPT	1/2" NPT	1/2" NPT
<b>Override Feature</b>	Yes	Yes	Yes
<b>Spring Force</b>	5	8	10

Specifications	DTLF-15	DTLF-20	DTLF-10
<b>Engine Make</b>	All	All	All
<b>Oil Setting Pressure</b>	5-25	5-25	5-25
<b>Fuel Flow</b>	4.0 GPM	4.0 GPM	4.0 GPM
<b>Inlet / Outlet Ports</b>	1/2" NPT	1/2" NPT	1/2" NPT
<b>Override Feature</b>	Yes	Yes	Yes
<b>Spring Force</b>	15	20	10

<sup>1</sup> Includes GM-2 check valve (3/8" ) for fuel return line. Master Control Mounting Bracket:  
Order Part Number MB-1

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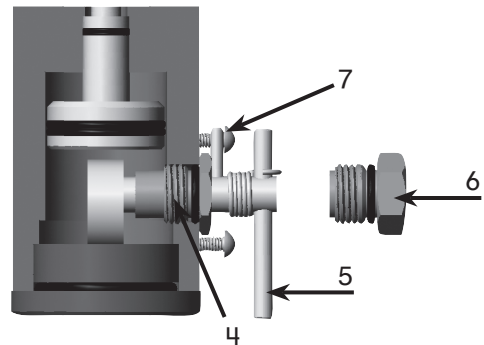
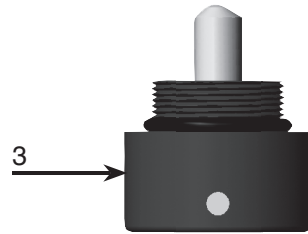
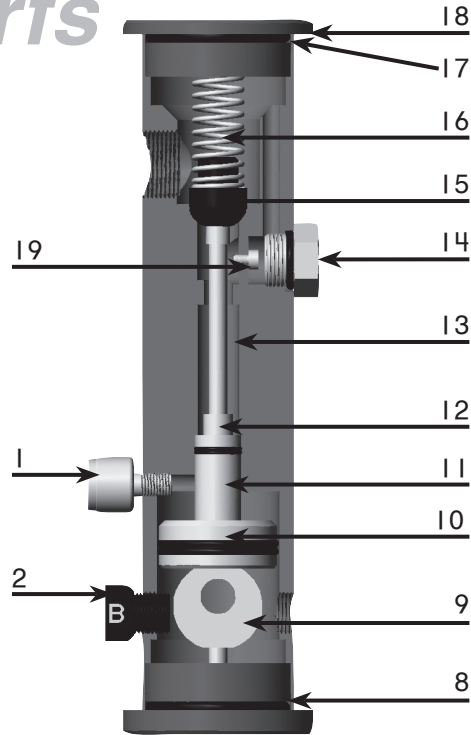
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## Replacement Parts

Part Number	Description
1. 41728	Filter / Breather
2. 43572	Oil Orifice (0.043") Fitting
3. AG-1	Air Starter Assembly
4. 40819	Cam Shaft Bushing (includes 43506 O-ring)
5. 43595	Cam Shaft / Handle Assembly
6. See Orifice Information Chart	
7. 43704	Stop Screw
8. 43705	Stop Screw Sleeve
9. 43597	Bottom End Cap (D-V only, 1/8"NPT)
10. 43601	Cam with Screw (D, DL, DTF & DTLF)
11. 43502	Large Quad Ring
12. 43599	Piston, D & DTF
13. 43603	Piston, DL & DTLF
14. 43602	Piston, D-V
15. 43501	Small Quad Ring
16. 43008	Main Spring, D-5V, D-5, DL-5, DTF-5 & DTLF-5
17. 43009	Main Spring, D-5YV, D-5Y, DL-5Y, DTF-5Y & DTLF-5Y
18. 43010	Main Spring, D-10V, D-10, DL-10, DTF-10 & DTLF-10 (was PN. D9)
19. 43011	Main Spring, D-15 & DL-15, DTF-15 & DTLF-15
20. 43012	Main Spring, D-20 & DL-20, DTF-20 & DTLF-20 (was PN. D9-25)
21. 43013	Main Spring, D-25 & DL-25, DTF-25 & DTLF-25
22. 40836	Orifice Plug (DTF, DTLF)
23. 41752	Main Ball Seal
24. 49000	Main Ball Seal with Spring Kit
25. 43020	Valve Spring
26. 43504	O-ring
27. 43598	End Cap (D-V only, 1/4"NPT)
28. 40810	Orifice Package (A, B, D, F, J & K sizes)
29. SK49012	Seal Kit, All models
30. SP-1	End Cap Spanner Wrench
31. SK49013	Rebuild Kit, D & DTF
32. SK49014	Rebuild Kit, DL & DTLF
33. SK49015	Rebuild Kit, D-V
34. 7330	Installation Instructions



# Sentinel Systems

## SVK Series

### *Electric Solenoid Bypass*

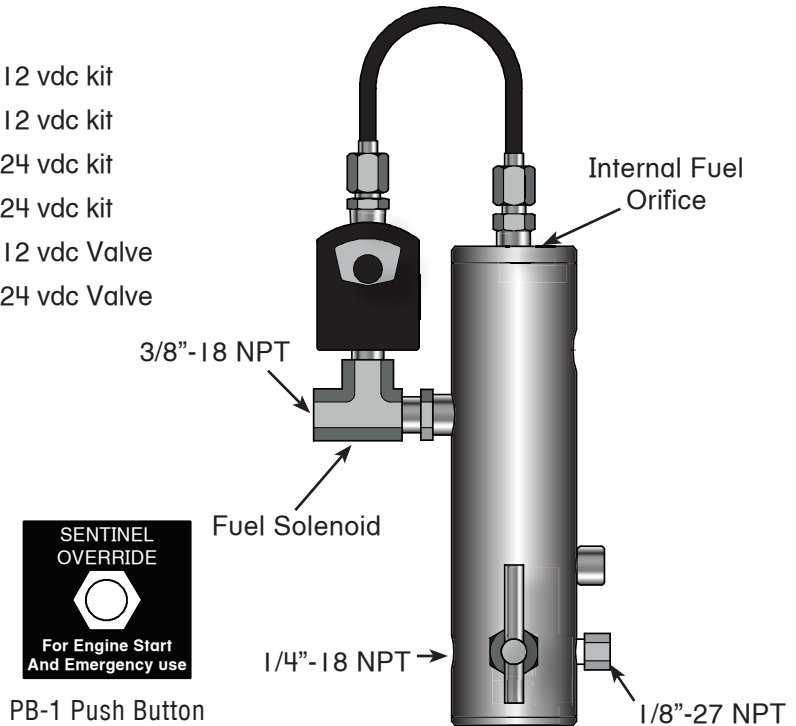
Provides easy override at startup and to the pre-selected, limited horsepower / torque to the engine in the event of a shut-down.

**Kit contains:**

SV-4 Series Fuel Solenoid Valve (installed on Master Control at factory) PB-1 Push Button Decal Wiring, Hardware, Connectors  
The Master Control is not included in SVK-1/SVK-2 kits or with the SV-4-12/SV-4-24 Valves.

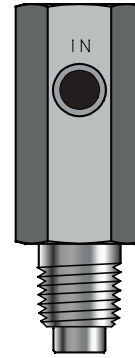
**Override/Heat Shields**

<u>Part Number</u>	<u>Description</u>
1. SVK-1	Fuel Solenoid, 12 vdc kit
2. SVK-1A	Fuel Solenoid, 12 vdc kit
3. SVK-2	Fuel Solenoid, 24 vdc kit
4. SVK-2A	Fuel Solenoid, 24 vdc kit
5. SV-4-12	Fuel Solenoid, 12 vdc Valve
6. SV-4-24	Fuel Solenoid, 24 vdc Valve



# Sentinel Systems

## H & HA Series



**H-180**

## Heat Sensor

Sentinel Heat Sensors work in conjunction with the Master Control to protect the engine from abnormally high coolant, transmission oil or crankcase oil temperature. Model H and Model HA Heat Sensors are mechanical dump-type units, normally closed. Temperature actuation settings of 180 to 260° Fahrenheit (82 to 127° Centigrade) can be specified as required for engine coolant and lubricating oil, transmissions, driven compressors, etc.

**Note:** The heat sensor must be monitoring *moving* fluid.

MODEL H 1/2" NPT installation thread, two or more may be used in parallel.

MODEL HA 3/8" NPT installation thread, two or more may be used in parallel.

MODEL HM Metric 18M X 1.5 installation thread. Limited selection, see table below.

To order, designate **H or HA**, followed by a dash (-) and then the temperature setting desired. (see below)

## How to Order

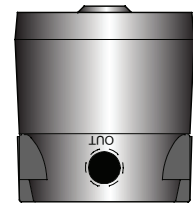
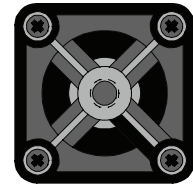
H or HA	-180	PS
Basic Model: MODEL H 1/2" NPT thread MODEL HA 3/8" NPT thread	Temperature: 180*, 190, 200 <sup>*2</sup> , 210 <sup>1</sup> , 218*, 225*, 240 <sup>2</sup> , 185 <sup>1</sup> , 195, 205 <sup>*2</sup> , 212, 220 <sup>1</sup>	Indicate: <b>PS</b> for a 1/8" NPTF female port option is available to accommodate a pressure switch (if desired)
* Indicate that a 1/8" NPTF female port option is available to accommodate a pressure switch. <sup>1</sup> This temperature setting available for H only. <sup>2</sup> PS option available for H only. <sup>3</sup> Metric thread.		

# Sentinel Systems

## CPV Series

# Coolant Pressure Valve (CPV)

Specifications	CPV
<b>Crack Pressure:</b>	
Opens	.50 PSI
Closes	.75 PSI
Flow Resistance	1 PSI
<b>Port Size:</b>	
Inlet	1/4" NPTF
Outlet	1/4" NPTF
Coolant Port	1/8" NPTF
All Ports	Female
Material	fiberglass-filled nylon with an aluminum base



- CPV Standard Coolant Pressure Valve (replaces and retrofits older CL-79).
- RKCPV: Rebuild Kit for CPV
- MB-79 Mounting Bracket for CPV
- MB-1 Mounting Bracket for CPV and Master Control

## Oil and Coolant Warning Kit

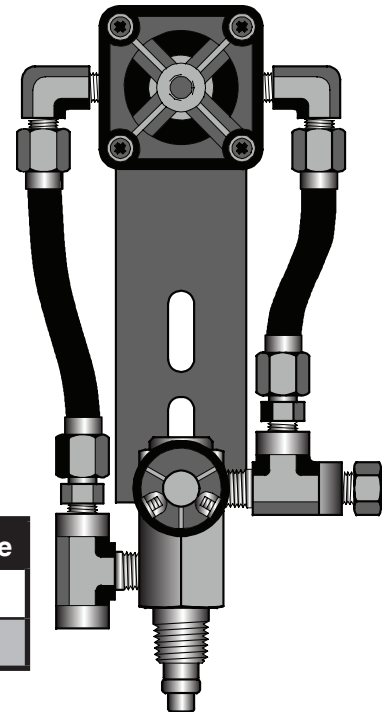
The Sentinel Oil and Coolant Warning Kit includes all necessary components to warn the operator of abnormally high oil or coolant temperature and low or loss of coolant pressure.

**The Oil and Coolant Kit includes the following:**

- Heat Sensor with 1/4" NPTF ports
- Pressure Switch (set as specified below)
- Coolant Pressure Valve (CPV)
- Light / Buzzer ( 12 vdc or 24 vdc )
- Mounting Bracket (MB-79)
- Orificed Fitting (42540)
- Branch Tee Fitting, 1/4" NPTF
- Street Tee Fitting, 1/4" NPTF
- Sentinel Decal



Light-Buzzer



Part Number	Sensor Setting	Pressure Setting	Switch Voltage
WK-1A	212°F	10 PSI	12 vdc
WK-1B	212°F	10 PSI	24 vdc

WK-2 Hose and Fitting Kit for above kits (shown installed in illustration).

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# Sentinel Systems

## STV Series

### *Self Venting Test Valve*

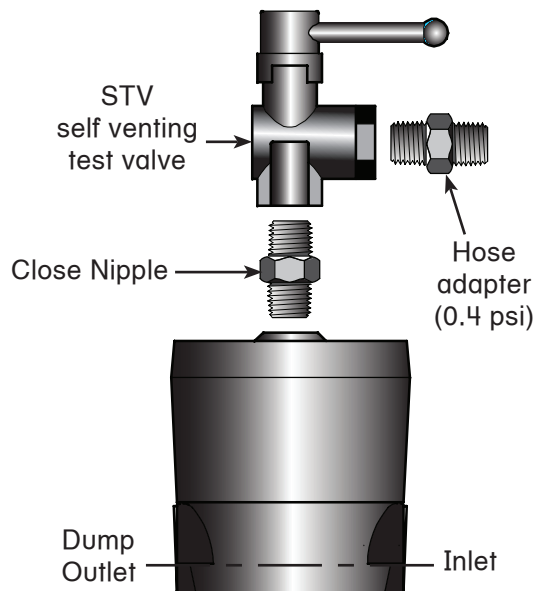
Now, there are no more excuses why the system is not tested and working properly, with just one-quarter turn of the valve handle, the testing is complete! The Sentinel Self Venting Test (STV) Valve Kit eliminates excessive troubleshooting time, fluid spillage, potential component damage and personal harm due to hot oil or water.

### *How The Valve Works*

**Sentinel's STV installs at the water inlet to the coolant valve:**

1. In normal operation, water flows through the STV, allowing water to the coolant valve.
2. To test the system, the red handle on the STV is turned one-quarter to shut the water flow to the coolant valve.
3. When the STV is closed, it vents the small amount of water which becomes trapped between it and the coolant valve. The loss of water pressure from closing the STV causes the coolant valve to open and simulate an engine shutdown.
4. The engine will not operate until the STV is returned to the open position.

Because the engine will not operate until the STV is returned to the open position, an added feature of the new STV is that it can be used as an anti-theft device. At the job site, the operator can turn the STV to the test position when his work is complete. If removal of the equipment is attempted, it would not start because the pressure will not build up close to the coolant valve



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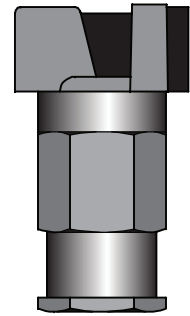
# Sentinel Systems

## PV Series

### Dump Valves

PV Series Dump Valves protect water pumps and air compressors from loss of fluid. They are normally open and will close only when the input pressure reaches the rated pressure of the dump valve (noted at the end of the part number). This pressure can be applied by water discharge from a water pump or air pressure from an air compressor.

**Note:** CV flow factor: 0.83.



Specifications	PV4-15	PV4-50
<b>Minimum Pressure</b>	15 PSI	50 PSI
<b>Maximum Pilot pressure</b>	150 PSI.	150 PSI.
<b>Port Size</b>	1/4" NPTF	1/4" NPTF
<b>Orifice</b>	7/32"	7/32"

### Cylinder Liner Pullers

Sentinel offers three liner pullers for Detroit Diesel engines that provide fast and easy removal and installation of cylinder liners. The puller is placed inside the cylinder and spans from air intake openings. Then turn the crankshaft and the piston will push the liner up and out.



Specifications	LP53-71	LP-92	LP-149
<b>Detroit Diesel Engine Type</b>	53 & 71 Series	92 Series	149 Series

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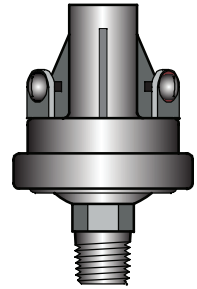


# Sentinel Systems

## PS & PR Series

### Oil Pressure Switches

Pressure Switches (PS) can be used in conjunction with Sentinel Master Controls and Model H and HA Heat Sensors to affect immediate engine shutdown by de-energizing the existing fuel pump solenoid or by activating an alarm to warn of an impending shut-down.

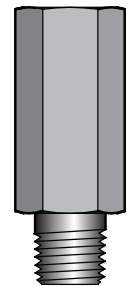


Specifications	PS-1	PS-1A	PS-2	PS-2A <sup>1</sup>
Valve Closed	5 PSI	10 PSI	15 PSI	15 PSI
Tread Size	1/8" -27 MPTM	1/8" -27 MPTM	1/8" -27 MPTM	1/8" -27 MPTM

<sup>1</sup> Specifically for use with Caterpillar 3208, Detroit 8.2 and Cummins B Series engines.

### Pressure Relief Valves

The PR valves are used for relieving pressure between the transfer pump and Sentinel Master Control and are mandatory for all mechanical fuel pumps.



Specifications	PR-35	PR-35
Application	Gear Driven Transfer Pumps	Mack Systems with no By-pass
Port Size Inlet	1/4"-18 NPT	1/4"-18 NPT
Port Size Outlet	1/4"-18 NPT	1/4"-18 NPT
Length	1 7/8" long in a 3/4" hexagonal body	1 7/8" long in a 3/4" hexagonal body



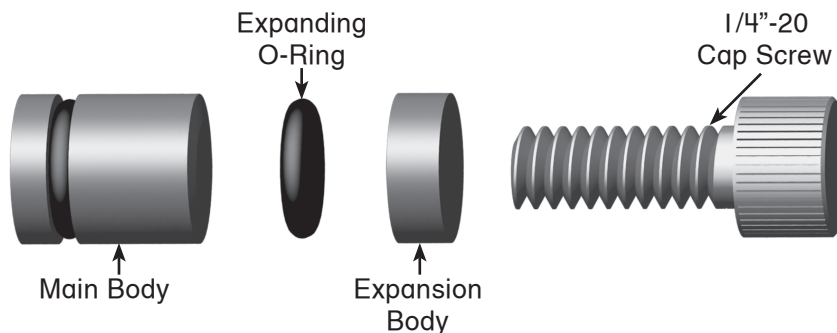
# Sentinel Systems

## CAT Addapters

### CAT-2

Expansion Plug For Caterpillar D-353 Engine

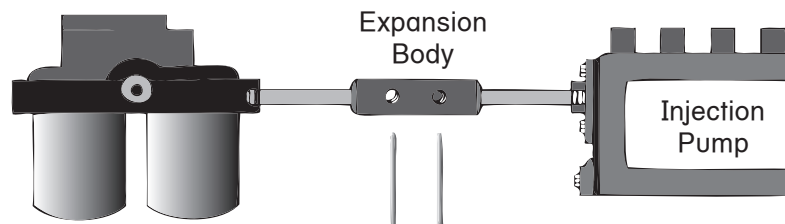
The purpose of the CAT-2 Adapter is to prevent fuel from going directly to the injection pump without going through the Sentinel Master Control first.



### CAT-3

Adapter For Caterpillar 5.4 Bore Engine  
(Replaces 8S5030 CAT adapter)

**Note:** On some D343 CAT engines in trucks, the CAT-3 Adapter is not required because the ports at the injection pump and filter housing have threads in them. All that is required is to run a fuel line from the filter housing to the fuel Inlet port of the Master Control and one line from the fuel outlet port of the master control to the injection pump.



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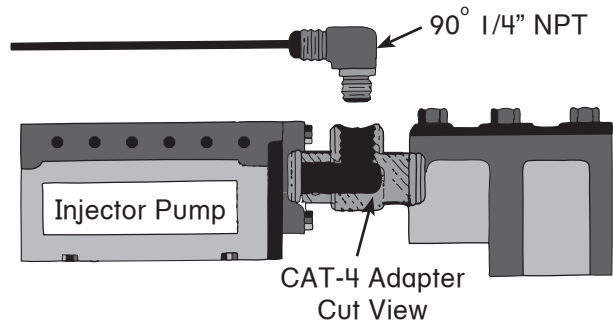
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# Sentinel Systems

## CAT Adapters

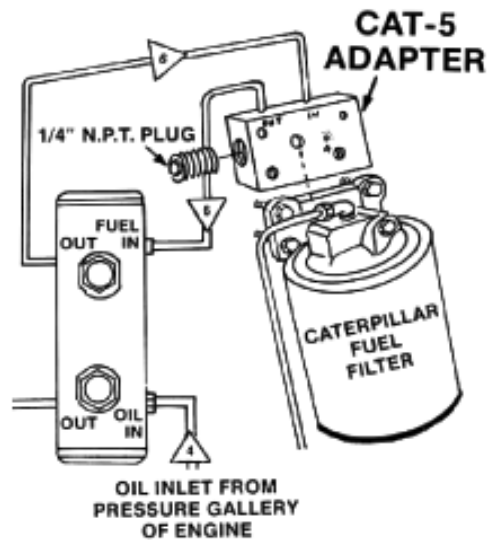
### CAT-4

Adapter For Caterpillar D8H and K Engines.



### CAT-5

Adapter Block For Caterpillar Sleeve Metering 3304 & 3306 Engines.



# Sentinel Systems

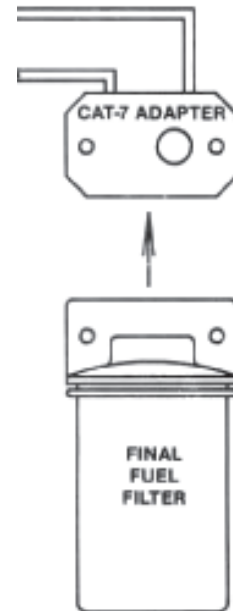
## CAT Adapters

### CAT-7

Adapter For Caterpillar New Scroll 3304 Engines Manufactured After 1980.

### CAT-8

Adapter For Caterpillar New Scroll 3304 Engines Manufactured Outside U.S.



## HK-CAT Hose Kits

### Caterpillar

This HK-CAT kit is specifically assembled for Caterpillar engines and includes the most common hose and fittings necessary to install a complete Sentinel engine protection system on any engine (see Application Guide for details). Depending on the application, this kit may include extra hose and fittings and some application-specific hose and fittings will be customer supplied.



# Sentinel Systems

## HK-CAT

### Hose Kit

Find your engine and order one each of the listed components. See notes below.

Caterpillar	D-330, D-330C, and D-333C.					
System Type	Master Control	Heat Sensor	Coolant Pressure Valve	Mounting Brackets	Valves and Adapters	Hose and Fitting Kit
Shutdown	D-10	HA-218	CPV	MB-1, MB-79	CAT-1, STV	HK-CAT
De-torque	DTF-10	HA-218	CPV	MB-1, MB-79	CAT-1, STV	HK-CAT
Shutdown with Override	D-10 with SVK-1A	HA-218	CPV	MB-1, MB-79	CAT-1, STV	HK-CAT
	D-336, D-346, D-348 and D-379.					
Shutdown	D-10	HA-218	CPV	MB-1, MB-79	STV	HK-CAT
De-torque	DTF-10	HA-218	CPV	MB-1, MB-79	STV	HK-CAT
Shutdown with Override	D-10 with SVK-1A	HA-218	CPV	MB-1, MB-79	STV	HK-CAT
	D-342					
Shutdown	D-10	HA-218	CPV	MB-1, MB-79	CAT-4, STV	HK-CAT
De-torque	DTF-10	HA-218	CPV	MB-1, MB-79	CAT-4, STV	HK-CAT
Shutdown with Override	D-10 with SVK-1A	HA-218	CPV	MB-1, MB-79	CAT-4, 41737 and STV	HK-CAT
	D-343, D-398 (new style) and D-1693.					
Shutdown	D-10	HA-218	CPV	MB-1, MB-79	CAT-3, STV	HK-CAT
De-torque	DTF-10	HA-218	CPV	MB-1, MB-79	CAT-3, STV	HK-CAT
Shutdown with Override	D-10 with SVK-1A	HA-218	CPV	MB-1, MB-79	CAT-3, STV	HK-CAT

**Notes:** Engines below 180 GPH (approx. 2.85 GPM) fuel flow must use a D master control. Engines with fuel flow between 180 and 240 GPH (approx. 4 GPM) must use a DL master control. Engines with 240 GPH fuel flow, or higher, require two master controls. Standard SVK-1A override is 12 vdc. Order SVK-2A for 24 vdc applications. The STV test valve will aid in initial system test and assist with testing in the field.

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# Sentinel Systems

## HK-CAT

### Hose Kit

Find your engine and order one each of the listed components. See notes below.

Caterpillar	D-353, D-398 (old style) and D-399.					
System Type	Master Control	Heat Sensor	Coolant Pressure Valve	Mounting Brackets	Valves and Adapters	Hose and Fitting Kit
Shutdown	D-10	H-218	CPV	MB-1, MB-79	CAT-2, STV	HK-CAT
De-torque	DTF-10	H-218	CPV	MB-1, MB-79	CAT-2, STV	HK-CAT
Shutdown with Override	D-10 with SVK-1A	H-218	CPV	MB-1, MB-79	CAT-2, STV	HK-CAT
	D-318, D-353 stationary engines.					
Shutdown	D-10	HA-218	CPV	MB-1, MB-79	CAT-2, STV	HK-CAT
	1140, 1150, 1160 and 3208 V8.					
Shutdown	D-10	H-218	CPV	MB-1, MB-79	PS-1A, PB-1 and STV	HK-CAT
De-torque	DTF-10	H-218	CPV	MB-1, MB-79	PS-1A, PB-1 and STV	HK-CAT
Shutdown with Override	D-10 with SVK-1A	H-218	CPV	MB-1, MB-79	STV	HK-CAT
	3114, 3116, and 3176 with unit injected fuel system, and D-7 engine.					
Shutdown	D-10	H-218NF	CPV	MB-1, MB-79	PR-60, 41737 and STV	HK-CAT
De-torque	DTF-10	H-218NF	CPV	MB-1, MB-79	PR-60, 41737 and STV	HK-CAT
Shutdown with Override	D-10 with SVK-1A	H-218NF	CPV	MB-1, MB-79	PR-60, 41737 and STV	HK-CAT
	3204 with direct injected, scroll metered fuel system - late models.					
Shutdown with Override	D-15 with SVK-1A	H-218	CPV	MB-1, MB-79	PR-60, CAT-7 and STV	HK-CAT

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# Sentinel Systems

## HK-CAT

Caterpillar	All 3208.					
System Type	Master Control	Heat Sensor	Coolant Pressure Valve	Mounting Brackets	Valves and Adapters	Hose and Fitting Kit
Electrical Shutdown	N/A	H-218PS	CPV	MB-79	LB-1, PB-1, PS-1A, D-25-F4, PS-2A and STV	N/A
D-3304, D-3306, D8800 and D7G engines with sleeve metering fuel system.						
Shutdown	D-15	H-218	CPV	MB-1, MB-79	CAT-5, STV	HK-CAT
De-torque	DTF-15	H-218	CPV	MB-1, MB-79	CAT-5, STV	HK-CAT
Shutdown with Override	D-15 with SVK-1A	H-218	CPV	MB-1, MB-79	CAT-5, STV	HK-CAT
D-3304 and D-3306 with direct injected, scroll metering fuel system.						
Shutdown	D-15	H-218	CPV	MB-1, MB-79	PR-60, CAT-7 and STV	HK-CAT
De-torque	DTF-15	H-218	CPV	MB-1, MB-79	PR-60, CAT-7 and STV	HK-CAT
Shutdown with Override	D-15 with SVK-1A	H-218	CPV	MB-1, MB-79	PR-60, CAT-7 and STV	HK-CAT
All 3306A, 3306C, 3406A, 3406B and 3406C.						
Shutdown	D-10	HA-218	CPV	MB-1, MB-79	PR-60, 41737 and STV	HK-CAT
De-torque	DTF-10	HA-218	CPV	MB-1, MB-79	PR-60, 41737 and STV	HK-CAT
Shutdown with Override	D-10 with SVK-1A	HA-218	CPV	MB-1, MB-79	PR-60, 41737 and STV	HK-CAT

**Notes:** Engines below 180 GPH (approx. 2.85 GPM) fuel flow must use a D master control. Engines with fuel flow between 180 and 240 GPH (approx. 4 GPM) must use a DL master control. Engines with 240 GPH fuel flow, or higher, require two master controls. Standard SVK-1A override is 12 vdc. Order SVK-2A for 24 vdc applications. The STV test valve will aid in initial system test and assist with testing in the field, if necessary. D-3304 and D-3306 engines with sleeve metering fuel systems that have the fuel filter mounted at any location other than directly on the injection pump require no fuel adapter. D8800 engines - add a PR-60 pressure relief valve.

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# Sentinel Systems

## HK-CAT

### Application Guide

Find your engine and order one each of the listed components. See notes below.

Continued from previous page.

Caterpillar	All 3406 stationary engines.					
System Type	Master Control	Heat Sensor	Coolant Pressure Valve	Mounting Brackets	Valves and Adapters	Hose and Fitting Kit
Shutdown	D-15	HA-218	CPV	MB-1, MB-79	41737, STV	HK-CAT
	All D-3408 and D-3412 engines.					
Shutdown	D-15	HA-218	CPV	MB-1, MB-79	41737, STV	HK-CAT
De-torque	DTF-15	HA-218	CPV	MB-1, MB-79	41737, STV	HK-CAT
Shutdown with Override	D-15 with SVK-1A	HA-218	CPV	MB-1, MB-79	41737, STV	HK-CAT
	All 3508, 3512 and 3516 engines.					
Shutdown	D-10	HA-218	CPV	MB-1, MB-79	GM-2, STV	HK-CAT
De-torque	DTF-10	HA-218	CPV	MB-1, MB-79	GM-2, STV	HK-CAT
Shutdown with Override	D-10 with SVK-1A	HA-218	CPV	MB-1, MB-79	GM-2, STV	HK-CAT

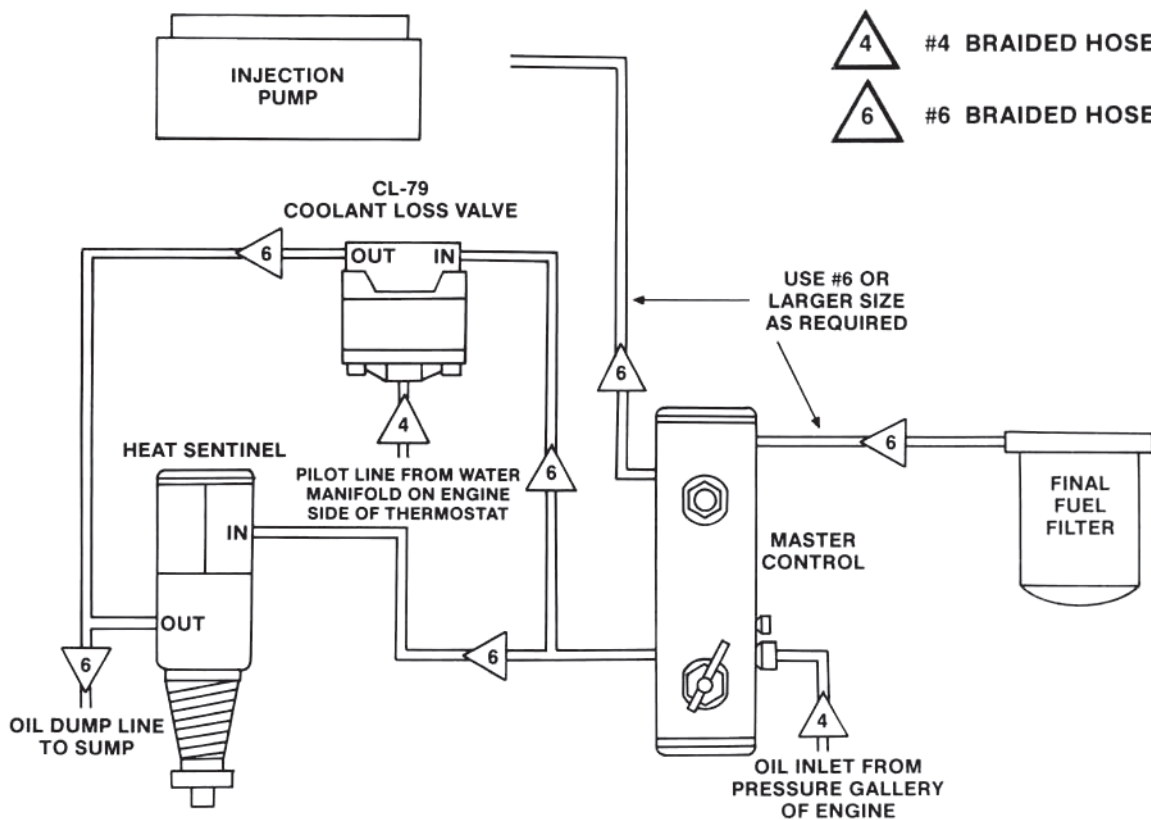
**Notes:** Engines below 180 GPH (approx. 2.85 GPM) fuel flow must use a D master control. Engines with fuel flow between 180 and 240 GPH (approx. 4 GPM) must use a DL master control. Engines with 240 GPH fuel flow, or higher, require two master controls. Standard SVK-1A override is 12 vdc. Order SVK-2A for 24 vdc applications. The STV test valve will aid in initial system test and assist with testing in the field.

# Sentinel Systems

## HK-CAT

**IMPORTANT: PROPER INSTALLATION MANDATORY FOR OPTIMUM PERFORMANCE.**

Refer to Master Control Installation Instructions for additional information.



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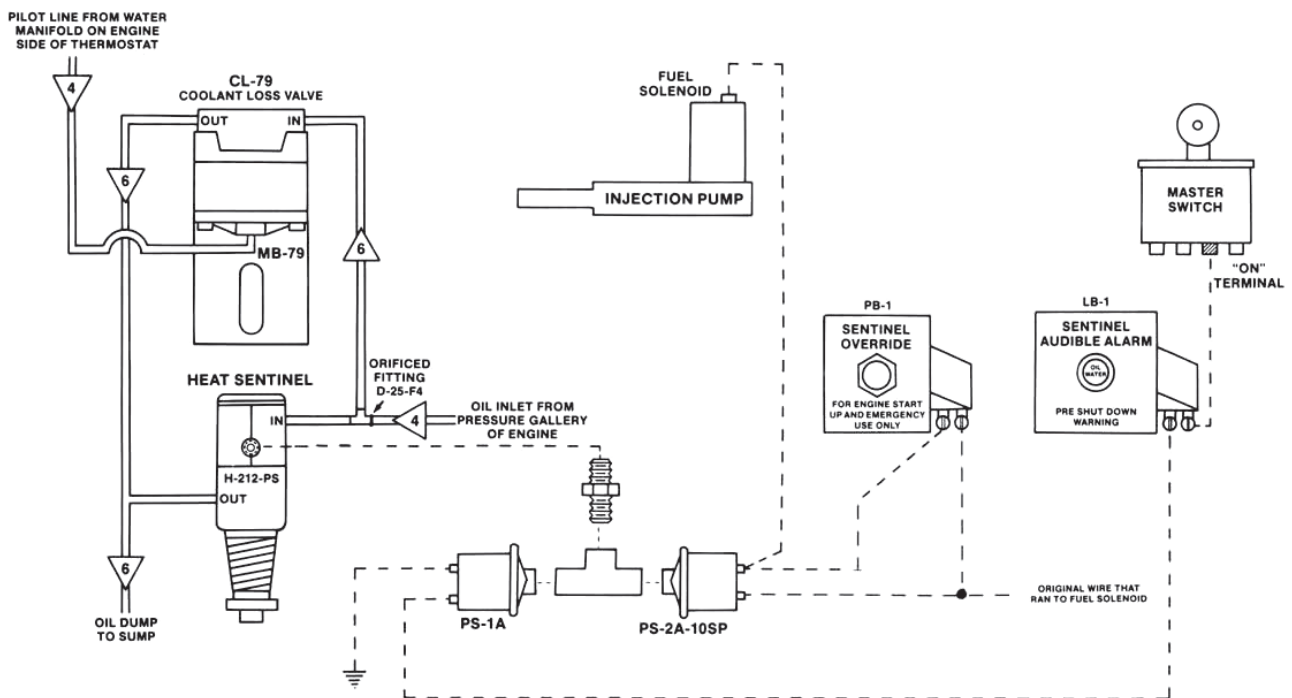
# Sentinel Systems

## HK-CAT

**IMPORTANT: PROPER INSTALLATION MANDATORY FOR OPTIMUM PERFORMANCE.**

Refer to Master Control Installation Instructions for additional information.

Use **ONLY** the water pick up point at 1/8" Pipe Plug on top left side of water pump.



-  #4 BRAIDED HOSE
-  #6 BRAIDED HOSE

ALL WIRE #14 GAUGE OR LARGER

# Sentinel Systems

## HK-CAT

### Instructions For Installing CAT-2 Addapter

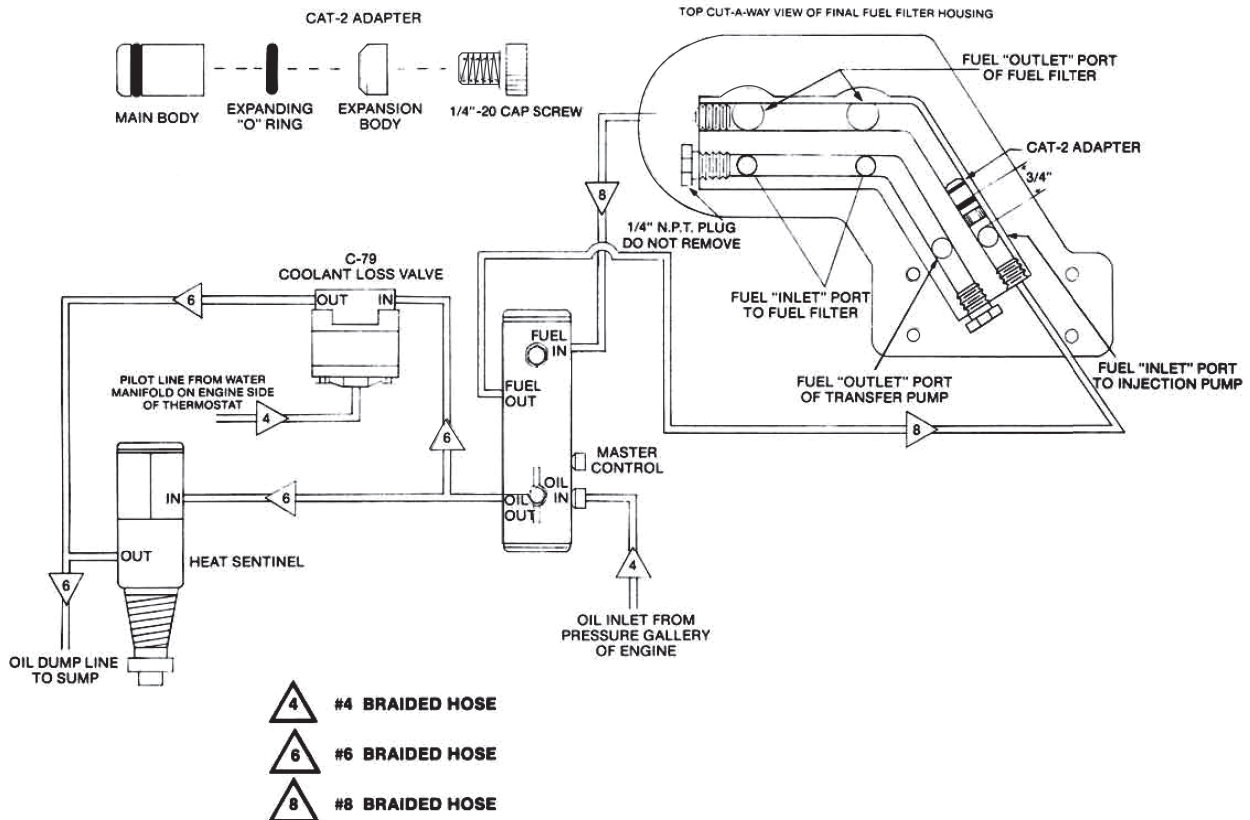
1. Remove the four (4) bolts that hold the fuel filter housing onto the injection pump. Remove the fuel filter housing from the injection pump.
2. Remove the 1/4 N.P.T. plug, that is installed in the end of the fuel filter housing, in front of the fuel "Inlet" port to the injection pump.
3. Remove the 1/4-20 cap screw in the CAT-2 Adapter. Using a long 1/4-20 bolt, insert the Main Body of the CAT-2 Adapter into the port from which the 1/4 N.P.T. plug was removed. Make sure that the Main Body of the CAT-2 Adapter is inserted approximately 3/4" past the fuel "Inlet" port to the injection pump. Insert the expanding "O" Ring into the port up against the Main Body. Insert the Expansion Body and the 1/4-20 cap screw and tighten the cap screw.

**CAUTION:** The port into which the CAT-2 Adapter is to be inserted

is supposed to be 27/64 (.422) I.D. Some ports may be undersize in which case a 27/64 drill or reamer will have to be used to enlarge the port.

4. Install a suitable adapter that will accept the #8 fuel line into the port from which the 1/4 N.P.T. plug was removed. Replace the 1/4 N.P.T. plug at the opposite end of the port with a suitable adapter that will accept the #8 fuel line.
5. Replace the fuel filter housing, plumb the fuel system and the remainder of the system as shown.

THE PURPOSE OF THE CAT-2 ADAPTER IS TO PREVENT FUEL FROM GOING DIRECTLY TO THE INJECTION PUMP WITHOUT GOING THROUGH THE SENTINEL MASTER CONTROL FIRST.



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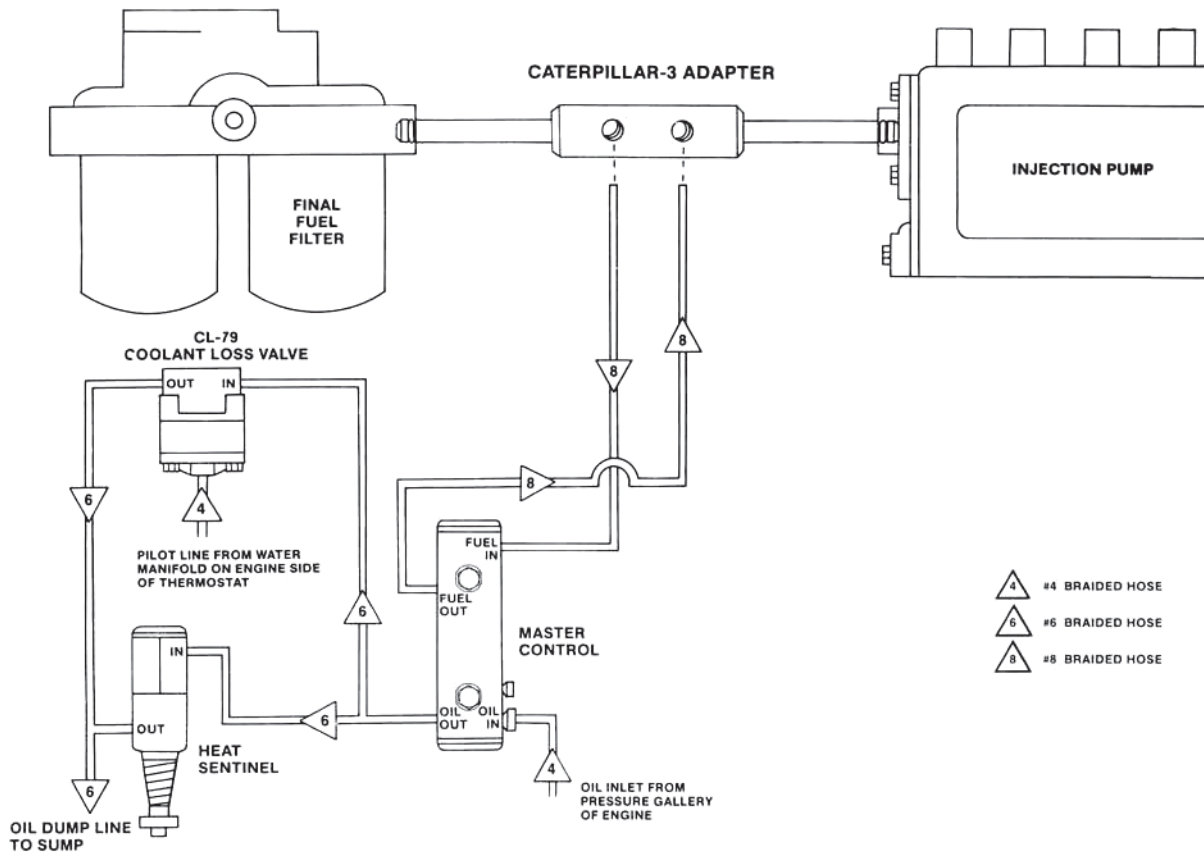
# Sentinel Systems

## HK-CAT

### Instructions For Installing CAT-3 Addapter

1. Remove the final fuel filter housing by removing the (5) bolts that hold it to the engine. Replace the fuel sleeve (855030), that connects the fuel filter housing to the injection pump, with the CAT-3 Adapter.
2. Replace the fuel filter housing.
3. Install the proper fittings in the CAT-3 Adapter and the Sentinel Master Control that will accept the #8 fuel lines. Make sure that the fuel coming out of the final fuel filter goes to the fuel "In" port of the Master Control.
4. Plumb the remainder of the system as shown.

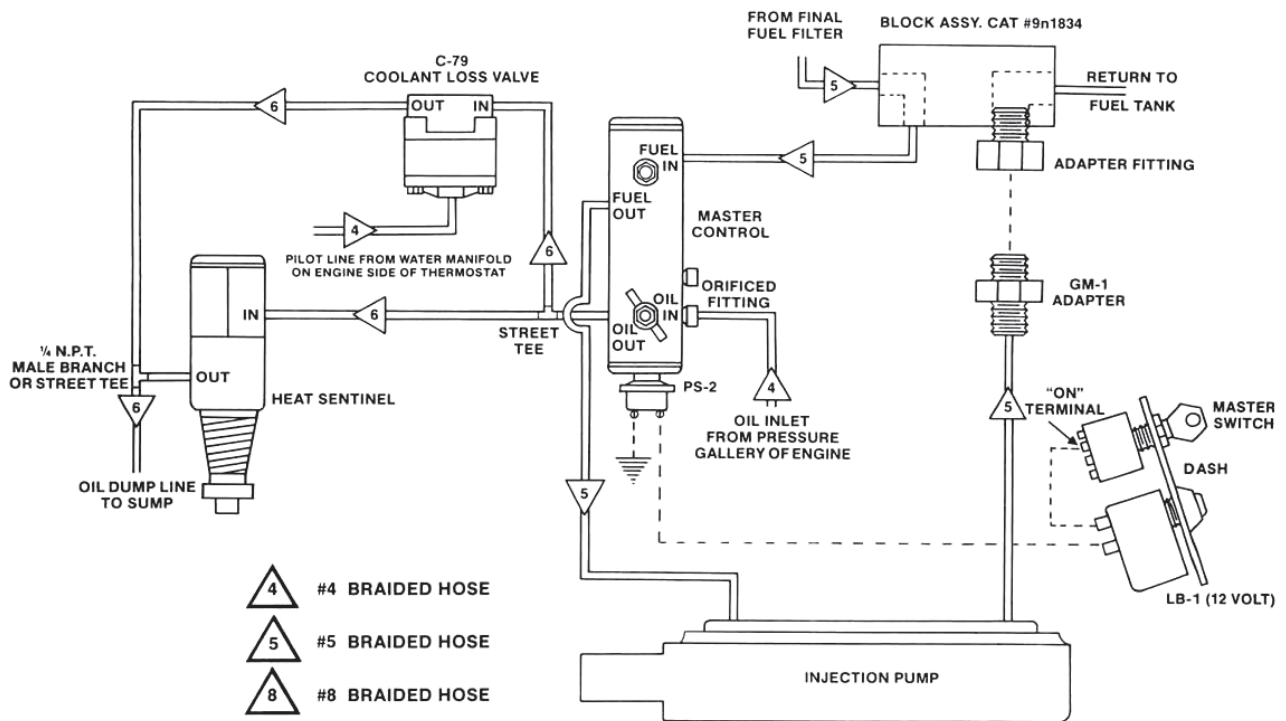
NOTE: On some D343 CAT engines in trucks, the CAT-3 Adapter is not required because the ports at the injection pump and filter housing have threads in them. All that is required is to run a fuel line from the filter housing to the fuel "In" port of the Master Control and one line from the fuel "Out" port of the Master Control to the injection pump.



# Sentinel Systems

## HK-CAT

For Caterpillar 3406 Engines



Light Buzzer (LB-1) and Pressure Switch (PS-2) as shown, are optional equipment.

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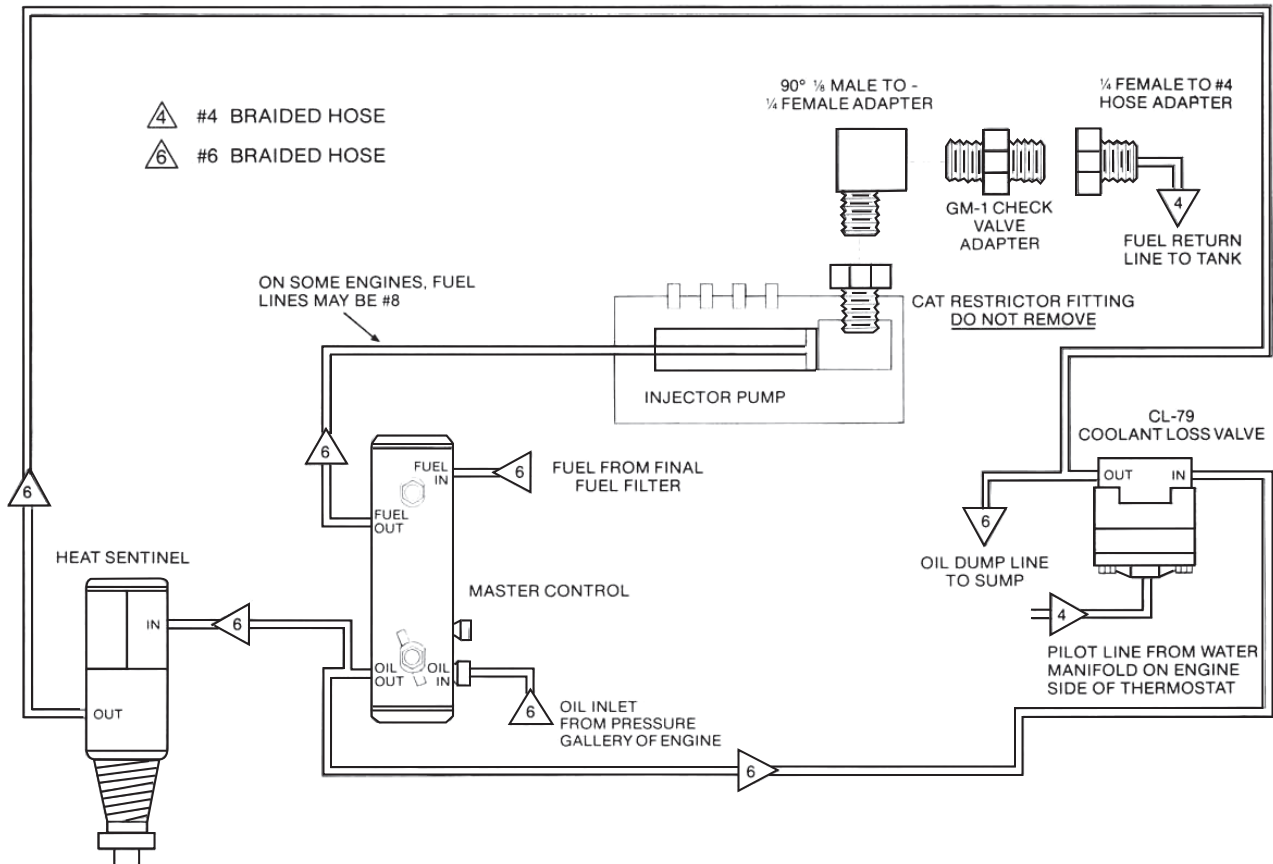
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# Sentinel Systems

## HK-CAT

For Caterpillar 3408 & 3412 Engines





# Sentinel Systems

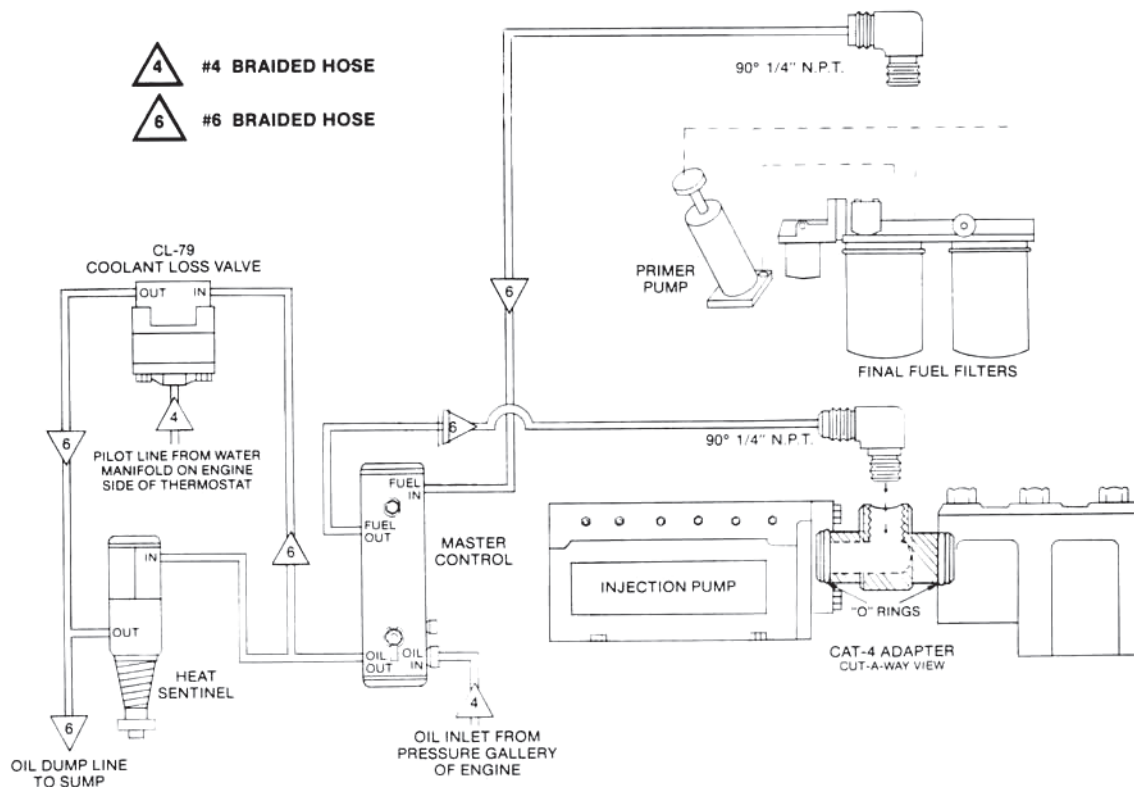
## HK-CAT

**IMPORTANT: PROPER INSTALLATION MANDATORY FOR OPTIMUM PERFORMANCE.**

Refer to Master Control Installation Instructions for additional information.

### CAT-4 Adapter

1. Remove the final fuel filter housing by disconnecting the two fuel primer lines at the back of the filter housing and removing the (5) bolts holding the housing on the engine.
2. Remove the 1/4" N.P.T. plug, located between the two fuel filter line fittings on the back of the filter housing. Install a 90° 1/4" N.P.T. to #6 Adapter in the place that the 1/4" N.P.T. plug was removed.
3. Replace the fuel sleeve (7L7345) that connects the final fuel filter housing to the injection pump, with the Cat-4 Adapter. The 90° 1/4" N.P.T. to #6 Adapter will have to be installed in the Cat-4 Adapter before the housing is bolted back on the engine. **NOTE:** Make sure the open fuel port in the Cat-4 Adapter is toward the injection pump.
4. Bolt the housing back to the engine and plumb the fuel system as shown.
5. Install the remainder of the system and plumb as shown.



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# Sentinel Systems

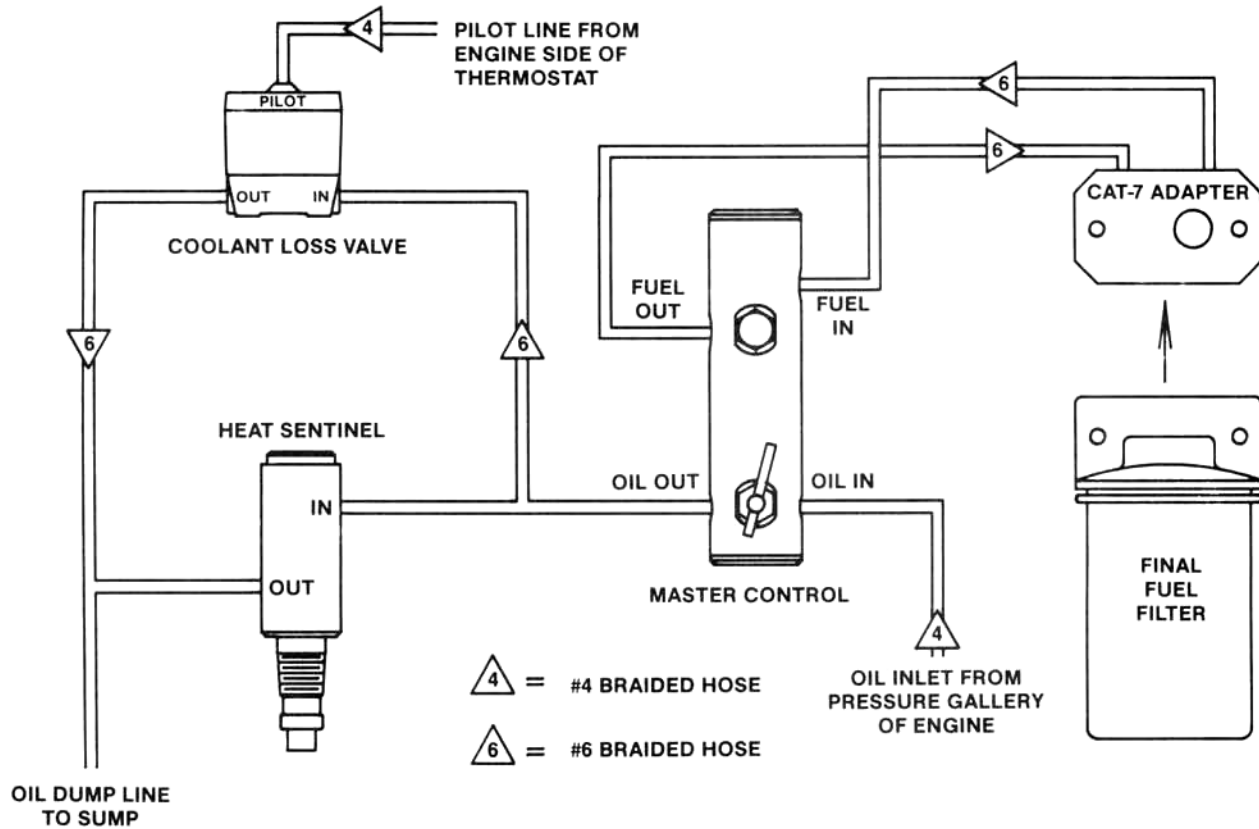
## HK-CAT

### IMPORTANT: PROPER INSTALLATION MANDATORY FOR OPTIMUM PERFORMANCE.

Refer to Master Control Installation Instructions for additional information.

### CAT-7 Fuel Block

1. Remove fuel filter housing from pump by removing four (4) bolts.
  2. Place CAT-7 Fuel Block Adapter between filter and pump, matching fuel flow holes. Use two (2) 7N9520CAT gaskets.
  3. Replace filter housing using longer bolts.
  4. Connect fuel supply line from CAT-7 Adapter port marked "Out" to fuel **inlet** side of Master Control, using #6 Braided Hose.
  5. Connect fuel line from "Fuel Out" of Master Control to opening in adapter marked "In", using same size line as in Step 4.
  6. Plumb Heat Sentinel and Coolant Loss Valve as shown. **Do not** use hose with less than 5/16" I.D.
- CAUTION:** Check opening and cavity in Engine for obstructions — the brass power element of Heat Sentinel must not be squeezed or distorted when installed.
7. Connect oil line from pressure gallery of Engine, using #4 Braided Hose, to orifice fitting in Master Control.
  8. Connect oil outlet of Heat Sentinel and Coolant Loss Valve (dump line) to non-pressure opening in Engine (sump or pan), using same size hose as in Step 6.
  9. Note stampings "IN", "OUT", and "4" on CAT-7 Adapter.
  10. Water pickup for CL-79 is from Pilot Line from Water Manifold on engine side of thermostat.



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# Sentinel Systems

## HK-CAT

Master Control and Coolant Loss Valve (CL-79) may be mounted together on MB-1 Mounting Bracket for ease in mounting. Using two of the four bolts on top of air intake manifold (located about the middle of the "V" of engine) is suitable for most vehicle installation.

**Heat Sentinel Installation** — Three  $\frac{3}{8}$ " NPT openings into coolant jackets are easily accessible on most engines. One on either head and one at rear of engine in the "V" on water manifold. Other  $\frac{1}{2}$ " NPT openings are also available and suitable for Heat Sentinel installation.

**Oil Pressure Pickup** — Use one of the following:

1. Tee into oil pressure gage line.
2. Drill and tap ( $\frac{1}{8}$ " NPT) removable plate on right front of engine.
3. Drill and tap ( $\frac{1}{8}$ " NPT) plate on left side of engine. (Two bolts hold plate on.) This plate is covering main oil pressure gallery.
4. Any other main oil pressure outlet on engine.

**Coolant Pressure Pickup** — There are numerous openings in engine coolant system that are suitable. Make sure that opening which is selected is between the water pump and thermostat housing. The  $\frac{3}{8}$ " NPT opening that was not used in Heat Sentinel installation makes a good pickup point. To insure proper coolant pressure pickup point was selected, a 0-30 P.S.I. pressure gage may be used to test water pump pressure. The water pressure should increase as the engine RPM increases. If pressure does not increase as engine RPM increases, pickup point is on suction side of water pump.

**Oil Dump** — Use one of the following:

1. Plate on left front of engine if hydraulic pump is not installed on engine. (Six bolts hold plate on.) Drill and tap  $\frac{1}{4}$ " NPT for opening.
2. Cover over cam shaft gear on top front of engine. (Four bolts hold plate on.) Drill and tap  $\frac{1}{4}$ " NPT for openings.
3. Some valve covers have openings that can be tapped  $\frac{1}{4}$ " NPT. (No drilling necessary.)
4. Any convenient non-pressure openings in crankcase.

### Fuel Section

The fuel line that runs from the final fuel filter to the injection pump may be used by disconnecting it at the injection pump and connecting it to the Master Control fuel "Inlet" port. A new line will have to be made to run from the fuel "Outlet" port to the injection pump.

Locate the fuel return line on the injection pump and install the GM-1 Check Valve with the arrow pointing towards the fuel tank. **CAUTION:** Make sure that the Cat restrictor fitting that is installed in the fuel return line is not removed or the engine will not develop full power. Check system for shutdown as described in installation sheet furnished with Master Control.

# Sentinel Systems

## HK-CAT

### For Caterpillar 3508, 3512 & 3616 Engines

Cat. Engine 3508, 3512 and 3616

4 -3/16" I.D. Hose

6 -5/16" I.D. Hose

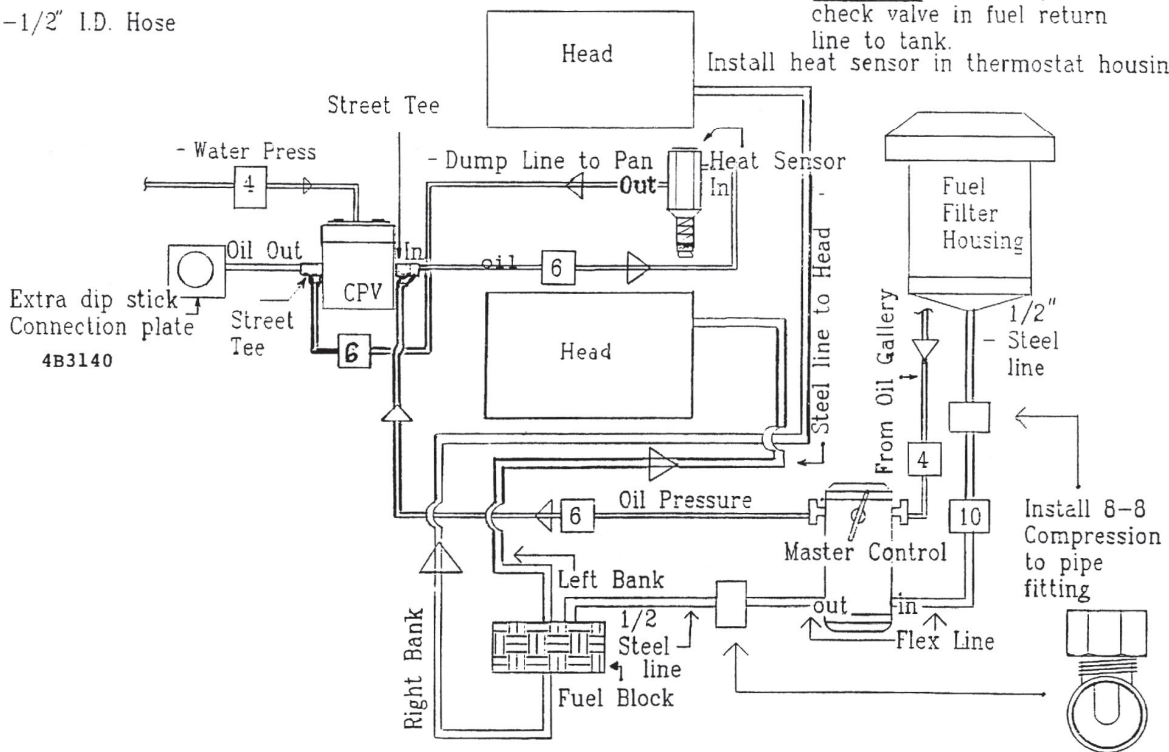
10 -1/2" I.D. Hose

Master control has to be the DL series control to handle Fuel volume

Note: Install master control valve upside down and use straight fitting at the fuel connections

Mandatory- Install 3/8 fuel check valve in fuel return line to tank.

Install heat sensor in thermostat housing.



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# Sentinel Systems

## HK-CMNS

### Cummins Hose Kits

This HK-CMNS kit is specifically assembled for Cummins engines and includes the most common hose and fittings necessary to install a complete Sentinel engine protection system on any engine (see Application Guide for details). Depending on the application, this kit may include extra hose and fittings and some application-specific hose and fittings will be customer supplied.

#### Application Guide

Find your engine and order one each of the listed components. See notes below.

Cummins	All B Series direct injected engines with rotary Bosch pump, 6 CT 8.36 engine with Bosch injection pump, B Series with Bosch in-line injection pump, 230 thru 475, 855, 902, Big Cam II and III, L-10, M-11, NH- 220, KTA-19C, KTA-450, KTA-1710, K-1150, all in-line 6, V504 and all C Series.					
System Type	Master Control	Heat Sensor	Coolant Pressure Valve	Mounting Brackets	Valves and Adapters	Hose and Fitting Kit
Shutdown	D-5Y	HA-212	CPV	MB-1, MB-79	PR-60, STV	HK-CMNS
De-torque	DTF-5Y	HA-212	CPV	MB-1, MB-79	PR-60, STV	HK-CMNS
Shutdown with Override	D-5Y with SVK-1A	HA-212	CPV	MB-1, MB-79	PR-60, STV	HK-CMNS
All 2300, M-38-V-12, 3067, K-50-V-16 and K Series engines.						
Shutdown	DL-10	H-212	CPV	MB-1, MB-79	PR-60, 41737, STV	HK-CMNS
De-torque	DTLF-10	H-212	CPV	MB-1, MB-79	PR-60, 41737, STV	HK-CMNS
Shutdown with Override	DL-10 with SVK-1A	H-212	CPV	MB-1, MB-79	PR-60, 41737, STV	HK-CMNS

Notes: Engines below 180 GPH (approx. 2.85 GPM) fuel flow must use a D master control. Engines with fuel flow between 180 and 240 GPH (approx. 4 GPM) must use a DL master control. Engines with 240 GPH fuel flow, or higher, require two master controls. Standard SVK-1A override is 12 vdc. Order SVK-2A for 24 vdc applications. Hose and fitting kits include the most common components to fit most applications - additional components, if needed, are customer supplied. The STV test valve will aid in initial system test and assist with testing in the field, if necessary. Cummins C Series engines require two 14mm to 3/8" NPT banjo fittings (part number 40748).

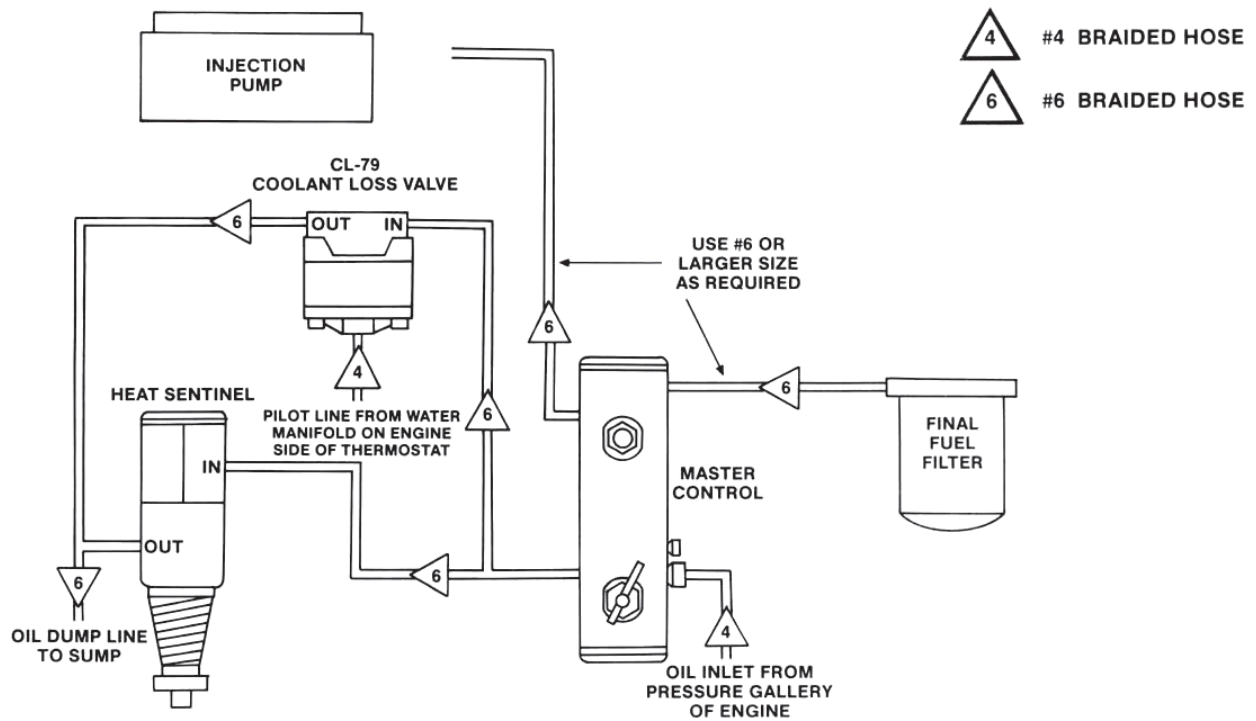


# Sentinel Systems

## HK-CMNS

**IMPORTANT: PROPER INSTALLATION MANDATORY FOR OPTIMUM PERFORMANCE.**

Refer to Master Control Installation Instructions for additional information.



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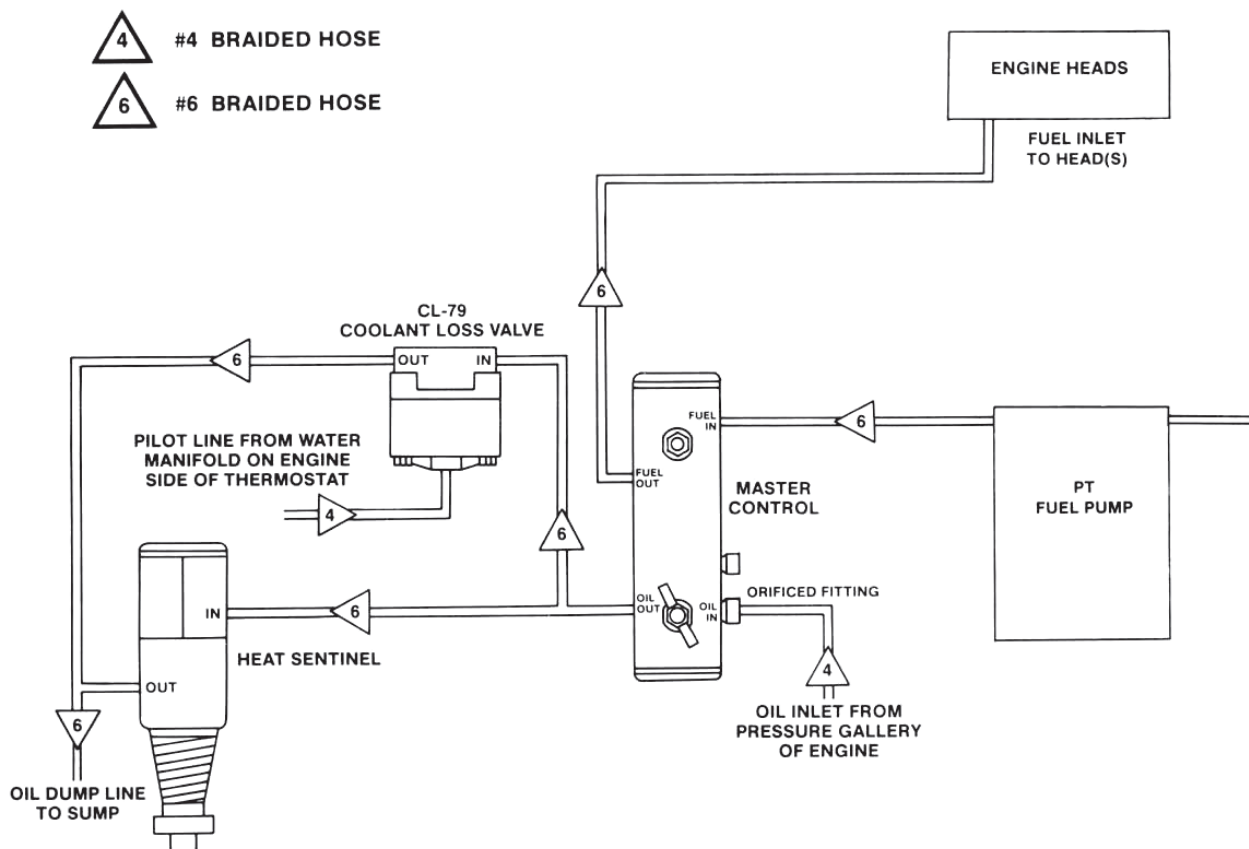
# Sentinel Systems

## HK-CMNS

### All Cummins w/PT Pump Fuel Systems

**IMPORTANT: PROPER INSTALLATION MANDATORY FOR OPTIMUM PERFORMANCE.**

Refer to Master Control Installation Instructions for additional information.



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# Sentinel Systems

## Deutz Application Guide

Find your engine and order one each of the listed components. See notes below.

Deutz	All 411 and 511 engines.					
System Type	Master Control	Heat Sensor	Coolant Pressure Valve	Mounting Brackets	Valves and Adapters	Hose and Fitting Kit
Shutdown	D-15	HA-225	CPV	MB-1	40745, DZ-3A, STV	HK-GU
	All 1011, F2L912 and F4L-1011 engines.					
Shutdown	D-15	HA-225	CPV	MB-1	40745, STV	HK-GU
	All 413, BF6L, FL-3, FL-4, FL-5, FL-6, FL-912 and FL-913 and 914 engines.					
Shutdown	D-15	HA-255	CPV	MB-1	40745, DZ-4A, STV	HK-GU

Notes: Engines below 180G PH (approx. 2.85 GPM) fuel flow may use a D master control. Engines with fuel flow between 180 and 240 GPH (approx. 4 GPM) must use a DL master control. Engines with 240 GPH fuel flow, or higher, require two master controls. Standard SVK-1A override is 12 vdc. Order SVK-2A for 24 vdc applications. Hose and fitting kits include the most common components to fit most applications - additional components, if needed, are customer supplied. The STV self-venting test valve will aid in initial system test and assist with testing in the field, if necessary. Deutz engines: If belt protection is required, use a XDV-1 dump valve installed in 2245062 Deutz mounting bracket.

# Sentinel Systems

## HK-JD

### *John Deere*

This HK-JD kit is specifically assembled for John Deere engines and includes the most common hose and fittings necessary to install a complete Sentinel engine protection system on any engine (see Application Guide for details). Depending on the application, this kit may include extra hose and fittings and some application-specific hose and fittings will be customer supplied.

**Find your engine and order one each of the listed components. See notes below.**

John Deere	All agricultural, construction and stationary equipment/engines.					
System Type	Master Control	Heat Sensor	Coolant Pressure Valve	Mounting Brackets	Valves and Adapters	Hose and Fitting Kit
Shutdown	D-15	H-218	CPV	MB-1, MB-79	PR-60, STV	HK-JD

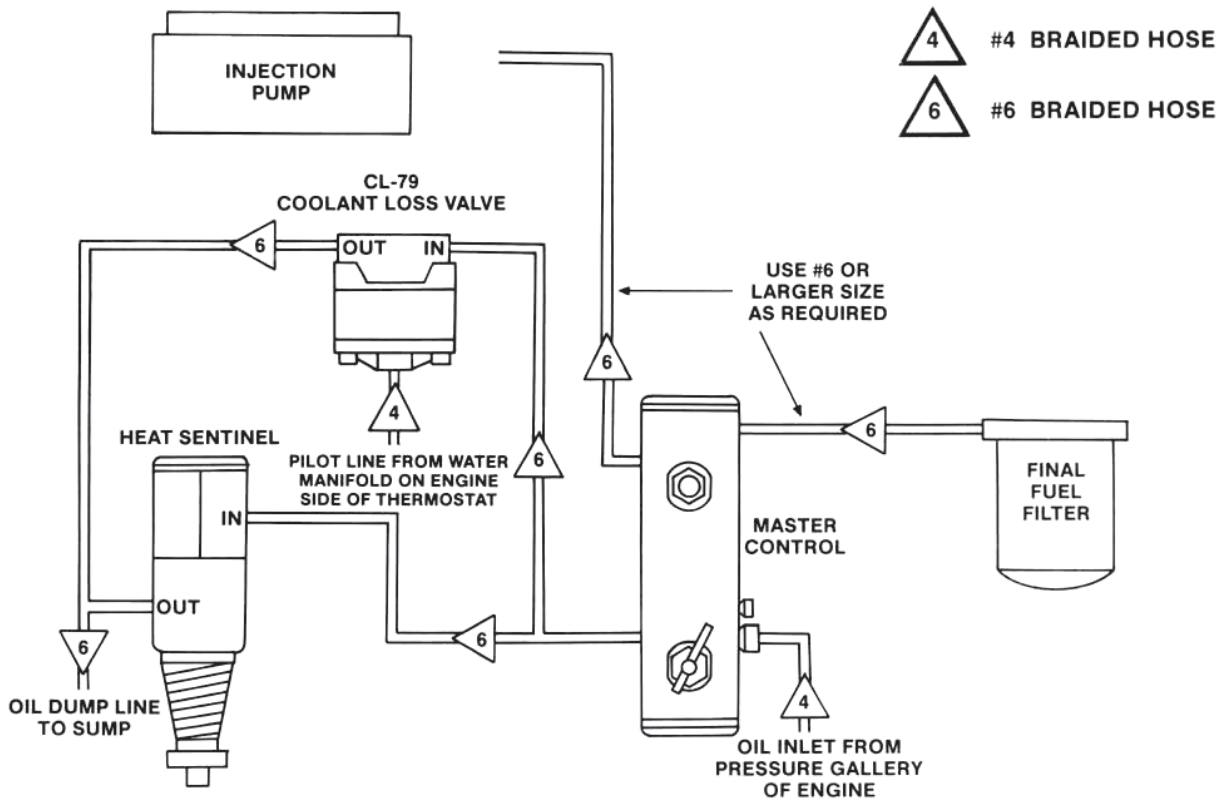
**Notes:** Engines below 180 GPH (approx. 2.85 GPM) fuel flow must use a D master control. Engines with fuel flow between 180 and 240 GPH (approx. 4 GPM) must use a DL master control. Engines with 240 GPH fuel flow, or higher, require two master controls. The STV test valve will aid in initial system test and assist with testing in the field, if necessary.

# Sentinel Systems

## HK-JD

**IMPORTANT: PROPER INSTALLATION MANDATORY FOR OPTIMUM PERFORMANCE.**

Refer to Master Control Installation Instructions for additional information.



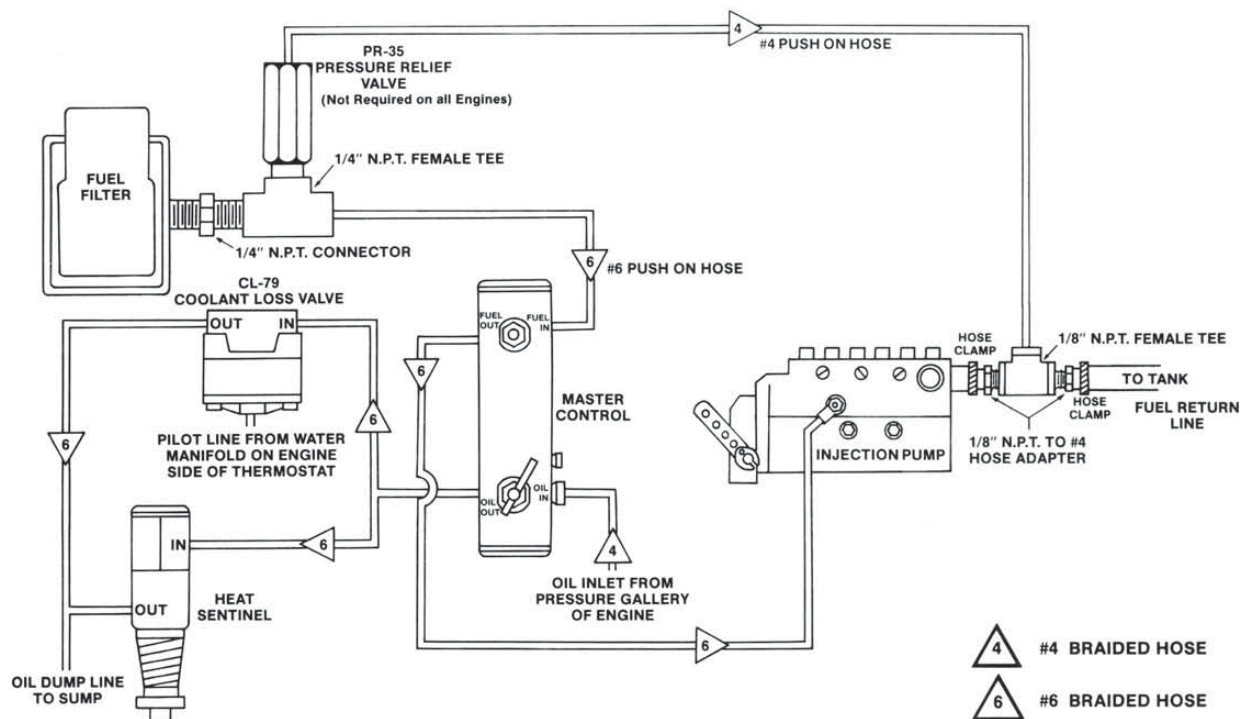
# Sentinel Systems

## HK-JD

### *For All John Deere*

**IMPORTANT: PROPER INSTALLATION MANDATORY FOR OPTIMUM PERFORMANCE.**

Refer to Master Control Installation Instructions for additional information.



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# Sentinel Systems

## HK-DDC

### *Detroit Diesel Hose Kits*

This HK-DDC kit is specifically assembled for Detroit Diesel engines and includes the most common hose and fittings necessary to install a complete Sentinel engine protection system on any engine (see Application Guide for details). Depending on the application, this kit may include extra hose and fittings and some application-specific hose and fittings will be customer supplied.

**Find your engine and order one each of the listed components.**

Notes: Engines below 180 GPH (approx. 2.85 GPM) fuel flow must use a D master control. Engines with fuel flow between 180 and 240 GPH (approx. 4 GPM) must use a DL master control. Engines with 240 GPH fuel flow, or higher, require two master controls. Standard SVK--1A override is 12 vdc. Order SVK--2A for 24 vdc applications. The STV test valve will aid in initial system test and assist with testing in the field.

Detroit Diesel	3-53, 4-53, 6-53, 2-71, 3-71, 4-71 and 6-71 in-line engines, 6V-53, 8V-53, 6V-71, 8V-71, 12V-71, 6V-92, 8V-92 and 6110.					
System Type	Master Control	Heat Sensor	Coolant Pressure Valve	Mounting Brackets	Valves and Adapters	Hose and Fitting Kit
Shutdown	D-5	HA-212	CPV	MB-1, MB-79	STV	HK-DDC
De-torque	DTF-5	HA-212	CPV	MB-1, MB-79	STV	HK-DDC
Shutdown with Override	D-5 with SVK-1A	HA-212	CPV	MB-1, MB-79	STV	HK-DDC
All Series 40 engines.						
Shutdown	D-5Y	H-212	CPV	MB-1, MB-79	41737, STV	HK-DDC
De-torque	DTF-5Y	H-212	CPV	MB-1, MB-79	41737, STV	HK-DDC
Shutdown with Override	D-5Y with SVK-1A	H-212	CPV	MB-1, MB-79	41737, STV	HK-DDC
All 8-71 engines with electrical shut-off.						
Electrical Shutdown	N/A	H-218PS	CPV	MB-79	LB-1, PB-1, PS-1A, D-25-F4, PS-2A	N/A

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# Sentinel Systems

## HK-DDC

### *Detroit Diesel Hose Kits*

This HK-DDC kit is specifically assembled for Detroit Diesel engines and includes the most common hose and fittings necessary to install a complete Sentinel engine protection system on any engine (see Application Guide for details). Depending on the application, this kit may include extra hose and fittings and some application-specific hose and fittings will be customer supplied.

**Find your engine and order one each of the listed components.**

Notes: Engines below 180 GPH (approx. 2.85 GPM) fuel flow must use a D master control. Engines with fuel flow between 180 and 240 GPH (approx. 4 GPM) must use a DL master control. Engines with 240 GPH fuel flow, or higher, require two master controls. Standard SVK--1A override is 12 vdc. Order SVK--2A for 24 vdc applications. The STV test valve will aid in initial system test and assist with testing in the field.

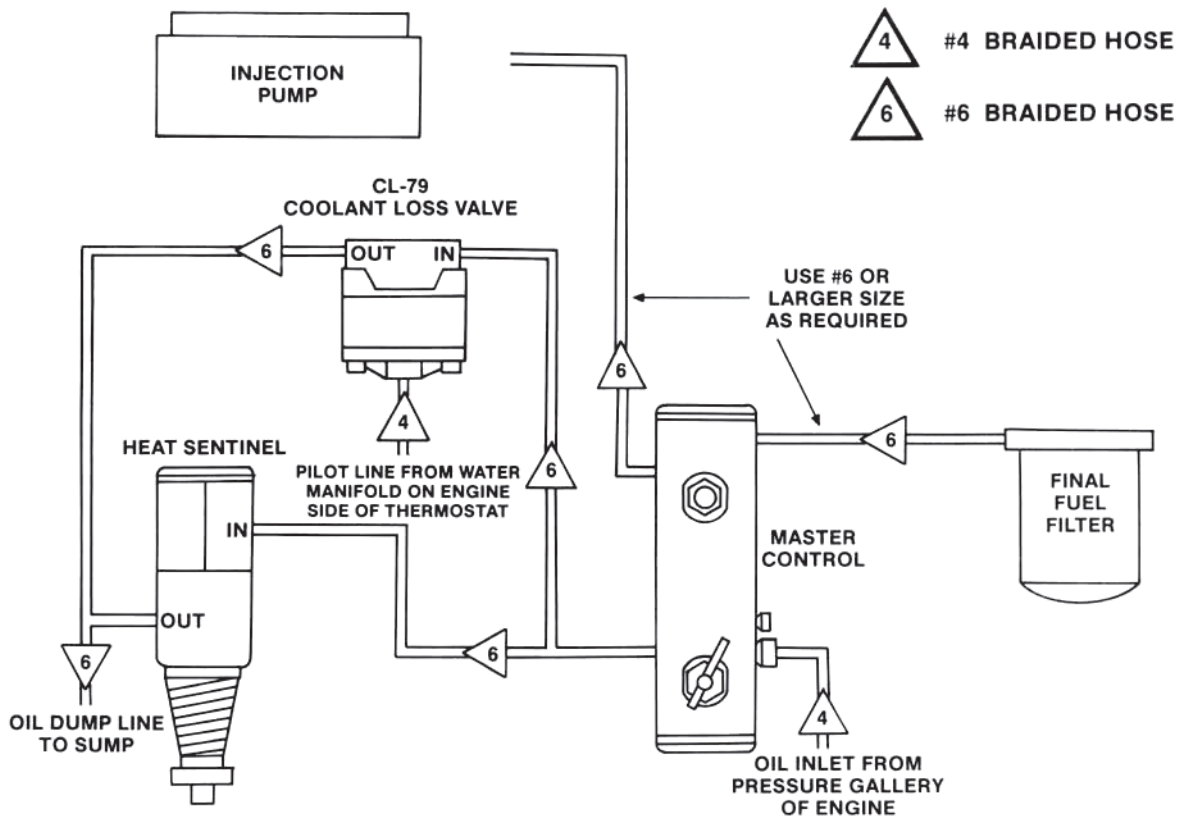
	All 16V-71, 12V-92 and 16V-92 engines.					
Shutdown	D-5	H-212	CPV	MB-1, MB-79	STV	HK-DDC
De-torque	DTF-5	H-212	CPV	MB-1, MB-79	STV	HK-DDC
Shutdown with Override	D-5 with SVK-1A	H-212	CPV	MB-1, MB-79	STV	HK-DDC
	All 12V-149 and 16V-149 engines.					
Shutdown	DL-5	H-212	CPV	MB-1, MB-79	STV	HK-DDC
De-torque	DTLF-5	H-212	CPV	MB-1, MB-79	STV	HK-DDC
Shutdown with Override	DL-5 with SVK-1A	H-212	CPV	MB-1, MB-79	STV	HK-DDC

# Sentinel Systems

## HK-DDC

**IMPORTANT: PROPER INSTALLATION MANDATORY FOR OPTIMUM PERFORMANCE.**

Refer to Master Control Installation Instructions for additional information.





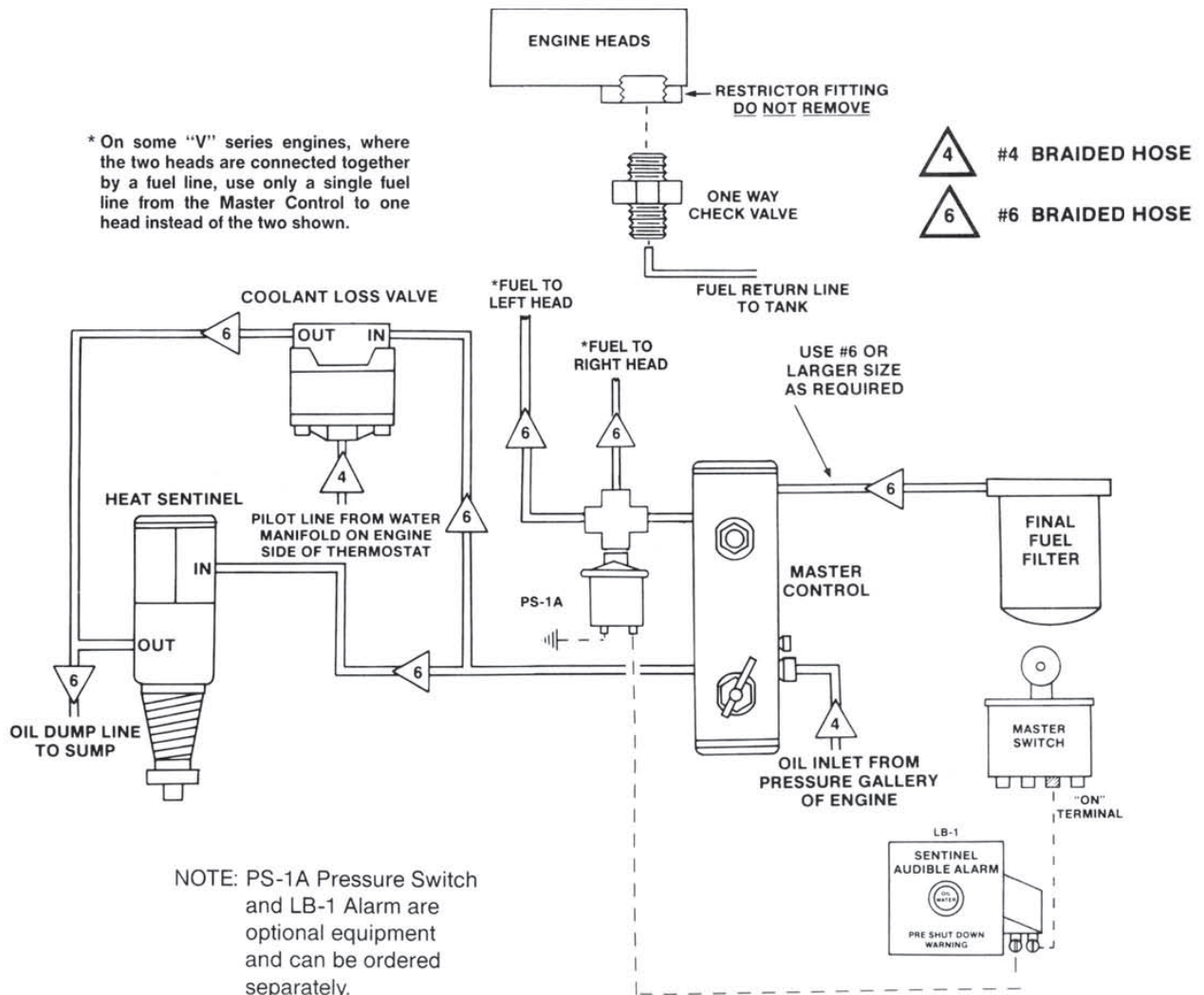
# Sentinel Systems

## HK-DDC

### *Detroit 6V, 8V & 12V Series Engines*

**IMPORTANT: PROPER INSTALLATION MANDATORY FOR OPTIMUM PERFORMANCE.**

Refer to Master Control Installation Instructions for additional information.



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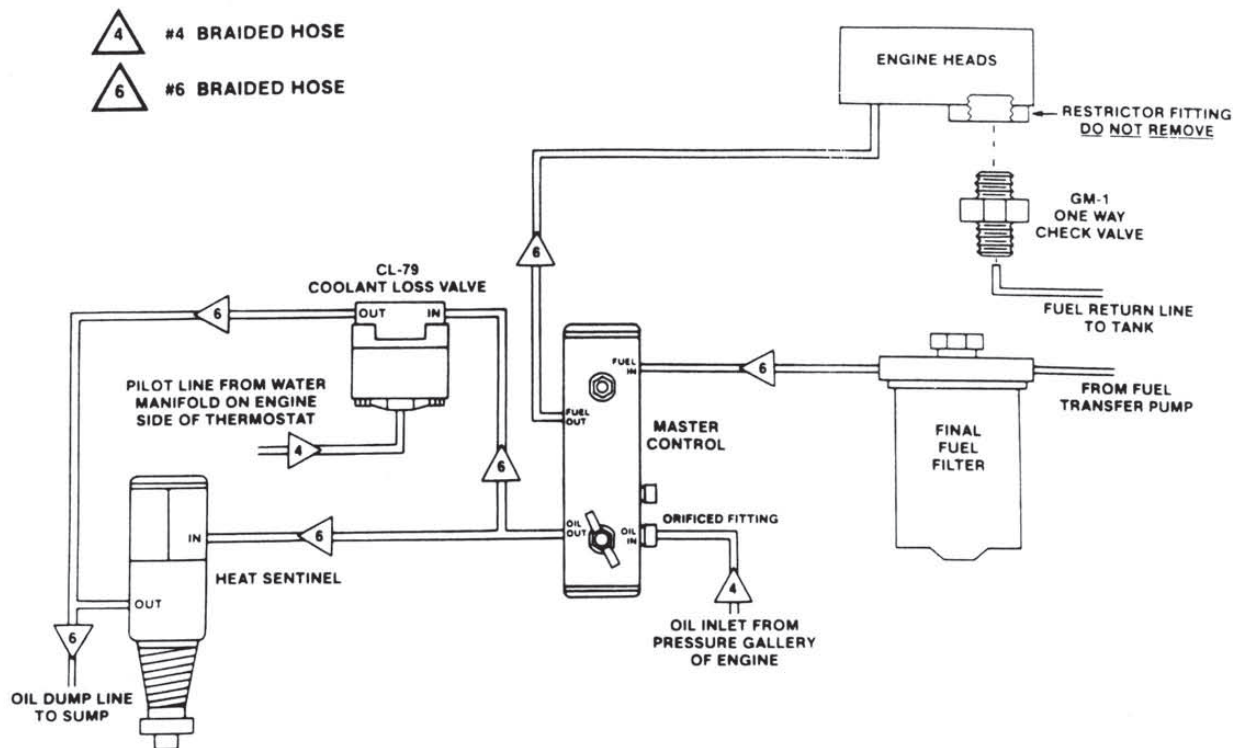
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# Sentinel Systems

## HK-DDC

### *Detroit Inline 2-71, 3-53 3-71, 4-53, 4-71, 6-53 & 6-71 Series Engines*

**IMPORTANT: PROPER INSTALLATION MANDATORY FOR OPTIMUM PERFORMANCE.**  
Refer to Master Control Installation Instructions for additional information.



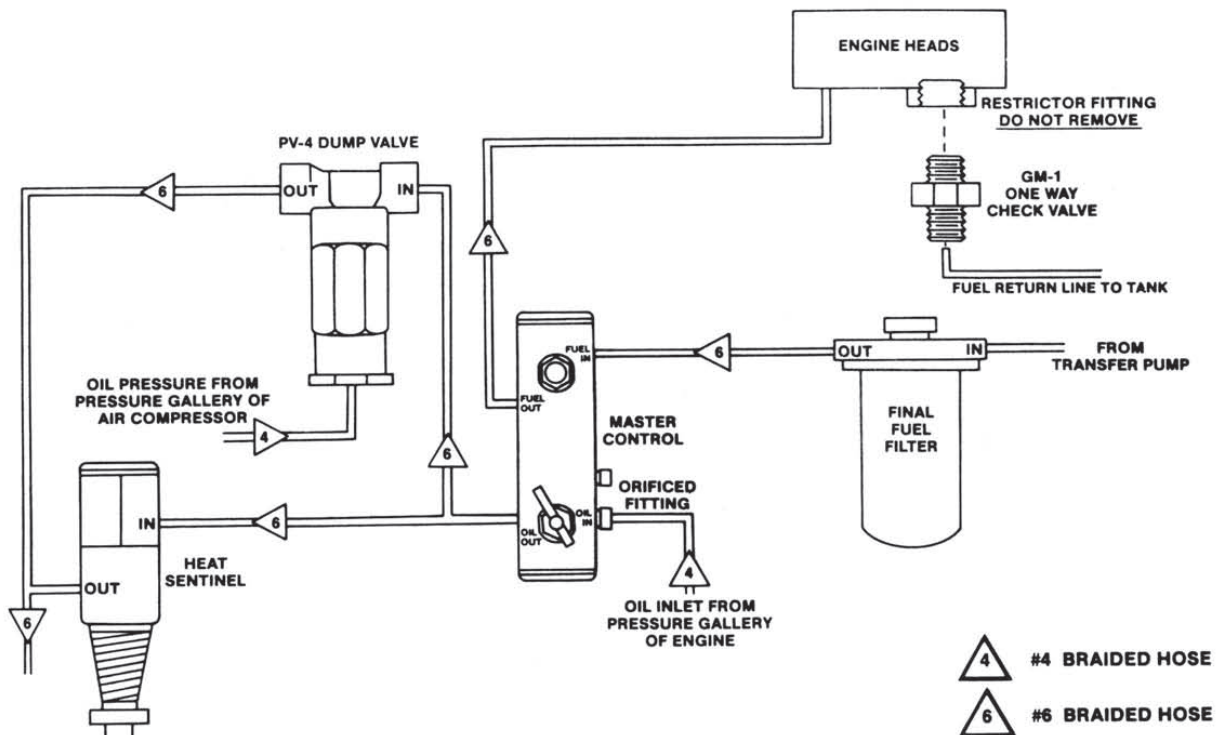
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# Sentinel Systems

## HK-DDC

### *Detroit Inline w/PV-4 2-71, 3-53, 3-71, 4-53, 4-71, 6-53 & 6-71 Series Engines*

**IMPORTANT: PROPER INSTALLATION MANDATORY FOR OPTIMUM PERFORMANCE.**  
Refer to Master Control Installation Instructions for additional information.



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# Sentinel Systems

## HK-GU

### General Use Hose Kits

This HK-GU (General Use) kit includes the most common hose and fittings necessary to install a complete Sentinel engine protection system on any engine (see Application Guide for details). Depending on the application, this kit may include extra hose and fittings and some application-specific hose and fittings will be customer supplied.

Find your engine and order one each of the listed components. See notes below.

Allis Chalmers	All In-line and V Series engines.					
System Type	Master Control	Heat Sensor	Coolant Pressure Valve	Mounting Brackets	Valves and Adapters	Hose and Fitting Kit
Shutdown	D-10	H-212	CPV	MB-1, MB-79	STV	HK-GU
De-torque	DTF-10	H-212	CPV	MB-1, MB-79	STV	HK-GU
Shutdown with Override	D-10 with SVK-1A	H-212	CPV	MB-1, MB-79	STV	HK-GU
Case	504 engine and 300 HP Scania engine 674T with Bosch injection pump, Tractors: 970, 1070, 1170, 1175, 1220, 1370, 1570, 2090, 2290, 2390, 2590, 2670, 2870, 4490, 4690 and 4890.					
Shutdown	D-15	HA-212	CPV	MB-1, MB-79	STV	HK-GU
Fairmont Tamper	All engines.					
Shutdown with Override	D-5Y with SVK-1A	H-212	CPV	MB-1, MB-79	40748, PR-60, STV	HK-GU
Fiat	All 8360.05 (160 HP), 8220.02 (200 HP), MZ900 and M2900 engines.					
Shutdown	D-10	HA-212	CPV	MB-1, MB-79	STV	HK-GU
De-torque	DTF-10	HA-212	CPV	MB-1, MB-79	STV	HK-GU
Shutdown with Override	D-10 with SVK-1A	HA-212	CPV	MB-1, MB-79	STV	HK-GU

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# Sentinel Systems

## HK-GU

**Notes:** Engines below 180 GPH (approx. 2.85 GPM) fuel flow must use a D master control. Engines with fuel flow between 180 and 240 GPH (approx. 4 GPM) must use a DL master control. Engines with 240 GPH fuel flow, or higher, require two master controls. Standard SVK-1A override is 12 vdc. Order SVK-2A for 24 vdc applications. The STV test valve will aid in initial system test and assist with testing in the field.

Find your engine and order one each of the listed components. See notes below.

Fiat Allis	All in-line and V Series engines.					
System Type	Master Control	Heat Sensor	Coolant Pressure Valve	Mounting Brackets	Valves and Adapters	Hose and Fitting Kit
Shutdown	D-10	H-212	CPV	MB-1, MB-79	STV	HK-GU
De-torque	DTF-10	H-212	CPV	MB-1, MB-79	STV	HK-GU
Shutdown with Override	D-10 with SVK-1A	H-212	CPV	MB-1, MB-79	STV	HK-GU

Ford	All 225, 2725, 6.2L, 6.9L and 7.3L engines.					
System Type	Master Control	Heat Sensor	Coolant Pressure Valve	Mounting Brackets	Valves and Adapters	Hose and Fitting Kit
Shutdown	D-15	HA-212	CPV	MB-1, MB-79	STV	HK-GU
De-torque	DTF-15	HA-212	CPV	MB-1, MB-79	STV	HK-GU
Shutdown with Override	D-15 with SVK-1A	HA-212	CPV	MB-1, MB-79	STV	HK-GU

General Motors	All 5.7L and 6.2L engines.					
System Type	Master Control	Heat Sensor	Coolant Pressure Valve	Mounting Brackets	Valves and Adapters	Hose and Fitting Kit
Shutdown	D-15	H-212	CPV	MB-1, MB-79	PR-60, STV	HK-GU
De-torque	DTF-15	H-212	CPV	MB-1, MB-79	PR-60, STV	HK-GU
Shutdown with Override	D-15 with SVK-1A	H-212	CPV	MB-1, MB-79	PR-60, STV	HK-GU

**Notes:** Engines below 180 GPH (approx. 2.85 GPM) fuel flow must use a D master control. Engines with fuel flow between 180 and 240 GPH (approx. 4 GPM) must use a DL master control. Engines with 240 GPH fuel flow, or higher, require two master controls. Standard SVK-1A override is 12 vdc. Order SVK-2A for 24 vdc applications. The STV test valve will aid in initial system test and assist with testing in the field.

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# Sentinel Systems

## HK-GU

Find your engine and order one each of the listed components. See notes below.

Hino	All EH-100 and EH-200 engines.					
System Type	Master Control	Heat Sensor	Coolant Pressure Valve	Mounting Brackets	Valves and Adapters	Hose and Fitting Kit
Shutdown	D-5Y	HA-212	CPV	MB-1, MB-79	STV	HK-GU
De-torque	DTF-5Y	HA-212	CPV	MB-1, MB-79	STV	HK-GU
Shutdown with Override	D-5Y with SVK-1A	HA-212	CPV	MB-1, MB-79	STV	HK-GU

Hyundai	All 6D125-1 engines.					
Shutdown with Override	D-10 with SVK-1A	H-212	CPV	MB-1, MB-79	STV	HK-GU

International Harvester	All 200 Series, 268, 303, 310, 414, 414T, 436, 466, 466T, 510 payloaders up thru 550, 800T, 817B, 817C, 9.0L, DT-366, DT-408, DT-466HT, DT-530 late models, backhoes, and crawler tractors TD-7 thru TD-20.					
Shutdown	D-15	H-212	CPV	MB-1, MB-79	PR-60, STV	HK-GU
De-torque	DTF-15	H-212	CPV	MB-1, MB-79	PR-60, STV	HK-GU
Shutdown with Override	D-15 with SVK-1A	H-212	CPV	MB-1, MB-79	PR-60, STV	HK-GU
	All DT-466 engines.					
Shutdown	D-5Y	H-212	CPV	MB-1, MB-79	STV	HK-GU
De-torque	DTF-5Y	H-212	CPV	MB-1, MB-79	STV	HK-GU
Shutdown with Override	D-5Y with SVK-1A	H-212	CPV	MB-1, MB-79	STV	HK-GU

**Notes:** Engines below 180 GPH (approx. 2.85 GPM) fuel flow must use a D master control. Engines with fuel flow between 180 and 240 GPH (approx. 4 GPM) must use a DL master control. Engines with 240 GPH fuel flow, or higher, require two master controls. Standard SVK-1A override is 12 vdc. Order SVK-2A for 24 vdc applications. The STV test valve will aid in initial system test and assist with testing in the field.

# Sentinel Systems

## HK-GU

Find your engine and order one each of the listed components. See notes below.

Isuzu	All engines.					
System Type	Master Control	Heat Sensor	Coolant Pressure Valve	Mounting Brackets	Valves and Adapters	Hose and Fitting Kit
Shutdown	D-15	HA-212	CPV	MB-1, MB-79	STV	HK-GU
Shutdown with Override	D-15 with SVK-1A	HA-212	CPV	MB-1, MB-79	STV	HK-GU

Komatsu	All D-155 and D-355 engines.					
Shutdown	D-10	H-212	CPV	MB-1, MB-79	STV	HK-GU
De-torque	DTF-10	H-212	CPV	MB-1, MB-79	STV	HK-GU
Shutdown with Override	D-10 with SVK-1A	H-212	CPV	MB-1, MB-79	STV	HK-GU

Kubota	All engines.					
Shutdown	D-15	HA-212	CPV	MB-1, MB-79	STV	HK-GU
Shutdown with Override	D-15 with SVK-1A	HA-212	CPV	MB-1, MB-79	STV	HK-GU

Lister	All HR-1, HR-2, HR-3, HR-4, 6 cylinder and TR engines.					
Shutdown	D-15	HA-225	N/A	MB-1	STV	N/A

Lombardini	All 3 and 4 cylinder engines.					
Shutdown	D-15	HA-225	N/A	MB-1	STV	N/A

**Notes:** Engines below 180 GPH (approx. 2.85 GPM) fuel flow must use a D master control. Engines with fuel flow between 180 and 240 GPH (approx. 4 GPM) must use a DL master control. Engines with 240 GPH fuel flow, or higher, require two master controls. Standard SVK-1A override is 12 vdc. Order SVK-2A for 24 vdc applications. The STV test valve will aid in initial system test and assist with testing in the field.

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# Sentinel Systems

## HK-GU

Find your engine and order one each of the listed components. See notes below.

Mack	All engines.					
System Type	Master Control	Heat Sensor	Coolant Pressure Valve	Mounting Brackets	Valves and Adapters	Hose and Fitting Kit
Shutdown	D-15	H-212	CPV	MB-1, MB-79	PR-60, STV	HK-GU
De-torque	DTF-15	H-212	CPV	MB-1, MB-79	PR-60, STV	HK-GU
Shutdown with Override	D-15 with SVK-1A	H-212	CPV	MB-1, MB-79	PR-60, STV	HK-GU

Mack-Renault	All in-line engines.					
System Type	Master Control	Heat Sensor	Coolant Pressure Valve	Mounting Brackets	Valves and Adapters	Hose and Fitting Kit
Shutdown	D-15	HA-212	CPV	MB-1, MB-79	PR-60, STV	HK-GU
De-torque	DTF-15	HA-212	CPV	MB-1, MB-79	PR-60, STV	HK-GU
Shutdown with Override	D-15 with SVK-1A	HA-212	CPV	MB-1, MB-79	PR-60, STV	HK-GU

Mitsubishi	E-70-B 4 cylinder (4032) and all engines up to 700HP.					
System Type	Master Control	Heat Sensor	Coolant Pressure Valve	Mounting Brackets	Valves and Adapters	Hose and Fitting Kit
Shutdown	D-10	HA-218	CPV	MB-1, MB-79	STV	HK-GU
De-torque	DTF-10	HA-218	CPV	MB-1, MB-79	STV	HK-GU
Shutdown with Override	D-10 with SVK-1A	HA-218	CPV	MB-1, MB-79	STV	HK-GU

Perkins	All in-line and V Series engines.					
System Type	Master Control	Heat Sensor	Coolant Pressure Valve	Mounting Brackets	Valves and Adapters	Hose and Fitting Kit
Shutdown	D-15	HA-212	CPV	MB-1, MB-79	STV	HK-GU
Shutdown with Override	D-15 with SVK-1A	HA-212	CPV	MB-1, MB-79	STV	HK-GU

**Notes:** Engines below 180 GPH (approx. 2.85 GPM) fuel flow must use a D master control. Engines with fuel flow between 180 and 240 GPH (approx. 4 GPM) must use a DL master control. Engines with 240 GPH fuel flow, or higher, require two master controls. Standard SVK-1A override is 12 vdc. Order SVK-2A for 24 vdc applications. The STV test valve will aid in initial system test and assist with testing in the field.



# Sentinel Systems

## HK-GU

Find your engine and order one each of the listed components. See notes below.

Scania	All engines.					
System Type	Master Control	Heat Sensor	Coolant Pressure Valve	Mounting Brackets	Valves and Adapters	Hose and Fitting Kit
Shutdown	D-15	H-212	CPV	MB-1, MB-79	PR-60, STV	HK-GU
Shutdown with Override	D-15 with SVK-1A	H-212	CPV	MB-1, MB-79	PR-60, STV	HK-GU

Superior	All engines.					
Shutdown	DL-10	H-212	CPV	MB-1, MB-79	STV	HK-GU

Volvo	All in-line engines.					
Shutdown	D-15	HA-212	CPV	MB-1, MB-79	STV	HK-GU
Shutdown with Override	D-15 with SVK-1A	HA-212	CPV	MB-1, MB-79	STV	HK-GU

Waukesha	All L5792 engines.					
Shutdown	DL-10	H-212	CPV	MB-1, MB-79	STV	HK-GU

Yanmar	All 4T95J engines.					
Shutdown	D-15	HA-212	CPV	MB-1, MB-79	STV	HK-GU
Shutdown with Override	D-15 with SVK-1A	HA-212	CPV	MB-1, MB-79	STV	HK-GU

**Notes:** Engines below 180 GPH (approx. 2.85 GPM) fuel flow must use a D master control. Engines with fuel flow between 180 and 240 GPH (approx. 4 GPM) must use a DL master control. Engines with 240 GPH fuel flow, or higher, require two master controls. Standard SVK-1A override is 12 vdc. Order SVK-2A for 24 vdc applications. The STV test valve will aid in initial system test and assist with testing in the field.

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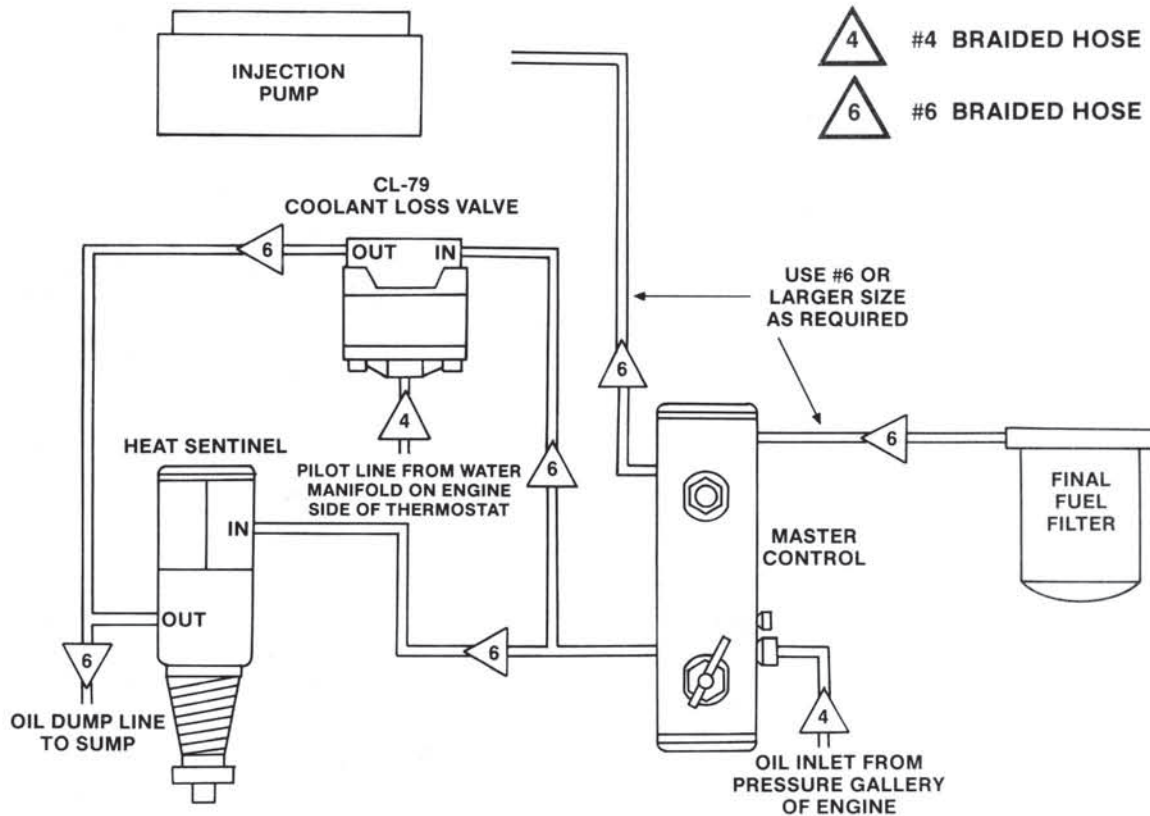


# Sentinel Systems

## HK-GU

**IMPORTANT: PROPER INSTALLATION MANDATORY FOR OPTIMUM PERFORMANCE.**

Refer to Master Control Installation Instructions for additional information.



# Sentinel Systems

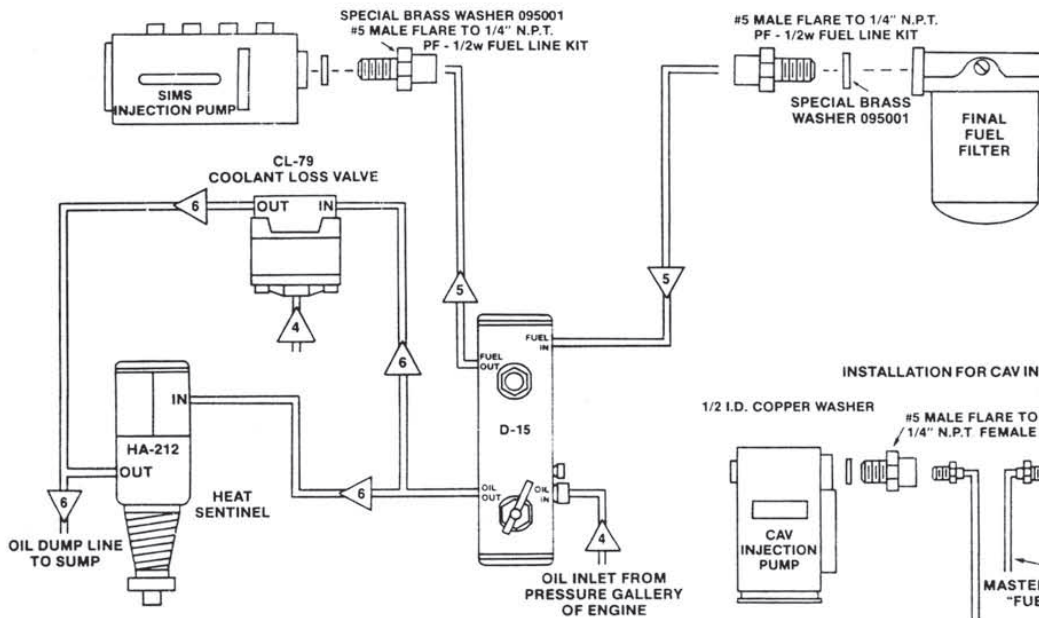
## HK-GU

### Perkins Inline and V Series Engines

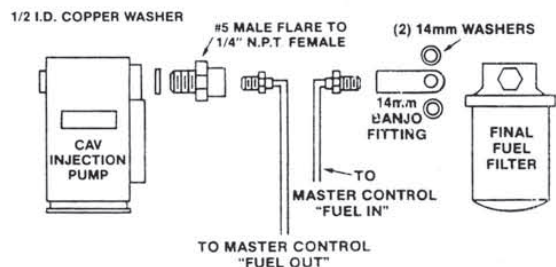
**IMPORTANT: PROPER INSTALLATION MANDATORY FOR OPTIMUM PERFORMANCE.**

Refer to Master Control Installation Instructions for additional information.

#### INSTALLATION FOR SIMS INJECTION ENGINES



#### INSTALLATION FOR CAV INJECTIONS



-  #4 BRAIDED HOSE
-  #5 BRAIDED HOSE
-  #6 BRAIDED HOSE

1. Remove steel line.
2. Cut line and remove short section.
3. Install compression pipe fitting as shown.

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# Sentinel Systems

## HK-GU

# Komatsu D-155 & D355 Engines

### IMPORTANT: PROPER INSTALLATION MANDATORY FOR OPTIMUM PERFORMANCE.

Refer to Master Control Installation Instructions for additional information.

#### NOTE:

1. Mount Master Control below Fuel Filter on Air Intake Manifold using MB-1 Mounting Bracket. Bracket should be bent 90°.
2. Coolant Loss Valve can be mounted 12" to the right of Master Control using bolt in Air Intake Manifold. MB-79 Mounting Bracket should be bent 90°

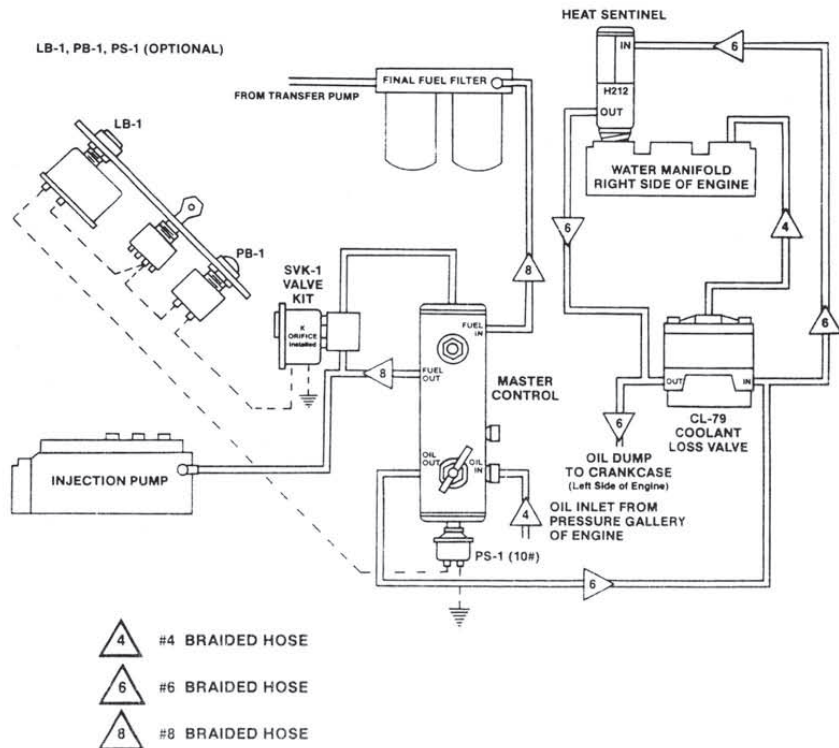
#### PARTS LIST

##### A) Master Control

##### OPTIONS

- (1) D-10V (No Manual Override at Control).  
*Shown in Drawing*
- (2) D-10 With D4-2 & D4-4 Caps (Full Power Override at Control)
- (3) DTF-10V With FO-1-K Fuel Orifice (No Manual Override at Control)
- (4) DTF-10 With D4-2 Cap and FO-1-K (Full Power Manual Override at Control)

- (B) H-212 Heat Sentinel 212° F  
 (C) CL-79 Coolant Loss Valve  
 (D) SVK-1 Fuel Solenoid Valve with FO-1-D Fuel Orifice Installed  
 (E) MB-1 Mounting Bracket for Master Control  
 (F) MB-79 Mounting Bracket for Coolant Loss Valve  
 (G) LB-1 Light Buzzer  
 (H) PS-1 10# Pressure Switch



10

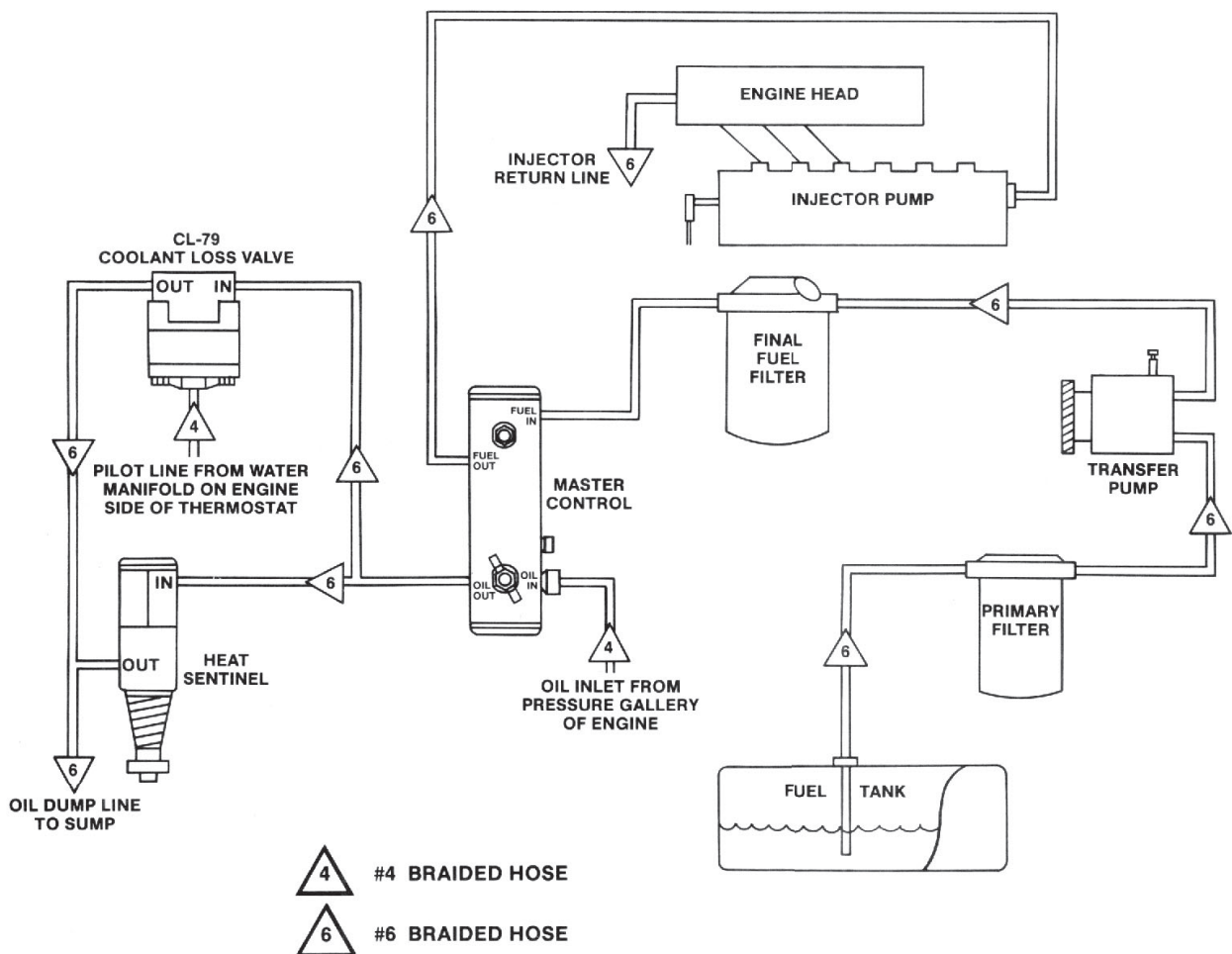
# Sentinel Systems

HK-GU

## *International Harvester Engines*

**IMPORTANT: PROPER INSTALLATION MANDATORY FOR OPTIMUM PERFORMANCE.**

Refer to Master Control Installation Instructions for additional information.



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# Sentinel Systems

## HK-GU

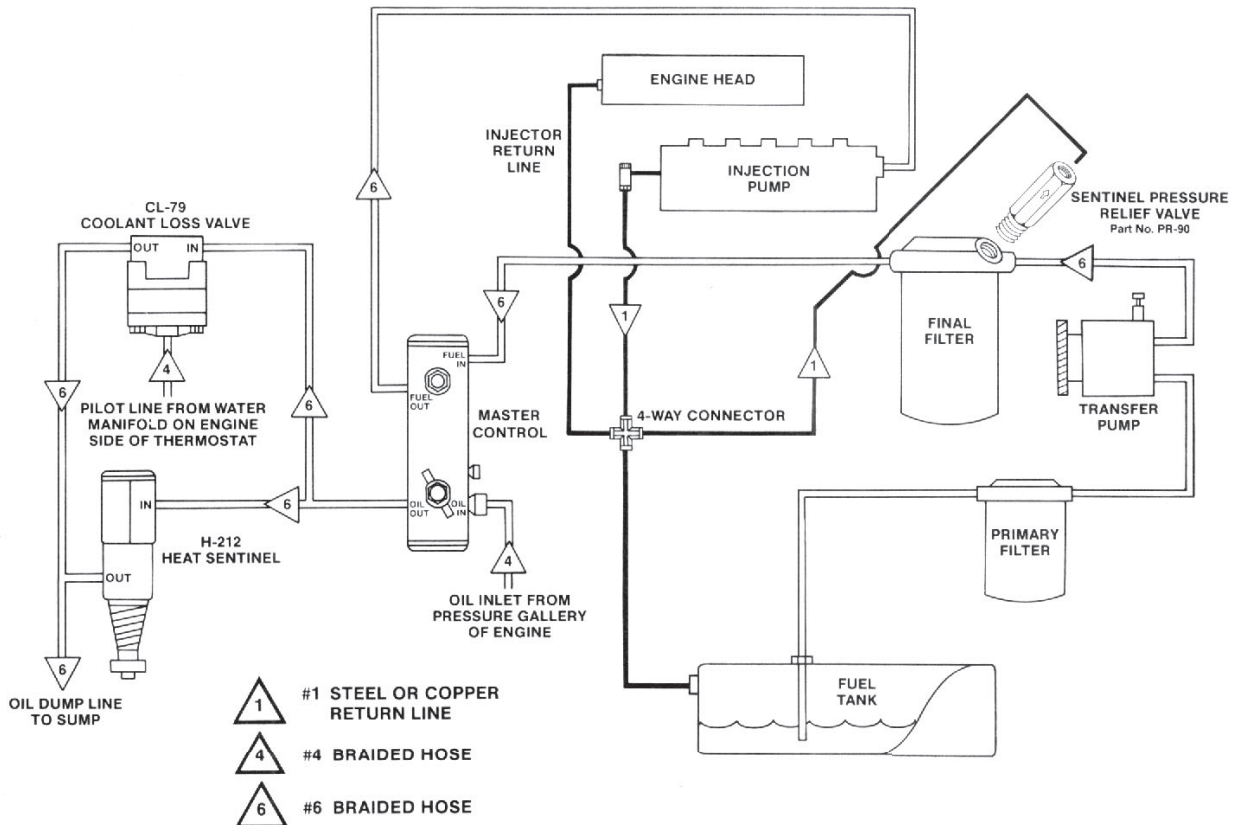
# International 817C Engines DT 466 PR-90 Pressure Relief Valve

**IMPORTANT: PROPER INSTALLATION MANDATORY FOR OPTIMUM PERFORMANCE.**

Refer to Master Control Installation Instructions for additional information.

The PR-90 Pressure Relief Valve must be installed between the Master Control and Transfer Pump on all International engines that use **Piston Type** transfer pumps.

817C (C Series Engines will have serial numbers of 10,000 or higher) and the 573B are two samples that use this type of pump.



10

# Sentinel Systems

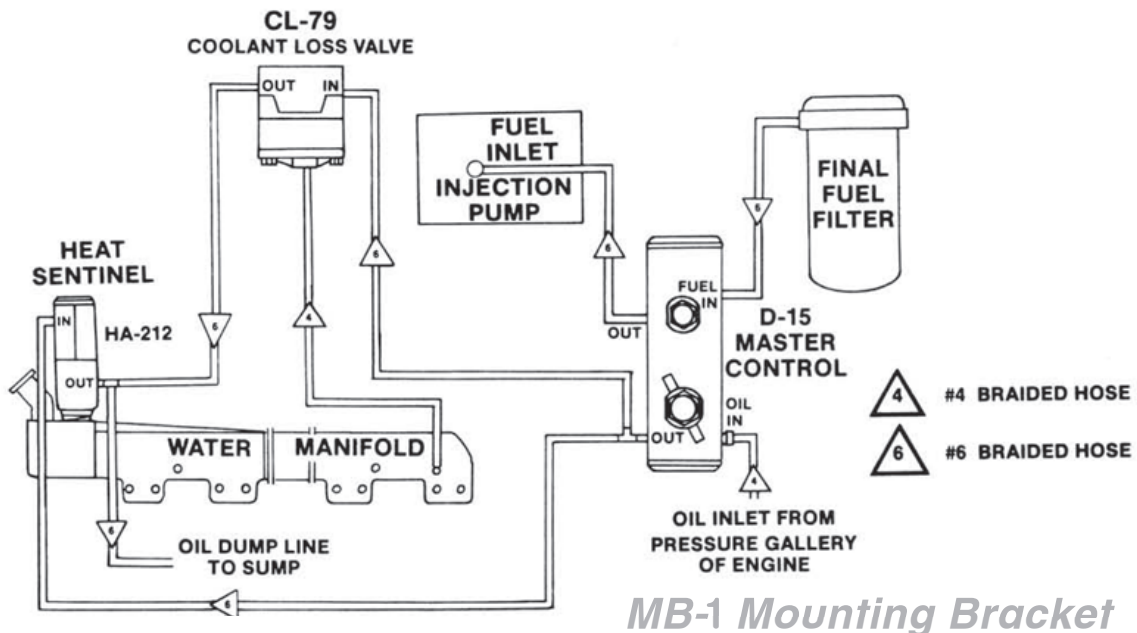
## HK-GU

# Mack, Mack Renault, Scania & Volvo Engines

### IMPORTANT: PROPER INSTALLATION MANDATORY FOR OPTIMUM PERFORMANCE.

Refer to Master Control Installation Instructions for additional information.

1. Using the MB-1 Mounting Bracket, mount the Master Control in a convenient location between the fuel inlet of the injection pump and final fuel filter.
  2. Install the Heat Sentinel in the  $\frac{1}{2}$ " N.P.T. opening in the thermostat housing. Other openings in the water manifold, engine block or engine head are available, also if the  $\frac{1}{2}$ " N.P.T. opening in the thermostat housing is not available.
  3. Mount the CL-79 Coolant Loss Valve at any convenient location at approximately the same height as the engine head. Pilot line pickup point is any opening in water manifold.
  4. Install a fitting that will accept a #6 hose end at any non-pressure opening in the crankcase. A  $\frac{3}{8}$ " N.P.T. opening on the left side of the engine block, just above the oil pan, is usually used for the dump point.
  5. For oil pressure to the Master Control use one of the following pickup points:
    - a. Main oil pressure gallery openings on right side of engine block.
    - b.  $\frac{1}{8}$ " N.P.T. oil pressure opening in injection pump.
    - c.  $\frac{1}{8}$ " N.P.T. oil pressure opening in oil filter housing.
- NOTE:** Do not tee into oil pressure line that feeds an accessory.
6. Remove the fuel line that runs from the final fuel filter to the inlet of the injection pump. Make up two new #6 fuel lines and plumb as shown. Plumb remaining lines and check system as described on installation sheet furnished with Master Control.



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# Sentinel Products

## Part Number Index

### 0

N/A

### 1

N/A

### 2

N/A

### 3

N/A

### 4

40810.....	697
40819.....	697
40836.....	697
41728.....	697
41752.....	697
43008.....	697
43009.....	697
43010.....	697
43011.....	697
43012.....	697
43013.....	697
43020.....	697
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43504.....	697
43572.....	697
43595.....	697
43597.....	697
43598.....	697
43599.....	697
43601.....	697
43602.....	697

43603.....	697
43704.....	697
43705.....	697
49000.....	697

### 5

N/A

### 6

N/A

### 7

7330.....	697
-----------	-----

### 8

N/A

### 9

N/A

### A

AG-1.....	697
-----------	-----

### B

N/A

### C

CAT-2.....	705
CAT-3.....	705
CAT-4.....	706,718
CAT-5.....	706,719
CAT-7.....	707,720
CAT-8.....	707



**Parker Hannifin Corporation**  
Racor Division, PO Box 3208  
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Fax: 209.529.3278  
E-mail: racor@parker.com  
www.parker.com/racor





# Sentinel Products

## Part Number Index

CPV ..... 700

### D

D-10 ..... 691  
D-10V ..... 691  
D-15 ..... 691  
D-15V ..... 691  
D-20 ..... 691  
D-20V ..... 691  
D-25 ..... 691  
D-5 ..... 691  
D-5V ..... 691  
D-5Y ..... 691  
DL-10 ..... 694  
DL-15 ..... 694  
DL-20 ..... 694  
DL-5 ..... 694  
DL-5Y ..... 694  
DTF ..... 692  
DTF-10 ..... 695  
DTF-10V ..... 695  
DTF-15 ..... 695  
DTF-20 ..... 695  
DTF-25 ..... 695  
DTF-5 ..... 695  
DTF-5V ..... 695  
DTF-5Y ..... 695  
DTLF ..... 692  
DTLF-10 ..... 696  
DTLF-15 ..... 696  
DTLF-20 ..... 696  
DTLF-5 ..... 696  
DTLF-5Y ..... 696

### E

N/A

### F

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FO-I-B ..... 693  
FO-I-C ..... 693  
FO-I-D ..... 693  
FO-I-E ..... 693  
FO-I-F ..... 693  
FO-I-G ..... 693  
FO-I-H ..... 693  
FO-I-I ..... 693  
FO-I-J ..... 693  
FO-I-K ..... 693

### G

N/A

### H

H-180 ..... 699  
HK-CAT ..... 707  
HK-CMNS ..... 723  
HK-DDC ..... 731,732  
HK-GU ..... 737

### I

N/A

### J

N/A

### K

N/A

### L

LP-149 ..... 702  
LP-92 ..... 702  
LP53-71 ..... 702

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# Sentinal Products

## Part Number Index

### M

MB-1 ..... 691,700,748  
MB-79 ..... 700

### N

N/A

### O

N/A

### P

PR-35 ..... 703  
PR-90 ..... 747  
PS-1 ..... 703  
PS-1A ..... 703  
PS-2 ..... 703  
PS-2A ..... 703  
PV4-15 ..... 702  
PV4-50 ..... 702

### Q

N/A

### R

RKCPV ..... 700

### S

SK49012 ..... 697  
SK49013 ..... 697  
SK49014 ..... 697  
SK49015 ..... 697  
SP-1 ..... 697  
STV ..... 701  
SV-4-12 ..... 698

SV-4-24 ..... 698  
SVK-1 ..... 698  
SVK-1A ..... 698,738  
SVK-2 ..... 698  
SVK-2A ..... 698,738

### T

N/A

### U

N/A

### V

N/A

### W

N/A

### X

N/A

### Y

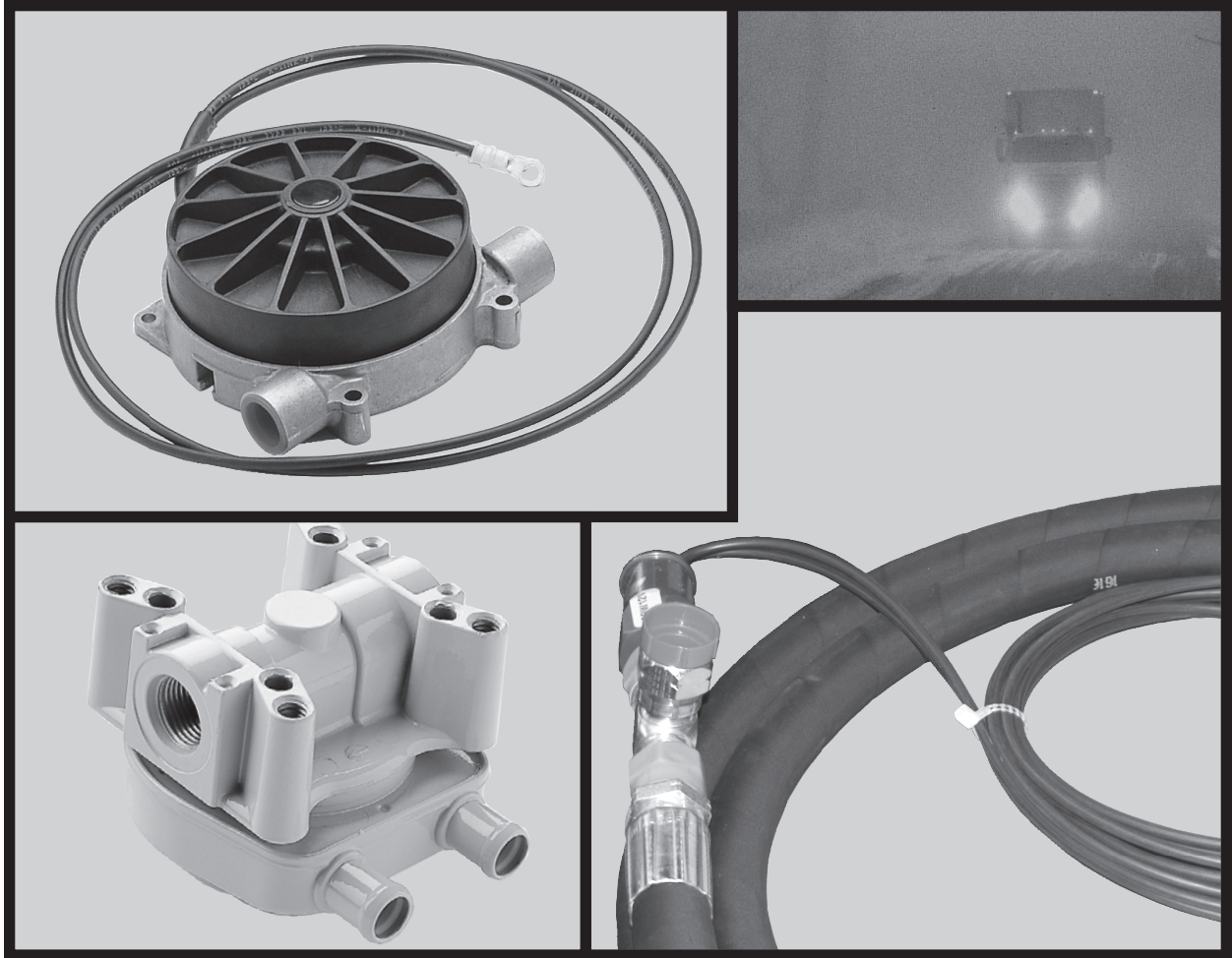
N/A

### Z

N/A



# Section 11



## *Heater Systems*

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**Section II - Heaters**

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Thermoline™ Electric Heaters..... 760

Heater Relay..... 762

Part Number Index..... 763

# Heaters

## Fuel Heaters

From the very beginning Racor delivered high quality products. Extreme conditions call for extreme protection and performance. Racor delivers the goods.

### Application

The diesel fuel heaters apply heat to the fuel incoming from the fuel tank to enable it to flow more freely on its way to the primary fuel filter/water separator.

### Heating Fuel

Heating the fuel dissolves paraffin wax crystals (and ice) that form when diesel fuel is chilled thus enabling water separators to work more efficiently and to prevent fuel filters from plugging with wax and/or ice crystals.

### Biodiesel Information

Biodiesel is a diesel fuel produced by the

chemical refining of vegetable oils into “fatty acid methyl esters”, or FAME. Glycerin is removed in the refining process, lowering the oil viscosity to match diesel fuel. Pure biodiesel is most often added to diesel fuel in a 2, 5, or 20% blend, and is referred to as B2, B5, or B20 respectively.

Other renewable “biofuels” available are raw oils or recycled greases that have not been transformed into biodiesel. These products require extra heat, filtration, and other vehicle modifications to burn in diesel engines.

### Two Types Available

**Electric Heated:** The electrical heaters use vehicle electrical power to operate the heating elements.

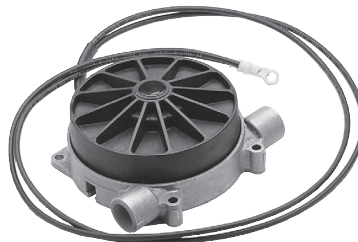
**Coolant Heated:** The coolant heaters use hot engine coolant as a heat source and transfer that heat to the fuel.



Nomad™ Coolant Heater



Thermoline™ Heater



Nomad™ Electric Heater



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# Heaters

## Nomad™ Electric Heaters

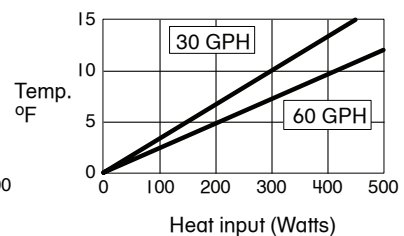
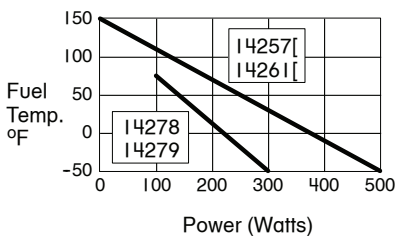
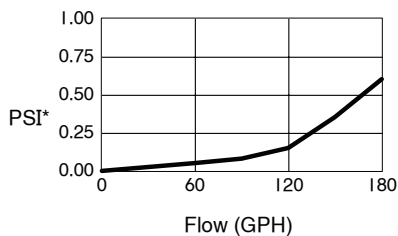
Specifications	14278	14279	14257	14261
Engine HP.	up to 200	up to 200	200 - 300	200 - 300
Power Output	300 watts	300 watts	500 watts	500 watts
Voltage	12 vdc	24 vdc	12 vdc	24 vdc
Amperes Draw	21.4	10.7	35.7	17.9
Alternator Rating <sup>1</sup>	65	40	75	45
Internal Thermostat	Yes	Yes	In-cab control	In-cab control
Fuel Port Size	7/8"-14 SAE	7/8"-14 SAE	7/8"-14 SAE	7/8"-14 SAE
Coolant Port Size	N/A	N/A	N/A	N/A
Height	2.6 in. (6.6 cm)	2.6 in. (6.6 cm)	2.6 in. (6.6 cm)	2.6 in. (6.6 cm)
Width	5.8 in. (14.7 cm)	5.8 in. (14.7 cm)	5.8 in. (14.7 cm)	5.8 in. (14.7 cm)
Depth	5.4 in. (13.7 cm)	5.4 in. (13.7 cm)	5.4 in. (13.7 cm)	5.4 in. (13.7 cm)
Weight (dry)	1.7 lbs (0.8 kg)	1.7 lbs (0.8 kg)	1.7 lbs (0.8 kg)	1.7 lbs (0.8 kg)

For operating temperatures, refer to the specific unit page that follows.

<sup>1</sup> For on-highway trucks, assuming all tractor lights and blowers are on. Use of more accessories will require a higher rating.

## Test Data

These results are from controlled laboratory test. Field results may vary



\* PSI X 2.036 = inHg. / PSI X 6.895 = kPa

# Heaters

## Nomad™ Electric Heaters

### How to Order

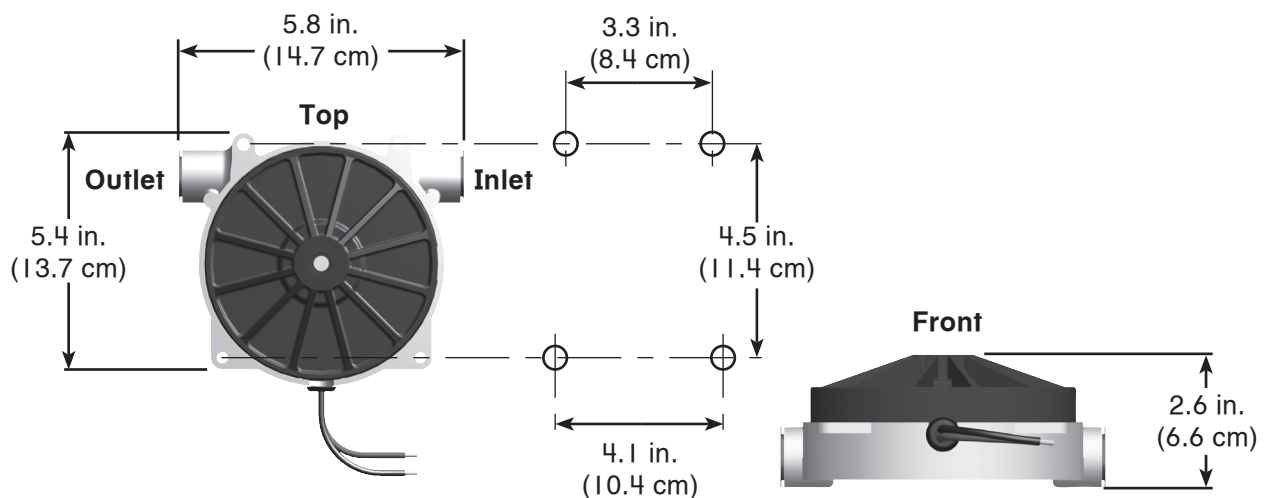
(The numbers below show how part numbers are constructed).

14278 <sup>1</sup> 14279 <sup>1</sup>	14257 <sup>2</sup> 14261 <sup>2</sup>
Up to 200 HP, 300 Watts Aluminum die-cast body and high impact glass-filled nylon cover. Internal automatic thermostat controlled.  Fittings and mounting hardware included.	200 to 300HP, 500 Watts Aluminum die-cast body and high impact glass-filled nylon cover.  Fittings and mounting hardware included.

<sup>1</sup> Optional relay kit **RK11861** (12vdc) or **RK11862** (24vdc) may be required, not included.

<sup>2</sup> Controlled by provided In-cab controller / relay **RK14280-12** (12vdc) or **RK14280-24** (24vdc).

### Mounting Information



11



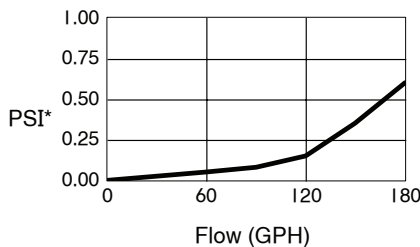
# Heaters

## Nomad™ Coolant Heaters

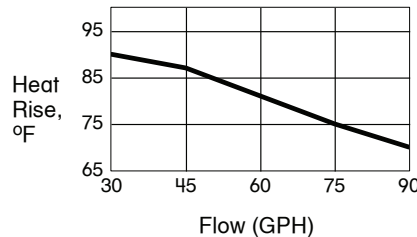
Specifications	320HTR4	320HTR4T
Engine HP.	up to 300	up to 200
Power Output	N/A	N/A
Voltage	N/A	N/A
Amperes Draw	N/A	N/A
Alternator Rating	N/A	N/A
Internal Thermostat	No	Yes
Fuel Port Size	7/8-14	3/8 NPT
Coolant Port Size	5/8" ID Hose	5/8" ID Hose
Height	3.8 in. (9.7 cm)	3.8 in. (9.7 cm)
Width	3.9 in. (9.9 cm)	3.9 in. (9.9 cm)
Depth	4.7 in. (11.9 cm)	4.7 in. (11.9 cm)
Weight (dry)	2.1 lbs (1.2 kg)	3.0 lbs (1.4 kg)
For operating temperatures, refer to the specific unit page that follows.		

## Test Data

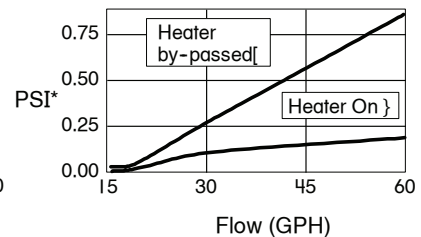
These results are from controlled laboratory test. Field results may vary



SAE J905 Fuel Flow Restriction  
Given: Fuel temperature 70°F.  
( $_F - 32 \times .555 = _C$ )



Typical Flow vs Heat Rise  
Given: Fuel inlet temperature, 70°F.  
Coolant inlet temperature, +180°F.



Typical Differential Pressure vs Flow  
[ Given: Fuel inlet temperature is +85°F (320HTR4T.)  
} Given: Fuel inlet temperature is +40°F, Heater on.

\* PSI X 2.036 = inHg. / PSI X 6.895 = kPa

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# Heaters

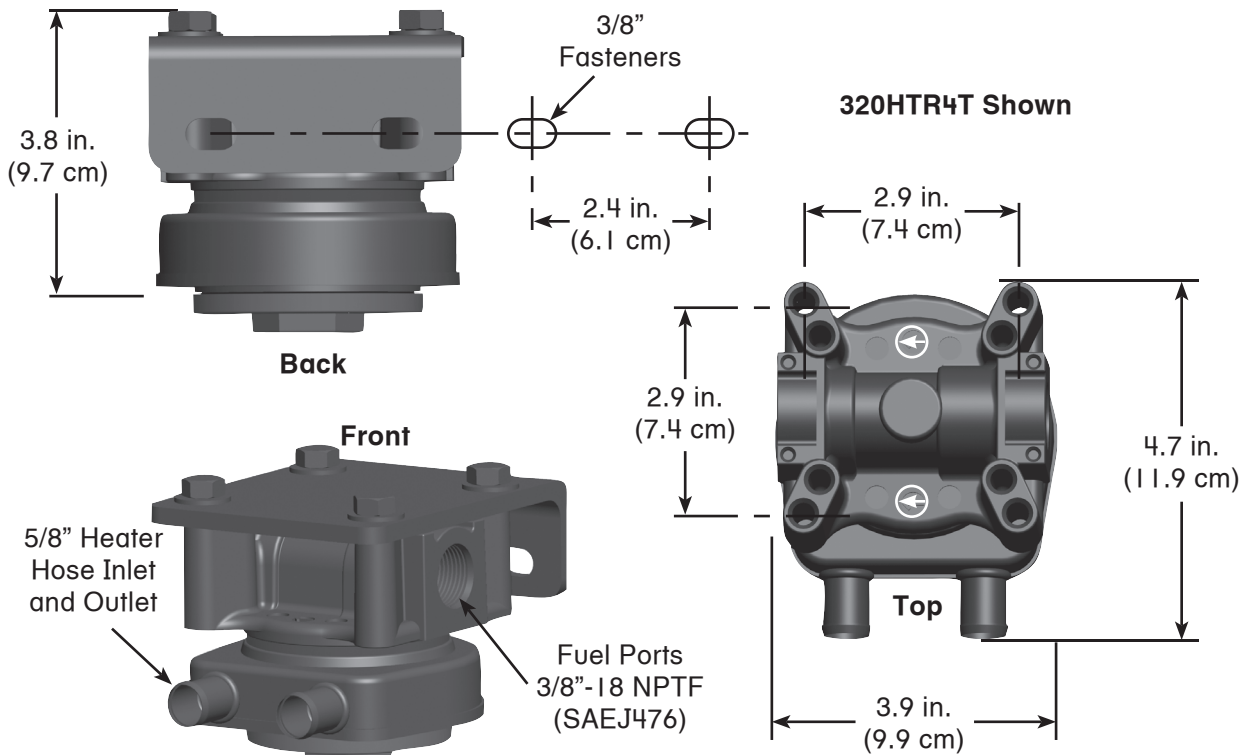
## Nomad™ Coolant Heaters

### How to Order

(The numbers below show how part numbers are constructed).

320HTR4	T
<p><b>Basic Model:</b> Coolant heat exchanger type unit. Use with engines up to 300 horsepower. Aluminum die-cast body and plated steel coolant heat exchanger.</p> <p>Accepts 5/8" I.D. coolant hoses. Mounting bracket and hardware included.</p>	<p><b>Optional Automatic Thermostat:</b> Specify <b>T</b> for this option, only. Installed by the factory, when the fuel temperature is below 60° F, the thermostat is open to heat fuel.</p> <p>As the fuel temperature approaches 80° F the thermostat closes, allowing the fuel to by-pass the heat exchanger.</p>

### Mounting Information



# Heaters

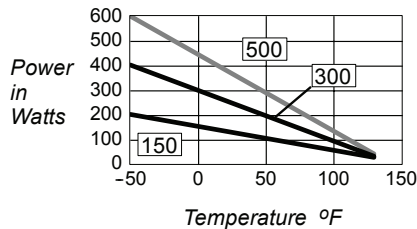
## Thermoline™ Electric Heaters

Specifications	HEATER300	HEATER500
Engine HP.	100-200	Over 200
Power Output	300	500
Voltage	12-24	12-24
Amperes Draw	21.4/10.7	35.7/17.9
Alternator Rating <sup>1</sup>	65/40	75/45
Internal Thermostat	In-cab	In-cab
Fuel Port Size <sup>2</sup>	7/8"-14 SEA	7/8"-14 SEA
Coolant Port Size	N/A	N/A
Height	N/A	N/A
Width	7.0 ft (2.1 m)	10.5 ft (3.2 m)
Depth	N/A	N/A
Weight (dry)	6.3 lbs (2.9 kg)	8.4 lbs (3.8 kg)

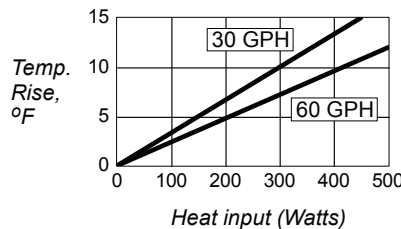
<sup>1</sup> For on-highway trucks, assuming all tractor lights and blowers are on. More accessories will require a higher rating.  
<sup>2</sup> Thermoline™ fittings are 45° female swivel (SAEJ512). Do not adapt to JIC 37° fittings (SAEJ514).

## Test Data

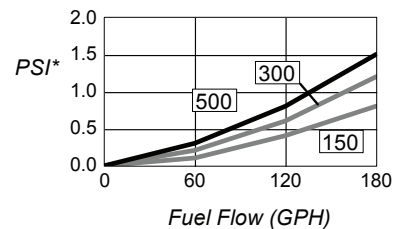
These results are from controlled laboratory test. Field results may vary



Typical Power Consumption  
 (Power output decreases as  
 fuel temperature rises)  
 ( $_F - 32 \times .555 = _C$ )



Typical Heat Rise  
 -All models.  
 Given: Heat input (based on fuel  
 temp.in the line) and Flow Rate (of the  
 fuel based on engine speed & type).



Typical Fuel  
 Flow Restriction  
 Given: Fuel temperature 70\_F  
 \* PSI X 2.036 = inHg.  
 PSI X 6.895 = kPa

\* PSI X 2.036 = inHg. PSI X 6.895 = kPa

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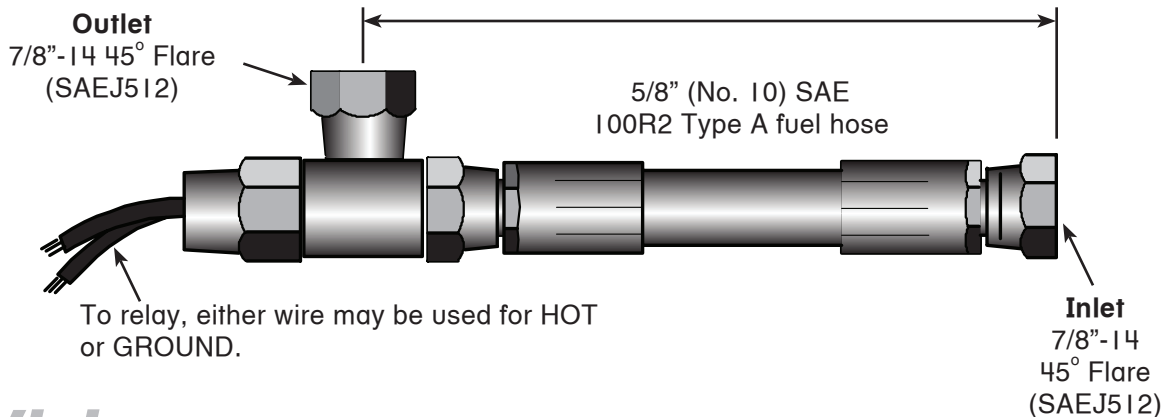
# Heaters

## Thermoline™ Electric Heaters

### How to Order

(The numbers below show how part numbers are constructed).

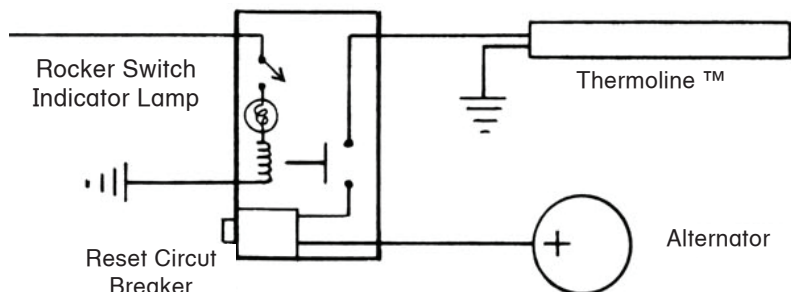
Heater	300	12V
<p>Basic Thermoline™ designation The unit uses 'oversize' No.10 high quality fuel hose with an internal heating element. The heater element is a conductive polymeric core extruded between two parallel copper bus wires and is infinitely temperature self-regulating. In-cab under-dash controller/relay (RK 14280-12 or -24) is included.</p>	<p><b>300:</b> Recommended for engines 100 to 200 horsepower. <b>500:</b> Recommended for engines over 200 horsepower.</p>	<p><b>Specify Voltage:</b> <b>12V</b> for 12 volts. <b>24V</b> for 24 volts.</p>



### Wiring Diagram

#### 300/500 Models

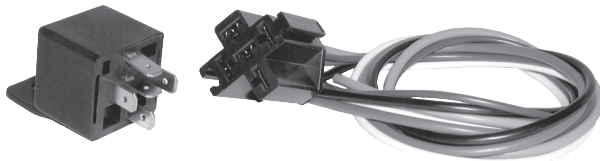
Fuse Block Accessory  
(AC) DC Voltage  
Power Supplied By  
Ignition Switch **ON**



# Heaters

## Heater Relay

### *Heater Relay Kits*



**RK11861 & RK11862**  
Heater Relay



**RK14280-12 & RK14280-24**  
Heater Relay

A Relay kit may be necessary when installing a Racor heater due to power demand. Standard OE fuses, wiring and alternators may be unable to carry the load without overheating or potential shorting, creating a serious condition.

### *Relay Information*

<b>Specifications</b>	<b>RK11861</b>	<b>RK11862</b>	<b>RK14280-12</b>	<b>RK14280-24</b>
<b>Application</b>	DC	DC	DC	DC
<b>Volts</b>	12	24	12	24
<b>Remote Mount</b>	Yes	Yes	No	No
<b>Max Watts/amps</b>	300 or 25 amps	360 or 15 amps	N/A	N/A

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7601	Fully Synthetic Oil 112005
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7642	Diesel Biocide 112005
7644	ParFit Diesel Spin-ons 112005
7645	ParFit Filters for Ford 7.3L 112005
7646	ParFit Filters for Ford 6.0L 112005
7647	ParFit Coolant Filters 112005
7648	RVFS Filter Vessels - June 2006
7652	Conditioner Plus Additive M.A.P.
7654	ECO-II Product Bulletin
7655	ECO III Brochure Nov2005
7656	ECOLITE Product Bulletin
7657	ECO-LL Product Bulletin
7658	ECO-SE Product Bulletin
7659	ECO-SM Product Bulletin
7660	Technical Bulletin - 600 Series Heads
7661	LFS 802-S Spin-on Bypass 03-2007
7662	RMO Series - 2 in Electro Mon Elements
7663	RMO Series - 2 in Mon Elements

Brochure Number	Description
7664	RMI Series - 6 inch In to Out
7665	RMO Series - 6 inch Out to In
7666	API-IP Coalescer Elements
7667	RSS and RST Separator Elements
7670	Training Request Book 11-2005
7671	Filter Buggy 11-2005
7672	HDEP Brochure
7673	777R vs Competitor
7674	API Coalescer Elements
7676	Strategic Procurement Manual
7678	CCV Technical Brochure
7679	Biodiesel Brochure - Dec2006
7680	MonoClone PB
7681	Filter Glove
7682	R45, R60, R90 Tap Plate TB - 06-2006
7683	Pump System Brochure
7684	EPA-07 Brochure
7686	ParFit Catalog 05-2006
7687	Kenworth Intake Air Filtration - 06-2006
7688	Rubber Spacer TB
7689	CCV3551KIT01 - 0906
7689SP	Spanish-CCV3551KIT01 - 0906
7690	CCV4500INT01 Bulletin
7691	Diesel Conditioner Plus+ - 08-06
7692	Diesel Winter Plus+ - 08-06
7693	Square-cut Gasket
7694	Marine FBO Assemblies
7696	PowerGen Brochure - November 2005
7697	200 Series Hand Primer Pump Changes
7698	Filtration Pump Trifold 0207
7699	Electronic Water Probe
7700	11-1676E Vacuum Gage
7701	Filter Service Indicator
7702	Marine Gasoline Filters
7702	Portuguese-Marine Gasoline Filters
7703	2020-2040 Innerwrap Change
7705	HFCM Drain Plug Upgrade
7706	3150R and 3250R Series Head Change
7707	Thermoline Jan07
7708	300RC Biodiesel Filters
7709	Marine Fuel Certification Bulletin - Jan2007
7710	CCV 12000 Jan07
7711	Racor Solutions for Rental Protection
7714	Hot STK
7715	ACM20 - 020
7716	777R Bowl Ring Change
7717	PFF5544 GM Duramax Element- 03-2007
7718	2006 International I6 Replacement Element Kits
7719	2007 International V8 Replacement Element Kits
7720	Bowl Material Change 03-2007
7721	RK32037 Filter Service Indicator
7722	2007 International Assemblies

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