Lubrication Filtration Systems
- Lube Oil
- Hydraulic Fluid
- Transmission Fluid
- Fluid Condition Monitors
Lubrication Filtration Systems
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17 Functions. One Integrated Module.

- An automatic drain valve reduces the amount of oil in the filter housing and element, minimizing oil waste at the time of service.
- Integrated anti drain-back and oil cooler bypass.
- Fuel system pressure regulation and fuel return connection are included in the module.
- Fuel filtration media is specified based on the engine system requirements and service intervals.
- 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.
- Metal-free eco-friendly incinerable media.
- Ports for pressure and temperature sensors can be added for all-in-one engine management.
- Coolant connection is supplied in the module base.

The System Advantage

Racor top-load fluid conditioning modules can be designed to include secondary fuel filtration, full-flow oil filtration, built-in performance monitoring sensors and controls and fuel heaters. The module shown has an oil cooler incorporated into the assembly. Advanced filter media can be engineered to meet the most specific, the most stringent, and the most demanding applications, achieving optimum efficiency and capacity.
The New Generation of Top-Load Filters

A permanent assembly houses both the Racor top-load oil filter and top-load fuel 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 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.
The filter element and screw cap are a patented, combination design that minimizes skin contact during service. Parker Racor patents ensure that equipment owners receive genuine OEM replacement filters.

Top-loading element meets OEM filter specifications and is user-friendly – cleaner, easier, quicker than servicing under-engine mounted filters.

Rugged, die cast aluminum housing.

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.
Engineered Media Research and Development

Just as the filter element is at the heart of the system, so too is media research and development at the heart of Racor engineering programs. Racor is of course renowned for its fuel filtration and patented Aquabloc® media. In oil, development programs are equally ambitious and testing equally rigorous.

1 **Efficiency:** Testing is per ISO 4548-12. Racor has developed a number of media that offer this level of efficiency by blending cellulose and polyester fibers, which enhance strength and durability. Synthetic or microglass fibers can be added for strength and efficiency.

2 **Capacity:** Testing for capacity is per SAE J806 using SOFTC-2A as a clogging contaminant. This more fairly represents what happens in a crankcase in terms of soot and oxidation products clogging the filter medium. Racor believes this to be a more realistic measure of ultimate field performance than using test dust as a contaminant.

3 **Media Durability:** Filter elements are hot soaked for 500 hours at 250°F in contaminated crankcase oil, followed by an element collapse test. The collapse test requirement after the 500 hour hot soak is for 100 psid or higher.

In addition to these tests, Racor performs numerous cold start flow/collapse tests to simulate winter conditions, particularly with regard to older, used elements where media strength might be an issue.

4 **On-vehicle field tests:** Racor oil filtration media meets or exceeds OEM field testing requirements. Elements are returned to the laboratory after on-vehicle testing for various lengths of time and visually inspected for damage, flow tested for restriction, bubble tested for element integrity, and collapse-tested for durability. Open records are tabulated on all field returns for reference by both Racor and its OEM customers.
Racor’s state-of-the-art laboratories provide the comprehensive test results needed to ensure that filtration systems meet performance specifications.

Tests are conducted on ISO and SAE certified test equipment, including an electronically-monitored engine dynamometer to ensure accurate documentation of the results.

**Cleanable Media**
Cleanable element is a high quality stainless steel mesh screen designed for long life and severe duty.

**Hydraulic Media**
Designed specifically for higher operating pressures. Racor synthetic media provides exceptional durability at high operating temperatures.

**Transmission Fluid Media**
Synthetic media with absolute filtration for high temperature and severe duty applications.

**Multi Layer Wound Cotton Covered Media**
Special end cap design and covered media prevents contaminant migration.

Racor engineering research is continuously focused on the latest technology in oil filter media development. Laboratory tests have proven up to 40% higher efficiency with Racor oil filter media versus competitive oil filters (ISO 4548-12 Test Procedure). Racor offers multiple oil filter media options, including synthetic media, for specific engine operating requirements. Synthetic media increases the efficiency and durability of oil filter elements.
Engineered Cellulose Media

Racor has developed advanced cellulose media designed to efficiently remove solid contamination that has entered the oil supply. As part of an overall filter element integrity program, equal attention is paid to the sealing of the element to the end caps, so that customers are assured that Racor filter elements perform to all OEM specifications.

Depth-Loading Bypass Media

The computer-wound pattern of the Racor depth loading filter element creates unique and variable 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. Reduces damaging particle count by over 99.5%.

Hydraulic Fluid Media and Transmission Fluid Media

Hydraulic and transmission fluids are not only subject to high temperature and pressure, it is essential that these fluids remain free of contaminants so that precision components are not damaged. Racor synthetic media delivers on all counts, providing exceptional durability, long life and importantly, the confidence that comes with high efficiency filtration.
LFS 300 Series Oil Filter Retrofit Kits

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.

All models available with stainless steel cleanable media. To order, add a “CL” suffix to the part number, (i.e., LFS335CL).

Available Threads: 3/4”-16, M18 x 1.5, 1”-16 UNF

** VIN vehicle identification number, VIN code for Dodge, Ford and General Motors on model years 1972-1980 are the 5th character. Model years 1981-1999 are the 8th character.

For additional information, request Product Bulletin #7556.
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 condensed water, which forms component-damaging acids if left in the oil.

The Racor Bypass Oil Series removes 99.5% 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

1. Extends the miles between oil changes
2. Saves maintenance costs and downtime
3. Keeps oil cleaner longer, reducing oil consumption and disposal
4. Extends engine life and “re-build” intervals
5. Keeps engines better lubricated which means reduced wear
6. Removes damaging water

<table>
<thead>
<tr>
<th>Part Number</th>
<th>LFS 800</th>
<th>LFS 801</th>
<th>LFS 802</th>
<th>LFS 802 - S*</th>
<th>LFS 820</th>
<th>LFS 825</th>
</tr>
</thead>
<tbody>
<tr>
<td>Replacement Element (P/N)</td>
<td>LFS-800BPE</td>
<td>LFS-801BPE</td>
<td>LFS-802BPE</td>
<td>LFS-802BPE</td>
<td>LFS-820BPE</td>
<td>LFS-825BPE</td>
</tr>
<tr>
<td>Engine Size/Horse Power</td>
<td>up to 150 hp</td>
<td>150 - 250</td>
<td>250 - 400</td>
<td>250 - 400</td>
<td>400 - 500</td>
<td>500 - 800</td>
</tr>
<tr>
<td>Sump Capacity</td>
<td>2.5 gal / 9.5 ltr</td>
<td>6 gal / 19 ltr</td>
<td>15 gal / 57 ltr</td>
<td>15 gal / 57 ltr</td>
<td>30 gal / 114 ltr</td>
<td>45 gal / 170 ltr</td>
</tr>
<tr>
<td>Flow Rate</td>
<td>.3 gpm / .9 lpm</td>
<td>.4 gpm / 1.4 lpm</td>
<td>.5 gpm / 1.9 lpm</td>
<td>.5 gpm / 1.9 lpm</td>
<td>1 gpm / 3.8 lpm</td>
<td>1.5 gpm / 5.7 lpm</td>
</tr>
<tr>
<td>Canister Cap</td>
<td>.3 gal / .9 ltr</td>
<td>.3 gal / .9 ltr</td>
<td>.3 gal / 1.9 ltr</td>
<td>.3 gal / 1.9 ltr</td>
<td>2.5 gal / 9.5 ltr</td>
<td>3.5 gal / 13.3 ltr</td>
</tr>
<tr>
<td>Orifice Size</td>
<td>.040” / 1 mm</td>
<td>.040” / 1 mm</td>
<td>.040” / 1 mm</td>
<td>.040” / 1 mm</td>
<td>.039” / 2.4 mm</td>
<td>.101” / 2.6 mm</td>
</tr>
<tr>
<td>Port Size</td>
<td>1/8” npt</td>
<td>1/4” npt</td>
<td>1/4” npt</td>
<td>N/A</td>
<td>1/2” npt</td>
<td>1/2” npt</td>
</tr>
<tr>
<td>Height</td>
<td>5.5” / 14 cm</td>
<td>7.5” / 19.1 cm</td>
<td>11” / 27.9 cm</td>
<td>11” / 27.9 cm</td>
<td>14.5” / 36.8 cm</td>
<td>20” / 50.8 cm</td>
</tr>
<tr>
<td>Width</td>
<td>4” / 10.2 cm</td>
<td>5.25” / 13.3 cm</td>
<td>5.25” / 13.3 cm</td>
<td>5.25” / 13.3 cm</td>
<td>9” / 22.9 cm</td>
<td>9” / 22.9 cm</td>
</tr>
</tbody>
</table>

*LFS 802 - S CAT C10 - C12 - C15 3176 w/1 3/8”-16” Thread – See product bulletin # 79661.
**Engineered Bypass Oil Filtration Media Extends Oil Change Intervals**

Oil flows inward through the graded density filter media

- Cleansed Oil
- 1–5 Micron Filtration
- 35–40 Micron Filtration

**Typical Results**

![Graph showing ISO cleanliness and mileage with and without Racor Bypass ISO 13/10 and ISO 18/13.]

**Superior Solid Filtration**

The Bypass Oil Series filter element is a one micron filter element. With surface filters, particles tend to stack up on the surface, thereby “loading” the filter and reducing filtration. The Racor Bypass Oil Series filter element is a “depth” filter trapping different size particles at varying depths within the element, so loading is virtually eliminated.

The computer-wound pattern of the element creates unique and variable 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. Reduces damaging particle count by over 99.5%.

The Bypass Oil Series filter element is a depth loading filter with higher capacity and a superior moisture retention material – cotton.

Pleated cellulose and centrifuge filters don’t have the media capacity that the Bypass Oil Series filter element does. Also, stacked disc, pleated and mulched cellulose media filters are not effective for the removal of water from engine lube oil.

**Oil Filter Bypass Kits for Light Duty Pickups**

The kit comes complete with all hose and fittings required for a simple installation. The oil supply is easily taken from the engine by means of the unique Racor machined and anodized components. The oil is returned to the crank case via the filler cap or drain plug adapter.

<table>
<thead>
<tr>
<th>Application</th>
<th>Kit Part #</th>
<th>Year Model</th>
<th>Bypass Filter</th>
<th>Hose Kit</th>
<th>Replacement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dodge / Cummins 5.9L</td>
<td>LFS RK859CEA</td>
<td>1993 &amp; 2002</td>
<td>LFS 801</td>
<td>LFS 801HK</td>
<td>LFS 801BPE</td>
</tr>
<tr>
<td>Dodge / Cummins 5.9L</td>
<td>LFS RK859CEB</td>
<td>1994–2001</td>
<td>LFS 801</td>
<td>LFS 801HK</td>
<td>LFS 801BPE</td>
</tr>
<tr>
<td>Dodge / Cummins 5.9L</td>
<td>LFS RK859CL</td>
<td>1998 ½ to Current</td>
<td>LFS 801</td>
<td>LFS 801HK</td>
<td>LFS 801BPE</td>
</tr>
<tr>
<td>GM Duramax 6.6L</td>
<td>LFS RK866G</td>
<td>All Models</td>
<td>LFS 801</td>
<td>LFS 801HK</td>
<td>LFS 801BPE</td>
</tr>
<tr>
<td>Ford 6.0L</td>
<td>LFS RK860F</td>
<td>2003 to Current</td>
<td>LFS 801</td>
<td>LFS 801HK</td>
<td>LFS 801BPE</td>
</tr>
<tr>
<td>Ford 7.3L DI and IDI Engine</td>
<td>LFS RK873F</td>
<td>1987 to 2003</td>
<td>LFS 801</td>
<td>LFS 800BHK</td>
<td>LFS 801BPE</td>
</tr>
</tbody>
</table>

Request Product Bulletin #7637 for specific kit information.
Racor water-absorbing hydraulic filters feature a specially designed media that traps not only solid contaminants like dirt and rust, but damaging water as well. As the element fills with water and plugging occurs, flow is restricted and the head goes into a bypass mode. Water-absorbing spin-on hydraulic filters are available for virtually any application and are available in a 10 micron rating. To make monitoring easy, Racor offers a range of heads with pressure restriction gauges, including large diameter heads with standard, color coded bar gauges.

Racor resin-impregnated hydraulic filters include media that traps solid contaminants like dirt and rust as it repels water. Resin-impregnated hydraulic filters are available for virtually any application and are available in a 10 micron rating.

### Water-Absorbing Hydraulic Filter Specifications

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Micron Rating</th>
<th>Center Thread</th>
<th>Filter Dia.</th>
<th>Filter Length</th>
<th>Media Area</th>
<th>Capacity Solids</th>
<th>Capacity H2O</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN HW 3510</td>
<td>10</td>
<td>1”-12</td>
<td>3.7” / 9.4 cm</td>
<td>5.5” / 14 cm</td>
<td>190 in² / 1226 cm²</td>
<td>13.68 g</td>
<td>247 ml</td>
</tr>
<tr>
<td>IN HW 3510A</td>
<td>10</td>
<td>1 1/8”-16</td>
<td>3.7” / 9.4 cm</td>
<td>5.5” / 14 cm</td>
<td>190 in² / 1226 cm²</td>
<td>13.68 g</td>
<td>247 ml</td>
</tr>
<tr>
<td>IN HW 3525</td>
<td>25</td>
<td>1”-12</td>
<td>3.7” / 9.4 cm</td>
<td>5.5” / 14 cm</td>
<td>190 in² / 1226 cm²</td>
<td>15.58 g</td>
<td>247 ml</td>
</tr>
<tr>
<td>IN HW 3810</td>
<td>10</td>
<td>1”-12</td>
<td>3.7” / 9.4 cm</td>
<td>8” / 20.3 cm</td>
<td>350 in² / 2258 cm²</td>
<td>25.2 g</td>
<td>455 ml</td>
</tr>
<tr>
<td>IN HW 3825</td>
<td>25</td>
<td>1 1/8”-16</td>
<td>3.7” / 9.4 cm</td>
<td>8” / 20.3 cm</td>
<td>350 in² / 2258 cm²</td>
<td>28.7 g</td>
<td>455 ml</td>
</tr>
<tr>
<td>IN HW 5710</td>
<td>10</td>
<td>1 1/2”-16</td>
<td>5” / 12.7 cm</td>
<td>7” / 17.8 cm</td>
<td>383 in² / 2470 cm²</td>
<td>27.58 g</td>
<td>498 ml</td>
</tr>
<tr>
<td>IN HW 5725</td>
<td>25</td>
<td>1 1/2”-16</td>
<td>5” / 12.7 cm</td>
<td>7” / 17.8 cm</td>
<td>383 in² / 2470 cm²</td>
<td>31.40 g</td>
<td>498 ml</td>
</tr>
<tr>
<td>IN HW 51110</td>
<td>10</td>
<td>1 1/2”-16</td>
<td>5” / 12.7 cm</td>
<td>11” / 27.9 cm</td>
<td>689 in² / 4444 cm²</td>
<td>49.61 g</td>
<td>896 ml</td>
</tr>
<tr>
<td>IN HW 51125</td>
<td>25</td>
<td>1 1/2”-16</td>
<td>5” / 12.7 cm</td>
<td>11” / 27.9 cm</td>
<td>689 in² / 4444 cm²</td>
<td>56.50 g</td>
<td>896 ml</td>
</tr>
<tr>
<td>IN HW 33RB</td>
<td>10</td>
<td>3/4”-16</td>
<td>3” / 7.6 cm</td>
<td>3” / 7.6 cm</td>
<td>60 in³ / 387 cm³</td>
<td>4.32 g</td>
<td>78 ml</td>
</tr>
<tr>
<td>IN HW 35RB</td>
<td>10</td>
<td>1”-12</td>
<td>3.8” / 9.7 cm</td>
<td>5” / 12.7 cm</td>
<td>190 in³ / 1226 cm³</td>
<td>13.68 g</td>
<td>247 ml</td>
</tr>
<tr>
<td>IN HW 57RM</td>
<td>10</td>
<td>1 1/2”-16</td>
<td>5” / 12.7 cm</td>
<td>7” / 17.8 cm</td>
<td>383 in³ / 2470 cm³</td>
<td>27.58 g</td>
<td>498 ml</td>
</tr>
</tbody>
</table>

Maximum operating pressure: 100 psi / 1207 kPa.
**Reservoir Breather Filters**

Reservoir breather filters provide precision hydraulic components with special protection against wear particles and destructive moisture. The use of reservoir breather filters is especially critical in high humidity areas or where moisture is present near hydraulic systems. Racor reservoir breathers contain a unique filter media which removes both dirt and moisture. The spin-on design provides ease of service. Consult factory for details.

<table>
<thead>
<tr>
<th>Part Number</th>
<th>Micron Rating</th>
<th>Center Thread</th>
<th>Filter Dia.</th>
<th>Filter Length</th>
<th>Media Area</th>
<th>Solids</th>
<th>H2O</th>
<th>Capacity</th>
<th>Capacity</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN HW 33RB</td>
<td>10</td>
<td>3/4&quot;-16</td>
<td>3.0&quot; / 7.6 cm</td>
<td>3.0&quot; / 7.6 cm</td>
<td>60 in / 387 cm</td>
<td>4.32 g</td>
<td>78 ml</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IN HW 35RB</td>
<td>10</td>
<td>1&quot;-16</td>
<td>3.75&quot; / 9.5 cm</td>
<td>5.0&quot; / 12.7 cm</td>
<td>190 in / 1226 cm</td>
<td>13.68 g</td>
<td>247 ml</td>
<td></td>
<td></td>
</tr>
<tr>
<td>IN HW 57RB</td>
<td>10</td>
<td>1 1/2&quot;-16</td>
<td>5.0&quot; / 12.7 cm</td>
<td>7.0&quot; / 17.8 cm</td>
<td>383 in / 2470 cm</td>
<td>27.58 g</td>
<td>408 ml</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Medium Pressure Hydraulic Filters**

Racor hydraulic filters for medium pressure applications are rated to 3,000 psi, and are crafted from corrosion-resistant anodized aluminum. An optional pop-up indicator signals the bypass condition and need for element replacement; however, a built-in bypass valve allows the system to continue operating in an unfiltered condition. Two flow rates and housing lengths accept a 10 micron element – with the extended lengths providing longer element life and larger sump capacity.

| Part No. | Service Micron Beta Max Operating Max Flow |
|----------|-----------------------------------------|--------------------------------------|
| HP60077C | FC60078 10 8 / 14 3000 psi / 207 bar 20 gpm / 76 lpm |
| HP60080C | FC60081 10 6 / 16 3000 psi / 207 bar 20 gpm / 76 lpm |
| HP60083C | FC60084 10 4 / 12 3000 psi / 207 bar 50 gpm / 189 lpm |
| HP60086C | FC60087 10 6 / 17 3000 psi / 207 bar 50 gpm / 189 lpm |
| HP60077M | FC60079 10 2 / 5 3000 psi / 207 bar 20 gpm / 76 lpm |
| HP60080M | FC60082 10 2 / 6 3000 psi / 207 bar 20 gpm / 76 lpm |
| HP60083M | FC60085 10 2 / 6 3000 psi / 207 bar 50 gpm / 189 lpm |
| HP60086M | FC60088 10 3 / 7 3000 psi / 207 bar 50 gpm / 189 lpm |

C = Cellulose
M = Microglass
Racor Hydraulic Filtration Systems remove solid contamination and water from petroleum based fluids such as hydraulic fluid and gear and lube oils. Racor filter carts can be used to prefilter fluids, transfer fluids or to clean existing systems. In all cases, it makes remote, on-demand filtering for contaminant-free fluids fast and convenient. The Racor Hydraulic Filter Cart is standard with a 10 gpm pump, 40 micron inlet filter and down to 3 micron outlet filter elements. The standard seals are Buna nitrile.

**Benefits**

1. Both units feature an industrial quality precision gear pump for smooth, quiet, reliable service.
2. Removable filter housing top covers for simple, clean servicing of the two elements.
3. Two filters ensure pump protection and two-stage for long element life.
4. A wide variety of particulate filter elements are available to obtain desired cleanliness levels. The WR element removes “free-water” from filtered fluids upon contact with the polymer filter.
5. A standard visual indicator on the filter head tells when it is time to change the elements.
6. The inlet and outlet hoses are 11’ long and include rigid PVC wands for easy handling.
7. The lightweight portable steel frame includes a built-in drip pan beneath the filters and pump to help keep work areas safe and clean.

**Hydraulic Filter Cart**

Fluid cleanliness levels are a function of initial contamination levels, contamination ingestion rates, reservoir size and filter element efficiency. The chart below lists time requirements to achieve certain cleanliness levels, based on the assumptions noted.

**Hydraulic Filter Cart Specifications**

<table>
<thead>
<tr>
<th>Basic Models</th>
<th>HFC 60039-5</th>
<th>HFC 60039-10</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid Filtered</td>
<td>Petroleum based fluids such as hydraulic, gear and lube oils</td>
<td></td>
</tr>
</tbody>
</table>

| Available Filter Elements | 40W, 40SA, 20C, 10C, 03C, 10B, 03B, WR |  

<table>
<thead>
<tr>
<th>Maximum Flow Rate</th>
<th>5 gpm / 19 lpm</th>
<th>10 gpm / 38 lpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>Maximum Pressure</td>
<td>25 psi / 1.7 bar</td>
<td>25 psi / 1.7 bar</td>
</tr>
<tr>
<td>Height</td>
<td>40.5” / 1029 mm</td>
<td>40.5” / 1029 mm</td>
</tr>
<tr>
<td>Width</td>
<td>25.5” / 648 mm</td>
<td>25.5” / 648 mm</td>
</tr>
<tr>
<td>Depth</td>
<td>19” / 483 mm</td>
<td>19” / 483 mm</td>
</tr>
<tr>
<td>Weight-Dry</td>
<td>110 lbs / 50 kg</td>
<td>110 lbs / 50 kg</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-40° / +225° F / -40° / +107° C</td>
<td></td>
</tr>
</tbody>
</table>

*Viton is a registered trademark of Dupont

<table>
<thead>
<tr>
<th>Hydraulic Filter Cart Cartridge Elements</th>
</tr>
</thead>
<tbody>
<tr>
<td>Part No.</td>
</tr>
<tr>
<td>----------</td>
</tr>
<tr>
<td>IN H60039</td>
</tr>
<tr>
<td>IN H60045</td>
</tr>
<tr>
<td>IN H60042</td>
</tr>
<tr>
<td>IN H60044</td>
</tr>
<tr>
<td>IN H60041</td>
</tr>
<tr>
<td>IN H60043</td>
</tr>
<tr>
<td>IN H60040</td>
</tr>
<tr>
<td>IN H60065</td>
</tr>
</tbody>
</table>

*The elements do not include the housing cover O-ring.*
Guardian® Portable Filtration System: A Handy Way To Transfer Fluids

Contamination is sometimes added to a new fluid during processing, mixing, handling or storage. If your fluid system is sensitive to the harmful effects of contamination, the Guardian Portable Filtration System may be ideal for your application.

This handheld solution is ideal for smaller, more difficult to reach locations—in marine engine rooms or on large equipment.

Guardian® Specifications

<table>
<thead>
<tr>
<th>Basic Model</th>
<th>GLT60006</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluid Filtered Available Fiber Elements</td>
<td>Petroleum based and Water emulsions 74W, 40W, 25W, 20C, 10C, 10B, 03B, WR</td>
</tr>
<tr>
<td>Maximum Flow Rate</td>
<td>4 gpm / 15 lpm</td>
</tr>
<tr>
<td>Maximum Pressure</td>
<td>50 psi / 3.5 bar</td>
</tr>
<tr>
<td>Port Thread, Inlet / Outlet</td>
<td>1/2&quot;-14 NPTF</td>
</tr>
<tr>
<td>Hose Connection Thread</td>
<td>3/4&quot;-11 1/2 NH</td>
</tr>
<tr>
<td>Height</td>
<td>8.50&quot; / 216 mm</td>
</tr>
<tr>
<td>Width</td>
<td>7.75&quot; / 197 mm</td>
</tr>
<tr>
<td>Depth</td>
<td>15.75&quot; / 400 mm</td>
</tr>
<tr>
<td>Weight-Dry</td>
<td>24 lbs / 11 kg</td>
</tr>
<tr>
<td>Operating Temperature</td>
<td>-15° / +120° F / +26° / +49° C</td>
</tr>
</tbody>
</table>

Guardian® Replacement Elements

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Media</th>
<th>Description</th>
<th>Case Qty.</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN G60000</td>
<td>74W</td>
<td>74 Micron, Wire Mesh</td>
<td>1</td>
</tr>
<tr>
<td>IN G60002</td>
<td>40W</td>
<td>40 Micron, Wire Mesh</td>
<td>1</td>
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<tr>
<td>IN G60001</td>
<td>25W</td>
<td>25 Micron, Wire Mesh</td>
<td>1</td>
</tr>
<tr>
<td>IN G60010</td>
<td>20C</td>
<td>20 Micron, Cellulose</td>
<td>2</td>
</tr>
<tr>
<td>IN G60006</td>
<td>10C</td>
<td>10 Micron, Cellulose</td>
<td>2</td>
</tr>
<tr>
<td>IN G60007</td>
<td>10B</td>
<td>10 Micron, Microglass</td>
<td>2</td>
</tr>
<tr>
<td>IN G60008</td>
<td>03B</td>
<td>3 Micron, Microglass</td>
<td>2</td>
</tr>
<tr>
<td>IN G60009</td>
<td>WR</td>
<td>Water Removing Media*</td>
<td>2</td>
</tr>
</tbody>
</table>

The element end cap (cover) O-ring is reusable and is not included with service elements.

*Water capacity is 1.5 fluid ounces (45 milliliters)
**Automatic Transmission Filter Kit**

- Extend Transmission Life
- Extend Service Intervals
- Reduce Maintenance Costs

**Overview**

- The Racor LFS 22825 automatic transmission filter kit includes the hardware, fittings and mounting bracket for a simple installation.
- Quality Parker hose assemblies are available separately.
- The spin-on filter element is manufactured with synthetic media specifically designed for transmission fluid use.
- Simply cut the steel tube going to the transmission cooler and slip on the Parker Flareless tube fittings and tighten.

**Features**

- Heavy 1/4" steel plate mounting bracket, pre-drilled and black powder-coated
- Die-cast multi-port 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 Feruloke Flareless fittings
- Steel wire reinforced Parker hydraulic hose

The universal mounting bracket, filter and fittings are easily adapted to fit most any vehicle frame rail or transmission cross-over brace.

Bracket Part No. 31923

Assembly Replacement Element Part No. LFS TF100RE

Transmission Fluid Media

Synthetic media with absolute filtration for high temperature and severe duty applications.
TRANSMISSION FLUID FILTRATION

Racor quality replacement filter elements for the Allison automatic transmissions, meet or exceed original equipment manufacturers specifications.

Racor filters utilize special cellulose and fiberglass media combined with wire reinforcements, to combat the transmission pressure surges and heat buildup automatics face in the field.

These products stand up to the demanding stop and go operations of today’s trucks, buses and heavy equipment.

In addition to price and quality, the range of interchangeable elements allows the users to acquire more of their replacement elements from one quality source.

Some of the manufacturers that Racor element part numbers will fit include, Detroit, GMC, Baldwin, Pall, Donaldson and Fleetguard.

### Allison Transmission Replacement Elements

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Replaces</th>
<th>Description</th>
<th>Specifications</th>
<th>Diameter</th>
<th>Length</th>
</tr>
</thead>
<tbody>
<tr>
<td>IN T60079Q</td>
<td>23018853</td>
<td>Cartridge</td>
<td>3.8”/9.6 cm</td>
<td>3.5”/8.9 cm</td>
<td>16.84”/43 cm</td>
</tr>
<tr>
<td>IN T60074Q</td>
<td>23040988</td>
<td>Cartridge</td>
<td>3.5”/8.9 cm</td>
<td>13”/33 cm</td>
<td>8.2”/21 cm</td>
</tr>
<tr>
<td>IN T6026</td>
<td>23042062</td>
<td>Spin-On Pall</td>
<td>3.8”/9.6 cm</td>
<td>5.0”/13 cm</td>
<td></td>
</tr>
<tr>
<td>IN H60578</td>
<td>23049373</td>
<td>Cartridge</td>
<td>3.1”/7.8 cm</td>
<td>13”/33 cm</td>
<td></td>
</tr>
<tr>
<td>IN T6076Q</td>
<td>23049373</td>
<td>Cartridge</td>
<td>3.1”/7.8 cm</td>
<td>13”/33 cm</td>
<td></td>
</tr>
<tr>
<td>IN T6075Q</td>
<td>23049374</td>
<td>Cartridge</td>
<td>3.8”/9.6 cm</td>
<td>16.84”/43 cm</td>
<td></td>
</tr>
<tr>
<td>IN T6088</td>
<td>29006337</td>
<td>Cartridge</td>
<td>3.1”/7.8 cm</td>
<td>6.0”/15 cm</td>
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<tr>
<td>IN T6075Q</td>
<td>29510912</td>
<td>Cartridge</td>
<td>3.8”/9.6 cm</td>
<td>16.84”/43 cm</td>
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</tr>
<tr>
<td>IN H6074Q</td>
<td>29510918</td>
<td>Cartridge</td>
<td>3.1”/7.8 cm</td>
<td>8.19”/21 cm</td>
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</tr>
<tr>
<td>IN T6088</td>
<td>29526898</td>
<td>Cartridge</td>
<td>3.1”/7.8 cm</td>
<td>6.0”/15 cm</td>
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<tr>
<td>IN T6089</td>
<td>29526899</td>
<td>Cartridge</td>
<td>3.1”/7.8 cm</td>
<td>4.0”/10 cm</td>
<td></td>
</tr>
</tbody>
</table>

For additional information, request Product Bulletin #7557.

---

Hose assemblies have 9/16”-18 90° Swivel one end and 5/16” or 3/8” straight end for tubing connection.

Product bulletin #7557
**FLUID CONDITION MONITORS**

**DOC19 and DOC Plus Patented Maintenance Systems**

DOC19 and DOC Plus patented maintenance systems automatically change oil while the engine is running. DOC19 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 the maintenance shop and on the job. Saves time, fuel and cost.

The DOC Plus 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 DOC for the ultimate in hands-off oil maintenance. Reduced downtime for engine maintenance means quick payback.

The DOC19 pays for itself in less than a year of average use.

**Never Lo Oil Replenishing Systems**

Never Lo Oil Replenishing Systems — automatic or manual— provide a constant supply of fresh, clean oil to the engine.

- The AFG Automatic Gravity System continuously monitors engine oil and automatically maintains it at a pre-adjusted level. The system requires no electrical connections and is easy 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 site gauge is calibrated at two-quart intervals for easy makeup.
- When used in conjunction with the DOC19, the Never Lo Oil Replenishing System provides a constant supply of fresh oil to the engine.

**SootChek™: Results in 45 Seconds!**

SootChek is a hand held, battery operated diagnostic tool that measures soot concentration levels in diesel engine lubricating oil up to 10% and higher, without sample preparation or solvents. The obvious advantage of SootChek is that it gives maintenance personnel an on-site, immediate and accurate measurement of the engine oil soot levels, so that oil can be changed before soot concentrations are too high.

**Time Frame: 45 Seconds**

Part No. LFS RK763

SootChek™ is a registered trademark of Wilks Enterprise.

**OilChek™ Portable Oil Monitor**

The oil monitor measures the effect of all the contaminants and the electro 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.

**Time Frame: 5-10 Minutes**

**Fluid Types:**
- Engine Oil
- Transmission Fluid
- Hydraulic Fluid

Part No. LFS RK761
Oil analysis tells you a lot about how the equipment was used and what condition it’s in. Oil that has been inside any moving mechanical apparatus for some time reflects the exact condition of that assembly. As moving parts make contact, wear occurs and introduces minute metal particles to the oil. These particles are so small that they remain in suspension. Many products of the combustion process also become trapped in the circulating oil. In addition, the oil may be exposed to external contamination. Identifying and measuring these impurities indicates the rate of wear and level of contamination. Thus, the oil becomes a working history of the machine. Oil analysis also suggests methods to reduce accelerated wear and contamination.

A typical oil analysis can indicate the presence of contaminants and tell you if you’ve been using the appropriate lubricants. Oil analysis detects:

- Fuel dilution of lubrication oil
- Dirt contamination in the oil
- Antifreeze in the oil
- Excessive bearing wear
- Misapplication of lubricants

Some wear is normal. However, abnormal levels of a particular material can give an early warning of impending problems, prevent a breakdown and allow for corrective action such as repairing an air-intake leak before major damage occurs.
ParFit™ Series Spin-On Oil Filters

The ParFit oil filter product line is a growing family of quality spin-on oil filters for heavy duty diesel applications. Each filter model incorporates Racor specified filter medias designed to meet or exceed OEM performance requirements at competitive prices.

The ParFit oil filter product line provides micron fuel system protection for many of the most popular heavy duty diesel engine applications.

Every ParFit oil filter contains the latest high efficiency, long life medias developed for optimum filtration performance. Each media grade was specified and laboratory tested by Racor to SAE standards to guarantee the best cost and performance value.

Features and Benefits

- ISO 9002 Certified Manufacturing practices insures superior quality.
- Filter media researched and specified by Racor filtration experts means better engine protection compared to other low cost oil filter brands.
- High contaminant capacity 20 micron is highly efficient and has long life.
- Economical engine protection.
- Performance meets or exceeds OEM specifications.

<table>
<thead>
<tr>
<th>ParFit</th>
<th>Fleet Guard</th>
<th>Wix</th>
<th>Baldwin</th>
<th>Donaldson</th>
<th>Lubefiner</th>
<th>Height (inches/cm)</th>
<th>Thread</th>
<th>Common Applications</th>
<th>Case Qty</th>
</tr>
</thead>
<tbody>
<tr>
<td>PFL5513</td>
<td>LF667</td>
<td>51791</td>
<td>B7600</td>
<td>P554004</td>
<td>LFP3191</td>
<td>10.31” / 261.87 cm</td>
<td>1 1/8&quot;-16 UN</td>
<td>Caterpillar IR-0658, 2P-4004</td>
<td>6</td>
</tr>
<tr>
<td>PFL5514</td>
<td>LF777</td>
<td>51749</td>
<td>B7577</td>
<td>P550777</td>
<td>LFP777B</td>
<td>10.25” / 260.35 cm</td>
<td>1 3/8&quot;-16 UN</td>
<td>Cummins 3320289, Cummins Engines; Euclid Rear Dumps; Versatile Tractors</td>
<td>6</td>
</tr>
<tr>
<td>PFL5515</td>
<td>LF653</td>
<td>51061</td>
<td>B6</td>
<td>P55035</td>
<td>PH1218</td>
<td>5.37” / 136.40 cm</td>
<td>1 3/16&quot;-16 UN</td>
<td>KHD (Kockern-Humboldt-Deutz) Q1h4117 Volvo 243004</td>
<td>12</td>
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<tr>
<td>PFL5516</td>
<td>LF3313</td>
<td>51515</td>
<td>B2</td>
<td>P550008</td>
<td>PH8A</td>
<td>5.37” / 136.40 cm</td>
<td>3/4&quot;-16 UN</td>
<td>Ford, Mazda, Toyota Automotive, Light Duty Trucks</td>
<td>12</td>
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<tr>
<td>PFL5517</td>
<td>LF3000</td>
<td>51748</td>
<td>B8D103</td>
<td>P553000</td>
<td>LFP3000</td>
<td>11.27” / 286.26 cm</td>
<td>2 1/4&quot;-12 UN</td>
<td>Cummins 154709</td>
<td>6</td>
</tr>
<tr>
<td>PFL5518</td>
<td>LF3342</td>
<td>51268</td>
<td>B7230</td>
<td>P555570</td>
<td>LFP5570</td>
<td>5.37” / 136.40 cm</td>
<td>1 1/8&quot;-16 UN</td>
<td>Cummins 154709</td>
<td>12</td>
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<tr>
<td>PFL5519</td>
<td>LF690</td>
<td>51158</td>
<td>B167</td>
<td>P558250</td>
<td>LFP880</td>
<td>6.63” / 168.40 cm</td>
<td>1”-12 UN</td>
<td>Deutz Engine, International Engines</td>
<td>12</td>
</tr>
<tr>
<td>PFL5520</td>
<td>LF670</td>
<td>51970</td>
<td>B96</td>
<td>P551670</td>
<td>LFP670</td>
<td>10.25” / 226.35 cm</td>
<td>1 1/2&quot;-12 UN</td>
<td>Caterpillar 4N5623, Caterpillar 1R0712 / FF5264 is downsize version of FF211</td>
<td>6</td>
</tr>
<tr>
<td>PFL5521</td>
<td>LF691A</td>
<td>51792</td>
<td>B99</td>
<td>P554005</td>
<td>LFP4005</td>
<td>11.27” / 286.26 cm</td>
<td>1 1/2&quot;-16 UN</td>
<td>AC TP915D Detroit Diesel, 25014274 GMC 25014274</td>
<td>6</td>
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<tr>
<td>PFL5522</td>
<td>LF3349</td>
<td>51607</td>
<td>B7339</td>
<td>P558615</td>
<td>LFP780</td>
<td>7.10” / 180.34 cm</td>
<td>1”-16 UN</td>
<td>Ford E6D206554, Borsch 1-457-434-069; Deutz 1161341; Melroe-Bobcat 4121609</td>
<td>12</td>
</tr>
<tr>
<td>PFL5523</td>
<td>LF3620</td>
<td>51971</td>
<td>B495</td>
<td>P552100</td>
<td>LFP2160</td>
<td>10.25” / 260.35 cm</td>
<td>1 5/8&quot;-12 UN</td>
<td>AC TP916D GMC 25014342</td>
<td>6</td>
</tr>
</tbody>
</table>

All necessary gaskets and seals included.
Quality Racor Lubrication Products

Racor Oil Products provide the satisfaction and comfort associated with high quality lubrication products. Our engineered premium synthetic and synthetic blend products were designed with the demands of tighter engine tolerances and performances.

Synthetic Heavy Duty Engine Oil

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.

- Prevents Rust & Corrosion
- Resists Oxidation/Reduces Engine Wear
- Extended Drain Intervals
- Provides Low Temperature Protection
- Improves Fuel Economy

Superior Synthetic 2 Cycle Engine Oil

This superior synthetic 2 cycle oil has been designed to meet the strict requirements associated with 2 cycle engines. The Racor Superior Synthetic 2 cycle oil dramatically improves engine performance by utilizing the most advanced synthetic components available. Recommended for use in outboard marine engines, motorcycles, chain saws, lawn mowers, string trimmer, and other applications that require NMMA and TC-W3 certified 2 cycle oils.

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 or Teflon®, which have 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.

<table>
<thead>
<tr>
<th>Part No.</th>
<th>Description</th>
<th>Size</th>
<th>Treats</th>
</tr>
</thead>
<tbody>
<tr>
<td>ADT 1111</td>
<td>Powershot+™ Diesel Fuel Conditioner</td>
<td>11 ounces</td>
<td>30 gallons</td>
</tr>
<tr>
<td>ADT 1116</td>
<td>Diesel Conditioner Plus+</td>
<td>16 ounces</td>
<td>320 gallons</td>
</tr>
<tr>
<td>AZT 1201</td>
<td>Diesel Conditioner Plus+</td>
<td>1 gallon</td>
<td>2,560 gallons</td>
</tr>
<tr>
<td>AZT 1555</td>
<td>Diesel Conditioner Plus+</td>
<td>55 gallon drum</td>
<td>140,800 gallons</td>
</tr>
<tr>
<td>AZT 2116</td>
<td>Diesel Biocide</td>
<td>16 ounces</td>
<td>1,280 gallons</td>
</tr>
<tr>
<td>AZT 2201</td>
<td>Diesel Biocide</td>
<td>1 gallon</td>
<td>10,240 gallons</td>
</tr>
<tr>
<td>AZT 2405</td>
<td>Diesel Biocide</td>
<td>5 gallons</td>
<td>51,200 gallons</td>
</tr>
<tr>
<td>AZT 2555</td>
<td>Diesel Biocide</td>
<td>55 gallon drum</td>
<td>563,200 gallons</td>
</tr>
<tr>
<td>AZT 3116</td>
<td>Diesel Performance Plus+</td>
<td>16 ounces</td>
<td>80 gallons</td>
</tr>
<tr>
<td>AZT 4116</td>
<td>Diesel Winter Plus+</td>
<td>16 ounces</td>
<td>128 gallons</td>
</tr>
<tr>
<td>AZT 4201</td>
<td>Diesel Winter Plus+</td>
<td>1 gallon</td>
<td>1,024 gallons</td>
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<tr>
<td>AZT 4355</td>
<td>Diesel Winter Plus+</td>
<td>55 gallon drum</td>
<td>563,200 gallons</td>
</tr>
<tr>
<td>AZT 5111</td>
<td>Powershot+™ Gasoline Conditioner</td>
<td>16 ounces</td>
<td>15 gallons</td>
</tr>
<tr>
<td>AZT 5116</td>
<td>Gasoline Conditioner Plus+</td>
<td>16 ounces</td>
<td>320 gallons</td>
</tr>
<tr>
<td>AZT 5555</td>
<td>Gasoline Conditioner Plus+</td>
<td>55 gallon drum</td>
<td>140,800 gallons</td>
</tr>
<tr>
<td>ADT 7116</td>
<td>Lube Oil Treatment</td>
<td>16 ounces</td>
<td>2 gallons</td>
</tr>
<tr>
<td>ADT 7201</td>
<td>Lube Oil Treatment</td>
<td>1 gallon</td>
<td>16 gallons</td>
</tr>
<tr>
<td>ADT 7555</td>
<td>Lube Oil Treatment</td>
<td>55 gallon drum</td>
<td>880 gallons</td>
</tr>
<tr>
<td>ADT 8116</td>
<td>Coolant Treatment</td>
<td>16 ounces</td>
<td>8 gallons</td>
</tr>
<tr>
<td>ADT 8021</td>
<td>Coolant Treatment</td>
<td>1 gallon</td>
<td>64 gallons</td>
</tr>
</tbody>
</table>
FUEL AND COOLANT ADDITIVES

**We’ve Bottled Racor Protection**

Racor Additives are performance-enhancing products for all climates and seasons. There are several convenient sizes, including a 16 oz. bottle; 1 and 5 gallon containers; and a 55 gallon drum. The high concentration of active ingredients in Racor additives allows for higher treatment rates. All Racor Fuel Additives are alcohol-free.

**Powershot+™ Diesel Conditioner**

Racor Powershot+™ Diesel Fuel Conditioner is recommended for use in all engine applications using #1 and #2 diesel fuels.

One 11 ounce bottle treats up to 30 gal. of diesel fuel.

With regular use of Racor Powershot+ Diesel Conditioner, fuel economy is improved, corrosion protection is provided and fuel stability is enhanced during storage.

**Powershot+™ Gasoline Conditioner**

Racor Powershot+™ Gasoline Conditioner is a convenient gasoline additive that cleans while it protects. It can be used in all types of internal combustion systems and gasoline blends.

By cleaning the engine's fuel injectors or carburetor, Racor Powershot+™ Gasoline Conditioner provides better combustion, better fuel economy and lower exhaust emissions.

**Diesel Biocide**

Racor Diesel Biocide is a multifunctional petroleum distillate fuel additive. It is used to help maintain color stability and clarity; control bacteria, fungi, organic reaction and sludge formation; inhibit corrosion; and disperse existent sludge.

EPA Est. No. 072342-CA-001, EPA Reg. No. 1448-17-47099.

**Gasoline Conditioner Plus+**

Racor Gasoline Conditioner Plus+ is a diluted multi-functional gasoline additive that cleans as it protects. It is designed for secondary treatment applications and can be used with all types of internal combustion systems and gasoline blends. It provides better combustion, better fuel economy and lower exhaust emissions.

**Diesel Conditioner Plus+**

Racor Diesel Conditioner Plus+ is a multi-functional fuel additive for all season use. Its formulation contains a cetane improver. Its lubricity additives reduce friction and pass the scuffing BOCLE test for lubricity. Corrosion and rust formation are also reduced.

**Coolant Treatment**

Racor Coolant Treatment is a combustion corrosion inhibitor and iron oxide/scale dispersant. Its unique formulation protects all types of metals, including aluminum, in diesel and gasoline engine cooling systems.

**Diesel Winter Plus+**

Racor Diesel Winter Plus+ is added to middle petroleum distillates such as No. 2 heating oil or diesel fuel to improve their low temperature operability as measured by pour point and cold filter plugging point. Racor Diesel Winter Plus+ prevents the plugging of lines, filter screens, and valves and allows the fuel to flow freely down to 32°F (0°C). Diesel Winter Plus+ contains a deicer, which can help reduce line freezing.

**Diesel Performance+**

Racor Diesel Performance Plus+ has the same engine protection qualities as the Racor Diesel Conditioner Plus+ and it has five times the cetane improver to deliver optimal engine performance. The added performance comes with improved lubricity and is alcohol free for better fuel system component protections.
**Alternative Fuels**
Racor offers the industry’s first and most complete line of high and low pressure alternative fuel filter / coalescers and prefilter / strainers. From pipeline to engine – they deliver the ultra-fine filtration required by alternative fuels.

**Fuel Recycling Systems**
- Remove water and contamination from diesel fuel, kerosene and light hydrocarbons in day tanks and fuel tanks
- Portable, bulkhead and in line configurations

**Engine Components and Systems**

**Sentinel Engine Protection System**
Sentinel Mechanical Engine Protection Systems slow to idle or shut down diesel engines before minor problems cause major damage. Sentinel Systems protect engines from:
- Loss of oil pressure
- Loss of coolant
- High oil and coolant temperatures

Also available:
- Fuel Modules / Integrated Systems
- Heaters
- Hose and Fittings

**Fuel Filter / Water Separators**
- Turbine and spin-on designs for diesel and gasoline
- Powerful heaters, integral primer pumps, and service indicator options
- See-thru and metal collection bowls

**Hydrocarbon Filter Vessels and Elements**
- High efficiency and high value in a compact package
- Complete range of filter elements
- Flow rates to 1000 gpm+

**Order Brochure No. 7330, Sentinel Mechanical Diesel Engine Protection Systems**

**Order Brochure No. 7529, Fuel Filtration Products**

**Model 8250D**

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**Turbine Series Marine Manifold**

**RVFS Series**
CCV® Crankcase Ventilation Filter Systems

- Keeps engine compartments and components clean.
- Prevents clogging of engine intakes, turbochargers and intercoolers.
- Improves reliability and maintainability of diesel engines.
- Superior efficiency and performance.
- Reduces environmental pollution from crankcase emissions.
- Replacement filter is crushable and burnable.
- Reduces smoke and odor in the immediate environment.
- Installed as original equipment by major manufacturers worldwide.

Coated glass-filled nylon components.

Replaceable high-performance filter with depth-loading micro-glass fiber coalescing media.

Drain check valve allows collected oil to be returned to the crankcase. This eliminates frequent draining and significantly reduces oil consumption.

Maximum continuous operating temperature, -40°F to +240°F.

Also Available from Racor

Heavy-Duty Engine Air Filtration

A complete line of heavy-duty engine air filters and precleaners is now available from Racor. The Series includes:

- Combination dynamic or static precleaner / air filters
- Standard air filters
- On-highway and off-highway underhood air precleaners
- On-highway, off-highway and industrial air precleaners

The combination systems provide the security of a primary and safety element with an efficient precleaner in a single-connection, compact package. The precleaners are self-powered and self-cleaning, requiring no electrical or exhaust gas power to dispose of separated particles. They extend engine air filter life and prolong engine and turbocharger life while reducing downtime. A wide range of models is available for a variety applications and flow rates. Adjustable mounting bands make installation quick and easy.

Order Brochure No. 7539, Air Filtration Systems
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Parker Racor Division
Quality Management System Certifications
- ISO/TS 16949: 2002
- ISO 14001: 2004

Fuel Filtration
Racor Division wrote the book on fuel filtration technology. Please call us at 1-800-344-3286 ask for technical service to request part number 7550.

Product Information Center
U.S., Canada, Mexico call: 1-800-C-Parker (1-800-272-7537)
Fax: (440) 266-7400
e-mail: c-parker@parker.com
Hours: Monday – Friday 8:00 a.m. to 6:30 p.m. EST
Saturday 7:00 a.m. to 12:00 p.m. EST

For Service within Europe:
From AU, CH, DE, EI, FR, and UK, call: 00800 27 27 5374
All other countries, call:
English speaking service +44 1442 358 429
German speaking service +44 1442 358 428
French speaking service +44 1442 358 427
Fax: +44 1442 458112
e-mail: epic@parker.com
Hours: Monday – Friday 08:30 to 18:00 CET

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About Parker Hannifin Corporation

Parker’s Charter
To be the world’s leading diversified manufacturer of motion control technologies and systems, providing precision-engineered solutions for a wide variety of commercial, mobile industrial and aerospace markets.

Corporate Profile
With annual sales exceeding $8 billion, Parker Hannifin Corporation is the world’s leading diversified manufacturer of motion and control technologies, providing systematic, precision-engineered solutions for a wide variety of commercial, mobile, industrial and aerospace markets. The company's products are vital to virtually everything that moves or requires control, including the manufacture and processing of raw materials, durable goods, infrastructure development and all forms of transport.

Traded on the New York Stock Exchange under the symbol “PH,” Parker is strategically diversified, value-driven and well positioned for global growth as the industry consolidator and supplier of choice.

The company has increased its annual dividends paid to shareholders for forty-nine consecutive years, among the top five longest-running dividend-increase records in the S&P 500 Index. For more information, visit the company’s web site at http://www.parker.com, or its investor information site at http://www.phstock.com.

Aerospace Group
A leader in the development, design, manufacture and service of control systems and components for aerospace and related high technology markets, achieving profitable growth through premier customer service.

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A leading supplier of pneumatic and electro-mechanical components and systems to automation customers worldwide.

Climate & Industrial Controls Group
Designs, manufactures and markets system-control and fluid-handling components and systems to refrigeration, air-conditioning and industrial customers worldwide.

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Designs, manufactures and markets quality filtration and clarification products, providing customers with the best value, quality, technical support and global availability.

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Designs, produces and markets a full spectrum of hydraulic components and systems to builders and users of industrial and mobile machinery and equipment.

Instrumentation Group
A global leader in the design, manufacture and distribution of high-quality critical flow components for worldwide process instrumentation, ultra-high-purity, medical and analytical applications.

Seal Group
Designs, manufactures and distributes industrial and commercial sealing devices and related products by providing superior quality and total customer satisfaction.
ECO III® HEAVY-DUTY AIR FILTRATION SYSTEMS

The new Racor ECO III air filtration systems bring the technology of heavy-duty air cleaners to an unprecedented level. To deliver maximum filter life, the ECO III housing inlet is positioned to direct air flow evenly around the filter — engaging the entire element in the contaminant removal process. A secondary filter, or safety filter, can be specified for severe service environments. Multiple sealing surfaces have been designed into the housing to ensure system integrity.

The durable, corrosion-free housing comes installation-ready for direct attachment of a Racor closed crankcase filter system to meet the requirements of emission reduction legislation. The base mounting bracket and included hardware installs quickly, in any direction, to the engine, frame rail or fire wall. This unique design eliminates the need for costly custom-made brackets. Service is quick with no tools required. Compact, efficient, flexible, reliable — engineered for the long-haul. Racor ECO III reinvents air filtration, inside and out.

To simplify element changeouts, two molded handles, and an extended edge lip let hands firmly grasp and remove the integral end pan filter element… with no contact or contamination to the skin.

A key feature of the ECO III housing is the tangential orientation of the 7” inlet, which directs air flow evenly around the element. Element life is increased because the entire filter is engaged in the process.

The solid injection molded glass-filled nylon polymer housing is corrosion-free, a durable construction that increases the temperature operation range to 250°F. The rugged assembly provides heavy duty structural strength proven to dependably withstand severe vibration.

Simple, clean, toolless service was a design imperative, and a major ECO III benefit. Simple snap clamps secure the housing and integrated filter element components.

At both ends of the housing, keyed channels lock the element outlet component securely into place — to prevent element misalignment and rotation.

The standard, integral CCV™ port enables direct plumbing of a Closed Crankcase Ventilation exhaust line into the ECO III — creating an entirely closed, environmentally sound air system. By 2007 stringent legislation will mandate additional emission reductions.

A secondary filter, or safety filter, can be specified for severe service operating conditions.

Because contaminated airflow is dispersed around the element, dust loading and pressure drop are improved. Systems where the contaminated airflow enters the unit at a right angle can experience loading at the single intake point.

INSTALLATION & SERVICE — NO TOOLS. FLEXIBLE. FAST.

- The entire ECO III system is serviced with four quick release stainless perimeter clamps.
- ECO III is a model of flexibility.
  - The housing 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.
  - The reversible base mounting bracket and included hardware mounts quickly, in any direction, to frame rail or firewall. This complete mounting system eliminates the need for custom made, field engineered and installed brackets — a significant savings of time and money.
  - “Quick Key”, integral to the mounting base, securely locks the ECO III housing after the filtration unit has been precisely positioned.
  - “Quick Key”, integral to the mounting base, securely locks the ECO III housing after the filtration unit has been precisely positioned.

For ease of installation, both the CCV and Restriction Indicator Ports can be rotated 360° in 10° increments.

The ECO III features an enlarged 6” radiused outlet to further reduce overall system restriction. This leak-free outlet port can be positioned on either end of the ECO III housing to simplify installation.

For additional information, request brochure #7655.