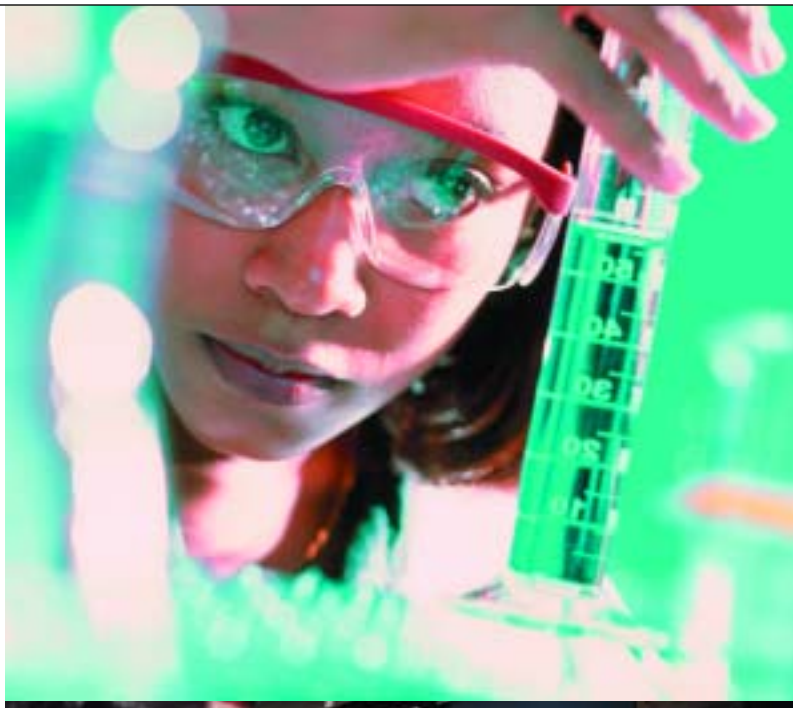
RACOR®

Marine Filtration Systems

- Fuel
- Air
- Oil
- Hydraulic
- Water
- Coolant

Parker



fuel

A single valve on all of the double manifold MAX models isolates one filter/separator for service while the other keeps operating. This way, you keep running while draining contaminants from the collection bowl or while changing filter elements.

Legendary Diesel Fuel Filtration

When engines demand heavy-duty, high-capacity water separation and fuel filtration, the Turbine Series is the most complete, efficient and reliable engine protection you can install. Symbolizing Racor's continuing commitment to the science of filtration, the Turbine Series has established its position as the filter/separator often imitated, but never equaled.

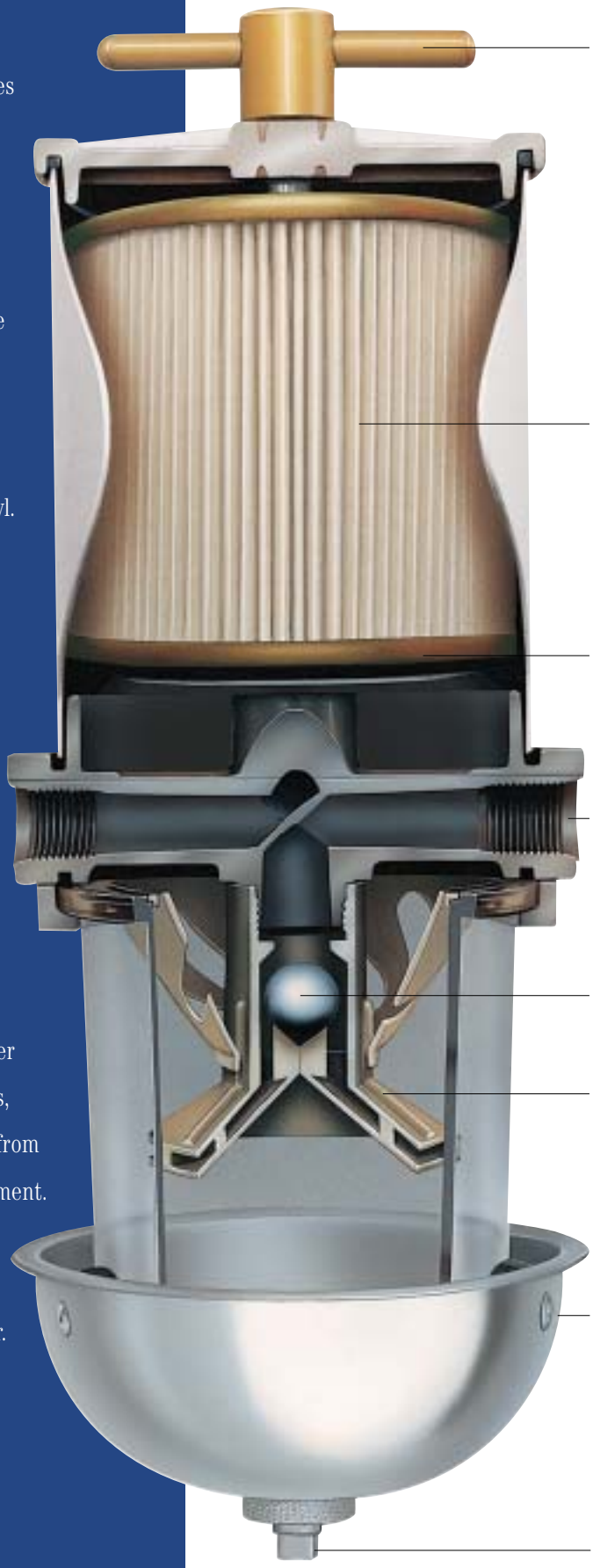
Models that include an aluminum bowl or stainless steel shield meet ASTM FS1201 certification, are UL-listed, American Bureau of Shipping, Veritas, Det Norske Veritas, ISO 10088 and U.S.C.G. accepted. For severe service, all-metal bowls should be specified.

The Inside Story

1 As fuel enters, it moves past the internal check valve then through the turbine centrifuge where it flows in a spiraling direction, spinning off large particulates and water droplets. Being heavier than fuel, they fall to the bottom of the collection bowl.

2 Smaller water droplets bead-up along and on the sides of the internal components and on the surface of the Aquabloc II element. When heavy enough, they too fall into the high-capacity bowl to be drained as needed.

3 Besides repelling water and tiny solids, asphaltenes, algae and rust are filtered from fuel by the Aquabloc II element. Because Aquabloc II elements are waterproof, they remain effective longer.



Make certain that you replace your elements only with Genuine Racor Aquabloc II filters. While many others try to imitate the construction and performance of Aquabloc elements, only the genuine article delivers the fit and performance specified by engine manufacturers, and, guarantees that your Racor Filter/Separator will deliver the protection you count on.

Aquabloc II Elements

Besides removing asphaltenes, water, gums and varnishes, Aquabloc II elements filter tiny particles of dirt and algae from fuel. Aquabloc II elements are rustproof – with polymer end-caps that won't ever corrode.

With an Aquabloc®II replacement element, you get a complete kit with all the seals you need. And not just any seals, but specially-formulated, Racor-engineered seals.

For convenience, end-caps are color-coded for easy identification and application –

- brown for 2-micron secondary/final filtration,
- blue for 10-micron primary or secondary and
- red for 30-micron primary filtration.

The top cap includes handles for easy servicing and an element bypass button for emergencies.

Aquabloc II media is a blend of high-grade cellulose compounded with engineered fibers and a special chemical treatment. Water won't even cling to the element. Aquabloc II repels it.

Racor filter elements include an emergency by-pass.

Order Genuine Aquabloc II Replacement Elements.

Be sure to specify both the size of element and the micron rating.

MODEL	500	900	1000
2-Micron	2010SM-OR	2040SM-OR	2020SM-OR
10-Micron	2010TM-OR	2040TM-OR	2020TM-OR
30-Micron	2010PM-OR	2040PM-OR	2020PM-OR

S = Secondary/Final 2-micron (Brown printing on the end-cap)
T = Primary or Secondary/Final 10-micron (Blue printing on the end-cap)
P = Primary 30-micron (Red printing on the end-cap)

Electric Primer Pump Kit

The electric primer kit can be retrofitted to many of the Racor 900 or 1000 series fuel filters already in service.

The filter pump is an innovative and proprietary system consisting of a pre-screen filter, a flow bypass circuit and a roller cell pump powered by a 12 V DC motor or innovative 24 V DC Racor brushless motor.

When the switch is activated the fuel is drawn into the pre-screen and then pumped through the housing, refilling the unit with fuel.

When not in use the filter pump system is bypassed and the Racor fuel filter/water separator functions normally.

Note: Not for use as continuous duty.

"Around the world, for over 35 years, most marine engineers choose or recommend Racor as the choice for fuel system protection."

The Complete Kit makes installation easy.

Wiring harness and controller switch supplied as part of complete kit.

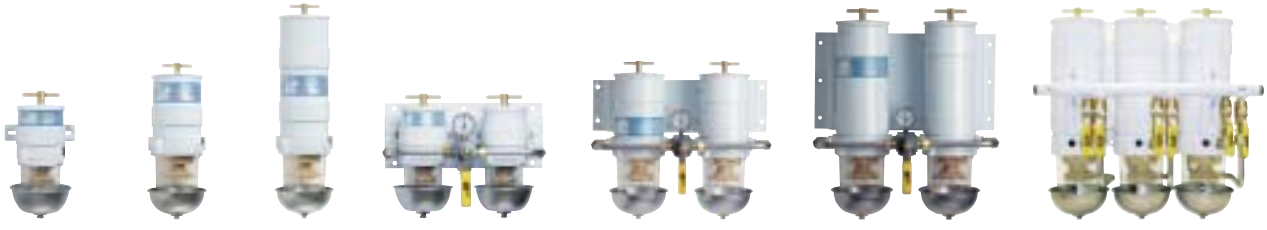
Part numbers:
RKP1912 for 12 V DC systems; RKP1924 for 24 V DC systems

Helpful accessories enhance your view of fuel system performance and ease of service

Water Alarm/Water Probe
RK20726

RK11-1669

UL-Listed Drain Valve
RK19492



500 MA | **900 MA** | **1000 MA** | **75500 MAX** | **75900 MAX** | **751000 MAX** | **791000 MAX**

MODEL	500 MA	900 MA	1000 MA	75500 MAX	75900 MAX	731000 MA	751000 MAX	771000 MA	791000 MAX
Maximum Flow Rate	60 gph 227 lph	90 gph 341 lph	180 gph 681 lph	60/120 gph 227/454 lph	180 gph 681 lph	360 gph 1363 lph	180/360 gph 681/1363 lph	540 gph 2044 lph	180/360/540 gph 681/1363/2044 lph
Height	11.5" / 292 mm	17" / 432 mm	22" / 559 mm	11.5" / 292 mm	17" / 432 mm	22" / 559 mm	22" / 559 mm	22" / 559 mm	22" / 559 mm
Width	5.8" / 147 mm	6" / 152 mm	6" / 152 mm	14.5" / 368 mm	18.75" / 476 mm	17" / 432 mm	18.75" / 476 mm	21.5" / 546 mm	21.5" / 546 mm
Depth	4.8" / 122 mm	7" / 178 mm	7" / 178 mm	9.5" / 241 mm	11" / 279 mm	12" / 305 mm	11" / 279 mm	12" / 305 mm	12" / 305 mm
Weight	4 lbs / 2 Kg	6 lbs / 3 Kg	10 lbs / 5 Kg	17 lbs / 7.7 Kg	23 lbs / 10 Kg	26 lbs / 11.8 Kg	30 lbs / 13.6 Kg	39 lbs / 17.7 Kg	52 lbs / 23.6 Kg
Port Size Std. (Option)	3/4"-16 UNF 14 mm x 1.5	7/8"-14 UNF 22 mm x 1.5	7/8"-14 UNF 22 mm x 1.5	3/4"-16 UNF	7/8"-14 UNF	3/4" NPT	7/8"-14 UNF	1"-11.5 NPT	3/4"NPT
Clean Pressure Drop	0.3 psi 1.7 kPa	0.34 psi 2.4 kPa	0.49 psi 3.4 kPa	0.70 psi 4.83 kPa	1.7 psi 11.7 kPa	1.7 psi 11.7 kPa	3.7 psi 25.5 kPa	1.7 psi 11.7 kPa	2.5 psi 17.2 kPa
Maximum[1] Operating Pres.	15 psi 103 kPa	15 psi 103 kPa	15 psi 103 kPa	15 psi 103 kPa	15 psi 103 kPa	15 psi 103 kPa	15 psi 103 kPa	15 psi 103 kPa	15 psi 103 kPa
Element #	2010	2040	2020	2010	2040	2020	2020	2020	2020
Element Rmvl. Clearance	4" / 102 mm	5" / 127 mm	10" / 254 mm	4" / 102 mm	5" / 127 mm	10" / 254 mm	10" / 254 mm	10" / 254 mm	10" / 254 mm

Notes:
Units are available with solid metal bowls, add "M" after MA, i.e. 1000MAM. Please consult factory to confirm specifications. Example 500MAM. Also available in metric ports, add "*" to prefix when ordering. Example *500MA.
(1) Vacuum installations are recommended.

Compact and Versatile Systems for Main Propulsion and Genset Applications

1 Cost-Effective

Cost-effective designs for on-engine or remote mounting. Complete assemblies available in all-metal bowls.

2 High-Capacity

Hand-operated fuel priming pumps are integral to many Racor diesel spin-on series models, a feature that allows for the removal of unwanted air from the filter and the engine fuel system.

3 Environmentally Friendly

Metal bowls are reusable, impact-resistant and virtually indestructible. When it's time for service, only the filter element is replaced – the bowl and drain plug are reused. The long life-cycle of the bowl saves money and reduces the environmental impact through disposal of less material. Use metal bowl versions for all marine engine room applications.

4 Easy Upgrades

Water in fuel sensors are available to alert operators to drain accumulated water from the bowl.

5 Corrosion-Resistant Construction

Advanced technology means bowls will not deteriorate from water collection, alcohol-blended fuels, exposure to harsh additives, salt spray, or UV light.

6 Safety First

Racor's UL-listed filters meet ABYC, ASTM, ISO, and many other global standards for filters used in marine engine rooms.

Racor Aquabloc elements are available in 2-,10- and 30-micron ratings.
Red = 30-micron, primary, good.
Blue = 10-micron, primary, better.
Brown = 2-micron, primary or secondary, best.

A handy accessory – bowl removal wrench
Part # RK22628

The 790 FilterPump Assembly

The 790R30 fuel filter/water separator assembly is a two-stage filtration and repriming system. 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.

The 790R30 assembly is equipped with Racor's 12 volt motor and roller cell pump. The motor shaft directly drives the gerotor, creating a unique, positive displacement pump.

Dual Spin-On Filter/Separators

With the Racor Model 75B32009M, a simple turn of the integral handle puts a clean filter in service when the on-line filter gets dirty – so engines can keep operating. Maximum fuel flow is 120 gph with both filters on-line (or one-half maximum fuel flow with one filter on-line). Ideal for gensets and propulsion engines when space is a concern. Element replacement is not possible while the engine is running.

Please specify carefully – there are important differences among Spin-On Series features which effect performance and application.

	110A	120RMAM	230RMAM	245RMAM	445MAM	460MAM	490MAM	790MAM	4120MAM
Maximum Flow Rate	15 gph / 57 lph DIESEL 35 gph / 133 lph GAS	15 gph / 57 lph	30 gph / 114 lph	45 gph / 170 lph	45 gph / 170 lph	60 gph / 227 lph	90 gph / 341 lph	90 gph / 341 lph	120 gph / 454 lph
Gasoline or Diesel [1]	Both	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel	Diesel
Vacuum Installation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Pressure Installation	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Maximum psi [1]	100 psi / 690 kPa	7 psi / 48 kPa	30 psi / 207 kPa	30 psi / 207 kPa	30 psi / 207 kPa	30 psi / 207 kPa	30 psi / 207 kPa	30 psi / 207 kPa	15 psi / 103 kPa
Clean Pressure Drop	0.15 psi 1.08 kPa	0.15 psi 1.08 kPa	0.31 psi 2.14 kPa	0.61 psi 4.21 kPa	0.17psi 1.20 kPa	0.39 psi 2.7 kPa	0.95 psi 6.5 kPa	0.25 psi 1.7 kPa	0.85 psi 5.9 kPa
Port Size	1/4" NPT	1/4" NPT	1/4" NPT	1/4" NPT	3/8" NPT	3/8" NPT	3/8" NPT	7/8" NPT	3/4" SAE
Integral Primer Pump	No	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Element	R11T	R12SUL	R20TUL	R25TUL	S3204TUL	S3211TUL	S3201TUL	S3201TUL	S3201TUL
No. of Ports	4	4	3	3	4	4	4	4	4
Drain Type	Positive Seal	Positive Seal	Positive Seal	Positive Seal	Positive Seal	Positive Seal	Positive Seal	Positive Seal	Positive Seal
Water Sensor Option	No	Yes	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Height	6" / 152 mm	5.7" / 145 mm	9" / 229 mm	10.5" / 267 mm	9.4" / 238 mm	10.8" / 274 mm	12.8" / 325 mm	12.8" / 325 mm	12.8" / 325 mm
Width	3.2" / 81 mm	3.2" / 81 mm	4" / 102 mm	4" / 102 mm	4.5" / 114 mm	4.5" / 114 mm	4.5" / 114 mm	4.3" / 110 mm	4.5" / 114 mm
Depth	3.2" / 81 mm	3.2" / 81 mm	4" / 102 mm	4" / 102 mm	4.8" / 121 mm	4.8" / 121 mm	4.8" / 121 mm	6.5" / 165 mm	4.8" / 121 mm
Weight	1.3 lbs / 0.59 kg	1.4 lbs / 0.63 kg	2 lbs / 0.90 kg	2.2 lbs / 1.0 kg	2.9 lbs / 1.4 kg	3.1 lbs / 1.4 kg	3.3 lbs / 1.5 kg	6.5 lbs / 3.0 kg	3.3 lbs / 1.5 kg

(1) Pressure installations are applicable up to the maximum psi shown.

P SERIES FILTER PUMPS

The patented P Series diesel fuel conditioning module (for vacuum side applications only) was developed for application in any diesel engine fuel injection system. P Series assemblies are available in three sizes and all feature 3/8" NPT fuel ports. This innovative and modular fuel filter/water separator incorporates low-pressure fuel system components into a single package. Supplies clean, dry fuel to the fuel system and serves as a repriming system.

Durable, 12V DC roller-cell electric fuel pump offers the benefit of an electric, on-demand, priming pump.

A fuel filter/water separator and primer pump in one unit.

High-performance Aquabloc II cartridge-style filter media is environmentally friendly and incinerable.

Important Note: ABYC standards allow for installation outside of the engine room only.

Basic Models	P3	P4	P5
Maximum Flow Rate	30 gph / 114 lph	40 gph / 170 lph	50 gph / 227 lph
Clean Pressure Drop	0.4 psi / 2.8 kPa	0.5 psi / 3.4 kPa	0.8 psi / 5.5 kPa
Maximum Pump Output (at 14.4 volts)	40 gph / 151 lph	40 gph / 151 lph	40 gph / 151 lph
Standard Fuel Port Size (SAE J476)	3/8" – 18 npt	3/8" – 18 npt	3/8" – 18 npt
Total Number of Ports Available:	2	2	2
Fuel Inlets	1	1	1
Fuel Outlets	1	1	1
Replacement Elements:			
02 micron	R58060-02	R58095-02	R58039-02
10 micron	R58060-10	R58095-10	R58039-10
30 micron	R58060-30	R58095-30	R58039-30
Minimum Service Clearance	2.5" (28 mm)	2.5" (28 mm)	2.5" (28 mm)
Height	7.7" (196mm)	9.0" (229 mm)	11.5" (292 mm)
Depth	5.2" (132 mm)	5.2" (132 mm)	5.2" (132 mm)
Width	4.8" (122 mm)	4.8" (122 mm)	4.8" (122 mm)
Weight (dry)	3.4 lb (1.5 kg)	3.8 lb (1.7 kg)	4.2 lb (1.9 kg)
Maximum Pump Output Pressure	10 psi (69 kPa)	10 psi (69 kPa)	10 psi (69 kPa)
Features:[1]			
Water Sensor	Standard	Standard	Standard
Heater	Standard	Standard	Standard
Pressure Regulator (10 psi)	Standard	Standard	Standard
Operating Temperature	-40˚ to +255˚F / -40˚ to +121˚C		

Vacuum installations are recommended. [1] Not for use with gasoline applications.

How To Order – The example below illustrates how part numbers are constructed.

P4	2	10	N	H
Specify 'P3' for 30 gph, 'P4' for 40 gph, or 'P5' for 50 gph	'2' must be in the part number. (It specifies a 12V DC pump	Specify micron rating of element: '02', '10', or '30'	'N' must be in the part number. (It specifies standard 3/8" npt ports	'H' must be in the part number. (It specifies a 12V DC, 150-watt heater)

Interested in continuous running pumps? Consult factory 1-800-344-3286, ask for Technical Services.

In 2.7, 3.9, 5.0 and 15 gallon per minute flow rates.

Caution for Users: *Petroleum products flowing over a plastic surface generate static electricity.* Caution should be taken to ensure that the RFF is grounded to reduce static electricity buildup and reduce the chance of explosions or fire. Electrically bond the funnel by using a wire with a metal clip on each end and clamp one to the upper rim of the funnel and the other to the fueling source. For example, the metal gas can or nozzle from the pump.

Fuel Filter Funnel

The Racor Fuel Filter Funnel (RFF) family is a new heavy-duty, fast-flow, filter-in-a-funnel that separates damaging free water and contaminants from gasoline, diesel, heating oil, and kerosene.

The new RFF family of products is capable of removing free water and solids down to .005 inches and allows you to visually inspect the integrity of your fuel supply as you refuel.

The RFF family is manufactured using industrial-grade black electro-conductive polypropylene. Carbon powder is injected into the plastic so that the RFF will conduct static electricity. The grounding capability of the RFF is an important safety feature. Always use proper fuel handling procedures and follow local, state and federal regulations.

Every time you squeeze the trigger, you threaten your engine's life.

No matter how carefully diesel or gasoline is handled and stored, dirt, rust, gums, algae and water are going to find their way in, and just a few drops can leave you dead in the water. Racor fuel filter/water separators with Aquabloc II media remove virtually 100% of damaging water and solids, allowing engines to run with more power and greater efficiency. Install a Racor mounting head or spin directly onto your existing filter head to protect your engine and improve its performance. Spin on a Racor fuel filter/water separator, for the life of your engine.

The Most Complete Protection On The Water

Being on the water is fun, having water in your fuel is not. And more than ever today's high-performance gasoline inboard and outboard engines require clean, dry fuel. Racor filters offer the improved features and peace-of-mind that come with our quality fuel filter/water separators.

- Clear contaminant collection bowl with drain valve for outboards.
- 10-micron Aquabloc II media.
- High capacity and long life.
- Rated 98% efficient at 10-micron per SAE test procedures.
- Corrosion-resistant construction.
- Metal bowl units for inboard powered boats meet 33 CFR and USCG regulations.
- Meets ABYC standard for gasoline-powered vessels.

Integral primer pump versus the old primer bulb for outboards

Racor innovation leads the market again. The new 490R-RAC-01 gasoline fuel filter/ water separator with integral primer pump for outboards eliminates the need to install a primer bulb in the fuel line.

Basic Models	120R-RAC-01	120R-RAC-02	320R-RAC-01	320R-RAC-02	490R-RAC-01	660R-RAC-01	60R-RAC-01	3120R-RAC-32
Maximum Flow Rate	30 gph / 114 lph	30 gph / 114 lph	60 gph / 227 lph	60 gph / 227 lph	90 gph / 341 lph	90 gph / 341 lph	90 gph / 341 lph	120 gph / 454 lph
Filter Element No.	S3240	S3240UL	S3227	S3228UL	S3227	S3232	S3232UL	S3232UL
Center Threads	M18 x 1.5	M18 x 1.5	1"-14	1"-14	1"-14	1"-14	1"-14	1"-14
Head Port Size	1/4"-18 NPTF	1/4"-18 NPTF	1/4"-18 NPTF	1/4"-18 NPTF	3/8"-18 NPTF	3/8"-18 NPTF	3/8"-18 NPTF	1/2"-14 NPTF(1)
Height	6.5" / 166 mm	6.0" / 153 mm	9.38" / 238 mm	9.0" / 226 mm	9.9" / 251 mm	11.00" / 280 mm	10.5" / 267 mm	10.38" / 264 mm
Width	3.2" / 81 mm	3.2" / 81 mm	4" / 102 mm	4" / 102 mm	4.5" / 14 mm	4.2" / 106 mm	4.2" / 106 mm	4" / 102 mm
Depth	3.2" / 81 mm	3.2" / 81 mm	4" / 102 mm	4" / 102 mm	4.8" / 121 mm	4.5" / 114 mm	4.5" / 114 mm	5" / 127 mm
Weight (dry)	1.1 lbs / 0.5 kgs	1.2 lbs. / 0.6 kgs	2 lbs / 0.9 kgs	2 lbs / 0.9 kgs	2.6 lbs / 1.3 kgs	3 lbs / 1.4 kgs	3 lbs / 1.4 kgs	2 lbs / 0.9 kgs
Clean Pressure Drop	0.15 psi / 1.03 kPa	0.15 psi / 1.03 kPa	0.61 psi / 4.23 kPa	0.61 psi / 4.23 kPa	0.95 psi / 6.5 kPa	0.61 psi / 4.23 kPa	0.61 psi / 4.23 kPa	0.15 psi / 1.03 kPa
Max Pressure	7 psi / 48 kPa	7 psi / 48 kPa	7 psi / 48 kPa	7 psi / 48 kPa	7 psi / 48 kPa	7 psi / 48 kPa	7 psi / 48 kPa	7 psi / 48 kPa
Element Removal / Underbowl	1" / 25.4mm	1" / 25.4mm	1" / 25.4mm	1" / 25.4mm	1" / 25.4mm	1" / 25.4mm	1" / 25.4mm	1" / 25.4mm
Operating Temp.	-40˚ to +255˚ F / -40˚ to +124˚ C							

(1) Pressure installations are applicable up to the maximum psi shown. Racor filter/separators will not separate oil from gasoline in blended fuel mixtures.

Upgrade Your Standard Gasoline Filter with these Convenient Spin-Ons

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 see-thru bowl with self-venting drain or a metal bowl with drain plug for inboard applications. Metal bowls are UL-listed and USCG accepted. See-thru bowls are for outboard applications only.

For inboards:
B32020MAM
B32021MAM

INBOARD ENGINE VESSELS	
PFF55510	Replaces Mercury, Mercruiser, Yamaha, Suzuki, Honda, Tohatsu.
B32020MAM	Replaces Quicksilver. Also fits: SMI, Sierra AquaPower and other filter heads. Metal bowl.
S3220UL	Replacement Element for B32020MAM.
B32021MAM	Replaces OMC Metal Bowl. UL recognized.
S3221UL	Replacement Element for B32021MAM.

For outboards:
B32013
B32014

OUTBOARD ENGINE VESSELS	
PFF55510	Replaces Mercury, Mercruiser, Yamaha, Suzuki, Honda, Tohatsu.
B32013	Replaces Quicksilver. Also fits: Yamaha, Suzuki, SMI, Volvo Penta, Sierra, AquaPower and other filter heads. With see-thru bowl.
S3213	Replacement Element for B32013.
B32014	Replaces OMC. See-thru bowl.
S3214	Replacement Element for B32014.

PF Series

The ParFit™ marine fuel filter/water separator for most inboard, outboard, two- and four-cycle gasoline engine applications. The PFF5510 has specially treated Aquabloc 10-micron rated media, guaranteed to outperform standard gas filters.

ParFit PFF5510

The ParFit PFF5510 gasoline fuel filter/water separator replaces standard filters in most popular marine gasoline engine applications. Applications include Mercury, Mercruiser, Yamaha, Suzuki, Honda, Tohatsu and other mounting heads. Dimensions are 3.6" diameter x 4 1/4" tall.

Features and Benefits

- High contaminant-capacity and 96% @ 10-micron particle removal efficiency makes this filter suitable for all low or high-pressure injection systems.
- 99% efficient water-removing filter media.
- Performance exceeds OEM specifications.
- 11/16"-16 threads for the most popular applications.

Compact Filters for Smaller Boats and Personal Watercraft

Part No.	025-RAC-01	025-RAC-02	025-RAC-05	110A	025-RAC-09	025-RAC-10A
Flow Rate	25 gph / 95 lph	25 gph / 95 lph	25 gph / 95 lph	35 gph / 133 lph	35 gph / 133 lph	35 gph / 133 lph
Media	250-micron cleanable plastic screen	10-micron Aquabloc II filter	10-micron Cellulose filter	10-micron Aquabloc II filter	116-micron screen filter	104-micron prescreen filter
Configuration	Anodized mounting head w/ reusable see-thru bowl	Anodized mounting head w/ reusable see-thru bowl	Stainless steel 5/16" w/ hose barb epoxy paint	1/4" NPTF die cast painted mounting head	3/8" NPTF stainless steel	1/2" NPTF steel with epoxy paint
Dimensions	2.1" / 53 mm x 4.3" /109 mm	2.1" / 53 mm x 4.3" /109 mm	4.8" / 122 mm x 2.3" / 58 mm	4.75" / 121 mm x 2.3" / 58 mm	4.5" / 114 x 2.2" / 56 mm	4.2" / 107 mm x 1.9" / 48 mm

Versatile RVFS Series

Racor RVFS Series filter vessel 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 a coalescer/separator, water absorber or clay treater by changing internal components, flow direction or by selecting optional filter cartridges when ordering. The vessels are fabricated from carbon steel with an exterior primer coating of Gavlon suede gray and the interior is epoxy coated to meet MIL-C-4556E.

Element choices include a coalescer/separator, pre-filter, water absorber or clay treater.

Completely dressed factory filter vessels can be specified with differential pressure gauges, water sight glasses, air eliminators, and manual or automatic drains. Wall mount units can be special ordered. Consult factory for other options.

250 psi ASME Code Section VIII

RVFS-2
14" W x 51" D

The Ultimate In High-Capacity Filtration

For over 35 years, Racor has been recognized as the leader in filtration and separation technology. Our engineering team takes specific application prerequisites, and by utilizing the latest computer-assisted design tools, quickly develops the necessary components to manufacture filter vessels that meet industry and customer-specific requirements. Our successful experience in global applications is the result of a continuous improvement process and real-world evaluations of product performance.

The multi-stage RVFS Filter System is a "turnkey" system ideal for easy installation and servicing. Part # RVFS-1-MS

800 Series

The Racor 800 Fuel Filter/Water Separator Series offers large diesel engine operators both ease of maintenance and continuous engine operation. Continuous operations allow filter changeouts and the draining of accumulated water from the standard, see-thru, high-impact bowls. Manifolded systems have sufficient fuel flow capacity for prime or standby power operations, commercial marine engines or other large engine applications. Options include see-thru or metal contaminant collection bowls, heaters, water sensors, water sight glasses, and vacuum or pressure gauges. Diesel applications only. For installations in engine rooms, metal bowl units are required. Order 812MA, 75812MA or 79812MA.

75812 Fuel Filter/ Water Separator. Marine (MA) models with metal bowls are also available in the 800 Series.

Vessel Series	FBO-10-MA	FBO-14-MA	806	812	75812	79812	RVFS-1	RVFS-2	RVFS-3
Fuel Ports	1 1/2" NPT	1 1/2" NPT	1" NPT	1" NPT	1" NPT	1 1/4" NPT	2" NPT	2" NPT	2" NPT
Max. Flow Rate	18 gpm / 68 lpm	25 gpm / 95 lpm	360 gph / 1363 lph	720 gph / 2725 lph	1440 gph / 5450 lph	2160 gph / 8175 lph	50 gpm / 189 lpm	100 gpm / 378 lpm	150 gpm / 568 lpm
Max. Working Pressure	75 psi / 517 kPa	75 psi / 517 kPa	30 psi / 207 kPa	30 psi / 207 kPa	30 psi / 207 kPa	30 psi / 207 kPa	85 psi / 586 kPa	85 psi / 586 kPa	85 psi / 586 kPa
Clean Pressure Drop	1 psi / 6.9 kPa	1 psi / 6.9 kPa	1.6 psi / 11 kPa	3.2 psi / 22 kPa	6.0 psi / 41.4 kPa	5.2 psi / 35.9 kPa	2 psi / 13.8 kPa	2 psi / 13.8 kPa	2 psi / 13.8 kPa
Temperature Rating	-10 F / +150 F	-10 F / +150 F	-10 F / +180 F	-10 F / +180 F	-10 F / +180 F	-10 F / +180 F	-10 F / +150 F	-10 F / +150 F	-10 F / +150 F
Replacement Elements	See Chart p. 15	See Chart p. 15	RK 22788	RK 22610	RK 22610	RK 22610	RK 22610	RK 22610	RK 22610
Height	18.8" / 478 mm	22.6" / 574 mm	24" / 610 mm	34" / 855 mm	34" / 855 mm	34" / 855 mm	39" / 991 mm	51" / 1295 mm	65" / 1651 mm
Width	8.6" / 218 mm	8.6" / 218 mm	9" / 226 mm	9" / 226 mm	18" / 476 mm	30" / 762 mm	13.75" / 350 mm	13.75" / 350 mm	13.75" / 350 mm
Depth	8.6" / 218 mm	8.6" / 218 mm	9" / 229 mm	9" / 229 mm	16" / 394 mm	16" / 394 mm	13.5" / 343 mm	13.5" / 343 mm	13.5" / 343 mm
Dry Weight	13 lbs / 5.9 kgs	16 lbs / 7.2 kgs	25 lbs / 11 kgs	22 lbs / 10 kgs	77 lbs / 35 kgs	160 lbs / 73 kgs	100 lbs / 91 kgs	115 lbs / 113 kgs	130 lbs / 136 kgs
Collection Bowl Capacity	150 ml	150 ml	3.7 L	3.7 L	7.4 L	11.1 L	1 gallon	1 gallon	1 gallon
Required for element change	2" / 50.8 mm	12" / 305 mm	2" / 50.8 mm	12" / 304.8 mm	12" / 305 mm	12" / 305 mm	12" / 305 mm	24" / 609.6 mm	36" / 914.4 mm

RK 22610 – Replacement Element Kit (contains one each of 8021 and 8022 filter elements and a lid gasket; 75812 requires 2 kits; 79812 requires 3 kits;)
Some units are available with solid metal bowls, add MA to suffix, example 812MA or 75812MA.

RVFS-1, RVFS-2, RVFS-3 Element Options

	RVFS-1	RVFS-2	RVFS-3	Micron sizes
Silicone-treated Pleated Pre-filters	6" x 14"	6" x 30"	6" x 44"	0.5, 1, 2, 5, 10, 25
FBC Clay Bags	N/A	7" x 18"	7" x 18"	N/A
Water Absorbing Elements	6" x 14"	6" x 14"	6" x 14"	1, 5, 10, 25
OCP Coalescer	8" x 15"	8" x 30"	8" x 44"	1, 2, 5, 10, 25
Teflon® Separator	4" x 15"	4" x 30"	4" x 44"	Screen

For additional information, request brochure no. 7537, RVFS Vessel Filter Element Options Identification and Application Guide.

Spin-On Protection At The Pump

Start protecting your engine investment right at the pump. Racor's Fuel Dispensing Filters are essential for stationary and overhead tanks and mobile service vehicles. With their easy-to-install heads, they remove virtually 100% of the contaminants from diesel fuel.

Racor FDW elements feature a super-absorbent, chemically-treated media that absorbs 25 times its weight in water, "locking it in" as a barrier against free and emulsified water. There is no bypass valve which ensures that fuel is completely protected. As the media swells, it significantly reduces the fuel flow rate, signaling a need to replace the element.

Racor offers filter protection down to 25 microns. Flow rates range from 15 to 100 gpm. Element service is clean and easy – there's no cartridge to replace – just spin-on a new Racor filter element.

Fuel dispensing filters can be used with diesel fuel or gasoline.

Filter Heads

Part No.	HH07500	FDH12500	FDW125DD
Port Size	3/4" NPT	1 1/4" NPT	1 1/2" NPT
Element	FDW 3525/3825	FDW 51125	FDW 51125(2)
Element Thread	1" – 12 UNF	1 1/2" – 16 UNF	1 1/2" – 16 UNF
Flow Rate	15 gpm / 57 lpm	50 gpm / 176 lpm	100 gpm (Dual unit) / 375 lpm

Water Removing Filter Elements

Part No.	FDW 3525	FDW 3825	FDW 51125
Nominal Micron Rating	25	25	25
Element Size	3.7 D x 5.5 L	3.7 D x 8.0 L	5.0 D x 11.0 L
Element Thread	1" – 12 UNF	1" – 12 UNF	1 1/2" – 16 UNF
Application	Marinas	Marinas	Marinas

Maximum operating pressure of Fuel Dispensing Filter Heads and Water Removing Filters is 100 psi (690kPa).
10-micron elements available through special order.

3150R, 3250R

Fuel Dispensing Filters utilize water-repelling 30-micron Aquabloc II media and a see-thru bowl. The assembly can be hard plumbed directly to the fuel dispenser. Flow rates from 150-250 gallons per hour.

Specifications

Part No.	3150R	3250R
Maximum Flow Rate	150 gph / 568 lph	250 gph / 946 lph
Maximum Working Pressure	15 psi / 103 kPa	15 psi / 103 kPa
Filter Element	S3228	S3207
Port Sizes	7/8"-14 SAE	7/8"-14 SAE
Height Width Depth Weight	13.63" / 346 mm 5.00" / 127 mm 5.5" / 140 mm 3.6 lbs / 1.63 kg	17.25" / 438 mm 5.00" / 127 mm 5.5" / 140 mm 4.6 lbs / 2.08 kg
Clean Pressure Drop	0.68 psi / 4.7 kPa	1.0 psi / 6.9 kPa
Bowl/Sump Water Capacity	82 ml	82 ml
Operating Temp. -23˚ to 82˚ C	-10˚ to 180˚ F -23˚ to 82˚ C	-10˚ to 180˚ F -23˚ to 82˚ C

The slotted locking ring collar attaches the filter housing to the aluminum die cast filter head with four bolts. Metal hand knobs are provided for ease of maintenance.

Powder coated components capable of 150 psi @ 240° F max design pressure.

Steel filter bowl assembly, a manual vent valve and a manual drain valve help provide ease of service – especially significant given the FBO assembly's wide range of installations, including aviation fuel trucks, aviation fueling cabinets, diesel fuel dispensing systems, marine fuel docks and fuel systems on large diesel engines. 1 1/2" NPT inlet and outlet.

Refer to page 13 for specifications.

FBO-10 and FBO-14

Racor's new 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 assemblies can handle flow rates from 18-50 depending on element specified, the elements installed and fuel being filtered.

UL listed versions in white are available, see page 13.

FBO Element Options

Type	FBO-10 6 x 10 Element	Micron	Flow Rate GPM Diesel	Gas	FBO-14 6 x 14 Element	Micron	Flow Rate GPM Diesel	Gas
Filter Separator	FBO-60327	1	18	45	FBO-60336	1	25	65
Filter Separator	FBO-60328	5	18	45	FBO-60337	5	25	65
Filter Separator	FBO-60353	10	18	45	FBO-60356	10	25	65
Filter Separator	FBO-60329	25	18	45	FBO-60338	25	25	65
Prefilter	FBO-60330	1	20	50	FBO-60339	1	30	75
Prefilter	FBO-60331	5	20	50	FBO-60340	5	30	75
Prefilter	FBO-60356	10	20	50	FBO-60357	10	30	75
Prefilter	FBO-60332	25	20	50	FBO-60341	25	30	75
Absorptive Filter	FBO-60333	1	18	45	FBO-60342	1	25	60
Absorptive Filter	FBO-60334	5	18	45	FBO-60343	5	25	60
Absorptive Filter	FBO-60355	10	18	45	FBO-60358	10	25	60
Absorptive Filter	FBO-60335	25	18	45	FBO-60344	25	25	60

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 Fuel 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 gallons of diesel fuel.

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 (-36°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 protection.

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.

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

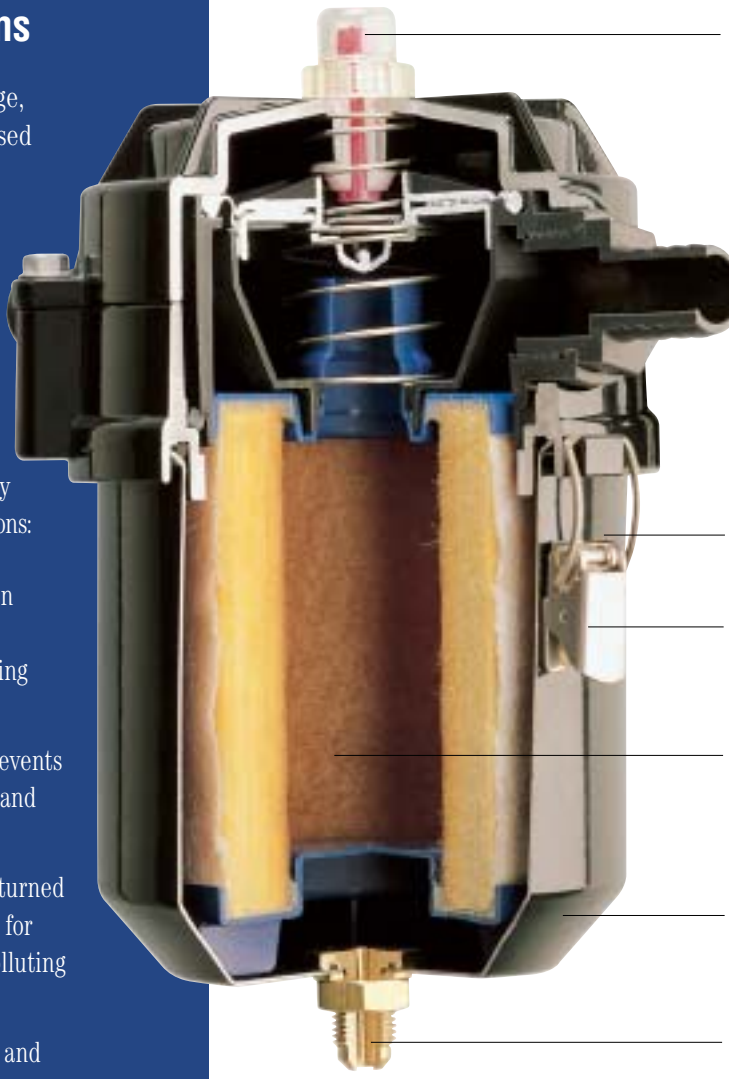
air

Racor CCV Systems

In a 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.

Closed crankcase ventilation systems eliminate crankcase emissions and provide a cleaner engine environment by performing the following functions:

- They reduce oil consumption by separating the oil from crankcase gases and returning the oil to the sump.
- The high-efficiency filter prevents fouling of the turbocharger and after-cooler.
- Filtered crankcase gas is returned to the engine intake system for re-combustion instead of polluting the environment.
- Keeps engine compartment and components clean.



Pop-up style indicator that alerts of a bypass condition and the need for a filter change.

A unique crankcase pressure regulator with integral bypass valve minimizes variation in crankcase pressure. Excessive variation in crankcase pressure can damage seals, cause loss of oil and other problems.

Left- or right-hand inlet/outlet options.

High-efficiency oil separation to 0.3µ (microns).

Durable glass-filled nylon and die cast aluminum components.

Steel with epoxy powder coating.

Stainless steel latches for tool-less element change.

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

Extended filter service interval from the Vaporbloc element.

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 (-40˚C to 116˚C).

The CCV3500 Series is recommended for turbocharged diesel applications and gensets, where the crankcase flow rate is limited to 3 cubic feet per minute (CFM) on a new engine.

CCV Operation

- CCV systems operate by filtering contaminants and coalescing oil mist from crankcase gases. The crankcase breather hose is connected to the 3/4" inlet hose barb of the CCV assembly. The connection at the engine can be at the valve cover or the crankcase.
- Filtered air from the CCV assembly is plumbed to the air intake system between the air filter and the turbocharger.
- Coalesced oil drains from the element sump to an external drain. A check valve holds the oil in the line until it is released to the oil pan via a hose connection.
- The pressure regulating valve protects the engine from excessive crankcase vacuum.

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.

Air Filters/Silencers

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 Vaporbloc filter media. Turbo noise is reduced by the unique design of the housing. An integral hose connection on the housing routes the clean blow-by from the CCV back into the engine.

- Pop-up style indicator alerts the operator of a bypass condition and the need for a CCV Vaporbloc filter change.
- Air Filter/Silencer is standard with an integral venturi port for CCV connection.
- Air filter media is washable.
- Optional tap sleeves for easy connection of existing air cleaner to CCV assembly.
- Prevents turbo and intercooler fouling.

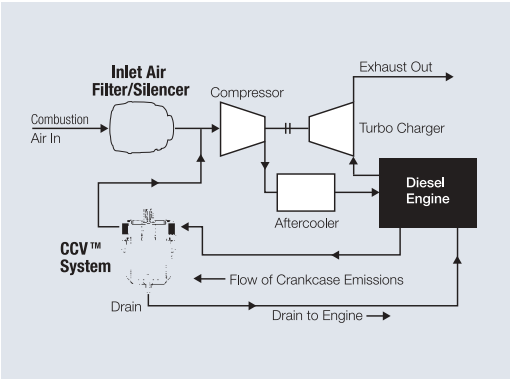
Reduce Emissions, Clean Up Engine Rooms and Engines

Marine diesel engines can benefit from the installation of a combination Racor CCV Crankcase Ventilation and Air Filter/Silencer System. The Racor system consists of Crankcase Ventilation Filters (CCV) and Engine Air Filter/Silencers (AF).

The CCV contains Racor's high-performance Vaporbloc™ filter made of depth-loading, micro-glass fiber coalescing media. The marine Air Filter/Silencer (AF) contains a washable media and is ruggedly built to provide an extended service life.

How the Systems Work

The engine crankcase breather is connected to the inlet of the Racor CCV assembly. The CCV outlet is connected to the engine's combustion air inlet via an air intake connector where filtered blow-by gas is recycled through the combustion process. Oil collected in the CCV sump is returned to the crankcase through a hose and a drain check valve.



Marine Engine Application Worksheet

In order to determine the correct Racor CCV system for a particular application, certain engine information is required. A complete kit is composed of the following:

1. Racor CCV assembly
2. Fitting/Hose Kit
3. Air Intake Connector (Tap Sleeve or Marine Air Filter/Silencer Assembly)

1 Select the Racor CCV Assembly:

Racor CCV application is determined by crankcase flow in cubic feet per minute or CFM. Flow 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.

Example: CAT 3116-260HP / 40 = 6.5 CFM, select CCV4500

CAT 3406-525HP / 40 = 13.13 CFM, select CCV6000

Maximum Flow Rate	
CCV Model	**Flow**
CCV1500	1 CFM / 28 LPM
CCV3500	3 CFM / 95 LPM
CCV4500	10 CFM / 283 LPM
CCV6000	20 CFM / 566 LPM
CCV8000	40 CFM / 1132 LPM

CCV units are designed to handle crankcase flow rates of 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. Note: Specify left- or right-hand inlet when ordering.

❷ Select a Fitting/Hose Kit:

Fitting/Hose Kits come with both fittings and enough hose for the inlet and outlet sides of the Racor CCV assembly. Racor CCV filter units require straight thread o-ring hose barb fittings available only from Racor distributors. In order to determine the correct application, you will need to know the quantity and the outside diameter of engine breather(s)/hose connection. Fitting/Hose Kits are available in various sizes and hose configurations. Consult factory or see www.parker.com/racor.

❸ Air Intake Connector – Select A, B, or C; Depending On Application:

A. Tap Sleeve

Tap sleeves provide for connection of the Racor CCV outlet to the engine's air intake. Determine the inside diameter of the hose between the turbo and the air cleaner. This will determine the outside diameter of the tap sleeve required for completion of the installation of your Racor CCV system. Verify all dimensions required of the tap sleeve before ordering.

Example: John Deere #4045T – Hose between turbo & air cleaner is 4" inside diameter. Correct tap sleeve is CCV40100, which is 4" outside diameter with a 1" OD hose barb.

B. Hump Hose Fittings:

These are designed to be used with existing air cleaner-to-turbo rubber adapters.

Part Number	Hose
CCV55113	1"
CCV55114	1 1/4"
CCV55115	1 1/2"

C. Marine Air Filter Silencer Assembly.

In order to determine the correct marine air filter application, you will need to know the engine's marine air filter rating (AFR) and 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.

4-cycle engines: AFR = HP x 2.0
2-cycle engines: AFR = HP x 2.5

Maximum Flow Rate	
Marine Air Filter	**AFR**
AF M408512	800 cfm / 377 L/s
AF M501012	1200 cfm / 566 L/s
AF M601212	1600 cfm / 755 L/s

Note: If AFR is close to maximum capacity of the marine air filter as listed above, use the next size larger.

Example: DDC 12V92TA DDEC (2-cycle – twin turbo):

826 hp x 2.5 = 1032.5 AFR per turbo = (2) AF M501012

1110 hp x 2.5 = 1387.5 AFR per turbo = (2) AF M601212

CAT 3196 (4-cycle - twin turbo):

660 hp x 2.0 = 1320.0 AFR = (1) AF M601212

In addition, note the dimensions of the marine air filter outlets and the Racor CCV connector barb outside diameter in the Marine Air Filter chart on the following page to ensure the correct installation for your engine. However, the Marine Air Filters typically correspond with the following CCV Models.

Optional Tap Sleeves:
CCV30100, CCV40100, CCV50125, CCV50125

Marine Air Filter	CCV Model
AF M408512	CCV3500 or CCV4500
AF M501012	CCV4500 or CCV6000
AF M601212	CCV8000

Cummins QSM11 marine engine with CCV cutaway

Caterpillar 3196 marine engine with Racor CCV/AF System

Marine Air Filter/Silencer (AF) System

For more detailed information and for available hose kits, request technical manual number #55021 or call factory.

CCV Specifications

	CCV1500	CCV3500	CCV4500	CCV6000	CCV8000
Height	5.1" / 130 mm	7.0" / 178 mm	9.25" / 235.0 mm	12.00" / 304.8 mm	13.88" / 352.6 mm
Maximum Opening Width (incl. clamps & bracket)	8.2" / 208 mm	7.0" / 178 mm	7.50" / 190.5 mm	11.25" / 286.8 mm	13.25" / 336.6 mm
Depth	5.6" / 142 mm	6.3" / 160 mm	5.60" / 142.2 mm	7.30" / 185.4 mm	9.30" / 236.2 mm
Weight	1.5 lbs / .68 kg	2.3 lbs / 1.0 kg	3.26 lbs / 1.48 kg	5.01 lbs / 2.28 kg	8.72 lbs / 3.96 kg
Filter Removal Clearance	6.0" / 152 mm	4.6" / 117 mm	2.25" / 57.2 mm	4.00" / 101.6 mm	5.00" / 127.0 mm
Replacement Element/Media Density/Low	CCV 55365-04	N/A	N/A	N/A	N/A
Replacement Element/Media Density/Medium	N/A	CCV 55304-06	CCV 55248-06	CCV 55274-06	CCV 55222-06
Replacement Element/Media Density/High	N/A	CCV 55304-08	CCV 55248-08	CCV 55274-08	CCV 55222-08
Housing Material	Glass-filled nylon and black powder epoxy-coated steel bracket.	Glass-filled nylon components.	Die cast head, glass-filled nylon and black powder epoxy-coated steel bowl.	Die cast head, glass-filled nylon and black powder epoxy-coated steel bowl.	Die cast head, glass-filled nylon and black powder epoxy-coated steel bowl.
Inlet & Outlet Thread Size	3/4" hose	3/4" hose	1 3/16" - 12 STOR	1 5/8" - 12 STOR	1 7/8" - 12 STOR
Max. Cubic Feet per Minute	1 cfm / 30 lpm	3.0 cfm / 84 lpm	10 cfm / 283 lpm	20 cfm / 566 lpm	40 cfm / 1132 lpm
Crankcase Pressure Regulator	Vacuum limiting valve	Integral	Integral	Integral	Integral
Bypass/Change Indicator	N/A	Integral	Integral or Remote	Integral or Remote	Integral or Remote
Engine Block Check Valve Return Fitting	N/A	1/4" NPT	1/4" NPT	1/4" NPT	3/8" NPT
Swivel Fitting (Qty.)	N/A	# 6 JIC (2pcs.)	# 6 JIC (2pcs.)	# 6 JIC (2pcs.)	# 8 JIC (2pcs.)
Oil Drain Hose I.D.	N/A	.375"	.375"	.375"	.5"

Additional details are available in technical manual #55021. * Units can be manifolded to handle higher flow rates.

Air Filter/Silencer Specifications

	AF M408512	AF M501012	AF M601212
Max. Air Flow*	800 cfm / 377.6 l/s	1200 cfm / 566.4 l/s	1600 cfm / 755.2 l/s
Outlet Diameter	4.00" / 101.6 mm	5.00" / 127.0 mm	6.00" / 152.4 mm
Filter Element	AF M8040	AF M8050	AF M8060
Length	12.50" / 317.5 mm	12.50" / 317.5 mm	12.50" / 317.5 mm
Depth	9.59" / 243.5 mm	11.14" / 282.8 mm	13.51" / 343.2 mm
Hose Barb size	1.00" / 25.4 mm	1.25" / 25.4 mm	1.25" / 31.75 mm
Weight	4.16 lbs / 1.89 kgs	5.03 lbs / 2.28 kgs	8.00 lbs / 3.63 kgs
CCV hose barb	1" OD	1 1/4" OD	1 1/4" OD
Operating Temperature	-40˚ to +240˚F / -40˚ to +116˚C		

*Values given are cubic feet per minute (cfm) and liters per second (l/s).

When is My Engine Air Filter "Used Up?"

Because it performs so well, it is not uncommon for the engine air filter to appear as if it has reached its capacity. Generally, there is considerable service life left. The only way to know when the engine air filter has reached capacity is to measure the restriction at service intervals.

A helpful and effective way to verify restriction is with a filter restriction monitor. A restriction monitor will provide a quick and accurate assessment of the air filter's condition and remaining service life.

Standard Filter Monitor Part Numbers

Part Number	Range (In. water vac.)	Description
400033015[A]	8-15	Direct Mount
400033020[A]	8-20	Direct Mount
400033025[A]	8-25	Direct Mount
014440001[A]	8-25	Direct Mount w/ 90˚ fitting
072604000[B]	4-25	Remote Mount
076248001[A]	8-25	Dash Mount

[A] Unit standard with a 1/8"-27 NPT straight fitting
[B] Unit standard with a 90˚ coupling and 10' hose

NEW ECO III®

ECO III is the newest addition to Racor's complete ECO family of air filtration systems. ECO systems can be configured to meet a wide variety of over-the-road, off-road and industrial applications. For more information, visit www.parker.com/racor or request the #7655 Air Filtration Systems brochure.

ECO Series Spin-On Disposable Air Cleaners

With its revolutionary spin-on design, the completely disposable ECO Series offers faster, safer, more trouble-free service than any other air cleaner today.

The ECO Series provides two significant improvements in engine protection. When the filter loads with dirt and replacement is required, collected dust and debris stay safely contained inside the disposable housing, eliminating the chance of contaminating the air intake system during air filter service. Since the ECO Series uses no clean air gaskets, you never have to worry about gasket leakage. The outlet simply hooks up to the intake with a rubber connection and clamp, creating a leak-tight seal.

The first cone-type filter element that is both tapered and offset.

Water-resistant media provides three- to five-times longer filter life than conventional designs.

More usable media area than conventional filters.

Paper pleats are permanently locked in place for reliable performance.

Air flow distribution and dust loading are uniform throughout the high-performance filter cone pack, resulting in increased capacity and lower pressure differential for improved horsepower and fuel economy.

Media is SAE-rated to provide average efficiency of 99.9% (SAE J726C), with no seals or gaskets to replace.

ECO II

ECOLITE

- Compact air cleaner with reverse flow flexibility.
- Tapered offset cone design assures uniform air distribution, minimizes air restriction and maximizes element service life.
- Positive barrier, pleated paper media is set in a superior quality adhesive for a permanent seal.
- The only air filter available with choice of flow directions in a single part number.
- Airflow may enter or exit end opening.
- Efficiency is rated 99.9%.
- No seals or gaskets to replace.
- Housing is a strong, lightweight, rust-resistant steel.

ECO-BC

This Spin-On disposable air cleaner features a Slimline design for vertical installations requiring tight or limited space restrictions.

- Inside-out vertical applications only.
- Drain valve in base for water removal.

ECO-SM

- Easy upgrade for existing air cleaners with separate elements.
- Fast and easy to service with no housing to clean or gaskets to service.
- Economical scheduled maintenance design.
- Choice of three inlet locations to match new or retrofit applications.
- Beaded outlet.
- Drain holes for water removal.

ECO-SE

- For light and medium duty applications; smaller mobile and stationary engines up to 300 hp.
- Easy to service, compact, lightweight, high-efficiency design.
- Durable urethane outlet eliminates additional rubber connection.
- Straight-thru design improves pressure differential in smaller engine air intakes.
- Beaded cavity outlet.
- Drain holes for water removal.

ECO-LL

- Spin-On disposable featured in a Long Life high-performance version.
- Use when extended maintenance intervals, or severe service, or when element life improvement is desired.
- Choice of inlet locations.
- More media surface area than scheduled maintenance style.
- Beaded outlet.
- Drain holes for water removal.

Air Filter Replacements

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 with polyurethane sealing surfaces. This product is cleanable and must be oiled before re-using.

Air Filter Cleaning Kit

To be used for washing and re-oiling Racor cleanable air filters.

Part Number: AFM82006

Competitive Part Number	Racor Part Number	Dimensions (in) (DxHxd)
CD170	AF M8145	10 x 8 x 10
CD174	AF M8121	7.5 x 6 x 7.5
CD175	AF M8122	7.5 x 7 x 7.5
CD177	AF M8124	7.5 x 9 x 7.5
CD178	AF M8126	7.5 x 10 x 7.5
CD180	AF M8010	3" Air Separator Element
CD182	AF M8143	10 x 12 x 10
CD183	AF M8153	12 x 12 x 12
CD184	AF M8037	9 x 14 x 6.875
CD185	AF M8047	10 x 14 x 7
CD186	AF M8152	12 x 7 x 12
CD187	AF M8155	12 x 10 x 12
CD189	AF M8157	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 x 7
CD197	AF M8033	9 x 12 x 6.88
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 8 x 12

UniPamic® Light & Medium Service Air Cleaners

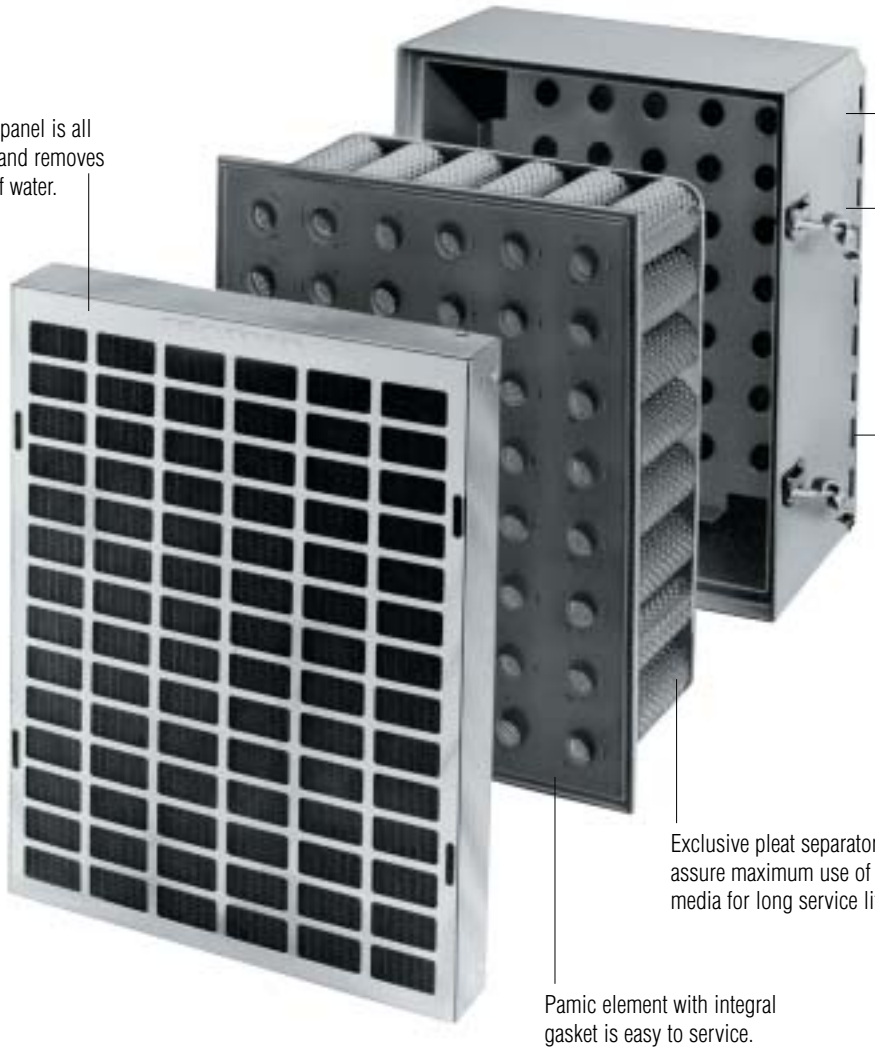
UniPamic Series Air Cleaners provide unmatched engine protection for a wide range of equipment, from on-highway trucks to compressors, stationary engines to marine engines.

Greatest Protection – The Pamic filter element has an average efficiency rating of 99.9% (SAE J726). It begins at a high level and continues to increase throughout the life of the filter.

Extended Service Life – 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 upgradeable 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.

Increased Horsepower, Reduced Fuel Consumption – 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.

Easy To Service – 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.



BYPASS OIL FILTRATION SERIES

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. 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.

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

Ideal for tow vehicles!

oil

Easy-install mounting bracket.

The cartridge element is made of an efficient combination of a cotton and cellulose woven media.

Reusable spin-on steel canister mounted to a rugged aluminum head.

The engineered design of the filter element provides more efficient filtration for a significantly longer period of time than pleated cellulose, stacked disc and other cartridge filters.

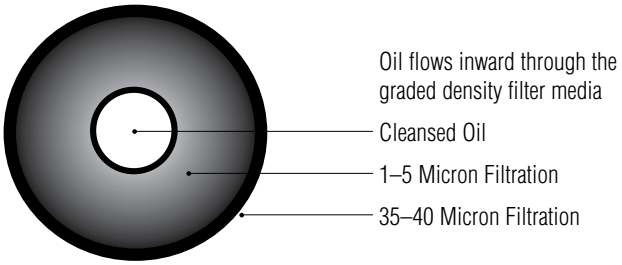
Part Number	LFS 800	LFS 801	LFS 802	LFS 802 - S*	LFS 820	LFS 825
Replacement Element (P/N)	LFS-800BPE	LFS-801BPE	LFS-802BPE	LFS-802BPE	LFS-820BPE	LFS-825BPE
Engine Size/Horse Power	up to 150 hp	150 - 250	250 - 400	250 - 400	400 - 500	500 - 800
Sump Capacity	2.5 gal / 9.5 ltr	6 gal / 19 ltr	15 gal / 57 ltr	15 gal / 57 ltr	30 gal / 114 ltr	45 gal / 170 ltr
Flow Rate	.3 gpm / .9 lpm	.4 gpm / 1.4 lpm	.5 gpm / 1.9 lpm	.5 gpm / 1.9 lpm	1 gpm / 3.8 lpm	1.5 gpm / 5.7 lpm
Canister Cap	.13 gal / .5 ltr	.3 gal / .9 ltr	.5 gal / 1.9 ltr	.5 gal / 1.9 ltr	2.5 gal / 9.5 ltr	3.5 gal / 13.3 ltr
Orifice Size	.040" / 1 mm	.040" / 1 mm	.040" / 1 mm	.040" / 1 mm	.093" / 2.4 mm	.101" / 2.6 mm
Port Size	1/8" npt	1/4" npt	1/4" npt	1/4" npt	1/2" npt	1/2" npt
Height	5.5" / 14 cm	7.5" / 19.1 cm	11" / 27.9 cm	11" / 27.9 cm	14.5" / 36.8 cm	20" / 50.8 cm
Width	4" / 10.2 cm	5.25" / 13.3 cm	5.25" / 13.3 cm	5.25" / 13.3 cm	9" / 22.9 cm	9" / 22.9 cm

The Racor Remote Bypass Oil Filter Kit comes complete with all hose and fittings required for a simple installation. The filter is mounted using a supplied heavy duty bracket. 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 by the machined and anodized filter cap or drain plug adapter. The adapter and all connectors are included in the Racor kit.

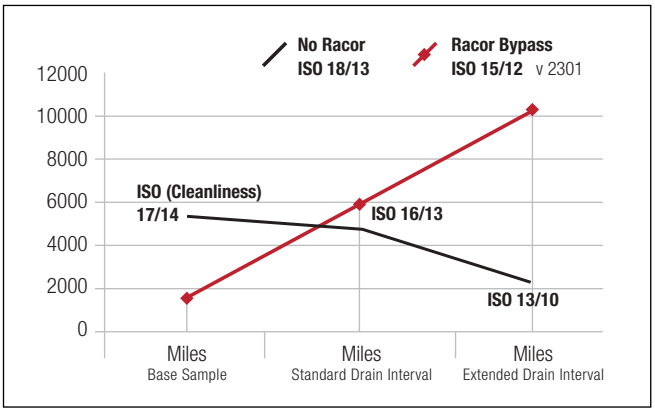
*LFS 802 - S CAT: C10 - C12 - C15 3176 w/1 3/8"-16" Thread

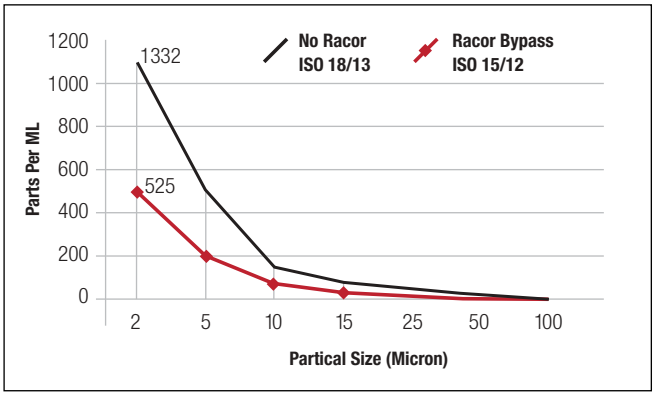
Superior Oil Filtration Media

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. Reduces damaging particle count by 99%.



Typical Results





Superior Solid Filtration

The Bypass Oil Series filter element is a one micron filter element. With surface filters, particles tend to stack up on a single plane, thereby "loading" the filter and cutting off flow. The 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 Bypass Oil Series filter element is a depth filter with more media volume and a superior moisture retention material – cotton.

Pleated cellulose and centrifuge filters don't have the media volume 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.

Dodge/Cummins 5.9 L

Tow Vehicle Application Chart

Application	Kit Part #	Year Model	Bypass Filter	Hose Kit	Replacement
Dodge / Cummins 5.9L	LFS RK859CEA	Thru 1993-2002	LFS 801	LFS 801BHK	LFS 801BPE
Dodge / Cummins 5.9L	LFS RK859CEB	1994-2001	LFS 801	LFS 801BHK	LFS 801BPE
Dodge / Cummins 5.9L	LFS RK859CL	1998.5 to Current	LFS 801	LFS 801BHK	LFS 801BPE
GM Duramax 6.6L	LFS RK866G	All Models	LFS 801	LFS 801BHK	LFS 801BPE
Ford 6.0L	LFS RK860F	2003 to Current	LFS 801	LFS 801BHK	LFS 801BPE
Ford 7.3L DI and IDI Engine	LFS 873F	1987 to 2003	LFS 801	LFS 800BHK	LFS 801BPE

Spin-On Hydraulic Protection

Racor water-absorbing hydraulic filters feature a specially designed media that traps solid contaminants like dirt and rust and damaging water. As the element fills with water and plugging occurs, flow slows 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 bypass filters are also ideal for cleaning hydraulic fluids.

- Reduction in erosion, fatigue and wear caused by abrasive particles
- Longer fullflow filter life.
- Eliminate sticky servo valves.
- Maintain consistent TAN, (Total Acid Number) by reducing the build up of moisture in the system.
- Reduced operating cost due to better machine performance.
- Longer hydraulic component life.
- Reduced use of expensive hydraulic filters.
- Reduced waste of costly dirty filters

For specifications refer to page 26.

hydraulic filtration

Spin-On Hydraulic Elements

Low-Pressure

Filtration applications for return lines and other low-pressure fluid circuits.

Part No.	IN HW3510	IN HW5710	IN HW51110
Flow Rate	15 gpm / 57 lpm	50 gpm / 190 lpm	50 gpm / 190 lpm
Threads	1" – 12	1 1/2" – 16	1 1/2" – 16
Dimensions	3.7D x 5.5L	5.0D x 7.0L	5.0D x 11.0L
Pressure	100 psi / 690 kPa	100 psi / 690 kPa	100 psi / 690 kPa

See chart below for mounting head information.

High-Pressure

Filtration applications for pressure locations within the fluid circuit.

Part No.	HP60077	HP60080	HP60083	HP60086
Flow Rate	20 gpm	20 gpm	50 gpm	50 gpm
Length	Standard	Extended	Standard	Extended
Pressure	3000 psi / 20,690 kPa	3000 psi / 20,690 kPa	3000 psi / 20,690 kPa	3000 psi / 20,690 kPa

Consult factory for ordering assistance.

Type 1
07500 Series

Type 2
12500 (L or R) Series
(IN HH12515**L** Shown)

Type 2
12500MP Series
(Multi-port head)

IN HG15LF Gauge
(Not to scale)

Mounting Heads

Part No.	Head Type	Port Size	Center Thread	By-pass Setting (psiD)	Filter Application
Maximum flow rate for the heads below is 15 gpm / 900 gph and up to 175 psi / 12.1 bar					
IN HH 75503	1	3/4" NPT	1"-12 UN	3	Use with
IN HH 07515	1	3/4" NPT	1"-12 UN	15	3510
IN HH 07525	1	3/4" NPT	1"-12 UN	25	filter
Maximum flow rate for the heads below is 50 gpm / 3000 gph and up to 175 psi / 12.1 bar					
IN HH 12515[1]	2	1 1/4" NPT	1 1/2"-16 UN	15	Use with
IN HH 12525[1]	2	1 1/4" NPT	1 1/2"-16 UN	25	5710 and
IN HH 12515MP[2]	2	1 1/4" NPT	1 1/2"-16 UN	15	51110
IN HH 12525MP[2]	2	1 1/4" NPT	1 1/2"-16 UN	25	filters

[1] Specify L or R. L provides the standard color-coded bar restriction gauge on the side of the head with the flow direction going to your left. R has the flow going to the right. See center head illustration, above.
[2] MP signifies a multi-port head. The multi-ports are for an optional in-head gauge, such as the IN HG15LF liquid filled, 1.5" diameter, compound pressure/vacuum gauge (1/8" NPT). See right illustration, above.

Model GLT 60006

Guardian: A Handy Way To Transfer Fluids

Contamination is sometimes added to a new fluid – hydraulic or diesel – 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.

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. Consult factory for ordering assistance.

Reservoir Breather Filters

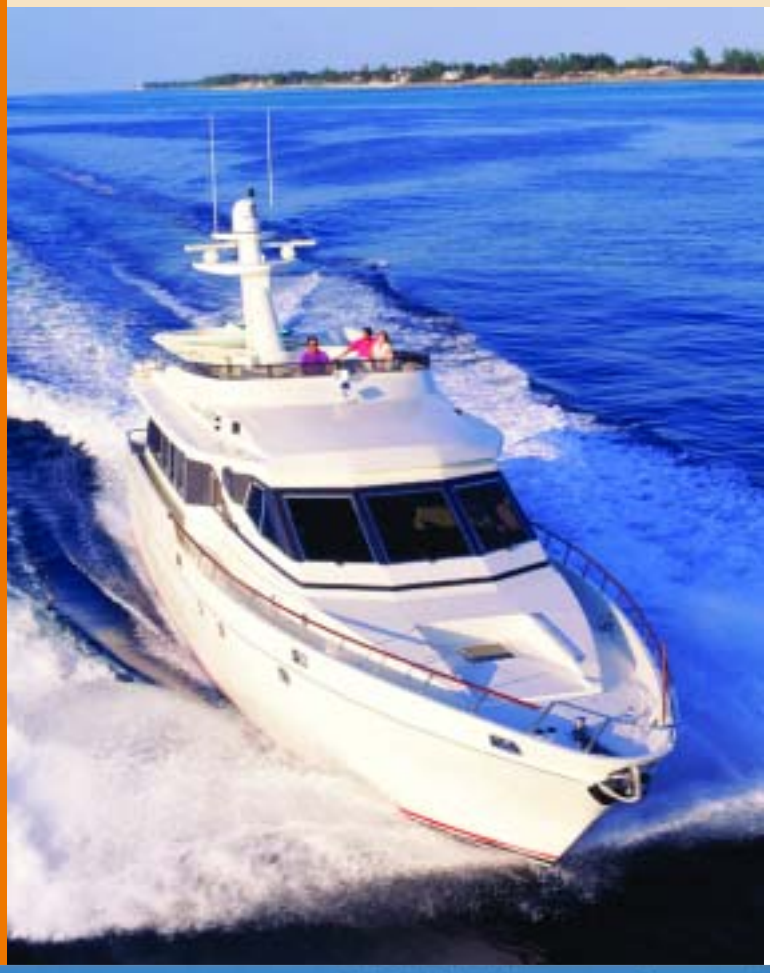
Reservoir breather filters provide precision hydraulic components with special protection against wear particles and destructive moisture. The use of reservoir breather filters is especially critical in high-humidity areas or where moisture is present near hydraulic systems. Racor reservoir breathers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

Marine Rated – Best

Parker Marine Hose is a USCG-rated hose for gasoline, diesel, lube oil and hydraulic systems for commercial and recreational applications.

It is fire-resistant and meets SAE J1527 Type A class 1 and SAE J1942 standards. As you'd expect, it delivers test-proven performance in a wide operating temperature range and constant working pressure. It is of a long-lasting reinforced construction, kink and cut resistant, and compatible with a variety of standard 100R5 fittings.

marine rated hose



- Packaged in 350-foot reels or 50-foot kits.
- High-tensile steel wire braid.
- 500 psi working pressure.
- Passed 2 1/2 minute fire test.

No-Skive Hose and Fittings

- No-Skive hose and fittings does not require removal of the outer hose cover, eliminating premature failure caused by skiving too long or short.
- Use of No-Skive hose and fittings keeps outer cover intact, protecting vulnerable wire wrap during fitting assembly.
- Cushioned grip increases hose life – supporting cushion of compressed rubber between gripping threads on fitting reduces wire movement, minimizing stress.
- Corrosion Protection – steel wire braid of No-Skive hose is never exposed because outer rubber cover is not removed before assembling fitting.
- No-Skive fittings allow socket threads to penetrate outer hose cover, and grip the wire braid of the hose.
- Simple two step assembly – attach socket to hose, thread nipple to socket.

Reusable Fittings

Reusable-style fitting design permits quick, easy field assembly without special tools… just replace the hose!

Brass Part #	Plated Steel	Size
955-W5-R5	915-W5-R5	-5
955-W6-R6	915-W6-R6	-6
955-W8-R8	915-W8-R8	-8
955-W10-R10	915-W10-R10	-10
955-W12-R12	915-W12-R12	-12
955-W12-R16	915-W12-R16	-16

Fire-Resistant Marine Hose Meets SAE J1527 Type A Class 1 and SAE J1942 Standards

Part Number	Hose I.D.		Hose O.D.		Working Pressure		Burst Pressure		Minimum Bend Radius		Weight		Inches of Hg	kPa (abs)
	inch	mm	inch	mm	psi	MPa	psi	MPa	inch	mm	lbs / ft	kg / m		
CGH-5	1/4	6,3	0.58	15	500	3,5	2000	13,8	1	25	0.19	0,28	24	81
CGH-6	5/16	8	0.68	17	500	3,5	2000	13,8	1-1/4	32	0.23	0,34	24	81
CGH-8	13/32	10	0.77	20	500	3,5	2000	13,8	1-3/4	44	0.28	0,42	24	81
CGH-10	1/2	12,5	0.92	23	500	3,5	2000	13,8	2-1/4	57	0.39	0,58	20	68
CGH-12	5/8	16	1.08	27	500	3,5	2000	13,8	2-3/4	70	0.47	0,70	20	68
CGH-16	7/8	22	1.23	31	500	3,5	2000	13,8	3-1/2	89	0.41	0,61	20	68

Vacuum/Compound Gauge Kits

Vacuum and Compound (vacuum/pressure) gauges and related hardware are available to monitor element condition. 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. Note the position of the dial, or apply the 'red line' decal provided with most kits. This will assist in easy monitoring as filter efficiency begins to decrease when a filter change is necessary.

RK11-1669

Note: Intervals of element changeout may vary depending on fuel cleanliness. Always keep a spare Racor element on hand.

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.

Kit Part No.	**Description**	**Application** Suction (vacuum) or Pressure	
RK11233	Vacuum Gauge, all liquid filled out, 2" dial, 0-30 in.Hg. with 1/4" NPT back bracket mount.	Vacuum (Suction) or Pressure	
1606B	Vacuum Gauge Kit. Gauge (RK11233), one 7232-4 & 7234-4 fitting. Instrument panel installation. #4 hose not included.	Vacuum (Suction) or Pressure	
7232–4 7234–4 0102–4–2	Adapter fitting, 1/8"NPTM X#4 (1/4") hose. Use with 0102-4-2 fitting, if needed. Adapter fitting, 1/4" swivel X #4 (1/4") hose. Use with all gauges, if needed. Adapter fitting, straight 1/4" NPTM x 1/8" NPTF. For use with 7232-4 / 7234-4 fittings, if needed.		
RK11–1676	Vacuum Gauge. all liquid filled out, 2" dial, 0-30 inHg. With 1/4" NPT bottom boss mount.	Vacuum (Suction) or Pressure	
RK11–1669	'T-Handle' Vacuum Gauge Kit. Includes Gauge (11-1676) and lid fitting (11-1668).	Vacuum (Suction) or Pressure	
RK18–1104	Compound Gauge, liquid filled, 2" dial, 0–30 inHg. / 0-30 psi. 1/4" NPT back bracket mount.	Vacuum (Suction) or Pressure	
RK18–1551	Compound Gauge, liquid filled, 2 1/2" dial, 0-30 inHg / 0-30 psi. 1/4" NPT back boss mount.	Vacuum (Suction) or Pressure	
RK19476	Compound Gauge, 2" dial, 0-25 in.Hg. / 0-15 psi. 1/4" NPT bottom boss mount.	Vacuum (Suction) or Pressure	

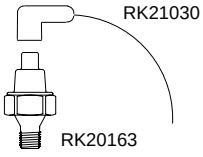
Water Detection Modules & Kits

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 electronic 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).

Caution: The water probe and detection modules work with 12 or 24 volts, direct current only and should never be wired to other brand modules or household 110 or 220 volts, alternating current.

Use the guide below to find the correct detection module for your application.

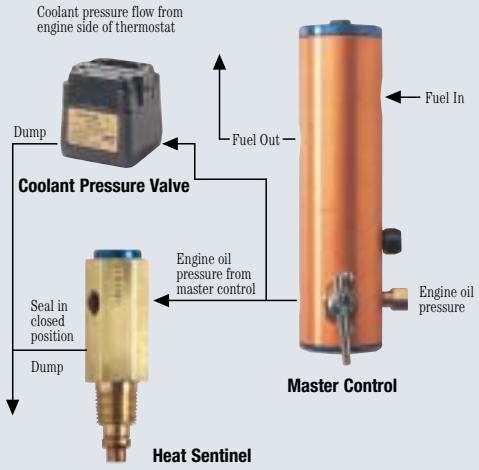
Kit Part No.		Use with the following voltage:	
RK12870	Under-dash Water Detection Module. Light and audio illuminates and sounds when water is detected. Water must be drained to reset light and stop horn. Plastic enclosure measures: 1.38" square x 1.25" deep.	12V DC	 RK12870 / RK12871
RK12871	Under-dash Water Detection Module. same as above.	24V DC	
RK20725	Under-dash Mount Water Detection Module. Light only. Green 'ON' lamp illuminates with power and red 'DRAIN' lamp illuminates when water is detected. Initial power-up self diagnosis feature and circuit protection included. Plastic enclosure measures: 2.75" x 1" x 1.5"	12V DC	 RK20725 / RK20725-24
RK20725-24	Under-dash Water Detection Module. Same as above.	24V DC	
RK20726	2" Gauge Type Water Detection Module. Light and audio. Red 'DRAIN' lamp illuminates continuously and horn sounds momentarily when water is detected. Initial power-up self diagnosis feature and circuit protection included. Plastic case, satin black dial with white lettering.	12 or 24V DC	 RK20726
RK30056	2" Gauge Type Water Detection Module and Water Probe Kit. (Module RK20726 and Probe RK21069, with 1/2"-20 threads).	12 or 24V DC Bowl must have water probe port	 RK11-1570
RK11-1570	2" Gauge Type Water Detector & Filter Restriction Module. Includes pre-set vacuum switch (7in.Hg.), connector and outlet adapter fitting. Red 'DRAIN' or 'CHANGE FILTER' lamp illuminate continuously and horn sounds momentarily when water is detected. Probe not included. Steel case, black dial with white lettering.	12 or 24V DC For units with 7/8" SAE ports	 RK14329
RK14329	Remote Detection Unit. Sends 12V DC hot (+) signal when an input ground signal (from a water probe or a vacuum switch – not included) is received. Must be used with a relay to power a horn or indicator lamp (if draw is over 1 amp). Plastic enclosure measures: 3" x 2.5" x .75"	12V DC	 RK14332
RK14321	Remote Detection Unit. Same as above but sends 24V DC hot (+) signal.	24V DC	
RK14332	Under-dash mount. Same as RK14329 but sends a ground (–) signal. Enclosure size is same as RK20725, above.	12V DC	 RK14332
RK20163	Vacuum Switch Kit. 12 or 24V DC, non-adjustable, 'NORMALLY OPEN' contacts close at 7 in.Hg., 118" NPT threads. For use with all models.		 RK21030 RK20163
RK21030	Vacuum Switch Connector Kit (for use with above). Molded connector with single 18 AWG., 18" blue wire lead.		

Sentinel Systems Are Engine Insurance

There's no way to predict where or when engine problems will occur. Hoses break, seals crack and connections fail in the most unlikely places and at the most inopportune times. These failures can quickly lead to damaged camshafts, cylinders and piston heads – even a total engine seizure.

With a Sentinel protection system, diesel engines are shut down, or slowed down, before component failures cause expensive repair bills. Sentinel systems are ready to protect engines against a wide range of conditions: low oil pressure, loss of coolant, high oil temperature, high coolant temperature, high transmission temperature, or loss of tail pump pressure on irrigation engines.

Sentinel systems are inexpensive insurance, offering engine protection, savings in time and money, and satisfied customers – all valuable assets in today's well-managed operations.



Sentinel Delivers Mechanical Reliability and Safety

Sentinel's mechanical shut down systems work when they have to, reliably and with minimal maintenance. They are not prey to moisture, corrosion, faulty connections, severed wiring, broken indicators or severe vibration – any of the host of problems that are inherent in electrical systems.

For remote equipment located in oil fields, mines, construction sites or other volatile environments prone to explosion hazards, Sentinel's trouble-free mechanical system has significant safety advantages over electrical systems.

Engine Coolant Heating

Racor ECH tank-type coolant heaters maintain an engine's operating temperature during down-time and serve as an excellent cold weather starting aid. By utilizing standard alternating current (AC) they heat and maintain the engine coolant at a pre-determined temperature range. This warm coolant helps keep the engine ready for instant operation. Racor ECH tank-typecoolant heaters are mounted off the engine for long life and increased wattage output.

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 or more 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 with civil and criminal penalties.

Installed in the fuel tank vent line, the Racor Lifeguard Fuel/Air Separator efficiently separates air from fuel forced into the line. Air is vented, and all 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. The unit is also maintenance free – there's nothing to rust or corrode.

The Racor Fuel/Air Separator fits neatly into your vent line, actually replacing a section of the line. Fittings are included. One fuel/air separator unit is required for each vent line, and both models fit 5/8" vent lines.

	LG50	LG100
Application	Gasoline	Diesel/Gasoline
Dimensions	1 3/4"D x 6"L	4"D x 9 3/4"L
Max Air Flow	12 cfm / 5.6 lps	17 cfm / 8 lps
Thermal Expansion	Up to 2.4 psi	Up to 2.4 psi
Vent Line Size[1]	5/8"	5/8"

(1) Adapter fitting is available for larger or smaller vent lines. Order part #RK50033.

Clean Pure Water

The same innovative technology that's made Racor the first name in marine engine protection makes Racor Drinking Water Filters a natural addition to your boat. Highly effective against the many contaminants present in on-board water supplies, Racor Drinking Water Filters ensure that you will have clean, fresh water on hand. There are two types of high-efficiency Racor Water Filters – Taste and Odor Removal and Sediment Removal. Both models serve a single cold water faucet or water tank inlet and are sure to provide a refreshing improvement in water taste and quality.

- Multiple layers of tightly wound synthetic yarns trap sediment, rust, algae and other microscopic solids.
- Tough, tight-sealing see-thru bowl lets you inspect filter effectiveness at a glance.
- Activated charcoal element option for taste and odor removal.

Model No.	Description	Replacement
WFA12-S5	Sediment Removal, 5 micron	WFC-S5
WFA12-S30	Sediment Removal, 30 micron	WFC-S30
WFA12-S60	Sediment Removal, 60 micron	WFC-S60
WFA12-T5	Taste and Odor Removal, 5 micron	WFC-T5

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.

Filtration Technology Textbook

Parker's 250-page illustrated textbook covers the broadest range of filtration information ever assembled under one cover. The text is designed for anyone interested in industrial filtration, including engineers, educators, managers, distributors, salespeople and students.

To order call 1-800C-PARKER 1-800-272-7537 and ask for catalog services.

Need assistance? Call our technical service hotline:
800/344-3286 Ext.7695, or direct 209-575-7695

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Instrumentation Group
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Designs, manufactures and distributes industrial and commercial sealing devices and related products by providing superior quality and total customer satisfaction.

About Parker Hannifin Corporation

Parker Hannifin is a leading global motion-control company dedicated to delivering premier customer service. A Fortune 200 corporation, we are listed on the New York Stock Exchange with PH as our symbol. Our components and systems comprise over 800,000 products that control motion in a wide spectrum of essential uses in some 1,200 industrial and aerospace markets. Parker is the only manufacturer to offer its customers a choice of hydraulic, pneumatic, and electro-mechanical motion-control solutions.

Our Company has the largest distribution network in its field, with over 8,200 distributors serving more than 400,000 customers worldwide.

Parker's Charter

To be a leading worldwide manufacturer of components and systems for the builders and users of durable goods. More specifically, we will design, market and manufacture products controlling motion, flow and pressure. We will achieve profitable growth through premier customer service.

Product Information

Parker Hannifin's North American customers seeking product information, the location of a nearby distributor or repair services will receive prompt attention by calling the Parker Product Information Center at our toll-free number: 1-800-C-PARKER (1-800-272-7537). In the United Kingdom, a similar service is available by calling 0500-103-203.

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