



aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding





Marine Filtration Systems





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Fuel Filtration



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 filters.



Legendary Diesel Fuel Filtration

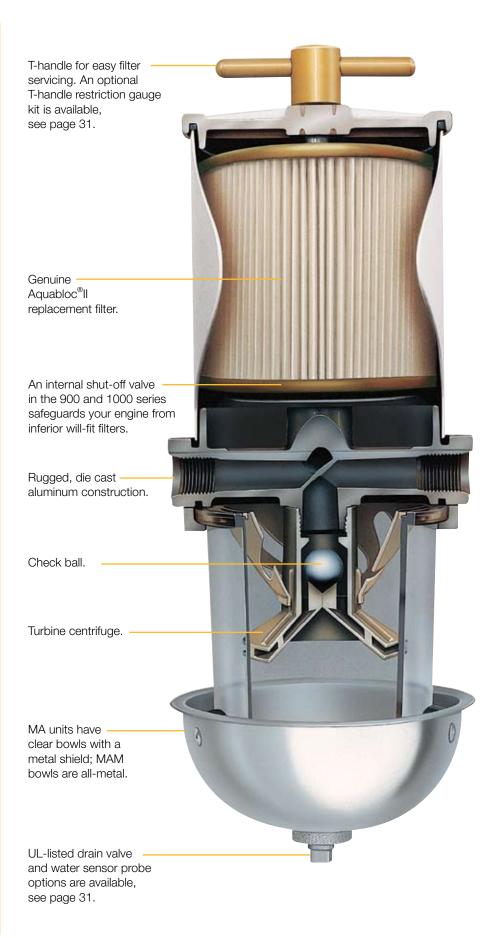
When engines demand heavy-duty, high-capacity water separation and fuel filtration, the Turbine Series is the most complete, efficient, and reliable engine protection you can install. Symbolizing Racor's continuing commitment to the science of filtration, the Turbine Series has established its position 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

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 bowl.

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

3 Besides repelling water asphaltenes, algae, rust, and tiny solids from fuel. Aquabloc*II filters are waterproof, so they remain effective longer, that saves you money.



Make certain that you replace your Turbine Series assemblies only with Genuine Racor Aquabloc* filters. While many others try to imitate the construction and performance of Aquabloc* filters, only the genuine article delivers the fit and performance specified by engine manufacturers, and guarantees that your Racor filter/water separator will deliver the protection you count on.

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

Red = 30 micron, primary filtration.
Blue = 10 micron, secondary filtration.
Brown = 2 micron, final filtration.

The top cap includes handles for easy servicing and a filter bypass button for emergencies.

Aquabloc® media is a blend of high-grade cellulose compounded with engineered fibers, and a special chemical treatment. Water will not cling to the filter, Aquabloc® repels it.

Aquabloc® Filters

Besides removing asphaltenes, water, gums, and varnishes, Aquabloc® filters out tiny particles of dirt and algae from diesel fuel. Aquabloc® filters are rustproof—with polymer end-caps that won't corrode, ever.

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

Always carry extra Racor fuel filters as one tankful of dirty fuel can quickly clog a filter.

Many Racor filters include an emergency by-pass.



Order Genuine Aquabloc® Replacement Filters. Be sure to specify both the size of filter and the micron rating.

How to Order

2020	TM	-OR
Select Filter	Select	Must have
2010 (500 Series)	Micron	-OR in part
2040 (900 Series)	Rating	number
2020 (1000 Series)	SM = 2	(includes
	TM = 10	o-rings)
	PM = 30	

Electric Primer Pump Kit

Racor's electric primer pump kit can be retrofitted to many of the Racor 900 or 1000 Turbine Series fuel filters/water separators already in service.

The filter pump is an innovative and proprietary system consisting of a 100 micron pre-screen filter, a flow bypass circuit, and an innovative roller cell pump powered by a 12 or 24 vdc Racor brushless motor.

When the switch is activated the fuel is drawn into the prescreen, then pumped through the housing, refilling the unit with fresh, clean dry fuel.

When not in use, the filter pump system is bypassed and the Racor fuel filter/water separator functions normally. The complete primer pump kit includes wiring harness and controller switch.

Order Part Number:

RKP1912 for 12 vdc system

RKP1924 for 24 vdc system

RKP1924 for 24 vdc system

RKP1924 for 32 vdc system

100 micron

pre-screen.

Unitized assembly only 3.3 in. (8.4 cm) tall

Flow 60 GPH (227 LPH)

in priming mode

3.3 in. (8.4 cm)

Note: Not for use in continuous duty applications.

Marine Turbine Series











Model	500MA	900MA	1000MA	75500MAX	75900MAX	
Max Flow Rate 1 filter on-line 2 filters on-line	60 GPH (227 LPH) N/A	90 GPH (341 LPH) N/A	180 GPH (681 LPH) N/A	60 GPH (227 LPH) 120 GPH (454 LPH)	90 GPH (341 LPH) 180 GPH (681 LPH)	
Height	11.5 in. (29.2 cm)	17.0 in. (43.2 cm)	22.0 in. (55.9 cm)	11.5 in. (29.2 cm)	17.0 in. (43.2 cm)	
Width	5.8 in. (14.7 cm)	6.0 in.(15.2 cm)	6.0 in. (15.2 cm)	14.5 in (36.8 cm)	18.8 in. (47.8 cm)	
Depth	4.8 in. (12.2 cm)	7.0 in. (17.8 cm)	7.0 in. (17.8 cm)	9.5 in. (24.1 cm)	11.0 in. (27.9 cm)	
Weight (approx.)	4 lbs (1.8 kg)	6 lbs (2.7 kg)	17 lbs (7.7 kg)	17 lbs (7.7 kg)	23 lbs (10.4 kg)	
Port Size (metric optional) 1	3/4"-16 SAE 16 mm x 1.5	7/8"-14 SAE 22 mm x 1.5	7/8"-14 SAE 22 mm x 1.5	3/4"-16 SAE N/A	7/8"-14 SAE N/A	
Clean Pres. Drop	0.3 PSI (0.02 bar)	0.34 PSI (0.02 bar)	0.49 PSI (0.03 bar)	0.70 PSI (0.05 bar)	1.7 PSI (0.12 bar)	
Max. Operating Pressure ²	15 PSI (1.03 bar)	15 PSI (1.03 bar)	15 PSI (1.03 bar)	15 PSI (1.03 bar)	15 PSI (1.03 bar)	
Replacement Filter	2010 Series	2040 Series	2020 Series	2010 Series	2040 Series	
Overhead Clearance	4.0 in. (10.2 cm)	5.0 in. (12.7 cm)	10.0 in. (25.4 cm)	4.0 in. (10.2 cm)	5.0 in. (12.7 cm)	
Ambient Temperature Range		-4	40° to +255°F (-40° to +124°)	C)		
Maximum Fuel Temperature	Maximum Fuel Temperature 190°F (88°C)					

Note: Units are available with metal bowls, add "M" after MA, i.e. 1000MAM. 1 Use (*) for metric port threads, i.e. *500MA, *900MA, and *1000MA.

² Vacuum installations are recommended.









Model	731000MA	751000MAX	771000MA	791000MAV		
Max Flow Rate 1 filter on-line 2 filters on-line 3 filters on-line	360 GPH (1363 LPH) N/A N/A	180 GPH (681 LPH) 360 GPH (1363 LPH) N/A	N/A N/A 540 GPH (2044 LPH)	180 GPH (681 LPH) 360 GPH (1363 LPH) 540 GPH (2044 LPH)		
Height	22.0 in. (55.9 cm)	22.0 in. (55.9 cm)	22.0 in. (55.9 cm)	22.0 in. (55.9 cm)		
Width	16.5 in. (41.9 cm)	18.0 in. (45.7 cm)	18.0 in. (45.7 cm)	21.5 in. (54.6 cm)		
Depth	12.0 in. (30.5 cm)	11.0 in. (27.9 cm)	11.0 in. (27.9 cm)	11.8 in. (30.0 cm)		
Weight (approx.)	26 lbs (11.8 kg)	30.lbs (13.6 kg)	39 lbs (17.7 kg)	52 lbs (23.6 kg)		
Port Size (metric optional) 1	3/4"-14 NPT N/A	7/8"-14 SAE N/A	1"-11.5 NPT N/A	3/4"-14 NPT N/A		
Clean Pres. Drop	1.7 PSI (0.12 bar)	3.7 PSI (0.26 bar)	1.7 PSI (0.12 bar)	2.5 PSI (0.17 bar)		
Max. Operating Pressure ²	15 PSI (1.03 bar)	15 PSI (1.03 bar)	15 PSI (1.03 bar)	15 PSI (1.03 bar)		
Replacement Filter	2020 Series	2020 Series	2020 Series	2020 Series		
Overhead Clearance	10.0 in. (25.4 cm)	10.0 in. (25.4 cm)	10.0 in. (25.4 cm)	10.0 in. (25.4 cm)		
Ambient Temperature Range	-40° to +255°F (-40° to +124°C)					
Maximum Fuel Temperature	190°F (88°C)					

Note: Units are available with metal bowls, add "M" after MA, i.e. 1000MAM. Use (*) for metric port threads, i.e. *500MA, *900MA, and *1000MA.

² Vacuum installations are recommended.

Compact and Versatile Systems for Main Propulsion and Genset Applications

Cost-Effective

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

High-Capacity

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

Environmentally Friendly

Metal bowls are reusable, impact-resistant, and virtually indestructible. When it's time for service, only the filter is replaced - the bowl and drain plug are reused. The long life-cycle of Racor bowls saves you money and reduces the environmental impact through disposal of less material.

Note: Use metal bowl versions for all marine engine room applications.

Easy Upgrades

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

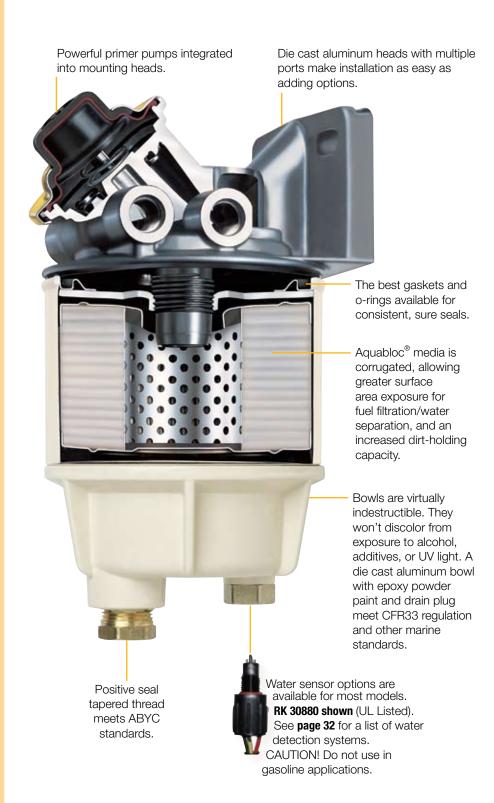
Corrosion-Resistant Construction

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

Safety First

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

Diesel Spin-on Series





Racor Aquabloc[®] Filters Are Available In Color Coded 2,10, Or 30 Micron Ratings.

P = 30 micron, primary filtration.

T = 10 micron, secondary filtration.

S = 2 micron, final filtration.

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















Specifications	215RMAM	230RMAM	245RMAM	445MAM10	460MAM10	490MAM10	4120MAM10
Maximum Flow Rate	15 GPH (57 LPH)	30 GPH (114 LPH)	45 GPH (170 LPH)	45 GPH (170 LPH)	60 GPH (227 LPH)	90 GPH (341 LPH)	120 GPH (454 LPH)
Maximum PSI ¹	30 PSI (2.1 bar)	30 PSI (2.1 bar)	30 PSI (2.1 bar)	15 PSI (1.0 bar)			
Clean Pressure Drop	0.12 PSI (0.01 bar)	0.3 PSI (0.02 bar)	0.6 PSI (0.04 bar)	0.2 PSI (0.01 bar)	0.3 PSI (0.02 bar)	0.4 PSI (0.03 bar)	0.5 PSI (0.03 bar)
Port Size	1/4"-18 NPTF	1/4"-18 NPTF	1/4"-18 NPTF	3/8" NPTF	3/8" NPTF	3/8" NPTF	3/4" SAE
Primer Pump	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Replacement Filter	R15TUL	R20TUL	R25TUL	S3204TUL	S3211TUL	S3201TUL	S3201TUL
Number of Ports	3	3	3	4	4	4	4
Water Sensor Option ²				RK30880E			
Height	7.7 in. (19.6 cm)	9.0 in. (22.9 cm)	10.5 in. (26.7 cm)	9.4 in. (23.9 cm)	10.8 in. (27.4 cm)	12.8 in. (32.5 cm)	12.8 in. (32.5 cm)
Width	3.9 in. (9.9 cm)	3.9 in. (9.9 cm)	4.0 in. (10.2 cm)	4.5 in. (11.4 cm)			
Depth	4.0 in. (10.2 cm)	4.0 in. (10.2 cm)	4.0 in. (10.2 cm)	4.8 in. (12.2 cm)			
Weight (approx.)	1.2 lbs (0.5 kg)	2.0 lbs (0.9 kg)	2.2 lbs (1.0 kg)	2.9 lbs (1.3 kg)	3.1 lbs (1.4 kg)	3.3 lbs (1.5 kg)	3.3 lbs (1.5 kg)
Ambient Temp Range	-40° to +255°F (-40° to +124°C)						
Maximum Fuel Temp	190°F (88°C)						

 $^{^{\}rm 1}$ Pressure Installations are applicable up to the maximum PSI shown, vacuum installations are recommended. $^{\rm 2}$ CAUTION! Do not use in gasoline applications.



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. It supplies clean, dry
fuel to the fuel system and serves
as a repriming system.



	_		-		
Specifications	P3	P4	P5		
Maximum Flow Rate	30 GPH (114 LPH)	40 GPH (151 LPH)	50 GPH (189 LPH)		
Clean Pressure Drop	0.4 PSI (0.03 bar)	0.5 PSI (0.03 bar)	0.8 PSI (0.05 bar)		
Maximum Pump Outlet (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: Fuel Inlets Fuel Outlets	2 1 1	2 1 1	2 1 1		
Replacement Filter 2 micron 10 micron 30 micron	R58060-02 R58060-10 R58060-30	R58095-2 R58095-10 R58095-30	R58039-2 R58039-10 R58039-30		
Minimum Service Clearance	2.5 in. (6.4 cm)	2.5 in. (6.4 cm)	2.5 in. (6.4 cm)		
Height	7.7 in. (19.6 cm)	9.0 in. (22.9 cm)	11.5 in. (29.2 cm)		
Depth	5.2 in. (13.2 cm)	5.2 in. (13.2 cm)	5.2 in. (13.2 cm)		
Width	4.8 in. (12.2 cm)	4.8 in. (12.2 cm)	4.8 in. (12.2 cm)		
Weight (dry - approx.)	3.4 lbs (1.5 kg)	3.8 lbs (1.7 kg)	4.2 lbs (1.9 kg)		
Maximum Pump Outlet Pressure	10 PSI (0.7 bar)	10 PSI (0.7 bar)	10 PSI (0.7 bar)		
Features: Water Sensor ¹ Heater ¹ Pressure Regulator (10 PSI)	Standard Standard Standard	Standard Standard Standard	Standard Standard Standard		
Ambient Temp Range	-40° to +255°F (-40° to +124°C)				
Maximum Fuel Temperature	190°F (88°C)				

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

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

P4	2	10	N	Н
Specify Model: P3 for 30 GPH P4 for 40 GPH P5 for 50 GPH	Must be in part number to specify a 12 vdc pump	Must be in part number to specify micron rating 2, 10, or 30	Must be in part number to specify 3/8" NPT ports	Must be in part number to specify a 12 vdc 150 watt heater



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

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

The RFF family of products is capable of removing free water and solids down to 0.005 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 gasoline is handled or 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 gasoline 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 only.
- 10 micron Aquabloc® 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.
- New 2 micron option.

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 only) eliminates the need to install a primer bulb in the fuel line.

















Specifications	120R-RAC-01	120R-RAC-02	320R-RAC-01	320R-RAC-02	490R-RAC-01	660R-RAC-01	660R-RAC-02	3120R-RAC-32
Max Flow Rate	30 GPH (113 LPH)	30 GPH (113 LPH)	60 GPH (227 LPH)	60 GPH (227 LPH)	90 GPH (340 LPH)	90 GPH (340 LPH)	90 GPH (340 LPH)	120 GPH (454 LPH)
Filter (10 micron)	S3240	S3240TUL	\$3227	S3228TUL	\$3227	S3232	S3232TUL	S3232TUL
(2 micron)	N/A	N/A	S3228SUL	S3228SUL	S3228SUL	N/A	N/A	N/A
Center Threads	M18 x 1.5	M18 x 1.5	1"-14	1"-14	1"-14	1"-14	1"-14	1"-14
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
Height	6.5 in. (16.5 cm)	6.0 in. (15.2 cm)	9.4 in. (23.9 cm)	9.0 in. (22.9 cm)	9.9 in. (25.1 cm)	11.0 in. (27.9 cm)	10.5 in. (26.7 cm)	10.4 in. (26.4 cm)
Width	3.2 in. (8.1 cm)	3.2 in. (8.1 cm)	4.0 in. (10.2 cm)	4.0 in. (10.2 cm)	4.5 in. (11.4 cm)	4.2 in. (10.7 cm)	4.2 in. (10.7 cm)	4.0 in. (10.2 cm)
Depth	3.2 in. (8.1 cm)	3.2 in. (8.1 cm)	4.0 in. (10.2 cm)	4.0 in. (10.2 cm)	4.8 in. (12.2 cm)	4.5 in. (11.4 cm)	4.5 in. (11.4 cm)	5.0 in. (12.7 cm)
Weight (approx.)	1.1 lbs (0.5 kg)	1.2 lbs (0.5 kg)	2.0 lbs (0.9 kg)	2.0 lbs (0.9 kg)	2.6 lbs (1.2 kg)	3.0 lbs (1.4 kg)	3.0 lbs (1.4 kg)	2.0 lbs (0.9 kg)
Clean Pressure Drop	0.2 PSI (0.01 bar)	0.2 PSI (0.01 bar)	0.6 PSI (0.04 bar)	0.6 PSI (0.04 bar)	1.0 PSI (0.07 bar)	0.6 PSI (0.04 bar)	0.6 PSI (0.04 bar)	0.2 PSI (0.01 bar)
Max Working Pressure ¹	7.0 PSI (0.5 bar)	7.0 PSI (0.5 bar)	7.0 PSI (0.5 bar)	7.0 PSI (0.5 bar)	7.0 PSI (0.5 bar)	7.0 PSI (0.5 bar)	7.0 PSI (0.5 bar)	7.0 PSI (0.5 bar)
Service Clearance (under bowl)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)
Ambient Temp Range	-40° to +255°F (-40° to +124°C)							
Max Fuel Temperature	190°F (88°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 clear bowls with self-venting drain (for outboard applications) or a metal bowl with drain plug (for inboard applications). Metal bowls are UL-listed and USCG accepted.



For inboards or Outboards: B32020MAM B32021MAM PFF5510



Part Number	Inboard Engine Vessels				
PFF5510	Replaces Mercury, Mercruiser, Yamaha, Suzuki, Honda, and Tohatsu.				
B32020MAM	Replaces quicksilver. Also fits: SMI, Sierra, Aquapower, and other filter heads. (comes with a metal bowl)				
S3220TUL ¹	Replacement filter for B32020MAM.				
B32021MAM	Replaces OMC. UL Recognized. (comes with a metal bowl)				
S3221TUL	Replacement filter for B32021MAM.				

¹Opional 2 micron filter (S3220SUL).



For outboards only: B32013 B32014

Part Number	Outboard Engine Vessels				
Replaces Quicksilver, Yamaha, Suzuki, SMI, Volvo Penta, Sierra, AquaPower, and other filter heads. (comes with a clear bowl)					
S3213	Replacement filter for B32013.				
B32014	Replaces OMC. (comes with a clear bowl)				
S3214	Replacement filter for B32014.				

Compact Gasoline Filters for Smaller Boats and Personal Watercraft









Specifications	025-RAC-01	025-RAC-02	110A	025-RAC-10A
Flow Rate	25 GPH (95 LPH)	25 GPH (95 LPH)	35 GPH (133 LPH)	35 GPH (133 LPH)
Media	250 micron (cleanable plastic screen)	10 micron (Aquabloc [®] filter)	10 micron (Aquabloc [®] filter)	104 micron (in-line filter)
Port Size	1/4"-18 NPTF	1/4"-18 NPTF	1/4"-18 NPTF	1/2" NPTF
Dimensions	H 4.3"x D 2.1"	H 4.3" x D 2.1"	H 6" x D 3.3" x W 3.2"	H 4.2" x D 1.9"

Gas Filters

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

The Racor 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 in. (9.1 cm) diameter x 4.25 in. (10.8 cm) tall.

Features and Benefits

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

Versatile RVFS Series

Racor RVFS Series filter vessels, 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 Galvanized suede gray and the interior is epoxy coated to meet MIL-C-

Filter choices include a coalescer, separator, prefilter, and water absorber or clay treater.

4556E.

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, and see brochure #7648.

Pressure Rating:

250 PSI (17.2 bar) ASME Code Section VIII



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.

RVFS Series

Specifications	RVFS-1-10C	RVFS-2-10C	RVFS-3-10C			
Fuel Ports	2.0 in. NPTF	2.0 in. NPTF	2.0 in. NPTF			
Max. Flow Rate	50 GPM (189 LPM)	100 GPM (378 LPM)	150 GPM (567 LPM)			
Max. Working Pressure	85 PSI (5.9 bar)	85 PSI (5.9 bar)	85 PSI (5.9 bar)			
Clean Pressure Drop	2 PSI (0.14 bar)	2 PSI (0.14 bar)	2 PSI (0.14 bar)			
Replacement Filter	RK 22610	RK 22610	RK 22610			
Height	39 in. (99.1 cm)	51 in. (129.5 cm)	65 in. (165.1 cm)			
Width	13.8 in. (35.1 cm)	13.8 in. (35.1 cm)	13.8 in. (35.1 cm)			
Depth	13.5 in. (34.3 cm)	13.5 in. (34.3 cm)	13.5 in. (34.3 cm)			
Weight (approx.)	100 lbs (45 kg)	115 lbs (52 kg)	130 lbs (59 kg)			
Sump Capacity	1 gal. (3.8 l)	1 gal. (3.8 l)	1 gal. (3.8 l)			
Service Clearance	12 in. (30.5 cm)	12 in. (30.5 cm) 24 in. (61.0 cm)				
Ambient Temp Range	-40° to +255°F (-40° to +124°C)					
Maximum Fuel Temperature		190°F (88°C)				

Note: For additional information, request brochure no. 7537 or 7648.



800 Series

The Racor 800 Series fuel filter/water separators offer large diesel engine operators, ease of maintenance, and continuous engine operation.



Replacement Filter Options

RVFS-1**	Micron	Description	
OCP-15858	5	Coalescer	
SP-15404	15404 5 Separ		
OCP-15868	10	Coalescer	
SP-15405	10 Separator		
OCP-15878	78 25 Coalescer		
SP-15407	25	Separator	

Note: All vessels come equipped with Viton* o-rings. Compatible with biodiesel mixtures.

*For RVFS-1, 2, and 3, customer must order one **OCP** and one **SP** filter. A fuel filter/water separator consists of one coalescer and one separator filter.

RVFS-2**	Micron	Description	
OCP-30858	5	Coalescer	
SP-30404	5	Separator	
OCP-30868	10	Coalescer	
SP-30405	10	Separator	
OCP-30878	25	Coalescer	
SP-30407	SP-30407 25 Separat		

RVFS-3**	Micron	Description	
OCP-44858	5	Coalescer	
SP-44404	5	Separator	
OCP-44868	10	Coalescer	
SP-44405	405 10 Separator		
OCP-44878	25	Coalescer	
SP-44407 25 S		Separator	











Specifications	806MA	75806MA	79806MA	812MA	75812MA	79812MA
Maximum Flow Rate	360 GPH (1363 LPH)	720 GPH (2725 LPH)	360 GPH (1363 LPH)	720 GPH (2725 LPH)	1440 GPH (5451 LPH)	2160 GPH (8176 LPH)
Fuel Ports	1" NPT	1" NPT	1" NPT	1" NPT	1" NPT	1 1/4" NPT
Max Working Pressure	30 PSI (2.1 bar)	30 PSI (2.1 bar)	30 PSI (2.1 bar)	30 PSI (2.1 bar)	30 PSI (2.1 bar)	30 PSI (2.1 bar)
Clean Pressure Drop	1.6 PSI (11 kPa)	3.2 PSI (22 kPa)	6.0 PSI (41.4 kPa)	3.2 PSI (22 kPa)	6.0 PSI (41.4 kPa)	5.2 PSI (35.9 kPa)
Replacement Filter	RK 22788**	(2) RK 22788**	(3) RK 22788**	RK 22610*	(2) RK 22610*	(3) RK 22610*
Height	22.8 in. (57.9 cm)	22.8 in. (57.9 cm)	22.8 in. (57.9 cm)	33.2 in. (84.3 cm)	33.2 in. (84.3 cm)	33.2 in. (84.3 cm)
Width	9.0 in. (22.9 cm)	21.8 in. (55.4 cm)	33.3 in. (84.6 cm)	9.0 in. (22.9 cm)	21.8 in. (55.4 cm)	33.3 in. (84.6 cm)
Depth	9.0 in. (22.9 cm)	16.0 in. (40.6 cm)	16.0 in. (40.6 cm)	9.0 in. (22.9 cm)	16.0 in. (40.6 cm)	16.0 in. (40.6 cm)
Weight (approx.)	25 lbs (11.3 kg)	52 lbs (23.6 kg)	79 lbs (35.8 kg)	36 lbs (16 kg)	89 lbs (40 kg)	133 lbs (60 kg)
Sump Capacity	1 gal (3.8 l)	2 gal (7.6 l)	2.9 gal (11.0 l)	1 gal (3.8 l)	2 gal (7.6 l)	2.9 gal (11.0 l)
Service Clearance (above)	12.0 in. (30.5 cm)	12.0 in. (30.5 cm)	12.0 in. (30.5 cm)	12.0 in. (30.5 cm)	12.0 in. (30.5 cm)	12.0 in. (30.5 cm)
(below)	4.0 in (10.2 cm)	4.0 in (10.2 cm)	4.0 in (10.2 cm)	4.0 in (10.2 cm)	4.0 in (10.2 cm)	4.0 in (10.2 cm)
Ambient Temp Range	-40° to +255°F (-40° to +124°C)					
Max Fuel Temperature	190°F (88°C)					

^{*} RK 22610 - Replacement filter kit (contains one each of 8021 and 8022 filter and a lid gasket; 75812 requires 2 kits; 79812 requires 3 kits)

^{**} RK 22788 - Replacement filter kit (contains one each of 4021 and 4022 filter and a lid gasket; 75806 requires 2 kits; 79806 requires 3 kits)



FBO-10-MA and FBO-14-MA

Racor's FBO-10-MA and FBO-14-MA filter assemblies are designed to meet tough hydrocarbon refueling conditions and provide for ease of filter change-outs. The FBO assemblies can handle flow rates from 18 to 50 GPH (68 to 189 LPH) depending on filter specified and fuel being filtered (see chart below).

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 75 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.



Specifications	FBO-10-MA	FBO-14-MA		
Fuel Ports	1 1/2" NPT	1 1/2" NPT		
Max. Flow Rate	50 GPM (189 LPM)	75 GPM (284 LPM)**		
Max. Working pressure	75 PSI (5.2 bar)	75 PSI (5.2 bar)		
Clean Pressure Drop	1 PSI (6.9 kPa)	1 PSI (6.9 kPa)		
Replacement Filter	see chart below	see chart below		
Height	18.8 in. (47.8 cm)	22.6 in. (57.4 cm)		
Width	8.6 in. (21.8 cm)	8.6 in. (21.8 cm)		
Depth	8.6 in. (21.8 cm)	8.6 in. (21.8 cm)		
Weight (approx.)	13 lbs (5.9 kg)	16 lbs (7.3 kg)		
Sump Capacity	5.1 oz (151 ml)	5.1 oz (151 ml)		
Service Clearance	2.0 in. (5.1 cm) 12.0 in. (30.5 cm)			
Ambient Temp Range	-40° to +255°F (-40° to +124°C)			
Max Fuel Temperature	190°F (88°C)			

FBO Replacement Filter Options

Туре	FB0-10 6" x 10"	Micron	Flow	Rate	FBO-14 6" x 14"	Micron	Flow	Rate
Туро	Filter	moron	Diesel	Gasoline	Filter	moron	Diesel	Gasoline
Filter Separator	FB0 60327	1	18 GPM (68 LPM)	45 GPM (170 LPM)	FB0-60336	1	25 GPM (95 LPM)	65 GPM (246 LPM)
Filter Separator	FB0 60328	5	18 GPM (68 LPM)	45 GPM (170 LPM)	FB0-60337	5	25 GPM (95 LPM)	65 GPM (246 LPM)
Filter Separator	FB0 60353	10	18 GPM (68 LPM)	45 GPM (170 LPM)	FB0-60356	10	25 GPM (95 LPM)	65 GPM (246 LPM)
Filter Separator	FB0 60329	25	18 GPM (68 LPM)	45 GPM (170 LPM)	FB0-60338	25	25 GPM (95 LPM)	65 GPM (246 LPM)
Prefilter	FB0 60330	1	20 GPM (76 LPM)	50 GPM (189 LPM)	FB0-60339	1	30 GPM (114 LPM)	75 GPM (284 LPM)
Prefilter	FB0 60331	5	20 GPM (76 LPM)	50 GPM (189 LPM)	FB0-60340	5	30 GPM (114 LPM)	75 GPM (284 LPM)
Prefilter	FB0 60356	10	20 GPM (76 LPM)	50 GPM (189 LPM)	FB0-60357	10	30 GPM (114 LPM)	75 GPM (284 LPM)
Prefilter	FB0 60332	25	20 GPM (76 LPM)	50 GPM (189 LPM)	FB0-60341	25	30 GPM (114 LPM)	75 GPM (284 LPM)
Absorptive Filter	FB0 60333	1	18 GPM (68 LPM)	45 GPM (170 LPM)	FB0-60342	1	25 GPM (95 LPM)	60 GPM (227 LPM)
Absorptive Filter	FB0 60334	5	18 GPM (68 LPM)	45 GPM (170 LPM)	FB0-60343	5	25 GPM (95 LPM)	60 GPM (227 LPM)
Absorptive Filter	FB0 60355	10	18 GPM (68 LPM)	45 GPM (170 LPM)	FB0-60358	10	25 GPM (95 LPM)	60 GPM (227 LPM)
Absorptive Filter	FB0 60335	25	18 GPM (68 LPM)	45 GPM (170 LPM)	FB0-60344	25	25 GPM (95 LPM)	60 GPM (227 LPM)







Filter Heads

Part Number	PFHH07500	PFFDH12500	PF FDH125DD
Port Size	3/4" NPT IN	1 1/4" NPT PF	1 1/2" NPT
Filter	PFFDW3525/3825	PFFDW51125	PFFDW51125 (two filters requiered)
Center Thread	1" – 12 UNF	1 1/2" – 16 UNF	1 1/2" – 16 UNF
Flow Rate One Unit on-line Two Units on-line	15 GPM (57 LPM) N/A	50 GPM (189 LPM) N/A	100 GPM (379 LPM) 375 GPM (1420 LPM)

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





Water Removing Filters

Part Number	PFFDW3525	PFFDW51125
Micron Rating	25	25
Filter Size	3.7 D x 5.5 L	5.0 D x 11.0 L
Center Thread	1" – 12 UNF	11/2"-16 UNF

Maximum operating pressure of fuel dispensing filter heads and water removing filters is 100 PSI (6.9 bar). 10 micron filters available through special order.

3150R and 3250R High Flow Filters

High flow applications need not suffer with high maintenance... and Racor offers a range of ultra-high capacity, high efficient fuel filter/water separators that also deliver spin-on convenience. As you'd expect, Aquabloc® media is standard and all units provide flexibility in options to customize and meet specific operating conditions.



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 filters feature a superabsorbent, 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 fuel flow rate, signaling a need to replace the filter.

Racor offers filter protection down to 25 microns nominal. Flow rates range from 15 to 100 GPM (57 to 379 LPM). Filter service is clean and easy, there's no cartridge to replace, just spinon a new Racor filter.



		▼		
Part Number	3150R	3250R		
Maximum Flow Rate	150 GPH (568 LPH)	250 GPH (946 LPH)		
Maximum Working Pressure	15 PSI (1.0 bar)	15 PSI (1.0 bar)		
Filter	S3228	S3207		
Port Size	7/8"-14 SAE	7/8"-14 SAE		
Height	13.6 in. (34.5 cm)	17.3 in. (43.9 cm)		
Width	5.0 in. (12.7 cm)	5.0 in. (12.7 cm)		
Depth	5.5 in. (14.0 cm)	5.5 in. (14.0 cm)		
Weight (approx.)	3.6 lbs (1.6 kg)	4.6 lbs (2.1 kg)		
Clean Pressure Drop	0.7 PSI (4.8 kPa)	1.0 PSI (6.9 kPa)		
Water Capacity	2.8 oz (82.8 ml)	2.8 oz (82.8 ml)		
Ambient Temp Range	-40° to +255°F (-40° to +124°C)			
Maximum Fuel Temperature	190°F (88°C)			



Racor Additives

We've Bottled Racor Protection

Racor Additives are performanceenhancing products for all climates and seasons. There are several convenient sizes, including a 16 and 32 oz. bottles, 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.

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.

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.

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.

Part Number	Description	Size	Treat Ratio (up to)
ADT 1116	Diesel Conditioner Plus+	16 ounces	320 gallons
ADT 1201		1 gallons	2,560 gallons
ADT 1555		55 gallon drum	140,800 gallons
ADT 2116	Diesel Biocide	16 ounces	1,280 gallons
ADT 2201		1 gallons	10,240 gallons
ADT 2405		5 gallons	51,200 gallons
ADT 2555		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		1 gallons	1,024 gallons
ADT 4555		55 gallon drum	563,200 gallons
ADT 5116	Gasoline Conditioner Plus+	16 ounces	320 gallons

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.

Part # ADT 9333, 32 ounces

- Prevents rust & corrosion
- Resists oxidation/reduces engine wear
- Extended drain intervals
- Provides low temperature protection
- Improves fuel economy

Spout Extension

A convenient spout extension is available for quick, clean service. The spout fits all 16 ounce bottle. Ask for part# ADT RK21644.





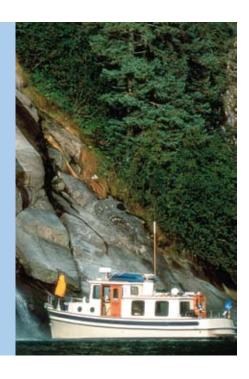
Crankcase Filtration

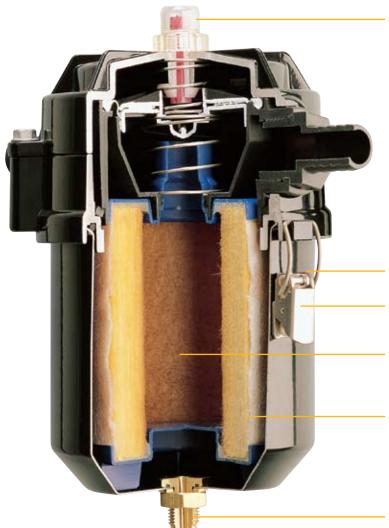
In a robust, compact package, the patented Racor Closed Crankcase Ventilation (CCV) Filter Systems provide superior oil coalescence and crankcase pressure control under the most severe conditions.

CCV 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 down to 0.3 microns.

Durable glass-filled nylon and die cast aluminum components.

Steel with epoxy powder coating.

Stainless steel latches for tool-less filter change.

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

Extended filter service interval from the Vaporbloc filter.

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

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 positioned at the valve cover or crankcase.
- Filtered air from the CCV assembly is plumbed to the air intake system between the air filter and turbocharger.
- Coalesced oil drains from the filter sump to an external drain. A check valve holds 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 Closed 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.















Specifications	CCV1500	CCV3500	CCV4500	CCV6000	CCV8000	CCV12000
Maximum Flow Rate	1 CFM (28 LM)	3 CFM (85 LM)	10 CFM (283 LM)	20 CFM (566 LM)	40 CFM (1133 LM)	50 CFM (1416 LM)
Maximum Engine Rating	40 HP (29.8 KW)	120 HP (89.4 KW)	400 HP (298.3 KW)	800 HP (596.6 KW)	1600 HP (1193.1 KW)	2000 HP (1491.4 KW)
Inlet/Outlet Port Size	3/4" hose	3/4" hose	1 3/16"-12 STOR	1 5/8"-12 STOR	1 7/8"-12 STOR	1 7/8"-12 STOR
Weight (approx,)	1.5 lbs (0.7 kg)	2.3 lbs (1.0 kg)	3.3 lbs (1.5 kg)	5.0 lbs (2.3 kg)	8.7 lbs (3.9 kg)	9.3 lbs (4.2 kg)
Replacement Filter Media Density: Low	CCV55365-04	N/A	CCV55248-04	N/A	N/A	N/A
Replacement Filter Media Density: High	N/A	CCV55304-08	CCV55248-08	CCV55274-08	CCV55222-08	CCV55222-12-08
Replacement Filter Media Density: Ultra	N/A	N/A	CCV55248-10	CCV55274-10	CCV55222-10	CCV55222-12-10
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.	Die cast head, glass- filled nylon and black powder epoxy-coated steel bowl.
Crankcase Pressure Regulator	Vacuum Limiting valve	Integral	Integral	Integral	Integral	Integral
Bypass/Change Indicator	N/A	Integral	Integral or Remote	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	3/8" NPT
Swivel Fitting (Qty.)	N/A	#6 JIC (2 pcs.)	#6 JIC (2 pcs.)	#6 JIC (2 pcs.)	#8 JIC (2 pcs.)	#8 JIC (2 pcs.)
Oil Drain Hose I.D.	N/A	0.375 in. (0.95 cm)	0.375 in. (0.95 cm)	0.375 in. (0.95 cm)	0.5 in. (1.27 cm)	0.5 in. (1.27 cm)

Units can be manifolded to handle higher flow rates. Do not use CCV1500 in continuous duty applications.



Reduce Emissions, Clean Up Engine Rooms and Engines

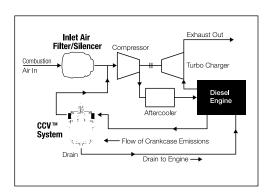
Marine diesel engines can benefit from the installation of a combination Racor Closed Crankcase Ventilation (CCV) and Air Filter/Silencer System. The CCV contains Racor's high-performance Vaporbloc™ filter made of depth-loading, microglass fiber coalescing media. The marine Air Filter/Silencer (AF) contains a washable media and is ruggedly built to provide an extended service life.

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 vent 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.

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 (85 LPM)		
CCV4500	10 CFM (283 LPM)		
CCV6000	20 CFM (566 LPM)		
CCV8000	40 CFM (1133 LPM)		



CCV units are designed to handle crankcase flow rates of up to 40 CFM (1132 LPM). Traditionally, the crankcase flow rate can be calculated as follows: Rated horsepower \div 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.

2 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.

Air Intake Connector — Select A, B, or C, Depending on Application:

A. Tap Sleeve

Tap sleeves connect 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.

John Deere #4045T — Hose between turbo and air cleaner is 4" inside Example:

diameter. Correct tap sleeve is CCV40100, which is 4" outside diameter with a 1" OD hose barb.

Tap Sleeves



Tap Sleeve	Dimensions		
	0. D.	Length	Hose Barb
CCV30100	3 in.	5 in.	1 in.
CCV40100	4 in.	5 in.	1 in.
CCV50125	5 in.	6 in.	1.1/4 in.
CCV60125*	6 in.	6 in.	1.1/4 in.

*Note: CCV60125 includes a 1 1/4" x 1 1/2" bushing (connects to 1 1/2" ID hose).

B. Hump Hose Fittings:	Part Number	Hose
Use these with existing air cleaner-to-	CCV55113	1 in.
turbo rubber adapters.	CCV55114	1 1/4 ir
tarbo rabber adapters.	CCV55115	1 1/2 ir



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:	$AFR = HP \times 2.0$
2-cycle engines:	$AFR = HP \times 2.5$

Maximum Flow Rate				
Marine Air Filter AFR				
AF M408512	800 CFM (377 LPS)			
AF M501012	1200 CFM (566 LPS)			
AF M601212	1600 CFM (755 LPS)			

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

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

> 826 hp x 2.5 = 1032.5 AFR per turbo = (2) AF M 5010121110 hp x 2.5 = 1387.5 AFR per turbo = (2) AF M 601212

CAT 3196 (4-cycle - twin turbo):

660 hp x 2.0 = 1320.0 AFR = (1) AF M 601212

Marine Air Filters (AF) typically correspond with the following CCV models, see chart.

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



John Deere Marine PowerTech 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.

Air Filter Replacements

Racor offers direct replacements for the intake air filter portion of competitive air filters/silencers.

Also available is the replacement filter 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.

Washing and re-oiling Kit



Part No. AF M82006



Competitor	Racor Part Number	Dimensions	
Part Number	nacoi Fait Nullibei	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	
CD178	AF M8126	7.5 x 10 x 7.5	
CD180	AF M8010	3" Air Separator	
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	
CD189	AF M8157	12 x 14 x 12	
CD190	AF M8026	7.5 x 10 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	
CD204	AF M8156	12 x 12 x 8	

Air Filter/Silencer Specifications









	AF M408512	AF M501012	AF M601212	AF M701212
Max. Air Flow*	800 CFM (378 l/s)	1200 CFM (566 l/s)	1600 CFM (755 l/s)	2000 CFM (944 l/s)
Outlet Diameter	4.0 in. (10.2 cm)	5.0 in. (12.7 cm)	6.0 in. (15.2 cm)	7.0 in. (17.8 cm)
Filter	AF M8040	AF M8050	AF M8060	AF M8070
Length	12.5 in. (31.8 cm)	12.5 in. (31.8 cm)	12.5 in. (31.8 cm)	12.5 in. (31.8 cm)
Depth	9.6 in. (24.4 cm)	11.1 in. (28.2 cm)	13.5 in. (34.3 cm)	13.5 in. (34.3 cm)
Hose Barb size	1.0 in. (2.5 cm)	1.3 in. (3.3 cm)	1.3 in. (3.3 cm)	1.3 in. (3.3 cm)
Weight	4.2 lbs (1.9 kg)	5.0 lbs (2.3 kg)	8.0 lbs (3.6 kgs)	8.0 lbs (3.6 kgs)
CCV hose barb	1.0 in OD	1 1/4 in. OD	1 1/4 in. OD	1.0 in. 0D
Operating Temperature	-40° to +240°F (-40° to +116°C)			

^{*}Values given are cubic feet per minute (CFM) and liters per second (I/s).

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 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 (0.2 bar). It also eliminates damage to expensive striping, 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, and fittings are included with each kit. One Fuel/Air Separator unit is required for each vent line.

Note: Fuel/Air Separators fit 5/8" vent lines, 1/2" fittings are available.





Specifications	LG50	LG100
Application: Gasoline Diesel	Yes No	Yes Yes
Maximum Air Flow	12 CFM (340 l/m)	17 CFM (481 I/m)
Hose Barb ¹	5/8"	5/8"
Thermal Expansion	Up to 2.4 PSI (0.17 bar)	Up to 2.4 PSI (0.17 bar)
Height	6.0 in. (15.2 cm)	9.8 in. (24.9 cm)
Diameter	1.8 in. (4.6 cm)	4.0 in. (10.2 cm)
Weight (dry)	1.2 lbs (0.5 kg)	1.6 lbs (0.7 kg)

Notes: 1 Order part RK 50033 for 1/2" NPTF threaded fitting)



How They Work

LG50 (for gasoline)

Stage 1: Venting tank fuel is diffused by the flow diverter and air is allowed to bypass the diverter. Fuel is directed back into the fuel tank.

Stage 2:

Vapor collects on the interior surfaces and coalesces. The fuel returns downward by gravity and air continues up and out of the unit.



LG100 (for diesel)

Stage 1:

Venting tank fuel is diffused by the flow diverter and air is allowed to bypass the diverter. Fuel is directed back into the fuel tank.

Stage 2:

Fuel de-foams through a fine wire mesh screen which filters out large contaminates. Under the screen, the fuel collects temporarily until it can freely flow back to the fuel tank.

Stage 3:

Vapor collects on the interior surfaces and coalesces. The fuel returns downward by gravity and air continues up and out of the unit.

Note: The safety relief valve includes a floating check ball which will not permit a large in-rush of fuel to bypass. In the event of internal pressure reaching 2.4 PSI (0.17 bar), the spring will compress and open the safety seat.

Replacement Hydraulic Filters

ParFit™ hydraulic filters are interchangeable with most competitors filters to allow customers to acquire all their replacement filters from one quality source. Racor ParFit™ hydraulic replacement filters conform to all the same rigorous tests as the standard replacement filters and designed to filter contaminants in hydraulic fluid efficiently.

For a full list of cross reference part numbers, request bulletin #7729





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.

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.



Specifications

Specifications	PFHW57RB	PFH5526
Micron	10	10
Center Thread	1 1/2"-16 UNF	1 1/2"-16 UNF
Diameter	5.0 in. (12.7 cm)	3.7 in. (9.4 cm)
Length	7 in. (17.8 cm)	5.3 in. (13.5 cm)

Hydraulic Filters





Part Number	PFHW5710	PFHW51110
Flow rate	50 GPM (189 LPM)	50 GPM (189 LPM)
Threads	1 1/2"-16 UNF 1 1/2"-16 UNF	
Diameter	5.0 in. (12.7 cm)	5.0 in. (12.7 cm)
Length	7 in. (17.8 cm)	11 in. (27.9 cm)
Pressure	100 PSI (6.9 bar)	100 PSI (6.9 bar)

See chart below for mounting head information.



Type 1

Mounting Heads



Type 2



Type 2 (multi port head)

Part Number	Head Type	Port Size	Center Thread	By-pass Setting (PSID)	Replacement Filter
Maximu	m flow rate for the	heads below is 15	GPM (56 LPM) and	up to 175 PSI (12.1	bar)
PFHH07500	1	3/4" NPTF	1"-12 UNF	3	
PFHH07515	1	3/4" NPTF	1"-12 UNF	15	3510 Filter
PFHH07525	1	3/4" NPTF	1"-12 UNF	25	
PFHH12525L ¹	2	1 1/4" NPTF	1 1/2"-16 UNC	25	DELIME1110
PFHH12525R ²	2	1 1/4" NPTF	1 1/2"-16 UNC	25	PFHW51110
PFHH12515MP	2	1 1/4" NPTF	1 1/2"-16 UNC	15	DELIME 710
PFHH12525MP	2	1 1/4" NPTF	1 1/2"-16 UNC	25	PFHW5710

¹Left hand flow. ²Right hand flow.

Never Lo Oil System



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

- The AFG Automatic Gravity System continuously monitors engine oil and automatically maintains 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 an available supply of fresh oil to the engine.

DOC19 and DOC Plus



it as fuel—in a simple, efficient closed loop system to keep your vehicle out of the maintenance shop and on the job. 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.

OilCheck LFS RK761

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



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.

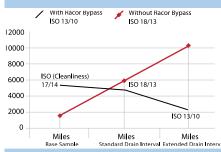
The Racor 800 Series Bypass Oil Filter will remove damaging particles in the 4 to 7 micron range, which minimizes wear and extends engine component life.

The polishing effect of the Racor 800 Series Bypass Oil Filter 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

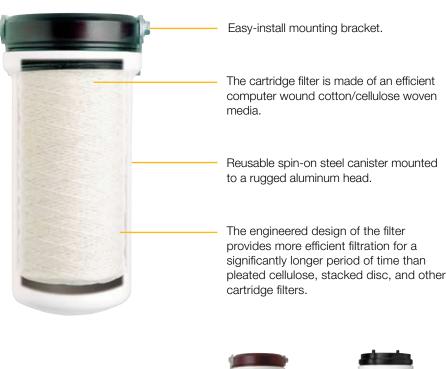
- Extends the miles/hours between oil changes
- Saves maintenance costs and downtime
- Keeps oil cleaner longer, reducing oil consumption and disposal
- Extends engine life and "re-build" intervals
- Keeps engines better lubricated which means reduced wear
- · Removes damaging water

Typical Results



Ideal for heavy-duty applications!

Oil Filtration









Specifications	LFS 801	LFS 802	LFS 802-S1
Replacement Filter	LFS 801BPE	LFS 802BPE	LFS 802BPE
Horse Power	150 to 250 HP (112 to 186 kw)	250 to 400 HP (186 to 298 kw)	250 to 400 HP (186 to 298 kw)
Sump Capacity	6.0 gal. (22.7 l)	15.0 gal. (56.8 l)	15.0 gal. (56.8 l)
Flow Rate	0.4 GPM (1.5 LPM)	0.5 GPM (1.9 LPM)	0.5 GPM (1.9 LPM)
Canister Cap	0.13 gal. (0.5 l)	0.5 gal. (1.9 l)	0.5 gal. (1.9 l)
Orifice Size	0.4 in. (1.0 cm)	0.4 in. (1.0 cm)	0.4 in. (1.0 cm)
Port Size	1/4"-18 NPTF	1/4"-18 NPTF	1 3/8"-16 UN-2B
Height	7.5 in. (19.1 cm)	11.0 in. (27.9 cm)	11.0 in. (27.9 cm)
Width	5.4 in. (13.7 cm)	5.4 in. (13.7 cm)	5.4 in. (13.7 cm)

¹ Fits CAT engines: C10 - C12 - C15 3176 filter head has 1 3/8"-16 UN-2B center thread.

Tow Vehicle Application Chart

Application	Kit Number	Year Model	Bypass Filter	Hose Kit Included	Replacement Filter
Dodge/Cummins 5.9L	LFS RK859CEA	1993-2002	LFS 801	LFS RK801BHK	LFS 801BPE
Dodge/Cummins 5.9L	LFS RK859CEB	1994-2001	LFS 801	LFS RK801BHK	LFS 801BPE
Dodge/Cummins 5.9L	LFS RK859CL	1998 1/2- Current	LFS 801	LFS RK801BHK	LFS 801BPE
GM Duramax 6.6L	LFS RK866G	All Models	LFS 801	LFS RK801BHK	LFS 801BPE
Ford 6.0L	LFS RK860F	2003-Current	LFS 801	LFS RK801BHK	LFS 801BPE
Ford 7.3L DI and IDI Engine	LFS RK873F	1987-2003	LFS 801	LFS RK801BHK	LFS 801BPE

Racor Absolute Series

Oil Cleaners

The Racor Absolute Series bypass oil cleaners were developed to increase the life span of engine oil by reducing the contaminates in the oil resulting in longer full flow filter life and lower maintenance costs. Standard engine oil change intervals are in place based on the capacity (life) of the oil filter and the condition of the engine oil. With the Racor Absolute Series bypass

oil cleaner installed the engine oil stays many times cleaner.

Racor Absolute Series bypass oil filters are manufactured from proprietary cellulose pulp for maximum absorption. The design, shape, and tensioning of the tissue guarantees absolute filtration of solid particles and water.

AB Series

The AB Series provides continuous oil cleaning during engine operation. The filter design, shape, and tensioning of the media guarantees absolute filtration of solid particles and water.

- Continuous Oil Purification
- Longer Oil Life
- Longer Engine Life
- Improved Fuel Economy
- Reduce Reuse Recycle
- No certification needed, just install and reap the benefits!





Specifications	ABS10300	ABS10450
Maximum Pressure	180 PSI (12.4 bar)	180 PSI (12.4 bar)
Capacity	30 qts (28 L)	50 qts (47 L)
Port Size (inlet/outlet)	1/4" NPTF	1/4" NPTF
Dimensions	W6.38 x D6.54 x H12.48 in. (W162 x D166 x H317 mm)	W8.03 x D8.11 x H12.64 in. (W204 x D206 x H321 mm)
Weight (approx.)	10 lbs (4.5 kg)	15 lbs (6.8 kg)



Replacement Parts

ABS44030	Seal Service Kit (for ABS10300)
ABS44045	Seal Service Kit (for ABS10450)
ABS45165	Bracket (for ABS10300)
ABS45155	Bracket (for ABS10450)
ABS45336	T-handle (for ABS10300)
ABS45346	T-handle (for ABS10450)

Replacement Filters

ABS10300 ABS20330 ABS20370 ABS25350	3 micron filter (Green) 5 micron filter (Blue) 10 micron filter (Orange)
ABS10450	
ABS20430	3 micron filter (Green)
ABS20470	5 micron filter (Blue)
ABS25450	10 micron filter (Orange)

Absolute Vessels

Use Racor Absolute Series oil cleaners for maximum dirt and water removing efficiency.

SU Series



Specifications	ABS11200
Housing Material	Stainless Steel
Capacity	100 qt (94.6 L)
Port Size	1/2" NPT
Working Pressure	<120 PSI (8.3 bar)
Dimensions	W9.3 x D10.6 x H16.1 in. (W210 x D269 x H620 mm)
Replacement Filters	(use two) ABS20430 (3 micron), ABS20470 (5 micron) ABS25450 (10 micron)
Weight (approx.)	22 lbs (10.0 kg)

SS Series



Specifications	ABS10515			
Housing Material	Carbon Steel			
Capacity	250 qt (236.6 L)			
Port Size (inlet/outlet/drain)	1/2" NPTF			
Working Pressure	<72.5 PSI (5.0 bar)			
Dimensions	W18.9 x H50.0 in. (W480 x H1270 mm)			
Replacement Filters	(use five) ABS20515 (3 micron)			
Weight (approx.)	191 lbs (86.6 kg)			



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

As you'd expect, it delivers testproven 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.

Reusable Fittings

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

Brass	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

Marine Rated Hose

No-Skive Hose and Fittings

- No-Skive hose and fittings do 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.
- High-tensile steel wire braid.

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



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

#		0	(*	*			9	J	Hg
Part Number	Hose	e I.D.	Hose	0.D.	Working	Pressure	Burst P	ressure	Min. Ben	d Radius	Weight (per foot)	Inches of	Mercury
	in.	cm	in.	cm	PSI	mPa	PSI	mPa	in.	cm	lbs/ft	kg/m	Hg	kPa
CGH-5	1/4	0.6	0.6	1.5	500	3.4	2000	13.8	1	2.5	0.19	0.09	20	68
CGH-6	5/16	.8	0.7	1.8	500	3.4	2000	13.8	1 1/4	3.2	0.23	0.10	20	68
CGH-8	13/32	1.0	0.8	2.0	500	3.4	2000	13.8	1 3/4	4.5	0.28	0.13	20	68
CGH-10	1/2	1.3	0.9	2.3	500	3.4	2000	13.8	2 1/4	5.7	0.39	0.18	20	68
CGH-12	5/8	1.6	1.1	2.8	500	3.4	2000	13.8	2 3/4	7.0	0.47	0.21	20	68
CGH-16	7/8	2.3	1.2	3.0	500	3.4	2000	13.8	3 1/2	8.9	0.41	0.19	20	68

Helpful accessories that enhance your fuel systems performance and ease of service

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. The only way to know when the engine air filter has reached it's capacity is to measure the restriction at service.

An 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 inHg (27-50 kPa)	Direct Mount
400033020 A	8-20 inHg (27-67 kPa)	Direct Mount
400033025 ^A	8-25 inHg (27-84 kPa)	Direct Mount
014440001 ^A	8-25 inHg (27-84 kPa)	Direct Mount w/ 90° Fitting
072604000 B	4-25 inHg (14-84 kPa)	Remote Mount
076248001 A	8-25 inHg (27-84 kPa)	Dash Mount

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

Part	No.	Description	Tread Size	
RK 1	1233	Vacuum Gauge, all liquid filled out, 2" dial, 0-30 in.Hg. (0-15 PSI)	1/4" NPT back mount bracket	
160)6B	Vacuum Gauge Kit. Gauge (RK11233), one 7232-4 & 7234-4 fitting	1/4" NPT back mount bracket	
723	2-4	Adapter fitting for use with 0102-4-2 fitting	1/8"MNPT x #4 (1/4") hose	44)20
723	4-4	Adapter fitting for use with all gauges	1/4" swivel x #4 (1/4") hose.	cos E
0102	2-4-2	Adapter fitting for use with 7232-4 / 7234-4 fittings	1/4" NPTM x 1/8" NPTF	
RK11-	1676E	Vacuum gauge with 2" dial, rotating bezel, reset knob, and red tell-tale pointer. 0-30 inHg. (0-15 PSI)	1/4" NPT bottom boss mount	
RK11-	-1969	T-handle vacuum gauge for 500FG Turbine Series fuel filter water/separators	1/4" NPT x 3/4" fitting threads	
RK 11-	-1669	T-handle vacuum gauge for 900FH & 1000FH Turbine Series fuel filter water/ separators	1/4" NPT x 1" fitting threads	
RK 19	9492	UL-Listed Brass Drain Valve	1/4" NPTF	**

Vacuum/Compound Gauge Kits

Vacuum and Compound (vacuum/pressure) gauges and related hardware are available to monitor filter condition. As the filter 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 filter 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.

Note: Intervals of filter change out may vary depending on fuel cleanliness. Always keep a spare Racor filter on hand.



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. Not for use on gasoline application.

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

Part Number	Description	Voltage	lmage
RK 12870	Under-dash Water Detection Module Light and sound when water is detected. Water must be drained to reset light and stop horn. Plastic enclosure measures: 1.38" square x 1.25" deep Water probe included.	12 vdc	
RK 12971	Same as above	24 vdc	
RK 20725	Under-dash Mount Water Detection Module Light only. Green 'ON' lamp illuminates with power on. 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" Water probe included.	12 vdc	The state of the s
RK 20725-24	Same as above	24 vdc	
RK 20726	2" Gauge Type Water Detection Module Light and audio. Red 'DRAIN' lamp illuminates and horn sounds when water is detected. Initial power-up self diagnosis feature and circuit protection included. Plastic case, satin black dial with white lettering. Water probe included.	12 or 24 vdc	
RK 11-1570 ¹	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 and horn sounds when water is detected. Water probe included.	12 or 24 vdc	
RK 14329	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"	12 vdc	
RK 14321	Sam as above	24 vdc	
14332	Under-dash mount Same as RK14329 but sends a ground (–) signal. Enclosure size is same as RK 20725, above.	12 vdc	
RK 20163	Vacuum Switch Kit Non-adjustable, 'NORMALLY OPEN' contacts close at 7 in.Hg. (3.4 PSI) 1/8"-27 NPT threads. For use with all models.	N/A	-
RK 21030	Vacuum Switch Connector Kit Molded connector with single 18 AWG., 18" blue wire lead.	N/A	

¹ Clear collection bowl must have a 7/8" SAE port.

Village Marine Tec. Products

For Reverse Osmosis Applications

Racor is the watermaker of choice for the experienced sailor. The Racor units come equipped with a corrosion resistant pumps, membranes, and controls. The result is the most reliable, field serviceable, quiet, efficient and economical source of fresh water available in the industry. Available in self contained frame, semi-modular or completely modular configurations with water output ranging from 160 to 100,000 GPD. (see brochure 7807)



LWV Series (see bulletin 7829)

The Little Wonder vertical systems are in compactly framed for easy installation and simple operation. Operating on DC power, they are ideal for sail boats or as back up watermakers on larger yacht.

Features and Benefits

- Raw water boost pump provides extra feed pressure.
- VMT's exclusive titanium high pressure pump is impervious to the corrosive sea water environment and designed for maximum efficiency, producing more water with less battery power.
- Adjustable 316 ss pressure regulating valve provides constant pressure. No fluctuating pressure and low noise.
- Product flowmeter to monitor gallons per hour of product water being produced.

- Glycerine filled high pressure gauge to assure accurate reading of pressure from high pressure pump.
- Easy to operate high pressure bypass valve controls the operating mode from cleaning/flush to reverse osmosis.
- Supplied with cleaning and preservative chemicals to keep your system in prime working condition, plus a spare pre-filter cartridge.
- 12v, permanent magnet motor has significant reserve capacity for long life (on dc powered units).
- Special hi-rejection Aqua Pro membrane(s).
- Manual fresh water flush.
- Product sample valve.
- Cleaning valve.

Model	Flow Rate	Voltage	Amps	Dimensions	Weight
LWV-160	160 GPD (606 LPD)	12 or 24 vdc	13 or 7	13x13x25 in. (33x33x65 cm)	70 lbs (31.8 kg)
LWV-200	200 GPD (757 LPD)	12 or 24 vdc	17 or 9	13x13x25 in. (33x33x65 cm)	72 lbs (32.7 kg)

Oily Water Separator

Are USCG Approved Information available upon request

Simple To Operate Easy To Maintain

Village Marine Tech. (VMT) Oily Water Separators meet IMO resolution MEPC.60(33) and MARPOL 73/78 standards of 15 ppm limits for discharge from the machinery bilge spaces of ships.

The OWS Series Oily Water Separators are available in 2.2 GPM (8.3 LPM), 4.4 GPM (16.7 LPM), 8.8 GPM (33.3 LPM), and 11 GPM (41.6 LPM) flow rates.



Model	fodel Fresh Water Flow		Amps	Through Hull Required	Weight	
LWM-160	7.0 GPH (26 LPH)	12 or 24 vdc	13 or 7	1/2"	49 lbs (22 kg)	
LWM-200	8.3 GPH (31 LPH)	12 or 24 vdc 110 or 220 vac	17 or 9 6 or 3.3	1/2"	51 lbs (23 kg)	

Features and Benefits

- Easy access sediment prefilter.
- Maintenance-free air/oil separator.
- 3 Plunger titanium pump for low vibration, and noise.
- Unsurpassed corrosion resistance.
- Low pressure magnetic drive pump.
- Glycerine filled pressure gauges.
- Freshwater flush system.

Product Information:

Racor VMT provides a complete line of desalination equipment and U.V. sterilizing equipment. For all of your water making needs please visit our website www.villagemarine.com or contact Racor VMT directly. We are here to provide you the highest level expertise and support possible.



STW Series

The goal for many Nordhavn Yacht owners is to circumnavigate the globe with self sufficient capabilities and economical equipment. Pacific Asian Enterprises manufactures Nordhavn Yachts which are vessels that have a range of up to 4,000 nautical miles. In 2002, a stock 40 footer completed a 26,000 mile circumnavigation in less then 26 weeks without a single breakdown.

While meeting with various Nordhavn Yacht owners one of the most important goals of long underway periods is the need to produce your own fresh water, and truly be self sufficient while on the open seas. (see bulletin 7861 and 7860)





Model	Fresh Water	Supply (VAC)	Power (Amps)	Frame Size	Weight	
STW-400	16 GPH (63 LPH)	110/220	13/8	22"L x 16"W x 12"H (56L x 41W x 30H cm)	135 lbs (61 kg)	

Why Choose VMT?

The team at Pacific Asian Enterprises has worked very closely with Racor/VMT. over the past several years in providing a variety of reverse osmosis desalination units to every size vessel in production, past and present. Racor/VMT. has an unsurpassed reputation of manufacturing the best built water maker equipment with unparalleled level of factory support. Racor VMT. produces over 95% of all components in their systems in house. Racor VMT. is the TRUE manufacturer of reverse osmosis desalination equipment.

Pacific Asian Enterprises and Nordhavn Yacht owners rely on Racor VMT. to provide world class service. Peace of mind is one of the major keys to having a successful extended underway period. Racor VMT. assists the operators and crew of these fine vessels with that peace of mind by providing safe, efficient and reliable equipment accompanied by

the best factory and technical support possible. There is no longer a need to store additional water on board vessels in water bottles. Make water at sea and forget about having to return to dock just to re-fill the water tanks. Racor VMT. is proud to provide all of your fresh water needs and the highest level of expertise and support possible.



SW Series (see bulletin 7857 and 7832)

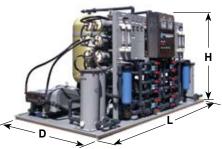


Features and Benefits

- Sea strainer (prevents large particles from entering into the system).
- Media filter (with simple backflush and rinse controls).
- Pre-filtration housings.
- Ceramic plunger titanium pump.
- Ni-al-br low pressure pumps.
- Stainless steel, glycerine filled pressure gauges.
- High-pressure hose (with titanium fittings).

- Standard sized membranes.
- 316 SS high-pressure bypass valve.
- Adjustable 316 ss pressure regulating valve.
- Brine water flow meter.
- Product flow meter.
- · Automatic diversion valve.
- Digital water quality monitor.
- Cleaning valve.
- Freshwater flush system.





SW Systems

Systems are designed for rugged use in harsh environments where a large quantity of potable water is required. Typical installations are offshore rigs, work camps, oceanfront resorts, and cruise ships.

Each SW unit comprises a single skid installation with two complete, independent reverse osmoses (RO) systems. The two trains can both run or can be operated on a duty/standby basis.

Special Features

- 24,000–36,000 GPD Unit Capacity.
- Exclusive corrosion resistant Titanium Head with 5 Plunger Pumps.
- 316 Stainless Steel high-pressure regulating valves.
- Corrosion-resistant FRP pressure vessels.
- All corrosion resistant hardware and fasteners.
- Backwashable media filters.
- Optional FRP piping and polypropylene valves.

Model	Product Flow ¹	Power ²	Skid Size ³ L x D x H	Weight
SW 24	24,000 GPD (90,850 LPD)	60 amps		6,950 lbs (3,152 kg)
SW 32	32,000 GPD (121,133 LPD)	60 amps	11.8 L x 6 D x 6.5 H (ft) (3.3 L x 1.8 D x 2.0 H) (m)	7,300 lbs (3,311 kg)
SW 36	36,000 GPD (136,275 LPD))	70 amps		7,500 lbs (3,402 kg)

¹ Product flow based on median seawater conditions, both trains running.

² SW modular units dimensions and weights are available upon request. All other specifications are the same as the framed units.

³ Based on 440 Volts, 3 phase - Amp draw will vary due to voltage / Hz.

PW Systems

PW systems are the preferred choice for some of our most discriminating clients (such as the United States Navy, the United States Coast Guard, and the Cousteau Society) and have proven to be amongst most reliable units on the market. These systems are designed to provide the best performance and longevity under the most rugged conditions.

PW Systems are available in 2 styles:

<u>Framed</u>: Framed units are the most convenient to install-simply connect hoses, run the power, and you're in business.

Modular: Modular systems allow the user freedom to install components where space permits, and the modules are small enough to fit through hatchways for installation.

Optional Accessories

- Cyclone Separator (for sandy water conditions).
- Hand-Held Digital Water Tester (tests water to World Health Organization Standards 500 ppm).
 Reads 0-999 ppm
- Hazardous Area Classification Class I, Div I, Group D.
- Media Filter (extends the life of micron filters).
- FRP low pressure piping.

PW Series (see bulletin 7858, 7857, and 7831)



Features and Benefits

- Sea Strainer (prevents large particles from entering into the system).
- Pre-filtration Housings.
- Ceramic Plunger Titanium Pump.
- Boost Pump (provides up to 50 psi of boost pressure).
- Stainless Steel, Glycerine Filled Pressure Gauges.
- High Pressure Piping.
- Standard Sized Membranes.
- Easy to operate 316 SS High Pressure Bypass Valve.
- Adjustable 316 SS Pressure Regulating Valve (for use in fresh, brackish, or seawater).
- Brine Water Flow Meter (measures brine flow output).

- Product Flow Meter (to easily monitor gallons/hour of water produced).
- Automatic Diversion Valve (diverts water to discharge).
- Digital Water Quality Monitor (displays ppm TDS of product water output).
- Cleaning Valve (for easy cleaning or sterilization).
- Non-corrosive, Aluminum, Powder Coated Frame.
- FRP Pressure Vessels.
- Simple to use freshwater flush system (extends life of membranes without use of preservatives).
- One-Year Warranty.

	Product Flow Vo	Voltage Vac. HP	Davier	Water Connections					
Model			НР	Power amps	Feed Inlet	Reject Outlet	Product Outlet	Skid Size	Weight¹
PW3000	125 GPH (473 LPH)	440 or 220	10 hp (7.5 kw)	14 or 28	1.5" (3.8 cm)	1.5" (3.8 cm)	1.0" (2.5 cm)	84" x 34" x 35" (213 x 86 x 89 cm)	800 lbs (363 kg)
PW4000	167 GPH (632 LPH)	440 or 220	10 hp (7.5 kw)	14 or 28	1.5" (3.8 cm)	1.5" (3.8 cm)	1.0" (2.5 cm)	84" x 34" x 35" (213 x 86 x 89 cm)	900 lbs (408 kg)
PW5000	208 GPH (787 LPH)	440 or 220	15 hp (11.2 kw)	21 or 42	1.5" (3.8 cm)	1.5" (3.8 cm)	1.0" (2.5 cm)	84" x 34" x 35" (213 x 86 x 89 cm)	1000 lbs (455 kg)
PW6000	250 GPH (946 LPH)	440 or 220	15 hp (11.2 kw)	21 or 42	1.5" (3.8 cm)	1.5" (3.8 cm)	1.0" (2.5 cm)	84" x 44" x 35" (213 x 112 x 89 cm)	1050 lbs (477 kg)
PW7000	292 GPH (1105 LPH)	440 or 220	15 hp (11.2 kw)	21 or 42	1.5" (3.8 cm)	1.5" (3.8 cm)	1.0" (2.5 cm)	84" x 48" x 35" (213 x 122 x 89 cm)	1500 lbs (682 kg)
PW8000	333 GPH (1261 LPH)	440	20 hp (14.9 kw)	27	1.5" (3.8 cm)	1.5" (3.8 cm)	1.0" (2.5 cm)	84" x 48" x 35" (213 x 122 x 89 cm)	1600 lbs (727 kg)
PW10000	417 GPH (1579 LPH)	440	20 hp (14.9 kw)	27	1.5" (3.8 cm)	1.5" (3.8 cm)	1.0" (2.5 cm)	84" x 48" x 35" (213 x 122 x 89 cm)	1800 lbs (818 kg)
PW12000	500 GPH (1893 LPH)	440	25 hp (18.6 kw)	34	1.5" (3.8 cm)	1.5" (3.8 cm)	1.0" (2.5 cm)	88" x 52" x 35" (224 x 132 x 89 cm)	1900 lbs (864 kg)
PW16000	667 GPH (2525 LPH)	440	25 hp (18.6 kw)	34	1.5" (3.8 cm)	1.5" (3.8 cm)	1.0" (2.5 cm)	88" x 52" x 43" (224x132x109 cm)	2200 lbs (1000 kg)
PW18000	750 GPH (2839 LPH)	440	30 hp (22.4 kw)	40	1.5" (3.8 cm)	1.5" (3.8 cm)	1.0" (2.5 cm)	88" x 52" x 43" (224 x 132 x 109 cm)	2250 lbs (1022 kg)

¹PW modular units dimensions and weights are available upon request. All other specifications are the same as the framed units.

The Leader in MIL-SPEC Reverse Osmosis Desalination Systems

For over 30 years Village Marine Tec. (VMT) has been the leading supplier of RO desalination equipment to the US Navy and US Coast Guard. We are proud that our steadfast commitment to the design, engineering, and manufacture of the worlds most advanced Reverse Osmosis (RO) equipment has helped improve the quality of life while underway for the men and women who serve. From potable water for drinking and showers to High-Purity Permeate for Reactor-Grade applications, Village Marine Tec is your choice for fresh water from the sea.

Our in-house design, manufacturing and testing capabilities coupled with our synergistic family of companies are unequalled in the industry and uniquely position VMT to provide the toughest most reliable MIL-SPEC RO equipment.

US Navy Installations

- Arleigh Burke (DDG 51) Class
- Spruance (DD 963) Class
- Ticonderoga (CG 47) Class
- Tarawa (LHA 1) Class
- Los Angeles (SSN 688) Class
- Ohio (SSN 726) Class
- Avenger (MCM1) Class
- Osprey (MHC51) Class
- Freedom (LCS1) Class
- Virginia (SSN774) Class

US Coast Guard Installations

- WAGB-11 Polar Sea
- WLB 225' Class
- WMEC 270' Class
- WPB 87' Class
- WMEC 210' Class
- · WPB 110' Class







Parker Racor Division Quality Management System Certifications

ISO/TS 16949: 2002ISO 14001: 2004

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Every agent has access to extensive computer databases referenced by part number and product category. Information encompassing 200 worldwide facilities, 400 product lines, and 1,200 market segments is at their fingertips. Our goal is to make it as easy as possible for you to do business with Parker.

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By using the Language Line Service, we can access interpreters for more than 140 languages immediately. Handling non-English-speaking inquiries is not a problem!

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Parker's Motion & Control Technologies

At Parker, we're guided by a relentless drive to help our customers become more productive and achieve higher levels of profitability by engineering the best systems for their requirements. It means looking at customer applications from many angles to find new ways to create value. Whatever the motion and control technology need, Parker has the experience, breadth of product and global reach to consistently deliver. No company knows more about motion and control technology than Parker. For further info call 1 800 C-Parker (1 800 272 7537).



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- Aircraft engines
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- Military aircraft
- Missiles & launch vehicles
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- Unmanned aerial vehicles

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- Fluid conveyance systems Fluid metering delivery
- & atomization devices
- Fuel systems & components
- Hydraulicsystems&components Inertnitrogengeneratingsystems
- Pneumaticsystems&components
- Wheels & brakes



CLIMATE CONTROL

- Agriculture
- Air conditioning
- Food, beverage & dairy Life sciences & medical
- Precision cooling
- Processing
- Transportation

Key Products

- CO² controls
- Electronic controllers
- Filter driers
- Hand shut-off valves Hose & fittings
- Pressure regulating valves
- Refrigerant distributors
- Safety relief valves
- Solenoid valves
- Thermostaticexpansionvalves



ELECTROMECHANICAL

- Aerospace
- Factory automation
- Food & beverage
- Life science & medical
- Machine tools
- Packaging machinery
- Paper machinery
- Plasticsmachinery&converting
- Primary metals
- Semiconductor & electronics
- Textile
- Wire & cable

Key Products

- AC/DC drives & systems
- Electric actuators
- Gantry robots Gearheads
- Human machine interfaces
- **Industrial PCs**
- Linear motors, slides and stages Precision stages
- Stepper motors
- Servo motors, drives & controls
- Structural extrusions



FILTRATION

- Food & beverage
- Industrial machinery
- Life sciences
- Marine
- Mobile equipment
- Oil & gas
- Power generation
- **Process**
- Transportation

Key Products

- Analytical gas generators
- Compressed air & gas filters
- Condition monitoring Engine air, fuel & oil filtration
- & systems
- Hydraulic, lubrication & coolant filters
- Process, chemical, water & microfiltration filters
- Nitrogen, hydrogen & zero air generators



FLUID & GAS HANDLING

Kev Markets

- Aerospace
- Agriculture
- Bulk chemical handling
- Construction machinery Food & beverage
- Fuel & gas delivery
- Industrial machinery
- Mobile
- Oil & gas
- Transportation
- Welding

Kev Products

- Brass fittings & valves
- Diagnostic equipment Fluid conveyance systems
- Industrial hose
- PTFE & PFA hose, tubing & plastic fittings
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- **Ouick disconnects**



HYDRAULICS

Key Markets

- Aerospace
- Aerial lift **Aariculture**
- Construction machinery
- Forestry
- Industrial machinery
- Mining
- Oil & gas
- Power generation & energy
- Truck hydraulics

- Diagnostic equipment
- Hydraulic cylinders & accumulators
- Hydraulic motors & pumps
- Hydraulic systems
- Hydraulic valves & controls Power take-offs
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters Quick disconnects



PNEUMATICS

- **Key Markets**
- Aerospace Conveyor & material handling
- Factory automation
- Food & beverage
- Life science & medical Machine tools
- Packaging machinery Transportation & automotive

- **Kev Products** Air preparation
- Compact cylinders
- Field bus valve systems
- Grippers Guided cylinders
- Manifolds
- Miniature fluidics
- Pneumatic accessories
- Pneumaticactuators&grippers Pneumatic valves and controls
- Rodless cylinders
- Rotary actuators Tie rod cylinders
- Vacuumgenerators,cups&sensors



PROCESS CONTROL

- Chemical & refining
- Food, beverage & dairy
- Medical & dental Microelectronics
- Oil & gas Power generation

- **Key Products**
- Analyticalsampleconditioning products & systems Fluoropolymerchemicaldelivery
- fittings, valves & pumps Highpuritygas delivery fittings,
- valves & regulators Instrumentationfittings, valves & regulators Mediumpressurefittings&valves Process control manifolds



SEALING & SHIELDING

- **Key Markets**
- Aerospace Chemical processing
- Consumer Energy, oil & gas Fluid power
- . General industrial Information technology
- Life sciences
- Military
- Semiconductor
- Telecommunications Transportation

- **Key Products** Dynamic seals
- Elastomeric o-rings EMI shielding
- Extruded & precision-cut, fabricated elastomeric seals
- Homogeneous & inserted elastomeric shapes
- High temperature metal seals Metal&plasticretainedcompositeseals Thermal management



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