

75900MAX or MAXM and 751000MAX or MAXM

Marine Fuel Filter/Water Separators

Instruction Part Number 19536 Rev B



The Racor Turbine Series fuel filter/water separators protect the precision components of your engine from dirt, rust, algae, asphaltines, varnishes and especially water, which is prevalent in engine fuels. They remove contaminants from fuel using the legendary three stage process described below.

The Racor MAX assembly allows the isolation of one filter at a time for servicing while the engine is running. The handle pointer always indicates which unit is on-line. To take one filter off-line for servicing while engine is running, select the filter to stay on-line, then begin servicing the other unit.

Models 75900MAXM and 751000MAXM are American Bureau of Shipping (ABS) and Bureau Veritas (BV) Marine Type Approved.



75900MAX Assembly Shown

Contact Information

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How It Works

Stage 1 - Separation

Using the fuel flow, the turbine separates large solids and 'free' water through enhanced centrifugal force.

Stage 2 - Coalescing

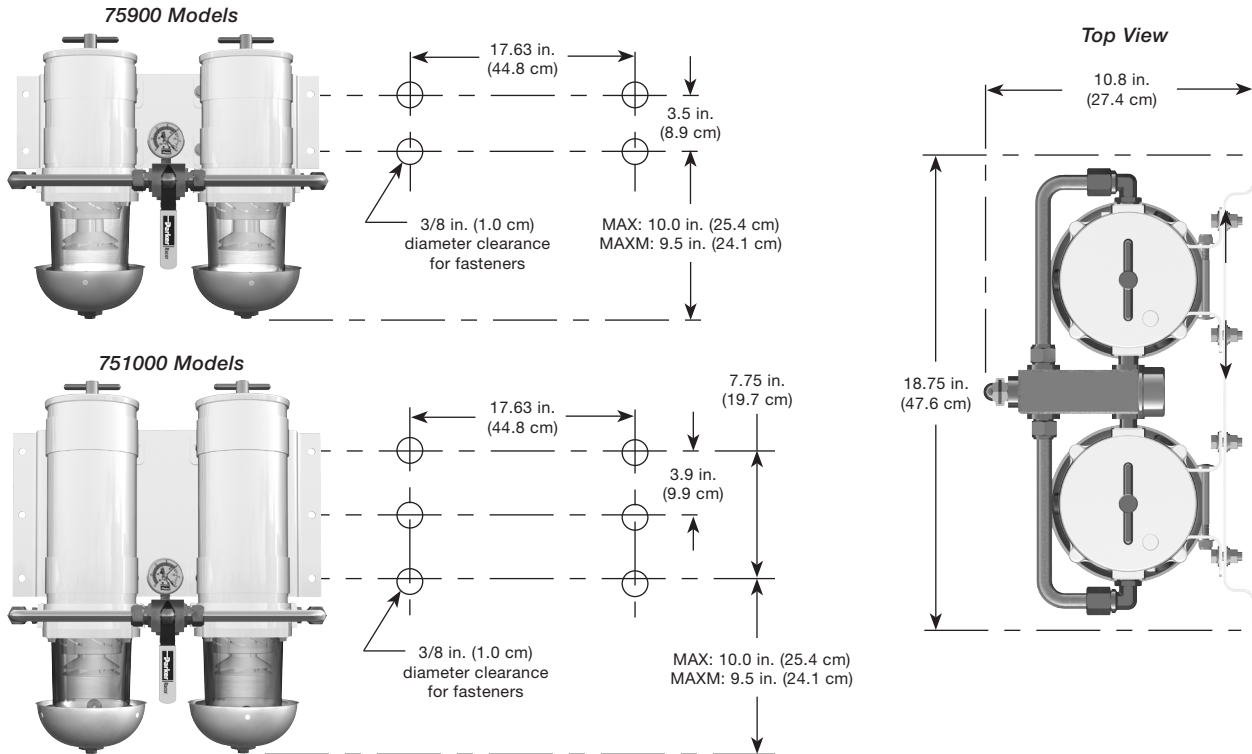
Smaller water droplets and solids coalesce on the conical baffle and fall to the collection bowl.

Stage 3 - Filtration

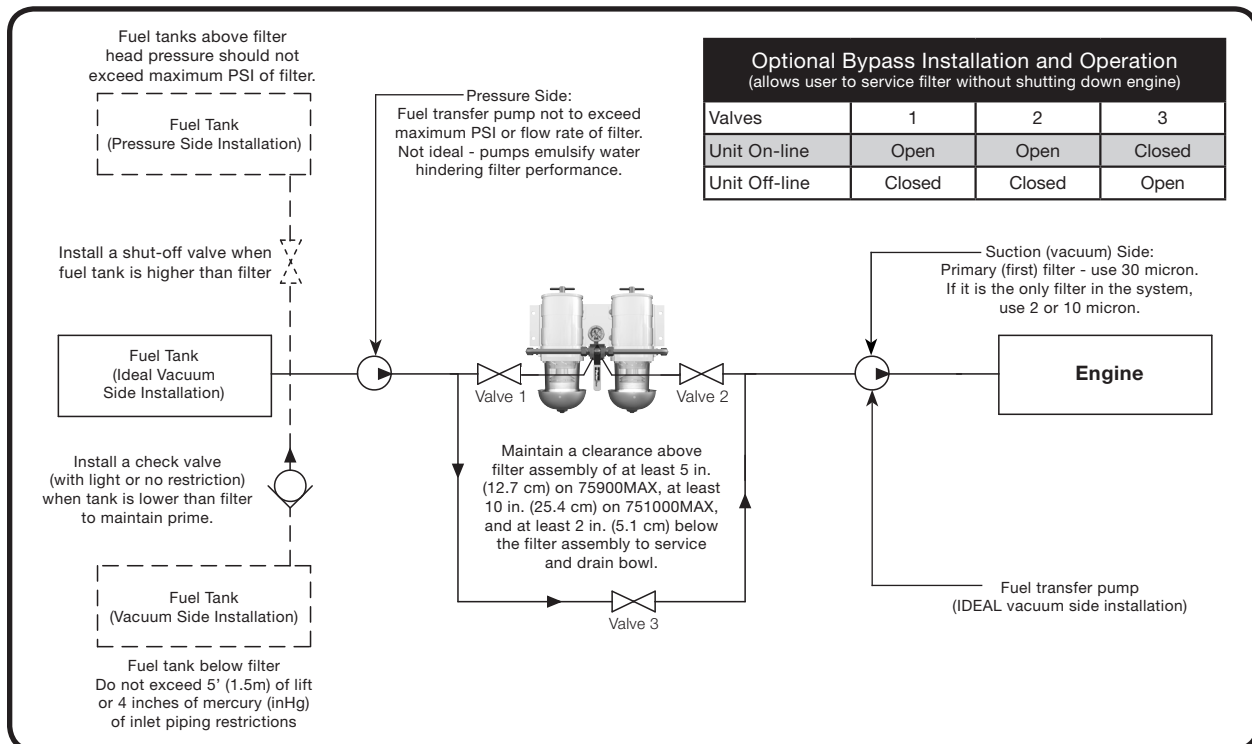
Engines will benefit from near 100% water separation and fuel filtration with Racor's proprietary Aquabloc® water repelling media. The replaceable filters are available in 2, 10 and 30 micron ratings.



Mounting Instructions



Installation Diagram



Installation Guidelines

These *customer supplied* materials should be on hand before beginning installation.

- Shop Towels
- Mounting Hardware (3/8")
- Inlet/Outlet Fittings
- Fuel Hose
- Clean Diesel Fuel (2-3 gals.)
- Clean Motor Oil
- Thread Sealant (no thread tapes)

Positioning The Filter Assembly

Install filter assembly on suction side of fuel transfer pump for optimum water separating efficiency. *See Installation Diagram.*

Keep fuel line restrictions to a minimum. Locate the filter assembly between horizontal planes of the bottom of the fuel tank and inlet of fuel pump, if possible. If filter assembly is installed in an application where the fuel tank is higher than the filter, a shut-off valve must be installed between the tank and filter assembly INLET. This will be used when servicing the replacement filter.

BEFORE Installing The Filter Assembly

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

Installing The Filter Assembly

- Completely remove any suction side filters in fuel line between fuel tank and fuel pump. This is where the Racor filter will mount. Leaving these filters in place will add to fuel system restriction. Filter heads cast into the engine or that are non-removable or hard piped should be serviced with a new filter and left in place.
- Keep fuel flow restriction to a minimum. Always use the maximum size fuel hose possible. Do not make sharp bends with flexible hose as kinks may occur. Avoid use of two 45° elbow fittings where one 90° elbow will work.

- When routing hose, avoid surfaces that move, have sharp edges, or get hot (such as exhaust piping).
- Avoid using one-way check valves that have an opening pressure higher than 0.5 PSI (0.03 bar).

Priming Instructions

1. Remove T-handle and lid from top of all filter assemblies.
2. Fill filters with clean fuel.
3. Lubricate lid gaskets and T-handle O-rings with clean fuel or motor oil.
4. Replace lids and T-handles and tighten snugly by hand only—do not use tools.
5. If applicable, refer to equipment operator's service manual to complete fuel priming procedure.
6. Start engine and check for fuel system leaks. Correct as necessary with engine off and pressure relieved from filter assembly.

Service Instructions

Draining Water

Frequency of water draining is determined by the contamination level of the fuel. Inspect or drain collection bowls of water daily or as necessary. Collection bowls must be drained before contaminants reach the bottom of the turbine (inside the bowl), or when the Water Detection Module (optional) indicates a drain is required.

Suction Side Applications

1. Close inlet valve (or valve #1) and open drain plug on bottom of bowl.
2. Close drain plug after all water and contaminants have been evacuated—DO NOT leave drain open too long as it will eventually completely drain entire filter of water AND fuel.
3. Follow *Priming Instructions*.

Pressure Side Applications

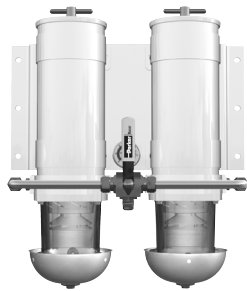
1. Open drain plug on bottom of bowl. Head pressure will push any water and contaminants out of drain while keeping filter primed.
2. Close drain after all water and contaminants have been evacuated—DO NOT leave drain open too long as it will eventually completely drain entire filter of water AND fuel, and possibly drain entire tank.

Selector Valve

The Racor filter assembly allows the isolation of one filter at a time for servicing while engine is running. The handle pointer always indicates which

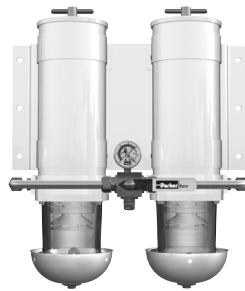
unit is on-line. To take one filter off-line for servicing while engine is running, select the filter to stay on-line, then begin servicing the other unit.

CAUTION! The handle can rotate 360°, so be very careful to avoid the **BOTH OFF** position (arrow up) while engine is running.



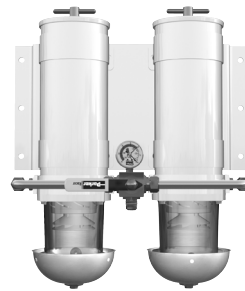
Both On

Pointer on handle points down to inlet and outlet ports



Left On

Pointer on handle points to left unit



Right On

Pointer on handle points to right unit



Both Off

Pointer on handle points up/away from inlet and outlet ports

Filter Replacement

Frequency of filter replacement is determined by contamination level of fuel. Replace filter every 500 hours, every other oil change, when vacuum gauge (optional) reads between 7 to 10 inches of mercury (inHg), if power loss is noticed, or annually, whichever comes first.

Note—always carry extra replacement filters as one tankful of excessively dirty fuel can plug a filter.

Use only genuine Racor Aquabloc® replacement filters—see Replacement Part list.

All Applications:

1. Bypass filter assembly with bypass valves, if applicable.
2. Remove T-handle and lid.
3. Remove filters by holding bail handles and slowly pulling upward with a twisting motion. Dispose properly according to local regulations.
4. Replace old lid gasket and T-handle O-ring with new seals (supplied with new filter). Lubricate both seals with motor oil or diesel fuel before installation.
5. Refer to Priming Instructions, otherwise, fill unit with clean fuel, replace lid and T-handle and tighten snugly by hand only – do not use tools.

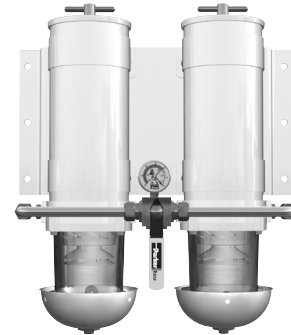
Note—above ground tanks or transfer pump applications may use head pressure to prime filter assembly.

Troubleshooting

A major cause of power loss or hard starting is result of an air leak (or clogged filter). If your unit will not prime or fails to hold prime, check that drain,

bowl and filter are properly tightened. Next, check all fitting connections and ensure fuel lines are not pinched or clogged with contaminants.

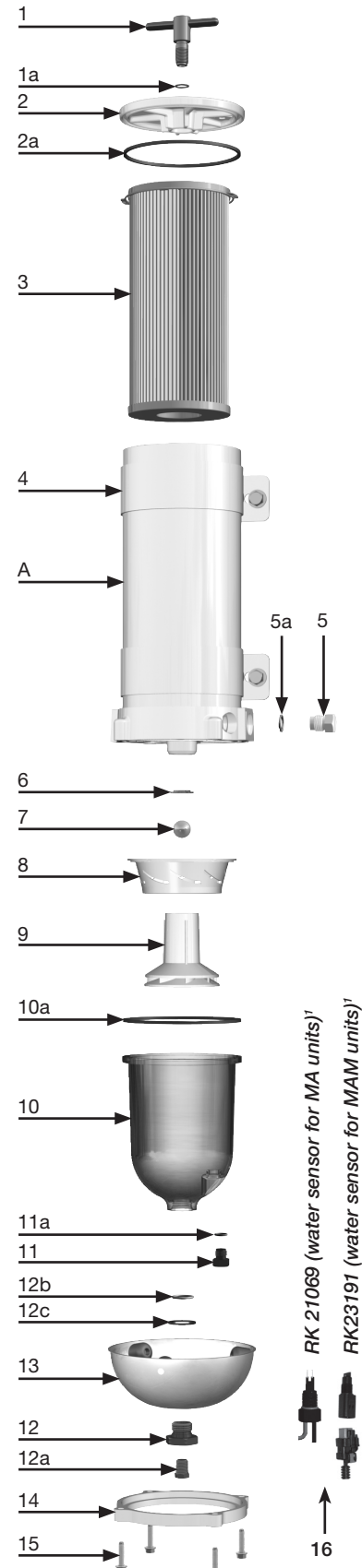
If problems persist (and filter is new) call Racor Technical Support for assistance: (800) 344-3286 or (209) 575-7555.



Specifications	75900MAX and 75900MAXM	751000MAX and 751000MAXM
Maximum Flow Rate: (one unit online) (two units online)	90 GPH (341 LPH) 180 GPH (681 LPH)	180 GPH (681 LPH) 360 GPH (1,363 LPH)
Port Size	7/8"-14 (SAE J514)	7/8"-14 (SAE J514)
Minimum Service Clearance (above assembly) (below assembly)	5.0 in. (12.7 cm) 2.0 in. (5.1 cm)	10.0 in. (25.4 cm) 2.0 in. (5.1 cm)
Replacement Filter (2 micron) (10 micron) (30 micron)	2040N-02 or 2040SM-OR 2040N-10 or 2040TM-OR 2040N-30 or 2040PM-OR	2020N-02 or 2020SM-OR 2020N-10 or 2020TM-OR 2020N-30 or 2020PM-OR
Height MAX MAXM	17.0 in. (43.2 cm) 16.5 in. (41.9 cm)	22.0 in. (55.9 cm) 21.5 in. (54.6 cm)
Width	18.8 in. (47.8 cm)	18.8 in. (47.8 cm)
Depth	11.0 in. (27.9 cm)	11.0 in. (27.9 cm)
Weight (dry) MAX MAXM	23.0 lb (10.4 kg) 24.0 lb (10.9 kg)	30.0 lb (13.6 kg) 31.0 lb (14.1 kg)
Max. Working Pressure	25 PSI (1.7 bar)	25 PSI (1.7 bar)
Clean Pressure Drop	1.7 PSI (0.12 bar)	3.7 PSI (0.26 bar)
Water Removal Efficiency	99%	99%
Ambient Temp. Range	-40°F to +250°F (-40°C to +121°C)	
Max. Fuel Temperature	190°F (32°C)	

Replacement Parts

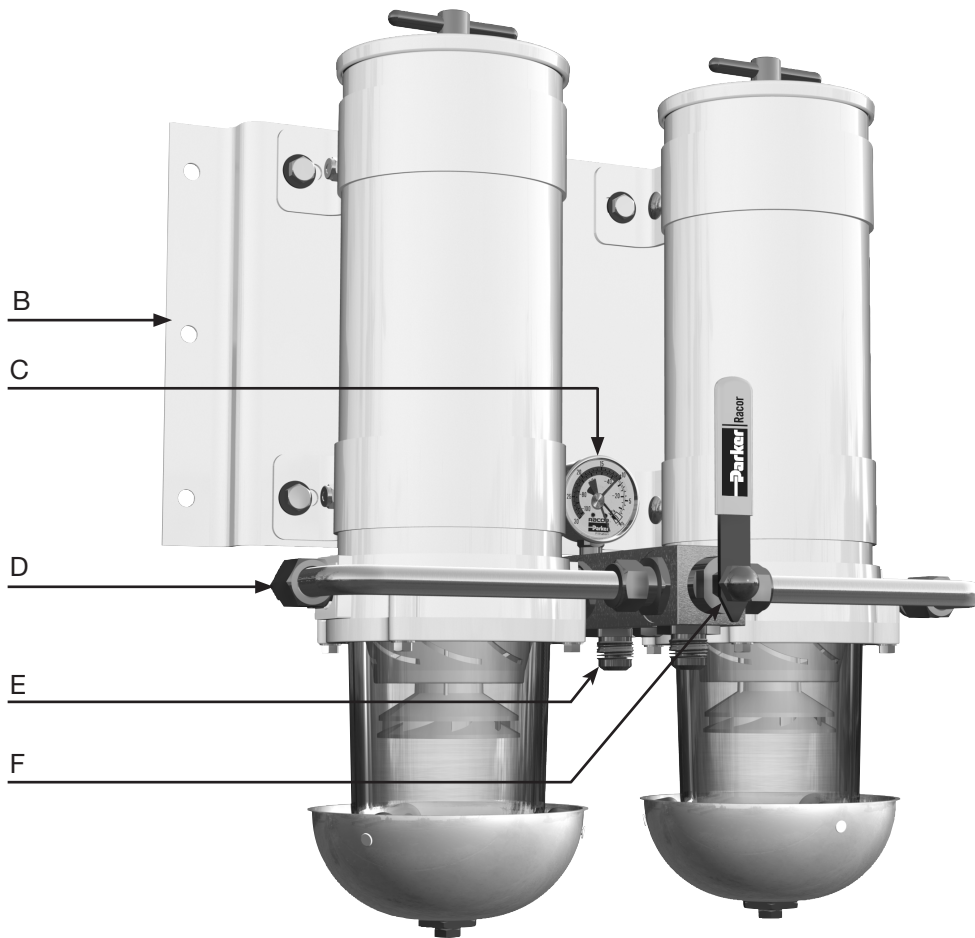
Part Number	Description
1	RK 11-1945 (brass) RK23183 (stainless steel) T-handle and O-ring Kit (includes 1a) (9/16" -18 UNF Threads) <i>Hand tight only.</i>
1a	RK11350 T-handle O-ring Kit
2	RK 11-1933-04 Lid Kit (includes 2a)
2a	RK11007 Lid Seal Kit
3	New Filters: 2040N-02 (2 micron) 2040N-10 (10 micron) 2040N-30 (30 micron) Current Filters: 2040SM-OR (2 micron) 2040TM-OR (10 micron) 2040PM-OR (30 micron) For 75900MAX or 75900MAXM assemblies (includes 2a)
	New Filters: 2020N-02 (2 micron) 2020N-10 (10 micron) 2020N-30 (30 micron) Current Filters: 2020SM-OR (2 micron) 2020TM-OR (10 micron) 2020PM-OR (30 micron) For 751000MAX or 751000MAXM assemblies (includes 2a)
4	RK11-2006 Clamp Bracket Kit
A	(not sold separately) 75900MAX or 75900MAXM Body/Housing 751000MAX or 751000MAXM Body/Housing
5	RK 11-1679 Feed-thru Plug Kit (includes 5a) Tighten 15 in. lbs (1.69 Nm) max.
5a	43506 Plug O-ring
6	RK 11028B Checkball and Checkball Seal Kit
7	
8	RK 11-1939 Conical Baffle and Turbine Centrifuge Kit (includes 6, 7, 8, 9, and 10a). <i>Hand tightened only.</i>
9	
10	RK 11-1606-1 (MAX models) RK 11734-03 (MAXM models) Clear Bowl Kit (includes drain, 10a, and 11) Metal Bowl Kit (includes 12a)
10a	RK11007 Bowl Seal Kit
11	RK 20126 (MAX models) RK 20022 (MAXM models) Plastic Plug Kit (includes 11a) Metal Plug Kit (includes 11a) <i>Tighten plugs to 15 in.lbs (1.69 Nm) max.</i>
11a	(not sold separately) Water Probe or Plug O-ring
12	RK 11-1910 Bowl Drain fitting Kit (includes 12a, 12b, and 12c). <i>Tighten 30 in.lbs (3.39 Nm) max.</i>
12a	918-N4 Drain Plug
12b	(not sold separately) Drain Fitting O-ring
12c	(not sold separately) Bowl Drain Washer
13	RK 11868 Heat Deflector Kit (includes 12)
14	RK 11037A Bowl Ring Kit (includes 10a and 15)
15	RK 11542 Bowl Fasteners (4ea.) Tighten 60 in.lbs (6.78 Nm) max.



RK 21069 (water sensor for MA units)
RK23191 (water sensor for MAM units)¹

¹ Must be used with Racor Water Detection Amplifier. Contact Racor for more information.

Part Number		Description
B	RK 19486	75900 Main Bracket
	RK 11-1777	751000 Main Bracket
C	RK11-1676E	Vacuum Gauge - Bottom Mount 0-30 HG
D	RK 19475	Rigid Tubing Assembly
E	RK 19473	Valve Assembly
F	RK 19506	Valve Service Kit



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