660R-RAC Series

Gasoline Fuel Filter/Water Separators

Instruction Part Number 21385 Rev F

Overview:

Don't be caught in the water without one of these Racor gasoline spin on series filters. These filters are designed for high-performance applications, which means your engine will perform better than ever with clean, water-free fuel.

The spin-on filter is simple to replace and reuseable clear plastic (or metal) contaminant collection bowl features a self-venting drain (or metal plug) for removing unwanted muck and water.

Contact Information:

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Product Features:

- **Removes 99% of free water**
- **660R-RAC-02 is UL listed and USCG approved for inboard marine use**
- **4-port, die-cast aluminum mounting head with 3/8"-18 NPTF threads**
- **90 GPH (340 LPH) maximum flow rate**
- **Superior corrosion resistance with electrostatic powder coating**
- **High-capacity, 10 micron Aquabloc®II media**

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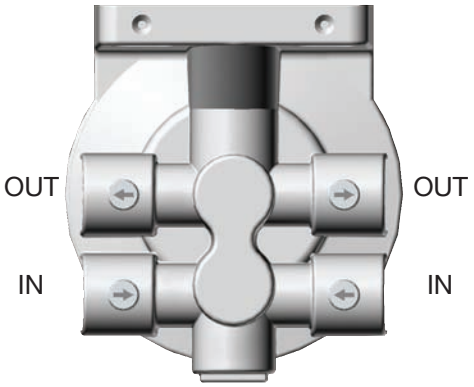
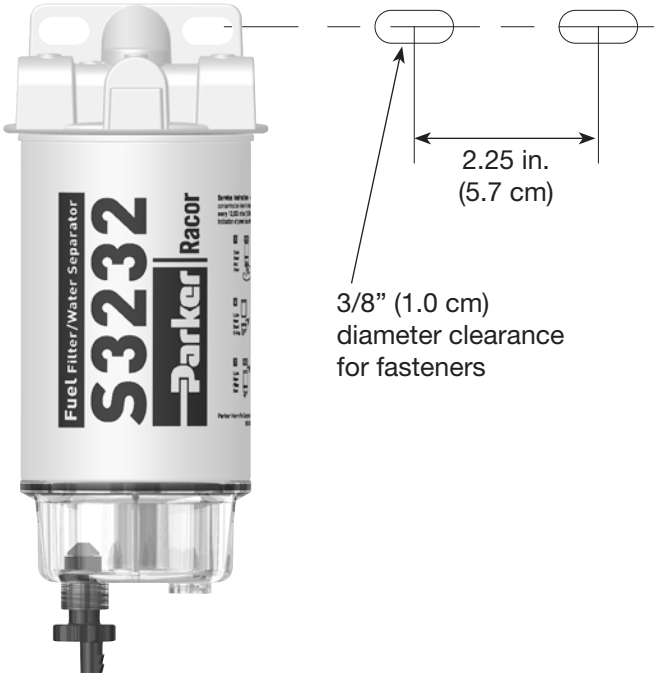
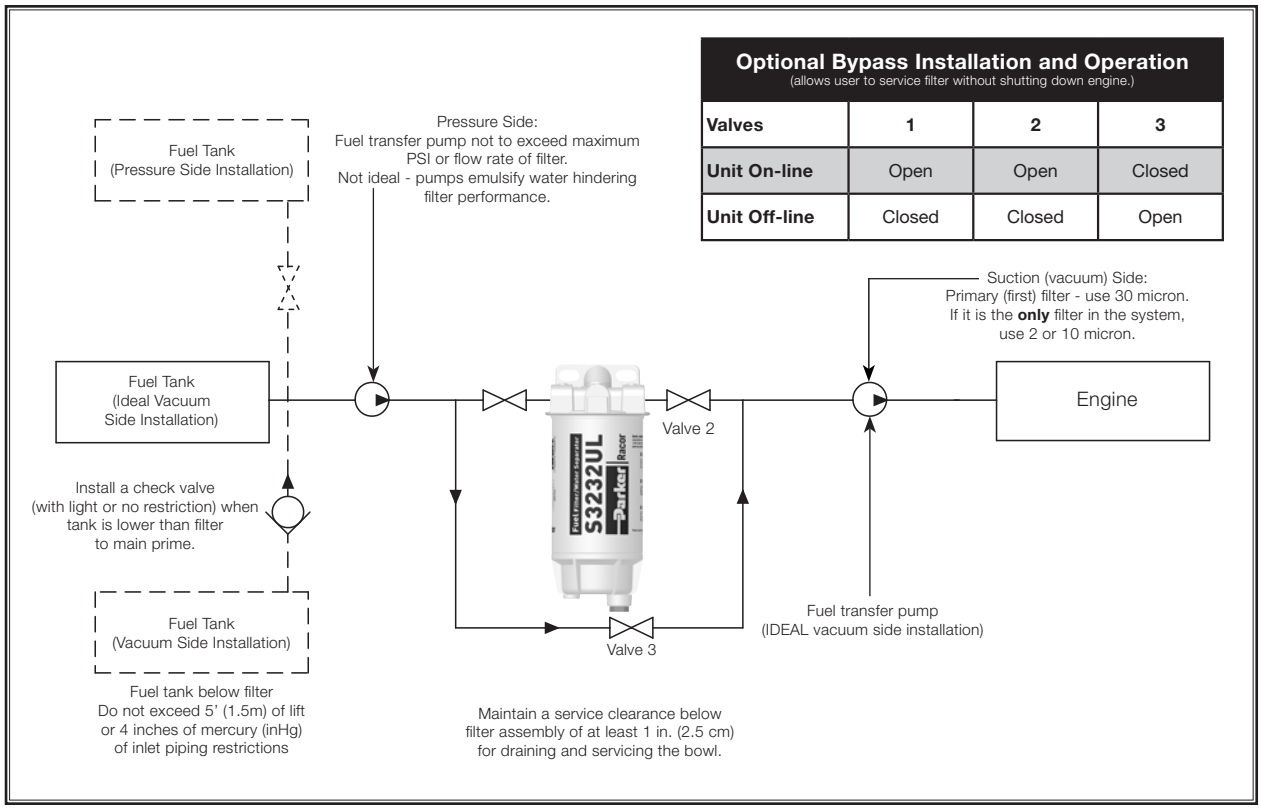
Mounting Instructions

Top View





Installation Diagram



Installation Guidelines

Danger! Great care must be exercised to avoid potential fire hazards during installations on gasoline fuel systems. Do not smoke or permit open flames or sparks near the fuel system.

1. Any secondary or pressure side filters located between the pump and engine should be serviced and left in place.
2. Mount the unit vertically on the suction side of fuel pump, transfer pump, or non-removable filters, whichever comes first.
3. Ensure a suitable pipe thread sealing compound is used on the NPT threads of fitting prior to installation into the head. For mounting flexibility there are two inlet ports and outlet ports. *Plated steel fittings are recommended.* Plug unused ports with the provided steel NPT plugs - Do not use thread tapes on NPT threads.
4. Use quality fuel hose in the maximum fuel line size applicable to reduce potential fuel flow restrictions. Note: USCG accepted hose recommended. Contact your Racor distributor for your application requirements.

Priming The Unit

1. Carefully spin-off bowl/element as one and fill both with clean fuel (use a strap wrench near top of element to remove and avoid damage).
2. Spin Bowl/Element onto mounting head and tighten snugly by hand - *do not use tools to tighten.*
3. Start engine and check for any leaks. If engine is difficult to start or runs rough, check that drain, bowl, element and port plug are securely tightened. Check all connections for security and hoses to ensure there are no kinks or sharp bends that would create excessive restriction.

Service

Danger! When servicing gasoline fuel systems, extreme care must be exercised to avoid potential fire hazards. Do not smoke or permit open flames near fuel system during servicing procedures.

Draining the Collection Bowl

Water is heavier than fuel and will settle at bottom of bowl and appear a different color. In extremely humid conditions, take a fuel sample (in clear container) frequently, daily, if needed and drain as required if water is present.

1. Place a suitable container below unit to collect contaminants.
2. Close fuel tank valve (if applicable), then open Racor self-venting drain (or loosen/remove drain plug) at bottom of bowl. *Note: a UL listed drain valve kit is available for '02' models, order part no. RK 19492.*
3. Prime the fuel system following the manufacturer's procedure - refer to Priming The Unit.

Element Replacement

Element replacement frequency is determined by contamination levels in fuels. Fuel flow to engine becomes restricted as element slowly plugs with contaminants, resulting in noticeable power loss and/or hard starting. Replace element annually, every 100 hours, or when there is a noticeable power loss, whichever comes first. Change element as soon as possible. *Note: Always carry extra replacement elements as one tankful of excessively contaminated fuel can plug a fuel filter.*

Clean any debris or dirt away from Racor head/filter joint prior to removal.

1. Place a suitable container below unit to collect contaminants.
2. Close valve at fuel tank (if applicable) open or remove drain (plug) to empty Racor filter of fuel.
3. Spin element and bowl off together (use a strap wrench on element), then remove bowl from element.
4. Clean, bowl O-ring gland and sealing surface of mounting head, of dirt, debris or gums.
5. Apply lube oil to new seal and bowl O-ring supplied with element.
6. Place new seal onto top of new element and O-ring into bowl gland.
7. Spin bowl onto element, and then both onto head. Tighten snugly by hand – *do not use tools to tighten.*
8. Prime fuel system following manufacturer's procedure - refer to Priming The Unit.

Troubleshooting Procedures

A major cause of power loss or hard starting is result of an air leak (or clogged filter). If your filter 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.

Applies to all models

ASTM INTERNATIONAL Standards Worldwide

MEMBER ABYC Setting Standards for Safer Boating

NMMA TYPE ACCEPTED

MARINE UL LISTED

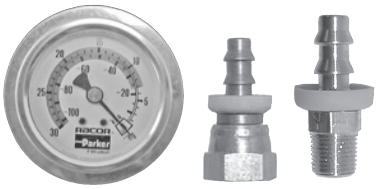
Specifications	660R-RAC-01	660R-RAC-02
Application: **Inboard** **Outboard**	 No Yes	 Yes Yes
Maximum Flow Rate	90 GPH (340 LPH)	90 GPH (340 LPH)
Center Threads	1”-14	1”-14
Port Size	3/8”-18 NPTF	3/8”-18 NPTF
Number of Ports: **Inlets** **Outlets**	 2 2	 2 2
Height	11.0 in. (27.9 cm)	10.5 in. (26.7 cm)
Width	4.2 in. (10.7 cm)	4.2 in. (10.7 cm)
Depth	4.5 in. (11.4 cm)	4.5 in. (11.4 cm)
Weight (dry)	3.0 lb (1.4 kg)	3.0 lb (1.4 kg)
Clean Pressure Drop	0.61 PSI (4.23 kPa)	0.61 PSI (4.23 kPa)
Maximum Pressure	7 PSI (0.5 bar)	7 PSI (0.5 bar)
Underbowl Clearance	1.0 in. (2.5 cm)	1.0 in. (2.5 cm)
Water Removal Efficiency	99%	99%
Ambient Temperature Range	-40° to +255°F (-40° to +124°C)	
Maximum Fuel Temperature	190°F (32°C)	

Accessories

Vacuum Gauges

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

By installing a vacuum gauge in the fuel system on the outlet side of the filter, visual monitoring of element condition is possible.



Specifications	1606B
Description	Includes gauge and two fittings. Instrument panel installation.
Threads	1/4" NPT back bracket mount.
Dimensions	2.0" W x 1.9" D
Dial	2 in.
Weight	0.4 lb (0.2 kg)
Special Notes: For severe vibration applications, mount gauge on stable, remote location and connect using flexible tubing. Additional gauges available - contact your local distibutor.	

Hose

Racor fuel hose is fire resistant and meets SAE J1527 Type A class and SAE J1942 standards. This hose delivers test proven performance in a wide operating temperature range, constant working pressure in popular sizes, long-lasting reinforced construction, kink and cut resistance, and compatibility with a variety of standard fittings.

Part Number	Hose ID	Working Pressure	Burst Pressure	Min. Bend Radius
CGH-5	1/4" (6.3 mm)	500 PSI (3.5 MPa)	2000 PSI (14 MPa)	1" (25 mm)
CGH-6	5/16" (8 mm)	500 PSI (3.5 MPa)	2000 PSI (14 MPa)	1 1/4" (30 mm)
CGH-8	13/32" (10 mm)	500 PSI (3.5 MPa)	2000 PSI (14 MPa)	1 3/4" (45 mm)

Note: Additional sizes may be available - call Racor at (800) 344-3286

Additional Features

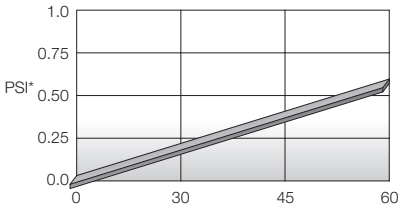
- High-tensile steel wire braid.
- No-Skive - does not require the removal of outer cover to install.
- USCG-rated for gasoline, diesel, lube oil and hydraulic systems.
- Working temperature of -4°F to +212°F (-20°C to +100°C).

Drain Valve Kit

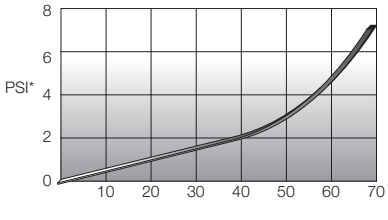
UL Listed drain valve kit is available part number RK 19492.

Performance Information

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



SAE J905 Fuel Flow Restriction



Racor Gasoline Solid Capacity Test
(using SOFTC-2A; 10 micron Element)

*PSI x 2.036 = inHg. (PSI x 6.895 = kPa)

660R-RAC-01
Replacement Parts

Part No.		Description
1.	**RK 21411**	Mounting Head Kit
2.	**20707**	Gasket Kit
3.	Replacement Elements	
	S3232	10 Micron
4.	**RK 22244**	Bowl O-ring Kit
5.	**RK 30475**	Clear Bowl Kit
6.	**RK 30476**	Self-venting Drain Kit

660R-RAC-02
Replacement Parts

Part No.		Description
1.	**RK 21411**	Mounting Head Kit
2.	**20707**	Gasket Kit
3.	Replacement Elements	
	S3232 UL	10 Micron (UL Marine)
4.	**RK 22244**	Bowl O-ring Kit
5.	**RK 30473-02**	Metal Bowl Kit
6.	**918-N6**	Steel Port Plug

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