

Marine Gasoline Series 120R-RAC-01 and 120R-RAC-02 Fuel Filter/Water Separators

Instruction Part Number 10223 Rev B



You've Made the Right Choice:

The 120R-RAC-01 and 120R-RAC-02 were designed specifically for marine gasoline applications. These high-performance filters will help your engine run better than ever with clean, water-free fuel. The legendary Aquabloc®II paper media removes 99% of free water and sediment down to 10 micron (nominal). With four port mounting versatility and simple servicing procedures, there has never been a better choice for your marine application than a Racor fuel filter/water separator.



Contact Information: Product Features:

Parker Hannifin Corporation
Racor Division
P.O. Box 3208
3400 Finch Road
Modesto, CA 95353

phone 800 344 3286
209 521 7860
fax 209 529 3278
racor@parker.com

www.parker.com/racor
www.parker.com/racorproducts

- Removes 99% of free water
- High-capacity, Aquabloc®II media
- 4 port, die-cast aluminum mounting head
- 30 GPH (114 LPH) maximum flow rate

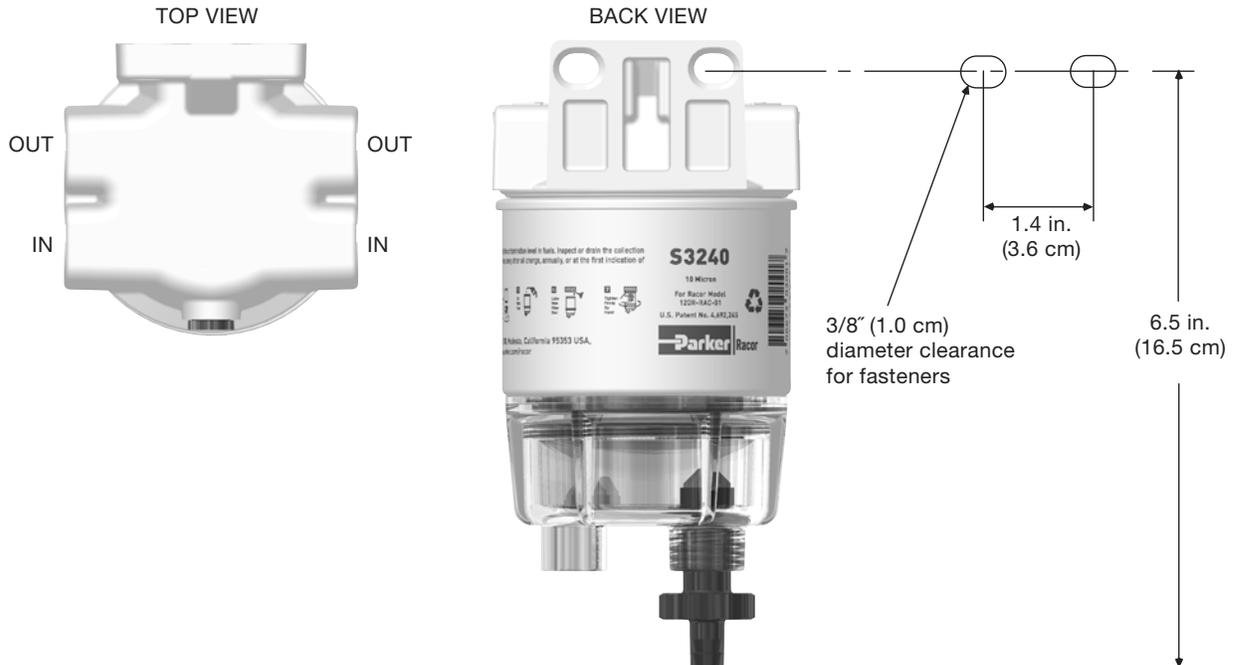


(120R-RAC-02 only)

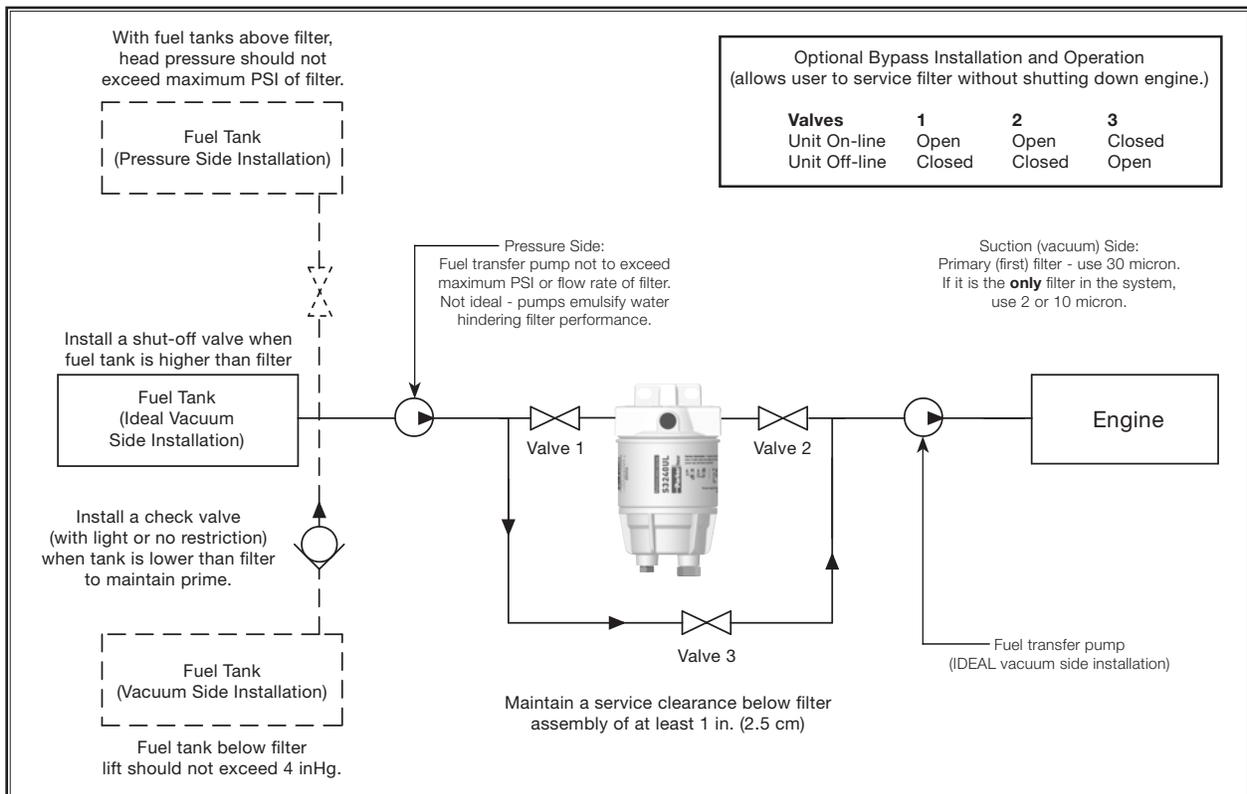


ENGINEERING YOUR SUCCESS.

Mounting



Installation Diagram



Installation Guidelines

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

1. Any secondary/final or pressure side filters located between pump and engine should be serviced and left in place.
2. Mount filter vertically on suction side of the fuel pump, transfer pump, or non-removable filters, whichever comes first. Maintain 1" (2.5 cm) vertical clearance below the filter housing for removal of replacement element.
3. Ensure a suitable pipe thread sealing compound is used on NPT threads of fittings (customer supplied - steel plated fitting are recommended) prior to installation into mounting head. *Note: Use pipe dope and not thread tapes.*
4. Use quality fuel hose in the maximum fuel line size applicable to reduce potential flow restriction. *Note: USCG accepted hose is recommended. Racor offers USCG accepted hose in several sizes.*

Priming The Unit

Note: If fuel tank is mounted higher than filter, open tank outlet valve and fill filter using gravity. Loosen outlet connection to bleed air, if needed.

1. Spin filter off of mounting head, in a counter-clockwise direction, and fill with clean fuel.
2. Lubricate filter seal with motor oil.
3. Spin filter back onto mounting head and tighten snugly by hand - do not use tools.
4. Start engine and check for leaks. If engine is difficult to start or run's rough, check drain, bowl, filter, and port plugs are securely tightened. Check all hoses for kinks or sharp bends that would create excessive restriction. Correct any leaks with engine off.

Draining The Collection Bowl

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

To Drain Contaminants

1. Place a container of sufficient volume below filter assembly to collect contaminants.
2. Close fuel tank valve (if applicable), then open drain at bottom of bowl (or loosen/remove drain plug). *Note: a UL Listed drain valve kit is available for 120R-RAC-02 models. Order part number RK 19492.*
3. Prime fuel system following manufacturer's procedure, if necessary; otherwise see Priming The Unit.



Filter Replacement

Frequency of filter replacement is determined by contamination levels in fuels. Fuel flow to engine becomes restricted as the filter slowly plugs with contaminants. Replace filter every 500 hours, 10,000 miles, every other oil change, annually, or at first indication of power loss and/or hard starting, whichever comes first. *Always carry extra replacement filters as one tankful of excessively contaminated fuel can plug a filter.*

To Replace the Filter:

Clean all debris or dirt away from head of filter assembly prior to servicing.

1. Place a container of sufficient volume below filter assembly to collect contaminants.
2. Open drain (remove plug on 02 model) to empty filter assembly of fuel. (Close tank outlet valve if tank is mounted higher than filter).
3. Spin filter and bowl off together, then remove bowl from filter.
4. Clean bowl o-ring gland and sealing surface of mounting head free of dirt, debris, or gums.
5. Apply motor oil to new filter seal and bowl o-ring (supplied with new filter).

6. Place filter seal onto filter and o-ring into bowl gland.
7. Spin bowl onto new filter snugly by hand - DO NOT USE TOOLS!
8. Prime fuel system following manufacturer's procedure, if necessary; otherwise see Piming The Unit.



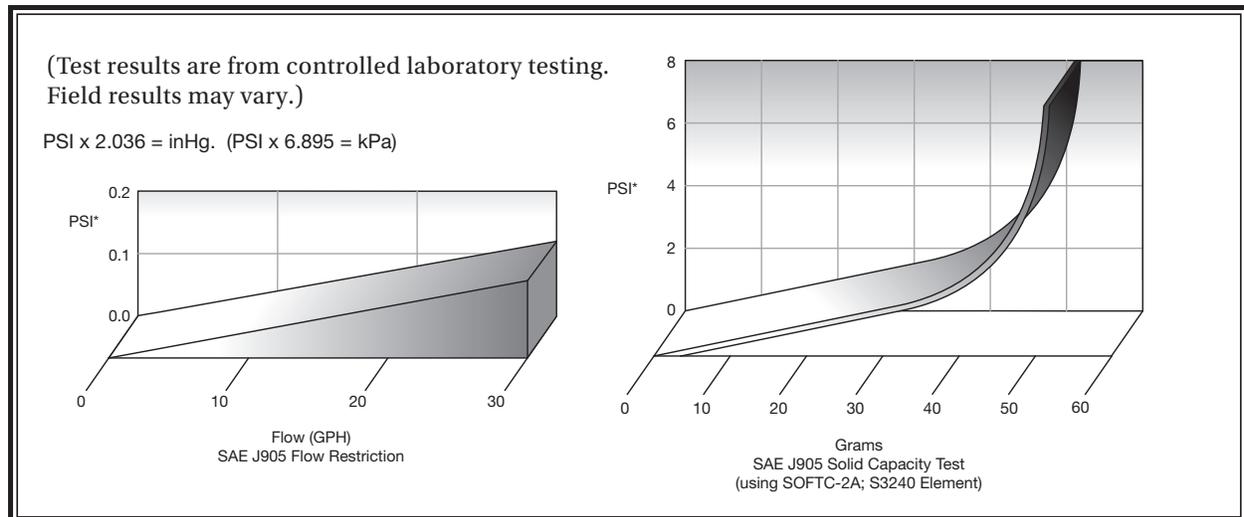
Troubleshooting

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

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

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

Test Data



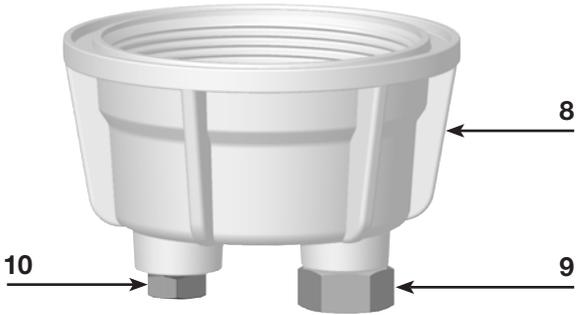
Specifications



	120R-RAC-01	120R-RAC-02
Application:		
Inboard	No	Yes
Outboard	Yes	Yes
Maximum Flow Rate	30 GPH (114 LPH)	30 GPH (114 LPH)
Center Threads	M18 x 1.5	M18 x 1.5
Port Size	1/4"-18 NPTF	1/4"-18 NPTF
Number of Ports:		
Inlets	2	2
Outlets	2	2
Height	6.5 in. (16.5 cm)	6.0 in. (15.2 cm)
Width	3.2 in. (8.1 cm)	3.2 in. (8.1 cm)
Depth	3.2 in. (8.1 cm)	3.2 in. (8.1 cm)
Weight (dry)	1.1 lb (0.5 kg)	1.2 lb. (0.6 kg)
Clean Pressure Drop	0.15 PSI (0.01 bar)	0.15 PSI (0.01 bar)
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 +250°F (-40° to +121°C)	
Maximum Fuel Temperature	190°F (88°C)	

120R-RAC-01 and 120R-RAC-02 Replacement Parts

<u>Part Number</u>	<u>Description</u>
1. RK 10214-01	Head Kit
2. 10224	3/8"-24 UNF Vent Plug
3. RK 10503	Gasket Kit
4. S3240	120R-RAC-01: 10 micron Replacement Filter (includes #'s 3 and 5)
S3240UL	120R-RAC-02: 10 micron Replacement Filter (includes #'s 3 and 5)
5. RK 10012	Bowl O-ring Kit
6. RK 10222	Clear Bowl Kit (-01 model) (includes #'s 5 and 7)
7. RK 30476	Self-venting Drain Kit
8. RK10553	Metal Bowl Kit (-02 model) (includes #'s 5, 9, and 10)
9. RK 20022	Probe Plug Kit (1/2"-20 UNF)
10. 01SP-2S	Drain Plug Kit (1/8" NPTF)



Accessories



Vacuum Gauges

Vacuum gauges are available to monitor filter condition. As the filter slowly becomes clogged with contaminants, restriction increases.

Specifications	RK 11233	1606B
Description	Silicone dampened, 0-30 inHg. Install in Instrument panel.	Includes gauge and two fittings (see below): RK 11233 Vacuum Gauge A. 7232-4 Adapter Fitting 1/8" NPTM x #4 (1/4") hose barb. B. 7234-4 Adapter Fitting 1/4" swivel x #4 (1/4") hose barb.
Threads	1/4" NPT on back	
Dimensions	2.0" Diameter x 1.9" Depth	
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 distributor.		

RK 22628 Bowl Wrench

Hand wrench to remove all metal and clear spin-on bowls that feature external ribs.



Hose Information

Racor hose for fuel, oil, and hydraulic fluids 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 100R5 fittings.



How to Order

CGH	-5		-50
	Number	I.D. Size	
Basic Part Number	-5	1/4"	Standard roll is 350 feet. (add -50 for a 50 foot roll)
	-6	5/16"	
	-8	13/32"	
	-10	1/2"	
	-12	5/8"	
	-16	7/8"	

Specifications	CGH-5	CGH-6
Hose I.D.	1/4 in. (6.4 mm)	5/16 in. (8.0 mm)
Hose O.D.	1/2 in. (15.0 mm)	5/8 in. (17.0 mm)
Working Pressure	500 PSI (34.4 bar)	500 PSI (34.4 bar)
Burst Pressure	2000 PSI (137.8 bar)	2000 PSI (137.8 bar)
Minimum Bend Radius	1.0 in. (25.4 mm)	1.25 in. (30.0 mm)
Weight Per Foot	0.19 lbs/ft (0.28 kg/m)	0.23 lbs/ft (0.34 kg/m)
Inches in Mercury	InHg 20 InHg (68 kPa)	20 InHg (68 kPa)

Limited Warranties Statement

All products manufactured or distributed by Racor are subject to the following, and only the following, LIMITED EXPRESS WARRANTIES, and no others: For a period of one (1) year from and after the date of purchase of a new Racor product, Racor warrants and guarantees only to the original purchaser-user that such a product shall be free from defects of materials and workmanship in the manufacturing process. The warranty period for pumps and motors is specifically limited to ninety (90) days from date of purchase. A product claimed to be defective must be returned to the place of purchase. Racor, at its sole option, shall replace the defective product with a comparable new product or repair the defective product. This express warranty shall be inapplicable to any product not properly installed and properly used by the purchaser-user or to any product damaged or impaired by external forces.

THIS IS THE EXTENT OF WARRANTIES AVAILABLE ON THIS PRODUCT. RACOR SHALL HAVE NO LIABILITY WHATSOEVER FOR CONSEQUENTIAL DAMAGES

FLOWING FROM THE USE OF ANY DEFECTIVE PRODUCT OR BY REASON OF THE FAILURE OF ANY PRODUCT. RACOR SPECIFICALLY DISAVOWS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED INCLUDING, WITHOUT LIMITATION, ALL WARRANTIES OF FITNESS FOR A PARTICULAR PURPOSE (EXCEPT FOR THOSE WHICH APPLY TO PRODUCT OR PART THEREOF THAT IS USED OR BOUGHT FOR USE PRIMARILY FOR PERSONAL, FAMILY, OR HOUSEHOLD PURPOSES), WARRANTIES OF DESCRIPTION, WARRANTIES OF MERCHANTABILITY, TRADE USAGE OR WARRANTIES OR TRADE USAGE.

Warning

Failure or improper selection or improper use of the products and/or systems described herein or related items can cause death, personal injury and property damage. This document and other information from Parker Hannifin Corporation, its subsidiaries and authorized distributors provide product

and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the applications are met. The products described herein, including with limitation, product features, specifications, designs, availability and pricing, are subject to change by Parker Hannifin Corporation and its subsidiaries at any time without notice.

The following statement is required pursuant to proposition 65, applicable in the State of California: 'This product may contain a chemical known to the State of California to cause cancer or reproductive toxicity'