

## Fuel Conditioning Module



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

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

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



| Specifications                            | P3                 | P4                 | P5                 |
|-------------------------------------------|--------------------|--------------------|--------------------|
| <b>Maximum Flow Rate</b>                  | 30 GPH (114 LPH)   | 40 GPH (151 LPH)   | 50 GPH (189 LPH)   |
| <b>Clean Pressure Drop</b>                | 0.4 PSI (0.03 bar) | 0.5 PSI (0.03 bar) | 0.8 PSI (0.06 bar) |
| <b>Max. Pump Output (at 14 volts)</b>     | 40 GPH (151 LPH)   | 40 GPH (151 LPH)   | 40 GPH (151 LPH)   |
| <b>Standard Fuel Port Size (SAE J476)</b> | 3/8"-18 NPT        | 3/8"-18 NPT        | 3/8"-18 NPT        |
| <b>Total Number of Ports Available</b>    | 2                  | 2                  | 2                  |
| Fuel Inlets                               | 1                  | 1                  | 1                  |
| Fuel Outlets                              | 1                  | 1                  | 1                  |
| <b>Replacement Filter</b>                 |                    |                    |                    |
| 2 micron                                  | R58060-02          | R58095-2           | R58039-2           |
| 10 micron                                 | R58060-10          | R58095-10          | R58039-10          |
| 30 micron                                 | R58060-30          | R58095-30          | R58039-30          |
| <b>Minimum Service Clearance</b>          | 2.5 in. (6.4 cm)   | 2.5 in. (6.4 cm)   | 2.5 in. (6.4 cm)   |
| <b>Height</b>                             | 7.7 in. (19.6 cm)  | 9.0 in. (22.9 cm)  | 11.5 in. (29.2 cm) |
| <b>Depth</b>                              | 5.2 in. (13.2 cm)  | 5.2 in. (13.2 cm)  | 5.2 in. (13.2 cm)  |
| <b>Width</b>                              | 4.8 in. (12.2 cm)  | 4.8 in. (12.2 cm)  | 4.8 in. (12.2 cm)  |
| <b>Weight (dry - approx.)</b>             | 3.4 lbs (1.5 kg)   | 3.8 lbs (1.7 kg)   | 4.2 lbs (1.9 kg)   |
| <b>Maximum Pump Outlet Pressure</b>       | 10 PSI (0.7 bar)   | 10 PSI (0.7 bar)   | 10 PSI (0.7 bar)   |
| <b>Features</b>                           |                    |                    |                    |
| Water Sensor                              | Standard           | N/A                | Standard           |
| Heater <sup>1</sup>                       | Standard           | Standard           | Standard           |
| Pressure Regulator (10 PSI)               | Standard           | Standard           | Standard           |

Vacuum installations only. <sup>1</sup> Not for use with gasoline applications.

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

| P4                                                                            | 2                           | 10                                      | N                            | H                                      |
|-------------------------------------------------------------------------------|-----------------------------|-----------------------------------------|------------------------------|----------------------------------------|
| <b>Specify Model</b><br>P3 (for 30 GPH)<br>P4 (for 40 GPH)<br>P5 (for 50 GPH) | Specifies a<br>12 vdc pump. | Specify micron rating:<br>02, 10, or 30 | Specifies<br>3/8" NPT ports. | Specifies a 12 vdc 150<br>watt heater. |



### Polish, Prime, Deliver

The P Series Diesel Fuel Conditioning Module was developed for applications on the vacuum side of 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 can act as a reprimer or supply a continuous flow of clean, dry fuel to the fuel system.



## Turbine Series

The high-grade aluminum components and powdercoat paints mean that corrosion is never a worry.

A durable single bolt mounting bracket doubles resistance to vibration fatigue.

Aquabloc® Synergy media sheds water and keeps engines waterproof, rustproof and dirtproof.

300-watt heaters start you in the cold. Thermostats are standard to meet the requirements of today's electronic engines.

Polymer bowl withstands impact and temperature extremes.

Self-venting drain. A single twist makes draining clean, fast and easy.

With an Aquabloc Synergy replacement element, you get a complete kit with all the seals you need.

Aquabloc Synergy media is a blend of high-grade cellulose compounded with resins and a special chemical treatment.

Aquabloc Synergy elements filter harmful tiny, particles of dirt and algae from fuel. Aquabloc Synergy elements are rustproof – with polymer end caps that won't ever corrode.

### The First Name In Fuel Filtration.

Every engine runs better with a system that cleans fuel, removes water, heats fuel and senses when it's time for service. The system is the Racor Turbine Series and it's the most complete, most efficient, most reliable high-capacity engine protection you can install. A system that protects your investment in engines and fuel.

For marine rated filters, see brochure #7501.

Primer pump kit shown installed.

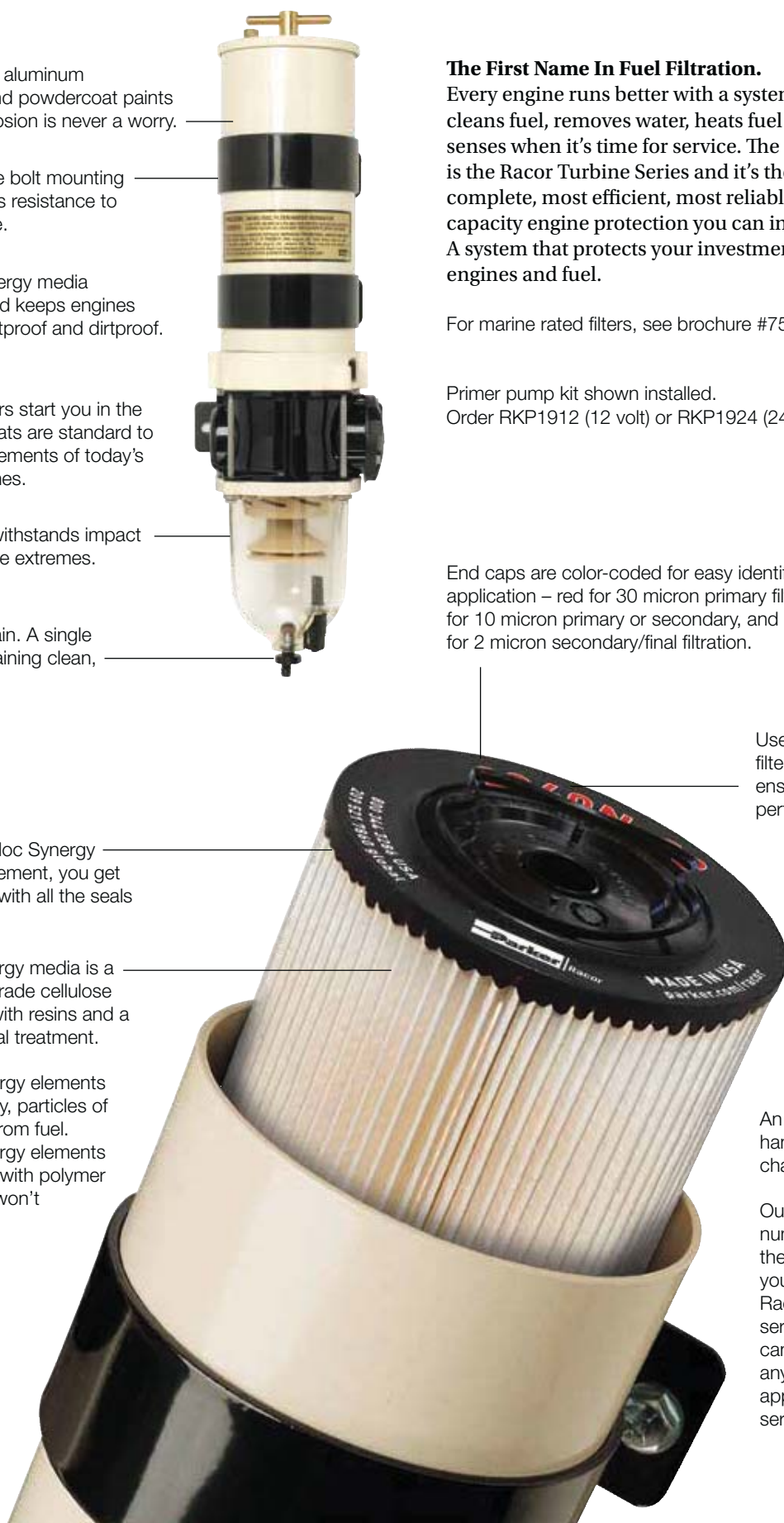
Order RKP1912 (12 volt) or RKP1924 (24 volt).

End caps are color-coded for easy identification and application – red for 30 micron primary filtration, blue for 10 micron primary or secondary, and brown for 2 micron secondary/final filtration.

Use original Racor filter elements to ensure premium performance.

An integral bail handle makes changeouts easy.

Our toll-free phone number is shown on the end cap. It puts you in touch with Racor's technical service staff who can answer any availability, application, or service question.



## The Inside Story

**1** As fuel enters, it moves past the internal check valve, then through the turbine centrifuge where it flows in a spiraling direction, spinning off large particulates and water droplets. Being heavier than fuel, the large particulates and water droplets 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® Synergy filter. When large enough, they too fall into the high-capacity bowl to be drained as needed.

**3** Aquabloc Synergy filter repels any remaining water droplets while stopping and trapping fine rust and dirt particles. Aquabloc® Synergy filters are waterproof, so they remain effective longer, saving you money.

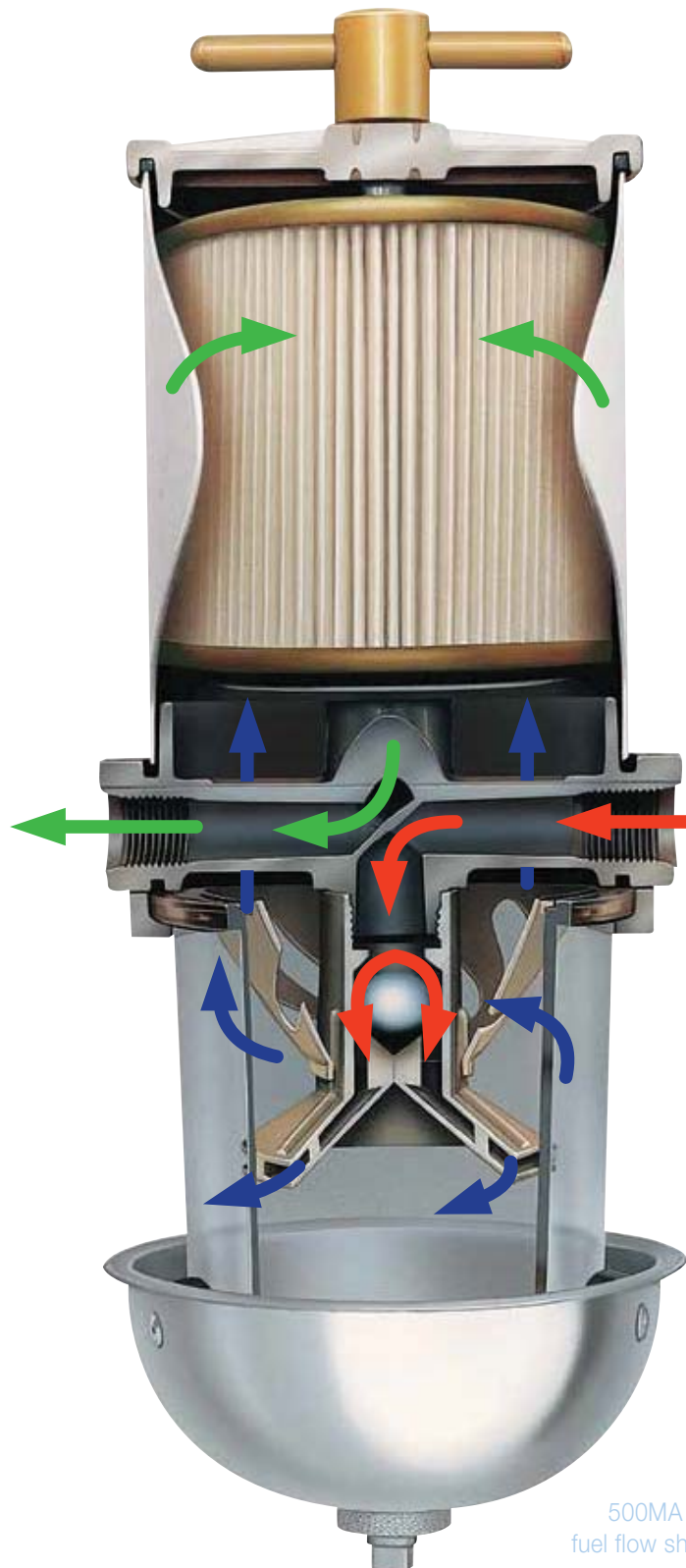
### T-Handle Vacuum Indicator Kit For Turbine Series Assemblies

T-Handle vacuum gauge indicators, monitor filter condition as the filter slowly becomes clogged with contaminants. As the filter gets dirty, restriction increases and less fuel is delivered to the engine causing the engine to lose power and eventually stall. By installing a vacuum indicator in your fuel system, visual monitoring of filter condition is possible at a glance, increasing fuel system troubleshooting efficiency, eliminating guess work, and lengthening filter changeout intervals.



#### **RK19671**

This restriction indicator kit fits Turbine Series Fuel Filter/Water Separator assemblies and installs in one easy spin. Fits 500 models built after year 2002 and all 900/1000 models.



500MA with  
fuel flow shown

# Mobile Diesel



| Model                                                           | 500FG2 /10 /30                  | 900FH2 /10 /30             | 1000FH2 /10 /30            | 75500FGX2 /10 /30                     | 75900FHX2 /10 /30                     |
|-----------------------------------------------------------------|---------------------------------|----------------------------|----------------------------|---------------------------------------|---------------------------------------|
| Max. Flow Rate<br>(One filter on-line)<br>(Two filters on-line) | 60 GPH (227 LPH)<br>N/A         | 90 GPH (341 LPH)<br>N/A    | 180 GPH (681 LPH)<br>N/A   | 60 GPH (227 LPH)<br>120 GPH (454 LPH) | 90 GPH (341 LPH)<br>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<br>(metric optional) <sup>1</sup>                     | 3/4"-16 SAE<br>16 mm x 1.5      | 7/8"-14 SAE<br>22 mm x 1.5 | 7/8"-14 SAE<br>22 mm x 1.5 | 3/4"-16 SAE<br>N/A                    | 7/8"-14 SAE<br>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 <sup>2</sup>                            | 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                                       | -40° to +255°F (-40° to +124°C) |                            |                            |                                       |                                       |
| Maximum Fuel Temperature                                        | 190°F (88°C)                    |                            |                            |                                       |                                       |

Notes: <sup>1</sup> Use (\*) for metric port threads, i.e. \*500FG, \*900FH, and \*1000FH. <sup>2</sup> Vacuum installations are recommended.



| Model                                                                                      | 731000FH2 /10 /30                | 751000FHX2 /10 /30                             | 771000FH2 /10 /30                | 791000FHV2 /10 /30                                            |
|--------------------------------------------------------------------------------------------|----------------------------------|------------------------------------------------|----------------------------------|---------------------------------------------------------------|
| Max. Flow Rate<br>(One filter on-line)<br>(Two filters on-line)<br>(Three filters on-line) | N/A<br>360 GPH (1363 LPH)<br>N/A | 180 GPH (681 LPH)<br>360 GPH (1363 LPH)<br>N/A | N/A<br>N/A<br>540 GPH (2044 LPH) | 180 GPH (681 LPH)<br>360 GPH (1363 LPH)<br>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                                                                                  | 3/4"-14 NPT                      | 7/8"-14 SAE                                    | 1"-11.5 NPT                      | 3/4"-14 NPT                                                   |
| 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 <sup>3</sup>                                                       | 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)                     |                                                |                                  |                                                               |

Notes: <sup>2</sup> Vacuum installations are recommended.



## Turbine Series Replacement Elements

The lower the micron rating the finer the filtration. Lower micron ratings should be considered when there is no additional downstream filtration.

Ultimately, the micron rating preferred will be a function of fuel quality, operating climates and maintenance schedules.

### BUILD A PART NUMBER

#### ELEMENTS FOR 500 SERIES

## 2010SM-OR

**2010** - 500 series

**SM** - 2 micron

**TM** - 10 micron

**PM** - 30 micron

**-OR** - O-ring pack



#### ELEMENTS FOR 900/1000 SERIES

## 2040N-02

**2040N** - 900 series

**2020N** - 1000 series

**-02** - 2 micron

**-10** - 10 micron

**-30** - 30 micron



| Specifications                                                                                      | 2010SM-OR<br>2010TM-OR<br>2010PM-OR                                                                                    | 2020N-02<br>2020N-10<br>2020N-30                                                                                    | 2040N-02<br>2040N-10<br>2040N-30                                                                                    |
|-----------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------|
| <b>Micron Rating &amp; Filtration Level</b>                                                         | 2010SM-OR, 2 Micron, Final Filtration<br>2010TM-OR, 10 Micron, Secondary<br>2010PM-OR, 30 Micron, Primary <sup>1</sup> | 2020N-02, 2 Micron, Final Filtration<br>2020N-10, 10 Micron, Secondary<br>2020N-30, 30 Micron, Primary <sup>1</sup> | 2040N-02, 2 Micron, Final Filtration<br>2040N-10, 10 Micron, Secondary<br>2040N-30, 30 Micron, Primary <sup>1</sup> |
| <b>Height</b>                                                                                       | 2.7 in. (6.9 cm)                                                                                                       | 9.6 in. (24.4 cm)                                                                                                   | 4.6 in. (11.7 cm)                                                                                                   |
| <b>Diameter</b>                                                                                     | 3.1 in. (7.9 cm)                                                                                                       | 4.7 in. (11.9 cm)                                                                                                   | 4.7 in. (11.9 cm)                                                                                                   |
| <b>Applications</b>                                                                                 | 500 Series                                                                                                             | 1000 Series                                                                                                         | 900 Series                                                                                                          |
| Notes: <sup>1</sup> A secondary or final filter is required downstream. Replacement seals included. |                                                                                                                        |                                                                                                                     |                                                                                                                     |



# GreenMAX™

Heavy-Duty, High-Capacity, Fuel Filter Water Separator With Options for All-Weather Operations



Integrated Piston-Style Hand Priming Pump or Fill Port

Hot Engine Return Fuel Recirculating Heater

Dual Inlet / Outlet Ports  
Low Restriction at High Flow Rates

Patented Filter Valve Mechanism Holds Prime and Prevents Clean Side Contamination During Service

Durable Multi-Port Cast Aluminum Mounting Head Assembly

Easy to Mount with Through-Holes for a 3/8" Bolt and Tapped for a M8 Bolt

Aquabloc® Synergy High-Capacity, High-Flow Filter Element

Rated Diesel Flow Rate Change to 150 gph (568 lph)

Optional 200W Electric In-Bowl Fuel Heater for Severe Cold Conditions (Not Shown)

High-Capacity Removable, Reusable and Extremely Durable Bowl – A See-Thru Bowl That Stays See-Thru

Water-In-Fuel (WIF) Water Sensor Alerts Operator for Service (1/2-20 SAE Port)

| GreenMAX™ Fuel Filter Water Separator                |                                                                         |
|------------------------------------------------------|-------------------------------------------------------------------------|
| Rated Flow Rate                                      | 150 GPH (568 LPH)                                                       |
| No. of Ports                                         | Inlet Ports: 2, Outlet Ports: 2                                         |
| Port Size                                            | -10 SAE (7/8-14 UNF)                                                    |
| Hand Primer Pump                                     | Optional                                                                |
| Micron Rating Available                              | 2, 10, 30, Depth Coalescer                                              |
| Particulate Removal Efficiency (SAE J1985)           | Min 98% (R61691T)                                                       |
| Water Removal Efficiency (SAE J1839)                 | Min 99% (R61691T)                                                       |
| Return Fuel Heat Valve (Thermostatically Controlled) | Optional: -8 SAE 45° Flare (3/4-16)                                     |
| Electrical Heater 12 or 24 vdc                       | Optional (300W/200W)                                                    |
| Water Sensor                                         | Optional (1/2-20 SAE port)                                              |
| Vacuum (Maximum)                                     | 20" Hg                                                                  |
| Ambient Temperature Range                            | -30° to +100° C                                                         |
| Maximum Fuel Temperature                             |                                                                         |
| With Bowl Heater                                     | 71° C                                                                   |
| Without Bowl Heater                                  | 85° C                                                                   |
| Fuel Compatibility                                   | Diesel fuel per ASTM D975 and Biodiesel blends up to B20 per ASTM D7467 |
| Optional Filter Change Indicator                     | Vacuum Indicator / Vacuum Switch                                        |

| MODEL        | DESCRIPTION                                                                         |
|--------------|-------------------------------------------------------------------------------------|
| 4400R02      | GreenMAX FF/WS, W/Hand Primer Pump, 2 Micron                                        |
| 4400R10      | GreenMAX FF/WS, W/Hand Primer Pump, 10 Micron                                       |
| 4400R30      | GreenMAX FF/WS, W/Hand Primer Pump, 30 Micron                                       |
| 4400RDC      | GreenMAX FF/WS, W/Hand Primer Pump, Depth Coalescer                                 |
| 4400R1202    | GreenMAX FF/WS, 12v in bowl heater, W/Hand Primer Pump, 2 Micron                    |
| 4400R1210    | GreenMAX FF/WS, 12v in bowl heater, W/Hand Primer Pump, 10 Micron                   |
| 4400R1230    | GreenMAX FF/WS, 12v in bowl heater, W/Hand Primer Pump, 30 Micron                   |
| 4400R12DC    | GreenMAX FF/WS, 12v in bowl heater, W/Hand Primer Pump, Depth Coalescer             |
| 4400R2402    | GreenMAX FF/WS, 24v in bowl heater, W/Hand Primer Pump, 2 Micron                    |
| 4400R2410    | GreenMAX FF/WS, 24v in bowl heater, W/Hand Primer Pump, 10 Micron                   |
| 4400R2430    | GreenMAX FF/WS, 24v in bowl heater, W/Hand Primer Pump, 30 Micron                   |
| 4400R24DC    | GreenMAX FF/WS, 24v in bowl heater, W/Hand Primer Pump, Depth Coalescer             |
| 4400R1210-01 | GreenMAX FF/WS, W/Hand Primer Pump, 12 VDC Bowl Heater, 10 Micron, Return Fuel Heat |
| 4400R2410-01 | GreenMAX FF/WS, W/Hand Primer Pump, 24 VDC Bowl Heater, 10 Micron, Return Fuel Heat |
| 6600R02      | GreenMAX FF/WS, 2 Micron                                                            |
| 6600R10      | GreenMAX FF/WS, 10 Micron                                                           |
| 6600R30      | GreenMAX FF/WS, 30 Micron                                                           |
| 6600RDC      | GreenMAX FF/WS, Depth Coalescer                                                     |
| 6600R1202    | GreenMAX FF/WS, 12v in bowl heater, 2 Micron                                        |
| 6600R1210    | GreenMAX FF/WS, 12v in bowl heater, 10 Micron                                       |
| 6600R1230    | GreenMAX FF/WS, 12v in bowl heater, 30 Micron                                       |
| 6600R12DC    | GreenMAX FF/WS, 12v in bowl heater, Depth Coalescer                                 |
| 6600R2402    | GreenMAX FF/WS, 24v in bowl heater, 2 Micron                                        |
| 6600R2410    | GreenMAX FF/WS, 24v in bowl heater, 10 Micron                                       |
| 6600R2430    | GreenMAX FF/WS, 24v in bowl heater, 30 Micron                                       |
| 6600R24DC    | GreenMAX FF/WS, 24v in bowl heater, Depth Coalescer                                 |
| 6600R1210-01 | GreenMAX FF/WS, 12 VDC Bowl Heater, 10 Micron, Return Fuel Heat                     |
| 6600R2410-01 | GreenMAX FF/WS, 24 VDC Bowl Heater, 10 Micron, Return Fuel Heat                     |
| SERVICE      | DESCRIPTION                                                                         |
| R61691S      | Replacement Element, GreenMAX 2 Micron                                              |
| R61691T      | Replacement Element, GreenMAX 10 Micron                                             |
| R61691P      | Replacement Element, GreenMAX 30 Micron                                             |
| R61762       | Replacement Element, GreenMAX Depth Coalescer                                       |

For a complete list of part numbers see cut sheet RSL0275.

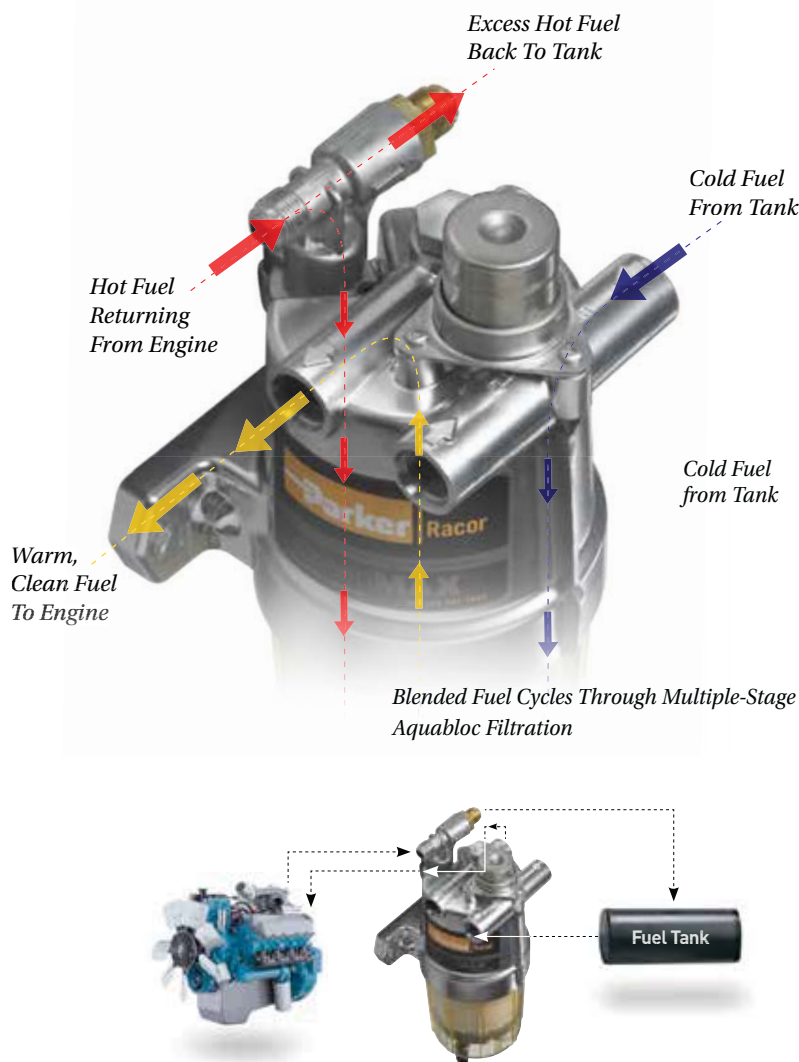
Two heating options, including a patented engine return fuel recirculating technology, deliver free-flowing fuel even in the most severe weather conditions.

## Cold Start In-Bowl Electric-Thermostatically Controlled Fuel Heating Options

To bring fuel quickly to operating temperatures in very cold conditions, optional 200W in-bowl heater is available. Thermostatically controlled and self-regulating, automatically shutting down once target fuel temperature is achieved.



To summarize GreenMax fuel heating options: Electric heaters help you get started; hot fuel recirculating keeps you running.



## Engine Return Fuel Recirculation

The GreenMAX Fuel Filter Water Separator features an innovative patented technology that utilizes unused warm engine fuel returning to the tank to provide on-demand fuel heat transfer for cold weather operations. This cold weather feature directs engine return fuel into the GreenMAX prior to the filtration stage, melting the wax and paraffins that separate from diesel fuel at cold temperatures (cloud point) and restrict fuel flow.

When the fuel system temperature is stabilized for optimum fuel filtration and engine operation, the engine return fuel recirculation valve automatically redirects the hot engine return fuel to the fuel tank. The recirculating valve is self-regulating, sensing fuel temperature and automatically closing once the fuel is warm.

The engine return fuel is mixed with the GreenMAX incoming fuel flow from the fuel tank, providing optimum fuel temperature for efficient fuel filtration and engine performance.