

Model 6120N Fuel / Water Separator for Diesel Powered Engines



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Racor's 6120N Fuel /Water Separator is specifically designed to handle today's tough water and solids contamination.

This unit is recommended for the suction (vacuum) side of the fuel transfer pump for flow rates up to 120 gallons per hour. The four port die-cast aluminum mounting head features standard SAEJ1926 3/4"-16 O-ring inlet and outlet ports (two on each side). Many varieties of fittings are available from your dealer or Racor. Fittings are not supplied with this unit.

The mounting head also features a fuel priming pump for *pumping out* contaminants and priming the unit after servicing procedures. A vent plug is also fitted in the head to simplify removal of trapped air, making fuel priming an easy, no-mess experience.

The S6464 'Nautilus' water coalescing element is for heavy-duty, full time water removal. The S6464 is self-cleaning and non-plugging under normal conditions - please refer to page 3 for more information.
Note: The S6464 is not a particulate removing filter. Use only with a secondary/final filter installed downstream.

The reusable large capacity, see-through contaminant collection bowl allows the operator to check build-up at a glance. When water is present, the drain valve is opened and the fluid is simply pumped out.

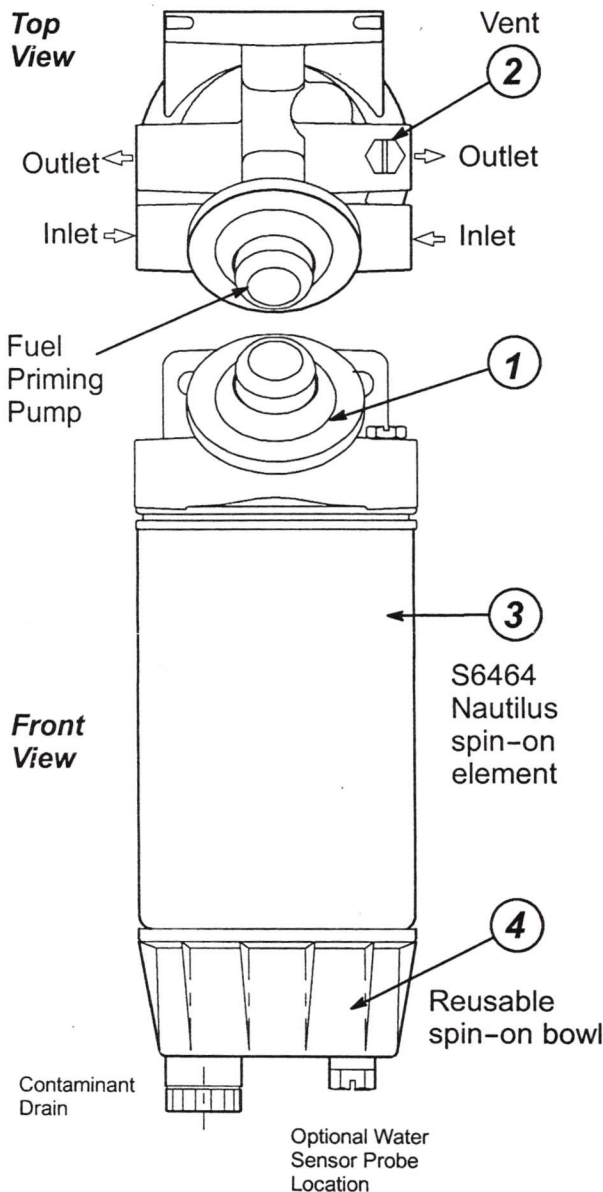
Optional features: A water sensor probe is available with most units which, when used with a Racor Water Detection Kit (see Accessories for these kits), alerts the operator when it's time to drain the bowl.

A 12 or 24 vdc, 200 watt heater may be ordered to keep fuel from freezing in the coldest climates. The heater is recommended for those applications where freezing temperatures are frequently encountered. Not for use with Gasoline applications.

PART NUMBER IDENTIFICATION:

The example below illustrates how the part numbers are constructed.

6120	P	N	-12 or -24
Basic unit with primer pump and vent plug in the head.	<u>Optional</u> Water Sensor Probe. Omit if not desired.	<u>Element</u> S6464 Nautilus.	<u>Optional Electric</u> In-Bowl Heater 12 vdc or 24 vdc. Omit if not desired.



SPECIFICATIONS

Fuel Ports	3/4"-16 SAEJ1926
Maximum Flow Rate	120 GPH / 454 LPH
Clean Press.Drop*	0.50 PSI (3.45 kPa)
Height	11.75" (298 mm)
Width	4.5" (114 mm)
Depth	4.8" (121 mm)
Weight, Dry	3.4 lbs. (1.54 kgs)

* Specifications result from tests conducted at the maximum flow rate.

PARTS LIST

Item	Part No.	Description
1	RK22168	Filter Head Assembly
2	RK10110	Vent Plug Kit
3	S6464	Nautilus Water Coalescing Element
4a	RK30063	Bowl with Water Sensor Port
4b	RK30900	Bowl with 12 vdc Heater
4c	RK30925	Bowl with 24 vdc Heater
5	RK30964	Water Sensor Probe*

*Must be used with Water Detection Kit. See Accessories.

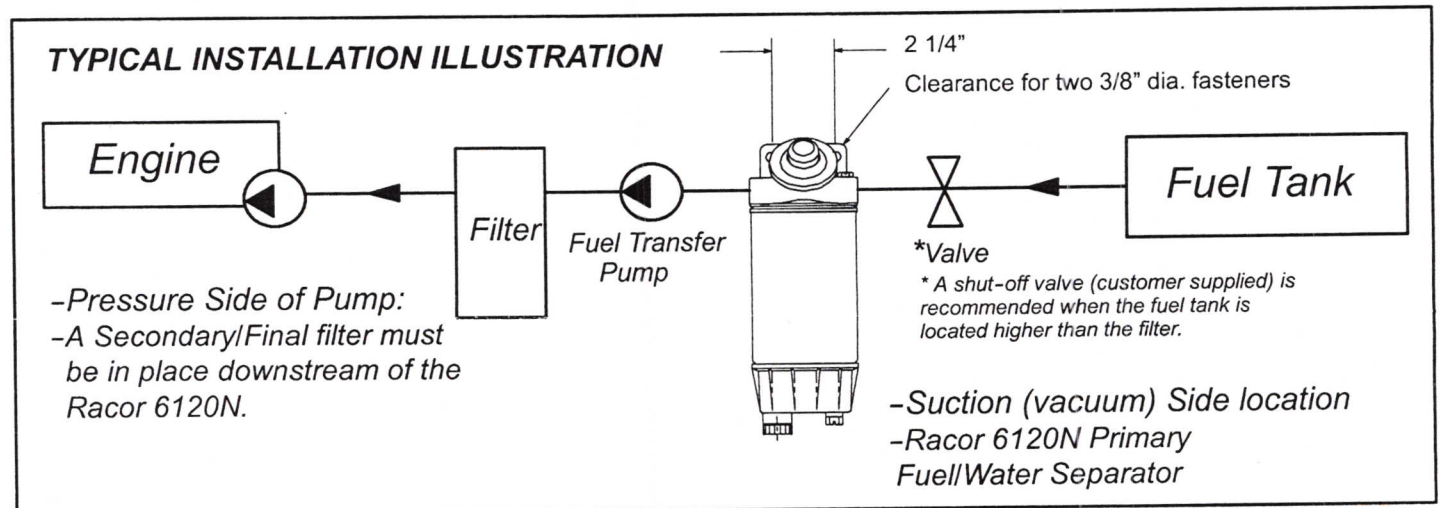
INSTALLATION

! WARNING ! Exercise caution to avoid fire hazards. **DO NOT SMOKE.** Avoid open flame or heat which could start a fire. Perform the installation in a well ventilated area. Ensure you have all parts and materials handy before beginning.

The 6120N Models are designed to be versatile to most applications. Refer to the installation diagram and keep these points in mind before choosing a location and running hoses.

1. The unit should be located on the suction (vacuum) side of the fuel transfer pump for optimum efficiency.
2. Install the unit out of the wind stream as much as possible to protect the unit from potential damage.
3. The location should allow for easy visual inspection of the collection bowl and accessibility to the bowl drain.
4. Keep the height of the unit to less than 20" above the top of the fuel tank, where possible.
5. Obtain suitable fittings to adapt the unit to your fuel system plumbing. Fittings are not provided with this unit but are available from your Racor Dealer or from any Parker Hannifin Hydraulic Fittings Dealer. Call 1-800-C-PARKER for the dealer nearest you. Use the largest fuel line size possible to keep fuel line restriction to a minimum. You may use low pressure fuel hoses that use 'push-on' type fittings (clamps are recommended) or those that use non-skive type hose fittings. Fuel hoses may be obtained from a local hydraulic specialties dealer. See Fittings Chart on the back page.
6. For frame rail attachment, Racor's adjustable Frame Rail Mounting Bracket Kit is recommended. No drilling or welding for attachment is required. See Accessories.
7. Plug the unused fuel ports with the supplied plugs.
8. Prime the unit by following priming instructions below.

NOTE: Fuel additives containing alcohol can damage non-metal components in fuel systems and are not recommended.



OPERATING INSTRUCTIONS

PRIMING. Loosen the vent plug on the mounting head. Operate the priming pump until the fuel purges at the vent plug. Close the vent plug. Start the engine and check for leaks. Correct as necessary with the engine off.

DRAINING THE COLLECTION BOWL. Water is heavier than diesel fuel and will settle to the bottom of the bowl and appear different in color. Check the bowl daily and drain if water is present. Note: the optional Water Detection Package warns the operator when a high water level condition exists and draining is required. See Accessories for this convenient feature.

1. Open the drain and operate the pump to *pump out* contaminants.
2. Close the drain and prime filter as described above.

ELEMENT REPLACEMENT. Under normal operating conditions the S6464 Coalescing Element is self-cleaning and non-clogging. Inspection of the element is recommended if microbiological contamination is suspected, such as foul-smelling fuel, green-brown accumulations in the collection bowl, loss of power or a smoking exhaust. Inspect the underside of the element. If contamination or biological growth is found, replacement is recommended. Consult your equipment manufacturer for treatment of fuel system biological contamination, if necessary.

1. Drain off some fuel by opening the drain.
2. Spin the element and bowl off together.
3. Remove the bowl from the element and clean the bowl and O-ring gland.
NOTE: The bowl is reusable, do not discard.
4. Apply a coating of clean fuel or motor oil to the new O-ring and place in the bowl gland.
5. Spin the bowl onto the new element and snugly tighten by hand. **DO NOT USE TOOLS TO TIGHTEN!**
6. Lubricate the top element seal and then spin them both onto the mounting head. Tighten by hand only.
7. Refer to PRIMING instructions, above.

INSTALLING OPTIONAL FEATURES

NOTE: RACOR ELECTRICAL OPTIONS ARE FOR USE WITH DIESEL FUEL APPLICATIONS ONLY.

WATER SENSOR PROBE. Racor 6120N Models can be specified with a water sensor probe. The probe senses continuity values and *must* be used with a special electronic detector to function properly. Due to the various detector models available they are sold separately. Installation instructions are supplied with each kit. See Accessories for part numbers.

IN-BOWL HEATER. The in-bowl heater is a cold weather starting aid with an internal automatic thermostat that turns the heater on if the fuel temperature drops below 45°F (7°C). Heat is supplied just below the S6464 element to melt the wax crystals due to fuel gelling. This allows fuel to pass through the element, increasing the efficiency of water separation. The heater will automatically turn off at about 75°F (24°C). The 200 watt heater may be installed in 12 or 24 vdc electrical systems with either positive or negative grounds. The heater is operated by turning the ignition switch on for a minimum of five minutes prior to starting the engine.

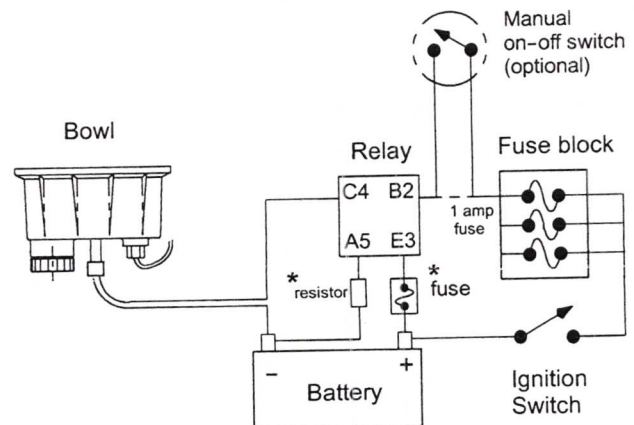
CUSTOMER SUPPLIED ITEMS.

1. Because of the power demand: 20 amperes at 12 vdc and 10 amperes at 24 vdc, an additional relay is recommended for the safest method of installation.
Racor offers two relay kits: *RK11861 (for 12 vdc) and RK11862 (for 24 vdc)*. These kits are supplied with an in-line fuse holder (and fuse) and the *RK11862* kit also includes a resistor (see diagram below).
2. An on-off toggle switch may be used to control power to the heater relay. This allows the operator to cut power to the heater relay during summer use.
4. All wires should be at least 14 AWG (gauge) on the installation.

INSTALLATION.

1. Either bowl heater wire may be used for power (+) or ground (-).
2. Soldered and crimped wire / terminal connections are recommended.
3. Run wires in protected locations. Avoid hot surfaces and places that could pinch or rub on the wires.

*The fuse holder and fuses shown in the illustration are supplied with these kits. Use the 25 amp fuse with 12 vdc and the 15 amp with 24 vdc systems. The resistor is also supplied and is used with the 24 vdc application only.



SERVICE

Frequency of water draining or element replacement is determined by the contamination levels present in diesel fuel.

DRAINING THE COLLECTION BOWL. Water is heavier than diesel fuel and will settle to the bottom of the bowl and appear different in color. The bowl must be drained before water reaches the bottom of the element or when the Water Detector (if equipped) indicates it's time to 'Drain Water'.

Inspect or drain the collection bowl of water daily.

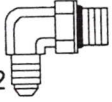
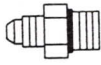
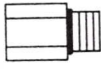
1. Open the Drain and operate the pump to drain off contaminants.
2. Close the drain and reprime filter.

ELEMENT REPLACEMENT. The S6464 Nautilus coalescing element is self-cleaning and non-plugging under normal conditions and is designed for many years of service. The S6464 should not require replacement unless it becomes fouled by excessive fuel contaminants or microbiological growth (such as brown/green accumulations). In this case, the fuel tank may need immediate attention as well. Contact your vehicle or equipment dealer for service instructions.

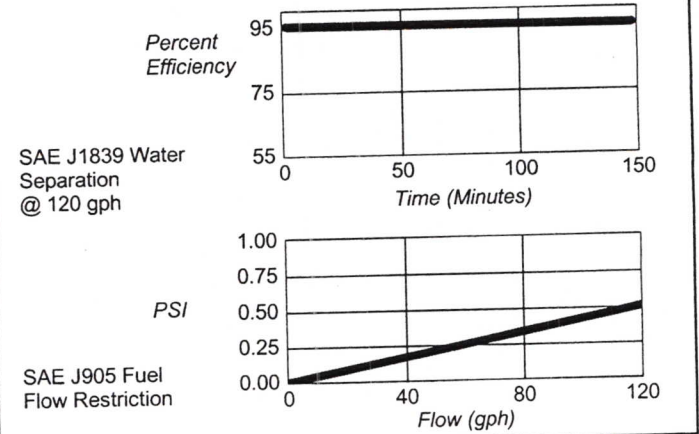
1. Drain off fuel in the unit by loosening the vent plug and opening the drain valve.
2. Spin the element and bowl off together. Remove the bowl and clean it in fresh diesel fuel.
3. Apply a coating of clean fuel or motor oil to the new bowl O-ring and element top seal. Spin the bowl onto the new element.
4. Spin the element/bowl onto the filter head firmly by hand only. **DO NOT USE TOOLS TO TIGHTEN!**
5. With the vent plug still loosened, operate the primer pump until fuel purges at the vent plug. Close the vent plug.
6. Start the engine and check for leaks. Correct as necessary with the engine off.

TROUBLESHOOTING PROCEDURES

A major cause of power loss or hard starting is the result of an air leak. If your unit will not prime or fails to hold prime, first check that the vent and drain are properly closed and that the element and bowl are snugly tightened. Next, check all fitting connections and ensure none of the fuel lines are pinched or clogged with contaminants. If problems persist and the element is new, feel free to call your Racor Distributor or Racor Customer Service for assistance: 1-800-344-3286, PST.

FITTINGS CHART		
PLATED STEEL FITTINGS FOR 3/4"-16 SAE J1926 PORTS		
Description	T2	Part Number
SAE 37° Elbow 	3/4"-16	913-O8-J8
	7/8"-14	913-O8-J10
SAE 37° Straight 	3/4"-16	911-O8-J8
	7/8"-14	911-O8-J10
NPT Female 	1/2" NPT	911-O8-F8

PERFORMANCE INFORMATION



ACCESSORIES

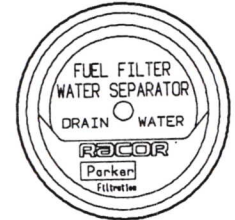
Water Detection Kit # RK20725

This 12 vdc under-dash module illuminates the 'Drain' light when the water level reaches the in-bowl water sensor probe. The light automatically goes out when the water is drained below the probe. Hardware and instructions are included. The enclosure measures 2 3/4" X 1" X 1 1/2". Extra wire and terminals are customer supplied.



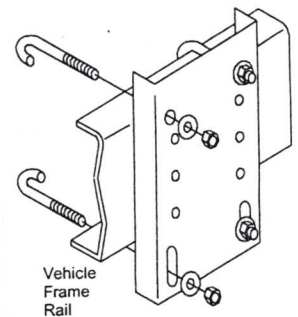
Water Detection Kit # RK20726

This 12 or 24 vdc gauge type module illuminates a light and sounds a momentary buzzer at each power-up (self-diagnosis) and when water reaches the in-bowl water sensor. The buzzer sounds for only 2-4 seconds to get the operator's attention, then stops. The light automatically goes out when the water is drained below the water sensor probe. The gauge is corrosion resistant and waterproof on the dial side. Hardware and instructions are included. The gauge fits 2 1/16" diameter openings. Extra wire and terminals are customer supplied.



Frame Rail Mounting Kit #RK11-1518

The adjustable frame rail bracket fits frame rails up to 10" in height by 4" in depth and 3/4" in thickness. No drilling or welding of the frame rail is necessary. (It may be necessary to drill additional holes onto the frame rail bracket to position the Racor filter in the exact desired location) Hardware shown is included.



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