

Bulletin Number: AKSV0101

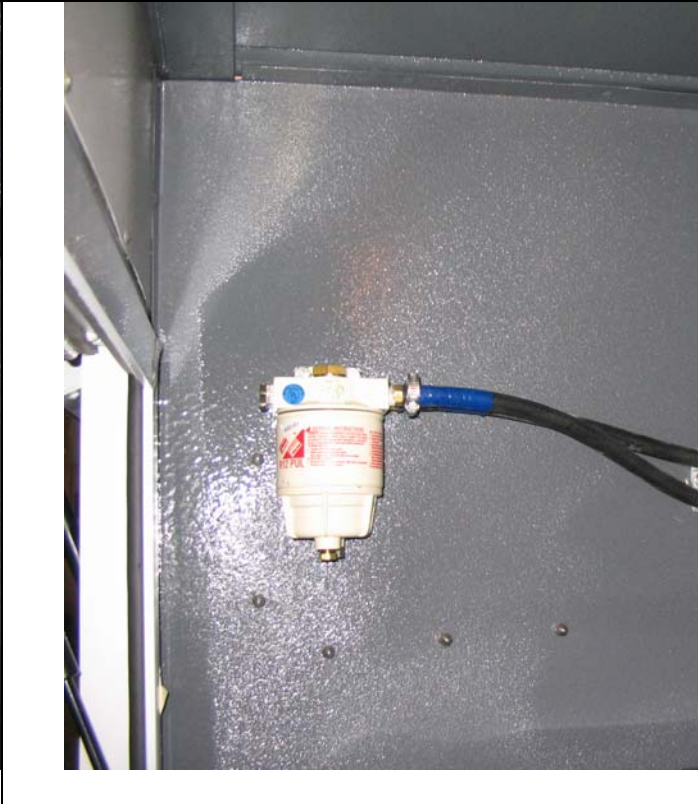
Date: 5/2/06

Subject: Generator fuel precautions

Photos



60KW Generator application



100KW Generator application

To ensure proper operation of your Kohler generator – all models – it is recommended that the generator fuel used is number 2 low sulfur fuel. In winter weather it is recommended that drying agent additives be used to minimize water content in the fuel. Water in the fuel puts the injector fuel pump in jeopardy of damage from water getting into the pump damaging the seals. As additional precaution it is highly recommended that a second fuel filter assembly be installed to provide an added measure of protection. The Racor 30 micron filter can be installed as a primary filter to help reduce the infiltration of water and other impurities to the fuel system. For additional information contact AK Specialty Vehicles Service Department at the number listed below.

Note: Field failures of generators due to improper and / or contaminated fuel will not be covered by warranty by either AK Specialty Vehicles or Kohler Generators.



**RACOR 230R30 Spin-on Series Fuel Filter/ Water Separators for Diesel Engines  
For use on 60KW Kohler Generators**

230R30 Specifications

Property	Value
Maximum Diesel Flow Rate	30 GPH
Fuel Port Size (SAE J476)	1/4"-18 NPTF
Replacement Elements	R20P (30 Microns)
Minimum Service Clearance	2-inch (50 mm)
Clean Element Pressure Drop	0.31 PSI (2.14 kPa)
Priming	Standard In-Head Priming Pump
Operating Temperature	-40° to 255° F (-40° to 121°C)

230R30 Installation Parts List

Item	Qty	AKSV Part #	Description
1	1	7004033	RACOR 230R30 Spin-on Series Fuel Filter/ Water Separators for Diesel Engines (30 GPH Diesel, 30 Micron)
2	2	H6000781	Fitting Brass 5/16" Barb X 1/4" MPT
3	1	H6000254	Sealant Pipe Thread 16oz Can
4	1	H6000696	Hose Fuel 5/16" ID 9/16" OD SAE 30R7 x 48-inches
5	2	H6000052	Clamp Worm Drive Standard 1/2" To 29/32
6	2	H6000264	Tape Electrical Vinyl Blue 3/4" x 8"
7	2	4003999	Fastener Bolt S/S Hex 5/16"-18 x 1"
8	2	H6000369	Fastener Nut S/S 5/16"-18
9	2	H6000368	Fastener Washer S/S Flat 5/16"
10	1	4004013	Fastener 10-24 x 1/2 S/S Philips Pan Head Machine Screw
11	1	4003834	Fastener HighCap Acorn 18-8 SS Nut 10-24
12	1	H6000323	Fastener Washer S/S Flat #10
13	2	H6000440	Clamp Loom Nylon 3/4"
14	1	H6000308	Tie Wrap 7-1/4 9728-3

230R30 Installation Tools/Supplies

- |                  |                        |
|------------------|------------------------|
| 1. Shop Towels   | 8. Philips Screwdriver |
| 2. Hose Cutter   | 9. Power Drill         |
| 3. Utility Knife | 10. #10 Drill Bit      |
| 4. Clean Fuel    | 11. 5/16" Drill Bit    |
| 5. 3/8" Wrench   | 12. Tape Measurer      |
| 6. 1/2" Wrenches | 13. Marker             |
| 7. 9/16" Wrench  |                        |



## 230R30 Installation Instructions

1. Locate Diesel Fuel Tank Lower Compartment
2. Find appropriate mounting location on forward wall of lower compartment allowing a minimum of 2" of clearance around filter assemble for service. Filter is to be placed on the suction side of the fuel pump and mounted higher than the fuel tank.
3. Apply thread sealant to fitting threads (use paste sealant, do not use thread tape). Install filter supplied plug into outboard outlet port of filter and barbed fittings to inlet and inboard outlet fittings of filter. Use 9/16" wrench to tighten fittings.
4. Mount filter assembly to compartment wall using 5/16"-18 x 1" hex bolts, 5/16" flat washer and 5-16"-18 hex nuts. Mark filter mounting holes on compartment wall and drill through wall using 5/16" drill. Place hardware and tighten with 1/2" wrenches.
5. Loosen fuel supply line from fuel tank fitting (line marked with blue tape) and attach to barbed fitting on outlet port of fuel filter. Secure fuel line to fitting using existing band clamp.
6. Wrap each end of new fuel line hose with blue tape to within 1/2" of hose end.
7. Install hose and clamps from barbed fitting on inlet port of fuel filter to barbed fitting on fuel tank. Secure fuel line to fittings using band clamps.
8. Located and drill one #10 hole through the compartment wall for mounting both nylon clamping looms to hold the fuel lines going into and out of the filter in place.
9. Using the 10-24 x 1/2" pan head machine screw, the #10 flat washer and the 10-24 high cap acorn nut mount both nylon clamping looms and secure both fuel lines. Use Phillips screwdriver and 3/8" wrench to tighten hardware.
10. Using plastic cable tie wrap, tie both fuel lines to each other near the fuel tank.
11. **Prime** the fuel filter as follows:
  1. Loosen vent plug with a 1/2" wrench
  2. Operate the hand primer pump until fuel purges at the vent plug
  3. Close the vent plug
12. Make sure all fittings and connections are tight and secure.
13. Start Engine and check for leaks. Correct as necessary with engine off.

## 230R30 Service Instructions

### Draining the collection bowl

1. Make sure engine is off.
2. Open the drain and operate the pump to drain off contaminants.
3. Close Drain.

### Element Replacement

1. Make sure engine is off.
2. Drain off some fuel by loosening the vent plug and opening the drain valve.

3. Spin bowl and element together off of mounting head.
4. Spin collection bowl off of element clean o-ring groove and save.
5. Dispose of used element and seals properly.
6. Coat new o-ring and seals with clean fuel.
7. Spin bowl onto the new element and then spin them both onto the filter head snugly by hand only. **DO NOT USE TOOLS.**
8. Close bowl drain.
9. With the vent plug still loosened, operate the primer pump until fuel purges at the vent plug.
10. Close vent plug.
11. Start engine and check for leaks.
12. Correct as necessary with engine off.

### **230R30 Installation Photos**



Figure 1. Lower Tank Compartment Prior to Installation



Figure 2. Lower Compartment Forward Wall Prior to Installation



Figure 3. Lower Compartment Forward Wall Prior to Installation



Figure 4. Lower Compartment After Installation

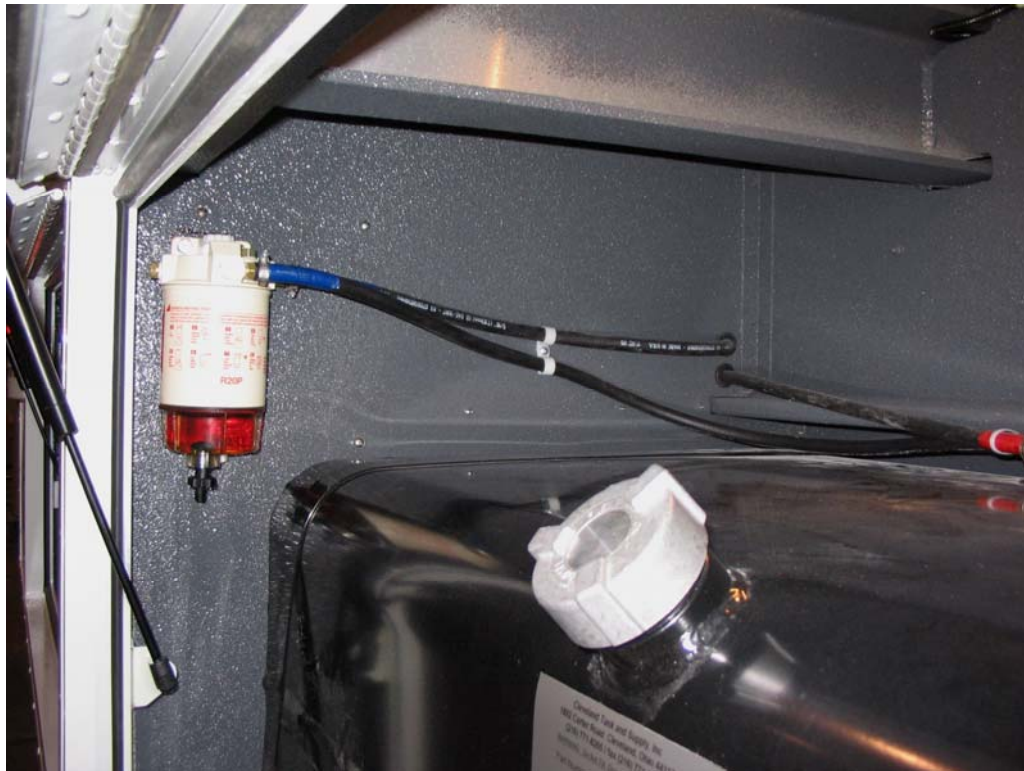


Figure 5. Lower Compartment Forward Wall After Installation

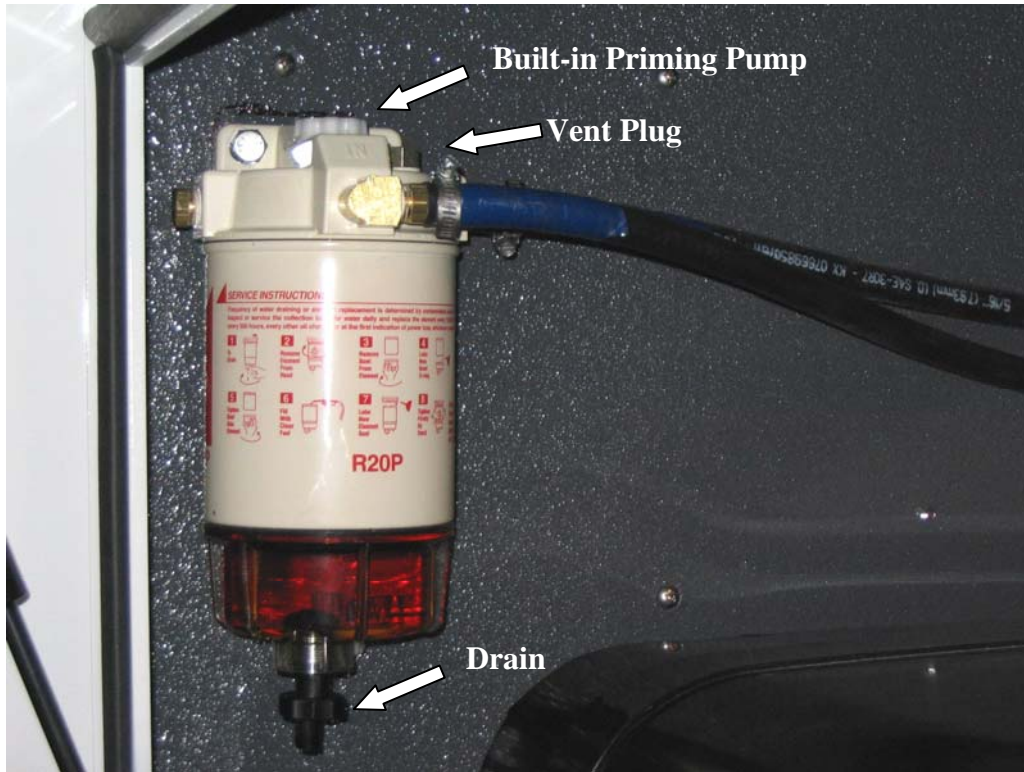


Figure 6. Racor 230R30 Filter Installed

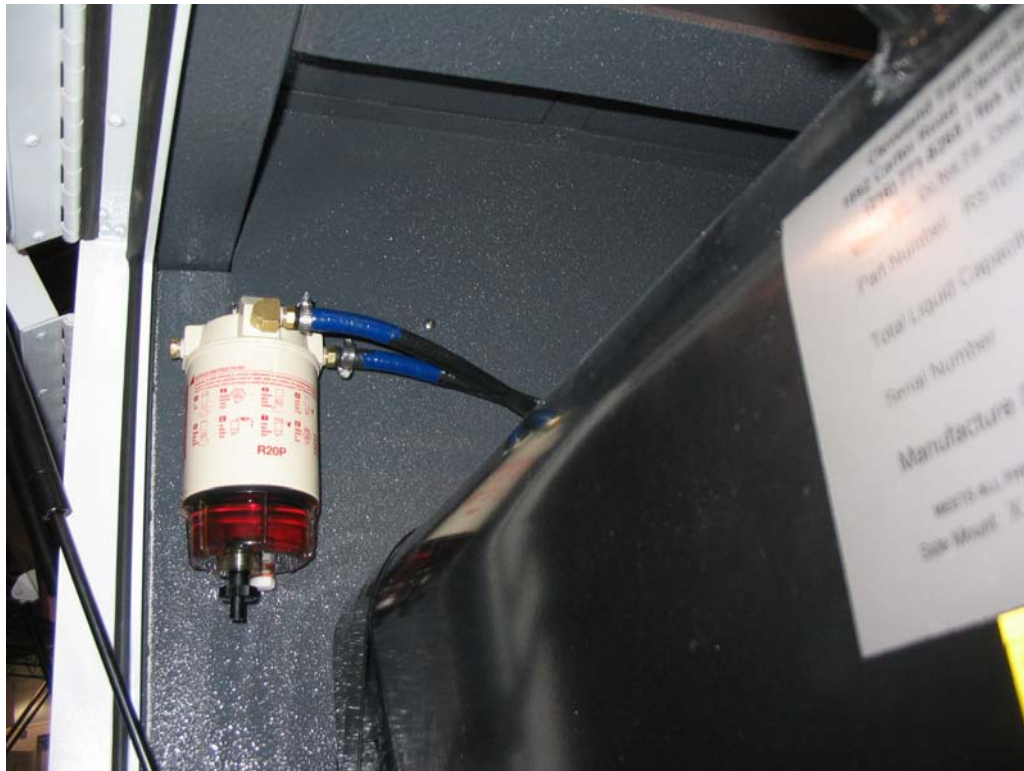


Figure 7. Lower Compartment Forward Wall



Figure 8. Filter with Reference from Compartment Ceiling





**RACOR 120RMAM30 Marine Spin-on Series In-Line Fuel Filter  
For use on 100KW Kohler Generators**

120RMAM30 Specifications

Property	Value
Maximum Diesel Flow Rate	15 GPH
Fuel Port Size (SAE J476)	¼"-18 NPTF
Replacement Elements	R12PUL (30 Microns)
Minimum Service Clearance	1-inch (25 mm)
Clean Element Pressure Drop	0.15 PSI (1.08 kPa)
Priming	Manual Fill of Element and Bowl
Operating Temperature	-40° to 255° F (-40° to 121°C)

120RMAM30 Installation Parts List

Item	Qty	AKSV Part #	Description
1	1	Pending	RACOR 120RMAM30 Marine Spin-on Series Fuel Filter (15 GPH Diesel, 30 Micron)
2	2	H6000781	Fitting Brass 5/16" Barb X 1/4" MPT
3	1	H6000254	Sealant Pipe Thread 16oz Can
4	1	H6000696	Hose Fuel 5/16" ID 9/16"OD SAE 30R7 x 48-inches
5	2	H6000052	Clamp Worm Drive Standard 1/2" To 29/32
6	2	H6000264	Tape Electrical Vinyl Blue 3/4" x 8"
7	2	4003999	Fastener Bolt S/S Hex 5/16"-18 x 1"
8	2	H6000369	Fastener Nut S/S 5/16"-18
9	2	H6000368	Fastener Washer S/S Flat 5/16"
10	1	4004013	Fastener 10-24 x 1/2 S/S Philips Pan Head Machine Screw
11	1	4003834	Fastener HighCap Acorn 18-8 SS Nut 10-24
12	1	H6000323	Fastener Washer S/S Flat #10
13	2	H6000440	Clamp Loom Nylon 3/4"
14	1	H6000308	Tie Wrap 7-1/4 9728-3



## 120RMAM30 Installation Tools/Supplies

1. Shop Towels
2. Hose Cutter
3. Utility Knife
4. Clean Fuel
5. 3/8" Wrench
6. 7/16" Wrench
7. 1/2" Wrenches
8. 9/16" Wrench
9. 15/16" Wrench
10. Philips Screwdriver
11. Power Drill
12. #10 Drill Bit
13. 5/16" Drill Bit
14. Tape Measurer
15. Marker

## 120RMAM30 Installation Instructions

1. Locate Diesel Fuel Tank Lower Compartment
2. Find appropriate mounting location on forward wall of lower compartment allowing a minimum of 1" of clearance around filter assemble for service. Filter is to be placed on the suction side of the fuel pump and mounted higher than the fuel tank.
3. Apply thread sealant to fitting threads (use paste sealant, do not use thread tape). Install filter supplied plugs into outboard inlet and outlet ports of filter and barbed fittings to inboard inlet and outlet fittings of filter. Use 9/16" wrench to tighten fittings.
4. Mount filter assembly to compartment wall using 5/16"-18 x 1" hex bolts, 5/16" flat washer and 5-16"-18 hex nuts. Mark filter mounting holes on compartment wall and drill through wall using 5/16" drill. Place hardware and tighten with 1/2" wrenches.
5. Loosen fuel supply line from fuel tank fitting (line marked with blue tape) and attach to barbed fitting on outlet port of fuel filter. Secure fuel line to fitting using existing band clamp.
6. Wrap each end of new fuel line hose with blue tape to within 1/2" of hose end.
7. Install hose and clamps from barbed fitting on inlet port of fuel filter to barbed fitting on fuel tank. Secure fuel line to fittings using band clamps.
8. Located and drill one #10 hole through the compartment wall for mounting both nylon clamping looms to hold the fuel lines going into and out of the filter in place.
9. Using the 10-24 x 1/2" pan head machine screw, the #10 flat washer and the 10-24 high cap acorn nut mount both nylon clamping looms and secure both fuel lines. Use Phillips screwdriver and 3/8" wrench to tighten hardware.
10. Using plastic cable tie wrap, tie both fuel lines to each other near the fuel tank.
11. **Prime** the fuel filter as follows:
  4. Loosen head bolt with a 15/16" wrench
  5. Spin bowl and element together off of mounting head
  6. Fill element with clean fuel
  7. Apply coat of clean fuel to element gasket
  8. Spin bowl and element together back onto mounting head
  9. Tighten hand tight. Do not use tools to tighten.
  10. Tighten head bolt snugly with 15/16" wrench
12. Make sure all fittings and connections are tight and secure.
13. Start Engine and check for leaks. Correct as necessary with engine off.

## 120RMAM30 Service Instructions

### Draining the collection bowl

4. Make sure engine is off.
5. Open vent plug on mounting head with a 1/2" wrench.

6. *Note: Do not leave drain open for very long as it will eventually drain the entire filter of all water and fuel.* Slowly open drain plug on bottom of the collection bowl with a 7/16" wrench and allow only water to drain out.
7. When fuel is detected coming out of drain, close quickly and tighten snugly.
8. Close vent plug and tighten snugly.
9. **Prime** the fuel filter as follows:
  1. Loosen head bolt with a 15/16" wrench
  2. Spin bowl and element together off of mounting head
  3. Fill element with clean fuel
  4. Apply coat of clean fuel to element gasket
  5. Spin bowl and element together back onto mounting head
  6. Tighten hand tight. Do not use tools to tighten.
  7. Tighten head bolt snugly with 15/16" wrench

### Element Replacement

1. Make sure engine is off.
2. Drain filter assembly completely.
3. Loosen head bolt with a 15/16" wrench.
4. Spin bowl and element together off of mounting head.
5. Spin collection bowl off of element and save.
6. Dispose of used element and seals properly.
7. Coat new seals with clean fuel.
8. Install new o-ring onto collection bowl.
9. Install collection bowl onto new element.
10. Install new gasket onto new element.
11. **Prime** the fuel filter as follows:
  1. Loosen head bolt with a 15/16" wrench
  2. Spin bowl and element together off of mounting head
  3. Fill element with clean fuel
  4. Apply coat of clean fuel to element gasket
  5. Spin bowl and element together back onto mounting head
  6. Tighten hand tight. Do not use tools to tighten.
  7. Tighten head bolt snugly with 15/16" wrench

## 120RMAM30 Installation Photos



Figure 1. Lower Tank Compartment Prior to Installation



Figure 2. Lower Compartment Forward Wall Prior to Installation



Figure 3. Lower Compartment Forward Wall Prior to Installation



Figure 4. Common Wall of Adjacent Compartment Prior to Installation



Figure 5. Lower Compartment After Installation

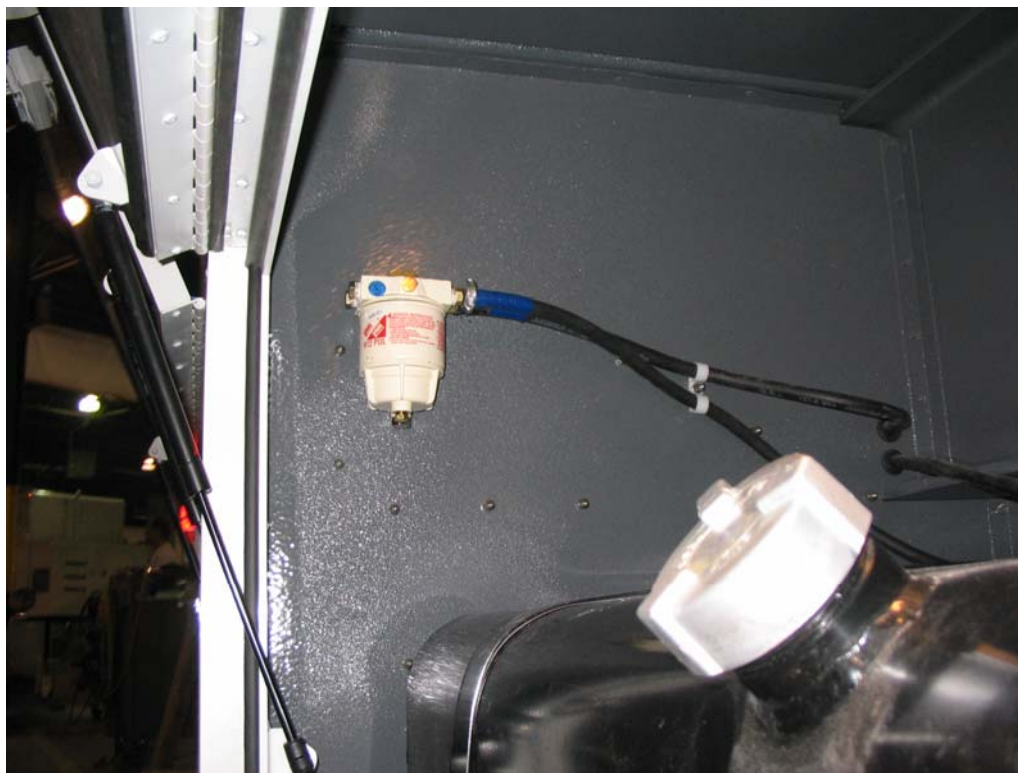


Figure 6. Lower Compartment Forward Wall After Installation

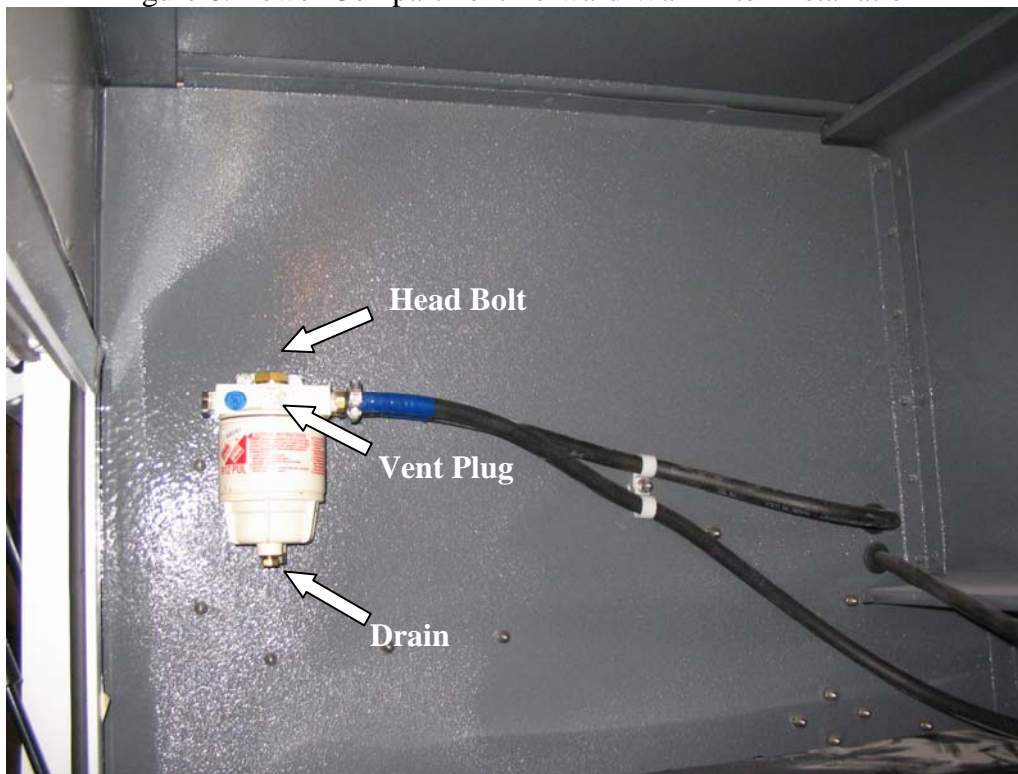


Figure 7. Racor 120RMAM30 Filter Installed



Figure 8. Lower Compartment Forward Wall



Figure 9. Filter with Reference from Compartment Ceiling



Figure 10. Common Wall of Adjacent Compartment After Installation