



Technical Support

Subject
RAPTAIR-MF Dual Air Filter Retrofit Kit

System or Parts affected

- RAPTAIR-MF units: D600005BETA01 to D600005BETA59

Parts

RETROFIT KIT, D600005, DUAL FILTER P/N# A500027

- Fastener Pack (Part # 3800959)
- Remote Filter (Part # 9500250)
- Air Intake (Part #9500292)
- Inlet Valve (Part # 9500295)
- Coalescing Filter (Part # 3600079)

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Overview

Background:

There have been several instances of compressor oil getting into the engine intake. This could lead to engine run on, compressor oil in the engine oil and potential damage to the engine if not fixed.

Resolution:

VMAC is providing a no charge upgrade for early RAPTAIR-MF units that had a single air filter which filtered air for the compressor and engine. The design has been changed to separate the air filters for the engine and compressor, which will prevent the problem from occurring. Ideally this upgrade is done when servicing of the compressor and/or Kubota engine. VMAC will contact all customers who should have this upgrade.

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Bonus:

One time offer with this upgrade that VMAC will sell you A500007 – 100 hour engine service kit and A500024 400 hour compressor service kit at 10% discount and free ground shipping.

Tools Required:

- Filter wrench
- 1/2 inch gear wrench
- 1/2 inch box end wrench
- 11/16 inch box end wrench
- 3/4 inch box end wrench
- 7/8 inch box end wrench
- Flat head screw driver
- Philips screw driver
- Side cutters Hose clamp
- 1/4 inch drive
- 1/4 inch drive extension
- 1/2 inch drive
- 1/2 inch drive extension
- 8mm-13mm 1/4 deep sockets
- 8mm-13mm 1/2 deep sockets
- Hex head 6mm 1/2 drive
- Right angle pick
- Loctite
- Flashlight
- Small fuel line pinch vise grips

Important Safety Notice:

The information contained within this manual is based on sound engineering principles, research, extensive field experience and technical information. Information is constantly changing with the addition of new models, assemblies and service techniques. **If a discrepancy is noted in this manual, contact VMAC prior to initiating or proceeding with service.** Current information may clarify the matter. **Any person with knowledge of such discrepancies, who performs any work on the system, assumes all risks.**

Only proven service procedures by qualified personnel are recommended. **Anyone who departs from the specific instructions provided in this manual must first assure that their safety and that of others is not being compromised** and that there will be no adverse effects on the performance or the operational safety of the equipment.

VMAC will not be held responsible for any liability, injuries, loss or damage to individuals or to equipment as a result of the failure of any person to properly adhere to the procedures set out in this manual or standard safety practices. Safety should be your first consideration in performing service operations. If you have any questions concerning the procedures set out in this manual or require any more information on details that are not included in this manual, please contact VMAC before beginning any work. Our local number is [1\(250\)740-3200](tel:12507403200) , and our toll free number is [1\(800\)738-8622](tel:18007388622) .

To order parts, contact your VMAC dealer. Your dealer will ask for the VMAC serial number, part number, description and quantity. To locate you nearest dealer, call [1\(888\)241-2289](tel:18882412289) , or see our website at <http://www.vmacair.com> and click [Find a Dealer](#).

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Knowledge Base: www.kb.vmacair.com
 Email: tech@vmacair.com
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Safety Messages:



This symbol is used to call your attention to instructions concerning your personal safety. Read the message that follows and be aware of the possibility of injury or death



This symbol is used to call your attention to instructions on a specific procedure that if not followed may damage or reduce the useful life of the compressor.



This symbol is used to call your attention to additional instructions involving fire hazards.

Note: It is impossible to warn about every conceivable hazard; let good common sense be your guide.

Safety Precautions:

Observe the following general safety rules:

- Pay attention to the system during operation; do not leave it unattended
- Follow safe work practices and wear appropriate safety equipment when operating air powered equipment, particularly eye and hearing protection
- Follow all safety precautions for mechanical work
- Follow safety procedures for the type of work being completed



Avoid all contact with pressurized air; if it penetrates skin, it can enter the bloodstream and cause serious bodily harm or death



Do not breathe the compressor air. Vaporized oil is a severe respiratory hazard



Avoid contact with drive belts and stay clear of all moving parts when the system is operating



To prevent compressor explosion or fire, make sure that the air entering the compressor is free of flammable vapors



To prevent compressor explosion or fire, make sure that correct servicing procedures and intervals are observed



Vaporized oil propelled by high pressure is an explosive mixture

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Disassembly:

To watch a video of this retrofit: <https://www.youtube.com/watch?v=8YD2yjagjTY>



Ensure system is fully depressurized before starting

1. Disconnect the battery and remove it from the unit



Battery acid is highly corrosive. Ensure there are no cracks or leaks in the battery before removing

2. Remove the coalescing filter and discard (It will be replaced) (Fig 1)
3. Disconnect the engine air filter minder wires under the filter and remove the air filter. Simply pull the wires out of the socket to disconnect (Fig 2)

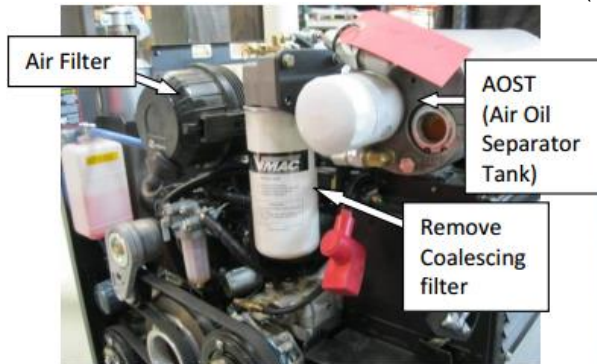


Fig 1



Fig 2

4. Loosen the clamps to the unit's air filter intake tube connections at the engine and compressor inlet valve and then remove the complete air intake tubes and hoses (Fig 3 & 4)



Fig 3



Fig 4

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5. Disconnect the two poly tubes at the compressor inlet valve (Fig 5)
6. Remove the four M8 socket head cap screws locating the compressor inlet valve onto the compressor. (Note; the bolt lengths are different front and back.) Remove the inlet valve and the O-ring under the inlet valve. (Also note the location of the small bracket) (Fig 6)



Ensure the hole is covered to prevent contamination (putting a rag over it is adequate)

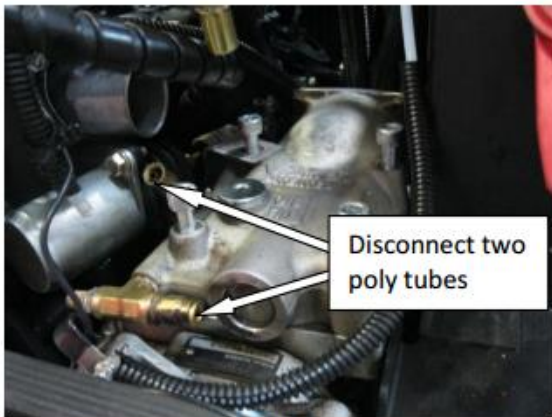


Fig 5

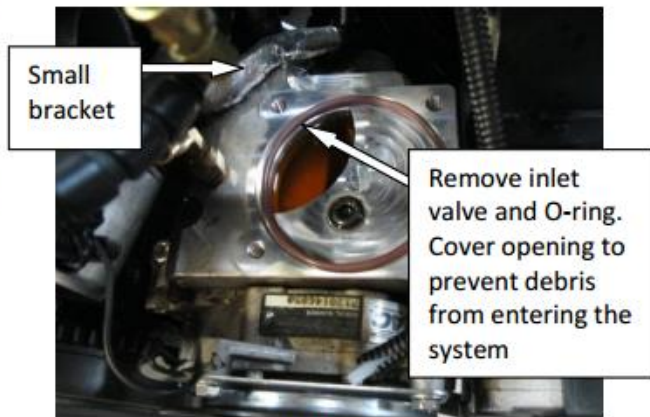


Fig 6

7. Disconnect the smaller oil return hose from the 90 degree elbow on the AOST (Air Oil Separator Tank) next to the drain plug. Then remove the 90 degree elbow that was directly attached to the hose (the one connected to the AOST should be left on) (Fig 7). The check valve can either be added now, or after the next step

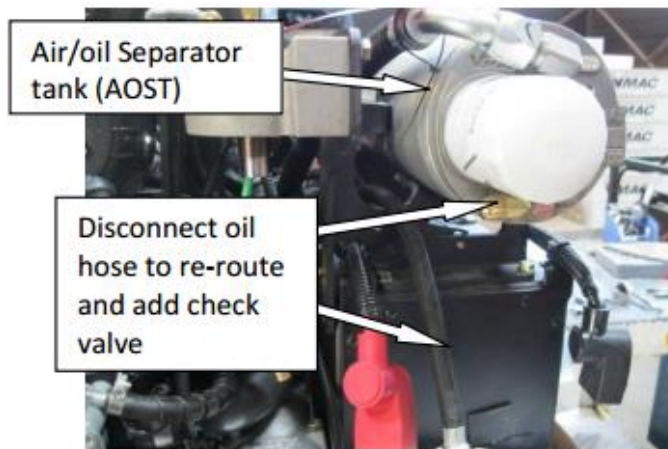


Fig 7

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8. Reroute the hose around the opposite side (engine side) of the larger 3/4" air discharge hose that connects to the AOST. The hose end should end up in the same area it was originally, except that it will seem to be a couple inches shorter. This will ensure that the rerouted hose is kept clear of the engine fan (Fig 8(a-c))



Fig 8a

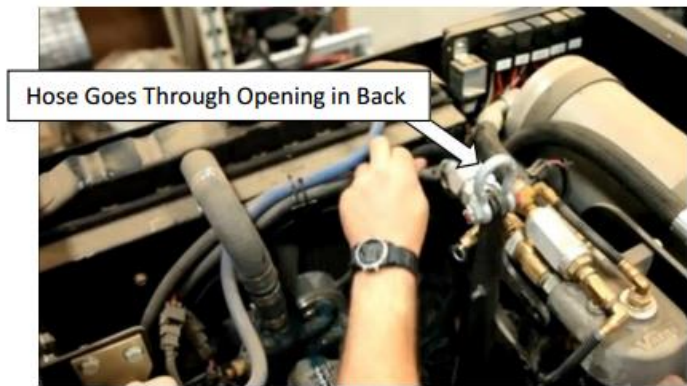


Fig 8b



Fig 8c

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This would be a good point to conduct your compressor 200 or 400 hour system service as the oil drain plug is accessible. The drain pan can be placed under the plug on the battery location shelf. Engine service should be conducted at 50 & 100 hours.

Installation of the AOST oil-return hose check valve:

9. Connect the straight connection end of the new AOST check valve to the rerouted hose (**Fig 9**).



Make sure that the arrow on the check valve is pointing towards the hose

10. Pull the hose forward and install the new 90 degree swivel elbow to the other end of the check valve, and align it so that the 90 degree swivel fitting will connect to the front lower AOST oil connection. Tighten the hose connection to the check valve **BEFORE** connecting the 90 degree swivel elbow. Set the check valve at horizontal position and tighten the swivel
11. Zip-tie the rerouted oil hose to the larger main air discharge hose

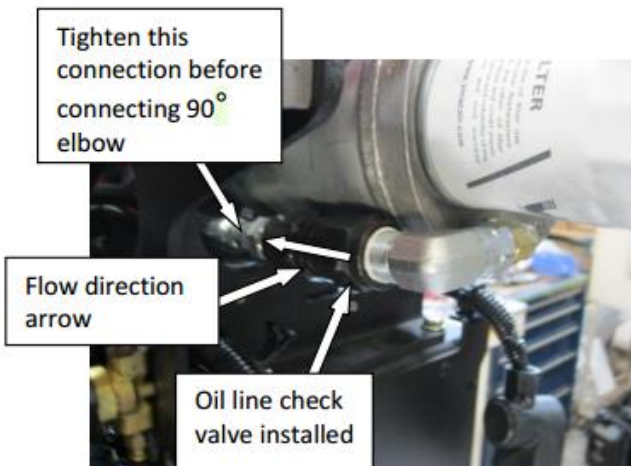


Fig 9



Fig 10

Installation of the new separate air intake systems:

Note: All parts come pre-assembled and some items will need to be disassembled to enable easy installation.

12. Connect the engine air filter minder wiring extension harness to the original wires and lay the harness extension over on the engine side, ready to connect to air filter minder later (**Fig 10**)
13. Install the replacement compressor inlet valve and new O-ring. Ensure the correct length M8 socket screws are selected, and the location of the small bracket attached is in the correct place. Tighten all four M8 socket screws (shorter socket screws are closest to the clutch)



Failure to put the screws in the right holes will result in damage to the compressor

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14. Reconnect the two poly tubes to the compressor inlet valve.
15. Install the new compressor air filter and steel intake tube to the compressor inlet valve and secure with the hose clamp (Fig 11 & 12)



Fig 11



Fig 12

16. Remove the engine air filter from the intake hose assembly. Feed the smaller hose end of the intake assembly between the main lifting bracket and the generator. Fit the smaller hose end to the engine air intake leave the clamp loose until the other end is connected (Fig 13 & 14)

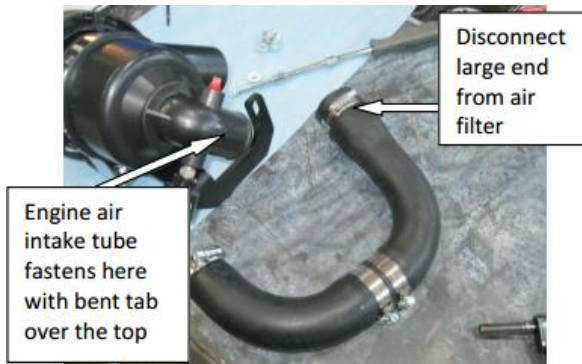


Fig 13

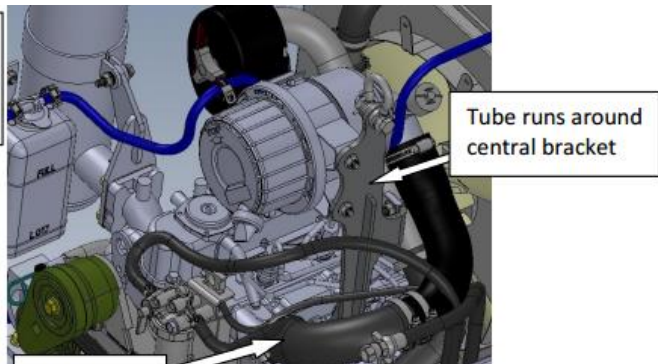


Fig 14

17. Install the new engine air filter to the main lifting support bracket using the supplied bolts (Fig 15)
18. Connect the other end of the air filter minder wiring extension to the engine air filter minder (Fig 16)
19. Connect the other end of the engine air intake hose to the new engine air filter, align for best clearance and tighten both end hose clamps

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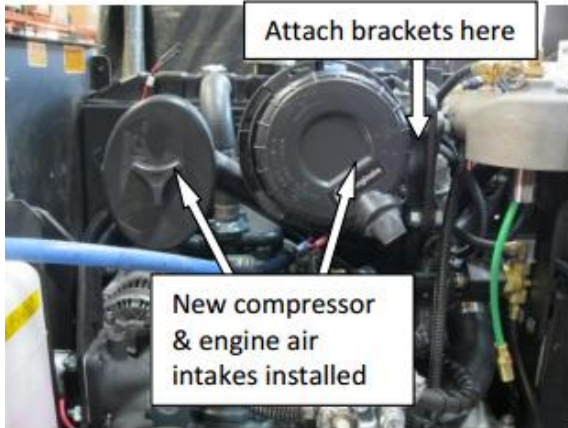


Fig 15



Fig 16

20. Using the bolt and flange nut removed earlier from the compressor air intake tube, secure the tube to the rear of the new engine air filter mounting bracket with the bent tab hooked up over the top of the bracket. Fit the bolt from the rear and install the flange nut
21. Fit the P clip for the blue coolant hose to the end of the air filter band clamp thread, after the clamp nut, and install the supplied 10mm flange nut with blue Loctite and tighten (Fig 17).



Fig 17

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It is important to make sure that the red plastic blanking plug on the underside of the air filter intake elbow has adequate clearance to the compressor air intake tube.

Installing the ground strap:

22. Fit one end of the ground wire to the battery negative clamp bolt
23. Connect the other end of the supplied additional ground wire to the lower outer coalescing filter manifold bolt (Fig 18)

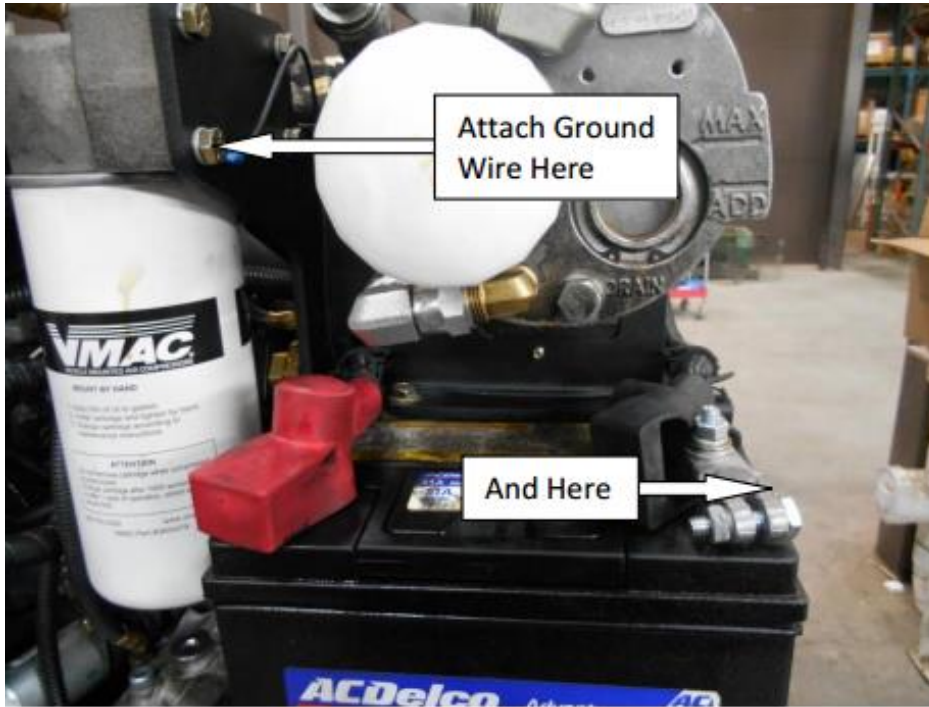


Fig 18

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Removing the Check Valve from the Fuel Return Hose:

24. Check the fuel return hose under the generator to see if there is a small plastic fuel check valve (Fig 19(a-c)). If there is, it must be removed at this point. Replace valve with the 3/16 hose barb connector (Fig 20) included in kit (P/N# 5000199)



Fig 19a (Valve)



Fig 19b (Valve seen from beneath the unit)



Fig 19c (Valve seen from the side)

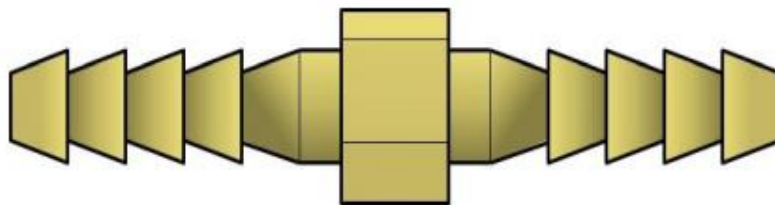


Fig 20 (Hose Barb Connector)

25. Fasten the fuel return hose to the injector rail using the supplied metal hose clamp. Route the fuel lines as previously routed and secure with the P-clips.

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Replacing the Plastic Clamps:

26. If they have not been already, replace the black plastic clips on the inlet and outlet hoses on the fuel filter bowl (Fig 21) with the 0.57-0.63 metal clamps (P/N# 2200209), and replace the clamp on the engine end of the fuel return hose with the 0.37-0.43 metal clamp (P/N# 2200207).
- 27.

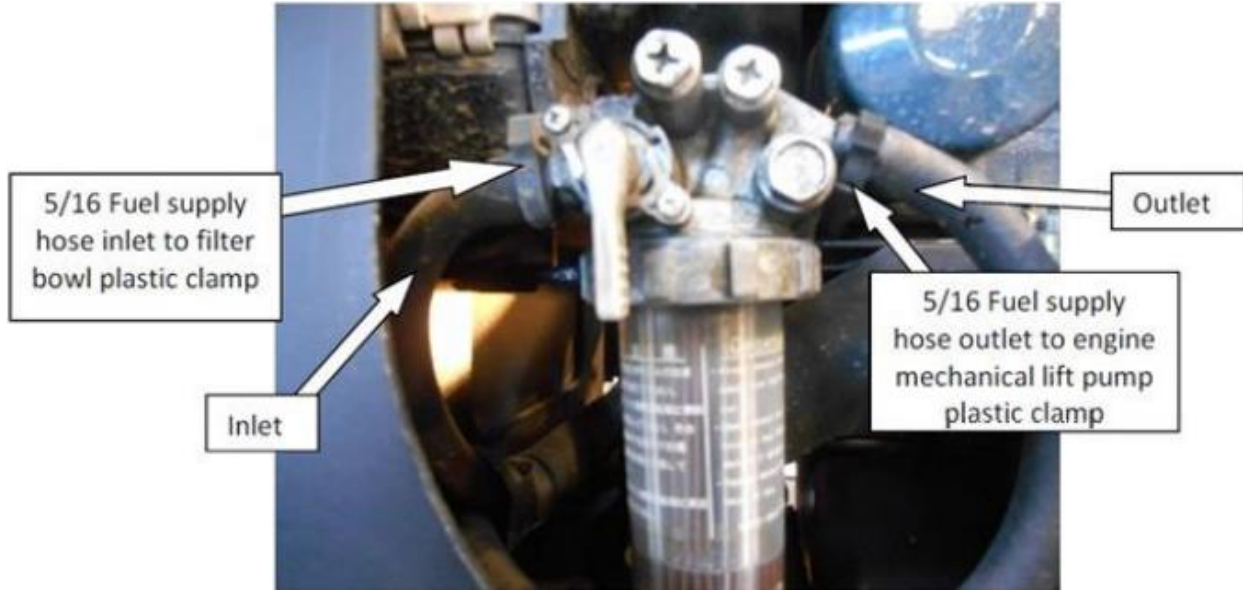


Fig 21

Finishing the installation:

1. Recheck all the connections and hose routings to ensure they are not contacting hot or sharp edges.
2. Install zip ties to the air filter minder extension harness and secure the 3/16" fuel return hose with zip ties and Rubber P clip as they were previously secured.
3. Refit the battery, the new coalescing filter (supplied in the kit), and any panels removed earlier. Test-run the system and check for leaks and that all functions operate correctly.

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