

Installation Instructions for the A500002 - External Fuel Pump RAPTAIR60 Diesel Driven Compressor

Operation

The external fuel pump kit will activate the fuel pump when the key switch is in RUN and automatically disable the fuel pump in Standby mode. The fuel pump will reactivate when restarting.

Important Information

The information in this manual is intended for certified VMAC installers who have been trained in installation procedures and for people with mechanical trade certification who have the tools and equipment to properly and safely perform the installation. Do not attempt this installation if you do not have the appropriate mechanical training, knowledge and experience.

Follow all safety precautions for mechanical work. If you have difficulty with the installation, contact VMAC.

To order parts, contact your VMAC dealer. Your dealer will ask for the VMAC serial number, part number, description and quantity. To locate your nearest dealer, call 1-800-738-8622. (or visit www.vmacair.com)

Notice: Manuals and products are subject to change without notice

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Version	Revision Details	Revised by/date	Approved	Implemented
A	Release	MP 04FEB2012	OJ 27Feb2012	27Feb2012
B	Added fuel pump install details	MP 28FEB2012	TG 1Mar2012	1Mar2012
C	ECN 12-051, manual text changes	SAR 27 Mar 2012	MH 30 Mar 2012	11 Apr 2012
D	ECN 12-181	SAR 06 Dec 2012	MH 10 Dec 2012	13 Dec 2012
E	ECN 13-055 update for D600003/4	AH 03 Jul 2013	MP/DB 10 Jul 2013	10 Jul 2013
F	ECN 14-013 manual text changes	AH 25 Mar 2014	MP/DB 21 Apr 2014	23 Apr 2014
G	18-090 Update wire colour	MSP 10 May 2018	JKR/AWG 15 May 2018	15 May 2018

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ITEM	DESCRIPTION	QUANTITY
1	Fuel Pump Harness	1
2	M5x8 Bolt	1
3	Tie-wraps	3
4	Red female bullet connectors	2
5	40A sealed relay	1
6	Fuel pump	1

Installing the Fuel Pump

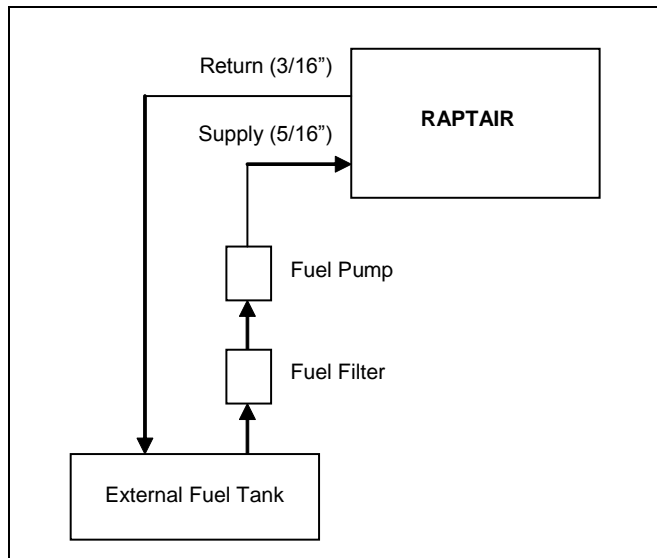


Figure 1 – Installing the fuel pump

1. Ensure the key switch is in the OFF position and remove the service panel.
2. Disconnect the battery, secure terminals so they will not contact battery posts.
3. Install Fuel Filter in supply line before fuel pump as seen in Figure 1 with Diesel compatible hose (not supplied).



Mount filter and pump as close to tank as possible (Maximum 2 meters from tank).

4. Ensure return line is routed back to tank with Diesel compatible hose (not supplied).
5. Ensure all connections use metal clamps to prevent leaks.



Note: Verify direction of the flow of the fuel pump and filter.

Installing the Electrical Connections – D600003/D600004



Note: Discard M5x8 bolt supplied in the kit, it is not used during install on D600003/4.

1. The control mount assembly is located directly beside the battery. Unscrew the two lower screws on each side on the control panel to swing down the control mount assembly. Figure 2.
2. Cut zip ties holding relay wires together and remove Glow Plug Relay and neighboring relays to access relay holder bolts.
3. Slide and attach the External Fuel Pump Relay holder slotted beside the Glow Plug Relay holder using dovetail connection.
4. Reinstall relay holders and relays.
5. Secure wiring with new zip ties.
6. Install the green/yellow stripe harness wire with a ring terminal to the Ground post.
7. Install the orange harness wire with a ring terminal to the Key Switched +12V post.

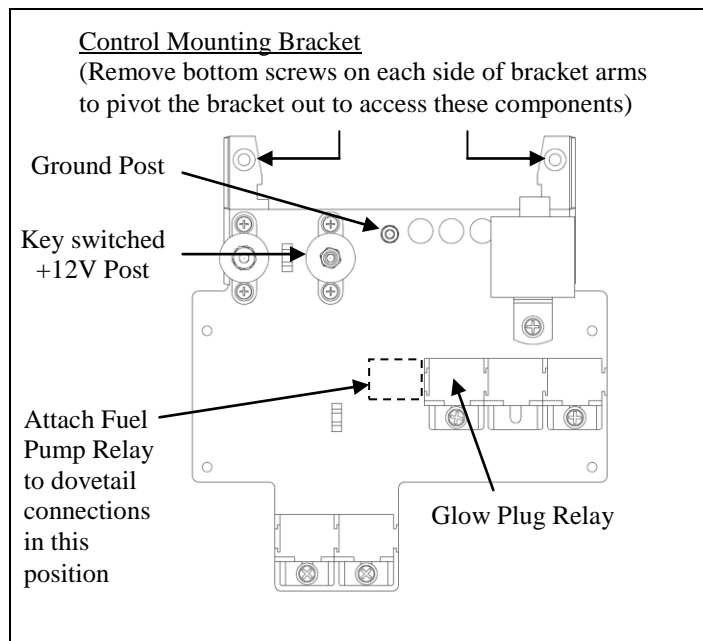


Figure 2 - Control Mount Assembly D600003/4

8. Locate LED Beacon; trace the wiring back to the two-pin connector.
9. Disconnect two-pin LED beacon connector and install fuel pump harness in line with both male and female LED beacon connectors. Fasten with tie-wraps.
10. Route the green/yellow stripe and red fuel pump connections along the harness below the compressor, exiting the unit in the same location as the display box connections. Secure with zip ties.
11. Swivel-up the control mount assembly and re-attach the two lower screws.
12. Extend the blunt-cut red and green/yellow stripe wires to the fuel pump. Crimp the supplied female bullet connectors to the extending wire and connect to the fuel pump. (Fuel pump brown to harness red and fuel pump black to harness green/yellow stripe). Cover wires with loom.
13. Connect the battery and reattach the service panel.

Installing the Electrical Connections – D600001/D600002

1. Unscrew the two lower bolts on each side on the control panel to swing down the control mount assembly. Figure 3.
2. Carefully remove the Glow Plug Relay and Throttle Pull Relay to access the relay holder bolts. Remove the bolts.
3. Slide and attach the External Fuel Pump Relay holder beside the Throttle Pull Relay, as shown in Figure 3. Fasten the relay holders with the bolts.

4. Install the Glow Plug Relay, Throttle Pull Relay and External Fuel Pump Relay.
5. Install the green/yellow stripe harness wire with a ring terminal to the Ground post.
6. Install the orange harness wire with a ring terminal to the Key Switched +12V post.
7. Locate LED Beacon; trace the wiring back to the two-pin connector.
8. Disconnect two-pin LED beacon connector and install fuel pump harness in line with both male and female LED beacon connectors. Fasten with tie-wraps.

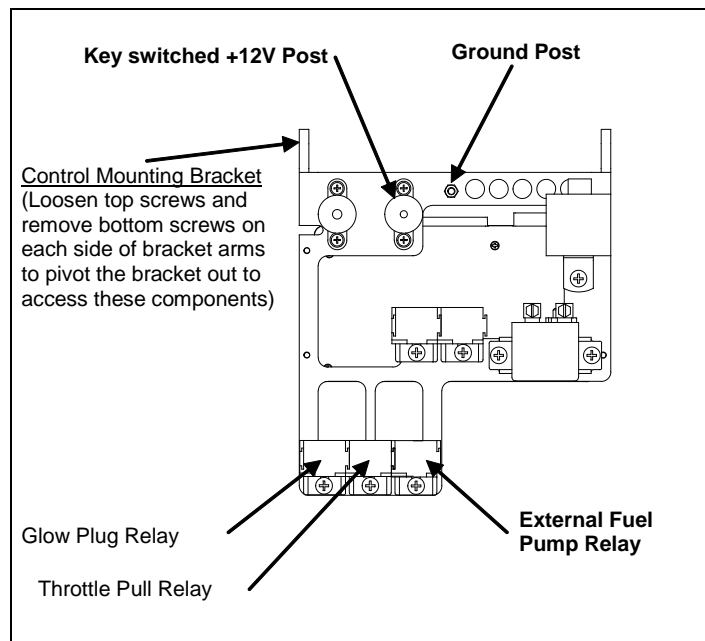


Figure 3 - Control Mount Assembly D600001/2

9. Route the green/yellow stripe and red fuel pump connections along the harness below the compressor.
10. Swivel-up the control mount assembly and re-attach the two lower bolts.
11. Extend the blunt-cut red and green/yellow stripe wires to the fuel pump. Crimp the supplied female bullet connectors to the extending wire and connect to the fuel pump. (Fuel pump brown to harness red and fuel pump black to harness green/yellow stripe).
12. Connect the battery and reattach the service panel.

Bleeding the fuel system.

1. Ensure the fuel level in the tank is at a suitable level and the fuel switch on the fuel filter bowl (behind the Raptair service panel) is in the on position (vertical).
2. Check and ensure that the fuel systems is sealed, that there are no fuel leaks, no kinks in the lines and that there are no points where air can be drawn into the fuel system.
3. **Ensure that the electronic primer pump is installed as close as possible to the tank** (Maximum 2 meters from the tank). This is a pusher pump and not a suction pump. The primer pump filter should be installed before the pump and preferably vertically mounted.
4. Turn the Raptair key on the control panel to the first position (Do not continue to the start position)
5. Listen to hear the primer pump is running.
6. At the fuel filter bowl, (Fig 4 [A]) loosen the inlet screw and allow fuel to flow out. Use a cloth to catch the fuel surplus and allow flow to continue until there are no further air bubbles coming out. Tighten the inlet screw. Next, loosen the outlet screw and bleed until all air bubbles are gone. Tighten the outlet screw.
7. At the injector pump (Fig 4 [B]) locate the Fuel bleed screw on the side of the pump, loosen the Fuel bleed screw and allow the fuel to flow out into a cloth and again wait until the air bubbles are cleared then retighten the Fuel bleed screw.
8. Check the fuel bowl sight glass is full and proceed to start the Raptair. The Initial start will be a little rough until internal pump and injector lines are cleared of air. Run the Raptair until fully warmed.

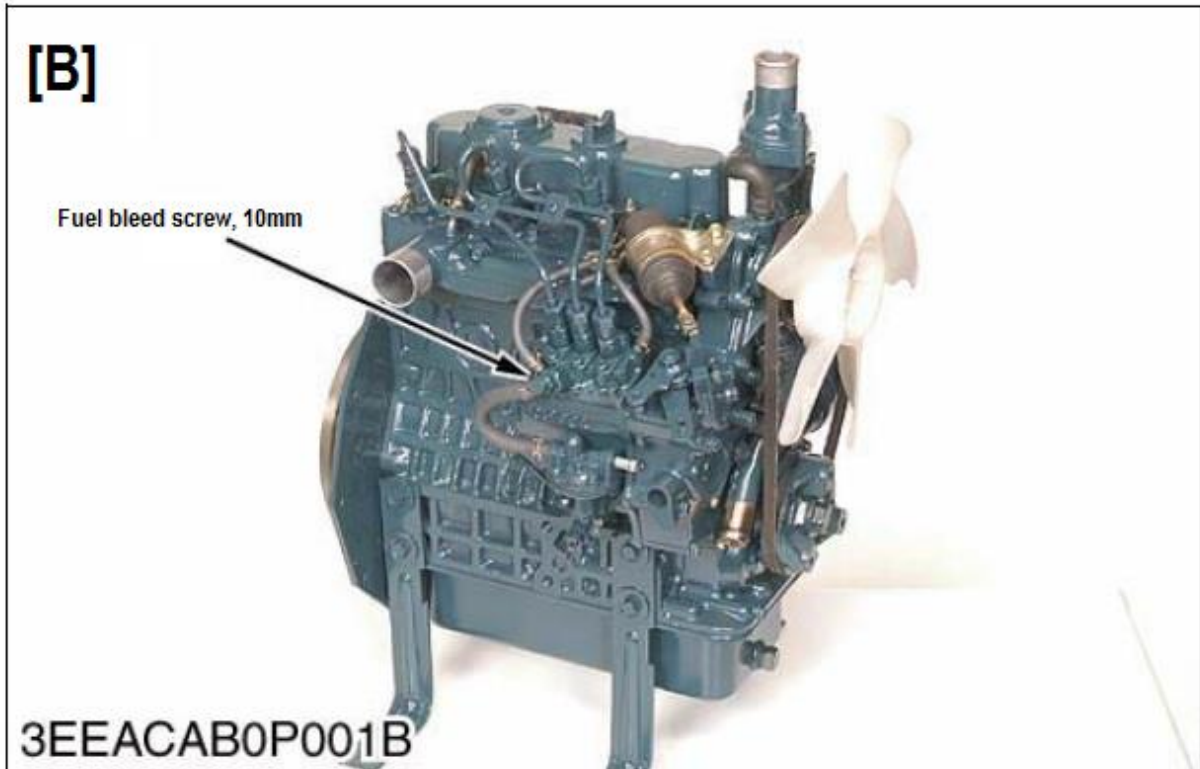
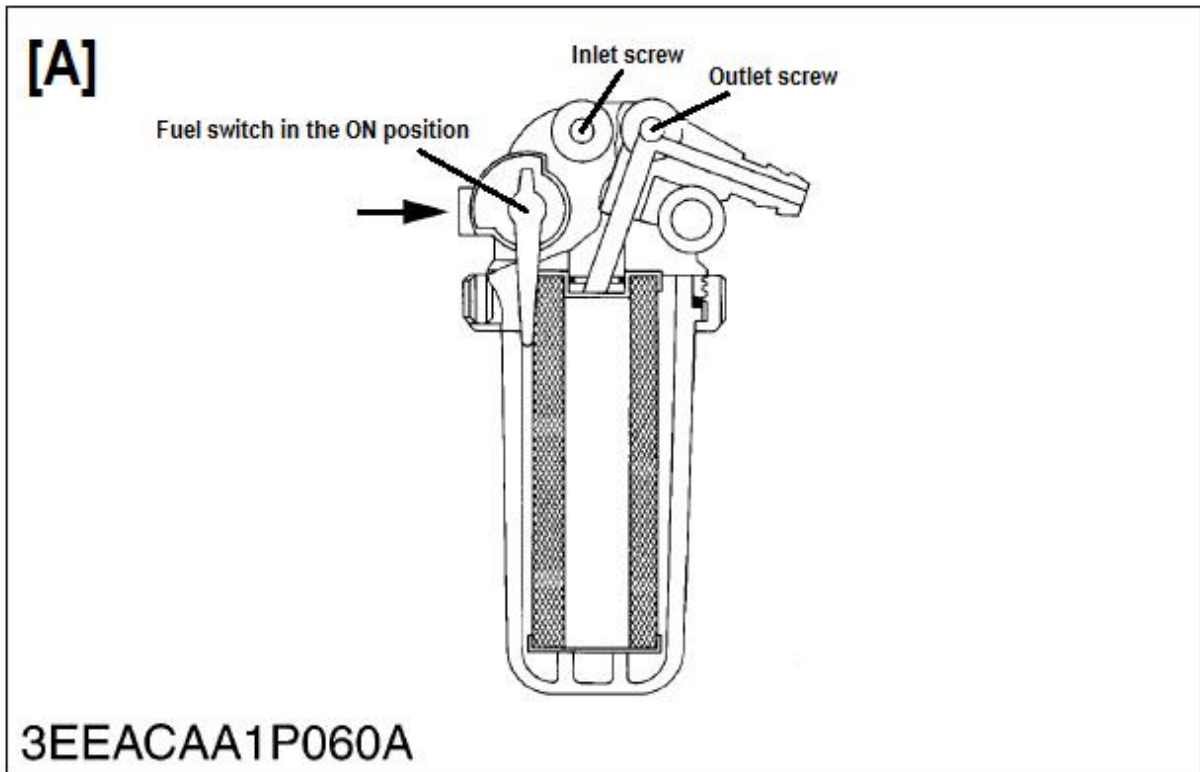


Figure 4

Testing the External Fuel Pump

1. Turn the key from OFF to RUN, the fuel pump should activate.
2. Turn the key from RUN to OFF, the fuel pump should deactivate.
3. Turn the key to RUN and start the compressor system, the fuel pump should activate and run the entire time.
4. Do not discharge air and wait until the unit enters STANDBY mode (engine shutdown and LED beacon illuminates).
5. In STANDBY mode, the fuel pump should be deactivated.
6. Dump air to allow the system to restart, the fuel pump should reactivate.
7. Turn the system off and key switch to OFF.

Updating the System Settings

The fuel pump uses the beacon output for its control logic. When the beacon is turned on in standby mode the fuel pump is disabled. If the DISABLE AUTO RESTART DELAY is reached then the beacon will shut off, and the fuel pump will be enabled again, potentially damaging the pump if left running for an extended period.

The update to the system setting will disable the delay setting used to shutoff the control system in STANDBY mode. After this setting change, the unit will no longer disable automatic restart if left unattended for the default 30minutes. Ensure the unit is switched off if left unattended for an extended period of time.



Failure to change the settings may result in damage to the fuel pump.

1. Turn the key from OFF to RUN.
2. In the Display box enter the Diagnostic settings and change DISABLE AUTO RESTART DELAY to NEVER. Refer to the owner's manual for details on entering Diagnostics and setting values.
3. Confirm the value has been successfully updated to NEVER and exit Diagnostics mode.
4. Turn the key switch to the OFF position.