



AAM Competition GT-R R-Line Triple Pump Fuel System v2 **INSTALLATION INSTRUCTIONS**

WARNING FOR INSTALLER OF THIS PRODUCT

*** Product(s) are designed for off-road / competition use only ***

This AAM Competition, LLC product requires above average mechanical ability to install properly. Installation requires the appropriate tools for tightening and loosening nuts and bolts involved for the installation of this kit. As with all mechanical projects, take appropriate precautions for your personal safety and for the proper care and treatment of the vehicle being serviced. Be sure and read through all directions before attempting.

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Parts List

- AAM Competition Bulkhead Assembly
- AAM Competition Triple Pump Assembly
- Driver and Passenger side Fuel Rails
- Wiring Harness and Main Electrical Line
- Electrical Block Assembly
- Hose- In-tank
- Hoses- Feed and Return Lines
- Fittings
- Rail Mounting Hardware
- Bulkhead Hardware and Fuse
- Fuel Pressure Regulator
- Gauge
- Inline Filter

Instructions

Removal of OE part(s)

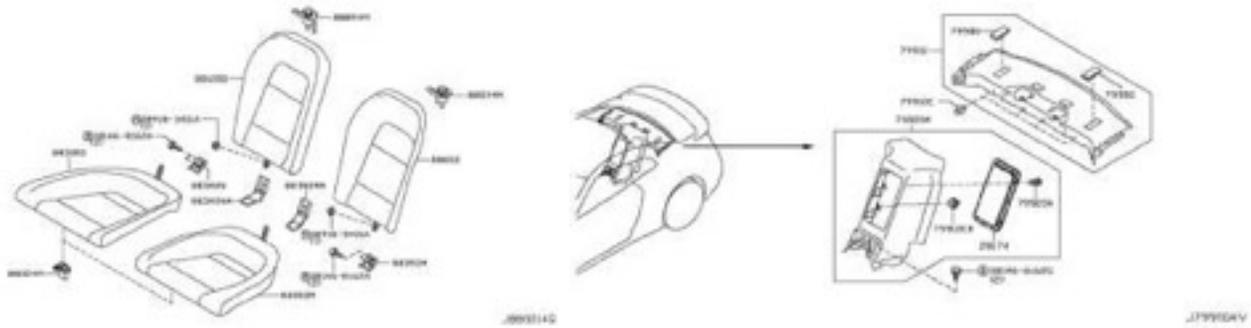
When working with fuel – be sure to be in a well-ventilated area. Let vehicle cool before working.

Install the system with 1/8th tank or less. This will help with removing and installing the fuel system.

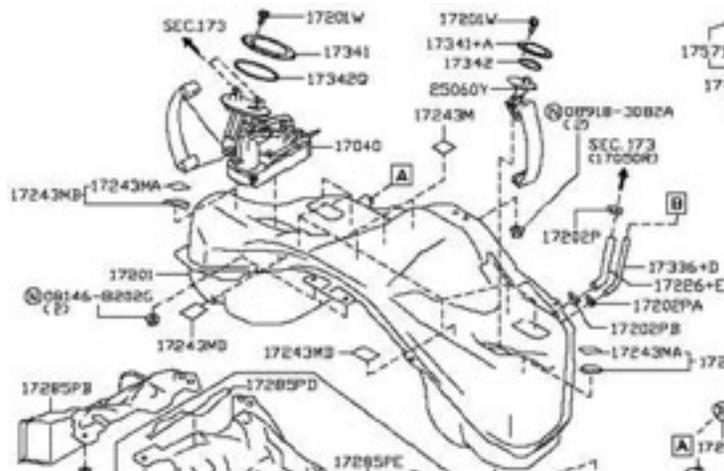
Before starting work – disconnect power to pumps and crank the engine. This relieves pressure in fuel lines and system.

Removing OEM in-tank pump assembly.

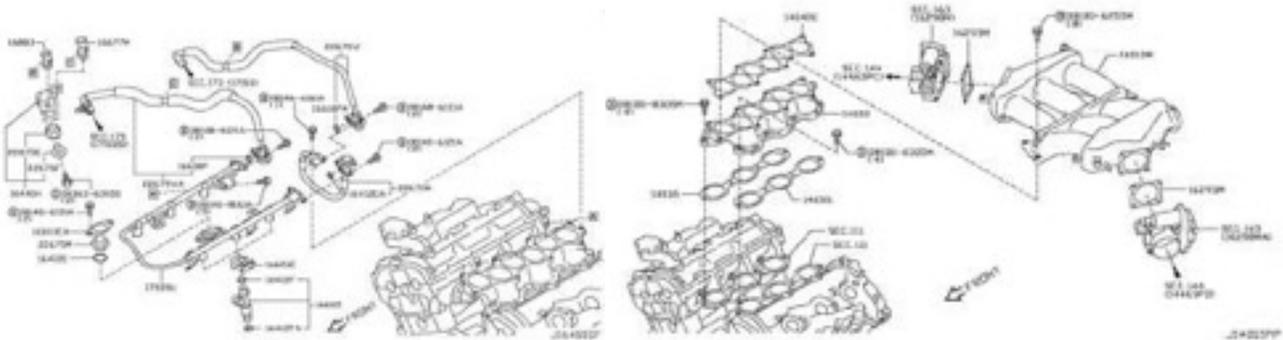
1. Disconnect Battery – This keeps all electronics safe and reduces risks of damage to electrical systems
2. Lift up on the passenger side, rear seat. Remove.
3. Lift up rear cup holder/armrest. Disconnect wire and remove.
4. Remove the seat backs on both sides and the speaker cover/housing



5. Located under the bottom of the rear passenger seat; open up fuel tank cover plate by rotating the tabs clockwise.
6. Unplug the OE connectors
7. At this point it is useful to reconnect power to the vehicle, and attempt to start vehicle. This will relieve pressure in fuel lines and will help with installation. Disconnect power lines.
8. Disconnect OE lines from fuel hat on tank (fuel will leak)
9. Unbolt OE retaining plate (holds down OE Bulkhead hat)
10. Lift up the hat to remove it from the tank, careful to not damage the level sender. Take note of the Blue O-ring.
11. Reach into the tank, locate the pump housing at the bottom of the tank.
12. Lift up retaining clip on the housing and slide towards the front of the car. The whole assembly should come loose
13. Extract from the tank, letting fuel drain out.
14. Disconnect the small and two larger quick disconnects from the pump housing. You will need to work with those later so keep accessible.
15. Completely remove assembly



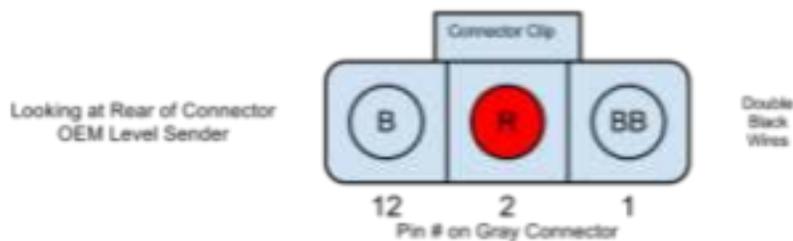
Remove the Intake manifold and OEM fuel components if upgrading the fuel rails, injectors and lines.



Installation of AAMC Fuel System

Preparing Installation

1. Remove Level Sender from OE system
2. Re-attach to AAMC Bulkhead assembly with supplied screw and nut
3. Insert pins into connector as shown in diagram. The “GRAY CONNECTOR” is bolted to the AAMC bulkhead.



Installation – Pump Assembly

1. The two larger quick-release hoses need to be zip-tied together and left in tank. Push them to rear of tank as to be out of the way. This is part of the OEM siphon system
2. Take the AAMC pump assembly, lower into the tank. Careful to not snag fuel filters on the edge of the tank. Watch out for damaging the finish on the aluminum as well.
3. Slide in the pump assembly, just as the OE system was. There are small sheet metal “rails” at the bottom of the tank. The slots of on the base of assembly (on side) slide into the rails.
4. Find the smaller quick disconnect fitting in the tank, extract and leave aside. This plugs into the bulkhead.
5. Secure assembly, check that the hoses are clear, and the connectors are accessible.

Installation – Bulkhead Assembly

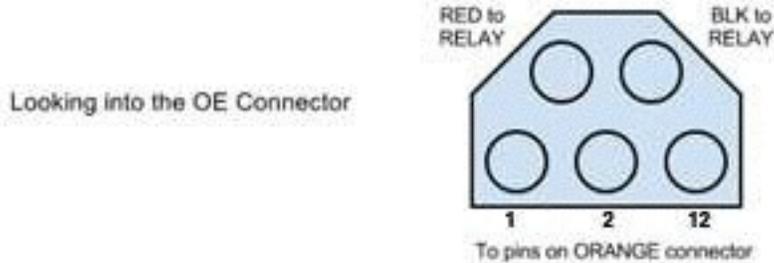
1. Take the short hose with fittings on ends. This is the feed hose that goes from the tanks to the AAMC bulkhead hat.
2. The 90degree end attaches to the fuel pump assembly in the tank. Screw on the fitting, point the hose downward and tighten. Leave the other side accessible.
3. Take the power plugs for the pumps, attach to the wiring harness on the AAMC Bulkhead. It does not matter which pumps get attached to which plug.
4. Take the AAMC Bulkhead, clip in the smaller quick-disconnect fitting to the return side.
5. Take the other end of the Feed line and attach to the Feed side on the bulkhead.
6. Attach fuel sending unit from OEM assembly.
7. Carefully insert the AAMC Bulkhead assembly into the tank, careful to not bind or damage the level sender. Also make sure the wiring harness and lines do not interfere with the level sender operation inside the tank.
8. Take note of the large o-ring around the tank opening. Make sure it's in place.
9. Place the AAMC Bulkhead flush with the tank, align the holes and secure down with supplied Rounded Stainless screws.

Installation – Wiring

Wiring can be routed as per user preference.

1. Route the supplied 6GA Red wire with the fuse from the battery to the rear of the car. Attach to the power terminal.
2. Start at the battery, slip the wire down through the engine bay, below the car.
3. Run the wire along side fuel and brake lines, secure with zip ties.
4. Snake the wire into the cabin, by the rear armrest area. (Through the tank opening)
5. Run the wire through the grommet on the tank access plate you removed earlier. All other wiring should be routed through the same grommet. This will allow you to reinstall plate without pinching wires.
6. Take the Relay Block and secure to the car, slide under the OE sheet metal. The groove will hold the piece in position.
7. Attach the ground wires to a grounding bolt.

8. Run the wiring with the large connector down to the AAMC Bulkhead.
9. Take the OE 5 pin connector and insert pins from the AAMC harness as shown in diagram. This is the Relay trigger and level sender passthrough. Use electrical tape to secure pins to the connector so they do not come out. Gently wrap around a few times

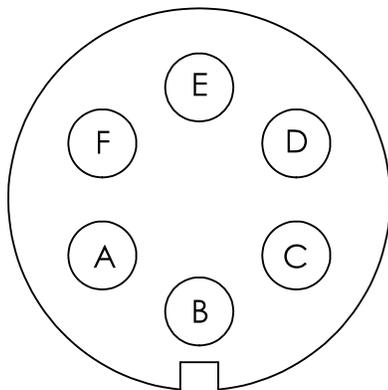


10. Take the 6GA wire, connect to the butt connector off the relay harness.
11. Plug the AAMC connector into the AAMC Bulkhead.
12. Wiring is complete. Make sure all connectors are tight and secure

Installation – Relay- Wiring

Dual Stage Pump Activation

Mil-Spec Bulkhead Connector



- A - GND1 - Level Sensor/ Temp
- B - PWR - Level Sensor/ Temp
- C - GND 2 - Level Sensor/ Temp
- D, E, F - Pump Power Wires

Relay Configuration:

Single - one relay is triggered, turning on a single pump

Double - two relays are triggered, turning on two pumps

Users can configure the primary OEM pump circuit to initiate one or two pumps depending on which relay wires are hooked up

Level Sender/Temp Sensor Pass-through:

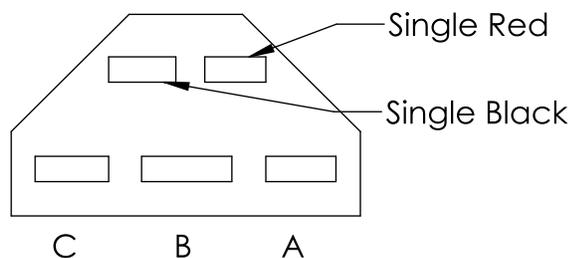
A, B, C should be connected accordingly.
Matching up at the bulkhead and at the OEM
Primary connector on the harness.

The fuel system features three relays with two sets of “trigger” wires (labeled as Single and Dual). When wired up, the pumps are activated just the same as with the OEM system. The Single runs one pump, and when the Dual circuit is activated – two more kick on.

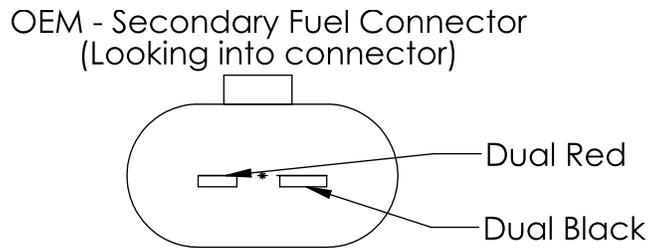


The “Single” wires activate a single pump and should be wired into primary OEM harness connector (5 pin). See diagram

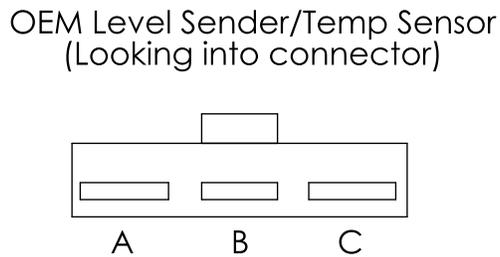
OEM - Primary Fuel Connector
(Looking into connector)



The "Dual" wires should be wired into the secondary OEM harness connector (2 pin). See Diagram



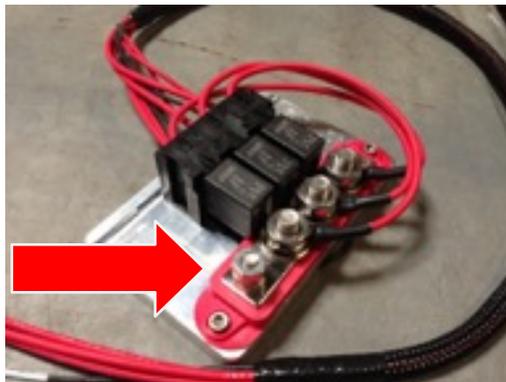
The "passthrough" level sender wires should be wired accordingly. (3 pin on the level sender). See Diagram.



Install the inline fuse to the positive terminal on the battery and run the 6GA power feed wire from the battery to the rear of the vehicle, along the fuel lines. You can crimp the 6GA wire to the in-line fuse holder.

Feed the power wire up and over the tank and have it come out by the fuel hat. It will be routed to the area under the subwoofer.

The power and relay plate is designed to be placed under the plastic subwoofer cover. There is a terminal on the Bus bar to accept the power feed (from batt). Run the power feed wire and crimp on the supplied terminal. Bolt to the bus bar (red arrow)



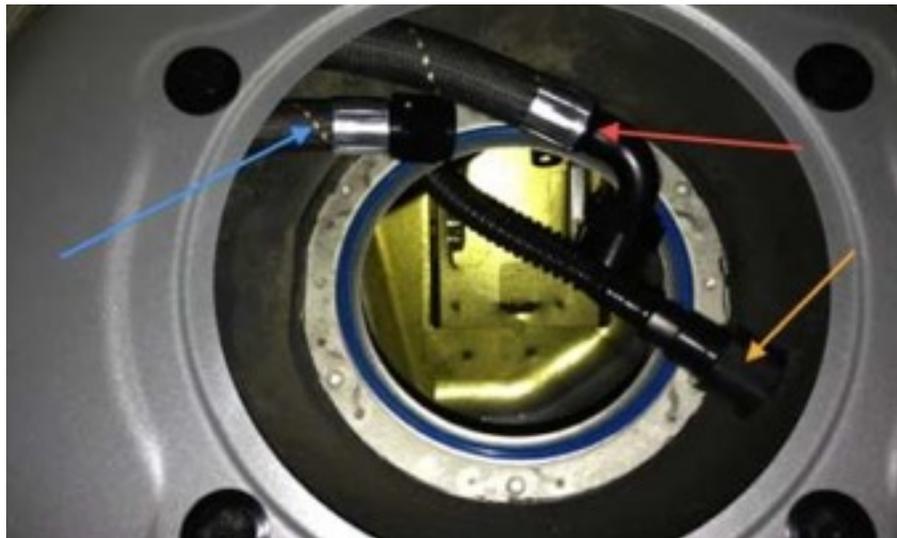
The pump system is grounded through the fuel hat bulkhead. Use the supplied ground wire to ground the bulkhead to the chassis as the nearest point.

Installation – Lines

This is the recommended fuel line routing. It is recommended, but not required, to remove the OEM feed and return lines, as well as the EVAP system to some extent. This de-clutters the engine bay and makes it easier to route the upgraded, larger lines.

It is highly recommended that a professional technician install the system. Careful to not crimp or bend the lines too much.

1. Locate all the supplied lines, rails and fittings
2. The main feed and return lines should be routed from the inside of vehicle, through the tank access opening.
3. The 10AN (larger) feed line should be run first, then the smaller 8AN line. The 10AN line needs to come around to the driver side of the fuel pump bulkhead assembly. (see image)
4. Snake the lines over and around the tank toward the bottom of the vehicle.
5. Lower the transmission and gas tank to create some room for routing of lines.
6. Once snaked through – pull the lines through until the fittings on the end are lined up with the fittings on the bulkhead of the fuel system



7. Raise the tank back up, feeding the lines back through slightly to not crimp the lines.
8. The feed and return lines run straight to the front of vehicle

9. The lines should snake around the front sub frame past the engine and run up along side the passenger side Intercooler piping. This takes the lines away from the heat of exhaust
10. Leave the feed/return lines loose in the upper engine bay.



11. Locate, assemble and mount the Fuel Pressure regulator, around the area of the VIN# - use the supplied bracket, fitting and gauge. Replace OE hose mounting bracket, reuse rubber isolators.



12. Prep the fuel rails by assembling the injectors, brackets, fittings and hoses.



13. Install fuel rails and run the hoses on the inside of the rails. The 180 deg fittings are at the front of the engine.



14. The Y-block attaches to at the back side of the engine to the two lines running to the front of the rails



15. The other hoses attach to the rear of the rails and run to the Fuel Pressure regulator



16. Run the Feed and return lines to the regulator and the y-block accordingly.
17. Trim the hoses as necessary and use the supplied fittings to finish the hose ends.
18. Assemble and tighten all fittings and connections.

Installation – Finalize install

1. Connect the negative terminal on the battery.
2. Put the vehicle into the on position - DO NOT START.
3. The pumps should prime, you will hear a buzz from the tank.
4. Look around the bulkhead area - check for fuel leaks and etc. Make sure all is dry and secure.
5. If all checks out, start the vehicle - let it idle.
6. Check for leaks
7. Verify wiring is good and does not get hot. Some warmth in the wiring is OK initially.
8. If all checks out. Reinstall the cover over the bulkhead, careful not to damage the power wire if you ran it from through the tank opening.
9. Replace the armrest, seats and speaker covers.
10. Place the seat back into place and lock in.