

INSTALLATION INSTRUCTIONS

FUEL RAIL FOR TOYOTA 2JZ-GE ENGINE

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Document# 19-0209

1. Refer to the factory Toyota Service Manual for disassembly questions.

To relieve fuel pressure, temporarily disconnect the fuel pump relay. Start and idle the vehicle and allow the engine to stall. Remove the fuel cap.

Turn the ignition OFF and remove the key.



2. Using a 10mm socket wrench, disconnect the battery's (-) negative terminal.

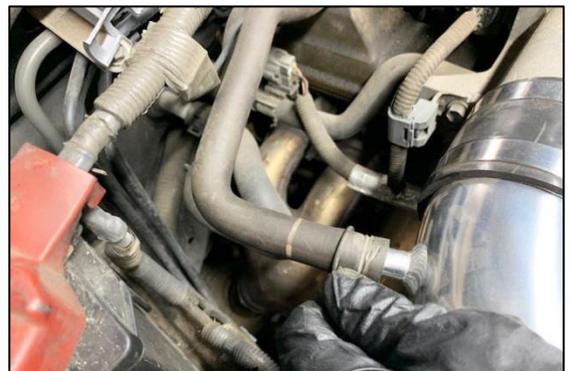
Install fender covers to protect the paint and body.



3. After the engine has cooled, unplug the mass air flow (MAF) sensor.



4. Using pliers, disconnect the crankcase breather hose from the intake pipe.



5. Using pliers, remove the vent valve hose from the intake pipe.



6. Remove the intake pipe from the throttle body.



7. As shown, remove the throttle cable adjustment screw using 14mm wrenches.

Remove the throttle cable end from the butterfly.



8. Unplug the TPS connector from the throttle body.



9. Unplug the APPS connector from the throttle body.



10. Using a flat blade, dislodge the wiring harness connection near the throttle body.



11. Unplug the throttle body motor connector.



12. Using needle nose pliers, dislodge the plastic wiring harness stay just under the throttle body.



13. Unplug the EVAP purge solenoid connector shown.



14. Remove the hose from the EVAP purge solenoid shown.



15. Remove the EVAP purge solenoid M6 bolt shown using a 10mm socket. Allow the solenoid to freely move. Removal is not necessary.



16. Using pliers dislodge the two spring clamps and remove the PCV valve hose from the vehicle.



17. Remove the 2 upper throttle body bolts using a 12mm socket wrench.



18. Remove the 2 lower throttle body bolts using a 12mm socket wrench. Remove the throttle body bracket.



19. **Late model and all California spec engines with Toyota Air Assist Fuel Injection**

Dislodge the spring clamp using pliers and pull off the hose.

NOTE: if the Toyota Air Assist Injection is going to be eliminated, this intake port will need to be capped with a simple 1/2" vacuum cap (not included).



20. Remove the four M8 bolts and two M8 nuts that mate the primary runners to the plenum using a 12mm socket wrench.



21. Remove the vacuum hose from the lower intake runners, as shown.



22. Dislodge the spring clamps and pull off both throttle body coolant hoses.



23. Remove the ACIS solenoid vacuum hose shown.



24. Carefully pull the intake manifold assembly upwards to remove.



25. Using a 10mm socket wrench, unscrew the two ACIS actuator mounting bolts.

Carefully rotate the actuator to move it out of the way. NOTE: a cable zip-tie can be handy, as shown.



26. Unplug the 6 fuel injector connectors.



27. Remove the vacuum hose shown.



28. Unplug the camshaft position sensor.



29. Unplug this noise filter connector.



30. Using a 10mm socket wrench, unscrew the three M6 nuts that secure the plastic injector wiring harness cover.

Next, temporarily remove the three wiring harness cover studs (shown) using an E5 Torx socket wrench.



31. Using a 22mm wrench, remove the fuel pulse damper mounted to the fuel feed banjo. Have a rag handy as fuel will spill from this connection.

For early 2JZ-GE engines that use a fuel rail-mounted fuel pressure regulator, remove the return hose.



32. If using the 20-0371-PK Plumbing Kit, the banjo fuel feed line will not be reused. This can be unbolted from the engine block or simply pushed out of the way as shown. If elected to keep it in the engine bay, blow the fuel out with compressed air.



33. Using a 12mm wrench unscrew the three M8x1.25mm fuel rail bolts.



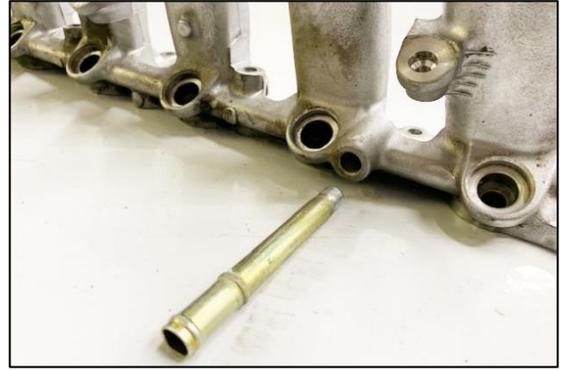
34. Carefully pull the fuel rail and injectors out of the engine bay.

Clean the injector seats and mask them from loose debris.



35. Late model and all California spec engines with Toyota Air Assist Fuel Injection

If using aftermarket fuel injectors that eliminate Toyota Air Assist, the long air pipe can be removed, but is not necessary. The port shown does NOT need to be capped or plugged.



36. Late model and all California spec engines with Toyota Air Assist Fuel Injection

Do not install the provided billet injector seats unless aftermarket injectors will be used that eliminate Toyota Air Assist. Check the radiumauto.com website for the list of confirmed fitment fuel injectors.

To install, lubricate each injector seat O-ring and press them in. A hammer and socket can be used, as shown.



37. Lubricate all adapter fitting O-rings and secure to the four 8AN ORB ports.

For 20-0371-PK Plumbing Kit, install the provided adapter fittings and fuel pulse damper, as shown.



38. Lubricate each fuel injector's top and bottom O-rings with engine oil.

As shown, install the fuel injectors to the engine first.

Reinstall the three OEM insulating spacers. Toyota P/N: 90561-08009



39. Lineup and place the fuel rail down on the engine. Fully seat the upper O-ring of the fuel injectors. NOTE: it is normal for the front of the fuel rail to be in slight contact with the engine harness cover, as shown.

Install the OEM M8 bolts and torque to 15ftlbs (21Nm) using a 12mm socket wrench.

Lineup the plastic fuel injector harness cover and reinstall the 3 studs using an E5 Torx. Next, install the 3 OEM nuts using a 10mm wrench.



40. For the 20-0371-PK plumbing kit, find a good vacuum source for the fuel pulse damper. Many 2JZ-GE engines use a vacuum cap on the vacuum port shown. This is one option for the vacuum signal.

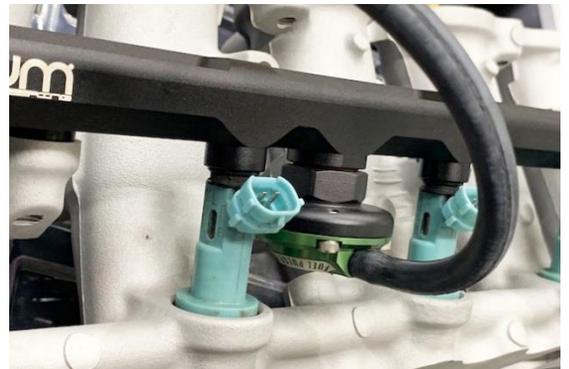


41. Another option for fuel pulse damper vacuum reference (for the 20-0371 plumbing kit) is this source pictured.



42. Insert the provided vacuum hose to the fuel pulse damper barb. The included "Y" fitting will be required if tapping into an existing vacuum hose.

Mock-up the new vacuum hose staying clear of hot areas or moving parts.



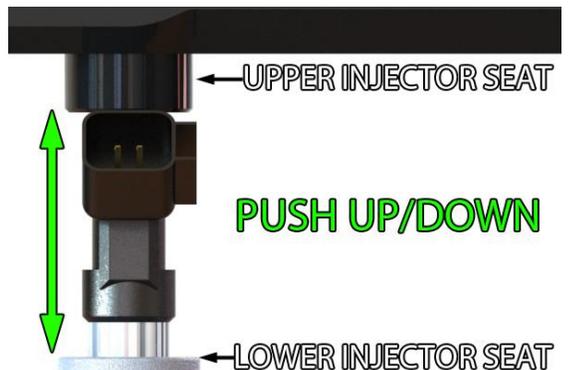
43. Cut the vacuum hose to length.

Reinstall the vacuum hose. These connections do NOT require clamps.



44. As a test, push the fuel injectors downward until they bottom out. Now inspect the injectors' upper O-rings and confirm they are still inserted into the fuel rail injector bores. Do not pressurize the fuel system until the proper height is achieved.

Orientate the fuel injectors such that the electrical connectors do not experience any interference with the surrounding area. Plug in each of the injector connectors.



45. Reminder: The basic fuel rail does not include fittings or a feed supply hose.

However, if using the 20-0371-PK Plumbing Kit, safely place the vehicle on jack stands. Remove the under paneling. This will differ depending on the vehicle, however, the fuel feed line will be on the LH side of the vehicle near the firewall.

Disconnect the hard line fuel fitting from the soft fuel rail hose. Be careful as this connection is typically weathered and has lots of corrosion. Screw the included inverted flare adapter fitting to the hard line fitting as shown using a $\frac{3}{4}$ " wrench.



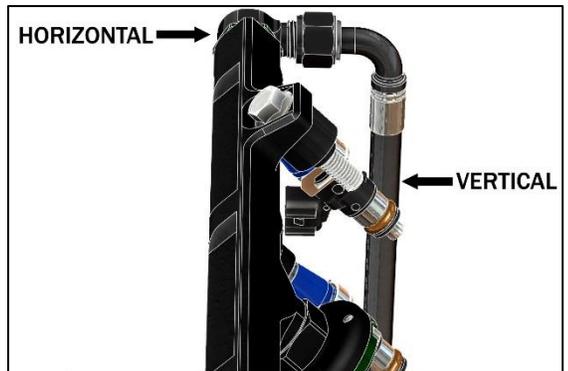
46. Find the included hose in the kit.

Using an 11/16" non-marring aluminum wrench, screw the 90 degree hose end to the rear fuel rail fitting and the 45 degree hose end to the inverted flare adapter fitting, as shown using a $\frac{3}{4}$ " wrench.



47. Orientate the fitting at the fuel rail feed line as shown.

The 8AN ORB to 6AN male 90 degree fitting should point towards the LH side of the vehicle. The 90 degree hose end should follow suit and be running down the firewall vertically.



48. Install everything in reverse order.

Start the engine and verify there are no leaks.

Installation Complete

