

READ BEFORE INSTALLATION

Full Function Engineering

1993-1995 Mazda RX-7 (FD3S)

13B-REW Fuel Rail Step Up Kit

FULL FUNCTION

Notice of Performance

Many of the parts that we sell are of a high performance nature and may cause additional stress on your vehicle. We cannot guarantee the integrity of your automobile. Full Function Engineering shall not be responsible for damages due to neglect or damages caused by products we sell. Some parts we sell are intended for off-highway use and may not be smog legal or D.O.T approved. Federal and State laws may prohibit use of said products on your vehicle; we recommend consulting your local authorities.

Be safe during installation and use your head on the road.

Failure to comply CAN cause an engine fire. Keep a fire extinguisher at hand.

WARNING

FFE rails are designed to be a perfect fit but require some attention to attain this.

Proper fitment is **YOUR** job to ensure.

(Full Function Engineering holds NO liability for improper install)

You should **NOT** have to tension the rail bolts to “snug” the injectors.

If your injectors will not rotate (with light force) or,

The spacers do not seat tightly between the rail and intake manifold/block,

DO NOT PROCEED.

The bolts should torque to the manufacturers recommended specifications with no gap between the spacer, rail and intake manifold.

These rails REQUIRE the removal of the plastic diffusers and associated spacers. Take precautionary steps when removing as they can break and fall into intake ports.

The provided spacers have a flat end which installs on the engine or intake manifold side. The protrusion inserts into the rail for alignment.

If you believe you received the incorrect fitment for your injectors or engine please refer to the bolt and spacer picture below and also our injector fitment guide on the website.

If you have questions, fitment issues or suggestions please contact us.

Included Parts:



1. 13B-REW Secondary Fuel Rail
2. 2x 34mm Rail spacer with M8 x 70mm Bolt
3. 2x Lower Injector insert with 4x o-rings
4. Fuelab Mini FPR with hardware
5. Fuelab 0-120 PSI Pressure Gauge
6. Swivel Adapter -6 ORB to -6 ORB
7. Swivel Adapter 90 degree -6 ORB to -6 Male AN
8. -6 ORB Plug
9. 2x Straight Push-lock -6 Hose End
10. Hardline adapter to -6 Male
11. 3x feet E85 compatible -6 push-lock hose
12. OEM Banjo Adapter 12mm to -6 ORB

1. Disconnect Battery.
2. Relieve fuel pressure using FSM procedures.
3. Remove OEM secondary fuel rail, secondary fuel injectors, and Air Control Valve following the procedures and precautions of the FSM.
4. CAUTIOUSLY remove plastic diffusers (air bleed sockets) in secondary injector bores of lower intake manifold. Breaking these during removal will result in debris falling into intake ports.
5. Install 34mm injectors (lube o-rings) into FFE secondary fuel rail with blue lower o-ring inserts. *See Injector Fitment Guide to ensure correct fitment.*
6. Bolt fuel rail with injectors to lower intake manifold ensuring o-rings have been fully seated. There should be no gaps under the rail spacers to rail but fuel injectors will still be able to rotate and move up and down slightly. Tighten to OEM spec 14-19 ft/lb.
7. Assemble and install FPR and fittings. Lube all o-rings prior to installation. *See Figure 1.*
 - a. Install the double sided swivel -6 ORB into one side port. Keep in mind the orientation of the gauge port as you may want to point the gauge towards the passenger side of the car for better visibility/accessibility.
 - b. Install the -6 ORB plug into the open side port.
 - c. Install the 90 degree swivel fitting into the bottom return port of the FPR with the -6 AN male pointed towards the driver's side of the car.
 - d. Install FPR to fuel rail at firewall end of rail.
 - e. Install the gauge or pressure sensor into the gauge port using Teflon tape.
8. Install FFE -6 ORB to 12mm banjo adapter into front port of the secondary rail. *See Figure 2.*
9. Reinstall banjo assembly to adapter. New crush washers are required.
10. Reinstall Air Control Valve using FSM procedures or install ACV block-off plate if necessary.

11. Install hardline adapter to OEM return line. Hard line adapters require cutting off 'nipple' on OEM line with small pipe cutters. Slide the nut on tube followed by the ferrule. Thread the adapter together so that ferrule squeezes the tube creating a compression seal.
12. Cut -6 hose to required length for return line. Leave some slack to make installation easier.
13. Assemble return fuel hose with straight hose ends on either side.

To assemble hose ends first cut hose to desired length. Keep in mind that some extra slack in hose can be beneficial for an easier install. Clamp the hose end in a vise firmly so that hose can be pressed onto the barb of the fitting. Apply liberal lubricant such as WD40 to both hose end and inside of hose. Using a heat gun on low setting (hair dryer could also work), GENTLY warm the rubber hose. DO NOT OVERHEAT hose or it can cause deformation. While hose is warm, press onto barb of fitting completely up to the stop. The hose end is now complete, but clamps are available for extra security.

14. Install return line ensuring hose ends are securely tightened.
15. Reconnect battery and prime fuel system to check for leaks. If there is a leak, STOP, disconnect battery and contact us for assistance.
16. With engine off and fuel pump running adjust FPR to desired fuel pressure.
17. Reinstall injector electrical connectors, upper intake manifold, and any other removed items using FSM procedures.

Figure 1.

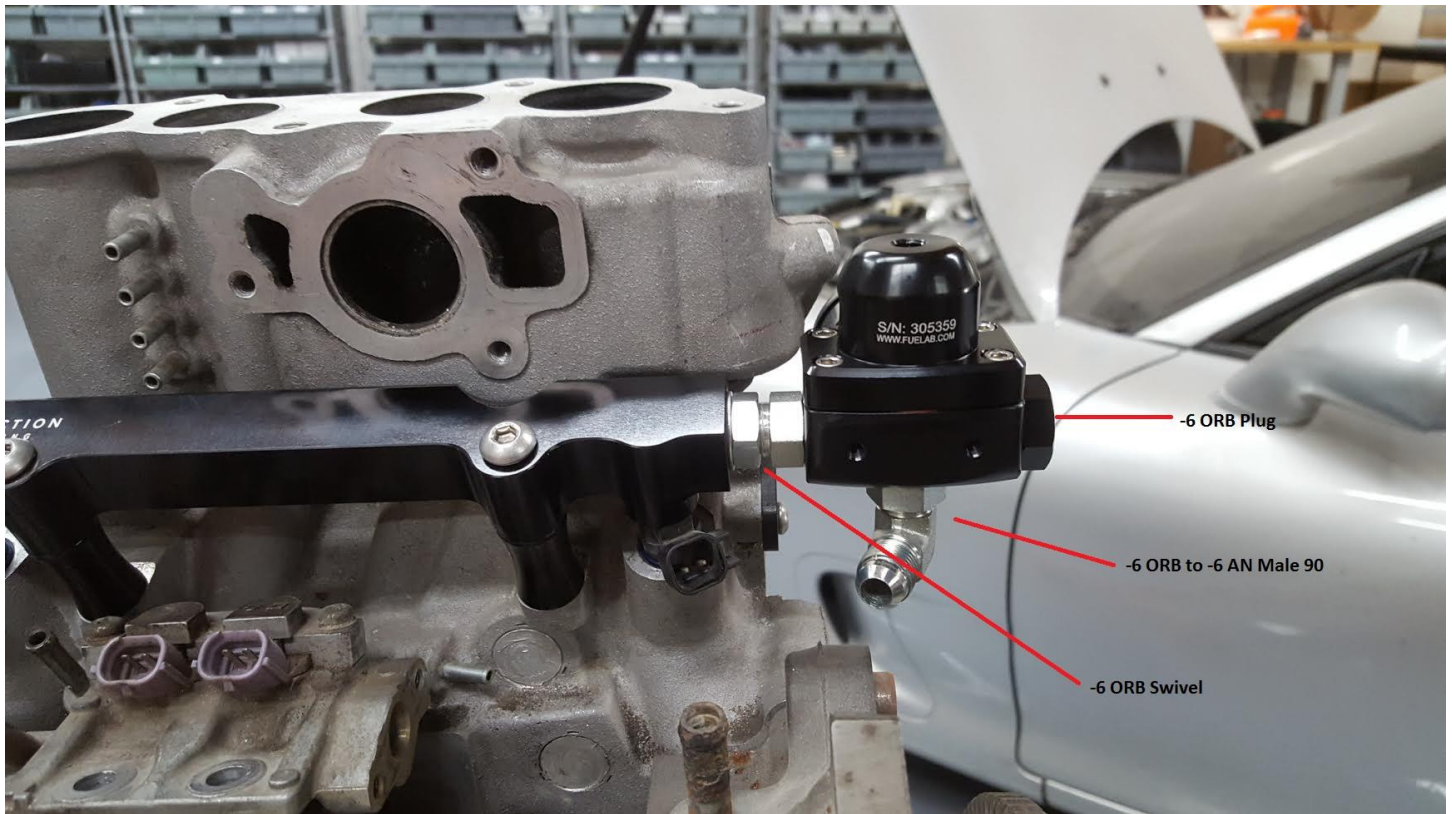


Figure 2.



Please contact us if you have any concerns or questions during install.

Email: fullfunctioneng@gmail.com