



INSTALLATION INSTRUCTIONS

Large ID Replacement Fuel Rail Kit

2005 – 2010 4.6l Ford Mustang

Part No. PF-3030



PF-3030 Contents

<u>Description</u>	<u>Qty.</u>
Fuel Rail	1
Fuel Rail w/FPS Adapter	1
Crossover Hose 8AN	1
90deg Swivel Fitting 8AN	2
End Fitting 8AN ORB	3
End Cap Fitting ORB	1
Fuel Rail to Manifold Bracket	4
Screw & Lock Washer ¼-20	4
180deg Swivel Fitting 8AN	1
Inlet Hose 8AN	1
Straight Hose Fitting 8AN	1
Female Quick Connector Adapter	1

The fuel rails contained in this kit replace the factory production fuel rails intended for use in a customized fuel system. This kit contains a provision for attachment of the OEM production fuel pressure sensor (FPS) directly to the fuel rail.

Caution:

Installation of this product involves handling of gasoline and should be conducted in a well ventilated area with fire safety equipment readily available. Work area should be free of open flames and other sources of ignition. Smoking in the work area is prohibited. Wear eye goggles and other appropriate safety apparel to protect from sprayed gasoline and other debris.

It is recommended that the installation be conducted by a qualified automotive technician with knowledge of automotive fuel systems and repair procedures.

This kit is not legal for sale or use on emission controlled motor vehicles in certain states. Check with local authorities for the specific regulations in your local area.

Installation Instructions:**Warning:**

Fuel rail and fuel lines may be under high pressure. Fuel system pressure must be properly relieved before opening system. Refer to vehicle manufacturer's service manual for proper fuel system bleed down procedures. Failure to properly relieve fuel system pressure may result in a fire or personal injury.

The enclosed fuel rail kit is intended to be installed on an unmodified production OEM intake manifold. Performance Fuel Systems, Inc. cannot guarantee fitment on an aftermarket intake manifold or modified production intake manifold and is not responsible for verifying proper fitment.

Removal of Production OEM Fuel Rail Assembly:

1. Disconnect battery negative cable. Relieve fuel system pressure per vehicle manufacturer's service manual.
2. Disconnect electrical connectors from each fuel injector. Note the location of each connector.
3. Clean any dirt or debris at the base of each fuel injector.
4. Place a shop towel underneath the fuel supply feed line quick connector at the fuel rail, disconnect the supply feed line from the fuel rail. A quick connect disconnect tool is required for the removal of the feed line from the quick connector. Use the shop towel to catch any fuel spillage.
5. Disconnect any vacuum lines or electrical wiring that may interfere with the removal of the fuel rails.
6. Remove the 4 bolts holding the fuel rail to the intake manifold.
7. Remove the fuel rail with injectors by gently pulling up on the fuel rail assembly. Do not separate the fuel injectors from the fuel rail while removing from the intake manifold.
8. Using a shop towel beneath the fuel rail assembly, remove the injector retaining clip holding the fuel injector to the fuel rail and gently pull the injector out of the fuel rail port. There may be a considerable amount of fuel remaining in the fuel rail which will drain upon removal of the fuel injectors. Use a drain cup or shop towel to catch any gasoline that may leak out from the fuel rail.

Note: Failure to properly follow safe handling procedures can result in fire or personal injury.

Assembly and Installation:

1. Lightly oil the Fuel Pressure Sensor (FPS) o-ring (FPS not included in this kit) and install into the Performance Fuel Systems, Inc. fuel rail which has the circular adapter, being careful not to damage the o-ring. Position of the FPS can be varied to your desired location but generally the wire connector terminal should be facing the front of the engine.

See Figure 1.

2. Clean and inspect the original Fuel Pressure Sensor (FPS) mounting screws (replace if necessary). Align the mounting holes of the FPS to the screw holes in the fuel rail adapter. Tighten and torque screws per vehicle manufacturer's recommended specifications.



Figure 1

3. Install supplied mounting bracket and 1/4-20 screw with lock washer to the logo side of the Performance Fuel Systems, Inc. fuel rail. Install so that the bracket with the slotted hole is facing upwards and the bracket top surface is parallel with the fuel rail. **See Figure 2.** Tighten bracket into position onto fuel rail. Repeat for remaining three brackets.



Figure 2

4. Install supplied 8AN ORB (O-Ring Boss) end fittings and ORB end cap fitting into the fuel rail ends. **Figure 3** Suggested configuration is to install an 8AN ORB fitting in each end of the fuel rail that faces the rear of the vehicle. The remaining 8AN ORB fitting should be installed on the fuel rail end facing forward on the driver side of the engine. The ORB end cap (hex cap configuration in updated kits) should be installed on the fuel rail end facing forward on the passenger side of the engine. See **Figure 5** below for suggested assembly configuration. Do not use thread sealant on these fittings. Tighten the fittings being careful that the o-rings seat into the fuel rail ends. Do not over torque.



Figure 3

5. Remove, inspect and clean both o-rings from the fuel injectors. It is recommended to replace the o-rings prior to re-installation. O-rings are available at your vehicle's manufacturer service center or auto parts store.

6. Install the o-rings onto the fuel injectors carefully as to not cut or damage the o-ring.

7. Lightly oil upper fuel injector o-rings and insert fuel injectors into the Performance Fuel Systems, Inc. fuel rail ports being careful not to cut or damage the o-rings. The OEM production injector retaining clips are not required.

8. Position fuel injectors so that the wire connector terminals are pointing in the opposite direction of the mounting brackets. **See Figure 4.**

9. Lightly oil the bottom fuel injector o-rings and install the fuel rail – injector assembly by lining up and inserting the fuel injectors into the intake manifold ports making sure the top end of the injectors do not dislodge from the fuel rail.

Important: Position the fuel rails into the intake manifold so that the brackets are facing inward and the fuel injector wiring connectors are facing outboard.



Figure 4

10. Insert the fuel rail assembly so that the injectors bottom out in their intake manifold ports. Make sure that the fuel injector o-rings are fully seated in the intake ports as well as the fuel rails ports. For both ends of the fuel injector, the o-rings should be seated so that neither are exposed. Check to make sure the fuel rail bracket mounting slots are aligned with the intake manifold mounting screw holes.

11. Inspect and clean the production fuel rail to intake manifold attachment screws. Replace if necessary. Align and install screws through the slotted fuel rail brackets and thread into the intake manifold. Tighten and torque screws per vehicle manufacturer's recommended specification.

12. Check proper alignment of fuel injectors. Fuel injectors should be perpendicular to the fuel rail and sitting straight in the intake ports. If alignment is not correct, loosen and adjust mounting brackets to the intake manifold and/or recheck the position of the brackets to the fuel rail.

13. Assemble supplied 90deg. swivel fittings to each end of supplied braided hose (long hose supplied in kit). Follow hose-fitting instructions below.

Step 1: Remove tape from each hose end being careful not to fray the ends.

Step 2:

Unthread hose socket from fitting and insert on the end of the hose. While verifying that the hose is fully seated, place a mark on the hose to confirm that the hose socket doesn't move during the balance of the assembly process.

Step 3:

For ease of installation, lubricate the inside of the hose and nipple threads. Use a 30W oil or equivalent lubricating product. While holding the hose with the other hand start threading the lubricated nipple into the hose socket.

Step 4:

Insert the hose socket into a vise. Check the mark that was previously made on the hose to confirm it has not pushed out of the socket while installing the nipple.

Step 5:

Using a proper wrench, turn clockwise pulling the nipple into the hose socket while checking the mark on the hose during the entire process. Do not over tighten as the finished product should have a gap of approximately .031 inches.

14. Connect the hose assembly to the fuel rails by attaching each 90deg. hose fitting to an 8AN ORB fitting facing the rear of the vehicle. Tighten the fittings into position. **See Figure 5.**

15. Following hose assembly instructions in step 13. above, assemble supplied 180deg. swivel connector to end of short braided hose supplied in the kit. Assemble straight hose connector to the opposite end of short braided hose. **See Figure 5.**

16. Screw and tighten stainless steel female Quick Connector adapter to open/female end of straight hose connector. **See Figure 6.**



Figure 6

17. Connect vehicle's fuel supply line male quick connector to female side of stainless steel Quick Connector adapter.

18. Reinstall vacuum hoses and electrical wiring.

LIMITED WARRANTY

This Performance Fuel Systems, Inc. product is warranted to be free from defects in materials and workmanship for a period of one year from the original date of purchase. Warranty claims must include authentic, dated proof of purchase.

All claims must be made by the original retail purchaser directly to Performance Fuel Systems, Inc. by calling 248-914-8732 or by e-mail sales@performancefuelsystems.com in order to review proof of purchase and to receive a Returned Material Authorization (RMA) number and return shipping instructions. All returns are to include the RMA number and are to be shipped pre-paid freight by the retail purchaser. All returned product will be inspected for improper installation, modifications and misapplication. If the product is determined to be defective, the retail purchaser will be refunded the value of the sale price and will not include costs associated to direct, incidental or consequential damages. This Limited Warranty covers only the product itself and not the cost of installation or removal.

Performance Fuel Systems, Inc. expressly retains the right to make changes and improvements at any time in any product the company manufactures and sells. Changes and improvements may be made without notice and without any obligation to change published materials.

This Limited Warranty is in lieu of and excludes all other warranties, expressed or implied. This Limited Warranty gives you specific legal rights. Other rights may be applicable which vary from state to state.



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