

Component Procedures: Fuel Rail

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Component Procedures: Fuel Rail

Parts and Labor (itype_189)

Parts

Qualifier	Part #	Name	Price	Note
Fuel Rail > Right	12629929	Fuel Rail	270.52	
Fuel Rail > Left	12633593	Fuel Rail	285.22	

Labor

Operation	Qualifier Path	Skill	Std Hrs	Wty Hrs
Remove & Replace	Fuel Injection > Fuel Rail, R&R > One Bank	B	3.3	1.4
Remove & Replace	Fuel Injection > Fuel Rail, R&R > Both Banks	B	3.8	0.0

Fuel Injection Fuel Rail Assembly Replacement - Bank 1 (Article 11425)

Special Tools

EN-49248 - Injector Rail Assembly Remover

Equivalent regional tools: Special Tools

Removal Procedure

- Relieve the fuel system pressure. Fuel Pressure Relief
- Remove the fuel pipe shield. Fuel Pipe Shield Replacement
- Remove the intake manifold. Intake Manifold Replacement
- Remove and DISCARD the fuel feed intermediate pipe. Fuel Feed Intermediate Pipe Replacement
- Remove the upper fuel injection fuel rail noise shield.
- Disconnect the engine wiring harness from the fuel injector wiring harness es as necessary.
- Remove the fuel injector wiring harnesses from any brackets as necessary.
- Remove the bank 1 fuel injection fuel rail fasteners (1). Click for full-size image
- Remove the bank 2 fuel injection fuel rail fasteners (1) for clearance purposes. Click for full-size image
- Use the EN-49248–4 - hooks to slowly work the fuel injection fuel rail (1) upwards in small, even increments. Click for full-size image
- Once the fuel injection fuel rail (1) is free, remove the EN-49248 - remover components.
- Slide the fuel injection fuel rail (1) toward the rear of the engine approximately 25 mm (1 in) and remove it from the vehicle. Click for full-size image
- Once the fuel injection fuel rail is removed, clean and inspect the fuel injectors . Fuel Rail and Injectors

Cleaning and Inspection

Installation Procedure

- Starting approximately 25 mm (1 in) at the rear of the engine, lower the fuel injection fuel rail (1) and slide it forward to align the fuel injectors with the cylinder head bores. Click for full-size image
- Start and hand tighten the two outer fuel injection fuel rail fasteners to seat the fuel injectors. Click for full-size image
- Start and hand tighten the remaining fuel injection fuel rail fasteners.
- In the sequence shown in the graphic, tighten the fuel injection fuel rail fasteners to:
 - First Pass: 12 Nm (106 lb in)
 - Final Pass: 23 Nm (17 lb ft)
- Install the fuel injector wiring harnesses to any brackets as necessary.
- Connect the engine wiring harness to the fuel injector wiring harnesses as necessary.
- Install a NEW fuel feed intermediate pipe. Fuel Feed Intermediate Pipe Replacement
- Inspect for leaks using the following procedure:
 - Turn ON the ignition with the engine OFF for 2 seconds.
 - Turn OFF the ignition for 10 seconds.
 - Turn ON the ignition with the engine OFF.
- Inspect for fuel leaks.
- Install the upper fuel injection fuel rail noise shield.
- Install the intake manifold. Intake Manifold Replacement
- Install the fuel pipe shield. Fuel Pipe Shield Replacement

Fuel Injection Fuel Rail Assembly Replacement - Bank 2 (Article 11426)

Special Tools

EN-49248 - Injector Rail Assembly Remover

Equivalent regional tools: Special Tools

Removal Procedure

- Relieve the fuel system pressure. Fuel Pressure Relief
- Remove the fuel pipe shield. Fuel Pipe Shield Replacement
- Remove the intake manifold. Intake Manifold Replacement
- Remove and DISCARD the fuel feed intermediate pipe. Fuel Feed Intermediate Pipe Replacement
- Remove the upper fuel injection fuel rail noise shield.
- Disconnect the engine wiring harness from the fuel injector wiring harnesses as necessary.
- Remove the fuel injector wiring harnesses from any brackets as necessary.
- If equipped, cut the tie strap (1). Click for full-size image
- Disconnect the fuel pressure sensor electrical connector (2).
- Remove the fuel pressure sensor (3).
- Remove the bank 2 fuel injection fuel rail fasteners (1). Click for full-size image
- Remove the bank 1 fuel injection fuel rail fasteners (1) for clearance purposes. Click for full-size image
- Use the EN-49248—4 - hooks to slowly work the fuel injection fuel rail (1) upwards in small, even increments. Click for full-size image
- Once the fuel injection fuel rail (1) is free, remove the EN-49248 - remover components.
- Slide the fuel injection fuel rail (1) toward the rear of the engine approximately 25 mm (1 in) and remove from the vehicle. Click for full-size image
- Once the fuel injection fuel rail is removed, clean and inspect the fuel injectors . Fuel Rail and Injectors Cleaning and Inspection

Installation Procedure

- Starting approximately 25 mm (1 in) at the rear of the engine, lower the fuel injection fuel rail (1) and slide it forward to align the fuel injectors with the cylinder head bores. Click for full-size image
- Start and hand tighten the two outer fuel injection fuel rail fasteners to seat the fuel injectors. Click for full-size image
- Start and hand tighten the remaining fuel injection fuel rail fasteners.
- In the sequence shown in the graphic, tighten the fuel injection fuel rail fasteners to:
- First Pass: 12 Nm (106 lb in)
- Final Pass: 23 Nm (17 lb ft)
- Install and tighten the fuel pressure sensor (3) to 33 Nm (24 lb ft) . Click for full-size image
- Connect the fuel pressure sensor electrical connector (2).
- If equipped, install a NEW tie strap (1).
- Install the fuel injector wiring harnesses to any brackets as necessary.
- Connect the engine wiring harness to the fuel injector wiring harnesses as necessary.
- Install a NEW fuel feed intermediate pipe. Fuel Feed Intermediate Pipe Replacement
- Inspect for leaks using the following procedure:
- Turn ON the ignition with the engine OFF for 2 seconds.
- Turn OFF the ignition for 10 seconds.
- Turn ON the ignition with the engine OFF.
- Inspect for fuel leaks.
- Install the upper fuel injection fuel rail noise shield.
- Install the intake manifold. Intake Manifold Replacement
- Install the fuel pipe shield. Fuel Pipe Shield Replacement

Fuel Rail Stop Bracket Installation Warning (Article 13056)

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Warning:

The fuel rail

stop bracket must be installed onto the engine assembly. The stop bracket serves as a protective shield for the fuel rail in the event of a vehicle frontal crash. If the fuel rail stop bracket is not installed and the vehicle is involved in a frontal crash, fuel could be sprayed possibly causing a fire and personal injury from burns.

All Technical Service Bulletins (itype_100)

Tsbs

- Fuel System - Cold Start Misfire After Engine/Fuel Sys Repair (PI1296, 2014/08/19)

Repair Tips (itype_110)

Tsbs

- Fuel System - Cold Start Misfire After Engine/Fuel Sys Repair (PI1296, 2014/08/19)