Dorman 904-231

Dorman 904-231 Diesel Fuel Injector Rail Plug Instruction Manual

Model: 904-231

1. Introduction

This manual provides detailed instructions for the installation, maintenance, and troubleshooting of the Dorman 904-231 Diesel Fuel Injector Rail Plug. This component is designed as a direct replacement for the original part in specific diesel vehicles, ensuring proper function of the high-pressure oil system for fuel injectors.
Compatibility: This part is compatible with various Ford models. To confirm fitment for your specific vehicle, please refer to the vehicle compatibility list below or consult your vehicle's service manual.

- Ford E-350 Club Wagon: 2004, 2005
- Ford E-350 Super Duty: 2004-2010
- Ford E-450 Super Duty: 2004-2008
- Ford Excursion: 2003-2005
- Ford F-250 Super Duty: 2004-2007
- Ford F-350 Super Duty: 2004-2007
- Ford F-450 Super Duty: 2004-2007
- Ford F-550 Super Duty: 2004-2007

2. Product Overview

The Dorman 904-231 Diesel Fuel Injector Rail Plug is engineered to maintain high-pressure oil within the oil rails, which is critical for powering the fuel injectors in diesel engines. It is constructed from durable materials to ensure longevity and reliable performance.

Key Features:

- **Direct Replacement:** Designed to match the fit and function of the original equipment part.
- **Durable Construction:** Manufactured from high-quality materials for extended service life.
- **Essential Repair:** Addresses issues caused by leaking high-pressure oil tubes, which can lead to poor engine performance or non-starting conditions.

- **O-Ring Replacement:** O-rings are crucial components that require replacement when servicing the oil galley to prevent leaks.

Figure 1: Dorman 904-231 Diesel Fuel Injector Rail Plug (Main View)
This image displays the Dorman 904-231 Diesel Fuel Injector Rail Plug, highlighting its threaded end and O-rings, which are essential for sealing the high-pressure oil system.

Figure 2: Dorman 904-231 Diesel Fuel Injector Rail Plug (Side View)
A side view of the Dorman 904-231 Diesel Fuel Injector Rail Plug, showing its full length and the placement of multiple O-rings along its body for effective sealing.

3. Installation Instructions

The installation of the Dorman 904-231 Fuel Injector Rail Plug involves working with the vehicle's high-pressure oil system. It is recommended that this procedure be performed by a qualified technician. Always

ensure the engine is cool and the battery is disconnected before beginning any work.

Tools and Materials:

- 12mm wrench/socket (for valve cover bolts)
- T30 Torx bit (for oil rail bolts)
- 12mm Hex/Allen bit (for dummy plug and standpipe)
- Needle-nose pliers (for removing standpipe)
- Assembly lubricant (for O-rings)
- Torque wrench
- Clean rags
- Replacement Dorman 904-231 Fuel Injector Rail Plug
- High-pressure oil stand pipe (if replacing, sold separately)

Procedure:

1. **Preparation:** Ensure the engine is cool. Disconnect the vehicle's battery. Remove any components obstructing access to the valve covers, such as the intercooler pipe and glow plug control module.
2. **Remove Valve Covers:** Loosen and remove the 12mm bolts securing the valve covers. Carefully lift the valve covers to expose the oil rail and injectors.
3. **Loosen Dummy Plug and Standpipe:** Before removing the oil rail, use a 12mm hex/Allen bit to loosen the dummy plug and standpipe. This prevents damage during oil rail removal.
4. **Remove Oil Rail:** Remove the T30 Torx bolts securing the oil rail. Carefully lift the oil rail straight up to avoid damaging the injector O-rings. Allow any residual oil to drain.
5. **Inspect Ball Tubes:** While the oil rail is out, inspect the ball tubes. They should move freely but not be excessively loose. Replace O-rings or tubes if necessary.
6. **Remove Old Rail Plug and Standpipe:** Use needle-nose pliers to carefully extract the old fuel injector rail plug and standpipe from the oil rail.
7. **Install New Rail Plug and Standpipe:** Apply a light coat of assembly lubricant to the O-rings of the new Dorman 904-231 Fuel Injector Rail Plug and standpipe. Gently guide them into their respective positions in the oil rail. Ensure they are seated correctly.
8. **Reinstall Oil Rail:** Carefully lower the oil rail back into place, ensuring the new rail plug and standpipe align with the injectors. Torque the T30 Torx bolts to 10 ft-lbs in a criss-cross pattern, working from the center outwards.
9. **Torque Dummy Plug and Standpipe:** Torque the dummy plug and standpipe to 60 ft-lbs.
10. **Reassemble:** Reinstall the valve covers, ensuring all bolts are tightened to manufacturer specifications. Reconnect the intercooler pipe, glow plug control module, and any other removed components. Reconnect the battery.
11. **Initial Start-up:** The engine may require extended cranking to prime the high-pressure oil system. Allow the engine to run for 10-20 minutes to circulate oil and purge air. Shut off the engine, wait 5-10 minutes, then restart to confirm proper operation.

Installation Video Reference:

Video 1: Upgraded Standpipe 2004-2010 Power Stroke Installation (Source: AUTO4YOU)
This video provides a visual guide for the installation process of an upgraded standpipe, which is part of the high-pressure oil system. The steps shown are highly relevant to the installation of the Dorman 904-231 Fuel Injector Rail Plug and associated components.

Video 2: 6E7Z9A332B Fuel Supply Tube Stand Pipe Dummy Plug Kit (Source: Rogierra Direct)
This video demonstrates the components of a fuel supply tube stand pipe dummy plug kit, offering insights into the parts involved in the high-pressure oil system and their assembly.

Video 3: Upgraded Standpipe Design Prevents High-pressure Oil Leaks (Source: AUTO4YOU)
A brief video highlighting the design improvements in upgraded standpipes aimed at preventing high-pressure oil leaks, which is directly related to the function of the Dorman 904-231.

4. Maintenance

Regular maintenance of your vehicle's high-pressure oil system is crucial for optimal engine performance and longevity. The Dorman 904-231 Fuel Injector Rail Plug is designed for durability, but its associated O-rings are wear items.

- **O-Ring Inspection and Replacement:** Whenever the oil rail is removed for service, it is highly recommended to replace all O-rings on the rail plug, standpipe, and injectors. Worn or damaged O-rings are a common cause of high-pressure oil leaks.
- **Oil Quality:** The high-pressure oil system relies on clean, high-quality engine oil. Follow your vehicle manufacturer's recommended oil change intervals and use the specified oil type to prevent premature wear and breakdown of oil properties.

5. Troubleshooting

Issues with the high-pressure oil system can manifest in several ways. If you experience any of the following symptoms after installation or during vehicle operation, consider inspecting the rail plug and related components:

- **Extended Cranking:** The engine takes longer than usual to start, especially when warm. This can indicate a loss of high-pressure oil.
- **Rough Idling or Poor Performance:** Inconsistent engine operation, misfires, or a noticeable drop in power can be linked to insufficient oil pressure to the injectors.
- **Oil Leaks:** Visible oil leaks around the valve covers or oil rail area.
- **Diagnostic Trouble Codes (DTCs):** Certain engine codes related to oil pressure or injector performance may appear.

If troubleshooting these issues, always re-check O-ring seating, torque specifications, and the condition of the rail plug and standpipe. Ensure no debris has entered the oil system during installation.

6. Specifications

Attribute	Detail
Manufacturer	Dorman Products
Brand	Dorman
Model	904-231
Item Weight	3.2 ounces
Product Dimensions	2.5 x 2.5 x 3.4 inches
Manufacturer Part Number	904-231

OEM Part Number	DEC023908; W302908
Special Features	Durable
ASIN	B0083H5PDO
Date First Available	July 13, 2012
What's in the Box	Rail Plug

7. Warranty and Support

Information regarding the product warranty and customer support is not available in the provided data. Please refer to the official Dorman website or contact Dorman customer service for details on warranty coverage and technical assistance.