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HIRINTOL 3087557 / ISM M11 ISM11 QSM11

HIRINTOL Diesel Fuel Injector User Manual

Model: 3087557 / ISM M11 ISM11 QSM11

Introduction

This manual provides essential information for the HIRINTOL 3087557, 3087557RX, 3087557PX Diesel Fuel Injector. This component is designed for use with Cummins ISM, M11, ISM11, and QSM11 Celect Plus Engines found in medium and heavy-duty trucks, petroleum machinery, and generator sets. Please read this manual thoroughly before installation and operation to ensure proper function and longevity of the product.

Product Overview

The HIRINTOL Diesel Fuel Injector is an aftermarket replacement part engineered to meet or exceed original equipment (OE) specifications. It is constructed from durable metal and designed for direct replacement in compatible engine systems.

Key Features:

- **Reference Part Numbers:** 3087557, 3087557RX, 3087557PX.
- **Compatibility:** Specifically designed for Cummins ISM M11, ISM11, and QSM11 Celect Plus Engines.
- **High-Standard Production:** Manufactured with precision control, using high-quality raw materials and OE specifications for excellent performance and a perfect fit.
- **Durable Material:** Made from premium, long-lasting metal to ensure strength, durability, and extended service life.
- **Direct Replacement:** Pre-tested and designed for easy installation, providing a perfect match to the original part.



Image 1: Side view of the HIRINTOL Diesel Fuel Injector, showing its overall structure and electrical connector.



Image 2: Close-up views highlighting the injector tip, spring mechanism, part markings, and electrical connector.

Specifications

Specification	Detail
Part Type	Fuel Injector
Fuel Type	Diesel
Material	Metal
Item Condition	Aftermarket Part
Reference Numbers	3087557, 3087557RX, 3087557PX
Compatible Engine Models	Cummins ISM M11, ISM11, QSM11 Celect Plus

Specification	Detail
Inlet Connection Type	Threaded
Outlet Connection Type	SAE
Number of Ports	2
Valve Type	Needle Valve
Included Components	1pc 3087557 3087557RX 3087557PX Diesel Fuel Injector

Setup and Installation

Important: Installation of diesel fuel injectors requires specialized tools, knowledge, and experience. Improper installation can lead to engine damage, fuel leaks, and safety hazards. It is highly recommended that this product be installed by a qualified and certified diesel engine technician.

General Guidelines (for professional technicians):

1. **Safety First:** Ensure the engine is cool, disconnected from power, and all safety precautions are followed. Wear appropriate personal protective equipment (PPE).
2. **Depressurize Fuel System:** Before beginning any work, safely depressurize the fuel system according to the engine manufacturer's service manual.
3. **Remove Old Injector:** Carefully disconnect electrical connectors and fuel lines from the old injector. Remove any retaining clamps or bolts. Extract the old injector, taking care not to damage the injector bore or fuel rail.
4. **Inspect and Clean:** Thoroughly inspect the injector bore and fuel rail for any debris, corrosion, or damage. Clean as necessary to ensure a proper seal for the new injector.
5. **Install New Injector:** Apply a thin layer of clean engine oil or appropriate lubricant to the new injector's O-rings and seals. Carefully insert the new injector into the bore, ensuring it seats correctly.
6. **Secure and Connect:** Reinstall retaining clamps or bolts and torque them to the engine manufacturer's specifications. Reconnect fuel lines and electrical connectors, ensuring all connections are secure.
7. **Bleed Air and Test:** Follow the engine manufacturer's procedure to bleed air from the fuel system. Start the engine and carefully check for any fuel leaks or abnormal operation.

Refer to your specific Cummins engine service manual for detailed, model-specific installation instructions and torque specifications.

Operating Principles

The diesel fuel injector is a critical component of the engine's fuel delivery system. Its primary function is to atomize and inject a precise amount of diesel fuel into the engine's combustion chamber at the correct time and pressure. This process is electronically controlled by the engine's Electronic Control Module (ECM).

How it Works:

- **Fuel Delivery:** High-pressure diesel fuel is supplied to the injector from the fuel pump and common rail system.
- **ECM Signal:** The ECM sends an electrical signal to the injector's solenoid or piezoelectric actuator.
- **Nozzle Opening:** This signal causes a needle valve within the injector to lift, opening the nozzle.
- **Fuel Atomization:** The high-pressure fuel is then forced through tiny orifices in the nozzle, creating a fine mist (atomization) that mixes efficiently with air for combustion.
- **Precise Control:** The duration and timing of the injection are precisely controlled by the ECM to optimize engine performance, fuel efficiency, and emissions.

Proper operation of the fuel injector is essential for smooth engine running, optimal power output, and reduced fuel consumption.

Maintenance

While fuel injectors are designed for durability, proper engine and fuel system maintenance can significantly extend their lifespan and ensure optimal performance.

Recommended Maintenance Practices:

- **Use Clean Fuel:** Always use high-quality, clean diesel fuel. Contaminants in fuel are a leading cause of injector failure.
- **Regular Fuel Filter Replacement:** Adhere strictly to the engine manufacturer's recommended intervals for fuel filter replacement. A clogged fuel filter can starve injectors or allow contaminants to pass through.
- **Fuel System Additives:** Consider using a reputable diesel fuel additive designed to clean injectors and prevent deposits, especially in engines prone to carbon buildup. Follow product instructions carefully.
- **Professional Inspection:** Have your fuel system and injectors professionally inspected during routine engine servicing. Technicians can identify early signs of wear or malfunction.
- **Avoid Running Out of Fuel:** Repeatedly running the fuel tank dry can introduce air into the fuel system and potentially damage fuel system components, including injectors.

Do not attempt to clean or repair the injector yourself unless you are a trained professional with the correct equipment. Disassembly can cause irreparable damage.

Troubleshooting

If you experience issues with your engine's fuel system, consult a qualified technician. The following are common symptoms that may indicate a fuel injector issue:

Common Symptoms of Fuel Injector Problems:

- **Engine Misfires or Rough Idling:** A faulty injector may not deliver fuel consistently, leading to uneven engine operation.
- **Reduced Engine Performance:** Loss of power, poor acceleration, or decreased fuel efficiency can be signs of an injector not spraying correctly.
- **Increased Exhaust Smoke:** Excessive black smoke (unburnt fuel) or white smoke (water/coolant or unburnt fuel in cold conditions) can indicate improper fuel atomization.
- **Check Engine Light (CEL):** The engine's ECM may detect an injector malfunction and illuminate the CEL, often accompanied by a diagnostic trouble code (DTC).
- **Fuel Leaks:** Visible fuel leaks around the injector or fuel rail indicate a sealing issue or physical damage.
- **Hard Starting:** Difficulty starting the engine, especially when cold, can be caused by injectors not delivering enough fuel during startup.

If any of these symptoms occur, it is crucial to have the engine diagnosed by a professional. Attempting to repair or replace injectors without proper tools and expertise can cause further damage.

Warranty and Support

Product Warranty:

This HIRINTOL Diesel Fuel Injector comes with a **6-month warranty period** from the date of purchase. During this period, if any manufacturing defects or performance issues arise under normal operating conditions, repair or replacement service will be provided. This warranty covers defects in materials and workmanship.

The warranty does not cover damage resulting from improper installation, misuse, neglect, accident, unauthorized modification, or normal wear and tear. Proof of purchase is required for all warranty claims.

Customer Support:

For technical assistance, warranty claims, or any questions regarding your HIRINTOL Diesel Fuel Injector, please contact your point of purchase or refer to the contact information provided by the seller. When contacting support, please have your product model number (3087557 / ISM M11 ISM11 QSM11) and purchase details readily available.

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