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HIRINTOL 478-7932

HIRINTOL 478-7932 ECM Controller Electronic Control Module User Manual

For Caterpillar Engines and Heavy Equipment

1. Introduction

This manual provides essential information for the proper installation, operation, and maintenance of the HIRINTOL 478-7932 Electronic Control Module (ECM). The ECM serves as the central nervous system for your engine, managing critical functions to ensure optimal performance and efficiency. Please read this manual thoroughly before attempting any installation or service.

2. Product Overview

The HIRINTOL 478-7932 ECM is a robust electronic unit designed to control various engine parameters. It processes data from multiple sensors to provide precise control over fuel injection, ignition timing, and other critical engine functions. This module is an aftermarket replacement part engineered to meet the specifications of original equipment.

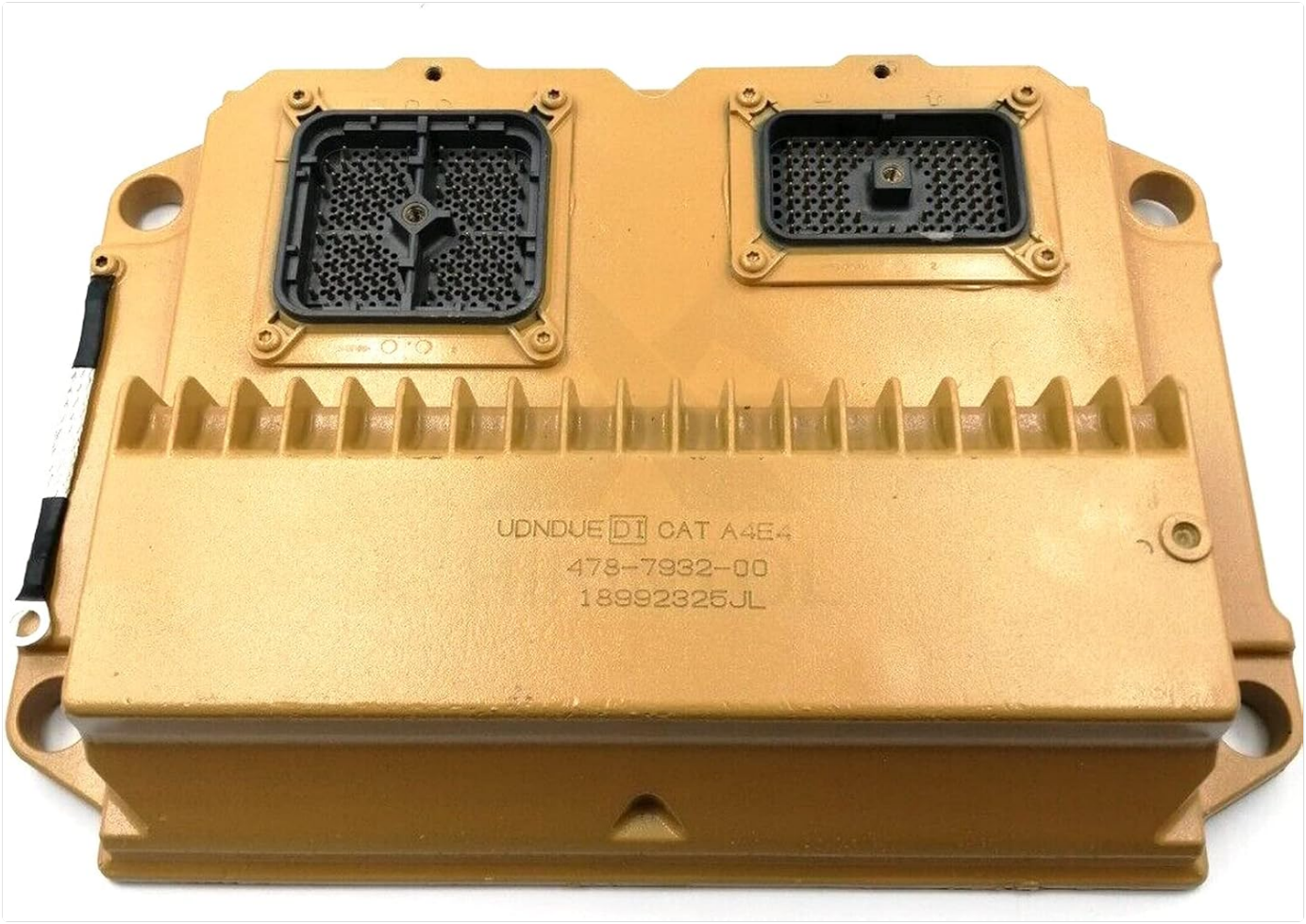


Figure 1: Top view of the HIRINTOL 478-7932 ECM Controller, showing the main housing and electrical connectors.



Figure 2: Angled view of the ECM, highlighting its compact design and connection points.

3. Specifications

Part Type	ECU Controller, ECM Controller, CPU Controller, Engine Control Unit Module
Reference Number	478-7932, 4787932
Fuel Type	Diesel
Material	Metal
Product Dimensions	1.97 x 1.18 x 1.57 inches
Item Weight	4 pounds
Compatible Engines	Caterpillar 3406B, 3406C, C9, C11, C13, C13GENSET, CX31-C11I, CX31-C9I
Compatible Equipment	Excavators (e.g., 336D2, 340D2 L), Wheel Loaders (e.g., 972H, 980H), Motor Graders (e.g., 12M, 160K), Articulated Dump Trucks (e.g., 735, 740), Track-Type Tractors (e.g., D7R, D6R III), and others as listed in product description.

4. Installation and Setup

Installation of the ECM requires specialized knowledge and tools. It is strongly recommended that installation and removal be performed by an experienced technician to ensure correct procedure and prevent damage to the unit or vehicle systems.

Location

The Electronic Control Module is typically located on the cool side of the engine, usually bolted using four mounting points. It connects to the vehicle's wiring harnesses via specific connectors.



Figure 3: Close-up view of the ECM's electrical connectors, which interface with the engine's wiring harness.

Programming Requirements

Programming of the ECM is essential for its correct function with your specific engine. Each engine has unique requirements. To facilitate programming, please provide the following information:

1. Original ECU Part Number and a clear picture of the original unit.
2. Vehicle Model and Serial Number.
3. Engine Model and Serial Number.

This information allows the module to be programmed to your engine's exact specifications, ensuring it is ready for immediate installation and operation.

5. Operation

Once correctly installed and programmed, the ECM operates automatically as an integral part of your engine's control system. It continuously monitors engine sensors and adjusts parameters in real-time to maintain optimal performance, fuel efficiency, and emissions control. The ECM provides data output and executes split-second decisions for the vehicle's functionality and safety.

6. Maintenance

The HIRINTOL 478-7932 ECM is designed for durability and long-lasting performance. Routine maintenance primarily involves ensuring its physical integrity and proper connections. Keep the ECM clean and free from excessive dirt, moisture, and corrosive substances. Regularly inspect the wiring harnesses and connectors for any signs of wear, corrosion, or loose connections. Avoid exposing the unit to extreme temperatures or physical impact.

7. Troubleshooting

Should you experience any issues with your engine's performance after ECM installation, it is recommended to consult a qualified technician. Common issues related to ECMs often stem from incorrect programming, faulty wiring, or sensor malfunctions. A diagnostic scan tool can help identify specific fault codes that indicate the nature of the problem. Do not attempt to open or repair the ECM yourself, as this may void the warranty and cause further damage.

8. Warranty and Support

The HIRINTOL 478-7932 ECM comes with a **12-month warranty period**. If any problems arise during this period, repair or replacement services will be provided. For technical support, warranty claims, or any inquiries regarding the product, please contact HIRINTOL customer service. We are committed to providing a positive buying experience and reliable after-sales service.
Please note that the amount charged covers the product, shipping, and handling. Any customs or import taxes are the buyer's responsibility.

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