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Denso 234-9091

Denso 234-9091 Air Fuel Sensor User Manual

Model: 234-9091

1. Introduction

This manual provides essential information for the proper installation, operation, and maintenance of the Denso 234-9091 Air Fuel Sensor. Please read this manual thoroughly before attempting any installation or service.

2. Product Overview

The Denso 234-9091 is a direct-fit, OE-replacement air/fuel ratio sensor designed to monitor the oxygen content in the exhaust gases. This information is crucial for the engine control unit (ECU) to maintain an optimal air-fuel mixture, which contributes to efficient fuel consumption and reduced emissions. Constructed from durable materials like Zirconium and Stainless Steel, this sensor is engineered for precise performance.

Figure 1: Denso 234-9091 Air Fuel Sensor. This image shows the sensor body, threaded section, and electrical connector.

Figure 2: Denso Air Fuel Sensor Packaging. The box displays the Denso brand logo and "AIR/FUEL SENSOR" text.

3. Compatibility

This sensor is designed as a direct replacement for specific vehicle models and may replace the following part numbers: 36531R40A01, 25680, 250-54110, 350-64090.
Compatible vehicle applications include:

- 2009-2014 Acura TSX
- 2008-2012 Honda Accord
- 2010-2011 Honda CR-V

Always verify compatibility with your vehicle's specific make, model, year, and engine type before installation.

4. Installation (Setup)

Warning: Improper installation can lead to vehicle damage or personal injury. It is recommended that

installation be performed by a qualified automotive technician.

4.1 Safety Precautions

- Ensure the engine is cool before beginning work to prevent burns.
- Disconnect the vehicle's battery to prevent electrical shorts.
- Wear appropriate personal protective equipment (PPE), including gloves and eye protection.
- Work in a well-ventilated area.

4.2 General Installation Steps

1. **Locate the Sensor:** Identify the position of the old air/fuel ratio sensor in the exhaust system. Consult your vehicle's service manual for exact location.
2. **Disconnect Electrical Connector:** Carefully disconnect the electrical connector from the old sensor. Avoid pulling on the wires.
3. **Remove Old Sensor:** Use an oxygen sensor wrench or appropriate socket to loosen and remove the old sensor.
4. **Prepare New Sensor:** Apply anti-seize compound (if not pre-applied) to the threads of the new Denso sensor. Avoid getting anti-seize on the sensor tip.
5. **Install New Sensor:** Hand-thread the new sensor into the exhaust bung to prevent cross-threading. Tighten to the manufacturer's specified torque using the appropriate wrench.
6. **Connect Electrical Connector:** Reconnect the electrical connector securely.
7. **Clear Codes:** Reconnect the battery. If a "Check Engine" light was on, it may need to be cleared using an OBD-II scanner.
8. **Test Drive:** Perform a short test drive to ensure proper operation and that no warning lights reappear.

5. Operating Principles

An air/fuel ratio sensor, also known as a wideband oxygen sensor, measures the precise ratio of oxygen in the exhaust gases. Unlike traditional oxygen sensors that switch between rich and lean signals, air/fuel ratio sensors provide a continuous, proportional voltage signal that directly corresponds to the air-fuel mixture. This allows the engine's ECU to make more precise and rapid adjustments to fuel delivery, optimizing combustion for fuel efficiency, power, and emissions control across various engine loads and RPMs.

6. Maintenance

Air/fuel ratio sensors are generally maintenance-free components. Regular inspection during routine vehicle service is recommended. Check the sensor's wiring and connector for any signs of damage, corrosion, or loose connections. Do not attempt to clean the sensor tip, as this can damage the sensitive sensing element.

7. Troubleshooting

A failing or faulty air/fuel ratio sensor can manifest in several ways. Common symptoms include:

- **Check Engine Light:** The most common indicator. Diagnostic Trouble Codes (DTCs) related to oxygen sensor performance (e.g., P0171, P0172, P0133, P0134) will often be stored.
- **Decreased Fuel Economy:** An inaccurate sensor reading can cause the engine to run too rich or too lean, leading to increased fuel consumption.
- **Increased Emissions:** The engine's ability to control emissions is compromised, potentially leading to failed emissions tests.

- **Rough Idling or Engine Misfires:** Incorrect air-fuel mixture can cause engine instability.
- **Reduced Engine Performance:** The engine may feel sluggish or lack power.

If you experience any of these symptoms, it is advisable to have your vehicle diagnosed by a qualified technician using appropriate diagnostic tools.

8. Specifications

Feature	Specification
Brand	Denso
Model Number	234-9091
Part Number	234-9091
Material	Stainless Steel, Zirconium
Item Weight	1.6 ounces (approximately 45 grams)
Item Dimensions (L x W x H)	5.75 x 2.19 x 1.88 inches (approximately 14.6 x 5.56 x 4.78 cm)
Measuring Range	10.0 - 20.0 (Air/Fuel Ratio)
Output Type	Analog
Mounting Type	Threaded Mount
Upper Temperature Rating	1000 °C
UPC	042511117181

9. Warranty Information

This Denso 234-9091 Air Fuel Sensor comes with a**30-day warranty** from the date of purchase. Please retain your proof of purchase for any warranty claims. The warranty covers defects in materials and workmanship under normal use. It does not cover damage due to improper installation, misuse, accident, or unauthorized modifications.

10. Support and Contact

For technical assistance, further product information, or warranty inquiries, please refer to the official Denso website or contact your authorized Denso dealer or automotive parts supplier. It is always recommended to consult with a certified automotive technician for diagnosis and repair of vehicle systems.

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