

Denso 234-9049

Denso 234-9049 Air Fuel Sensor Instruction Manual

INTRODUCTION

This manual provides essential information for the installation, operation, maintenance, and troubleshooting of the Denso 234-9049 Air Fuel Sensor. This sensor is designed to optimize engine performance and fuel efficiency by accurately monitoring the air-fuel ratio in your vehicle's exhaust system. Proper installation and function contribute to reduced emissions and extended catalytic converter life.

PRODUCT OVERVIEW

The Denso 234-9049 is a high-quality replacement air/fuel ratio sensor, engineered to meet original equipment (OE) standards for precise fit and performance. It is constructed from durable materials such as stainless steel and zirconium.



Image 1: The Denso 234-9049 Air Fuel Sensor, showing the sensor tip, wiring, and electrical connector. This component is crucial for monitoring exhaust gases.

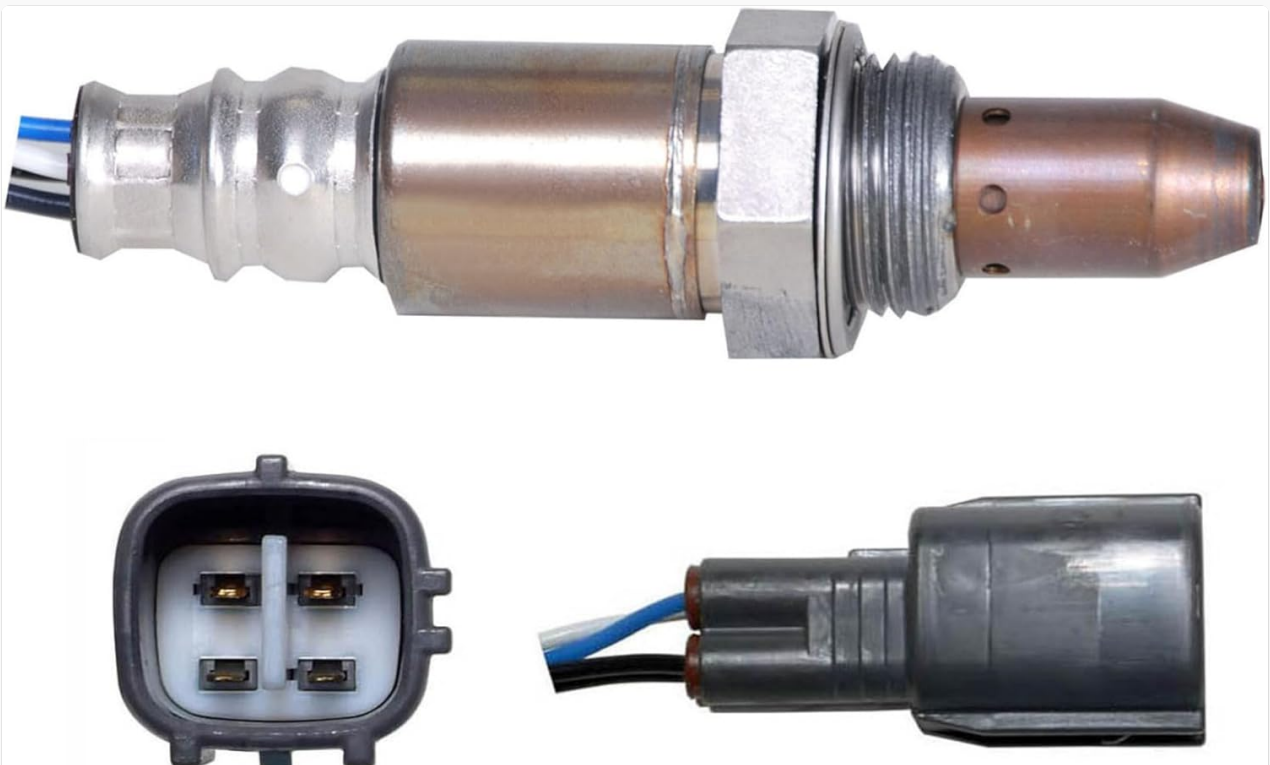


Image 2: A detailed view of the Denso 234-9049 sensor tip and its electrical connector, highlighting the precision engineering.

COMPATIBILITY

The Denso 234-9049 Air Fuel Sensor is compatible with the following vehicle models:

- **Toyota:** Avalon (2005-2007), Camry (2003-2011), Highlander (2001-2003), RAV4 (2003-2012), Sienna (2007-2010), Solara (2004-2008)
- **Scion:** tC (2005-2010), xB (2008-2015)
- **Lexus:** ES350 (2007), RX350 (2007, 2010-2011), RX450h (2010)

Always verify the correct part number for your specific vehicle's year, make, and model before installation.

SETUP AND INSTALLATION

Safety Precautions: Always ensure the vehicle's engine is off and cool before beginning any work. Disconnect the negative battery terminal to prevent electrical hazards. Wear appropriate personal protective equipment, including gloves and eye protection.

1. **Locate the Sensor:** Identify the existing air fuel sensor in your vehicle's exhaust system. Consult your vehicle's service manual for the exact location.
2. **Prepare for Removal:** For easier removal, it is recommended to spray penetrating oil onto the threads of the old sensor and allow it to soak. Running the engine for a few minutes to slightly warm the exhaust system (ensure it's not hot) can also aid in removal.
3. **Disconnect Electrical Connector:** Carefully disconnect the electrical connector from the old sensor. Some connectors may require pressing a tab or sliding a lock. Avoid pulling directly on the wires.
4. **Remove Old Sensor:** Use a specialized oxygen sensor removal socket (typically 7/8 inch) and a breaker bar to loosen and remove the old sensor. Turn counter-clockwise.
5. **Prepare New Sensor:** Apply a small amount of anti-seize compound (often included with the sensor) to the threads of the new Denso 234-9049 sensor. Ensure no anti-seize gets on the sensor tip, as this can affect its performance.
6. **Install New Sensor:** Thread the new sensor into the exhaust bung by hand to prevent cross-threading. Once hand-tight, use the oxygen sensor socket to tighten it to the manufacturer's specified torque. Do not overtighten.
7. **Connect Electrical Connector:** Reconnect the electrical connector firmly until it clicks into place. Ensure the wiring is routed away from hot exhaust components.
8. **Final Steps:** Reconnect the negative battery terminal. Start the vehicle and check for any warning lights. It may be necessary to clear any stored diagnostic trouble codes (DTCs) using an OBDII scanner.

OPERATING PRINCIPLES

The Denso 234-9049 Air Fuel Sensor continuously measures the oxygen content in the exhaust gases. This information is sent to the vehicle's engine control unit (ECU), which then adjusts the fuel injection to maintain an optimal air-fuel ratio. This precise control ensures:

- **Efficient Fuel Consumption:** The engine operates at its most efficient point, reducing fuel usage.
- **Maximized Engine Performance:** Proper air-fuel mixture contributes to consistent power delivery.
- **Reduced Emissions:** By maintaining the ideal ratio, the catalytic converter can effectively convert harmful pollutants into less toxic substances.

MAINTENANCE

Air fuel sensors are critical components that do not typically require routine maintenance. Their lifespan is influenced by factors such as fuel quality, engine condition, and driving habits. It is recommended to replace the sensor when it begins to show signs of degradation or failure, as indicated by diagnostic trouble codes or decreased engine performance.

TROUBLESHOOTING

If you experience issues related to your vehicle's air fuel sensor, consider the following:

Common Symptoms of a Failing Sensor:

- Illuminated Check Engine Light (CEL)
- Decreased fuel economy
- Rough idling or engine hesitation
- Increased emissions

Diagnostic Trouble Codes (DTCs):

A failing air fuel sensor often triggers specific DTCs that can be read with an OBDII scanner. Common codes associated with air fuel/oxygen sensor issues include:

- **P2238:** Oxygen (A/F) Sensor Pumping Current Circuit Low (Bank 1, Sensor 1)
- **P0420:** Catalyst System Efficiency Below Threshold (Bank 1) - often related to upstream O2 sensor issues
- **P0051:** HO2S Heater Control Circuit Low (Bank 2, Sensor 1)

If these codes appear, replacing the air fuel sensor is often the recommended solution after verifying the wiring and other related components are intact.

SPECIFICATIONS

Feature	Specification
Brand	Denso
Model Number	234-9049
Item Dimensions (L x W x H)	5.75 x 2.19 x 1.88 inches
Material	Stainless Steel, Zirconium
Item Weight	4 ounces
Maximum Supply Voltage	5 Volts
Measuring Range	10:1 - 18:1
Output Type	Push-Pull
Specific Uses For Product	Replacement Air/Fuel Ratio Sensor
UPC	042511117426

WARRANTY AND SUPPORT

For specific warranty information regarding your Denso 234-9049 Air Fuel Sensor, please refer to the documentation included with your purchase or visit the official Denso website. Denso provides support and detailed product information through their authorized channels.



Image 3: Front view of the Denso Air Fuel Sensor packaging, indicating 'first time fit' and brand information.

WARNING: Anti-seize and other chemical compounds may cause irritation to the skin or eyes.

CAUTION: Only use compounds labeled as air/fuel sensor friendly.

Scan or go to
DENSOtechtips.com
for more technical
information.

AVERTISSEMENT: les anti-grip-
pants et autres composés
chimiques peuvent provoquer une
irritation de la peau ou des yeux.

ATTENTION: N'utilisez que des
composés étiquetés comme
compatibles avec les capteurs
d'air/carburant.

Scannez ou visitez le site
DENSOtechtips.com pour plus
d'informations techniques.

ADVERTENCIA: El antiadher-
ente y otros compuestos
químicos pueden causar
irritación en la piel o los ojos.

PRECAUCIÓN: Utilice
solamente compuestos
etiquetados como amigable con
el sensor de aire/combustible.

Escanee o visite
DENSOtechtips.com para
obtener más información técnica

234-9049

OXYGEN SENSOR • SONDE D'OXYGENE



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Assembled in the USA from
foreign components


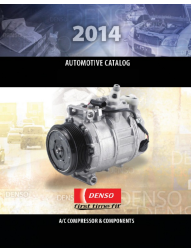



Assemblé dans l'USA des
composants étrangers

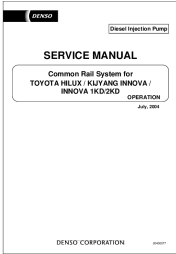
Reunido en EEUU de
componentes extranjeros

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Image 4: Back view of the Denso Air Fuel Sensor packaging, displaying the part number 234-9049 and UPC 042511117426,

Related Documents - 234-9049

	<p>DENSO Oxygen & Air/Fuel Sensor 2016 Automotive Catalog Find Replacement Parts</p> <p>Explore the comprehensive DENSO 2016 Automotive Catalog for Oxygen and Air/Fuel Sensors. Find OE-quality replacement parts, part numbers, and vehicle application guides for a wide range of makes and models.</p>
	<p>DENSO Automotive Catalog: A/C Compressors & Components</p> <p>Discover the comprehensive DENSO 2014 Automotive Catalog for A/C compressors and components. This guide offers extensive application data, troubleshooting advice, and product details for aftermarket vehicle parts. Find OE-quality replacements from DENSO.</p>
	<p>DENSO Aftermarket News - New DCS Wiper Blade and Vehicle Applications</p> <p>DENSO's April 2018 aftermarket news update, detailing the launch of the new DCS Wiper Blade, including part number conversions, and listing new vehicle applications for DENSO Oil Filters and Ignition Coils.</p>
	<p>DENSO Spark Plugs: Discovering Advanced Ignition Technology and Performance</p> <p>Explore DENSO's comprehensive guide to spark plug technology, detailing innovations like Iridium Power, Iridium TT, and U-groove designs. Learn how DENSO spark plugs enhance engine performance, fuel economy, and emissions control for automotive applications.</p>
	<p>DENSO 2017 Radiator & Condenser Automotive Catalog</p> <p>Comprehensive DENSO 2017 catalog featuring a wide range of radiators and condensers for domestic, European, and import vehicles, including detailed application information and service instructions.</p>

	<p>DENSO Common Rail System Service Manual for Toyota Hilux/Innova 1KD/2KD Engines</p> <p>Comprehensive service manual from DENSO CORPORATION detailing the Common Rail System for Toyota Hilux, Kijang Innova, and Innova vehicles with 1KD-FTV and 2KD-FTV diesel engines. Covers system operation, components, diagnosis, and troubleshooting.</p>
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Documents - Denso – 234-9049



[\[pdf\]](#) Guide Catalog

Denso Replacement Emission Control Parts Catalog replacement emission control parts egr pcv air pump oxygen sensor check valve pressure position vacuum solenoid evap vapor CARiD Denso® 234 4018

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OXYGEN AIR/FUEL SENSOR 2016 AUTOMOTIVE CATALOG O2AF-CAT-0615
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[DENSO Oxygen & Air/Fuel Sensor 2016 Automotive Catalog | Find Replacement Parts](#)

Explore the comprehensive DENSO 2016 Automotive Catalog for Oxygen and Air/Fuel Sensors. Find OE-quality replacement parts, part numbers, and vehicle application guides for a wide range of makes and models.

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