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- > [Standard Motor Products](#) /
- > Standard Motor Products KS37 Knock Sensor User Manual

Standard Motor Products KS37

Standard Motor Products KS37 Knock Sensor User Manual

Model: KS37 | Brand: Standard Motor Products

1. INTRODUCTION

This manual provides essential information for the proper understanding, installation, and maintenance of your Standard Motor Products KS37 Knock Sensor. The knock sensor is a critical component in your vehicle's engine management system, designed to detect engine knocking or pre-ignition and send signals to the engine control unit (ECU) to adjust ignition timing, thereby preventing potential engine damage and optimizing performance.

For optimal performance and safety, it is recommended that installation and any related diagnostics be performed by a qualified automotive technician.

2. SAFETY INFORMATION

- Always disconnect the vehicle's battery before working on any electrical components to prevent electrical shock or damage to the vehicle's systems.
- Ensure the engine is cool before attempting any work to avoid burns from hot engine components.
- Wear appropriate personal protective equipment (PPE), including safety glasses and gloves, during installation or inspection.
- Refer to your vehicle's specific service manual for detailed instructions and torque specifications related to knock sensor replacement.
- Keep all tools and parts away from moving engine components once the engine is running.

3. PRODUCT OVERVIEW

The Standard Motor Products KS37 is a high-quality replacement knock sensor engineered to meet or exceed OEM specifications. It is designed for precise detection of engine vibrations indicative of knocking.



Figure 3.1: Overall view of the KS37 Knock Sensor, showing the sensor body, connecting wire, and electrical connector.



Figure 3.2: Detailed view of the multi-pin electrical connector, ensuring a secure and reliable connection to the vehicle's wiring harness.

The sensor typically consists of a piezoelectric element that generates a voltage signal in response to vibrations. This signal is then transmitted via the integrated wiring harness to the vehicle's ECU.

4. SETUP AND INSTALLATION

Installation of the KS37 Knock Sensor requires specific tools and knowledge of automotive electrical and mechanical systems. It is highly recommended to consult your vehicle's factory service manual for the exact location and removal/installation procedures for your specific make and model.

General Installation Steps:

1. **Preparation:** Park the vehicle on a level surface, engage the parking brake, and ensure the engine is off and cool. Disconnect the negative terminal of the battery.
2. **Locate the Old Sensor:** Refer to your vehicle's service manual to find the knock sensor's location, which is typically mounted on the engine block or intake manifold.
3. **Disconnect Electrical Connector:** Carefully disconnect the electrical connector from the old knock sensor.
4. **Remove Old Sensor:** Using the appropriate wrench or socket, unbolt and remove the old knock sensor. Note any washers or gaskets that may be present.
5. **Install New Sensor:** Install the new Standard Motor Products KS37 Knock Sensor. Ensure proper seating and tighten to the vehicle manufacturer's specified torque. Overtightening can damage the sensor or engine block.
6. **Connect Electrical Connector:** Reconnect the electrical connector firmly to the new sensor.
7. **Final Steps:** Reconnect the negative battery terminal. Start the engine and check for any warning lights or unusual operation. It may be necessary to clear any stored diagnostic trouble codes (DTCs) using an OBD-II scanner.

5. OPERATING PRINCIPLES

Once installed, the Standard Motor Products KS37 Knock Sensor operates continuously as part of the engine's feedback system. It monitors engine vibrations and sends a voltage signal proportional to the intensity of these vibrations to the ECU. The ECU interprets these signals to identify the characteristic frequencies associated with engine knocking or detonation. Upon detecting knocking, the ECU will automatically retard the ignition timing for the affected cylinder(s) to prevent damage and restore optimal combustion. This process is entirely automatic and requires no user intervention during vehicle operation.

6. MAINTENANCE

The Standard Motor Products KS37 Knock Sensor is a sealed, maintenance-free component. It does not require periodic cleaning, lubrication, or adjustment. Its lifespan is typically dependent on environmental factors and vehicle operating conditions. However, regular vehicle maintenance, including ensuring proper engine tuning and using the correct fuel octane, can help prevent conditions that lead to excessive engine knocking, thereby indirectly contributing to the longevity of the knock sensor and other engine components.

Inspect the wiring harness connected to the sensor periodically for any signs of wear, fraying, or damage. Ensure the connector remains clean and securely attached.

7. TROUBLESHOOTING

A faulty knock sensor can lead to various engine performance issues and trigger the Check Engine Light (CEL). Below are common symptoms and troubleshooting steps.

Common Symptoms of a Faulty Knock Sensor:

- **Check Engine Light (CEL):** The most common indicator. Diagnostic Trouble Codes (DTCs) related to the knock sensor

(e.g., P0325, P0326, P0327, P0328, P0329) will typically be stored.

- **Reduced Fuel Economy:** If the ECU constantly retards timing due to a false knock signal, fuel efficiency can decrease.
- **Decreased Engine Performance:** Loss of power, sluggish acceleration, or rough idling can occur if timing is excessively retarded.
- **Engine Knocking/Ping:** If the sensor fails to detect actual knocking, the engine may experience audible knocking or pinging, which can lead to severe engine damage over time.

Troubleshooting Steps:

1. **Scan for DTCs:** Use an OBD-II scanner to retrieve any stored codes. This is the first and most crucial step.
2. **Inspect Wiring and Connector:** Visually inspect the sensor's wiring harness and connector for any signs of damage, corrosion, or loose connections.
3. **Check Sensor Resistance (if applicable):** Some knock sensors can be tested for resistance, but this varies by vehicle and sensor type. Consult your vehicle's service manual for specific testing procedures.
4. **Verify Proper Torque:** Ensure the sensor is tightened to the correct torque specification. An improperly torqued sensor can provide inaccurate readings.
5. **Consider Replacement:** If the sensor is confirmed faulty after diagnostics, replacement with a new Standard Motor Products KS37 is recommended.

Note: Engine knocking can also be caused by other issues, such as low octane fuel, carbon buildup, or faulty spark plugs. Always perform a thorough diagnosis before replacing the knock sensor.

8. SPECIFICATIONS

Attribute	Value
Brand	Standard Motor Products
Model Number	KS37
Item Dimensions (L x W x H)	4 x 5 x 2 inches
Item Weight	4 ounces
Mounting Type	Flange Mount
UPC	091769222024
ASIN	B001O7IFVO

9. WARRANTY AND SUPPORT

Standard Motor Products stands behind the quality of its products. For specific warranty terms and conditions, please refer to the warranty information provided with your purchase or visit the official Standard Motor Products website. Warranty coverage typically addresses defects in materials and workmanship under normal use.

For technical support, installation assistance, or warranty claims, please contact Standard Motor Products customer service directly or the authorized retailer from whom you purchased the sensor. When contacting support, please have your product model number (KS37) and purchase details readily available.

Note: Improper installation or use outside of vehicle manufacturer specifications may void the product warranty.

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