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Standard Motor Products Camshaft Sensor PC660 User Manual

Model: PC660 | Brand: Standard Motor Products

1. PRODUCT OVERVIEW

The Standard Motor Products PC660 Camshaft Sensor is a critical component in modern internal combustion engines. It plays a vital role in the engine's electronic control system by monitoring the rotational speed and position of the camshaft. This information is then transmitted to the Engine Control Unit (ECU), which uses it to precisely control fuel injection and ignition timing, ensuring optimal engine performance and efficiency.



Figure 1: Standard Motor Products PC660 Camshaft Sensor. This image displays the black electronic component, featuring a connector at one end and a cylindrical body with O-rings at the other, designed for secure engine mounting.

This manual provides essential information regarding the installation, operation, maintenance, and troubleshooting of your PC660 Camshaft Sensor.

2. INSTALLATION AND SETUP

Installation of the PC660 Camshaft Sensor typically involves replacing an existing sensor. Due to the complexity of automotive systems and the importance of correct installation for engine function, it is highly recommended that installation be performed by a qualified automotive technician.

General Installation Steps (Professional Installation Recommended):

1. **Safety First:** Ensure the vehicle's engine is off and cool. Disconnect the negative terminal of the vehicle's battery to prevent electrical hazards.
2. **Locate the Sensor:** Identify the location of the existing camshaft position sensor on your vehicle's engine. Refer to your vehicle's service manual for precise location.
3. **Disconnect Electrical Connector:** Carefully disconnect the electrical connector from the old sensor. Avoid pulling on the wires.
4. **Remove Old Sensor:** Unbolt or unclip the old sensor from its mounting point. Be mindful of any O-rings or seals that may be present.
5. **Prepare New Sensor:** Inspect the new PC660 sensor for any visible damage. Ensure any O-rings or seals are properly seated on the new sensor. A light coat of clean engine oil on the O-rings can aid installation.
6. **Install New Sensor:** Insert the new PC660 sensor into its mounting location. Secure it with the appropriate bolts or clips, tightening to the vehicle manufacturer's specified torque.
7. **Reconnect Electrical Connector:** Firmly connect the electrical connector to the new sensor until it clicks into place.
8. **Reconnect Battery:** Reconnect the negative terminal of the vehicle's battery.
9. **Test Operation:** Start the engine and check for any diagnostic trouble codes (DTCs) using an OBD-II scanner. Clear any codes related to the camshaft sensor if they appear after installation and verify proper engine operation.

Always consult your vehicle's specific service manual for detailed, model-specific installation instructions and torque specifications.

3. OPERATING PRINCIPLES

The Standard Motor Products PC660 Camshaft Sensor operates on principles that allow it to detect the rotational position of the camshaft. Most camshaft sensors are either Hall effect sensors or magnetic reluctance sensors.

- **Function:** The sensor generates a signal based on the presence or absence of a magnetic field or a change in reluctance as a target wheel (often integrated into the camshaft or a gear) rotates past it.
- **Signal Transmission:** This signal, typically a voltage pulse, is sent to the ECU. The frequency and pattern of these pulses inform the ECU about the camshaft's exact position and speed.
- **ECU Utilization:** The ECU uses this camshaft position data, often in conjunction with crankshaft position data, to determine the precise timing for fuel injection and ignition for each cylinder. This synchronization is crucial for engine efficiency, emissions control, and overall performance.

As an electronic component, the PC660 sensor operates continuously when the engine is running, requiring no direct user interaction after proper installation.

4. MAINTENANCE

Camshaft position sensors like the PC660 are generally maintenance-free components designed for long service life. However, periodic inspection can help identify potential issues before they lead to failure.

Recommended Maintenance Checks:

- **Visual Inspection:** During routine engine maintenance, visually inspect the sensor and its wiring for any signs of

physical damage, corrosion, fraying, or loose connections.

- **Cleanliness:** Ensure the sensor and its immediate surroundings are free from excessive dirt, oil, or debris, which could potentially interfere with its operation or cause premature wear to the wiring.
- **Connection Integrity:** Verify that the electrical connector is securely seated and free from moisture or corrosion.

If any damage or significant wear is observed, consider replacing the sensor to prevent potential engine performance issues.

5. TROUBLESHOOTING

A failing or faulty camshaft position sensor can lead to various engine performance issues. Below are common symptoms and basic troubleshooting steps. Always consult a professional mechanic for accurate diagnosis and repair.

Common Symptoms of a Faulty Camshaft Sensor:

- **Check Engine Light (CEL):** The most common indicator. The ECU will typically log a Diagnostic Trouble Code (DTC) related to the camshaft position sensor (e.g., P0340, P0341).
- **Engine Cranking but No Start:** If the ECU cannot determine camshaft position, it may not allow the engine to start.
- **Rough Idling or Stalling:** Incorrect timing information can lead to erratic engine operation.
- **Reduced Engine Performance:** This can include poor acceleration, reduced fuel economy, or a general lack of power.
- **Engine Misfires:** Incorrect ignition or fuel timing can cause cylinders to misfire.

Basic Troubleshooting Steps (Professional Diagnosis Recommended):

1. **Check for DTCs:** Use an OBD-II scanner to retrieve any stored trouble codes. This is the first and most crucial step.
2. **Inspect Wiring and Connector:** Visually check the sensor's wiring harness for any cuts, abrasions, or signs of rodent damage. Ensure the electrical connector is clean, dry, and securely attached.
3. **Sensor Resistance Check (Advanced):** For some sensor types, a multimeter can be used to check the sensor's internal resistance. Refer to your vehicle's service manual for expected values. This requires specific knowledge and tools.
4. **Signal Check (Advanced):** An oscilloscope can be used to verify the signal output from the sensor while the engine is cranking or running. This is a definitive test but requires specialized equipment and expertise.

If symptoms persist after basic checks, or if you are unsure about performing diagnostic steps, seek assistance from a certified automotive technician.

6. SPECIFICATIONS

Key specifications for the Standard Motor Products PC660 Camshaft Sensor:

Attribute	Detail
Brand	Standard Motor Products
Model Number	PC660
Product Type	Auto Part (Camshaft Position Sensor)
Item Dimensions (L x W x H)	2 x 1.4 x 3.4 inches

Attribute	Detail
Item Weight	0.01 Ounces
Mounting Type	Engine Mount
Output Type	Push-Pull
Country of Origin	Mexico
UPC	707390341026

7. WARRANTY AND SUPPORT

For specific warranty information regarding your Standard Motor Products PC660 Camshaft Sensor, please refer to the warranty documentation provided with your purchase or visit the official Standard Motor Products website. Warranty terms and conditions can vary based on region and retailer.

For technical support, product inquiries, or assistance with warranty claims, please contact Standard Motor Products customer service directly. You can typically find contact information on their official website or through your product retailer.

Manufacturer: Standard Motor Products

Website: www.smpcorp.com (Please verify the current official website for the most up-to-date information.)

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This manual is for informational purposes only. Always consult a qualified professional for vehicle repair.