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› Standard Motor Products TH136 Throttle Position Sensor Instruction Manual

Standard Motor Products TH136

Standard Motor Products TH136 Throttle Position Sensor Instruction Manual

Model: TH136

1. INTRODUCTION

This manual provides detailed instructions for the installation, function, maintenance, and troubleshooting of the Standard Motor Products TH136 Throttle Position Sensor (TPS). The TPS is a critical component in your vehicle's engine management system, responsible for monitoring the throttle valve's position and sending this data to the engine control unit (ECU).

Accurate throttle position data is essential for proper fuel injection, ignition timing, and overall engine performance. Please read this manual thoroughly before attempting any installation or maintenance procedures.

2. SAFETY INFORMATION

WARNING:

- Always disconnect the vehicle's battery negative terminal before performing any electrical work to prevent electrical shock or damage to vehicle components.
- Wear appropriate personal protective equipment (PPE), such as safety glasses and gloves, during installation.
- Ensure the vehicle is parked on a level surface with the parking brake engaged.
- Allow the engine to cool completely before working on engine components to avoid burns.
- If you are unsure about any step, consult a qualified automotive technician.

3. SETUP AND INSTALLATION

3.1 Tools Required

- Socket wrench set
- Screwdriver set (Phillips and flathead)
- Torque wrench (if specified by vehicle manufacturer)
- Battery terminal wrench
- Clean cloth

3.2 Installation Procedure

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 vehicle's battery.
2. **Locate the Existing TPS:** The throttle position sensor is typically mounted on the throttle body, usually opposite the throttle cable linkage. Refer to your vehicle's service manual for the exact location.
3. **Disconnect Electrical Connector:** Carefully disconnect the electrical connector from the old TPS. Press any release tabs or slide locks before pulling the connector off.
4. **Remove Old TPS:** Unscrew the mounting screws or bolts securing the old TPS to the throttle body. Gently pull the sensor straight off the throttle shaft. Note its orientation for correct installation of the new sensor.
5. **Inspect Throttle Body:** While the old sensor is removed, inspect the throttle shaft and surrounding area for any debris or excessive wear. Clean if necessary.
6. **Install New TPS:** Align the new Standard Motor Products TH136 TPS with the throttle shaft. The sensor typically has a D-shaped or similar keyed opening that must align with the throttle shaft. Gently push the sensor into place, ensuring it seats correctly without forcing it.
7. **Secure New TPS:** Reinstall the mounting screws or bolts. Tighten them securely, but do not overtighten, as this can damage the sensor or throttle body. If a torque specification is available, use a torque wrench.
8. **Reconnect Electrical Connector:** Reattach the electrical connector to the new TPS, ensuring it clicks into place securely.
9. **Reconnect Battery:** Reconnect the negative terminal of the vehicle's battery.
10. **Initial Check:** Start the vehicle and check for any immediate warning lights or unusual engine behavior. Some vehicles may require a throttle body relearn procedure after TPS replacement; consult your vehicle's service manual.

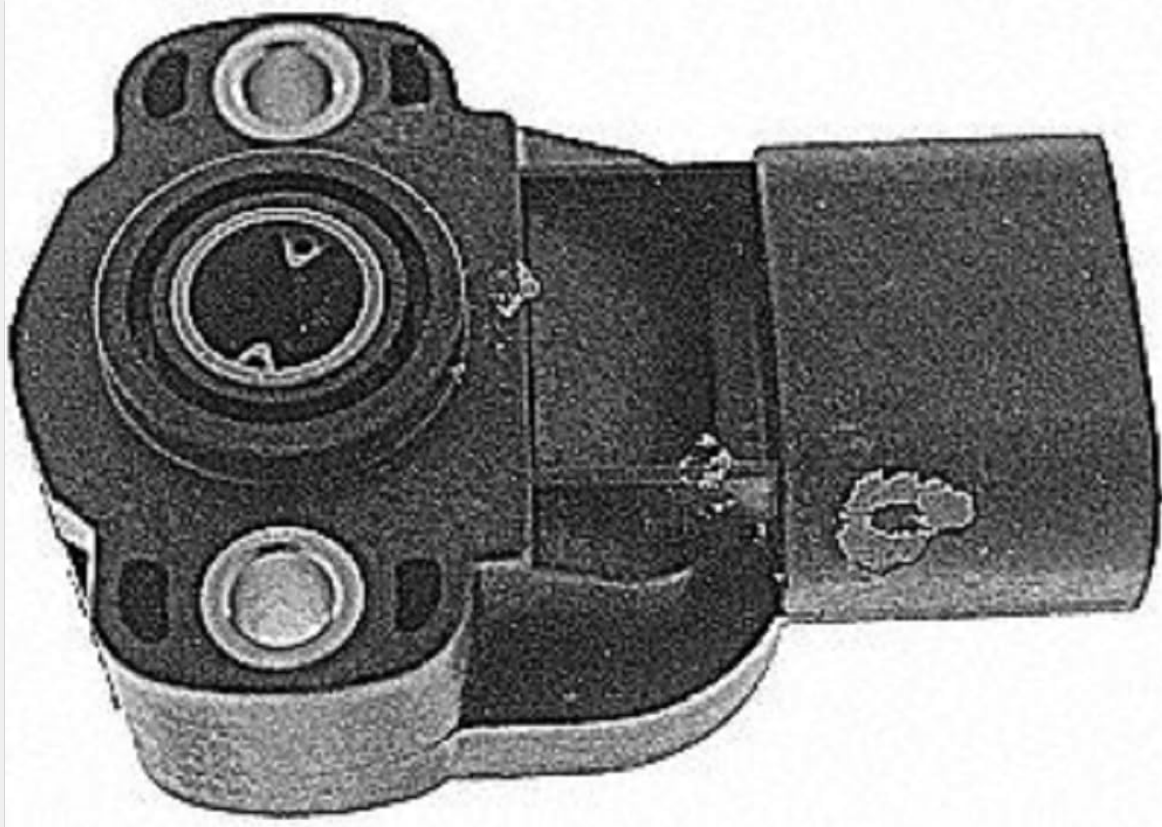


Figure 1: Standard Motor Products TH136 Throttle Position Sensor. This image displays the sensor's main body, including the electrical connector port on the right and the throttle shaft interface on the left, with two mounting holes visible.

4. OPERATING PRINCIPLES

The Standard Motor Products TH136 Throttle Position Sensor operates by converting the mechanical position of the throttle valve into an electrical signal. As the accelerator pedal is pressed, the throttle valve opens, and the TPS rotates with the throttle shaft.

Inside the sensor, a potentiometer or Hall effect sensor generates a variable voltage signal that is directly proportional to the throttle's angle. This voltage signal is sent to the vehicle's Engine Control Unit (ECU).

The ECU uses this information to:

- Determine the driver's power demand.
- Adjust fuel injection quantity.
- Control ignition timing.
- Manage automatic transmission shift points.
- Regulate idle speed control.

A properly functioning TPS ensures smooth engine operation, optimal fuel efficiency, and responsive acceleration.

5. MAINTENANCE

The Standard Motor Products TH136 Throttle Position Sensor is designed for long-term reliability and typically requires minimal maintenance. However, periodic checks can help ensure its continued performance:

- **Visual Inspection:** Periodically inspect the sensor and its electrical connector for any signs of

physical damage, corrosion, or loose connections.

- **Wiring Integrity:** Ensure that the wiring harness leading to the TPS is free from fraying, cuts, or excessive tension.
- **Throttle Body Cleanliness:** A dirty throttle body can affect the smooth operation of the throttle valve, which in turn can impact TPS accuracy. Consider cleaning the throttle body as part of routine vehicle maintenance.
- **Avoid Harsh Chemicals:** Do not spray harsh cleaning chemicals directly onto the TPS, as this may damage internal components.

If any issues are observed, refer to the troubleshooting section or consult a professional technician.

6. TROUBLESHOOTING

A malfunctioning Throttle Position Sensor can lead to various drivability issues. Below are common symptoms and potential causes:

Symptom	Possible Cause	Action
Rough or erratic idle	Inconsistent TPS signal at idle	Check TPS wiring and connector. Inspect for proper installation. Consider TPS replacement if signal is erratic.
Engine hesitation or stumbling during acceleration	Intermittent or incorrect TPS signal during throttle opening	Verify TPS signal with a diagnostic scanner. Check for voltage drops or spikes.
Check Engine Light (CEL) illuminated	ECU detects an out-of-range or inconsistent TPS signal (DTCs P0120-P0124, P0220-P0224, etc.)	Retrieve diagnostic trouble codes (DTCs) using an OBD-II scanner. Follow vehicle-specific diagnostic procedures.
Poor fuel economy	ECU receiving incorrect throttle position data, leading to improper fuel delivery	Ensure TPS is calibrated correctly (if applicable for your vehicle). Check for other contributing factors.

For advanced diagnostics, it is recommended to use an automotive scan tool to monitor the TPS voltage output in real-time. The voltage should smoothly increase as the throttle is opened and smoothly decrease as it is closed, without any drops or spikes.

7. SPECIFICATIONS

The following specifications are for the Standard Motor Products TH136 Throttle Position Sensor:

- **Model:** TH136
- **Brand:** Standard Motor Products
- **Material:** Platinum (internal components)
- **Item Dimensions (L x W x H):** 3 x 2 x 5 inches
- **Item Weight:** Approximately 0.8 ounces (22.68 g)
- **Specific Uses:** Automotive throttle position sensing
- **Manufacturer Part Number:** TH136

- **UPC:** 091769196899

Note: Specifications are subject to change without notice. Always refer to the product packaging or manufacturer's official website for the most current information.

8. WARRANTY AND SUPPORT

For information regarding the warranty coverage for your Standard Motor Products TH136 Throttle Position Sensor, please refer to the warranty documentation included with your purchase or visit the official Standard Motor Products website. Warranty terms and conditions may vary.

If you require technical assistance, have questions about installation, or need to report a product issue, please contact Standard Motor Products customer support directly. Contact information can typically be found on their official website or product packaging.

Standard Motor Products Official Website: www.smpcorp.com

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