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Hella 6PV 010 946-281

Hella 6PV 010 946-281 Accelerator Pedal Position Sensor User Manual

Model: 6PV 010 946-281 | Brand: Hella

1. Introduction

This manual provides essential information for the installation, operation, and maintenance of the Hella 6PV 010 946-281 Accelerator Pedal Position Sensor. This component is designed for specific BMW vehicles equipped with a manual transmission. The accelerator pedal position sensor is a critical part of the engine management system, converting the mechanical movement of the accelerator pedal into an electrical signal that the engine control unit (ECU) uses to determine the driver's power request.

2. Safety Information

Warning: Improper installation or handling of automotive components can lead to serious injury or vehicle damage. Always follow manufacturer's instructions and consult a qualified automotive technician if you are unsure about any procedure.

- Ensure the vehicle's ignition is off and the battery is disconnected before beginning any installation or repair work.
- Wear appropriate personal protective equipment, including safety glasses and gloves.
- Refer to your vehicle's specific service manual for detailed instructions on removing and installing the accelerator pedal assembly.
- Do not modify the sensor or its wiring.
- Keep children and pets away from the work area.

3. Compatibility and Part Verification

The Hella 6PV 010 946-281 Accelerator Pedal Position Sensor is designed to be a direct replacement for specific BMW OEM part numbers. It is crucial to verify compatibility with your vehicle before installation.



Image 3.1: Compatibility chart listing Hella part number 6PV 010 946-281 and corresponding BMW OEM reference numbers. Always cross-reference with your vehicle's existing part or service manual.

This Hella part number matches the following OEM references:

BMW - 35 42 6 770 935

BMW - 35 42 6 786 589

BMW - 35 42 6 789 529

BMW - 35 42 6 793 742

BMW - 35 42 6 853 176

BMW - 6 770 935

BMW - 6 786 589

BMW - 6 789 529

BMW - 6 793 742

BMW - 6 853 176

An OEM (Original Equipment) number is a unique identifier assigned to a specific part or component by the vehicle manufacturer. The OEM number can typically be found on the part that needs replacement or in different documentation. For comparison purposes only. Please also use the Amazon Confirmed Fit tool or consult your vehicle's service manual.

4. Installation / Setup

Installation of the accelerator pedal position sensor typically involves replacing the existing unit. Due to variations in vehicle models and configurations, specific steps may differ. Always refer to your vehicle's official service manual for precise, model-specific instructions.

General Installation Steps:

1. **Preparation:** Park the vehicle on a level surface, engage the parking brake, and disconnect the negative terminal of the battery.
2. **Locate the Sensor:** The accelerator pedal position sensor is typically integrated into the accelerator pedal assembly.
3. **Disconnect Wiring:** Carefully disconnect the electrical connector from the old sensor. Observe the connector's locking mechanism.
4. **Remove Old Sensor:** Unbolt or unclip the old accelerator pedal assembly or sensor from its mounting points.
5. **Install New Sensor:** Position the new Hella 6PV 010 946-281 sensor or assembly and secure it with the appropriate fasteners. Ensure it is seated correctly.
6. **Connect Wiring:** Reconnect the electrical connector to the new sensor. Ensure a secure connection.
7. **Final Steps:** Reconnect the vehicle battery. Start the vehicle and check for proper operation and any diagnostic trouble codes (DTCs). It may be necessary to perform a throttle body or pedal position sensor relearn procedure, as specified by your vehicle manufacturer.



Image 4.1: Front view of the Hella 6PV 010 946-281 Accelerator Pedal Position Sensor. This image shows the pedal surface and the main body of the sensor.



Image 4.2: Side view of the Hella 6PV 010 946-281 sensor, illustrating the internal mechanism and mounting points.



Image 4.3: Detailed view of the electrical connector on the Hella 6PV 010 946-281 sensor, showing the pin configuration. Ensure this matches your vehicle's harness.

5. Operation

The accelerator pedal position sensor operates by detecting the angle or position of the accelerator pedal. As the driver presses the pedal, the sensor sends a corresponding electrical signal to the vehicle's Engine Control Unit (ECU). The ECU interprets this signal to determine the desired engine power and adjusts fuel injection, ignition timing, and other engine parameters accordingly. This sensor is crucial for precise throttle control and engine performance.

6. Maintenance

The Hella Accelerator Pedal Position Sensor is a sealed unit and generally requires no routine maintenance. However, it is important to:

- Keep the area around the pedal assembly clean and free from debris that could impede pedal movement.
- Ensure electrical connections remain secure and free from corrosion.
- Avoid exposing the sensor to excessive moisture or harsh chemicals.

If the sensor is damaged or malfunctions, it should be replaced with a new, compatible unit.

7. Troubleshooting

Malfunctions of the accelerator pedal position sensor can lead to various drivability issues. Common symptoms may include:

- **Check Engine Light:** Illumination of the Check Engine Light (CEL) with associated diagnostic trouble codes (DTCs) related to pedal position.
- **Erratic Acceleration:** Unintended acceleration, deceleration, or inconsistent throttle response.
- **Loss of Power:** Reduced engine power or "limp mode" activation.
- **No Acceleration:** Engine may idle but not respond to accelerator pedal input.

Troubleshooting Steps:

1. **Scan for DTCs:** Use an OBD-II scanner to retrieve any stored diagnostic trouble codes. This can help pinpoint the issue.
2. **Inspect Wiring and Connector:** Check the electrical connector and wiring harness for any signs of damage, corrosion, or loose connections.
3. **Verify Pedal Movement:** Ensure the accelerator pedal moves freely without obstruction.
4. **Consult Service Manual:** Refer to your vehicle's service manual for specific diagnostic procedures and expected sensor voltage readings.
5. **Professional Diagnosis:** If symptoms persist, it is recommended to have the vehicle diagnosed by a qualified automotive technician.

8. Specifications

Attribute	Detail
Brand	Hella
Model Number	6PV 010 946-281
Manufacturer Part Number	6PV 010 946-281

OEM Part Numbers	35 42 6 770 935; 35 42 6 786 589; 35 42 6 789 529; 35 42 6 793 742; 35 42 6 853 176; 6 770 935; 6 786 589; 6 789 529; 6 793 742; 6 853 176
Item Weight	8.4 ounces (approx. 238 grams)
Product Dimensions	6.57 x 4.49 x 14.96 inches (approx. 16.7 x 11.4 x 38 cm)
Application	BMW Manual Transmission Vehicles (verify with OEM part numbers)
ASIN	B00V0H32BQ
Date First Available	December 4, 2015

9. Warranty and Support

For warranty information and technical support, please refer to the official Hella website or contact Hella customer service directly. Keep your purchase receipt as proof of purchase. Specific warranty terms and conditions may vary by region and product.

For additional assistance, you may visit the Hella Store on Amazon.

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