Bosch 0280218135

BOSCH 0280218135 Mass Air Flow (MAF) Sensor Instruction Manual

1. Overview

The Bosch 0280218135 Mass Air Flow (MAF) sensor is an original equipment component designed to accurately measure the amount of air entering your vehicle's engine. This precise measurement is crucial for the Engine Control Unit (ECU) to calculate the correct fuel injection quantity, ensuring optimal combustion, fuel efficiency, and reduced emissions. This sensor is compatible with select BMW models, including 2004-05 545i, 2004-05 645Ci, 2004-05 745i, 2004-05 745Li, and 2004-06 X5.

Figure 1: BOSCH 0280218135 Mass Air Flow Sensor.

Key Features:

- **Accurate Air Flow Measurement:** Ensures efficient engine performance and proper fuel-air mixture.
- **Optimal Performance:** OE technology provides correct function and calibration for trouble-free operation and emission compliance.
- **Superior Design:** Patented design enhances robustness against water and particulate damage, reduces sensor drift, and lowers pressure drop.
- **Precision Calibration:** 100% new sensor and housing are calibrated together for precise readings and optimal engine performance.
- **Trouble-Free Installation:** OE identical connector ports and attachment points ensure an exact fit.

2. Safety Information

Always prioritize safety when working on your vehicle. Failure to follow safety precautions can result in injury or damage to the vehicle.

- Ensure the vehicle's engine is turned off and has cooled down before beginning any work.
- Disconnect the negative terminal of the vehicle's battery to prevent electrical hazards.
- Wear appropriate personal protective equipment, including safety glasses and gloves.
- Refer to your vehicle's specific service manual for detailed instructions and torque specifications.
- Keep all tools and parts away from moving engine components.

3. Installation

Installation of the Mass Air Flow sensor should ideally be performed by a qualified technician. If you choose to perform the installation yourself, ensure you have the necessary tools and knowledge. Always consult your vehicle's service manual for specific procedures.

Tools and Materials:

- New BOSCH 0280218135 MAF Sensor
- Screwdriver or socket set (for hose clamps)
- T25 5-Point Star Tamper Proof Bit (if applicable for sensor mounting screws)
- Clean cloth

Installation Steps:

1. Locate the existing MAF sensor, typically situated between the air filter box and the throttle body on the intake tract.
2. Disconnect the electrical connector from the MAF sensor by pressing the release tab and pulling gently.
3. Loosen any hose clamps securing the air intake tube to the MAF sensor housing.
4. Remove the mounting screws (if present) that secure the MAF sensor to the air intake housing. A T25 5-Point Star Tamper Proof Bit may be required.
5. Carefully remove the old MAF sensor from the air intake tube.
6. Inspect the air intake tube for any debris or damage and clean if necessary.
7. Install the new BOSCH 0280218135 MAF sensor into the air intake tube, ensuring it is seated correctly.
8. Secure the mounting screws (if applicable) and tighten the hose clamps to factory specifications.
9. Reconnect the electrical connector to the new MAF sensor, ensuring it clicks into place.
10. Reconnect the negative battery terminal.
11. Start the engine and check for proper operation and any warning lights. It may be beneficial to clear any stored diagnostic trouble codes (DTCs) using an OBD-II scanner after installation.

Installation Video:

No official product installation videos specifically for the BOSCH 0280218135 Mass Air Flow Sensor were available from the seller. Please refer to the written instructions and your vehicle's service manual.

4. Operation

The Mass Air Flow (MAF) sensor is a critical component of your vehicle's engine management system. It measures the mass of air flowing into the engine's intake manifold. This data is then sent to the Engine Control Unit (ECU), which uses it to determine the correct amount of fuel to inject into the cylinders for optimal combustion. A properly functioning MAF sensor ensures:

- Accurate fuel-air mixture for efficient engine operation.
- Reduced exhaust emissions.
- Improved fuel economy.
- Smooth engine idle and acceleration.

Any malfunction in the MAF sensor can lead to incorrect fuel delivery, affecting engine performance and potentially triggering a 'Check Engine' light.

5. Maintenance

While MAF sensors are designed for durability, periodic inspection and cleaning can help maintain optimal performance and extend their lifespan.

- **Regular Inspection:** Periodically check the MAF sensor and its electrical connector for any signs of damage, corrosion, or loose connections.
- **Cleaning:** If you suspect the sensor is dirty, use a specialized MAF sensor cleaner. Do NOT use harsh chemicals or abrasive materials, as this can damage the delicate sensor elements. Follow the cleaner product's instructions carefully.
- **Air Filter Maintenance:** Ensure your engine's air filter is clean and replaced according to your vehicle's maintenance schedule. A dirty air filter can restrict airflow and allow contaminants to reach the MAF sensor.

6. Troubleshooting

If you experience issues with your vehicle's engine performance, a faulty MAF sensor could be a contributing factor. Here are common symptoms and troubleshooting steps:

Symptom	Possible Cause	Action
Check Engine Light (CEL) illuminated	MAF sensor malfunction, incorrect readings	Scan for diagnostic trouble codes (DTCs) using an OBD-II scanner. If MAF-related codes (e.g., P0100-P0104) are present, inspect or replace the sensor.
Rough idle or stalling	Inaccurate air measurement leading to incorrect fuel mixture.	Inspect the MAF sensor and its connections. Consider cleaning the sensor with a specialized MAF cleaner.
Poor fuel economy	Sensor providing readings that cause the engine to run too rich.	Verify MAF sensor readings with a diagnostic tool. Replace if readings are consistently out of specification.
Lack of power or hesitation during acceleration	Sensor providing readings that cause the engine to run too lean.	Check for vacuum leaks in the intake system. Ensure the MAF sensor is securely installed and connected.
Engine difficult to start	Severely faulty MAF sensor providing no or erratic signal.	Inspect wiring and connector for damage. Test sensor functionality if possible.

If troubleshooting steps do not resolve the issue, it is recommended to seek assistance from a certified automotive technician.

7. Specifications

Specification	Value
Brand	Bosch
Model	0280218135
Item Dimensions (L x W x H)	6.3 x 5.12 x 5.12 inches
Material	Plastic

Specification	Value
Item Weight	0.36 Kilograms
Style	Air Sensor
Measurement Accuracy	±3%
Mounting Type	Flange Mount
Output Type	Push-Pull
Specific Uses For Product	Air Flow Sensor
Upper Temperature Rating	220 Degrees Fahrenheit
UPC	826732057903
Manufacturer	Bosch
Included Components	MAF Sensor

8. Warranty and Support

For any issues experienced within 30 days of receipt, please contact the seller or manufacturer directly for assistance. The manufacturer's warranty covers defects in materials and workmanship under normal use.

For further technical support or warranty claims, please refer to the contact information provided with your purchase or visit the official Bosch Automotive website.

Ask a question about this manual

Ask about setup, troubleshooting, compatibility, parts, safety, or missing instructions. Manuals+ will review the question and use this page's manual context to help answer it.

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Email

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Question

Example: How do I reset this device or fix this error?

Details

Model number, symptoms, what you tried, or the section of the manual you are using.

Submit question