



MASS AIR FLOW SENSOR DIAGNOSTICS AND REPLACEMENT

The **mass airflow (MAF)** and oxygen sensors are used to measure the proper ratio of air to fuel. The two sensors work together to keep the engine within stoichiometry.

While the oxygen sensor measures the oxygen in the exhaust gases, the MAF sensor measures the amount of air by weight through changing voltages. It sends this information to the vehicle's onboard computer. The computer then uses it, with other inputs, to calculate the correct amount of fuel to be delivered to the engine. It is typically located downstream of the air filter. The computer balances this measured airflow with the fuel input by adjusting the injector pulses.

Typically, a vehicle's Check Engine Light will illuminate, alerting the driver that there is a code. If the code says it is the MAF sensor, it does not always mean that your sensor is the bad part causing the code.

REASONS FOR A MAF CODE:

- **Vacuum leak**
- **Misfire(s)**
- **Bad connection/wiring to the sensor**
- **Damaged or disconnected intake boot**
- **Clogged or improperly installed air filter**
- **Clogged/restricted catalytic converter or exhaust**
- **Dirty/obstructed or faulty MAF sensor**

When a MAF sensor fails, it typically under-reports air entering the engine. The unmeasured air is detected by the oxygen sensor. In most cases, the engine management system will see a lean mixture, increasing injector open time. This will drive the long-term and short-term fuel trims in a positive direction. Unmetered air codes and positive fuel trims can also be caused by air entering the engine after the mass airflow sensor. This could be

caused by an intake manifold gasket, PCV system malfunction or even the brake booster.

If the MAF sensor has been contaminated and is underreporting air entering the engine, the only option is replacement. Cleaning the sensor might improve performance, but it will never return its performance and accuracy to "like-new" condition.

Walker Products' MAF sensors are always 100% NEW and NEVER remanufactured! All sensors are 100% programmed and tested for fit, form and function before being available to be sold. As an industry-leading program, Walker Products manufactures high-demand SKUs in our USA facilities with OEM-quality components, custom-engineered circuit boards and programming.

The Walker Mass Air Flow Sensor program offers replacement sensors for both sensor only, complete sensor and housing assemblies. Sensor-only replacement is typically faster and more economical, but some manufacturers recommend replacing the complete housing assembly to ensure the connector air tubes are clean and to protect the sensor itself, which can be damaged by oils on your hands or even by air pollution.

Walker Products' Mass Airflow Sensors stand apart from the competition due to the focus on ensuring customers receive the best product possible. When it comes to MAF sensors, it is vital that they are correctly tuned to the vehicle, which is why Walker's team of engineers works to create sensors that have custom-tuned flow characteristics for the entire flow spectrum. Walker MAF sensors continue to meet or exceed OEM long-term fuel trim percentages, and calibrations go through 100%

production testing and are always verified using on-vehicle testing. Walker Products gives our customers the confidence that they are investing in nothing short of the best.



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