

# Why should you change an oxygen sensor?



It is critical that oxygen sensors are replaced at the suggested intervals provided by vehicle manufacturers before the sensor fails. Following the recommendations will prevent long term damage to a vehicle's engine, reduce harmful carbon dioxide (CO<sub>2</sub>) emissions and save money when refueling your vehicle.

An oxygen sensor's service life varies: oxygen sensors with 1 – 2 wires have a typical service life between 30,000 – 50,000 miles; while 3 – 5 wire sensors have a life span of up to 100,000 miles. Checking and replacing worn out oxygen sensors has become a critical part of regular vehicle maintenance.

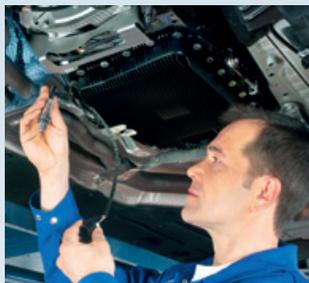
## A worn out oxygen sensor can cause

- ▶ Engine performance issues
- ▶ Lower miles per gallon fuel efficiency
- ▶ Excessive harmful exhaust emissions
- ▶ Catalytic converter damage

## Replacing a worn oxygen sensor

- ▶ Improves engine performance
- ▶ Reduces harmful emissions
- ▶ Optimizes fuel delivery for maximum miles per gallon
- ▶ Prevents catalytic converter failure

Oxygen sensors are important engine components – indispensable for reliable engine function and correct emission values. But the perfect functioning of oxygen sensors can be jeopardized by many factors:



- ▶ Environmental influences, such as salt and dirt
- ▶ Large temperature fluctuations
- ▶ Poor-quality fuel
- ▶ Soot and oil residues in the exhaust gas

## How to diagnose



**State of oxygen sensor:**  
Greenish, grainy discoloration.

**Possible cause:**  
Antifreeze has escaped and entered the combustion chamber.

**Measure:**  
Replace the oxygen sensor. Check the engine block, cylinder head, intake manifold and head gasket for wear and cracks.



**State of oxygen sensor:**  
Blackened, with oily contamination.

**Possible cause:**  
Excessive oil consumption.

**Measure:**  
Check the valve guides and seals, which may be worn. Replace the oxygen sensor.



**State of oxygen sensor:**  
Dark brown discoloration.

**Possible cause:**  
Air-fuel mixture too rich.

**Measure:**  
Check the fuel pressure. Replace the oxygen sensor.



**State of oxygen sensor:**  
Reddish or white discoloration.

**Possible cause:**  
Fuel additives in the gasoline.

**Measure:**  
Do not use fuel additives. Replace the oxygen sensor.



**State of oxygen sensor:**  
Broken cable.

**Possible cause:**  
Excessive cable tension.

**Measure:**  
Replace the oxygen sensor. Route the new cable without tension.



**State of oxygen sensor:**  
The molded cable tubing is damaged.

**Possible cause:**  
Impact by stone chippings.

**Measure:**  
Replace the oxygen sensor.

