



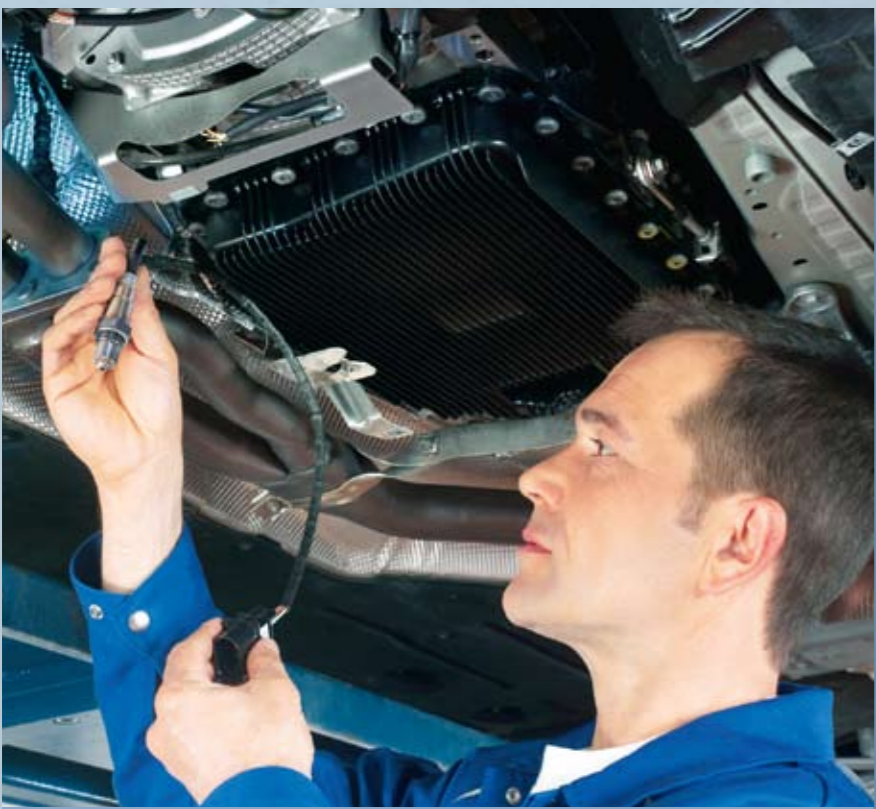
# Bosch tips

## Detecting lambda sensor faults and dealing with them



**Check regularly, change in good time**

**That's how to detect faulty lambda sensors**



**Lambda sensors are important engine components - indispensable for reliable engine function and correct emission values. But the perfect functioning of lambda 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

To prevent possible engine damage and increased fuel consumption - with resulting higher CO<sub>2</sub> emissions - lambda sensors should be checked every 30,000 kilometers and replaced as a precaution at the recommended intervals.

**Prerequisite for lambda sensor diagnosis:** The engine mechanics and ignition system must be in good working order.

**To diagnose a lambda sensor, proceed as follows:**

1. Read out the fault memory and check the actual values from self-diagnosis
2. Check the signal patterns (comply with ESI[tronic] trouble-shooting instructions)
3. Examine cables and connections for secure contact

If you find anything unusual during these diagnosis steps, remove the lambda sensor and follow the instructions on the right in cases of extreme contamination/discoloration.



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

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

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



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

**Possible cause:**  
Excessive oil consumption.

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



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

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

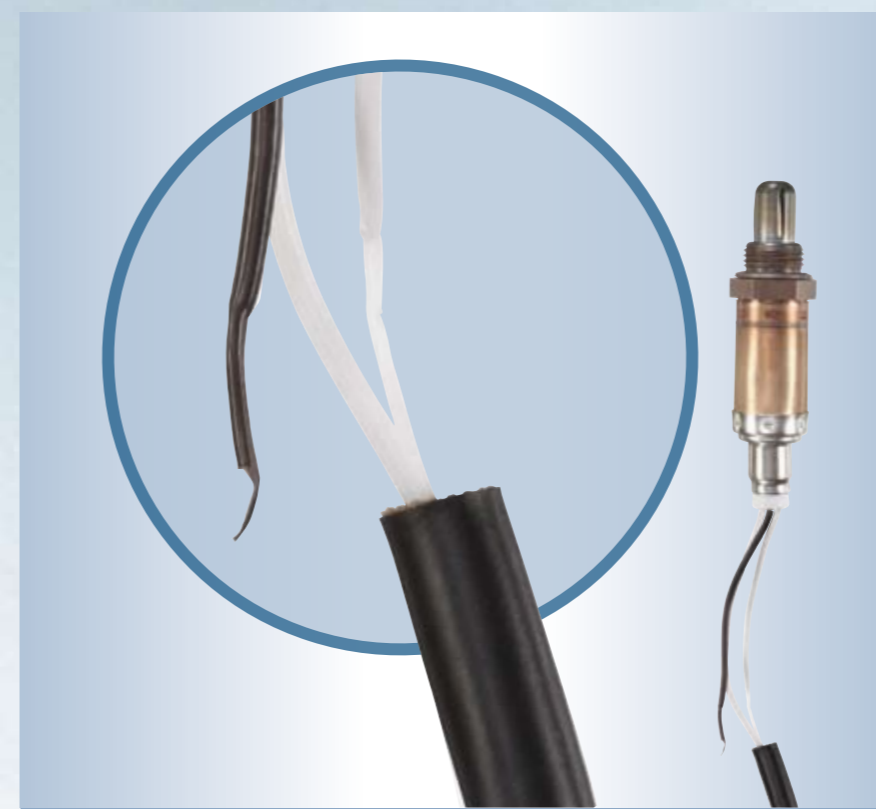
**Measure:**  
Check the fuel pressure. Replace the lambda sensor.



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

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

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



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

**Possible cause:**  
Excessive cable tension.

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



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

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

**Measure:**  
Replace the lambda sensor.

## What makes Bosch lambda sensors so unique?



Lambda sensors from Bosch are tailor-made for the workshop and 100% aligned to workshop requirements.

**3 advantages for fast, reliable installation:**

- ▶ The pre-greased thread allows you to replace the lambda sensor quickly and easily, saving you work and time
- ▶ Made-to-measure cable lengths make the sensor suitable for every type of vehicle
- ▶ The original connector fits perfectly, just like in the original equipment

**Original equipment expertise for virtually every vehicle**

All Bosch lambda sensors feature original equipment quality: in other words, they are subject to the same strict test criteria as the original part in your customer's car. The quality of the replacement lambda sensor is therefore guaranteed to remain constant.

That's why all vehicle manufacturers worldwide put their trust in lambda sensors from Bosch - the Number 1 for lambda sensors for original equipment and the aftermarket.

**And that's why regular checking and replacement is well worthwhile. Specific advantages for car drivers, compared with those with a faulty lambda sensor:**

- ▶ Up to 15% savings in fuel costs
- ▶ Minimized pollutant values
- ▶ Improved engine power
- ▶ Reduced CO<sub>2</sub> emissions