BOSCH 0258 005 074
NTK 25592.

OXYGEN SENSOR REPLACEMENT INSTRUCTIONS

GENERAL INFORMATION

PERIODIC MAINTENANCE

The oxygen sensors **have to be periodically replaced** following the vehicle manufacturer indications (normally every 50.000-60.000 km) because the sensitive element is loosing efficiency with the time, due to chemical contamination caused by the combustion gases. They become progressively unsensitive, even in correct engine regulation conditions. They should be considered as a consumable item like filters, spark plugs, etc. Missing periodical replacement causes poor engine performances, high increase of fuel consumption, environmental pollution and fast deterioration of the catalytic muffler (much more expensive).

OXYGEN SENSOR DETERIORATION

As a general rule, all the oxygen sensors are very sensitive to lead, coking, unburnt hydrocarbon, oil vapor, silicon and coolant contaminations. Notice that:

1. Lack of regular engine maintenance can damage the oxygen sensor.
2. Carbon coking and unburnt hydrocarbon, due to rich mixture, damage the oxygen sensor.
3. Lead contamination, due to poor quality contaminated gasoline or erroneus use of leaded gasoline, causes a very fast deterioration of the oxygen sensor.
4. Silicon contamination due to bad quality green gasoline is also fastly deteriorating the oxygen sensors.
5. Coolant contamination, due to leakage of engine gaskets in wearout engines, causes a very fast deterioration of the oxygen sensor.

TOOLS NEEDED

- 22 mm hexagon key for most of the sensors (17 mm hexagon key for some M12 sensors).
- in case of flange-fitted sensor (some Toyota vehicles, etc.) also a 10 mm hexagon key is needed for flange bolts removal

WARNING

DO NOT REPLACE THE SENSOR WHEN THE ENGINE IS HOT. DO NOT TOUCH WITH YOUR HANDS THE ENGINE OUTLET MANIFOLD WHEN HOT. WAIT UNTIL IT IS PROPERLY COOLED DOWN.

CAUTION

READ **ALL THE INSTRUCTIONS** THOROUGHLY BEFORE SENSOR REPLACEMENT. DO NOT USE WORN OUT TOOLS.

CAUTION

THE THREADS OF THE OXYGEN SENSOR ARE COATED WITH A SPECIAL LUBRICANT COMPOUND THAT ALLOWS EASY INSTALLATION AND REMOVAL. DO NOT REMOVE THIS COATING FROM THE THREADS. ALSO TAKE CARE NOT TO SPREAD THIS ANTISEIZE GREASE OVER THE SENSOR HEAD, OR THE SENSOR MAY BE DAMAGED FOR CONTAMINATION.

PROCEDURE

1. Identify the sensor mounted on the engine exhaust manifold or exhaust pipe and its connector.
2. Remove the connector plug of the sensor from the relevant socket and clean the socket terminals by an electro- contact cleaner.
3. By the 22 mm (or 17mm) hexagon key, remove the old sensor. NOTE: This is easier when the manifold is moderately warm. (If the sensor is fitted with a flange, remove the flange bolts by the 10 mm hexagon key, then remove the old flange from its location. The flange has to be replaced before installing the new sensor.).
4. Clean the threads, removing dirt and corrosion to ensure good electrical conduction.
5. Remove protection cap from the new sensor head, paying attention not to foul the sensor head with the antiseize grease of its threads or other grease/dust of the engine vane. NOTE: If the threads are not lubricated, a small amount of Cyclo C-681 Lambda Antiseize conductive grease or equivalent must be employed over the threads.
6. Insert the sensor and turn it by hand into its threaded location.
7. Complete the mounting by the hexagon key, tightening ½ turn to ¾ turn more, that is **35 - 45 Nm the standard M18** sensor (18-23 Nm the smaller M12 type). DO NOT OVERTORQUE.
8. Connect the sensor plug to the corresponding socket.

IMPORTANT COMPLETION NOTE

After the oxygen sensor replacement two more operations have to be carried out on the vehicle engine control system:

1. Reset of the engine control CPU.
2. Re-assignment of the sensor parameters to the CPU.

This is needed to remove from the CPU memory any previous error data which may have been stored and to avoid bad engine regulation due to the keeping of the old sensor parameters. In most cases this can be obtained as follows:

1. After installation of the new sensor, with engine always off, disconnect the positive terminal of the vehicle battery for at least 2 to 3 minutes to reset the CPU.
2. Immediately after reset, reconnect the battery terminal and make a short travel with the vehicle (at least 5-10 minutes) in order to re-assign the new sensor parameters to the CPU.

However, it is always recommended to refer to the specific procedure, as detailed in the vehicle Manufacturer maintenance manual.

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