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For direct replacement of OE sensors

The new NOx sensors ensure accurate urea dosing and replace the OE sensor directly.

An essential part of modern trucks and diesel engine

A NOx (nitric oxide) sensor is typically a high-temperature device that measures the level of oxides in exhaust systems, which is strictly regulated by authorities in all parts of the world.

The measurement also helps to optimize engine operation, ensuring proper functioning of the exhaust after-treatment system.

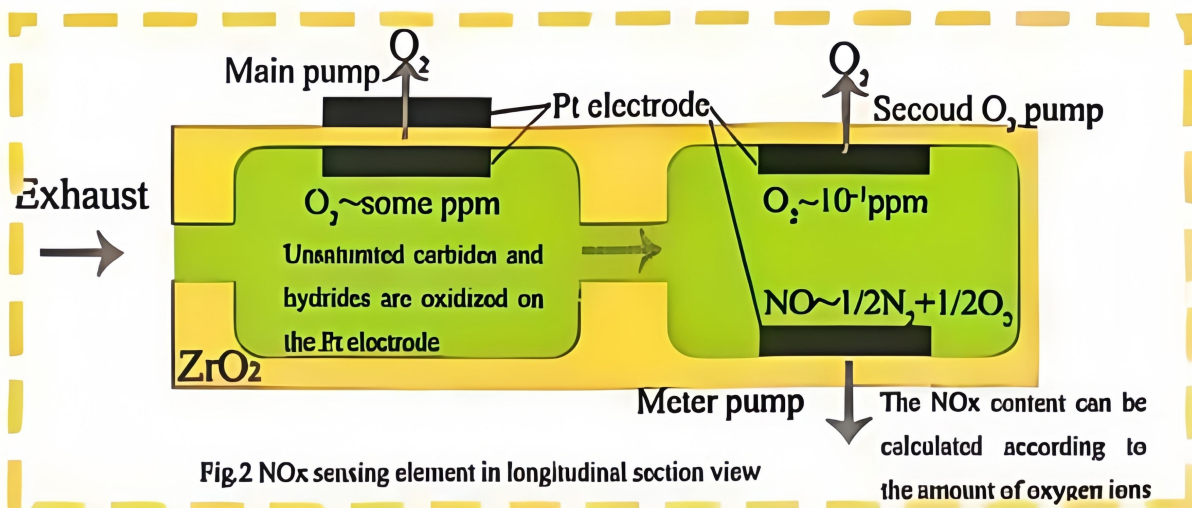
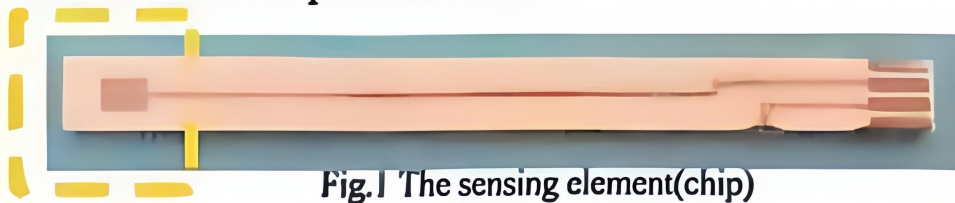
Thoroughly tested

All NOx sensor products match OE criteria and are calibrated and controlled at test facilities. Parts available for Cummins, DAF, Detroit, Freightliner, International, Iveco, Kenworth, MAN, Mercedes-Benz, Paccar, Peterbilt, Renault Scania and Volvo. All products have a 1 year warranty.

Principle of operation

NOx sensor acts as oxygen sensor with extended functionality.

The sensing element is a ceramic chip(see Fig.1)that consists of a heating circuit,small passage leading into two cavities,oxygen pumping circuit and NOx decomposition circuit.



Before operation,the ceramic chip is heated for approximately 1.5minuters for it to become functional.As the exhaust gas enters the ceramic chip through the small passage(see Fig.2),at the first cavity all the free oxygen molecules are pumped through the second cavity where NOx molecules are decomposed and the resulting oxygen measured as a small electric current.

Additional circuit board(see Fig.3)is used to convert the measured current to a signal which is compatible with the Engine Control Unit(ECU) communications protocol.

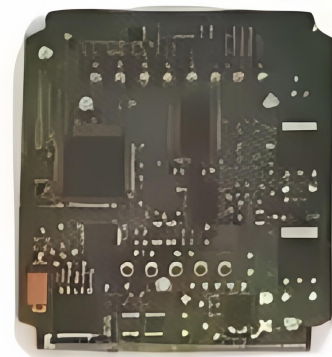


Fig.3 Sensor circuit board

User Manual

The supply voltage of Xinyuan NOx sensors is limited within 9~36 Volts and the signal voltage ranges from 2.5 to 3.6 Volts. It is strictly prohibited to alter the arrangement of connector wires.

During storage or installation, please make sure that the sensor wires are hanging tension-free.

The cautions in installation and operation.

1>After proper installation the sensor wire should form a 180 degree loop to provide for safe play-distance(see Fig.4).

2>The minimum bending radius of the harness is 10 mm.It is likewise prohibited to wind or bend the wire(see Fig.5).

3>Airtightness of sensor and exhaust pipe shall be ensured.

4>The operating temperature of SCU is between - 40°C and 125 °C, please keep away from heat source.

5>Keep the cable away from sharp edges and avoid contact/friction with frame/engine assembly.

6>When installing the NOx sensor in nonspecific(new) designations,please consider sensor locations carefully. It should not be placed overly close to bends, as the turbulence will disturb proper operation.

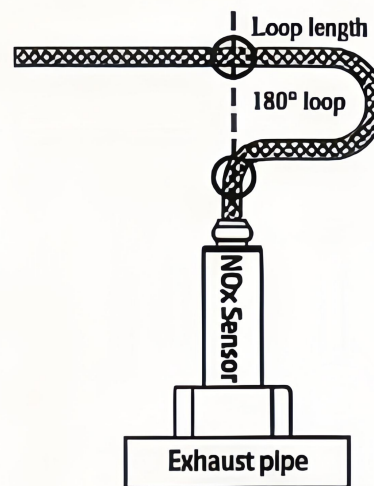


Fig.4 Suggested wire handling during installation

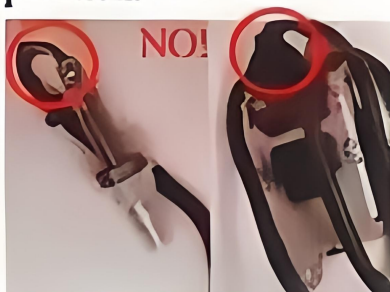


Fig.5 Inappropriate wire



Fig.6 Sensor placement suggestion

7>The installation angle should be up-right, considerable distance away from any bends(see Fig.6).

8>Installation angle should be aimed perpendicular; at least it must be inclined 10° towards horizontal.

Thus preventing the collection of liquids between sensor housing and sensor element during the cold start phase.

The angle against the exhaust gas stream should be aimed as 90° ; maximum inclination $90^\circ \pm 45^\circ$.

Additional placement suggestions are given in figure 7.

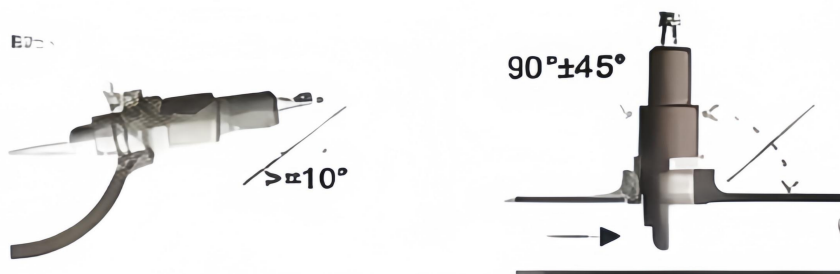


Fig.7 Installation angles

9>When replacing a NO_x sensor please pay attention to its' designation. The sensors that are located before the catalyst are regarded as "upstream", but those that are located after the catalyst are considered as "downstream sensors". The NO_x sensor concentration in both of these locations is very different so in some applications different sensors might be used for upstream and downstream locations. It is very important to avoid any mix-ups.

10>Tightening torque: 40-60 Nm, material characteristics and strength of the counter thread must be appropriate.

11>The sensor ceramic element is heated up quickly after heater start. After heating up the ceramic, all occurrence of condensation water, which could damage the hot ceramic, must be ruled out.

When choosing a location of a NO_x sensor, please also consider the potential for pools of condensate water to form in the exhaust system.

12>The use of cleaning or greasing fluids or evaporating solids at the sensor plug connection and the sensing element is not permitted.

13>The sensor must not be exposed to strong mechanical shocks (e.g. while the sensor is installed).