ATT NOx Sensor

USER MANUAL

ALLIANCE
TRANSPORT TECHNOLOGIES

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CONTENTS

For replacement of OE sensors

ATT NOx Sensors

ATT is a leading supplier and remanufacturer of emissions control technologies. We are committed to providing the highest quality products that not only meet our customers' needs but also contribute to a zero emissions culture.

To ensure that our NOx Sensors accurately measure nitrogen oxide and oxygen concentration and comply with strict emission regulations we work closely with a reputable strategic supply partner who, at their international factories, develop and create innovative products that are made from trusted genuine materials. These factories and new technologies are managed and quality controlled by Alliance personnel.

Sub-assembly of units takes place by the ATT team here in the UK. All ATT NOx sensors are tested by ATT engineers using proprietary software developed in-house here at ATT. This is ATT's final QC process and ensures that high quality standards are adhered to. Distributed from our New Parts depot in Cleckheaton, all our NOx Sensors come with a 12-month warranty from date of invoice.

Rigorous Testing

Alliance Engineers

Sub-assembled in the UK

100% Guarantee

Ethical Overseas Factories

PRINCIPLES OF OPERATION

A NOx Sensor is a high-temperature device that measures the levels of nitrogen oxide and oxygen concentration within the air. It can also detect emission regulations in a combustion environment eg exhaust of a truck. This is achieved by transmitting the measured values via a CAN bus to the master control.

Certain gases, including carbon dioxide and nitrogen oxide, are the catalyst in causing atmospheric pollution. More specifically, nitrogen oxide contributes to the production of smog and can cause lung damage.

HOW DOES THE ATT NOx SENSOR WORK?

Here at ATT, we only use tested quality genuine materials that we can trust. As a customer, your satisfaction is something that we can guarantee.

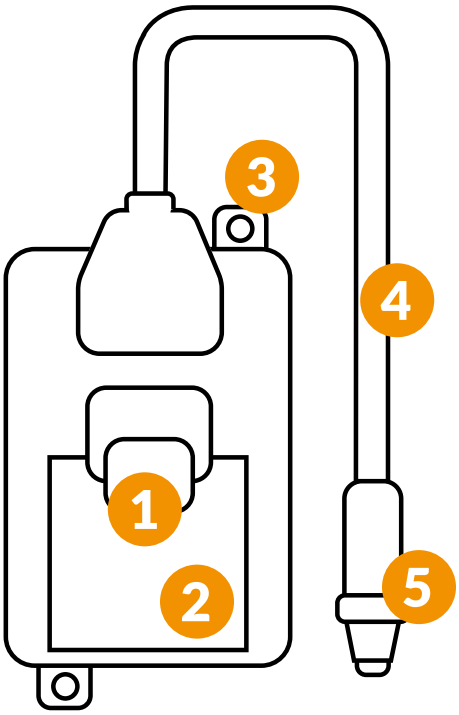
The effectiveness of a NOx sensor depends on the quality of the sensor. A high-quality sensor works by using high-graded various base metals. These metals react with the nitrogen oxide, which then sends a voltage current to the SCR system. This works directly proportional to the amount of NOx produced by the vehicle; the higher the amount of NOx, the stronger the voltage.

When using a cheaper, lower-quality NOx sensor, it can be less accurate. This is down to how effectively the sensor can estimate the concentration level of NOx rather than using the numerical value of the voltage. Overall the sensor is less efficient due to detecting NOx slower than a higher quality sensor.

ATT NOx Sensor

NOx Sensor Circuit Board

USER MANUAL



Product Part Key

1. Power Plug
2. PCB Unit
3. Mounting Plate
4. Leather Cable Hose
5. Read Sensor

1

The supply voltage of ATT 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 and installation, please make sure that the sensor wires are hanging tension-free. After proper installation the sensor wire should form a 180 degree loop to provide for safe play-distance.

2

When installing the NOx sensor in non-specific (new) designations, please consider the sensor's location carefully. It should not be placed overly close to bends, as the turbulence will disturb proper operation. The installation angle should be up-right, and a considerable distance away from any bends.

Inappropriate Wire Handling

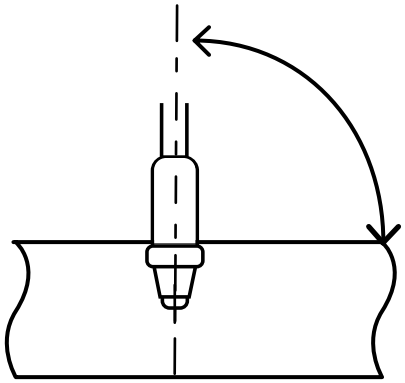
3

When replacing a NOx 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 NOx 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.

4

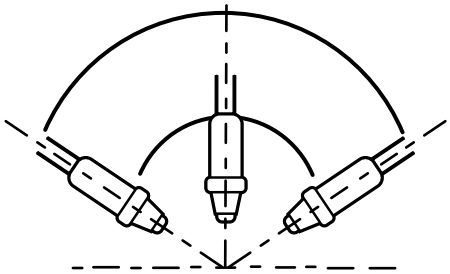
When choosing a location of a NOx sensor please also consider the potential for pools of condensate water to form in the exhaust system. The sensor location should be chosen so that during operation there is no risk for the condensate water to come in contact with the sensor head.

Vertical Angle



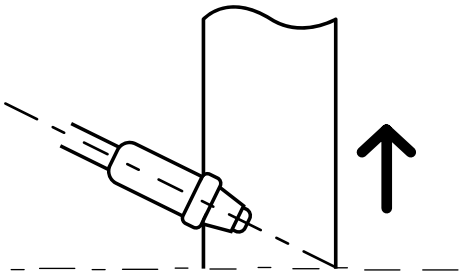
Horizontal Exhaust Pipe Alignment

Tile Angle from Vertical



Horizontal Exhaust Pipe Alignment

Horizontal Angle



Vertical Exhaust Pipe Alignment

ATT NOx Sensor Testing Rig

ATT Engineer Testing our NOx Sensors

WE TEST WE CHECK WE SOLVE

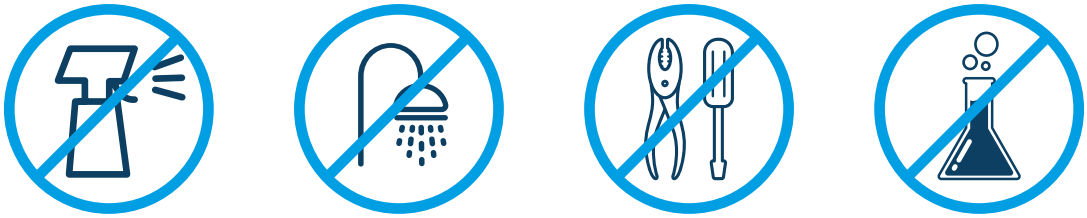
Full audit trail that is accredited to ISO 9001 ensuring a quality service for our customers every time

TROUBLESHOOT

Before replacing the old NOx sensor it is important to understand why it failed. Possible reasons for failures are listed below:

- Excessive soot/ash content in exhaust gas. The sensor head will be black.
- Contaminated exhaust gases. Engine oil contamination is a common issue indicating worn out engine components.
- Lacking or excessive supply voltage due to short circuit, sudden voltage spikes or external power source.
- Direct contact with condensate during operation.

It is important to fix any of the listed issues before installing a new NOx sensor otherwise the risk of repeated damage remains. If the freshly installed sensor is not recognised or does not function, please use a multimeter to see if the power supply is within 9-36 Volts (12V nominal) at the sensor connector. Please also make sure that you follow any instructions regarding NOx sensor replacement issued by the manufacturer of your vehicle. If the sensor connects and is recognised but is showing signs of abnormal function, please make sure that the correct sensor is selected for its' location.



Prohibited Handling

WARRANTY

Please make sure that all the issues from the troubleshoot section have been repaired before installing the ATT product. If evidence of any of the issues listed under troubleshoot section are detected during warranty investigation, the claim will be rejected. Likewise, the sensor body and wiring must not bear visible signs of damage in order for the warranty to be valid. If the sensor thread or nut has sustained damage, it is evidence of excessive force that can potentially lead to failure.

Exposed Wiring

The area where wiring connects to the sensor head is the most critical and can be prone to connection loss if treated poorly. In case of damage, the warranty will not be valid.

Used vs New Sensor Head

If there are considerable stains of soot/ash on the sensor head, it is evidence of a damaged DPF or poorly calibrated engine operation. The sensor chip in this case is easily damaged and therefore warranty becomes void.

Do not attempt to wash or submerge the sensor. Do not use any spraying agents. Store in a dry environment only. If evidence of water is found in the sensor head, or any chemical traces are found on the product, the warranty will be void.

Damaged Wire Protector

Damaged wire protectors are evidence of poor handling that can result in damaged wiring. In order for the warranty to be valid there must be no signs of wire damage.

CONTACT

Scott Thompson is our Head of New Parts in Cleckheaton. He and the team are our specialists for all your new part needs. This ranges from ordering, shipping and product technical information. They are availiable 8am - 5pm Monday to Friday and you can find the department's contact information below.

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