Automotive Oxygen Sensor

Introduction

Automotive oxygen sensor is also called automobile A/F oxygen sensor, automobile oxygen sensor, automotive exhaust sensor, air/fuel oxygen sensor, exhaust oxygen sensor, zirconium oxide oxygen sensor and lambda sensor.

Automotive oxygen sensor is mounted to the exhaust gas manifold and used to:

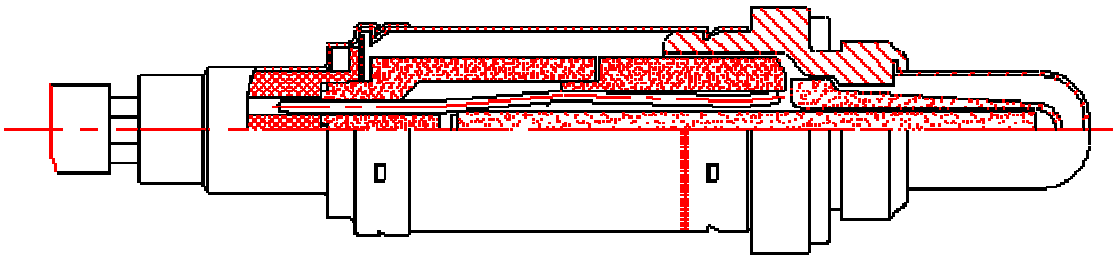
1. Improve fuel economy as much as 15-20%.
2. Minimize exhaust emission.
3. Ensure peak engine performance.

For a better engine performance, we suggest:
Use the unleaded gasoline.
Replace the normal aging oxygen sensor at the interval: every 100,000-Km.

Constitution

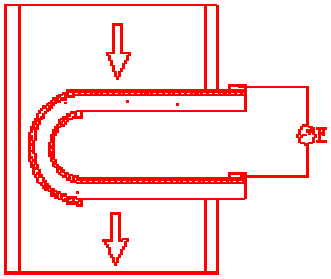
HTYG-3/4 sensor consists of a zirconia tube, a rod heater, sealing elements, signal output wires and a connector.

The zirconia tube mounted in the cavity with a rod heater is the key component. Its surfaces are provided with electrodes made of a gas-permeable platinum layer. And a porous ceramic coating has been applied to the side exposed to the exhaust gas. This coating prevents contamination of the electrode surface by combustion residue in the exhaust gas for a longer life.



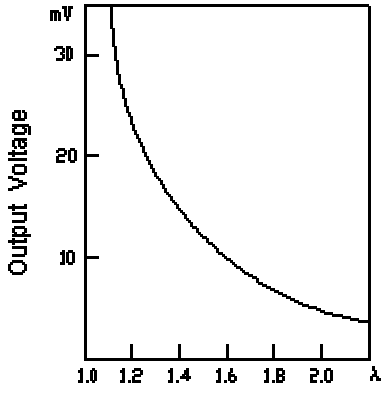
Principle

The exhaust emission is of severe pollution to atmosphere. To minimize exhaust emission, it is only possible to use three-way catalytic converters. These converters operate efficiently only if combustion is as complete as possible and if unleaded gasoline is used.



The automotive oxygen sensor is a measuring probe for determining the oxygen content of the exhaust gas. Since the amount of oxygen in the exhaust gas indicates precisely how complete the combustion of the air-fuel mixture in the cylinders is, it is also the best parameter for controlling the air/fuel ratio.

The oxygen sensor is located in the exhaust manifold. The outside surface of the ceramic measuring tube protrudes into the gas flow, and the inner surface contacts with the outside air. A voltage is generated at the interface due to the oxygen difference in the two electrodes.



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When the engine is operating with a rich exhaust (excessive fuel), there is a reduction of free oxygen in the exhaust stream and the oxygen voltage raises above the reference voltage (the reference voltage is sent by ECU). When the engine is run lean, the voltage drops below the reference voltage due to the excess of oxygen in the exhaust stream.

* High voltage output = rich mixture = low oxygen content in the exhaust

* Low voltage output = lean mixture = high oxygen content in the exhaust

This voltage is processed by ECU (electronic control unit) into a control signal for influencing the air-fuel mixture through controllable fuel injection.

By providing closed loop control of the mixture, it becomes possible to use three-way catalytic converters to achieve the maximum reduction in exhaust emission. In addition, the engine runs smoother and is more fuel-efficient.

Technical Specifications

1. Working temperature: 200-900ºC
2. Temperature of sensed exhaust gas : 100-600ºC(the maximum

temperature for rod heater can be up to 800ºC)

3. A/F ratio: 12 ≤A/F≤17
4. Output voltage: 10mV-1000 mV
5. Response time: <200 ms
6. Life time: ≥1.0×10^5 Km (when unleaded gasoline used)
7. Rated voltage: 12 V

Quality, Service and Price

We know our clients concern the quality, the service and the price.

As stated in the Company Introduction, Hongtak has been engaging in oxygen sensor for five years and has a strong technical force. These make Hongtak as one of the wold top leaders in the oxygen sensor industry.

We always try all the possibilities to provide better services and to be competitive in prices to meet our customers' utmost satisfaction.

Ordering

Since different cars may have different types of oxygen sensors, please specify your specific types of cars when ordering.