Feature

SHINKA 1

SHINKA (Delving) of Automobile Oxygen Sensors

Helping Prevent Atmospheric Pollution by Controlling the Exhaust Gas Cleaning Performance of the Three-Way Catalyst*

* An exhaust gas cleaning device that simultaneously eliminates carbon monoxide (CO), hydrocarbons (HC) and nitrogen oxides (NOx) in exhaust gas through oxidation or reduction.

History of Oxygen Sensors

1980s

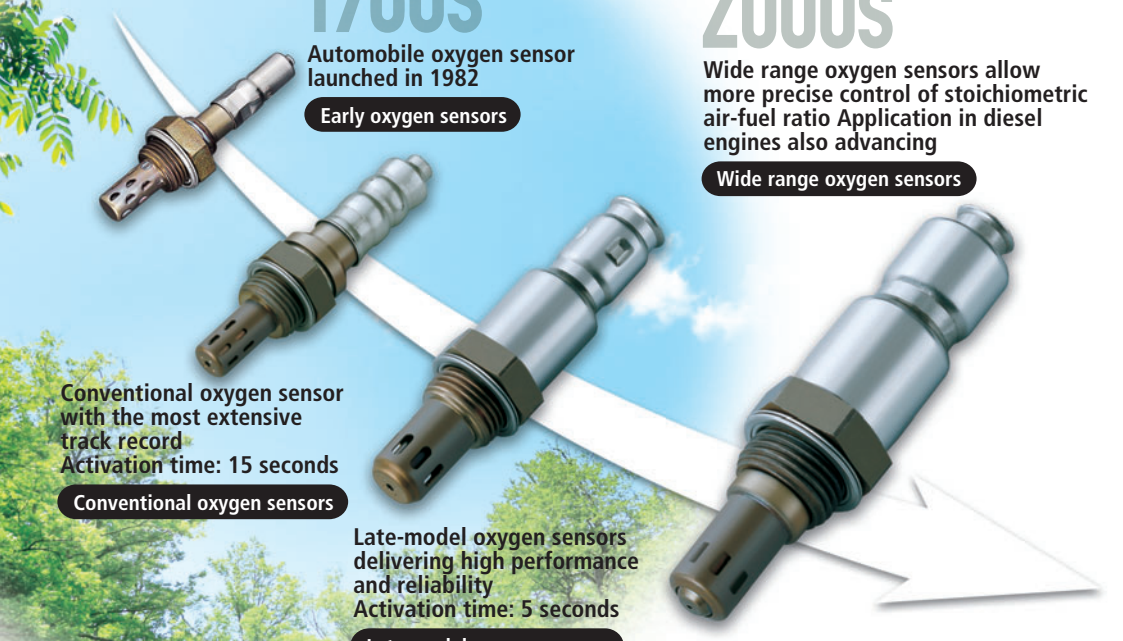
Automobile oxygen sensor launched in 1982

Early oxygen sensors

2000s

Wide range oxygen sensors allow more precise control of stoichiometric air-fuel ratio Application in diesel engines also advancing

Wide range oxygen sensors



Conventional oxygen sensor with the most extensive track record
Activation time: 15 seconds

Conventional oxygen sensors

Late-model oxygen sensors delivering high performance and reliability
Activation time: 5 seconds

Late-model oxygen sensors

Voice of our Developer

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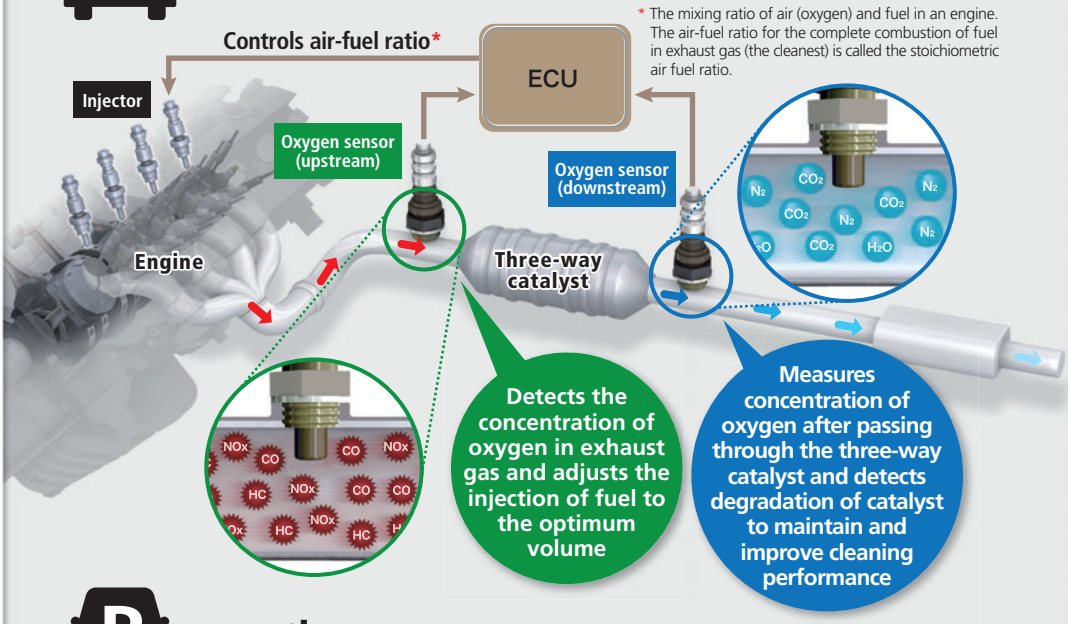
Aiming to establish new elemental technologies

The precious metal platinum is needed to make the elements in oxygen sensors perform their function, but it is an extremely expensive metal, which is a factor in pushing up the cost of sensors. We go to a lot of trouble to identify the minimum amount of platinum required to strike a balance between guaranteeing the functional aspect of the sensor with cost reductions. Oxygen sensors still have a short history relative to the history of the internal combustion engine, and that is why there is still unexplored territory in terms of methods of usage and development goals. We will work to establish elemental technologies in order to handle new areas.

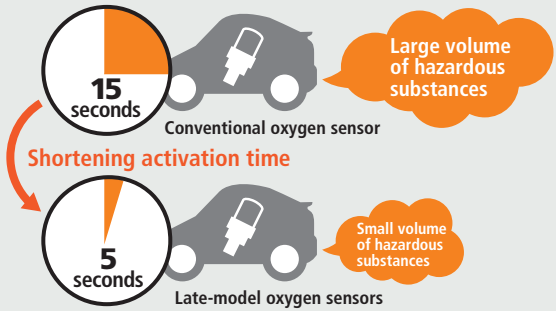
Controls Exhaust Gas Cleaning Performance



* The mixing ratio of air (oxygen) and fuel in an engine. The air-fuel ratio for the complete combustion of fuel in exhaust gas (the cleanest) is called the stoichiometric air fuel ratio.

Preventing Atmospheric Pollution

Oxygen sensors need to function in the shortest possible time after the engine starts. The activation time for NGK SPARK PLUG's late-model sensors is a mere five seconds. They also meet exhaust gas regulations becoming stricter around the world.



Supplying NOx Sensors to Meet Stringent NOx Regulations

Highly precise control of NOx is needed to meet the stringent NOx regulatory values of recent years.

NOx sensors measure the concentrations of NOx and oxygen in exhaust gas in real time, contributing to energy conservation and clean air by controlling NOx in gasoline direct injection engines and diesel engines.

WEB

http://www.ngkntk.co.jp/english/csr/feature01.html