

NTK **EGR** VALVES ARE AVAILABLE IN TWO TYPES...

pneumatic



electric



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NGK Spark Plugs (UK) Limited
Maylands Avenue
Hemel Hempstead
Hertfordshire
HP2 4SD

Tel: 01442 281000
Fax: 01442 281001



VEHICLE
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Effective control
of NOx emissions
is more important
than ever - all the
more reason to trust
the world's No.1



**AVOID
HARD NOx
WITH NEW
EGR
VALVES**
FROM THE WORLD'S NO.1

HOW DO EXHAUST GAS RECIRCULATION VALVES HELP KNOCK NOx?

The principal function of the exhaust gas recirculation 'EGR system' is to reduce the amount of nitrogen oxides, also called NOx or pollutants, that are produced during the combustion process.

NOx is created by the high combustion temperatures that allow the nitrogen and oxygen in the air/fuel mixture to combine and form nitrogen oxides. EGR takes exhaust gases from the exhaust manifold and reintroduces them into the intake manifold, mixing them with fresh air.

Today, 100 % of the Diesel cars are equipped with EGR, and only 30 % of petrol cars. Since Euro 5, most of the new petrol cars in the market are/will be equipped with an EGR system.

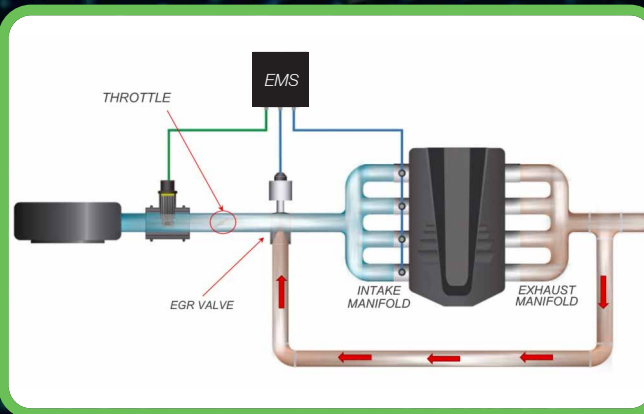
New models will be equipped with two EGR types (low pressure and high pressure).

Achieving the "right" level of return gas is governed by the Engine Management System (EMS) which measures various inputs e.g. engine load, engine speed, boost pressure, mass air flow rate, intake air temperature.

The Engine Management System (EMS) calculates the desired EGR return rate. (Diesel max. 30% and petrol up to 18%)

The EGR valve, which is controlled and actuated by the ECU then returns the exact amount of exhaust gas to the intake manifold as calculated by the EMS

The result? NOx emissions are reduced



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The biggest challenge for the EGR valve is soot deposits which can cause:

Unstable idling, jerking, insufficient power and illumination of the MIL warning light

This is often the cumulative effect of repeatedly driving short distances resulting in an incorrect fuel/air mixture caused by;

Clogged air filter

Defective MAF/ MAP sensor

Defective injectors

Worn spark plugs or damaged glow plugs

In addition, abnormal oil entering the combustion chamber (e.g. worn valve guides or cylinders/rings or via the turbocharger) can also be the cause of rapid clogging of the EGR valve.

Oil vapour produced during combustion can also lead to very rapid build-up of carbon in the EGR valve.

POSSIBLE CONSEQUENCES

A defective EGR valve is not automatically a major problem but sooner or later it can damage the particle filter.

Deposits can also form within the intake manifold and Intake valves can become coated and gummed, which can lead to damage to the turbocharger.