



PN-2015-007-EGTS-Wrong application UPDATE

Date 09.10.15

TECHNICAL INFORMATION

EGTS Exhaust Gas Temperature Sensors

Wrong application chosen

Warranty department noticed that EGTS sensors are sent in which are not defective. Customers reported that “NTK sensor does not work, but OE sensor works”.

The problem could be traced down to wrong application.

This Technical Information explains the background and how to choose the correct part..

Function principle of EGTS Sensors:

- Generally, Exhaust gas temperature sensors work by changing their resistance according to the temperature.
- There are sensors of two different function principles used by the car manufacturers: “NTC” and “PTC” Type.
- NTC: The resistance gets LOWER when the temperature gets higher
- PTC: The resistance gets HIGHER when the temperature gets higher
- Many car manufacturers use sensors of both function principles (NTC and PTC) sometimes on different positions at the same engine.

NTK EGTS Sensors:

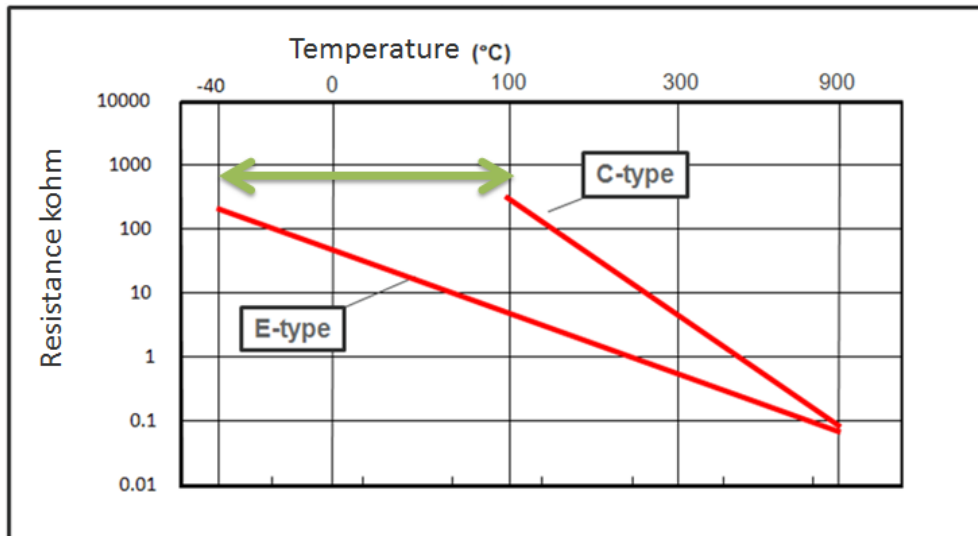
- All NTK EGTS sensors are NTC types. They differ in design, wire length and also in resistance.
- NTK distinguishes EGTS into C-Type and EGTS E-Type.



NTK EGTS NEWS



- The E- Type has a measuring range from -40 to +900°C
- The C- Type has a measuring range from +100 to +900°C
- E- Type and C- Type differ significantly in resistance

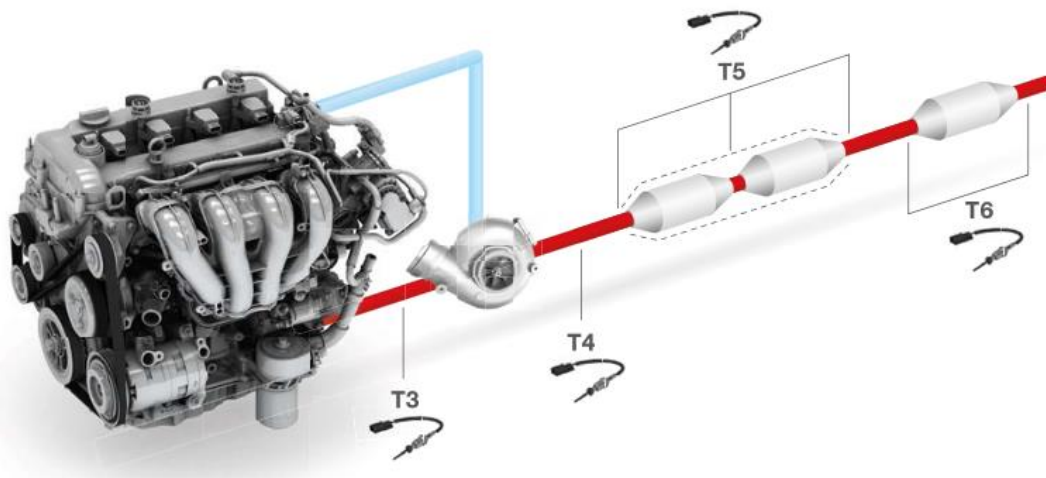


- A typical value for an NTK E- Type sensor is around 25 kΩ at 20°C, and 90 Ohm at 900°C
- A typical value for an NTK C- Type sensor is around 6 M (!) Ω at 20°C, and 90 Ohm at 900°C
- A typical value for a PTC Sensor (not by NTK) is about 270 Ω at 20°C, and 800 Ohm at 900 °C
- It is obvious that the three different types of sensors must not be interchanged
- If a wrong sensor is installed, often a trouble code is stored by the ECU (sometimes only after a few km of driving). If that happens, technicians often check the resistance and measure (in case of C- Type) a “very high resistance”. They conclude that the sensor is faulty.
- Problems occur also if the sensors are installed in the wrong engine (always carefully observe engine code). Even with the same car model, there is one engine using the NTC Type sensors, other engines use the PTC type.
- Some engines use both types at different installation positions.



Choosing the correct application:

In the NTK catalogue the installation position is indicated by a code. (T1-T6)



T3 Position = Before turbocharger

T4 Position = After Turbocharger

T5 Position = Before Diesel Particle Filter (DPF)

T5 Position = After Diesel Particle Filter (DPF)

T5 Position = Before catalyst

T6 Position = After catalyst

NTK EGTS NEWS



Example from NTK catalogue:

VW Passat, 2011, Engine CFFB:

Three different NTK sensors and installation positions for one engine

Passat	TDi	362	CFFB	1968	103	08.10 -	7	Before turbocharger	Lower	T3	VW115J-CWE	92572
Passat	TDi	362	CFFB	1968	103	11.10 -	6	Before Diesel Particulate Filter		T5	VW100J-EWE	95067
Passat	TDi	362	CFFB	1968	103	11.10 -	6	After Diesel Particulate Filter		T5	VW106J-EWE	97702

Two of the sensors are T5 position; one is installed before DPF, the other after DPF. They have different part numbers!

Therefore it is additionally necessary to determine the exact sensor position. An additional help is to distinguish the different NTK sensors by function principle/ part numbers:

Example: E- Type: VW101J-EWE

Example: C- Type: VW114J-CWE

Example from TecDoc:

NGK	
Sensor, exhaust gas temperature (Mixture Formation)	
92572	Sensor, exhaust gas temperature
Trade Numbers:	VW115J-CWE
	Engine Code : CFFB
	Fitting Position : Lower
	before turbocharger, Number of circuits: 2, Length: 680 mm
95067	Sensor, exhaust gas temperature
Trade Numbers:	VW100J-EWE
	Engine Code : CFFB
	before soot particulate filter, Number of circuits: 2, Length: 660 mm
97702	Sensor, exhaust gas temperature
Trade Numbers:	VW106J-EWE
	Engine Code : CFFB
	after soot particulate filter, Number of circuits: 2, Length: 505 mm

Always check the exact engine code and correct installation position for EGTS sensors to make sure it really fits the car.

