

140

TECHNICAL REPORT

EURO environmental standards
for EU vehicles



INTRODUCTION

Concern to reduce the impact of vehicle emissions within the EU led to the imposition of increasingly stringent environmental requirements.

At the end of the 1980s, the first of the regulations to control pollutant emissions from combustion vehicles came into force: Euro 0, in 1988.

Since then, the regulations applicable to both diesel and petrol engines have been renewed every 4 years, each time tightening the maximum pollutant emission limits that newly registered vehicles to be marketed in Europe must comply with.

The following is a summary of the limits established, in each regulation, for the gases contained in the emissions produced by cars:

- Nitrogen oxides (NO_x).
- Carbon monoxide (CO).
- Carbon dioxide (CO₂).
- Unburned hydrocarbons (UHCs).
- Particulate matter (PM).



PETROL ENGINES

Regulation	Entry into force	CO	HC	NO _x	PM
EURO 3	01/2000	2.300	200	150	ND
EURO 4	01/2005	1.000	100	80	ND
EURO 5	09/2009	1.000	100	60	5
EURO 6	09/2014	1.000	100	60	4.5
EURO 7	07/2025	500	100	60	4.5

DIESEL ENGINES

Regulation	Entry into force	CO	HC	NO _x	PM
EURO 3	01/2000	640	NA	500	ND
EURO 4	01/2005	500	NA	250	ND
EURO 5	09/2009	500	NA	180	5
EURO 6	09/2014	500	NA	80	4.5
EURO 7	07/2025	500	NA	60	4.5

Data in mg/km



EURO 7

The Euro 7 standard will enter into force on **1st July 2025** for passenger cars and vans and two years later for trucks and buses.

ELECTRIC VEHICLES

Electric cars do not emit pollutants into the road, but the new regulation will require them to **monitor particulate emissions** from tyres and brakes.

Batteries will have to ensure their range: after five years or 100,000 kilometres, they will have to retain 80% of their original capacity, and after eight years or 200,000 kilometres, 70%.

AJUSA, OUR COMPANY

These changes in regulations force vehicle manufacturers to **make major changes to engines** to meet the new limits, requiring them to incorporate new exhaust gas filtration or recirculation elements.

Therefore, the same type of engine may have to comply with 2 and/or up to 3 generations of the EURO standard.

This is where we find variations in the components manufactured by Ajusa, as in the following example.

This is a set of **cylinder head bolts** for a FIAT DUCATO 2.3, where the manufacturer himself indicates the possibility of fitting 2 different sets on the same model, emphasising that some are fitted on EURO5 engines and the others on EURO6 engines.

Marca	AJUSA
Número de artículo	81071100
Grupo de productos	Juego de tornillos de culata
GTIN/EAN	8433577770557
Unidad de embalaje	1
Características	Accesorios

Juego de tornillos de culata	
Criterios	
Medida de rosca	M15
Paso de rosca	1,5 mm
Long.	192 mm
Cant.	6, 4
Long. 1	132 mm
Perfil cabeza tornillo/tuerca	Torx exterior

Marca	AJUSA
Número de artículo	81033800
Grupo de productos	Juego de tornillos de culata
GTIN/EAN	8427769724312
Unidad de embalaje	1

Juego de tornillos de culata	
Criterios	
Medida de rosca	M14
Paso de rosca	1,5 mm
Long.	191 mm
Cant.	6, 4
Long. 1	132 mm
Perfil cabeza tornillo/tuerca	Torx exterior

This is only one example, but there are countless occasions in which the same engine can mount different components depending on the EURO standard it complies with, and in this case, the manufacturer itself uses the standard it complies with to make it known whether it mounts one component or another. This makes it necessary to **keep up to date with these regulations** and to know which standard applies to each vehicle.