

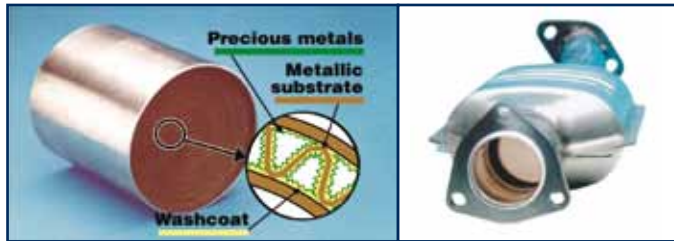
Klarius Catalytic Converter

Technical Information



Klarius
Group
Excellence in Every Part





Metallic technology

Ceramic technology

What is a catalytic converter?

A vehicle fitted with a catalytic converter (cat) produces 20 times less toxic gases than a vehicle with a conventional exhaust pipe. Cats are installed at the front of the exhaust system, as close to the engine outlet as possible, to work most efficiently.

There are three components to the catalytic converter:

- the monolith
- the washcoat
- the loading

The monolith (for core) is a honeycomb structure, constructed of ceramic or stainless steel, with a surface area of approximately 1m².

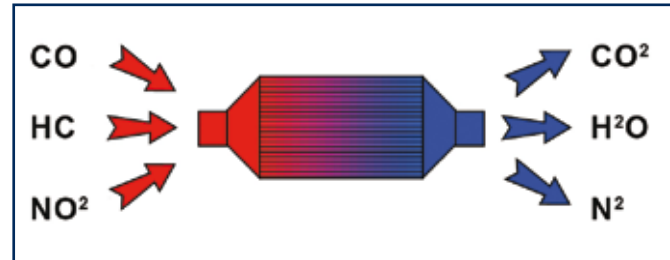
To maximise the total surface area of the core, the internal surfaces are coated with a solution called the washcoat. This addition of the washcoat increases the cat's surface area to over 14,600m².

The catalysts used to convert harmful exhaust emissions are precious metals such as Platinum, Rhodium and Palladium. These are overlaid onto the washcoat and it is these elements which cause a chemical reaction to take place inside the converter.

How does a catalytic converter operate?

In an internal combustion engine, combustion of the fuel/air mixture creates the following pollutants: CO, HC and NOx.

The three way catalytic converters lower these pollutants by more than 90% by converting these harmful gases into CO² / H²O / N₂.



Does this catalytic converter need replacing?

Before replacing a catalytic converter, the cause of failure must be identified.

Some of the signs of failure are visually recognisable such as damage caused by heat, shock, tube fracture or bad fitting.

In general, a catalytic converter has to be replaced once during the life of the vehicle. If the majority of mileage is on the motorway the life of the cat could be doubled. Cars mainly driving in urban areas with short stop-start around town, the life of the cat can be reduced to 40,000 miles. This is due to the cat not reaching its full operating temperature of 400°C and therefore gradually destroying the catalyst.

What causes a cat to fail?

To ensure optimum performance it is essential having a clean running engine that has been serviced.

- **Incorrectly operating engine** – This could lead to an excessive amount of fuel in the cat, causing a rapid rise in temperature and resulting in a meltdown or shattering of the monolith.
- **Faulty lambda sensors** – Lambda sensors are fitted within the exhaust gas system and monitor the amount of oxygen present in the fuel/air mixture entering the cat. The electronic control unit adjusts the mixture accordingly to ensure the right fuel air mixture is provided and all harmful gases are converted.
- **Foreign objects** – Silicon sealant, sealing paste, oil or anti-freeze entering the cat can block the tiny cells within the monolith. The resulting problems will be restricted gas flow, increased back pressure, overheating of the internal engine components.



Klarius highly recommends checking that the engine and the lambda sensors are operating correctly at least every 15,000 miles, typically they last 60,000 miles.

- During replacement, use the correct installation mountings in catalytic kits to ensure the effective sealing of the exhaust system, and always use a new set of mountings.
- Do not use sealing compounds or grease ahead of the catalytic converter under any circumstances or contamination will occur.
- To confirm correct operation, it is recommended to carry out a full gas analysis after replacement.

Legislation

All 31 and 32 prefix Klarius catalytic converter range is entirely type-approved and complies with all European legislation (r103).

Cars manufactured on or after 1st March 2001 must be fitted with type-approved catalytic converters.

Klarius range

Fitting a Klarius Type Approved catalytic converter not only ensures compliance with the new legislation but provides complete reassurance that the product is OBD compatible, with emission characteristics closely matching the original equipment, avoiding any risk of error code or Malfunction Indicator Light (MIL) illumination.



The Klarius Catalytic Converter range complies with the legislation as follows:

- All replacement catalytic converters, for vehicles registered on or after 1st March 2001 are Type Approved in accordance with EU Emission regulations.



- All Klarius Type Approved catalytic converters (31 and 32 prefix) are clearly marked with both the Klarius part number and Type Approval number, for example e11 103R 003302.

All Klarius Type Approved catalytic converters carry a lifetime warranty.*

Klarius offers you more than 1,000 references ensuring the largest possible coverage.

* 2 year warranty will apply if you do not register for the lifetime warranty.

The Fast Track development of new parts through its own Technical Centre based in the UK is the guarantee of an increased reactivity to a market in constant change.

This fantastic range, along with the exhaust and Diesel Particulate Filters (DPF) ranges makes Klarius a first choice 'one stop shop' for all your business needs.

