EMISSIONS CONTROL

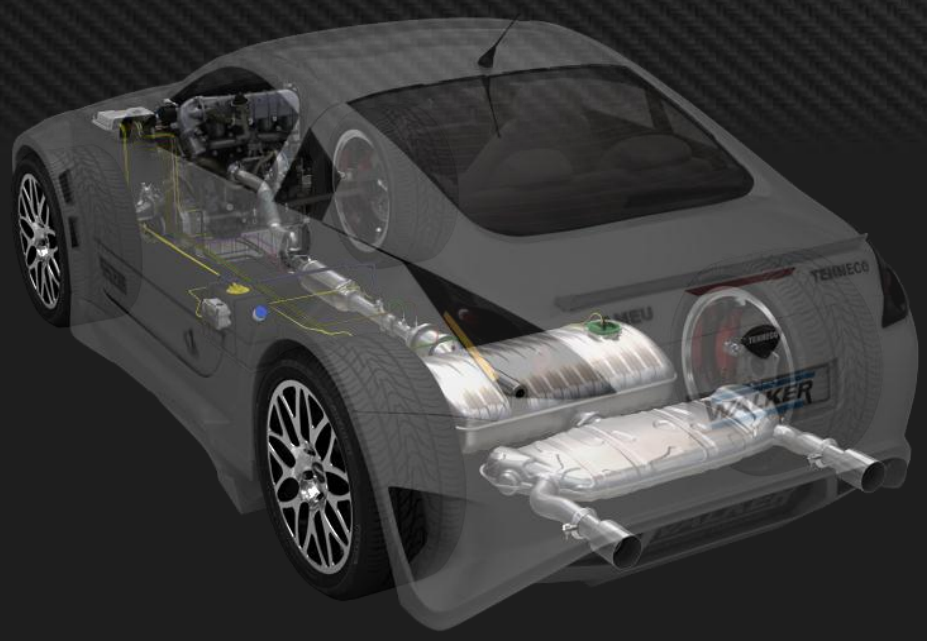
POLLUTION, HUMAN HEALTH & ENVIRONMENT

Pollution, human health & environment

Did you know that…

- Since it foundation, Walker® company have been investigating and designing all its products for OE and AM with the aim of make them cleaner and safer for the environment, obtaining always from them the maximum mechanical performance.

- A clear example of this is Walker®'s homologation European policy for exhaust systems. Since Walker® start to homologate the exhaust and catalytic converters in the early 90's Walker® has invested in this process more than 30 million Euros. This investment guaranties to all the users that all Walker® AM products strictly follow all European guidelines ensuring optimal levels of performance and protecting at the same time our health by protecting the environment from excessive noise levels and dangerous pollution agents



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Did you know that…

- The Homologation of aftermarket exhaust system parts (silencers and catalytic converters) is a comparison process between the original equipment part and the after market part that we want to homologate. This process will ensure end consumer and installer that the unit that he will be installing is equally in back-pressure and noise levels in comparison to the one that original equipment manufacturer designed for this vehicle. This fact will guarantee that installing the homologated exhaust system (silencer or catalytic converter) the engine will always maintain its maximun performance with its lowest consumption level equivalent to being equipped with the original one.

- It is important to note that the installation of non homologated silencers or catalytic converters is prohibited by actual European laws and is consider an illegal activity within the European Community area, as well as is selling non homologated tires or laminated glass for car windows. Non fulfilment of these guidelines can be penalised by the local authorities.

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Did you know that…

- There are two different areas where homologated products can help protecting our health: controlling the acoustic contamination and controlling the level of harnfull gases released to atmosphere by the exhaust system.

The acoustic contamination:

- The terms "acoustic contamination" makes reference to the noise, provoked by the human activities (traffic, industries, local of leisure, etc.), that it produces negative effects on the auditory, physics and mental health of people. A report of the World Organization of the Health (OMS), considers 50 dB, as the superior desirable limit, above this level, the sound is pernicious for rest and communication.

- According to studies of European Union (2005): 80 million people are exposed daily at levels of noise environmental superiors to 65 dBa and other 170 millions, they are he at levels entity 55-65 dBa.

- By using Walker® homologated AM exhaust systems, the users ensure that their vehicles will have controlled noise levels contributing to a more quiet and healthy environment.

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Did you know that…

- From all the pollutants generated in a combustion process, the most common are: Carbon monoxide (CO), unburnt Hydro Carbons (HC), Nitrogen oxides (NOx) and particle matter (PM). Walker® have been working actively since it foundation with all the OE manufacturers with the target of reducing this harmful gasses to the minimum level.
- The homologation process ensures the correct level of back-pressure in the exhaust system in order to maintain an optimal performance and a minimum consumption level at any time. Its important to remember that wrong back-pressure levels (independently if is higher or lower than the OE level) generates unburnt hydrocarbon (HC) leakage during the overlap time of the four stroke engines which ends increasing the consumption (because this fuel is not burned in the combustion chamber) and the HC levels of the exhaust gases going out to the atmosphere.

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Did you know that…

- According to a recent study published in New England Journal Medical, the inhalation of the exhaust gases emitted by the diesel engines produces changes in the electric heart activity, what suggests that the atmospheric contamination reduces the quantity of the oxygen available, making even three times bigger the heart stress during the practice of the exercise. It is also demonstrated the relationship between the arteriosclerosis and the inhalation of solid particulate matter (smaller than 2,5 microns), emitted mainly by diesel engines. Walker® has been working for years in the design of more efficient Diesel Particulate Filters (DPF) obtaining a performance over 98% in eliminating that dangerous particulate matter.

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Did you know that…

- Carbon Monoxide (CO) is the most toxic substance we can come into contact with in our daily life - at home, at work, garage, car, caravan and boat. You can't smell it, see it or taste it, but it could be there now.
- Un-burnt hydrocarbons emissions are those fuel particles which remain without burning in the exhaust gases when it leaves the exhaust system to the atmosphere. These emissions are one of the main components of the smog present in the big cities. It is very important to have in mind that many are the components of the fuel which are proved to be dangerous for the human health and even carcinogenic. One of the main targets for all the governments is to ensure through a right environmental policies that automotive manufacturers are producing “clean” engines. At the same time all those environmental policies control that all those vehicles are being serviced with homologated spare parts that maintain this environmental level though all the life of the vehicle. In this respect Walker® has always been aligned with the environmental guidelines, working in OE at the maximum level of quality and maintaining those levels through the homologation process in all the emission control products in AM.

- At the same time the design of new and more effective oxidizing catalytic converters are transforming the CO and HC remaining after the combustion process in the cylinders into CO_2 and Water.

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Did you know that…

- In conditions of extreme heat and pressure (in the combustion chamber) part of the nitrogen molecules present in the air are combined becoming nitrogen oxides. These oxides are commonly named NOx due to the fact that we can find different types and the percentage of each one of them varies depending on different factors (temperature, pressure, oxygen presence, etc). These oxides when combined with water, present in the clouds, generate acids, that later on return to earth in form of rain. Nitric acids acids are the main responsible together with the sulphurous acids of the phenomena which has been named “Acid Rain”.

- Acid rain causes acidification of lakes and streams and contributes to the damage of trees at high elevations and many sensitive forest soils. In addition, acid rain accelerates the decay of building materials and paints, including irreplaceable buildings, statues, and sculptures. Prior to falling to the earth, sulfur dioxide (SO2) and nitrogen oxide (NOx) gases and their particulate matter derivatives—sulfates and nitrates—contribute to visibility degradation and harm public health. Many scientific studies have identified a relationship between elevated levels of fine oxides particles and increased illness and premature death from heart and lung disorders, such as asthma and bronchitis.

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Did you know that…

- Walker® has invested big amounts of money in his research and development programs oriented to decrease the amount of pollutant gases released through exhaust gases into the atmosphere achieving a great sucess. Millions of 2 and 3 way catalytic converters has been fitted in passenger cars, trucks and busses helping to decrease significatively the levels of CO, HC and NOx gases released to the atmosphere through the automobile exhaust gases. On the other hand, for lean Air/fuel mixtures engines such as Diesel and some gasoline direct injection systems, diesel particulate filters (DPFs) have been introduced to eliminate the dangerous particulate mater present in the exhaust gases. In diesel vehicles due to the fact that reduction with Rhodium is not possible due to the excess of oxigen in the Air/fuel mixture, a new line of products, like high effective SCR (Selective Catalytic Reduction) systems for NOx and the Nox-Trap catalytic converters have been designed to decrease the level of NOx to the minimum. Those type of emission control devices become more and more common until its use became mandatory in all passenger cars after 2014 due to the implementation of the Euro 6 environmental guidelines in Europe.

Selective Catalytic Reduction System (SCR)