

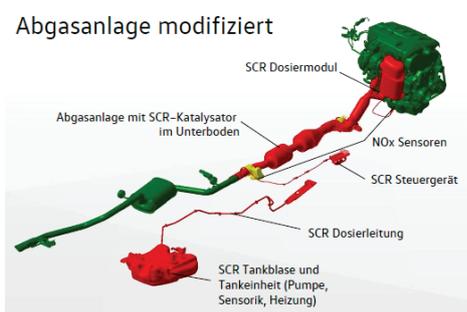


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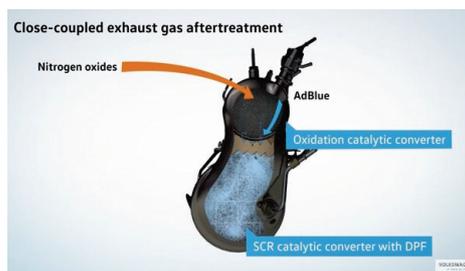
## Volkswagen advises against hardware retrofits for diesel cars

- Not all Euro 5 vehicles can be retrofitted and not all of them will achieve emissions of less than 270 mg/km
- The stark differences in the condition of the vehicles to be retrofitted leads to risks regarding functionality and emissions
- The increased component load may lead to long-term secondary damage and therefore limited reliability

Wolfsburg, Germany – Volkswagen continues to take a critical view of the planned retrofitting of diesel cars with the emission standard Euro 5 and discourages its customers from having hardware retrofitted by third-party providers. “All of the concepts that we know of so far bring disadvantages for our customers such as increased fuel consumption and therefore increased CO<sub>2</sub> emissions, and even a reduction in performance in some cases”, warns Frank Welsch, Head of Technical Development at Volkswagen. Moreover, contrary to other claims, not all Euro 5 vehicles can be retrofitted and not all will achieve emissions of less than 270 mg/km, which would allow them to be exempted from the upcoming driving bans. In addition to this, Volkswagen believes that the long-term functional reliability of the technology cannot be guaranteed.



In red: Component changes required for retrofitting the hardware on the underbody of a Euro 5 vehicle



See Videoclip for a detailed explanation which components are necessary and which risks may occur.

The problem in detail: it is technically not possible to retrofit a Euro 5 vehicle with an eleven-year-old engine generation so that it corresponds to the emission level of a modern Euro 6 vehicle. Furthermore, there is currently no reliable information on the long-term effects of intervening in the control system, the components and the vehicle architecture in

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continuous operation. Particularly in compact vehicles, the space required for hardware retrofits is either not available at all, or is only available to a limited extent in the vehicle interior. In addition, besides obtaining proof that this system is effective, aspects such as the long-term development of fuel consumption, the driveability, the prevention of other pollutants and the durability of the components must also be taken into consideration.

SCR systems for current Euro 6 vehicles must fulfil numerous complex technical and legal requirements. For example, the system must also function in frosty conditions, even though the reducing agent (AdBlue®) for NOx reduction freezes at -11 degrees. The AdBlue® fill level, the estimated range, and any misfuelling must be visible to the driver via a separate display in the cockpit. The emission stability must be guaranteed for the service life of the vehicle. If the ratio of the reducing agent to nitrogen oxide in the exhaust gas is not correct, excess toxic ammonia gas may be emitted from the exhaust tract, which must be prevented using a trap catalytic converter. This is yet to be developed.

There are currently no systems ready for series production on the market that have met the manufacturer requirements as regards development, testing and approval stages. Moreover, according to independent investigations, the relevant retrofits may even bring about an increase in fuel consumption of up to six percent. This results in an increase in CO<sub>2</sub> emissions – a complete contradiction to the tightened climate protection regulations.

The Head of Development, Frank Welsch says: "It is important for us that our customers have vehicles that are reliable and safe to use. A retrofit which is not fully developed from a technical perspective can change the vehicle's characteristics to the disadvantage of our customers. It must be expected that the vehicle will consume more fuel, offer reduced performance and become louder. A retrofit which involves an enormous amount of time and technological effort may lead to huge problems regarding reliability and therefore a reduction in customer satisfaction. As the vehicle manufacturer, we can neither recommend this to our customers nor be liable for any defects. For this reason, we advise against carrying out a hardware retrofit."

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## Media Information



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