

Volkswagen Reveals Emissions Fix for Diesel Cars in Europe

By Jack Ewing

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A device that Volkswagen said would help its diesel cars conform with European clean air standards. CreditVolkswagen

WOLFSBURG, Germany — [Volkswagen](#) said on Wednesday that it would be able to bring its diesel cars into line with European clean-air standards by updating engine software and installing a small, tube-shaped part roughly the same diameter as the cardboard tube in a roll of paper towels.

The technical patch that [Volkswagen](#) presented at company headquarters here is valid only for Europe, where it will be installed beginning next year.

Modifying Volkswagen diesel cars sold in the United States will be more complicated because of stricter rules on emissions of nitrogen oxides, pollutants harmful to the environment and human health.

On Wednesday, in fact, California regulators gave Volkswagen, Audi and Porsche a [deadline of 45 days](#) to outline how they planned to fix faulty emissions on their cars with 3-liter diesel engines. The agency had already given such a deadline for the automaker's 2-liter engines, which ended on Friday.

Volkswagen will go a long way toward overcoming the crisis it faces if it can fix the cars in Europe.

Of the 11 million vehicles that the company has admitted programming to cheat on emissions tests, most are in Europe, and about 8.5 million of those require repairs. About 500,000 of the cars are in the United States.

The company said it hoped the changes to European cars would not affect performance or fuel economy, but could not yet guarantee that.

Ferdinand Dudenhöffer, a professor at the University of Duisburg-Essen, estimated the cost of the recalls in Europe at 500 million euros, or \$532 million, a fraction of the €6.7 billion that the company has set aside to cover the cost of the scandal.

“Volkswagen is finding its financial footing more quickly than expected,” Mr. Dudenhöffer said in an email. He noted, though, that Volkswagen still faced major risks, including fines by the United States [Environmental Protection Agency](#) and lawsuits by angry owners and shareholders.

The automaker also said on Wednesday that eight employees — fewer than some news outlets had reported — had been suspended in connection with an internal investigation to determine who decided to install illegal software in the vehicles.

Hans-Gerd Bode, a Volkswagen spokesman, declined to identify the employees who were suspended but confirmed that they included three top managers with responsibility for engine development.

Software in the cars ensured that they were on their best behavior when being tested, but allowed the vehicles to exceed emissions limits at other times.

The three managers have been previously identified as Wolfgang Hatz, who was in charge of research and development at Volkswagen's Porsche division as well as head of engine and transmission development for the Volkswagen Group; Ulrich Hackenberg, head of development for all Volkswagen Group brands; and Heinz-Jakob Neusser, head of development for the Volkswagen brand.

The technical fixes proposed by Volkswagen appeared to be surprisingly simple, deepening the mystery over why the decision had been made to evade pollution testing with illicit software. Volkswagen said German regulators had approved the changes.

Cars with 2-liter diesel motors can be repaired by simply updating the engine-control software, the company said.

Cars with 1.6-liter motors will require installation of a so-called flow straightener tube, which has mesh inside designed to stabilize air flowing into the motor. It allows the fuel-injection system to function more precisely and to reduce emissions.

Volkswagen is still working on a repair for 1.2-liter motors, but said it would probably consist of a software update.

The company said it would begin making the repairs in January and complete the recall by the end of 2016.

The measures required in the United States are not likely to be so simple. The United States places stricter limits on nitrogen oxides, which are linked to lung ailments. In addition, most of the diesel vehicles sold in the United States — 320,000 out of a total of 480,000 — are equipped with older emissions technology that could be harder to make compliant.

The cars with older technology included models from 2009 through 2012 like the Golf, Jetta and Beetle, as well as the [Audi A3](#).

Beginning with the 2013 model year, cars like the Passat were equipped with a system that uses the chemical urea to neutralize nitrogen oxide emissions and is considered effective when properly configured. Those vehicles may be easier to repair.

Volkswagen did not sell any engines smaller than 2 liters in the United States, though a small number of cars with 1.6-liter motors may have been imported from Mexico or other countries.

Representatives of Volkswagen and its Audi division have been in talks with the [Environmental Protection Agency](#) about how to make cars in the United States compliant.

This month, the California Air Resources Board and the Environmental Protection Agency discovered during on-road testing of Volkswagen vehicles that larger models were also equipped with defeat devices. While the carmakers dispute that the software is actually used to cheat on emissions testing, they admitted to regulators that all 2009 to 2016 models equipped with a 3-liter engine were fitted with the software.

A further problem in the United States is that there are only about 1,000 Volkswagen and Audi dealers that could carry out the repairs. Volkswagen's dealer network is much denser in Europe, where it is the largest carmaker by far.

“The risks continue to be in the U.S.A.,” Mr. Dudenhöffer said.