

“This test costs a lot of money,” Schenk added. “It’s able to differentiate not only cam wear but the other [parameters] as well, so it makes sense to use it to measure more than just one parameter.”

### MPG vs. CO<sub>2</sub>

In the United States, environmental regulations for vehicles have focused largely on improving fuel economy, as mandated by Corporate Average Fuel Economy laws, and on reducing air pollution from exhaust emissions.

Vehicle legislation in Europe, however, currently focuses on regulating carbon dioxide (CO<sub>2</sub>) generated as a byproduct of the combustion of fossil fuels. Road transport is responsible for about 20 percent of all CO<sub>2</sub> emissions in Europe, with passenger cars contributing about 12 percent. In 2007, the European Commission adopted legislation to reduce the average emissions of CO<sub>2</sub> emitted by new passenger cars from around 160 grams per kilometer currently to 130 grams per kilometer in 2012, and to 120 grams in 2015.

“Our efforts are directed towards meeting these mandates. We have no choice,” Keppeler stated. “Our product mix is the key. Smaller cars can have higher CO<sub>2</sub> limits, larger cars lower ones, but the average must meet the mandates. Failure to meet these mandates will result in severe financial penalties.”

*To assure oil supply is maintained at all times, Daimler's pivoting test rig subjects its engines to extreme conditions, tilting them into almost every position imaginable under various loads.*

### Oil Sequences Plus-Plus

Like other European OEMs, Mercedes-Benz bases its engine oil recommendations on tests approved by ACEA. These tests and limits are called ACEA Oil Sequences, with the latest version issued in 2008 and the next update expected later this year.

ACEA Oil Sequences are the minimum requirements, and Mercedes-Benz’s specifications go well beyond the ACEA-defined tests and approved limits to

include proprietary tests. MB’s requirements in fact are perhaps even more detailed than other vehicle manufacturers, with three quality levels: standard, medium and top.

MB calls its specifications “sheets.” The three quality levels impact primarily the drain intervals and fuel economy capability.

- Standard quality (sheet 229.1 for cars and 228.0/.1 for heavy-duty applications) allows owners with older vehicles to use

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## Daimler’s World

**S**tuttgart, Germany-headquartered Daimler AG is best known as the corporate parent of Mercedes-Benz, manufacturer of premium passenger cars. It’s also the world’s largest manufacturer of commercial vehicles. Daimler briefly owned Chrysler Corp. in the United States, but the

*Engine production at Detroit Diesel in Michigan*

two parted ways in 2007, after nine years of incompatible marriage.

In 2009, Daimler sold 1.6 million vehicles worldwide, including U.S. sales of 203,000 passenger cars and about 53,000 trucks, buses and other commercial vehicles. While Germany remains the stronghold for making MB passenger cars, its first U.S. manufacturing plant, in Tuscaloosa, Ala., devoted

itself to making SUVs. Plans are in place now for Tuscaloosa to add C-class sedan production in 2014.

On the heavy-duty side, Daimler’s principal truck lines include Mercedes-Benz, Freightliner, Western Star and Mitsubishi Fuso, as well as diesel engine manufacturer Detroit Diesel. Its buses include Thomas Built, Orion and Setra.

— David McFall

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