MAHLE

Driven by performance

PRESSRELEASE

Fuel savings with variable valve train systems

Stuttgart/Germany, September 2009—Innovative MAHLE solutions for a more variable valve train system can be integrated with only minor modifications in vehicle engines and result in fuel savings of up to 17 percent with the right combination.

In a variable valve train, valve opening times can be adjusted independently on the intake side and exhaust side. This mechanism can be used to produce effects that generate more torque even in the low rpm range. In addition, variable valve train systems increase engine output and support the operation of highly relevant systems for exhaust gas handling, such as exhaust gas recirculation (EGR). MAHLE solutions significantly reduce fuel consumption and emissions at very low adaptation cost for the valve train.

CamInCam® technology

The MAHLE CamInCam® camshaft, consisting of two camshafts, one inside the other, provides for variability in the valve train. For example, when this camshaft is used on the exhaust side of a four-cylinder turbocharged engine, higher torques and an earlier response of the turbocharger can be achieved—something that until now could only be achieved with cost-intensive twinscroll turbochargers or two-stage pressure-charging systems.

What's more, the MAHLE CamInCam® technology makes it possible to independently adjust opening times of the intake and exhaust valves, even in "simple," commonly used OHV and SOHV engines. In an American OHV V8 engine, a torque gain of nine percent and fuel savings up to seven percent were achieved by retrofitting with CamInCam®. In a European four-cylinder SOHC engine, fuel consumption decreased by three to eight percent.

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Cylinder shut-off

Using a switchable roller-type cam follower, MAHLE has achieved fuel savings by shutting off cylinders in the partial load range. The particularly low-friction system completely shuts off valve actuation in specific cylinders. In six- and eight-cylinder engines, this enables fuel savings of up to eleven percent in the New European Driving Cycle (NEDC) test cycle.

The MAHLE Group is one of the top 30 automotive suppliers and the globally leading manufacturer of components and systems for the internal combustion engine and its peripherals. Around 45,000 employees work at over 100 production plants and eight research and development centers. In 2008, MAHLE generated sales in excess of EUR 5 billion (USD 7.3 billion).

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