FEDERAL MOGUL

News & Information

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Federal-Mogul's Breakthrough in Crankshaft Seal Design Offers Fuel Savings and Reduced CO_2 Emissions

New MicroTorq™ seals can directly replace existing seals to provide significant improvement in fuel economy and CO_2 emissions

Southfield, Michigan, March 17, 2010… Federal-Mogul Corporation (NASDAQ: FDML), a leading global supplier of technologies that enhance safety and improve powertrain efficiency, has developed an innovative new seal design, called MicroTorq™, that reduces friction by up to 70 percent versus conventional lip-type seals. The new seal can provide an improvement in vehicle fuel economy of up to 0.49 percent and a reduction in CO_2 emissions of 1-2 g/km compared to traditional seal designs. The seals are also easier to install, more accommodating of shaft misalignment or eccentricity, and require less package space. The many benefits can be achieved relatively simply, even on existing engines as the new MicroTorq seal can be utilized without changing the design of adjacent components.

The friction contribution from a pair of conventional crankshaft oil seals can account for up to 3.5 g/km of a vehicle's CO_2 output, depending on the sealing technology, even at modest engine speeds of around 2000 rpm. "By adopting a fundamentally new design approach, we have developed a family of low friction seals that offer vehicle manufacturers a simple, cost-effective and easily implemented route to reduced emissions and improved fuel economy," said Larry Brouwer, Director, Sealing Technology and Innovation, Federal-Mogul Powertrain Sealing and Bearings. "There are very few technologies that offer such an affordable route to CO_2 reduction, making this an extremely attractive solution for all vehicle manufacturers."

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Friction occurs because conventional lip seals are preloaded against the crankshaft to maintain sealing when the crankshaft moves within the bearing clearance under varying load conditions. As well as consuming energy, friction at the seal's lip creates heat that degrades the oil, causing a build-up of carbon that destroys the hydrodynamic function of the seal lip, leading to oil leakage.

Federal-Mogul's MicroTorq seal overcomes these problems by virtue of its innovative 'dual-hinge' lip design that allows the main sealing element to maintain uniform contact with the shaft under conditions of varying geometry while maintaining a light contact load at both the main lip and the dirt excluder lip. Unique hydrodynamic features moulded into the seal are shaped to efficiently pump oil back into the engine while the crankshaft is turning, and provide static sealing when it is not. The MicroTorq seal is also equipped with a piloting foot that allows error-free installation every time, without the use of special tools, simultaneously simplifying the assembly process and improving installation robustness. Additionally, while conventional seals require 7-10 mm of axial space on the crankshaft, the MicroTorq seal can be packaged in under 5 mm, contributing to the design of compact lightweight engines.

Federal-Mogul has carried out extensive validation and durability testing on the new seal technology, confirming the advantages of the new approach. Dynamic tests at various speeds showed MicroTorq to generate approximately one-third to half the friction torque of conventional seal designs on average, while pressure/vacuum testing and air sealability tests demonstrated substantial benefits for the MicroTorq design. When conventional crankshaft seals were replaced with MicroTorq seals, calculated fuel consumption yielded improvements between 0.25 percent for a compact car equipped with a two-liter engine and a 6-speed automatic transmission and 0.49 percent for a V8 pick-up truck.

"MicroTorq seals can offer an immediate CO_2 savings of 1-2 g/km on current engine applications and up to 3.5 g/km for new engine development with almost no additional cost," said Gerard Chochoy, senior vice president, Federal-Mogul Powertrain Sealing and Bearings. "That's a big opportunity for Federal-Mogul customers using combustion engines in their vehicles or power generation applications." Federal-Mogul expects to announce the first high volume production application of the new seals later this year.

About Federal-Mogul

Federal-Mogul Corporation is a leading global supplier of powertrain and safety technologies, serving the world's foremost original equipment manufacturers of automotive, light commercial, heavy-duty, agricultural, marine, rail, off-road and industrial vehicles, as well as the worldwide aftermarket. The company's leading technology and innovation, lean manufacturing expertise, as well as marketing and distribution deliver world-class products, brands and services with quality excellence at a competitive cost. Federal-Mogul is focused on its sustainable global profitable growth strategy, creating value and satisfaction for its customers, shareholders and employees. Federal-Mogul was founded in Detroit in 1899. The company is headquartered in Southfield, Michigan, and employs nearly 39,000 people in 33 countries. Visit the company's Web site at www.federalmogul.com.

Forward-Looking Statements

Statements contained in this press release, which are not historical fact, constitute "Forward-Looking Statements." Actual results may differ materially due to numerous important factors that are described in Federal-Mogul's most recent report to the SEC on Form 10-K, which may be revised or supplemented in subsequent reports to the SEC on Forms 10-Q and 8-K. Such factors include, among others, the cost and timing of implementing restructuring actions, the Company's ability to generate cost savings or manufacturing efficiencies to offset or exceed contractually or competitively required price reductions or price reductions to obtain new business, conditions in the automotive industry, and certain global and regional economic conditions. Federal-Mogul does not intend or assume any obligation to update any forward-looking statement to reflect events or circumstances after the date of this press release.

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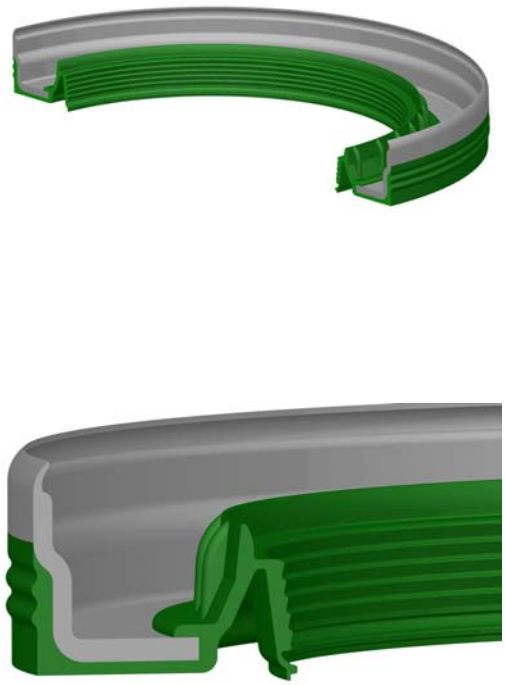
Images

	Cross-section of a MicroTorq seal showing the double hinge construction that gives the seal its outstanding ability to accommodate shaft movement and generate very low contact friction.