

CONTACT: Steve Gaut – 248-354-7826

Federal-Mogul's High Precision Electro-Erosion Machining (HPEEM) Process Manufactures Robust *and* Affordable Bushingless Steel Pistons

Innovative Process Delivers Reliability to Customers, Gains in Market Share

Southfield, Michigan, February 10, 2010 ...Today's vehicle manufacturers are driving the development of engine technologies that provide lower emissions, improved fuel economy and longer life – without compromising performance. Federal-Mogul Corporation (NASDAQ: FDML) is meeting these increasingly complex challenges through new product and process innovations. A recent example is an innovative non-contact metal shaping process to manufacture, with extreme precision, bushingless steel pistons that perform under higher cylinder pressures found in today's cleaner, higher performance heavy-duty diesel engines. HPEEM is Federal-Mogul's solution to achieve an extremely high-level of manufacturing precision that enables engineers, with minimal cost and capital investment, to design components with increasingly stringent manufacturing tolerances that improve overall engine reliability and performance.

HPEEM was developed in response to global legislation aimed at lowering CO₂ emissions. Engine manufacturers are utilizing a variety of technologies designed to meet these rigorous government mandates, including higher peak cylinder pressure (PCP). Higher PCP requires the size and shape of each component – in this case, steel pistons – to be extremely precise, to tolerances of a few microns. The challenge to achieve this high-level of precision required innovative solutions, both from a cost and overall product durability standpoint.

Federal-Mogul's HPEEM manufacturing process addresses this challenge, by using a highly controlled electro-erosion method to remove an exact amount of material, thus precisely shaping the piston pinhole, enabling improved load transfer capability and reliability of the piston.

(more)

Federal-Mogul uses HPEEM to machine precise, accurate and profiled pinholes in the company's award-winning Monosteel® piston, which now allows the piston to be assembled to the connecting rod without a bushing. The result is a pinhole form machined to extraordinarily tight tolerances, ensuring an affordable and reliable piston design for the vehicle manufacturer, enabling increased cylinder pressure while maintaining robust performance and durability.

Traditional machining would require an advanced machine to precisely move a metal-cutting tool through the pinhole, thus profiling the pinhole to the required shape. In addition to the significant technical challenges involved with this method, there is the high investment in the machine and significantly higher operating costs to achieve the tolerance target of several microns. The HPEEM innovation uses a non-contacting specially-shaped electrode precisely positioned in the pinhole (see figure) that, with proper control of the voltage and electrolyte, uses the electro-chemical machining principle to erode the steel surface of the piston pinhole. Electro-chemical machining is essentially a “reverse electro-plating” process – instead of adding a layer of metal to a surface, material is removed by an electro-erosion process. The HPEEM process for Monosteel pinholes has the electrolyte flow between the electrodes and the pinhole surface. A controlled voltage is applied between the part and electrode to erode the material from the pinhole surface. The electrolyte flow washes away the removed material as it exits the piston cavity. With proper control, a profile is machined in the pinhole to a tolerance of a few microns. The result is a very high precision material removal process that enables Federal-Mogul to deliver higher performance products in response to constant demands for improved engine output and greater efficiency.

“The simplicity of the process is astonishing. By using essentially saltwater as an electrolyte and electrical fields as the machining agents, we’ve developed a method (HPEEM) to machine a piston pinhole so exact and error-free that it surpasses any conventional machining quality-to-cost metric. Just as important, our steel pistons now perform under increasingly higher cylinder pressures without fail due to HPEEM’s production capability to hold tolerances of a few microns. Our customers tell us that we are currently the only supplier of steel pistons with this technology. It’s virtually a one-of-a-kind process,” explained Rainer Jueckstock, senior vice president, Powertrain Energy.

The steel piston business is a \$200 million global market. It's estimated that approximately 30 percent of today's steel pistons have bushings in the pinhole; however, all future heavy-duty diesel engines being developed for 2012 and beyond will be "bushingless" due to the higher load demands and cost considerations. Federal-Mogul estimates that the company's market share of Monosteel bushingless steel pistons will increase as a result of HPEEM and other design innovations. A key factor is the increased durability of the pin joint, enabled by the error-free, high precision capability of HPEEM.

Dr. William Zdeblick, R&D director, advanced manufacturing for Federal-Mogul, points out, "Bushingless Monosteel pistons require a steel-on-steel pin joint design. Analysis and testing demonstrated that for this design to work, a high precision profile needed to be put onto the piston pinhole to properly distribute the load. The profile needed to be uniformly concave and precise to a few microns. Any variation from target runs the significant risk of high stress concentration and potential piston failure. However, bushingless steel pistons machined conventionally would cost more because of the very high precision requirements on the pinhole profile. The HPEEM process allowed Federal-Mogul to remove the bushing and to provide our customers with pistons that meet their durability requirements - without the added high cost of conventional machining. It's a 'win' for Federal-Mogul and a 'win' for our customers."

The HPEEM process was developed at Federal-Mogul's advanced manufacturing technology development facility in Ann Arbor, Mich. and is in full production at the company's Puebla, Mexico piston facility.

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, industrial, 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 36 countries. Visit the company's website 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.

#