

## **Federal-Mogul Powertrain to Launch First Valve Rotator for Downsized Light Vehicle Engines**

**New, smallest ever, Rotocap® development allows enhanced valve rotation control on automotive applications, reducing wear and increasing valvetrain reliability**

BARSINGHAUSEN, Germany, Aug. 22, 2017 /[PRNewswire](#)/ -- Federal-Mogul Powertrain will launch a new, smaller version of its proven Rotocap® valve rotator, the first for 4 valve per cylinder light vehicle engines, at this year's IAA in Frankfurt, Germany. The miniaturized design features an outer diameter in the range of 20-25 mm and allows the Rotocap to package into the valve assembly on automotive powertrains. Rotocap provides the enhanced valve rotation control required to compensate the challenges caused by reduced valvetrain lubrication and engine downsizing – two main design trends to achieve lower emissions and improve fuel efficiency. The new mini Rotocap will be marketed alongside Federal-Mogul Powertrain's existing valve rotator products.

"The design function of a Rotocap has been proven in the heavy-duty sector, where often engines run too slowly to generate consistent valve rotation," explained Gian Maria Olivetti, Chief Technology Officer, Federal-Mogul Powertrain. "Today's non-clamping cotters used in light vehicles, allow free rotation of the valve, transmitting spring loads via beads and grooves. However, this free valve rotation is limited in a speed range below 2500 rpm due to low dynamic effects. We can now apply the Rotocap technology to light vehicles, where downsizing trends and increasing urban traffic density require engines to operate for prolonged periods at low speeds, and therefore may require forced valve rotation. Hybrid applications operating in a limited rpm range will also benefit from this technology."

### **Why valve rotation matters**

Rotocap provides forced valve rotation with enhanced rotation control, also at lower engine speeds. Valve rotation ensures an even distribution of temperature around the seat, increasing durability by reducing local distortion and avoiding blow-by and crack formation across the sealing surface. In addition, rotation reduces wear on other components in direct contact with the valve.

### **Benefits of Rotocap use on engines with reduced oil consumption**

Rotocap eliminates uncontrolled rotation which normally – by torsion of the valve spring or by miscellaneous resonances – is transferred to the valve during its opening and closing movement. It is replaced with motion through a defined angular movement that only takes place as the valve opens – this controlled movement can be relied upon across the whole engine speed range. Rotocaps also reduce abrasive wear of the valve seat area because the valve no longer rotates as it closes. This is particularly beneficial on engines designed with reduced oil consumption on the valvetrain or engines using alternative fuels (e.g. LPG, CNG, Ethanol) with generally higher seat wear ratios than gasoline or diesel.

Rotocap uses a compact and robust arrangement of balls and ramps within a self-contained assembly. The new small automotive Rotocap is available with an outer diameter in the range of 20-25 mm, which enables an easy implementation into the cylinder head. At the 2017 IAA Federal-Mogul Powertrain will exhibit a range of core valvetrain products such as valves, cotters and valve rotators, including its alternative design, Rotocoil, which uses a single garter spring in place of the balls and ramps. The company will be at Booth E33 in Hall 4.1 from 12-15 September (Press and Trade days only).

## **About Federal-Mogul**

Federal-Mogul LLC is a leading global supplier of products and services to the world's manufacturers and servicers of vehicles and equipment in the automotive, light, medium and heavy-duty commercial, marine, rail, aerospace, power generation and industrial markets. The company's products and services enable improved fuel economy, reduced emissions and enhanced vehicle safety.

Federal-Mogul operates two independent business divisions, each with a chief executive officer reporting to Federal-Mogul's Board of Directors.

Federal-Mogul Powertrain designs and manufactures original equipment powertrain components and systems protection products for automotive, heavy-duty, industrial and transport applications.

Federal-Mogul Motorparts sells and distributes a broad portfolio of products through more than 20 of the world's most recognized brands in the global vehicle aftermarket, while also serving original equipment vehicle manufacturers with products including braking, wipers and a range of chassis components. The company's aftermarket brands include ANCO<sup>®</sup> wipers; Beck/Arnley<sup>®</sup> premium OE quality parts and fluids; BERU<sup>®</sup>\* ignition systems; Champion<sup>®</sup> lighting, spark plugs, wipers and filters; Interfil<sup>®</sup> filters; AE<sup>®</sup>, Fel-Pro<sup>®</sup>, FP Diesel<sup>®</sup>, Goetze<sup>®</sup>, Glyco<sup>®</sup>, National<sup>®</sup>, Nüral<sup>®</sup>, Payen<sup>®</sup>, Sealed Power<sup>®</sup> and Speed-Pro<sup>®</sup> engine products; MOOG<sup>®</sup> chassis components; and Abex<sup>®</sup>, Ferodo<sup>®</sup>, Jurid<sup>®</sup> and Wagner<sup>®</sup> brake products and lighting.

Federal-Mogul was founded in Detroit in 1899 and maintains its worldwide headquarters in Southfield, Michigan. The Company has nearly 53,000 employees in 24 countries. For more information, please visit [www.federalmogul.com](http://www.federalmogul.com).

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