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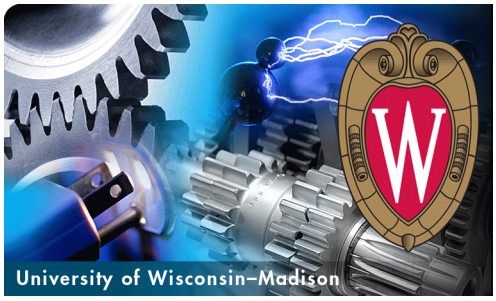
Variable Valve Timing Actuator



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OVERVIEW

The invention involves a variable valve timing actuator that allows the opening and closing of engine valves to be variably and individually controlled without using a camshaft. The invention utilizes energy regeneration so energy delivered to a valve while accelerating it is recovered while it is decelerating. Regeneration is preferably provided by potential energy storage devices such as springs. Energy losses are made up by adding energy to the actuator while the valve is stationary (or nearly so) in an open or closed state. This is done by (1) moving the spring seats in relation to the valve, thereby "charging" the springs in relation to the valve, and/or by (2) moving the valve with respect to the spring seats to "charge" the springs with respect to the valve. This energy addition is extremely efficient because it is performed after the potential energy within the springs has already been expended and the valve is sitting stationary in its open and closed positions. To hold the valve stationary when desired, a latch (e.g., a one-way clutch) is used to releasably fix the valve in place.

ADDITIONAL INFORMATION

Intellectual Property Status

View U.S. Patent No. 6,315,265 in PDF format

Tech Fields

Engines & Power Electronics - Automotive

CONTACT INFORMATION

For current licensing status, please contact our team at licensing@warf.org or 608.262.4924.

THE WARF ADVANTAGE

Since its founding in 1925 as the patenting and licensing organization for the University of Wisconsin-Madison, WARF has been working with business and industry to transform university research into products that benefit society. WARF intellectual property managers and licensing staff members are leaders in the field of university-based technology transfer. They are familiar with the intricacies of patenting, have worked with researchers in relevant disciplines, understand industries and markets, and have negotiated innovative licensing strategies to meet the individual needs of business clients.