

Hydrogen RX-8

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Hydrogen RX-8

MAZDA RX-8 HYDROGEN ROTARY ENGINE: A SPORTS CAR (AND ENGINE) LIKE NO OTHER

- Mazda Unites Alternative Fuel Power and Zoom-Zoom-

DETROIT - With a cat-like predatory stance, forward-thinking freestyle door system and enough room for four, not two, adults to enjoy all its benefits, the Mazda RX-8 has set itself apart from the pack. But if the recently introduced RX-8 production sports car truly is unique thanks, in large part, to its rotary engine, the RX-8 Hydrogen Rotary Engine (RE) concept, showcased this year at the North American International Auto Show (NAIAS), takes "unique" to all new levels.

Featuring a fuel system that consists of a high-pressure hydrogen tank, the vehicle balances the needs of the driving enthusiast and the environmentalist with a blend of alternative power and the exhilarating driving experience for which Mazda is known.

As the auto industry turns its attention to hydrogen fuel as a gasoline alternative, the RX-8 Hydrogen RE offers a hydrogen-powered version of RENESIS-Mazda's next generation rotary engine that was introduced last year in the all-new RX-8. By virtue of its smooth performance, compact size and impressive driving characteristics,

RENESESIS was named International Engine of the Year in June 2003.

The RENESIS Hydrogen RE allows the RX-8 concept to run on either hydrogen fuel or gasoline and capitalizes on all the advantages of the rotary to assure RX-8's ease-of-operation and reliability.

The RENESIS Hydrogen RE incorporates an electronically controlled hydrogen injector system, with the hydrogen injected in a gaseous state. The system draws air from the side port during the intake cycle and uses dual hydrogen injectors in each of the engine's twin rotor housings to directly inject hydrogen into the intake chambers.

Because it offers separate chambers for intake and combustion, the rotary engine is ideal for burning hydrogen without the backfiring that can occur in a traditional piston engine. The separate induction chamber also provides a safer temperature for fitting the dual hydrogen injectors with their rubber seals, which are susceptible to the high temperatures encountered in a conventional reciprocating piston engine.

Also helping to maximize the benefits of the rotary engine in hydrogen combustion mode, the RENESIS Hydrogen RE features adequate space for the installation of two injectors per intake chamber. Because hydrogen has an extremely low density, a much greater injection volume is required compared with gasoline, thus demanding the use of more than one injector. Typically, this can be difficult to achieve with a conventional reciprocating piston engine because of the structural constraints that prevent mounting injectors in the combustion chamber. However, with its twin hydrogen injectors, the RENESIS Hydrogen RE is both practical and able to deliver sufficient power.

In addition to the revolutionary hydrogen-powered RENESIS rotary engine, the Mazda RX-8 Hydrogen RE concept benefits from improved aerodynamics and optimized tires and weight-saving measures. A fast-fill tandem master cylinder reduces brake drag and friction hub carriers help cut power losses.

The vehicle also incorporates a host of other technologies for exceptional environmental compatibility. Three-layer, wet-on water-based paint on the RX-8 Hydrogen RE dramatically reduces the emission of organic solvents, saves energy by shortening the drying process and reduces carbon dioxide emissions. Moreover, the plant-based plastics used for the vehicle's interior parts provide an attractive alternative to plastics derived from fossil fuels such as petroleum.

The Mazda RX-8 Hydrogen RE illustrates Mazda's dedication to the future environment without abandoning true Zoom-Zoom and soul-of-a-sports-car thinking.

Mazda North American Operations is responsible for the sales and marketing, customer parts and services support of Mazda vehicles in the United States. Headquartered in Irvine, Calif., MNAO has more than 700 dealerships nationwide.

EDITOR'S NOTE: For more information on Mazda products, visit the online Mazda media center at www.mazdausamedia.com [8].

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