

For Release: December 1, 2003

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## MAZDA RX-8 — A SPORTS CAR LIKE NO OTHER

*– New Rotary-Powered RX-8 Creates Halo for Mazda Vehicle Line –*

IRVINE, Calif. – With an athletically sculpted exterior, a one-of-a-kind RENESIS 13B rotary engine and a thoroughly unique interior, the Mazda RX-8 is redefining the automobile industry's definition of a sports car. Mazda is the only car company in the world to achieve success in volume production of rotary-powered cars and has done so for more than three decades. The 2004 Mazda RX-8 takes this success to a new level by mating smooth and efficient rotary power with unique, cutting-edge styling and Mazda's trademark Zoom-Zoom driving experience.

"RX-8 forces the industry and the consumer to rethink what's possible with regard to sports cars," said Weldon Munsey, RX-8 vehicle line manager. "Tradition dictates that 'true' sports cars have little or no rear-seat passenger room and minimal storage space. With RX-8, we've challenged that dictate, incorporating both into a sleek, powerful, agile package."

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The heart of the RX-8 is the RENESIS rotary engine, and its small size and low weight are what make the design and concept of this car possible. Named "International Engine of the Year 2003" at Engine Expo 2003 in Stuttgart, Germany, the RENESIS rotary performs the four processes of intake, compression, combustion and exhaust in succession by turning a triangular-shaped rotor in a cocoon-shaped combustion chamber to generate the engine power. Compared to traditional internal combustion engines, it is significantly smaller (some 60 percent smaller than a comparable-power V-6 and 40 percent smaller than a four-cylinder) and exceptionally smooth and high revving.

The RENESIS (Rotary Engine genesis – or rebirth of the rotary engine) twin-rotor engine uses side intake and exhaust ports, rather than peripheral ports as used in all previous street-going rotaries, and features nearly 30 percent more intake area and twice as much exhaust area, than previous rotary engines. A three-stage intake system and electronic throttle deliver power output unparalleled in a normally aspirated 1.3-liter engine. Additionally, the RENESIS delivers greater fuel economy than any rotary before it. Also, because of the change in the port design, overlap between the intake and exhaust ports has been eliminated, greatly reducing exhaust emissions and allowing the car to meet the strict Tier 2 emissions classification in the U.S.

A change to the mounting points for the RENESIS 13B, along with the deletion of the previous twin turbochargers and their associated plumbing, allowed Mazda engineers to mount the engine lower and further rearward than in the previous RX-7, in what Mazda calls an advanced front-midship layout. In addition, the fuel tank is placed ahead of the rear axle, and all seating is within the wheelbase and track of the car. Combined, these all directly contribute to a 50/50 vehicle weight distribution, low yaw-inertia moment and superb handling characteristics.

A low hood design, a direct result of the advanced front-midship powertrain layout, allows the use of a newly developed double-wishbone front suspension. Upper and lower arms are mounted on a highly rigid sub-frame, and the long arms ensure linear alignment changes with compression and rebound of the front wheels. Fitted to all four wheels are mono-tube gas-filled shock absorbers designed with large diameter internal pistons and valving, offering immediate road feedback as well as a compliant ride.

Steering is by a newly developed electric-assist rack and pinion power steering system that transmits just the right amount of road information back to the driver. Because the unit uses an electric motor to provide boost rather than a conventional power steering pump, there is no parasitic horsepower loss, and the system can be made smaller and tuned to specific driving situations. At low speeds, the system provides additional boost to ease parking, while at higher speeds boost is reduced to provide greater feel, response and vehicle stability.

Mazda continues to pioneer styling with the RX-8's unique "Freestyle" four-door design, effectively demonstrating that a true sports car does not need to sacrifice space or convenience. With enough passenger room for four full-size adults and enough trunk space to fit luggage for a weekend or two full-size golf bags, soulful driving is no longer solely for the driver.

The RX-8's styling presents a genuine sports car form, yet still accommodates four adults. In order to provide sufficient headroom inside, the cabin floor was made as low as possible. Then, because the lower floor allowed the seats to be mounted lower in the chassis, visibility was enhanced by making the hood and instrument panel as low as possible. To ensure adequate rear-seat knee room, designers concentrated on the shape of the front seat backs and the rear seat cushions. Additionally, the front seat slide-rails are positioned to allow maximum foot room for rear seat passengers.

The RX-8's body shell, thanks to the design of the rear-hinged rear "Freestyle" doors, has no center "B"-pillar. The front doors open to 67 degrees while the rears open to 80 degrees – nearly perpendicular to the car. The absence of a center pillar provides a very large door opening, making ingress and egress far easier than any other sports car thanks to this efficient packaging solution.

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Inside, style and high quality immediately are apparent. Mazda's design team paid close attention to the materials used, as well as the colors and textures of molded

parts. Particular focus was placed on creating a unified look and feel throughout the cabin, regardless of the level of trim (leather or cloth) a customer should choose. In developing the seats, Mazda used advanced ergonomic research to determine the cause of driver fatigue and build in optimum support to counteract this condition. In addition, soft blue lighting was chosen for the instrument cluster because it was found to minimize eye fatigue and strain.

In addition to being the most revolutionary and cutting-edge sports car, the RX-8 also was developed to provide the highest levels of active and passive safety. Active safety refers to systems that the driver may use to minimize the chance of collision. Chief among these is the use of large ABS-equipped disc brakes on all wheels, and a precise steering and suspension system so you won't hit what you can steer around or stop in front of! Additionally, Dynamic Stability Control (standard on manual transmission cars with Sport Package, optional on RX-8s with automatic transmissions) offers a superior level of handling and security and may be defeated when driving and road conditions safely allow.

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Safety is continued with passive systems, or those that take effect automatically without driver intervention. Even with the absence of a center pillar, RX-8 is expected

to be a world leader in side-impact protection through the use of a series of locking pins, which hold the doors together as well as tie each door directly into the roof and floor of the car, thereby dissipating crash energy through the vehicle's structure. In addition, a dual-stage inflation system is used on the frontal airbags, and all models are equipped as standard with both seat-mounted side-impact airbags and side-curtain airbags. The front seats are designed to minimize whiplash injuries, the brake pedal is designed to break away in the event of a collision of sufficient force and all four seating positions are fitted with three-point seatbelts.

RX-8 is available as either a 238-horsepower model fitted with a six-speed manual transmission, or a 197-horsepower model fitted with a four-speed automatic with Sport Shift. Both automatic and manual transmission cars come equipped with power windows, mirrors and door locks, cruise control and an AM/FM/CD audio system with six speakers.

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To make ordering easy, both the automatic and manual are offered in four trim packages: a Standard Model, Sport Package (adds xenon headlights, fog lamps and DSC on M/T cars; adds 18-inch wheels, and larger brakes to these items for A/T cars),

Touring Package (adds moonroof and Bose® audio system to the Sport Package offerings) and Grand Touring Package (adds leather seating surfaces, heated in front, and heated outside mirrors to the Touring and Sport Packages). Also available as a stand-alone option is a DVD-driven satellite-navigation unit, which uses a single DVD for mapping for the entire United States and portions of Canada.

The Mazda RX-8 comes with a four-year roadside assistance program. With a call to a toll-free number, RX-8 owners can access roadside assistance 24 hours a day, 365 days a year throughout the United States and Canada. For all 2004 Mazda vehicles, the company will provide a free loaner car in the event a warrantable condition requires alternative transportation.

The RX-8 is covered by a comprehensive four-year/50,000-mile warranty that covers every part on the vehicle except those subject to normal wear. In addition, the RX-8 is covered by a five-year/unlimited-mileage corrosion warranty.

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.

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