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SKYACTIV® TECHNOLOGY MAKES NORTH AMERICAN DEBUT WITH 2012 MAZDA3

*- Refreshed 2012 Mazda3 Equipped With SKYACTIV®-G, SKYACTIV®-Drive
to Achieve 40 MPG on the Highway -*

Face-lifted with an even more refined exterior and interior, the 2012 Mazda3 also is the first application in North America of Mazda's innovative SKYACTIV¹ fuel-saving and performance-oriented technologies, achieving an EPA-rated 40 mpg on the highway. The Mazda3 model is Mazda's best-selling vehicle worldwide and accounts for nearly two thirds of all Mazda car sales in the United States, making the vehicle a prime candidate for introducing SKYACTIV TECHNOLOGY to consumers looking for dynamic performance coupled with high fuel efficiency.

"SKYACTIV TECHNOLOGY is not just an engine; it is a new generation of advanced vehicle performance and efficiency," said Jim O'Sullivan, president and CEO, Mazda North American Operations (MNAO). "SKYACTIV TECHNOLOGY embodies Mazda's philosophy of engineering only vehicles that are fun to drive, satisfying to own and environmentally responsible; and there is no better vehicle to start than with the Mazda3, one of the most exciting sport compact cars on the road."

Redesigned for the 2010 model year, the refreshed 2012 Mazda3 receives an all-new SKYACTIV-G 2.0-liter gasoline engine as well as the all-new SKYACTIV-MT six-speed manual transmission and all-new SKYACTIV-Drive six-speed automatic transmission. The 2012 Mazda3 also features improved sporty driving dynamics, responsive handling and a comfortable cabin space. The exterior design also has been refined to express a bolder stance, alongside new interior appointments creating additional functionality without sacrificing the touch-and-feel quality. New safety features complete the all-around package of performance and practicality.

¹ SKYACTIV is a registered trade mark of Mazda Motor Corporation.



Mazda3, SKYACTIV Reach New Heights

In addition to the Mazda3's current MZR 2.0-liter dual-overhead-cam 16-valve four-cylinder engine, which is available only on *i* SV and Sport sedan models, is the all-new high-efficiency direct-injection SKYACTIV-G 2.0-liter gasoline engine.

SKYACTIV-G will be the standard engine in all Mazda3 *i* Touring and Grand Touring models. Mated to a standard all-new SKYACTIV-MT six-speed manual transmission or optional all-new SKYACTIV-Drive six-speed automatic transmission, *i* Touring and Grand Touring trims will be available in either the sedan or hatchback body styles. The MZR 2.0-liter engine will continue to be available with the current five-speed manual as standard equipment. Mazda3 *i* Sport models also will be available with the current five-speed automatic as an option.

Approximately 4.4 pounds lighter than the current MZR 2.0-liter engine, the SKYACTIV-G 2.0-liter adopts multi-hole injectors to enhance fuel spray characteristics, along with specially developed piston cavity shapes that ensure a shorter combustion time and suppresses the impact on power and torque from engine knocking. Pumping loss also is decreased by employing dual sequential valve timing (S-VT).

The 2012 Mazda3 with SKYACTIV TECHNOLOGY achieves a high compression ratio of 12.0:1 and delivers 155 horsepower at 6,000 rpm and 148 lb-ft of torque at 4,100 rpm. (The PZEV version of this engine sold in California and other states produces 154 horsepower at 6,000 rpm.)

Compared to the current Mazda3 MZR 2.0-liter engine, the maximum power of the SKYACTIV-equipped 2012 Mazda3 is increased by approximately five percent (from 148 horsepower at 6,500 rpm) and peak torque is increased by approximately 10 percent (from 135 lb-ft at 4,500 rpm). With improved torque, coupled with a drive control system that utilizes coordinated controls of the engine and transmission, Mazda3s with SKYACTIV TECHNOLOGY excel in dynamic response, further maintaining the Zoom-Zoom ideal of oneness between car and driver.

Fuel economy also gets a boost from the combination of a SKYACTIV engine and transmissions. When equipped with the SKYACTIV-G 2.0-liter engine and optional SKYACTIV-Drive six-speed automatic transmission, the 2012 Mazda3 sedan will achieve an EPA rating of 40 mpg on the highway, an approximately 21-percent improvement over the current MZR 2.0-liter engine when equipped with the optional five-speed automatic transmission.



With a fuel tank capacity of 14.5 gallons, the 2012 Mazda3 sedan with SKYACTIV TECHNOLOGY has the potential of a 540-mile range, with still a gallon of fuel remaining. City mpg for the sedan version also improves by 17 percent to 28 mpg. When equipped with the SKYACTIV-MT six-speed manual transmission, the sedan has an EPA-rated fuel economy of 27 city/39 highway. The Mazda3 sedan with the MZR 2.0-liter engine has an EPA fuel economy rating of 25 city/33 highway with the standard five-speed manual transmission, and 24 city/33 highway with the optional five-speed automatic transmission.

Also, previously only available with the MZR 2.5-liter engine, the Mazda3 five-door hatchback model will now be offered in the U.S. with the SKYACTIV-G 2.0-liter gasoline engine. This Mazda3 hatchback is EPA-rated to deliver 27 city/38 highway (SKYACTIV-MT) and 28 city/39 highway (SKYACTIV-Drive AT). The slightly lower highway estimates can be attributed to different aerodynamics and a higher weight ratio between the sedan and hatchback. However, the hatchback's driving range remains impressive with more than 500 miles of driving on the same sized tank as the sedan, and at 39 mpg on the highway, the Mazda3 hatchback with SKYACTIV TECHNOLOGY is the most fuel efficient five-door in the compact car segment. The MZR 2.0-liter engine will not be available as a hatchback.

The higher fuel economy of the 2012 Mazda3 equipped with SKYACTIV TECHNOLOGY is a direct result of combining all the best features of the technology in today's transmissions. For SKYACTIV-Drive, the key advantages of a conventional automatic transmission, Continuously Variable Transmission (CVT) and Dual Clutch Transmission (DCT) were integrated. In addition, a torque converter with a lock-up clutch was developed to ensure minimal decrease in fuel economy and an increase in direct drive feel.

For SKYACTIV-MT, the goal was to achieve a shift feel that is sporty, brisk and responds to the driver. To accomplish this, not only was the shift-lever stroke shortened by about 10 percent compared to the current six-speed manual (available only in models equipped with the MZR 2.5-liter engine or MZR 2.3-liter Direct Injection Spark Ignition turbo engine) but other technologies were applied as well: a down type system, lock ball type synchronizer, shift load canceller, slide ball bearing and locating 2nd and 3rd gears on a common shaft. By reconfiguring the current six-speed manual transmission, its weight was reduced by approximately 4.4 pounds due to the need for fewer components, while creating a quicker and crisper shift feel.



Also available on the 2012 Mazda3 is the highly-acclaimed MZR 2.5-liter engine. Alongside the SKYACTIV-G 2.0-liter, the MZR 2.5-liter is a technology powerhouse as well. Available on s Touring and Grand Touring models only, it offers an aluminum block with cylinder-bore liners made of a steel-molybdenum alloy offering strength and stiffness generally not seen in large-displacement four-cylinder engines. A forged-steel crankshaft provides strength at high revs, but also rigidity to ensure low NVH characteristics.

Additionally, twin balance shafts located in the oil sump cancel second-order noise and vibration. The deep-skirt block is engineered for extra stiffness and main-bearing caps are integral with a ladder-type lower-block reinforcement. To minimize the noise and vibration typically found on larger displacement four-cylinder engines, the damper at the forward end of the crankshaft is equipped with two tuned masses. At the output end, a flexible flywheel also curbs NVH.

Fuel is delivered to the intake ports by an electronically-controlled sequential injection system. Ignition coils are modular units positioned directly above the spark plugs. Shim-less bucket tappets require no maintenance. Lightweight pistons are coated with a special anti-friction compound and fitted with low-tension rings for improved gas mileage. Sintered powder-metal connecting rods and lighter full-floating wrist pins minimize the reciprocating weight.

Providing 167 horsepower at 6,000 rpm and 168 lb-ft of torque at 4,000 rpm, the MZR 2.5-liter engine is available with a standard six-speed manual transmission or an optional five-speed electronically-controlled automatic with manual shift control. (The PZEV version of this engine sold in California and other states produces 165 horsepower at 6,000 rpm and 167 lb-ft of torque at 4,000 rpm.) The MZR 2.5-liter engine achieves EPA figures of 20 city/28 highway with a manual transmission and 22 city/29 highway with the automatic.

Distinctively Dynamic

Mazda3 has earned a solid reputation for its sporty and exciting handling that delivers an equally pleasurable driving feel which emphasizes consistency between the driver's expectations and the car's response. Inheriting this pedigree, the refreshed 2012 Mazda3 not only improves upon this sense of oneness between driver and vehicle, but also offers a comfortable driving experience that all passengers can feel and enjoy in various driving scenarios.



Referred to as *Toitsukan*, this linear and consistent feel is more specifically about establishing smooth transitions between acceleration, lateral and deceleration G forces in response to the basic aspects of driving, turning and stopping. This idea is not simply about delivering sharp response to the accelerator and steering operations for a sporty ride, but instead delivering a consistent linear feeling of the car's every response to control operations of the driver. *Toitsukan* extends to making driving pleasurable and instilling drivers with the sensation of excitement and control while at the same time offering passengers a comfortable ride created by a smooth and stable car movement.

Concentrated efforts were made to ensure *Toitsukan* is achieved throughout the vehicle's features, which also resulted in a stronger body that includes the adoption of the Electro-Hydraulic Power Assist Steering (EHPAS) system and optimized tuning of the front and rear dampers. Mazda's EHPAS system employs a new setting for pump flow characteristics that enables easier handling at slow speeds while also achieving more positive feedback and a better feeling for the road at mid-range through to high speeds. The overall result when compared to the current model is a lighter, more nimble steering feel.

Simply put: turn the wheel a little, get a little change of direction; turn the wheel a lot, get a lot of change of direction. It seems so easy, but so few manufacturers seem to be able to achieve this level of intuition.

The body of the 2012 Mazda3 also has been further reinforced for greater rigidity, improving upon the current model's already stellar agility and handling stability. This was partly achieved by increasing the number of spot welds used to join the suspension crossmembers (to which the front and rear suspensions are mounted) to the reinforced body areas. Use of stronger materials for reinforcements made it possible to more effectively disperse input from the suspension crossmember mounts to the body, thereby greatly improving overall body rigidity. In addition, the two reinforcement bars located under the center of the floor panel of the current Mazda3 were replaced by a single new brace that is both stronger and more rigid. Employing this sheet of reinforcing material suppresses fore-aft body deformation. This update applies only to models equipped with the SKYACTIV-G 2.0-liter or MZR 2.5-liter engines.



Additionally, models powered by SKYACTIV-G 2.0-liter gasoline engines are equipped with a drive control system that controls torque generation to maintain a harmonious balance between engine output and the gears of the transmission. Programmed in such a way to determine how much acceleration is called for in relation to the amount of acceleration pedal action, the system ensures the right amount of torque generated matches the acceleration demands. This instills in the driver a sense of confidence that the vehicle will respond faithfully and predictably. A driver's desired speed can be reached without the need of a heavy foot on the accelerator, thus contributing to lower fuel consumption.

Engaging, Efficient Exterior

This mid-generation evolution of the Mazda3 also extends to its exterior design. The current model's rich expression and bold stance has been updated to deliver a well-toned look that conveys even higher quality and curb appeal. Increased aerodynamics and stylized features give the 2012 Mazda3 a more sophisticated look, blending seamlessly with functionality.

The 2012 Mazda3's exterior appearance ultimately features a more taut impression with a new front fascia and updated five-point grille opening for both sedan and hatchback styles. New design characteristics include more delicately sculpted forms around the openings on the outside edge of the front bumper and a rounded fog lamp shape (changed from the horizontally-wide version of the current model).

Mazda3 sedan and hatchback models equipped with SKYACTIV-G gasoline engines will be further distinguished with exclusive elements, such as an all-new engine cover featuring a deep blue metallic paint finish with black sections along either side, headlamp units outfitted with a transparent blue ring around the center lens to emphasize the vehicle's distinctive character and a badge featuring a "SKYACTIV" logo against a clear-blue background.

Aerodynamics plays heavily to a vehicle's carbon footprint, and improved aerodynamic performance yields greater fuel economy and further reduces CO₂ emissions while also contributing to handling stability. With this in mind, the front bumper design was optimized, as were underbody parts, to more effectively streamline the flow of air traveling beneath the floor. The shape of the lower sections of the front bumper's sides were redesigned to protrude forward and the fins beneath were made larger. This adjustment effectively distributes the flow of air hitting the engine compartment and the front tire deflector, suppressing turbulence in cooling the engine as well as along the sides of the body.



Other aerodynamic aids that further streamline airflow throughout and around the vehicle include: a larger, smoother engine cover (on models equipped with the SKYACTIV-G 2.0-liter engine); increasing the floor under-covers by approximately 10 percent and eliminating vertical grooves for a smoother design; increasing the rigidity of the front tire deflectors to prevent deformation and establish a good balance between brake cooling, aerodynamic performance and handling stability; and an added clamshell shaped silencer to sit on angle with the road surface.

The devil truly is in the details, and Mazda's engineers didn't miss a single one. The end result is a 0.27 C_d for the sedan (SKYACTIV-equipped model only), an approximately seven-percent improvement over the 0.29 C_d of current models. The hatchback version has a 0.29 C_d (SKYACTIV-equipped model only), also an approximately seven-percent increase over the 0.31 C_d of current models.

The refreshed exterior look is completed with all-new 16- and 17-inch aluminum alloy wheel designs. The 16-inch wheel (on SKYACTIV-G 2.0-liter *i* models) now features 10 twisted-surface spokes, increased from the current model's seven-spoke design, and the 17-inch wheel (on MZR 2.5-liter *s* models) is characterized by enlarged openings between each spoke, creating a look that adds to a lighter yet more dynamic feel. Designs for the 16-inch steel wheels and 18-inch aluminum alloy wheels remain unchanged.

High Quality, Intuitive Interior

The interior design was no less re-imagined than the vehicle's exterior, and was developed with the end goals of a more inviting cabin and higher quality feel. Beginning with the instrument panel – the largest landscape within the cabin – black is now used throughout the center stack and shift gate to provide an even bolder look. Also, silver-colored, satin-polished details were added to areas frequently operated by consumers, such as the outer rings of the three climate-control dial switches and the audio control panel, as well as the ventilation louvers on the center panel. In addition to creating a feeling of higher refinement, the silver-on-black color scheme further accentuates the location of these common controls and switches, which increases legibility and lessens the amount of time drivers take their eyes off the road, consequently reducing operating errors.



The multi-information display (MID) and liquid crystal display (LCD) also received color adjustments, changing from the red text and graphics of the previous model to an easier-to-read white. On the 2012 *MAZDASPEED3*, silver touches also replace the previously red-accented graphics and the silver decoration atop the shift knob has been removed. The entire shift knob on the 2012 *MAZDASPEED3* is now black leather-wrapped. The parking brake knob also is wrapped in genuine leather, establishing a unified coordination that lends the cockpit an even sportier air and gives the *MAZDASPEED3* interior additional sophistication.

The sporty twin-meter design of the instrument cluster itself remains unchanged but is highlighted with new, continuous-lit white graphic meters, which provide better readability, even in bright daylight hours. Backlight colors also differ depending on the model: dynamic gray for standard and high trim levels, and a red gradation for the *MAZDASPEED3*. SKYACTIV-equipped vehicles will feature a blue gradation backlight as well as white-graphic meter panels. Also offered will be a stylish shift knob adorned by satin-polish plating on the lower section and a silver ring-surrounded plate on the upper part.

Proving that even on a mid-cycle refresh engineers truly sweat the details, the amount of the shift knob head's forward projection on SKYACTIV-Drive equipped models has been increased by nearly 0.16 inches over the current model, resulting in a better grip feel and smoother shifts in both front-aft and left-right directions.

Improved visual designs also have found their way into the comfortable, snug seats and create a stronger impression of dimensionality with new three-dimensional fabric patterns. On the black seats of non-leather models, gray cross-threads have been added to enhance contrast and create a feeling of casual comfort. Dune-colored seats receive both bright and dark-colored cross-threads to create a calm, mature interior atmosphere. Higher trim levels (Touring and Grand Touring) receive a different three-dimensional seat fabric pattern to create a richer expression of quality on the black fabric.



Additional Safety Features

All Mazda3 and MAZDASPEED3 models will continue to be equipped with a high level of standard safety features. An optional feature available for 2012 models is a new, segment-exclusive Blind Spot Monitoring (BSM) system. The BSM system aids drivers in avoiding accidents that often occur in tight-spaced situations, such as brushing up against another vehicle during lane changes and traffic merges. Located at the rear of the vehicle are 24GHz radar sensors aim to detect approaching vehicles within a range of 13 feet to the left or right, and within 26 feet from the rear. When a vehicle is detected entering the blind spot area, indicator lamps housed within the door mirrors will light. If a turn signal is activated while the indicators are lit, the indicators flash and a buzzer serves as an additional warning.

Also available as an option is an Adaptive Front-lighting System (AFS) with auto-leveling bi-xenon headlamps. AFS provides a wider range of vision during cornering, increasing the driver's gaze point and visible distance by taking into account both steering angle and vehicle speed to orient the headlamps to an angle.

BSM and AFS will be available as part of the Technology Package for *i* and *s* Grand Touring models as well as on the MAZDASPEED3.

All Mazda3s, regardless of trim level or engine choice, will continue to feature Mazda's own highly rigid safety body structure, which incorporates crushable outer zones that absorb impact energy, and Mazda's Triple-H construction, which applies H-shaped reinforcements to the floor, side frames and roof to suppress cabin deformation and minimize the likelihood of bodily injury during an impact. For 2012 models, the B-pillar reinforcement has been extended by more than seven inches and more high tensile steel was added to further increase body rigidity.

Standard advanced safety features include six airbags (advanced dual front, front-seat mounted and full-length side curtain) with improved double chamber side airbags, anti-lock brakes (ABS), Electronic Brakeforce Distribution (EBD) with Brake Assist, Dynamic Stability Control (DSC) with a Traction Control System (TCS), front and rear stabilizer bars, a tire pressure monitoring system (TPMS), a "crushable" brake and accelerator pedal assembly and collapsible steering column, three-point safety belts for all seating positions, front seatbelt pretensioners with force limiters as well as Lower Anchors and Tethers for Children (LATCH). On Mazda3 and MAZDASPEED3, safety is simply not an option.



Also, all Mazda vehicles come with the Mazda Certified Roadside Assistance Program. Using either the toll-free number or free Mazda Assist app for iOS- and Android-operated mobile devices, owners and their family members can contact roadside assistance 24 hours a day, 365 days a year throughout the United States and Canada. In addition, the New Vehicle Limited Warranty includes a comprehensive three-year/36,000-mile warranty, which covers every part of the vehicle except those subject to normal wear, a five-year/60,000-mile powertrain warranty and a five-year/unlimited-mileage corrosion warranty.

Mazda North American Operations is headquartered in Irvine, Calif. and oversees the sales, marketing, parts and customer service support of [Mazda vehicles](#) in the United States, Canada and Mexico through nearly 900 dealers. Operations in Canada are managed by Mazda Canada, Inc., located in Ontario; and in Mexico by Mazda Motor de Mexico in Mexico City.

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