



Mazda at the 2012 Australian International Motor Show

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New-look Mazda CX-9

The 2012 Australian International Motor Show marks the global debut of the New-Look Mazda CX-9, the company's range-topping SUV.

Mazda CX-9 is a crossover sport-utility vehicle (SUV) featuring a distinctive sporty appearance, a high-quality cabin, the flexibility of three-rows, and Mazda's exciting 'Zoom-Zoom' driving dynamics.

New-Look Mazda CX-9 carries over the utility and dynamic driving performance of the outgoing model while adopting the brand expression of Mazda's new-generation 'KODO – Soul of Motion' design theme at the front and rear for even sportier styling and stronger presence.

Enhancements in craftsmanship and interior design further the feeling of quality and refinement. In addition, a wide range of advanced technologies are adopted, including an upgraded infotainment system to enhance driving pleasure and the addition of new and advanced safety equipment for greater peace of mind.

The Mazda CX-9 is a standout in the large SUV segment and is marketed as Mazda's premium SUV in over 70 countries including Australia and North America.



AT A GLANCE

Exterior Design

- Brand expression of Mazda's new-generation 'KODO – Soul of Motion' design theme is adopted at the front and rear to give a strong sense of motion and vitality
- Within the front grille, the new signature wing is adopted, a unifying brand expression of the new Mazda family face and a hallmark of the 'KODO – Soul of Motion' design theme
- LED Daytime Running Lamps (DRL) with a halo ring light guide around the head lamp are added to selected models
- Rear combination lamps incorporate the new design signature and have been designed to emphasise the CX-9's presence to those behind
- Front fog-lamps with chrome-plated bezels
- 20-inch aluminium wheels with a high lustre finish convey a sense of quality and power
- Three new colours are introduced: Meteor Grey Mica has an impressive metallic lustre, Zeal Red Mica emphasises CX-9's form and Brilliant Black gives a subtle but sophisticated feel

Interior Design

- A black-based interior colour scheme emphasises the vehicle's quality and sportiness
- New Bordeaux-coloured decoration panels have a deep, glossy, metallic look and create a sense of quality befitting Mazda's premium model
- Satin-silver finished decorative items with metallic lustre emphasise the character of the black-based interior
- Meters with white illumination create a sporty look and are also highly legible
- Meters with an enhanced surface finish emphasise a sense of refinement and quality
- The shift knob has been redesigned under the new-generation design theme and offers improved comfort and feel
- A high quality genuine leather steering wheel offers a smoother feel
- Leather seats with perforations in the middle sections offer an enhanced sense of refinement
- Suede and dark-red stitching are newly adopted on parts of the door trim and seats

Equipment

- The infotainment system features the latest audio, navigation and speech-recognition systems based on an intuitive HMI (Human Machine Interface)
- A USB connector has been added to the audio system and the Bluetooth® profile has been upgraded to AVRCP (Audio/Video Remote Control Profile) version 1.4, which allows the user to repeat tracks, shuffle tracks, and select folders via the steering wheel controls
- The navigation system allows users to easily update map and other software data via an SD card. The system shows current road conditions and selects optimal routes and estimate arrival times based on historical data on a server
- A high sensitivity microphone for speech-recognition and telephone functions is equipped with a new noise-control and wind-noise-suppression processor to deliver clearer call quality

- The capacity of the telephone directory is dramatically increased to a maximum of 1,000 contacts, and the procedure for initiating calls is simplified using speech recognition for greater convenience
- Speed-dial function enables users to call frequently-used numbers with simple commands

Safety

Advanced active-safety technologies i-ACTIVESENSE are designed to better anticipate danger and help the driver avoid it, such as:

- Forward Obstruction Warning (FOW) detects the possibility of an imminent collision and warns the driver via an audible warning chime and a visual warning in the meter cluster
- Lane Departure Warning (LDW) system recognises lane markings on the road surface and issues a warning to the driver via an audible warning chime and a visual warning in the meter cluster when the vehicle is going to make an unintentional lane departure
- High Beam Control (HBC) automatically switches between high and low beams to ensure improved night-time visibility
- Blind Spot Monitoring (BSM) monitors the blind spot on either side of the car, detects vehicles approaching from behind in adjacent lanes and alerts the driver.

DESIGN FEATURES

‘KODO – Soul of Motion’ design theme inspires the styling

Sporty proportions and a commanding presence born of a distinctive design are just two of the characteristics that have made the Mazda CX-9 so highly prized since its debut.

With the New-Look CX-9, while continuing to make the most of these proportions, the front and rear have been redesigned to incorporate the brand expression of Mazda’s new design theme ‘KODO – Soul of Motion’.

A hallmark of KODO is the signature wing which underscores the front grille. This, in combination with the front and rear bumpers and lights - which have been redesigned to express both power and movement - impart the vehicle with a sense of vitality and an even greater presence.

The dynamic black-based interior colour scheme adopts new decorative items, including satin-silver trim on the doors and instrument panel and the decoration panels are in a new colour, Bordeaux. Combined with the exterior styling, featuring the brand expression of the new ‘KODO – Soul of Motion’ design theme, the interior design emphasises the sporty and prestigious look and feel of the CX-9.



Exterior Design

The exterior design is based on the sleek and sporty silhouette that is one of Mazda CX-9's most distinctive characteristics.

The three principle aims of the upgrade were:

- (1) to achieve a balance between various design elements
- (2) enhance the look of stability
- (3) to incorporate the key brand expression of the 'KODO—Soul of Motion' design theme.

A balance between the headlamps, grille and Mazda badge has been achieved to provide an attractive look that does not detract from the imposing character of the CX-9.

For example, the grille area is bigger and more deeply contoured and the lamps feature sharper designs to create a facial expression that is stylish, powerful and full of confidence.

The overall look of stability is made more pronounced by complementing the body's visual expression of forward movement with bumper corners that are tauter and less rounded than those of the outgoing model.

In addition, New-Look Mazda CX-9 features the new signature wing, a hallmark of the 'KODO—Soul of Motion' design theme. The broad chrome-plated wing imparts a strong presence to the new model and underscores its status as Mazda's premium SUV.

Special attention was paid to the details. Models with High-Intensity-Discharge (HID) headlamps have LED Daytime Running Lamps (DRLs) with LEDs mounted in the upper part of the extended signature wings and a ring around the headlamp.

The DRLs emit striking illumination to emphasise the vehicle's strong visual presence not only at night but also during the day. The rear combination lamps have new design signatures making the rear of the facelifted CX-9 more striking and characterful.

The 20-inch aluminium wheels have a high-lustre finish that gives a more richly contoured metallic look to convey the quality of Mazda's high-end SUV.

The introduction of brand expression of the new 'KODO—Soul of Motion' design theme emphasises the CX-9's stately and imposing presence.

Interior Design

Inside the sporty exterior lies an interior with a stylish and luxurious feel.

For the new model, Mazda further refined the previous model's highly-evaluated interior to be more dynamic with an even higher sense of quality.

The entire instrument panel is black, emphasising its sporty and prestigious look and feel.

A new design for the audio and navigation unit, including a piano-black finish on the surface around the display and flush surfaces for the display and switches, result in a stylish centre console.

The base layer of the new Bordeaux-coloured decorative panels is real metal giving them a deep, glossy look and causing them to give off a sharp, metallic radiance when light hits them.

These metallic reflections combine with the refined, subdued colouring to create a classy look perfect for this range-topping SUV.

Decorative items on the doors and centre console have a satin-silver finish whose metallic lustre emphasises the strong character of the black-based colour scheme.

Meter illumination is white, while the dials feature a surface finish of tiny, overlapping circles to emphasise the refinement of the cockpit.

The design of the shift knob emphasises dynamic performance and fits snugly into the driver's palm. This and the smooth leather steering wheel cover not only look great but enhance ease of operation.

The middle sections of leather seats are upholstered in perforated leather for a strong sense of refinement and quality.

Overall, a host of carefully crafted details are designed to fill owners with a sense of pride whenever they use the car.



Utility/Comfort/Equipment

A blend of comfort and well thought-out features

Inside its sleek sporty body, Mazda CX-9 offers the generous cabin space expected from a three-row SUV, taking full advantage of its 5,096mm length, 1,936mm width, 1,728mm height and 2,875mm wheelbase.

With the exception of a 7mm increase in overall length, all other dimensions remain unchanged from the outgoing model.

In addition, high-quality features and a wide range of equipment are also standout characteristics of CX-9.

New-Look CX-9 boasts an upgraded infotainment system with advanced functions to provide improved functionality and convenience. A fresh focus on the fundamental aspects of the human-machine interface during development made the system more intuitive and easier to use.

The audio system now incorporates a USB connector to accompany the AM/FM radio, AUX jack, and iPod connector so users can enjoy music stored in devices such as smartphones.

Also, the latest Bluetooth® profile AVRCP (Audio/Video Remote Control Profile) version 1.4 allows the user to repeat tracks, shuffle tracks, and select folders.

The navigation system is a TomTom® model offering users map and software updates via SD cards. It can show current road conditions, display optimal routes and estimate arrival times based on historical data on a server.

The speech-recognition functionality in the new CX-9 significantly improves on the previous version. With its superior speech-recognition performance, the audio system enables users to not only operate the telephone and navigation system but also to search for artists and tracks, thus offering greater convenience.

Call quality with the telephone function is improved thanks to a microphone with new noise-control processing and high-performance wind-noise-suppression processing.

The system simplifies the procedure for initiating telephone calls using speech recognition, and contacts can be registered in the telephone directory with a single operation.

The maximum number of contacts has been dramatically increased from 32 to 1,000. The system also has a speed-dial function where the user can register frequently used numbers and then call them using simpler commands.

With a smartphone connected to the system by Bluetooth®, messages (Short Message Service, Multimedia Messaging Service, and e-mail) received are shown on the in-car display. The system can read messages aloud and allows the user to send replies using fixed phrases.

Dynamic Performance

Sophisticated driving performance

The facelifted CX-9's powertrain, the MZI 3.7 litre V6 engine and six-speed automatic transmission with manual shift mode, is carried over from the previous model.

With maximum power of 204kW @ 6,250rpm and maximum torque of 367Nm @ 4,250rpm, the MZI 3.7 litre engine achieves superb linear acceleration combined with excellent NVH performance.

The six-speed automatic transmission offers a pleasingly sporty shift feel and linear response to accelerator inputs, there's also a manual shift mode for drivers who want to exercise more control.

The powertrain combination offers drivers a satisfying combination of power and refinement.

The Active Torque-Split All-Wheel Drive system adds greatly to CX-9's driving performance by firmly maintaining traction in a wide variety of road conditions. The system automatically selects driving modes according to driving conditions and achieves reliably stable traction.

Safety

Advanced safety features for greater peace of mind

Mazda's Proactive Safety philosophy takes a driver-focused approach.

Rather than simply letting systems intervene and take control of the vehicle, Mazda gives drivers an extra set of "eyes", so they're more aware of their surroundings at all times and can therefore proactively avoid hazards and avert accidents.

'i-ACTIVSENSE' is what Mazda calls these eyes, an innovative range of advanced sensor-based active safety technology.

The new CX-9 features assortment of 'i-ACTIVSENSE' systems, such as:

- Forward Obstruction Warning (FOW) detects the possibility of an imminent collision and warns the driver via a warning lamp and audible warning chime
- Lane Departure Warning (LDW) recognises lane markings on the road surface and issues a warning to the driver via a warning lamp and audible warning chime when the vehicle is going to make an unintentional lane departure
- High Beam Control (HBC) automatically switches the headlamps between high and low beam as required. If the system detects an oncoming vehicle or a vehicle in front, it automatically switches the headlamps to low beam to avoid blinding other drivers.

HBC also reduces the risk of striking a pedestrian by increasing the use of high beams without requiring any action by the driver.

- Blind Spot Monitoring (BSM) monitors the blind spot on either side of the car, detects vehicles approaching from behind in adjacent lanes and alerts the driver.
- In addition to these new features, a wide range of other active safety features such as reverse camera, Dynamic Stability Control (DSC), Anti-lock Braking System (ABS), Electronic Brake-force Distribution (EBD), Roll Stability Control (RSC) and Traction Control System (TCS) contribute to safer driving.

All-new Mazda6

All-New Mazda6 Brings an Added Dimension to the Celebration of Driving

The 2012 Australian International Motor Show marks the local premiere for the All-New Mazda6 sedan and wagon.

Following on from the Mazda CX-5, the All-New Mazda6 is the second of a new generation of Mazda vehicles to adopt the full range of SKYACTIV Technology and the 'KODO – Soul of Motion' design language.

Mazda has consistently strived to provide stylish, insightful and spirited cars and the new Mazda6 carries on this tradition while also offering outstanding environmental performance.

Mazda's environmental technology development is directed by its *Building Block Strategy* which first calls for thorough improvements in the base automotive technologies. The next step builds on these improvements with the sequential introduction of electric devices designed to improve fuel economy.

The first such device was i-Stop, Mazda's idling stop system introduced to Australia in 2011 with the Mazda3 SP20 SKYACTIV.

The second device, which makes its debut with the new Mazda6 is *i-ELOOP*, Mazda's unique brake energy regeneration system which begins charging a capacitor the moment you take your foot off the accelerator. Electricity stored in the capacitor can then be used to power electric components throughout the car. In freeing the engine from much of the duty of providing electricity to these components, more fuel energy goes directly to powering the car resulting in further improvements in fuel economy.

Both i-ELOOP and i-Stop are standard across the All-New Mazda6 range.

In addition, a variety of advanced active safety technologies have been adopted. The new Mazda6 delivers not only precise response and a high-quality, exhilarating driving experience but also outstanding environmental and safety performance.

Drawing on the full potential of both SKYACTIV Technology and KODO design, the Mazda6 aims to take the "joy of driving" to a new level and will build on the momentum created by the success of the CX-5.

It will be introduced to global markets starting late 2012.

“Driving pleasure” begins before you even turn the key

“In developing the third generation Mazda6, we pursued Mazda’s intrinsic value, ‘driving pleasure’. We wanted to create a car that reacts and behaves exactly as you expect it to. Part of this involved carefully crafting those parts of the car which you often touch to feel as though they are an extension of your own body.

The distinctive design hints at the power and agility with which the car moves. A variety of original innovations support a comfortable and enjoyable driving experience. Mazda’s superb engineering and craftsmanship have realised a car that handles so well it seems to respond directly to the driver’s intentions rather than the physical manipulations of steering, braking and accelerating.

In short, the new Mazda6 offers the “joy of driving” that people have come to expect from Mazda, but the experience starts even before you get behind the wheel and lingers long after the drive is over.

I can’t wait to see the look on the faces of people getting out of the car after their first time behind the wheel of the new Mazda6.”

-Hiroshi Kajiya, the new Mazda6 program manager



DESIGN FEATURES

An exceptional presence creates an expectation of outstanding driving performance every time you glance at the car

All-New Mazda6 is the mass production model born of the Mazda Takeri concept car showcased at Tokyo Motor Show in December 2011.

“The new Mazda6 has a robust framework and a low, wide stance that expresses strength and stability, creating the impression of amazing vitality without detracting from the universal aesthetic appeal and beautiful form it displays as a CD car,” says the chief designer Akira Tamatani.

“We have created a design in which the wild and dynamic expressions of motion artistically realise a powerful presence. Simply looking at the car heightens one’s expectations about the driving experience even before actually riding in it.”

At a single glance, the exterior design conveys animalistic tenacity, dignity and a sporty flare through its smooth and powerful physique. The coordinated interior, in keynote black, is both chic and contemporary without compromising on a timeless feeling of luxury and quality.

AT A GLANCE

Exterior

- In the front view, the ‘signature wing’ has been adopted. It is a unifying element of the new Mazda family face design. The hood creases extend from the tips of the signature wing and flow into the body character lines. Together with the solid design of the nose, they complement the overall dynamic form of the body that expresses a strong desire for motion.
- Three character lines dominate the side view – an elegant line that extends forward from the rear tyre, a rear fender line suggesting driving force from the vehicle’s hind quarter, and a front fender line denoting strong shoulders supporting nimble forefeet. The combination of these lines capture the form of a predator crouched and poised ready to leap forward in an explosion of movement.
- The rear view displays stability through the well balanced proportions of the wedged body, prominent rear fender and compact cabin.
- For the head lights, signature LED luminescence and halo ring light guides are adopted for the first time in a Mazda mass production vehicle.
- The first use of “Soul Red”, a new colour born of a unique technological process developed by Mazda, that balances depth and shading which accentuate the car’s dynamic form, and vividness which expresses sportiness.

Interior

- The driver-oriented cockpit offers generous space. Three meters laid out symmetrically in the meter hood heighten the expectation for exciting driving.
- Passenger side space provides a sense of both openness and safety with the decorative horizontal line extending through the center panel to the air-conditioning louvers as well as the encircling form of the dash.
- Soft materials are used for areas frequently touched such as the door trim and the upper part of the dash.

The instrument panel

- The solid, decorative instrument panel features 2 colours, 'Bordeaux metal' and 'Dark metal'.
- White scale markings appear to stand out from the meter face which feature a combination of spindle groove and honeycomb patterning to achieve a feeling of depth and quality craftsmanship. An encircling metal ring completes a tasteful design which conveys a zeal for driving



CRAFTMANSHIP

Quality that raises the anticipation of “driving pleasure”

New generation Mazda products are developed under the *design craftsmanship concept* which incorporates the designer’s aesthetic sense into a base of detailed and precise engineering.

Full-scale implementation of this concept with the new Mazda6 enabled a high-quality, premium finish with a harmony of form and quality while not compromising on functionality. Attention was paid not only to areas passengers see and touch but also to the feel and sound of operating the vehicle in order to create a sense of unity throughout the car. An overall feeling of quality appeals to all the senses and creates an expectation that the new Mazda6 will offer heightened levels of driving pleasure no matter where you take it.

- Details of all parts, including design motif, molding, and surface grain and gloss treatments are carefully executed according to a consistent philosophy
- In the cabin, the instrument panel is laid out horizontally, and a smooth continuity between the upper area of the instrument panel and the door trim creates an impression of simplicity and neatness
- Care has been taken to ensure metal-like decorations, such as satin chrome plating
- Parts which the driver often handles, such as the steering wheel, shift knob and parking brake lever are carefully crafted to achieve a smooth and consistent feel
- The layout of the instrument display and operating devices surrounding the driver’s seat has been optimised in consideration of both the characteristics of human vision and arm and hand movements.

PACKAGING

Packaging that facilitates comfort and ease-of-use

A spacious and comfortable environment is provided within the dynamic and elegant body form realised by KODO design. It offers an environment where the driver can relax and concentrate on the pleasure of driving. A feeling of anticipation is stirred every time you look at the car, run your hand over the fender, grasp the wheel or adjust the mirror.

Two fundamental aims directed the development of the packaging.

The first was to realise spacious, comfortable cabin that perfectly matches KODO design.

The second was to refine the Human Machine Interface (HMI) to create a cockpit environment where the driver can feel completely at ease to enjoy the drive. The new Mazda6 packaging achieves all three aims and provides driver and passengers with a great environment in which to savor the “joy of driving”.

Spacious, comfortable cabin that perfectly matches KODO design

- The 2,830mm long wheel base for sedan and 2,750mm for wagon allows a spacious backseat area, ample interior space and a broad canvas for the unrestrained expression of KODO
- Large 19 inch diameter wheels create a feeling of unshakable stability
- Compared to the previous model, the front wheel has been moved forward by 100mm in relation to the A-pillar resulting in reduced overhang. The rear deck of the sedan is also shorter than the previous model. The car's stance, with the bulk of the mass toward the rear, gives a sense of explosive power ready to be unleashed at any moment
- Shoulder room of 1,450mm in the front seat (20mm wider than the previous model) and a large radius corner on the center console ensure comfortable seating
- The sedan's rear seats feature ample legroom with knee clearance 43 mm greater than the previous model and amongst the best in the segment. Legroom on the sedan is 984 mm, an increase of 37 mm over the previous model. The length of the rear seat cushion is increased 20 mm and the seat back length increased 33 mm. The rear center arm rest has been enlarged by 60 mm
- The wagon's rear seats feature increased legroom with knee clearance 22 mm greater than the previous model and amongst the best in the segment. Legroom on the wagon is 955 mm, an increase of 8 mm over the previous model. The length of the rear seat cushion is increased 30 mm and the seat back length has increased 11 mm. The rear center arm rest has been enlarged by 60 mm
- The sedan's trunk was designed from an ergonomic perspective. Upper opening width is 32mm wider than the previous model, for easy loading. A swan hinge enables easy and smooth opening and closing of the trunk
- Cockpit environment
- An adjustable front seat combined with adjustable tilt and telescopic steering wheel enable precise adjustment of the driving position
- A multi commander allows intuitive control of an array of functions such as audio, the navigation system and the sensitivity of the automatic windshield wipers via the center display
- Trip management information is displayed on a 3.5-inch multi-information display in the meter cluster. Navigation information is shown on a 5-inch display located in the center panel. By separating information into categories and showing them on two different displays, readability and operability were further enhanced

DRIVING DYNAMICS

Impressive dynamic performance to achieve precise handling

In driving dynamics, the aim was to provide an exhilarating driving experience that can only be felt when the driver and car become one.

Mazda's fundamental belief is that a smooth linear response to driver input is the basis of driving pleasure, and full enjoyment cannot be attained through speed and power alone. This was the motivation for the introduction of SKYACTIV Technology throughout the car including the engine, transmission, body and chassis.

Aiming to realise both agility and linearity by uniting the driver and car, Mazda concentrated on providing outstanding levels of high performance via a control system that responds to the driver's intentions. In terms of acceleration characteristics, this means natural, linear acceleration in response to pedal operation without a hint of jerkiness or delay. For cornering characteristics, this means faithfully responding to steering input, providing immediate feedback from the road and mildly increasing roll so that no steering adjustment is required to maintain the desired cornering line.

Finally, for braking characteristics, this means braking performance that gives the driver the feeling of being in complete control, including when releasing the brakes. Closely concentrating on human sensitivity in this way, Mazda strove to balance fundamentally contradictory characteristics of motion: refined, supple motion and light, agile motion. Extremely impressive driving performance including superior high-speed straight-line stability that gives the feeling of complete control has been realised, thus providing an enjoyable, comfortable drive regardless of distance



CHASSIS & BODY

- The All-New Mazda6 has a finely tuned SKYACTIV-Chassis front strut and rear multi-link suspension systems, which deliver agile driving performance in the low to mid speed ranges and stability in high speed driving
- SKYACTIV-Chassis column-type electric power assist steering system offers precise control by responding to small steering inputs as needed without forcing changes in the positions of the hands holding the wheel and contributing to a linear steering feel. The new control assist enhances straight-ahead stability and prevents steering pull on rough road surfaces
- The optimised brake booster curves deliver effective, precise and assured braking performance all the way up to high G areas attributable to easily-controllable initial pedaling and enhanced stability enabled by higher brake cooling efficiency
- Robust SKYACTIV-Body structure makes wider use of ultra-high tensile steel and results in a weight reduction while at the same time improving torsional rigidity by about 30% for the sedan and 45% for the wagon
- Engineering efforts in NVH performance focused on achieving class-leading quietness in the cabin and creating a pleasant yet exhilarating engine sound under acceleration. The improved NVH performance mainly comes from effectively blocking noise paths from the engine and the road to the cabin and designing parts to effectively absorb sound energy
- The optimised under-floor design improves aerodynamic performance by rectifying airflow under the vehicle and minimising the trailing vortex by directing the airflow upwards via the tail up design of the main silencer. CD target is a class-leading 0.27 (depending on equipment level) for sedan and 0.28 for the wagon. This contributes to high-speed stability as well as an improvement in fuel efficiency

POWERTRAIN

- SKYACTIV-G (petrol engine) equipped models offer abundant torque characteristics at low engine speeds enabling acceleration that precisely matches the driver's intentions in various driving situations, contributing to a precise and linear response; high-quality ride and superb fuel economy performance
- The SKYACTIV-G 2.5 makes its debut in All-New Mazda6 and offers maximum torque of 250 Nm @ 3,250 rpm and maximum output of 138 kW @ 5,700 rpm
- SKYACTIV 2.5 also features a balance shaft that contributes to the mitigation of engine vibration and low noise output
- SKYACTIV-G 2.5 comes with the 6-speed SKYACTIV-Drive automatic transmission. Precise and responsive driving performance is supported by both SKYACTIV-Drive which is designed to control driving force and gear speed linearly in response to acceleration pedal input
- SKYACTIV-D 2.2 Diesel is combines a low compression ratio of 14:1 and optimised combustion timing to provide class-leading torque, engaging performance characteristics and excellent fuel economy
- SKYACTIV-D 2.2 offers maximum torque of 420 Nm @ 2,000 rpm and maximum output of 129 kW @ 4,500 rpm
- SKYACTIV-D 2.2 also comes with the 6-speed SKYACTIV-Drive automatic transmission

ENVIRONMENTAL AND SAFETY PERFORMANCE

Environmental and safety performance for driving pleasure and peace of mind

Environmental and safety performance was further enhanced in the All-New Mazda6 so customers can enjoy driving with peace of mind. In terms of environmental performance, the addition of i-stop and i-ELOOP improves the already outstanding fuel economy achieved with SKYACTIV Technology.

The foundation of the new Mazda6's safety performance lies in its outstanding handling that responds immediately to the driver's input, excellent visibility and the crash-worthiness of the highly rigid SKYACTIV-BODY.

On top of this, an array of advanced safety technologies, 'i-ACTIVSENSE', has been employed to support the driver in the safe operation of the vehicle. For example, Blind Spot Monitoring (BSM) and Adaptive Front Lighting System (AFS) assist driver awareness and improve field of vision at night.

Finally, superior passive safety minimises damage when collisions do occur.

Environmental performance

- The new Mazda6 is the first model to adopt the “i-ELOOP” brake energy regeneration system, which contributes to an improvement in fuel efficiency in real world driving situations. This is the first passenger car brake energy regeneration system in the world to utilize a capacitor
- The “i-Stop,” Mazda’s original idling stop system is introduced to the new Mazda6. This system boasts a class-leading engine re-start time of 0.35 seconds. i-Stop is a standard feature across the whole All-New Mazda6 range
- All-New Mazda6 models equipped with the SKYACTIV-D 2.2 litre clean-diesel engine deliver combined cycle fuel economy of just 5.4 litres per 100km with CO² emissions of just 141 g/km for both the sedan and wagon
- All-New Mazda6 models equipped with the SKYACTIV-G 2.5 litre petrol engine deliver combined cycle fuel economy of just 6.6 litres per 100km with CO² emissions of just 153 g/km for sedan and 155 g/km for wagon
- Award-winning single-nanotechnology in the catalyst improves the exhaust gas after-treatment process and reduces the amount of precious metal required

Safety performance

Active Safety Technologies - Maximise the range of conditions in which the driver can drive safely and comfortably

- Moving the bottom of the A-pillar rearwards by 100mm, compared with the outgoing model, and mounting the rear view mirror on the door rather than the base of the A-pillar helps enhance the forward and peripheral visibility
- High-Beam Control (HBC) uses a sensor to detect on-coming vehicles and automatically changes between high and low beam to help avoid blinding other drivers during night driving
- Adaptive Front-lighting System (AFS) predicts curvature based on the degree of steering input and vehicle speed and turns the headlights in the direction that the vehicle is actually heading. This improves visibility when driving at night
- Hill Launch Assist (HLA) helps prevent the Mazda6 from rolling backwards while the driver’s foot moves from the brake pedal to the accelerator pedal when taking off on a hill.
- Emergency Stop Signal (ESS) cause the hazard lights to rapidly flicker on and off in the event of panic braking at 50 km/h or faster in order to warn vehicles behind
- Blind Spot Monitoring (BSM) comes into effect at 10 km/h or faster and detects cars approaching from behind or driving in the blind spot on either side and warns the driver when he or she turns on the indicator to change lanes
- Rear Cross Traffic Alert (RCTA), which is applied for the first time of Mazda, comes with BSM. RCTA is a function to alert the driver to obstacles in the blind spot when the vehicle is backing out of a parking space

- Lane Departure Warning (LDWS) uses a camera to judge the position of lines on the road and warns the driver of unintentional lane departures, thus minimising the risk of collision due to driver inattention or fatigue
- Adaptive Cruise Control uses a radar to measure the speed of traffic ahead and adjusts cruise control speed accordingly. Adaptive Cruise Control will reduce the cars speed to match that of slower moving traffic ahead and will then resume the previous set speed once the road is clear

Passive Safety Technologies - Help protect passengers and pedestrians in the event of a collision

- The lightweight yet highly-rigid SKYACTIV-Body provides excellent crashworthiness and is designed to attain top safety ratings in tests around the world
- A multi-load path structure and a front end with an X-shaped cross-section increases impact energy absorption, further improving safety performance in frontal, side and rear-end collisions
- The anti-whiplash design of the front seats helps to reduce neck injury in the event of a rear-end collision
- There are two impact beams in the front doors. The upper beam has a round cross-section, and the lower beam has a double-ridged cross-section. The lower rear beam also has a double-ridged cross-section, helping to improve strength

The All-New Mazda6 Specifications

Dimensions - sedan

• Doors:	4
• Seating capacity:	5
• Coefficient of drag	0.27
• Overall length without licence plate holder	4,865 mm
• Overall width	1,840 mm
• Overall height	1,450 mm
• Wheelbase	2,830 mm
• Track front (17" tyre)	1,585 mm
• Track front (19" tyre)	1,595 mm
• Track rear (17" tyre)	1,575 mm
• Track rear (19" tyre)	1,585 mm
• Cargo volume (all seats up to belt line) **	438 L

*depending on equipment level

Dimensions - wagon

• Doors:	5
• Seating capacity:	5
• Coefficient of drag	0.28
• Overall length without license plate holder	4,800 mm
• Overall width	1,840 mm
• Overall height	1,480 mm
• Wheelbase	2,750 mm
• Track front (17" tyre)	1,585 mm
• Track front (19" tyre)	1,595 mm
• Track rear (17" tyre)	1,575 mm
• Track rear (19" tyre)	1,585 mm
• Cargo volume (all seats up to belt line) **	451 L

Engines (Preliminary data)

SKYACTIV-G 2.5 Petrol

• Displacement	2,488
• Valves	16
• Camshaft drive	By Chain
• Fuel injection system	Direct injection
• Compression ratio	13.0:1
• Max. power	138 kW @ 5,700
• Max. torque	250 Nm @ 3,250
• Recommended fuel type	Regular unleaded (91-RON or E10)
• Fuel tank capacity	62 L
• Fuel economy	6.6 litres per 100km
• CO ² emissions	153 – 155 g/km
• Powertrain	FWD
• Transmission	SKYACTIV-Drive (6-speed automatic)

SKYACTIV-D 2.2 Diesel

• Displacement	2,191
• Valves	16
• Camshaft drive	By Chain
• Fuel injection system	Direct injection
• Compression ratio	14.0:1
• Max. power	129 kW @ 4,500
• Max. torque	420 Nm @ 2,000
• Recommended fuel type	Diesel
• Fuel tank capacity	62 L
• Fuel economy	5.4 litres per 100km
• CO ² emissions	141 g/km
• Powertrain	FWD
• Transmission	SKYACTIV-Drive (6-speed automatic)

Chassis (Preliminary data)

• Front suspension	MacPherson Strut
• Rear suspension	Multi-link
• Tyre size	225/55 R17 or 225/45 R19
• Steering type	Rack and pinion
• Brake type front / rear	Ventilated discs / Solid discs
• Brake diameter front / rear	297 / 278 mm

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New-look M{zd{ mx-5

MESSAGE FROM THE PROGRAM MANAGER

“Lots of Fun for MX-5 Fans around the World”

“Since the original MX-5 was launched in 1989, this front engine, rear-wheel-drive (FR) two-seater open-top lightweight sports car has continued to provide *Jinba-Ittai* or “rider and horse as one” and “Lots of Fun” in innumerable ways.

“In the 23 years since its introduction there have been great changes in economic conditions and in people’s values. For instance, sports car buyers have become much more environmentally aware and more interested in features aimed at protecting their safety.

“Within this period various lightweight sports cars have appeared on the market only to disappear again. Yet the MX-5 continues to hold a special place in the hearts of car enthusiasts around the world.

“As of May 2012, total production has reached 921,172 units, earning this icon of the Mazda brand a place in the Guinness World Records as the “Best selling two-seater sports car”.

“In an ongoing effort to enhance the “Lots of Fun” concept of the MX-5, our development teams worked to evolve and enhance the MX-5 in six areas; styling, touching, listening, driving, cornering, and braking.

“What we aimed for most with this upgraded MX-5 was to bring even greater pleasure, to viewing the styling, touching the surfaces, and of course to the driving experience. In terms of touching and styling, we evolved the design of the front view to convey a more aggressive look, which also contributes to aerodynamic performance.

“In the realm of driving, we strove to realise greater sophistication of the signature *Jinba Ittai* driving experience. Details include revising the control characteristics of the accelerator and brakes for greater precision and agility when decelerating and accelerating into and out of corners.

“Lots of Fun” is what sports car fans all over the world expect from the MX-5. The evolution and maturation of this concept was the mission of the development team. I feel certain that we have succeeded in fulfilling our mission with the new MX-5.”

Nobuhiro Yamamoto - Mazda MX-5 Program Manager

NEW-LOOK MX-5 DEVELOPMENT THEME

Advancing the concepts of “*Jinba Ittai*” and “Lots of Fun”

In addition to providing a sense of command over a spirited machine, the MX-5 offers the driver and passenger a sense of being intimately in touch with their surroundings.

Other dimensions are the pride conveyed by the MX-5’s attractive styling, the enjoyment of customising its appearance and function to suit personal tastes, and the joy of meeting friends in a car that’s so universally admired.

Fun is truly a distinctive MX-5 characteristic and Mazda carried over the basic “Lots of Fun” principles as important assets from the original MX-5. This encompasses both the technologies employed and the methods with which they are implemented. Examples include the lightweight, high-rigidity two-seat open-top design of the body, the FR layout, the double-wishbone front and multi-link rear suspension systems, the powerplant frame (P.P.F.) which results in a highly rigid link between the transmission and the differential, and a design which minimises the weight of every component.



AT A GLANCE

Design

- Low and wide, aggressive-looking front face that emphasises the three-dimensional depth of the front grille, as befits a sports car
- The new front fog lamp bezel design and new chin spoiler enhance aerodynamic performance
- Interior decoration panels are changed from matte dark silver to a glossy dark grey that imparts a depth of colour with shine, to create an ambience of higher quality and sportiness

Driving dynamics

- Improved brake and accelerator control characteristics deliver smooth transition from deceleration to acceleration, and a linear feel to the acceleration
- Relentless weight reduction continues to shed every possible gram from the car, including the wire harness and front bumper for the RHT version

DESIGN FEATURES

The design of the front view has been made more aggressive, and improvements have been made to the look and quality of the interior.

Exterior and body colours

- An additional 47mm added to the depth of the front grille emphasises its three-dimensionality, while also lending the front a more aggressive presence and lower, wider look
- While the design conveys a sense of power and speed, highly detailed optimisation of the shapes of all components secures the outstanding aerodynamic performance for which the MX-5 has long been known
 - Shaping of the outer edges along the front and the angles of the sides of the front fog lamp bezels reduces air resistance due to wind separation.
 - The corners of the front bumper flare out further, reducing the amount of air that strikes the front tires
- The front license plate bracket is positioned entirely within the area of the front grille, creating a cleaner, more streamlined expression

- A new body colour, Dolphin Grey Mica replaces the discontinued Metropolitan Grey Mica. Other body colours are carried over from the previous model

Interior

- The dark silver decoration panels previously used and aluminium-finish steering wheel bezel are replaced by a glossy dark grey with depth and expression enhancing the feel of quality and the sporty look

DRIVING DYNAMICS

“Toitsukan” refines the experience of *Jinba Ittai*

The on-going pursuit of the MX-5's *Jinba Ittai* driving experience is aimed at achieving the sensation that the car is a natural extension of the driver's own body, whether driving slowly around town, manoeuvring winding roads, or enjoying a sporty drive.

For this upgraded MX-5, Mazda set out to further refine the *Jinba Ittai* driving experience by focusing on “*Toitsukan*” - a consistent and linear driving feel - to deliver smooth transition of G force when decelerating, turning and accelerating again as the driver negotiates corners.

To this end, Mazda enhanced the control characteristics of the accelerator pedal and the release of the brake.

Enhanced Accelerator Control Characteristics (MT Configurations)

Mazda implemented measures to offer finer acceleration control characteristics that respond faithfully to the driver's will, from the point of take-off through until the desired speed is reached.

To deliver this enhanced sporty driving experience more precise settings determine the amount of acceleration in accordance with the amount the accelerator pedal is pressed on the MX-5 with manual transmission.

Specifically, the amount of throttle movement in response to the speed and degree with which the accelerator is pressed is divided into two categories. These are based on the amount the pedal is pressed initially and the range to which it continues to be pressed further.

The separate control on these two categories realises acceleration characteristics that faithfully follow the will of the driver.

The result is an enhanced feeling of linear acceleration, smooth vehicle movement, and greater control when accelerating from a reduced speed, such as after turning at an intersection.

The linear feeling of acceleration in response to accelerator pedal action when traversing winding roads delivers greater control over the vehicle for a highly enjoyable and satisfying *Jinba Ittai* driving experience.

Brake Return Control Characteristics (All Configurations)

To deliver easier and more precise control over the load on the front wheels from the time the driver decelerates and turns the steering wheel just before entering a corner through to the moment they move their foot from the brake pedal to the accelerator after reaching the clip point, Mazda revised the vacuum brake booster's hysteresis to enhance brake return control on both the automatic and manual transmission configurations.

The result is a smoother feeling when accelerating after braking, such as when turning at intersections, etc. Such precise brake control when enjoying a sporty drive makes it easier to attain the driver's desired vehicle speed, makes cornering with a stable vehicle posture easier, delivers smooth transfer between deceleration G and lateral G, and further evolves the MX-5 *Jinba Ittai* driving experience.

An Uncompromising Focus on Weight Reduction

As a lightweight sports car, weight reduction is a critically important theme for MX-5 development. The "gram strategy" involves scrutinising the design of each component millimetre by millimetre, for any opportunity to shave even a single gram of excess weight.

The MX-5 development team remained faithful to this task and achieved significant weight-savings in a number of areas.

Front bumper

Employing a new plastic material that is both lighter and more rigid, the thickness of the front bumper is reduced from 2.3mm to 1.9mm versus the previous model, and the weight is reduced from 3.2kg to 2.8kg.