

# *Mazda CX-7* *2009*

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# *1. AT A GLANCE*

## *MAZDA CX-7 2009*

### **Exterior**

#### **Refined exterior design that communicates a clearer premium identity**

- New larger Mazda five-point lower grille for a more dynamic and sporty face
- Lower grille framed in stylish, silver-look detailing for a more premium look (depending on grade)
- New front fog light bezels for a look of quality craftsmanship
- New chrome-plated garnish along the bottom of the doors that emphasizes the vehicle's sporty silhouette (depending on grade)
- Enhanced rear bumper design with rear moulding and a larger roof spoiler (depending on grade)
- 7 body colours available including all-new Aluminium Metallic, Stormy Blue Metallic Mica and Sparkling Black Mica
- New 18- or 19-inch alloy wheels with sporty, three-dimensional designs (depending on grade)



## Interior

### Updates for enhanced quality feel and durability

- New trim and dashboard material with higher quality feel and improved dirt resistance
- New centre console lid/armrest with high-resilience urethane lid for comfort and durability
- New steering wheel
- New blackout meters with blue-ring illumination, white pointers and three-dimensional dials
- Revised double-roof dashboard with integrated Multi-Information Display (MID) and integrated navigation system (depending on grade and market)
- New piano black or metallic look edging (depending on grade) on the centre panel for a refined look
- Air vents now with glaze-minimizing chrome rings
- New front and rear door armrests with soft padding for quality and comfort



### **Comfort, Functionality & Equipment**

- Interior now quieter and more comfortable with less engine, road and wind noise levels
- Multi Information Display (MID) above the centre panel for driver information, rear-view camera and navigation now on board (depending on grade and market)
- Optional easy-to-use compact navigation system with 4.1-inch high-resolution (LCD) screen located in the MID
- Audio system with Bluetooth® compatibility for playing music wireless from portable music players (depending on grade) using controls on the audio panel or the steering wheel
- Power-adjustable driver seat now with 3-position seat memory
- Front passenger seat now power-adjustable



## Powertrains

- New to CX-7: MZR-CD 2.2-litre common-rail turbo diesel with Selective Catalytic Reduction system
  - Produces maximum output of 127 kW/173 PS at 3,500 rpm and maximum torque of 400 Nm at a low 2,000 rpm
  - Uses 7.5 litres of fuel per 100 km (combined), emits 199 g/km of CO<sub>2</sub> and is Euro Stage V compliant
  - Common-rail direct injection with 200 MPa injection pressure for high power and torque with low emissions
  - Newly developed variable geometry turbo charger combined with a highly efficient intercooler for strong, linear torque development
  - New-generation Mazda diesel particulate filter (DPF) for faster regeneration
  - New Selective Catalytic Reduction (SCR) system with AdBlue®\* additive significantly reduces NOx emissions

\* AdBlue® is a form of aqueous urea and a registered trademark of the Verband der Automobilindustrie e.V. (VDA)

- High-rigidity aluminium lower block with front chain drive cassette-type balancer shaft for low engine noise
- DOHC valve system is chain-driven for maintenance-free operation
- Electro-hydraulic power-assisted steering (for diesel only) that contributes to precise steering feel and low fuel consumption

## High-performance MZR 2.3-litre DISI\*\* Turbo petrol:

- Produces maximum power of 191 kW/260 PS at 5,500 rpm and 380 Nm of maximum torque at 3,000 rpm for sports car performance
- New for CX-7 facelift:
  - Piston crowns now designed with dish-shaped cavity for a better air-fuel mix and improved combustion during engine warm-up
  - Mazda exclusive under-floor catalyst employing single-nanotechnology which reduces the amount of precious metals needed

\*\* DISI = direct-injection spark ignition



## Chassis

- New body shell reinforcements achieve a 5 percent increase in torsional rigidity for a further improvement in handling stability and ride comfort
- New weld bond reinforcements used extensively to enhance strength with minimal weight increase
- MacPherson strut front and multi-link rear suspension systems for precise driving feel in all situations
- New dampers realise smoother suspension strokes, for improved stability and ride comfort
- Active Torque-Split All-Wheel Drive (AWD) system still standard for all models

## Safety

- Facelift retains extensive safety package of original model with new technologies added for enhanced active safety
- New to CX-7:
  - Rear Vehicle Monitoring system that detects cars approaching from behind or driving in the blind spot and warns the driver before he changes lanes (depending on grade)
  - Emergency Stop Signal (ESS) that automatically flashes hazard lights if the driver brakes abruptly to warn drivers of following vehicles
  - Rear-view system with camera to assist driving in reverse or parking (depending on grade and market)
  - Tyre pressure monitoring system
- Large ventilated disc brakes in front (320 mm) and rear (petrol: 302 mm, diesel: 325 mm), a 10.5-inch diameter brake booster and a long-stroke master cylinder for reliable deceleration
- ABS, EBD, Emergency Brake Assist, DSC and TCS are standard
- Automatic headlamps and rain sensing wipers (depending on grade)





## *2. INTRODUCTION*

### *SOPHISTICATED AND MORE SUSTAINABLE*

**Mazda CX-7 is one of the world's first production SUVs to combine a sporty design and driving experience with SUV practicality and roominess. Since its launch in 2006, this unique sports crossover SUV has steadily gained in popularity around the world, selling about 190,000 units and winning 15 automotive awards. In Europe, it found more than 30,000 owners in the growing non-premium compact SUV segment in less than two years. Europeans are attracted to its sporty design, its fun-to-drive nature and its mix of everyday practicality, roominess and quality feel.**



The new facelift model refines this package of attributes even further and is engineered to be **more sophisticated, sustainable and emotionally appealing**. While retaining the sporty nature of the original model, the facelift improves ride comfort and handling stability, and combines this with **lower noise levels in the cabin** for a more sophisticated interior environment. It is also more sustainable with the introduction of a **new, clean-running diesel** that delivers high power and torque, low fuel consumption and **Euro Stage V** compliance. The **design** of the facelift received updates to make it even more emotionally appealing with a new, more dynamic Mazda family face, premium exterior detailing and a higher quality feel. And **updated suspension** settings further refine its driving performance.



### *3. DESIGN*

#### *THE SOPHISTICATED SPORTS CROSSOVER SUV*

At launch in 2007, Mazda's sports crossover SUV featured an advanced design that gave it an emotional appeal usually reserved for sports cars. Taking this as their basis, designers of the facelift enhanced CX-7's sporty nature and sophisticated character even further. They introduced a new, more dynamic front end, improved build quality and added premium details for a sense of refinement.

**Exterior Design - Now even More Dynamic**

The facelifted CX-7 is just as sporty-looking as before with an extremely flat A-pillar angle of 66°, a rising belt line and roof spoiler, powerful wheel arches (inspired by Mazda's sports coupe RX-8) and large wheels. This is enhanced for the facelift with an **all-new lower five-point grille**. It looks larger and more aggressive - reflecting Mazda's new-generation design language introduced with the new Mazda3 - and is framed by chrome mouldings for a premium look. **New front fog lamps** are introduced as well. These are embedded in a bezel design that is more vertical than before, and whose top outer corners are points that seem to flow into the fender panels.

New visual enhancements continue on the sides and rear of the CX-7 facelift. **Chrome-plated mouldings** are now placed at the bottom of the doors, around the side windows and just below the large Mazda logo at the rear, and a **new and larger roof spoiler** is available (all depending on grade).

New 18- and 19-inch alloy wheels complete the exterior updates. Their three dimensional designs add to the vehicle's sporty character. The list of **seven exterior colours** has been **updated with Aluminium Metallic, Stormy Blue Mica and Sparkling Black Mica**.

**Mazda CX-7 Body Colours**



Aluminium Metallic



Stormy Blue Mica



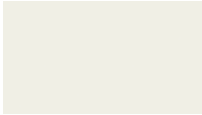
Sparkling Black Mica



Galaxy Gray Mica



Copper Red Mica



Crystal White Pearl



Brilliant Black





#### Interior Design - Enhanced Quality Feel

**SUV roominess and practicality**, combined with an **ergonomic cockpit**, **sporty touches** and **high craftsmanship**, were an appealing combination of the original CX-7. The facelift has all this plus updates that are meant to **enhance the interior's quality look and feel** even further. There is a **new trim and dashboard material** with dimples and round edges that give these surfaces a higher quality feel and make them more dirt resistant. The **steering wheel** is newly designed and includes more control buttons. The instrument cluster in front of the driver gets new dials and white pointers for a three-dimensional look, and new blue-ring illumination.

Stretching across the dashboard is a redesigned double-roof hood. It now rises in the middle to make room for a **new Multi-Information Display (MID)**. The **audio panel** is also updated with either piano black or metal-look edging on the sides.



Other quality enhancements include new low-glare chrome plating on the vertical spoke of the steering wheel, and the chrome rings around the air vents in the centre and on the sides of the dashboard. **Soft padding** is introduced **for the door-trim armrests and the centre console lid** (depending on grade). When combined with the facelift's two interior colour schemes of black or sand beige (depending on grade), these details give the CX-7 facelift a **high quality feel**.



## *4. COMFORT, FUNCTIONALITY & EQUIPMENT*

### *A REFINED DRIVING EXPERIENCE*

The Mazda CX-7 facelift is a practical and roomy vehicle that meets the needs of various lifestyles in a way that is both sporty and sophisticated. The facelift updates this successful combination with enhanced ride comfort, a quieter cabin, improved ease-of-use and a long list of standard and available equipment for a refined driving experience.

### Enhanced Ride Comfort and a Quieter Cabin

The original Mazda CX-7 was one **of its segment's most sophisticated vehicles**, and this aspect is carried forth with the facelift. Its body shell's torsional rigidity is increased by 5 percent, which improves ride comfort and softens the road noise.

The engine line-up now includes a **new-generation 2.2-litre turbo diesel** that is one of the quietest and most refined in the non-premium SUV segment. Its **aluminium lower block**, for instance, is mounted to the cylinder block at 18 separate points for extreme rigidity and low engine noise. A **front chain drive cassette-type balancer shaft** helps reduce engine noise and vibrations, and a **special rear-wheel torque control of the diesel version** suppresses resonance in the rear drivetrain.

The bonnet and engine compartment **noise insulators** have been **improved** to efficiently suppress high-frequency noise. New insulators are installed on the suspension towers and the wheel housings. New urethane foam used in the A-pillars, and a thicker dash insulator and floor mat are used for the first time.

Mazda CX-7 facelift's high-performance DISI petrol version also has **NVH (noise, vibration and harshness) updates, including new suspension tower insulators and new engine compartment and dash insulators** that are denser and better at keeping noise levels in the cabin low.

**Wind noise is lower** than ever before, too. NVH engineers counteracted the noise that side winds make when striking the A-pillars by using a large moulding that prevents air separation. This can cause a major pressure difference at this part of the car, which increases noise. The new moulding keeps the air from separating and results in a significant reduction of wind noise into the cabin.



### **Sporty and Easy to Use**

Like its predecessor, the CX-7 facelift makes it easy to enjoy its powerful engines. The cockpit's ergonomic design is unusually sporty for an SUV. The front seats offer good side support and comfort on longer trips with wide seatbacks and continuously variable lumbar adjustment. The shift lever is placed high and forward to make sporty shifting easy and fun. The facelift cockpit gets two new features for increased comfort and ease-of-use: the front and rear armrests are now made of new soft material for a premium look and feel, **a new driver's seat position memory system** for up to three individual settings is introduced (depending on grade and market), and the **front passenger** seat now comes **with 4-way power adjustment**.

Providing the driver with all necessary vehicle information on one compact screen is Mazda's **new Multi-Information display (MID)**. It shows all essential vehicle and navigation info - placed next to the driver's field of vision for a minimum of eye movement while driving - and a new MID switch on the right of the steering wheel allows switching between displays without the driver taking his hands from the wheel. The MID includes audio system info, settings and maintenance reminders like volume settings for warnings, switching between km and miles, and even on/off settings for displaying regular service inspections like tyre rotation, etc. The trip computer readout shows current fuel consumption rate, average fuel consumption rate, distance-to-empty and average vehicle speed.





### Premium Bose® Sound System

The collaboration between Bose and Mazda continues with the facelift of the Mazda CX-7. Designed especially for the acoustics of this sports crossover SUV, the Bose Surround Sound System reproduces music with clarity and power at any volume. A surround sound experience from stereo sources is created by Bose Centerpoint® signal processing circuitry, which delivers evenly balanced, 360° surround sound to each passenger. The system also makes sure that background noise cannot interfere with enjoying the music. Bose digital amplifier and AudioPilot® noise compensation technology adjust the music to compensate for the effects of unwanted outside sound. And it all happens automatically, so there is much less need to adjust the audio controls.

A: Three 8-cm mid/high-range speakers in the instrument panel

B: Two 23-cm Nd® woofers in the front doors

C: Two 16,5-cm wide-range speakers in the rear doors

D: Two 8-cm mid/high-range speakers in the d-pillars

E: Bose digital amplifier mounted in the left rear quarter panel

F: AudioPilot® system microphone mounted in the instrument panel.



### New Equipment Added to a Long List of Premium Features

The facelifted CX-7 has an **extensive standard equipment** package: AM/FM radio and CD player with MP3 capability, one-touch power front and rear windows, remote central locking, cruise control, and an anti-theft alarm system (depending on grade and market).

New leather seats with front seat heating, a **Bose® premium audio system** with Centerpoint® surround sound and nine speakers, **Xenon automatic headlamps** and **rain sensor wipers**, and Mazda's Advanced **Keyless Entry & Start System** are also available either optionally or as standard (depending on grade and market).





New equipment added to the facelift leaves nothing to the imagination. A **rear-view camera** system helps the driver park and drive safely in reverse, and a **Rear Vehicle Monitoring (RVM)** system alerts the driver when a vehicle is approaching from behind or driving in the blind spot. The **all-new navigation system** with TFT colour display can be controlled with buttons on the steering wheel. It is easy to read and stores its data on a Secure Digital (SD) card (depending on market).

**Bluetooth® technology** has been expanded for Mazda CX-7 facelift, which not only allows hands-free use of Bluetooth® equipped **mobile phones**, but also lets passengers **play music from a wireless MP3 player** on the car's audio system. The driver can control the player using either the audio panel or the buttons on the new steering wheel. MP3 players can also be played on the car's audio system by plugging them into the AUX jack in the centre console box.



### SUV Practicality with Improved Storage Space

The facelifted CX-7 has plenty of room for five adults to travel in comfort with their luggage. It is an ideal vehicle for active lifestyles with **rear seats** that fold down 60/40 by pulling on a latch on the side trim of the boot using Mazda's **Karakuri system**. A lip at the rear seats helps prevent heavier items from sliding forward, and a **reversible water-proof board in the boot floor** for carrying dirty items without staining the carpet.

There are **numerous storage compartments** placed around the cabin. The **large centre console box** holds up to 4.8 litres and has been upgraded for the facelift model with two new storage compartments at the top for more small-item storage. One of these is a 0.9-litre tray that is ideally shaped to hold a mobile phone, an MP3 player or sunglasses. And the tray at the bottom of the centre panel is now equipped with a rubber mat so that small items do not slide around.



## *5. POWERTRAINS*

### *CLEAN-RUNNING 2.2-LITRE TURBO DIESEL*

Mazda CX-7 facelift now offers customers in Europe two All-Wheel Drive, powertrains to choose from. New to the line-up is Mazda's new-generation 2.2-litre common-rail turbo diesel that combines high power and torque with low fuel consumption and emissions. Still available is the extremely sporty 2.3-litre turbo petrol engine with direct injection.

### MZR-CD 2.2 - New Powerful Turbo Diesel for Europe

The lively MZR-CD 2.2-litre common-rail turbo diesel produces **127 kW/173 PS at 3,500 rpm** and a massive **400 Nm of torque at just 2,000 rpm**. It accelerates the CX-7 facelift in 11.3 seconds from 0 to 100 km/h and allows a top speed of 200 km/h. A **newly developed variable-geometry turbo charger** and a **special intercooler** that has been optimized for the CX-7 facelift contribute to **quick, powerful response at engine speeds as low as 1,600 rpm**.

The **common-rail system optimises combustion** for high efficiency. It maximises fuel injection pressure, using a special fuel pump and 10 very small (0.119 mm) injector holes, to achieve injection pressure of up to 200 MPa, one of the industry's highest. This allows very precise injection timing, which engineers used to optimize the number of injections per cycle and to control the amount of fuel sprayed into the combustion chamber.

### Low Fuel Consumption

The CX-7 facelift with the MZR-CD 2.2-litre turbo diesel is not only exciting to drive, it's also frugal at the pump for such a sporty SUV with so much room and versatility. It needs **just 7.5 litres of fuel per**

**100 km (combined)** by employing a **low compression ratio** of 16.3:1 (for a compact SUV), a **small turbo charger, improved intercooler efficiency** and **special gear ratios**. It also uses **highly responsive injectors** that achieve a minimum injection interval of just 200  $\mu$ s, which makes injection about 30 percent faster, and allows strict control over the amount of fuel used during injection.



### Cleaner-Running and Euro Stage V Compliant

The MZR-CD 2.2-litre turbo diesel complies with **Euro Stage V** emission standards and is combined with the latest Mazda exclusive exhaust-gas treatment technology. Its **newly-developed diesel particulate filter (DPF)** is made from a ceramic material with high thermal resistance that includes a special Mazda-developed catalyst. The catalyst uses oxygen stored in the base material, in addition to the oxygen present in exhaust gases, to improve combustion of soot emissions. By increasing the volume of oxygen, this system makes regeneration of the filter faster and more efficient. In fact, Mazda CX-7 facelift's DPF needs to regenerate (in the NEDC mode) only half as often as conventional systems, and each regeneration process takes only a third as long. After exhaust gases have been purified of particulate matters, they pass through Mazda's newly-developed **Selective Catalytic Reduction (SCR) system** to significantly lower NOx (see box).

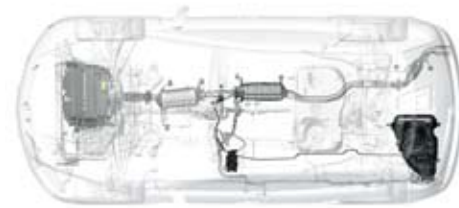


### New SCR System Drastically Reduces NOx Emissions

The CX-7 facelift MZR-CD 2.2 turbo diesel is the first non-premium compact SUV and the **first Mazda vehicle equipped with a Selective Catalytic Reduction (SCR) system**.

It uses a natural chemical reaction to **turn toxic NOx emissions into harmless nitrogen and oxygen**. For this, it employs **AdBlue®\* aqueous urea**, a form of ammonia, which is stored in a **special 15.5-litre tank** located under the luggage compartment. It has special temperature insulation and a strong protective cover for maximum safety. The SCR system **injects small amounts of AdBlue®** at about 5 bar **into the exhaust gases** as they leave the DPF. AdBlue® is injected directly onto a special surface where it mixes with the exhaust gases. **Exhaust heat causes the urea to instantly decompose into ammonia**, which then **breaks down the NOx** present in the exhaust gases, in a natural chemical process, **into harmless nitrogen and oxygen** before exiting the vehicle.

\* The AdBlue® supply lasts over 20,000 km under normal driving conditions and is refilled at each scheduled maintenance.





### **MZR 2.3 DISI Turbo - The Original High-Performance Petrol**

The petrol version of the CX-7 facelift inherits the original model's acclaimed MZR 2.3-litre DISI Turbo engine. Its **direct-injection technology** has a host of advantages over intake manifold petrol engines. Torque is about 10 percent higher at 3,000 rpm, because of the cooling effect caused by injecting petrol directly into the combustion chamber. **For the CX-7 facelift**, the DISI petrol is **improved even further**. Its **piston crowns** now have a dish-shaped cavity that improves the air-fuel mix and contributes to **better combustion** during engine warm-up. **Fuel is now injected not only during intake, but also during the compression stroke** for a richer mix around the spark plugs and **increased combustion stability**. The MZR 2.3-litre DISI Turbo produces **191 kW/260 PS at 5,500 rpm** and a high maximum torque of **380 Nm at a low 3,000 rpm**. It responds quickly to pedal movement, accelerates the CX-7 facelift in **8.2 seconds from 0 to 100 km/h**, and allows a **top speed of 211 km/h**.



### Six-Speed Manual Transmission

Both engines feature a manual six-speed transmission with a compact three-shaft design carried over from the original model. It has **triple-cone synchronizers for first, second and third gears, and a double-cone synchronizer for fourth gear**, to deliver **smooth and precise shift characteristics**. It uses **low-viscosity transmission fluid** for easy shifting, even when the engine is cold. The **diesel's sixth gear ratio** has been **configured as overdrive** for maximum fuel efficiency.





## *6. CHASSIS*

### *IMPROVED HANDLING STABILITY AND RIDE COMFORT*

The body shell of the Mazda CX-7 facelift is more rigid than the original model, and delivers improved ride comfort and even better handling stability. The suspension system is specially tuned for each engine to provide predictable linear handling and the same superior straight-line stability the original model is known for. Coupled to Active Torque-Split All-Wheel Drive, this updated chassis makes the Mazda CX-7 facelift sporty and nimble.

### Increased Torsional Rigidity for Improved Ride Comfort and Handling Stability

The original CX-7 body shell was ahead of its time at launch for its combination of **high rigidity and low weight**. Local reinforcements and high and ultra-high tensile steels were used for the body shell, which helped avoid unnecessary gain in weight while delivering **some of the best body rigidity in the segment**.

The CX-7 facelift inherits this body shell and adds new rigidity-enhancing measures for a **5 percent increase in torsional rigidity**, which **enhances handling stability** and helps to **reduce road noise** and vibration for a quieter cabin. When combined with **new dampers** with a smoother stroke, this achieved an **increase in overall ride comfort** for the CX-7 facelift.

Weight gain had to be avoided as well, which would have negatively affected fuel consumption and handling. Engineers used advanced computer aided analysis to achieve both these goals. They applied reinforcements only where it was most effective, and used **strong lightweight weld bonds** (with advanced adhesives) wherever possible. Stiffness was increased for the facelift at the rear wheel houses, the door openings, the B-pillars, the shelf gussets and the underfloor frame (diesel only).

### Suspension and Steering

Mazda CX-7 facelift inherits the passenger-car-like **MacPherson strut front and multi-link rear suspensions** from the original model, **refined for the facelift** to deliver even **more linear handling and performance feel**. **New dampers** are introduced that give a smoother suspension stroke and improves straight-ahead stability and ride comfort. These supplement the front suspension's **ball-type struts with low friction bearings, strong lateral force control springs**, and **six rubber mounting points**. An **enlarged castor angle** is also used to optimise straight-line stability, while delivering excellent road feedback and grip when cornering. The **rear suspension** also gets **new dampers** and is **specially tuned for the facelift**. Its geometry ensures that the wheels suffer **minimal camber change** and maintain their near-vertical position even when cornering hard, which is vital to a high-torque, high-performance vehicle like this.

While the high-performance DISI petrol retains the hydraulic power-assisted steering system from its predecessor, the new **diesel uses electric hydraulic power-assisted steering** for a great balance between fuel savings and good steering feel.





### **Electronically Controlled Active Torque-Split All-Wheel Drive**

Mazda CX-7 facelift's **permanent All-Wheel Drive**, system employs Mazda's unique Active Torque-Split to translate the vehicle's high maximum torque to the road in a smooth and controllable way, regardless of which engine is under the bonnet. **High-tech sensor technology** of the All-Wheel Drive, system **monitors** the CX-7's **steering angle, yaw rate, wheel speed, lateral G-force and throttle-valve position**, to optimise traction in real time. The vehicle's All-Wheel Drive, control module then distributes torque between the front and rear axles using an **electronically-controlled active-torque coupling** mounted in front of the rear differential. The system distributes **up to 50 percent of the engine power to the rear axle** for an **optimal torque split in all situations**.





## *7. SAFETY & ENVIRONMENT*

### *NEW ACTIVE SAFETY FEATURES, CONTINUED ENVIRONMENTAL EFFORTS*

The CX-7 facelift inherits one of the segment's most comprehensive safety packages from the same vehicle that received the highest ranking of any compact SUV tested by the USA's National Highway Traffic Safety Administration (NHTSA) in 2007. For the refreshed model, several new active safety features are added for even more peace of mind.

Mazda's **Rear Vehicle Monitoring (RVM)** system is **newly introduced to the CX-7 facelift** (depending on grade and market). This system uses radar sensors in the rear bumper when the vehicle is travelling at 60 km/h or faster to monitor vehicles driving behind the car. It **warns the driver if a car is approaching from the left or right rear, or is in the blind spot**, by illuminating a warning lamp in the door mirror on the relevant side. If the driver turns on the indicator on the side of the approaching vehicle, a warning buzzer sounds and the warning lamp flashes.

Other new active safety features include a **rear-view camera** that uses the MID display to assist while driving in reverse or parking, a **tyre pressure monitoring system**, and **Emergency Stop Signal (ESS)** that automatically flashes the rear hazard lamps whenever the driver brakes abruptly.

If the driver needs to slow down, he can rely on the CX-7's **large ventilated disc brakes in front (320 mm) and rear** (petrol: 302 mm, diesel: 325 mm), a 10.5 inch outer diameter brake booster and a long-stroke master cylinder for reliable deceleration with light pedal effort and short pedal travel. Standard are DSC with TCS, ABS, EBD, Emergency Brake Assist, automatic headlamps and rain sensor wipers (depending on grade and market).

The CX-7 facelift body shell and cabin are engineered with Mazda's extremely strong 'Triple-H' body structure that effectively resists impacts from various directions and helps protect the occupants. The front sub-frame delivers high energy absorption in case of frontal impact, and has a special joint part between the front side member and the sub-frame that redirects impact energy downward away from the cabin. This additional front sub-frame is also designed to help prevent CX-7's front end from 'climbing up' onto the bonnet of an oncoming car in a head-on collision. At the rear, the high rigidity structure includes an impact absorbing zone to better protect the fuel tank in case of a rear-end impact.



Inside are **front seats** designed to help protect the neck and chest in case of rear impact. They have an **optimised head restraint position, reinforced attachment area, and a strengthened seat back frame structure** that keeps the front occupants' head and chest supported against the head restraint, which helps avoid whiplash. Standard for all versions of the Mazda CX-7 facelift are **front, side and curtain airbags**, a **collapsing brake pedal** that helps reduce the chance of leg injury to the driver, **ISOFIX** safety seat mounts and top tethers in the rear seats, and **pillar trim with energy absorbing ribs**.



### **Environmental Efforts - 95 percent Recyclable**

The CX-7 facelift reflects Mazda's ongoing efforts to build cars in a way that has less negative effect on the environment. This begins at **Mazda assembly plants** in Japan, which were **ISO 14001 certified** (an environmental management standard) over ten years ago - including the Ujina 2 plant in Hiroshima, where the CX-7 is assembled. Mazda also uses a **unique three-layer paint system** that reduces CO<sub>2</sub> by 15 percent and volatile organic compounds (VOCs) in the paint by half.

At the end of its life, the CX-7 facelift, like all current Mazda models, is roughly **80 percent recyclable**. The remaining 20 percent, most of it plastic rubber and glass, is named with **ISO standard material labels** so it can be sorted out and easily recycled and recovered. Mazda even recycles the **materials from damaged bumpers** to make new bumpers. If parts have to be discarded at the end of the vehicle's life, they contain hardly any substances that would pollute the environment. **No lead** is used in the CX-7 facelift's fuel tank, wire harness and electro-undercoating; and it has **no hexavalent chromium or cadmium** in any components.







## *8. TECHNICAL DATA*

### *MAZDA CX-7 FACELIFT*

**Mazda CX-7 Facelift - Dimensions**

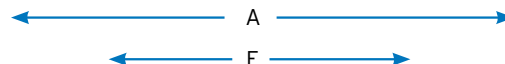
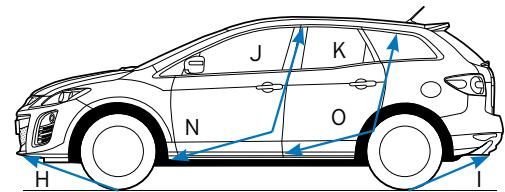
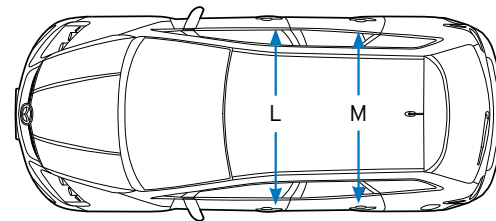
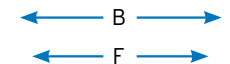
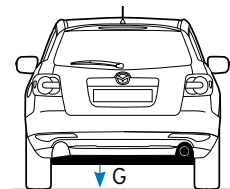
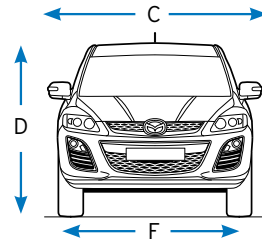
		MZR-CD 2.2 Turbo Diesel 6-Speed Manual	MZR 2.3 DISI Turbo Petrol 6-Speed Manual
<b>Dimensions</b>			
Body Type		Monocoque	Monocoque
Doors		4 + tailgate	4 + tailgate
Seating capacity		5	5
Coefficient of drag	Cd	0.34	0.34
Cross-sectional area	m <sup>2</sup>	2.581	2.581
<b>Boot Measurements</b>			
Volume all seats up (to belt line)	l	455	455
Volume 2nd row down (to belt line)	l	774	774
Volume 2nd row down (to ceiling)	l	1,348	1,348

**Mazda CX-7 Facelift - Dimensions**

Model name		MZR-CD 2.2 Turbo Diesel 6-Speed Manual	MZR 2.3 DISI Turbo Petrol 6-Speed Manual
Load floor length to 2nd row	mm	1,013	1,013
Load floor length to 1st row	mm	1,758	1,758
Boot width at widest point	mm	1,362	1,362
Distance between rear wheel housings	mm	1,050	1,050
Boot height (floor to ceiling)	mm	788	788
Boot threshold to ground	mm	764	764
Tailgate height to ground	mm	1,877	1,877
Tailgate opening height	mm	766	766
Tailgate opening width	mm	1,096	1,096

## Mazda CX-7 Facelift - Dimensions

			Mazda CX-7 Facelift
External			
A	Length (with / without plate holder)	mm	4,700 / 4,680
B	Overall width (without body side protector)	mm	1,870
C	Overall width (mirror to mirror)	mm	2,055
D	Overall height	mm	1,645
E	Wheelbase	mm	2,750
F	Track front / rear	mm	1,615 / 1,610
G	Ground clearance (between the axles, unladen)	mm	208
H	Angle of approach (diesel / petrol)		17.3° / 18.5°
I	Angle of departure (diesel / petrol)		22.7° / 24.7°
Interior			
J	Front head room (without sunroof)	mm	1,009
K	Rear head room (without sunroof)	mm	998
L	Front shoulder room	mm	1,472
M	Rear shoulder room	mm	1,417
N	Front leg room	mm	1,059
O	Rear leg room	mm	925



**Mazda CX-7 Facelift - Powertrains**

		<b>MZR-CD 2.2 Turbo Diesel 6-Speed Manual</b>	<b>MZR 2.3 DISI Turbo Petrol 6-Speed Manual</b>
<b>Engine Type</b>		In-line 4-cylinder, DOHC	In-line 4-cylinder, DOHC
Displacement	cm <sup>3</sup>	2,184	2,261
Bore x stroke	mm	86.0 x 94.0	87.5 x 94.0
Valves		4 per cylinder	4 per cylinder
Camshaft drive		Chain	Chain
Injection system		High-pressure common-rail direct injection	Electronically controlled direct injection
Compression ratio		16.3 : 1	9.5 : 1
Emission control system		Diesel Particulate Filter (DPF) Selective Catalytic Reduction (SCR) system	3-way catalytic converter with single nano-technology
Max. power	kW PS	127 at 3,500 rpm 173 at 3,500 rpm	191 at 5,500 rpm 260 at 5,500 rpm
Max. torque	Nm	400 at 2,000 rpm	380 at 3,000 rpm

**Mazda CX-7 Facelift - Powertrains**

		<b>MZR-CD 2.2 Turbo Diesel 6-Speed Manual</b>	<b>MZR 2.3 DISI Turbo Petrol 6-Speed Manual</b>
Fuel type		Diesel	Unleaded 98 RON
Fuel tank capacity	l	69	69
Engine oil capacity	l	5.7	5.7
Battery type		80D26L / 12 V	55D23L / 12 V
Transmission		Mazda Active Torque-Split All-Wheel Drive with 6-speed manual transmission	
Gear ratios			
1 <sup>st</sup>		3.818	3.818
2 <sup>nd</sup>		2.045	2.238
3 <sup>rd</sup>		1.290	1.535
4 <sup>th</sup>		0.926	1.171
5 <sup>th</sup>		0.853	1.085
6 <sup>th</sup>		0.711	0.853
Reverse		4.139	4.139
Final drive ratio (1 <sup>st</sup> - 4 <sup>th</sup> / 5 <sup>th</sup> - 6 <sup>th</sup> )		4.187 / 3.526	3.941 / 3.350

**Mazda CX-7 Facelift - Chassis**

		<b>MZR-CD 2.2 Turbo Diesel 6-Speed Manual</b>	<b>MZR 2.3 DISI Turbo Petrol 6-Speed Manual</b>
<b>Suspension and Wheels</b>			
Front suspension		MacPherson struts	MacPherson struts
Rear suspension		Multi-link	Multi-link
Front dampers		Telescopic double-acting	Telescopic double-acting
Rear dampers		Telescopic double-acting	Telescopic double-acting
Front stabiliser diameter	mm	28	28
Rear stabiliser diameter	mm	19	19
Wheel size		18 x 7 1/2 J, 19 x 7 1/2 J	19 x 7 1/2 J
Tyre size		235/60 R 18, 235/55 R 19	235/55 R 19

**Mazda CX-7 Facelift - Chassis**

		<b>MZR-CD 2.2 Turbo Diesel 6-Speed Manual</b>	<b>MZR 2.3 DISI Turbo Petrol 6-Speed Manual</b>
<b>Steering</b>			
Type		Rack and pinion, electric hydraulic power assist	Rack and pinion, hydraulic power assist
Steering wheel turns (lock to lock)		2.9	2.9
Turning circle (kerb to kerb)	m	11.4	11.4
Turning circle (wall to wall)	m	12.2	12.2
<b>Brakes</b>			
Type front		Ventilated discs	Ventilated discs
Type rear		Ventilated discs	Ventilated discs
Diameter front	mm	320	320
Diameter rear	mm	325	302
Vacuum booster diameter	Inch	10.5	10.5
Scheduled maintenance		Every 20,000 km/ 12 months	Every 15,000 km/ 12 months

### Mazda CX-7 Facelift - Performance

		MZR-CD 2.2 Turbo Diesel 6-Speed Manual	MZR 2.3 DISI Turbo Petrol 6-Speed Manual
<b>Performance</b>			
Top speed	km/h	200	211
Acceleration 0-100 km/h*	s	11.3	8.2
<b>Fuel Consumption**</b>			
Extra urban	l/100 km	6.6	8.4
Urban	l/100 km	9.1	14.0
Combined	l/100 km	7.5	10.4
CO <sub>2</sub> emissions (combined)	g/km	199	243
Emission stage		Euro Stage V	Euro Stage V

\* Under Mazda test conditions

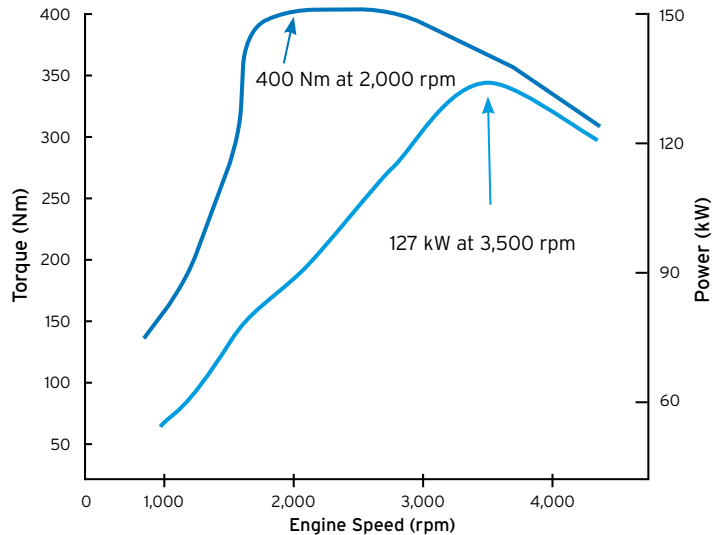
\*\* According to EC 715/2007 in its latest version

### Mazda CX-7 Facelift - Weight and Payload

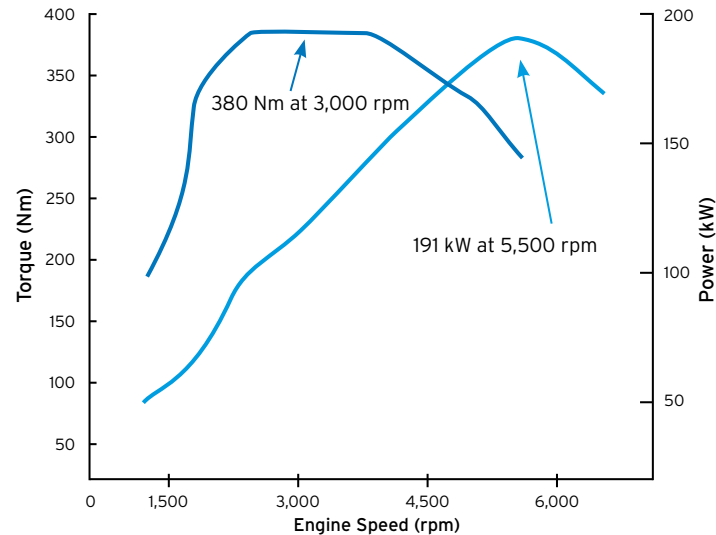
		MZR-CD 2.2 Turbo Diesel 6-Speed Manual	MZR 2.3 DISI Turbo Petrol 6-Speed Manual
<b>Weight and Payload</b>			
Min. kerb weight (without driver)	kg	1,800	1,740
Min. kerb weight***	kg	1,875	1,815
Max. permissible weight	kg	2,430	2,301
Permissible front axle weight	kg	1,304	1,219
Permissible rear axle weight	kg	1,227	1,181
Permissible tow weight, braked trailer(8% slope)	kg	2,000	1,600
Permissible tow weight, braked trailer(12% slope)	kg	1,800	1,450
Permissible tow weight, unbraked trailer	kg	750	750
Max. roof load capacity	kg	100	100

\*\*\* According to 92/21/EEC in its latest version (including 75 kg driver)

MZR-CD 2.2 Turbo Diesel - Engine Performance Curves



MZR 2.3L DISI Turbo Petrol - Engine Performance Curves







## *9. PHOTOS*

### *MAZDA CX-7 STILLS*



Mazda\_CX-7FL\_still1.jpg



Mazda\_CX-7FL\_still2.jpg



Mazda\_CX-7FL\_still3.jpg



Mazda\_CX-7FL\_still4.jpg



Mazda\_CX-7FL\_still5.jpg



Mazda\_CX-7FL\_still6.jpg



Mazda\_CX-7FL\_still7.jpg



Mazda\_CX-7FL\_still8.jpg



Mazda\_CX-7FL\_still9.jpg



Mazda\_CX-7FL\_still13.jpg



Mazda\_CX-7FL\_still14.jpg



Mazda\_CX-7FL\_still15.jpg



Mazda\_CX-7FL\_still10.jpg



Mazda\_CX-7FL\_still11.jpg



Mazda\_CX-7FL\_still12.jpg



Mazda\_CX-7FL\_still16.jpg



Mazda\_CX-7FL\_still17.jpg

## *MAZDA CX-7 ACTION*



Mazda\_CX-7FL\_action1.jpg



Mazda\_CX-7FL\_action2.jpg



Mazda\_CX-7FL\_action3.jpg



Mazda\_CX-7FL\_action7.jpg



Mazda\_CX-7FL\_action8.jpg



Mazda\_CX-7FL\_action9.jpg



Mazda\_CX-7FL\_action4.jpg



Mazda\_CX-7FL\_action5.jpg



Mazda\_CX-7FL\_action6.jpg



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Mazda\_CX-7FL\_action14.jpg



Mazda\_CX-7FL\_action15.jpg



Mazda\_CX-7FL\_action19.jpg



Mazda\_CX-7FL\_action20.jpg



Mazda\_CX-7FL\_action21.jpg



Mazda\_CX-7FL\_action16.jpg



Mazda\_CX-7FL\_action17.jpg



Mazda\_CX-7FL\_action18.jpg



Mazda\_CX-7FL\_action22.jpg



Mazda\_CX-7FL\_action23.jpg

## *MAZDA CX-7 INTERIOR*



Mazda\_CX-7FL\_int1.jpg



Mazda\_CX-7FL\_int2.jpg



Mazda\_CX-7FL\_int3.jpg



Mazda\_CX-7FL\_int4.jpg



Mazda\_CX-7FL\_int5.jpg



Mazda\_CX-7FL\_int6.jpg

## *MAZDA CX-7 DETAILS*



Mazda\_CX-7FL-tag1.jpg



Mazda\_CX-7FL-tag2.jpg



Mazda\_CX-7FL-front.jpg



Mazda\_CX-7FL-mir.jpg



Mazda\_CX-7FL-exh.jpg



Mazda\_CX-7FL-key.jpg



Mazda\_CX-7FL-cam.jpg



Mazda\_CX-7FL-meter.jpg



Mazda\_CX-7FL-panel.jpg



Mazda\_CX-7FL-detail.jpg



Mazda\_CX-7FL-bose.jpg



Mazda\_CX-7FL-trunk1.jpg



Mazda\_CX-7FL-trunk2.jpg



Mazda\_CX-7FL-trunk5.jpg



Mazda\_CX-7FL-trunk3.jpg



Mazda\_CX-7FL-trunk4.jpg

## *MAZDA CX-7 DESIGN SKETCHES*



Mazda\_CX-7FL-sketch1.jpg



Mazda\_CX-7FL-sketch2.jpg



Mazda\_CX-7FL-sketch3.jpg

## *MAZDA CX-7 TECHNICAL IMAGES*



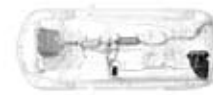
Mazda\_CX-7FL-2.2I\_1.jpg



Mazda\_CX-7FL-2.2I\_2.jpg



Mazda\_CX-7FL-chassis.jpg



Mazda\_CX-7FL-SCR.jpg



CX-7FL\_Diesel-Body.jpg



CX-7FL\_DISI-Turbo.jpg













CX-7FL-Skeleton-DISL.jpg











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