



All-new Mazda2

Press Kit

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Contents

1. The all-new Mazda2 – At a glance	3
2. Introduction – No limitations, only new frontiers	9
3. Exterior – Not your conventional supermini	10
4. Interior – Free to move	12
5. Connectivity, functionality & equipment – In a higher league	15
6. Powertrains – Driving people	18
7. Chassis & body – Unconventionally well-rounded	24
8. Safety – A people-centric approach	27
9. Technical specifications	29
9. Contacts – Mazda Motor UK Ltd	37

Chapter 1

The all-new Mazda2 – At a glance

Mazda's SKYACTIV technology and the 'KODO – Soul of Motion' design theme are brought together again, to create an all-new model for the B-segment. Enhanced for a supermini's dimensions and this market sector's distinct requirements, the all-new Mazda2 features a wealth of class-beating and confidence-inspiring qualities.

- A small package brimming with Sustainable Zoom-Zoom in an uncompromising combination of performance and safety, plus the Mazda2's best-ever fuel economy.
- Advanced lightweight design connects form and function with the segment's most technologically sophisticated equipment to date, including:
 - MZD Connect, Mazda's safe and easy to use in-car connectivity system
 - An evolved human-machine interface (HMI) optimised for the Mazda2 interior
 - Standard i-stop idle-stop system, also available with the unique i-ELOOP brake energy regeneration system
- Mazda's contender in the highly competitive B-segment, which represents 22 per cent of the European passenger car market.
- Scheduled for launch in Europe in five-door hatchback form in early 2015.

Exterior

The striking KODO styling conveys Mazda's characteristic vitality and agility. With lines and shapes expressing strength and pent-up energy waiting to be released, the all-new Mazda2 is clearly no ordinary supermini.

- Features the signature wing Mazda front grille and glinting predator-like headlamps of other KODO-based Mazdas together with the solid stance, muscular character lines and cab-rearwards profile
- Increased length, and a longer wheelbase with smaller overhangs opens up more space for occupants and powertrains while also enhancing stability and passive safety
- Defies the "one-motion" (one-box) style popular in the B-segment, with A-pillars moved 80mm to the rear and overall height virtually unchanged, while also ignoring other design limitations usually typical for this class of car
- First Mazda with a four-lamp LED design to go with the dynamic round signature of the low-slung headlamps, which nicely complement the U-shaped signature of the horizontal combination tail lights
- Choice of 10 body colours include two all-new hues: Dynamic Blue (sporty) and Smoky Rose (stylish)
- Available with 15- and 16-inch alloy or 15-inch steel wheels

Interior

Like the exterior, elements of the cabin styling actually help make the all-new Mazda2 more comfortable and ergonomic. Cabin designers also raised the bar for interior craftsmanship and material quality.

- It is more spacious with:
 - added front shoulder room and a wider centre console along with more rear knee clearance and legroom

- vast driver's seat adjustment range to go with tilt/telescopic steering, enabling drivers of different sizes to find the ideal position
- entry and exit easier than ever, even in tight parking spots
- optimal pedal positioning (similar to the all-new Mazda3)
- Repositioned A-pillars and exterior mirrors provide better forward field of view and wider viewing angle
- Coherent layout and clear arrangement of controls simplify operation and build confidence
- Snug *Jinba Ittai* fit of seats with higher seatbacks, better hold and special vibration-stiffling materials
- Inspired interior styling highlights and craftsmanship set a new global benchmark in this class, giving the cabin a premium quality look and feel
- Features a customer-oriented choice of five upholstery (including luxurious off-white half leather) and interior finishing packages for an individual look
- Remarkably versatile boot capacity thanks to minimal obstructions and an enhanced tailgate and boot opening

Connectivity, functionality & equipment

Among the most remarkable features of the all-new Mazda2's cabin is the extraordinary level of cutting-edge technology – particularly for a car in this class – and the unprecedentedly user-friendly layout that makes these systems so safe and easy to use.

- Two-zone cabin puts driver at the cockpit's focal point while giving passengers a securely comfortable environment:
 - enhanced human-machine interface (HMI) designed for extremely safe interactivity
 - all driving-related controls and data enable quick reactions with minimal eye and limb movement
 - Active Driving Display* – a B-segment first – projects the most important real-time driving data on a 'heads-up' display screen directly into the driver's forward field of view; other driving information appears in the sporty new instrument cluster
 - 7-inch display* on the dash above the centre stack (for communications and infotainment functionality) can be operated either via the optimised rotary commander on the centre console, voice command or touchscreen
- Always online with MZD Connect*, Mazda's in-car connectivity system, which works with iPhone or Android smartphones to safely access a variety of free mobile content via Aha, a cloud platform-based service:
 - features thousands of stations as well as personalised location-based services and Twitter and Facebook audio feeds
 - includes navigation software that can utilise the smartphone's tethering capabilities to search and locate potential destinations**
 - comes with Mazda vehicle apps like Eco-display, maintenance reminders and warnings, also allowing drivers to track performance, such as fuel consumption
 - can be controlled using the rotary commander or voice command
 - also supports iPod, MP3 and CD playback, terrestrial radio, SMS and readout functions
- New navigation system offering more accurate route calculations, added destination search features, three years of free updates and support for up to 18 audio and 26 text languages*
- More effective and energy-efficient climate control system

- Rear parking sensors*

* Availability depends on equipment package and market

** Optional service

Powertrains

Mazda has optimised its range of ultra-efficient SKYACTIV powertrains for its B-segment newcomer, bringing on a formidable line-up of extreme compression engines, including a new small-displacement clean diesel and supermini-sized versions of its SKYACTIV manual and automatic transmissions. All feature Mazda's advanced i-stop idle-stop system as standard equipment, while the i-ELOOP brake energy regeneration system is also offered – depending on model.

The all-new lightweight **SKYACTIV-D 1.5-litre** common-rail clean diesel features:

- An exceptionally low 14.8:1 compression ratio
- A new combustion chamber and fuel injection system to help counter cooling losses
- A compact high-efficiency turbocharger with variable turbine geometry
- Quiet low-knock operation

Output:

- 77kW /105ps at 4,000rpm & 220Nm at 1,400-3,200rpm

Fuel consumption & CO₂ emissions*:

- 83.0mpg & 89g/km (with six-speed manual)

Emissions class: Euro 6

'Rightsized' **SKYACTIV-G 1.5-litre** direct injection petrol engines featuring:

- Natural aspiration, low mechanical resistance and a 14:1 compression ratio (world's highest in a mass-production model**) for most versions
- A specially designed 4-2-1 exhaust system and enhanced fuel spray properties to counter the drawbacks to high compression along with earlier knock control to improve cold-engine fuel efficiency
- Three versions of this powerplant available, including a standard version with 12:1 compression and a 4-1 exhaust system

SKYACTIV-G 1.5-litre (115ps)

Output:

- 85kW / 115ps at 6,000rpm & 148Nm at 4,000rpm

Fuel consumption & CO₂ emissions*:

- 57.6mpg & 115g/km (with six-speed manual & i-ELOOP)

Emissions class: Euro 6

SKYACTIV-G 1.5-litre (90ps)

Output:

- 66kW / 90ps at 6,000rpm & 148Nm at 4,000rpm

Fuel consumption & CO₂ emissions*:

- 62.7mpg & 105g/km (with five-speed manual)
- 58.8mpg & 112g/km (with six-speed automatic)

Emissions class: Euro 6

SKYACTIV-G 1.5-litre (75ps)

Output:

- 55kW / 75ps at 6,000rpm & 135Nm at 3,800rpm

Fuel consumption & CO₂ emissions*:

- 60.1mpg & 110g/km (with five-speed manual)

Emissions class: Euro 6

* Combined cycle; Mazda in-house figures

** Available as of September 2014

SKYACTIV-MT five- and six-speed manual transmissions deliver:

- The light, crisp shifting of the legendary Mazda MX-5 roadster
- Special fuel-saving designs, now even lighter than ever
- Competition-beating torque capacity combined with lower internal drag

SKYACTIV-Drive six-speed automatic transmission:

- Special version for small-displacement petrol engines
- 17kg lighter than previous SKYACTIV-Drive gearboxes
- Features a wider lockup range for even smoother starts and 'Sport' mode to exploit extra torque and deliver enhanced acceleration

CHASSIS & BODY

Segment-beating responsiveness and passive safety protection have arrived in Europe's B-segment with the Mazda2's SKYACTIV-Chassis and SKYACTIV-Body. The perfect complement for SKYACTIV powertrains, they give the all-new Mazda2 an uncommon level of refined ride comfort for the segment to go with its class-leading blend of low-speed manoeuvrability and high-speed stability.

SKYACTIV-Chassis

- Connects the driver to the car in true *Jinba Ittai* fashion, with:
 - a faithful and predictable linear steering response and enhanced feedback
 - lower steering gear ratio with stiffer mounts for added linearity
 - an ideal balance between steering lightness and stability
- Lighter yet stiffer suspension with optimised geometry and enhanced shock absorbers for a smoother ride:
 - first Mazda with a friction control function on the front and rear shock absorbers
- Performance-enhanced brake system:
 - fine-tuned for easier operation, more control and a quicker response
 - feels progressively firmer the harder the driver applies the brakes

SKYACTIV-Body

- Lighter yet stronger than the previous-generation model:
 - lightweight high and ultra-high tensile steels now make up 65 per cent of the body (up from 53 per cent), also allowing Mazda's development team to eliminate certain parts and shed further weight
 - torsional (twisting) rigidity increased by 22 per cent while reducing bodyshell weight by seven per cent
- Top class aerodynamics:
 - air flow streamlined and balanced to prevent vortex formation behind the vehicle
 - shapes around the car optimised to minimise resistance, from bumpers to mirrors to spoilers
- One of the smoothest riding models and quietest interiors in its class despite being a lightweight vehicle, thanks to:
 - using sound-absorbing materials to block noise paths into the cabin
 - enhancing the bodyshell's shock absorbing function and suppressing unwanted powertrain vibration and noise

SAFETY

Active safety

An assortment of active safety systems underscore the feeling of confidence inspired by the way the all-new Mazda2 drives.

- **Blind Spot Monitoring*** (BSM) detects and warns the driver of vehicles approaching from behind in adjacent lanes and in the blind spots to the sides of the car
- **Smart City Brake Support*** (SCBS) is an autonomous emergency braking system that works at speeds of 2.5-18.5mph and automatically applies the brakes if the system detects an imminent frontal impact
- **Lane Departure Warning System*** (LDWS) monitors lane markings at 40mph and above, alerting the driver of unintentional lane changes
- **High Beam Control*** (HBC) automatically changes between high and low beams to avoid impairing the vision of other motorists
- Standard **ABS** with **EBD** (Electronic Brakeforce Distribution) and brake assist (**EBA**), **DSC** (Dynamic Stability Control) and **TCS** (Traction Control System)

** Availability depends on equipment package and market*

Passive safety

Featuring body structures that effectively absorb and disperse impact energy away from the cabin, the all-new Mazda2 offers remarkable occupant and pedestrian protection for its class.

- SKYACTIV-Body is more secure on all sides despite its lightweight design, with stronger materials, straight, continuous architectures and reinforced joints:

- significantly more ultra-tensile steel in places such as the cabin side frame, cabin floor, A-pillars, roof rails and side sills
 - 22 per cent extra torsional stiffness yet seven per cent lighter than the body of the current model
- Longer wheelbase with larger front-end crumple zones help absorb energy, channelling it around the cabin using a multi-load path concept
 - Cage structure for the cabin controls the flow of energy for excellent side impact protection.
 - Optimised rear frame set-up improves crash safety, especially during an offset rear impact
 - Front, side and curtain airbags have been adapted for cabin size to restrain occupants earlier
 - Seatbelts equipped with pretensioners and load limiters front and back
 - Interior trim and components redesigned to better absorb shocks
 - Bonnet, cowl and front bumper structures changed to better protect the head and legs of pedestrians

Chapter 2

Introduction – No limitations, only new frontiers

Superminis are renowned for being economical, affordable, easy to drive and outstanding in their main environment, the city. However, these cars are also typically regarded as having some limitations in terms of performance, equipment, comfort and safety.

This is where Mazda threw out the rulebook with its all-new Mazda2, building on the strengths of its current B-segment model as well as its highly successful new-generation model line-up – and the power of the company's conventional-challenging spirit – to establish new class standards.

When it introduced the current Mazda2 about seven years ago, Mazda bucked the prevailing trend towards bigger, heavier subcompacts and that model went on to win the 2008 World Car of the Year award. Now the company is defying convention again with numerous core aspects of its new-generation, all-new Mazda2 model, from the stunning exterior design, innovative cabin layout and generous equipment (particularly for the B-segment), to the unconventional engines, which include 'rightsized' petrol powerplants and a brand new ultra-efficient clean diesel.

Again raising the bar for superminis, Mazda enhanced the current model's already outstanding driving dynamics, improved overall comfort and delivered a class-leading level of confidence-inspiring stability and solidity. Mazda also targeted C-segment standards when it came to infotainment and connectivity technology, safety systems and cabin ergonomics. As Mazda2 Programme Manager Ayumu Doi declared: "We aimed to shatter all notions of the class."

The all-new Mazda2 has extraordinary presence and vitality, following closely on the styling of the Mazda Hazumi concept shown at the 2014 Geneva Motor Show.

Its SKYACTIV technology strikes an ideal balance between performance and economy, with engines and transmissions optimised for this size of car and a body and chassis that stretch the boundaries for the segment in terms of ride quality, smooth responsiveness and advanced collision safety. Finally, progressive high-tech innovations such as the MZD Connect in-car connectivity concept and i-ACTIVSENSE active safety systems satisfy the demands of today's drivers to always be in a modern, connected world.

Chapter 3

Exterior – Not your conventional supermini

The all-new Mazda2 is the fourth Mazda to embody its 'KODO – Soul of Motion' design theme. The convention-defying carmaker had already raised the bar for exterior styling with its other new-generation models (Mazda CX-5, Mazda6 and all-new Mazda3), which share traits like a solid stance, muscular lines, a cab-rearwards profile and an overall look that says 'forward momentum'. Indeed, these award-winning designs have given momentum to people's rising expectations of what will come next from the styling house of Mazda.

Concentrating such vibrancy and emotion into Mazda's smallest model, to be manufactured as a five-door hatchback, did not make the designers' task any simpler. After all, following in the footsteps of the award-winning current generation, the all-new Mazda2 needed to boast class-beating looks.

Nevertheless, Mazda's designers are always up for a challenge and contemplated what the competition was doing and then did something different.

Instead of following the typical B-segment "one-motion" (one box) style, which moves the A-pillars forward to make the cabin look roomier and more practical, Mazda defied convention. Re-engineering KODO for supermini dimensions, designers came up with a striking presence and vitality unmatched in its class. And although KODO's unique proportions might at first glance appear to come at the expense of practicality, they also managed to build in unparalleled real-world utility.

SUPERMINI-SIZED

The front axle was moved 80mm forward and the A-pillars 80mm towards the rear. Together with the higher rear shoulders and larger diameter tyres, plus a wider track and minimal wheel-arch clearance, the short overhangs give Mazda's new subcompact a well-planted stance – another KODO trademark. The vehicle's weight appears to fall on the rear axle, like a sprinter in the starting blocks set to spring into action. The added room up front also opens up space for the bigger wheels, SKYACTIV powertrains (*see chapter 6*) and an enlarged crumple zone in case of a frontal impact.

The all-new Mazda2 is a global model. Besides looking good, it needs to satisfy a diversity of needs, particularly in the cabin. So Mazda grew the all-new model by 140mm in length (compared to the outgoing model) and added 80mm to the wheelbase – putting both dimensions among the class leaders. The new model is also slightly taller (by 20mm), although this is barely perceptible. Therefore, in spite of the compact appearance from the outside, new Mazda2 can still comfortably accommodate four adults. It even has a smaller turning radius (4.7m rather than 4.9m*), improving the already nimble manoeuvrability drivers expect from a fun-to-drive supermini – and absolutely mandatory for a vehicle with the Mazda badge.

* *With 15-inch wheels; 16-inch alloy wheels also available*

The little Mazda also looks attractive from all perspectives. Up front, the piercing low-slung headlamps and signature wing grille are immediately eye-catching. Featuring a round lighting signature and a four-lamp LED design* (a Mazda first), the headlamps add to the dynamic nature of the all-new Mazda2's face. Like on other new-generation Mazdas, they conjure up the image of a predator.

** Depending on equipment package*

STRONG, FLOWING LINES

The front grille is even more formidable than its previous incarnations, with a sculpted three-dimensional effect as the chromed "wings" pass through the headlamps on a contour that continues down the side of the body. It is joined there by more of KODO's distinctive character lines, which in this case defy the design limitations that normally hold sway in the B-segment.

Underlining the new Mazda2's stylish consistency, the uppermost of these lines ends at the horizontal rear combination lamps, which encroach well into the tailgate. Featuring an immediately recognisable U-shaped lighting signature, these lamp clusters nicely complement the headlamps. This dramatically enhances the power expressed by the rising shoulder line and steeply sloping rear window.

Fresh and lively, the all-new Mazda2's look is certain to stand out from the B-segment competition and invite the broadest range of drivers to open the door and get behind the wheel.

Many shades of fun

Buyers can choose from 10 exterior colours including two developed especially for the all-new Mazda2: Dynamic Blue for a pure sporty look and stylish Smoky Rose. The remaining choices* are Soul Red Metallic, Titanium Flash, Deep Crystal Blue, Aluminium Metallic, Metropolitan Grey, Jet Black, Snowflake White Pearl and Arctic White.

** Availability may vary according to market*

Chapter 4

Interior – Free to move

Conventional thinking would suggest that there have to be trade-offs with a subcompact car between roominess and stylistic freedom. Nevertheless, thanks to Mazda's convention-defying philosophy, the all-new Mazda2's interior style elements work in symbiosis with comfort, craftsmanship and ergonomics.

With the new model, the 'feel-good' factor starts when first getting into the car, something people always notice when it's difficult. Mazda therefore optimised the height and shape of the door openings to ease entry and exit from the all-new Mazda2 in spite of its reclined A-pillars and compact-looking roofline. Designers even took the path of a person's foot into account when determining the best shape for the doors, greatly simplifying the getting-in-and-out process in tight parking spots where the doors can't be opened fully.

Once inside, the all-new Mazda2 is unconventionally roomy. To maximise utilisation of space, subcompacts typically use upright seating. However, this requires a taller cabin. Mazda created room elsewhere, by optimising the shape of the instrument panel, and using leaner seatbacks and thinner head restraints.

By adopting such measures, the carmaker was able to add 12mm of front shoulder room (providing an extra 6mm between front occupants and their doors), 20mm of space between the driver and front passenger, and 12mm of width to the centre console – compared with the current model. That adds up to more comfort, more versatility and better side impact protection.

As a world model, the Mazda2 needs to fulfil an assortment of needs, such as accommodating people of vastly different sizes. With this in mind, Mazda designed the cockpit to comfortably accommodate occupants measuring between 1.50m and 1.90m tall.

With 260mm of movement, the driver's seat offers the most front-back slide adjustment in its class, and 45mm of telescopic range was also added to the existing 50mm of steering wheel tilt.

The shorter cabin required in most B-segment cars usually compromises the pedal layout, but here KODO came to the rescue: By moving the front wheels forward by 80mm, Mazda was able to position the pedals just as optimally on the all-new Mazda2 as on the larger new-generation Mazda3. So, together with the wide range of seat and steering wheel adjustments, even tall drivers can extend their legs normally and operate the vehicle in a degree of comfort usually reserved for larger, more costly vehicle segments.

Proving again how styling doesn't have to compromise roominess, the boldly flared rear fenders allowed interior designers to maintain the horizontal positioning of the back seats – even though the sides of the all-new Mazda2 converge towards the rear. With the wider centre console and front occupants further apart, communicating with those in the back is that much easier. Thanks to slimmer front seatbacks with concave mouldings, rear passengers also have 19mm of additional

knee clearance.

STRETCHING THE CABIN

For the seats, Mazda took inspiration from its other new-generation models. Specifically, the company strove to provide the snug *Jinba Ittai* fit for the desired driver-and-car-as-one-body experience and cornering hold which Mazda aims to deliver in all its vehicles. Whilst avoiding too much pressure on any given part of the body or detracting from overall ride comfort.

As a result, the all-new Mazda2 seats feature higher backrests and 30 per cent more contact area with the occupant's body. They also utilise a new type of urethane to minimise unwanted input and vibrations, and adjust hold to the lower back and upper body according to lateral forces to provide added support during hard cornering. And like other aspects of the cabin, they're designed to satisfy a variety of different physiques.

Designers were also aiming to heighten the joy of ownership with an exceptional level of craftsmanship and an inspired interior design. The climate-control louvres are a good example of these efforts, with three round and one cleverly understated horizontal vent positioned in symmetry across the dash.

SUBTLY CLEVER

The louvres stylish arrangement not only heightens the quality look of the interior, but also accentuates the roomy, open feeling – an effect emphasised by the uncluttered dash space above the line connecting the louvres, as the centre stack does not divide the front of the cabin.

While advanced comfort makes for a more enjoyable drive and a finely crafted interior stimulates anticipation for the next journey, a coherent control and display layout providing a clear overview builds confidence about the experience behind the wheel. Superminis in particular need to be easy to drive, as they are often the first choice for first-time drivers. Plus, the all-new Mazda2 gives the driver outstanding visibility in all directions.

The A-pillars positioned further towards the rear (relative to the current Mazda2) widen the overall viewing angle. Streamlining the exterior mirrors and relocating them from the A-pillars to the doors, also adds to the new model's segment-leading visibility by eliminating a blind spot. This makes it easier to see obstacles and pedestrians – including smaller children – on the side of the road and at junctions.

A subcompact, of course, should manoeuvre well in tight spaces like parking lots and garages, even when reversing. The all-new Mazda2 excels here, since the driver can see objects behind the car, even those low to the ground, and accurately judge distances as a result.

A CLEAR OUTLOOK

Good visibility to the front, side and rear, plus easy to assimilate information is all part of the unique 'heads-up' cockpit concept Mazda's new subcompact inherits from the remarkably ergonomic new-generation Mazda3: The cabin is split into two zones – one focused on driving and the other on connectivity and infotainment – and features an evolved version of Mazda's innovative human-machine interface (HMI), which includes a head-up display, 7-inch touchscreen, rotary commander

and much more (see *chapter 5*).

A fun way to personalise interiors

Mazda was aiming for a sporty, sophisticated interior on its all-new supermini. For that it came up with a rich blend of expertly crafted high-quality materials and finishes unusual for the B-segment.

The stylish new line-up of colour coordination schemes available for the upholstery and interior trim, which offers a fun and easy way to personalise Mazda2 interiors, is unrivalled in the B-segment. Customers have a choice of five packages.

1. Entry level: Refined sporty quality with a black base colour, blue stripes on the fabric upholstery and black rings on the climate-control louvres.
2. Mid-grade: Piano black base colour coordinated with navy blue fabric upholstery, silver ornamentation and high-gloss decorative panels.
3. Mid-grade (option): Inspired by 1950s furniture, features red fabric with red, white and black trim along with high-gloss colour panels.
4. High-grade: Black fabric upholstery with red stripes and stitching as well as satin chrome highlights.
5. High-grade (option): The top of the line, featuring half-leather seats in off-white, trim with red stripes and stitching, and satin chrome accents.

Great use of easy-to-use space

They may be small, but superminis tend to be used daily, meaning there is a high frequency of loading and unloading. The all-new Mazda2's boot holds a better-than-average 280-litres (or 950-litres with the rear seats folded down), but what really stands out is its versatility.

With fewer obstructions, there's enough space for a large 72cm suitcase or standard-sized baby stroller. Fold down half the 60:40 split rear seatback*, and you can even carry a golf bag. The opening is now extra-practical, with a 52mm wider bottom edge and straightened corners. The floor of the opening is lower too, so even heavy objects can be loaded or removed with smooth, natural movements. Easier to open, reach and close, the tailgate is also more user-friendly.

** Depending on equipment package*

Chapter 5

Connectivity, Functionality and Equipment – In a higher league

Remarkably ergonomic for any class, Mazda's new-generation interior brings outstanding user-friendliness to the B-segment. The cabin design gives drivers the full benefit of all that the car has to offer in the way of advanced infotainment and connectivity functionality, but enables them to keep their eyes on the road and operate the vehicle in absolute safety.

Mazda engineers split the cabin into two zones. The cockpit zone puts the driver at the focal point, with all driving-related controls positioned for quick and easy strain-free access. That means natural motions with no wasted energy and minimal eye movement. The passenger zone, meanwhile, is designed for comfort and a secure feeling of roominess as well as a relaxed operation of the all-new Mazda2's infotainment systems, which now include in-car online connectivity care of MZD Connect (see box).

The foundation for the enhanced usability of the Mazda cabin is the company's continually evolving human-machine interface (HMI). Its elements include the Active Driving Display, the first 'head-up' display in this class. The device projects key real-time driving data into the driver's forward field of view. Minimal focal adjustment is required, and the display even adapts automatically to ambient light. Drivers can therefore see the vehicle's speed, directions from the navigation system, or the status of the car's i-ACTIVSENSE active safety technology without even a short glance away from the road. To avoid information overload, the Active Driving Display shows only three items at once, changing according to priority. For example, an active safety warning will supplant speed and navigation data until the associated hazard has passed.

Other driving information can be found in the sporty instrument cluster, a design introduced on the all-new Mazda3. It features a single large analogue tachometer with integrated digital speedometer* in the centre, flanked by smaller wing-shaped gauges displaying the trip odometer, fuel gauge and temperature, among other things. Infotainment features, meanwhile, are concentrated on the 7-inch display located on the dash above the centre console. These functions can be controlled either by touchscreen, voice command or via the rotary commander on the centre console.

** Depending on equipment package*

MOVING UPSCALE

The commander has been streamlined for the all-new Mazda2 to better suit the narrower console and for more intuitive blind operation than earlier versions. It now requires less movement to navigate, and has three buttons at the front ("navigation", "home" and "audio") and two just behind it ("back" and "favourite"). Also new is a soft rubber palm rest for more comfortable operation.

Voice command offers another safe means to interface with the new model's connectivity and infotainment systems while driving, whether accessing the internet via MZD Connect, searching for music or contacts on the connected smartphone, or zooming in and out of the navigation system's route map.

Great effort clearly went into making the all-new Mazda2 remarkably straightforward – and of course fun – to operate. It simply feels natural to the driver, from the positioning of the gear shift lever and drive selection switch* to the accelerator pedal, now more precise with a hinged organ-style setup that is easier on the driver’s ankle. What is more is that Mazda’s labours have paid off, particularly in combination with improvements to the car’s ride comfort, stability and powertrain response.

MAZDA2 NAVIGATION SYSTEM

With a variety of comfort and convenience features, the navigation system on the all-new Mazda2 helps drivers reach their destinations safely, less stressfully and better informed.

Key features include:

- Safer, easier and more relaxed for the driver, since turn-by-turn directions are shown on the Active Driving Display** as well as the centre stack display**.
- Real-time information (via smartphone) using RDS-TMC along with accumulated statistical traffic congestion data (stored with the maps) and the latest online traffic info to deliver the most accurate route calculations.
- Search destinations as well as filling stations, points of interest and weather forecasts:
- Available throughout Europe*** with map data on the navigation system SD card, including:
 - three years of free updates (maps and directions) transferable via SD card
 - support for up to 18 audio and 26 text languages

** Allows drivers to switch the transmission to “Sport” mode on petrol-powered automatic models (see chapter 6)*

*** Availability depends on equipment package and market*

**** Individual service availability and tariffs may vary according to country*

MZD Connect: Always online

First introduced on the all-new Mazda3, Mazda’s in-car connectivity system is now destined for the B-segment on the all-new Mazda2. MZD Connect* allows people to safely and easily connect to the internet and social networking services when in transit – something many Mazda2 buyers will consider essential.

Hook up an iPhone or Android smartphone to MZD Connect via Bluetooth (or USB cable) and users get access to a surplus of mobile content via the cloud platform-based Aha service. It features tens of thousands of stations, from radio and podcasts to audio books, as well as personalised location-based services and Twitter and Facebook audio feeds, including “like” and “shout” functionality.

MZD Connect uses NAVTEQ map data from an SD card to show locations and routes. Users can set destinations from a contact list or search online. The navigation software* can also utilise the

smartphone's tethering capabilities to locate things like the nearest filling station and determine the current price of fuel**.

Operated either via the new rotary commander on the centre console or voice command, MZD Connect builds upon Mazda's SMS and readout functions. At the same time, it supports iPod, MP3 and CD playback as well as terrestrial AM/FM radio reception, including high-quality digital audio broadcasts (DAB). MZD Connect also comes with Mazda's own vehicle apps like Eco-display, maintenance reminders and warnings, and allows drivers to track things like fuel consumption.

** Optional depending on equipment package*

*** Optional service*

Chapter 6

Powertrains: Driving people

Mazda's SKYACTIV technology has been widely praised on all new-generation models to date. Nevertheless, even though they're lightweight and exceptionally efficient, adapting SKYACTIV powertrains for the B-segment was still a challenge. The supermini class is, after all, in some ways a market of its own with certain distinctions and limitations.

Mazda's engineers therefore focused on making the most of SKYACTIV's strengths, optimising its essentials for the sporty yet forgiving nature of the all-new Mazda2, while omitting anything unnecessary. Whilst still delivering *Jinba Ittai* oneness with the car, a predictable, natural linear response to driver input, and the sense of control key to the exciting Zoom-Zoom nature of all Mazdas.

For a B-segment car the engines and transmissions would have to be smaller yet still deliver the superior blend of performance and fuel economy that has become synonymous with SKYACTIV powertrains. An appropriately sized diesel engine was also a must, particularly for the European market. Hence the SKYACTIV-D 1.5-litre, a new small-displacement clean diesel. Having premiered on the Mazda Hazumi, the concept upon which the all-new Mazda2 is based, this engine will be offered with a six-speed SKYACTIV-MT manual gearbox.

The SKYACTIV-D 1.5-litre shares the low compression, quiet low-knock operation, and superior ignition and cold-start capabilities of its larger sibling, the SKYACTIV-D 2.2. However, since a smaller engine suffers from greater cylinder wall cooling losses, Mazda developed a new combustion chamber and fuel injection system, and slightly higher compression of 14.8:1 – still remarkably low for a diesel.

Rather than the SKYACTIV-D 2.2-litre's sequential twin-turbo setup, the engineers gave the SKYACTIV-D 1.5-litre a lighter ultra-compact single turbocharger with variable turbine geometry, which delivers ample boost for day-to-day speeds and features a special sensor to maintain output at higher speeds. Mazda's i-stop (the idle-stop system delivering the world's fastest diesel restarts), is standard equipment on the all-new Mazda2, and an enhanced version of the i-ELOOP brake energy regeneration system is also available.

These and other measures to save space while optimising performance make the Mazda2 SKYACTIV-D 1.5-litre a true lightweight. Output, meanwhile, is 77kW/105ps at 4,000rpm with ample maximum torque of 220Nm at 1,400-3,200rpm. Coupled with a special compact version of the six-speed SKYACTIV-MT manual, this model can reach 62mph in 10.1 seconds and a 110mph top speed. Combined cycle fuel economy is a mere (83.0mpg), which corresponds to CO₂ emissions of only 89g/km*. What is more, like all SKYACTIV-D engines, it saves customers additional money since costly NO_x aftertreatment is not required to meet the stringent Euro 6 emissions standard.

POWER IN ESSENCE

Mazda's latest supermini is also available with a choice of 'rightsized' SKYACTIV-G petrol engines. Admired on existing new-generation Mazdas for their unique combination of linear responsiveness and excellent fuel efficiency, these naturally aspirated direct-injection powerplants feature high compression and low mechanical resistance. And like the smaller SKYACTIV-D, they have been optimised for B-segment driving needs.

This is because linear accelerator response is particularly important in a subcompact. Consider a typical day-to-day situation such as decelerating into a roundabout, maintaining a more or less constant pace through it, and smoothly accelerating out again. Even an inexperienced driver needs to be able to predict the pedal behaviour, so Mazda designed it to give consistent feedback to the driver while ironing out jerky behaviour and unwanted bursts of speed. That builds confidence and makes driving more enjoyable.

The all-new Mazda2 is available with three different versions of the SKYACTIV-G 1.5-litre engine with different outputs, all of which meet the Euro 6 emissions standard. Like the engine launched on the all-new Mazda3, two of this trio feature a 14:1 compression ratio** and 4-2-1 exhaust manifold, putting out either 85kW/115ps or 66kW/90ps at 6,000rpm. Torque-wise, both units produce 148Nm at 4,000rpm. The third version is the 'standard-power' unit with (among other things) 12:1 compression and a lighter and more compact 4-1 exhaust system. It produces 55kW/75ps at 6,000rpm and 135Nm at 3,800rpm.

Looking to combine such outputs with superior efficiency, especially under day-to-day driving conditions, Mazda focused on the factors having the biggest effect on fuel economy. These include weather (e.g. temperature and humidity), road and traffic conditions, and the load placed on the engines by auxiliary systems. Hence improvements over the current model such as the introduction of earlier knock control during engine warm-up, a more efficient climate control system, and by recycling kinetic energy with the i-ELOOP brake energy regeneration system.

SITUATION ORIENTED

With the 115ps SKYACTIV-G 1.5-litre, which transfers power to the front wheels via a six-speed SKYACTIV-MT manual, new Mazda2 can sprint to 62mph in 8.7 seconds and attain a top speed of 124mph. Using Mazda's innovative i-ELOOP brake energy regeneration system, this model still manages fuel consumption and CO₂ emissions of only 57.6mpg and 115g/km*.

The 90ps model can be ordered either with a special small, lightweight version of the six-speed SKYACTIV-Drive automatic or a new five-speed SKYACTIV-MT manual transmission. Performance figures with this engine are 12.0 seconds and 110mph for the automatic and 9.4 seconds and 114mph with the manual. These versions record 58.8mpg and 112g/km (automatic) and 62.7mpg and 105g/km (manual).

Finally, the 75ps Mazda2, which also comes with the new five-speed manual gearbox, can accelerate to 62mph in 12.1 seconds and reach a top speed of 106mph, achieving 60.1mpg while emitting 110g/km of CO₂.

* Combined cycle figures calculated in-house at Mazda

** The highest available in a passenger car as of September 2014

SKYACTIV-D 1.5-litre – Small-displacement clean diesel power

Clean subcompact diesel: Mazda's new SKYACTIV-D 1.5-litre features low compression, superior ignition, superb torque and outstanding fuel economy – the same virtues as its award-winning SKYACTIV-D 2.2-litre engine. Only now, the unconventional carmaker has adapted this innovative powerplant for the smaller displacement and removed anything unnecessary to minimise cooling losses, mechanical resistance and weight, to maximise superior fuel economy and driving fun.

Core technology: what's new

-14.8:1 compression (rather than 14.0:1) to ensure similar combustion characteristics to the SKYACTIV-D 2.2-litre despite its compact size

-High-dispersion solenoid (rather than piezo) fuel injectors to suppress cooling losses and provide the optimum injection pattern for the given driving conditions. This improves combustion efficiency and thus fuel economy while running quieter

-Special "shoulder" added to the combustion chamber to suppress flow around the lip of the chamber and prevent combustion gas cooling

-Optimised engine cooling system with flow control further reduces cooling losses and hastens warm-up after cold starts, limiting the waste of unburned fuel

-Ultra-compact single turbocharger for more efficiency and less weight:

- delivers boost from low engine speeds, which also aids cold temperature starts

- uses a rotation speed sensor to maintain output through to high rpms

- adds low-pressure exhaust gas recirculation systems (EGR) to supplement high-pressure EGR, ensuring effective boost pressure under heavy loads

- uses a water-cooled (rather than air-cooled) intercooler integrated into the 1.4kg-lighter intake manifold to increase turbo boost efficiency while improving the turbo response by speeding up EGR gas discharge to the manifold

-Newly developed combustion-control logic keeps engine quiet by precisely correcting injection quantity and timing to suppress knocking

- together with measures to curtail engine vibration, it makes the SKYACTIV-D 1.5-litre the quietest diesel in its class

-Exhaust system layout optimised for compact engine compartment, minimising engine height and length as well as the distance from the turbocharger to the diesel oxidation catalyst

-Comes with standard i-stop idle-stop system, the idle-stop system delivering the world's fastest

restarts on a diesel engine

The bottom line

-Smooth linear acceleration from a standstill without peaking until the top of the rpm range
-10 per cent more power and seven per cent more torque with 19 per cent lower fuel consumption and CO₂ emissions* with greatly reduced particulate matter (e.g. soot) and NO_x emissions, requiring no expensive aftertreatment to meet Euro 6

-output: 77kW/105ps @ 4,000rpm & 220Nm @ 1,400-3,200rpm

-fuel economy & CO₂ emissions: 83.0mpg & 89g/km**

** Comparisons between the all-new Mazda2 with six-speed SKYACTIV-MT manual and i-stop vs. current Mazda2 with MZR-CD 1.6-litre and five-speed manual*

*** Combined cycle figures calculated in-house at Mazda*

SKYACTIV-G 1.5-litre – Smooth, confidence-building response

Bucking the trend towards petrol engine downsizing and turbocharging, Mazda continues to win over customers with its naturally aspirated high-compression SKYACTIV-G powerplants. The direct-injection SKYACTIV-G 1.5 is now available in three lightweight versions optimised for the smaller packaging of the all-new Mazda2

Core technology

-Unusually high 14:1 compression ratio, the world's highest in a volume-production passenger car*

-A special fuel-saving 4-2-1 exhaust manifold, which lowers the in-cylinder compression temperature to help prevent knocking, improve the scavenging effect and with it combustion efficiency, and deliver extra torque – especially at low rpms

-A piston cavity for quick, uniform ignition and a better combustion process

-Multi-hole injectors to adjust the fuel spray for even distribution, also enhancing in-cylinder cooling to suppress knocking

-A smaller cylinder bore to minimise cooling losses

-A high tumble port for superior ignition with more even flame distribution, producing more torque

-A revised oil lubrication structure, which reduces resistance and with it the loss of oil pressure

-Continuously variable sequential valve timing (SV-T) on the intake and exhaust valves, which:

-improves low-end torque together with the longer 4-2-1 exhaust

-maximises low-load fuel economy by allowing more hot exhaust gas recirculation

-suppresses knocking under heavy load by increasing air flow to improve torque output

-All petrol-powered versions of the all-new Mazda2 come with standard i-stop, Mazda's idle-stop system delivering some of the fastest engine restarts in the industry

-The 115ps SKYACTIV-G 1.5-litre is also available with a lighter and more efficient edition of the i-

ELOOP brake energy regeneration system first introduced with the new-generation Mazda6

The bottom line

- Exceptionally free-revving engines thanks to their smoother valves and piston rings
- Up to 11 per cent more torque, but with around 20 per cent lower fuel consumption and CO₂ emissions** (running on normal RON 95 octane petrol)

** As of September 2014*

*** Relative to the outgoing MZR 1.5-litre*

The alternative

The all-new Mazda2 also comes with a 'standard-power' version of the SKYACTIV-G 1.5-litre featuring a lower 12:1 compression ratio and simpler 4-1 exhaust manifold.

- Weighs even less than other SKYACTIV-G 1.5 units, with a smaller exhaust, hydraulic rather than electric single sequential valve timing (intake valve only) and a lighter engine cover and oil pump
 - still produces more torque than the outgoing MZR 1.5-litre
 - highly competitive fuel economy & CO₂ emissions of 60.1mpg 4.7l/100km and 110g/km

Transmissions – Smooth, direct & fun

Combining the crisp, quick shifting characteristics of Mazda's legendary MX-5 sports car in a lightweight fuel-saving design, the all-new Mazda2 is available with two newly-developed SKYACTIV-MT manual transmissions.

These five- and six-speed gearboxes are just as much fun to use as those on existing new-generation Mazdas, only now they are even lighter, more compact and with less resistance thanks to thinner casing material and an improved shift-linkage mechanism. Combining competition-beating torque capacity with lower internal drag, they also weigh 5-7 per cent less than the current Mazda2's five-speed gearbox and require 45 per cent less transmission oil. Both units deliver superior fuel economy.

A new, smaller version of the six-speed SKYACTIV-Drive automatic is also available for the all-new Mazda2 together with 90ps SKYACTIV-G 1.5-litre. Built especially for smaller displacement petrol engines, it delivers the same direct, quick shifting manual-like feel, smooth acceleration and outstanding fuel economy of the larger SKYACTIV-Drive versions fitted in other new-generation Mazda models.

With this version of the transmission it is now even lighter as Mazda omitted the one-way clutch, used a smaller planetary pinion, torque converter and valve body, and optimised the transmission case shape. As a result, it is 17kg lighter than the version used in the Mazda3 and Mazda6. This smaller gearbox also gets a wider lockup range (93 per cent as opposed to 89 per cent) for even smoother standing starts. It also features a "Sport" mode, which delivers more torque and an enhanced acceleration response at the flick of the drive selection switch located just behind the gearshift.

i-ELOOP - Now better than ever

Mazda is committed to minimising the environmental impact of its vehicles, and its unique i-ELOOP brake energy regeneration system supports this ambition. Short for “Intelligent Energy Loop”, i-ELOOP is the first such system in a passenger car that stores recovered electricity in a capacitor.

Specifically, Mazda adopted an electric double-layer capacitor (EDLC) rather than a dedicated battery. The large capacity EDLC captures and stores energy very quickly during the deceleration phase, which typically lasts only 10 seconds or so. In contrast, the lead acid starter batteries normally used in vehicles are far more limited in their charging and storage capabilities. Another benefit of EDLCs is their durability: They can be recharged over and over with minimal deterioration, unlike the lithium-ion batteries used in electric vehicles, for example.

i-ELOOP uses a 12V-25V variable voltage alternator to efficiently generate power from the moment the accelerator is released, fully charging the EDLC in as little as seven seconds – well within a typical deceleration cycle. Then the DC/DC converter steps down the voltage of the electricity in the EDLC to 12V to power electrical engine components as well as the headlamps, climate control and audio systems. Surplus electricity goes to the starter battery.

ENHANCED CHARGING

A full capacitor charge can normally run the vehicle’s electrical systems for long enough that there is no need to revert to battery power even when Mazda’s i-stop system has shut the engine off at a traffic light. In fact, during stop-and-go city driving, charging often resumes before the capacitor is fully discharged, so i-ELOOP can satisfy most, if not all, of a vehicle’s electricity needs. This frees up the engine output normally required to drive the alternator. Together with i-stop, i-ELOOP hikes real-world fuel economy by up to 10 per cent under everyday urban driving conditions.

The system developed for the all-new Mazda2 is now even more efficient. By improving the EDLC’s charging performance, Mazda was able to use a smaller starter battery. It thus freed up space to accommodate the DC/DC converter, which was previously located in the cabin. This, in turn, means shorter wiring, saving 5kg together with the smaller battery. And less weight, of course, means even lower fuel consumption.

Chapter 7

Chassis & Body – Unconventionally well-rounded

Mazda's engineers were determined to achieve a new level of refinement for their latest B-segment vehicle. Now featuring the SKYACTIV-Chassis and SKYACTIV-Body, the all-new Mazda2 gets the light, crisp handling, lightweight strength and advanced passive safety protection that have been highly praised on other new-generation Mazdas. In fact, the newcomer eclipses the existing B-segment standard for smooth responsiveness.

New Mazda2 features significantly advanced comfort and a confidence-inspiring stability that rivals, and in many cases surpasses, what Europe's best superminis currently offer. And at the same time, the company enhanced the already exceptionally fun-to-drive nature of the current Mazda2, magnifying the *Jinba Ittai* oneness with the car inspired by the iconic Mazda MX-5 – especially around town, where a contender in this segment needs to make driving effortless. Naturally, the new model also boasts an excellent ride/handling/stability balance on country roads and high-speed motorways, because otherwise it wouldn't be a Mazda.

The engineers' main goals were to reduce the impact of bumps and road surface irregularities transmitted through the rear suspension and to deliver a faithful steering response with a fine balance between lightness and stability. Which meant more than simply down-scaling the SKYACTIV platform for the Mazda2's smaller wheels and shorter wheelbase.

So Mazda updated the current generation's suspension with the SKYACTIV-Chassis concept, increasing the castor angle of the front wheels, for example, to enhance feedback and the already outstanding steering response. The front MacPherson struts were retuned for better comfort, while the mounting positions for the rear torsion beam setup were raised to suppress impact shock and improve wheel grip – now both best-in-class. These changes also ensure superior high-speed stability. The new supermini is also the first Mazda with a friction control function on the front and rear shock absorbers, which makes for a smoother ride and better initial steering response.

In terms of steering, the SKYACTIV-Chassis improves upon a very good thing, as the all-new Mazda2 responds even more faithfully and predictably to driver input. Here again the challenge was about balancing the car's agile fun-to-drive nature with a reassuring experience – two aspects that normally do not work in each other's favour. The engineers therefore lowered the steering gear ratio by two per cent, from 15.0:1 to 14.7:1, requiring less steering wheel movement to provoke the same response, and changed the steering gear mounts to boost linearity.

NIMBLE STABILITY

The new model also retains the current Mazda2's braking system – front ventilated discs and rear drums – but now performance-enhanced for more precise and linear control. The pedal stroke, for example, was tweaked for easy operation and a faster response. The brake booster was also retuned to allow enhanced speed control in tight places like car parks as well as during city driving requiring frequent moderate braking. Developers were aiming for a progressive feeling: smooth when the pedal is first depressed and increasingly firm when braking harder. But with no initial

delay, since the system is stiffer than before and requires less fluid.

Like its chassis, the all-new Mazda2 inherited the same outstanding SKYACTIV-Body architecture used on other new generation Mazda models, only with a simpler frame layout and optimised shapes to enhance its lightweight strength. Body stiffness has been boosted by 22 per cent over the current model, yet the bodysell is still seven per cent lighter despite being larger.

Mazda put its weight-saving 'gram strategy' into action once again, looking exhaustively for ways to reduce weight with advanced body structures and materials, without compromising strength, comfort or passive safety. In a new approach, the company's engineers enhanced the cross sectional shape of certain frame members for greater strength while removing others, instead adding sturdier panels to assume their structural function. The entire floor pan, for example, is now a structural member.

CLEVERLY STRUCTURED

As in other new-generation models, Mazda also significantly increased the proportion of high-strength steels on the all-new Mazda2 from 53 to 65 per cent. Lighter yet stronger than conventional steel, this allowed engineers to eliminate parts and cut even more weight. So whereas previous incarnations of the SKYACTIV-Body feature three load paths for dispersing frontal impact energy through the body and away from the cabin, this version requires only two to achieve a similar performance.

Ultra-high tensile steels (those rated at 780MPa or more), now make up 30 per cent of the body's total. Whilst 1,180MPa grade steel was used for the first time on a Mazda bodysell in the A-pillars, roof rails, and certain cross-members and the side sill reinforcements. The doors, too, are lighter, with fewer parts, but still offer improved side impact protection.

NVH – Refined around the edges

A lighter car is more efficient, with greater performance from the same engine output as well as better fuel economy and lower emissions. However, it's also more susceptible to vibration and noise. Especially in a supermini, which by nature has the occupants in closer proximity to the engine than in larger vehicles. Mazda countered such drawbacks on the all-new Mazda2 with a range of anti-NVH (noise, vibration and harshness) measures such as:

- Blocking noise paths into the cabin and directing noise into special sound-absorbing materials

- Improving floor panel beads for 5dB less radiant cabin noise

- Separating suspension resonance from body cavity resonance to maintain a quiet, smooth cabin at different speeds, road surfaces, trip durations, altitudes, etc.

 - 15 per cent less noise on rough roads

 - rear passengers can converse with the front occupants even at high speeds

- Enhancing the bodyshell's shock absorbing function in clever ways, like adjusting the stiffness of rear seat mount brackets so that seat movement counters car body deformation from road input
- Suppressing powertrain vibration and noise (especially low and high-frequency) while tuning acoustics for a pleasant acceleration sound in the cabin
- Optimising engine mount positioning to limit vibration, especially during engine starts and restarts
- Minimising the diesel knock from the new SKYACTIV-D 1.5-litre audible to occupants using enhanced combustion calibration and well-placed sound insulation
- Reducing cabin wind noise thanks to the vortex-suppressing shape of the A-pillars and side mirrors, the position of the wipers (with minimal protrusion above the bonnet), and the stiffness of the doors

Chapter 8

Safety – A people-centric approach

The all-new Mazda2 was created to be comfortable, fun to drive and confidence inspiring. Mazda's Proactive Safety Philosophy supports all three goals with a fully comprehensive blend of active and passive safety protection which is rare in this segment.

The idea behind Mazda Proactive Safety is to help drivers ascertain conditions, recognise dangers and react accordingly. All the virtues packed into the new supermini, such as its faithfully predictable responsiveness and heads-up cabin with superior visibility and ergonomics, make it a safer place to be. This inherent primary safety together with its class-beating i-ACTIVSENSE range of active safety technology and the innovative passive protection built into the SKYACTIV-Body (and SKYACTIV-Chassis), demonstrate that the latest edition of Mazda's smallest model is aiming for the highest score from Euro NCAP.

The all-new Mazda2 is the first Mazda in Europe with **Blind Spot Monitoring (BSM)**, the company's latest innovation in active safety technology. BSM expands the functionality of the Rear Vehicle Monitoring system (RVM) seen on other new-generation Mazdas. Working at speeds as low as 18.5mph*, it now not only detects vehicles approaching from behind in adjacent lanes from as far as 45m distance, but those up to 7m away on either side as well. Should the driver activate the turn signal on the side of an advancing car, BSM triggers a buzzer sound and flashing indicator in the corresponding side mirror. Utilising 24GHz microwave radar, the system also includes Rear Cross Traffic Alert (RCTA), a feature that takes advantage of BSM's sensors and warning signals to monitor the blind spots when the car is reversing.

** Minimum speed may vary depending on market*

Typical owners of the all-new Mazda2 will be driving for much of the time in urban traffic, which is one reason why Mazda has equipped it with **Smart City Brake Support (SCBS)**. This system uses a near-infrared sensor to keep an "eye" on preceding vehicles at a range of around 6m and speeds of 2.5-to-18.5mph. If it perceives an increased accident risk, SCBS pre-fills the brakes to prepare for an emergency stop, applying them automatically when necessary or cancelling the pre-fill should the danger subside. It should therefore prevent an impact at speeds of 12.5mph or less, depending on road conditions.

EYES WIDE OPEN

The **Lane Departure Warning System (LDWS)** is another new-generation technology making its B-segment debut on the Mazda2. Working at 40mph and above, LDWS monitors the lane markings using a camera, activating a rumble strip sound from the corresponding side speaker along with a visual warning in the instrument panel should it detect an unintended lane change. To prevent false alarms, the system is designed to recognise when lane changes are deliberate, if for example the driver activates the turn signal or accelerates. LDWS even adapts to a driver's individual habits.

High Beam Control (HBC) automatically switches between high and low beams at night to avoid impairing the vision of other motorists. HBC monitors the headlights and tail lights of oncoming and preceding vehicles with a camera. The system, which was first introduced on the Mazda CX-5, has been updated for the all-new Mazda2 to include a new light sensor. This ensures more frequent high-beam usage and also makes HBC less likely to unnecessarily switch to the low beams.

Standard equipment on the all-new Mazda2 includes the latest generation of automated vehicle safety systems, including ABS with Electronic Brakeforce Distribution (EBD) and brake assist (EBA) as well as stability control (DSC) and traction control (TCS).

Nevertheless, should an accident occur, the lightweight yet remarkably strong SKYACTIV-Body effectively absorbs and disperses impact forces from any direction to suppress cabin deformation. Optimised to deliver the same outstanding protection as the all-new Mazda3, Mazda6 and Mazda CX-5, the all-new Mazda2's SKYACTIV-Body compensates for its smaller size with stronger structures and materials. So in spite of being seven per cent lighter than the current model, it delivers 22 per cent better torsional (or twisting) stiffness thanks to a significantly higher proportion of ultra-high strength steel in strategic locations like the cabin side frame, A-pillars, roof rails and side sills.

During a frontal impact, a multi-load path structure absorbs the forces and distributes them over different paths around and away from the cabin. Front frame members are supported by the side sills and B-frames to form a continuous architecture, which prevents cabin deformation. An impact-absorbing extension on the front suspension cross-member initially absorbs energy before separating to form an effective crumple zone in the engine compartment. And to simplify repairs and minimise costs, easily replaceable bolt-on parts like the bumper and suspension cross-member crush cans deform during a low-speed impact to protect other parts around the engine compartment.

COMPREHENSIVE PROTECTION

The cabin has been strengthened by linking the roof members, B-pillars and underbody into an uninterrupted ring structure, with ultra-high tensile steel for key frame members and parts of the floor. Consequently, the underbody and sides of the cabin are 15 per cent stronger than in the current Mazda2, yet still lighter. Meanwhile at the back, the all-new model gets the x-shaped bumper reinforcing members used on other new-generation Mazda models.

Inside, front, side and curtain airbags have been adapted for the smaller cabin to restrain occupants earlier. Pressure sensors were also added to front doors for quicker and more precise side impact detection. Both the front and back seatbelts have pretensioners and load limiters, and the seats themselves have been enhanced to protect occupants' chests while preventing whiplash and hip movement. Like other Mazdas, interior trim is designed to better absorb shocks and protect the head, chest and ribs.

As far as pedestrians are concerned, the angle of the front of the bonnet was adjusted and the internal bonnet shape was revised with holes and cut-outs to allow more give upon contact with a

pedestrian's head. The cowl panel, meanwhile, was given an s-shape cross section to absorb energy should there be contact with the windscreen. Finally, energy absorbing foam was added to the front bumper to protect the legs, while a lower bumper "stiffener" helps prevent legs from sliding under the front of the car.

9. TECHNICAL SPECIFICATIONS

The all-new Mazda2 (Preliminary data)

DIMENSIONS

Body type		Monocoque
Doors		4 + liftgate
Seating capacity		5
Exterior		
Overall length	mm	4,060
Overall width	mm	1,695
Overall width (mirror to mirror)	mm	1,983
Overall height (without shark fin antenna)	mm	1,495
Wheelbase	mm	2,570
Overhang front	mm	815
Overhang rear	mm	675
Track front	mm	1,495
Track rear	mm	1,485
Ground clearance between axles	mm	143

Interior		
Front headroom	mm	984
Rear headroom	mm	945
Front shoulder room	mm	1,352
Rear shoulder room	mm	1,272
Front hip room	mm	1,322
Rear hip room	mm	1,212
Front legroom	mm	1,063
Rear legroom	mm	881

Boot		
Volume to tonneau cover, rear seats up*	l	280
Volume to roof, rear seats folded down*	l	950
Load floor length to 2 nd row	mm	713
Load floor length to 1 st row	mm	1,367
Width between rear wheel wells	mm	1,000
Liftgate opening threshold, distance from ground	mm	738
Liftgate opening width / height	mm	925 / 848**

* Including sub-trunk

** With tyre repair kit

ENGINES: PETROL & DIESEL

		SKYACTIV-G 1.5-litre (75ps)	SKYACTIV-G 1.5-litre (90ps)	SKYACTIV-G 1.5-litre (115ps with i-ELOOP)	SKYACTIV-D 1.5-litre
Engine type		I4 DOHC 16 valves	I4 DOHC 16 valves	I4 DOHC 16 valves	I4 DOHC 16 valves
Displacement	cm ³	1,496	1,496	1,496	1,499
Bore x stroke	mm	74.5 x 85.8	74.5 x 85.8	74.5 x 85.8	76.0 x 82.6
Camshaft drive		Timing chain	Timing chain	Timing chain	Timing chain
Fuel injection system		Direct injection	Direct injection	Direct injection	Direct injection
Compression ratio		12.0:1	14.0:1	14.0:1	14.8:1
Exhaust type		4-1	4-2-1	4-2-1	4-1
Emission control system		Three-way catalyst	Three-way catalyst	Three-way catalyst	Oxidation catalyst & DPF
Max. power	kW (PS) / rpm	55(75)/6,000	66(90)/6,000	85(115)/6,000	77(105)/4,000
Max. torque	Nm / rpm	135/3,800	148/4,000	148/4,000	220/1,400-3,200
Fuel type		95 RON	95 RON	95 RON	Diesel
Fuel tank capacity	l	44	44	44	44
Engine oil capacity	l	3.9	3.9	3.9	4.7
Battery		Q-85	Q-85	N-55 (S)	S-95
Transmission		5MT	5MT / 6AT	6MT	6MT

TRANSMISSIONS:

SKYACTIV-MT & SKYACTIV-DRIVE

	SKYACTIV-G 1.5-litre (75ps)	SKYACTIV-G 1.5-litre (90ps)		SKYACTIV-G 1.5-litre (115ps)	SKYACTIV-D 1.5-litre
Transmission	5-speed manual	5-speed manual	6-speed automatic	6-speed manual	6-speed manual
Powertrain	FWD	FWD	FWD	FWD	FWD
Gear ratios					
1 st	3.583	3.583	3.529	3.583	3.230
2 nd	1.904	1.904	2.025	1.904	1.652
3 rd	1.218	1.218	1.348	1.290	1.088
4 th	0.918	0.918	1.000	0.972	0.775
5 th	0.717	0.717	0.742	0.795	0.580
6 th	-	-	0.594	0.645	0.490
Reverse	3.454	3.454	2.994	3.454	3.454
Final drive ratio	3.619	3.619	4.319	4.388	3.850

SUSPENSION & WHEELS

	SKYACTIV-G 1.5-litre (75ps)	SKYACTIV-G 1.5-litre (90ps)	SKYACTIV-G 1.5-litre (115ps)	SKYACTIV-D 1.5-litre
Suspension				
Front suspension	Macpherson strut			
Rear suspension	Torsion beam axle			
Shock absorbers (front & rear)	Twin tube			
Stabilisers (front)	21.0	21.0	21.0	21.5
Wheels & tyres				
Wheel size	15X5.5J 16X5.5J	15X5.5J 16X5.5J	16X5.5J	15X5.5J 16X5.5J
Tyre size	185/65 R15 185/60 R16	185/65 R15 185/60 R16	185/60 R16	185/65 R15 185/60 R16

STEERING & BRAKES

		SKYACTIV-G 1.5-litre (75ps)	SKYACTIV-G 1.5-litre (90ps)	SKYACTIV-G 1.5-litre (115ps)	SKYACTIV-D 1.5-litre
Steering					
Steering type		Rack and pinion			
Power assist type		Electric power assist			
Steering gear ratio		14.7			
Steering wheel turns* (lock to lock)		2.84 / 2.92	2.84 / 2.92	2.84	2.84 / 2.92
Turning circle* (kerb to kerb)	m	4.7 / 4.9	4.7 / 4.9	4.9	4.7 / 4.9
Brakes					
Type (front)		Ventilated discs			
Type (rear)		Drums			
Diameter (front)	mm	258			
Diameter (rear)	mm	200			
Vacuum booster diameter	inches	9			
Scheduled maintenance		Every 20,000 km / 12 months**			

* With 15-inch / 16-inch wheels

** May vary according to country or region

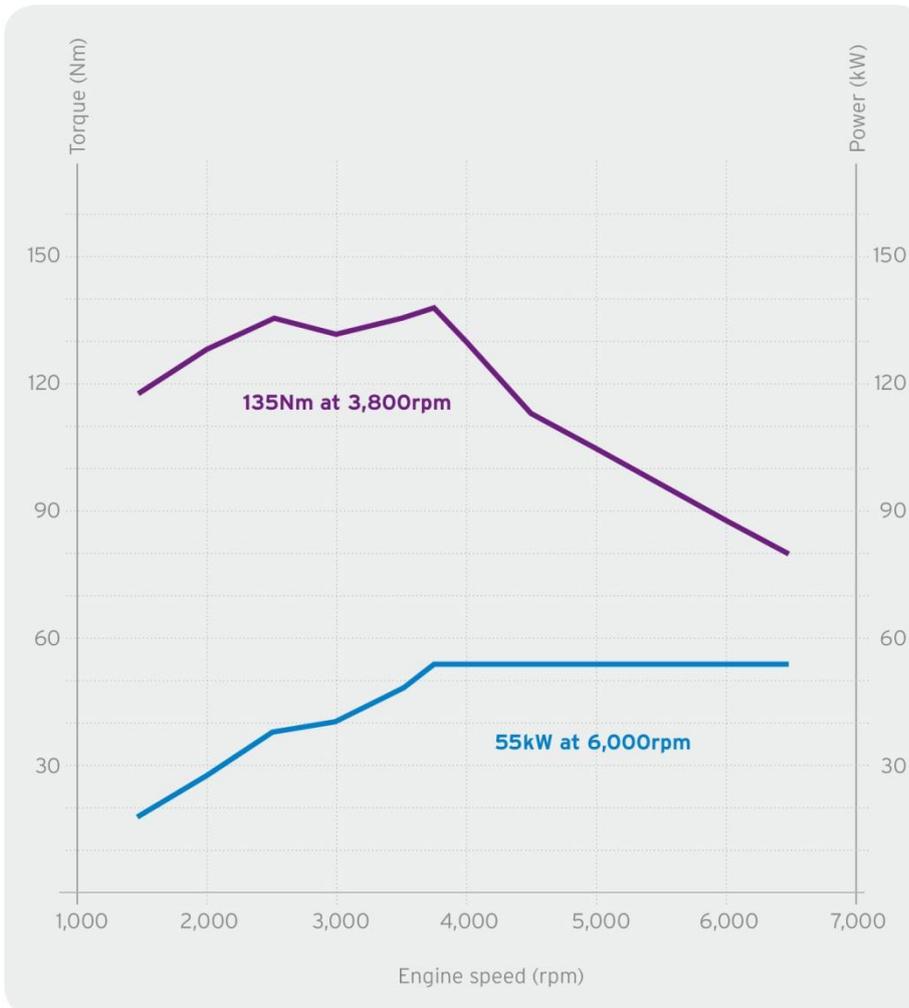
PERFORMANCE & WEIGHTS

		SKYACTIV-G 1.5-litre (75ps)	SKYACTIV-G 1.5-litre (90ps)		SKYACTIV-G 1.5-litre (115ps with i-ELOOP)	SKYACTIV-D 1.5-litre
Transmission		5MT	5MT	6AT	6MT	6MT
Performance						
Top speed	km/h	171	183	177	200	178
Acceleration 0-100 km/h*	s	12.1	9.4	12.0	8.7	10.1
Fuel consumption						
Urban	l/100km	6.1	5.9	6.1	6.4	3.8
Extra urban	l/100km	3.9	3.7	4.1	4.1	3.2
Combined	l/100km	4.7	4.5	4.8	4.9	3.4
CO ₂ emissions (combined)	g/km	110	105	112	115	89
Emission rating		Euro 6	Euro 6	Euro 6	Euro 6	Euro 6
Weight and payload						
Min. kerb weight	kg	970	975	1,000	980	1,040
Min. kerb weight (with 75kg driver)	kg	1,045	1,050	1,075	1,055	1,115
Max. permissible weight	kg	1,500	1,505	1,535	1,510	1,575
Max. payload	kg	530	530	535	530	535
Permissible front axle weight	kg	795	800	830	810	875
Permissible rear axle weight	kg	785	785	785	785	780
Permissible tow weight (trailer without brakes)	kg	515	515	530	515	n/a
Permissible tow weight (trailer with brakes, 12% gradient)	kg	900	900	900	900	n/a
Permissible tow weight (trailer with brakes, 8% gradient)	kg	1,100	1,100	1,100	1,100	n/a
Max. roof load capacity	kg	50	50	50	50	50

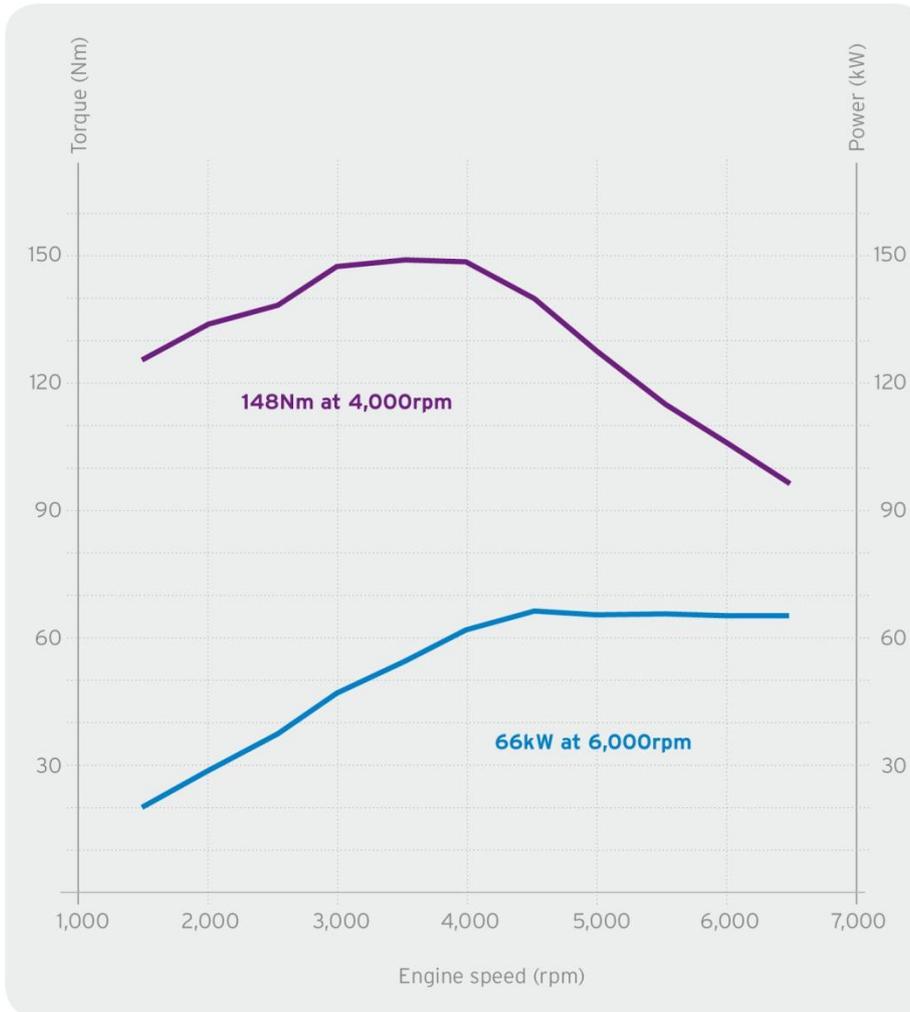
* Under Mazda test conditions

ENGINE PERFORMANCE CURVES:

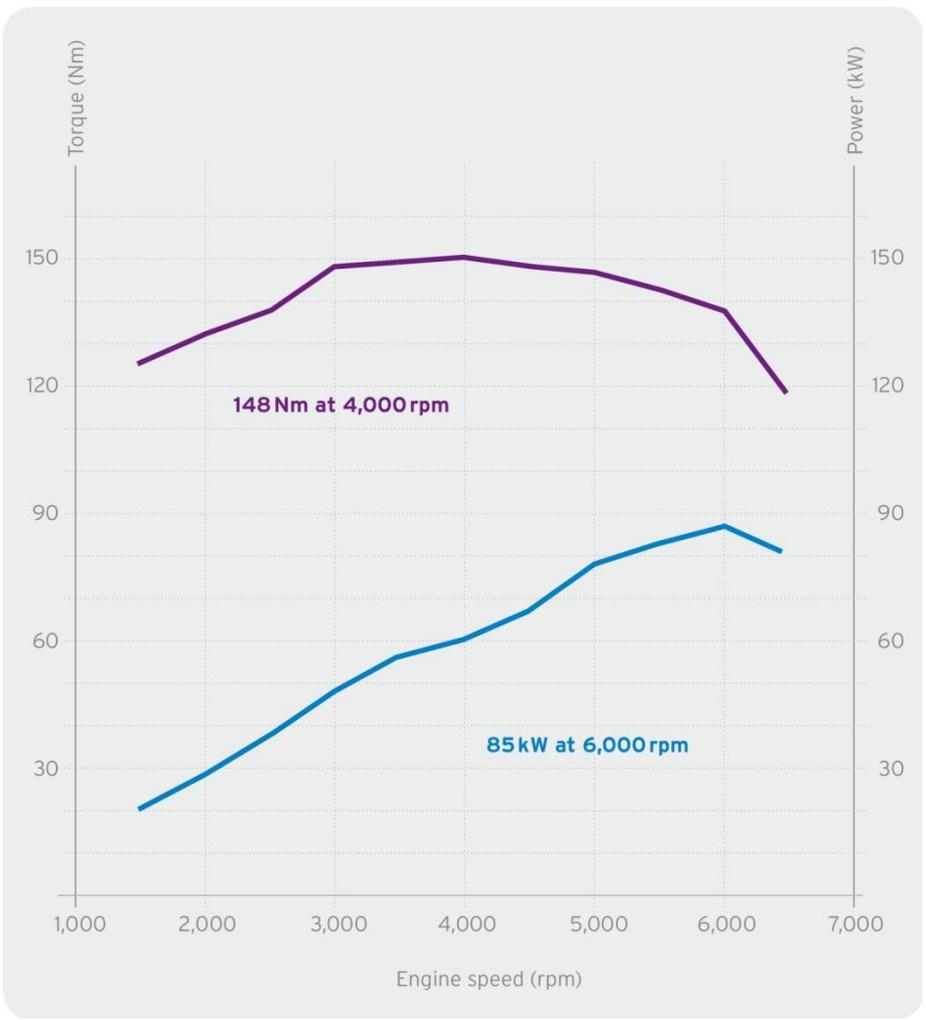
SKYACTIV-G 1.5 (75PS)



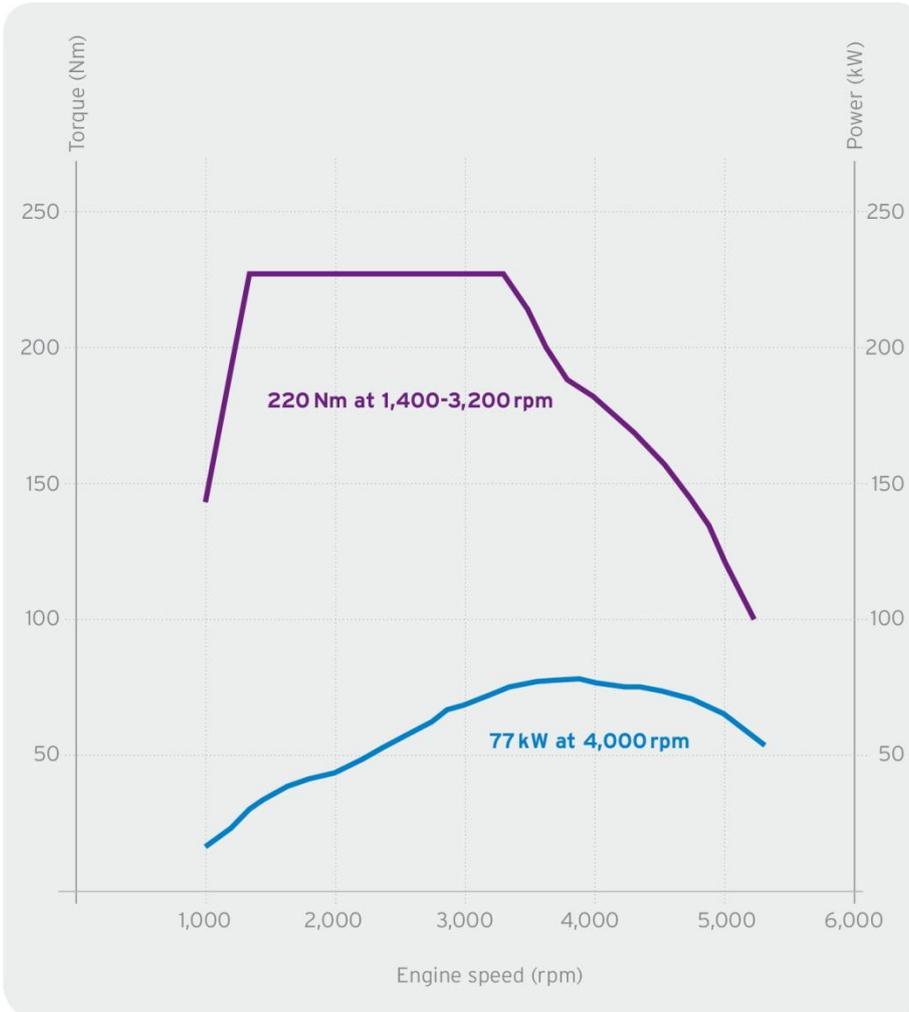
SKYACTIV-G 1.5 (90PS)



SKYACTIV-G 1.5 (115PS)



SKYACTIV-D 1.5



10. Contacts

Further press information is available from www.mazda-press.co.uk

Interactive Press Packs for all models are available from www.mazdamediapacks.co.uk

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