1. AT A GLANCE

The second generation Mazda3 made its global debut in 2008. Ever since, its agile and confident driving performance has been well-received by customers all over the world and the Mazda3 has grown to become a core model that comprises approximately one third of Mazda's global sales volume.

The new facelifted Mazda3 further refines Zoom-Zoom – the essence of the Mazda brand – by providing a high level of comfort and further enhancing the fun-to-drive essence and precise handling for which the Mazda3 has become known. Updated design features, improved dynamics and improved value across the Mazda3 range combine to make the new Mazda3 more appealing than ever.

The new Mazda3, specifically in the form of the new Mazda3 SP20 SKYACTIV, will become the first model sold in Australia to introduce some of Mazda's new-generation SKYACTIV Technologies. The combination of Mazda's new SKYACTIV-G 2.0 engine, coupled with the new SKYACTIV-Drive automatic transmission bring out the Mazda3's exhilarating and sporty characteristics by providing dramatically improved torque and power, along with exceptional fuel economy that will make the SP20 SKYACTIV the most fuel-efficient, petrol-powered small car in Australia.

Mazda3 Global

- Production started in June 2003
- Global sales of Mazda3 have exceeded 3.0 million units (as of July 2011)
    - 2004: 224,369
    - 2005: 373,652
    - 2006: 371,699
    - 2007: 448,738
    - 2008: 428,456
    - 2009: 397,059
    - 2010: 435,222
    - 2011: 225,590 (as of July 2011)
- Mazda3 has so far received 125 awards (as of July 2011) from key markets around the world including Australia, USA, Canada, New Zealand, Malaysia and Czech Republic

Mazda3 in Australia

- First-generation Mazda3 was launched in Australia in January 2004
- Second-generation Mazda3 launched in April 2009
- Australian sales of Mazda3 to date are in excess of 258,000 units (as at September 2011)
- The Australian Mazda3 awards cabinet includes:
    - *Wheels Active Safety Program* 2007, 2008
    - *Australia's Best Small Car* 2008
    - *Drive.com.au Small Car of the Year* 2006, 2007, 2008
    - *Carsales.com.au People's Choice Award* 2006, 2007, 2008, 2009, 2010
- Mazda3 has been in Australian top four new cars since 2006 and has risen to compete for the title of Australia's best-selling car
- Mazda3 became the first Mazda to reach #1 in Australia, in January 2009
- Mazda3 was the first car from a full-line importer to reach #1 in 15 years
- Mazda3 was Australia's best-selling in both June and August 2011
- The Mazda3 and 323 small cars have notched up 496,926 sales to end of August 2011

New Mazda3 Range

- New Mazda3 continues to blend sporty driving and expressive design with strong environmental and safety performance
- Designers of the new Mazda3 have focussed on an evolved design incorporating new front and rear bumpers, updated front fascia, improved aerodynamics, new alloy wheel designs and an enhanced cabin
- The new SKYACTIV-G 2.0 engine featured on the new SP20 SKYACTIV model offers enhanced driving pleasure through increased levels of power and torque while offering significant fuel efficiency improvements
- The inclusion of i-stop, Mazda's idling stop system, on the SP20 SKYACTIV model further improves fuel efficiency
- The new SKYACTIV-Drive automatic transmission on the SP20 SKYACTIV model features a greatly increased lock-up range for a more direct shift feel and fuel efficiency improvements
- Sporty and responsive driving dynamics have been improved on the SP20 SKYACTIV model with the introduction of a new drive control system which coordinates control of the engine and transmission
- Refined chassis settings on all models result in more responsive handling and a flatter, more comfortable ride.
- A thicker body frame and effective distribution of vibration damping materials yield an extremely quiet ride across the range

New Mazda3 Range Highlights

Page 46: Full specification and equipment list.

Mazda3 Neo 4-dr sedan and 5-dr hatchback

- From $20,330
- 2.0-litre, four-cylinder 16-valve DOHC with S-VT 108kW/182Nm, 7.9L/100km (manual)
- Six-speed manual transmission (5-speed Activematic, $2,000)
- Dynamic Stability Control (DSC), Traction Control System (TCS), Anti-lock Braking System (ABS), Electronic Brake-force Distribution (EBD), Emergency Brake Assist (EBA), dual front, side and curtain airbags, active front head restraints
- Air-conditioning, 3.5-inch multi information display that integrates ambient temperature gauge, service reminder and a trip computer comprising current and average fuel consumption, distance-to-empty, average speed and speed alert; MP3-compatible CD-player, AUX-in jack, power windows and mirrors, remote central locking, 15 inch alloy wheels, body coloured door handles, tilt and telescopic steering wheel, rear spoiler (hatch), variable intermittent wipers

Mazda3 Maxx Sport 4-dr sedan and 5-dr hatchback

- From $24,490
- 2.0-litre, four-cylinder 16-valve DOHC with S-VT 108kW/182Nm, 7.9L/100km (manual)
- Six-speed manual transmission (5-speed Activematic, $2,000)
- Dynamic Stability Control (DSC), Traction Control System (TCS), Anti-lock Braking System (ABS), Electronic Brake-force Distribution (EBD), Emergency Brake Assist (EBA), dual front, side and curtain airbags, active front head restraints
- Mazda3 Neo equipment plus integrated satellite navigation, Bluetooth® phone connectivity, dual-zone climate control air-conditioning, auto on/off headlamps, wipers with rain-sensing function, 16-inch alloy wheels, side skirts and rear spoiler (sedan), fog lamps, leather-wrapped gearshift knob and steering wheel

- 4.1-inch colour multi information display that integrates ambient temperature gauge, satellite navigation, service reminder and trip computer comprising current and average fuel consumption, distance-to- empty, average speed and speed alert
- Newly added: auto on/off headlamps, wipers with rain-sensing function

Mazda3 Diesel 4-dr sedan and 5-dr hatchback

- From $27,360
- 2.2-litre, four-cylinder 16 valve DOHC intercooled turbo diesel 110kW/360Nm, 5.7L/100km
- Six-speed manual transmission
- Dynamic Stability Control (DSC), Traction Control System (TCS), Anti-lock Braking System (ABS), Electronic Brake-force Distribution (EBD), Emergency Brake Assist (EBA), active front head restraints, dual front, side and curtain airbags
- Mazda3 Maxx Sport equipment plus LED tail lamps
- Newly added: auto on/off headlamps, wipers with rain-sensing function

Mazda3 SP20 SKYACTIV 4-dr sedan and 5-dr hatchback

- From $27,990
- SKYACTIV-G 2.0-litre, four-cylinder 16 valve DOHC with S-VT and i-stop 113kW/194Nm, 6.1L/100km
- SKYACTIV-Drive Six-speed automatic transmission
- Dynamic Stability Control (DSC), Traction Control System (TCS), Anti-lock Braking System (ABS), Electronic Brake-force Distribution (EBD), Emergency Brake Assist (EBA), active front head restraints, dual front, side and curtain airbags
- Mazda3 Maxx Sport equipment plus sports grille, LED tail lamps, overhead sunglass storage box, stainless steel scuff plates, driver seat with lumbar adjustment
- **Luxury option** $3,000 includes Bi-Xenon headlamps, sliding centre armrest console, leather seat trim, premium Bose 242 watt amplifier and 10 speakers including subwoofer

Mazda3 SP25 4-dr sedan and 5-dr hatchback

- From $31,490
- 2.5-litre, four-cylinder, 122kW/227Nm, 8.6L/100km
- Six-speed manual transmission (5-speed Activematic, $2,180)
- Dynamic Stability Control (DSC), Traction Control System (TCS), Anti-lock Braking System (ABS), Electronic Brake-force Distribution (EBD), Emergency Brake Assist (EBA), active head restraints, dual front, side and curtain airbags
- Mazda3 Maxx Sport equipment plus Bi-Xenon headlamps, 17-inch alloy wheels, sports grille, power sliding and tilt glass sunroof, auto on/off headlamps, side indicators in exterior mirrors, LED tail lamps, leather seat trim, smart keyless entry and push-button start, sliding centre armrest console, wipers with rain-sensing function, overhead sunglass storage box, stainless steel scuff plates
- Newly added: Bi-Xenon headlamps, smart keyless entry and push button start, auto on/off headlamps, wipers with rain-sensing function

Mazda3 MPS 5-dr hatchback

- From $39,490
- 2.3-litre, turbocharged four-cylinder, 190kW/380Nm, 9.9L/100km
- Six-speed manual transmission
- Dynamic Stability Control (DSC), Traction Control System (TCS), Anti-lock Braking System (ABS), Electronic Brake-force Distribution (EBD), Emergency Brake Assist (EBA), active head restraints, dual front, side and curtain airbags
- 18-inch alloy wheels, sports body kit, power windows and mirrors, Bluetooth, drilled aluminium pedals and foot rest, dual zone climate control, cruise control, leather-wrapped steering wheel and gear shift knob, half leather seats with 8-way power adjustment and 3-position memory function (driver's side), multi information display with trip computer and satellite navigation, smart keyless entry and push button start,
- Newly added:Bi-Xenon headlamps with AFS, auto on/off headlamps, rear view mirror with auto dimming function, wipers with rain-sensing function, premium Bose 242 watt amplifier and 10 speakers including subwoofer

Design Changes

Exterior Design Changes

- Evolution of exterior design to deliver a well-toned high, quality look
- The shape of the front bumper has been enhanced to provide a more sculpted look and provide improved aerodynamic performance
- Updated five-point grille creates a richer and more stylistic impression
- Front fog lamp bezels have changed in shape from horizontal to round
- Rear bumper of hatchback now protrudes 30mm less for a more dynamic design and easier loading
- Neo, Maxx Sport and Diesel sedan models adopt a sports bumper for a more dynamic look at the rear
- 16 and 17 inch wheels feature a new design
- The number of spokes on 16 inch wheel has increased from seven to ten and each of the spokes incorporate a twisted surface to emphasise sportiness
- The 17 inch wheel is characterised by enlarged openings between each spoke which adds to a lighter yet more dynamic look
- The SP20 SKYACTIV model features several blue highlights to demonstrate that this particular model is equipped with new SKYACTIV Technology:
    - The engine cover is finished in a deep blue metallic paint colour
    - The headlamp units incorporate a transparent blue ring around the centre lens to emphasise the car's distinctive character
    - The rear of the car features an exclusive SKYACTIV badge

Interior Design Changes

- The use of silver paint and decorative materials has been revised to create a feeling of even higher interior quality
- A change to white text and graphics for the Multi Information Display (MID) and Liquid Crystal Display (LCD) results in improved legibility
- The new Mazda3 inherits the sporty meter design of the current model but has changed to new, continuous-lit white graphic meters that provide excellent legibility even during the day
- Meter backlight colours have been chosen to best suit each models characteristics. Neo, Maxx Sport, Diesel and SP25 all adopt a dynamic-looking grey while the SP20 SKYACTIV features an exclusive blue illumination and the MPS a sporty red illumination
- The basic seat design has been carried over from the current model but two new cloth trims are featured

Mechanical Changes

Powertrains

New SKYACTIV-G 2.0 litre petrol engine:

- 2.0-litre in-line 4-cylinder 16-valve DOHC S-VT with i-stop
    - Standard on SP20 SKYACTIV sedan and hatch
    - High compression ratio of 12.0:1
    - 113kW @ 6,000rpm (4.6 per cent increase over MZR 2.0 litre engine)
    - 194Nm @ 4,100rpm (6.6 per cent increase over MZR 2.0 litre engine)
    - 6.1L (sedan) - 6.2L (hatch) /100km with SKYACTIV-Drive six-speed auto (25.6 per cent improvement over MZR 2.0 litre engine with five speed auto)
    - CO_2 emissions 143g (sedan)-145g (hatch) /km

Both the MZR 2.0 litre and MZR 2.5 litre petrol engines and the MZR-CD 2.2 litre diesel engine are carried over to the new Mazda3:

- 2.0-litre in-line 4-cylinder 16-valve DOHC S-VT engine
    - Standard on Neo and Maxx Sport sedan and hatch
    - 108kW @ 6,500rpm
    - 182Nm @ 4,500rpm
    - 7.9L/100km with six-speed manual
    - CO_2 emissions 187g/km
    - 8.2L (sedan) – 8.4L (hatch) /100km with five-speed automatic
    - CO_2 emissions 193g (sedan)-198g (hatch) /km

- 2.5-litre in-line four-cylinder, 16-valve DOHC S-VT engine
    - Standard on SP25 sedan and hatch
    - Matched to six-speed manual transmission
    - Five-speed Activematic with paddle shift available
    - 122kW @ 6,000rpm
    - 227Nm @ 4,000rpm
    - 8.6L/100km (manual and Activematic)
    - CO_2 emissions 204 g/km
- 2.2-litre in-line four-cylinder, 16-valve DOHC intercooled turbo diesel engine
    - Standard on Mazda3 Diesel sedan and hatch
    - Matched to six-speed manual transmission
    - 110kW @ 3,500rpm
    - 360Nm @ 1,800-2,600rpm
    - 5.7L/100km manual
    - CO_2 emissions 150 g/km
- 2.3-litre Direct Injection Spark Ignition (DISI) turbocharged in-line four-cylinder, 16-valve DOHC engine
    - Standard on Mazda3 MPS hatch
    - Matched to six-speed manual transmission
    - 190kW @ 5,500rpm
    - 380Nm @ 3,000rpm
    - 9.9L/100km manual
    - CO_2 emissions 235 g/km

Chassis and Structure

- Second Generation Mazda3 underwent more development kilometres than any previous Mazda
    - 20 locations in 11 countries
    - 1.28million km including:
        - 880,000km on real-world roads in target markets
        - 175,000km at Mazda's Miyoshi Proving Ground
        - Temperatures ranging from -25deg to +50deg Celsius
- In developing the new facelifted Mazda3, a further 470,000km have been covered in testing
- The body of the new Mazda3 has been further reinforced to increase rigidity
- The front McPherson strut and rear multi-link suspension layout has been optimised to provide a greater balance between comfort and handling stability
- The Electro Hydraulic Power Assist Steering (EHPAS) system on the new Mazda3 has also been optimised making handling easier at low speeds, while also achieving more positive feedback and a better feeling for the road at mid-range to high speeds

Safety

- Dynamic Stability Control (DSC)
- Traction Control System (TCS)
- Anti-lock Braking System (ABS)
- Electronic Brake-force Distribution (EBD)
- Emergency Brake Assist (EBA)
- Driver's front airbag
- Passenger's front airbag
- Front-side and full length curtain airbags available on all models
- Active front head restraints on all models
- Intrusion-minimising brake and clutch pedal

Marketing

- Mazda3's dominant audience are 25-39 year olds (men and women)
- Their lives are constantly in motion and they don't want to stop
- They are young enthusiasts, ready to take on what life has to offer
- They aim to strive professionally and personally
- They like to be seen, but not in a boastful way
- Their cars are an expression of their individuality
- They are value conscious people who seek substance in life
- They have more cash to splash than key competitor drivers (Corolla and Civic)
- The Mazda3 fits in with their lifestyle

SP20 SKYACTIV

- No kids
- ABC qualities
- Value conscious about ownership / running costs
- Value environmental performance, but not at the expense of driving enjoyment

MPS

- Mazda3 MPS' dominate audience is outgoing males from 30-49
- They are image passionate, image conscious, confident, competitive and expressive
- They are interested in the gym, cycling, AFL and motor sport
- They are successful in life, well cultured and focused on living a well-balanced lifestyle
- They want the world to know they are driving a sporty, powerful vehicle
- They consider themselves as fashionable and up-to-the-minute style aware, whilst being hot for the latest electronics in talk and play

Sales

Mazda Australia expects to sell an average of around 2800 units per month with the following body style and model split:

- Sedan 50%
- Hatch 50%

- Neo 65%
- Maxx Sport 12%
- SP20 SKYACTIV 15%
- Diesel 1.5%
- SP25 5%
- MPS 1.5%

2. PRICING

Mazda3's position as being one of Australia's most popular cars is well known. This reputation has been forged off the back of attractive design, excellent ride and handling, high levels of occupant safety and solid value for money.

The new Mazda3 will build on all these strengths and deliver a car which offers enhanced design, new technology, more refined ride and handling, additional features and even better value for money.

These changes should ensure that Mazda3 remains firmly on the shopping lists of Australian new car buyers for the foreseeable future.

New Mazda3 Pricing – Manufacturer's List Price (MLP)*

		New price	Prev price	Additional value
Neo	6MT**	**$20,330**	**$21,330**	**$1,790**
Maxx Sport	6MT**	**$24,490**	**$26,360**	**$1,815**
Diesel	6MT	**$27,360**	**$29,230**	**$1,815**
SP20 SKYACTIV	6AT	**$27,990**	**N/A**	**N/A**
SP20 SKYACTIV Luxury	6AT	**$30,990**	**N/A**	**N/A**
SP25	6MT***	**$31,490**	**$33,120**	**$2,885**
MPS	6MT	**$39,490**	**$41,915**	**$2,175**

Automatic transmission option

** Neo, & Maxx Sport models only	**$2,000**
*** SP25 models only (inc paddle shift)	**$2,180**

* Manufacturer's List Price (MLP) includes GST but excludes dealer delivery, registration, third party insurance costs, stamp duty and other mandatory charges.

3. PRODUCT CONCEPT

A message from the Program Manager:

A Breakthrough Sports Compact: The Embodiment of Zoom-Zoom

Staying Faithful to the Basics of Car-making

In planning the mid-cycle facelift, we returned to the basic origins of the automobile, and considered what essential values the Mazda3 should offer. We believe that, beyond impressive fuel economy and other performance figures, a vehicle should also provide a sense of driving pleasure and make its owner proud. We rediscovered that the Mazda3, in its position as the standard bearer of the Mazda brand, needs to offer both exhilarating driving and appealing design on top of exceptional fuel economy. Armed with this knowledge, we commenced the development program with a clear target of how to further refine Zoom-Zoom — the essence of the Mazda brand.

Comfort and Driving Pleasure

First of all, we targeted a high level of comfort that would enable the driver and passengers to enjoy the ride in various driving conditions. We also wanted the car to be fun to drive with precision handling, as if it were an extension of the driver's own body, in a similar way to the MX-5. Specifically, we focused on refining the driving feel by making the different vehicle movements — driving, turning and stopping — flow together. We created continuous and smooth transitions between the g-forces felt under acceleration, cornering and braking. We call this *Toitsukan*, which translates as a consistent and linear driving feel. Part of this is ensuring that engine torque rises in precise proportion to the force applied to the accelerator pedal. Thanks to its more linear behaviour, as well as improvements to the already impressive high-speed stability, the facelifted Mazda3 is more pleasing than ever to use on a daily basis.

New SKYACTIV Technology

On top of this, the facelifted Mazda3 will be the first model sold in the US, Canada, Japan and Australia to be powered by Mazda's new SKYACTIV-G 2.0 engine, coupled with the SKYACTIV-Drive automatic transmission. These new-generation technologies bring out the Mazda3's exhilarating and sporty characteristics by providing dramatically improved torque and power, along with exceptional fuel economy that is among the best in the industry. The SKYACTIV technologies were developed to achieve conflicting targets at the same time, such as improved fuel economy as well as increased power. The Mazda3 will be our first car outside Japan to feature these truly breakthrough technologies.

The Perfect Balance

The desire to improve driving performance at the same time as fuel economy has troubled car makers for many years, but with the facelifted Mazda3, I can assure you that Mazda has finally achieved it — to an unprecedented degree. I sincerely hope that drivers around the globe will enjoy driving the new Mazda3, and that it will become a treasured companion for them as they travel the road of life.

Kenichiro Saruwatari

Mazda3 Program Manager

4. POWERTRAIN

The SKYACTIV Technology Concept

SKYACTIV Technology is a brand name covering Mazda's new-generation technologies. In line with the company's 'Sustainable Zoom-Zoom' long-term vision, these technologies take an innovative approach to improving both driving pleasure and environmental and safety performance. The introduction of SKYACTIV Technology in Mazda cars provides a sporty and exciting driving experience while firmly addressing the demands for environmental and safety performance that will continue to escalate in future.

The new Mazda3 leads other Mazda models in being the first to incorporate the new SKYACTIV-G petrol engine and new SKYACTIV-Drive automatic transmission. Mazda3 accounts for approximately one third of all Mazda vehicles sold. Consequently, we decided that Mazda3 was the most appropriate model to introduce SKYACTIV Technology in order to deliver further enhanced driving performance and greater fuel economy to more of our customers as quickly as possible.

SKYACTIV-G 2.0 petrol engine

By adopting multi-hole injectors and a piston cavity, the new Mazda3 achieves a top-of-class, high compression ratio of 12.0:1 to deliver a 6.6 per cent improvement in torque a 4.4 per cent improvement in power output and 25.6 per cent better fuel economy when compared to the current MZR 2.0 litre petrol engine.

In addition, the vastly improved torque, along with a drive control system that utilizes coordinated control of the engine and transmission, results in accelerator response that realises more linear acceleration and deceleration, in line with Mazda's ideal of a sporty drive.

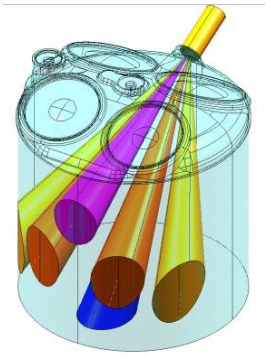
SKYACTIV-G 2.0			
	Fuel Economy	**Maximum Output**	**Maximum Torque**
Transmission: SKYACTIV-Drive (6AT)	6.1-6.2L / 100km	113kW @ 6,000rpm	194Nm @ 4,100rpm

One technology representative of the direct-injection engine is the injector system that delivers atomised petrol directly into the cylinders. SKYACTIV-G adopts multi-hole injectors, each with six injection holes. Increasing the number of injection holes over that of conventional injector systems enables finer atomisation of fuel. This helps to directly achieve assured vaporisation for a more homogenous air-fuel mixture with an intensified flow, while the latent heat of vaporisation improves the 'in-cylinder cooling effect'. These attributes combine to effectively suppress knocking.

Increasing the compression ratio also shortens the distance between the spark plug and piston crown, so the flame propagated during ignition strikes the piston and causes combustion to not spread out evenly. And, because the flame contacts the piston directly, it tends to cause pronounced cooling loss. SKYACTIV-G circumvents these inherent weaknesses by adopting a newly developed piston containing a cavity in the piston crown. The cavity promotes a uniform spread of the flame immediately after ignition while avoiding direct contact between piston and flame, thereby suppressing the occurrence of knocking.

The electrically operated Sequential Valve Timing (S-VT) on the intake side, optimally varies the open/close timing of intake valves in response to engine speed and air intake volume, and thereby reduces pumping loss by generating internal Exhaust Gas Recirculation (EGR). In addition, knocking is suppressed during high load, by improving the scavenging effect of high-temperature gas remaining within the piston. Also, the change to electrical control keeps the system operating even at low engine speed, so load control can be performed by the intake S-VT. These measures boost both power output and fuel economy.

Piston cavity



Multi-hole injector

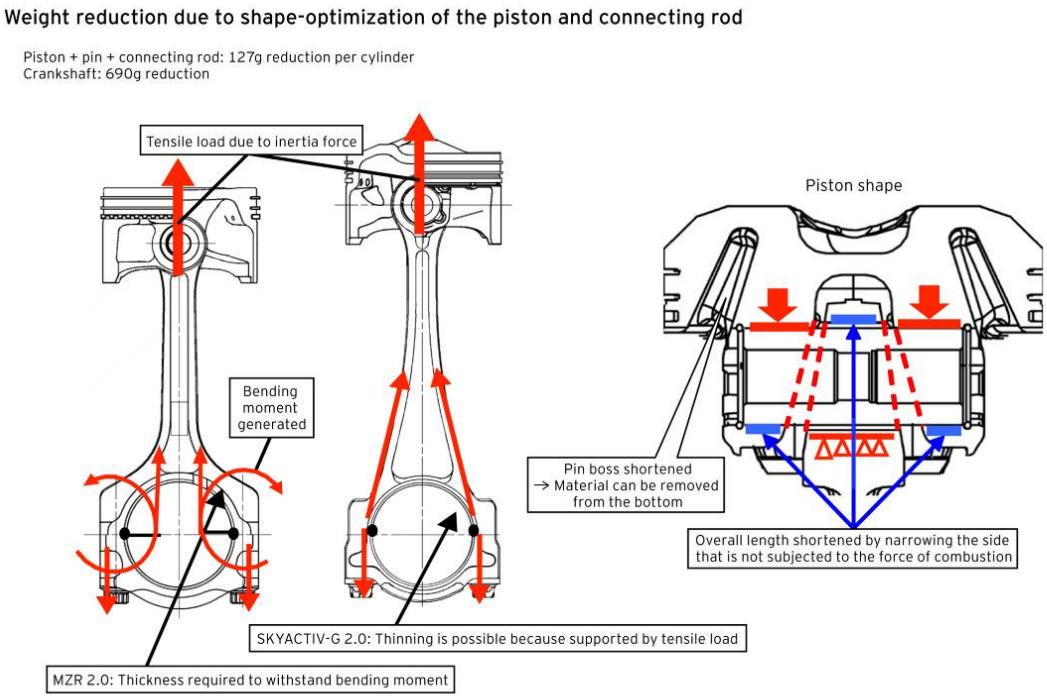
Reducing weight and mechanical friction

Mazda concentrated on reducing the weight and mechanical friction of each SKYACTIV-G 2.0 engine part. For instance, by optimising the shape of the pistons and connecting rods, the weight of these components was reduced by 127g per cylinder, while thinning the crankshaft achieved a weight reduction of 690g. In conjunction with our thorough weight reduction initiative, this process of shape revision was repeated for each and every part. In addition, we adopted a roller follower in the valve mechanism, which reduces mechanical friction by continually rolling against the contact area of the camshaft.

A number of other detailed measures were implemented, including the reflective finish of camshaft journals, reduction in the load on valve springs, optimisation of the chainline and the chain itself in the

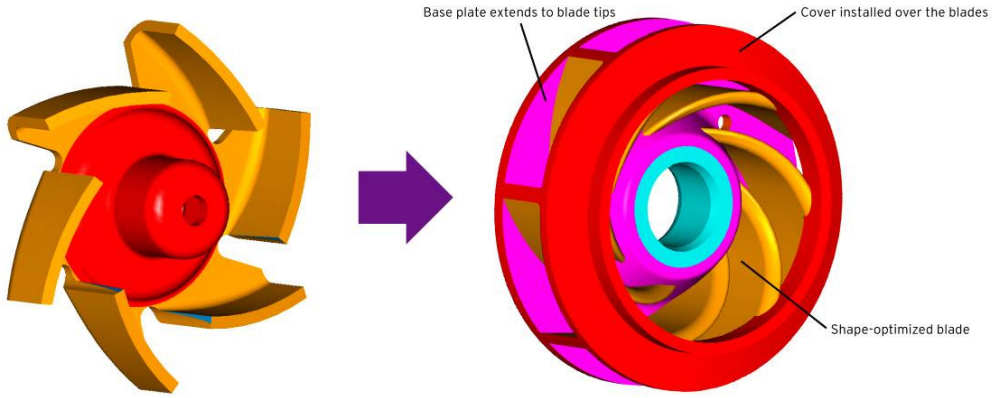
drive-chain system, the use of a plastic impeller to improve the efficiency of the water pump along with the revision of the shape of the water jacket to reduce resistance to water flow in the cooling system, and optimisation of the Front End Accessory Drive (FEAD) system by means of a low-tension drive.

Furthermore, we revised the current oil lubrication system structure, curtailing pressure loss by reducing resistance of the oil passages and decreasing the hydraulic pressure demanded by hydraulic devices, and thereby enabling a reduction in the size of the oil pump. Mazda is also the first Japanese automaker to employ optimal control of the oil pump discharge pressure, adopting a dual-stage switching system that electronically controls discharge pressure in response to engine speed, load and other conditions. The significant reduction in mechanical friction outlined here has made a substantial contribution to improving fuel economy.



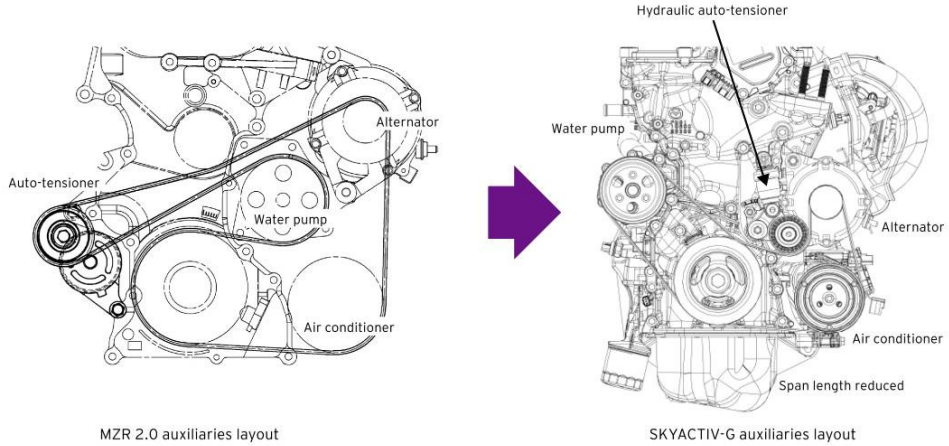
Weight reduction due to shape-optimization of the piston and connecting rod

Water pump impeller structure



Water pump impeller structure

FEAD system optimization



FEAD system optimization

Sporty engine note and quietness of the SKYACTIV-G engine

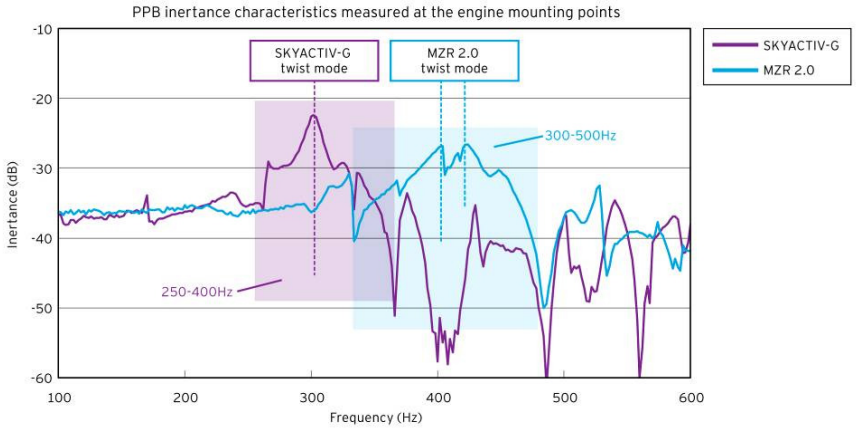
The lower the frequency of the engine sound, the stronger the tendency to transmit displeasing booming noise while driving. And, higher frequencies tend to transmit mechanical sounds that grate on the ears. As such, the way to produce a sporty and pleasing engine note is to strike the right balance between the low and high frequencies.

Generally speaking, increasing the rigidity of the engine and transmission reduces booming noise, but it comes with the downside that it tends to increase the generation of high frequency sounds. Mazda's SKYACTIV-G engine resolves these seemingly contradictory issues and realizes a powerful and clear engine note during acceleration through the optimal tuning of power plant bending (PPB) and crank twisting characteristics. This suppresses the transmission of higher frequency sound (400Hz–500Hz) from the engine mounts to the body, and achieves an optimal balance between low and high frequencies, with an engine note in the range of about 300Hz.

Detailed measures executed within the very engine block of the SKYACTIV-G include the adoption of an independent plughole shape that increases rigidity over the conventional bathtub shape. So, even while the engine increases torque and output over the MZR 2.0 engine, it achieves a 1KHz–5KHz frequency that passengers perceive as relatively quiet.

These measures for SKYACTIV-G engine configurations strike just the right balance between a sporty engine note that contributes to a more pleasurable driving experience and a quiet ride at cruising speeds.

PPB characteristics measured at the engine mounting points



SKYACTIV-Drive

The conventional automatic transmissions (AT) that are commonly used at present can be categorised into three main types. The first is the step automatic transmission, which is popular for providing ease in starting off and driving uphill. The second type is the Continuously Variable Transmission (CVT), which features smooth shifting. And the third is the Dual Clutch Transmission (DCT), which delivers good fuel economy and a direct feel. In pursuing the ideal transmission, Mazda combined the best features of all three types when developing the SKYACTIV-Drive. The goal for the full-range lock-up 6-speed AT called SKYACTIV-Drive was to attain a direct feel similar to a manual transmission, powerful starts from a standstill, smooth shifting, and excellent fuel economy.

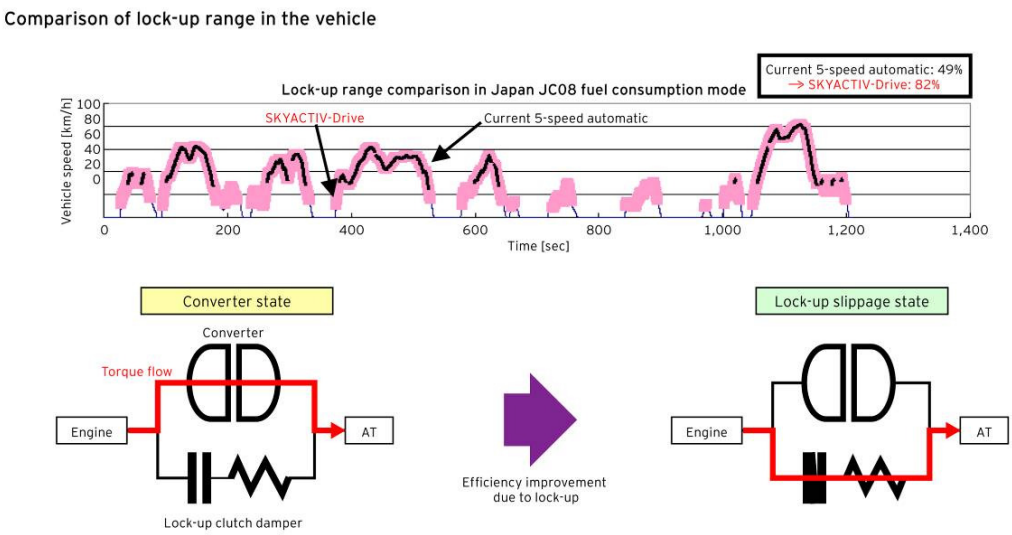
SKYACTIV-Drive

Attaining Full-range direct drive

Attaining Full-range direct drive requires improvements to both vibration suppression and clutch durability. So, for SKYACTIV-Drive we reduced the damper spring stiffness while increasing torsional torque to suppress vibration. In addition, Mazda changed from the single-plate, ring-form clutch structure to a small multi-plate wet clutch with a total of four plates that delivers better cooling performance and yields better durability.

The piston has also been downsized to enhance the hydraulic pressure response of the lock-up clutch system. That yields precise hydraulic control with no time lag, and contributes to extending the control range of the lock-up clutch.

Furthermore, with SKYACTIV-Drive, Mazda downsized the torus by specialising the torque converter function as a starting-off device. Coupled with the newly developed clutch and piston, this reduces the size of the lock-up clutch system itself. These measures simultaneously achieve both powerful start-off and lock-up immediately after starting off.



Comparison of lock-up range in the vehicle

Adoption of a mechatronics module

With the newly developed lock-up clutch system as a base, Mazda introduced a high-response direct linear solenoid into the hydraulic control system to attain a more accurate response and direct shift feel. In addition, this direct linear solenoid is combined with the Engine Control Unit (ECU) to form a 'mechatronics module', which constantly maintains optimal control of hydraulic pressure, thereby suppressing shocks that would otherwise occur due to variations in hydraulic pressure. Owing to the accurate control yielded as well as linking the engine and transmission computer to coordinate control of engine torque and hydraulic pressure, SKYACTIV-Drive achieves both faster gear change speeds and reduces shocks during gear shifting.

By building in this kind of meticulous control, SKYACTIV-Drive delivers the smooth gear shifts expected of an automatic transmission along with the direct shift feel of a manual transmission.

The first “i-stop” equipped model in Australia

The new Mazda3 is the first model in Australia to employ Mazda’s idling stop system, i-stop. The i-stop system conserves fuel by shutting down the engine when the brake pedal is pressed and the car is brought to a halt at a traffic light or in a traffic jam, and then automatically restarting it when the brake pedal is released again to resume driving. Conventional idling stop systems have relied solely on an electric motor to restart the engine. In contrast, Mazda’s i-stop uses engine combustion to restart the engine as part of its “combustion + motor-assist” system. The engine quickly restarts in approximately 0.35 seconds, or roughly half the time required by conventional idling stop systems. (These figures are the results of in-house testing of models with an automatic transmission.)

Reduction of vibration upon restart

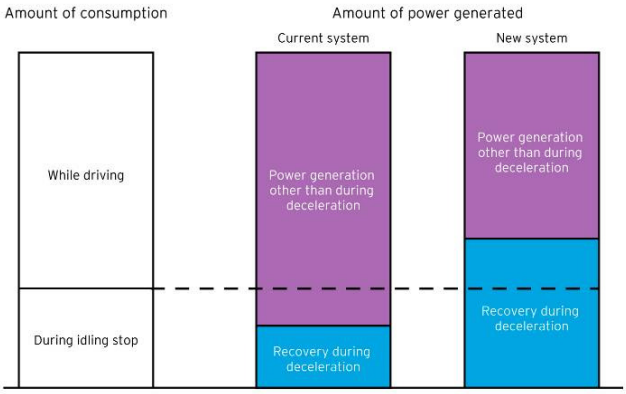
The restart mechanism used by i-stop involves the purging of remaining exhaust gases when the engine is stopped. Fresh air is then drawn in and compressed to facilitate combustion when the engine is restarted. This fresh air is combusted when the brake pedal is released to get under way again, which moves the pistons and restarts the engine. If there is a large volume of air remaining in the cylinder, the combustion force at re-start is greater than necessary, causing increased vibration. Therefore, to reduce air remaining in the cylinder at engine restart on the new Mazda3, Mazda has slowed the speed with which the intake valve closes when the engine is shut down. Leaving the intake valve open during the compression process allows any unneeded air to escape. This further reduces vibration at engine restart for a yet smoother driving experience.

Optimized power generation control system featuring high-power alternator

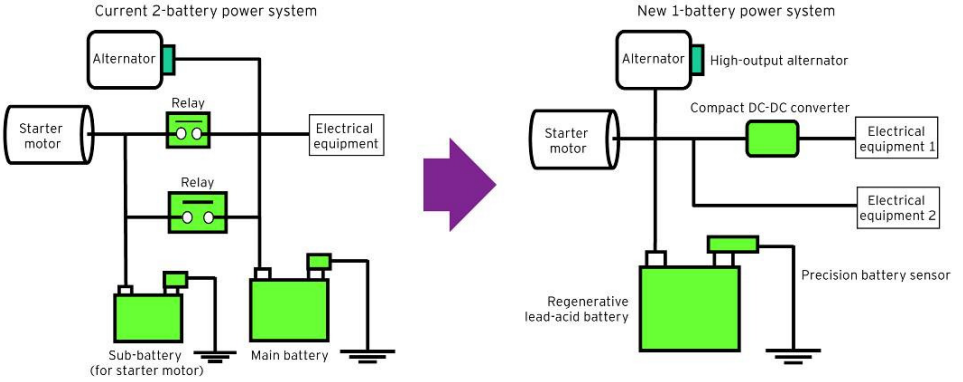
The new Mazda3 is equipped with a new optimized power control system that combines the use of a high-output alternator and a single large lead-acid battery. This system recovers a large amount of energy when the car decelerating.

Under normal operating conditions, the energy recovered through braking is sufficient to power the electrical systems when the engine is shut off, and provides some electricity when the vehicle is moving. As a result, it reduces the amount of fuel needed for generating electricity, thereby, further improving fuel economy.

Electric energy gain and loss diagram



Battery system



Adds a second dedicated battery and relay switching for powering the starter motor for restarts.

Uses a single battery along with a compact DC-DC converter that supplies stable voltage to electrical equipment during restarts.

MZR engine line-up

MZR 2.0 litre petrol engine

Standard on Mazda3 Neo, and Maxx Sport models and mated with either a 6-speed manual transmission or an optional 5-speed automatic transmission, the MZR 2.0 litre petrol engine achieves a balance between powerful performance and good fuel economy.

MZR 2.0 litre petrol			
	Fuel Economy	**Maximum Output**	**Maximum Torque**
Transmission: 6MT	7.9L / 100km	108kW @ 6,500rpm	182Nm @ 4,500rpm
6AT	8.2-8.4L / 100km	108kW @ 6,500rpm	182Nm @ 4,500rpm

MZR 2.5 litre petrol engine

Equipped on the SP25 model, the MZR 2.5 is a light, compact design that features the high performance of a 2.5L engine in a package that is about the same size and weight as the MZR 2.3 engine. It delivers a linear feel to acceleration, accurate response and the driving pleasure and performance of a light feel and plenty of power. For the Mazda3, the engine is mated with either a 6-speed manual or a 5-speed automatic transmission.

MZR 2.5 litre petrol			
	Fuel Economy	**Maximum Output**	**Maximum Torque**
Transmission: 6MT	8.6L / 100km	122kW @ 6,000rpm	227Nm @ 4,000rpm
6AT	8.6L / 100km	122kW @ 6,000rpm	227Nm @ 4,000rpm

MZR-CD 2.2 litre diesel engine

Standard on the Mazda3 Diesel, the MZR-CD 2.2 delivers high levels of power output, fuel economy and operating quietness.

MZR-CD 2.2 litre diesel			
	Fuel Economy	**Maximum Output**	**Maximum Torque**
Transmission: 6MT	5.7L / 100km	110kW @35,000rpm	360Nm @ 1,800 -2,600rpm

MZR 2.3 litre DISI turbo engine

The MZR 2.3 DISI turbo gasoline engine is the turbocharged direct-injection engine that powers the Mazda3 MPS. It is known for its power, flat torque that ensures ease of control, highly responsive and powerful acceleration.

MZR 2.3 litre DISI turbo			
	Fuel Economy	**Maximum Output**	**Maximum Torque**
Transmission: 6MT	9.9L / 100km	190kW @ 5,500rpm	380Nm @ 3,000rpm

5. DYNAMICS AND REFINEMENT

Realizing *Toitsukan*, a linear and consistent feel, to driving operations

The current Mazda3 has earned a solid reputation for delivering a pleasurable feel to driving operations that ensures consistency between the driver's expectations and the car's response. The new Mazda3 not only improves on the sense of oneness between driver and vehicle, it also offers a comfortable driving experience that offers all passengers a reassuring and pleasant ride under all driving conditions. It is this consistent driving experience that we call *Toitsukan*, or a linear and consistent feel.

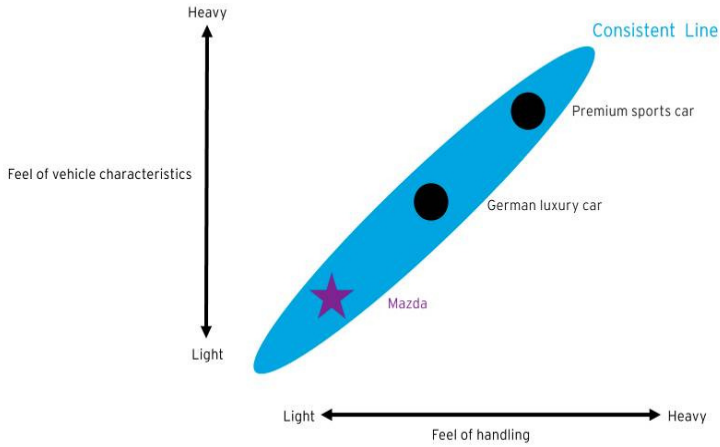
Specifically, this involves establishing smooth transitions between acceleration, lateral and deceleration G forces in response to the basic aspects of driving, turning and stopping, as well as a consistent linear feeling to the car's every response to control operations by the driver. This is not simply delivering sharp response to accelerator and steering operations for a sporty ride. Rather, it extends to making driving pleasurable and instilling drivers with the sensation that their driving skills have improved greatly, while at the same time offering passengers a comfortable ride created by smooth and stable car movement.

Concentrated efforts to ensure this *Toitsukan* is achieved for each of the car's operations include the adoption of a drive control system, optimization of the Electro-Hydraulic Power Assist Steering (EHPAS) system's characteristics, and thorough tuning of the front and rear dampers.

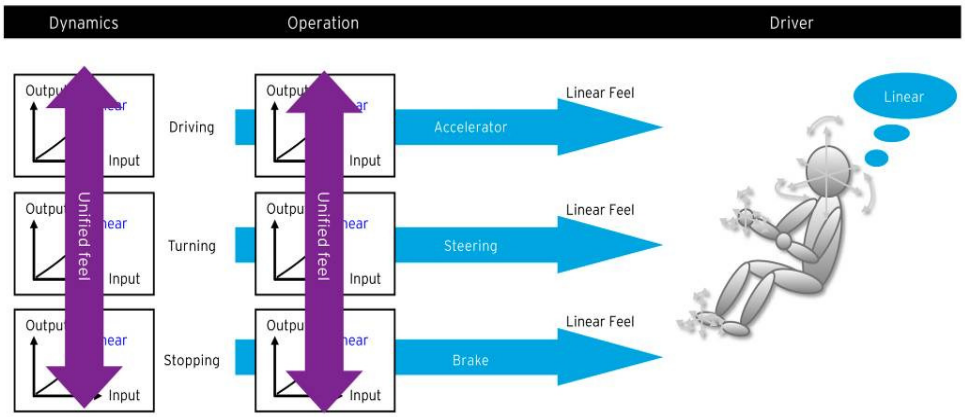
Efforts to achieve *Toitsukan* in all driving operations

In order to achieve the development team's vision of *Toitsukan*, or a consistent and linear feel, we conducted thorough studies regarding how the feeling of driving operations, including acceleration, braking, steering, etc., is related to the actual driving feeling attained when the car responds to each operation. This began with assigning specialists in the field to each related department as we established a development system ready to approach *Toitsukan* for engine and transmission, steering, suspension, and body characteristics. For actual road testing, we set up a new dedicated test area named the "*Toitsukan* Test Course". In contrast to other oval track or mountain road test courses that push the extreme limits of performance characteristics or durability, this course emulates the very real driving conditions of daily use in both city and suburban settings. Adopting the perspective of the typical driver and running the car through the tests under perfectly normal driving conditions contributed to achieving the consistent and linear driving feel we carefully built into the new Mazda3.

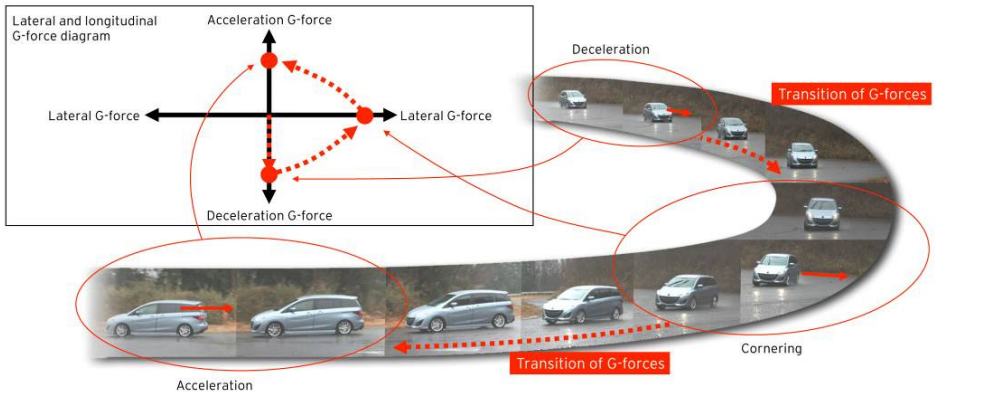
The feel of driving the new Mazda3 aims to provide



The concept behind Mazda's Toitsukan



The transition between longitudinal and lateral G-forces while cornering



Note: The vehicle shown in this illustration is the Mazda5.

Drive control that maintains a harmonious balance between engine and transmission

Models powered by SKYACTIV-G are equipped with a drive control system that controls torque generation to maintain a harmonious balance between engine output and the gears of the transmission. Programmed to determine how much acceleration is called for in relation to the degree of accelerator pedal action, the system ensures that just the right amount of torque is generated to match the acceleration demands of the moment such that the driver's desired speed is reached with one press of the pedal. As such, the driver gains a sense of confidence that the car will respond faithfully and predictably to accelerator operation.

This drive control system enables sure and smooth take-off and acceleration, even given gentle operation of the accelerator pedal.

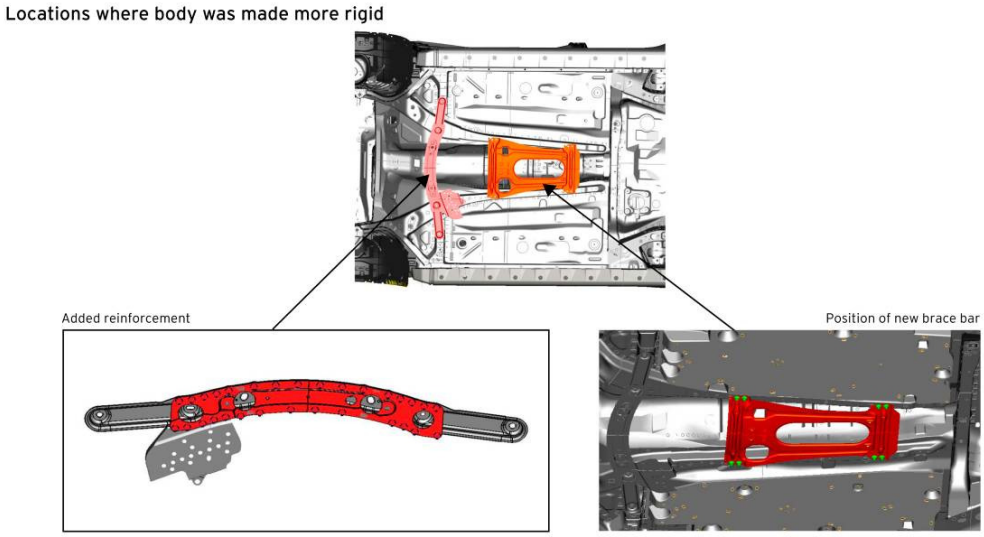
Improved handling stability to deliver a higher quality driving experience

[Improved body rigidity]

The body of the new Mazda3 is further reinforced to achieve greater rigidity and improve on the current model's already stellar reputation for agility and handling stability.

For starters, the number of spot welds used to join the forward crossmember beneath the floor to the reinforcement has also been increased. The evolution of stronger material for use in the reinforcements makes it possible to more effectively disperse input from the suspension crossmember mounts to the body, thereby greatly improving overall body rigidity.

A single new brace bar that is stronger and more rigid now replaces the two reinforcing bars located under the centre of the floor panel of the current model. The use of this sheet of reinforcing material suppresses fore-aft body deformation. The above measures increase body rigidity and create a well-balanced body design, and this is what ensures a more refined level of handling stability on the new Mazda3.



Suspension system

The new Mazda3 carries over the front MacPherson struts and rear multi-link suspension layout of its predecessor. The front and rear dampers have been optimized and, while based on the nimble responsiveness of steering operations and flat, comfortable ride for which the current model is known, the new Mazda3 offers an improved ride quality.

Steering system

The new Mazda3 inherits Mazda's EHPAS system which achieves a light yet solid feel to operation and contributes to fuel economy. Along with the suspension tuning and increased body rigidity, the characteristics of the power assist system were also optimized for the new Mazda3. Specifically, a new setting for the pump flow characteristics makes handling easier at slow speeds, while also achieving more positive feedback and a better feeling for the road at mid-range to high speeds. The overall result when compared to the current model is a more lighter, more nimble feel to steering wheel operation.

Improved aerodynamic performance

Improved aerodynamic performance yields greater fuel economy and further reduces CO_2 emissions, while it also contributes to further evolved handling stability. Measures implemented to achieve this include the optimization of the front bumper design, as well as optimization of underbody parts to more effectively streamline the flow of air traveling beneath the floor and improve handling stability. These combine to give the new Mazda3 outstanding aerodynamic performance, with an improved drag coefficient (Cd) of 0.27 for sedan and 0.29 for hatch.

Optimized front bumper design

Optimizing the shape of the lower sections on the front bumper's sides made it possible to achieve a more dynamic appeal to the design, while at the same time improving aerodynamic efficiency. The latest in CAE technologies was applied to creating a design that effectively streamlines airflow, and that also suppresses turbulence when air flows into the engine compartment to cool the engine. To effectively distribute the flow of air hitting the front toward the engine compartment and the front tire deflector, the lower side sections were designed to protrude forward, and the fins beneath the front bumper were made larger. This new bumper design also delivers the added benefit of suppressing the all-too common phenomenon of turbulence along the sides of the body, and thereby helps smooth the flow of air through to the rear of the car.

Enlarged engine undercover (SP20 SKYACTIV model)

The engine undercover from the current Mazda3 is enlarged for the SP20 SKYACTIV model, and also adopts a flat design. Effectively streamlining the flow of air coming from the front and passing it on to the rear, this new undercover contributes to improved aerodynamic performance characteristics.

Floor undercover

The undercover now covers approximately 10% more area than on the current Mazda3 and its vertical grooves were eliminated to create a flat design. The rear of the cover is now curved to reach closer to the ground, which serves to control the flow of air along a smoother path of travel. In addition, the new brace bar introduced to increase body rigidity is made from a single sheet, and this also contributes to achieving a flat underbody design.

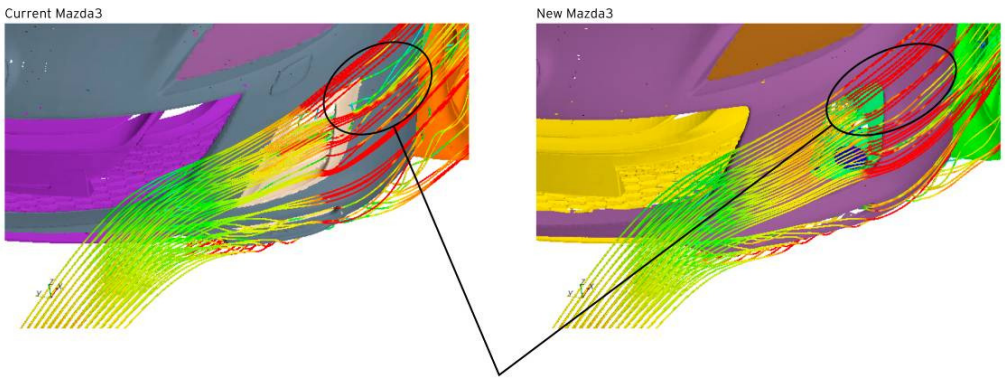
Front tire deflectors

Increasing the rigidity of the front tire deflectors prevents them from deforming as they receive air striking them at high speeds. This establishes a good balance between brake cooling and aerodynamic performance, and handling stability.

Optimized silencer design (SP20 SKYACTIV model)

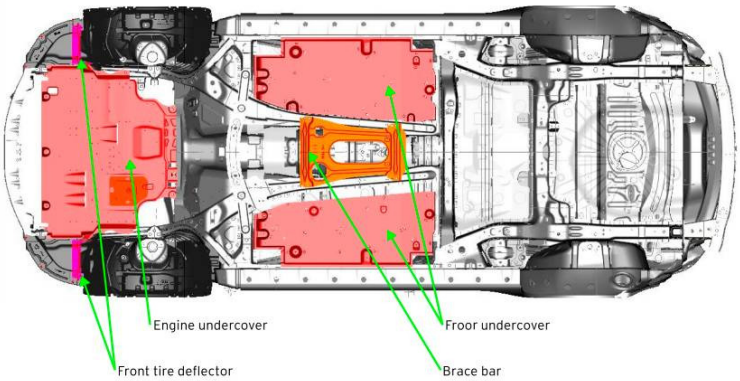
A new clamshell silencer shaped to sit on angle with the road surface helps streamline the flow of air as it passes across the rear of the car.

Airflow over the side of the front bumper

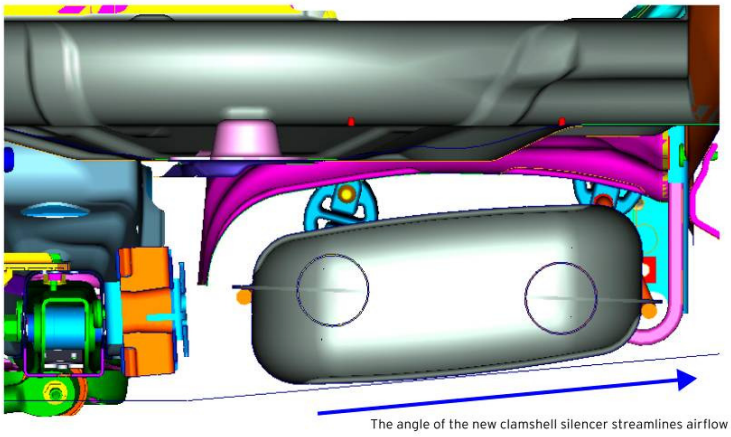


The shape of the side section is optimized to suppress turbulence generated when air is drawn into the engine compartment for cooling purposes.

Aerodynamic underbody parts



Clamshell silencer



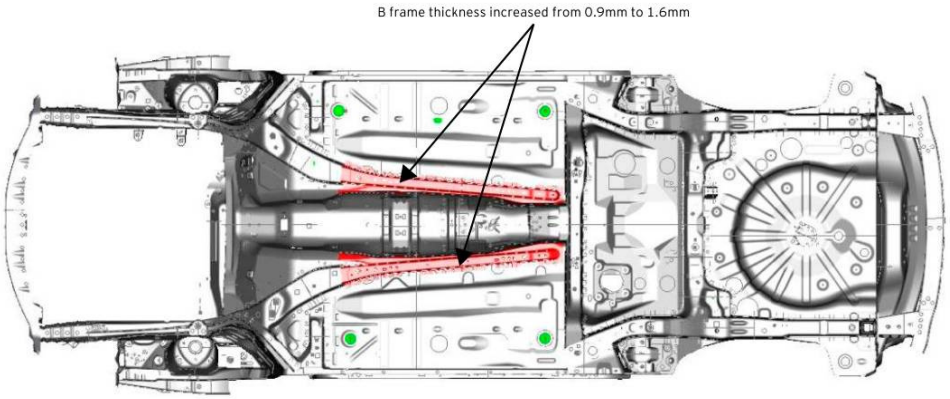
The angle of the new clamshell silencer streamlines airflow

Improved NVH performance

Measures aimed at reducing road noise

The thickness of the B frame beneath the floor was increased from 0.9mm to 1.6mm to reduce the transmission of road noise. As a general rule, changes in pressure within the cabin interior have a tendency to amplify noise. So, by increasing the thickness of the steel plate used for the body's framework, we achieved greater rigidity and suppressed the amount of deformation experienced by the cabin and thereby reduced the volume of noise heard within the cabin.

Increased thickness of the B frame



6. DESIGN

Design Evolution for a Well-toned Look that Speaks of Higher Quality

Based on the current model's design, which boldly took on a rich expression and a dynamic stance, the new Mazda3 has evolved to deliver a well-toned look that conveys even higher quality. For the new Mazda3, the design team has created a sophisticated design that blends harmoniously with high functionality. Examples of such design advances include the new front face with a more taut image that also realizes improved aerodynamic characteristics, and newly added chrome-coloured parts that contribute to a mature interior atmosphere while efficiently guiding the user's eyes to controls and switches.

In addition, special exterior and interior design elements for the SP20 SKYACTIV instantly identifies it as a new model.

Exterior design

We aimed to further evolve the dynamic exterior styling of the current model. Furthermore, we aimed to fuse the new design with a higher level of functionality — such as improved aerodynamics and easier loading/unloading through the liftgate — by employing new design methods.

Front view

The Mazda family face was further refined for the new Mazda3. We reviewed the shapes of the front bumper's corners and gave them a more sculpted form. Combined with the updated five-point grille, the new front fascia creates a richer and more stylish impression. In addition, the lustrous painting on the protector component covering the bumper reinforcements on the upper part of the grille has been expanded to realize a front view with an aggressive yet high-quality feel.

New design features that heighten the new Mazda3's athletic appearance include more delicately sculpted forms around the openings on either side of the front bumper, and the round fog-lamp shape that has been changed from the horizontally wide shape of the current model.

The lower part of front bumper corners now protrude boldly forward to more effectively disperse the frontal airflow upward and downward. And the fins beneath the front bumper were enlarged to more effectively guide the airflow to the front tire deflectors. These measures resulted in improved aerodynamic performance, thus realizing a dynamic and emotional design and high functionality at the same time.

Front bumper corner shape of new Mazda3

Rear view

As with the front end, we revised the rear bumper design of the 5-door hatchback to achieve both dynamic design and functionality. The rear bumper now protrudes 30mm less, and the reflectors in the rear combination lamps are positioned as close to the outer edges as possible. These measures combine to enhance the impression of wideness and solidness that is so important for a hatchback. And the revised rear bumper shape contributes to easier loading and unloading.

On the 4-door sedan, a more dynamic rear view is obtained by adopting a sporty rear bumper as standard equipment.

Current sedan rear bumper

New sedan rear bumper

Wheel design

16- and 17-inch alloy wheels feature entirely new designs. The 16-inch wheel now has 10 spokes, increased from the current design's seven spokes. Each of the spokes incorporates a twisted surface to emphasize sportiness. The 17-inch wheel design is characterized by enlarged openings between each spoke, creating a look that adds to a lighter yet more dynamic feel.

16-inch aluminum wheel

17-inch aluminum wheel

SP20 SKYACTIV

The SP20 SKYACTIV features an exclusive design to clearly demonstrate that the car employs such special new technologies.

SKYACTIV TECHNOLOGY aims to deliver exhilarating driving pleasure and outstanding environmental and safety performance to all our customers. Visibly expressing the world realized through SKYACTIV TECHNOLOGY are five keywords chosen for design development: "infinite possibilities", "pureness", "care for environment", "feel of transparency" and "liveliness". We tried to express these keywords in many places on the actual car through use of painted surfaces or materials in deep blue or transparent blue colours, and adopting gradation effects to impressively show the reflection of light.

Lifting the hood reveals an attractive engine cover featuring a deep blue metallic paint finish that expresses "infinite possibilities". The black sections along either side appear to continue the lines of the intake manifolds beneath them, giving the cover an impression of a powerful stream that flows from the car's front end to the rear. This symbolizes the SKYACTIV-G engine's high intake and exhaust efficiency.

Each of the headlamp units adopts a transparent blue ring around its centre lens, creating the illusion that it is the "eye" of the car and emphasizing the car's distinctive character. Combined with the silver reflector and clear outer lens, the blue ring even enhances the "liveliness" of the front view of the new SP20 SKYACTIV.

In the rear is an exclusive badge, which proudly shows that the car is equipped with SKYACTIV TECHNOLOGY. The badge features a shining "SKYACTIV" logo against a clear-blue background, and its form embodies the Mazda design characteristics of emotional, flowing lines. At the same time, it establishes a visual connection to the design of the engine cover, expressing the high intake and exhaust efficiency of the SKYACTIV-G engine.

SKYACTIV TECHNOLOGY design: engine cover

SKYACTIV TECHNOLOGY design: headlamp

SKYACTIV TECHNOLOGY design: rear badge

Interior design

In developing the interior design for the new Mazda3, we pursued an even higher quality feel by strategically revising the use of silver paint and decorative materials. At the same time, we also made efforts to realize an easy-to-use, highly functional cabin environment by improving the legibility of the meters and displays, and also by more effectively guiding the user's eyes to the respective controls and switches.

The interior styling for models equipped with the SKYACTIV-G engine feature an exclusive SKYACTIV TECHNOLOGY design.

Cockpit design: Instrument panel design

On the instrument panel, the paint colour of the centre stack lower panel and the area surrounding the shift gate has been changed from silver to black, giving the interior a tauter and well-toned appearance. In addition, we adopted a silver-coloured decoration with a satin polish finish that is bright but which also features a suppressed lustre for effect. This decoration is applied to areas that users frequently touch, such as the outer rings of the dial switches on the centre and right and left sides of the audio panel, the outer rings of the three climate-control dial switches, and the ventilation louvers on the centre panel. The subtle shine from these decorated parts clearly indicates the location of the controls and switches to be operated, thereby reducing the amount of eye movement required of the driver to operate them, while at the same time supporting smooth and assured operation. Furthermore, the silver decorations combined with the chic, black-keyed instrument-panel design deliver a refined and highly mature interior atmosphere.

A change to white text and graphics for the Multi Information Display (MID) and liquid crystal display (LCD), which are mounted in the upper area of the instrument panel to provide various driving information, results in improved legibility.

The MPS now features the same silver decoration panels as other Mazda3 models instead of the previous red-accented graphics. This further enhances the interior's highly contrasted design, strengthening the sharp characteristics particular to that model.

The silver decoration on the upper part of the shift knob has now been replaced with genuine leather on MPS. The parking brake knob is also leather-wrapped, establishing a unified coordination that lends the cockpit an even sportier air and gives the high-performance model interior a more refined feel.

Current Mazda3 instrument panel

New Mazda3 instrument panel

White color used for MID and LCD graphics

Finely crafted decorations determined through advanced application of a driving simulator

To realize the ideal layout of decorative parts to enable sure and simple operation while driving, we conducted painstaking tests of the driver's eye movements utilizing a driving simulator. The results confirmed that, in case of a black-painted instrument panel, operating errors can be reduced through the use of silver decorations that have brighter surfaces than those on the current model. Furthermore, the increased brightness makes controls and switches to be operated easy to recognize, allowing the driver to confirm their location. Therefore, the required time for drivers to actually operate the control or switch can be reduced after removing their hand from the steering wheel.

Based on these findings, we adopted bright, satin-polish silver-coloured outer rings for the dials and switches most used by the driver. This includes the dial switches on the centre and both sides of the audio-control panel, the three-dial switches on the climate-control panel, and the ventilation louver knobs on the instrument panel centre stack.

Meter design

The new Mazda3 inherits the sporty twin-meter design of the current model, but replaces the current blackout design with new, continuous-lit-type white graphic meters. Because they are able to provide excellent legibility, even in daytime, the brightness of the meters is set at 25 candelas. Furthermore, we chose meter backlight colours to best suit each model's characteristics: a dynamic-looking grey for the standard and high grades, and a sporty red gradation for the MPS to enhance the impression of Zoom-Zoom driving exhilaration and of a high-quality feel.

Meter design for Neo, Maxx Sport, Diesel & SP25 models *Meter design for MPS*

SP20 SKYACTIV

A special meter design is adopted for the SP20 SKYACTIV as clear visual emphasis that the car is equipped with SKYACTIV TECHNOLOGY. Although the basic shape of the meters is common to all models, meters on the SP20 SKYACTIV feature an exclusive blue gradation illumination. In addition, the introduction of sporty, white-graphic meter panels helps contribute to an easy-to-read, expansive meter design.

The SKYACTIV-Drive shift knob projects forward by 4mm over that of the current model resulting in a better grip that feels as if the knob sticks firmly to the palm to enable smooth shift operation in both front-aft and left-right directions.

Meter design for SKYACTIV-G model

Seat design

While carrying over the basic form of the current seats, newly designed cloth patterns have been introduced to give the new Mazda3's interior a higher quality feel with a stronger impression of dimensionality.

7. SAFETY – ACTIVE & PASSIVE

Safe, Confident Driving Performance with Evolved Safety Equipment

In a concerted effort to fully protect all occupants, Mazda devoted serious effort toward improving the active safety technologies that help drivers avoid collisions and foresee potential hazards, and also the passive safety technologies that reduce the chance and severity of injury in the case of an unexpected accident. Of course, the measures taken are all linked directly to the "driving pleasure" at the heart of Mazda's Zoom-Zoom concept.

Phrased differently, we believe that to achieve true driving pleasure we must establish a strong sense of oneness between driver and car. This consists of the driver's capability to perfectly control the car, as well as improved safety performance and a more confidence-inspiring ride feel. The concepts of "driving pleasure" and "safe and confident driving" do not stand in opposition to one another. Rather, they are synonymous concepts that go hand in hand.

In adhering to the basic performance aspects of driving, turning and stopping, and establishing smooth transitions between the acceleration, lateral and deceleration G forces that these generate, the new Mazda3 brings a "unified feel" with consistent linear response to each of the driver's control operations. As such, the new Mazda3 offers the driver assurance and the freedom to enjoy confidently controlling the car.

Active Safety

New Mazda3 comes with a state-of-the-art active safety portfolio which includes Dynamic Stability Control (DSC), Traction Control System (TCS), Anti-lock Braking System (ABS), Electronic Brakeforce Distribution (EBD), and Emergency Brake Assist (EBA) as standard on all models

Passive Safety

The New Mazda3 is designed to provide high levels of crash resistance and occupant protection. Its body structure uses Mazda's triple-H architecture, with strong H-shaped reinforcements in the floor, side frames and roof. High and ultra-high strength steel was used throughout the body to ensure crash resistance; the reinforcements and inners are made of high-tensile steel at the A-pillar, the hinge pillar reinforcement and the side sills. The joint between the hinge pillars and A-pillar inner panels was lowered too, and spot welding used, to ensure that the joints do not open at the seams during a hefty impact.

New Mazda3 has a front end structure that dissipates impact energy from the front through the entire vehicle, sparing the cabin as much as possible. A cross-car beam is also placed between the hinge pillars that helps dissipate energy before it reaches the cabin. A special undercarriage structure is designed to create a crushable zone at the front by causing the engine, transmission and suspension crossmember mounts to separate from the body structure in case of a major frontal impact.

The door impact beams are located with reinforcements added to their front sections, which helps reduce intrusion into the cabin during side impact. The area with energy-absorbing material used on the inside of the door and door trim are enlarged as well, and a door trim armrest with a crushable design is introduced to help reduce the chance of injury here. At the back the rear side frames are made of tailored blank high-tensile steel and have a thicker and straighter crossbeam. Its structure is designed to dissipate collision energy to the front and away from where the fuel tank is positioned.

Active Front Head Restraints and Six Airbags

On the inside, the New Mazda3's safety package includes active front head restraints that protect the neck against whiplash – and are designed to allow a better rearward view – along with front, side and curtain airbags standard on all models. With the curtain airbags being mounted to the top of the B-pillars, inflation time is reduced by 4/1000th of a second over previous systems and provides a large protection area and excellent energy absorption.

The new Mazda3 seatbelts feature double pretensioners and digressive Load-Limiter Retractors (LLR), which restrict body movement and help to reduce shock to the passenger's chest. A crushable clutch and brake pedal, crushable pads below the heel area, a new shape for the steering wheel adjustment lever, and an energy-absorbing steering column are onboard to help prevent injury to the driver's lower legs and chest. Additionally, soft, energy-absorbing ribs are installed at each corner of the cabin.

The new Mazda3's bonnet is made with an energy-absorbing structure at the cowl and fender bracket areas, to help reduce injury when struck. Energy-absorbing foam is used in the bumper beams and energy-absorbing plastic in the bumper's lower section, to reduce injury severity to the legs here as well.

10. BODY COLOURS

Choice of eight body colours

The body colour range for new Mazda3 consists of 8 colours, including three new colours, Sky Blue Mica, Dolphin Grey Mica and Autumn Bronze Mica.


Sky Blue Mica *new


Dolphin Grey Mica *new


Autumn Bronze Mica *new


Velocity Red Mica


Crystal White Pearl Mica


Aluminium Metallic


Graphite Mica


Black Mica

For the first time, Crystal White Pearl Mica will now be offered on the new Mazda3 MPS alongside Velocity Red Mica, Aluminium Metallic Mica and Black Mica

Mazda Australia does not charge extra for Mica or Metallic paint colours, a saving of $500 or more against some rivals.

11. SPECIFICATIONS & EQUIPMENT

		Neo	Maxx Sport	SP20 SKYACTIV	Diesel	SP25
Powertrain						
Engine type		2.0 litre in-line 4 cylinder 16 valve DOHC S-VT	2.0 litre in-line 4 cylinder 16 valve DOHC S-VT	2.0 litre in-line 4 cylinder 16 valve DOHC S-VT with i-stop	2.2 litre in-line 4 cylinder 16 valve DOHC intercooled turbo diesel	2.5 litre in-line 4 cylinder 16 valve DOHC S-VT
Engine capacity		1,999 cc	1,999 cc	1,998 cc	2,183 cc	2,488 cc
Bore and stroke		87.5 mm x 83.1 mm	87.5 mm x 83.1 mm	83.5 mm x 91.2 mm	86.0 mm x 94.0 mm	89.0 mm x 100.0 mm
Compression ratio		10.0 : 1	10.0 : 1	12.0 : 1	16.3 : 1	9.7 : 1
Maximum power		108 kW @ 6,500 rpm	108 kW @ 6,500 rpm	113 kW @ 6,000 rpm	110 kW @ 3,500 rpm	122 kW @ 6,000 rpm
Maximum torque		182 Nm @ 4,500 rpm	182 Nm @ 4,500 rpm	194 Nm @ 4,100 rpm	360 Nm @ 1,800-2,600 rpm	227 Nm @ 4,000 rpm
Throttle control		Electronic (drive-by-wire)	Electronic (drive-by-wire)	Electronic (drive-by-wire)	Electronic (drive-by-wire)	Electronic (drive-by-wire)
Fuel system		Electronic multipoint injection	Electronic multipoint injection	Electronic direct injection	Common-rail electronic direct injection	Electronic multipoint injection
Fuel tank capacity		55 litres	55 litres	55 litres	55 litres	60 litres
Recommended fuel		Reg Unleaded or E10	Reg Unleaded or E10	Reg Unleaded or E10	Diesel (ultra low sulphur)	Reg Unleaded or E10
Fuel consumption*1	man (combined)	7.9 litres per 100 km	7.9 litres per 100 km	-	5.7 litres per 100 km	8.6 litres per 100 km
	auto (combined)	8.2 - 8.4 litres per 100 km	8.2 - 8.4 litres per 100 km	6.1 - 6.2 litres per 100 km	-	8.6 litres per 100 km
Manual transmission		6-speed	6-speed	-	6-speed	6-speed
Activematic (auto) transmission		5-speed	5-speed	6-speed	-	5-speed
Gear ratio	1st - man/auto	3.454 / 3.620	3.454 / 3.620	- / 3.552	3.538/-	3.454 / 3.620
	2nd	2.059 / 1.925	2.059 / 1.925	- / 2.022	1.913/-	1.842 / 1.925
	3rd	1.392 / 1.285	1.392 / 1.285	- / 1.452	1.218/-	1.310 / 1.285
	4th	1.030 / 0.933	1.030 / 0.933	- / 1.000	0.880/-	1.030 / 0.933
	5th	0.795 / 0.692	0.795 / 0.692	- / 0.708	0.809/-	0.837 / 0.692
	6th	0.717 / -	0.717 / -	- / 0.599	0.711/-	0.717 / -
	reverse	3.198 / 3.405	3.198 / 3.405	- / 3.893	3.831/-	3.198 / 3.405
	final drive	4.388 / 3.863	4.388 / 3.863	- / 3.812	3.421 (1st-4th) / - 2.954 (5th-6th) / -	4.105 / 3.652

Chassis						
Brake diameter	front	278 mm	278 mm	300 mm	300 mm	300 mm
	rear	265 mm	265 mm	265 mm	280 mm	280 mm
Brake type	front	Ventilated disc	Ventilated disc	Ventilated disc	Ventilated disc	Ventilated disc
	rear	Solid disc	Solid disc	Solid disc	Solid disc	Solid disc
Steering type		Electro hydraulic power assist steering	Electro hydraulic power assist steering	Electro hydraulic power assist steering	Electro hydraulic power assist steering	Electro hydraulic power assist steering
Suspension	front	MacPherson strut	MacPherson strut	MacPherson strut	MacPherson strut	MacPherson strut
	rear	Multi-link	Multi-link	Multi-link	Multi-link	Multi-link
Turning circle	kerb to kerb	10.9 m	10.9 m	10.9 m	10.9 m	10.9 m
Tyre size		195/65R15 91V	205/55R16 91V	205/55R16 91V	205/55R16 91V	205/50R17 89W
Wheel size		15 x 6.0 J	16 x 6.5 J	16 x 6.5 J	16 x 6.5 J	17 x 7.0 J
Wheel type		Alloy	Alloy	Alloy	Alloy	Alloy
Wheel type (spare)		Temporary	Temporary	Temporary	Temporary	Temporary
Exterior						
Body kit comprising:	rear spoiler	Hatch only	X	X	X	X
	side skirts	-	X	X	X	X
	sports grille	-	-	X	-	X
Door handles (body coloured)		X	X	X	X	X
Exhaust extension (chrome)		X	X	X	X	X
Fog-lamps (front)		-	X	X	X	X
Front and rear bumpers (body coloured)		X	X	X	X	X
Green-tinted windscreen, side and rear windows		X	X	X	X	X
Headlamps (Bi-Xenon)		-	-	Luxury option	-	X
Headlamps (Halogen)		X	X	X	X	-
Metallic/Mica paint		X	X	X	X	X
Power mirrors (body coloured)		X	X	X	X	X
Power sliding and tilt glass sun-roof		-	-	-	-	X
Power windows		X	X	X	X	X
Roof rack mounting points		X	X	X	X	X

Tail-lamps (LED)		-	-	X	X	X
Interior						
Air-conditioning		X	-	-	-	-
Air-conditioning (dual-zone climate control)		-	X	X	X	X
Automatic transmission indicator in instrument cluster		Auto only	Auto only	X	-	Auto only
Bluetooth® (hands-free compatible)*2		-	X	X	X	X
Centre armrest console (sliding) with tray		-	-	Luxury option	-	X
Centre armrest console with tray		X	X	X	X	-
Critical function warning lights/chimes		X	X	X	X	X
Cruise control		X	X	X	X	X
Cupholders		X	X	X	X	X
Digital clock		X	X	X	X	X
Door ajar warning light		X	X	X	X	X
Door pockets (front)		X	X	X	X	X
Driver's left footrest		X	X	X	X	X
Glove box (illuminated)		X	X	X	X	X
Headlamps auto on/off function		-	X	X	X	X
Illuminated entry system with delayed fade		X	X	X	X	X
Instrument panel light dimmer		X	X	X	X	X
Interior illumination:	cargo room lamp	X	X	X	X	X
	ignition key surround	X	X	X	X	-
	map reading spot lamps	X	X	X	X	X
	power window switch (driver)	X	X	X	X	X
Interior release for:	boot lid	Sedan only	Sedan only	Sedan only	Sedan only	Sedan only
	fuel filler door	X	X	X	X	X
Leather-wrapped:	gear shift knob	-	X	X	X	X
	steering wheel	-	X	X	X	X
Lights-left-on audible warning		X	X	X	X	X

Low fuel warning light		X	X	X	X	X
Multi information display with:	ambient temperature gauge	X	X	X	X	X
	maintenance monitor	X	X	X	X	X
	satellite navigation	-	X	X	X	X
Multi information display with:*3	trip computer	X	X	X	X	X
Overhead sunglass storage box		-	-	X	-	X
Passenger assist grips (front and rear)		X	X	X	X	X
Scuff plates (stainless steel)		-	-	X	-	X
Seat trim:	cloth	X	X	X	X	-
Seat trim:*4	leather	-	-	Luxury option	-	X
Seats (front) with:	adjustable head restraints	X	X	X	X	X
	height adjustment (driver)	X	X	X	X	X
	lumbar adjustment (driver)	-	-	X	-	X
	rake and slide adjustment	X	X	X	X	X
	seat back pocket (passenger)	X	X	X	X	X
Seats (rear) with:	60/40 split fold backrest	X	X	X	X	X
	adjustable head restraints	X	X	X	X	X
	centre fold down armrest	X	X	X	X	X
Smart keyless entry and push-button engine start		-	-	-	-	X
Tachometer and electronic odometer/ tripmeter		X	X	X	X	X
Tilt and telescopic adjustable steering wheel		X	X	X	X	X
Vanity mirrors (front)		X	X	-	X	-
Vanity mirrors (front) with illumination		-	-	X	-	X
Ventilation pollen filter		X	X	X	X	X
Window demister (rear)		X	X	X	X	X
Wiper (rear) with intermittent function		Hatch only	Hatch only	Hatch only	Hatch only	Hatch only
Wipers (front) 2-speed with rain-sensing function		-	X	X	X	X

Wipers (front) 2-speed with variable intermittent function		X	-	-	-	-
Audio						
AM/FM tuner		X	X	X	X	X
Auxiliary input (3.5mm MP3 player compatible)		X	X	X	X	X
Bluetooth® audio (MP3 player compatible)*2		-	X	X	X	X
CD player, single disc (MP3/WMA compatible)		X	X	X	X	X
Premium Bose® 242 watt amplifier and speakers (including subwoofer)		-	-	Luxury option	-	X
Speakers, number of		6	6	6 or 10 (Luxury option)	6	10
Steering wheel mounted audio controls		X	X	X	X	X
Safety						
Active head restraints (front)		X	X	X	X	X
Airbags SRS:	front (driver and passenger)	X	X	X	X	X
	side (front)	X	X	X	X	X
	curtain (front and rear)	X	X	X	X	X
Anti-lock Braking System (ABS)		X	X	X	X	X
Child restraint anchor points		X	X	X	X	X
Collapsible steering column		X	X	X	X	X
Dynamic Stability Control (DSC) - switchable on/off		X	X	X	X	X
Electronic Brake-force Distribution (EBD)		X	X	X	X	X
Emergency Brake Assist (EBA)		X	X	X	X	X
Engine immobiliser		X	X	X	X	X
High mount stop lamp		X	X	X	X	X
Intrusion-minimising brake pedal		X	X	X	X	X
Intrusion-minimising clutch pedal		Manual only	Manual only	-	X	Manual only
Left-hand-side convex (wide angle) exterior mirror		X	X	X	X	X

One touch (up and down) power window (driver)		X	X	X	X	X
Remote boot release		Sedan only	Sedan only	Sedan only	Sedan only	Sedan only
Remote central locking (2 transmitters)		X	X	X	X	X
Seat-belt warning audible and visual (front)		X	X	X	X	X
Seat-belts 3-point lap-sash (all seats)		X	X	X	X	X
Seat-belts (front) with pretensioners, load-limiters and height adjustable shoulder anchorages		X	X	X	X	X
Side impact door beams		X	X	X	X	X
Traction Control System (TCS)		X	X	X	X	X
Triple H' safety construction with front and rear crumple zones		X	X	X	X	X
Dimensions						
Ground clearance	laden	118 mm	118 mm	118 mm	120 mm	118 mm
Overall length	Sedan	4,580 mm	4,580 mm	4,580 mm	4,580 mm	4,580 mm
	Hatch	4,460 mm	4,460 mm	4,460 mm	4,460 mm	4,490 mm
Overall width		1,755 mm	1,755 mm	1,755 mm	1,755 mm	1,755 mm
Overall height		1,470 mm	1,470 mm	1,470 mm	1,470 mm	1,470 mm
Track	front	1,535 mm	1,535 mm	1,535 mm	1,535 mm	1,530 mm
	rear	1,520 mm	1,520 mm	1,520 mm	1,520 mm	1,515 mm
Wheelbase		2,640 mm	2,640 mm	2,640 mm	2,640 mm	2,640 mm
Cargo room volume VDA	Sedan	430 litres	430 litres	400 litres	430 litres	400 litres
	Hatch	340 litres	340 litres	300 or 276 (Luxury option) litres	340 litres	276 litres
Kerb weight man	Sedan	1,265 kg	1,280 kg	-	1,440 kg	1,364 kg
	Hatch	1,281 kg	1,297 kg	-	1,458 kg	1,369 kg
Kerb weight auto	Sedan	1,292 kg	1,307 kg	1,318 kg - 1,336 kg	-	1,400 kg
	Hatch	1,304 kg	1,319 kg	1,329 kg - 1,346 kg	-	1,406 kg
Towing capacity*5	braked	900 kg	900 kg	900 kg	900 kg	900 kg
	unbraked	500 kg	500 kg	500 kg	550 kg	550 kg