

CR-Z



Press Kit



Introducing the CR-Z

The Honda CR-Z combines the advantages of a stylish coupe body with a clean, efficient petrol-electric hybrid powertrain and is available with a 6-speed manual transmission or CVT.

This exciting new coupe will change current perceptions of hybrids, with its driver-focussed chassis and responsive 1.5-litre engine.

Creating a category of its own, the all-new CR-Z showcases Honda's commitment to designing cars that are fun to drive and have a reduced carbon footprint.

The world's first car manufacturer to announce voluntary targets for reduction for carbon dioxide emissions, Honda has been implementing proactive measures to help address environmental issues for over five decades.

In 2011, Honda announced it will endeavour to reduce product-related carbon dioxide emissions by 30 per cent for cars, motorcycles and power products by 2020 (based on year 2000 figures).



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The CR-Z features

- An all-new, sporty, aerodynamic form
- A wide track, short wheelbase chassis for agile and responsive handling
- Honda's unique 3-Mode Drive System to tailor steering, throttle response and IMA assistance to the driver's needs
- A 1.5-litre i-VTEC engine coupled with Honda's Integrated Motor Assist (IMA) system, with CO2 emissions of 118g/km (manual) and 111g/km (CVT) on the combined cycle while delivering fuel economy of 5l/100km (manual) and 4.7l/100km (CVT)
- The world's first six-speed manual transmission combined with a hybrid drive train
- A five-star ANCAP safety rating, the highest available
- A driver focussed cockpit design with 3D gauges
- Everyday comfort delivered by a flexible interior with two plus two seating, generous cargo area and plenty of small item storage spaces



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CR-Z Sport at a glance

- 1.5 litre i-VTEC engine with Honda's unique Integrated Motor Assist (IMA) technology delivering a total system output of 91kW and either 174Nm (manual) or 167Nm (CVT)
- A choice of 6-speed manual transmission with Hill Start Assist (HSA) or a Continuously Variable Transmission (CVT) with Creep Aid System and steering-wheel mounted paddle shift controls
- CO2 emissions of 118g/km (manual) and 111g/km (CVT) on the combined urban/extra urban cycle
- Fuel economy of 5l/100km (manual) and 4.7l/100km (CVT) on the combined urban/extra urban cycle
- Five-star ANCAP safety rating
- Multi-information Display (MID)
- Ecological Drive Assist System
- Auto stop mode
- Vehicle Stability Assist (VSA), Traction Control System (TCS), Brake Assist (BA) and ABS and EBD
- Front suspension MacPherson strut and rear suspension torsion beam
- 16 inch alloy wheels with a temporary spare
- Electric Power Steering (EPS)
- Ventilated front and solid rear disc brakes
- AM/FM audio, CD player and MP3 compatibility with steering-wheel mounted audio controls
- USB connectivity with iPod integration
- Bluetooth Hands-free Telephone (HFT) connectivity with steering-wheel mounted controls



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CR-Z Sport at a glance

- Active head restraints
- Seatbelts with pre-tensioners and front 3-point ELR and rear 3-point ELR/ALR
- Advanced Compatibility Engineering (ACE) body structure
- Dual front, side and full length curtain airbags
- Child safety seat anchorages
- Daytime Running Lights (DRL) and LED tail lights
- Immobiliser system
- Honda G-Con technology
- MID-linked rear park assist
- Security alarm system
- Cloth trim
- Front fog lights
- Rain sensing front wipers



CR-Z Luxury at a glance

- Only available with CVT, Creep Aid System and steering-wheel mounted paddle shifts
- Leather trim with heated front seats
- Panoramic glass roof
- Satellite navigation with live traffic updates, DVD player and Bluetooth audio streaming
- Reversing camera
- OPTIONAL: MID-linked rear park assist



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The CR-Z's exterior styling is formed around a 'one-motion wedge' concept with a low bonnet line and wide stance giving the car a confident, athletic look. Signature Honda design features, such as the split level rear glass hatch and aerodynamic, shallow raked roofline have been referenced in the design of the sleek coupe and then combined with a curvaceous and deeply sculpted exterior form.

The overall power output of the engine and IMA system is 91kW and 174Nm of torque for the manual transmission or 167Nm for the CVT.

For the first time, a fuel efficient, low emission hybrid system is combined with an ultra precise six-speed manual gearbox. The manual gearbox is a core part of the driver engagement Honda's engineers wanted to bring to the CR-Z. The flexibility of Honda's unique IMA hybrid system allows it to be used with both manual and CVT-based gearboxes.



The manual transmission is complemented by a 1.5-litre four-cylinder i-VTEC engine, a key component in the CR-Z's unique character. The eager-to-rev nature of the engine is enhanced by the additional 78Nm of torque provided by the 10kW electric motor, which is situated between the engine and transmission. The electric motor boosts torque at low and medium RPM.

To maximise driver choice and enhance day to day driveability, the CR-Z is fitted with a 3-Mode Drive System.



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This unique feature allows the driver to choose between three driving modes, which alter the responses of the throttle, steering, climate control and the level of assistance provided by the IMA system. This allows the driver to adapt the car's settings to enjoy favourite roads, maximise economy, or strike a balance between the two.

Honda's 3-Mode Drive System alters the operating parameters of the hybrid drivetrain and the power steering assistance as well as the throttle mapping between the three modes.

When the CR-Z driver is away from the town or city and wanting to enjoy the open road, SPORT mode can be selected. This sharpens the throttle response, changes the parameters of the IMA system to provide more electric motor assistance and secure, solid steering to emphasise a sporty feel.

Honda recognises that even the most enthusiastic driver may regularly experience heavy traffic, where maximising fuel economy is more desirable. In these situations ECON mode can be selected, which prioritises fuel economy in the

operation of the drive-by-wire throttle, ECU, air conditioning and the hybrid system. For those times when spirited driving is not possible or desirable, the Eco Assist function, in conjunction with ECON mode, allows the driver to enjoy beating their best economy score on the way to work, or in heavy traffic.

In NORMAL mode (which is the default mode) there is a balance between performance, economy and emissions that suits most driving situations.

The ambient lighting of the speedometer is used in the same way as in the Insight, to provide feedback to the driver on how their style impacts on fuel economy and emissions. In addition to the Eco Assist function, the CR-Z's meter lighting is linked to the 3-Mode Drive System. In NORMAL and ECON mode the ring around the speedometer is illuminated blue and changes to green when driven economically. In ECON mode it has a green eco flower lit in the mode indicator. When the CR-Z is in SPORT mode, the speedometer surround is constantly illuminated in a red ambient light.



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Careful consideration was given to exhaust design to ensure that as well as being efficient, the CR-Z sounds sporty, quite unlike any previous compact hybrid.

The exterior design of CR-Z deliberately evokes the iconic style of the 1980s CR-X. Signature features of the CR-X, such as the split level rear glass hatch and low shallow raked roofline have been referenced in the design of the sleek coupe and then combined with a curvaceous and deeply sculpted exterior form.

The shallow raked roofline and sharply truncated tail of the CR-Z is a feature shared with many Hondas past and present, including the CR-X, first-generation Insight and the FCX Clarity. All of these cars have been designed to cut through the air with minimal disturbance, assisting reduction of drag to lower fuel consumption and emissions. The CR-Z's headlights are accented with LED daytime running lights (DRL), which are positioned in the lower section of the headlight assembly.

This is the first time LED DRLs have been applied to the front of any production Honda and provide additional daytime safety by making the car more visible in all weather conditions.

The interior of the production car has been influenced by the cabin of the 2007 Tokyo Motor Show CR-Z Concept, especially the 3D speedometer and driver focused cabin. The high-technology instrument binnacle ergonomically places all of the commonly used controls close to the driver's hands to minimise risk and allow full concentration at all times.



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The CR-Z Sport comes standard with six airbags, active head-restraints for the driver and front passenger, Vehicle Stability Assist, Hill Start Assist for the manual transmission, Creep Aid System for the CVT, ABS and EBD, climate-control air-conditioning, daytime running lights, a Multi-Information Display and steering-wheel mounted Bluetooth HFT controls. It also receives cruise-control, a six-speaker audio system with CD player, MP3 compatibility and steering-wheel mounted audio controls and USB connectivity. The CR-Z Luxury receives satellite navigation with live traffic updates, a panoramic roof and heated leather trimmed front seats. The CR-Z Luxury also allows owners to option MID-linked park assist to compliment the reversing camera which comes standard on this variant.

The one-touch motion folding rear seats open up a flat floored cargo area, that gives a roomy 401 litres of cargo space (including under-trunk box), allowing a wider range of luggage to be carried.

The chassis was an important factor in the development of the CR-Z, with driver enjoyment being a core part of the design brief. The wheelbase, track width and set-up are unique to this car.

The CR-Z's suspension features unique springs and dampers settings. One of the major detail changes is the adoption of an aluminium lower control arm in the MacPherson strut front suspension. This reduces the weight of each wishbone and also increases strength to cope with the wider track width and tyres.



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The CR-Z's Heritage

As a compact coupe with a double window rear hatch and shallow sloping roof line, the CR-Z's links to the CR-X are clear. What perhaps is less obvious is the link between the cars' aims and original design briefs.

Current Honda CEO and President, Takonobu Ito, who worked on the engineering of the chassis of the CR-X and recognises the need for a new era of environmentally responsible fun cars, commented at the Detroit Motor Show debut of the CR-Z: "My first assignment in the U.S. came in the early 1980s. I was a young engineer, developing the chassis for the first generation Honda CR-X.

You might remember it as the "pocket rocket." I remember CR-X as a vehicle that demonstrated that a car can be both sporty and fuel efficient. Times have changed ... but the idea of developing vehicles that are both fun to drive and fuel efficient is alive and well."



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Honda's First Hybrid Coupe – the Insight

The Honda Insight was the first hybrid to be sold in Australia and like the CR-Z, was a three-door coupe with a manual transmission. The role of CR-Z and the original Insight coupe are quite different however the daring styling of the Honda Insight also had the signature two window rear hatch and aerodynamically sculpted roofline.

The first-generation Insight was also available with a CVT transmission in Japan, showing from the start that Honda's innovative IMA hybrid system is flexible and adaptable. This car paved the way for Honda's modern hybrids, demonstrating the benefits of petrol-electric technology as well as proving the reliability of this previously unseen system.

In the 10 years since the Insight was launched, the world has changed a great deal and more environmentally sensitive technologies have become mainstream. Honda's first foray into the hybrid market started a petrol electric revolution that continues with the CR-Z today.



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Positioning

The concept behind the CR-Z is 'Compact Renaissance Zero'. Honda has always been a leader in producing small fuel efficient cars with great handling. The CR-Z exemplifies these qualities in an entirely new way.

Large Project Leader for the CR-Z, Norio Tomobe, wanted to build on the core notion of engaging driving and commented that he wanted customers to "...feel proud of possessing a car with values you can talk about with others..."

The CR-Z offers customers an engaging drive with responsive handling and agility thanks to its low centre of gravity and short wheelbase. It is a stylish coupe, with a distinct compact exterior design and a futuristic interior that seats two plus two.

Its advanced technology includes the unique 3-Mode Drive System coupled with Honda's Integrated Motor Assist (IMA) system. The engine and IMA system delivers excellent fuel efficiency and features the Eco Assist driver coaching, to help improve fuel efficiency even further. It also boasts the latest safety features you'd expect from a Honda including active and passive features designed to protect occupants and pedestrians.

Buyers of the CR-Z appreciate style and uniqueness. They enjoy new experiences and look for a car that suits their busy lifestyle.



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Exterior design and body

The CR-Z was created from a project to create a sporty-styled coupe for the second decade of the 21st century. The compact dimensions, light weight construction and aerodynamic design bring the dual benefit of improving performance, while reducing fuel consumption and emissions.

The design has hints of Honda's past with the split level rear window and shallow sloping roof, combined with complex curves and deeply scalloped panels.

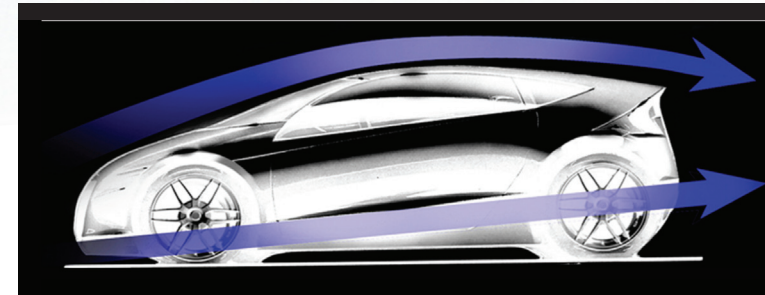
The major challenge that faced Honda's designers and engineers was to maintain the sleek low bonnet of the concept design, while adopting the 1.5-litre engine with the IMA system and complying with pedestrian impact requirements. Honda's engineers worked tirelessly with the designers to reduce the height of the engine, as well as working on suspension and body hard points to allow for sufficient clearance for bonnet deformation.

The wide and low stance is enhanced at the front end by the striking grille, which extends above and below the front bumper line. This grille is a key feature of the car's 'face', with a pronounced raised area of the bonnet flowing from its top line right up to the base of the

windscreen. The wide tapering headlights, with daytime running lights elegantly integrated into the lower edges extend towards the edges of the strongly flared wheels arches.

The angle of curvature at the edge of the windscreen of the CR-Z is the greatest of any current Honda model and blends almost seamlessly into the A-pillars and side windows. This wraparound effect is only possible because of the revolutionary rain gutters integrated into the front pillars that significantly reduce the usual step between the edge of the windscreen and the A-pillar by 50 percent. As well as creating a distinctive visual effect, the reduction in this step has clear aerodynamic benefits, reducing turbulence and wind noise in this important area. The integrated look is accentuated by the gloss black surface finish applied to the A-pillars, creating the illusion of a single piece of glass.

The wraparound screen positions the A-pillars further back in the side profile, giving the bonnet a longer and lower appearance. By curving the glass around the sides of the car, Honda's engineers were able to achieve excellent forward visibility, a key factor in safety and enthusiastic driving.



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Aerodynamics

The door mirrors have an ultra-aerodynamic shape, supported by a wing form stay which combine visual appeal with low drag design. Extensive aerodynamic testing led the design team to the final shape, which integrates a slim indicator repeater to complete the look.

The roof slope and length is critical to the overall aerodynamic performance of a vehicle. The stylists and engineers worked together to create a visually pleasing design without compromising aerodynamics.

The rear of the CR-Z plays an important role in the aerodynamics and many hours of wind tunnel testing went into refining the final design. The strongly flared rear arches stand proud of the bodywork and the rear tapers into the split level glass hatch, a concept shared with the second-generation CR-X, first-generation Insight and FCX Clarity models.

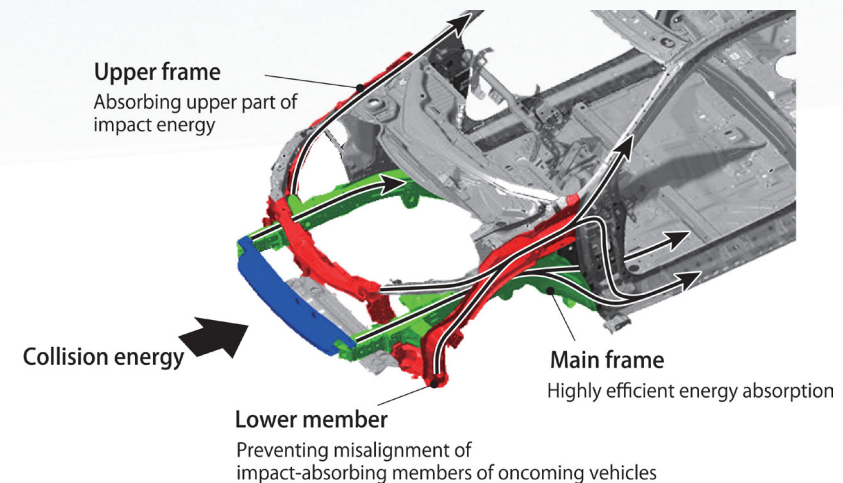
The curvature and shape of the rear hatch and glass area are part of the drag reduction measures that have been used throughout the CR-Z's design, bringing a fresh perspective to a signature Honda design feature. Great attention was paid to maximising visibility through the rear hatch and the size and position of the spoiler, dividing the two areas was very carefully researched and tested.



Body Structure

The radical looks of the CR-Z Concept required innovative solutions to ensure the styling did not compromise the usability or dynamic responses of the car. Honda Engineers wanted to create a stiff body to ensure dynamic responses met the expectations its styling creates. To achieve this, metal gussets are used around the front and rear suspension turrets to provide a firm base for excellent suspension control. Furthermore an H-shaped 'performance rod' was designed for the rear to increase chassis stiffness. The result is a rigidity figure similar to that of the Civic Type R.

As with all recent Honda models the CR-Z has an Advanced Compatibility Engineering (ACE) body structure. This unique Honda technology has been developed through years of testing at Honda's Tochigi R&D centre where real cars are crashed in real-world situations. The front frame spreads the load over the front crash structures to ensure the CR-Z gives maximum protection to driver and passengers in impacts with vehicles of different bumper heights.



Safety

The CR-Z achieves a five-star ANCAP safety rating – the highest rating available – and offers an array of standard safety features, including six airbags, Vehicle Stability Assist (VSA) with traction control and brake assist, active head-restraints, ABS and EBD.

Other safety features include child seat anchorages, daytime running lights, Honda G-Con technology, immobiliser system, keyless entry with central locking, progressive crumple zones, rear park assist in the Sport and reversing camera in the Luxury variant, seatbelt reminders in all seating positions, security alarm and transmission shift lock for the CVT.

The CR-Z features Honda's advanced collision safety technology, with an Advanced Compatibility Engineering (ACE) body that provides higher levels of protection to vehicle occupants while minimising impact to the other vehicle in a collision. It is also designed to reduce injuries to pedestrians in the event of a collision.



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Interior Design

The interior styling of the CR-Z Concept was warmly received and Honda's engineers and stylists were keen to reflect this in the production car.

The cabin of the CR-Z has been ergonomically designed around a cockpit theme, clustering critical controls close to the driver to create a sense of purpose and reduce distractions. The upper dashboard section contains all of the controls and dials.

The seats have been designed to support sporty driving, with particular attention paid to the angle of the seat in relation to the pedals. The angle was set to allow the driver to sit low in the car and maintain a comfortable and practical driving position. The side bolsters of the seats have been designed to support various sizes with tilt and telescopic adjustable steering-wheel.



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Instrumentation

The element of the concept car interior reflected most strongly in the production car is the design of the instrument panel, which has an eye-catching and hi-tech 3D gauge design. The dials of the CR-Z have ambient lighting, playing a key role in the 3-Mode Drive System and the Eco Assist functions.

The tachometer forms the centre piece of the instrument cluster with the speedometer recessed in to the middle of the dial. The rev-counter performs a full scale deflection from zero to maximum and back again at start-up, drawing the driver's eye to the instrument binnacle.

Either side of the speedometer and rev counter are the ancillary gauges and displays, for less critical information. To the right of the centre, are the fuel gauge and instant fuel consumption meters and below these is the Multi-Information Display (MID). On the left of the central gauge, are the IMA battery level gauge and the charge/assist gauge, which shows the level of assistance from the IMA or brake regeneration.

The MID can display elapsed journey time, average fuel economy and average speed. The MID can also display the power flow map and the Eco Assist bar, which gives detailed guidance on driving style and levels of excessive acceleration or braking when economy is the goal. Drivers can also check the economy figures achieved on their previous journeys as well as their progress towards the Eco Assist awards.

The instrument area is framed by two wing-like extensions to the instrument cowl which contains the controls for frequently used equipment, placing them close to the driver's hands. On the right 'wing' the controls for the 3-Mode Drive System are clustered alongside the controls for the door mirrors.

On the left wing the controls and the display for the climate control are positioned together for ease of use. The MID controls are beneath the steering-wheel right spoke and the Hands Free Telephone (HFT) controls are beneath the left spoke.



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Interior Flexibility

The stylish interior layout has the flexibility to extend usability. The rear seats have been designed to fold easily and quickly to significantly increase cargo space. The one touch motion folding rear seats can easily be folded, even if standing behind the car, quickly extending beyond the standard 225 litres of space (including under-boot floor). Folding the seats opens up a flat floored cargo area that gives a surprising 401 litres of cargo space (including under-boot floor), allowing a wider range of luggage to be carried.

The boot area itself is fitted with a 3-mode tonneau cover that in addition to the conventional 'cargo blind' mode, can be removed and locked in at the boot floor so taller items may be placed in the cargo area with the seats folded down.

From this 'locked away' position the tonneau cover can be also extended for 'Secret Mode', allowing the user to section the luggage with the cover forming a hidden section against the boot lip, almost invisible from the outside.



Cargo area with tonneau cover



Cargo blind locked into floor



Secret mode

Engine and IMA system

The CR-Z combines a 1.5-litre i-VTEC engine and Honda's Integrated Motor Assist (IMA) system, giving excellent fuel economy and emphasis on driver enjoyment. The combined power figure peaks at 91kW with 174Nm of torque for the manual and 167 Nm for the CVT.

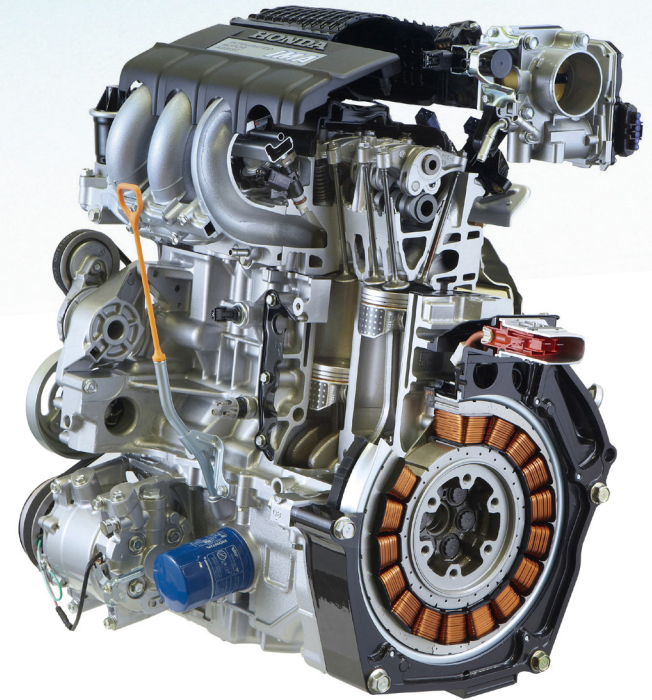
Performance and driver enjoyment can be seen as conflicted with good fuel economy and exhaust emissions levels. The CR-Z's 1.5-litre, 16-valve, i-VTEC, petrol engine provides driver enjoyment with its enthusiastic engine note, willingness to rev and broad spread of torque. At the same time its modest capacity, boosted by an electric motor can achieve excellent fuel economy and low overall exhaust emissions, including the all important CO2 emissions.

The CR-Z emits just 118 g/km of CO2 and consumes 5.0l/100km of fuel for the manual transmission, with the CVT emitting 111g/km and using just 4.7l/100kms of fuel (combined urban/extra urban).

The valve timing on the engine allows for one intake valve to be deactivated at low engine speeds. This creates an additional swirl effect that enables fast combustion and higher exhaust gas recirculation. The effect of this additional turbulence is to reduce emissions and improve fuel consumption. At higher revs, both intake valves are opened to increase power output.

Importantly, small changes were made to the engine to suit the characteristics of the CR-Z, integration of the IMA system and installation in the coupe body. Honda engineers developed a new intake manifold and a flat air cleaner assembly for sufficient clearance and space for pedestrian impact protection.

The 1.5-litre i-VTEC engine was chosen for its combination of light weight, fuel efficiency and compact size. The block of the 1.5-litre engine allows simplified integration of the IMA system. As the basic block layout is shared with the 1.3-litre Insight engine, the sump pan that was developed for that car was adopted. This measure assisted the team in the task of reducing the overall engine height and lowering the position in the chassis.



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Integrated Motor Assist (IMA) System

The IMA system is shared with the Insight hybrid, but the software and parameters have been modified to interact with the 3-Mode Drive System and manual transmission. Although the operating revs are quite different in a manual car, the flexibility of Honda's IMA parallel hybrid system makes integration of different engines and transmissions more straightforward.

Extensive testing was done to ensure that the impressive durability of the Insight's IMA hardware was not compromised in any way by the addition of a manual gearbox. Particular attention was paid to the possibility of over-revving the engine due to missed gear changes and the implications this might have for the system.

The CR-Z's regenerative braking system intelligently apportions braking power between the hydraulic brakes and the electric motor to extract even more electricity from the vehicle's kinetic energy.

The electric motor provides its peak torque instantly from the start, boosting the low end torque and improving initial acceleration. Peak torque delivery at just 1500 rpm, enables great flexibility at all engine speeds.

The battery pack in the CR-Z is a 100 volt Nickel Metal Hydride unit which provides an excellent balance between output, reliability, safety and cost.



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Exhaust Design and Tuning

To ensure drivers enjoy the CR-Z on the open road, the development team dedicated a great deal of time and thought to the design of the exhaust. The brief was to create an efficient unit that allowed the optimum operation of the engine to minimise emissions and generate the target power level, but also to produce an enjoyable sound.

The unique exhaust has a sporty note when the engine is being worked hard, but without excessive noise on freeways or around town. To achieve this the team spent time tuning other components, including the engine mounts and noise insulation, to isolate unpleasant sounds and allow the acoustic ranges of the exhaust to be heard.



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3-Mode Drive System

The CR-Z is designed to combine driver enjoyment with performance and economy. These roles can sometimes be in opposition with characteristics like sharp throttle response and greater steering feedback, increasing driver satisfaction in open road driving.

Honda engineers developed the 3-Mode Drive System, allowing the driver to alter the characteristics of the car depending on their needs and environment. By significantly altering the responses of the car, this system allows drivers to adapt to different road and traffic situations.

This feature enables the driver to choose between three driving modes which alter the parameters of the throttle, steering, climate control and IMA operation.

This new facility allows the driver to decide whether they wish to maximise sportiness, economy or the best balance between the two.



3-Mode Drive System



SPORT Mode

For sporty driving, switch the car into SPORT mode. This noticeably sharpens the throttle response, changes the parameters of the IMA system to provide more electric motor assistance and provides solid and secure steering to deliver a sporty feeling.



Speedometer in SPORT mode

ECON Mode

Honda recognises that maximising fuel economy is sometimes more desirable. In these situations ECON mode can be selected, which prioritises fuel economy in the operation of the drive-by-wire throttle, ECU, air conditioning and the IMA system. For those times when spirited driving is neither possible nor desirable, the Eco Assist function in conjunction with ECON mode, allows the driver to achieve their best economy score on the way to work, or in heavy traffic.

The ECON mode changes throttle response to a non-linear type, smoothing out inputs. This action is assisted by the use of a different engine map that prioritises fuel economy. The climate control system is also influenced by the ECON mode, re-circulating air and reducing compressor operation in order to reduce energy consumption. The use of the motor to assist the petrol engine is redefined with priority given to improve fuel economy.



Speedometer in ECON mode

NORMAL Mode

At all times the car can be run in NORMAL mode, which provides a balance between performance, economy and emissions and suits most driving situations. The CR-Z defaults to NORMAL mode when it is first switched on.



Speedometer in NORMAL mode



Eco Assist

The CR-Z uses a driving-style guidance function that can be used to achieve excellent fuel economy and thus minimising emissions.

During driving, there are two main elements to the system: an 'eco drive bar' indicator within the Multi Information Display (MID), and an ambient meter, behind the digital speedometer display. Both instruments are synchronised, to give real time information on the consumption of fuel and provide guidance on how to modify driving styles.

The 'eco guide bar' in the MID is a solid bar symbol that moves to either side of a central line. The idea is to drive in a way that keeps the bar in the centre and out of the shaded areas on either side.

When driving smoothly, thus efficiently, the bar stays near the centre of the indicator, shifting slightly right during gradual acceleration and slightly to the left when braking gently. During these conditions, the ambient meter behind the speed display glows a green colour to display optimum economical driving.

Under greater acceleration, or when braking moderately, the bar in the MID shifts more towards either end of the scale, showing the use of more fuel, and the ambient meter glows a green-blue colour.

With aggressive acceleration or sudden braking, the indicator bar will head to the right or left, into the shaded areas of the scale indicating that the driving behaviour is not conserving energy. The ambient meter turns blue.



Eco Guide Bar



Multi Information Display

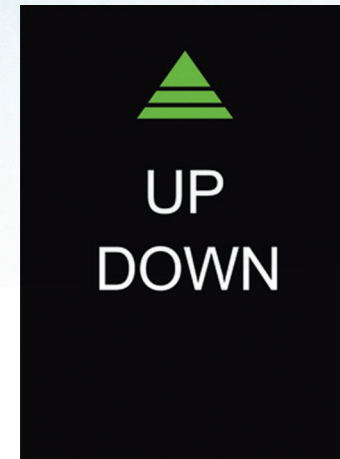
Eco Assist

In order to achieve the best fuel consumption figures, the driver should aim to keep the bar in the centre, and the display glowing green as much as possible.

To help motivate drivers, another display above the bar indicator grants rewards for more efficient driving. If performing well, small leaves will 'grow' above the bar to show the driver's eco-progress, with more leaves added and eventually a flower added if the system records a 'perfect' score.

By pressing the Info button on the steering wheel and scrolling through the MID displays, drivers can look at their average fuel consumption for the current trip as well as retrieve their average fuel economy for the last three journeys.

The manual CR-Z Sport is fitted with a Shift Indicator Light (SIL) that in ECON and NORMAL mode alerts the driver to the optimally efficient shift up or down point. Following the indications of the light and advice of the Eco Assist function, fuel consumption can improve by up to 10 per cent, reaffirming Honda's commitment to improve everyday fuel economy.



Shift Indicator Light (manual only)



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Eco Scoring

Once a journey is over and the ignition is turned off, the 'eco guide' in the MID changes to an 'eco score' display for a period of six seconds. The leaf symbol at the top reports on the driver's performance during the last drive, while the bar and symbols at the bottom of the display show a lifetime score. This is shown in three stages, with the fully grown plant and flower to the right of the bar showing the best score.

If the driver reaches the third stage successfully, a recognition symbol with wreathes is displayed. At the end of the third stage a trophy symbol appears indicating the best economical driving style.

If the driving style becomes less economical and the lifetime score and stage regress, the plant symbol drops its flower and leaves.

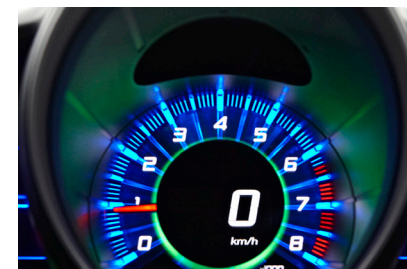
The normal mode – NORMAL – provides a balance between performance, economy and emissions. It generally suits all driving situations. NORMAL mode balances the operation of the IMA system, climate control and throttle between maximum economy and driver enjoyment. This is the default mode on start-up. In this mode the power steering settings are the same as in ECON. All homologation tests are undertaken in NORMAL. Between the different modes, the icon of each mode is displayed on the MID before reverting to the previously selected information.



Cruise Control when in ECON Mode

When Cruise Control is set during normal driving, the removal of excessive acceleration when driving on the flat and when descending hills improves fuel consumption. During gradient changes, it is possible for a conventional system to accelerate excessively, causing additional fuel consumption. In ECON mode, Cruise Control minimises unnecessary throttle openings in these situations. The Cruise Control softens the response to increases in gradient and allows some variation in speed to reduce consumption. Combined with ECON mode, this cruise control reduces fuel consumption without sacrificing driver comfort.

Cruise control operation under conventional settings is available in SPORT or NORMAL mode, as these modes will be used in driving conditions where the vehicle's speed will vary significantly.



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Transmission

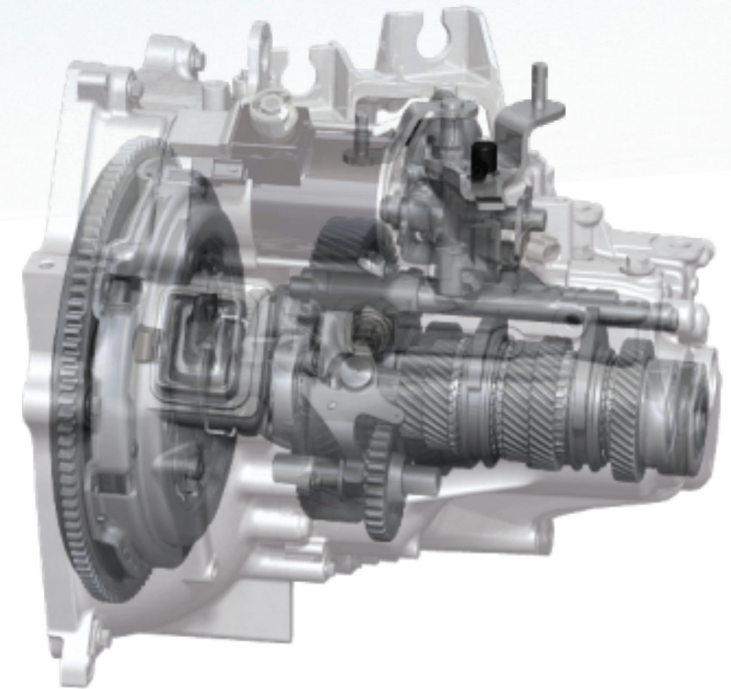
Manual Transmission

The CR-Z is the first hybrid to be fitted with a 6-speed manual gearbox, allowing maximum control over the torque combination of the 1.5-litre i-VTEC engine and IMA motor.

A manual gearbox was considered essential and a 6-speed considered the optimum gearbox for both economy and sportier driving. Honda's unique IMA system works with a variety of hardware. As shown with the first-generation Insight, a manual gearbox can work very well with the right hybrid technology.

The manual gearbox gives the CR-Z a very different character from existing hybrids and provides a new level of interaction.

The gearbox has been developed with the enthusiastic driver in mind, with a short shift and firm but light action that encourages the driver to change regularly. Tolerances of the shift mechanism components have been optimised to reduce free play in the mechanism. The detent is a component that controls the movement of the shift lever and this area was the subject of a great deal of attention to achieve a positive click with each gear change.

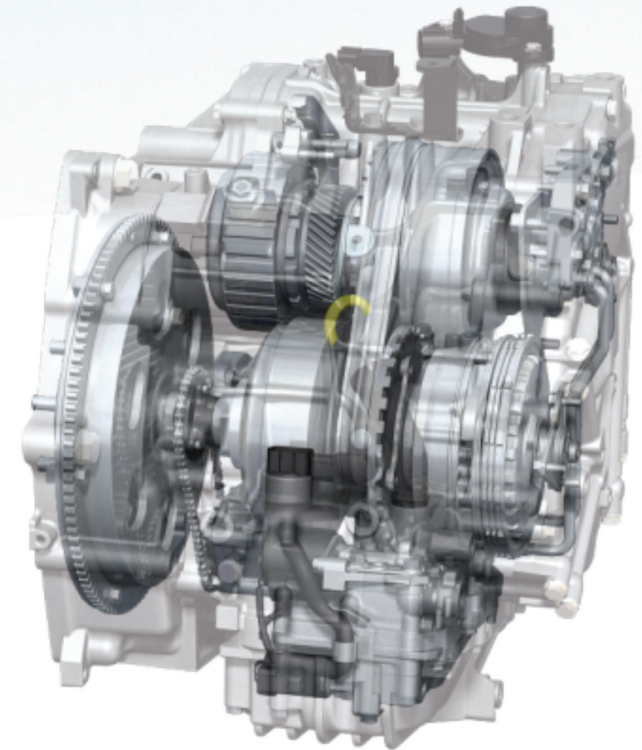


Transmission

Continuously Variable Transmission (CVT)

The CVT offers smooth and predictable transitions and excellent low-end acceleration and low-rpm cruising. By helping the engine and IMA motor stay in their most efficient operating range, the CVT provides a fuel efficiency benefit superior to that of a conventional automatic transmission with gears and allows for greater efficiency during regenerative braking by smoothing deceleration.

The use of a lower gear ratio results in quick-reacting initial acceleration performance. The start clutch control is redesigned to take full advantage of the features of the IMA system, engaging at lower rpms to enhance initial acceleration and contribute to fuel efficiency.



Chassis

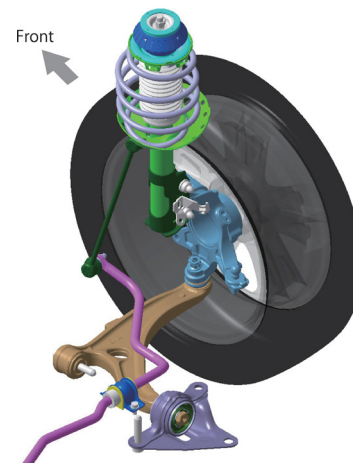
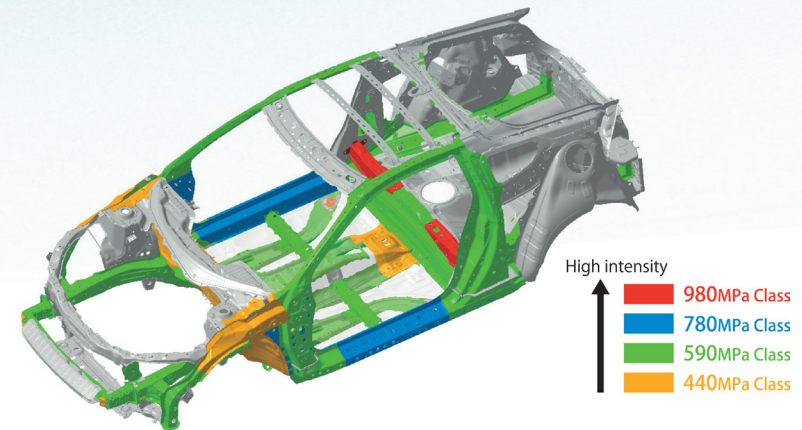
The chassis development of the CR-Z was always going to be a cornerstone of the character of the car. From the outset, the basic platform was shared with the Honda Insight but with significant changes in length, track width, components and settings.

The most significant change to the platform is the reduction in wheelbase by 115 mm to increase the agility and reduce the overall length of the CR-Z by 325 mm. Overall width is increased by 45mm compared to Insight.

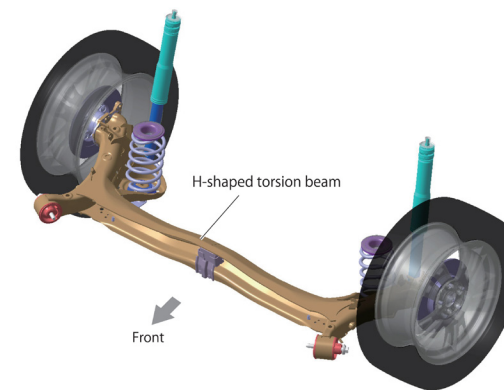
To complement the wider track and reduce weight, the lower arms of the front MacPherson strut suspension is made from aluminium. These aluminium struts are lighter and stronger, to support the greater forces generated by the increase in track width and tyre size.

The rear suspension is an H-shaped Torsion beam, providing excellent control of the rear wheels while creating room for the low mounting of the IMA battery and control unit.

The mounting of the battery below the boot along with low overall height of the CR-Z has benefits for handling by lowering the centre of gravity. The trailing arms are modified to increase track width and increase strength.



MacPherson strut



H-shaped Torsion beam

Steering

New advanced Electric Power Steering control – a first for Honda – gives a more linear and natural feel. This new software, combined with the ability to select the level of assistance through the 3-Mode Drive system, gives the CR-Z a totally different steering feel to other Honda hybrids.



Recycling Information

The CR-Z is 92 per cent recyclable overall and Honda is continually working on ways to improve the figure closer to full recyclability. The battery pack is included in this figure, meaning the CR-Z is no less recyclable than a conventionally powered vehicle.



Specifications

FEATURES	CR-Z Sport	- Common features -	CR-Z Luxury
Powertrain			
Engine		SOHC + Integrated Motor Assist(IMA)	
		Inline 4 cylinder	
Capacity		1.5 litre - 1497 cc	
Compression ratio		10.4	
Bore x stroke (mm)		73 x 89.4	
Emission - Australian Standards		ADR 79/02 (Euro 4)	
Manual Transmission - 6-Speed 2	6-Speed		-
- with Hill Start Assist (HAS)	✓		-
Automatic transmission with grade logic	✓	CVT (Constantly Variable Transmission)	✓
- with Creep Aid System		✓	
- with steering wheel mounted paddle shifters		✓	
Fuel type		Unleaded (RN91)	
- E10 Suitable		✓	
Fuel supply system		Honda Programmed Fuel Injection (PGM-FI)	
Drive-by-Wire throttle system (DBW)		✓	

Specifications

FEATURES	CR-Z Sport	- Common features -	CR-Z Luxury
Performance			
Maximum power - Total System Output		91 kW @ 6000 rpm	
Maximum torque - Total System Output			
- Manual ²	✓	174 Nm @ 1000-1500 rpm	-
- Automatic	✓	167 Nm @ 1000-1500 rpm	✓
Fuel consumption - manual transmission (litres/100km)^{1 2}			
- combined	5.0		-
- urban	6.0		-
- extra urban	4.4		-
Fuel consumption - automatic CVT (litres/100km)¹			
- combined		4.7	
- urban		5.2	
- extra urban		4.3	
CO₂ Emissions - manual transmission (g/km)^{1 2}			
- combined	118		-
- urban	142		-
- extra urban	105		-
CO₂ Emissions - automatic CVT (g/km)¹			
- combined		111	
- urban		124	
- extra urban		103	



Specifications

FEATURES	CR-Z Sport	- Common features -	CR-Z Luxury
Performance			
3-Mode drive system			
- Sport mode		For increased throttle & steering responsiveness as well as increased electric motor power assist.	
- Normal mode (default)		Delivers a linear throttle response with good fuel economy. A balance of agility and smooth driving.	
- Econ mode		Tuned for optimal fuel economy. Easy driving with torque assist at low speed.	
Ecological Drive Assist Programme for improved fuel economy		✓	
Auto-Stop mode		✓	
Chassis			
Front suspension		MacPherson strut	
Rear suspension		Torsion Beam Axle	
Power Steering		Electric	
Stabiliser bars		Front & rear torsion bar type	
Front brakes		Ventilated disc	
Rear brakes		Solid disc	



Specifications

FEATURES	CR-Z Sport	- Common features -	CR-Z Luxury
Exterior			
Door handles		Body coloured	
Door mirrors body coloured		✓	
- with side turn indicator		✓	
- powered		✓	
- heated		✓	
- electrically retractable		✓	
Front fog lights		✓	
Headlights		Halogen	
- auto on/off		✓	
- beam height adjustment		✓	
LED Tail lights		✓	
Panoramic glass roof	-		✓
Privacy glass			
- Rear quarter		✓	
- Rear windscreen		✓	
- Rear extra		✓	
Windscreen wipers			
- Front windscreen		Rain sensing	
- Rear windscreen		✓	



Specifications

FEATURES	CR-Z Sport	- Common features -	CR-Z Luxury
Interior			
Accessory power outlet (12v)		✓	
Air conditioning		Climate Control	
Alloy pedals		✓	
Centre console with armrest		■ ⁷	
Comprehensive interior illumination		✓	
Cruise control		✓	
Cup Holders ⁷		3	
Driver's footrest		✓	
Driver seat height adjustment		✓	
Dust & pollen filter		✓	
Glovebox (climate control linked)		✓	
Instant fuel consumption meter		✓	
Lights-on warning		✓	
Low fuel warning		✓	
Multi information display			
- Outside temperature display		✓	
- Odometer		✓	
- Trip meter		✓	
- ECO coaching & rating system		✓	
- Fuel economy history - Last three drives + current		✓	
- Average fuel economy		✓	



Specifications

FEATURES	CR-Z Sport	- Common features -	CR-Z Luxury
Interior Cont.			
- Distance to empty		✓	
- Time elapsed		✓	
- Average speed		✓	
- Power flow map		✓	
- Seat belt reminders		✓	
Power windows with auto up/down		✓	
Seat back pocket		Front passenger	
Seats - Front			
- Fully reclining		✓	
- Cloth trim	✓		-
- Leather trim	-		✓
- Heated	-		✓
Seats - Rear			
- Cloth trim		✓	
- One touch fold-down		✓	
Shift indicator light (Normal & Econ Mode) ²³	✓		-
Steering column adjustment		Tilt & telescopic	
Steering wheel		Leather-wrapped ⁵	
Ticket holder		✓	
Tonneau cover		3-mode	
Vanity mirror (illuminated)		Driver & front passenger	



Specifications

FEATURES	CR-Z Sport	- Common features -	CR-Z Luxury
Audio & Navigation			
AM/FM radio, CD with MP3 compatibility		✓	
Antenna		Shark-fin type	
Auxiliary jack	✓		-
Hands-free telephone bluetooth connectivity ⁶		✓	
- Steering wheel mounted telephone controls		✓	
Speakers			
- Front		2	
- Rear		2	
- Tweeters		2	
Satellite Navigation with			
- SUNA live traffic updates	-		✓
- DVD Video	-		✓
- Bluetooth audio streaming	-		✓
Speed-sensitive volume compensation (SVC)		✓	
Steering wheel mounted audio controls		✓	
USB Connectivity with iPod integration ⁶		✓	



Specifications

FEATURES	CR-Z Sport	- Common features -	CR-Z Luxury
Safety & Security			
Active headrest		Driver & front passenger	
Advanced Compatibility Engineering (ACE) body design		✓	
Airbags SRS - front		Driver & front passenger	
Airbags SRS - side with OPDS		Driver & front passenger	
Airbags SRS - full length curtain		✓	
Anti-lock Braking System (ABS)		✓	
Child safety seat anchorages		2	
Daytime Running Lights (DRL) - LED Type		✓	
Electronic Brake-force Distribution (EBD)		✓	
Honda G-Con technology		✓	
Immobiliser system		✓	
Keyless entry with central locking		✓	
Progressive crumple zones		Front & rear	
Rear parking assist	✓		■
Rear view mirror		Day/Night	
Reversing Camera	-		✓



Specifications

FEATURES	CR-Z Sport	- Common features -	CR-Z Luxury
Safety & Security Cont.			
Seat belts with			
- Pretensioners		Front	
- Reminder		Driver & all passenger	
- 3-point ELR		Front	
- 3-point ELR/ARL		Rear	
Security alarm system		✓	
Transmission shift lock ⁴		✓	
Vehicle Stability Assist with traction control (TCS) and brake assist (BA)		✓	

Specifications

FEATURES	CR-Z Sport	- Common features -	CR-Z Luxury
Dimensions/Weights/Capacities			
Overall length (mm)		4080	
Overall width (mm)		1740	
Overall height (mm)		1395	
Wheelbase (mm)		2435	
Tread (mm)			
- Front		1515	
- Rear		1500	
Front head room (mm)	938		946
Ground clearance - non-load (mm)		145	
Kerb weight (kg)			
- Manual transmission ²	1155		-
- Automatic	1175		1190
Maximum Permissible Weight (kg)		1570	
Fuel tank capacity (litres)		40	
Turning radius at body (meters)		5.4	
Boot Capacity (Litres)			
- Seat up (including under trunk box)		225	
- Seat down (including under trunk box)		401	
Seating capacity		4	



Specifications

FEATURES	CR-Z Sport	- Common features -	CR-Z Luxury
Tyres and Wheels			
Wheel size		16 x 6J	
Tyre size		195/55R16 87V	
Wheel type		Alloy	
Spare wheel type		Temporary	
Warranty			
Vehicle warranty		3 years or 100,000 km	
Vehicle rust and perforation warranty		6 years	
Hybrid battery warranty		8 years, unlimited km	

Specifications

FEATURES	CR-Z Sport	- Common features -	CR-Z Luxury
Colour Guide			
Exterior		Interior	
Crystal Black (P)		Black	
Horizon Turquoise (P)		Black	
Milano Red		Black	
Premium White (P)		Black	
Storm Silver (M)		Black	

KEY: ✓ Standard feature. ■ Accessory option. - Not available.

¹ The fuel consumption figures quoted are based on ADR81/02 test results

² Not available on Luxury

³ Manual transmission only

⁴ CVT only

⁵ Leather interior includes some PVC vinyl material

⁶ Check compatibility list

⁷ Fitment of centre console accessory deletes one cup holder