

HONDA S2000



HONDA



S2000

Impressum Seite: This Australian specification article includes headlight patterns. see page 08 for photograph.



Passion and spirits rise as Honda meets the challenges of the future, firm in our pursuit of driving pleasure.



Important Note: The Australian specification vehicle includes headlight washers - see page 26 for photograph.



*Our desire – to create a car with a unique sense of oneness,
harmonising the diverse elements of life in the future.*



Important Note: The Australian specification vehicle includes headlight washers - see page 26 for photograph.



A oneness of driver and car. A oneness with the sights, sounds and sensations of the natural world. And a oneness with society.



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It's the living embodiment of the Honda spirit. It's the car you've been longing for.



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The symbiotic relationship between car and driver

– Sports car packaging is dependent on the laws of physics –

Oneness is the basis of driving pleasure

The perfect relationship between a horse and rider is one of complete intimacy. The rider controls the actions of the horse by the slightest body movement, becoming in effect one with the horse, conveying instructions in an almost telepathic manner.

This is the ideal that Honda sought when developing the S2000 – a sports car that would respond intuitively to the demands of the driver while still obeying the laws of physics that govern our material world. The physical characteristics necessary to achieve this melding of man and machine are of supreme importance, and our decision was to design a lightweight, compact package that combines a low centre of gravity with an ideal front-rear weight distribution and a low yaw moment of inertia.

By building on these vital basic attributes we have succeeded in creating not just a sports car, but an entity where the distinction between human desire and mechanical function almost ceases to exist – car and driver become one in the S2000.



Ideal 50:50 front-rear weight distribution

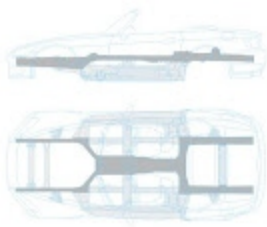
A natural sports layout demands innovative engine placement

Various engine-drive layouts were considered in Honda's search for the perfect sports car configuration. Detailed investigation revealed that the front-engine, rear drive layout was a natural choice to realise the ideal 50:50 front-rear weight distribution ratio necessary to achieve supertative handling and balance while ensuring superb traction performance. Our goal was to create a sports car that will enable more people, regardless of their levels of driving skill, to experience the real pleasure of sports car driving over a wide variety of road conditions. The decision to pursue an FR layout was merely the beginning of our quest for an ideally balanced sports car. The frontal positioning of the engine and transmission, the heaviest components, required a radical change in design to prevent the car from being front heavy.

Accordingly, not only were the size and weight of the engine significantly reduced, but the unit itself was located behind the front axle, a longitudinally mounted, front-engine configuration that enabled the ideal front-rear weight ratio of 50:50 to be achieved. The concentration of other heavy components, such as the fuel tank, battery and spare tyre at the midpoint of the vehicle, significantly lowers the centre of gravity and gives the S2000 an extremely low moment of inertia comparable to that of a super sports car with a rear-midship layout.

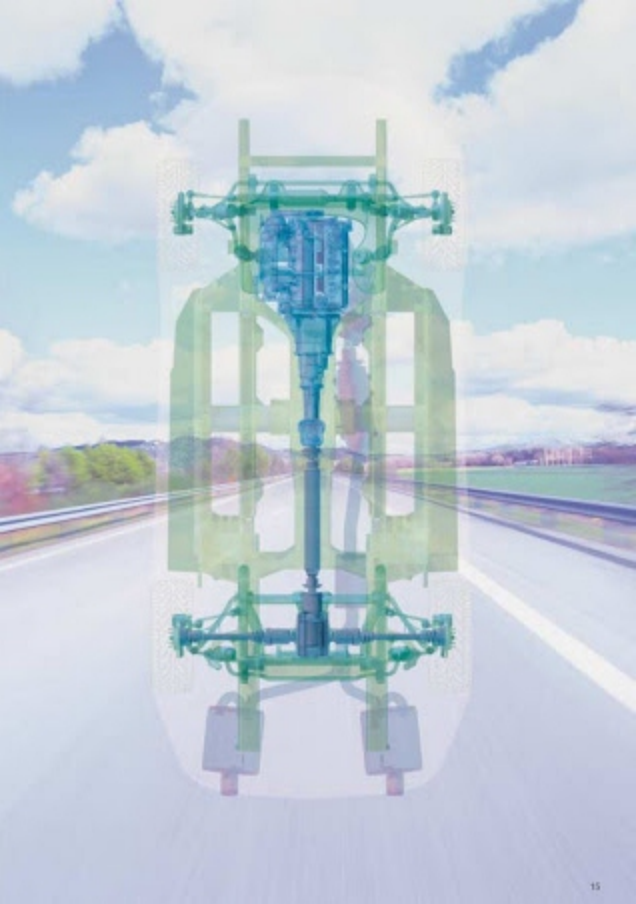
Closed body rigidity in an open car

Balanced, dynamic sports driving performance ultimately depends on the structural integrity of the body. Only an exceptionally rigid body can counter the forces generated during braking, cornering and coping with vibration-inducing road surfaces – thus allowing the suspension to perform as designed. For the S2000, Honda employed an innovative High X-Bone Frame structure that links the front and rear side members by a high-mounted floor tunnel that provides superb torsional rigidity. Large cross-section sidesills further enhance this exceptional body stiffness. This unique construction gives the open-top S2000 the equivalent body rigidity of a closed car.



High X-Bone Frame structure

The High X-Bone Frame with its high-mounted floor tunnel is combined with the large cross-section sidesills to provide a lightweight, highly rigid structure equivalent to that of a closed car.



The symbiotic relationship between car and driver

– The prerequisites of premium performance –

Power throughout the rev range

No longer do we live in an age when the environment can be sacrificed in the pursuit of more power. The second automotive century demands a more responsible attitude, especially from the manufacturers of sports cars. Engines that deliver higher power must do so with the highest level of environmental consideration.

The 2-litre in-line four-cylinder DOHC VTEC engine of the S2000 delivers impressive power and torque – 176kW@8300rpm and 208Nm@7500rpm – yet meets the Honda LEV standard for low emission vehicles. Its maximum power output of 90kW/litre, one of the highest for naturally aspirated engines, 9000rpm rev limit and 11.0:1 compression ratio place the S2000 firmly within the realm of competition race engines. However, these figures reveal only a fraction of this engine's potential. To provide the maximum driving pleasure, engine development was focused on ensuring an exhilarating feeling of power could be experienced throughout the rev range. The three-dimensional performance graph shows the degree of throttle opening in addition to the conventional power and torque curves. The consistently high torque at all engine revolutions provides not only the expected superb acceleration at peak power, but also immediate response at cruising speeds. Such engine characteristics – smooth, instantaneous response regardless of throttle input – serve to enhance the feeling of oneness between the driver and car.

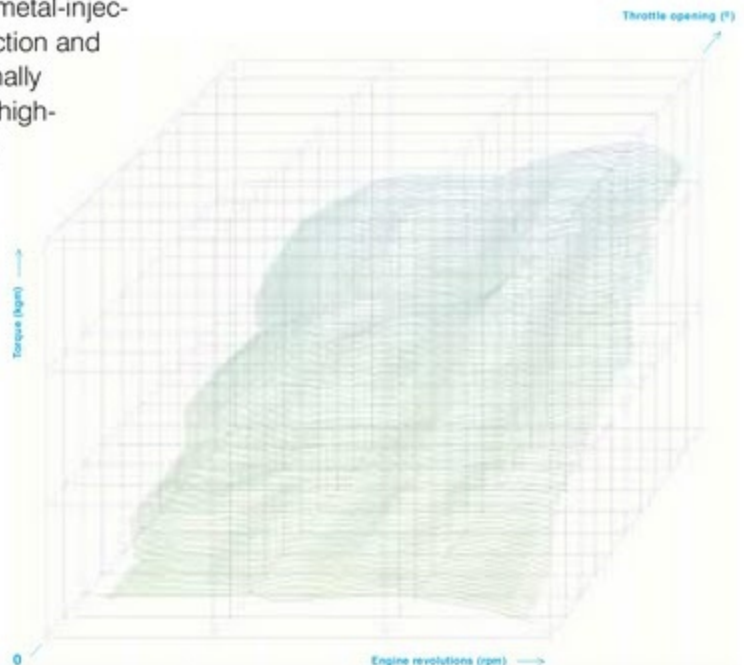
Smaller, lighter yet more powerful

The exceptionally powerful 2-litre DOHC VTEC engine used in the S2000 is approximately 10 per cent shorter, narrower and lighter than previous equivalent-displacement engines. Use of high-precision, metal-injection moulded, roller coaxial VTEC rocker arms reduces friction and simplifies the internal structure of the camshaft. Exceptionally strong, yet lightweight, round-section valve springs allow higher engine revolutions, and the smaller diameter camshaft gear drive and narrower valve angle permit a more compact DOHC cylinder head. Positioning the silent-drive oil pump within the sump shortened the block, and a serpentine auxiliary drive enabled the generator and water pump to be located for maximum compactness. Such dimensions also enhance collision safety, since the crumple zone could be proportionately expanded.



Chain camshaft drive system

The scissor-gear, silent-drive-chain camshaft drive and the single-belt serpentine auxiliary drive reduce the overall size of the powerplant.



Three-dimensional engine-performance graph

Throttle opening is an additional element of this graph, enabling the S2000's engine characteristics to be discerned throughout the rev range.



The higher the revolutions, the higher the technology

To realise exhilarating acceleration, we determined that the maximum revolutions of the S2000 engine should be set at 9000rpm, one of the highest figures among commercially available production cars. Achieving such a high engine speed necessitated reducing the inertial weight of components while increasing strength and eliminating friction wherever possible. Accordingly, forged aluminium pistons are employed for the first time in a Honda production car together with special hard-surface carburised connecting rods for greater strength. To cope with such high engine revolutions the clutch also received special attention, with the use of extremely high wear-resistant pad material while the small inertia mass of the flywheel, the lowest of all 2-litre engines, increases response and ease of use.

Connecting your right foot to the road

The rigidity of the drivetrain determines the immediacy of the input of the driver's right foot. The S2000 features a one-piece propeller shaft and large-diameter driveshaft with widely positioned aluminium differential mounts that convey positive, instantaneous delivery of power to the rear wheels. Similarly, we adopted a highly refined limited-slip differential that enables the exceptional power of the S2000 to be transmitted to the road with minimal loss and greater control under changing road conditions and weight transfer when cornering.

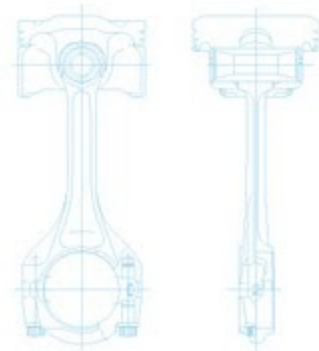
6-speed close-ratio harmony

To fully exploit the potential of the high-revving, high-power S2000 engine we developed a 6-speed close-ratio manual transmission with a low inertia geartrain ideal for the rear-drive layout. This geartrain reduces the load on the synchromesh and was developed from Honda's renowned expertise in front-engine, front-drive vehicles. Unlike that of other cars, sixth gear on the S2000 is not an overdrive, but is an integral element that perfectly matches this gearbox to the unique characteristics of the engine for smooth acceleration under a wide variety of driving conditions. First, third and fourth gears feature double-cone synchronisers and a triple-cone synchroniser is fitted to second, reducing the shift load for a positive, short-stroke, competition-style shift feel. The S2000's flick-of-the-wrist shifting ability encourages drivers to create their own individual symphonic driving melodies.



DOHC VTEC

The high-precision, metal-injection moulded, roller coaxial VTEC rocker arms reduce friction and weight and allow the internal structure of the camshaft to be simplified; thereby allowing higher revolutions.



Forged aluminum pistons and carburised connecting rods

The rigid forged aluminum pistons, strong tapered-roller bearings and carburised connecting rods are weight-saving and friction-decreasing measures that help achieve the goal of high revolutions.



Slick-shifting manual transmission

The shift unit is directly located on the rigid transmission case for a positive feel and to reduce the vibration caused during shifting.





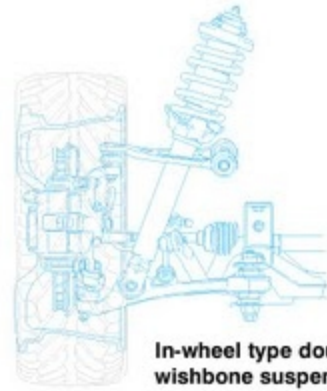


The symbiotic relationship between car and driver

– Designed to maximise driving pleasure at any pace –

Invigorating handling at all speeds

The essence of a sports car is its ability to provide the same exhilarating performance whether negotiating tight slow corners or high-speed curves. Maintaining poise and balance during rapid direction changes and acceleration. The S2000 was developed to be fun to drive at any speed and on a wide variety of roads. Accordingly, before we conducted full-scale track testing, we tested the S2000 under normal road conditions to ensure that driving pleasure was not diminished in everyday situations. Further extensive testing, not only at our sinuous Takasu, Japan, test track, but also the famed Nurburgring in Germany, revealed that the S2000 was a world-class performer under any conditions.



In-wheel type double wishbone suspension

A suspension tuned for pleasure

The in-wheel type front and rear double wishbone suspension was selected for the flexibility of its settings. It also offers the virtue of compactness and lower load height while allowing the mounts to be widely spaced on the front and rear subframes to enhance rigidity. Independent-pressure separate-reservoir dampers complete this layout, and the resulting taut linear responsive handling gives maximum feedback from the road, yet does not detract from driving comfort.



Brakes to match the performance

The full potential of a sports car cannot be realised without the reassurance of a braking system that complements its performance. The 16-inch front ventilated discs and 15-inch rear discs provide progressive fade-resistant braking force in direct response to pedal pressure, and the specially calibrated ABS allows the driver to fine-tune braking performance for maximum sports driving pleasure.

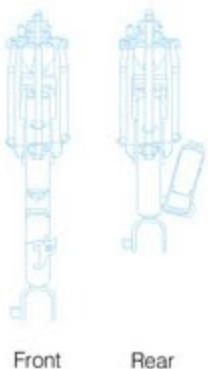


Tyres and wheels for responsive stability

The tyres for the S2000 were specifically designed to complement its unique abilities. The 215/45R17 front tyres provide the essential quick responsive steering, while the wider 245/40R17 tyres at the rear ensure maximum grip. Lightweight aluminum wheels further reduce unsprung weight for superb cornering stability that is the hallmark of a true sports car.

EPS enhances your communion with the road

The lightweight and compact electronically assisted power steering system (EPS) eliminates the power loss of hydraulic systems and provides the perfect response necessary for sports driving. An optimised gear ratio and enhanced gearbox torsional rigidity give a taut linear feel at high and low speeds while minimising kickback for sensitive road communication that you can exploit to the full.



Separate-reservoir dampers

The combination of sealed high-pressure gas and the free-piston movement, which prevents cavitation, allows excellent response.



The relationship between the driver and the world

– Open-top driving opens up new vistas –

It's a mind-expanding difference

The S2000 is different. Its open-top design ensures you experience the rich variety of sights, sounds and smells that nature has to offer. Your oneness with the car and road is broadened into an enviable communion with the world around you. The sound of the engine merges into the breeze; the scent of the forests blends with that of the leather upholstery. Opening the top opens your mind to a wealth of new driving sensations.



Open-cockpit comfort without sacrifices

The S2000 is primarily designed to be driven with the top down, and we conducted exhaustive wind-tunnel and real-world testing to fine-tune the body contours for a pleasant airflow conducive to driver and passenger comfort. The buffeting effect of the wind that is usually apparent behind the occupants' heads is eliminated as is the distraction this causes. To ensure that owners can continue to enjoy open-top sports driving in cold weather, the S2000 is equipped with a large-capacity, high-performance heating system. Central outlets ensure lower-body warmth even in the middle of winter and the one-touch open-mode air-conditioning setting enables the driver to select the most comfortable environment for any season.

Owners of the S2000 will soon become addicted to open-top driving; however, to cope with sudden changes in weather, the S2000 features one of the quickest operating soft-tops in the world. This lightweight electric system raises the roof in approximately six seconds, hardly time for the rain to spot the water-resistant upholstery.

The cockpit reflects the driver/car interface

The interior ergonomics of the S2000 set this vehicle apart from all others. Seat, steering wheel, shift lever and pedal positions all reinforce the oneness of driver and car. Competition-style bucket-type seats provide excellent lateral support when cornering, thus minimising fatigue to allow you to spend fun-filled hours at the wheel. The small 360mm-diameter steering wheel offers direct steering response, with an optimised shape and thickness for delicacy of control and a non-slip, punch-finish leather surface. To further hone steering responsiveness we developed a compact lightweight air-bag module that eliminates the centre offset and reduces the moment of inertia.

The compact digital instrument panel, although mounted directly behind the steering wheel, gives the driver unobstructed at-a-glance information. The tachometer, a vital element of sports driving, features a vivid graphic display for instant readability, while speed is indicated by a large digital readout. Warning lights are clustered logically and switches are positioned according to their frequency of use for maximum driving efficiency.

The unique racing spirit of Honda is obvious from the moment you turn the key – nothing happens. You've time to relax, sit back and compose yourself. Then you hit the red starter button that lights the competitive fire within the S2000. Let the fun begin.



Effect of open-mode air conditioning

Cockpit

Operation of all controls is swift and certain. Those most frequently used, such as air conditioning and audio switches, are located close to the steering wheel, and the digital-display speedometer is exceptionally easy to read.





The relationship between the driver and society

– Responsibility is the province of manufacturer and driver –

Safety is an integral aspect of sports driving

The enjoyment of high performance without anxiety was our goal. The S2000 is a next-generation sports car, one that fulfils its social responsibilities while generating unconditional driving pleasure. Safety is a crucial element in high-performance cars, especially open-top sports cars, and our objective was to create a vehicle that offers safety levels equivalent to that of closed-body cars.

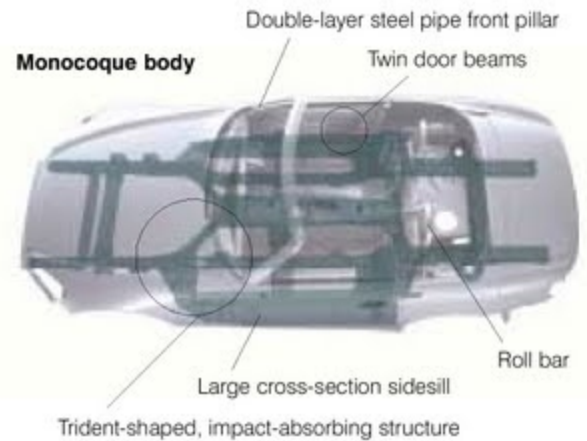
The High X-Bone Frame structure is the key to the S2000's outstanding safety performance. In a frontal collision, the straight side-members absorb the brunt of the impact by progressively crumpling, impact force is also distributed through the floor tunnel, floor frame and sidesills to effectively preserve basic cabin integrity. Three-point ELR seatbelts with pretensioners and load limiters are fitted as standard equipment, and the dual SRS airbags offer additional head and torso protection for seatbelt-restrained occupants. Twin beams in each door and the high, large cross-section sidesills help ensure the safety of occupants in a side collision. The excellent visibility afforded by this open-top vehicle is further enhanced by the optimised A-pillar shape, while highly effective, long-life High Intensity Discharge (HID), low beam only, projector headlights provide superb illumination for night time driving. A major contribution to safety is the combination of the inherent agility of the S2000, with the standard anti-lock braking system (ABS). The S2000 achieved impressive results in frontal, offset and side collision tests, and offers one of the highest levels of vehicle safety in the world.

Sports cars need not be antisocial

The Honda S2000 owes its high performance to a highly efficient engine design, not sheer size, and such efficiency results in outstanding fuel economy.

One of our most significant achievements as regards our social responsibility was the inclusion of Low Emission Vehicle (LEV) technology in this sports car. The metallic honeycomb catalytic converter and the electric air pump system that injects air into the exhaust ports ensure the temperature of the catalyser is kept high for lower emission levels, even when starting from cold. Also, since the air-fuel ratio is precisely and constantly adjusted, harmful HC, NOx and CO emissions are sharply reduced. Such environmentally aware thinking in the design of what is essentially a high-performance car is typical of Honda's commitment.

The S2000 is a next-generation sports car, one that will build a new relationship with society, thus allowing you to enjoy the exquisite pleasure of sports driving in a socially responsible manner.



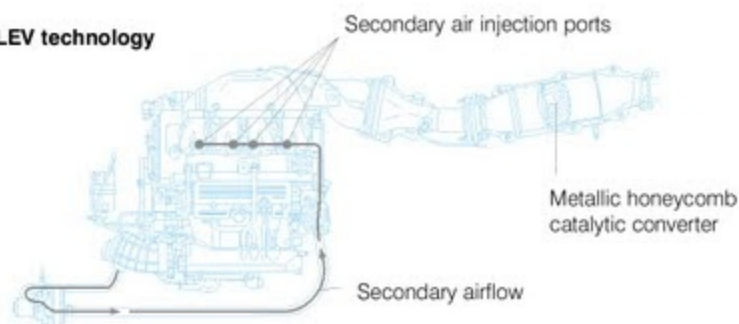
Dual SRS airbags for driver and passenger



Headlight Washers
(This additional feature is included in the Australian specification vehicle)



Honda LEV technology



Caution: The dual SRS airbags are a supplemental safety feature and are only truly effective when used in combination with the seatbelts. Safe driving is always advised. ABS offers no protection against dangerous driving practices.

SAFETY MEASURES & ENVIRONMENTAL SOLUTIONS









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COLOURS

Interior Colours

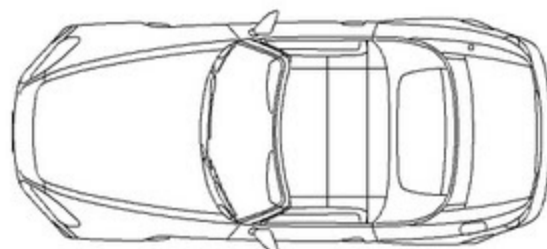
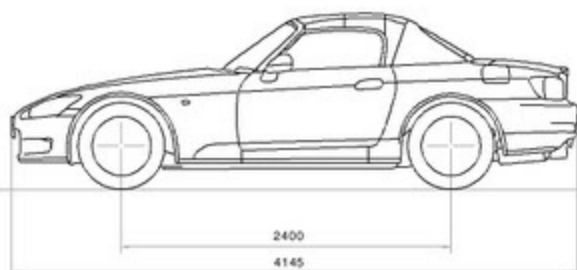
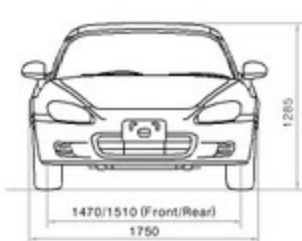


Red & Black



Black

General View: (Unit: mm)



Exterior Colours



Silverstone Metallic*
(Black or Red & Black leather)



Berlina Black
(Black or Red & Black leather)



Indy Yellow Pearl*
(Black leather only)



Nuerburgring Blue Metallic*
(Black leather only)



Formula Red
(Black leather only)



Monte Carlo Blue Pearl*
(Black leather only)



Grand Prix White
(Black or Red & Black leather)

ACCESSORIES

Make the S2000 truly your own

Personalise your new S2000 and enhance your driving pleasure even further with this exciting range of colour coordinated body components and practical on-car accessories.

Choose from sporty front and rear spoilers and functional sill air deflectors.

Select your accessories when you choose your S2000 for full warranty protection and quality Honda fitment.



Sill Air Deflector



Rear Boot Spoiler



Storage Net



Hard Top – Available by special order ex Japan



Floor Mats – Available in Red and Black.

Major Equipment

Vanity mirror		Passenger sunvisor
Windows (front & side)		Heat absorbing
ACTIVE SAFETY		
Anti-lock Brakes (ABS)		†
Convex door mirror		Passenger side
Hazard warning lights		†
Headlights (low beam)		HID
High mounted stop light		†
Rear view mirror		Day/night type
Seatbelt reminder		Driver
Suspension – front		Double wishbone
Suspension – rear		Double wishbone
PASSIVE SAFETY		
Airbag SRS		Driver & front passenger
Fire retardant interior		†
Front windscreen		Laminated
Fuel tank rollover valve		†
Immobiliser system		†
Instrument panel		Padded
Monocoque body construction		†
Progressive crumple zones		Front & rear
Rollover protection		†
Screw type fuel cap		†
Seatbelts – 3 point ELR		†
Security alarm system		†
Side impact protection		†
Steering column		Energy absorbing type
DIMENSIONS		
Length		4145mm
Width		1750mm
Height		1285mm
Ground clearance – laden		107mm
Weight – tare		1255kg
Turning circle		10.8m
Fuel economy	Combined (litres/100km)	10.0
Fuel tank capacity		50 litres
Wheel size	Front	17 x 7JJ
	Rear	17 x 8.5JJ
Tyre size	Front	215/45 R17 87W
	Rear	245/40 R17 91W
Seating capacity		2
AUDIO		
AM/FM radio, stereo cassette		4 channel x 40 watts
CD stacker		8 CD capacity
Front speakers		2
Front tweeters		2
COLOURS		
	Exterior	Interior
	Grand Prix White	Black or Red Leather
	Berlina Black	Black or Red Leather
	Formula Red	Black Leather
	Silverstone Metallic*	Black or Red Leather
	Indy Yellow Pearl*	Black Leather
	Nuerburgring Blue Metallic*	Black Leather
	Monte Carlo Blue Pearl*	Black Leather

Specifications

POWERTRAIN

Engine	Inline 4 cylinder, DOHC VTEC
Capacity	2.0litre – 1997cc
Max power	176kW @ 8300rpm
Max torque	208Nm @ 7500rpm
Control system	Honda programmed & fuel injection (PGM-FI)
Emission standard	LEV (Low Emission Vehicle)
Manual transmission	6 speed
Limited-slip differential	†
Fuel type	Premium Unleaded

CHASSIS

Body Type	Monocoque
Dampers	Gas type
Front suspension	Double wishbone
Rear suspension	Double wishbone
Stabiliser bars	Front & rear
Power steering	Electric
Wheel type	Alloy
Spare wheel type	Temporary
Brakes	Front Rear
	Vented disc Disc

EXTERIOR

Bumpers	Impact absorbing
Front wiper	2 speed & intermittent
Headlights (low beam)	HID
Headlight washers	†
Keyless entry	†
Power door mirrors	†
Power soft top	†

INTERIOR

Airconditioning	†
Airconditioning pollen filter	†
Ashtray	†
Boot release	†
Centre console	With storage
Central locking	†
Cup holder	†
Dashboard warning lights	Comprehensive array
Dashboard	Digital
Driver's footrest	†
Driver's window	Auto up/down
Fuel lid release	†
Head restraints – front	†
Interior illumination	Cargo area
Interior illumination	Map lights
Interior illumination	Courtesy light
Lights-on warning	Chime
Low fuel warning	Light
Power windows	†
Power outlet (10 amp)	†
Storage net	x 3
Tachometer	Digital
Tripmeter	x 2
Seat back pockets	Driver & passenger seats
Seat trim material	Leather

Specifications may vary in some cases and are subject to change without notice. Equipment may vary in some cases and is subject to change without notice. † Standard equipment



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