



October 2010

PRODUCT INFORMATION
MY10 Barina Spark

Configuration

- Five door hatchback

Models

- Barina Spark CD, Barina Spark CDX (1.2 litre petrol – manual)

Dimensions

	Barina Spark CD and CDX
Length	3595mm
Width (no mirrors)	1597mm
Height	1522mm
Wheelbase	2375mm
Front track	1410mm
Rear track	1417mm
Leg/shoulder/head room (front)	1067mm/1288mm/1009mm
Leg/shoulder/head room (rear)	893mm/1263mm/952mm
Luggage capacity	170 (Rear seat up)

Engine

- 1.2 litre in-line 4-cylinder DOHC 16 valve petrol engine with E10 compatibility
 - Power: 59kW @ 6400rpm
 - Torque: 107Nm @ 4800rpm

Transmissions

- 5-speed manual transmission

Fuel economy (combined)

- 5.6 litres/100km (1.2 litre petrol manual)

Emissions

- CO₂ emission levels for the 1.2 litre petrol manual are 128 g/km

Development

- Global mini car architecture investment – \$US800 million
- Development period – 27 months
- Vehicle development – over one million kilometers
- Test locations – United Kingdom, United States, Sweden, China, Korea and Australia
- Numerous durability and extreme weather tests were conducted, including hot weather tests in Arizona, USA and cold weather tests in Arjeplog, Sweden.

Technical Data Overview

1.2 litre DOHC 16-VALVE 4 cylinder petrol engine	
Availability	Standard on CD & CDX models
Valvetrain	Overhead camshafts, four-valves per cylinder
Fuel Delivery	Multi-port fuel injectors
Drive axle	Front wheel drive
Turning circle	9.9 metres
Fuel tank capacity	35 litres
Displacement	1206cc
Compression Ratio	9.8:1
Front suspension	McPherson strut
Rear suspension	Torsion beam
Steering	Hydraulic power steering
Brakes	236mm front ventilated discs; 200mm rear drums Electronic Stability Control (ESC) Four channel, four sensor ABS, EBD, TCS
Wheels and tyres	CD – 14"x4.5" alloy wheels CDX – 15"x5" alloy wheels
Service intervals	15,000km or 12 months (whichever occurs first)

1.2L 4-cylinder DOHC petrol engine – feature highlights

The 1.2 litre petrol engine promises to deliver on the segment's primary price of entry – fuel efficiency – while meeting all emissions requirements and delivering refined noise/vibration characteristics, and features technological highlights, including:

- **Port deactivation technology:** A specific port deactivation device is integrated into the intake manifold and used to induce a swirl charge motion within the cylinder that produces high exhaust gas recirculation (EGR). The result is more stability during idling and enhanced fuel efficiency.
- **Dual overhead cam:** Four valves per cylinder increase flow in and out of the engine. The dual overhead camshafts over the bank of cylinders are driven by a chain that is powered by the engine's crankshaft. The low-friction chain takes the place of traditional belt versions, for less noise and fewer maintenance issues.
- **Deep skirt cylinder block:** A cast iron deep-skirt cylinder block ensures overall structural solidity of the engine, which results in the reduction of noise and vibration at all speeds.
- **Intake manifold:** To enhance tonal noise characteristics of the engine, the intake manifold incorporates resonators within the intake channels that lead to the throttle body. The resonators deliver tonal engine sound quality that is improved by compensating the impact of unequal length inlets that usually result in a mix of tones and an unrefined sound.
- **Electronically controlled EGR valve:** The EGR valve more precisely re-circulates exhaust gas back into the cylinders for improved fuel efficiency and reduced emissions.
- **Close-coupled catalytic converter:** The exhaust is collected in the cylinder head and exits directly via a single opening to a close-coupled catalytic converter. As a result, traditional exhaust manifolds and heat shields are eliminated, reducing the engine weight in the process. Additionally, the configuration improves heater performance during cold weather starts and reduces the time it takes for catalytic converters to become active during cold start conditions.

Safety

Occupant safety was one of the main objectives when developing the Barina Spark.

The Barina Spark incorporates a host of structural enhancements as well as a range of active and passive safety systems as standard, which ensures the Barina Spark is one of the safest vehicles in the light car segment.

Barina Spark offers an impressive level of standard safety including:

- Electronic Stability Control (ESC)
- Anti-lock Braking System (ABS)
- Electronic Brakeforce Distribution (EBD)
- Traction Control System (TCS)
- Brake Assist
- 6 airbags (driver, front passenger, front side and curtain)
- Collapsible pedal release system
- Driver and front passenger seatbelt reminder
- Three-point seatbelts in all five seating positions
- Seatbelt pretensioners in driver and front passenger position
- Child seat latching system at rear seating positions

Body Frame Integral (BFI) design provides a strong, stiff structure, and 60 per cent of the structure is made of high-strength steel.

Energy management crumple zones for front and rear were designed to crush efficiently and maintain the vehicle integrity of the occupant compartment in a collision. Four-mount hydroformed engine cradle distributes energy in frontal and side impacts. Rear structure distributes energy in rear impacts, and is designed to encapsulate and protect the fuel tank during impacts from any angle.

For pedestrian protection, hood and hinge structures were designed to reduce injuries to pedestrians and more space were incorporated between hood and engine block.

Noise and vibration

The BFI structure and a host of acoustical applications help the Barina Spark achieve superior noise and vibration performance.

All chassis-to-body interfaces have been designed to enhance stiffness, helping to reduce low-frequency noise in the passenger compartment. In addition, air/noise barrier applications are incorporated in the floor, instrument panel, and inner body panels

Four acoustic resonators from low to high frequency on the intake system help mitigate noise and the exhaust system incorporates both a front a rear muffler.

Storage

The Barina Spark has a number of clever, practical storage areas that include:

- Standard 60/40 split-folding rear seats provide enhanced storage capabilities
- Centre console incorporates a dual cup holder and a bin for small items such as mobile phones
- Front door pockets with integrated bottle storage
- Acoustically trimmed, illuminated cargo area has a 170 litre volume.

Only available on CDX models:

- Front passenger seat back pocket large enough to carry items such as books and laptops, and front passenger side pocket for smaller items.
- Hidden front passenger under seat storage tray to keep valuables out of sight

Convenience

- 4-way adjustable driver and front passenger seats
- Front power windows on CD models; front and rear power windows on CDX models
- Cleverly positioned drivers side sunglass holder
- Overhead assist grips located on the front passenger door and rear doors
- Automatic headlight off ensures lights will not be left on after exiting the vehicle
- Driver and front passenger visors and vanity mirrors with covers

Sound system

AM/FM stereo with CD player and MP3 playback is standard on all models.

- Standard with four speakers located in the front and rear doors
- iPod/iPhone® AUX input and USB for MP3 players
- Steering-wheel mounted audio controls.

Security

- Immobilizer
- Remote central door locking.

Servicing

- 15,000km or 12 months (whichever comes first)

Place of manufacture

- GM Daewoo Auto & Technology, Changwon, South Korea.

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