



Press Information

Atrai HyBrid

11th GAIKINDO AUTO EXPO
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Daihatsu has long been both a proponent and a supplier of small cars that provide convenience and comfort for people. And besides being close vehicle for people's life itself, Daihatsu's small cars are also designed as model solutions to problems relating to environmental protection and the effective use of resources.

We look at the automobile from a broad range of perspectives in an attempt to work toward a harmonious coexistence between the automobile, people and society. During our 100-year history as a car manufacturer, we have developed and implemented numerous examples of eco-friendly technology. Among our past achievements were the first electric vehicle ever sold in Japan and the development of CNG engines that run on compressed natural gas as an alternative to petrol. And at this motor show, we are continuing this rich tradition of innovation by presenting the Atrai Hybrid, which combines improved fuel efficiency with clean exhaust emissions.

What is Hybrid?

Hybrid is one of the most promising alternative power systems for automobiles yet developed.

Among the other alternative power systems for automobiles are the electric vehicle, which uses batteries to power an electric motor, the fuel-cell electric vehicle and the compressed natural gas vehicle. Before any of these types of vehicles can become widely used, however, many problems remain to be solved. In addition to technological barriers, there are a number of infrastructure-related problems such as the need to build filling stations that supply these alternative fuels.

The distinctive features of the hybrid system are that it combines the advantages of the internal combustion engine with those of the electric motor and it is capable of using the currently available infrastructure.

By using the engine and the electric motor selectively, the hybrid system can dramatically realize less exhaust emission and less fuel consumption. In fact, the hybrid system has already begun to be used in some production models as a next-generation power train.

The Atrai Hybrid employs a parallel hybrid system that uses the engine and the electric motor selectively according to the driving conditions.

The engine is a 3-cylinder, 660cc, twin-cam petrol engine with DVVT (Dynamic Variable Valve Timing), which features excellent response, low fuel consumption and low pollution. The motor is a highly efficient alternating-current synchronous motor that draws its energy from light and compact rectangular nickel-metal hydride batteries featuring high energy density and long life. The primary power plant of this hybrid system is the petrol engine. When the car accelerates, both the engine and the electric motor deliver driving power. Thanks to this combination, the Atrai Hybrid features a driving performance that's even better than that of the petrol version and a fuel consumption that's a full 30% better under the Japanese 10-15 mode. Moreover, the Atrai Hybrid complies with the Super Low Emission category under the Japanese exhaust-gas emission standard.

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Exterior, Interior and Safety

The exterior features a semi-cabover layout. It's a unique minivan style suggestive of a dynamic and powerful sporty vehicle.

The interior features a high eye point and a wide glass area that facilitates excellent wide-open visibility, making the Atrai an ideal vehicle for leisure activities.

The Atrai also employs a broad range of advanced safety technologies, which allow this car to clear the Japanese standard for frontal and rear-on collisions by a wide margin.

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Atrai Hybrid

Technical Data

Dimension and weight

Overall length		mm	3,395
Overall width		mm	1,475
Overall height		mm	1,830
Wheelbase		mm	2,420
Track	Front	mm	1,285
	Rear	mm	1,290
Kerb weight		kg	990
Seating capacity			4

Engine

Type			EF-VE
Displacement		cc	659
Max. output		PS/rpm	43/5,900
Max. torque		kg-m/rpm	6.4/4,000

Batteries

Type		Nickel - metal hydride
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Motor

Type		Permanent - magnet type synchronous
Max. output		10 kW

Power train

Drive		Rear-wheel drive
Transmission		Electronically controlled 4-speed automatic

Chassis

Suspension	Front	MacPherson struts with coil springs
	Rear	Trailing arm with torsion beam
Steering		Rack and pinion
Brakes	Front	Disc brakes with booster
	Rear	Drums, leading and trailing
	Parking	Mechanically operating on rear wheels
Tyres		165/70R13

Performance

Fuel consumption		km/litres	20 (in 10 - 15 Japanese mode)
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