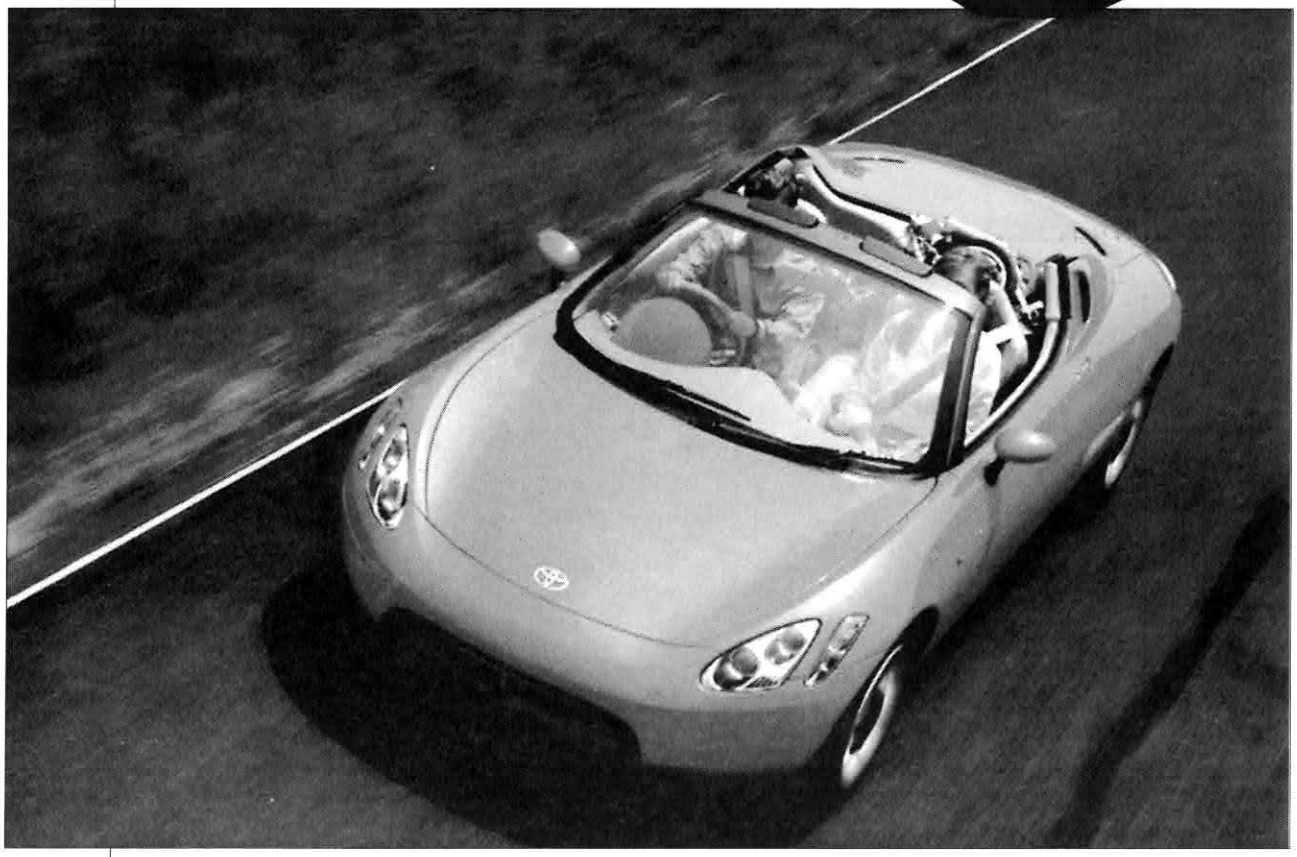
TOYOTA

THE SPORTS CAR FOR ACTIVE LIFESTYLES

TOYOTA MRJ



At Toyota, we know exactly what a sports car should be: responsive to the driver's every command, quick off the mark, and nimble on a twisty road. We've always felt the midship engine design was the best way to meet all those goals, and ensure unprecedented comfort. The Toyota MRJ has all the sportscar characteristics a midship engine car can offer, plus extra utility that lets you add sporty driving to your everyday life. Enthusiasts today want the joy of a sports cars with a personal touch—with individualist form and coloring. The Toyota MRJ fits the bill perfectly.

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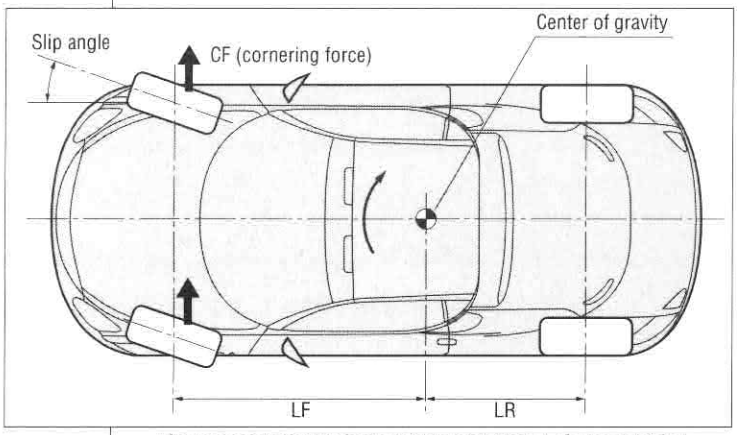
More nimble, more stable, more fun to drive

To add greater stability to the nimble nature of this midship we sought the best possible balance of wheelbase and overall vehicle length. To find that balance, we used two approaches: computer simulations based on the latest developments in vehicle dynamics theory, and repetitive tests with prototypes. Based on the data we compiled, the wheelbase was set at 2550mm within an overall length of 3995mm.

In addition to the long wheelbase, we took extra care in positioning the engine because it affects two characteristics. Properly positioned, it helps achieve the ideal front-to-rear weight distribution for traction and handling performance. Its placement also affects the inertia moment of the vehicle in the direction of the turn when cornering.

New thinking on four-wheel steering led to a new active rear-wheel steering system for the MRJ. Its rear super-strut suspension also contributes to the nimble nature of this vivacious sportscar.

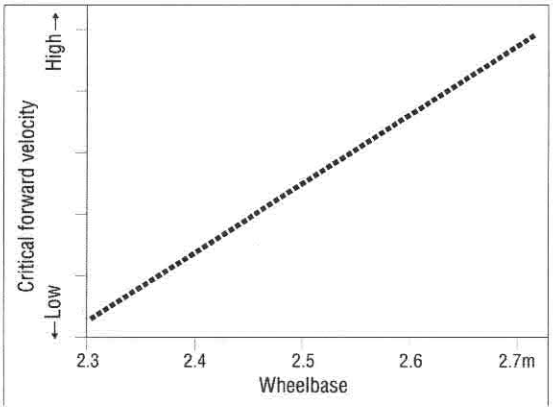


The moment that makes a car turn is CF x LF. If two vehicles have the same yawing interia moment, the one with the longer LF will show better response to steering input.

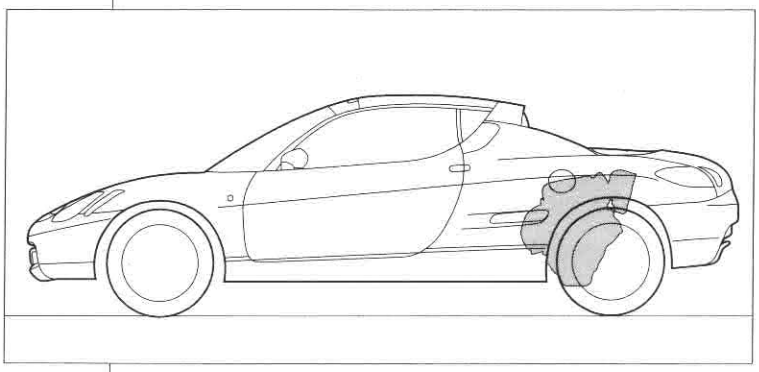
Long wheelbase

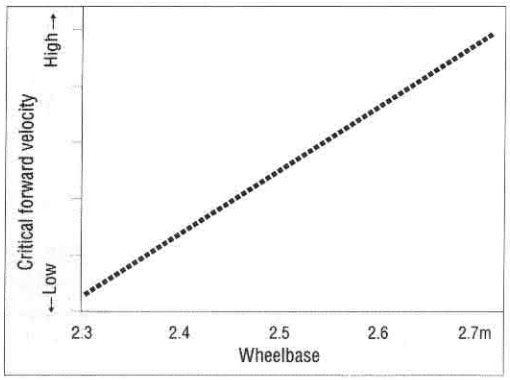
Fitting the longest wheelbase possible within the overall length helps increase the maximum speed at which the MRJ can negotiate a curve without going into a rear slide.

With a long wheelbase, cornering force is applied to the wheels, which are far from the vehicle's center of gravity. Thus lateral force to the vehicle's cornering moment is increased, improving the vehicle's response to steering input. These characteristics add to the fun of driving and make the driver feel at one with the car. It also makes the car more stable toward outside influence such as crosswinds or rough roads.



Sudden turning of the steering wheel while the car is going fast promotes rear-wheel skid. The same maneuver at low speeds, however, does not cause rear slide. The point at which the speed exceeds the tires' ability to grip the road is called the critical forward velocity of rear-wheel skid.





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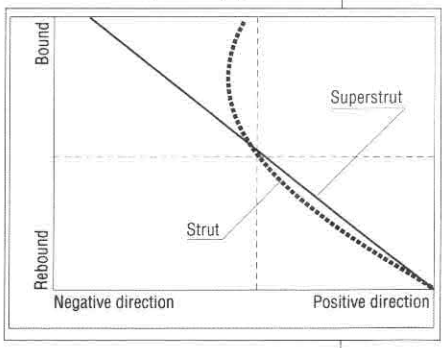
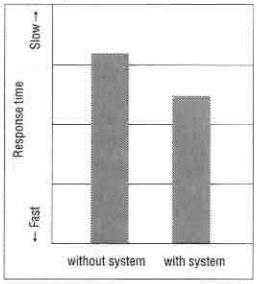
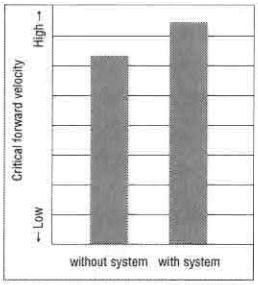
Superstrut suspension

The rear suspension is Toyota's own Superstrut design. Although similar to the Macpherson strut type, it offers the same kind of freedom in geometry as double wishbone suspension. In addition, the upper ball joint and camber control arm reduces camber change in relation to the ground, improving steering response.







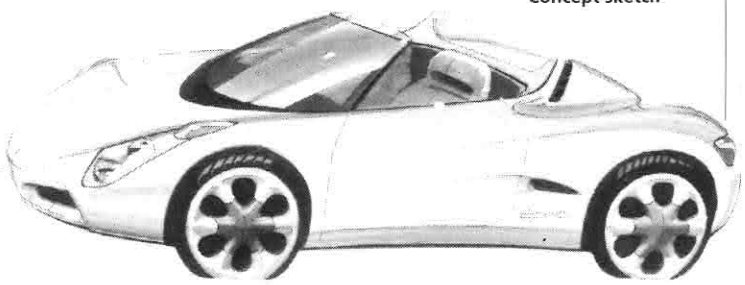
Active rear wheel steering

While maintaining the natural steering feel of a lightweight sports car with front-wheel steering, we added active rear wheel steering to enhance stability and controllability. The system monitors vehicle speed, steering angle of the front and rear wheels, and vehicle yaw rate, and automatically steers the rear wheels as necessary. This assures superior stability and response, even with variations in the road surface friction coefficient, crosswinds, and other changes in the driving environment.

Engine

The engine delivers 170 PS maximum power and 19 kg-m maximum torque. Its VVT mechanism helps increase the torque at low and medium rpm ranges, creating the optimum balance of responsiveness and driveability for everyday conditions.

Concept sketch

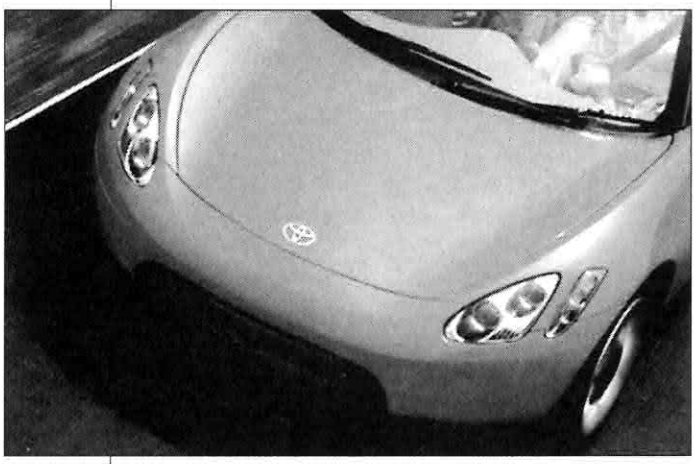


TOYOTA MOTOR CORPORATION

TOYOTA MRJ

A driver-friendly midship engine car

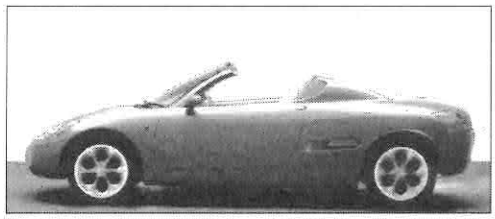
The design concept for the MRJ is "a driver-friendly sports car." Its compact, sleek silhouette; a wheelbase that stretches practically the entire length; and the low, slanted nose, suggest excitement and agility. The four-passenger 2+2 seat arrangement is a first in Toyota midship cars. It's more practical than ever, but doesn't stray at all from its sporting heritage.

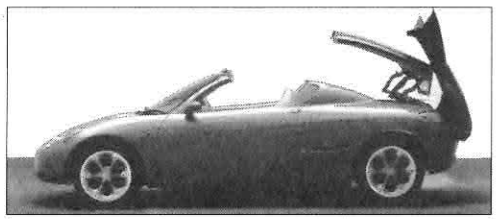


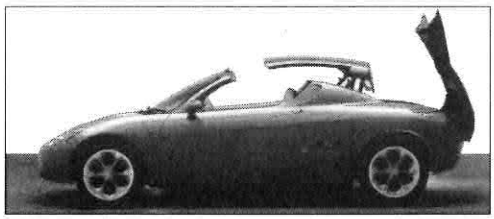
Distinctive front-end treatment
The front-end styling is dominated by a low, slanted nose – a tipoff to its midship engine configuration and wide, stable stance. The sharp, sculpted fender line complements the simple triangular headlamps to create a look unlike anything else on the road.

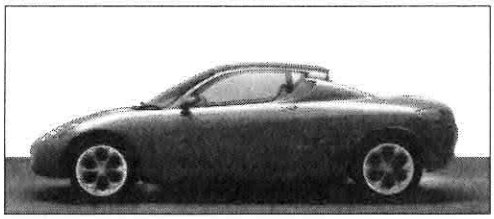
Aerocabin
The aerocabin hard top is built into the body, and has an electric motor to raise or lower it quickly and easily. Just touch a button to go from open sports car to hardtop coupe, to suit your mood.

Vibrant, dynamic lines
The wheelbase has been extended to create special styling with minimal front and rear overhang for a dynamic effect. The wedge-shaped rear perspective and the pyramid-shaped air intakes convey an image of acceleration.









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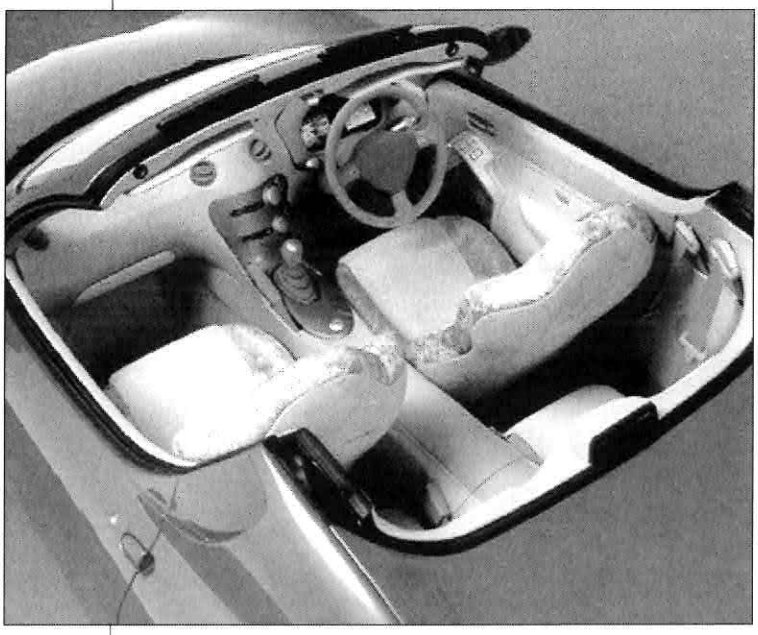
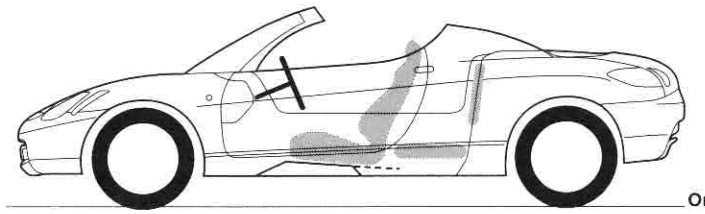


2+2 seating arrangement opens up a new dimension

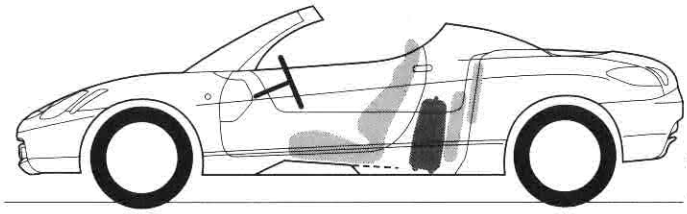
While refining the midship sports car, we also filled out the cabin space to create a 2 + 2 seating arrangement that makes room for large luggage or one or two extra passengers. That makes the MRJ the perfect choice for those who don't want to sacrifice sporty motoring for four-seater practicality. The combination of linen-weave natural materials and multicolored print leather, create a vivid, fresh color scheme that captures the MRJ's playful, open-air feeling.

Versatile interior space expands utility

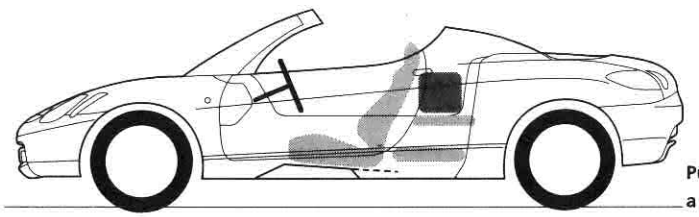
The MRJ's rear seat is adaptable to a wide range of needs. It folds down or pushes up to make room for luggage. The passenger-side seat can also fold down to accommodate extra-large items.



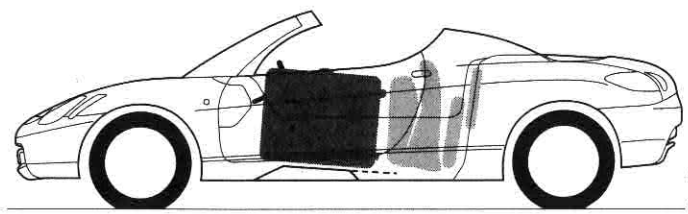
Ordinary seat position



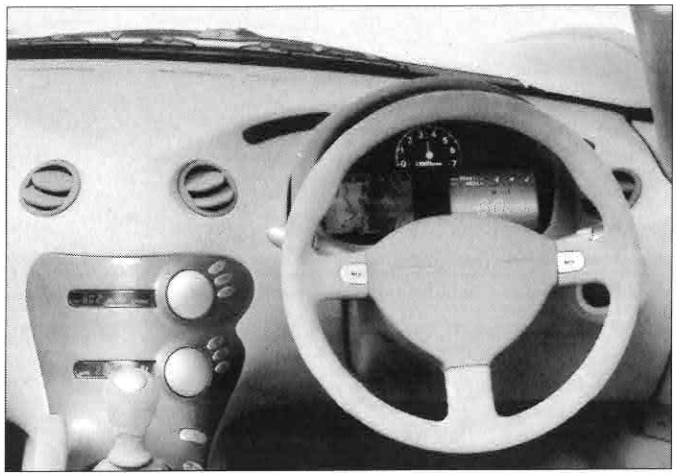
With the rear seat cushion tipped up, there's plenty of space for a travel bag.



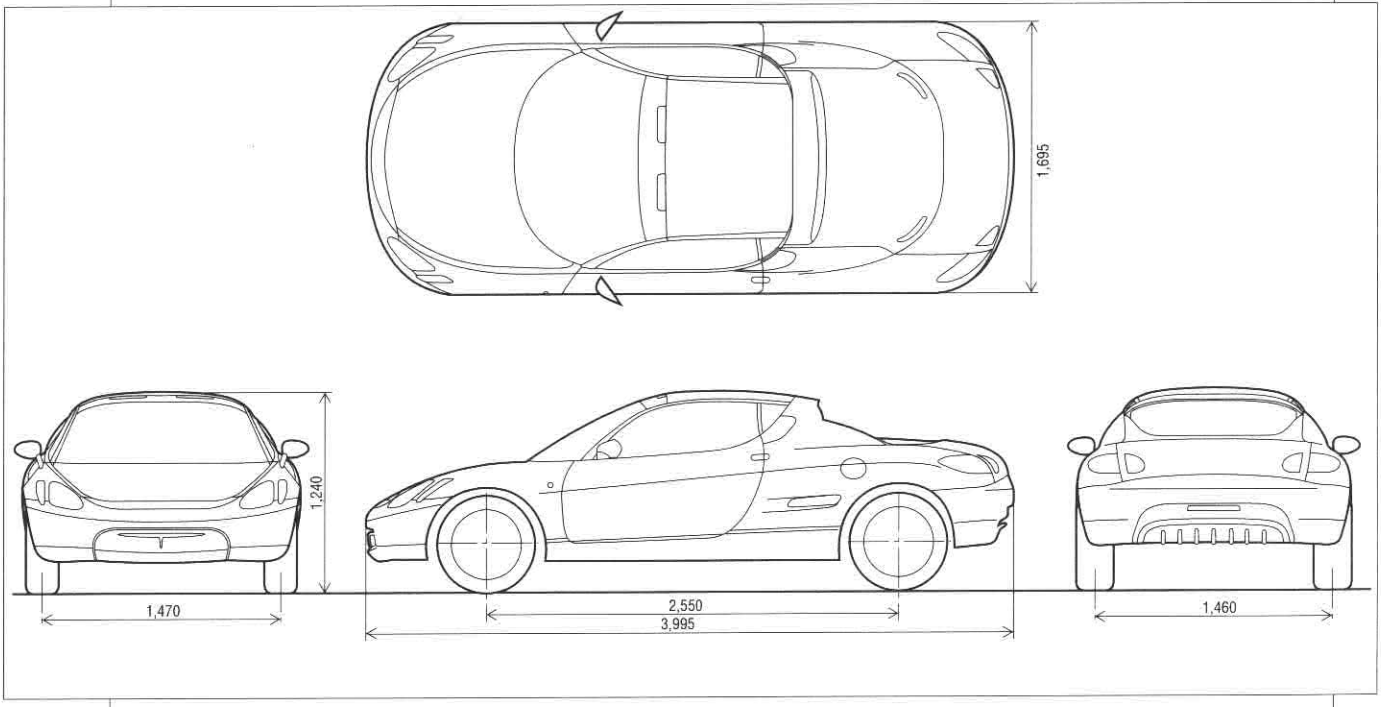
Pull the rear seat back down, and you have a place for golf bags and other long items.



Push the front seat back, tip up the cushion, and you can carry a large suitcase easily.



Multi-display system
The distinctive instrument cluster consists of two LCD monitors and a centrally located analog tachometer. The right-hand LCD monitor alternates between the speedo-meter and a cluster of gauges. The other monitor shows either navigation or audio/air conditioner information. Placing multiple switches in the center cluster makes operation much simpler.



Main specifications

Overall length		3,995mm
Overall width		1,695mm
Overall height		1,240mm
Seating capacity		4
Wheelbase		2,550mm
Tread	/front	1,470mm
	/rear	1,460mm
Engine		DOHC 20-valve VVT
Displacement		1,762cc

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