

This press pack accompanied the UK launch of the first generation Toyota RAV4 in June 1994. Some changes were made to the model range during its time on sale, which can be tracked using the Timeline feature available on the first generation Toyota RAV4 archive web page. Additional assets and information relating to the RAV4 range may be obtained from the Toyota press office if required.

Press Information

FOR IMMEDIATE RELEASE

16 June 1994

TOYOTA'S RECREATIONAL ACTIVE VEHICLE WITH 4WD - THE RAV4

From concept to reality

The new Toyota RAV4, like the Previa before it, is a perfect example of a motor show concept which has made it to the showroom. The RAV4 (Recreational Active Vehicle with 4WD) sets new standards in the small four wheel drive or sport utility sector and is designed for those with active life styles, a sense of fun and who want to be just a little different.

Combining striking rounded styling with class leading aerodynamics, the Toyota RAV4 is powered by a 2.0 litre 16 valve engine and has fully independent suspension, monocoque construction and a roomy, practical interior. Permanent four wheel drive gives it the go-anywhere ability of an active leisure vehicle. Two models take Toyota into (for them) a new sector of the market; the RAV4 with manual transmission only is priced at £12,666 and the even better equipped RAV4 GX is £13,995 with manual transmission and £15,170 with a four speed electronically controlled automatic transmission.

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First seen as a concept car at the Tokyo Motor Show in 1989, the RAV4 re-emerged, still as a concept car, at last October's Tokyo show. Clearly, much work had been done and the car looked ready for production. The reactions of motoring journalists and the public were positive and the car was shown again at the Brussels Motor Show earlier this year before making its world debut as a new production car at Geneva in March.

Right from the early concept briefings as long ago as 1986, the emphasis was on fun combined with high performance, ease of use and practicality whether it was to be used for everyday transport in an urban environment or for skiing, mountain biking, windsurfing or any other leisure activity. It therefore had to look the part - and does - on a short 2,200mm wheelbase with rounded, unique styling and a body which is almost as high as it is wide.

Two doors open wide into a surprisingly spacious interior with plenty of headroom. All four seats can be fully reclined and the individual rear seats can be folded flat for increased luggage space. The big rear door opens from the nearside down to bumper height making loading easy. Unlike many four wheel drive vehicles, the RAV4 uses a monocoque body construction rather than a body mounted on a separate chassis and this helps to keep the floor low and flat for easier entry and exit and greater space inside. There is ample storage space and useful detailing such as cup or can holders in the back as

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well as for front seat passengers. The full size spare wheel is mounted on the outside of the rear door.

Power comes from the 2.0 litre 3S-FE four cylinder engine which is also used in two litre versions of the Carina E. It has twin camshafts, 16 valves with scissors gear drive and multipoint fuel injection. It gives 129bhp at 5,600rpm and 129 lb ft of torque at 4,600rpm. Because the 3S-FE is one of Toyota's new generation of engines designed for family car use, most of the torque is available from very low revs making it extremely flexible and tractable both on and off road. Top speed is 108mph with manual transmission and 0-60mph comes up in just 10.7 seconds. Even with this brisk performance, the RAV4 will achieve almost 40mpg at 56mph with fuel consumption on the automatic almost identical to that of the manual.

Unlike many of its rivals, the RAV4 boasts full time four wheel drive with a viscous coupling and mechanical lock up for the manual and a hydraulic multi-plate lock up torque converter on the auto. With a 205mm ground clearance and relatively lightly treaded Dunlop Grandtrek tyres (215/70 on 16 inch wheels) the RAV4 is not designed to compete with vehicles like the Landcruiser in terms of ultimate rough road ability but it is still able to go where two wheel drive vehicles fear to venture. Its light weight (less than 1,200 kg), short wheelbase and overhangs, and good approach and departure angles ensure that the RAV4 will get you to where you want to be.

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A small 4WD car does not have to be uncomfortable and here, the RAV4 scores again. With fully independent suspension, it rides and handles like a well developed saloon or hatchback. The front suspension uses MacPherson struts and an anti-roll bar. At the back, double wishbones with trailing arms and coil springs not only give excellent ride and handling characteristics, but also do not intrude on interior space.

All RAV4 models have power steering, a driver's side airbag, an electronic radio and cassette unit, an anti-theft system and cockpit headlamp levelling. The RAV4 GX gains power front windows, a more powerful four speaker audio system, central locking, electric door mirrors and twin lightweight aluminium roof panels which can either be tilted for ventilation or removed completely for an almost convertible feel. These panels are then stowed vertically and safely on the inside of the rear door.

Although the RAV4 is very well equipped, a huge range of optional accessories enables owners to customise their car to suit their lifestyles. Audio systems can be upgraded including CD players, air conditioning is available and so too are roof racks with specialist attachments, bull bars and light guards, alloy wheels, lights and side decals.

The launch of the RAV4 gives Toyota one of the largest ranges of 4WD vehicles on the market. The 4WD version of the

Celica - the GT-Four - arrived last month and there are also petrol and diesel engined 4Runners, three different Landcruisers and the Hilux pick-up. Like all Toyotas, the RAV4 has a three year or 60,000 mile warranty and comes with a year's free membership of Club Toyota and the RAC. It also has 9,000 mile service intervals, helping to reduce the cost of ownership.

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For further information and photographs, contact Simon Small,
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THE TOYOTA RAV4 IN DETAIL

THE HISTORY OF A CONCEPT

The Toyota RAV4 has come a long way from the original concept briefings of 1986. It first appeared as a concept at the Tokyo Motor Show of 1989, but it did not re-surface again until a completely remodelled car was shown at Tokyo in October 1993. Earlier this year, it appeared at the Brussels show and finally debuted as a production car at Geneva in March - the first time Toyota has premiered a new car in Europe.

Back in 1986 in Toyota City, a working group of design, marketing and engineering specialists started to research new products, preparing the concepts for the passenger cars of the future. This special working group was set up at the suggestion of these young specialists and one of their ideas was a small, light, sporty and affordable sports utility ...

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Apart from the briefing that led to the RAV4 show car, more than 30 ideas were developed by the working group. Without giving away too many secrets, the Toyota RAV4 won't be the last vehicle to emerge from this creative process. Masakatsu Nonaka, the chief engineer of the RAV4, was working on several other projects when he was asked to head the development team in 1988. Since 4WD vehicles were his passion, he readily accepted the challenge.

The 1989 show car featured a 1.6 litre engine, part time 4WD, a rigid rear axle and rugged styling. It was well received by the public but then the RAV4 disappeared for four years until, unexpectedly, a new version appeared at the 1993 Tokyo show. It had been re-styled and now had a 2.0 litre engine, full time 4WD and independent rear suspension.

Finally, eight years after the first pencil was put to paper, the RAV4 was announced at the Geneva show in March. In this case, Toyota had taken its time and by avoiding a 'me too' product of the 'eighties, developed a product that would turn heads in the 'nineties.

From the start it was decided that Europe was a vital market for the RAV4, so Nonaka made several study trips to Europe. His very close monitoring of the European market taught him about the peculiarities of the world's biggest car market. Backed up by Toyota's experience in marketing niche models, Nonaka decided the RAV4 would be a trend-setter, able

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to compete strongly with existing market leaders not just in Europe, but all over the world.

It took just 15 months to take the car from concept to prototype once the decision was made to develop the car as a production model. But to reach that crucial decision, many months of market planning and research went into convincing management that the Toyota RAV4 could break new ground and succeed.

"Lots of effort went into convincing the right people," says Nonaka. "But objections were necessary to be creative and the passion I felt for this car helped me to overcome any difficulties. Out of the discussions came the RAV4 as it is now, so it all served a purpose".

The development parameters of the RAV4 covered five main areas:

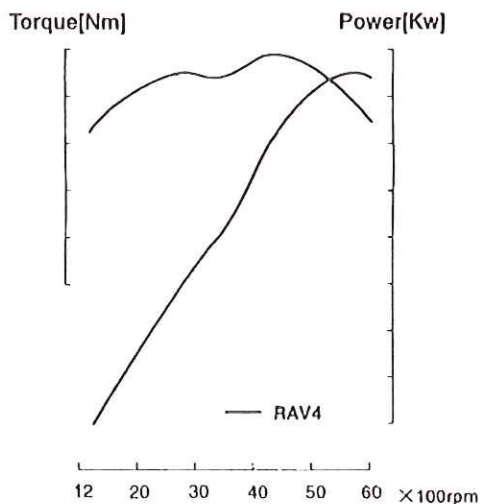
- (i) a wide track, independent suspension, full time 4WD, an engine with a wide power band and all-round high performance;
- (ii) compact and sporty styling offering off-road ruggedness with on road comfort;
- (iii) generous space with a transverse engine and a low flat floor achieved by development of a new rear suspension;
- (iv) low weight;
- (v) full consideration of safety and environmental needs.

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Masakatsu Nonaka is satisfied that all his aims have been achieved, in some cases with completely new solutions from Toyota's team of engineers. The RAV4 is a relatively simple, economical, versatile and original car.

THE 3S-FE ENGINE

The 3S-FE is a 1998 cc in-line, four cylinder DOHC engine with four valves per cylinder and electronic fuel injection, designed specifically for family car use. It was first introduced with the Toyota Camry in 1986 and has since gained a reputation as an engine with ample performance, smoothness, quiet operation and excellent fuel economy. It is ideally suited to the RAV4 application, mounted inclined for a very short front overhang.



The 3S-FE's compact aluminium cylinder head has twin overhead camshafts, pent-roof combustion chambers, four valves per cylinder at a small valve-included angle and centred plugs - a configuration developed in search of fuel-efficient, high performance family car engines.

The valves are set at an acute included angle of 22 degrees 35'. The shallow pent-roof chambers in the head are offset by similar displacement heron-like chambers in the piston tops.

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Since it first appeared, the 3S-FE has been improved in many ways. For example, knock control sensors assist the ECU in more precisely matching spark advance to engine conditions. The long intake tracts have been narrowed and set more vertically which reduces intake resistance and increases the inertial charging effect, improving aspiration at low-to-mid revs. The intake port shape has been refined as well. A large capacity air cleaner is used to further improve intake efficiency. Valve lift has also been changed along with valve timing.

Each camshaft drives its valves directly. The intake camshaft is turned by the timing belt and the exhaust camshaft is driven from the intake cam via scissors gear. The valves have bucket tappets with chrome molybdenum shims to allow clearance adjustment without removing the camshafts. The lightweight cast iron block has semi-siamese cylinders, a short skirt and FEM-analysed ribbing and reinforcing. Its rigidity has been improved further with the addition of an aluminium stiffener. The crankshaft has five journals and eight balance weights, and is now made of steel instead of cast iron to attain greater stiffness and less vibration. The aluminium alloy three-ring pistons have integral steel struts to help reduce thermal expansion. They attach to the crankshaft via sintered steel con rods. The dual-damper crankshaft pulley is effective against both torsional and bending vibration.

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The 3S-FE uses D-Jetronic fuel injection and a three way catalytic converter to meet all exhaust emissions regulations. The injection system is a two group type with two hole injectors that spray the fuel directly at the twin intake ports. An eight bit microcomputer calculates the optimum injection duration according to the condition of the engine for precise air/fuel ratio control as well as improved engine response.

The fully transistorised ignition system utilises an electronic spark advance which uses pre-programmed spark advance maps to calculate precise ignition timing. The entire system consists of a coil/distributor unit, an igniter unit, high tensile spark plug wires, sensors and a microcomputer. This controls the electronic fuel injection and the electronic spark advance and incorporates diagnostics, fail-safe and back-up functions.

The 3S-FE also uses an exhaust gas recirculation (EGR) system to induce some of the exhaust gas into the air-fuel mixture to slow combustion and reduce peak combustion temperatures, resulting in less NOx. Oil is water cooled and an aluminium radiator core is used to reduce weight. Four engine mounts are used on either side and at each end. The mount on the right side is fluid filled to reduce noise and vibration.

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TRANSMISSION

The RAV4 has permanent four wheel drive, either automatic or with a manually lockable mechanical centre differential to absorb the rotational differences created between the front and rear wheels.

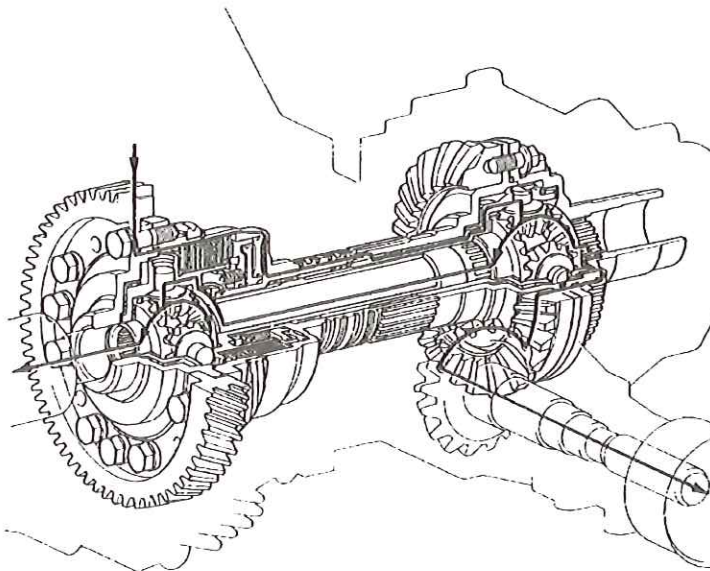
Toyota has enormous experience in developing and producing vehicles with 4WD including of course, the World Rally Championship winning Celica GT-Four. The first 4WD produced by Toyota was the Toyota BJ in 1951 based on several prototypes dating back to 1945. The BJ became the Landcruiser in 1953 and is now the world's best selling off-roader.

With plenty of torque at low engine revs, the RAV4 does not need an intermediate gear or off-road reduction ratio and this helps both performance and fuel economy. The layout of the RAV4 with its slanted, transverse engine, gives a centre of gravity very close to that of a normal saloon car and unlike serious off-roaders, it does not need a separate housing for its front differential sub-assembly. This is integrated in the transmission and centre diff assembly beneath the engine - an arrangement that also saves weight.

The manual Toyota RAV4 uses a 5-speed transaxle, equipped with a 4-pinion gear type centre differential and centre differential lock system. An air-cooled transaxle oil cooler is standard on all manual transaxle models. It is mounted behind the front bumper and uses corrugated aluminium pipe with a wider effective surface area.

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The centre differential gear responds instantly to changes in operating conditions. If one of the four wheels loses traction, the system ensures efficient drive distribution to all four wheels. A centre differential lock warning buzzer sounds during the time the centre differential locking fork moves from the "lock" to the "free" position (until the centre differential locking sleeve is completely disengaged from the centre differential case).



The automatic transaxle in the RAV4 is a 4-speed compact electronically controlled (ECT). The centre differential, front differential and transfer gears, whose function it is to transmit the power from the transaxle to the front drive shafts and the propeller shaft, are enclosed within the automatic transaxle case.

A computer-controlled, hydraulic multi-plate clutch type differential limit system is placed between the front and rear axles. It controls the differential effect between the axles

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based on the amount of hydraulic pressure applied. The computer varies the pressure to control the differential limiting force in proportion to the difference in the vehicle speed, the throttle angle and in the number of rotations of the axles (detected via signals from the two sensors located at the front and rear). Control is automatic, so the driver doesn't need to operate anything. The rear differential is the conventional type, with a 2-pinion gear. The rear diff carrier is longitudinal and the mount rubber is soft to reduce vibration.

THE RAV4 CHASSIS - suspension, steering and brakes

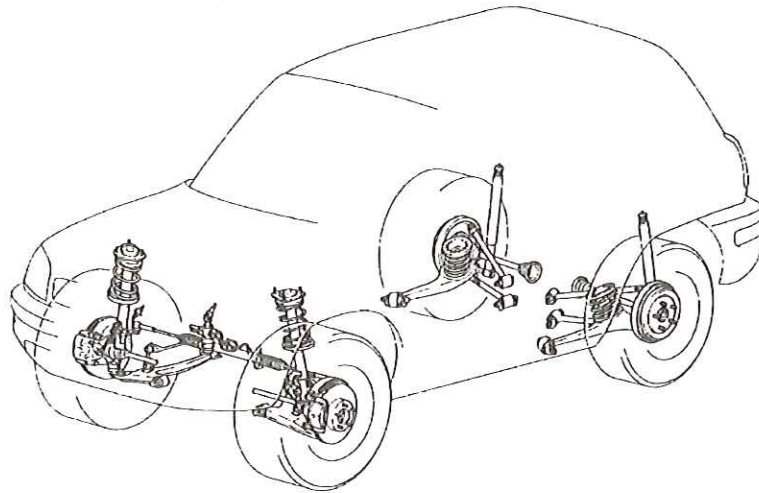
Developed as an "urban 4WD" passenger vehicle that is fun to drive both on and off-road, the chassis of the Toyota RAV4 offers nimble handling, superb stability, comfortable ride and good off-road performance.

Major components are the all-independent suspension, the use of front and rear subframes, the engine revolution-sensing type rack-and-pinion power steering and the powerful brakes.

The 4-wheel independent suspension makes the RAV4 different from other off-roaders which usually do not have permanent 4WD. This is because 4WD vehicles that are used off-road regularly, need rigid axle suspension. But if used on-road, the rigid axle is not the best choice as it increases unsprung weight, making the car uncomfortable on the road. A bound of one wheel will affect the behaviour of the other wheel

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greatly and both cambers will change unfavourably. An independent suspension is superior in these areas as the wheels don't influence each other and camber changes during bound and rebound can be made to help the car maintain excellent road contact.



The long arms used on the RAV4's suspension ensure ideal camber variations and a generous amount of vertical suspension movement. If the suspension travel is short, the vehicle may bottom out on bumpy roads, or may have difficulty in keeping all four wheels in full contact with the road surface.

The centrifugal force created during cornering causes the vehicle body to lean outward, so that on rigid axle vehicles with non-variable camber, the outer wheel has a tendency to lean outward (= positive camber). This makes the outer tyre skid easily in the outward direction. On the RAV4, the length of the suspension arms and their locations are designed so that the wheel leans inward to increase its negative camber during a bound, when the vehicle body lowers. Therefore, the camber

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of the outer wheel remains almost perpendicular to the road even during cornering. This allows the vehicle to withstand the centrifugal forces generated during cornering and provide excellent controllability and stability.

The width of this new small sports utility is comparable to that of a passenger car, while its turning circle is superior in most cases.

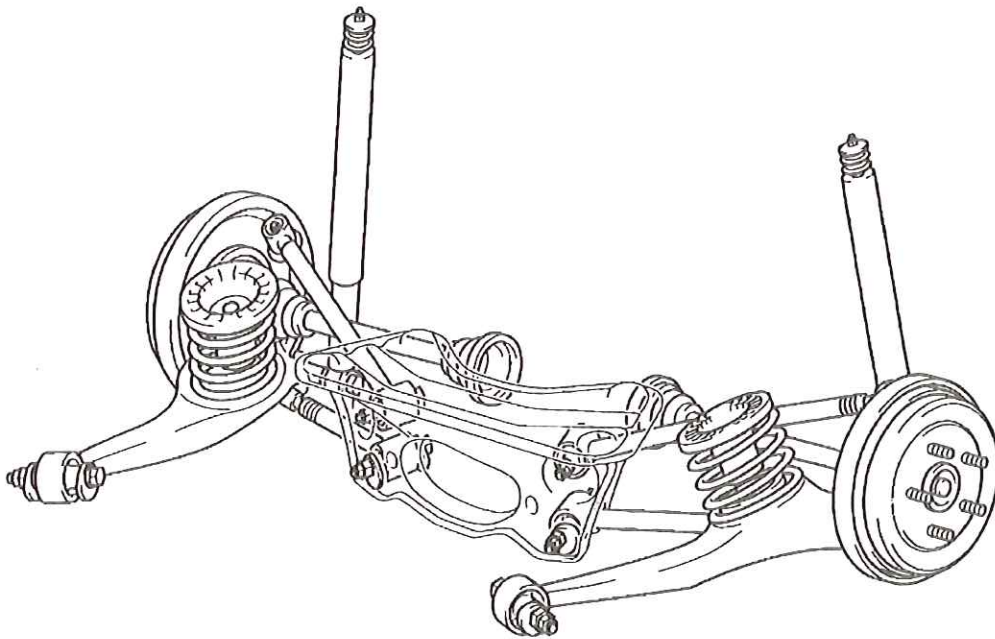
In front and rear, twin-tube type shock absorbers are used. These shock absorbers, found on Toyota's latest sports models, offer excellent damping force characteristics through the use of low-pressure nitrogen gas. Two-stage leaf valves, instead of the normal single leaf valve, are used to generate high damping force even at low shock absorber piston speed. The piston valve, which usually contains an elongation valve only, is provided with both the elongation and contraction valves. Also this shock absorber optimises the oil path for efficient oil flow, improving the shock absorber's control and stability.

The MacPherson strut type front suspension features an L-shaped lower arm with strut bar function. Its optimal suspension geometry ensures a comfortable ride and the ability to overcome rough terrain. The front suspension features an optimum caster angle and trail values to provide straight line stability during low to high-speed ranges and steering response during high speeds.

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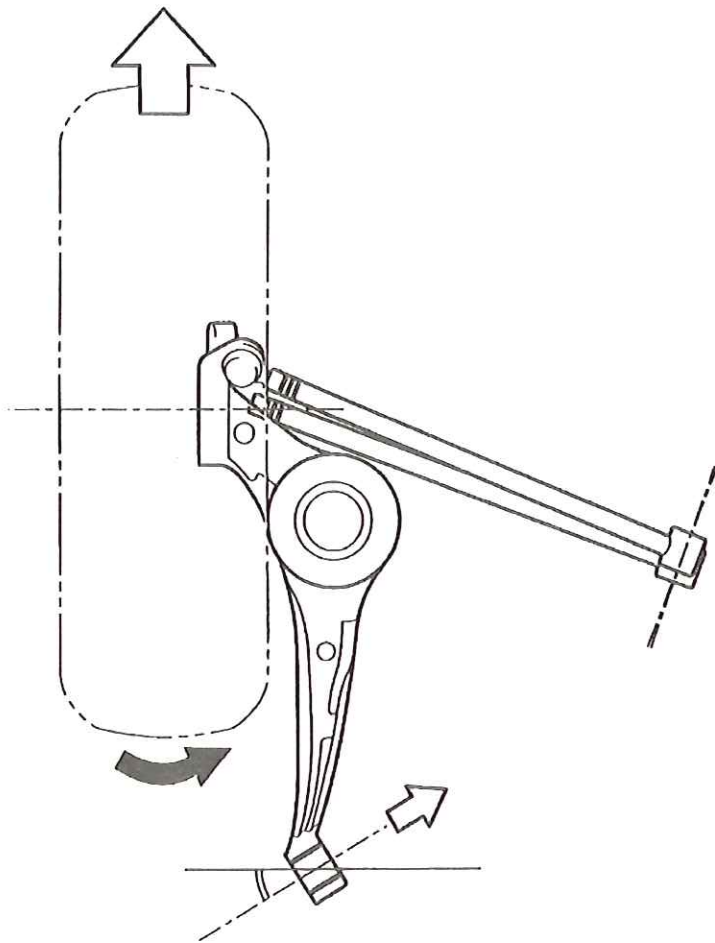
By adopting negative camber, the tread contact camber of the outer tyre is optimised for improved cornering performance. By mounting the lower arm and shock absorber in the most appropriate positions, nose dive during braking has been reduced.

For the rear suspension, a newly developed double wishbone design with trailing arms is used. Each arm length and angle has been developed in consideration of mounting areas of the upper, lower and trailing arm. This results in minimum toe changes on bounds and rebounds.



The trailing arms are made of single piece cast steel on which the wheel and coil spring carriers are integrated. The trailing arm is hollow to reduce weight. Angle and positioning of the trailing arm and bushing characteristics are designed to provide a toe-in effect upon braking. The attachment axle at the front of the trailing arm is angled toward the vehicle's axle.

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When the brakes are applied, the braking force pulls the wheel as well as the trailing arm backwards. The wheel that is attached directly onto the trailing arm effects compliance steer in the toe-in direction, to ensure vehicle stability during braking.

The coil springs and shock absorbers have been positioned separately. These efforts have made it possible to lower the vehicle's floor, which in turn provides generous interior space while ensuring ample suspension stroke.

The upper and lower arms are made of hollow bars to reduce weight. A rubber bushing is used on the subframe side and a ball joint on the axle side. By reducing the twist and wrench torque while maintaining proper rigidity in this manner, a high level of ride comfort, control and stability have been realised.

Mounting front and rear suspension to the body via subframes affords a higher level of rigidity than mounting them directly onto the body. Also, this choice of construction reduces the noise and vibration transmitted from the road surface.

A T-shaped front subframe made of steel has been adopted to ensure body rigidity. The lower arm and steering gear housing are mounted on the subframe, and the subframe onto the body.

The rear subframe is also made of steel, therefore relatively compact and lightweight, while maintaining excellent rigidity. The weight of the rear subframe is about half that of other passenger cars. The upper and lower suspension arms and differential carrier are mounted onto the subframe, and the subframe onto the body.

Lightweight and compact rack-and-pinion steering is used with an engine revolution sensing, rotary type steering control valve. In this system, steering effort is regulated to an optimal level according to the engine speed.

A bending bracket with simple construction and high support rigidity is adopted for the energy absorbing mechanism of the steering column. If impact is applied to the steering wheel in a collision, the steering wheel itself moves forward and causes the bending bracket to bend and absorb the energy. An SRS airbag is standard for the driver.

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For all models, ventilated disc brakes are used for the front, and leading-trailing drum brakes for the rear. Combined with the permanent 4WD mechanism, the Toyota RAV4 gives equal engine brake force on all four wheels at any time.

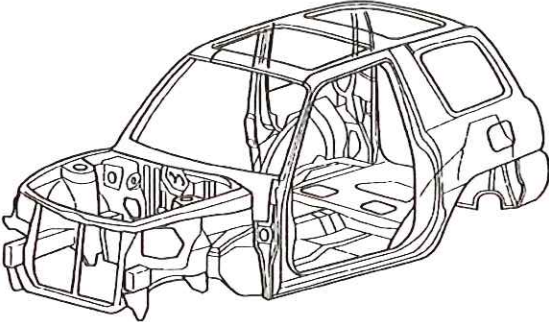
THE MONOCOQUE BODY

Despite its compact external dimensions and its overall height of just 1655 mm, the RAV4 has a "grown-up" car feel and surprises with unexpectedly generous space for rear passengers and luggage.

The special construction of the RAV4 is the reason for the cabin height inside. The RAV4 has a monocoque body, where most trucks and off-road vehicles have a separate frame construction. The frame and carriage-type construction has the disadvantage of making a vehicle heavier and restricting the interior space. A monocoque body helps to reduce the weight by 30 to 40 kg, compared to a conventional frame construction.

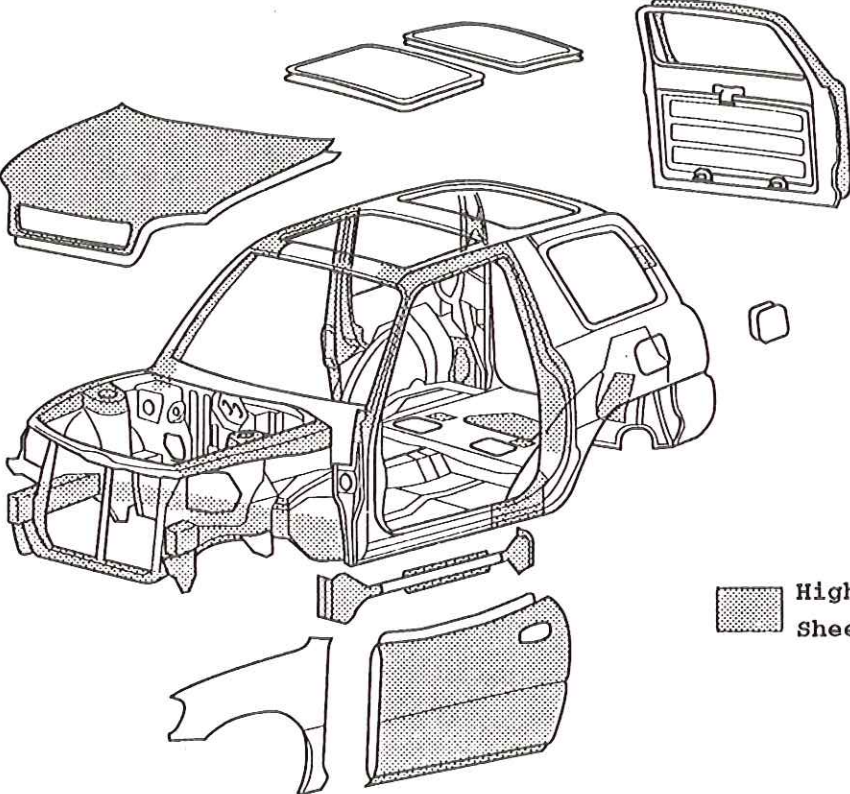
The RAV4's monocoque body structure has the chassis frame and the car's body built as one. The body is lightweight and highly rigid through the generous application of high-strength sheet steel, the use of front and rear subframes, the reinforcement of the body members and an optimised allocation of materials. Rust-preventative sheet steel and various chip-resistant treatments have been generously applied to ensure outstanding corrosion resistance.

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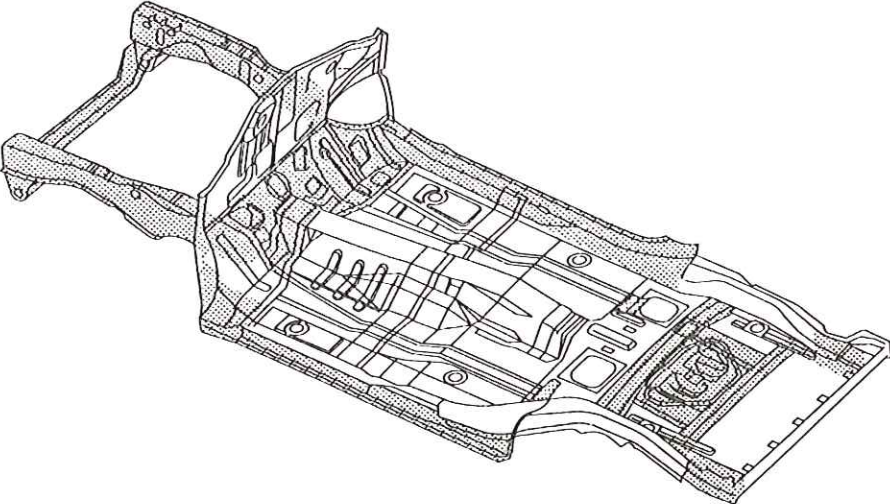


Light and highly rigid high-strength sheet steel is used for the bonnet, door panels, back door and members. Sheet steel is very resistant to partial pressure, making it

difficult to dent.

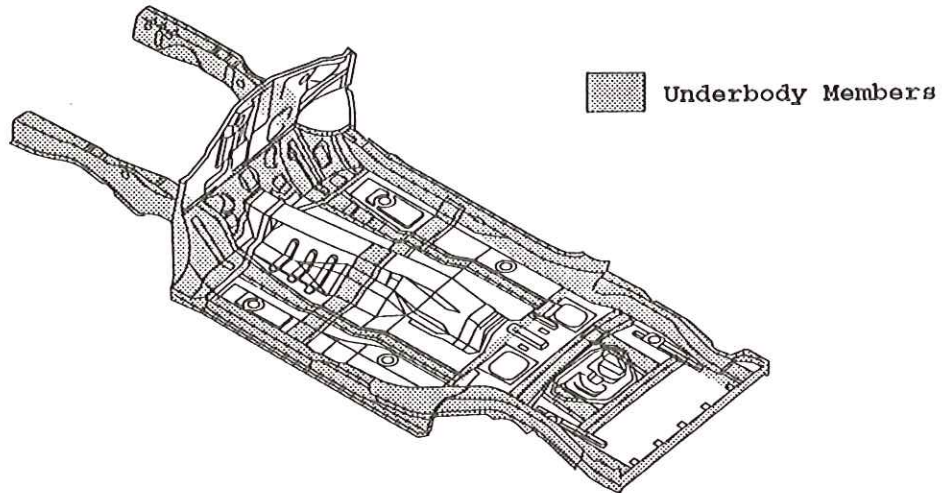


High Strength Sheet Steel

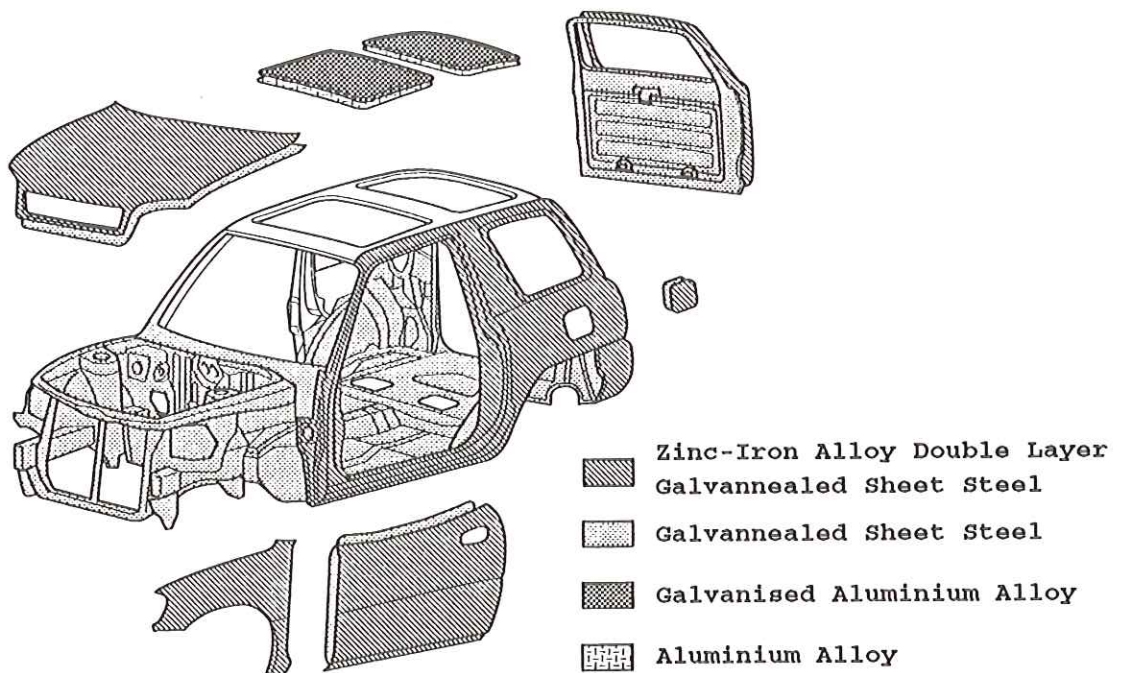


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When an accident does occur, the CIAS (Crushable Impact Absorbing Structure) construction transfers the impact energy beneath the sturdy passenger cell, via the underbody structure. Side protection beams improve door rigidity, and are provided as standard.



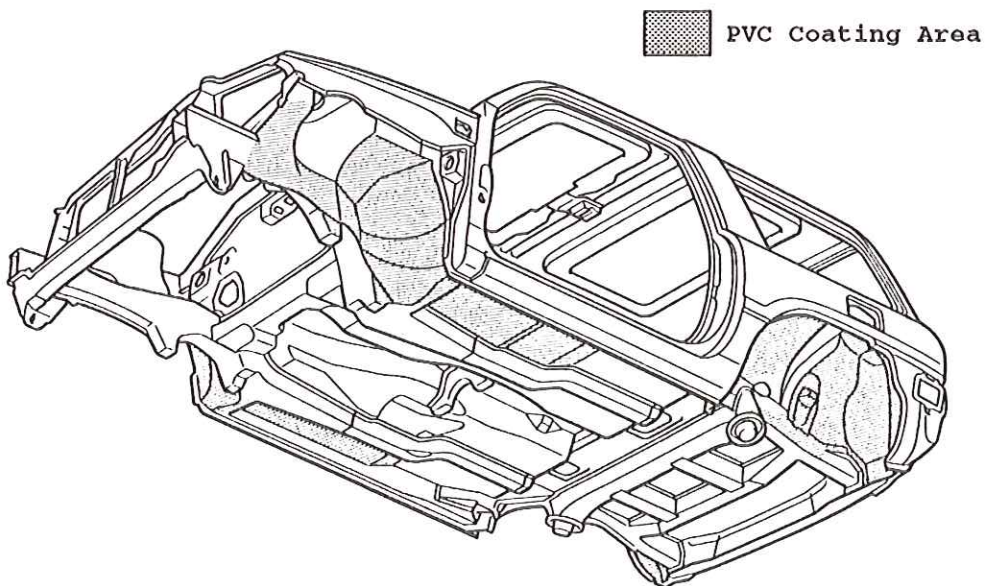
Rust-resistant performance is increased by using anti-corrosion sheet steel and performing anti-corrosion treatment by applying wax, sealer, anti-chipping paint etc, to easily corroded parts such as the bonnet, doors, sill, panels etc.



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Four types of anti-corrosion sheet steel are used: galvanized sheet steel, zinc-iron alloy double layer galvanized sheet steel, galvanized aluminium alloy, and aluminium alloy. Galvanized sheet steel is used in various areas including the inner panels and the engine compartment. Zinc-iron alloy double layer galvanized sheet steel is used for outer panels such as the bonnet, doors and back door. Galvanized aluminium alloy is used for the sun roof outer panel and aluminium alloy for the sun roof inner panel.

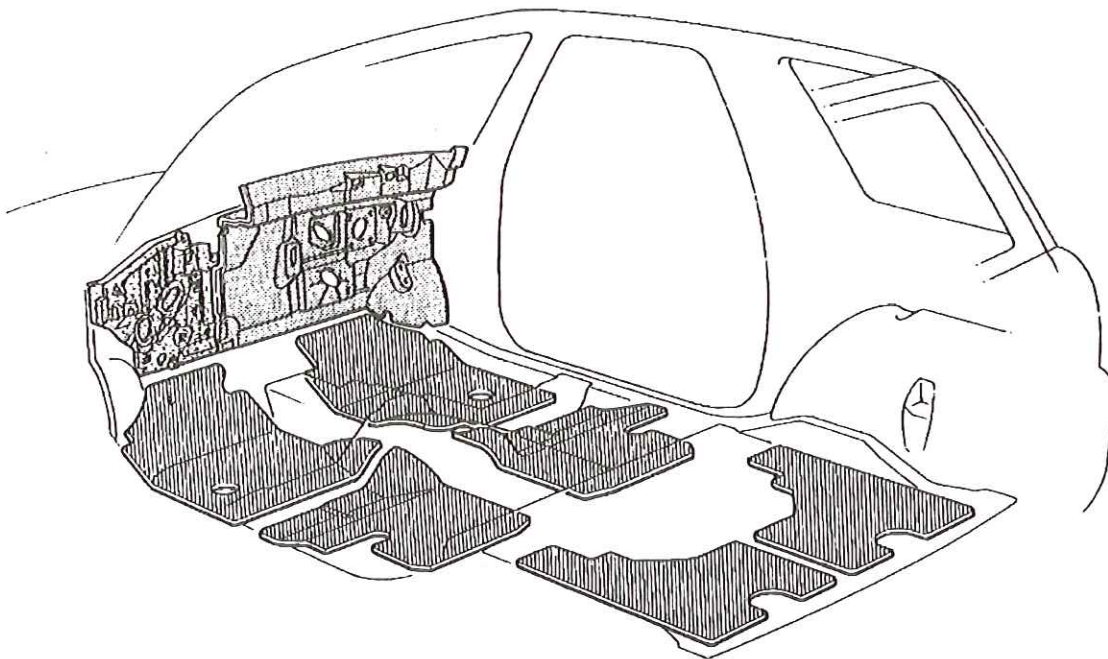
Wax and sealer is applied to the hemmed portions of the bonnet, door panels and back door to improve rust-resistant performance. The bottom side of the cowl panel, the wing apron and other parts which are subject to damage by flying gravel etc are given a PVC coating to improve rust-resistant performance.



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Anti-chipping paint and PVC primer are applied to the sill panels and front and rear wheel arches to protect them from flying stones. In addition, soft-chip primer is applied to the bonnet and front end panels.

An effective application of vibration damping and noise suppressant materials reduces engine and road noise and vibration. Vibration damping sheet steel is used in the dash panel. Asphalt sheet is applied to most of the floor area to reduce engine and road noise during vehicle operation.



For active safety, the RAV4 incorporates: MacPherson strut front suspension and double wishbone rear suspension, full-time 4WD system, front ventilated disc brakes and side impact barriers. The airbag is standard.

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Examples of the RAV4's passive safety are the monocoque body and the placement of the fuel tank in front of the rear axle, which is much safer for cars with short rear overhangs.

A variety of environmental measures are provided, such as the adoption of R134a refrigerant in air conditioning systems, non-asbestos brake pads and the emphasis on weight reduction, thus improving fuel economy.

Front bumper, side protection mouldings and rear bumper are made of super olefin polymer. This material is superior to R-RIM urethane and polypropylene, which are commonly-used as bumper material. Characteristics are: good paintability, surface quality and smoothness equivalent to steel, high impact resistance (even at low temperatures to minus 30 degrees), weight reduction (through a thin-walled design), higher fitting precision and easier recyclability.

Thermo plastic resin components are widely used, and the composition of resin materials is marked on the parts, for easier recycling.

EXTERIOR

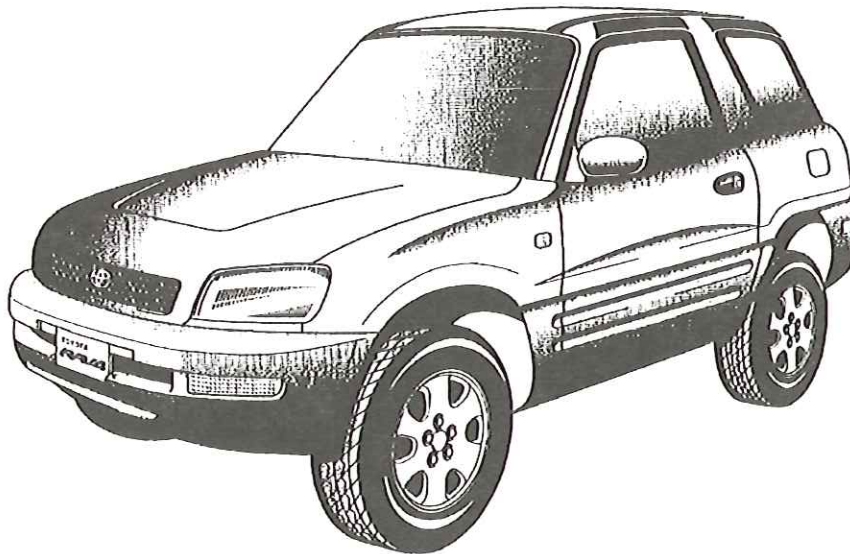
A full-sized four-seater, the RAV4 has body-hugging bumpers make for easy parking, and a sloping bonnet and clear sightlines all round help keep the vehicle's edges in constant driver view. Large areas of glass give the driver and up to three passengers an excellent feeling of spaciousness. This

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is an ideal urban car, tailor-made for the traffic and parking conditions of Europe.

The "urban 4WD" design of the RAV4 combines off-road grittiness with on-road comfort. The RAV4's approach and departure angles give sufficient ground clearance for off-road driving and an underbody in the front provides added protection.

Designed to be dynamic, the RAV4's styling is characterised by:

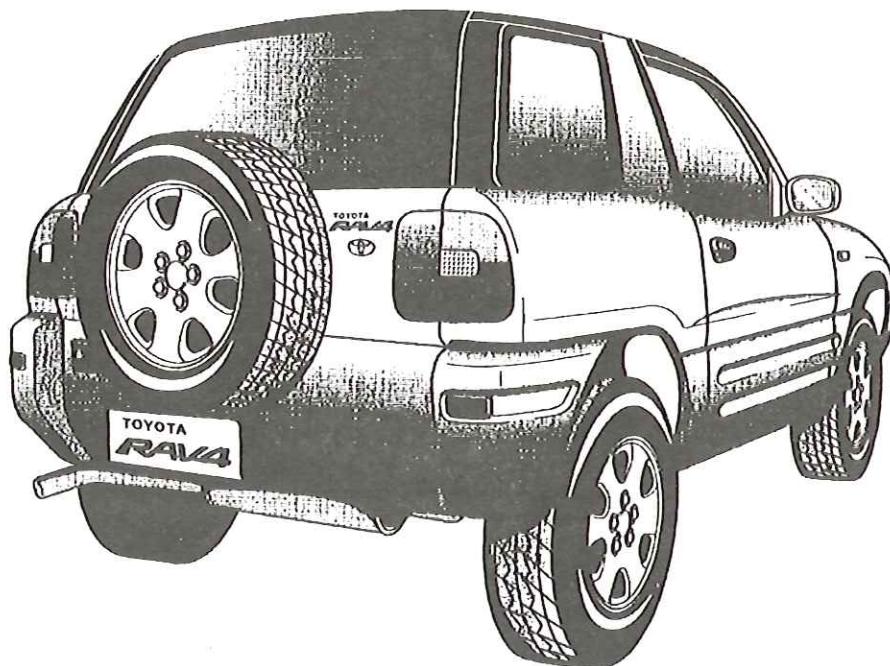


- overall off-road, light sports utility image
- aerodynamic, round and compact body, offering a wide view
- wide track creating a fun-to-drive image
- front grill built into hood with mesh-like round holes
- sculpted halogen headlights
- rounded front bumper corners, meeting urban driving conditions

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- blacked-out cabin look to offer open car feel, combined with rollbar-like colour-keyed centre pillar
- large resin side-protector and kicked-up rear wing arch for a lively look
- smoothly flowing wing line that flows back energetically, resembling the classic coke-bottle image
- rear bumper-integrated reflectors
- back door handle integrating into rear combination lamp

The exterior equipment also gives the Toyota RAV4 a distinctive outlook, with:



- twin aluminium sun roofs (on the GX) can be tilted up or detached, and stored on the inside of the back door. The roofs weigh respectively 3.6 kg and 2.4 kg for easy handling
- large protection mouldings are used on the wings, doors and quarter panels

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- roof rack attachment brackets (four in total) are provided on the front and rear, beneath the roof mouldings
- wide and large tyres (215/70 R16) are standard
- the spare tyre is fitted to a carrier on the outside of the back door
- intermittent rear wiper is standard

INTERIOR

The RAV4 interior offers simple and functional looks, while affording a comfortable environment for the occupants. The cabin has a wide and sporty form, offering a combination of utility and fun. The large instrument cluster offers good access and visibility. Instruments and switches are positioned where you expect them for ease of use. A small diameter (370 mm) steering wheel completes the sporty feel and the column is tilt adjustable through 11 degrees.

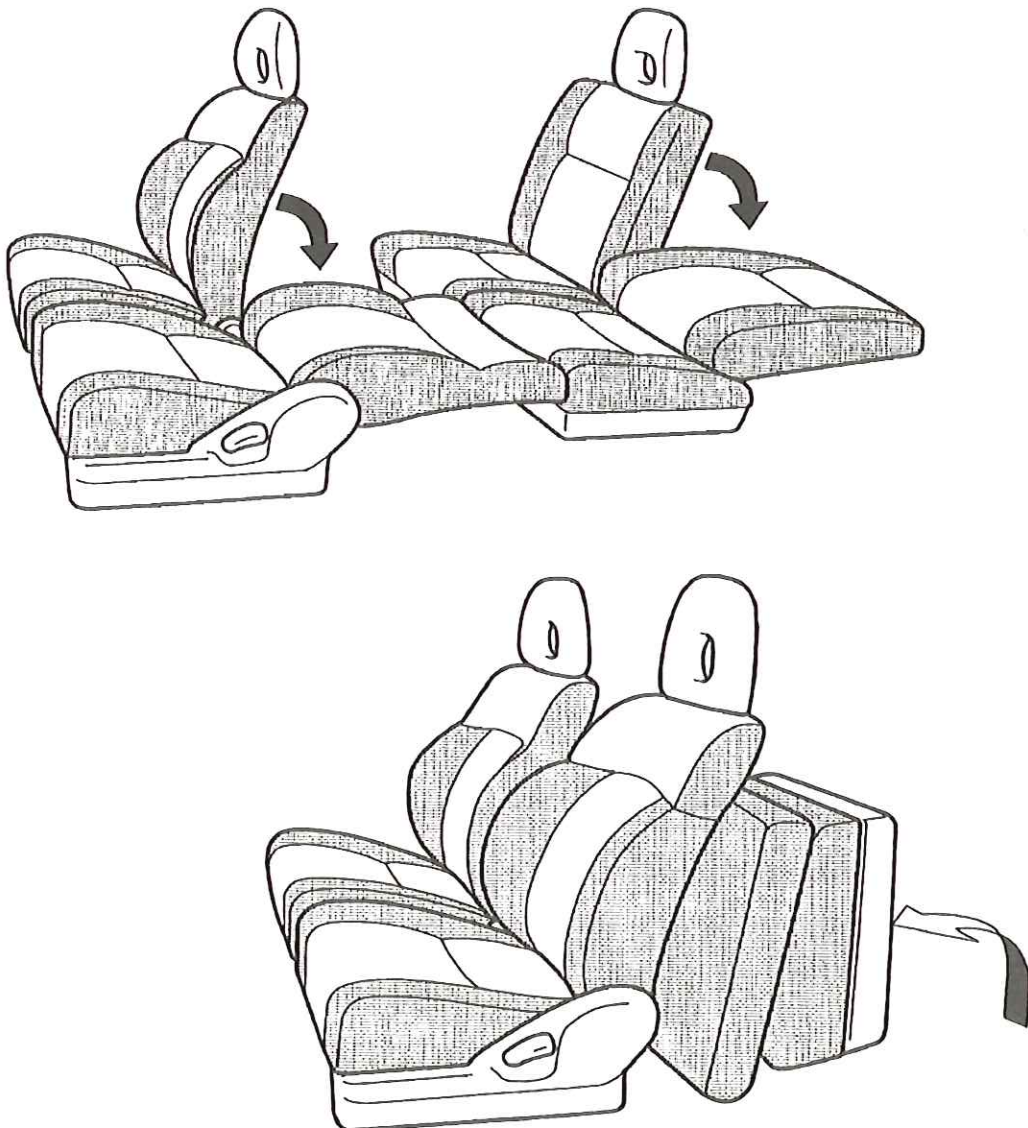
The front and rear seats are the full reclining type and can be folded down to provide a fully flat area. The rear seats are split to provide generous storage space. The rear seatbelt buckles store in the seat slit area. This improves the look of the rear seat when it is unoccupied, but also ensures that there are no protrusions when the seats are unfolded to the fully-flat position.

The door trim provides large-size door grips and spacious door pockets. Practical and easy to close storage spaces are incorporated in the rear side panels.

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The flat design of the rear suspension with its compact coil springs and separate, outside-positioned shock absorbers, is a prime example of space-saving design. The layout results in minimal intrusion of the wheel housing inside the vehicle, giving rear seat passengers more hip and elbow movement and enabling optimum utilisation of the luggage compartment.

A range of seat arrangements are possible, making it easy to load luggage of various size and shapes. Floor hooks can be used for securing luggage.



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Also, loading and unloading are made easier thanks to the low floor height and low profile bumper. The removable sun roofs can also be stored in the inner panel of the back door, thus also saving space.

To further distinguish the Toyota RAV4 from what is already on the market, plenty of small, but useful, details have been included:

- two cup holders beside the rear seats make life more pleasant for passengers
- the glovebox can keep large magazines and still be closed
- 4-step headlights beam level adjuster
- a buzzer warns the driver that the lights remain on
- on opening the driver's door while the ignition key is inserted, a warning buzzer reminds the driver to remove the key
- when a front door is opened, the illuminated entry system turns on the ignition key cylinder illumination lights. The light turns off 5 seconds after both doors are closed
- reclining seat and head rest in the rear passenger seat prevents passengers from becoming tired during long trips
- the front head rests are hollowed out, for better visibility, and detachable

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MARKETING AND POSITIONING A COMPLETELY NEW TOYOTA IN EUROPE

The Toyota RAV4 was designed, engineered and built with Europe in mind. "Europe is the world's biggest vehicle market and the small sports utility segment is growing here", explains Masakatsu Nonaka, the RAV4's chief engineer.

In 1991, more than 161,000 sports utilities were sold in Europe, a market share of 1.3%. In 1993, more than 187,500 brand new sports utilities drove onto European roads. Thus, with overall sales down in 1993, the sports utility improved market share in Europe to 1.8%.

With estimated sales of 8000 units in Europe in the remainder of 1994, the RAV4 will help the (small) sports utility to further expand its market share. In Europe, MPVs and sports utilities are the only segments making progress.

In Japan also, the trend is towards more functional and versatile cars. Sales of 'recreational vehicles' (vans, cab-waggons and 4x4 vehicles) have grown from 360,000 in 1987 to 660,000 in 1993.

Market and customer profile analyses demonstrate that image, style and driving pleasure are major purchase criteria for small sports utility buyers.

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The Toyota RAV4's objective is to fill a niche in the market, with its pact between fun and reason. Developed as an urban 4WD, this vehicle is geared towards 30 to 35 year olds offering them an alternative to the mid-sized saloon segment.

He or she might be a hatchback owner, ready to move on to something different. The vehicle will attract busy executives, the young, independent woman, the outdoor fanatic, persons with an active lifestyle living and working in the city, earning a little more than average. But it is also the ideal second car in any household, with a clear image: non-conformist and imaginative, expressing the individualism of the driver who wants to stand out from the crowd.

A Toyota market survey in Germany among small sports utility users showed that 62% are former hatchback owners. For more than 70% of those people, a small sports utility will be used mainly in the towns for everyday use. To a medium sports utility user, towing (28%) or typical 4x4 leisure driving (31%) are much more popular.

Where a car used to be only a means of transport, nowadays it must fulfil a multitude of needs. The RAV4 is a new step towards the young car buyers market, for those who seek driving pleasure without wanting to compromise either on comfort or on everyday practicality.

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The RAV4 is an image builder. Concept, appearance and technical features put it into a class of its own. In addition, it is also a key element of Toyota's long term strategy in Europe and should help to further strengthen the already solid customer base in the years ahead.

ends...

For further information and photographs, contact Simon Small,
Press Office, Tel: 0737 768585.



Press Information

FOR IMMEDIATE RELEASE

16 June 1994

TOYOTA RAV4

Standard Equipment

	RAV4	RAV4 GX
Exterior		
Tinted glass	■	■
Side impact beams	■	■
Rear wash/wipe	■	■
Interior		
Power windows	-	■
Driver side airbag	■	■
Twin aluminium sunroofs	-	■
Electronic radio/cassette	■(2spkrs)	■(4spkrs)
Central locking with remote	-	■
Electric door mirrors	-	■
Cockpit headlamp levelling	■	■
Panel rheostat	-	■
Rear door interior trim	-	■
50/50 folding rear seats	■	■
Lockable glovebox	■	■
Cup holders	■	■
Tilt-adjustable steering column	-	■
Anti-theft system with immobiliser	■	■
Remote fuel flap release	■	■
Reclining front and rear seats	■	■
Mechanical		
Power steering	■	■
Toolkit	■	■
Permanent 4WD	■	■

Options

Because of the very nature of the RAV4, there is a large range of optional equipment including upgraded audio system, CD players, air conditioning, bull bars, roof racks, alloy wheels etc.

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Press Information

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TOYOTA RAV4 **Technical Specification**

DIMENSIONS

Length	3705 mm
Width	1695 mm
Height	1655 mm
Wheelbase	2200 mm
Track front/rear	1460/1465 mm
Ground clearance	205 mm
Approach/departure angles	37°/42°
Overhang front/rear	735/770 mm

DRAG COEFFICIENT Cd 0.39

WEIGHT/CAPACITIES

Kerbweight	1177 kg (manual) 1207 kg (auto)
Gross vehicle weight	1565 kg
Roof rack load	100 kg

more...



Technical specifications...2

Towing capacity:

With brake	1500 kg
Without brake	610 kg

Luggage capacity:

Seat up (VDA method)	173 litres
Seat down (VDA method)	520 litres

Fuel tank	58 litres
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ENGINE

Type	3S-FE, front transverse, 4 cylinder in-line, 16 valves DOHC. Alloy head, cast iron block
Bore & stroke	86 mm x 86 mm
Capacity	1998 cc
Compression ratio	9.8:1
Fuel system	95 RON unleaded. Electronic D-Jetronic fuel injection
Power output	129 bhp at 5600 rpm
Torque	129 lb ft at 4600 rpm

ELECTRICS

	12 V
Ignition	Transistorised

TRANSMISSION

<i>Manual:</i> E250F	5 speed plus reverse type
Clutch	Single dry plate, hydraulic 236 mm dia (Permanent 4WD with viscous coupling and mechanical lock-up)
Ratios	1st 3.833 2nd 1.913 3rd 1.258

more...

Technical specifications...3

4th	0.918
5th	0.775
Reverse	3.583
Final	4.933

Automatic:

4 speed plus reverse
electronically controlled
type A540H

(Permanent 4WD with
hydraulic multi-plate
lock-up torque converter)

Ratios	1st	2.810
	2nd	1.549
	3rd	1.000
	4th	0.734
	Reverse	2.296
	Final	4.285

SUSPENSION

Front

Independent MacPherson
struts with coil springs
and gas dampers

Spring rate	22.5 N/mm
Toe in	0.0 mm
Camber	-0 deg. 15'
Caster	1 deg. 20'
Anti-roll bar	Torsion, 23 mm dia

Rear

Independent, double
wishbone with coil springs
and gas dampers

Spring rate	50 N/mm
Toe in	3 mm
Camber	-1 deg. 05'

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STEERING

Type Power assisted rack and pinion - 2.7 turns lock to lock. 17.7:1 ratio

Turning circle 10.6 m

BRAKES

Power assisted dual circuit. Handbrake on rear wheels

Front Ventilated discs. 302 mm dia

Rear Drums. 228.6 mm dia

WHEELS AND TYRES

215/70 R16 Dunlops on 16 x 6JJ steel wheels. Full size spare

PERFORMANCE

Maximum speed 108 mph (manual)
106 mph (auto)

0-60 mph 10.7 secs (manual)
11.4 secs (auto)

0-400 m 17 secs (manual)
17 secs (auto)

FUEL CONSUMPTION

	Manual	Auto
Urban cycle (1/100 km)	27.2 mpg (10.4)	26.9 mpg (10.5)
Constant 56 mph (1/100 km)	39.8 mpg (7.1)	39.8 mpg (7.1)
Constant 75 mph (1/100 km)	29.1 mpg (9.7)	29.1 mpg (9.7)

INSURANCE GROUP

11 (Toyota Insurance)

WARRANTY

3 years or 60,000 miles
6 years anti-corrosion
3 years paintwork/surface rust

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Press Information

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TOYOTA RAV4 CHIEF ENGINEER - MASAKATSU NONAKA

"It is a designer's and engineer's dream to be able to work on this type of car, from concept through to production," said RAV4 chief engineer, Masakatsu Nonaka at this year's Geneva Motor Show where the RAV4 debuted.

During his fact-finding trips through Europe, the young-at-heart Nonaka soon noticed how the younger generation used their off-roaders and sports utilities for cruising on city boulevards and for weekend trips to the sea, rather than for heavy work.

"This trend wasn't really difficult to pick up," recalls Mr Nonaka. "In Europe, but also in the US and in Japan, it became obvious that young people would want a different type of car in the 'nineties."

Mr Nonaka was personally involved in setting the final design and development briefs. "The Toyota RAV4 had to be

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different from traditional off-roaders and passenger cars," recalls the Toyota RAV4's chief engineer. "We wanted the Toyota RAV4 to be something completely new and fresh, so a lot of time was spent getting the details right."

December 1942	Born in Japan. Mr Nonaka is married, and has two sons at Tokyo University
March 1967	Graduated from Osaka University (Masters degree in mechanical engineering)
April 1967	Joined Toyota Motor Corporation
1967-1973	Assigned to No 2 Engineering Division (safety experiment department) to be in charge of development of air bags, energy-absorbing steering columns, and others
1974 -	In charge of product planning (product planning office in the Product Planning Division at the No 3 Vehicle Development Centre - commercial and recreational vehicles) Developed the following vehicles: <ul style="list-style-type: none">- Ministry of Transportation project: new type of mid-sized bus with aluminium monocoque body, low floor, front wheel drive, diesel, automatic transmission- former Coaster model- Mega Cruiser- Toyota RAV4
Hobbies	Mountain hiking, trial bikes, skin and scuba diving

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Press Information

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TOYOTA RAV4 PRODUCTION AND EXPORT

The Toyota RAV4 is built at the Motomachi Plant in Toyota City, also home to the Toyota Crown, Supra and the Lexus SC400 and SC300 sports coupes. Although opened in 1950, the plant has recently undergone extensive renovation, with the installation of new production equipment and manufacturing systems, making it one of Toyota's most advanced production facilities today. About 4500 people work there.

The Toyota RAV4 is being produced on Motomachi's number 3 line, the plant's newest. The number 3 line is a further evolution of similar production lines recently installed in Toyota's Tahara and Kyushu plants in Japan and its Burnaston, UK and Georgetown, Kentucky plants.

The new assembly line is segmented into sublines in which individual components are assembled and fully inspected before being transferred to the main line. Final assembly then

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consists of installing entire modules - radiators and instrument panels, engine mounting and tyre assembly, seats and the like. The segmented approach not only improves line worker satisfaction by allowing them to see a job completed, it also improves productivity.

Special emphasis has also been placed on making the line more worker-friendly by relying on automation where necessary and reducing the physical strain placed on workers through more flexible line equipment. Individually height-adjustable pallets for vehicles in-process are just one example. In-plant lighting and noise levels have also been vastly improved.

Motomachi also includes one of Toyota's most flexible body lines to date with the potential to build multiple platforms on the same line. Although the Toyota RAV4 is the only product presently built on the line, it will give Toyota greater flexibility to handle fluctuations in market demand in the future.

Some 640 employees are engaged in Toyota RAV4 production building an average of 4500 vehicles a month. Of these, some 2000 units will be bound for European markets.

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