

*This press pack accompanied the UK launch of the second generation Camry range in January 1987. The model underwent some changes during its time on sale and these can be tracked using the Timeline feature on the second generation Camry archive web page. Additional assets and information about the Camry range can be obtained from the Toyota press office.*

# TOYOTA

## PRESS INFORMATION

EMBARGO: PLEASE DO NOT PUBLISH UNTIL JANUARY 14, 1987

### TOYOTA CAMRY

#### INTRODUCTION

The new Camry represents a full model change designed to meet the needs of the motoring public through the remainder of the 1980s and into the 1990s. Camry is the top Toyota passenger car model in the UK market positioned in the upper medium size class.

An important model in the Toyota line-up, the Camry is sold in Europe, Japan and North America, as well as other countries around the world. In fact 252,950 Camrys rolled off the assembly lines at Toyota during 1985 alone.

The new Camry retains all the attributes that made the previous model so successful and meets new and emerging consumer demands to broaden its appeal still further.

The new Camry is longer and wider, yet retains the same wheelbase. Considerable attention was paid to aerodynamics in the design of the body, not only in sleek lines and rounded edges, but also in the specifics of flush joints, no apertures and spoilers.

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The compact form is balanced by shifting the cabin a little bit forward within the wheelbase, and increasing front and rear overhangs slightly. This gives the saloon extra luggage space, without sacrificing passenger room.

Extra space is also found in the new Estate, a first for the Camry line.

Brisk performance is often the feature most wanted in this class of car. Now Camry offers a new, more powerful engine, designated 3S-FE. It differs from other Toyota four-valve engines in that it is tuned for extra torque in the low-to-mid rpm ranges without sacrificing top end power. Technically, its extra-compact combustion chambers, scissors gear-driven exhaust camshaft, and acute valve included angle are likely to cause comment in engineering circles.

Complementing the new engine, Camry's suspension has been completely redesigned for a more comfortable ride and increased stability. And the brakes have been upgraded with bigger discs, master cylinders, and boosters.

Finally, Camry owners can expect extra comfort and convenience from new seats and upholstery, new instruments and switches, upgraded ventilation and heating, and features such as moonroof, stereo radio/cassette system, power windows, and on the Executive model cruise control and air conditioning.

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The 1987 Toyota Camry model range will be:-

Camry 2.0i Manual

Camry 2.0i Automatic

Camry 2.0i Executive Automatic

Camry 2.0 Diesel

Camry 2.0i Estate Manual

Camry 2.0i Estate Automatic

## ENGINE AND TRANSMISSION

### New 3S-FE Engine

Technically, the most important feature of the new Camry is the multi-valve 3S-FE engine. When it comes to designing multi-valve engines for mass production, Toyota is the biggest and most experienced manufacturer in the world. Toyota will produce 1,000,000 multi-valve engines in 1986, meaning that nearly 50 per cent of all petrol-engined Toyota passenger cars sold during the year have multi-valve engines.

The 3S-FE is a 2.0-litre inline four cylinder twin cam engine with four valves per cylinder and electronic fuel injection. Its power characteristics, however, are different from previous high-performance engines that power Toyota's sports models - engines designed to take maximum advantage of top end power - because it is the first Toyota four valve engine to have been developed specially for family car use.

As might be expected, the 3S-FE offers more power across the rpm range than the 2S-E engine it replaces, and it gives better fuel economy as well as improved driveability.

### PRODUCT INFORMATION

The 3S-FE is a new inline four cylinder 1,998 cc petrol engine with twin cams, four valves per cylinder, and electronic fuel injection developing a maximum power output of 126 bhp at 5,600 rpm and maximum torque of 132 lb ft at 4,400 rpm.

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The cylinder head was developed specifically for this engine in aluminium alloy. This improves aspiration compared to the two valve 2S-E engine, resulting in more power output across the range.

The 3S-FE four valve configuration is different from current Toyota four valve engines in that it is designed to provide a fatter torque in low-to-medium rpm ranges instead of concentrating on top-end power. This increase of torque was accomplished with a combination of three factors; compact pentroof combustion chambers to promote high thermal efficiency and a fast burn, long narrow intake tracts for a high inertial charge effect at low-to-medium revs, and timing that closes the inlet valves relatively quickly for minimal blowback. As the valve included angle is very acute, the new head is also significantly more compact than those of most DOHC engines of this displacement.

The sophisticated electronic fuel injection contributes to both power and economy. Its microcomputer also controls the digital spark advance and breakerless ignition systems.

#### The Lower Half

The lower half of the new 3S-FE engine is based on that of the proven 3S-GE, a powerful high-revving engine used in the Toyota Celica GT. While the 2S-E engine being replaced was long-stroke, the 3S-FE has an 86 mm x 86 mm square bore and stroke. This slows the piston speed to give the engine

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high-rev/high-power capacity, while providing sufficient bore diameter for the large valve area of the four valve configuration.

The lightweight cast iron block has semi-Siamese cylinders, a short skirt, and FEM-analyzed ribbing and reinforcing, which have been slightly modified from the 3S-GE. The crankshaft follows the 3S-GE design with five main journals and eight balance weights for ample bending rigidity and minimal vibration.

The aluminium alloy three-ring pistons have integral steel struts to help reduce thermal expansion. Their tapered striated skirts reduce friction and improve lubrication. They connect to the crankshaft via sintered steel connecting rods.

The crankshaft pulley incorporates dampers against both torsional and bending vibration. Five rubber-insulated engine mounts reduce the transfer of vibration from the engine to the body of the car.

#### The Upper Half

Specially designed for more power and better economy than the 2S-E engine, and fatter torque in the low-to-mid-rpm ranges compared with current Toyota four valve engines, these two objectives were accomplished with compact combustion chambers and better aspiration.

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Compactness of the combustion chamber is measured in flame propagation length. In this engine, compactness is achieved with a pentroof design that centres the spark plug at the top and situates the valves at an acute included angle of  $22^{\circ} 35'$  to bring the spark plugs closer to the top of the piston. The shallow pentroof chambers in the head are offset by similar-displacement heron-like chambers in the top of the pistons, which result in a short flame propagation length and a 9.8:1 compression ratio. Squish areas have been designed into the chambers to cause more turbulence in the air/fuel mixture. The result is a quick, clean burn. Small-diameter spark plugs allow larger passages in the water jacket so that the high-compression chambers are cooled sufficiently to prevent "knocking".

Better aspiration is another key to more power and economy, and to increased low/mid range torque.

The big 86 mm bore allows an intake valve area of  $804 \text{ mm}^2$ , 28 per cent more than that of the two-valve 2S-E engine. The exhaust valve area is  $572 \text{ mm}^2$ , 26 per cent more than the 2S. This larger breathing area combines with the comparatively short stroke to produce more power output across the rpm scale.

Twin camshafts operate the valves. A unique camshaft drive system accommodates the acute valve included angle. The inlet camshaft is driven by a single-stage cogged belt via a 48-cog wheel. The exhaust camshaft is driven from the inlet camshaft via scissors gear, which reduces gear noise. The

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camshafts act on the valves directly via bucket tappets. Chrome molybdenum shims in the tappets allow clearance adjustment without removing the camshafts.

### The Fuel System

The 3S-FE has D-type digital EFI (Electronic Fuel Injection) instead of the L-type of the 2S-E engine it replaces. This D-type EFI uses a Toyota-developed semiconductor vacuum sensor that assures precise manifold pressure signals. And it has less intake resistance, less weight and less size than L-type EFI systems.

The 8-bit microcomputer uses intake manifold pressure sensor signals and rpm data to calculate optimum injection duration. It also takes into account data on coolant temperature, intake temperature, and throttle position, and compensates injection duration as necessary. One-half the calculated fuel volume is simultaneously injected once per engine revolution through two-hole injectors that aim directly at the intake valves. These two-hole injectors reduce the amount of fuel that adheres to the area between the intake valves, resulting in more precise control of air/fuel ratios and improved engine response.

The FCS (Fuel Cut System) cuts off fuel injection when the accelerator is released and the engine speed is over 2,000 rpm. This prevents over-rich mixture, saving fuel and reducing the chance of incomplete combustion. The fuel injection cuts back in when the engine speed goes below 1,500 rpm (with a warm engine).

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### The Ignition System

The 3S-FE utilizes a fully transistorized microcomputer-controlled ignition system with electronic spark advance. It is far more precise than mechanical systems, and improves power output, fuel economy, and engine response. The electronic rotor pickup and the intake manifold pressure sensor supply data for the microcomputer to calculate precise ignition timing according to a pre-programmed spark advance map. The system consists of a coil/distributor unit, an igniter unit, high-tensile spark plug wires, engine operating condition sensors and a controlling microcomputer. Solid state electronics assure complete reliability.

### The Computer

The 3S-FE engine is managed by an 8-bit microcomputer that was custom-designed to meet Toyota's engine management requirements. The computer controls the electronic fuel injection and the electronic spark advance, as well as incorporating diagnostics, failsafe, and backup functions. A single microcomputer controlling all major engine management functions is more efficient and its custom-designed circuitry allows faster calculations.

Its on-board self-diagnosis system remembers anomalies in engine function so service mechanics can easily do the necessary repairs.

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The failsafe system guards the engine when there is a chance it will be damaged; ie, when the computer judges that the signals it gets from any individual sensor indicate a malfunction of the sensor itself, it will control the engine with predetermined data. If there is no igniter feedback signal, however, the failsafe system will shut the engine down.

The backup system consists of an IC programmed with the predetermined data for operation of the engine that takes command in case of CPU failure. If there is no CPU feedback signal to the monitoring circuit, the backup IC then operates the engine at its preset injection and ignition parameters.

#### The 2C-T Diesel Engine

The Toyota 2C-T is an inline four stroke four cylinder SOHC turbocharged diesel engine that displaces 1974 cc. It is one of Toyota's new generation diesel engines developed specially for passenger cars, which means it is lightweight, offers quick response, and has good fuel economy. The engine develops 83 bhp @ 4500 rpm maximum power and 121 lb ft @ 2400 rpm maximum torque.

The engine is a carryover from the previous Camry, with improvements to help it meet European emission standards and to further reduce noise and vibration.

Five engine mounts, three with dynamic dampers, reduce the transfer of vibration to the vehicle body. A new intake resonator cuts intake noise.



The long-skirt block is cast iron alloy with linerless bores, which are plateau-honed to reduce friction. The bore/stroke ratio is nearly square at 86 mm x 85 mm. FEM-analyzed ribs and bosses add rigidity to the block.

The FRM pistons have Toyota-developed fine ceramic tops that are highly resistant to both heat and wear. The connecting rods are forged steel, and the crankshaft's five journals and eight balance weights assure ample bending rigidity and minimal vibration.

Five mounts support the engine, insulating it from the body. Three of the five are fitted with dynamic dampers that are particularly effective at absorbing the vibrations caused when the engine is idling.

The head is aluminium alloy. The passages between the swirl chambers and the combustion chambers are enlarged to reduce emissions. The compression ratio has been upped to 23:1 to make starting easier and to improve cold-weather driveability.

The overhead camshaft is driven from the crankshaft with a toothed timing belt. It acts on the valves directly via bucket-type tappets. Shims in the bucket ends allow clearance adjustment without removing the camshaft.

The larger intake manifold improves breathing, and the reshaped exhaust manifold reduces exhaust resistance.

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The compact, lightweight fuel injection pump is the Bosch VE-type, which provides accurate timing and precise fuel metering. New throttle-type injector needles spread the injected fuel wider, improving atomization. The turbocharger is the Toyota-developed CT-20. With a full-floating bearing, its boost pressure peak is 0.61 kg/cm<sup>2</sup>.

### Transmissions

Every engine/transaxle combination in the Camry lineup drives equal-length driveshafts with a centre bearing and constant-velocity joints. These equal-length driveshafts avoid torque steer and enhance straight-line stability. Birfield joints are employed at the wheel end of the shafts, and sliding tripod joints at the transaxle end.

### Manual Transaxle

The S53 five speed manual transaxle mounted in Camrys with 3S-FE engines is basically the same transaxle as is found in previous Camrys, except that it has a slightly closer gear ratio. And it is the same unit as the one used in Toyota Celica GTs with the different final gear ratio adjusted to match the characteristics of the 3S-FE engine. The design characteristics of the transaxle are a particularly compact size, light weight, and fully synchronized forward gears.

The S51 five speed transaxle used with the 2C-T diesel engine is the same unit as in the previous Camry. Gear ratios are: 1st, 3.538; 2nd, 1.960; 3rd, 1.250; 4th, 0.945; 5th, 0.731; and reverse, 3.153.

Both manual transaxles work through a nine inch single dry-plate clutch, hydraulically operated and self adjusting. They are shifted with twin flexible push-pull cables, which ensure precise shifting, transmit no vibration, and feed back a positive feel to the driver.

#### Automatic Transaxle

This four speed automatic transaxle was originally developed for the old Camry. It features a wide gear ratio in the interest of more power during start up and acceleration, and more economy and less noise at cruising speeds. The torque converter has a stall ratio of 1.920, and its flat shape accommodates the lockup clutch, which eliminates hydraulic slip when engaged and improves fuel economy at cruising speeds. The clutch locks up when vehicle speed tops 38 mph in fourth gear and unlocks when speed drops below 36 mph in fourth gear. The lockup clutch also ensures quiet operation.

The lockup clutch, torque converter, and compact gear train are fitted into a short lightweight casing designed to take up the least possible space in the engine compartment. The compactness of this transaxle, along with its excellent performance, has led to its use in a number of Toyota passenger cars.

## CHASSIS AND SUSPENSION

### Suspension

The four wheel independent suspension of the new Camry is of the same type and retains the layout of the suspension of the replaced Camry. However, all suspension parts have been redesigned and repositioned for improved ride and stability.

In front, the ride is improved with reduced bound/rebound friction, and stability is improved with fine-tuned geometry and the addition of a cross member that forms a brace between the inboard anchor points of the lower arms.

In the rear, a subframe to which the dual transverse links anchor has been added. It insulates the body from suspension vibration and road noise. Stability is enhanced with longer transverse links with a wider span. Not only do they reduce track change, they also increase lateral rigidity.

### Front Suspension

The front suspension is MacPherson strut with tubular shock absorbers and offset coil springs. The strut assembly is located by a lower L-arm and a stabilizer bar that doubles as trailing rods.

Stability has been improved in several ways. First, the lower L-arms are 13 mm longer than those of the previous Camry to further reduce track and roll centre changes. Second, the inboard attachment points of the lower L-arms have been moved

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forward, closer to the lateral centre line of the front wheels. And third, a cross member has been added to bridge the inboard ends of the L-arms for greater lateral rigidity. Finally, steel inter-rings have been inserted in the rubber bushings at the inboard anchor points of the L-arms so they will resist lateral compression.

In addition to generous longitudinal compliance, the ride was further improved by reducing the friction associated with bound and rebound.

The lower L-arm bushings were designed for lower torsional rigidity, so they have less resistance to the vertical movement of the arm. The shock absorbers were also redesigned to reduce friction.

By slightly increasing castor while not increasing the trail, straight-line stability is improved without a corresponding increase in steering effort.

### Rear Suspension

The rear suspension consists of two sets of twin transverse links that anchor to a subframe, trailing rods, struts that incorporate both shock absorbers and coil springs, and a stabilizer bar that attaches to the strut housing via ball-jointed stabilizer links.

The transverse links are 150 mm longer than those of the old Camry, resulting in less track change. The wider span

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between the links increases lateral rigidity as well. The stabilizer bar attaches to the shock absorber strut housings, allowing stabilizing action toward even the slightest roll.

There are cylindrical rubber bushings with steel inter-rings at both the inboard and the outboard anchor points of the transverse links, which resist lateral compression while reducing bound/rebound friction. The bushings at the leading end of the trailing rods are all rubber, slit to allow a larger longitudinal compliance.

The shock absorbers are of larger diameter - 50.8 mm as opposed to 48 mm in the previous model - for increased damping capacity as well as improved rigidity.

A slight negative camber improves cornering and the geometry is set for both anti-squat and anti-lift. The rear transverse links are anchored to a sturdy subframe that reduces the transfer of vibration and noise to the body.

### Steering

Power steering is standard. The rpm-sensing power assistance offers light steering effort at low speeds and heavier effort at higher speeds. The system turns 3.0 times, lock-to-lock.

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Brakes

The new Camry brake system has been modified to match its engines, with ventilated disc brakes in front, drum brakes in the rear.

In Camrys with 3S-FE engines, the front brakes have 255 mm diameter ventilated discs with single 57.2 mm diameter piston floating calipers that work 50 cm<sup>2</sup> pads, which are larger than the brakes on the previous model. The self-adjusting rear brakes are 200 mm inside-diameter drums with leading/trailing shoes. Estates have 228.6 mm inside-diameter rear brake drums.

Camry's brakes are vacuum servo assisted. In models powered by the 3S-FE engine, the master cylinder is larger at 25.4 mm diameter, and a tandem 7 in + 8 in booster replaces the former single 9 in type. Brake pedal effort in these models is reduced 20 per cent compared with previous Camrys. 2C-T powered Camrys have a single 9 in booster and a 23.81 mm master cylinder.

Diagonal split brake lines assure reliable, balanced braking force, right and left, even if one line should rupture. P-valves in the lines apportion the hydraulic force, front and rear. Camry Estates have LSPV (Load Sensing Proportioning Valve) to adjust braking force to match the load at the rear axle. The parking brake acts on the rear drums.

## BODYWORK

### The Exterior Body

Camry is a straight-forward four door saloon of functional, contemporary design. The cabin is moved slightly forward in relation to the wheelbase, and both front and rear overhangs are greater. In redesigning the exterior, considerable attention was also given to improving the aerodynamic coefficients, and to enlarging the field of vision, both horizontally and vertically.

(Petrol Saloon Figs)	New Camry	Previous Camry
Overall length:	4520 mm	4435 mm
Overall width:	1710 mm	1690 mm
Overall height:	1400 mm	1395 mm

### Aerodynamics

The improving of Camry's aerodynamic coefficients achieved two purposes: 1) better fuel efficiency at high speeds, and 2) less wind noise. A great number of refinements in exterior design helped reduce both lift and drag.

At the front end, the bumpers are fitted smoothly to the body to reduce turbulence and wrap around to the front wheel wells. The thin-profile halogen headlamps and wraparound turn-signal lamps help minimize frontal area, which also reduces drag, while providing ample visibility at night.

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The frontal area of the Camry is reduced to 1.9 square meters. The bonnet is long and flat, and the bonnet extension piece provides a smooth transition from bonnet to headlamps.

Around the passenger compartment the large windscreen is raked by an additional 3 degrees compared to the old Camry, and set flush in its frame with epoxy adhesive. Semi-concealed wipers at the bonnet/windscreen joint reduce turbulence.

The joints between glass and frame, door and body, bonnet and body, headlamps and body, bumpers and body, etc are all designed to present a smooth flush surface to the wind.

With front and rear spoilers, Camry's aerodynamic coefficient is  $C_d$  0.35.

#### Field of Vision

Increasing the driver's field of vision was a specific goal in the redesign of the exterior of the new Camry. As a result, overall glass area is larger. The horizontal field of vision now extends through 304 degrees, an improvement of 6 per cent. The vertical field of vision to the front and rear is 4 per cent larger: 36.8 degrees to the front, 11.5 degrees to the rear. And the side field of vision is 63.5 degrees to the driver's side and 19.7 degrees to the passenger side, a total improvement of 10 per cent.

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## Body Shell

The body shell of the new Camry is a completely new design. Basically, it places the cabin slightly more forward, increases boot space with a longer rear overhang, and has a structure built specifically for increased rigidity, lower noise and vibration, and less susceptibility to corrosion.

## Rigidity

Body rigidity is increased in two specific areas: the floor pan, and the cabin cage.

Rigidity of the floor pan is increased by making the cross section of all body cross members and side members larger wherever necessary, by using thicker gauge steel for the members and by adding a cross member brace in the engine compartment that effectively acts as a sixth body cross member.

Around the cabin, rigidity is assured by reinforcing the joints of cowl to A-pillar, A-pillar to roof, roof to B-pillar, B-pillar to floor, floor to rear quarter panel, and rear quarter pillar to roof.

The reinforced body is made as light as possible by using high-tensile steel for large, simply shaped panels such as the bonnet and the doors.

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### Reducing Noise and Vibration

The enhanced rigidity of the body shell reduces body flex, which in turn cuts both noise and vibration.

In addition to the effect of rigidity increases, other measures were taken to make Camry quieter. An asphalt covering on the floor from cowl to rear cross member, with three layers (asphalt/felt/asphalt) over the front floor area. This helps insulate the cabin from road and tyre noise. The sturdy rear suspension subframe reduces the transfer of vibration and harshness from the suspension to the body.

### Rustproofing

At Toyota, rust prevention measures can be divided into four basic areas: 1) materials, eg galvanized steel; 2) joints and hems, eg hemming adhesive; 3) zinc phosphate coating and cathodic electrodeposited primer; and 4) anti-chip undercoatings.

The rust resistance of the new Camry is improved with the use of galvanized steel for the side floor members in addition to the parts already made of galvanized steel in the previous Camry. Fully 53 per cent of the new Camry's body shell weight is in galvanized steel.

Hemming adhesive and sealer are used at the panel joints to seal raw panel edges, and wax filler is used more extensively, particularly in the bottoms of the doors and around the bonnet latch. Adequate drainage is designed into

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the panels so that water will not accumulate, thus discouraging corrosion.

Camry's coating process itself works to prevent rust. First, the body is fully immersed in a phosphate solution that forms a layer of zinc phosphate on every surface, inside and out. This layer promotes adhesion of the primer in addition to its own inherent rust-resistant properties. Next, the body is dipped in a cathodic primer solution, in which a highly corrosion-resistant layer of primer is electrodeposited on it.

After the primer has been dried, the body is under-coated with PVC and anti-chip paint is applied to the edges of the wheel wells and the rocker panels. Then layers of high-quality enamel are sprayed on and baked. Finally, plastic liners are inserted in the front wheel wells to keep the dirt and gravel thrown by the tyres from nicking the interior of the wings.

#### Interior Accommodation

In concert with the complete redesign of Camry's exterior, the interior is entirely new. It retains the well-received attributes of the previous five passenger model - keeping space virtually the same while increasing luggage room and adding more front seat adjustment, vertically adjustable front seatbelt shoulder anchors, and so forth, to augment the comfort and convenience of driver and passengers.

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The cabin is surprisingly large, taking full advantage of front-wheel drive to give both driver and passenger ample room. The interior is designed with gentle curves and rounded edges to offer a soft atmosphere to those within.

Interior dimensions of the Camry saloon are:

Cabin length:	1,905 mm
Cabin width:	1,425 mm
Cabin height:	1,160 mm

	Front	Rear
Leg room:	1,090 mm	875 mm
Shoulder room:	1,380 mm	1,365 mm
Head room:	970 mm	935 mm

The boot capacity of the Camry saloon is 8 per cent larger than the old model. For added convenience, the boot lid opens at bumper level for a loading height of only 670 mm above ground, an improvement of 190 mm.

In the estate version of the new Camry, luggage space is 22.4 cu ft with the rear seat backs up, and 45.9 cu ft with the rear seat cushions folded up against the backs of the front seats and the rear seat backs down, to form a continuous flat deck. The Camry estate also has practical trays beneath the luggage deck for the storage of small items. Cargo can be strapped in place with the two luggage bands provided.

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Seating

The front seats adjust fore-and-aft on a 225 mm track; recline over a stepless arc, and can be stopped anywhere the passenger likes.

The headrests on both seats can be adjusted fore-and-aft as well as vertically. On the driver's seat, both the leading and trailing edges of the seat cushion can be adjusted separately for height, and it has an adjustable lumbar support.

Pockets are found on the rear of both front seats for the convenience of rear-seat passengers.

The three passenger rear bench seat has 60/40 split backs that fold down, either separately or together. The split seat backs also have pull-down centre armrests and a security lock that protects the contents of the boot.

The estate has 60/40 split rear seat backs that can be folded down to form a level cargo deck for large items.

Camrys have three point ELR front seatbelts with shoulder anchors that adjust in five steps over 72 mm. The rear seat belts are three point ELR seat-belts on each side with a two point lap belt for the centre passenger.

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## The Cockpit

Ergonomics and operator convenience were the major factors considered in the design and layout of the Camry cockpit. Particular attention was paid to the legibility of the instruments and the placement of the controls.

The standard instrument package does not differ with the Camry model chosen. The analogue instruments include a large speedometer, a large tachometer, a temperature gauge, a fuel gauge, and various warning lights. The analogue meter panels are dual-lit: back lit for character and number legibility, and foot lit for overall visibility.

To enhance operational convenience, a number of the controls and switches of the new Camry are illuminated. These include such standard items as the ignition, the instrument panel rheostat, the rear fog lamp switch, the remote mirror control unit, the hazard warning switch, the heater controls, and the rear window demister as well as options like the main cruise control switch, the audio system controls, and the power window switch panels.

The steering wheel can be tilted through an 11°15' arc.

## Ventilation and Heating

Larger ingress and egress vents combine with new direct-access side vents for 18 per cent more air flow volume when cruising at 60 mph. Ingress occurs at the cowl vents, and egress through the rear package tray and rear quarter panels.

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The heating system is improved in three ways: 1) with 17 per cent more blower motor capacity, 2) with a 50 per cent larger heater core, and 3) with the addition of ducts to send warm air into the rear seat area. The new heater produces 4,000 kcal/h and the maximum blower air flow volume is 290 m<sup>3</sup>/h.

The side vents in the dash now have direct access to the air stream. This gives the driver or passenger three choices: 1) close the vent to all air flow; 2) open the vent to heated air only; or 3) open the vent to allow fresh air to mix with heated air for a cooler air stream at torso level.

Performance of the air conditioner on the GLi Executive is improved by increasing compressor capacity 10 per cent to complement the increased capacity of the blower motor. The cooling capacity of the unit is 4,000 kcal/h with a maximum air flow volume of 450 m<sup>3</sup>/h.

#### Audio Systems

There are two audio systems, both with PLL (Phase Lock Loop) synthesized electronic radio tuning, all full-logic controlled, and with stereo cassette tape decks. The systems are:

1. LW/MW/FM radio and stereo tape deck. Traffic report reception capability in SK, DK, and BK modes, automatic SEEK function, FM stereo reception, six memories per band, and automatic loudness control. Automatic tape selector. Two 10-watt speakers. (Camry Diesel).

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2. LW/MW/FM radio as above. Stereo tape deck with automatic tape selector, Dolby noise reduction, repeat function, blank skip, and Automatic Programme Selector (APS). Four 15-watt speakers in saloons. Estate systems have six speakers: two 15-watt front speakers, two 20-watt rear speakers, and two 10-watt tweeters. (GLi and Executive).

Two-speaker systems mount the speakers beneath the front dash, right and left. Passive radiators are used to enhance frequency response. Four speaker systems mount two speakers in the rear package tray. Resonance guides allow the boot to be used as a huge speaker box. The six-speaker estate system mounts two speakers beneath the front dash, two in the rear quarter panel, and two tweeters in the roof of the luggage compartment.

#### Moonroof (GLi and Executive saloons)

The new Camry offers a moonroof instead of a sunroof. The moonroof is 10 per cent larger in area than the sunroof. It is made of laminated smoked glass which allows only about 22 per cent of sunlight to pass through. The moonroof can be utilized in three ways: 1) closed with the sunshade closed; 2) closed with the sunshade open; 3) open. The control panel is set into the roof immediately above the rearview mirror. The panel also includes map lights. For safety's sake, the moonroof stops when 20 cm from full closed. The close switch must be pressed again to finish closing it.

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Power Windows

Power windows are fitted on GLi, Executive and Estate models. A master switch panel is found in the driver's side armrest with individual control switches on the other three doors. A power door-lock function that is controlled by the driver is part of the power window package.

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## PRESS INFORMATION

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### TOYOTA CAMRY - SPECIFICATION

BODY	Saloon	Estate
<u>Dimensions</u>		
Overall length	Diesel 4500 mm, GLi Executive 4520 mm	4610 mm
Overall width	1710 mm	1710 mm
Overall height	1400 mm	1440 mm
Wheelbase	2600 mm	2600 mm
Track (front/rear)	1475/1445 mm	1475/1445 mm
Overhang (front/rear)	865/1035 MM (Diesel) (885/1035 mm: GLi and Executive)	885/1125 mm
Ground clearance	170 mm	175 mm
Interior length	1905 mm	1905 mm
Interior width	1425 mm	1425 mm
Interior height	1160 mm (1130 mm with moonroof)	1160 mm
Shoulder room (front/rear)	1380/1365 mm	1380/1365 mm
Headroom (front/rear)	970/935 mm	970/935 mm
Leg room (front/rear)	1090/875 mm	1090/875 mm
<u>Load space</u>		
Volume	17.8 cu ft	22.4 cu ft (rear seat up) 45.9 cu ft (rear seat down)
Length	-	830 mm (rear seat up) 1600 mm (rear seat down)
Width	-	1380 mm (rear seat up) 1420 mm (rear seat down)

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Height	-	830 mm
Height of tailgate		670 mm
<u>General</u>		
Seats	5	5
General arrangement	Front wheel drive, engine and transmis- sion transversely installed, all- independent suspension	Front wheel drive, engine and transmis- sion transversely installed, all- independent suspension
Structure	Unitized body	Unitized body
Bodywork	4-door saloon	5-door estate
Frontal area	1.9 m <sup>2</sup> (with spoiler)	1.9 m <sup>2</sup> (with spoiler)
Cd	0.35 (with spoilers)	0.39 (with front spoiler)

<u>Weights</u>	3S-FE Manual	2C-T Manual	3S-FE Manual
Kerb weight	1170 kg	1205 kg	1230 kg
on front wheels	695 kg	740 kg	700 kg
on rear wheels	475 kg	465 kg	530 kg
Max gross vehicle weight	1720 kg	1760 kg	1770 kg
on front wheels	895 kg	940 kg	845 kg
on rear wheels	825 kg	820 kg	925 kg
Max unbraked trailer	500 kg	500 kg	500 kg
Max braked trailer	1500 kg	1400 kg	1500 kg

Saloon

Estate

Supplies

Fuel tank capacity	60 litres	60 litres
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Visibility

Horizontal visibility	304 degrees
Front/rear visibility	36.8 degrees/11.5 degrees
Left/right visibility	63.5 degrees/19.7 degrees

more...

ENGINE	3S-FE	2C-T
Type	4 stroke petrol	4 stroke diesel
Fuel	Premium leaded	Diesel
Installation	Transverse	Transverse
Arrangement	4 cylinder, in-line	4 cylinder, in-line
Material:		
Block	Cast iron	Cast iron
Head	Cast aluminium	Cast aluminium
Dimensions:		
Overall length	678 mm	634 mm
Overall width	609 mm	601 mm
Overall height	654 mm	632 mm
Combustion chambers	Pentroof	Sub chamber (swirl type)
Bore x stroke	86 x 86 mm	86 x 85 mm
Displacement	1998 cc	1974 cc
Compression ratio	9.8:1	23.0:1
Fuel grade	95 RON (Octane number)	More than 50 (Cetane number)
Max power/engine speed	126 bhp @ 5600 rpm	83 bhp @ 4500 rpm
Max torque/engine speed	132 lb ft @ 4400 rpm	121 lb ft @ 2400 rpm
Valve operation:		
camshaft	Two, overhead	One, overhead
camshaft drive	Cogged belt	Cogged belt
valve timing diagram	6°-48°-54°-6°	7°-33°-51°-5°
valve adjustment	Shim	Shim
Valve included angle	22° 35'	-
Crankshaft main bearings	5	5

more....

Ignition

type	Full transistorised Digital spark timing control	-
firing order	1-3-4-2	1-3-4-2
Fuel system	D-Jetronic (electronic)	Rotary injection pump (Bosch VE type)
Cold starting system	Cold start fuel injector	Glow plugs with electronic control

Battery capacity

voltage	12V	12V
amperage	32A	52A
Alternator	840W	720W
Starter motor	1.0kW	1.4kW

## DRIVE TRAIN

<u>Manual Transmission</u>	3S-FE	2C-T
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## Clutch:

Type	Single dry plate
Mechanism	Diaphragm spring
Operation	Hydraulic

Gearbox

Designation	S53	S51
Forward speeds	5	
Casing	Aluminium alloy	
Operation	Twin cable	

## Gear ratios:

1st	3.285
2nd	2.041
3rd	1.322
4th	1.028
5th	0.820
Reverse	3.153
Final drive	3.736

more...



<u>Automatic Transmission</u>	<u>3S-FE only</u>
<u>Designation</u>	140L
<u>Torque Converter</u>	
Type	3 element, 1 stage, 2 phase
<u>Gearbox</u>	
Forward speeds	4
Casing	Aluminium alloy
Operation	Single cable
Gear ratio:	
1st	2.810
2nd	1.549
3rd	1.000
4th	0.706
Reverse	2.296
Final drive	4.176
<u>Drive shaft</u>	<u>3S-FE/2C-T</u>
Type	Equal length two tubular shafts with two constant-velocity joints
Inboard joints	Tripod
Outboard joints	Birfield
<u>CHASSIS</u>	<u>Saloon/Estate</u>
<u>Front Suspension</u>	
Type	MacPherson strut
Spings	Coil with telescopic hydraulic damper
Anti-roll bar:	
type	Solid
diameter	24 mm
Castor angle	1° 40' (saloon), 55' (estate)
Castor trail	5.4 mm (saloon), 1.6 mm (estate)
Camber angle	0° 35'
Toe-in	1 mm

more.....

Rear Suspension

Type	MacPherson strut
Springs	Conical coil with telescopic hydraulic damper
Anti-roll bar:	
type	Solid
diameter	14 mm
Camber angle	30' (saloon), 0 (estate)
Toe-in	4 mm

Braking System

Circuit	Diagonal with P valve
Booster	7 in + 8 in Tandem (3S-FE) 9 in Single (2C-T)
Master cylinder (bore)	Conventional tandem (25.4 mm) (3S-FE)  Conventional tandem (23.81 mm) (2C-T)
Front brakes:	
type	Ventilated disc
diameter (disc)	255 mm
Rear brakes:	
type	LT Drum
diameter (drum bore)	200 mm (saloon), 228.6 mm (estate)
Handbrake	Mechanically operated via cable operating on rear wheels

Id wheels/type

Material	Steel
Tyre size	185/70HR14

Steering

Type	Rack & Pinion
Gear ratio	17.4
Steering wheel diameter	390 mm
Turns lock to lock	3.0
Power assistance	Standard
Turning circle, kerbs	5.3 m
Steering wheel adjustment	Tilt

more....

## CAMRY OPTION AVAILABILITY

S .... Standard    - .... Not available    O .... Option    EX .... Executive

Description	Saloon Diesel	GLi	Estate GLi
<u>Exterior</u>			
Tinted laminated windows	S	S	S
Two power door mirrors	-	S	S
Intermittent rear wiper	-	-	S
Moonroof	S	S	-
Front spoiler	S	S	S
Rear spoiler	S	S	-
Halogen headlamps	S	S	S
Lamp auto-off system	S	S	S
Headlamp cleaners	-	EX	-
Dim/dip lighting	S	S	S
<u>Interior</u>			
3-spoke steering wheel synthetic leather	S	S	S
Tiltable steering	S	S	S
Power steering	S	S	S
Rear window defogger	S	S	S
Climatronic	S	S	S
Cruise control	-	EX	-
Analogue speedometer	S	S	S
Analogue tachometer	S	S	S
Air conditioner	-	EX	-
Six-way adjustable front seat	S	S	S
60/40 Split rear seat	S	S	S
Rear centre armrest	S	S	S
Power windows	-	S	S
Power door locks	-	S	S
Boot lid opener/switch	S	S	S
Adjustable seat belt shoulders anchor	S	S	S
Three-point ELR rear seat belts	S	S	S
Illuminated entry system	S	S	S

more....



## Camry specification.....8

Fuel Consumption

	Urban cycle	Constant 56 mph	Constant 75 mph
Camry saloon-manual	31.7	48.7	37.7
Camry saloon-automatic	30.1	44.1	34.9
Camry Estate - manual	31.7	47.1	35.8
Camry Estate -automatic	30.1	41.5	34.0
Camry Turbo Diesel	41.5	60.1	42.2

Performance - Saloon

	3S-FE	2C-T
Performance		
Max speed	125 mph 116 mph (auto)	106 mph
Acceleration: 0-60 mph	9.2 sec 10.8 sec (auto)	14.1 sec

Performance - Estate

	3S-FE
Performance	
Max speed	116 mph 106 mph (auto)
Acceleration 0-60 mph	9.5 sec 11.1 sec (auto)

## NEW TOYOTA CAMRY PRICE STRUCTURE

	<u>Basic</u>	<u>Car Tax</u>	<u>VAT</u>	<u>Total</u>
Camry 2.0 GLi (Manual)	8,340.00	695.00	1,355.25	10,390.25
Camry 2.0 GLi (Automatic)	8,870.00	739.16	1,441.37	11,050.53
Camry 2.0 GLi Executive (Automatic)	9,552.00	796.00	1,552.20	11,900.20
Camry 2.0 Diesel	8,589.00	715.75	1,395.71	10,700.46
Camry 2.0 GLi Estate (Manual)	8,444.00	703.66	1,372.15	10,519.81
Camry 2.0i Estate (Automatic)	8,974.00	747.83	1,458.27	11,180.10

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For further information please contact Simon Small,  
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7846/S/221286