

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

TOYOTA

FOR IMMEDIATE RELEASE


GOLDEN ANNIVERSARY LAUNCH FOR NEW TOYOTA COROLLA

It is somehow fitting that in their 50th anniversary year Toyota should introduce the latest and sixth generation of Corolla models - a line which has produced over 12½ million cars since the first Corolla left the factory in 1966. The Corolla is made in 12 countries and sold in 130 countries around the world, making it one of the best selling model lines in automotive history. Now, the new Corolla range will spearhead Toyota's efforts in global markets into the early nineties.

The new Corollas have been completely restyled and there are new and improved engines to give a fine combination of performance with excellent fuel economy. They are slightly longer, lower and wider than their predecessors. They are also quieter, better equipped and more comfortable. The new Corollas have been conceived as the most refined cars in their class.

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50 YEARS OF TOYOTA EXCELLENCE
1937 1987



Golden anniversary....2

In the UK, the Corolla range will consist of six models:

Toyota Corolla GL 3-door Hatchback with 2E engine
(12 valve 1.3 litre)

Toyota Corolla GL 4-door Saloon with 2E engine
(12 valve 1.3 litre)

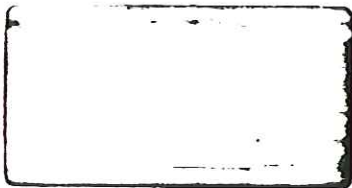
Toyota Corolla GL 5-door Liftback with 2E engine
(12 valve 1.3 litre)

Toyota Corolla GL Executive Liftback with 4A-F engine
(16 valve 1.6 litre)

Toyota Corolla GT-1 16 with 4A-GE engine
(16 valve 1.6 litre)

Toyota Corolla GL Estate with 2E engine
(12 valve 1.3 litre)

All models will be available from UK dealerships on
September 8, except for the Estate which will go on sale
during October.



TOYOTA

DEVELOPING THE NEW COROLLA

Millions of satisfied owners in more than 100 countries meant that engineers had to maintain the popular Corolla format with universal appeal while setting a new standard. The new Corolla had to have sufficient power for easy overtaking, for quick merging into fast traffic and for long-distance driving at high speeds. Higher driving speeds brought a need for superior straight line stability and cornering smoothness.

The exterior was redesigned from scratch, keeping in mind that these Corollas should be evolutionary, with universal appeal.

In the body shell and chassis, increased rigidity was the prime concern, to help the suspension maintain its designed geometry as well as to cope with increased power and suspension input, to reduce wind and road noise, and to create a sound body that has the solid feel of a larger car. Rustproofing measures were also improved.

For the interiors, designers concentrated on providing adequate space, and upgrading equipment and materials for a new feeling of luxury and quality.

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50 YEARS OF TOYOTA EXCELLENCE
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At Toyota, exhaustive testing proves every prototype before it is approved for production. Corolla was no exception. In addition to the battery of tests done at Toyota laboratories and proving grounds in Japan, extensive testing took place in Africa, Australia, Europe, the Middle East, and North America. The prototypes were driven by nine teams for hundreds of thousands of miles over all kinds of roads in all kinds of weather.

As a result, the new Corolla offers much more than mere basic transportation.

The styling of the new Corollas is a step forward in the evolution of this popular line. It is a pleasing blend of new trends that exhibits a concern for aerodynamics with a feel of solid quality. Its lines are sleek, smooth, and uncluttered, with flush surfaces throughout. The new Corollas' beauty comes from its styling simplicity. Furthermore, the new Corolla is the only car in its class to offer a five-door liftback.

Toyota is the world's largest producer of multi-valve engines. Now, with the development of the 16-valve 4A-F engine, all three engines in new Corollas feature multi-valve valve trains. They are: the brand-new 1.6-litre 4A-F engine, the improved 1.6-litre 4A-GE engine, and the 1.3-litre 2E engine.

ENGINES

Three engines are being offered with the new line of Corollas, each having been designed for a specific purpose. One of the engines is brand new, one is retained from the last lineup, and one has been significantly improved.

The 4A-F Engine

Corolla's brand new inline four-cylinder twin-cam 16-valve 1,587 cc 4A-F engine was designed specifically for family car use.

The 4A-F is different from Toyota's better-known sporty 16-valve engines, such as the 4A-GE mounted in MR2s and the 3S-GE found in Toyota Celicas, in that it is designed to provide more powerful torque in the low-to-mid rpm ranges instead of concentrating mainly on top end power output. Concept-wise, the 4A-F is similar to the 2.0-litre twin-cam 3S-FE family-use engine, which is fitted to the latest Toyota Camrys.

The engine is very compact, especially the upper half. The compactness of the cylinder head results from the narrow included angle of the valves and scissors gear-driven twin overhead camshafts. Its compact pentroof combustion chambers are designed for superior thermal efficiency.

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Compared to the 4A engine used in Carinas, noise from the 4A-F was reduced by six decibels at 62 mph through such measures as block ribbing and reinforcing, an eight-balance crankshaft with dynamic dampered pulley, valve train scissors gear, timing belt, redesigned intake tract, five-point engine mounts, and so forth.

The new 4A-F engine develops a maximum power output of 94 bhp at 6,000 rpm and maximum torque of 100 lb ft at 3,600 rpm. Its fuel efficiency ratings in a Corolla liftback with five-speed manual transmission are 32.8 mpg, urban cycle; 49.6 mpg at 56 mph and 38.7 mpg at 75 mph.

The character of the new 4A-F engine is determined principally by its upper half. The cylinder head was designed from scratch, based on the same concept as the cylinder head of the 2.0-litre 3S-FE engine. It is of aluminium alloy and has twin overhead camshafts, pentroof combustion chambers, centred spark plugs, and four valves per cylinder set in a narrow vee. The cylinder head is designed to improve the new engine's output across the rpm range and it is designed to operate quietly.

Many combinations of intake tract lengths, shapes, and diameters were tested before finally arriving at the one used on the new 4A-F, which results in an excellent combination of low-and-mid-range torque and top-end power. To complement the increased valve area, many valve timings were tested. Thus the combination of compact combustion chambers, increased breathing efficiency and new valve timing works to

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produce more power and torque across the rpm range, with significantly more in the low-to-mid rpm levels.

Mechanical simplicity was also one of the prime concerns of the engineering team. The cylinder head of the new 4A-F was designed with the fewest possible moving parts, considering that it employs a twin-cam four-valve system.

The narrow included angle of the valves is one reason why the cylinder head is as compact in size as those of most SOHC engines, and considerably less bulky than twin-cam engines with wide valve included angles.

A valve drive system similar to that in the Camry was adapted to cope with the narrow vee of valves. The exhaust camshaft is driven from the crankshaft with a cogged timing belt. The intake camshaft takes its driving power directly from the exhaust camshaft via a scissors gear. The result is much more compact than the more conventional system in which both intake and exhaust camshafts are driven by a timing belt.

The compactness of the cylinder head and block leaves ample elbow room in the engine compartment for routine servicing.

The cylinder head is also designed for minimal maintenance. The camshafts act directly on the valves via tappets bucket-type, eliminating the rocker arms.

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A number of things were done to reduce the possibility of mechanical noise emanating from the cylinder head. The driven gears on the intake camshafts were fitted with scissors gears to eliminate noise from gear backlash.

The 4A-F engine employs the same lightweight cast iron block as the more powerful 4A-GE, which guarantees a smoother, quieter operation because of the extra rigidity of the block compared to that of the former 4A engine. The bore is 81 mm and the stroke 77 mm.

The new cast iron crankshaft has five journals and eight balance weights, which mean reduced vibration and improved bending stiffness. The crankshaft drives its belts with a dynamic dampered pulley that absorbs both torsional and bending vibration, a world-first Toyota system introduced in Camrys and now used in Corollas.

The engine has five mounts instead of four as was formerly the case. It is supported by three mounts: one is located at the flywheel end of the engine, one at the pulley end, and one in the centre of the engine underneath. The other two mounts are essentially stoppers, one located on the front side of the engine, one on the dash panel side. These two stopper mounts are particularly effective in absorbing the engine's torque twist.

The new 4A-F engine is fed by a single two-barrel downdraught carburettor. Engine coolant is used to warm the intake manifold when starting out, so that the air-fuel

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mixture can atomise more effectively. After the engine is warm the flow of coolant is decreased sharply. This prevents the intake air from being overheated, causing the air to expand so that less air would reach the combustion chambers. Cooler intake air during normal operation also reduces knocking.

Noise from the intake tract is reduced measurably with the use of a large intake resonator. Further, the shell of the air cleaner was FEM analysed and designed for additional rigidity.

The ignition is fully transistorised, and igniter, distributor, and coil are integrated into a single unit.

The 4A-GE Engine

The Toyota 4A-GE engine has been refined to increase both power and torque. It is an inline four-cylinder twin-cam sports 16-valve engine that displaces 1,587 cc, and is improved considerably over the engine used in the previous Corolla GT model.

The 4A-GE debuted in the 1983 Corolla, and since has become well known as the powerplant in the Toyota MR2 midship sports car. Furthermore, in 1986, a Corolla equipped with a 4A-GE engine won the European Touring Car Championship (Group A, Class One), underscoring the fact that this engine has the

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capability of performing in racing competition. It also powered Chris Hodgetts to victory in the British Saloon Championship in 1986 and '87 and has a fine record in rallying.

By the end of 1986, Toyota had produced 420,510 4A-GE twin-cam engines.

The 4A-GE has been modified to increase its power, to give it more torque in the low-to-mid rpm ranges, and to reduce noise. It is a lightweight compact engine that is designed for quick response, high power output, and superior fuel efficiency.

The 4A-GE now generates a maximum output of 123 bhp at 6,600 rpm, up from 119 bhp in the previous model. Maximum torque is 107 lb ft at 5,000 rpm, compared to 103 lb ft before. Fuel efficiency in the Corolla GT-i with a five-speed manual transaxle is rated at 32.8 mpg urban cycle, 48.7 mpg at 56 mph and 36.2 mpg at 75 mph. Corresponding figures for the previous GT model were 32.1, 47.1 and 34.4 mpg respectively.

The sporty character of the 4A-GE engine results in the main from the characteristics of its upper half. The cylinder head is of aluminium alloy with pentroof combustion chambers that have centred spark plugs. There are four valves per cylinder, arranged in a 50° vee. The camshafts

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are driven by a cogged timing belt and act directly on the valves via bucket-type tappets. Valve timing has been modified to increase low-to-mid rpm torque.

Both intake and exhaust tracts have been modified to help increase power and torque. The cool air intake diameter is larger, as is the exhaust manifold. The exhaust pipe has been completely redesigned.

The 4A-GE engine is fitted with the Toyota Variable Induction System (T-VIS), which has an intake regulating valve in one of the two intake tracts per cylinder. Under 4,650 rpm, the valve is closed, above 4,650 rpm it is open. When the T-VIS valve is closed, the inertia charging effect increases, upping breathing efficiency, and a slight swirl is created in the air-fuel mixture entering the combustion chamber, which results in higher thermal efficiency. The closed valve also cuts blowback by some 50 per cent. When the valve is open in the high rpm ranges, aspiration efficiency is enhanced so that sufficient air reaches the combustion chamber. The engine is characterised by a smooth torque curve that rises quickly, peaks at about 5,000 rpm, and fades only slightly toward the upper rev ranges.

The crankshaft is also the same five-journal eight-weight configuration as the 4A-F, but is of forged and ion induction-hardened carbon steel to cope with the additional

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horsepower and torque of the 4A-GE. It exhibits minimal vibration, even at high revs.

The Fuel and Ignition System

The 4A-GE engine uses D-type Electronic Fuel Injection (EFI). This system has no air-flow meter, which means less resistance in the intake tract, and it uses a semiconductor vacuum sensor that weighs only grams. The EFI system uses two-hole injectors to direct the flow of atomised fuel straight at the intake valves, reducing the amount of fuel that clings to the walls of the intake tract.

The engine's ignition system is computer controlled and employs Toyota's Electronic Spark Advance (ESA), which is part of the overall engine management system called Toyota Computer Control System (TCCS). TCCS primarily controls fuel injection volume and ignition timing. Its ESA function responds to engine revolution and intake manifold pressure changes. The computer freely chooses the ignition parameters that match the condition of the engine from the data it receives from electronic sensors.

The 2E Engine

The 2E engine is an inline four-cylinder 12-valve SOHC engine displacing 1,295 cc, which was introduced in Japan in the Toyota Starlet in 1984. Since its debut, it has gained a reputation as a very efficient, powerful engine in its class.

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This engine was originally developed specifically for Toyota's small front-wheel-drive saloons and incorporates many weight-saving characteristics to give quick response and ample power as well as superior fuel efficiency.

Maximum power output is 74 bhp at 6,200 rpm and maximum torque is 76 lb ft at 4,200 rpm. The fuel economy figures with a four-door saloon and five-speed manual transmission are 37.2 mpg urban cycle, 55.4 mpg at 56 mph, and 39.2 mpg at 75 mph.

The aluminium alloy cylinder head has three valves per cylinder, two intake and one exhaust, in a cross flow layout. The end-pivot rocker arms are driven by a single overhead camshaft. The valve included angle of only 4° allows a very shallow wedge-shape combustion chamber, which has been proved to have fast stable burn characteristics.

Part of the combustion chamber is let into the top of the piston, allowing the squish areas to create a better combustion pattern. Because the three-valve system provides more breathing area than two valves in the same bore size, both power and torque are improved.

The bore is 73 mm and the stroke 77.4 mm. The block contains a cast iron crankshaft with five journals and four

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balance weights. The pins and journals are hollow, so weight is reduced without sacrificing stiffness. The engine is placed in the engine compartment with five mounts, three that support the weight, two that act as stoppers.

The 2E engine is fuelled through a variable venturi carburettor. The unique V-shape venturi results in a linear air volume change as the suction piston moves, which eliminates many of the problems of conventional SU-type carburettors. The ignition is fully transistorised and integrates the igniter, distributor and coil into a single unit.

Note:

All UK specification Corollas will accept either leaded or unleaded fuel.

TRANSMISSIONS

The Transaxles

There are three manual and two automatic transaxles to match the three engines of the new Corollas. Each engine/transaxle combination drives unequal length driveshafts. The vibration-damping characteristics of the solid longer drive shaft have been greatly enhanced by the addition of a new dynamic damper. Birfield joints are employed at the wheel end of the shafts and sliding tripod joints at the transaxle end.

Manual Transaxles

The five-speed transaxles fit all new Corolla engines, ie, the 4A-F and 4A-GE 1.6-litre engines, and the 2E 1.3-litre engine.

All Corolla manual transaxles are shifted via twin push-pull cables, which prevent the transfer of engine vibrations to the car body from the shift linkage yet offer precise gear changes.

The engines are equipped with single dry plate diaphragm clutches.

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Automatic Transaxles

Two of the new Corolla engines are available with three-speed automatic transmissions with lock-up clutches: the 1.6-litre 4A-F and the 1.3-litre 2E. The torque converters of these automatic transaxles have a stall ratio of 2.10, and their flat shape leaves room for the lock-up clutch, which eliminates hydraulic slip when engaged and improves fuel economy at cruising speeds.

The lock-up points of the clutches are matched to the engines they are mated with. With the 1.3-litre 2E engine, the clutch locks up when vehicle speed tops 34 mph in third gear, and unlocks when speed drops below 32 mph in third gear. With the 1.6-litre 4A-F engine, lock-up speed is 37 mph and unlock speed is 34 mph.

Lock-up clutches in the locked position assure better fuel economy and quieter operation. Furthermore, Corolla is one of few cars in this class to offer lock-up clutches at all.

CHASSIS

The Suspension

The four-wheel independent suspension of the new Corolla retains the same Macpherson strut configuration, front and rear, as the previous model. However, it has been completely redesigned.

All struts have tubular telescopic shock absorbers and offset coil springs. The front suspension is located by lower L-arms. The rear suspension is located transversely by tubular dual parallel links and longitudinally by trailing rods. Its anti-roll bar attaches to the shock absorber housing via ball-joint links.

The redesign of the suspension which was done to achieve a high level of straight-line stability, cornering smoothness, and ride comfort, concentrated on achieving two major effects: minimising front-wheel toe change or compliance steer, and minimising track and camber change during bound and rebound action of the rear suspension.

To minimise front toe change and compliance steer, the forward anchor points of the L-arms were moved 40 mm forward, placing them very close to the axis of the front wheels, which improved the suspension's rigidity to lateral force. The aft anchor point was left in the same location,

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effectively increasing the span of the L-arms, which gave the suspension greater rigidity against lateral force, yet provides sufficient longitudinal compliance for a better ride.

To reduce rear track and camber change during bound/rebound action, the steel tube dual links of the rear suspension were extended by 150 mm, which causes the wheels to scribe a much larger arc. The steel tubing also makes the rear links more rigid, which results in less twist and reduced deflection steer.

Toyota engineers made several changes in the new Corolla's suspension that enhanced smooth cornering. The roll centre heights of both front and rear suspension were altered to reduce body roll to achieve a desirable cornering attitude. The front anti-roll bars of GT-i models are shackled to the subframe at the aft lower arm anchor bracket. The ends of the bar then attach to the L-arms via ball-joint links. The rear anti-roll bars are attached to the strut housing via ball-joint links, whereas in the previous model they attached to the suspension links. Attaching them as close to the wheels as possible assures a smooth linear reaction to roll force for a smoother body roll overall. The suspension geometry is anti-dive in front and anti-lift in the rear.

For the suspension of any car to achieve its designed performance, the rigidity of both body and suspension

components must be assured. These affect suspension performance because every unintended movement of any part of the suspension momentarily changes the suspension geometry from its designed parameters. With the new Corolla, increases in power, which result in greater speeds and faster cornering, necessitated measures to increase body and suspension rigidity.

The entire body shell was re-examined and redesigned specifically to increase its rigidity. It forms a very rigid platform for the suspension.

The repositioning of the forward anchor points of the front L-arms moved them to a point very close to the front wheel axis. This increases the arms' stiffness toward lateral force. The rubber bushings at the anchor points have steel inner rings. Front wheel hub/steering knuckle units have been ribbed and reinforced for greater rigidity.

New subframes carry both the front and the rear suspension, providing stiff cradles that help maintain the designed suspension geometry. GT-i models have strut braces between the front suspension towers and the front bulkhead to further improve suspension rigidity.

The Brakes

There are three brake systems for new Corollas. Models powered by 1.3-litre 2E engines have solid front disc brakes

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and drum rear brakes. The 4A-F powered liftback has ventilated disc brakes in front, drum brakes in the rear. GT-i models have ventilated disc brakes in front, solid disc brakes in the rear. New Corollas have 8 in brake servos, except for GT-i versions which now have 9 in servos.

All models have diagonally split dual brake lines, and Corolla estates have load sensing proportioning valves (LSPV), which utilise a spring-loaded system attached to the rear links to sense the difference in vehicle height caused by various loads and operate twin pistons to adjust the hydraulic pressure in the dual brake lines accordingly.

The Steering

There are two steering systems available with the new Corolla lineup: one manual system and one power-assisted system. Both have been improved with increased rigidity from ribbed and reinforced steering knuckles and dash panel braces that attach to both sides of the cowl and to the transmission tunnel.

The GT-i and 1.6-litre liftback are fitted with progressive power-assisted steering. The rpm-sensing power assistance increases and reduces the steering effort required according to the engine speed. This means assist effort is highest when starting out, and gradually reduces as engine revolutions increase, resulting in very stable steering characteristics at cruising speeds.

THE BODY AND EXTERIOR

The new Corolla offers four distinct body types: five-door liftbacks, three-door hatchbacks, four-door saloon, and a five-door estate.

World cars such as the new Corolla must have universal appeal. They must appear driver-friendly, and they must blend in and be familiar in any country. For these reasons, the styling cannot be too extreme: not too casual, yet not too formal: not too radical, yet not too conservative either. Nevertheless, the styling of the new Corollas had to represent progress, a step forward in the continuing evolution of this well-received line of cars.

In the sense that it is a blend of pleasing new trends, the new Corolla has achieved a new plateau for its class. It exhibits a concern for aerodynamics. It has a feel of solid quality about it. Its lines are sleek and smooth, with flush surfaces all around. The whole exterior is uncluttered, offering the ageless beauty of simplicity. The planes are softened and the corners rounded, again slightly ahead of world automotive design trends.

For those who prefer a more stylish, more individualistic car, Corolla offers its liftback version. In overall length, it is 20 mm longer than the saloon. Furthermore, the body panelling is unique to the liftback, different

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from the other models in the lineup. The lines have a touch of glamour not found in the other models, with hidden pillars and a spoiler-like rear end to add a sporty air.

While the new Corollas have not gone to the extreme for aerodynamics, all surfaces of the body were made as flush as possible. The windscreens are bonded to the body shell. The front bumpers are designed as a unit with the front valance panels, with a favourable effect on the aerodynamics. Even the door mirrors have been redesigned for less turbulence.

As a result of this attention to detail, the aerodynamic coefficient of drag for new Corolla saloons is improved to 0.35.

Visibility was also a prime concern. The car has sufficiently large windows for an excellent field of vision for any driver.

A rigid body shell contributes to excellent handling, reduced interior noise, riding comfort, good durability, and a large margin of safety, among others. The rigidity of the body shells was increased to cope with the increased engine performance, to cope with increased suspension input, to reduce road and wind noise, and to create a sound body shell that would have the solid feel of a larger car. Furthermore, in collisions, the increased rigidity helps reduce cabin distortion.

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Rigidity was improved in several ways. Major joints, especially around the cabin area, were redesigned. With extensive reinforcing and stiffening, the improved rigidity of the cabin works to reduce noise, vibration, and harshness so the car offers its occupants a much quieter ride.

Included in the redesigning process were larger reinforcements for virtually every joint in the body shell. Particular attention was paid to the joints of the cabin area, the suspension anchor points, and the joints in the underbody sections.

Rigidity is further increased by bonding both the windscreen and the rear window glass directly to the body. The results of these efforts in the new Corolla saloon, for example, were a 50 per cent improvement in torsional stiffness and a 60 per cent improvement in bending stiffness.

Noise reduction

The noise levels in the cabin of the new Corolla are significantly lower, partially because of certain measures taken with the body shell.

Enhanced body shell stiffness reduces body flex, which in turn reduces both noise and vibration. The front bulkhead is of sandwich construction - an asphalt/mica layer between two steel sheets - which improves the insulation of the cabin against engine noise. Furthermore, the front bulkhead surface is also covered with very shallow dimples,

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which raises its vibration response frequency and prevents ultra-low frequency rumble.

The floor pan has a three-layer asphalt/mica sheet covering the front floors, the centre floors, beneath the rear seats, and around the spare wheel well, to improve insulation against road and tyre noise.

Further reductions in noise levels were achieved with the addition of front and rear suspension subframes, and with rear wheel wells that are the same sandwich-type panelling as the front bulkhead.

Proper attention to detail is most important in reducing wind noise. In the new Corolla more rigid door frames prevent the vacuum formed on the lee side of the car in cross winds from pulling the door out away from the body and causing wind noise.

The very smooth exterior of the new Corollas also works to reduce wind noise. And, to cut down on the transfer of wind noise through the hollow portions of the body shell such as the cabin pillars, urethane foam insulation has been stuffed in the welding access holes and then plugs fitted over them.

The new Corollas are very quiet cars. Cabin noise in the saloon, for instance, is only 40 dB when idling, 69 dB at 62 mph.

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Anti-corrosion

Toyota is concerned about corrosion. Engineers have worked hard to make sure the new Corollas have sufficient defence against rust. The anti-corrosion measures taken with these new cars can be divided into four categories: materials, coatings, joints and hems, and other details.

New Corollas are roughly 60 per cent galvannealled by body shell weight. Further, the galvannealled steel sheets used in Corolla body shells are plated on both sides. Even the suspension subframes are of galvannealled steel.

There are several coating processes that occur during the production of a Corolla. First, the body shell is degreased and treated to an ion bath that causes a layer of zinc phosphate to form on all surfaces. This improves the adherence of the electrodeposited cathodic primer coat that follows.

After the primer coat is dry, PVC undercoatings are applied, covering the entire bottom of every car. Anti-chipping paints come next, applied to rocker panels, the bottom of the door panels, and the wheel arches. Layers of enamel are then baked on to finish the Corolla's corrosion-resistant coatings.

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Hemming adhesive, sealer, and wax

Foldover hems are assembled with hemming adhesive, then sealer is applied to cover all raw panel edges. After the body shell has been phosphated, primed and painted, sealer and wax are liberally applied. Particular attention is paid to the edges of bonnets, the bottoms of the doors, the edges of boot lids and hatches, and all hinges.

Other details

After all coatings, sealer and wax have been applied, the plastic wheel well liners are inserted. Then, all badges are patched on with adhesive so no unnecessary holes are made in the body. Weather strips are attached with soft clips that do not chip the enamel from their mounting holes.

Considerable care has been taken with anti-corrosion measures to ensure that the new Corollas have sufficient protection. Each model carries a six year anti-corrosion warranty.

INTERIORS

Along with the complete redesigning of the body of the new Corollas, the interior is entirely new as well. Interior space in the new Corollas is virtually the same as in the previous model, but saloons and hatchbacks have more luggage room. In fact, because Corollas are considered to have sufficient interior room for a car of this class, Toyota designers concentrated on giving the new Corollas a touch of luxury, upgrading the interior as a whole and working to enhance the solid feel of quality throughout.

The front seats have been redesigned with larger seat cushions with thicker side pads to provide a more comfortable ride. The fabric upholstery has been carefully chosen to enhance the feeling of luxury. Furthermore, the concave backs of the front seats result in more leg room for rear passengers. The driver's hip point is 15 mm lower, providing sufficient headroom even though the cars have less overall height.

The rear seats offer a significant improvement in the convenience with which they can be used. All new Corollas come with 60/40 split rear seat backs so either side can be tipped down so that long items can protrude from the luggage area into the cabin. One convenient aspect of the 60/40

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split is the ability to seat two passengers in the rear when the smaller side is tipped forward, to accommodate several pairs of skis, for example.

Liftbacks, hatchbacks, and the estate have yet another convenience in the rear seat area. When especially bulky items must be carried, the rear seat cushion can be tipped up against the front seat backs, and the rear seat backs can be tipped forward to lie flat, forming a level cargo deck that extends from rear bumper to the back of the front seats. The increase of cargo space achieved in this manner in the liftback model is 168 per cent compared to when the rear seat is in its upright position.

The quality image of the interior of the new Corollas was a primary concern of the design team. One important step in the process was the careful selection of the materials to be used inside the new cars. Upholstery fabrics, for example, were examined for texture and feel as well as overall colour co-ordination. These were matched with carpets of proper colour and texture, and with trim coverings as well.

The wider front seats with their thicker side pads offer substantial evidence of extra luxury. The same is true with the thicker padding of the door trim. Furthermore, the texturing of the leather-style vinyl used for the door trim has been carefully matched with that of the dash and other parts of the car.

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The materials used in the interior, which were chosen and matched with extra care, complement the long, continuous lines and pleasantly rounded corners of the interior design itself.

Both heating and ventilation are improved in the new Corollas. Larger inlets, ducts and outlets promote a greater flow of fresh air. The inlet vents in the cowl are larger, shaped and positioned for proper intake. The outlet vents are also enlarged, one in a rear side member, and one in each rear quarter - three in all - the final result is a 26 per cent increase in the dynamic air flow when cruising at 60 mph, compared to the previous model.

The heating systems of the new Corollas have also been improved. They have longer cores for 37 per cent more heating capacity, and larger blowers for an 18 per cent increase in heated air flow. Furthermore, for the comfort and convenience of front-seat passengers, they have systems that allow fresh air to come in from outside through the centre register even while the heater is on, offering a flow of cooler air at torso level for a fresher feeling whenever desired. In total, the new heating systems produce 26 per cent more heat.

The instruments and controls

In keeping with the redesign of the entire vehicle, the dashboard and instrument panel have a new image. The instrument panel is set off by the long padded dashboard,
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which extends completely across the car. There are two kinds of analogue meter clusters for the new Corollas. GT-i models have a seven-dial cluster, and the remainder are equipped with four-dial clusters, with tachometers.

In the seven-meter cluster, the two larger dials contain the speedometer and tachometer. Two small dials contain the fuel gauge and temperature gauge. There are three more small dials that hold a voltmeter, an oil pressure gauge, and a digital clock. Warning indicators have been grouped above the small dials.

In the four-dial cluster, a tachometer occupies the larger dial next to the speedometer. The fuel and temperature gauges occupy the small dials on either side, and the warning indicators are grouped beneath the speedometer and tachometer. Instruments are indirectly illuminated in white.

In the interest of ergonomics, which really means convenience, certain controls have been moved closer to the driver - the power mirror and hazard warning lamp switches, for example. The audio system is closer as well, and situated higher on the dash so the driver can operate the controls while the road remains within his field of vision. For greater convenience at night, more of the switches in the new Corollas are illuminated.

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Driver fatigue is also of concern when designing for ergonomics. Two seemingly small, but important, items help fight driver fatigue in the new Corollas. First, the steering column tilt has been improved. Where the steering wheel tilt mechanism in the previous model travelled 30 mm, the one in the new Corollas travels 62 mm in seven steps: normal set position, three steps up over 31 mm and three steps down over 31 mm. Second, the shoulder anchors of the front seatbelts in liftbacks, saloons and estates adjust 72 mm in five steps so virtually anyone can find a comfortable seatbelt position.

TOYOTA COROLLA THREE-DOOR HATCHBACK BODY SPECIFICATION

Dimensions

Overall length	3995 mm
Overall width	1655 mm
Overall height	1365 mm (1360 mm:GT-i)
Wheelbase	2430 mm
Track (front/rear)	1430/1410 mm (1445/1425 mm:GT-i)
Ground clearance	155 mm (150 mm:GT-i)

Luggage space

Volume (VDA)	9.94 cu ft (rear seat backs up)
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General

Seats	5
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General arrangement	Front wheel drive, transversely mounted engine and transmission, 4-wheel independent suspension
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Cd	0.35
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Weights	4A-GE	2E
	Manual	Manual
Kerb weight	1025 kg	925 kg

more...

Corolla Three-Door Hatchback Body Specification...2

Max. gross vehicle weight	1525 kg	1450 kg
Max. unbraked trailer	450 kg	450 kg
Max. braked trailer (12% grade)	1200 kg	1000 kg
Fuel tank capacity	50 litres	

9834/I/2987

TOYOTA 4A-GE ENGINE SPECIFICATION

Type	4-stroke petrol
Arrangement	4-cylinder, inline
Material: block head	Cast iron Cast aluminium
Bore x stroke	81 x 77 mm
Displacement	1587 cc
Compression ratio	10:1
Fuel grade	Leaded super 95RON Unleaded super 95RON
Max. power/engine speed	123 bhp/6600 rpm
Max. torque/engine speed	107 lb ft/5000 rpm
Valve Operation: camshaft camshaft drive	Two overhead Cogged belt
Crankshaft main bearings	5
Ignition: type	Fully transistorised
Fuel system	D-Jetronic (electronic)
Battery	12V - 50Ah
Alternator	12V - 60A

TOYOTA COROLLA DRIVE TRAIN AND CHASSIS SPECIFICATION

Manual Transmission	4A-GE	4A-F	2E
Clutch type		Single dry plate	
Mechanism		Diaphragm spring	
Operation		Hydraulic	
Gear Box Forward speeds	5	5	5
Gear ratio:			
1st	3.166	3.166	3.545
2nd		1.904	
3rd		1.310	
4th		0.969	
5th		0.815	
reverse		3.250	
final drive	4.312	4.058	4.058
Automatic Transmission		4A-F	2E
Torque Converter Type		3 element, 1 stage, 2 phase	
Stall ratio		2.10	
Gear Box Forward speeds		3	
Gear ratio:			
1st		2.810	
2nd		1.549	
3rd		1.000	
reverse		2.296	
final drive		3.526	3.722
Front Suspension Type		All models Macpherson strut	
Springs		Coil with telescopic hydraulic shock absorber	
Anti-roll bar:			
type		Solid	
diameter		24 mm (GT-i only)	
			more...

Corolla Drive Train and Chassis Specification...2

Rear suspension	
Type	Macpherson strut
Spring	Conical coil with telescopic hydraulic shock absorber
Anti-roll bar:	
type	Solid
diameter	14 mm (GT-i)/ 13 mm (4A-F)/12 mm (2E)
Braking System	
Circuit	Split diagonal with dual P valve Split diagonal with dual LSP V (estate) 9 in single (GT-i)/8 in
Servo	
single	
Front brakes:	
type	Ventilated disc/disc (2E)
diameter (disc)	238 mm
Rear brakes:	
type	LT drum/disc (GT-i)
diameter (drum)	200 mm
(disc)	242 mm
Hand brake	Mechanically operated via twin cable operating on rear wheels
Wheels/type	
Material	Steel (alloy GT-i & Exec.)
Tyre size	155 SR13 185/60R14 (GT-i) 175/70 SR13 (Exec.)
Steering	
Type	Rack & pinion (power assistance on GT-i & Exec.)
Turns lock to lock	4.07 (2E)
Turning radius	3.27 (power assisted) 4.9/4.8 m (2E)

TOYOTA COROLLA THREE-DOOR HATCHBACK PERFORMANCE SPECIFICATION

Performance		4A-GE	2E
Max. speed	(mph)	122	100
			97 (auto)
Acceleration			
0-60 mph	(sec)	8.3	11.5
			17 (auto)
Fuel Consumption			
Urban	(mpg)	32.8	36.7
	(mpg)		35.8 (auto)
Constant 56 mph	(mpg)	48.7	55.4
	(mpg)		48.7 (auto)
Constant 75 mph	(mpg)	36.2	39.2
	(mpg)		34.9 (auto)

TOYOTA COROLLA FIVE-DOOR LIFTBACK BODY SPECIFICATION

Dimensions

Overall length	4215 mm
Overall width	1655 mm
Overall height	1365 mm
Wheelbase	2430 mm
Track (front/rear)	1430/1410 mm
Ground clearance	155 mm
Shoulder room	
(front/rear)	1351/1339 mm
Head room (front/rear)	975/903 mm
Leg room (front/rear)	1038/803 mm

Luggage Space

Volume (VDA)	13.6 cu ft (rear seat backs up)
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General

Seats	5
General arrangement	Front wheel drive, transversely mounted engine and transmission, 4-wheel independent suspension
Cd	0.35

more...

Corolla Five-Door Liftback Body Specification...2

Weights	4A-F Manual	2E Manual
Kerb weight	995 kg	960 kg
Max. gross vehicle weight	1490 kg	1450 kg
Max. unbraked trailer	450 kg	450 kg
Max. braked trailer (12% grade)	1200 kg	1000 kg
Fuel tank capacity	50 litres	

9834/H/2987

TOYOTA COROLLA FOUR-DOOR SALOON BODY SPECIFICATION

Dimensions

Overall length	4195 mm
Overall width	1655 mm
Overall height	1365 mm
Wheelbase	2430 mm
Track (front/rear)	1430/1410 mm
Ground clearance	155 mm

Luggage space

Volume (VDA)	15.6 cu ft
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General

Seats	5
General arrangement	Front wheel drive, transversely mounted engine and transmission, 4-wheel independent suspension
Cd	0.35

Weights

Kerb weight	935 kg
Max. gross vehicle weight	1450 kg
Max. unbraked trailer	450 kg
Max. braked trailer (12% grade)	1000 kg
Fuel tank capacity	50 litres

TOYOTA COROLLA FIVE-DOOR ESTATE BODY SPECIFICATION

Dimensions

Overall length	4205 mm
Overall width	1655 mm
Overall height	1425 mm
Wheelbase	2430 mm
Track (front/rear)	1430/1410 mm

Luggage space

Volume (SAE)	to be announced
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General

Seats	5
General arrangement	Front wheel drive, transversely mounted engine and transmission, 4-wheel independent suspension
Cd	0.36

Weights

Kerb weight	945 kg
Max. gross vehicle weight	1445 kg
Max. unbraked trailer	450 kg
Max. braked trailer (12% grade)	1000 kg
Fuel tank capacity	50 litres

TOYOTA 4A-F ENGINE SPECIFICATION

Type	4-stroke petrol
Arrangement	4-cylinder, inline
Material: block head	Cast iron Cast aluminium
Combustion chambers	Pentroof
Bore x stroke	81 x 77 mm
Displacement	1587 cc
Compression ratio	9.5:1
Fuel grade	Leaded super 95RON Unleaded super 95RON
Max. power/engine speed	94 bhp/6000 rpm
Max. torque/engine speed	100 lb ft/3600 rpm
Valve Operation: camshaft camshaft drive	Two, overhead Cogged belt exhaust, scissors gear inlet
Crankshaft main bearings	5
Ignition: type	Fully transistorised
Fuel system	Down draught compound 2 stage and 2 barrel
Battery	12V - 50Ah
Alternator	12V - 60A

TOYOTA 2E ENGINE SPECIFICATION

Type	4-stroke petrol
Arrangement	4-cylinder, inline
Material: block head	Cast iron Cast aluminium
Combustion chambers	Wedge
Bore x stroke	73 x 77.4 mm
Displacement	1295 cc
Compression ratio	9.5:1
Fuel grade	Leaded regular 90RON Unleaded regular 91RON
Max. power/engine speed	74 bhp 6200 rpm
Max. torque/engine speed	76 lb ft/4200 rpm
Valve Operation: camshaft camshaft drive	One, overhead Cogged belt
Crankshaft main bearings	5
Ignition: type	Fully transistorised
Fuel system	Down draught one barrel variable venturi
Cold starting system	Automatic choke control
Battery	12V - 40Ah
Alternator	12V - 50A

TOYOTA COROLLA FIVE-DOOR LIFTBACK PERFORMANCE SPECIFICATION

Performance		4A-F	2E
Max. speed	(mph)	113	100
		106 (auto)	97 (auto)
Acceleration 0-60 mph	(sec)	10.4	11.5
		12.7 (auto)	17 (auto)
Fuel Consumption			
Urban	(mpg)	32.8	37.2
	(mpg)	33.6 (auto)	35.8 (auto)
Constant 56 mph	(mpg)	49.6	55.4
	(mpg)	47.1 (auto)	49.6 (auto)
Constant 75 mph	(mpg)	38.7	40.9
	(mpg)	36.2 (auto)	36.2 (auto)

TOYOTA COROLLA FOUR-DOOR SALOON PERFORMANCE SPECIFICATION

Performance

Max. speed	(mph)	100
Acceleration 0-60 mph	(sec)	11.5

Fuel Consumption

Urban	(mpg)	37.2
Constant 56 mph	(mpg)	55.4
Constant 75 mph	(mpg)	40.9

9834/R/2987

TOYOTA COROLLA FIVE-DOOR ESTATE PERFORMANCE SPECIFICATION

Performance

Max. speed	(mph)	100
Acceleration 0-60 mph	(sec)	11.5

Fuel Consumption

Urban	(mpg)	36.7
Constant 56 mph	(mpg)	55.4
Constant 75 mph	(mpg)	39.2

9834/S/2987