

This press pack accompanied the UK introduction of the seventh generation Corolla in August 1992. Details of the model's history can be tracked using the Timeline feature on the seventh generation Corolla archive page. Additional assets and information relating to the Corolla range may be obtained from the Toyota press office if required.



Press Information

FOR IMMEDIATE RELEASE

3 August, 1992

MAKING THE WORLD'S BEST SELLER EVEN BETTER

Greater Choice from the Bigger, Faster, Safer, New Corolla Range from £9456

With almost 20 million sales since its introduction in 1966, Toyota's Corolla is the world's most popular car. And the new seventh generation is set to consolidate that number one position with a greater choice of Corollas that are bigger, faster, safer, quieter and more refined than the previous model.

On sale on August 7 - in time for the new K registration prefix - the new Toyota Corolla range is initially composed of 1.3 and 1.6 litre models with three levels of trim and equipment; XLi, GLi and Executive. There are five body styles; three door hatchback, four door saloon, five door hatchback, five door liftback and estate.

The XLi grade and the five door hatchback are completely new to the Corolla range in Britain.

Toyota (GB) Ltd.
The Quadrangle Redhill Surrey RH1 1PX
Telephone: Redhill (0737) 768585
Facsimile: Redhill (0737) 771728
Telex: 946414

more...

Best seller...2

Prices are very competitive, starting from £9456 - just £71 more than the previous Corolla range - up to £13,210 for the 1.6 Executive. Standard equipment across the range includes adjustable power steering, central locking, a stereo RDS radio and cassette player with four speakers, side impact beams and 60/40 folding rear seats.

For the first time, all Corolla engines are fuel injected, twin overhead camshaft 16 valve units with computer control and three-way catalytic converters.

The nine car line-up is:

	BASIC	CAR TAX	VAT	TOTAL
	£	£	£	£
Corolla 1.3 XLi 3 door	7726.00	321.92	1408.39	9456.30
Corolla 1.3 XLi 5 door	8053.00	335.54	1468.00	9856.54
Corolla 1.3 GLi 3 door	8404.00	350.17	1531.98	10286.15
Corolla 1.3 GLi 4 door	8914.00	371.42	1624.95	10910.36
Corolla 1.3 GLi 5 door liftback	9313.00	388.04	1697.68	11398.72
Corolla 1.3 GLi Estate	9231.00	384.62	1682.73	11298.36
Corolla 1.6 GLi 4 door	9342.00	389.25	1702.97	11434.22
Corolla 1.6 GLi 5 door liftback	9740.00	405.83	1775.52	11921.35
Corolla 1.6 Executive 5 door liftback	10793.00	449.71	1967.47	13210.18

more...

Best seller...3

All Corollas, except for the XLi grades and 1.3 GLi 4 door and Estate models, are available with automatic transmission for an additional £605 (inclusive of car tax and VAT).

Early in 1993, the Corolla range will widen still further with the additions of 2.0 litre diesel engined models with three, four and five door body styles and a 1.8 litre high performance GTi in three door form only.

COROLLA QUALITY

Over 350 parts have been changed or improved in the development of the new Corolla, many in a bid to improve still further the Corolla's outstanding reputation for quality and reliability. For example, almost 90% of the bodyshell is now made of anti-rust galvanealed steel compared to 60% in the previous model. Double locking waterproof connectors are used in the wiring and even connector terminals are gold plated to achieve aerospace standards of reliability.

With reduced and consistent body panel gaps, painstaking attention to detail and the co-ordinated look and feel of materials surrounding the passengers, quality and refinement were clearly the watch-words of the development team.

With a longer wheelbase and bigger exterior dimensions, there is more room for driver and passengers as well as their

more...

luggage. This is particularly evident in the back where there is more foot, leg, head and shoulder room.

MORE POWERFUL, FUEL EFFICIENT ENGINES

The 1331 cc 4E-FE engine is new to the range and powers all 1.3 litre Corollas. This is a fuel injected DOHC development of the previous 2E engine with four valves per cylinder. (The previous Corolla 1.3 engine used three valves and a carburettor).

Power output is up from 74 bhp to 87 bhp at 6000 rpm with torque of 82 lb ft at 4800 rpm. In five-speed manual form, this engine can achieve up to 53.5 mpg at 56 mph. Top speed of 1.3 models is 109 mph with manual transmission, with 60 mph coming up in 11.3 seconds.

The 1.6 litre engine is the latest version of the 4A-FE with a capacity of 1587 cc. Power output has increased from 106 bhp to 113 bhp at 6000 rpm and torque has also increased to 107 lb ft at 4800 rpm. Aided by the slippery body lines of the new Corolla, 1.6 GLi and Executive models can achieve around 50 mpg at 56 mph and a top speed of 121 mph. The 0-60 mph sprint time is 9.8 seconds.

But despite more power and improved performance, new Corollas are quieter and more refined than ever. Extensive measures have been taken to make Corolla the quietest and smoothest car in its class.

more...

REDUCED NVH

Body rigidity has been significantly improved with special strengthening and much stiffer subframes and suspension pick-up points. All moving components are insulated from the body by noise and vibration damping mounts. A special foam is used between inner and outer body panels to cut resonance and absorb sound, and the engine is mounted with dynamic damper and hydraulic mounts which prevent the transfer of engine vibrations to the body.

Like Toyota's luxury Lexus LS400, the Corolla uses vibration damping sandwich sheets of steel and asphalt, especially in the front bulkhead. Even the floor has been specially designed to dissipate and absorb noise and vibrations.

With drag coefficients as low as 0.30, wind noise is the merest whisper.

Revisions to the suspension have resulted in greater stability in corners and in straight running, particularly in crosswinds. Handling and grip have been improved for even safer cornering but not at the expense of ride comfort. Braking is more than up to the job with big ventilated discs at the front and drums at the back. (The GTi will use discs on the rear).

BETTER THAN EVER

The Corolla's history is one of continuous success based on its wide-ranging appeal, ease of use, low cost of ownership and quality and reliability.

All of this has been retained and improved. The new body styles will look good through the '90s but provide more passenger and luggage space. Performance in all areas has reached even higher standards and for the small family car sector, the levels of comfort and refinement are exceptional.

With better handling, braking, greater rigidity, side impact beams and energy-absorbing steering wheels and columns, the Corolla is safer than before.

It is also more durable with better corrosion protection and every part re-examined to enhance reliability and vehicle life.

The Corolla is also environmentally friendly. It already conforms with future exhaust emission regulations and uses recycled parts and materials in manufacture. At least 75% of the car can be recycled and all plastic parts are coded for easy identification and recycling.

Best seller...7

Like all Toyotas, the Corolla is covered by a three-year or 60,000 mile warranty, six-year corrosion warranty and three-year paint and surface rust warranty. Free membership of Club Toyota and the RAC for one year comes with every car.

ends...

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

NOTE TO JOURNALISTS:

The launch press pack provides some information on the diesel-engined and GTi Corollas which will be added to the range early in 1993. Full details will be available later.



Press Information

FOR IMMEDIATE RELEASE

3 August, 1992

REFINING THE WORLD'S BESTSELLER

THE COROLLA STORY

The first generation Corolla made its debut in November 1966 as a two door saloon. It was a completely new car with no off-the-shelf parts, based on Toyota's experience with the earlier Toyota 1000 and in the knowledge that the Japanese car market was broadening to include more and more family cars.

In May 1967, the four door saloon and estate models were introduced, and in September 1969, a larger 1.2 litre engine replaced the original 1.1 litre.

A complete model change came for the first time in May 1970. Styling took on a new look with longer, wider and lower body lines. The line-up consisted of a two and four door saloon, a coupe and an estate.

In June 1970, only three years and eight months after its launch, cumulative production reached 1,000,000 units.

Toyota (GB) Ltd.
The Quadrangle Redhill Surrey RH1 1PX
Telephone: Redhill (0737) 768585
Facsimile: Redhill (0737) 771728
Telex: 946414

more...

An extensively improved third generation was unveiled in April 1974. With the exception of the estate, there was a choice of 1.2, 1.4 and 1.6 litre engines. To satisfy European market requirements, this new Corolla featured a wider body and track.

In January 1976, a Corolla liftback was introduced with a 1.6 litre engine and a new sporty rear end. The coupe model received the same styling treatment in 1977.

The fourth generation made its debut in 1979, the year in which cumulative production reached 7,000,000 units. This generation received a major facelift in 1981 and was fitted with its first diesel engine one year later in Japan.

It was in 1983 that Toyota celebrated 25 million Toyotas and the 10 millionth Corolla rolling off the assembly lines. During that year, the fifth generation was presented to Europe on the Toyota stand at the Frankfurt Motor Show. It was a completely new compact car with front wheel drive and a range of all new OHC engines mated to a standard five speed manual gearbox.

One year later in 1984, Toyota introduced for the first time a 1.3 litre with a completely new 12 valve cylinder head, and in 1985 a 16 valve 1.6 was mounted in the GT version.

The introduction of the sixth generation was in 1987. A saloon, a hatchback, a liftback and an estate were available

more...

from the start. The combination of a variety of engines (1.3 and 1.6 petrol and 1.8 diesel) and a versatile range of body styles added up to an impressive model mix.

A WORLD PHENOMENON

From its introduction in 1966, the Corolla has always been a car that has met the motoring needs of a great many people. Today it symbolises the borderless nature of the world consumer and it competes with the world's most popular automobiles on more than equal terms.

Corollas are sold in more than 130 countries around the globe with total cumulative sales almost topping 20 million units.

Corollas are produced in 13 countries, and soon two more (Pakistan and Turkey) will join in manufacturing the world's favourite car.

In 1991, around 831,000 Corollas were produced in Japan, 111,000 in the USA, 68,000 in Canada, 43,000 in South Africa, and 23,000 in Australia.

The other manufacturing plants are located in the Philippines (1967), Malaysia (1968), New Zealand (1968), Thailand (1969), Indonesia (1971), Trinidad and Tobago (1971), Kenya (1982) and Venezuela (1986). (Start up date in parenthesis).

more...

In total, around 1,076,000 Corollas of all kinds were produced last year with an average daily production of 4300 units.

The Toyota Corolla has been the best selling car in Japan since 1969 (for 23 years) and the best selling Japanese car in Europe since 1988.

A EUROPEAN PHENOMENON

Six different generations have so far been exported to Europe (1966-1970-1974-1979-1983-1987). In 1991, Corolla accounted for 157,527 new registrations in EC and EFTA countries.

In terms of sales volume, Germany, Belgium, UK, Switzerland and the Netherlands represent the five most important markets for the Corolla.

It is also interesting to note that in 1991, the Corolla was the overall number one best seller in Finland and Norway.

For 1992, Toyota has a total sales target of 13,000 units/month for the Corolla line-up in the global European market. (The total of 156,000 includes the previous model as well as the seventh generation. It also covers the run-out period of the previous model).

In line with former experiences in this market, Toyota foresees that in Europe, 40% of sales of the new Corolla will be hatchbacks, 30% liftbacks, 20% saloons and 10% estates.

The market introduction of this seventh generation will start in most European countries in the summer of 1992.

THE COROLLA IN BRITAIN

Imported from Japan since 1966, the Corolla has been one of Toyota (GB)'s most significant and successful models - particularly during the 1980s and early 1990s when it was their biggest selling model.

Cumulative registrations in Britain until the end of 1991 were 241,070. From 1966 to 1970 only 1928 Corollas were registered but during the 1970s, annual registrations rose almost every year from 1703 in 1971 to 9116 in 1979. The peak year in this decade was 1977 with 11,850 registrations.

In the 1980s, sales continued to increase strongly and since 1985, registrations have been as follows:

1985	-	15,121 units
1986	-	15,943 units
1987	-	16,233 units
1988	-	17,620 units
1989	-	18,936 units

more...

1990	-	16,221 units
1991	-	15,069 units

In 1988 and 1989, Corolla accounted for 45-46% of total UK passenger car sales for Toyota (GB). Since the very first Toyota imports began in 1965, Corolla has accounted for 40% of total Toyota passenger car sales to the end of 1991.

Following the announcement of Toyota's Burnaston and Deeside production plants in 1989, Toyota (GB)'s deliberate policy has been to increase sales of the medium size Carina model in the build-up to UK production of the new Carina E. This has mainly been at the expense of Corolla and this accounts for an apparent decline in sales over the last two years. (Last year Corolla accounted for 37% of UK Toyota passenger car sales).

In fact, registrations of Carina are expected to exceed those of Corolla for the first time this year, but this realignment does not indicate that Corolla is any less important. It continues to be a vital model in the small family car sector and will continue to play a very major role in the future.

THE COROLLA IN COMPETITION

The Corolla's popularity on the road and sophistication of design are reflected in its success on race circuits and rally stages.

more...

In the British Touring Car Championship, it picked up three overall championships and two further class titles in the 1980s. Corolla GT Coupes took the honours in 1982, 1986 and 1987, the second of these with only one defeat all season to beat current Toyota BTCC driver Andy Rouse, in a 3.5 litre Rover, to the title. The two class championship successes which did not yield outright honours came in 1988 and 1989, with the Corolla GT.

The car was proving just as effective, meanwhile, in the forests, with successes in the same period running well into double figures. In 1983 and 1984 a Group 'A' Corolla GT Coupe won the British Open Rally Championship, also taking the National Rally Championship for Group 'A' cars in the latter year. And in 1988 a Group 'A' Corolla GT claimed the same title once again, signalling a period of Toyota domination in British rallying with another model, the Celica.

THE NEW COROLLA LINE-UP

The previous Corolla range comprised 1.3 litre models in GL trim with three, four and five door body styles plus an estate. Until recently, there was also a 1.6 four wheel drive estate. In addition, a 1.6 litre Corolla Executive came in five door liftback form only, with an enhanced equipment list. A high performance GTi three door hatchback used the 4A-GE 1.6 litre engine.

The new range is greatly expanded:

- Corolla 1.3 XL 3 door hatchback - manual
- Corolla 1.3 XL 5 door hatchback - manual
- Corolla 1.3 GL 3 door hatchback - manual or automatic
- Corolla 1.3 GL 4 door saloon - manual
- Corolla 1.3 GL 5 door liftback - manual or automatic
- Corolla 1.3 GL Estate - manual
- Corolla 1.6 GL 4 door saloon - manual or automatic
- Corolla 1.6 GL 5 door liftback - manual or automatic
- Corolla 1.6 Executive 5 door liftback - manual or automatic

In addition, 2.0 litre diesel engined models in three, four and five door liftback form, and a 1.8 litre GTi three door model will arrive early in 1993 to make a 13-car range plus automatic options. For the first time, there are two five door models - one a hatchback design and the other a liftback in the Toyota tradition.

In 1992, Toyota (GB) expects to achieve 15,700 Corolla registrations, of which about 7700 will be the previous model and 8000 will be the new Corolla. Of these new models, 65% will be 1.3 litre cars and 35% 1.6 litres. XL trim will account for about 7%, GL for 83% and Executive for 10%. In 1993, Corolla volume is expected to rise to 19,600 units.

Standard equipment on all models includes side impact beams, a stereo RDS radio and cassette player with four

more...

speakers, central locking, tilt adjustable power steering and folding rear seats.

For the first time, all Corollas have twin cam, fuel injected 16 valve engines (except for the diesel).

DEVELOPMENT OBJECTIVES

The Corolla's history is one of continuous success based on its wide-ranging appeal, ease of use, low cost of ownership and quality and reliability. In global terms, it is unsurpassed in sales, production and reputation.

Chief engineer, Takayasu Honda, and his team clearly had a tough act to follow and their approach to development of the new car was one of evolution rather than revolution. The world's most popular car has been further refined but as usual with Toyota, that does not mean a revised version of the old car; it means a completely new vehicle to continue the great Corolla tradition.

The new Corolla had to retain all its inherent virtues of ease of use, comfort, quality, practicality, low cost and high performance. The package has always exuded efficiency and these basic requirements are very evident in the new Corolla.

In addition, Honda and his team set out to:

1. Develop new body styles to not only look good through the 1990s, but to provide greater space and comfort with a solid look of quality.
2. Further develop the basic elements of driveability, handling, braking, fuel efficiency and performance to achieve the highest standards.
3. Provide a comfortable and relaxing interior through exhaustive study of ergonomics and human requirements.
4. Improve vehicle safety.
5. Further improve Toyota's outstanding reputation for quality and durability by re-examining every part to enhance reliability and vehicle life.

A hallmark of Toyota vehicles over the past three or four years has been the dramatic reduction in noise, vibration and harshness (NVH). This obsession continued with the Corolla to provide even greater standards of passenger comfort.

ends...

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



Press Information

FOR IMMEDIATE RELEASE

3 August, 1992

THE COROLLA IN MORE DETAIL

THE EXTERIOR

The bodies of the new Corolla were designed to meet several objectives; visual appeal, room for a comfortable interior, excellent cooling characteristics and practical aerodynamics. The bodies are significantly bigger and the larger exterior package has been efficiently used to create an interior with a high level of comfort.

The new Corolla represents an important step in the evolution of automotive design as well, with the emphasis on curved lines and smooth surfaces.

The larger dimensions of the new Corolla are immediately apparent. The 2430 mm wheelbase of the previous model has been stretched by 35 mm to 2465 mm. Overall length has increased by 100 mm on three door models, 75 mm on four door models and 80 mm on five door liftbacks. The new Estate is 55 mm longer. Overall width in each case is increased by 30 mm. Height has also been increased for greater headroom.

Toyota (GB) Ltd.
The Quadrangle Redhill Surrey RH1 1PX
Telephone: Redhill (0737) 768585
Facsimile: Redhill (0737) 771728
Telex: 946414

more...

In each case, the designers have tried to achieve the ultimate combination of function and style. The three door hatchback has a longer and sleeker look than many of its competitors with a flowing window line and a high, aerodynamic rear end which resembles a fully integrated spoiler.

The five door hatchback shares the three door's profile but has an even larger glass area. The integrated front bumper and air intake area looks purposeful and sporty.

The four door saloon features larger headlamps than previous models with a fully integrated front bumper and air intake design. At the back, a higher boot line reduces air turbulence and helps to provide a much larger luggage space.

The five door liftback is probably the most striking of the new Corolla designs. It is elegant and sporty with a very distinctive rear end. It has the lowest drag coefficient figure of the range at Cd 0.30.

The Estate retains the Corolla family look of quality but has been developed for a broad range of uses. The high roof line and curved rear end are functional as well as aiding aerodynamics.

Fit and finish with the new Corolla has reached a level never before achieved. The gaps between the body and its hinged components such as the bonnet and the boot lid, have been significantly narrowed.

more...

The Corolla in more detail...3

The appearance of new Corolla was further improved by standardising the gaps. The gap between bonnet and grille and bonnet and headlamps, for example, are a constant 7.0 mm. And the gap at the leading edge of the front doors, the gap between doors and roof and the gap at the trailing edge of the rear doors are all a consistent 5.0 mm.

New body construction methods improve appearance too. Where the side member panel was formerly made of five separate pieces, it is now built of only two, which reduces the number of potentially finish-marring welds.

Visible spot welds on the door frames have been reduced, as have the number of joins in the window and door trim. Furthermore, the moulding used around windows and windshields is flat, and blends smoothly between body and glass.

New paint technology and additional colours add to the pleasing appearance of the new Corolla. With conventional metallic colours, a technique for keeping the metallic flakes parallel to the surface, deepens the lustre. And a new rose graphite mica metallic colour is introduced. This paint mixes mica flakes with graphite in the colour pigment of the base coat. The result is a translucent metallic sheen, especially when sunlight falls directly on it.

more...

THE INTERIOR

The interior space reflects the larger body of the new Corolla. Inside, four adults can easily ride in comfort. By extending the wheelbase by 35 mm, the hip point for rear passengers was moved 25 mm rearward, resulting in 40 mm more rear knee room. Depending on the trim, there is up to 70 mm more cabin width. Furthermore, the front seat back cushions are designed to add 40 mm of width and 45 mm of height to the foot well for rear passengers.

To increase room for the driver, the pedals were moved 5 mm forward and an extra 15 mm was added to the rear of the seat position slide.

The interiors of the new Corolla are designed so that the lines curve gently, with no jarring corners. Materials, textures and colours are carefully matched for shade and likeness to add to the overall atmosphere of high quality. Fit and finish are of the highest standard.

Instruments were chosen for their legibility, and switches and knobs were tested and adopted for ease of operation. Fire retardant materials were used throughout to enhance safety.

At the front, seatbelt shoulder anchor points are adjustable for height over a range of 89.2 mm and the rear centre seatbelt buckle has been integrated into the seat. The

more...

seats themselves have been redesigned to provide even more support with higher quality trim. For more comfort, the rear seat squab is thicker by 55 mm.

The glove box has been enlarged (to 6.2 litres) and even a rubber cushion has been added to the mechanism to ensure quiet opening and closing. Switches are now closer to the driver and metallic parts have been concealed with the appropriate trim. More extensive use of padding makes for a safer environment. The glove box catch is 55 mm off centre so that it can be reached from the driving seat.

The rear seats can be folded 60/40 and the luggage boot capacity has been increased by 5% over the previous model. Steering columns can be adjusted through seven positions with a range of 30° 30'.

THE ENGINES

The new Corolla will eventually have four engines. Initially, 1.3 litre (1331 cc) and 1.6 litre petrol engines will power the range. In the early months of next year (1993), a 2.0 litre diesel will be added along with a 1.8 high performance GTi engine.

All the petrol engines are twin camshaft, four valves per cylinder engines with electronic fuel injection. All but the 1.6 litre engine are new to the Corolla range.

The 1.8 power plant for the GTi is designated 7A-FE and the 2.0 litre diesel is the 2C. Full details will be available later.

The new Corolla engines are the culmination of Toyota's R&D work on more efficient reciprocating internal combustion engines.

This development work led to pentroof combustion chambers and a four valve configuration with scissors gear driven DOHC valve train. Other developments included the use of electronics in engine and power train management that helped achieve new heights in power output and fuel efficiency, torque spread and smoothness.

Stainless steel is used for the exhaust systems.

THE 1.3 LITRE 4E-FE ENGINE

This engine is new to the Corolla and is a logical development of Toyota's popular 2E 1.3 engine and it has been specially tuned for Europe, with an emphasis on fuel economy. It is an in-line four cylinder, 16 valve DOHC engine that offers more power and torque than the 2E engine. With 1331 cc, the 4E-FE engine produces 87 bhp and 82 lb ft torque.

THE UPPER HALF

The lightweight cylinder head is made of aluminium alloy

more...

that is specially blended for thermal exchange efficiency. There are two intake and two exhaust valves for each cylinder in a cross flow configuration, whereas the engine replaced had three valves per cylinder. The intake tract, the exhaust tract and the valves have the largest possible area to enhance the engine's aspiration.

The valve included angle is only $24^{\circ} 06'$ which helps achieve a very compact cylinder head with pentroof combustion chambers. The spark plugs are located at the top centre of the combustion chambers.

Ample squish areas in the cylinders increase air-fuel mixture turbulence and improve combustion characteristics. The configuration improves thermal efficiency, increases mid-range torque, and suppresses knocking, resulting in significant improvements in fuel economy.

The two overhead camshafts drive the intake and exhaust valves directly. The exhaust camshaft is driven from the crankshaft with a cogged timing belt and the intake camshaft is driven from the exhaust camshaft with a scissors gear mechanism.

THE LOWER HALF

The lightweight cast iron block measures a compact 352.5 mm

more...

long and 190.7 mm high. Its bore and stroke are 74.0 mm and 77.4 mm respectively.

The forged steel crankshaft has five journals and eight balance weights. The journal bearings and the weights have been carefully milled and balanced to reduce vibration and noise.

The journal fillets have been rolled for extra hardness. The crankshaft pulley is fitted with both torsional and bending dampers to reduce the effects of any engine vibration.

The three ring aluminium alloy pistons have tapered striated skirts to reduce friction and improve lubrication. Both top compression rings are a very narrow 1.2 mm, which has been found to reduce internal friction.

The engine is held with four mounts. The right engine mount is a compound hydraulic type, which increases dynamic damping at low frequencies and decreases the dynamic spring rate at high frequencies. The other three engine mounts are either mass damper or dynamic damper mounts, depending on the kind of transmission being used.

THE FUEL AND IGNITION SYSTEM

Fuel is supplied by multi-point electronic fuel injection. The control system includes electronic spark advance (ESA) and

more...

idle speed control (ISC) to boost fuel economy and eliminate rpm fluctuation when the engine is idling.

The air intake system includes a large air cleaner, a resonator, and a surge tank incorporated into the intake manifold.

The ignition is computer controlled and uses a single unit igniter, distributor and coil.

The exhaust system has a dual manifold that is tuned to the exhaust pulse to minimise pressure back-up and enhance efficiency. The system was designed specifically for Europe.

EMISSIONS CONTROL

The 4E-FE engine meets US'87 and CED (91/441/EEC) standards with a three-way catalytic converter.

THE 1.6 LITRE 4A-FE ENGINE

The Corolla's in-line four cylinder, 16 valve DOHC 4A-FE engine has been considerably improved, increasing both power and torque.

From 1587 cc, the 4A-FE now produces 113 bhp and 107 lb ft torque - up from 94 bhp and 99 lb ft in the older version of this engine as used in the previous Corolla Executive.

more...

THE UPPER HALF

The aluminium alloy head has twin overhead camshafts, pentroof combustion chambers, centred spark plugs and four valves per cylinder set in an acute valve-included angle of $22^{\circ} 09'$. The volume of the combustion chambers is matched with a portion inset into the top of the pistons. Squish areas in the chambers add to the turbulence of the air-fuel mixture to help speed combustion.

The camshafts act directly on the valves via bucket tappets so the system involves less mass so high rev valve operation can be more accurate and less power is lost to mechanical friction.

The intake valves were increased from 30.0 mm diameter to 31.0 mm and the lift stroke increased 1.4 mm to improve performance. By standing the intake ports up straighter and increasing the diameter of the intake valves, intake resistance was greatly reduced with a corresponding increase in intake efficiency, which resulted in increased torque in the medium rpm range. The valve timing was adjusted to reflect these changes.

THE LOWER HALF

The 1.6 4A-FE engine has a lightweight cast iron block that is ribbed and reinforced with an aluminium strut for

more...

increased rigidity. Its bore and stroke are 81 mm and 77 mm respectively.

A steel crankshaft is now used in this engine for its superior stiffness. It has five journals and eight balance weights. Its dynamic-damper pulley absorbs both torsional and bending vibration.

The three ring aluminium pistons have tapered striated skirts to reduce friction and improve lubrication. The top ring width is reduced from 1.5 mm to 1.2 mm to further reduce internal friction.

The positioning of the four engine mounts was computer-analysed to reduce vibration and noise. Hydraulic composite engine mounts are used at the right hand side. These mounts increase the dynamic damping coefficient at low frequencies and decrease the dynamic spring constant at high frequencies, which significantly reduces engine noise and shake. The other three engine mounts are either mass damper or dynamic damper mounts, depending on the kind of transmission being used. A large aluminium stiffener increases the rigidity of the power train, reducing engine vibration across the rpm band.

THE FUEL AND IGNITION SYSTEM

Fuel is supplied by two group electronic fuel injection. The electronic control system includes RISC (rotary idle speed

more...

control) to help save fuel and to eliminate idle rpm fluctuation.

The intake system has been improved with a larger air cleaner, increased intake manifold diameter, a larger surge tank, and slim vertical intake ports for greater intake efficiency.

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

THE EMISSION CONTROL SYSTEMS

The 4A-FE engine meets US'87 and CED (91/441/EEC) standards with a three-way catalytic converter.

THE TRANSAXLES

The new Corolla offers five-speed manual transaxles and three-speed and four-speed automatic transaxles.

MANUAL TRANSAXLES

The five-speed manual transaxles for new Corolla are matched to engine and body type. The units themselves are the same as in the former Corolla, but with revised gear ratios.

more...

All Corolla manual transaxles are shifted with twin push-pull cables, which prevent the transfer of engine vibrations through the shift linkage to the body of the car. They are fitted with notched contact plates for a solid, sure shift feeling, and they are all driven through single dry plate diaphragm clutches.

AUTOMATIC TRANSAXLES

There are two kinds of automatic transaxles for the new Corolla; a three-speed version for 1.3 litre engines, and four-speed version with a kick down facility for the 1.6 engine.

Each transaxle is hydraulically controlled and has a lock-up clutch that eliminates hydraulic slip and boosts fuel economy. The clutch lock-up point is matched to each engine. The torque converters of all automatic transaxles have a 2.30 stall ratio.

No automatic transmission will be available for the 2C diesel engine.

THE CHASSIS

The new Corolla maintains the same McPherson strut suspension of past models. With the increase in body size, however, the suspension was repositioned and refined. Toyota

more...

engineers aimed for predictable suspension performance. Emphasis was placed on quick cornering ability and high-speed stability to enhance active safety characteristics.

As a result, lateral displacement in crosswinds has been almost halved, the roll angle has been reduced by about 0.5° and the maximum lateral acceleration (in a 30 metre radius corner) has increased from just over 0.7 g to almost 0.9 g.

THE FRONT SUSPENSION

The basic layout of the front suspension is the same as with former Corollas, but several refinements were made to improve the suspension's already excellent reputation.

The lower arms were lengthened to 342 mm from 334 mm to reduce changes in track and roll centre height. This improves stability when cornering and makes the ride more comfortable.

The lower arm bushings were changed from a U-shape to a cylinder of rubber surrounded by steel and with a steel insert in the core. These bushings improve tracing characteristics both in cornering and in a straight line.

The structure of the lower arms was changed from a U-shape with outer flanges to simple U shapes, one nestled inside the other. This allows reduction of unsprung weight without reducing strength or stiffness, and results in a better ride.

more...

The stiff ball joint stabiliser links cause the anti-roll bar to react to even the slightest roll action. Corollas with diesel engines have rubber bushings at the anti-roll bar linkage.

Increased track width improves cornering ability. The front suspension track was increased to 1460 mm from 1430 mm.

THE REAR SUSPENSION

As with the former Corollas, the new models have dual-link McPherson strut-type independent rear suspension.

The span between the rear suspension links was increased to 150 mm from 120 mm. This made the suspension more rigid, which improved stability and tracing when cornering. Also, a single bolt goes through the bushing of suspension arm No 1, the body suspension member, and arm No 2 making the entire assembly stiffer.

Rear track width was increased to 1450 mm from 1410 mm, which improves cornering ability and straight line stability.

Suspension arms No 1 and No 2 were increased to 500 mm from 450 mm. This reduced changes in track width and roll height during suspension bound and rebound.

The width and offset of the coil springs were increased to

more...

reduce suspension friction and provide a flatter ride. The upper supports in the suspension towers were designed to reduce lateral frequency without affecting the vertical spring rate, thus reducing road noise without affecting handling. The shock absorbers feature two-tiered pistons. Depending on the force input from the road surface, a rotary valve within the shock absorber, allows fluid to flow into a reservoir, increasing damping power. Thus the absorber can automatically adjust its damping force to the road conditions.

All Corollas now have rear anti-roll bars with sensitive ball joint links. This reduces roll and improves overall stability.

BRAKES AND TYRES

All new Corollas have 14" wheels and front ventilated disc brakes to match, compared with 13" wheels and solid and ventilated discs on the former Corolla. The rear drum brakes help provide ample braking performance. The big 9" master cylinder is also an important component in the system.

COMFORT AND CONVENIENCE

Computers and data analysis alone cannot make excellent interiors.

People make superior interiors. Engineers, technicians, designers, craftsmen and volunteers who act as drivers and

more...

passengers through countless tests during the refining of interior convenience and comfort.

THE INSTRUMENT PANEL

The instrument panels of the new Corolla are characterised by a large safety pad that has no sharp corners. All materials are carefully selected for their quality and will maintain their unified appearance over the years.

Controls and switches are closer to the driver and easier to reach, regardless of the driver's height. The shift levers fall naturally beneath the hand of the driver, and shifting action of manual transmissions is sharp and positive. The parking brake handle is beside and slightly behind the gear shift lever, within easy reach.

The glove compartment is larger: up to 6.2 litres from 5.0 litres. There is also a handy tray located just to the driver's side of the instrument panel.

The warning lamps in the meter clusters are: high beam headlamps, turn signal and hazard warning, rear fog lamp indicator, hand brake lamp, battery low warning, door ajar warning, defroster warning and oil pressure warning.

According to standard Toyota procedure, Corolla lighting switches are located on a stalk on one side of the steering

more...

wheel while those having to do with visibility - windshield wiper switches, washer switches etc, are located on the other side. Switches for heater, radio and others are located on the central control panel.

Control switches for power windows are located in the armrests with a console controlling all windows and door locks on the driver's side. Power door mirror control switches are on the outside edge of the instrument panel, just beneath the side window defroster register. A rheostat to control instrument illumination intensity is located just inside the mirror control.

THE LUGGAGE AREA

The entire luggage area, including the backs of the fold-down 60/40 seats and the underside of the boot lid is upholstered in needlepunch carpeting. The sides of the boot area are moulded hardboard. Except for saloons, all Corolla models have a special place in the luggage compartment for a first aid kit.

The boot lid opens wide, and down to bumper height for extra ease in loading.

Hatchbacks have 309 litres VDA of luggage compartment space, five door liftbacks have 400 litres, saloons have 420 litres and estates have 394 litres.

more...

THE SEATS

Basically, the new Corolla line-up has three kinds of seats, depending on specification. Upholstery varies with the grade of Corolla chosen. Standard seats have such amenities as head restraints, fluororesin-treated fabrics that resist stains, reclining mechanisms, long seat positioning slides, and so forth. Sports seats differ from standard seats in that they are firmer and offer more side support.

In the Estate, the rear seats can be folded up against the front seat backs to clear the entire rear area to haul cargo.

The rear seats also have small pockets to receive the seatbelt buckles when they are not in use. In saloons, the pockets are in the centre, between the seat cushion and the seat back. In other models, they are soft pockets in the upholstery of the seat backs into which the seatbelt buckles can be slipped to get them out of the way.

IN-CAR AUDIO

All new Corollas are fitted with an electronic, stereo RDS radio and cassette player linked to four speakers. Aerials are roof mounted.

REDUCED NOISE, VIBRATION AND HARSHNESS

Quietness is very much a part of automotive comfort. So Toyota has made every effort to keep noise, vibration and harshness from the cabin.

The stiffness built into the monocoque body does much to make the car quiet. The parts of the body that serve as attachment points for the suspension - the suspension towers and the subframes - are designed for strength and rigidity, and the moving parts are insulated from the body by noise and vibration-damping mounts.

The engines are mounted with four mounts with dynamic dampers, and the right hand mount for engines is a composite liquid-filled (hydraulic) mount that effectively stops the transfer of engine vibration to the car's body. Engine noise is insulated from the cabin by a dash silencer of felt-backed plastic and a vibration damping steel-asphalt sandwich sheet first seen in the Lexus LS400.

While the body is being constructed, foam is placed between inner and outer shells of the body to cut resonance just above the windshield, in the door frames, in the A pillars, the B pillars and other places. These foam seals completely bridge the hollows and are placed to fully absorb all sound waves that strike them.

more...

Floor panels are flat, with minimum beading, which divides vibrations into many centres that are easily damped. Layered asphalt and resin sheets have proved effective in absorbing these vibrations, and are used in the floors and flat boot areas of the new Corolla.

Wind noise is hardly noticeable, thanks to the very flush surface of the body and the minimal inset of windows and windshields. The aerodynamic shape of bumpers, headlamps and door mirrors also helps in this regard. The new Corolla has succeeded in reducing engine noise, booming, idling vibrations, road noise and wind noise substantially.

SAFETY

SEATBELTS

Every Corolla is equipped with three-point ELR front seatbelts with adjustable shoulder belt anchors. In the back, three-point ELR belts are fitted either side with a two-point belt in the centre.

CRASHWORTHINESS

The new Corolla has been designed according to current wisdom concerning vehicle crashworthiness. The front and rear ends are crushable zones that will absorb part of the impact force during a head-on or rear-end collision. This allows the

more...

seatbelted occupants to decelerate more slowly than the vehicle itself, which reduces the impact on them.

The steering wheels of the new Corollas are also designed to partially collapse during collision impact, thereby absorbing part of the energy. They also have bending bracket-type collapsible steering columns to help.

Side impact beams are built into the doors of every new Corolla, to help protect the occupants in the event of a side collision.

High tensile steel is used to form the bodies of the new Corollas, striving for the highest strength-to-weight ratio possible. Furthermore, reinforcing is added in areas most likely to buckle under impact; the belt line joints of windshield and back window, the roof joints, the centre post joints and all floor joints amongst others. The objective is to provide a protective cabin that will maintain its shape during and after collisions.

DURABILITY

THE BODY STRUCTURE

Two elements of the body structure affect durability and reliability:

more...

1. Strength and rigidity.
2. Resistance to corrosion.

Strength And Rigidity:

The bodies of the new Corollas are monocoque in structure, the strongest and most rigid type, kilogram for kilogram.

High tensile steel is used to further increase both strength and rigidity. It is used for the broad expanses of bonnets, doors and boot lids to ensure their rigidity. It is also used for strength-imparting components such as joint reinforcements, suspension tower reinforcements, side impact bars, body side members, lower cowl member, front inner members and rear members among others.

High tensile steel saves body weight which is one reason why 38% of the bodies of new Corollas by weight, is of high tensile steel.

Resistance To Corrosion:

Galvanealling is the best way to keep steel from corroding, and the bodies of the new Corollas are 87% galvanealled steel (the previous model measured 62.5%). In fact, Corollas incorporate two kinds of galvanealled steel: normal galvanealled steel sheet and zinc-iron alloy double-layer galvanealled steel sheet.

more...

Galvanealled steel is used for inner panels, engine compartment components, and so forth. Zinc-iron alloy double-layer galvanealled steel is used for the major outer panels: bonnet, boot lid, wings, quarter panels and doors.

Wax, sealers and hemming adhesive are used where necessary to prevent water from reaching metal. Specifically, the leading edge of the bonnet, door hinge attachments, trailing edge of the boot etc.

The under body of each new Corolla is completely coated with 0.5 mm of PVC. This thickness is increased to 1.0 mm at the panel joints to help fight rust.

Chip resistant coatings are applied to the sill panels and wheel arches to help protect the finish from sand and gravel.

Resistance to rust also comes from the primers and outer coatings of the vehicle. The care taken can be understood better after the process is explained.

After the pressing and welding processes, the white body of the car is finished. But many things must happen before it is ready to take a coat of paint.

First, steel leavings, dust and dirt are removed in a hot water bath of about 40°. Then press oils and rust-preventing oils are removed in a slightly alkaline solution. The body is

more...

put through two more alkaline solutions to be sure all oils have been removed. Then it goes through an acidic bath to prepare it for the zinc-phosphate pre-primer. The zinc-phosphate bath causes tiny crystals to form on the body, enabling it to take the primer much better.

After the zinc-phosphate bath, the body goes through four water baths to make sure there are no blisters in the coating. Then it is dried in an oven at about 140°C.

The absolutely dry white body then travels to the primer tank where it is given a full-dip cathodic priming coat. The excess is allowed to drip off, the coating is washed in a shower of water and then dried. Hardbaked enamel coatings complete the process.

This process ensures that the body is protected from rust for many years. Toyota vehicles meet both the Canada and the Nordic anti-corrosion code for passenger cars.

THE CHASSIS STRUCTURE

The suspension attaches to the body through strong, rigid subframes called suspension members.

The front suspension member bolts to the monocoque body in four places. Plus, additional strength and stiffness comes from the longitudinal centre member.

more...

The rear suspension member bolts to the body in six places; three at each end.

These members locate the suspension precisely and minimise change in geometry, helping increase the useful life of the vehicle.

TOYOTA'S CONCERN FOR THE GLOBAL ENVIRONMENT

THE GLOBAL ENVIRONMENT CHARTER

In January 1992, Toyota Motor Corporation introduced an environmental charter entitled "A Comprehensive Approach to Global Environmental Issues: Earth Charter".

Drawn up by the newly formed Toyota Environmental Committee, this new charter defines the company's basic policy and action guidelines and calls for the co-ordination of environmental activities of Toyota-related companies worldwide.

Toyota intends to work within the new charter to protect the environment at all stages of operations, from product development and design to manufacturing, marketing and final disposal.

Water:

Toyota recycles 98% of the industrial water used in the

more...

manufacturing of Corollas and all other vehicles. Furthermore, 40% less water is used per vehicle today than was used in 1974.

Air:

Of major importance in Toyota's battle for cleaner air is the company's CFC policy. Toyota uses no specific CFCs to cleanse any mechanical or electronic parts. Alternative methods are already in place.

In new Corollas, for example, chlorofluorocarbon-free water-based foaming agents are used in the seat and dashboard foaming processes. The foam covering of the steering wheel is also produced with water-based agents.

The engine management system of the new Corolla has been refined so that the engine runs as efficiently as possible even when heater or cooler are being used.

The brake pads of the new Corolla use no asbestos, nor is this material used in any other part of these cars.

Recycling:

The waste generated in the manufacturing process is recycled wherever possible. Dash silencer panels are made of recycled urethane bumper material, for example, and many of the mud guards on Toyota vehicles are of recycled plastic.

more...

Scraps left from making the interior parts are recycled into radiator fan shrouds, fanbelt covers, cowl louvres and other such components (about 35% by weight).

More than 75% of every Corolla can be recycled. Plastic parts have a code stamped on them that identify the type of plastic. Bumpers and other polypropylene components are already ground into raw material and re-used in other parts.

Steel is the most recyclable of all components in the new Corollas and when their useful life is finished, they will probably have the interior stripped and be compacted into a cubic metre of metal ready for remelting, refining and re-use.

Toyota also has a team working on ways to design automobiles that are more easily disassembled for recycling.

BUILDING IN QUALITY

QUALITY ASSURANCE AND CONTROL AT TOYOTA

Different companies have different approaches to quality assurance and control.

Toyota quality includes all aspects of each product or service and, thus, requires the participation and co-operation of all those concerned with planning, design, manufacturing, inspection and sales.

more...

Quality assurance activities are usually seen as thoroughly conducting and inspecting products before delivery or promptly complying with claims on products in the market. Toyota's view of quality assurance is different. Toyota firmly believes that product quality assurance is not complete until consumers are totally confident when purchasing their cars and are fully satisfied with the product after using it.

QUALITY ASSURANCE FOR NEW PRODUCTS

The product planning division first studies what the customer wants in a car and what kind of car society needs. It also compares Toyota vehicles with the products of the competition, discusses what points of the old models should be improved and analyses the most up-to-date technological information to plan out a concept for a new vehicle.

Next is the design division. Here, drawings are made of the car based upon the concept generated by the product planning division and actual details are studied. Thorough consideration is also given to the capabilities of the manufacturing division, the process following this division.

Furthermore, design quality is improved through special activities called QRE or quality residence engineer system. Under this system, staff members of the departments of quality, administration, manufacturing and inspection work within the design division to provide them with examples of past defects

more...

that can be avoided and with specific requirements to be incorporated into the new design.

Then comes the production preparation division. In planning the production process, the layout of machinery and equipment, the order of process and other matters are studied in accordance with the principle that "quality is built in at each stage of the production process and no defects should ever be passed on to the next process".

During this process, many foolproof devices are designed to prevent mistakes caused by employee carelessness. A variety of standards for use in regular production are also set and a QC - quality control - process chart is prepared. Based on this chart, a work standards sheet explaining the methodology and procedure of work operations is made. Another chart of production conditions is then drawn up, explaining standards for operation of machinery and equipment. Another quality check standard sheet indicates characteristics of the quality to be verified at each process, including frequency of checks and checking methods.

In all the steps described above, processing and installation of parts, and assembly work of vehicles for pilot production are conducted.

Throughout this pilot production process, Toyota determines whether the product satisfies quality requirements,

if the process is easy to work on, and whether processing capabilities are sufficient.

If there are no problems here, mass production can begin.

QUALITY ASSURANCE AT FULL PRODUCTION

The guiding principle in production is building in quality at each process.

In order to comply to this principle, Toyota first confirms maintenance and administration of production processes and conducts improvements activities to bring quality up to the highest level.

Conducting work according to work standards is the starting point of improvement activities. In other words, unless the work standards are observed, work operations will not be stable and aspects requiring improvement will not be clear.

Accordingly, strict adherence to work standards by employees is vital in deciding not only the quality of the cars, but also the number of production units, the cost of production and safety at work.

Grasp of the production process means accurately grasping the real quality level of production from various viewpoints.

more...

In particular at Toyota, strict checks are made for first parts and first products. First parts and first products are those produced after a change in design and production process, adjustment in machinery or equipment, or immediately after work operations are started. The results of these checks are thoroughly compiled in the form of graphs and charts and visualised in every worksite.

Of course, there is always the possibility that some problems may occur. In that case, it is important to take immediate action to correct them. Supervisors and workers at Toyota are all acquainted with various problems and can, therefore, take immediate action in accordance with pre-arranged procedures. Various means to facilitate immediate action have, therefore, been developed.

The counter-measures are also classified into those involving machinery and equipment and those involving the process flow. Operational standards are then reviewed and revised depending on the situation.

Typical examples of improvement activities conducted at Toyota are activities by small groups, such as quality circle activities and a suggestion system for improvement of work operations. Those who know best what points should be improved on the job are the employees actually engaged in work operations. Thus, Toyota expects a lot from employees in terms of initiative and creativity.

Finally, Toyota collects information on the quality of the cars on the road. Such information is collected via surveys of owners, users, dealers, distributors, independent sources and through meetings with staff members from sales and after sales.

Toyota puts great emphasis on claims and requests from customers and all kinds of other sources. Such information is thoroughly analysed to clarify problems and is used for improvement of existing models and also for feedback into the development process for the next models.

COROLLA SYNONYMOUS WITH QUALITY

Prior to the year 1966, the word Corolla had one meaning only, a meaning linked to nature, that of the crown of a flower. Over the past 26 years, the word Corolla has acquired a new meaning and has become synonymous with reliability, dependability and quality.

This time Toyota has gone a step further making improvements to over 350 parts, mostly in areas not visible to the customer. Just to name a few, the use of anti-rust steel has been expanded from about 60% of the body weight on the previous model to almost 90% on the new model; wire harness connector terminals are now gold-plated to get the same level of reliability found in an aircraft and there is even more extensive use of doubled locked and waterproof wiring connectors. All engines have been refined and many redesigned

for greater fuel economy, higher torque in the normal revolution range, and higher output and response. Combustion is also much cleaner and, therefore, emissions too.

Development work on the new generation included testing at the Shibetsu proving grounds in Hokkaido, Japan's northern-most island. It is the only proving ground in the Far East capable of conducting high speed and sub-arctic tests.

Toyota's development team also spend a great deal of time overseas, learning more about local road and weather conditions, consumer preferences and market conditions. When prototypes of the new model were completed, they were sent to all kinds of overseas testing facilities to ensure that the new Corolla had what it took to be a car of the world.

For collision safety, simulators of various collision situations, using a super computer as well as offset collision tests with real cars, were conducted. These tests have helped build a durable body structure for the passenger cabin, with crash resistant sections front and rear.

The elimination of squeaking and creaking noise is also an important item in customer satisfaction. To eliminate these unpleasant noises, various tests were carried out using the latest equipment to create a wide range of conditions and temperatures.

Quality improvements may not always be directly visible to the customer, but whether the first or the second user, will no doubt gain from the advantages of reliability.

Many European independent sources have already confirmed that quality is an outstanding aspect of Toyota vehicles.

TOYOTA SERIES-WINNER IN TUV REPORT '92 - GERMANY

In the results recently issued by the German association in charge of technical inspection for automobiles (Technischer Uberwachungsverein - TUV Auto Report '92), Toyota is listed among the top three of the five categories surveyed, confirming the reliability and quality of Toyota cars. The '92 analysis is based on some nine million cars surveyed in around 500 TUV control stations.

The Carina, Starlet and Corolla all achieved a very similar high quality level according to the TUV analysis. The Corolla, Toyota's bestseller, comes just behind the Carina amongst the seven year old cars, and holds the bronze medal in the five year old car category in which Toyota occupies the first three positions.

**REFERENDUM OF THE OWNERS: TOYOTA COROLLA 1600
LE MONITEUR DE L'AUTOMOBILE/AUTOGIDS (26/07/91) -
BELGIUM/FRANCE**

Around 490 owners of Corolla 1600 three door hatchbacks and five door liftbacks co-operated in a survey carried out by Le Moniteur de l'Automobile and the results again confirmed the legendary reliability and quality of Toyota cars. Only 3% of 1988 Corollas were reported to have minor defects (such as troubles with the safety belts, the battery and the power supply).

ANNUAL REPORT OF THE BELGIAN CONSUMER ASSOCIATION (12/91)

A European investigation conducted in 1991 by the local consumer associations of France, Spain, Italy, Portugal and Belgium resulted in a report based on 37,548 answers on the weak and strong points of all models sold on these markets.

The conclusions on the Toyota Corolla were quite clear:

- The model is amongst those that gave most satisfaction to its customers.
- The Toyota Corolla had practically no weak points.
- Only five models were reported to clearly stand out over the others in terms of overall customer satisfaction. One of these was the Toyota Corolla.

more...

FOLKSAM - CAR MODEL SAFETY RATING 1991/1992 - SWEDEN

The study, conducted by a team of scientific advisers from different Swedish Universities, was based on insurance claims reported to Folksam Insurance Company (Sweden) from 1976 to 1990.

The aim of the investigation was to assess injury severity of adult front seat occupants. All in all, 28,153 occupants were surveyed.

All injuries were coded according to AIS-80 (Abbreviated Injury Scale) and were based on doctor's certificates, hospital records or, for minor injuries, on occupant's reports.

The conclusion of the summary of the rating results for cars with a weight of 951-1050 kg indicated that: "Also in this category, there is a wide variation between the different car models where the relation between the best and the worst car is 1:2.4. There are some remarkable results in reduction of the risk of receiving a disabling or fatal injury in an accident for the Toyota Corolla. In a comparison between the Corolla of 1980-82 and more recent models, there has been a clear reduction in that kind of risk value of almost 50%. The Toyota Corolla shows a dramatic reduction in the risk of death or disability, while some others do not seem to have become more safe."

more...

DAC - PANNENSTATISTIK (ADAC MOTORWELT 5/92) - GERMANY

ADAC, Germany's most important automobile association, publishes every year reliability/quality statistics based on the breakdown interventions of their well known yellow service cars.

Last year, around 1.5 million interventions were carried out in Germany and a final report, based on these results and adjusted by statistical methods, was published in May 1992.

The results clearly show Toyota's efforts to produce the best possible quality at an acceptable price.

Toyota Corolla ranked first in the lower mid-range class and the Toyota Carina was positioned first in the mid-range category.

**EAK POINTS OF CARS
PERIODIC INSPECTIONS IN 1990 AND 1991
YEAR BOOKS PUBLISHED BY SVENSK BILPROVING
02/91 AND 06/92 - SWEDEN**

Of the 3.3 million cars surveyed, 5 million defects were reported. The average number of defects was of 1.5 per vehicle. Seven parameters were examined and the Corolla again distinguished itself in terms of overall quality, with a much better than average defect frequency.

more...

The 1992 report confirmed the former one, and the last sentence of the 1991-Corolla analysis was very clear: "All models are much better than the average cars at periodic inspections."

In the UK, independent surveys and consumer reports have consistently placed Toyota - and Corolla and Carina in particular - at the very top of the reliability and customer satisfaction charts.

ends...

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



Press Information

FOR IMMEDIATE RELEASE

3 August, 1992

NEW TOYOTA COROLLA

Technical Specification

NB - Full details of the 1.8 GTi and 2.0 diesel Corollas will be available later although some information is included here for initial guidance.

DIMENSIONS

Length	4095 mm (3 and 5 door Hatchback models)
	4270 mm (4 door Saloon models)
	4295 mm (5 door Liftback models)
	4260 mm (GLi Estate)
Width	1685 mm
Height	1380 mm
	1425 mm (Estate only)
	1375 mm (Executive and GTi only)
Wheelbase	2465 mm
Track front/rear	1460 mm/1450 mm
	1460 mm/1440 mm (GTi only)
Cd	0.33 (Hatchback models)
	0.30 (Liftback models)
	0.33 (Saloon models)
	0.36 (Estate)
Centre of gravity height	520 mm
	515 mm (GTi only)

WEIGHTS

Kerbweight	4 door 1.6 GLi auto	1055 kg
	4 door 1.6 GLi man	1020 kg
	5 door 1.6 GLi liftback auto	1095 kg
	5 door 1.6 GLi liftback man	1060 kg
	3 door 1.3 GLi hatchback auto	1020 kg
	3 door 1.3 GLi hatchback man	1000 kg
	3 door 1.3 XLi hatchback man	995 kg
	4 door 1.3 GLi man	990 kg
	5 door 1.3 XLi hatchback man	1000 kg
	5 door 1.3 GLi liftback auto	1055 kg
	5 door 1.3 GLi liftback man	1030 kg
	5 door 1.3 GLi estate man	1015 kg
	3 door 1.8 GTi man	1070 kg
	5 door 1.6 Executive auto	1095 kg
	5 door 1.6 Executive man	1060 kg

Gross vehicle weight	1555 kg (1.3 models)
	1595 kg (1.6 models)
	1580 kg (GTi)

TOWING CAPACITY

With/without brake	1000 kg/450 kg (1.3 models)
	1200 kg/450 kg (1.6 models and GTi)

ROOF RACK LOAD

100 kg (Estate)
75 kg (all other models)

FUEL TANK CAPACITY

50 litres

BOOT CAPACITY (VDA)

0.42 m ³ (4 door)
0.309 m ³ seats up (3 and 5 door hatchbacks)
0.748 m ³ seats down (3 and 5 door hatchbacks)
0.4 m ³ seats up (5 door liftback)
0.845 m ³ seats down (5 door liftback)
0.394 m ³ seats up (Estate)
0.713 m ³ seats down (Estate)

TURNING CIRCLE

9.6 m

ENGINES

1.6 litre models: Type 4A-FE. In-line 4 cylinder mounted transversely. 5 main bearings, alloy head. Twin overhead camshafts, 4 valves per cylinder. 3-way catalytic converter

Bore and stroke	81 mm x 77 mm
Capacity	1587 cc
Compression ratio	9.5:1
Fuel system	D-Jetronic electronic fuel injection. 95 RON unleaded fuel
Maximum power	113 bhp/6000 rpm
Maximum torque	107 lb ft/4800 rpm

1.3 litre models: Type 4E-FE. In-line 4 cylinder mounted transversely. 5 main bearings, alloy head. Twin overhead camshafts, 4 valves per cylinder. 3-way catalytic converter

Bore and stroke	74 mm x 77.4 mm
Capacity	1332 cc
Compression ratio	9.8:1
Fuel system	D-Jetronic electronic fuel injection. 95 RON unleaded fuel
Maximum power	87 bhp/6000 rpm
Maximum torque	82 lb ft/4800 rpm

1.8 litre GTi: Type 7A-FE. In-line 4 cylinder mounted transversely. 5 main bearings, alloy head. Twin overhead camshafts, 4 valves per cylinder. 3-way catalytic converter

Capacity	1762 cc
----------	---------

FURTHER DETAILS AVAILABLE LATER**ELECTRICS**

Ignition	Transistorised
Battery	12 V 50 amp hr
Alternator	12 V 70 amp
Starter	12 V 1 kW

TRANSMISSIONS

Clutch	Hydraulic single dry plate diaphragm
Diameter	212 mm (1.6 and GTi models) 200 mm (1.3 models)

TRANSAXLES

1.3 auto models: Type A132L, hydraulically controlled with lock-up clutch. Stall ratio 2.3:1. 3-speed.

Ratios 1st	2.810
2nd	1.549
3rd	1.000
reverse	2.296
final drive	3.722

1.6 auto models: Type A240L, electronically controlled with lock-up clutch. Stall ratio 2.3:1. 4-speed.

Ratios 1st	3.643
2nd	2.008
3rd	1.296
4th	0.892
reverse	2.977
final drive	2.821

1.3 man models: Type C150. 5-speed.

Ratios 1st	3.545
2nd	1.904
3rd	1.310
4th	0.969
5th	0.815
reverse	3.250
final drive	4.058

1.6 man models: Type C52. 5-speed.

Ratios 1st	3.166
2nd	1.904
3rd	1.310
4th	0.969
5th	0.815
reverse	3.250
final drive	4.058

TRANSMISSION DETAILS FOR GTi MODEL AVAILABLE LATER**SUSPENSION**

Front Independent MacPherson struts with coil springs and gas dampers

Castor	1.4°
	1.46° (GTi only)
Camber	-0.22°
	-0.27° (GTi only)
Toe-in	0.05 mm
Spring rate	21.6 N/mm
	22.5 N/mm (GTi only)
Anti-roll bar	Torsion, 24 mm dia
	Torsion, 25 mm dia (GTi only)

more...

Corolla technical specification...5

Rear Independent MacPherson struts with coil springs and gas dampers
Spring rate 18.6 N/mm
19.6 N/mm (GTi only)
Anti-roll bar Torsion, 15 mm dia
Torsion, 16 mm dia (GTi only)

STEERING Power assisted rack and pinion 3.3 turns lock-to-lock

WHEELS AND TYRES

XLi models	165/70 TR 14 on 14 x 5.5 JJ steel wheels
Executive models	175/65 HR 14 on 14 x 5.5 JJ alloy wheels
GTi	185/60 R 14 on 14 x 5.5 JJ alloy wheels
Other models	175/65 HR 14 on 14 x 5.5 JJ steel wheels

BRAKES

Front Ventilated discs, 255 mm dia

Rear Drums, 200 mm dia
(except GTi - discs, 266 mm dia)

Parking brake Acting on rear wheels

Power assistance Vacuum servo with proportioning valve and LSPV on Estate

PERFORMANCE

Maximum speed	121 mph	1.6 man models
	112 mph	1.6 auto models
	109 mph	1.3 man models
	103 mph	1.3 auto models
0-60 mph	11.3 sec	1.3 man models
	16.0 sec	1.3 auto models
	9.8 sec	1.6 man models
	11.8 sec	1.6 auto models
0-400m	17.0 sec	1.6 man models
	18.0 sec	1.6 auto models
	17.9 sec	1.3 man models
	20.0 sec	1.3 auto models

GTi DETAILS AVAILABLE LATER

more...

Corolla technical specifications...6

FUEL CONSUMPTION

MODEL	URBAN CYCLE	CONSTANT 56 mph	CONSTANT 75 mph
1.3 GLi and XLi 3 door man	36.7 (7.7)	53.5 (5.3)	40.4 (7.0)
1.3 GLi 3 door auto	32.8 (8.6)	46.3 (6.1)	34.4 (8.2)
1.3 GLi 4 door man	36.7 (7.7)	53.5 (5.3)	40.4 (7.0)
1.6 GLi 4 door man	32.8 (8.6)	49.6 (5.7)	38.2 (7.4)
1.6 GLi 4 door auto	31.7 (8.9)	51.4 (5.5)	39.8 (7.1)
1.3 GLi and XLi 5 door man	36.7 (7.7)	53.3 (5.3)	40.4 (7.0)
1.3 GLi 5 door auto	32.1 (8.8)	47.1 (6.0)	35.3 (8.0)
1.6 GLi 5 door man	32.8 (8.6)	49.6 (5.7)	38.2 (7.4)
1.6 GLi 5 door auto	31.4 (9.0)	51.4 (5.5)	40.4 (7.0)
1.6 Executive man	31.7 (8.9)	49.6 (5.7)	38.7 (7.3)
1.6 Executive auto	29.7 (9.5)	51.4 (5.5)	40.4 (7.0)
1.3 GLi Estate man	36.7 (7.7)	51.4 (5.5)	38.2 (7.4)

ends...

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

NEW TOYOTA COROLLA

Standard Equipment

	1.3 XLi Models	1.3 GLi Models	1.6 GLi Models	1.3 GLi Estate	1.6 Executive
EXTERIOR					
Tinted glass	-	◆	◆	◆	◆
Laminated screen	◆	◆	◆	◆	◆
Rear spoiler	-	-	-	-	◆
Alloy wheels	-	-	-	-	◆
Colour keyed bumpers	-	◆	◆	◆	◆
Door mirrors	Remote	Remote	Remote	Remote	Remote
Side impact beams	◆	◆	◆	◆	◆
INTERIOR					
Stereo electronic RDS radio/ cassette with four speakers	◆	◆	◆	◆	◆
Remote boot/fuel flap release	◆	◆	Fuel flap only	◆	◆
Electric windows	-	-	-	-	◆
Tilt and slide sunroof	◆	◆	◆	◆	◆
Headlamp levelling	◆	◆	◆	◆	◆
Central locking	◆	◆	◆	◆	◆
Driver's seat height/lumbar adjust	-	◆	◆	◆	◆
60/40 split rear seats	◆	◆	◆	◆	◆
Front and rear headrests	◆	◆	◆	◆	◆
Intermittent wash/wipe	◆	◆	◆	◆	◆
Rear wash/wipe (not 4 door models)	◆	◆	◆	◆	◆
Tachometer	-	◆	◆	◆	◆
Tilt adjustable steering	◆	◆	◆	◆	◆
Power steering	◆	◆	◆	◆	◆
Adjustable seatbelt anchors	◆	◆	◆	◆	◆
					Electric

more...

	1.3 XLi Models	1.3 GLi Models	1.6 GLi Models	1.3 GLi Estate	1.6 Executive
MECHANICAL 3-way catalytic converter Full size spare wheel & tyre Electronic control 4-speed automatic transmission available 3-speed automatic transmission available	◆ ◆ - -	◆ ◆ - ◆	◆ ◆ - -	◆ ◆ ◆ -	◆ ◆ ◆ -