

This press pack accompanied the UK launch of the new Land Cruiser in January 2003, the model which replaced the Land Cruiser Colorado in the model range. Changes to the vehicle during its time on sale can be tracked using the Timeline feature on the Land Cruiser archive page. More information about the Land Cruiser range can be obtained from the press office.

THE ALL-NEW TOYOTA LAND CRUISER

Key Points

- All-new vehicle, replacing Land Cruiser Colorado
- On sale in the UK from 2 January 2003
- New model set to double previous Colorado sales in UK
- Builds on Land Cruiser heritage of more than 50 years
- Engineered without compromise for superb off and on-road performance
- Launched with Toyota's latest generation 161bhp 3.0-litre D-4D common rail turbo diesel, making it one of the most powerful cars in its class
- All-new 4.0-litre petrol VVT-i V6 engine available from March 2003
- Three and five-door body styles with 'wide body' styling treatment on selected models
- Available with either rear door mounted spare wheel or underbody mounted spare on top two grades
- Four distinct trim levels: LC₂, LC₃, LC₄ and LC₅
- On-the-road prices from £23,995 to £36,795
- Strong focus on technology to deliver refinement and performance both on and off road
 - Downhill Assist Control (DAC) for secure off-road descents
 - World first application of electronic Hill-start Assist Control (HAC), improving off-road safety and performance

- Vehicle Stability Control (VSC) and Active Traction Control (A-TRC) standard on LC₄ and LC₅
 - New generation TEMS (Toyota Electronic Modulated Suspension) four-mode semi-active automatic suspension for optimum ride comfort and handling (standard on LC₅)
 - Height adjustable rear air suspension standard with TEMS
 - ABS, EBD and Brake Assist standard on all models
 - CD-Rom-based satellite navigation with turn-by-turn feature standard on LC₄ models – optional on LC₂ and LC₃ models
 - DVD-based touch-screen satellite navigation system standard on LC₅ models
- Choice of five-speed manual or four-speed automatic transmission with low ratio transfer box
 - Robust body-on-frame construction to withstand extreme off-road conditions
 - Five-door accommodates up to eight in three rows of forward-facing seats
 - More spacious interior with increased head, shoulder and legroom
 - Advanced insulation and noise suppression features to achieve class-leading NVH levels
 - All seats equipped with three-point seatbelts and adjustable headrests
 - Eight airbags as standard
 - Dual stage 'smart' front airbags with driver's seat location sensor

Short Story

The launch of the new Toyota Land Cruiser is a landmark in the history of one of Toyota's most enduring models. For more than 50 years the Land Cruiser has embodied Toyota's core values, establishing a heritage of strength, reliability and rugged performance. In creating a new Land Cruiser for the 21st century, Toyota has not sacrificed these attributes but reinforced them with new levels of refinement, comfort, safety and on-road performance to create a vehicle that competes strongly on all fronts at the heart of the global SUV market.

Replacing the Land Cruiser Colorado, the new Land Cruiser will be offered with a choice of two engines: a new 4.0-litre VVT-i V6 petrol unit and Toyota's latest generation 3.0-litre D-4D common rail turbo diesel. The turbo diesel will be available from launch on 2 January, with the V6 following from March next year.

Available in three and five-door body styles, with the 'wide body' styling treatment on selected models and four distinct trim levels – LC₂, LC₃, LC₄ and LC₅ – the new Land Cruiser offers a wider market appeal than ever before.

On-the-road prices will start at £23,995 for the LC₂ three-door diesel with manual gearbox. Pricing and equipment levels will give the new Land Cruiser a key competitive advantage in the core UK SUV market.

All new Land Cruisers will come with a three-year / 60,000-mile warranty and three-year paint and 12-year anti-perforation warranties, in line with all other new Toyota models.

Technically Advanced

The new Land Cruiser is one of the most technically advanced vehicles to be launched by Toyota. It is equipped with a series of electronic systems designed to make driving on and off-road safer, more refined and more pleasurable.

These include a world first with the introduction of electronic Hill-start Assist Control (HAC). This detects if the vehicle begins to slip backwards or develops wheelspin when starting on an uphill gradient and automatically adjusts the braking and wheel rotation to allow a controlled get-away. It forms one element of the Brake Control System, together with Downhill Assist Control (DAC). This system is available on LC₄ and LC₅ with automatic transmission.

A Truly Modern Toyota

The new Toyota Land Cruiser builds on a heritage of more than 50 years but is a truly modern Toyota. It is designed and engineered to embody the four elements of the Toyota European DNA that defines the company's current product generation.

- Superior Quality: premium interiors and equipment levels, combined with indisputable reliability and durability.
- Design: a contemporary, European-influenced design with clear references to the Land Cruiser heritage and Toyota family identity.
- Driving pleasure: ruggedness off-road and secure, comfortable and rewarding performance on tarmac.
- Innovation: advanced technology used to increase all-round performance, safety and passenger comfort.

Design With a European Flair

An international team of engineers and designers developed the new Toyota Land Cruiser, working on an original concept produced by Toyota's ED² design studio in the South of France. ED² has also been the cradle of the new Avensis, Yaris, Corolla and Avensis Verso models.

The designers worked to an initial concept of a contemporary evolution of the traditional durability and power of the Land Cruiser. The result is a look that is strong and purposeful, building on the identity of the Land Cruiser Colorado, but interpreted in a contemporary, European-influenced style.

Both three and five-door versions will be available, in normal or wide-body styles (depending on grade). The five-door accommodates up to eight people in three rows of forward-facing seats. All seats are equipped with three-point seatbelts and adjustable headrests.

Most Powerful Land Cruiser Yet

The new Toyota Land Cruiser will be offered with a choice of two engines, offering a balance of power and economy that will make them the most efficient in their class.

The all-new 4.0-litre VVT-i V6 petrol unit, available in the UK from next March, is the most powerful engine yet to be offered in a Land Cruiser. Constructed in lightweight alloy, it develops 245bhp at 5,200rpm and offers 382Nm of torque at 3,800rpm. Acceleration from rest to 62mph can be achieved in 9.5 seconds.

The Land Cruiser will be available from launch on 2 January with the latest development of Toyota's common rail 3.0-litre D-4D turbo diesel engine. Power output is 161bhp at 3,400rpm and maximum torque is a formidable 343Nm, available from 1,600 to 3,200rpm. The engine's torque capabilities set a new standard in the market segment and give the new Land Cruiser distinct advantages in off-road and towing performance. On-road it will reach a top speed of 103mph (Auto:106mph) and accelerate from rest to 62mph in 12.7 seconds.

New Sales Ambitions

The new Land Cruiser will play an important role in Toyota's strategy for further development of its European market performance. In the UK Toyota expects 2,500 sales for the new model in 2003, contributing to a Europe-wide target of more than 30,000. This in turn will help progress towards Toyota's medium term goal of 800,000 total European sales by 2005.

AN ICON OF THE SPORTS UTILITY MARKET

- Almost four million sold worldwide
- Built in nine countries
- A story of adventure and exploration
- A human experienc

Some say no other car has driven as many roads in the world as the Toyota Land Cruiser. With close to four million cars sold worldwide over the past 51 years, it is probably true.

The Toyota Land Cruiser is built in nine different countries and exported to 127 nations. It was the first Toyota passenger car to be exported from Japan and has become an icon of the SUV market.

The new Toyota Land Cruiser builds on this heritage. The history of Land Cruiser has been a story of continuous development and improvement based on customer needs all over the world. Indeed, it could be argued the history of Land Cruiser is the history of Toyota itself – for the world beating 4x4 has led the expansion of the company since the 1950s, taking it to new continents and unexplored markets.

The new Toyota Land Cruiser is the culmination of all that knowledge. It takes the experience of coping with some of the most demanding conditions on the planet and yet exceeds European expectations of driving pleasure, perceived quality and design.

The Name Defines The Car

Only when the new car has met and overcome these challenges is it worthy to carry the legendary name: Toyota Land Cruiser.

The Toyota Land Cruiser has also earned some nicknames in some parts of the world, thanks to its record of reliability, durability and off-road performance.

In the United States, the 50-series was known as the Moose; in China, Toyota Land Cruiser is called Shamowang, the King of the Desert.

Throughout Latin America the locals call it "El Macho" and, in Brazil, a special version of Land Cruiser was named Bandeirante, the name given to the Portuguese pioneers who explored the country centuries ago.

The Stories Behind The Story

During the last 51 years, the Toyota Land Cruiser has built a solid reputation for durability, reliability and rugged off-road performance. This was achieved by Land Cruiser overcoming daily challenges set by customers.

Outback Engineer Who Relies on Land Cruiser

An Australian outback service engineer who makes regular 1,200 mile business trips has passed up the option of a new Land Cruiser because he feels there is plenty of life left in his current model.

Ben Drane runs the service centre for Cummins Engines in the Queensland town of Cloncurry and travels thousands of miles to answer emergency calls. He uses a specially equipped Land Cruiser 75 Series to provide repairs and service for lorries, mining equipment and generators.

The 1998 model Land Cruiser 75 Series 4.2-litre diesel fulfils the need for a vehicle that can handle the tough conditions in which Ben operates. "My previous vehicle was a light utility from another manufacturer which couldn't hack the rough roads, long distances and kangaroo plagues for which this region is known," said Mr Drane.

The Cummins mechanic knows a thing or two about the importance of reliability in the Outback. "I often get call-outs to truck drivers stranded by mechanical dramas," Mr Drane said. "Sometimes I have to make a 2,000 mile round trip to do the repair work, so I have to be sure my vehicle is not going to break down."

Aussie Escort Pilot Breaks One Million km Mark

A Western Australian man who acts as a pilot for some of the largest vehicles on Australia's roads has just broken the one million-kilometre barrier in his Toyota Land Cruiser.

Mike Johnston and his wife, Nita, drive their 1989 Toyota Land Cruiser 60 Series wagon as a pilot escort for oversized vehicles throughout Australia. When Mr Johnston purchased the Land Cruiser for their Perth-based company Australian Escort Services in 1991, it had already travelled 75,000km. More than 10 years later, the vehicle covers an average of 900km a day when working and has towed a caravan around Australia twice.

The interior of the veteran Land Cruiser has undergone some alterations over the years. Its back seats have been removed and replaced with a fridge, two CB radios, two telephones (which run off a dedicated battery) and a false floor, which conceals a bed.

After taking the Land Cruiser for a second trip around Australia in 2001 with his caravan in tow, Mr Johnston decided it was time to give the vehicle a short break. He chose another Toyota – this time a secondhand Land Cruiser 80 Series.

Land Cruisers Down The Mines

The Toyota Land Cruiser is the vehicle of choice for the mining industry around the world thanks to its exceptional durability. There are even some Land Cruisers that are used in the mineshafts and spend their working lives underground.

Land Cruisers working for the Republic of South Africa Petroleum Company have their roof sections removed, because the shafts are so cramped. With no rain inside the shaft, there is no need to worry about a roof or windows.

In Australian mining, the fuel tanks of the Land Cruisers are made of stainless steel for protection against salt and acidic water. In this tough environment, leaf springs are replaced every three months and the vehicle itself every three years.

Land Cruiser at The South Pole

A Toyota Land Cruiser was essential equipment for the Japanese South Pole Observation Team on their missions from the Showa base camp across the Antarctic wastes.

Before the team acquired the Land Cruiser they had used a clumsy snow crawler but the arrival in 1965 of an FJ40 transformed life in the camp.

In this part of the world, temperatures can reach -75°C and the average temperature can drop below -60°C in August. The Land Cruiser has made the difference, resistant to these unique conditions. Toyota Land Cruisers have also been used for two more recent expeditions – The South Pole expedition in 1997 and the Ice cap expedition in Greenland in 1998.

The Fresh Fish Express of The Desert

Fishermen who ply the warm waters of the Arabian Sea off the Sultanate of Oman rely on a fleet of Land Cruisers to get their catch to market, more than 90 miles away across the desert.

The fishing villages lining the coast 200 miles south-east of Muscat have no natural harbours where the boats can dock. The beaches here are long and shallow and the fishermen have to either set out in small craft or dock off a larger mother ship and bring the catch ashore in smaller boats.

When the boats reach the shore – their nets laden with fish – they are towed up the beach by the waiting Land Cruisers. The fish are then unloaded into special ice

refrigeration tanks on the truck beds of the waiting Toyotas before the boats are towed back down to the water's edge.

Fully laden with fish, packed in ice, the load can weigh up to two tons. But the Land Cruisers now have to race across the desert to reach the brokers' market and ice factory. These can be anything up to 90 miles away. Top speeds on the express fish delivery reach over 90mph.

Land Cruiser Facts and Figures

- The first generation Land Cruiser was initially called BJ. It used a Toyota B-type petrol engine and the platform was derived from a Toyota SB-type one-ton truck. It was originally developed for military use.
- The first Land Cruiser customer was the Japanese National Police Agency, after representatives witnessed a test in which Toyota test driver, Ichiro Taira, took the Land Cruiser prototype up Mount Fuji to checkpoint 6 in 1951. This feat had never been accomplished before.
- Toyota Land Cruiser was the first Toyota passenger car exported from Japan, in 1952.
- The first Toyota production line outside Japan was established in Brazil in 1959. Here, the Toyota Land Cruiser became the first Toyota produced outside Japan. The vehicles produced were modified versions of the 20-series and were named Bandeirante.
- The Toyota Land Cruiser is now produced at 11 different plants in nine different countries (Japan, Bangladesh, Brazil, Colombia, Indonesia, Kenya, Malaysia, South Africa and Venezuela).
- Prior to the launch of the new Toyota Land Cruiser, there have been 10 different generations of the car – counting both mainstream and bigger Station Wagon versions. There have been 37 model variations powered by more than 31 different petrol and diesel engines.
- The Toyota Land Cruiser has always been at the forefront of automotive technology. In 1985 the Toyota Land Cruiser 60 was equipped with a direct injection diesel engine, the first to be installed in a Toyota vehicle and one of the first in the world for passenger cars.

- In 1990 the Land Cruiser 70 sold in Japan adopted an electronically controlled injection system for diesel engines, the first to be installed in an off-road vehicle. The Land Cruiser 80 was also the first production car in the world to be equipped with a four valves per cylinder direct injection diesel engine in 1995.
- In 2002 Toyota introduced its new Night View system in the Land Cruiser 100, making the Land Cruiser the first SUV in the world to be equipped with an infrared vision system (available in the Japanese market). The same vehicle was also one of the first SUVs to offer a voice activation system for audio and navigation functions (fitted as standard specification in the Amazon for the UK market).
- The Land Cruiser established a Guinness World Record in 1984 when Emil and Liliana Schmid from Switzerland travelled a total distance of more than 510,000km in their Land Cruiser 60. It was the longest driven journey ever. Having started their drive on October 16, they crossed 131 different countries and territories.
- A Land Cruiser 90 became the first diesel vehicle to win a major FIA-sanctioned world championship event, the Baja Portugal Telecel 1000 in 1998. The driver was Philippe Wambergue and the event was a round of the FIA World Cross Country Championship.

The Minds Behind Land Cruiser

Across the generations, the creation of a new Toyota Land Cruiser has been a personal crusade for Toyota's chief engineers. Here some of them talk about their memories of that time:

Saihei Iritani – Chief Engineer for Land Cruiser 20 and 40

"We learned many things from the US Army by participating in tests in the United States and after that with the special order from the US Army Procurement Agency (APA) in Japan. Changes were made to drawings, specs and inspection methods. Much was learned about cleaning repair parts, painting, rust protection, protective packaging and wrapping. This know-how was very useful later as Toyota got more into the export market."

Kenrou Sekino – Chief Engineer for Land Cruiser 40 and 50

"At first the soft-top version was the only one available. But in South Africa, where it rains heavily, the demand for an enclosed version increased. Because the body would outlast the soft-top, it was considered more economical to pay more for an enclosed type than to have to replace the hood a few times. Therefore an enclosed model was produced and sold at a higher price. But this change also increased the cost of shipping the car to an unacceptable level. Rather than pass the cost to the customer, the solution chosen was to ship the parts and assemble the car locally."

Ichi Shingu – Chief Engineer for Land Cruiser 40 and 60

"One reason for the development of the 60-series was to create a model that was less likely to roll. This was because, in the Middle East, people would load the vehicle roof high, making it top-heavy, and then drive at speeds in excess of 65mph. Investigations revealed that they were often loading petrol cans, which was not surprising when you consider there were no fuel stations in the desert along the way. The track on the 60-series was widened in order to cope with this top-heaviness, providing more stability in cornering."

Masaomi Yoshii – Chief Engineer for Land Cruiser 60 and 70

"The biggest change was made in the transition from the 40-series to the 70-series. Considering that the 40-series itself had continued for about 30 years, it was not an easy change to make. The market still demanded heavy-duty vehicles, but recreational type users were increasing and both had to be satisfied. While some people in Japan thought the Land Cruiser was still too heavy and built to over-quality, people in Arab countries complained that the Land Cruiser was becoming too soft. We caught criticism from both directions. But, thanks to this experience the Land Cruiser was able to diversify in the directions it has today."

Osamu Shinoda – Chief Engineer of the Land Cruiser 70

"The Land Cruiser 70 is the elder son, which contains, as they say, all of the threads of history. Once I visited a fishing village in the Middle East where the only car used is the

Land Cruiser 70. These cars support the lives of villagers who use them to haul their daily catch, which is a moving sight indeed."

Takeo Kondo – Chief Engineer of the Land Cruiser 90

"I first got involved in the Land Cruiser development back in the days of the BJ40 and FJ55V. I think back with nostalgia remembering driving a BJ40 down the Meishin Highway, with all the road noise in the background and sweaty hands gripping the wheel. Later the Land Cruiser went through a series of evolutionary developments. Thinking back to the early days, it is almost as if the Land Cruiser has been on a constant path of improvement in driveability. In fact, with every model change the Land Cruiser always had the same basic aim in development. That was first to build on the Land Cruiser tradition of reliability, durability and off-road performance and, second, to improve its handling stability, riding comfort and driving pleasure."

Masaaki Ito – Chief Engineer of the Land Cruiser 100

"As new generations of the Land Cruiser have been released, from the 55, 60, 80 to the 100, our customers have greeted them with surprise and amazement at how far the Land Cruiser has come. With the development of the Land Cruiser 100 we created a prestige four-wheel drive with significantly improved road performance, yet with no sacrifice of its traditional off-road performance. As a result, Japan established a position in world markets supplying a prestige SUV model."

The New Toyota Land Cruiser Viewed by the Chief Engineer

Kunihiro Hoshi is a Chief Engineer in the Product Planning Division of Vehicle Development Centre III at Toyota Motor Corporation (TMC) in Japan, and is the man responsible for the development of the Toyota Land Cruiser.

On developing the first Land Cruiser of the 21st century, Hoshi's challenge was to achieve a perfect combination of the Land Cruiser's legendary reliability, off-road toughness and a convincing road handling and refinement, supported by a technology level other SUVs would find difficult to match.

Hoshi joined TMC in 1981 as an engineer, majoring in the field of electronics engineering. Through progressive responsibilities, he moved to passenger cars with a focus on NVH.

As an Assistant Manager, Hoshi was part of the team in charge of production planning for the second generation Lexus LS 400. He has also worked within the Lexus model line-up development on successive generations of the LS, GS, and RX, with regard to vibration and noise issues.

In 2000, Hoshi became Project General Manager of the new Toyota Land Cruiser. Hoshi's team for the vehicle's development includes about 500 engineering members, 1000 in manufacturing, vehicle testing and travel for the Toyota Land Cruiser.

In his spare time, Hoshi plays basketball and coaches a local school basketball team. He is active in motor sports and enjoys circuit racecar driving. One of his favourite pastimes is to watch European football matches. Kunihiro Hoshi lives in Seto City, Aichi prefecture, with his wife, and two daughters.

Mr. Hoshi gives his view of the new generation Toyota Land Cruiser:

"Land Cruiser was born in 1951, and has the longest brand history in Toyota. What that means is that even before the name Toyota was widely famous across the world, the Land Cruiser itself was already well known globally.

"It's my view, that Toyota Land Cruiser is one of the most prominent vehicles in our company. For that reason, I personally feel extremely responsible and proud to be able to work on the vehicle and I know this is a feeling shared by all my staff.

"In developing a new model, the first thing that occurred to me was that Land Cruiser has been such a strongly successful vehicle for so long that we absolutely had to respect its traditions - that is the traditions of ultimate reliability and maximum off-road performance.

"I felt that this was important not just for Toyota and its customers, but the automotive world as a whole, because the Land Cruiser has always represented the pinnacle of off-road performance.

"Let me explain the context. Not only 4x4s, but the SUV market in general is getting very competitive around the world. Also we are seeing more and more SUVs that are actually based on ordinary passenger cars.

"I say we had a tradition to maintain, but because of that tradition the Land Cruiser tended to be regarded as a truck-based on-road car. This was not really something our customers commented on, but it was repeated by motoring writers, and I was very aware of that.

"So I felt that while maintaining our traditional off-road performance, we had to make good some things that might be regarded as shortcomings, or we would fall behind the times. However, by retaining leadership off-road, if we could lead on-road as well, we could create a new and unprecedented type of vehicle.

"If we were to place importance on off-road behaviour, we had to start with a body-on-frame construction. Others are tending towards monocoque construction with no frame, but I didn't think a monocoque without a separate chassis was a good idea. That's because it is impossible to build-in sufficient strength for hard off-road use.

"I used to work on passenger car development and it was my job to analyse the results of stability tests. Based on that experience, in order to approach passenger car levels of stability, I knew we had to increase the strength and resistance to bending. We have done that very successfully, and the new Land Cruiser structure has up to 60 per cent greater resistance to twisting forces.

"This has been so effective, that the real world effect is that a driver can now tackle the road at 100mph where allowed, feeling the same degree of confidence in vehicle stability that he would have felt at 50mph before. I truly believe that now, unless we tell them, drivers will not realise the vehicle they are driving has a separate body and frame.

"It has always been known that tyre rumble and roar are not transmitted into the cabin of a body-on-frame vehicle in the same way as they are in a monocoque design. We believed that if we could deal with the other issues successfully, we could produce a Land Cruiser that would surpass the noise refinement of an ordinary car.

"We've also worked very hard on noise intrusion. We knew lower frequency vibrations had an adverse effect on the driving experience and one of the benefits of increasing frame and body stiffness was that it reduced the vibrations, as well as improving strength and stability. Previously, we were also getting a lot of vibrations through the engine mounting, so we relocated them to solve that problem.

"In order to deal with wind noise, we reduced the drag co-efficient, and paid special attention to the door mirrors, which were specially shaped in the wind tunnel to reduce wind rush. Engine noise intrusion into the cabin has been reduced by significantly upgrading the bulkhead insulation.

"The overall effect is a marked improvement in cabin refinement, and the benefits are noticeable even at speeds as low as 40-50mph.

"We've not just left the off-road performance; we have also worked on improving it. We're particularly proud of the Hill-start and Downhill Assist Control, which makes driving so easy that anyone can do it.

"We test in a variety of places, including Australia, in areas with really tough rocky climbs and descents. One is so steep, that the previous model only got to the top when a professional test driver was at the wheel.

"This time, we had a very inexperienced driver with us on the test, and I asked him to have a go. At first he was a bit scared, but when he realised what the vehicle was capable of, he did it three times for fun!

"What we wanted to do was create a car that could cover the whole spectrum on and off-road. We wanted something unique, and that is what we have achieved."

UNLIMITED DRIVING PLEASURE, OFF-ROAD AND ON-ROAD

- Tough, traditional body on frame design
- World-first electronic Hill-start Assist Control (HAC)
- Precise Downhill Assist Control (DAC)
- Semi-active suspension for ride comfort and handling
- Choice of two powerful economical engines

- Permanent four-wheel drive

The new Toyota Land Cruiser had a tough challenge in building on a heritage of 51 years as the world's toughest and most reliable off-roader. There has been no compromise in achieving that ambition.

At the same time, the new Land Cruiser acknowledges the changing market and increased demand for sports utility vehicles in which style, comfort and on-road performance are equally important.

The ambition has been for the new Land Cruiser to provide total driving pleasure, both off-road and on. The result is a vehicle with a combination of off-road performance and on-road dynamics that no other SUV can match.

Toyota's 'no compromise' approach has seen the fundamental body-on-frame construction retained for the new Land Cruiser. Other manufacturers have moved towards monocoque construction to achieve better on-road ride and handling, but the body-on-frame chassis is better suited to withstanding the higher stresses encountered in off-road use, without the risk of permanent deformation. Toyota has created an all-new chassis platform that is 60 per cent stiffer than the previous model, providing better torsional rigidity and improved vertical bending and lateral stiffness. This has been achieved through thicker side rails in the centre and rear portions of the chassis and improved cross-member design and location.

The increased stiffness has also yielded improved vibration performance, reduced steering compliance and better crash protection.

The new Land Cruiser also benefits from a lower centre of gravity and a wider stance than many of its competitors in the core SUV market, giving it superior handling and stability.

Sophisticated Suspension Design

The new Land Cruiser's admirable on-road stability and handling have been achieved through its new fully independent front suspension, using an arrangement of coil springs and double wishbones. Optimised geometry, with vertically-mounted shock absorbers,

reduced roll steer and increased castor action, improves straight line and braking stability while maintaining excellent ride comfort.

The rear suspension ride arms have been relocated and the shock absorber angles improved to increase efficiency and provide better stability and ride comfort. The suspension stroke has been increased front and rear over the previous generation model for even better off-road performance.

Innovative Active-Traction Control

The new Toyota Land Cruiser makes extensive use of advanced technology to give the driver complete control under all driving conditions and enhance occupant comfort and safety.

At the heart of the new technology is the Active-Traction Control system (available as standard on LC₄ and LC₅). This governs initial traction and acceleration in slippery conditions, but also contributes to good handling.

Many off-road vehicles are equipped with a differential locking mechanism, typically a centre diff-lock, in order to improve rough road performance. However, when the differential is locked its essential performance as a differential is lost and turning performance deteriorates due to the phenomenon of tight corner-braking. Moreover, when two diagonally opposed wheels start spinning, there is no mechanism for restraining the left wheels opposed to the right wheels. This prevents drive from being transmitted to the road surface, making progress difficult.

In contrast, the electronic A-TRC system applies braking control independently to whichever of the four wheels might be slipping, so creating a strong limited slip differential effect. The drive lost by the slipping wheel can be transferred instead to another wheel. This makes it possible to achieve the same degree of off-road performance provided by a centre plus rear locking mechanism.

A-TRC uses the same basic hardware configuration as the Vehicle Stability Control (VSC). Sensors detect any wheelspin and transmit the information to a central control unit, which also monitors vehicle behaviour and driver input. The newly developed and highly receptive sensors can detect backward as well as forward movement.

A-TRC also features a downhill travelling control. When the vehicle is in first gear, LO-range, descending a rough surfaced slope, speed is controlled by engine braking. However, if one of the wheels lifts, all braking power will tend to move to that wheel, causing the vehicle to gather speed abruptly. A-TRC counteracts this by applying braking to the wheels which remain in contact with the ground. This is particularly useful for controlling downhill speed in models equipped with manual transmission.

Hill-start Assist Control – a World First

The new Toyota Land Cruiser is the first vehicle in the world to be fitted with electronic Hill-start Assist Control (HAC) and is available on the automatic version of LC₄ and LC₅. This not only controls wheelspin when trying an uphill start on a slippery surface, but also detects if the vehicle is starting to slip backwards down the slope.

To prevent this backward slipping, HAC temporarily (no longer than five seconds) brakes all four wheels. By controlling the rotation of each wheel, HAC can arrest the downhill slip and allow the driver to pull away without losing control. This not only boosts hill start performance, but also increases the driver's confidence to tackle off-road conditions.

HAC is fully automated and works in conjunction with the automatic gearbox in Drive, Low, 2 and 3 gear positions. If it isn't triggered, it automatically switches off after three seconds. If it is activated, switch off occurs after five seconds. HAC is only available with automatic transmission and Vehicle Stability Control.

Precise Downhill Assist Control

Downhill Assist Control (DAC) is a braking system which works automatically to control speed and prevent the vehicle from slipping out of control on a descent. It offers a greater level of control than both the footbrake, where there is a risk of wheel lock, and engine braking, which may not be sufficient to limit the vehicle's speed. This system is available on LC₄ and LC₅ automatic versions.

DAC is engaged by the driver and can be switched on once LO-range has been selected on the transfer box. It operates at speeds of less than 15mph and with no pressure on the accelerator and brake pedals. Speeds are controlled to between 3 and 4mph if moving forwards and 2 and 3mph if reversing.

The newly developed active wheel speed sensors can detect extremely low speeds and the rotating direction of each wheel. This enables DAC to set the correct target speed for both forward and reverse movement. The DAC settings have also been tuned to take into account a wide range of off-road scenarios.

The DAC system on the new Toyota Land Cruiser is the most advanced and precise on the market. It is only available in conjunction with automatic transmission and Vehicle Stability Control.

Manual versions do not need DAC as a manual transmission has a far higher braking force in downhill situations than an automatic. DAC means the driver of an automatic vehicle has just as much control as the driver of a manual.

Advanced Differentials Make The Difference

The new Toyota Land Cruiser is fitted as standard with the Torsen torque-sensing limited slip centre differential, providing smoother cornering performance and improved driving stability.

The Torsen centre differential is a key element in the permanent four-wheel drive transmission that makes the new Land Cruiser so enjoyable to drive, both on and off-road. By automatically sensing the drive torque required by both front and rear wheels, it can adjust the torque delivery and maintain driving stability.

In normal on-road conditions, the torque distribution is 40/60 front to rear. If the front wheels start to spin, the torque can be rear-biased (29/71); if the rear wheels start to spin, the bias can be shifted to the front (53/47).

The Torsen centre differential also features a centre diff-lock which can be set from a button on the control panel. It provides a fixed torque split between the front and rear wheels, making it easier to free the vehicle in tricky conditions such as mud or sand.

The transfer gearbox offers two high ratios (with or without differential lock) and one low gear ratio. The manual gearbox can be shifted from high to low ratios at vehicle speeds below 5mph; upshifts can be made at any speed. With the automatic gearbox the vehicle must be stationary in order for ratios to be changed.

The new Toyota Land Cruiser has a new design front differential that is 25 per cent stronger than that on the previous model. The rear differential is available with either a limited-slip or diff-lock option for ultimate performance in the toughest off-road conditions.

This wide choice of traction system combinations makes it possible for all drivers to enjoy off-road driving. The expert can choose centre and rear diff-locks with manual control to extract the most from the new Land Cruiser's off-road capabilities, while the lesser experienced driver can select A-TRC or the rear limited-slip differential to achieve consistent performance with confidence.

Semi-Active Automatic Suspension

The essential element in the new Toyota Land Cruiser's superb on-road performance is TEMS (Toyota Electronic Modulated Suspension), the latest development of Toyota's semi-active automatic suspension. This allows the driver to select from four different settings to obtain the best ride comfort and handling, according to the road surface and driving conditions and is available as standard on LC₅.

The settings are comfort, semi-comfort, semi-sport and sport. The TEMS system controls the damping forces of the shock absorbers, according to the setting and signals from sensors measuring shock absorber movement, wheel speeds, engine speed and even stop light signals.

TEMS greatly enhances the new Land Cruiser's driving dynamics both on and off-road. The comfort and semi-comfort settings favour ride comfort over handling and off-road performance, while semi-sport sharpens the handling and stability characteristics. The sport setting optimises the off-road performance.

The new development of TEMS uses two complex control strategies: one for ride comfort, one for optimum handling. In addition, it features other, simpler controls, such as anti-squat and anti-dive.

The previous 'Skyhook' system has been superseded by the non-linear H_∞ strategy (named after Hardy, a mathematician who studied control systems). This marks an

advance in controlling the unnatural feeling created when a vehicle body runs level over a bumpy surface. This control strategy is used for comfort and a flat ride.

For handling, a roll-attitude control strategy is employed. This effectively pulls the vehicle's centre of gravity down, improving the handling and reducing the rolling movement.

Rear Air Suspension

Rear air suspension on the new Toyota Land Cruiser, standard with TEMS but operating separately from it, allows for variable ride height and increased ride comfort, especially on rough surfaces where there is a risk of bottoming.

The air suspension system replaces the conventional coil springs with pneumatic cylinders and is controlled by a height selector switch on the centre console, with the TEMS control. Interconnection between the two cylinders improves off-road stability and performance.

Rear ride height can be increased by 30mm for off-road use and can be reduced by 30mm below the normal height for ease of entry. Ride heights are overridden by the vehicle speed sensing control, which brings the level back to normal at speeds above 7.5mph (from low setting) or 31mph (from high setting).

The air suspension has two modes, for on-road or off-road driving. On-road the link between the pneumatic cylinders is closed for optimum stability. Off-road it is reopened to allow full suspension travel.

Choice of Powerful Engines

The new Toyota Land Cruiser is available with a choice of powerful, yet economical engines: the latest development of the existing 3.0-litre, four-cylinder, D-4D common rail turbo diesel and an all-new 4.0-litre V6 VVT-i petrol.

The new generation 3.0-litre D-4D engine, designated 1KD-FTV, is the most powerful of the advanced Toyota common-rail turbo diesels, producing 161bhp at 3,400 rpm.

Maximum torque of 343Nm is developed between 1,600 and 3,200rpm, giving the new Toyota Land Cruiser excellent mid-range acceleration and pulling power.

The diesel-powered Land Cruiser also offers remarkable economy on the combined cycle thanks to advanced common-rail technology: 30.1mpg for the three-door manual and 27.2mpg for the five-door automatic.

The 1KD-FTV engine comprises an iron-alloy block unit with an aluminium alloy cylinder head and four valves per cylinder. Two input ports of different shapes help promote fuel mix and optimise swirl.

The five-journal crankshaft has eight balancing weights and there are two counter-rotating balancing shafts to reduce engine vibration. An electro-hydraulic engine mount reduces vibration transmission to the chassis when the engine is idling or running at low speeds.

Engine power is boosted by the use of a variable nozzle turbo-charger and increased intercooling. By variable control of the turbo nozzle vane and optimising of the flow of exhaust gas into the turbine, great improvements have been achieved in low speed torque, maximum output, fuel consumption and noise and emission levels.

Engine emissions are minimised by an efficient exhaust gas recirculation (EGR) system and a downstream oxidising catalytic converter to clean the exhaust gas particulates, hydrocarbons and carbon monoxide.

Most Powerful Land Cruiser Yet

For truly outstanding performance, the new Toyota Land Cruiser is available with an all-new 245bhp V6 petrol engine – the most powerful yet fitted to a production Land Cruiser. This engine is also the most powerful and highest torque-producing among the six-cylinder engines in the segment.

Top speed is 109mph and, thanks to 382Nm of torque at just 3,800rpm, it will accelerate from nought to 62mph in 9.5 seconds (auto).

The new V6 engine is 11 per cent lighter than its predecessor and is constructed from 6 per cent fewer parts. The aluminium die-cast cylinder block is light, yet stiff and further weight is saved in the die-cast intake manifold with plastic delivery systems.

Choice of Transmissions

The new Toyota Land Cruiser is available with a choice of five-speed manual or four-speed automatic transmission. The manual gearbox is carried over from the previous model with improved synchromesh control.

The automatic gearbox is a four-speed, electronic control unit with computerised systems. These include engine torque control, which momentarily reduces engine output during gearshifts to reduce shock. The gearbox also has an automatic anti-squat device that reduces the effect of transmission take-up as the gear lever is moved from neutral to drive.

A 'second-gear start' button automatically puts the Land Cruiser into second gear when moving off from rest on slippery surfaces, such as ice and snow.

Precise Power Steering

Driving pleasure, on and off-road, is further enhanced by the precise speed-sensitive power steering that is standard on the new Toyota Land Cruiser.

The rack and pinion steering provides maximum straight line stability and precision with a variable gear ratio type steering rack. This steering rack changes the gear ratio gradually by changing the gear teeth form.

The gear ratio is set smaller around the steering centre and larger around the end position. As a result, rack stroke around the end position is larger to reduce the steering operation during low speed vehicle manoeuvring, while ensuring a more precise response around the steering centre, which suits high speed motorway driving.

The steering column itself is adjustable for both tilt and reach, to allow all drivers to find their optimum driving position. The energy absorbing mechanism reduces impact energy

and the entire column is designed to break and move away from the driver in the event of an accident.

The steering column shaft is made from aluminium for weight reduction and the steering rack itself is hollow, also helping to save weight. Through this, it is possible to decrease the overall inertia, achieving better steering response.

TECHNICAL ADVANCES IN SAFETY AND SECURITY

- Advanced Vehicle Stability Control (VSC)
- Superior braking performance
- Superior impact protection for class-leading star rating
- Twin-stage SRS front airbags as standard
- Anti-whiplash front seats and headrests standard throughout
- Full anti-theft protection

The new Toyota Land Cruiser is one of the most technically advanced vehicles ever launched by Toyota in Europe and boasts a wide range of features to make driving more enjoyable and safer – both on and off-road.

This is not technology simply for the sake of it. The engineering advances and modern electronic controls on the new Toyota Land Cruiser are there to enhance the driving experience; to allow drivers to go anywhere, exploring and enjoying the limits of the vehicle in safety and comfort.

Toyota technology is tried and tested and enjoys a worldwide reputation for reliability and durability.

This advanced technology, and the philosophy which supports it, are clearly present in the comprehensive safety and anti-theft package on the new Toyota Land Cruiser. Full active and passive safety systems are designed to enhance the driving experience, while also providing superior driver and passenger protection in the event of an accident.

Advanced Vehicle Stability Control

The advanced Vehicle Stability Control (VSC) system available with the new Toyota Land Cruiser (standard on LC₄ and LC₅) enhances the safety limits of the car and allows the driver to better enjoy the vehicle's excellent handling.

The VSC cuts in when it senses the vehicle is reaching the critical limits of cornering and instantly and safely brings the vehicle back under control.

Sensors throughout the vehicle constantly measure driver input and vehicle movement by comparing wheel speeds, yaw rate, steering and throttle angle, and brake pressure. From these measurements the VSC can determine the state of lateral slip and the degree of stability.

As the Land Cruiser approaches the critical limit the VSC intervenes to control engine acceleration and apply braking to each wheel as necessary. Turning moment and deceleration result, bringing the vehicle back under control.

The VSC is equally effective in controlling both understeer and oversteer, bringing the Land Cruiser back into line if the driver approaches the critical limits. More information about VSC can be found in the Technical Glossary.

Superior Braking Performance

The new Toyota Land Cruiser has a newly designed braking system that sets out to achieve the most effective performance in its class under both hot and cold braking conditions. This means not only the shortest stopping distances, but also excellent brake feel and short pedal strokes to give the driver increased confidence and safety.

At the front 338mm-diameter ventilated discs are provided as standard with four piston callipers. At the rear there are 312mm ventilated discs, with floating callipers.

A small diameter, long stroke master cylinder is fitted and this, combined with a variable ratio brake pedal, results in outstanding brake feel and linear response. When the pedal stroke is short or medium, the lever ratio is increased in order to reduce the pedal effort. When the pedal stroke is long, the lever ratio is decreased to provide ample pedal response (please refer to the Technical Glossary).

The latest generation anti-lock braking system (ABS) is an integral part of the complete active safety package, providing constant monitoring of the relative wheel speeds to ensure brakes are released momentarily in the event of skidding. The new, active wheel sensors can detect both forward and backward movement of the wheels.

Smart Brakeforce Distribution

A smart Electronic Brakeforce Distribution (EBD) system is another active safety feature, commanding the brake actuator to provide the optimum brake power, front to rear and left to right. The smart EBD can vary braking effort according to driving conditions and vehicle load. For example, the amount of brake force that is applied to the rear wheels during braking varies whether or not the vehicle is carrying a load.

If the brakes are applied while the vehicle is moving straight ahead, the weight transfer reduces the load applied to the rear wheels. The ABS ECU determines this condition from signals received from the speed sensor and the brake actuator regulates the distribution of the brake force to the rear wheels.

When the brakes are applied when the vehicle is cornering, the load applied to the inner wheels decreases and the load to the outer wheels increases. The ECU can apply smart brake force distribution to even up the load for optimum braking conditions.

The new Toyota Land Cruiser is equipped with Brake Assist to help improve emergency braking performance.

In emergencies many drivers, especially inexperienced ones, panic and do not apply sufficient pressure on the brake pedal to achieve the optimum results. The Brake Assist system interprets a quick push of the brake pedal as emergency braking and supplements the brake power to ensure the vehicle stops as quickly as possible.

Intelligent Passive Safety Systems

The new Toyota Land Cruiser is designed not only to avoid accidents but also to offer maximum protection to occupants in the event of an impact. The on-board passive safety features are intelligent and integrated to work with each other to absorb impact energy and reduce the risk of injury.

Dual-stage SRS airbags are standard equipment for driver and front seat passengers. The new Toyota Land Cruiser is equipped with a driver's seat position sensor and this, acting in combination with impact sensors, controls the inflation rate and pressure of the airbag to ensure maximum effect without over-inflation.

SRS side airbags for additional torso protection are provided for driver and front seat passenger, while SRS curtain shield airbags to protect front and rear occupants from head injury are standard across the range. These side and curtain airbags are activated by specially located sensors which measure the force of side impacts.

All eight seats (standard on five door models) are equipped with full, three-point seatbelts and adjustable headrests. Seatbelts for the front seats are equipped with pretensioners and force limiters, which control the pressure on the chest by gradually releasing the seatbelt after the collision.

The front seats are designed to reduce the effects of whiplash injury, incorporating a mechanism, which brings the headrest forward to cushion the head in the event of a severe rear-end collision.

ISO-FIX child seat mountings are standard equipment on the outer seats in the second row. Child seat restraint anchors are also provided, allowing for easy fitting of most international standard child seats. They also prevent the child seat from tipping forward in the event of an accident.

There is an SRS airbag warning light on the instrument panel in case of system malfunction and seat belt warning light for the driver's seat.

Impact Absorbing Body Structure

The strong ladder chassis frame of the new Toyota Land Cruiser is designed to cope with the most extreme off-road driving conditions – but its intrinsic strength also provides a secure, impact absorbing structure.

Sections of the front side rails are designed to deform progressively and absorb impact energy in the event of a frontal collision, while the front cross-member is designed to collapse in such a way as to protect the underside of the radiator and reduce damage.

Frontal impact absorption rates have been designed to be compatible with other vehicles to reduce the potential damage to opposing vehicles during a collision and also take pedestrian protection into account.

Impact energy from a side collision directed at the cabin area is dispersed throughout the body via pillar reinforcements, side impact protection beams and floor cross members. This cuts the forces impacting on the cabin to a minimum. As a result, the deformation of the cabin is also minimised.

A head impact protection structure has been built into the cabin. The inner ribs of the roof side rail and pillar will collapse to help reduce the impact if they are struck by an occupant's head during an accident. Energy absorbing materials are built into the front footwells and the front bulkhead is designed to collapse in such a way as to minimise possible injury to passengers' lower legs.

Effective Anti-Theft Mechanisms

The new Toyota Land Cruiser is available with a comprehensive anti-theft package to ensure that only the vehicle's rightful owner can drive the car away.

The engine immobiliser, effective on both petrol and diesel-engined models, uses a specially coded transponder chip embedded in the ignition key. This transmits a code to the engine ECU that has to be recognised before the engine can be started.

The alarm system will detect any attempt to break into the Land Cruiser, or to force the bonnet, and sound the independent, self-powered siren. Ultrasonic sensors are fitted which can detect if a window is smashed or there is movement inside the vehicle.

Shielded door locks (the outer door key cylinder has 10 tumblers) offer greater anti-theft protection and, for the UK market, doors can be double-locked to prevent opening even if the key mechanism has been forced.

Visible Identification Marks

Each model in the new Toyota Land Cruiser range is identified by its unique VIN code, clearly displayed on a visible VIN plate. This VIN is also stamped into the bodyshell and

on selected key components, ensuring that even if a vehicle is stolen and broken up for parts, the original source can still be traced.

THE SUV FOR CONNOISSEURS

- Spacious three and five-door body styles
- Third row seats with seatbelts and headrests (standard on five door models)
- Outstanding low noise, vibration and harshness (NVH)
- High quality interior trim and comfort
- Premium car equipment and specification

Customers in the Sports Utility Vehicle segment are changing – and the latest generation Toyota Land Cruiser has changed with them. While it remains a tough, go-anywhere off-roader in the tradition of its name, the new Land Cruiser is also a premium on-road car, offering an excellent ride and handling package; spacious interior; low levels of noise, vibration and harshness (NVH); and premium equipment.

The new Toyota Land Cruiser sets new standards in quality. It has benefited from recent Toyota studies into perceived quality, which have already been implemented in the new Corolla and Avensis ranges, matching premium sensory perceptions (touch, sound, sight) with the traditional Toyota engineering virtues of robustness and reliability.

In keeping with its premium car appeal, the new Toyota Land Cruiser has a powerful presence on the road. Much of the sense of power comes from the strong vertical profile of the front grille - a Land Cruiser hallmark - and from the solid, robust rear.

Yet, in keeping with its promise to deliver excellent on-road driving pleasure, the new Toyota Land Cruiser also has a dynamic shape with a raked silhouette from the A-pillar and a distinctive, forward sloping C-pillar.

Wide body mouldings on LC₃ and above are designed to protect the lower door and wheel arch areas against damage from flying stones, but also add to the overall impression of a robust, premium SUV.

Spacious Interior Design

The new Toyota Land Cruiser will be available in both three and five-door bodystyles. The spacious interior of the five-door model also has a third row of forward facing seats as standard.

As a result, eight people can be seated in comfort and safety with every seat equipped with a three-point seatbelt and headrest. An ingenious 'one-touch tumble' function allows all second row seats to be folded forward, using just one hand.

The overall width of the new Toyota Land Cruiser is 1790mm for LC₂ models (1875mm with the wide body mouldings – LC₃, LC₄ and LC₅). The five-door is 4850mm long – 4810 for the LC₂ - (4405mm for the three-door – 4365 on the LC₂) and the overall height (without air suspension) is 1850mm, or 1905mm for the wide body type, with roof-rails.

The new Toyota Land Cruiser has a commanding presence on the road and the dimensions, notably of the interior, increased as the original concept was refined.

The five-door has 15mm more headroom in the rear than the outgoing model and 40mm more legroom in the front. Rear seat legroom has been increased by 15mm and shoulder room increased by 30mm throughout.

The more spacious interior not only improves passenger comfort, but also increases load carrying potential. The cargo floor is longer and wider, increasing capacity when one, or all of the seat rows are folded forward.

Premium Interior Finish

The general rugged appeal of the new Toyota Land Cruiser is reflected in an interior design, which combines functionality with the quality of a premium sector passenger car.

There is a strong continuity across the dashboard and through into the door trim that emphasises the interior space and the excellent build standard. Strong horizontal and vertical lines, reduced panel gaps and a clean finish contribute to the sense of quality.

The front passenger SRS airbag cover is now out of sight, contributing to the strong, sculpted façade of the dashboard. The upper part of the dashboard has soft-touch finish and blends smoothly into the instrument panel cluster to create a quality feel.

High quality seating and interior trim is used throughout with a choice of two interior colour schemes: luxurious ivory or sporty grey. The sculpted door trims create a three-dimensional impact without intruding into the interior space.

The sense of quality is heightened by attention to detail throughout the interior: Quality features include chrome plated door handles, new trim plates, door scuff plates and damping of the glove compartment lid. Other interior details include; a sliding rear console cover that doubles as an arm rest; adjustable cup holders, front and rear; illuminated glove box; and footwell illumination for both front and rear passengers.

Soft-finish, full leather heated seats are fitted as standard on LC₄ and LC₅ models and there are two colour choices of velour upholstery. Electrically adjustable seats are also fitted for both driver and front seat passenger on LC₄ and LC₅ with the driver's seat equipped with eight different functions.

Quiet and Comfortable to Drive

In order to achieve their objective of creating premium car driver appeal, the engineers knew they would have to work hard on noise, vibration and harshness levels on the new Toyota Land Cruiser.

Kunihiro Hoshi, Chief Engineer, explains: "We've worked very hard on noise intrusion. We knew lower frequency vibrations had an adverse effect on the driving experience but one of the benefits of increasing frame and body stiffness was that it reduced the vibrations, as well as improving strength and stability.

"Previously, we were also getting a lot of vibration through the engine mountings, so we relocated them to solve that problem.

"In order to deal with wind noise, we reduced the drag coefficient and paid special attention to the wing mirrors, which were specially shaped in the wind tunnel to reduce wind rush. Engine noise intrusion into the cabin has been reduced by significantly upgrading the bulkhead insulation."

Measures to reduce NVH include fundamentals, such as the design of the mounts which attach the bodyshell to the ladder chassis, and also more subtle improvements, such as a seal behind the front wheel arch to reduce wind noise.

Engine and road noise has been suppressed by the effective application of vibration damping and noise suppressant materials.

A dash silencer, sandwich panel, and an inner dash silencer are provided around the dash panel for improved sound insulation. In place of the asphalt sheet used on the floor of the previous Land Cruiser, the new model uses a spray-on material for improved vibration damping.

Foam and urethane pad damping materials are used throughout the vehicle and as a result the wind and road noise transmitted to the rockers and pillars has been reduced.

Advanced Information Displays

The new Toyota Land Cruiser is laden with premium car equipment, setting new standards in the SUV segment. Convenience items, such as power windows all round and remote control central double locking, are standard equipment on all models.

Advanced Optitron-type displays (standard on LC₄ and LC₅) have been introduced from premium brand saloons and offer excellent visibility under all lighting conditions. The hi-tech feel is heightened by point illumination, in which a red light is emitted from the tip of the speedometer and tachometer needles.

Light emitting diodes (LEDs) are used to vary brightness and contrast on the main dials while the odometer and tripmeter use liquid crystal display (LCD).

The prominent centre console, with its brushed alloy side panels, is the command centre for comfort and convenience items such as the audio system, air conditioning and, where fitted, satellite navigation system.

The design of the centre console design will depend on the choice of grade.

The new Land Cruiser offers a choice of the most advanced navigation system installed in an SUV today:

- TBT navigation system (standard on LC₄, optional on LC₂ and LC₃) with ETA
- CD-Rom based
- Voice navigation
- Automatic reroute
- Guidance in five languages
- Point of interest function
- ETA – advanced information of traffic congestion, road accidents, road closures on programmed route
- Full mapping navigation system (standard on LC₅)
- DVD-based system; information covering all of western Europe is stored in an 8.5 Gb dual layer DVD disc
- Seven-inch, touch sensitive screen; this screen can also be used to control the air conditioning and audio system
- Voice guidance in eight languages (Danish, Dutch, English, French, German, Italian, Spanish and Swedish)
- Possibility of selection between three different routes (quick, fast and alternative), according to driver preference
- Dual map screen

More than this, routes can be searched by destination address, motorway exit junction or by points of interest. Pre-set destinations and route preferences (areas to avoid etc) can be programmed by the user.

An Eight-Seat Concert Hall

A nine-speaker premium audio system is available as standard on the top of the range LC₅ version. It features a radio/cassette player and six-disc CD autochanger, the latter is mounted in the glove compartment. The audio output is provided by:

- A 50W speaker in each door (four in total)
- Two front door mid range speakers (50W)
- Two front door tweeters (50W)
- A woofer, installed in the luggage compartment (50W, with a seven-litre box)
- A 400W amplifier (50W per eight channels)

The audio experience is further enhanced by DSP (Digital Signal Processor). Through digital effects, DSP brings a definition, purity and clarity to the sound that are often lacking in in-car audio systems.

Additionally, the system is equipped with ASL (Automatic Sound Leveliser). This feature constantly monitors the noise level around the cabin, thus adjusting the sound volume accordingly and achieving a more rewarding audio experience.

To improve the aerodynamics of the Toyota Land Cruiser and at the same time to reduce the risk of vandalism, two audio antennae (a main AM/FM antenna and a dedicated FM sub antenna) are embedded in the rear quarter glass.

All other derivatives are fitted with a six-speaker radio CD/tuner with a glass integrated antenna.

Advanced Climate Control

A newly developed climate control system has been installed in the new Land Cruiser, providing greater heating and cooling ability and minimising the impact on fuel consumption.

The fully automatic air-conditioning, available on LC₃, LC₄ and LC₅, allows selection of separate temperatures for driver and front seat passenger and digital temperature control.

This air conditioner's ECU is equipped with an Automatic ECON mode. This feature activates the compressor's on/off control, based on temperature readings (evaporator temperature, ambient temperature, required outlet air temperature and compressor temperature) in order to improve fuel economy.

The ECU receives information from a solar sensor, allowing the system to take sun exposure into account and improve passenger comfort.

In addition, on LC₅ models the rear seat passengers have their own air conditioning control. Ducting brings air from the front of the vehicle and there is also a separate fan unit installed in the rear.

Extending Refinement and Comfort to the Details

Apart from the use of premium quality materials and provision of sophisticated features, there is a wealth of detailing that underlines the on-board refinement.

The glass sunroof fitted as standard on LC₄ and LC₅ models allows more light into the interior and creates a spacious cabin feel. The roof has an electrically controlled tilt-and-slide function and a two-stage wind deflector.

When the sunroof is fully open, a control system adjusts the wind deflector height according to the vehicle speed. At low speeds, it raises the wind deflector height to the full-up position to prevent the generation of wind throb. At high speeds, it lowers the wind deflector to the half-up position to reduce wind noise. The sunroof is also equipped with an anti-jam protection feature.

All but the entry level LC₂ models in the new Toyota Land Cruiser range are fitted as standard with heated, electric mirrors. The mirrors are also retractable for easier parking in tight spaces. The LC₂ models are fitted with standard electric mirrors.

UK Pricing and Competitor Comparisons

With four trim grades, two body styles, two engines and two transmissions, the new Toyota Land Cruiser will be offered in a much broader range than the model it replaces. On-the-road prices will start at £23,995 for the LC₂ three-door diesel with manual transmission.

Full UK model pricing details are given below:

LC ₂ three-door diesel manual	£23,995
LC ₂ five-door diesel manual	£25,495
LC ₂ five-door diesel automatic	£26,695
LC ₃ three-door diesel manual	£25,995
LC ₃ five-door diesel manual	£27,495

LC ₃ five-door diesel automatic	£28,695
LC ₃ five-door petrol	£29,195
LC ₄ five-door diesel manual	£31,295
LC ₄ five-door diesel automatic	£32,495
LC ₄ five-door petrol	£32,995
LC ₅ five-door diesel manual	£35,095
LC ₅ five-door diesel automatic	£36,295
LC ₅ five-door petrol	£36,795

Price walks:

LC ₂ to LC ₃	£2,000
LC ₃ to LC ₄ to LC ₅	£3,800
Diesel to petrol	£500
Manual to automatic	£1,200
Three-door to five-door	£1,500

New Land Cruiser and its Competitors

The new Toyota Land Cruiser has a very high standard specification - even the entry level model offers eight airbags, air conditioning, remote central locking with double locking, alarm / immobiliser and roof rails.

The main competitors of new Land Cruiser are Land Rover Discovery and Mitsubishi Shogun. The five door Land Cruiser offers eight seats where its competitors have seven, and all new Land Cruisers are equipped with 17" alloy wheels, Electronic Brakeforce Distribution with Brake Assist, CD player and a tilt/telescopic adjustable steering column. The automatic transmission equipped LC₄ and LC₅ models have Hill-start Assist Control fitted as standard which is unique to new Land Cruiser.

To specify a Land Rover Discovery XS TD5 Auto at £31,490 to the same level as the Land Cruiser LC₄ D-4D Auto would cost an additional £1,965 or 3 per cent more as it is not equipped with a CD player, Brake Assist or side and Curtain Shield airbags.

The specification gap widens further with the Mitsubishi Shogun Equippe 3.2 DID Auto at £31,495 as to specify it to the same level as a Land Cruiser LC₄ D-4D Auto would cost an additional £3,560 or 7.9 per cent more.

The Mitsubishi is unable to offer items such as double locking, VSC, A-TRC, fully adjustable steering column or side and Curtain Shield airbags and neither the Land Rover nor Mitsubishi offer front and rear climate control air conditioning.

A full specification breakdown of Land Cruiser and its competitors can be found on the following pages.

NEW TOYOTA LAND CRUISER LC₃ 3.0 D-4D MAN 5-DR VERSUS COMPETITORS

	Toyota Land Cruiser	Land Rover Discovery	Mitsubishi Shogun
	LC₃ 3.0 D-4D Man	GS TD5 Man	Classic 3.2 TD DID Man
CD Player	✓	✗	✗
17" Alloy wheels	✓	16"	16"
ABS	✓	✓	✓
EBD & BA	✓	EBD only	EBD only
Remote central locking	✓	✓	✓
Double locking	✓	✓	✗
Alarm/Immobiliser	✓	✓	✓
Front airbag – driver	✓	✓	✓
Front airbag – pass	✓	✓	✓
Side airbag – front	✓	✗	✗
Roof airbag – front and rear	✓	✗	✗
Climate control AC	✓	✓	Man only
Steering wheel - tilt/telescopic adjust	✓	tilt only	tilt only

Roof rails	✓	Option	✓
Front foglamps	✓	✓	✗
Third row seating capacity - 3 people	✓	2 only	2 only
On the Road Price	£27,495	£27,295	£26,995
Specification Adjustment +/-	n/a	-£390	£1,175
Specification Adjusted Price	£27,495	£26,905	£28,170
% +/- v Land Cruiser	0.0%	-2.1%	2.5%
Source: Competitor Information November 2002			

NEW TOYOTA LAND CRUISER LC₃ 3.0 D-4D AUTO 5-DR VERSUS COMPETITORS

	Toyota Land Cruiser LC₃ 3.0 D-4D Auto	Land Rover Discovery GS TD5 Auto	Mitsubishi Shogun Classic 3.2 TD DID Auto
CD Player	✓	✗	✗
17" Alloy wheels	✓	16"	16"
ABS	✓	✓	✓
EBD & BA	✓	EBD only	EBD only
Remote central locking	✓	✓	✓
Double locking	✓	✓	✗
Alarm/Immobiliser	✓	✓	✓
Front airbag – driver	✓	✓	✓
Front airbag – pass	✓	✓	✓
Side airbag – front	✓	✗	✗
Roof airbag – front and rear	✓	✗	✗
Climate control AC	✓	✓	Man only
Steering wheel - tilt/telescopic adjust	✓	tilt only	tilt only
Roof rails	✓	Option	✓
Front foglamps	✓	✓	X
Third row seating capacity - 3 people	✓	2 only	2 only

On the Road Price	£28,695	£28,790	£28,495
Specification Adjustment +/-	n/a	-£390	£1,175
Specification Adjusted Price	£28,695	£28,400	£29,670
% +/- v Land Cruiser	0.0%	-1.0%	3.4%
Source: Competitor Information November 2002			

NEW TOYOTA LAND CRUSIER LC₄ 3.0 D-4D AUTO 5-DR VERSUS COMPETITORS

	Toyota Land Cruiser	Land Rover Discovery	Mitsubishi Shogun
	LC₄ 3.0 D-4D Auto	XS TD5 Auto	Equippe 3.2 TD DID Auto
CD Player	✓	✗	✗
17" Alloy wheels	✓	18"	16"
ABS	✓	✓	✓
EBD & BA	✓	EBD only	EBD only
Remote central locking	✓	✓	✓
Double locking	✓	✓	✗
Alarm/Immobiliser	✓	✓	✓
Vehicle Stability Control (VSC)	✓	ACE	AYC
Active Traction Control (A-TRC)	✓	✓	✗
Downhill Assist Control (DAC)	✓	✓	✗
Hill-start Assist Control (HAC)	✓	✗	✗
Front airbag – driver	✓	✓	✓
Front airbag – pass	✓	✓	✓
Side airbag – front	✓	✗	✗
Roof airbag – front and rear	✓	✗	✗
Climate control AC(front and rear)	✓	Front only	✓
Steering wheel - tilt/telescopic adjust	✓	tilt only	tilt only
Roof rails	✓	✓	✓
Front foglamps	✓	✓	✓

**NEW TOYOTA LAND CRUSIER LC₄ 3.0 D-4D AUTO 5-DR VERSUS COMPETITORS
(CONT)**

	Toyota Land Cruiser	Land Rover Discovery	Mitsubishi Shogun
	LC₄ 3.0 D-4D Auto	XS TD5 Auto	Equippe 3.2 TD DID Auto
Third row seating capacity - 3 people	✓	2 only	2 only
On the Road Price	£32,495	£31,490	£31,495
Specification Adjustment +/-	n/a	£1,965	£3,560
Specification Adjusted Price	£32,495	£33,455	£35,055
% +/- v Land Cruiser	0.0%	3.0%	7.9%
Source: Competitor Information November 2002			

TECHNICAL GLOSSARY

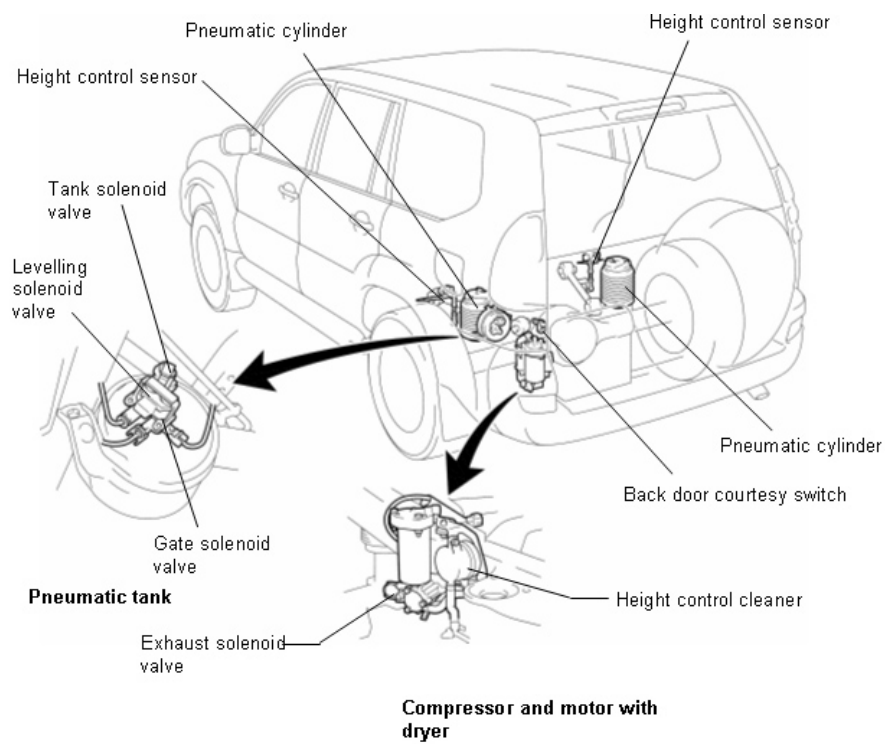
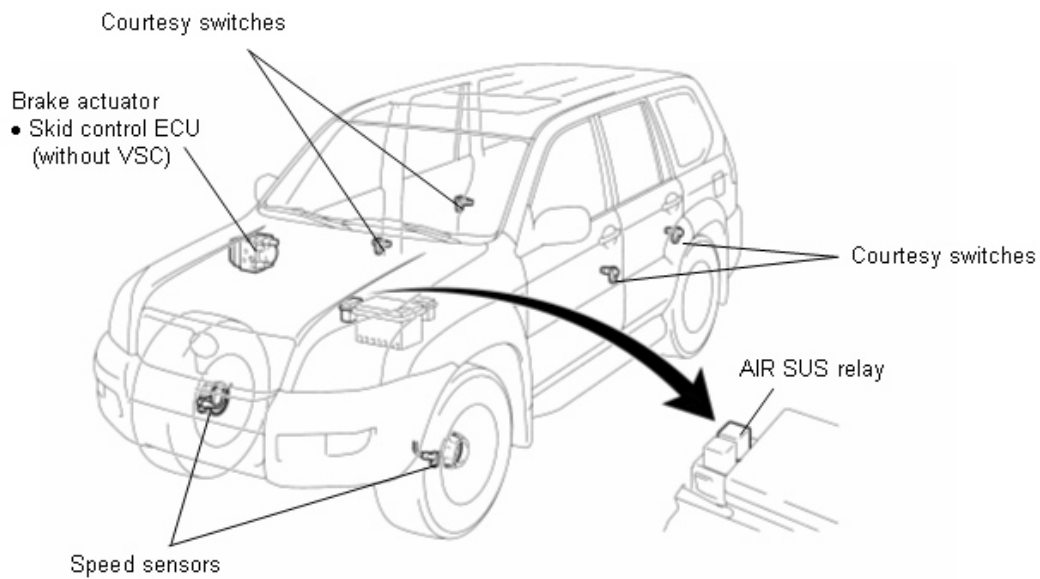
Second Gear Start Button

This feature is available only in conjunction with automatic transmission. It enables the vehicle to start in second gear, achieving a smoother and more linear initial acceleration. It is particularly helpful on loose, slippery surfaces.

Air Suspension (LC₅ model only)

This system uses pneumatic cylinders to achieve superior ride comfort in all conditions. A suspension control ECU analyses the information from switches, sensors and input signals to operate the air compressor and control the vehicle ride height. Air Suspension is available on the LC₅ version, integrated with TEMS (Toyota Electronic Modulated Suspension).

Air Suspension System Components (LC₅)



Functions of the Air Suspension

Vehicle Height Control	Automatic Height Control	Maintains a constant rear vehicle height regardless of the number of occupants or the amount of load.
	Vehicle	The driver can choose between three vehicle height

	Height Switching	positions by operating the height control switch: Normal, HI (+30mm) and LO (-30mm).
	Vehicle Speed Sensing	Even if the vehicle height is set to HI or LO by the height control switch, this function automatically returns to the normal vehicle height if the vehicle speed is higher than a prescribed speed (LO: 7.5mph, HI: 31mph).
	Key Off Operation	If an occupant exits the vehicle or cargo is unloaded when the ignition key is off, causing the vehicle height to rise, this control allows the vehicle to resume the target height only for a set length of time.
	Vehicle Height Control Off	Pressing the height control off switch will disable Vehicle Height Control.
SuspensionControl	Normal Control	Shuts off the right and left pneumatic cylinders by closing the gate solenoid valve, in order to ensure the proper rolling rigidity.
	Off-road Control	Connects the right and left pneumatic cylinders by opening the gate solenoid valve, ensuring the proper drive-through performance on very bumpy roads.

Active-Traction Control (A-TRC)

As opposed to conventional traction control systems, A-TRC was specially developed for both on-road and off-road use.

This system recognises road surface conditions from wheel speed signals and the G-sensor signal, and determines how the driver is operating the vehicle from the throttle position signal and transfer case mode (HI or LO). A-TRC then selects the appropriate control mode to match the driving conditions.

In slippery conditions, such as ice or snow, A-TRC mostly uses throttle control to ensure optimal driveability. Development tests showed that a vehicle equipped with this system could travel 3mph faster than a similar car without it after a four-second acceleration on a low-friction surface.

However, in off-road driving, when the transfer case is in LO position, the priority is on traction performance. Active brake control is used to suppress wheelspin and throttle control is not engaged.

A-TRC can be as effective as a centre/rear differential-lock or centre diff-lock with front/rear limited-slip differential combinations, but is a simpler technical solution. It also eliminates the annoying tight corner-braking phenomenon caused by diff-locks.

A-TRC also features a downhill travel control. When the vehicle is in first gear, LO-range, and going down a rough slope, speed is controlled by engine braking. However, if one of the wheels should lift, all the engine-braking power will tend to go to that wheel, causing the vehicle speed to increase sharply. A-TRC counteracts this by applying braking to the wheels that remain in contact with the ground.

A-TRC is fitted as standard on LC₄ and LC₅ with both manual and automatic transmissions. However, for drivers who prefer more traditional traction control systems, the new Toyota Land Cruiser comes as standard with a centre Torsen limited-slip differential plus diff-lock. A rear differential (LSD/full lockable) is available as standard on LC₂ and LC₃ models.

Road Condition	Transfer Range	Control	Contents	Outline
Ordinary Road	HI	Target Control	Vehicle speed + slip rate (HI range sets value)	Control designed to ensure the ease of driving on low-friction roads, dirt roads, and general roads
		Speed		
		Brake Control	Gradual pressure control	
Rocky or Off-road	LO	Target Control	Vehicle speed + slip rate (LO range sets value)	Control designed for rugged off-road driving
		Speed		
		Brake Control	Sudden pressure control	

Downhill	LO + first gear	Target Control Speed	Vehicle speed when deceleration slippage has been determined during downhill driving	Designed for rugged, off-road downhill driving with the engine brake applied. It prevents the potential acceleration of the vehicle due to a wheel-lift
		Brake Control	Pressure control to the front wheels	

Automatic Sound Leveliser

The premium nine-speaker audio system – fitted as standard on LC₅ – features this system. By monitoring the surrounding noise level, it automatically increases the sound volume to an optimal level.

Body-on-Frame (BoF)

The new Toyota Land Cruiser uses body-on-frame technology to produce a stiffer and more robust chassis that can cope with use and abuse in the severest off-road conditions. Unlike monocoque chassis design, body-on-frame construction can withstand higher stresses without suffering permanent deformation.

The BoF chassis of the new Toyota Land Cruiser is up to 60 per cent stiffer than its predecessor, having better torsional rigidity, superior vertical bending stiffness and enhanced lateral stiffness.

This chassis was also designed to be lighter than traditional ladder frames and to absorb large amounts of energy in the event of an impact. Body-on-Frame construction can be found in every version of the new Toyota Land Cruiser (see also EBD).

Brake Assist (BA)

This system comes into operation when the driver is attempting an emergency stop and adds extra brake pressure to ensure maximum braking effort. This feature is available on all models.

Downhill Assist Control (DAC)

Automatic transmissions do not allow as effective engine braking as manual vehicles when descending a steep hill. Therefore DAC is standard on automatic LC₄ and LC₅ and effects four-wheel brake control to maintain a constant, low vehicle speed without the risk of the wheels locking.

The ABS ECU computes the vehicle speed, travel direction, and the gradient of the hill in accordance with signals from the speed sensor and the yaw rate and deceleration sensor, effecting brake control to attain the target vehicle speed. The target vehicle speed changes according to the travel direction:

Travel direction	Target vehicle speed
Forward	3 – 4mph
Backward	2 – 3mph

This system can operate when the transmission is in neutral position and when the vehicle is reversing, giving the driver more freedom than other systems on the market. DAC also offers better control thanks to new active wheel speed sensors that can detect extremely low speeds (close to 0mph).

DAC operating Conditions	<ul style="list-style-type: none"> · DAC switch is ON · Transfer case is in LO range · Accelerator pedal and brake pedal are not pressed · Descending a hill at a vehicle speed of 15.5mph or less
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This system is fitted as standard on LC₄ and LC₅ equipped with automatic transmission (see also HAC).

Differential Lock

The function of a differential is to provide a torque split between left and right or front and rear wheels when the vehicle is turning. However, differentials also tend to transmit torque to the wheels with least grip, which compromises the vehicle's traction.

To prevent this, a differential lock can provide a fixed torque split between both wheels when activated, independently of the conditions. This feature is particularly useful in obtaining better traction when the vehicle is stuck on sandy or muddy terrain.

To cope with extremely rough situations, every new Toyota Land Cruiser is equipped with a centre diff-lock as standard; a rear diff-lock is available on LC₂ and LC₃.

Dual-stage SRS airbags

When the front airbag sensors and airbag sensor assembly detect a frontal collision, the airbag sensor assembly analyses the extent of the impact and seat position. At the moment of airbag inflation, the level of deployment will be optimised by delaying the inflation timing of the first and second initiators.

The dual-stage inflation system is used for the driver and front passenger airbags.

Electro Multi-Vision (EMV)

Fitted as standard on the LC₅ model this comprises a seven-inch LCD display with touch-sensitive panel for ease of use. Using the screen the driver can control the audio system, air conditioning and navigation system.

The Toyota Navigation System uses DVD technology, allowing a map of the whole of western Europe to be stored on a single disc. As well as featuring eight different languages, the system can be used to calculate journey times.

EMV also features a calendar with a practical memo registration capability.

Electrical-Hydraulic Engine Mountings

When the engine is idling or the vehicle is operating at low speed, these innovative engine mounts will be activated to provide better absorption of engine vibration.

The engine mount consists primarily of a rubber portion, No1 fluid chamber, No2 fluid chamber and diaphragm. Fluid is sealed in the No1 and No2 fluid chambers (please refer to the illustration overleaf).

When the engine is idling, the vacuum generated by the engine's vacuum pump is introduced into the mount. Consequently, the diaphragm is pulled down, making the No2 fluid passage open. As a result, a large amount of fluid flows back and forth between the two chambers, absorbing the engine vibrations.

The 3.0 D-4D engine is equipped with the Electrical-Hydraulic Engine Mount.

Electronic Brakeforce Distribution (EBD)

This system automatically applies the correct braking force to each wheel to compensate for different loads, during cornering or heavy straight line braking. This system can be found on every version.

Hill-start Assist Control (HAC)

When the vehicle starts off on a steep or slippery hill, it can slip backwards as the driver switches from the brake to the accelerator pedal. To prevent this, HAC temporarily (approximately for five seconds at most) applies the brakes to all four wheels to reduce the backward speed of the vehicle.

The skid control ECU determines the gradient of the hill, the acceleration state of the vehicle, the locked state and the direction of rotation of each wheel through the active speed sensors, and the yaw rate and deceleration sensor. This ECU then computes the amount of brake control required to prevent the wheels from locking.

This system is standard on LC₄ and LC₅ with automatic transmission.

HAC operating Conditions	<ul style="list-style-type: none">· Shift lever position is D, 3, 2, or L positions.· The brake pedal is not pressed.· The skid control ECU has detected the backward movement of the vehicle when the driver is starting off uphill.
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Limited-Slip Differential (LSD)

On slippery surfaces, the differential effect (tendency to distribute torque to the wheels with least grip) leads to momentary losses of traction. A limited-slip differential can counteract this by providing torque to the wheels with most grip.

To provide additional traction and greater driving pleasure, the new Toyota Land Cruiser is equipped with a centre TORSEN LSD as standard. This device can permanently change the torque split between front and rear wheels according to conditions.

In straight-line driving, the torque split between front and rear wheels is 40/60, helpful for an appropriate steering response during the initial stage of a turn. When accelerating in a curve the torque distribution to the rear wheels will be increased.

Front vs. rear wheel speed	Torque split front / rear wheels (%)
front = rear	40/60
front < rear	53/47
front > rear	29/71

Mechanical Variable Gear Ratio System

A variable ratio steering rack changes the gear ratio gradually by changing the gear teeth form. The gear ratio is set smaller around the steering centre and larger around the end position. Thus rack stroke around the end position is larger to reduce the steering effort required during low speed vehicle manoeuvres. It also provides a more precise response around the steering centre, appropriate for motorway driving. This feature can be found in every version of the new Toyota Land Cruiser.

One-touch Tumble Seats

Five-door versions feature a practical folding system for the second row seats. By pushing a handle, the seats can be folded down in one motion. Thanks to a special damper, the seat automatically locks when tumbled.

Optitron

The traditional instrument panel illumination is replaced by individual LEDs (Light Emitting Diode) on all the figure and indicator needles. These are set behind a low-reflection, smoked acrylic face. This feature makes the instrument panel as clear to read as possible under all light conditions. Optitron is available as standard equipment in the LC₄ and LC₅ models.

Toyota Electronically Modulated Suspension (TEMS)

This is a semi-active type of suspension. A control ECU estimates the vehicle conditions based on signals from four vertical acceleration sensors located close to each wheel, and, among others, the damping force select switch. It then directs the shock absorber actuators to vary the oil flow, thus controlling the damping force.

The original TEMS system was developed in 1983 and was the first semi-active suspension system in the world. The system installed in the new Toyota Land Cruiser is an evolution of the original TEMS.

This second generation is known as non-linear H[∞] TEMS and is the most advanced semi-active suspension system currently available on the market. While other competitor systems still use the Skyhook control method, TEMS now uses non-linear H[∞] control. TEMS also features eight additional control modes that suit every situation, to provide driving pleasure, comfort and a reassuring level of active safety.

H[∞] control is the mathematical theory used to execute the controller for TEMS ECU. Non-linear H[∞] means this mathematical model was expanded into a non-linear model, which better suits real-life conditions. The superior accuracy and non-linearity of the new control method has improved the ability of the system to adapt to changing surfaces and driving conditions, compared to the first generation Skyhook TEMS. Passengers will recognise the advantages of the second generation system in greater ride comfort with a high level of vibration dampening performance and a flat ride.

TEMS controls the vehicle in nine different ways:

Control	Function
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Non-linear H [∞] Control	Smoothly changes the damping force to a target value according to the changes in the road surface or driving conditions. It achieves excellent ride comfort while ensuring a high level of vibration damping performance.
Thumping Sensitive Control	When the road surface condition does not require a damping force, this function controls the shock absorbers so that their damping force will not increase.
Unsprung Vibration Control	If unsprung resonance is detected, this function ensures the damping force will not decrease below a certain level, in order to reduce the unsprung resonance.
Imaginary Roll Damper Control	Changes the damping force to control the vehicle posture during cornering. As a result, the vehicle can display minimal body roll during cornering, ensuring high levels of driving pleasure and safety.
Anti-Dive Control	During braking, this function makes the damping force firmer to restrain body dive, ensuring excellent stability and controllability.
Anti-Squat Control	During acceleration, this function makes the damping force firmer to minimise changes in the vehicle body posture.
High Speed Control	This function varies the range of the damping force according to vehicle speed in order to achieve a soft, comfortable ride and stable driving behaviour. The damping force is controlled at a softer variable range at low speeds, and at a firmer variable range at high speeds.
Control by Damping Mode Select Switch	The damping mode select switch enables the driver to select a desired damping force from the four modes.
VSC Operation Control	Changes the damping force to control the vehicle posture during VSC operation (front or rear skid). As a result, road-holding performance is improved during VSC operation.

The second generation (Non-linear H[∞]) TEMS is available as standard on the LC5 model.

Variable Ratio Brake Pedal

The new Toyota Land Cruiser's brake pedal and brake pedal lever are jointed by a link in order to achieve a variation of the pedal's lever ratio.

When the pedal stroke is small or medium, the lever ratio is increased in order to reduce the pedal effort. However, when the pedal stroke is large, the lever ratio is decreased to provide an ample and immediate response.

This system is more comfortable for the driver and also complements the action of Brake Assist, achieving more effective braking performance in emergencies. This system is standard on all versions.

Vehicle Stability Control (VSC) – When the skid control ECU determines that the vehicle is beginning to understeer or oversteer, it decreases the engine output and applies the brake to a front or rear wheel to control the vehicle's yaw moment.

The basic operation of the VSC is described below. However, the control method differs depending on the vehicle's characteristics and driving conditions.

1) Controlling a front wheel skid

When the skid control ECU determines that there is a large front wheel skid tendency, it counteracts accordingly. The skid control ECU controls the engine power output and applies braking to the inner front and rear wheels.

2) Controlling a rear wheel skid

When the skid control ECU determines that there is a large rear wheel skid tendency, it counteracts by applying the brakes of the outside front wheel. This generates an outward moment of inertia in the vehicle, in order to restrain the rear wheel skid tendency. Along with the reduction in speed caused by the braking force, the vehicle's stability is increased.

In some cases, the skid control ECU applies braking to the rear wheels, as necessary.

VSC is available on LC₄ AND LC₅ as standard.

NEW LAND CRUISER TECHNICAL SPECIFICATIONS

ENGINE (DIESEL)	3.0-LITRE D-4D
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Engine Type	1KD/FTV four cylinder with VNT turbocharger and intercooler		
Valve Mechanism	Double overhead camshaft 16 valve		
Displacement (cc)	2,982		
Bore x Stroke	96 x 103		
Fuel Injection Type	Common rail-injection system		
Injection pressure (bar)	1,350		
Cetane Rating	48 (minimum)		
Compression Ratio	18.4:1		
Max Power (bhp/rpm)	161 @ 3,400		
Max Torque (Nm/rpm)	343 @ 1,600-3,200		
ENGINE (PETROL)	4.0-LITRE V6 VVT-i		
Engine Type	1GR/FE		
Valve Mechanism	Double overhead camshaft 24 valve VVT-i		
Displacement (cc)	3,956		
Bore x Stroke	94 x 95		
Fuel Injection Type	Sequential Multiport injection		
Compression Ratio	10:1		
Max Power (bhp/rpm)	245 @ 5,200		
Max Torque (Nm/rpm)	382 @ 3,800		
PERFORMANCE	D-4D M/T	D-4D A/T	PETROL A/T
0-62mph	12.7	12.8	9.5*
Maximum speed (mph)	103	106	109*
FUEL	D-4D M/T	D-4D A/T	PETROL

ECONOMY/EMISSIONS/VED			A/T
Urban 3dr/5dr	24.6/24.4	21.6	15.5*
Extra urban 3dr/5dr	34.9/34.4	32.5	25.9*
Combined 3dr/5dr	30.1/29.7	27.2	20.8*
CO ₂ emissions 3dr/5dr	250/253	277	323*
VED Rating	E	E	E
DIMENSIONS (mm)	3 DOOR	5 DOOR	
Overall length (wide bodytype)	4,365 (4,405)	4,810 (4,850)	
Overall width (wide bodytype)	1,790 (1,875)	1,790 (1,875)	
Overall height (with roof rails) **TEMS suspension	1,850 (1,905)	1,850 (1,905) **1,895	
Wheelbase	2,455	2,790	
Track - front (wide bodytype)	1,535 (1,575)	1,535 (1,575)	
Track - rear (wide bodytype)	1,535 (1,575)	1,535 (1,575)	
Overhang - front	855	855	
Overhang - rear	1,055 (1,095)	1,165 (1,205)	
Interior Length	1,805	2,520	
Interior Width	1,535	1,535	
Interior Height	1,260	1,260	
Luggage capacity (L) max	403	620	
Fuel tank capacity (L)	87	87	
* Figures to be confirmed			
WEIGHTS (kg)	3 DOOR	5 DOOR	
Kerb weight (D-4D) (Auto)	1,840-2,010	1,980-2,170 (1,990-2,180)	

Gross vehicle weight	2,600	2,850	
Towing capacity – with braked trailer	2,800	2,800	
Towing capacity – without braked trailer	750	750	
Maximum roof load	80	80	
Maximum trailer nose weight	130	130	
OFF ROAD DATA			
Min ground clearance (mm) (wide bodytype)	207 (222)	207 (222)	
Wading depth (mm)	Over 700	Over 700	
Approach angle (°) (wide bodystyle)	31 (32)	31 (32)	
Departure angle (°) (wide bodystyle)	29 (30)	26 (27)	
Ramp break over angle (°) (wide bodystyle)	24 (25)	19 (20)	
TRANSMISSION	D-4D M/T	D-4D A/T	4.0 V6 A/T
1 st	3.830	2.804	2.804
2 nd	2.062	1.531	1.531
3 rd	1.436	1.000	1.000
4 th	1.000	0.753	0.705
5 th	0.838	N/A	N/A
Reverse	4.220	2.393	2.393
TRANSMISSION	D-4D M/T	D-4D A/T	4.0 V6 A/T
Differential gear ratio	4.100	4.300	3.909
Transfer box	2-speed planetary type		

High ratio / low ratio	1.000/2.566
SUSPENSION	
Front	Double wishbone with coil springs
Rear	Four-link with coil springs (air spring units with TEMS)
STEERING	
Type	Rack and pinion with variable ratio, power assisted
Ratio	15.6
Turns lock to lock	3.0
Minimum turning radius (m)	5.2 (five-door 5.7)
BRAKES	
Front	Four piston calliper, 338mm diameter discs
Rear	Floating type calliper 312mm diameter discs
Additional features	ABS, Electronic Brakeforce Distribution and Brake Assist
WHEELS AND TYRES	
Wheel size (wide bodytype)	6J x 17 (7J x 17)
Tyre size (wide bodytype)	225/70 R17 (265/65 R17)

NEW LAND CRUISER EQUIPMENT LIST

SAFETY	LC₂	LC₃	LC₄	LC₅
Two-stage driver and passenger airbags	✓	✓	✓	✓
Front side and Curtain Shield (roof mounted) airbags	✓	✓	✓	✓
Whiplash Injury Lessening (WIL) concept seat	✓	✓	✓	✓

– driver and front passenger				
Electronically controlled ABS with EBD and BA	✓	✓	✓	✓
Active Traction Control (A-TRC)	x	x	✓	✓
Vehicle Stability Control (VSC)	x	x	✓	✓
Side impact beams on all side doors	✓	✓	✓	✓
Front seatbelt pre-tensioners with force limiters	✓	✓	✓	✓
3-point seatbelts with Emergency Locking Retractor	✓	✓	✓	✓
Head impact protection structure for roof side and pillar	✓	✓	✓	✓
ISO-FIX child seat preparation	✓	✓	✓	✓
OFF ROAD				
Permanent 4WD	✓	✓	✓	✓
Hill-start Assist Control (HAC) and Downhill Assist Control (DAC) – (automatic transmission only)	x	x	✓	✓
Centre Torsen Limited Slip Differential (LSD)	✓	✓	✓	✓
Hi/Low gear range	✓	✓	✓	✓
Rear Differential lock	✓	✓	x	x
Centre differential lock	✓	✓	✓	✓
Active height suspension-damping force control system (TEMS – Toyota Electronically Modulated Suspension)	x	x	x	✓
COMFORT AND CONVENIENCE	LC₂	LC₃	LC₄	LC₅
Turn-by-turn satellite navigation system	Opt	Opt	✓	✓

DVD full mapping satellite navigation (Europe wide)	x	x	x	✓
Electronic Traffic Avoidance with turn-by-turn system	Opt	Opt	✓	x
Cruise control	x	x	✓	✓
Outside temperature display	✓	✓	✓	✓
Optitron instrumentation	x	x	✓	✓
Air conditioning with electronic air recirculation	✓	x	x	x
Dual zone climate control air conditioning (driver and front passenger independent controls)	x	✓	✓	x
Dual zone climate control air conditioning (front and rear controls)	x	x	x	✓
Electric tilt/slide sunroof with one touch operation and anti-trap	x	x	✓	✓
Tilt and telescopic adjustable steering column	✓	✓	✓	✓
Four-spoke leather steering wheel and leather gearshift knob	x	x	✓	✓
Electric lumbar support	✓	✓	✓	✓
Multi-adjustable front seats-electrically operated	x	x	✓	✓
Heated front seats	x	x	✓	✓
50/50 split/fold 3 rd row rear seats (5 door)	✓	✓	✓	✓
60/40 split fold 2 nd row rear seats	✓	✓	✓	✓
Reclining function on 2 nd row rear seats (eight seat model)	✓	✓	✓	✓
AUDIO	LC₂	LC₃	LC₄	LC₅
RDS radio / CD player with six speakers	✓	✓	✓	x

EMV (Electronic Multi-vision) audio system with radio/cassette/6CD changer and nine speakers	x	x	x	✓
SECURITY				
Remote central locking with double lock facility	✓	✓	✓	✓
Transponder engine immobiliser	✓	✓	✓	✓
Remote alarm with perimeter and microwave interior protection	✓	✓	✓	✓
Security window etching linked to 24 hr helpline	✓	✓	✓	✓
Vehicle parts marking – major parts traceable to VIN	✓	✓	✓	✓
UPHOLSTERY AND INTERIOR				
Velour upholstery with velour door trim inserts	✓	✓	x	x
Leather upholstery with leather door trim inserts	x	x	✓	✓
Brushed aluminium-effect fascia trim	✓	✓	✓	✓
Brushed aluminium-effect fascia trim with wood trim inserts	x	x	✓	✓
Front and rear armrests	✓	✓	✓	✓
EXTERIOR AND BODY				
Black door handles and mirrors	✓	x	x	x
Colour keyed door handles and mirrors	✓	✓	✓	✓
Chrome-effect front grille	✓	✓	✓	✓
Green tinted glass	✓	✓	✓	✓
Metallic paint	Opt	Opt	Opt	Opt
Side steps	✓	✓	✓	✓

Mudflaps	✓	✓	✓	✓
Colour keyed front and rear bumpers	x	✓	✓	✓
Wheel arch extensions-colour keyed	x	✓	✓	✓
Roof rails	x	✓	✓	✓
17" six-spoke alloy wheels with locking wheelnuts on 225/70 R17 tyres	✓	x	x	x
17" six-spoke alloy wheels with locking wheelnuts on 265/65 R17 tyres	x	✓	✓	✓
Leather-look soft spare wheel cover	✓	x	x	x
Metallic centre spare wheel cover	x	✓	x	x
Colour keyed hard spare wheel cover	x	x	✓	✓
Black electrically adjustable mirrors	✓	x	x	x
Colour coded electrically adjustable, heated and retractable mirrors	x	✓	✓	✓
Retractable headlamp washers	x	✓	✓	✓