

TOYOTA LAND CRUISER

KEY POINTS

- Land Cruiser benefits from more than 60 years of Toyota all-wheel drive engineering
- Legendary reputation for toughness and go-anywhere ability maintained and enhanced
- Advanced technology features for handling, safety and driver guidance, including Rear Cross Traffic Alert, Blind Spot Monitor, Trailer Stability Control, Pre-Collision System and Adaptive Cruise Control
- 174bhp (130kW) 2.8-litre D-4D engine with six-speed automatic transmission
- Toyota Touch 2 and Toyota Touch 2 with Go multimedia and navigation systems
- Three and five-door body styles with seating for up to seven people
- Clever interior packaging with two flat-folding third row rear seats (standard in Icon and Invincible)
- Protected by Toyota's five-year/100,000-mile new vehicle warranty

INTRODUCTION

The Toyota Land Cruiser enjoys a special status in the global market as a vehicle that has proved its tough, lasting and reliable qualities in the most extreme environments. This pedigree provided the platform for the development of the current Land Cruiser, a vehicle that goes further than ever before to deliver a balance of go-anywhere performance with the poise, comfort and refinement motorists want in normal day-to-day driving.

Introduced in the UK in 2009, the current Land Cruiser underwent a mid-life upgrade for the 2014 model year in late 2013. As well as gaining a distinctive new "face," the large SUV adopted further systems for safer, steadfast performance both on and off-road. At the same time the model's three-tier grade classifications were changed to Active, Icon and Invincible, bringing the range in line with Toyota's other all-wheel drive models.

Further significant changes were made in July 2015 with introduction of a new 2.8-litre D-4D engine, replacing the previous 3.0-litre unit, along with a new six-speed automatic transmission.

Land Cruiser's success is built on three core product values: -

- **Quality, durability and reliability**, building on Land Cruiser's long and distinguished history and reputation for lasting performance.
- **Unrivalled balance of on and off-road driving performance**, supported by advanced suspension and driver aid technologies.
- **Refined and versatile interior**, offering a functional but luxurious and comfortable on-board environment.

Land Cruiser benefits from a higher level of advanced but user friendly handling and guidance features that help the driver tackle the most challenging routes – a package that was further extended with new features for 2014. At the same time suspension technology and on-board monitors make it more comfortable and easier to manoeuvre through everyday urban traffic, too. Clever interior packaging provides highly flexible seating and luggage space arrangements, with generous space for up to seven on board. Most models enjoy a high specification of luxury features, including a surround sound premium audio system, triple-zone automatic air conditioning and a Blu-Ray/gaming entertainment package for rear seat passengers, creating a welcoming environment inside the vehicle whatever the driving conditions outside might be like.

In the UK Land Cruiser is available as a three or five-door model, powered by a 174bhp (130kW) 2.8-litre D-4D diesel engine, matched to six-speed manual or automatic gearboxes.

Seven seats are fitted to all versions except Icon, where the two third-row seats are offered as an option; the three-door is offered in Active specification only, with five seats.

THE LAND CRUISER LEGEND

The Toyota Land Cruiser has built a rock-solid reputation for reliability, durability and unrivalled off-road performance in a history that stretches back more than half a century.



To ensure the latest model was worthy of the Land Cruiser name, not only meeting but exceeding customer expectations, it underwent rigorous development testing on and off-road.

In styling terms, it is easy to identify as the latest in a long line of rugged Toyota four-wheel drive models. Compared to its predecessor, increases in external dimensions have been kept to a minimum to help preserve on and off-road agility, but the introduction of numerous aerodynamic enhancements have reduced the coefficient of drag (Cd) from 0.37 to 0.35.

Land Cruiser is equipped with one of the most comprehensive and technically advanced ranges of safety and handling features ever launched by Toyota, designed to make driving in all conditions secure and enjoyable.

History

It is more than 60 years since Toyota introduced the four-wheel drive model that was to inspire the world-conquering Land Cruiser, a vehicle that led the company's expansion into new markets through the 1950s and which has proved its mettle on every continent, including the frozen wastes of Antarctica. To date more than five million have been sold in 176 different countries and regions; the introduction of new Land Cruiser has extended that global reach even further, to 188 different sales territories.

Land Cruiser's ancestral line can be traced back to the Toyota BJ, a truck-derived model that was initially developed for military use. In 1955 the name BJ gave way to Land Cruiser and the pattern was set for a model range that has endured and prospered through to the present day.

As Toyota began its programme of worldwide exports and growth during the 1950s and '60s, it found many established markets were already well-penetrated by American and European

car makers. This helped prompt it to focus instead on emerging markets in Middle and Far East and South America, where Land Cruiser's tough performance made it a strong proposition.

The Land Cruiser concept was refined in the mid-1960s, as Toyota responded to an American trend for more refined four-wheel drive vehicles. The introduction in 1966 of the first Land Cruiser Station Wagon series catered for this growing market, joining the range alongside its more rugged stablemate.

Further expansion of the Land Cruiser concept came in 1985, when Toyota recognised the potential for a model that could offer the manoeuvrability and uncompromised off-road strengths of the Heavy Duty series with the comfort and refinement of the Station Wagon. The result was the first Land Cruiser Light Duty series.

From this point the Light Duty series has progressed through two further generations in 1996 (the Land Cruiser Colorado) and 2002 before reaching the launch of the all-new fourth generation model, raising the bar even higher in terms of quality, toughness and refinement.

Development testing

Land Cruiser underwent intensive development testing to ensure it met Toyota's ambitions for all-round improvements in quality, handling and performance.

Prototype models were subjected to more than 30,000km driving over the most severe terrain on the off-road test course at Toyota's Tahara factory, which is twice the distance covered in regular off-road vehicle testing and the equivalent of 100,000km of everyday use. Inspections were carried out after every 3,000km for engineers to seek out any faults and identify opportunities for improvements.

Disguised as current generation models, these prototypes were also tested over a further 30,000km of real-world off-road conditions and 70,000km of rough road driving.

The result has been to take Land Cruiser's hallmark standards of reliability and toughness to new heights, giving customers even greater confidence in their vehicle, whatever the working environment, wherever in the world.

DESIGN

The front-end treatment is the stand-out feature of Land Cruiser's refreshed design. Toyota has introduced a more prominent grille that marks an evolution of the traditional arrangement of five parallel vertical bars, giving them a stronger appearance and sinking them into the

upper edge of the new, deeper front bumper. According to model grade, the bars have a metallic or silver finish.

The headlamp clusters and daytime running lights form a single unit with the grille and the entire structure is set higher, making it less vulnerable to damage when driving off-road. The lamp units incorporate the high and low beam lights, turn indicators and DRLs; LED headlights and DRLs feature on all versions. In a neat touch, the units feature discreet Land Cruiser branding and a contrasting black and powder-coated aluminium internal finish.

The over-size bumper has a two-step design that further protects the headlights above. In spite of adding 20mm to the front overhang, its sharply cut-away bottom edge means there is no change in the vehicle's turning radius (5.2m for the three-door, 5.8m for the five-door) or its approach angle when driving off-road. The wheelbase and rear overhang are unchanged, with overall vehicle lengths increased to 4,335mm (three-door) and 4,780mm (five-door).

At the rear the lamp clusters have clear lens blocks and red accents and the licence plate surround has been rendered more prominent..

In profile, Land Cruiser displays fluid lines, with a forward position for the cowl, a high belt line and integral front and rear wheelarches flared towards the rear of the vehicle. As part of the 2014 restyling exercise, the door mirrors were made slightly smaller. The door mirror-mounted turn indicators and the rear lamps use LEDs, which light up more quickly than conventional bulbs, giving other drivers more time to react to vehicle braking. They also use less power.

The rear high-visibility LED lamp clusters flank a side-hinged tailgate, which is inset deep into the rear bumper to provide a practical, level access step, protected by a hard-wearing cover. The tailgate includes a top-hinged glass hatch, giving easy access to the load space, particularly in tight parking spots where opening of the full tailgate might be difficult. The hatch can be unlocked and opened one-handed, using the smart key or a button release next to the bottom left hand corner of the glass. An integral roof spoiler houses the rear screen wiper and high-mounted LED stop light.

Active models are fitted with 17-inch alloy wheels, with Icon and Invincible versions riding on 18-inch rims.

Aerodynamics

Seamless bodywork with minimal panel gaps and a series of aerodynamic enhancements deliver a 0.35 coefficient of drag (Cd), which supports better high-speed cruising fuel economy.

Aerodynamic efficiency was improved in the current generation model by reducing the overall height by 15mm, and by introducing front and rear spoilers to channel airflow under the body and direct it cleanly away from the trailing edge of the roof. Deflectors inside the engine compartment correct the flow of air through the radiator grille to reduce turbulence, and the design of the front bumper makes for a smoother rearward airflow. Front and rear spats are fitted to manage airflow around the tyres and cut turbulence.

Fitting a fin-shaped aero wiper blade cover and concealing the screen washer nozzles reduces wind noise and further improves aerodynamic performance.

SAFETY

Land Cruiser is equipped with a comprehensive and technically advanced range of active and passive on and off-road safety features. Advanced engineering and sophisticated electronic systems provide a high level of protection while at the same time making driving more rewarding, helping the driver explore and enjoy the limits of the vehicle's performance.

Body structure

Collisions between tall vehicles, such as SUVs, and passenger cars can result in the larger vehicle riding up over the smaller one. To counter this risk, Toyota works to ensure the safety systems of both vehicles involved in a collision can be used to their maximum potential.

To this end, the front crumple zone is set at a height equivalent to that of an average passenger car. The frame and body are designed to effectively channel and absorb impact energies to help protect all parties involved, even those on the receiving of a collision in a smaller vehicle.

Numerous measures have been taken to control body deformation in a frontal collision, while preserving the structural integrity of the cabin. Reinforcements in the A-pillars have a multi-layer construction between the roof rail reinforcement and cowl to give increased buckling strength and improved energy sustainability when buckled, which helps limit body

deformation. In addition, the lower front pillar reinforcements also have a multi-layer construction and high-strength outer rocker panel reinforcements have been introduced.

Using high-tensile sheet steel for the front pillar and roof rail reinforcement improves side collision performance. The roof header reinforcement has a closed top and bottom cross-section, giving added strength and floor cross-members are strategically placed to effectively distribute impact forces – measures which further help reduce the risk cabin deformation.

A highly effective multiple load-path cross-member structure channels impact energy from the B-pillars, and inner rocker-to-frame load path brackets carry energy from the outer rocker.

Occupant protection is further enhanced by the foam padded door panels and door trims, reducing the risk of pelvic injuries in a side collision, and crushable door armrests.

Pedestrian protection

Land Cruiser's bonnet, cowl and front wings are all designed to absorb as much energy as possible in the event of a collision with a pedestrian.

The bonnet has a deep, energy-absorbing profile with longitudinal reinforcement ribs. Crush points and holes behind the bonnet striker reinforcement ensure there is an ample impact absorption zone.

The front wing mounting brackets have crush points for effective energy absorption, and the wings themselves incorporate energy-absorbing protectors, with a construction designed to slip down in a head impact, so reducing the reaction force sustained by the pedestrian.

Airbags and active headrests

Land Cruiser is equipped as standard with seven airbags: driver's dual-stage front airbag, driver's knee airbag, passenger front airbag, front side airbags and full-length curtain airbags, giving head protection to outer seat occupants in all three rows.

The front seats are fitted with seatbelts with pretensioners and active headrests that help prevent whiplash injury. Extra protection is provided through a new seatback design, allied to a headrest shaped to sit as close as possible to the occupant's head in normal use. In a rear

impact, the force of the body on the seatback causes the headrest to move up and forward to close the gap between the head and headrest, significantly reducing the risk of whiplash.

Braking and stability control systems

Land Cruiser's servo-assisted braking system uses 388mm x 32mm ventilated front discs. Four-piston callipers with large pistons are used for improved stopping power and fade-free performance. At the rear there are 312mm-diameter ventilated discs with floating callipers.

The vehicle comes as standard with a full range of braking, traction control and stability systems: ABS with EBD and Brake Assist; Traction Control (TRC) and Vehicle Stability Control (VSC). During emergency braking, the stop lamps automatically flash to alert following drivers.

Further brake control systems are provided specifically to enhance off-road performance and ease of use in taxing conditions, including Multi-terrain ABS, Active Traction Control (A-TRC), Hill-start Assist Control (HAC) and Downhill Assist Control (DAC). Details of how these work can be found in the Off-Road Performance section.

Safety Pack

A comprehensive range of safety and handling features is provided in the Land Cruiser Safety Pack, which is fitted as standard on Invincible models and can be obtained as an option for Icon grade models.

The pack comprises: -

- Pre-Crash Safety system
- Adaptive Cruise Control
- Lane Change Assist
- Rear Cross Traffic Alert
- Blind Spot Monitor
- Multi-terrain Select
- Multi-terrain Monitor

Operating at speeds above 3mph, the Pre-Crash System uses a millimetre-wave radar sensor to detect objects ahead, determines the collision risk and helps the driver reduce the chances of an accident happening.

If it judges a collision to be highly possible, it will alert the driver and, when he or she begins to brake, it will activate Pre-Collision Brake Assist to supplement the driver's braking effort. If the driver does not brake and a collision is inevitable, the Pre-Collision Brake will automatically apply the brakes to reduce impact speed. The Pre-Collision Seatbelt is also activated under emergency braking, or if there is a risk of a loss of vehicle stability.

Adaptive Cruise Control works in tandem with PCS at speeds between 31 and 106mph (50 to 170km/h), automatically maintaining a selected distance from the vehicle in front, and returning to the original cruising speed once the road ahead is clear.

The Blind Spot Monitor alerts the driver to another vehicle travelling in a blind spot alongside by lighting up an indicator on the surface of the door mirror on the appropriate side of the car. The system works using radar sensors fitted to each side of the rear of the vehicle. If a vehicle is detected when the turn indicator is operating, the warning light will flash at fixed intervals.

The Rear Cross Traffic Alert uses the same radar as the Blind Spot Monitor to warn the driver of any vehicles approaching from either side that may not be visible through the rear screen or door mirrors. If any vehicle is detected, the system flashes the warning lights in the door mirrors and sounds a warning buzzer.

Details of the Multi-terrain Select and Multi-terrain Monitor can be found in the section on Off-Road Technology, below

Trailer Stability Control

The Trailer Stability Control system (standard on Invincible grade) uses yaw rate, steering and acceleration sensors to detect any sway developing in a trailer. To make the trailer stable, it initiates deceleration and yaw moment control.

ON-ROAD PERFORMANCE

Body-on-frame construction

Much of Land Cruiser's legendary off-road toughness can be attributed to its robust and durable body-on-frame construction. Toyota carried the concept forward into the current generation, at the same time increasing body rigidity by 11 per cent.

Another advantage over the monocoque design used by many rival SUVs is the ability of the ladder frame to absorb vibrations and noise from the engine, drivetrain and road surface, so limiting NVH disturbance in the cabin. To further absorb NVH and aid a comfortable ride, the frame-to-body mounts are packed with insulating rubber.

Using high tensile steel within the body saves weight as well as increasing bodyshell rigidity.

Suspension

Land Cruiser uses an extensively revised version of the front independent double wishbone and rear four-link rigid suspension system that was used in its predecessor model, retuned for greater ride comfort and better steering feel.

At the front a long wheel stroke has been retained and the shock absorbers and springs have been fine-tuned. The shocks themselves are larger than before. The lower arm and knuckle have been reinforced and all the bushings have been retuned. To achieve better handling stability, the roll steer ratio was modified from five to eight degrees.

At the rear the long wheel stroke has been enhanced with optimised springs and larger shock absorbers. Bushings have been retuned and the axle housing has been reinforced for added strength and durability.

Kinetic Dynamic Suspension System

The electrically modulated Kinetic Dynamic Suspension System (KDSS), fitted to Icon and Invincible models, optimises the effect of the front and rear anti-roll bars for better on and off-road performance (see Off-Road Performance section below for further details).

On-road the system works to suppress body roll, improve steering response and absorb the effects of driving over poor road surfaces.

Individual hydraulic cylinders are fitted to the anti-roll bars, each with an upper and lower chamber. The front and rear upper chambers and front and rear lower chambers are connected to each other by separate hydraulic lines, each containing an accumulator.

As the vehicle begins to roll in a turn, equal wheel forces occur on the outer wheels. As a result, the fluid in the hydraulic lines remains still, holding the front and rear cylinder pistons in place, so the anti-roll bars suppress the suspension stroke and body roll is reduced.

On rough surfaces, a slightly uneven force is experienced between the front and rear wheels. In this case, the electrically controlled accumulator valves rapidly open and close to absorb the movement of fluid in the hydraulic lines. This dampens vibrations by absorbing bumps in the road surface, making for a more comfortable ride.

Adaptive Variable Suspension

An Adaptive Variable Suspension system is fitted to Invincible models, allowing the driver to fine-tune the Land Cruiser's ride characteristics. Three settings are available, controlled by a switch on the centre console: Normal mode for everyday driving; Comfort mode for extra comfort when cruising; and Sport mode for better body control and precise steering response when cornering.

AVS automatically adjusts suspension performance at all four wheels independently, monitoring data from numerous sensors to continuously optimise the damping force of each shock absorber by activating the appropriate actuator.

Working in response to driver inputs, vehicle body motion and road surface quality, AVS activates adjustable damping to fulfil a range of specific control functions: -

- **Vehicle speed-sensitive control** gradually increases the damping force as speed rises, to achieve low-speed comfort with high-speed driveability and stability.
- **Anti-dive control** increases the front-end damping force under braking to reduce front-end dive.
- **Anti-squat control** increases rear-end damping force to minimise squat during acceleration.

Selecting Sport mode automatically increases the difference between inner and outer shock absorber damping through corners to further reduce vehicle roll.

The AVS also incorporates Roll Posture Control, to give a vehicle posture that matches the driver's intuitive feeling. By controlling the damping force, the phase difference between roll angle and pitch angle when cornering is minimised.

Electronically Modulated Rear Air Suspension

An electronically modulated rear air suspension system (fitted to Land Cruiser Invincible) works in conjunction with the AVS to maintain optimum control of the rear suspension and give uncompromised stability and ride quality, regardless of how many people or the load on board. It also excels in absorbing high frequency vibrations to reduced road-generated NVH.

The system has five control modes: -

- **Auto Levelling**, which maintains a constant rear body height, regardless of number of occupants or size of load.
- **Switchable Height Control**, which lets the driver select a Normal, High or Low vehicle height setting.
- **Speed-Sensitive Control**, which ensures the best stability and ride comfort by automatically returning the vehicle from High or Low vehicle height to the Normal setting once a certain speed has been reached.
- **Ignition-off Linked Control**, which, activated for a certain length of time after the ignition is switched off, prevents the rear height from rising after passengers get out of the vehicle.
- **Height Control OFF switch**, which disables height control when lifting or towing the vehicle.

Variable Flow Control Power Steering

Land Cruiser uses the same hard-wearing hydraulic power steering system as its predecessor, but with the benefit of revisions and the addition of Variable Flow Control. VFC combines direct response and feel when cruising with easy operation at parking speeds, plus a dedicated setting for off-road driving.

The steering gear ratio has been modified for a more agile response to steering inputs, and the steering rack support bushings have been returned to reduce steering shake and vibration under braking, giving a more comfortable ride.

VFC is an evolution of traditional speed-sensitive power steering that takes into account factors such as vehicle speed, steering angle and steering rate to deliver an ideal steering

fluid flow in all driving conditions. Controlling the flow in this way adjusts how heavy or light the steering feels to the driver.

When the vehicle is travelling in a straight line, VFC is in stand-by mode, reducing the power draw on the engine and thus improving fuel economy. When cornering or manoeuvring, VFC gives instant response to steering inputs with the correct fluid flow rate. At low speeds the flow rate is increased to reduce steering effort, making the wheel easier to turn. As vehicle speed rises, the flow rate progressively decreases to give a more direct and responsive steering feel.

Because it is hard to judge terrain conditions if the steering feel is constantly changing, VFC incorporates a dedicated off-road setting that is automatically activated when the driver selects L4 mode. This setting recalibrates the system to give a constant fluid flow rate regardless of vehicle speed, steering angle or steering rate. This constant level of steering assistance helps the driver gain a better idea of how much grip the tyres have through the steering wheel.

Quietness

In addition to the significant NVH benefits from its body-on-frame construction, new Land Cruiser also features a number of measures designed to cut wind and road noise, resulting in a very quiet cabin environment.

Air cavities have been introduced into the bonnet silencer, reducing engine noise. Sound insulation materials are placed in the A, B, C and D-pillars and the door sill and head sections to minimise the transmission of noise through the bodyshell. Sound dampening and insulating materials are used throughout the cabin, in the carpeting, door trims, roof headliners, luggage compartment side trim and dashboard silencer.

Measures to reduce wind noise include an acoustic windscreen which has an inner layer of film sandwiched between the glass. The step between the windscreen and the roof and side rain gutters has been kept to a minimum, and a front spoiler and undercover are fitted to smooth the airflow under the front of the car.

OFF-ROAD PERFORMANCE

Underbody clearance and protection

An SUV designed to tackle truly tough off-road terrain has to have a generous ground clearance. This is not just about the distance between the lowest point of the vehicle body

and the ground: there are three other measurements that dictate the quality of off-road ability: the approach angle, ramp breakover angle and departure angle.

The five-door Land Cruiser has a minimum ground clearance of 215mm. The approach angle, which determines the maximum gradient the vehicle can approach without the underside of the front bumper hitting the ground, is 32°. The ramp breakover angle (measured from the centre of the underbody to the contact points of the front and rear tyres), which determines the gradient the vehicle can crest without the ground contacting the underbody, is 22°. And the departure angle, which governs the maximum gradient the vehicle can negotiate without the underside of the rear bumper hitting the ground, is 25°, or 24° on models equipped with air suspension.



Ramp breakover angle (NB vehicle not 2014 model design)

Land Cruiser can also be driven at a maximum bank angle of 42° and at a maximum forward or reverse pitch angle of 42°. Its maximum wading depth is 700mm.



Wading Depth

Bank Angle

Forward/reverse Pitch

Even with its generous ground clearance, there is always a risk of the underside of the vehicle hitting the ground when driving over very rough terrain. For this reason, both the front and rear bumpers and the ladder frame cross-member have been designed to slide easily over any obstacles. Many other SUVs have box-shaped cross-members, which means they can easily become caught on obstacles, bringing the vehicle to a halt and potentially causing damage. Land Cruiser's slanted cross-member is shaped to slide up and over such hazards, reducing the risk of damage.

Off-road performance data for the three-door model can be found in the technical specification tables below.

Suspension

As detailed in the on-road performance section, Land Cruiser has an independent front suspension design and a four-link rear system with a lateral rod, giving strength, reliability and durability with the degree of long wheel stroke that is required for outstanding off-road performance.

The left and right sides of the rear suspension are connected by a rigid axle, giving better ground clearance and body stability that could be achieved with an independent design.

Working in conjunction with the new Kinetic Dynamic Suspension System (see below), Land Cruiser's wheel articulation ensures all the tyres can gain the best possible ground contact, even over the most severe terrain.

Kinetic Dynamic Suspension System

Full details of the Kinetic Dynamic Suspension System (KDSS) operation can be found in the On-road Performance section. In off-road driving, KDSS, fitted to Icon and Invincible models, optimises the effect of the front and rear anti-roll bars to increase wheel articulation (the vertical distance an individual wheel can move while the others remain in contact with the ground).

Driving over rough ground generates unequal front and rear wheel forces, which causes the piston in each hydraulic cylinder to create an opposite stroke. This counteracts the resistance of the anti-roll bar and allows the suspension to move freely. With both front and rear anti-roll bars virtually disconnected, the available wheel stroke is maximised, ensuring all four tyres can remain in contact with the ground wherever possible.

Adaptive Variable Suspension and Electronically Modulated Rear Air Suspension

Both the Adaptive Variable Suspension (AVS) and electronically modulated rear air suspension systems on the Land Cruiser Invincible have bespoke off-road settings to maximise the vehicle's all-terrain abilities.

The AVS has a Damper Optimisation Control feature that automatically adjusts shock absorber damping force to suit vehicle speed when L4 mode is selected. At slow speeds the dampers are optimised for crawling over the roughest terrain, while at moderate speeds they adjust to suit normal driving conditions. This degree of control allows for uncompromised off-road performance while keeping the bumps and jolts caused by rough terrain to a minimum.

In addition, when driving off-road, the valve on the hydraulic pipe connection between the left and right hand rear air suspension units remains open to ensure maximum wheel stroke and articulation.

OFF-ROAD TECHNOLOGY

Land Cruiser is engineered to excel over sand, rocks or any other demanding conditions it might encounter; giving maximum traction at all times to deliver the level of off-road performance for which the model is world-renowned.

The grip, slip and torque requirements generated by different terrain will make different demands on the permanent four-wheel drive system. For instance, soft surfaces, such as sand, require as much power as possible to be transferred to the ground, allowing a large amount of slip to let the tyres dig in and achieve maximum grip. By contrast, the slow traverse of rocks or slippery surfaces requires precise regulation of power to the wheels to control wheelspin and ensure a constant, steady level of grip.

Full-time four-wheel drive with Torsen limited slip differential

Land Cruiser's proven permanent four-wheel drive system uses a Torsen limited slip differential in the centre differential. The LSD uses low viscosity oil to reduce friction and support vehicle fuel efficiency.

The unit has a motorised transfer shift actuator for easier High-Low gear ratio shifting and the shift effort itself has been reduced by 30 per cent, giving better performance in cold weather.

In normal conditions, torque is split 40:60 front to rear, but the LSD can automatically vary the ratio from 50:50 to approximately 30:70 in order to achieve the optimum distribution in any given driving scenario.

The four-wheel drive system also has a new rear differential, designed for greater reliability and strength with a 34 per cent increase in torque capacity. An additional rear diff lock is fitted to Invincible models, increasing stability especially in extreme off-road conditions.

Instead of a conventional transfer shift lever, Land Cruiser has an easy-to-use dial switch, located along with the centre and rear differential locking switches on the centre console. Using these switches in combination lets the driver choose H4F, H4L, L4F and L4L modes – that is High or Low gear ratio with the centre differential Free or Locked.

Active Traction Control

The Active Traction Control (A-TRC) system uses brake and engine control and the distribution of appropriate torque between all four wheels to maintain traction when pulling away or driving on low-grip surfaces.

The system receives constant speed signals from each wheel, so it can detect which might be spinning and which have traction. By braking the spinning wheels, controlling engine output and distributing torque to those with grip, it automatically provides maximum traction on rough terrain. It also helps avoid wheelspin when pulling away or accelerating, even on slick roads and muddy tracks.

Multi-terrain Select

Multi-terrain Select is an evolution of the A-TRC system and a Toyota first.

MTS automatically modifies vehicle acceleration, braking and traction control to suit the off-road conditions, providing the driver with optimum traction and vehicle control.

The system is activated using the multi-information switch on the steering wheel and accessed via the multi-information display. It offers four terrain modes: Mud and Sand, Loose Rock, Mogul and Rock. The mode selected is shown in the display, with an additional prompt to the driver to engage the appropriate H4 or L4 four-wheel drive transfer range. The Multi-terrain Monitor (full details in the Driver Information section) automatically displays the view ahead of the vehicle.

- **Mud and Sand** mode gives high wheel slip level in L4 or H4 to allow the wheels to dig into the surface and secure traction. The MTS traction control minimises selective wheel braking to permit a necessary degree of wheelspin. These functions work in combination to prevent the vehicle from getting bogged down on soft ground.



- **Loose Rock** mode works in the L4 range, allowing a degree of wheel slip to maintain tyre momentum and to affect a greater degree of selective braking to control wheelspin. This is particularly useful for maintaining vehicle momentum when climbing gradients.
- **Mogul** mode, which operates in L4 range, makes grip the priority by only allowing a moderate amount of wheel slip, to maintain a slow, steady vehicle speed. At the same time, MTS traction control applies moderate selective braking to maintain grip. This mode is recommended for any conditions that do not specifically match the other MTS modes. It will maintain momentum over even the most severe, irregular, undulating terrain.

- **Rock** mode, also used with the L4 transfer range, minimises wheel slip to give maximum grip, while simultaneously applying strong selective braking. With the slip ratio of each wheel controlled independently, maximum grip and traction are obtained, even when traversing large obstacles.



Drivers should choose an MTS mode on the basis of the amount of wheelspin encountered. For example, when excessive wheelspin prevents the vehicle from gaining enough traction, a more aggressive mode, closer to the Rock setting, should be selected. Conversely, when there is too little wheelspin to achieve the necessary traction, a less aggressive setting, closer to Mud and Sand is recommended.

In any of the four modes, if the vehicle is stuck and the wheels are spinning freely, the centre differential can be locked for added traction. If the wheels continue to spin after locking the diff in L4 range, the rear differential may also be locked (on the Invincible model). A Crawl Control function may also be used to free the vehicle.

Crawl Control

Crawl Control, another standard feature of the Land Cruiser Invincible can help the driver climb or descend slopes at walking pace, or free the vehicle when stuck, without having to touch the pedals.

The system works in L4 range and is activated by a dashboard switch. It gives a range of five speed settings, automatically controlling engine and brakes to maintain the desired

speed. With no need for careful use of the throttle or brake pedals, the driver can concentrate on steering the vehicle.

Crawl Control has a number of other benefits. Its smooth control allows a slow and steady pace to be maintained, avoiding the risk of wheels spinning or locking. This reduces the amount of body movement on severe terrain, helping prevent the vehicle from bottoming out and causing damage. It also permits wading at a similarly slow and even speed, reducing the risk of the engine flooding, or submerged objects causing damage. Crawl Control operates in reverse gear, too, helping the driver when backing up over difficult surfaces.

Multi-terrain ABS

The Multi-terrain ABS system fitted to Land Cruiser has been calibrated to give remarkable stopping power across a wide range of off-road surfaces. While the system prevents the wheels from locking under braking on Tarmac roads in the same way as a conventional ABS, it deliberately allows for a certain degree of wheel-locking on loose surfaces, helping the tyres find purchase by digging in, so increasing stopping power.

Hill-start Assist Control and Downhill Assist Control

Hill-start Control and Downhill Assist Control are fitted to both Active and Icon grades (the Invincible covers these functions with Crawl Control).

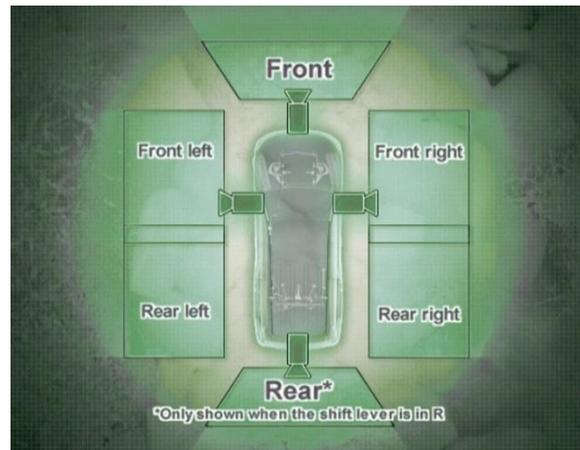
Hill-start Control detects any backward slip of the vehicle during an uphill start and temporarily applies the brakes to all four wheels for a maximum five seconds, allowing the driver to pull away without losing control.

Downhill Assist Control automatically governs vehicle speed to prevent the Land Cruiser from running downhill out of control. Operated by the driver, it can be switched on when L4 is selected in the transfer range. It works at speed less than 15mph, with no need for the driver to use the brake and accelerator pedals. Forward speed is controlled to between 3 and 4mph; reverse speed to between 1 and 3mph.

DRIVER INFORMATION

Multi-terrain Monitor

The Multi-terrain Monitor, fitted to Land Cruiser Invincible and available in the Safety Pack option for Icon models, works in conjunction with MTS to give the driver a better view of areas immediately around the vehicle that might be hard to see or obscured from the driver's eyeline. The system uses an array of four external cameras that feed live images to the multi-information screen on the dashboard, when moving forwards or in reverse.



The front camera uses a wide angle lens to give the widest possible forward view. Areas out of the driver's sight, such as immediately in front of the bonnet and to within 50cm of the bumper, can also be picked up by this camera.

As well as front and rear-facing cameras, there are cameras mounted on the door mirrors, which can project views from either the front or rear sides. The versatile display mode can show front and side views independently, or in a combined form. The driver can change the mode using the multi-information switch on the steering wheel and the display will indicate which cameras have been selected. When the shift lever is moved to the "R" position, the display automatically switches to the rear view.



The monitor also displays comprehensive information relating to the front view, including the camera range and location of any obstacles detected by the clearance sonar. Steering-linked guidelines are shown, mapping the predicted path of the front tyres to help the driver avoid any hazards ahead. The inner and outer edges of the front tyre paths are shown in red (within 0.5m) and yellow (within 1.0m) to indicate the distance from the front of the vehicle.



The side cameras let the driver view an image of the area around the left and right, front or rear tyres simultaneously, regardless of the vehicle's direction of travel.

Additional side camera information provided on the monitor includes the view range, the location of obstacles detected by the clearance sonar and the position of the contact areas of the front and rear tyres. Parallel lines indicating the vehicle's width are displayed 350mm from the side of the vehicle, and front and rear lines 100mm from the front and rear ends, helping the driver judge distances and accurately position the vehicle, even in the tightest surroundings.

Tyre Angle Display

The Land Cruiser Invincible is also equipped with a Tyre Angle Display, which compliments the Multi-terrain Monitor's predicted tyre path function. The system can be selected using the multi-information switch when MTS is operating. Guidelines linked to the vehicle's steering angle are projected in real time on to the display. Moving through seven steps, to keep the driver constantly informed about changes in tyre angle between zero and 45 degrees. The

Tyre Angle Display is also handy when parking, giving driver's an instant reminder of steering angle and tyre direction.

Body Angle Monitoring and Off-Road Traction Monitoring

The 2014 Land Cruiser marked the introduction of Body Angle and Off-Road Traction monitoring, displayed on the 4.2-inch colour TFT display in the centre of the instrument binnacle.

The former shows the vehicle's angle and direction, and shows an amber warning when a steep angle is being negotiated; the latter displays the performance of the traction control, steering angle and differential lock operation.

ENGINE AND TRANSMISSION

2.8 D-4D engine

In July 2015 Land Cruiser gained a new 2.8-litre D-4D engine which, although smaller in capacity than the previous 3.0-litre unit, generates higher torque, with reduced CO₂ emissions and improved fuel economy. At the same time, Land Cruiser's five-speed automatic transmission was replaced by a new six-speed unit.

The 2.8 D-4D produces a maximum 174bhp (130kW) at 3,400rpm. With automatic transmission, peak torque of 450Nm is delivered between 1,600 and 2,400rpm; with six-speed manual transmission the figure is 420Nm, available from 1,400 and 2,600rpm.

Carbon dioxide emissions are 190g/km for three-door models and 194g/km for the five-door, with both manual and automatic transmissions. Combined cycle fuel economy is 39.2mpg (three-door) and 38.2mpg (five-door, manual and auto).

Advanced turbodiesel engine technologies

The 2.8-litre D-4D is the first in a new generation of Toyota direct injection turbodiesel engines that benefit from advanced new design and technology to achieve much higher fuel efficiency, lower emissions and quieter operation.

Key to its performance is the world-first application of Thermo Swing Wall Insulation Technology, together with a SiRPA (a silica-reinforced porous, anodised aluminium coating)

on the pistons – reducing the cooling loss during combustion by about 30 per cent. SiRPA's high insulation and dissipation qualities make it easy to heat and to cool.

As a result, it is one of the most thermally efficient engines on the market: its thermal efficiency rating is 44 per cent.

The air intake port has been shaped to allow a significant increase in the amount of airflow into the cylinders; the piston combustion chamber shape has been revised; and the common rail fuel injection system allows for more advanced pressure control and injection optimisation. Air consumption is maximised, which enables high thermal efficiency and low emissions to be achieved.

Precise pilot injection, matching the state of the ambient air, takes place ahead of the main injection to shorten ignition delay. This means stable combustion is achieved, even in harsh environments, together with quiet running and high thermal efficiency.

Compact, high-efficiency variable geometry turbocharger

The GD engines use a new turbocharger that is 30 per cent smaller than its predecessor. Produced in-house by Toyota, it has a new turbine that improves efficiency and a new impeller that gives instantaneous throttle response and allows maximum torque to be obtained over wide engine rev range.

Toyota-first urea selective catalyst reduction system

Using Toyota's proprietary, compact, high-dispersion urea selective catalyst reduction system eliminates up to 99 per cent of NOx emissions, one of the principal causes of air pollution. This helps the engine conform to Euro 6 and other international emissions standards.

INTERIOR FEATURES

While it remains a tough, go-anywhere off-roader, Land Cruiser is a first-class on-road vehicle with a high level of refinement, interior quality, comfort and convenience, and practical application of advanced technology.

Design

Land Cruiser's cabin trims and detailing raise the overall tactile and perceived quality of the interior. The dashboard has been designed with a focus on making the vehicle's drive systems easier to access and monitor.

The centre console switch panel brings together controls for the on and off-road driving technologies. These include a selector dial for the five-mode Multi-terrain Select and five-step Crawl Control, flanked by switches for the all-wheel drive and Adaptive Variable Suspension.

Land Cruiser also features a 4.2-inch TFT colour screen, set between the main meters in the driver's instrument binnacle. The choice of functions includes a body angle gauge, traction control operation on each wheel and the status of the differential locks. The driver can select the screen functions using a control on the steering wheel, with additional options including tyre pressure warning, headlamp levelling, traction control "off" confirmation and Blind Spot Monitor alerts.

The Optitron speedometer and tachometer have thin needles and blue illumination, and centre console has a brushed metal finish for the upper audio control panel, above the central seven-inch colour display. Piano black and wood grain finishes are featured around the dashboard, door panels, centre console, steering wheel and gear lever, and an aluminium detail is added to the meter rings, air conditioning dials, air vent surrounds, audio panel and steering wheel.

Toyota has made it easy for drivers to find their ideal position at the wheel, with reach and rake adjustment for the steering wheel. The driver's seat has six-way manual adjustment on Active models and electric eight-way adjustment with power lumbar control and heating on Icon and Invincible versions; passenger seat adjustment is four-way manual or power, according to grade. The Invincible also provides a seat memory function.

The attention to detail can be witnessed in a soft-touch kneepad on the side of the centre console providing extra comfort for the driver's knee and shin, and a soft urethane pad on top of the centre armrest. Locating the off-road control switch at the base of the centre console makes it easier to use from either front seat.

Versatility

Land Cruiser is available in the UK three and five-door formats. Inside there is a 40:20:40 split-folding and reclining configuration for the second row seats. Front and rear doors all

have wider and lower openings for easier access and grab handles are provided to help access and exit all three rows of seats in the five-door version.

Second row seats

The second row seating layout gives more flexibility for arranging the interior to cope with different accommodation and load carrying requirements. The seat bases slide independently through a 135mm range, to gain extra legroom or load space as required. In Active models, which do not provide third row seats as standard, the second row seats can be double-folded to free up even more luggage room.

On the passenger side the second row seat has a walk-in function that is easier to use than the conventional seat-tumble system. A lever positioned on the side of the seat can be operated one-handed to simultaneously fold the seatback forwards and slide the seat base to its maximum forward position, to give generous access to the third row.

Third row seats

Instead of the “occasional use” seats found in some SUVs, the five-door Land Cruiser provides two proper seats with integral headrests, which can be folded completely flat into the loadspace floor.

Thanks to the sliding second row seat function, legroom is up to more than double that of the previous generation Land Cruiser, ranging from 489 to 618mm.

The left and right-hand seats, complete with headrests, can be lowered or raised independently in a smooth and easy action. A power seat-stowing and raising function is provided on Icon and Invincible models, using controls mounted inside the tailgate and behind the nearside second row seat. This feature also allows the third row seats to be reclined at the touch of a button.

Access to the third row seats is made easier by an increase in the folding angle of the second row seats to 46 degrees.

Storage

Clever packaging of the rear seats helps give Land Cruiser extra load capacity, compared to the previous model, in which the third row seats were stowed vertically on each side of the loadspace. With all second row seats in place, there is room for four suitcases to be carried in the rear loadspace; when the third row seats are raised, there is still space for one large and one medium size suitcase. Minimum loadspace width is 1,110mm, while the length from the tailgate to the back of the second row seats is a maximum 1,075mm.

The loadspace is fitted with a luggage net, tie-down hooks, utility rails (Icon and Invincible), a storage tray and a 3.8-litre storage box. A toolbox is stowed in a purpose-designed compartment in the tailgate.

Storage points are provided all around the cabin. Front seat storage includes a capacious glovebox, overhead sunglasses holder (with built-in conversation mirror), cupholders in three different sizes, and large front door pockets with built-in bottle holders. There is also a large storage box under the centre console armrest, big enough to hold four half-litre bottles and fitted with an upper level tray. On Icon and Invincible models this storage has a handy coolbox function.

Second row passengers are served by seatback pockets, twin cupholders and door pockets with bottle holders. Cupholders are provided for third row occupants, too. Twelve-volt power outlets are provided in the front and second rows, with a 220V AC power outlet in the loadspace.

Convenience

The interior makes good use of a range of high-technology, user-friendly systems designed to make life on board easier and more comfortable. Smart Entry and Start with sequenced lighting, automatic air conditioning (triple-zone on Icon and Invincible grades) and high quality in-car entertainment systems are among the features that add extra ownership rewards and help define the advances Toyota has achieved in quality and refinement.

Smart Entry and Start system

Land Cruiser can be locked and unlocked without handling the key fob. The front external door handles feature touch sensors that automatically lock or unlock the door, when the presence of the key fob is detected. Once inside, the vehicle can be started using the starter

button on the dashboard. The tailgate also has a lock/unlock button, located to one side of the number plate housing.

When the vehicle is opened, the interior roof lights and the starter button are automatically illuminated, together, where fitted, with side-step lights that light up both the top of the step and the ground immediately in front of the door.

Front footwell, map and vanity lights are also provided, along with independent second and third row reading lights. The shift lever and centre console are illuminated and the door trims, including the handles and storage pockets, have their own LED lighting.

Triple-zone automatic air conditioning

All Land Cruiser models are equipped with automatic air conditioning. On Icon and Invincible versions a triple-zone system is provided as standard. This allows separate temperatures to be selected for the front left and right sides and the rear of the cabin, with the temperature in the rear maintained by a separate air conditioning unit. On Active models the dual-zone system features air vents on the back of the centre console to feed warm or cool air through to the rear of the cabin.

Personalised multi-information display

Data presented on the multi-information display in the instrument binnacle can be selected and customised by the driver using the multi-information switch on the steering wheel. This switch can be used to choose from four modes: Cruise Information, Electronic Features Control, Multi-terrain Select and User Customised.

- **Cruise Information** mode gives access to range of trip information, including average speed, fuel consumption, elapsed journey time and cruising range.
- **Electronic Features Control** mode allows the driver to activate Multi-terrain Select, second-gear start and the parking sensors.

- **Multi-terrain Select** mode, described in the Off-Road Technology section.
- **User Customised** mode gives the driver the freedom to tailor up to 16 different features to suit personal preferences, with functions displayed in order of most frequently used. They include the timing of the follow-me-home headlamp function, lights-off timing of the external lights, sensor adjustment for the dusk-sensing headlamps, automatic door locking adjustment, control of the Eco Indicator display and language selection.

Wide-view front and side monitor

The cameras used for the Multi-terrain Monitor (described in the Off-Road Technology section) can also be used to help with parking manoeuvres in tight spots and at blind corners.

When the shift lever is in “D” or any other forward gear, the driver can use the Camera Mode button on the steering wheel to toggle between a wide 190° front view and a passenger side view, presented on the multi-information screen, or a combination of both, simultaneously. In Auto mode, the wide-view front and side monitors are automatically displayed at speed of less than 6mph, or when the vehicle is stopped with the shift lever in “D”.

Additional information can also be displayed on the screen, including parallel lines indicating vehicle width, a line showing the location of the front end of the vehicle, a predicted path line based on steering input and a predicted minimum turning path line.

Toyota Touch 2

The Toyota Touch 2 touchscreen-controlled multimedia system is fitted to Active grade models, while Icon and Invincible grades come with Toyota Touch 2 with Go, giving access to additional functions and navigation.

The standard Toyota Touch 2 features include: -

- Bluetooth, for hands-free phone calls, audio streaming and SMS/email messages.

- Vehicle information, for monitoring trip data, displaying climate control information and managing vehicle settings such as door locking and lighting operation to suit personal preference.
- MP3 player and iPod connection, either by Bluetooth or USB port or Aux socket The screen will display, where available, album cover, artist and track information.
- Multimedia management, control of the audio system.
- Automatic phone book download

Toyota Touch 2 with Go introduces the following functions: -

- Full map navigation, in 2D or 3D view, with clear display of major signposts, junctions and lane guidance.
- Intuitive detour, a new function that uses real-time traffic information to provide congestion alerts, estimate delays and suggest a detour.
- Speed limit and speed camera warnings, with an option speed warning setting and display of fixed speed camera locations (in some countries this function will need to be disabled to comply with local laws).

Toyota Touch with Go also opens up a host of online features that can deliver richer information about any journey and destination, and enable connection to popular and useful applications.

Features include: -

- Toyota Real-Time Traffic powered by TomTom, giving alerts on congestion and offering the option to re-route a programmed journey to avoid the jams and save time.
- Google Street View™ and Panoramio™, giving on-screen images of your current or chosen location, to help better confirm or recognise a destination.
- Access to other applications, including Twitter, Park&Go, on-line local search, fuel prices and local weather reports.

Vehicle owners need to register through Toyota's customer portal to gain 12 month's free access to the applications. Toyota Online services can be accessed using a Bluetooth-equipped mobile phone with an appropriate data plan and tethering.

JBL Synthesis Premium Surround Sound audio system

Icon and Invincible versions of Land Cruiser are equipped as standard with a 14-speaker JBL Synthesis Premium Surround Sound audio system. Developed exclusively for Land Cruiser, it delivers perfect 7.1 channel surround sound from selected CDs and DVDs, giving excellent clarity, dynamic response and enhanced bass performance. It also provides clear DAB radio reception.

Rear seat Blu-Ray entertainment system

Invincible versions of Land Cruiser are fitted with a Blu-Ray rear seat entertainment system that features a nine-inch LED backlit, ceiling-mounted VGA screen and 7.1 channel DVD surround sound for a complete home theatre experience for rear seat passengers.

The system can be operated using a remote control, but can also be switched on and off from the front seats. As well as opening and closing the screen, the remote can be used to adjust it to four different viewing angles.

Auxiliary inputs allow video cameras and games consoles to be connected and individual headphone jacks let rear passengers use the system without disturbing the driver.

GRADE STRUCTURE AND OUTLINE EQUIPMENT SPECIFICATIONS

Land Cruiser is available in the UK in three equipment grades: Active, Icon and Invincible. Equipment highlights are provided in the table below. In February 2017 an additional Invincible X model was launched, sharing the same specification as the Invincible but with the addition of black 18-inch *Pinnacle* alloy wheels, a rear underrun, chrome door mirror casings and chrome rear trim details, including exhaust tailpipe finishers.

| Active | Icon (adds) | Invincible (adds) |
|--|---|--|
| <ul style="list-style-type: none">- Vehicle Stability Control (VSC) with Active Torque Control (A-TRC)- Downhill Assist Control | <ul style="list-style-type: none">- Electronically modulated Kinetic Dynamic Suspension System (KDSS) | <ul style="list-style-type: none">- Crawl Control**- Adaptive Variable Suspension (AVS)/Active height control |

| | | |
|---|---|--|
| <p>(DAC) with Hill-start Assist Control (HAC)*</p> <ul style="list-style-type: none"> - Seven airbags, including driver's knee airbag - ABS with EBD - Active front headrests - 17-inch alloys - Leather steering wheel and gear shift trim - Body-coloured retractable door mirrors - Chrome radiator grille - Body-coloured doorhandles - Black side steps - Toyota Touch 2 - Fog lamps - Roof rails* - Cruise control* - Smart Entry and Start - Climate control - Scuff plates - 9-speaker audio system - Bluetooth - Rear-view camera - Toyota Touch 2 - Rear privacy glass (3dr only) <p>Options</p> <ul style="list-style-type: none"> - 3rd row seats - Toyota Touch 2 with Go - Leather upholstery and door trim with heated front seats (3-door model) - Leather upholstery and door trim with heated front and second row seats, triple-zone climate control and power front seat adjustment (5-door | <ul style="list-style-type: none"> - Triple-zone climate control air conditioning - Rear privacy glass - 18-inch alloys - Toyota Easy Flat rear seat system with third row seats (powered) - Third row curtain airbags - Leather upholstery - Electric, heated front seats - Illuminated entry - Rain-sensing wipers - Dusk-sensing headlights - Auto-dimming rear view mirror - Front and rear parking sensors - Toyota Touch with Go - JBL 14-speaker premium audio with DAB tuner - Cool box <p>Options</p> <ul style="list-style-type: none"> - Safety Pack with Pre-Crash Safety system, Adaptive Cruise Control, Lane Change Assist, Rear Cross Traffic Alert, Blind Spot Monitor, Multi-terrain Select and Multi-terrain Monitor - Protection Pack with side mouldings, boot liner and rear bumper protection plate - Style Pack with 18-inch alloys, chrome door mirror housings, chrome rear trim and rear skirt | <ul style="list-style-type: none"> - Multi-terrain Monitor - Steering Angle Display - Multi-terrain Select system - Seat memory package - Rear seat Blu-Ray entertainment system - Sunroof - Leather and wood steering wheel - Lane Change Assist with Blind Spot Monitor and Rear Cross Traffic Alert - Heated 2nd row seats <p>Options</p> <ul style="list-style-type: none"> - Two-tone leather upholstery |
|---|---|--|

| | | |
|--|--|--|
| model) – Style Pack with 18-inch alloys, chrome door mirror housings, chrome rear trim and rear skirt | | |
|--|--|--|

**In place of HAC and DAC

LAND CRUISER TIMELINE AND UK SALES

| YEAR | MONTH | EVENT |
|------|----------|--|
| 1951 | | First generation Land Cruiser launched in Japan, originally known as the BJ. |
| 1952 | | Land Cruiser becomes first Toyota passenger car to be exported from Japan. |
| 1959 | | Land Cruiser becomes the first Toyota model to be manufactured outside Japan, in Brazil. |
| 1975 | | First official Land Cruiser sales in the UK. |
| 2003 | January | 11 th generation Land Cruiser launched, replacing the Land Cruiser Colorado, powered by a 3.0 D-4D engine. |
| | March | Land Cruiser gains a 4.0 VVT-I petrol engine. |
| 2004 | March | Integrated ICE system introduced. |
| | December | Land Cruiser range revisions, including new six-speed manual and five-speed automatic transmissions and an upgraded 3.0 D-4D engine. LC ₃ becomes the entry point to the range. |
| 2005 | October | Specifications revised. |
| 2006 | Jun | Invincible limited edition introduced (500 examples), with power upgrade, based on the LC ₄ grade. |
| | November | Engines revised to meet Euro IV emissions standards. |
| 2007 | May | Top-of-the-range Invincible focus model added. |
| | October | Invincible replaces LC ₅ as mainstream flagship. |
| 2008 | March | 4.0 V6 petrol engine is deleted from the range. |
| 2009 | January | The three-door Land Cruiser is deleted from the range |
| | May | CO ₂ emissions on automatic models reduced to 224g/km , thanks |

| | | |
|------|-----------|--|
| | | to new low viscosity oil for the differential. |
| | September | The all-new Land Cruiser is unveiled at the Frankfurt motor show. UK customer order books open with first deliveries from December. |
| 2011 | January | Three-door Land Cruiser reintroduced. Euro 5 engine with DPF introduced. New 60 th Anniversary model introduced for 2011, replacing LC ₅ . |
| | October | 60 th Anniversary model makes way for the new LC ₅ grade. |
| 2014 | January | 2014 model introduced with new exterior and internal design features and additional equipment specification. |
| 2015 | July | A new 2.8-litre D-4D engine is introduced, replacing the previous 3.0-litre unit and available with a new six-speed automatic transmission. |
| 2017 | February | The range grows to include Invincible X grade. |

UK sales 2016: 751

Cumulative UK sales since launch (2003): 24,591

Cumulative UK sales of all Land Cruiser models since introduction (1975): 80,960

TOYOTA LAND CRUISER TECHNICAL SPECIFICATIONS

| ENGINE | | 2.8 D-4D | |
|--------------------------|-----------------|------------------------|-------|
| Engine type | | Four cylinders in-line | |
| Displacement (cc) | | 2,755 | |
| Valvetrain | | 16-valve DOHC | |
| Fuel injection type | | Common rail | |
| Emissions level | | Euro 6 | |
| Bore x stroke (mm) | | 92 x 103.6 | |
| Compression ratio | | 15.6:1 | |
| Max power (bhp/kW @ rpm) | | 174/130 @ 3,400 | |
| Max torque (Nm/rpm) | 6MT | 420 @ 1,400 – 2,400 | |
| | 6AT | 450 @ 1,600 – 2,400 | |
| TRANSMISSION | | | |
| | | 6MT | 6AT |
| Ratios | 1 st | 4.171 | 3.600 |
| | 2 nd | 2.190 | 2.090 |
| | 3 rd | 1.488 | 1.488 |
| | 4 th | 1.193 | 1.000 |
| | 5 th | 1.000 | 0.687 |
| | 6 th | 0.799 | 0.580 |
| | Reverse | 3.607 | 3.732 |
| PERFORMANCE | | | |
| Acceleration 0- | 6MT | 12.1 | |

| | | | |
|---------------------------------------|--|--|------------|
| 62mph (sec) | 6AT | 12.7 | |
| Max. speed (mph) | 109 | | |
| FUEL CONSUMPTION AND EMISSIONS | 6MT | | 6AT |
| | 3DR | 5DR | 5DR |
| Combined (mpg) | 39.2 | 38.2 | 38.2 |
| Urban (mpg) | 32.8 | 31.7 | 30.7 |
| Extra urban (mpg) | 43.5 | 42.8 | 44.8 |
| CO ₂ emissions (g/km) | 190 | 194 | 194 |
| Fuel tank capacity (l) | 87 | | |
| Insurance groups | Active 35A Icon 40A Invincible 41A | | |
| SUSPENSION | | | |
| Front | Double wishbone | | |
| Rear | Four-link with lateral rod | | |
| BRAKES | | | |
| Front | Ventilated discs | | |
| Rear | Ventilated discs | | |
| TYRES AND WHEELS | | | |
| Wheels | 17 or 18in | | |
| Tyres | 245/70R17 or 265/60R18 | | |
| OFF-ROAD PERFORMANCE | | | |
| Approach angle (°) | 32 | | |
| Departure angle (°) | 3-door | 26 | |
| | 5-door | 24 25 (with air suspension) | |
| Ramp angle (°) | 3-door | 25 | |
| | 5-door | 22 | |
| Side angle limit (°) | 42 | | |
| Climbing angle limit (°) | 42 | | |
| Minimum running ground clearance (mm) | 3-door | 205 | |
| | 5-door | 215 | |
| Wading depth (mm) | 700 | | |
| DIMENSIONS | | | |
| Overall length (mm) | 3-door | 4,335 | |
| | 5-door | 4,780 | |
| Overall width (mm) | 1,885 | | |
| Overall height (mm) | 3-door | 1,875 | |
| | 5-door | 1,890 (Active, Icon) 1,880 (Invincible) | |
| Wheelbase (mm) | 3-door | 2,450 | |
| | 5-door | 2,790 | |
| Front overhang (mm) | 915 | | |
| Rear overhang (mm) | 3-door | 965 | |
| | 5-door | 1,075 | |
| Front track (mm) | 1,605 (Active) | | |

| | | |
|---|--------|--|
| | | 1,585 (Icon, Invincible) |
| Rear track (mm) | | 1,605 (Active) 1,585 (Icon, Invincible) |
| Turning radius (m) | | 5.2 (3dr) 5.8 (5dr) |
| Load area capacity (5-door) – seats up, loaded to window line (l) | | 621 |
| Load area capacity (5-door) – seats folded, loaded to window line (l) | | 1,151 |
| WEIGHTS | | |
| Kerb weight (kg) | 3-door | 1,985 – 2,150 |
| | 5-door | 2,125 – 2,400 |
| Gross vehicle weight (kg) | 3-door | 2,600 |
| | 5-door | 2,990 |
| Towing capacity – braked (kg) | | 3,000 |
| Towing capacity – unbraked (kg) | | 750 |

TOYOTA LAND CRUISER EQUIPMENT LIST

| SAFETY | ACTIVE | ICON | INVINCIBLE | INVINCIBLE X |
|--|--------|------|------------|--------------|
| Two-stage driver and passenger airbags | ✓ | ✓ | ✓ | ✓ |
| Driver's knee airbag | ✓ | ✓ | ✓ | ✓ |
| Front side airbags | ✓ | ✓ | ✓ | ✓ |
| Full-length curtain airbags | ✓ | ✓ | ✓ | ✓ |
| Multi-terrain ABS | ✓ | ✓ | ✓ | ✓ |
| Electronic Brakeforce Distribution (EBD) and Brake Assist (BA) | ✓ | ✓ | ✓ | ✓ |
| Active Traction Control (A-TRC) | ✓ | ✓ | ✓ | ✓ |
| Vehicle Stability Control (VSC) | ✓ | ✓ | ✓ | ✓ |
| Side impact beams on all side doors | ✓ | ✓ | ✓ | ✓ |
| Front seatbelt pretensioners with force limiters | ✓ | ✓ | ✓ | ✓ |
| 3-point seatbelts with Emergency Locking Retractor | ✓ | ✓ | ✓ | ✓ |
| Dual-stage front passenger seatbelt warning system | ✓ | ✓ | ✓ | ✓ |
| Anti-whiplash active front headrests | ✓ | ✓ | ✓ | ✓ |

| | | | | |
|---|---------------|-------------|-------------------|---------------------|
| Head impact protection structure for roof side and pillar | ✓ | ✓ | ✓ | ✓ |
| Isofix child seat preparation | ✓ | ✓ | ✓ | ✓ |
| Adaptive Front-lighting System (AFS) | ✗ | ✓ | ✓ | ✓ |
| Blind Spot Monitor | ✗ | ✗ | ✓ | ✓ |
| Rear Cross Traffic Alert | ✗ | ✗ | ✓ | ✓ |
| Trailer Stability Control | ✗ | Opt | ✓ | ✓ |
| Safety Pack, featuring Adaptive Cruise Control, Pre-Collision System, Multi-terrain Monitor and Lane Change Assist with Rear Cross Traffic Alert and Blind Spot Monitor | ✗ | ✗ | ✓ | ✓ |
| OFF ROAD & HANDLING | ACTIVE | ICON | INVINCIBLE | INVINCIBLE X |
| Permanent 4WD | ✓ | ✓ | ✓ | ✓ |
| Hill-start Assist Control (HAC) and Downhill Assist Control (DAC) | ✓** | ✓ | ✗ | ✗ |
| Crawl Control | ✗ | ✗ | ✓* | ✓* |
| Centre Torsen Limited Slip Differential (LSD) | ✓ | ✓ | ✓ | ✓ |
| High/Low gear range | ✓ | ✓ | ✓ | ✓ |
| Rear differential lock | ✗ | ✗ | ✓ | ✓ |
| Centre differential lock | ✓ | ✓ | ✓ | ✓ |
| Multi-terrain Select (MTS) | ✗ | ✗ | ✓ | ✓ |
| Multi-terrain Monitor | ✗ | ✗ | ✓ | ✓ |
| Steering angle display | ✗ | ✗ | ✓ | ✓ |
| Body Angle Monitoring System | ✗ | ✓ | ✓ | ✓ |
| Off-Road Traction Monitoring System | ✗ | ✓ | ✓ | ✓ |
| Kinetic Dynamic Suspension System (KDSS) | ✗ | ✓ | ✓ | ✓ |
| Adaptive Variable Suspension (AVS) with Electronically Modulated Rear Air Suspension | ✗ | ✗ | ✓ | ✓ |

| COMFORT AND CONVENIENCE | ACTIVE | ICON | INVINCIBLE | INVINCIBLE X |
|--|---------------|-------------|-------------------|---------------------|
| Cruise control | ✓** | ✓ | ✓ | ✓ |
| Smart Entry and Start | ✓ | ✓ | ✓ | ✓ |
| Optitron instrumentation | x | ✓ | ✓ | ✓ |
| 4.2in colour TFT multi-information screen | x | ✓ | ✓ | ✓ |
| Automatic air conditioning | ✓ | x | x | x |
| Triple-zone climate control air conditioning | x | ✓ | ✓ | ✓ |
| Electric tilt/slide sunroof with one touch operation and anti-trap | x | x | ✓ | ✓ |
| Tilt and telescopic adjustable steering column | ✓ | ✓ | ✓ | ✓ |
| Dusk-sensing headlights | x | ✓ | ✓ | ✓ |
| Rain-sensing windscreen wipers | x | ✓ | ✓ | ✓ |
| Auto-dimming rear view mirror | x | ✓ | ✓ | ✓ |
| Back view monitor | x | ✓ | ✓ | ✓ |
| Front and rear parking sensors | x | ✓ | ✓ | ✓ |
| Multi-view monitor system | x | x | ✓ | ✓ |
| Utility rails in loadspace | x | ✓ | ✓ | ✓ |
| Illuminated entry | x | ✓ | ✓ | ✓ |
| Ventilated centre console box | ✓ | x | x | x |
| Refrigerated centre console box | x | ✓ | ✓ | ✓ |
| SEATING, UPHOLSTERY & TRIM | ACTIVE | ICON | INVINCIBLE | INVINCIBLE X |
| Manual driver/passenger seat adjustment | ✓ | x | x | x |
| Electric driver/passenger seat adjustment | x | ✓ | ✓ | ✓ |
| Electric driver/passenger seat adjustment with memory function | x | x | ✓ | ✓ |
| Electric lumbar support | x | ✓ | ✓ | ✓ |
| 40:20:40 folding and reclining 2 nd row | ✓ | ✓ | ✓ | ✓ |

| | | | | |
|--|---------------|-------------|-------------------|---------------------|
| seats | | | | |
| Two 3 rd row seats | Opt | ✓ | ✓ | ✓ |
| Easy-Flat rear seat folding | x | ✓ | ✓ | ✓ |
| Power 3 rd row seat operation | x | ✓ | ✓ | ✓ |
| Cloth upholstery | ✓ | x | x | x |
| Leather upholstery with heated front seats and (5dr model) second row seats | Opt | ✓ | ✓ | ✓ |
| Two-tone leather upholstery | x | x | Opt | Opt |
| AUDIO, NAVIGATION AND ENTERTAINMENT | ACTIVE | ICON | INVINCIBLE | INVINCIBLE X |
| Bluetooth | ✓ | ✓ | ✓ | ✓ |
| RDS radio / CD player with nine speakers | ✓ | x | x | x |
| Steering wheel-mounted audio and Bluetooth controls | ✓ | ✓ | ✓ | ✓ |
| Toyota Touch 2, including high-resolution touchscreen, Bluetooth, rear-view camera, car information display and USB port | ✓ | x | x | x |
| Toyota Touch 2 with Go, including features as above, plus full map navigation, SOS emergency call assistance, and access to connected services and downloadable applications | Opt | x | x | x |
| Toyota Touch 2 with Go Plus, including features as above, plus full map navigation, voice activation, text-to-speech function, SOS emergency call assistance, and access to connected services and downloadable applications | x | ✓ | ✓ | ✓ |
| JBL Synthesis premium audio with 14 speakers, surround sound and USB port | x | ✓ | ✓ | ✓ |
| Rear seat Blu-Ray entertainment system with drop-down 9in VGA screen | x | x | ✓ | ✓ |
| SECURITY | ACTIVE | ICON | INVINCIBLE | INVINCIBLE X |
| Remote central locking with double lock facility | ✓ | ✓ | ✓ | ✓ |

| | | | | |
|---|-----------------|-------------|-------------------|---------------------|
| Auto-relocking | ✓ | ✓ | ✓ | ✓ |
| Transponder engine immobiliser | ✓ | ✓ | ✓ | ✓ |
| Remote alarm with perimeter and microwave interior protection | ✓ | ✓ | ✓ | ✓ |
| Glass break sensors | ✓ | ✓ | ✓ | ✓ |
| Reinforced locks and latches | ✓ | ✓ | ✓ | ✓ |
| | ACTIVE | ICON | INVINCIBLE | INVINCIBLE X |
| Cloth upholstery | ✓ | x | x | x |
| Leather upholstery | Opt | ✓ | ✓ | ✓ |
| | ACTIVE | ICON | INVINCIBLE | INVINCIBLE X |
| EXTERIOR AND BODY | | | | |
| Colour keyed door handles and mirrors | ✓ | ✓ | ✓ | ✓ |
| Black front grille with chrome accents | ✓ | x | x | x |
| Silver-finished front grille | x | ✓ | ✓ | ✓ |
| Metallic paint | Opt | Opt | Opt | Opt |
| Side steps - black | ✓ | x | x | x |
| Side steps – aluminium, illuminated | x | ✓ | ✓ | ✓ |
| Scuff plates | ✓ | ✓ | ✓ | ✓ |
| Mudflaps | ✓ | ✓ | ✓ | ✓ |
| Colour keyed front and rear bumpers | ✓ | ✓ | ✓ | ✓ |
| Chrome door mirror covers and rear trim and | x | x | x | ✓ |
| Rear privacy glass | ✓ (3dr only) | ✓ | ✓ | ✓ |
| Roof rails | ✓ | ✓ | ✓ | ✓ |
| 17in six-spoke alloy wheels | ✓ | x | x | x |
| 18in six-split-spoke alloy wheels | x | ✓ | ✓ | x |
| 18in black alloy wheels | x | x | x | ✓ |
| Electrically adjustable, heated and retractable mirrors | ✓ | ✓ | ✓ | ✓ |
| LED headlamps with integrated daytime running lights | ✓ | x | x | x |

| | | | | |
|--|---|---|---|---|
| LED headlamps with integrated LED daytime running lights | ✓ | ✓ | ✓ | ✓ |
| Retractable headlamp washers | ✓ | ✓ | ✓ | ✓ |
| Front fog lights | ✓ | ✓ | ✓ | ✓ |

* In place of HAC and DAC; ** Not 3-door

ENDS

Ref: 170201M