

# 4WD BUYERS GUIDE

## TOYOTA LANDCRUISER 200 SERIES

### LARGE WAGONS

When the much-anticipated 200 Series was launched in November 2007 there was good news and bad news for LandCruiser fans. The good news was the significantly upgraded mechanical package in the 200 Series, but the bad news items were a price range that *started* at seventy grand and the demise of manual transmissions and the Standard-grade model.



The Australian 200 Series consists of three specification grades: GXL, VX and Sahara. All three grades are available with a choice of V8 power, either petrol or diesel.

The petrol 4.7-litre is a development of the existing 2UZ-FE V8, with variable inlet valve timing providing a claimed 18 percent more power and reduced fuel consumption. The new engine puts out 202kW at 5400rpm, with a torque peak of 410Nm at 3400rpm.

The 1VD-FTV diesel is an intercooled, twin-turbo version of the 70 Series' 4.5-litre single-turbo V8. Maximum power is 195kW at 3400rpm and a whopping 650Nm of torque is on tap from 1600rpm up to 2600rpm.

A carry-over, five-speed automatic bolts behind the petrol V8, while the diesel picks up a new Aisin six-speed auto. Both powertrains are fitted with a two-speed transfer case and a Torsen lockable centre differential that provides full-time 4x4 operation.

All 200 Series wagons sit on four-coil suspension, with a double-wishbone, independent layout up front and a live-axle, five-link design at the back. The front end is all-new, replacing the previous torsion-bar IFS, but the rear end is similar to the 100 Series' arrangement.

Traction aids have been upgraded from the 100 Series level and all 200 models come with multi-terrain ABS braking with electronic brake force distribution and emergency brake pressure assistance. Also standard are a brake-pressure delay that provides hill-start assistance, traction control and vehicle stability control.

The brake hardware has been upgraded, with larger, four-piston ventilated brake discs up front and ventilated rears. This means that 16-inch wheels won't fit, so the standard wheel size is 17-inch.

# Toyota LandCruiser 200 Series

Standard on all variants except the GXL turbo-diesel is Australian-designed Kinetic Suspension KDSS is a \$2500 option on the very model that's the biggest-selling variant. Cynics might suggest that's a money-grabbing move.

## KDSS

In the 200 Series' Kinetic Dynamic Suspension System the left-side ends of the front and rear anti-sway bars are fitted with hydraulic cylinders that are hydraulically linked by a pair of lines running along the inside of the left chassis rail.

When the vehicle is cornering to the left or the right on-road the cylinders are in phase, so the hydraulic lines 'lock' and the anti-sway bars act to resist body roll.

Off-road the front and rear cylinders are out of phase as the front and rear wheels rise and fall, so the anti-sway bars are deactivated, allowing unrestricted suspension movement and maximum wheel travel.

The additional wheel travel allowed by KDSS was clearly felt off-road, as was the absence of anti-sway bar bump reaction on slow, rutted tracks.

On-road the 200 Series test vehicles sat very flat through high-speed sweepers.



Crawl Control is a Toyota exclusive that was fitted to the petrol models only in 2007, but was made standard on all 200s from September 2009.

### Crawl Control

Crawl Control is designed to reduce the likelihood of driver error in steep up and down hill situations. With Crawl Control engaged the vehicle climbs and descends at one of three selectable speeds, without the need for the driver to touch the accelerator or the brake pedals.

The vehicle maintains its target speed uphill, by automatic accelerator and traction control operation. On steep descents Crawl Control combines engine braking with traction control operation of the wheel brakes.



All post-2009 200s come with a rear-view camera, audio controls on the steering wheel, a 12-Volt rear accessory socket, 3.5mm audio input jack and a USB port and auxiliary input.

The post-2009 'entry-level' LandCruiser 200 Series GXL has a new driver's seat with mechanical height and power lumbar adjustments.

A moonroof is standard on all post-2009 VX and Sahara variants and dark grey, instead of green, privacy glass. A DVD rear-seat entertainment system with three wireless headphones and the ability to play through the audio system was also added.

However, these models lost bush ability with a change to 18-inch wheels from 17-inch.

The 200 Series bodywork sits on a chassis that combines the US-market Tundra's front section with a specific-build chassis rear section. A shorter engine bay that no longer has to accommodate big in-line six-cylinder engines means there's a claimed 130mm interior length increase in the 200 Series body, despite the fact that the new vehicle is built on the 100 Series' 2850mm wheelbase and is only 60mm longer overall. Body width is up by 30mm.

Weight is also up, which is why some 2007-2009 models weren't available with sub-tanks. In calculations that allow for eight people on board, at an average weight of 75kg, plus filled sub tanks, some models would exceed the 3300kg gross mass rating of the 200 Series. That situation changed in September 2009 when all grades came standard with a 45-litre sub-tank in addition to the main 93-litre fuel tank.

The VX and Sahara turbo-diesel models became seven-seaters to allow for the extra fuel weight.

All 200 Series wagons except the 2012 GX model are fitted with 'Smart Entry and Start', the dopest thing to be called 'smart' since George Bush's graduation. It's too easy for one of the crew to leave the vehicle with the key in hand, so those in the vehicle can't turn the engine off and back on. The bush-practical GX has a conventional key and so should every other 4WD vehicle.

Underbonnet in the 200 there's space for a second battery in petrol machines but the diesel already has dual starting batteries.

## Toyota Releases the Standard 200 Landcruiser it Should Have Built Four Years Ago

When we attended the launch of the 200 Series in late 2007 we were appalled at the price of the new vehicle and the fact that there was no equivalent to the 100 Series Standard model. We weren't the only ones: the dealer body was less than impressed and so were the customers. Guess what? In November 2011 Toyota announced that it had finally 'listened to the demands of miners, farmers and other customers by launching an even tougher LandCruiser 200 Series wagon'.



The 2012 turbo-diesel GX comes with vinyl floors, twin, vertically hinged barn doors at the rear, 17-inch steel wheels, a snorkel, 93-litre main and 45-litre auxiliary fuel tanks, five seats, under-body protection plates and a standard car key.

Creature comforts are confined to a single CD player, manual air-conditioning, power windows with driver's auto up/down and power-operated exterior mirrors.

The GX also retains GXL safety equipment: driver and front-passenger airbags, curtain-shield airbags, vehicle stability control, active traction control, hill-start assist, multi-terrain anti-skid brakes and Toyota CRAWL.

There's a drawback of course: a 78 grand price tag! The sweetener is fixed price, \$210 servicing for the first 60,00km.

## On and Off-road

The on-road dynamics of all three 200 Series grades are pretty good, if not in the Discovery/Rangie Sport class. The front end handles rough surfaces with aplomb and the KDSS suspension provides flat, car-like handling and manoeuvrability that belies the heavyweight nature of these machines.

Only on severe corrugations at higher speeds than most owners would use do the rear dampers struggle to control live axle reaction. Steering precision is excellent, with little kick-back from bumps.



The petrol and diesel V8s provide more than ample grunt for solo vehicle work and the auto boxes have slick, shock-free shift actions. The gated, sequential shift layout, with Tiptronic-style up and down flick action is very easy to use.

The multi-terrain ABS brakes are very impressive, providing bitumen-like stopping distances on loose gravel. We can't say the same for headlights that fall way short of the 200 Series' mile-eating ability.

Off-road it's a story of accomplished performance, but with some ground clearance issues at the front end. The Crawl function works superbly, making safe rock climbers and descenders out of novices. DAC controlled downhill speed strongly. However, over-bonnet vision is poor.

The Smart Entry and Start system is a bloody nuisance. One of our passengers had the key in his pocket when he loaded camera gear into the vehicle and that allowed the push-start button to work. However, when he went wandering off later on we were left in the wagon, unable to turn the engine off for fear of not being able to restart it.

Oil consumption is a big problem with the 200 Series diesel and several supposed 'fixes' haven't stemmed the oil flow through this V8 diesel. Oil consumption is erratic we've found and an engine that hasn't used oil for a few thousand clicks will suddenly use plenty. Typically, we've had to top up oil every 1-2000km on long bush trips!

The Sahara's navigation system is completely useless off-bitumen, with virtually no dirt road mapping. Nissan has detailed bush track mapping in the Ti's nav system – why can't Toyota do the same, in a vehicle that costs thirty grand more?

The LandCruiser 200 Series is somewhat disappointing, particularly in the case of the VX and Sahara models, given the high retail prices. Alongside competitors in this price range that offer height-adjustable air suspension, electronically controlled centre and axle diff locks, HID lights, auto headlights and wipers, trailer-recognition VSC, fold-away third-row seats and classier switchgear the 200 equipment list looks decidedly underdone. The GXL is also under-equipped for the money.

However, from the fit and finish point of view the new Toyota is very good and dynamically, it's one of the best 4WD wagons in the world, on and off road, with prodigious towing ability.

## Previous Models

A good, used 100 Series turbo- diesel is an affordable alternative to the 200. Fit diff locks front and rear and you'll have a 100 that can more than match the 200's traction control. The 100 turbo-diesel is the pick

The 100 Series replaced the 80 Series early in 1998 and was produced until late-2007, giving it a 10-year life cycle. Although the bodywork was new the 1998 100 Series Standard, RV and GXL models relied on carry-over engines from the 80 Series: an upgraded 4.5-litre petrol six, with outputs of 165kW at 4600rpm and 387Nm at 3600rpm, and the IHZ 4.2-litre, naturally-aspirated diesel, with outputs of 96kW at 3800rpm and 285Nm at 2200rpm.

The previous Sahara version was replaced by a GXV model, powered by the Lexus LX470's 4.7-litre V8, with outputs of 170kW at 4800rpm and 410Nm at 3400rpm.

The standard transmission across the Standard, RV and GXL range was a five-speed manual. A four-speed automatic was optional on the RV and GXL petrol and diesel models, and standard on the GXV.

The Standard model retained part-time 4WD, with manual free-wheeling front hubs, but the other variants had full-time 4WD operation, with a manually lockable centre differential.

Standard, RV and GXL models retained the 80 Series' coil-sprung live front and rear axles, but the GXV introduced a torsion-bar-sprung, double wishbone, independent front suspension, in conjunction with a coil-sprung live rear axle.

A limited-slip rear differential was standard on all variants, except the GXV, which had a manually-lockable rear diff. Few of this model were sold and the lockable diff was replaced by electronically controlled traction and 'swerve' control in 1999.

Front and rear axle diff locks were optional on the Standard, RV and GXL models.

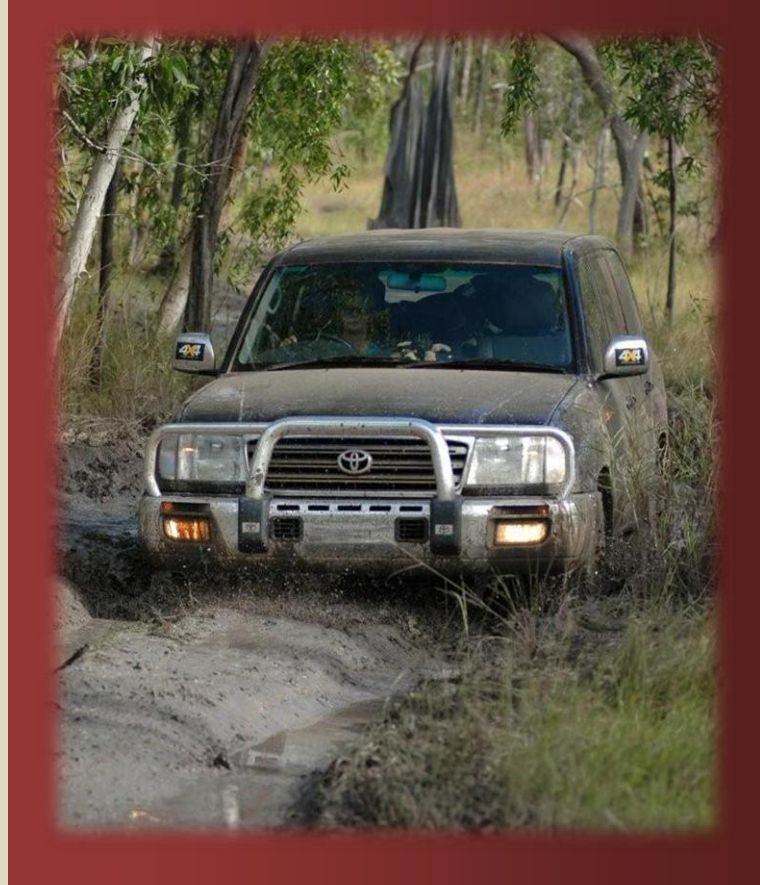
Disc brakes were fitted and ABS was standard on the GXL and GXV and optional on the RV.

In late 2000 a direct-injection 1HDTE turbo-diesel engine was introduced, giving diesel buyers a much needed performance boost, especially for towing. The claimed outputs were 151kW at 3400rpm and 430Nm at 1400-3200rpm.

Two downsides were the fact that the turbo-diesel was available only in GXL and GXV specification levels and part of the package was independent front suspension. Many GXL turbo-diesel buyers wanted a live front axle, but no dice. Pricing was very steep, as well, with GXL turbo-diesels retailing from 65 grand. The good news for GXV buyers and bad news for then-owners was a cut in the retail price of 10 grand.

In October 2002 a new five-speed automatic replaced the old four-speed and the in-line, 4.5-litre petrol six was dropped in favour of the V8 petrol engine from the GXV model.

The GXV nomenclature was replaced by the reintroduced Sahara nameplate on auto models, with a choice of turbo-diesel or petrol V8 power. The petrol model had an electronic accelerator and continued to be available with swerve and traction control. The turbo-diesel had a mechanical accelerator linkage that wasn't compatible with swerve and traction control, so the manual rear diff lock from the original GXV was fitted.



In what was seen by off-roaders as a series of backward steps the factory-fitted front and rear diff lock option was discontinued on all but the Standard model; the RV version was discontinued; and independent front suspension became the fitment on all but Standard and naturally-aspirated diesel GXL models.

In 2004, limited-edition Kakadu GXL automatic models were sold, with much-needed power adjustable front seats and front and rear air conditioning. This model also featured 17-inch wheels, a tilt-telescope steering column and a cool box between the front seats.

For 2005 GXLS, manual driver's seat adjustment was made standard, along with front and rear aircon and LED tail and stop lamps. The Sahara received electronically modulated suspension height and damping control.

Early 100 Series petrol sixes didn't compare well against the 4.8-litre petrol Patrol, which had more grunt and a five-speed auto box. The Patrol also had more ground clearance and a much more powerful limited-slip rear differential.

With the 4.7-litre Lexus V8, matched it to a new five-speed automatic transmission and independent front suspension, the on-road performance honours swung the way of the 2002 LandCruiser, along with better economy than the Nissan six.

The LandCruiser's independent front suspension gave it a handling edge over the Patrol on all made surfaces and the Toyota's rack and pinion steering was more precise than the Patrol's recirculating ball unit. However, the Patrol still had an off-road advantage, because the 2002 LandCruiser 100 Series had noticeably lower ride height than its predecessor and continued to use a weak rear LSD.

When it came to diesels the Nissan's 4.2-litre, indirect-injection six and direct-injection 3.0-litre were competitive with the naturally aspirated Toyota diesel, but neither could match the Toyota turbo-diesel, in terms of performance or economy.

The 100 Series has been a reliable workhorse, but the front differential was a weak link throughout its entire 10-year life span, in both live-axle and IFS models. A small diff centre was found wanting in off-road conditions and failures were common.



Front and rear diff locks helped prevent the 'spin-out' that smashed many 100 Series' diffs. In early 2004 there was a spate of front suspension lower control arm failures in LandCruiser 100 Series IFS vehicles, so a check of any IFS model is necessary. The failures seemed to be related to manufacturing processes, because the problem hadn't been apparent in earlier 100s and wasn't obvious in later models. ARB designed a retro-fit reinforcing plate to reduce the likelihood of lower control arm failure.

Toyota's 4.5-litre in-line six and 4.7-litre V8 petrol engines have been pretty well bullet-proof. Unlike Nissan, Toyota discourages LPG conversions on its petrol engines, so any LPG LandCruiser needs to be assessed carefully. Valve seat recession is possible in gas-fuelled engines.

Diesel 100 Series need to have had regular, professional maintenance to ensure reliability. The naturally-aspirated 1HZ engine is a pre-chamber, indirect-injection type that needs oil changes at no more than 5000km intervals. A detailed service history is an essential requirement with a used 100 Series diesel. Many 1HZ naturally aspirated diesels have been fitted with after-market turbos and these installations give little trouble if the boost and fuel delivery haven't been too ambitious, and servicing has been regular.

Many 100 Series have been modified to suit towing or bush work, with tyres and suspension being the most common changes. The original Grandtreks were marginal performers on and off road and ground clearance was always an issue, but particularly so in the case of IFS models. Vehicles used off road or for towing are likely to have suspension upgrades that incorporate a lift. Avoid 100 Series with high lifts, over 50mm, or you may have registration issues.

The 100 Series is infamous for the problem of freight in the back moving and locking the rear door latch. The latch is there as an emergency exit from the cargo area, but if you've fitted a cargo barrier you can't get into the back to open the latch. Make sure nothing can fall against the latch when the tailgate is shut. Another perpetual tailgate issue is dust entry causing the catches to seize.

We've heard of roof racks causing rain leaks inside the cabin, so check for rust.

The standard two-battery arrangement in turbo-diesel models is not what the market understands as a dual-battery installation, because both batteries are used for starting. You'll need a third battery if you want to run a fridge.

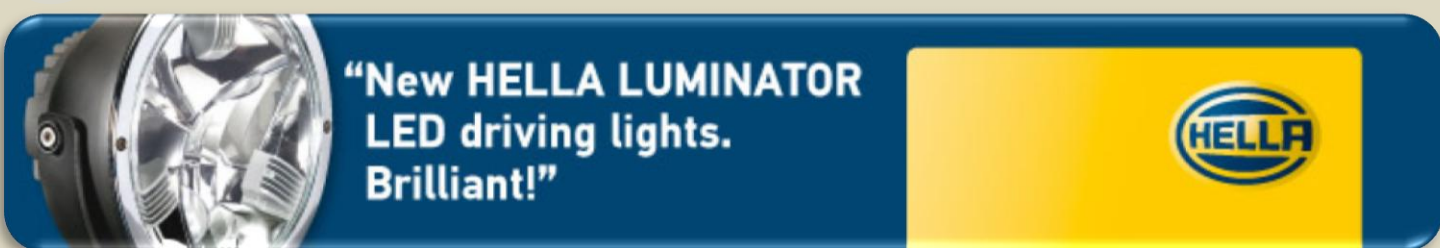
Many owners were unhappy with the standard spare wheel location, under the auxiliary fuel tank, so a swing-away spare wheel carrier was a common fitment. This relocation allowed more fuel tank space and many owners fitted larger auxiliary tanks.

## Bush Modifications

The 200 has ordinary ground clearance, so an after-market suspension kit is necessary, with a height increase around 50mm. After-market specialists have developed a GVM upgrade for the 200, increasing payload by a much-needed 280kg. If you intend to upgrade the standard suspension the best starting point is a GXL without KDSS.

Petrol and diesel 200s breathe through the inner mudguard, so a snorkel fitment is straightforward. A deep cycle (third) battery can be fitted under the bonnet of diesel 200s.

After-market diff locks front and rear will work in concert with the standard traction control system, taking the work load off the electronics and preventing power delivery loss in soft sand. There is a host of other after-market accessories for the LandCruiser 200 Series, including drawer kits, cargo barriers, winches, bars, spare wheel carriers and roof racks.



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