

RGMOTORSPORT TOYOTA LAND CRUISER PRADO V6

Towing the line

RGMotorsport's super-charger conversion for the new Toyota Land Cruiser Prado adds a hefty dollop of power to this premium SUV's already impressive V6 powerplant. But how does it improve the engine's efficiency in real-world conditions? And how fast is it really? To find out, we headed for the drag strip at Tarlton International Raceway... with a 1,1-ton Jurgens Fleetline caravan in tow

Text and photography:
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Main photo: RGMotorsport's 326 kW supercharged Prado was pitted against a standard version. The two vehicles were taken to Tarlton International Raceway and tested over a quarter mile with a caravan in tow.

A standard Toyota Prado 4.0 V6 is no slouch.

With 202 kW of power and 381Nm of torque, Toyota's popular SUV delivers a very respectable performance. Twenty years ago any vehicle with more than 200 kW of power would, without doubt, have been considered a performance machine.

However, with the addition of lots of extra technology and luxury, and added safety features, the modern Prado is no lightweight, and it tips the scale at nearly 2,3 tons. So it doesn't quite offer the spine-tingling top speed and acceleration one might associate with 202 kW of power. That's simply because the Prado, at its core, was never designed to be a speed merchant. Instead, there is much more to it.

Underneath the vehicle's sleek urban veneer lurks a true 4x4. While quite at home in rush-hour traffic, the Prado likes to venture off the beaten track.

And it has the specifications to prove it. With permanent four-wheel drive, low range, centre and rear differential locks, Hill Start Assist, Crawl Control and Multi-terrain Select systems, the vehicle can take on just about any 4x4 course.

So for those looking for a super elegant, super luxurious and super safe SUV that is also capable of tackling rugged off-road terrain, the Prado is an obvious choice.

But what if you want a competent off-roader cum daily runner that offers a bit of extra oomph? Something a bit more rorty, and sporty? Surely, in this day and age, 4x4 enthusiasts should be able to have their cake and eat it? Right?

Up, up... and away

Enter RGMotorsport, a local company that specialises in improving vehicles' performance.

With the aid of RGMotorsport, Prado owners can now add some serious muscle to their vehicles' engines.

How much muscle? Simply put, lots and lots.

After RGMotorsport's technicians are done fiddling with the latest Prado's four-litre V6 engine, with its variable valve timing, intelligent (VVT-i) system, maximum power rockets up to 326 kW and torque increases by 159 Newton metres – from 381 to 540.

That's a massive hike in power and torque.

Of course, we had to test it.

Dynometer readouts tell one story. We wanted the real story. So we had to ask ourselves: what would be a suitable power test for a leisure vehicle such as a Prado V6?

The answer: hook up a caravan behind it and see how it performs against the clock. After all, an increase in power is never more useful than when towing a bulky caravan.

With this in mind, we headed for Tarlton Raceway's drag strip. Once there, we placed RGMotorsport's Prado next to a standard version, connected identical Jurgens Fleetline caravans to each... and let rip.

Predictably, RGMotorsport's Prado outperformed the normal version.





Left: Rob Green (left) and Reghard Roets from RGMotorsport carefully monitored their vehicle's performance during the tests. Above: Reghard Roets (left) and Rob Green from RGMotorsport with their supercharged four-litre V6 Prado. Below: The source of the Prado's added power, RGMotorsport's supercharger conversion.

With the addition of lots of extra technology and luxury, and added safety features, the modern Prado is no lightweight, and it tips the scale at nearly 2,3 tons

The supercharged version went from 0 to 100km/h in 13,3 seconds, while the standard model needed 19,5 seconds. To complete the quarter mile, the RGMotorsport Prado needed 19,3 seconds (at a terminal speed of 119,4km/h). The standard Prado required 21,89 seconds (at 104,6km/h).

The addition of the hissing and blowing supercharger, the burbling and howling free-flow exhaust system and other modifications ensured a clear advantage for the souped-up vehicle.

While the standard Prado certainly didn't struggle to get the 1120kg Jurgens Fleetline off the line, RGMotorsport's was markedly quicker. It was especially the extra torque that made the difference immediately off the line, as the howling RGM Prado showed a clean pair of heels to the quieter and more reserved standard version.

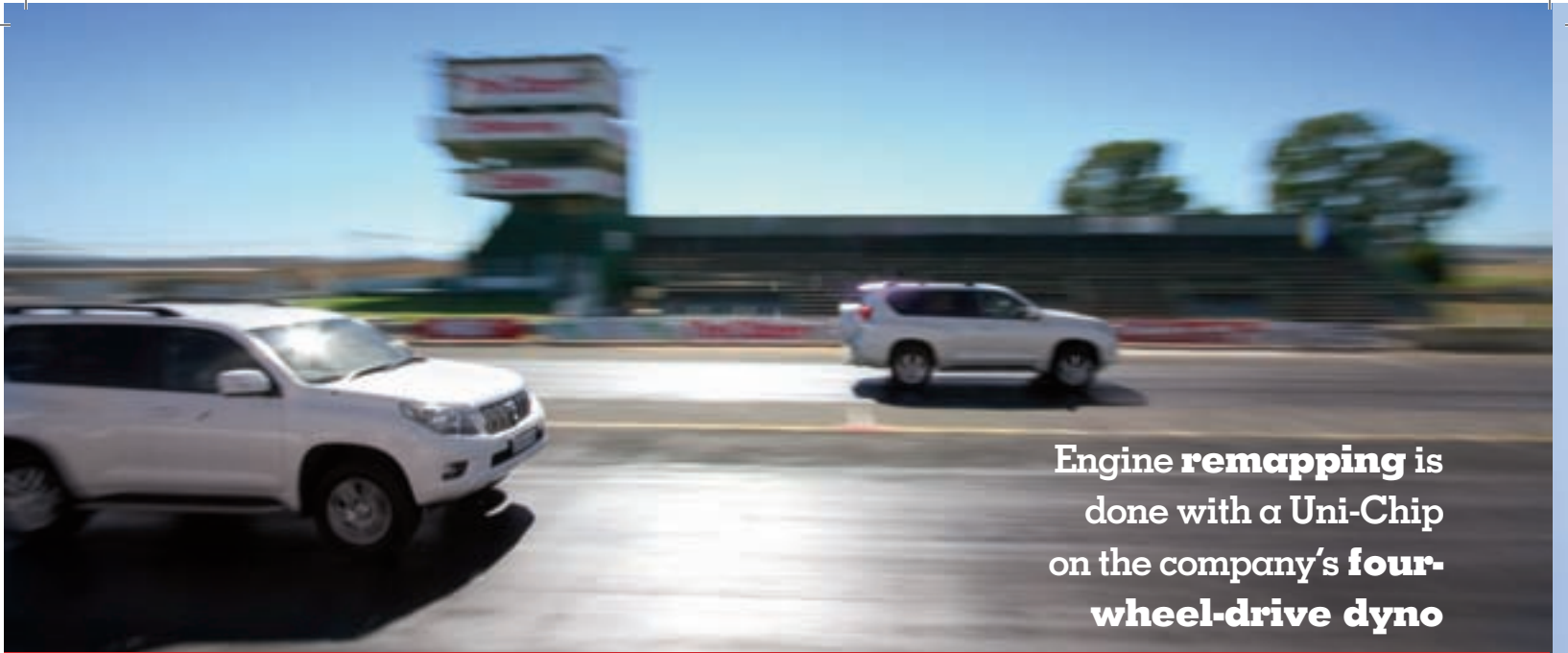
And this, in short, is why supercharger conversions on SUVs and bakkies are becoming increasingly popular. A little bit of



extra power adds immensely to these large vehicles' drivability.

"The average SUV is very big and heavy and is therefore often a bit under-powered," says Reghard Roets, marketing manager for RGMotorsport. "This is especially true at high altitudes – in Gauteng, for example – where a vehicle can lose up to 18% of its power compared to sea level. Because of this, giving them more power and torque greatly increases their towing ability and, of course, makes them more fun to drive."





Engine remapping is done with a Uni-Chip on the company's four-wheel-drive dyno

Above and below: In addition to the caravan test, the supercharged Prado's performance was also measured without a caravan. Its quarter mile time and acceleration was compared to that of a standard version. Predictably, the supercharged version came out on top.



Roets says SUV conversions are very popular – more so, in fact, than sedan and coupe conversions.

“On average, we do about four or five SUV and bakkie supercharger conversions for every performance car that we take on. Nissan, Toyota and Isuzu vehicles are especially popular, but we also do a fair number of Jeeps and Land Rovers.”

So how is all this extra power created? And how drastically does the vehicle need to be altered to accommodate the conversion? Surprisingly, RGMotorsport's modification is not very invasive. The supercharger conversion consists of a belt-driven Vortech supercharger that boosts manifold pressure by up to 0,5 bar. Air is fed through a RGMotorsport carbon induction system to the supercharger before being cooled by a water-to-air liquid charge cooler as it enters the engine.

Engine remapping is done with a Uni-Chip on the company's four-wheel-drive dyno. A stainless steel performance exhaust completes the conversion.

Optional extras for most vehicles include performance or off-road suspension and brake upgrades. The installation is therefore totally bolt-on, and the engine is not opened or tampered with. Body panels aren't modified, either. This means that the entire operation is completely reversible.

Your vehicle will lose its manufacturer's warranty, but RGMotorsport is willing to back up its work.

“We will take over the factory warranty for a period of up to three years or 100 000km on late model vehicles. This includes all mechanical and electrical components,” says Roets.

A Petrol Anonymous member, right?

The big question, which our more cynical (and realistic) readers may ask, is: how much petrol does this thing use? After all, a substantial increase in power must surely result in a significant increase in fuel consumption.

Not so, says RGMotorsport. Because the engine is more powerful it doesn't need to work as hard to lug all that weight around. This means that it is actually less thirsty, especially when towing a weighty caravan. Yeah right, we said. We've heard that one before.

So a straightforward fuel test was devised: fuel consumption would be measured without towing the caravans, over a distance of about 50km. Then we would add the Fleetlines, and drive 115km – and see if the age-old adage of “more power equals less fuel used” is actually true.

Without the vans, the standard Prado used 12,8 litres of petrol every 100km. The RGMotorsport Prado needed 13,1 litres over

the same distance. It wasn't looking good for the roaring, 326 kW Prado.

Then we hooked up the Jurgens caravans, and went for that 115km drive. All speed limits were observed as the Prado train made its way over secondary roads, highways and through town. The result?

Standard Prado: 22,3 litres/100km.

RGMotorsport Prado: 21,6 litres/100km

The 326 kW Toyota Prado had indeed proved to be more fuel efficient while towing a caravan weighing more than a ton.

How much?

The RGMotorsport supercharger conversion isn't cheap. It will cost you about R90 000 to turn your mundane but highly capable Prado V6 into a fire-breathing and spitting performance machine. That is a lot of money.

Well, to purchase a sporty SUV that will deliver comparable performance numbers will cost you lots more. And, the Prado remains a robust off-roader while most speedy sport-oriented SUVs are best kept on the road.

For those who want to improve their Prado's performance, but spend a bit less, there is another option. RGMotorsport offers a so-called Stage One conversion for Toyota's SUV that will set you back about R12 600 and includes a custom stainless steel exhaust system and engine remapping by means of a



UniChip. Overall, this will improve power to 238 kW. Fuel consumption will also be improved.

“The Stage One conversion offers better fuel consumption in everyday driving,” says Roets. “We have recorded savings of up to 15%.”

If you have a Prado – or any other 4x4 – a performance conversion is worth considering. This is especially true if you regularly tow a caravan or trailer. As we found, it will make your towing experience much more enjoyable.

“A supercharger conversion will make overtaking much easier, particularly when towing. And as our Prado has illustrated, you will see a reduction in fuel consumption.”

TARLTON INTERNATIONAL RACEWAY

Situated about 35km west of Johannesburg, Tarlton is one of South Africa’s premier drag racing strips. With regular national drag racing meetings and special events on the go, you can’t claim you’ve seen it all if you haven’t been to this track on a race day. The sights and sounds of Tarlton – and, of course, the very, very fast cars – provide a unique spectacle for petrolheads.

Contact: Tel. 011 762 5431; e-mail: info@tarltonrace.com; www.tarltonrace.com.

Above, left: To thoroughly test the supercharged Prado’s power and torque a 1,1-ton Jurgens Fleetline caravan was towed behind it. Above, right: The average fuel consumption of RGMotorsport’s Prado when towing a caravan was compared to that of a standard version over a distance of 115km.

RGM – THE ART OF PERFORMANCE

Established in 1992, Rob Green Autoservices and Motorsport offers a wide variety of performance parts and services. The company’s divisions include Rob Green Autoservices, RGMotorsport and Rob Green Electronics.

It also has specialised outfits that include research and development, manufacture and export, forced induction, design and outlet and emissions.

The company is headed by brothers and partners Rob and Steve Green, and its head office is situated in Strydom Park, Randburg. One of the unique features of the operation is an all-wheel-drive dyno room that can be used to test and tweak the performance of 4x4 vehicles.

Due to the cost of the equipment, few tuners possess the technology needed to test and remap AWD vehicles.

The dyno room has a sound-proof viewing area where customers can watch the remapping of their vehicle. Each owner is given a before-and-after graph that illustrates the changes that have been made.

Contact: Tel. 011 792-8352; info@rgmotorsport.com; www.rgmotorsport.com

THE RESULTS

	RGM Toyota Prado V6	Standard Toyota Prado V6
Maximum power	326kW @ 6000r/min	202kW @ 5600 r/min
Maximum torque	540Nm @ 4500r/min	381Nm @ 4400 r/min
0-100km/h (without caravan)	8,6s	12,27s
Quarter mile (without caravan)	16,4s	18,9s
0-100km/h (with caravan)	13,3s	19,5s
Quarter mile (with caravan)	19,3s (at 119,4km/h)	21,89s (at 104,6km/h)
Avg fuel consumption (without caravan)	13,1 litres/100km	12,8 litres/100km
Avg fuel consumption (with caravan)	21,6 litres/100km	22,3 litres/100km

