

REFINEMENT THE KEYNOTE OF THE **280 Kw** RGM SUPERCHARGED LEXUS IS 250

Refinement. Smoothness. Sophistication. These are the cornerstones of all Lexus products and particularly the “baby” in the range, the IS 250. However, even the most diehard Lexus fan would probably admit that the company’s entry-level sedan could probably cope quite happily with a power increase. Rated at 153 kW with 252 Nm of torque, the 2,5-litre V6 unit is smooth-revving but, typical of a small-capacity six, just a little tardy in mid-range acceleration. When RGMotorsport was approached to develop a supercharged version of the IS 250, the challenge was to increase performance across the range, but especially to retain the sophisticated power delivery inherent in the standard model.

The performance figures achieved by RGM speak for themselves. Power has risen to 280 kW @ 6 500 rpm, with a corresponding hike in torque to 376 Nm @ 5 500 rpm and the performance figures achieved are quite astounding.

Tested at Gerotek near Pretoria in back-to-back run-offs with a vehicle provided by Lexus South Africa, the **RGMotorsport Supercharged IS 250 slashed just under three seconds off the zero to 100 km time.** Both cars tested were the automatic version of the Lexus IS 250.

The standing 400 metre sprint was just as impressive, with the RGM Supercharged machine recording an elapsed time of 15,90 for the 400 m, as against the 17,67 mark recorded by the standard IS 250 automatic.

It should be noted that these times are representative of tests at Gerotek’s altitude of over 1 500 metres above sea level, with corresponding power losses due to the “thinner” air. While supercharged vehicles are less affected by high altitude than normally aspirated cars, there is nevertheless a power penalty, according to RGM’s electronics expert Steve Green.

However it was in the standing-start 1 km sprint that the RGM supercharged car perhaps showed its true potential. It covered the 1 000 metre distance in 28,7 seconds (as opposed to the 31,56 time for the standard car). But most impressive was the difference in terminal speeds at the end of the standing kilometre.

The standard car acquitted itself well with a 170, 40 km/h speed past the 1 000 metre post, but the RGM Supercharged IS 250 flashed by over 30 km/h faster, at 203, 46 km/h!

RGM’s Rob Green points out that in normal conversions of this type the car’s standard top-speed governor is left intact. However, RGM was keen to see what the ultimate speed potential of the supercharged IS 250 was. In a special top speed test, RGM removed the top speed governor using the Unichip Q piggy-back electronic controller. The RGM Lexus recorded a top speed of 271, 6 km/h, well in excess of the standard IS 250’s 236 km/h top speed.

The tests proved that the speed potential provided by the bespoke Supercharged kit is enormous. What the bald figures don’t show, however, is that the supercharged car can be driven normally with the hallmark refinement undisturbed by the conversion. In selecting the supercharger for this conversion, RGM opted for the Vortech V2 SC trim centrifugal supercharger, noted for its quiet operation.

Not only is the noise from the induction and mechanical drive from the supercharger virtually undetectable from standard, but the kit itself is barely noticeable at first glance under the bonnet.

The supercharger is mounted on right side of the compact V6 engine, and low down, so that the stock engine vanity covers conceal most of the high-quality RGM handiwork from view. This was achieved by driving the supercharger off the stock Lexus water pump using a special pulley and a multi rib belt arrangement. A lot of design-work and careful fabrication also went into mounting the RGM/MRP liquid charge cooler as discreetly as possible, with the primary aim of not interrupting the under-bonnet airflow to the stock Lexus engine cooling system. So successful was the final layout that Rob Green reports a reduction in charge air temperatures of up to 60 degrees C!

Cooling and lubrication for the supercharger unit is obviously vital, and RGM's vast experience with supercharging, after over a decade of work in this field, sees the RGM IS 250 use high-pressure oil feed to the supercharger, with gravitational return back to the sump.

For the Setrab liquid charge cooler mounted low in the nose of the Lexus, RGM installs a stand-alone coolant system independent of the Lexus engine coolant system. This has a six-litre capacity, using its own electric pump to efficiently circulate the coolant of 60 per cent water and 40 per cent Glycol in a closed loop system.

Another key to retaining the legendary Lexus refinement on the conversion was the employment of a highly sensitive RGM/EXCEL re-circulation valve for the boost pressure. Commonly known as a "dump valve" because it bleeds off excess intake pressure boost, the unit is a key factor in giving the RGMotorsport Supercharged kit precise throttle control, enabling smooth transitions from light-throttle normal running to full-throttle applications. The Vortech V2 SC trim supercharger unit has been set up to boost 0,5 Bar (0.7 psi) for this particular conversion.

Almost equally as impressive as the RGM IS 250's outright acceleration is the car's overtaking abilities with impressive gains in all speed ranges, making the car very safe in its ability to deal with challenging traffic conditions.

The electronic side regarding fueling & timing is taken care of with the Unichip Q+ piggy back ECU

RGM believes that this conversion is the first of its type to be carried out anywhere in the world, and while the Randburg concern sees a big market for the Lexus supercharging enhancement locally, there are plans to market the kit overseas. The kit is totally bolt-on, and no engine internals or factory ECU modifications are undertaken in the installation, making the conversion totally reversible.

Price, including fitment is R79 800. inc. The RGM 3 year/100 000 km warranty is standard with the conversion, and fitment time is 10 days at RGM's Randburg premises. The DIY kit will cost R56 430. inc and will include a full installation manual and CD.

For more information, telephone Alan Fine at RGMotorsport on +27 11 792 8352 or email at info@rgmotorsport.com

The full conversion can be viewed at:

http://www.rgmotorsport.com/html/lexus_is250.html

This press release was prepared for RGMotorsport by Stuart Johnston (083 450 9255)

Performance Tests carried out at Gerotek Vehicle Testing Centre.

**GEROTEK ROAD TEST RGM SUPERCHARGED LEXUS IS 250 9TH APRIL
2009 (7AM)
TESTS CONDUCTED @ 6000 FEET ABOVE SEA LEVEL**

Performance Acceleration

RGM S/C Lexus IS 250 (Auto)		Lexus IS 250 (Auto) Standard
0-60 km/h	3.76	4.92
0-80 km/h	5.59	7.43
0-100 km/h	7.46	10.44
0-120 km/h	10.10	14.65
0 – 400 metres	15.90	17.67
Terminal speed 400m	155.63 km/h	133.12 km/h
0 – 1000 metres	28.47	31.56

**Terminal speed over
1000 metres**

203.46 km/h

170.40 km/h

Top speed over 5km 271.6 km/h

236 km/h

Overtaking Acceleration

RGM S/C Lexus IS250 (A)		Lexus IS 250 (A) Standard
60-80 km/h	1.83	2.51
80-100 km/h	1.87	3.01
100-120 km/h	2.64	4.21