



Zeroshift helps new supercar set faster acceleration times
1st July 2011 A transmission using Zeroshift's seamless gear-change technology is helping the new Australian Joss JP1 supercar to set 0-160km/h (0-100mph) acceleration times of just 6.0 seconds. Integrated into a supercar transaxle developed by high-performance transmission manufacturer Albins, Zeroshift provides a continuous flow of torque during gearshifts that ensures the car's acceleration is uninterrupted.

"Zeroshift's seamless shifting between ratios helps the JP1 to deliver uncompromised acceleration and a driving experience that is unforgettable," says Bill Martin, Zeroshift's managing director. "The uninterrupted flow of torque also improves vehicle efficiency and ensures engine power can flow continuously to the wheels. The technology has a low part-count that makes integration into existing packages relatively straightforward."

The world's most powerful supercars compete to produce ever-faster 0-160km/h (0-100mph) acceleration figures with many achieving times in the order of 6.5 to 7.0 seconds. Gear changes interrupt the power delivery momentarily and this approximately half-second of lost acceleration can represent around 10 percent of the 0-160km/h time. Zeroshift eliminates this delay in the Joss JP1, allowing it to out-perform other supercar marques.

"After extensive research and technical appraisals, we concluded that no other transmission technology could be applied so readily and deliver such a boost to performance," said Joss technical director, Matthew Thomas. "With Albins and Zeroshift as technical partners, we have succeeded in making the JP1 a unique supercar that challenges the established order."

Zeroshift's technology replaces the synchromesh in a conventional manual gearbox with paired interlocking drive rings that change ratio without interrupting the torque. The lightweight shift forks that control the rings can be actuated without hydraulics thus incurring minimal parasitic losses. The gearbox architecture with a single clutch is retained.

The Joss JP1 application builds on a successful ongoing relationship between Zeroshift and Albins. Albins is the sole transmission supplier to the Australian V8 Supercar race series from 2013. Zeroshift is also working on developments with a number of other companies, including major motorcycle, passenger car and commercial vehicle manufacturers.