

CHASSIS DYNAMOMETER TEST

MAN 24,400 - 11,967cc Coach registered 17/7/02
Tested May 2003

Introduction

This vehicle was previously road tested by Florida Coaches, who noticed a substantial increase in torque when they first tried Hiclone plus a fuel saving of around 9.62%. It was decided to carry out additional chassis dynamometer tests to try and improve this result by repositioning the existing Hiclone and possibly adding another. This is the report of these chassis dynamometer tests and should be read in conjunction with the road test report.

The Coach was tested on the dynamometer without Hiclone fitted and the results obtained are shown by the blue line on the torque and power graphs opposite. Another test was run with one Hiclone fitted in exactly the same place as the Road Test and the results are represented by the pink line on the graphs. A further test was run with the Hiclone fitted as close to the inlet manifold as possible and a better result was obtained (not shown). A second Hiclone was fitted and tested in various positions. The best position was 12 inches in front of the first Hiclone and the optimum result was obtained (yellow line).

Results

Figure one shows that Hiclone has shifted the torque curve upwards with two Hiclones producing the best result. In both cases the increase in torque is substantial and bears out the road test result.

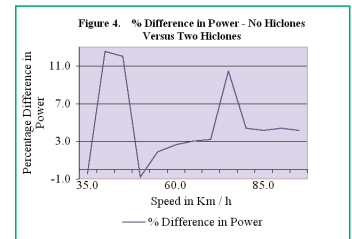
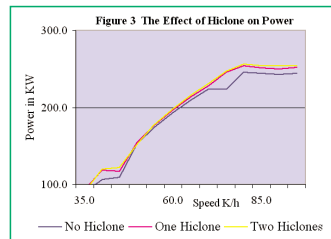
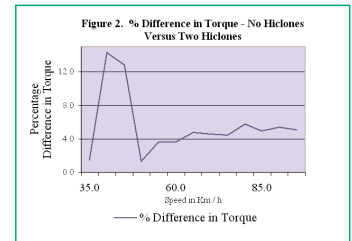
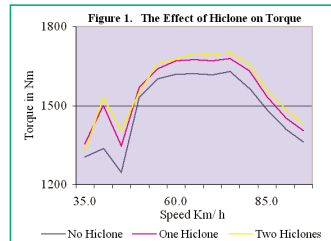
There is no doubt that Hiclone has significantly improved the torque and the road test indicates that this is not at the expense of fuel consumption; indeed the reverse is apparent, that Hiclone has significantly improved Torque and fuel consumption.

"...we found we were saving 12% on our fuel costs".

Mark Wilkes - ANC Express, Braintree, Essex.

The biggest effect on the torque is at the front end of the RPM range, as indicated in Figure 2, which shows the percentage difference in torque generated by the engine without Hiclone, compared with the result when two Hiclones were fitted. For operating in urban conditions, the extra torque will certainly make driving easier and more economical. It is also highly likely that significantly less emissions will be released in the urban cycle and further test should be carried out to look at this.

The increase in torque generated at the higher end of the RPM range is also significant and substantial. This should result in better fuel economy, less gear changes and engine wear, better fuel consumption and a smoother, more comfortable ride for the passengers. Hiclone has smoothed out the power curve and shifted most of it upwards as



shown in Figure 3. The increase in power is most noticeable in the lower ranges but there is also a spike in the middle range which corresponds with a dip in the original power curve of the engine (See Figure 4). At this point Hiclone has smoothed out the dip producing a much more even shaped curve which is likely to improve the Coaches' performance.

"...we are pleased with this product and are delighted to recommend it to other fleet operators".

Keith Halsey Managing Director EXB Transport Royston, Herts.

Conclusions

With the Road Test and the Dynamometer tests completed, it is apparent that Hiclone has had a dramatic effect on the performance of the engine and that this effect has culminated in a substantial fuel saving. In order to accurately estimate the actual fuel saving, a track test at a recognised Proving Ground should be carried out. Emission tests should also be carried out as it is highly likely that Hiclone will cut emissions.

The intervention of the Hiclone device has dramatically improved the performance of the engine and Owners of similar vehicles are also likely to benefit from a reduction in fuel consumption and an increase in torque, with all of the benefits that this implies. Engine dynamometer tests should now be carried out to look at the effects of Hiclone on diesel engines under load.

"The intervention of the Hiclone device has dramatically improved the performance of the engine"

* Further tests are planned for this coach and will be published shortly. Original test results are available for scrutiny upon request.