

## ROAD TEST

### Ford Transit 2.5 Litre Diesel Engine fitted in a 1997 Metrocab Licensed Taxi

The test was carried out on the 27th February 2003 at PTS's chassis dynamometer in Luton, to look at the effect of Hiclone on Ford Transit engines as used by Licensed Taxi's.

## ROLLING ROAD TEST

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For the first test, one Hiclone was fitted into the air induction hose near the engine manifold. The vehicle was placed on the Rolling Road and the testing programme was run with the Hiclone fitted and repeated with the Hiclone removed. No noticeable difference in the brake horse power or torque was recorded between the various test runs.

It was surmised that there were two possible causes for this negative result. First that it was probable that the Hiclone was fitted too far away from the engine manifold and secondly, that the manifold configuration was detrimental to Hiclone's swirling effect. It was decided to test this supposition by removing the engine manifold and placing a small Hiclone in each of the four individual inlet ports.

### Discussion

1. An increase in torque was recorded in the lower RPM ranges:-

- There is no doubt that Hiclone has substantially and positively transformed the performance of the engine which is likely to lead to substantial fuel savings in the urban cycle. This result has confirmed test results from Hiclone Europe Ltd's customers.
- The large increase in torque produced in the lower ranges indicates that more of the available fuel is being consumed, especially when operating in urban conditions. Further tests need to be carried out to look at the precise effect of Hiclone on emissions, but this test indicates that it is highly likely Hiclone will substantially cut them and reduce pollution in urban environments.
- The extra torque developed by the engine may prove useful to drivers especially when fully loaded. The handling of the vehicle should be substantially improve with less gear changes required. Engine dynamometer tests should be carried out to look at the effect of Hiclone on engine performance under a range of load conditions.

2. A smaller but significant increase in power and torque was recorded across the whole operating range:-

- Although the increase in torque in the higher ranges is smaller than the lower range, it is indicative that the Hiclone effect is likely to result in improved consumption at higher RPM. More tests should be carried out to investigate further.

3. A substantial increase in torque was recorded at the top of the operating range:-

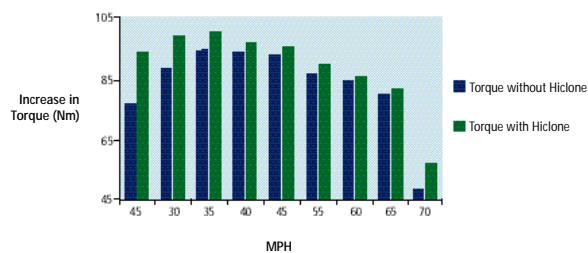
- Under motorway conditions is highly likely that the intervention of Hiclone will result in substantial fuel savings. More tests need to be carried out to evaluate this.

## Rolling Road Test Results

### INCREASE IN TORQUE (Nm) WITH AND WITHOUT HICLONE

Ford Transit 2.5 litre engine fitted in a 1997 Metrocab Licensed Taxi

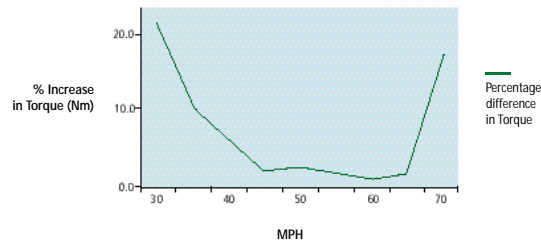
4 Hiclones fitted for maximum effect



### % INCREASE IN TORQUE (Nm) WITH HICLONE

Ford Transit 2.5 litre engine fitted in a 1997 Metrocab Licensed Taxi

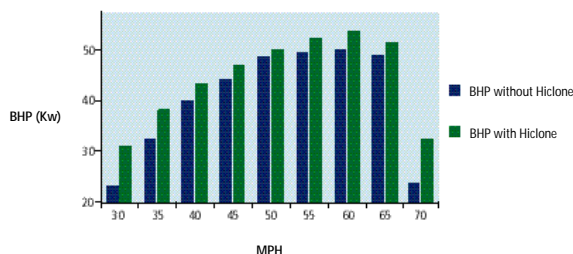
4 Hiclones fitted for maximum effect



### INCREASE IN BHP (Kw) WITH AND WITHOUT HICLONE

Ford Transit 2.5 litre engine fitted in a 1997 Metrocab Licensed Taxi

4 Hiclones fitted for maximum effect



### % INCREASE IN BHP (Kw) WITH HICLONE

Ford Transit 2.5 litre engine fitted in a 1997 Metrocab Licensed Taxi

4 Hiclones fitted for maximum effect

