# Dynamometer Test Results

***TriboDyn Motorcycle Oil Dyno Test vs. Mobile 1 Motorcycle oil***

TriboDyn®
PERFORMANCE LUBRICANTS

ODDBALL INDUSTRIES
FABRICATION AND TUNING

**Oddball Industries**

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## INTRODUCTION

The Basis of this test is to compare the differences between traditional motorcycle wet clutch oils and the TriboDyn® 10W-40 Motorcycle wet clutch oil. Namely, how the motorcycle performs on the dyno under high load conditions and the contrast of the dyno graphs with Mobil 1 10W-40 Motorcycle Oil vs. TriboDyn® 10W-40 Motorcycle Oil. We will also be monitoring engine temps and how the motorcycle feels when it is shifted.

## HYPOTHESIS

Based on previous tests done on TriboDyn engine oils, we expect to see a minor horsepower increase between the two oils, along with a smoother shifting transmission.

## MATERIALS

1. Dyno Dynamics Dynotech 2wd Dyno
2. 2011 Kawasaki Ninja ZX10-R with upgraded cams, slip on exhaust and power commander
3. TriboDyn® 10W-40 Motorcycle Oil
4. Mobil 1 10W-40 Motorcycle Oil

## PROCEDURE

1. Start motorcycle allow to get to operating temperature (205F).
2. Run 3 consecutive dyno runs from operation temp (205F) and document HP and TQ and engine temperature.
3. Set Dyno at 40mph and 80mph and test wide open throttle (WOT) clutch slip in 6th gear.
4. Change oil to TriboDyn® 10W-40 Motorcycle Oil and repeat steps 1-3.

## DATA

| Dyno Results | Engine Temp | Intake Air Temp |
|---|---|---|
| Mobile 1 Run 1:<br>184.3HP 65.8 TQ | 215 F | 89.8 |
| Mobile 1 Run 2:<br>189.4 HP 69.3TQ | 219F | 87.3 |
| Mobile 1 Run 3:<br>188.4 HP 68.8 TQ | 225F | 88.6 |
| TriboDyn Run 1:<br>190.3 HP 73.3 TQ | 213F | 89.0 |
| TriboDyn Run 2:<br>190.9 HP 73.3 TQ | 215F | 90.4 |
| TriboDyn Run 3:<br>193.1 HP 74.0 TQ | 220F | 88.8 |

## RESULTS

Based on the results from the dyno tests, it endorsed our hypothesis that TriboDyn would in fact increase horsepower and torque throughout the RPM range. Also, the transmission shifted much smoother after the oil change and the gears were not as notchy. In addition, we found that there was a minor engine temperature decrease. Also we did not experience any clutch clip in the high load test in either oil.

1. Peak HP increase of 3.8 HP
2. Peak TQ increase of 4.7 TQ
3. Temp decrease of 2-5 $^{o}$F

## CONCLUSION

In conclusion TriboDyn® 10W-40 Motorcycle Oil outperformed the Mobile 1 10W-40 Motorcycle Oil

based on our dyno test. There was a 2% gain in peak HP and a 6.7% gain in TQ with a 10 HP and 8 TQ gain from 7000 RPM to 12,000 RPM. In addition, TriboDyn held an average across the three runs of 191.4 HP and 73.5 TQ vs. Mobile 1's average of 187.3 HP and 67.9 TQ. This is a 4.1 HP and 5.6 TQ average difference equating to a 2.1% HP and 8.2% TQ average increase. Moreover, we noticed a minor change in engine temps ranging from 2-5 degrees across the three runs. There was no noticeable difference between the high load test at 40 mph or 80 mph in 6th gear between the two oils. Both held strong with no rpm increase at WOT.