



More Horsepower! The DynoJet 250 can assist!

by Glenn Rangiua

Electronic Fuel Injection (EFI) is going to be the standard fitment on all motorcycles in the not too distant future and for all those bikers who have been brought up on carburettor fuelled bikes it can be a massive change. Will the Engine Computer Management (ECM) system let me down? How do you tune it? What happens if I change the mufflers, exhaust system or air filter?

The good news is that there have been very few failures of ECMs recorded. Tuning the fuel injection system is a little harder, but help is on hand. DynoJet the dyno specialists in the USA have spent millions of dollars developing the Power Commander a tuneable computer system designed especially for motorcycles. The factory has purchased nearly every fuel injected bike manufactured and as they test their product on regular production bikes they know it works out in the real world.

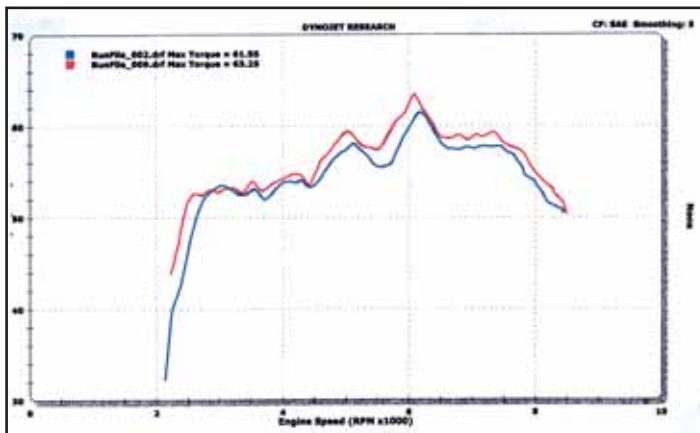
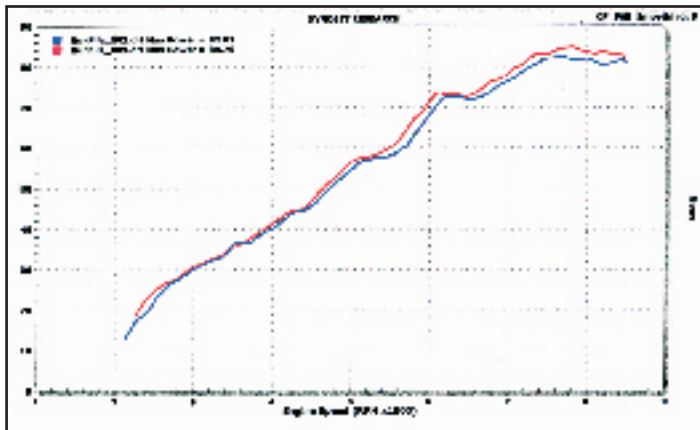
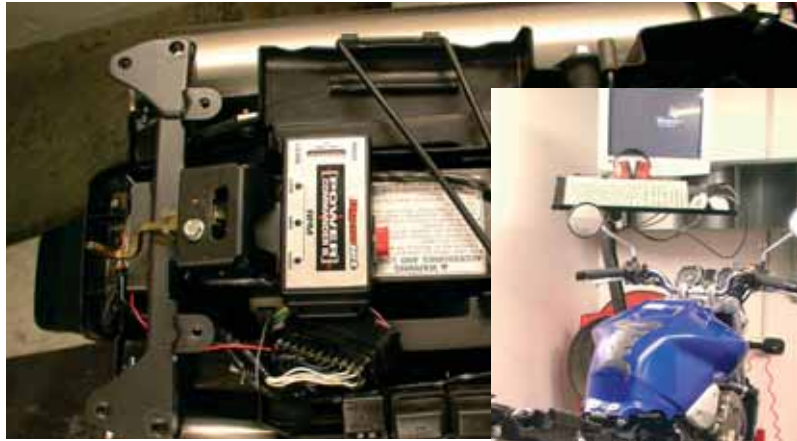
The ECM controls the EFI and it is the air/fuel ratio that needs correcting. Not that the manufacturers get it wrong but their



Gavin, part of the Dyno team at AMPS tipping 2.18Hp into the BMW R1100S motor. Yes we gained that power with an additive!! The product is Militec-1 and a 250ml bottle costs \$44.95. The best run before the additive was 82.61SAE HP the best run after using the additive was 84.79 SAE HP. Torque was also up from 61.55ftlbs to 63.25ftlbs. Instant power for the R1100S.

systems are setup for different countries, climate conditions and as a safeguard against warranty claims. They stick to the middle-of-the-road giving the bike rider most of the horsepower available, but with a margin for long term reliability. Manufacturers need to

meet the emission levels required by the countries they market their bikes in. So as you can see the hard charging, economical bike you might want to purchase has all these restrictions placed on it. There is often huge potential just waiting to be released.



The DynoJet dyno doesn't lie the BMW produced more power and torque after adding the Militec-1. The Honda gained only 1.05hp, but the Power Commander remap will add more.

not the way the environmentalists require it to be run.

If any major parts on a fuel injected bike are altered the only way to get it running smoothly and at optimum performance is to re-tune the ECM and as 99.9% have fixed maps you will need to fit a tuneable ECM like the Power Commander.

Power Commander have a unit (a standard fuel map is programmed into the unit) for nearly all fuel injected bikes. They come complete with instructions and photos showing the full installation procedure, but I feel that this is possibly better left to the experts. A CD with all the information needed to tune the bike using a computer, is also supplied.

The unit fitted to the Honda Hornet has a RRP of \$814.40 and it takes about an hour to fit so there is another \$50 to \$70 (labour) on the price. Tuning on the Dyno costs extra.

So if you want to alter your fuel injected bike by adding accessories and still want optimum performance get the guys at AMPS to fit a Power Commander and tune it on their DynoJet 250 dyno, you will notice the difference. BRM

For information on Power Commanders or the DynoJet 250 Dyno, call AMPS on 09 3007500 and ask for Dave, he is also the man to talk to if you have modified your fuel injected bike and are having trouble getting it to run smoothly.

For information on Militec-1 got to www.militec.co.nz or call 64 7 863 6816 Email terry@militec.co.nz

rear of the bike as these can cause quite a problem if they manage to hit the tyre at full speed.

The real work comes in when the Tuning link software on the DynoJet is tuned into the Power Commander fitted to the bike. With over 100 settings in the fuel map there is a lot to play with and it takes an experienced operator to get the best from your motor.

The Tuning Link uses the DynoJet 250's "Eddy Current" electro/magnetic braking system to mimic road conditions as it places a controlled amount of load on the motor. Using this system the operators can now load up the rear wheel and set the air/fuel at the optimum range (12.8:1 maximum power, but the figure of 13.2:1 is the choice for road use) over all the throttle settings and at all speeds.

They can adjust the map to suit the conditions that apply in your specific location, the fuel you use and your riding style. Often on a stock bike the Power Commander will not increase the horsepower by much, but it will sharpen up the response of the motor, make it run smoother and often give better fuel economy. It will deliver the correct ratio of air to fuel for our climate and your motor will run the way it was designed it and

Getting it out?

You could de-restrict the exhaust system, remove the catalytic converter, open up the air intake by using a more free flowing filter but as these will alter the air to fuel ratio the motor might not run as well as the factory prepared bike.

What now?

The only way to fine tune a fuel injected motorcycle is by running it on a Dyno and checking the fuel-air ratio while under load and through-out the rev range. There are a few dynos in New Zealand that can do this and all give slightly different results. The DynoJet 250 dyno in the workshop of Auckland Motorcycle and Power Sports (APMS) is the only one of its kind in New Zealand. It is a full rolling road type of dyno that will

replicate road riding conditions. It also has the full Dyno Tuning Link software system fitted. A dyno is a huge investment for any workshop but it is a necessity for correct tuning of modern fuel injected motorcycles.

The technicians at AMPS, Dave and Gavin have done a full DynoJet training course in the USA so they know what they are doing. It can be a dangerous business running bikes at top speed on a dyno and there are all the implications of the OSH rules to comply with. Spectators at AMPS are not encouraged but you can look through a three layer sound proof window if your favourite toy is strapped on the dyno. The guys check the bike out for safety and to make sure there are no loose stones lodged anywhere under the