

YSS SUSPENSION or NOT?

Words & Pics: Glen Williams



Many different brands of motorcycle suspension exist in the world and some of these aspire to challenge the established players with their ever increasing quality and ingenuity of design. YSS Suspension is such a brand and it has recently been introduced to the New Zealand market by noted distributor W White Wholesale of Hamilton. BRM's F3 Champion Glen Williams recently fitted some of the very latest YSS equipment to the front and rear of his Yamaha 1000 race bike – here's the story and test results thus far.

YSS suspension might be a relatively new brand name to our shores but it's a name that has been around for almost 30 years in the motorcycle suspension world. Their designs are based on some very sound technology and their own in-house R&D facility has been proud to support a number of winning teams in motorcycle race championships worldwide.

Around six months ago I bumped into Adrian Cox who is the Sales Manager for W White Wholesale Ltd. Adrian is also an accomplished road racer in his own right and was manning a trade display at the Taupo race track where we got to discussing a race bike project that I was mucking about with in my shed at home involving a 1989 model FZR1000.

The 'Fizzer 1000' had rather woeful and aged standard suspension fitted to it and I was fairly sure that it was having a large impact on my corner speed and also the level of grip we had. The suggestion was made that I might like to look into using one of their company's new YSS rear suspension shock units on the bike and combine this with a YSS front progressive dampening valve as well.

To tell you the truth my first thoughts were that it could be risky moving away from one of the more established brands that I typically have used and had planned to originally fit to the machine at some future date (when funds allowed) - however one other positive supporting factors in the equation was that suspension expert Kerry Dukie from Wellington based Dukic Suspension was to be the servicing and support agent for the YSS range.

So with that in mind and me being a bit of a sucker for taking on a challenge and trying something new - I thought 'why not?'

Delivery to GW headquarters

An order was placed and a short time later (10 days) the custom made YSS shock turned up complete with a full set of installation instructions and some optional spares for re-valving the compression and rebound stacks and spare main spring along with the all important product stickers! Upon unpacking my first impression was of the product looking top notch, and thus the rear shock was promptly sent off to Dukic Suspension for some light fettling and to refine the settings for my 140hp, 210kg Post Classic racing needs.

I had already ridden the FZR once in stock trim at the Manfeild race circuit and to be blunt the handling was pretty average (and that's being kind) – however I suppose a 21-year-old bike with 60,000km on the clock ain't really ever going to handle that good is it? One week later and the rear shock and matching front fork YSS PD Valves (Progressive Damping Valve) arrived back to me with a note saying that the spring rate, rebound and compression setting were “best guess” – but they should be reasonably close for the calculated combined rider / bike weight and horsepower of the machine. In the past I have found Dukic's guesses to be pretty close to the mark – and I hoped that these ones were too.

The Install

The rear shock and front fork PD Valves took very little time to be slotted into their rightful place on the bike. Rear shock length and mounting bosses were all spot on measurement-wise and installation was pretty much a doddle, taking little more than an hour to complete the work. I had specified a manual operating rear preload adjuster for the shock, however a hydraulic option is available for more convenient and speedy adjustment of preload if that is your preference. The remote gas reservoir is both compact and simple to use and also features some neat bling in the form of the anodized compression adjusters. The remote reservoir was an optional specification for me and is in keeping with the Post Classic Pre89 race class build guidelines which are written to keep the appearance of these bikes similar to the original. The '89 model FZR1000 also had a remote reservoir style rear shock set up.

Front PD Valves were dropped into the conventional design front forks (very few bikes had USD types in Pre89!) – and once again these were simple to fit and hopefully would provide a little more control over what is a very soft and spongy front end on this particular machine in standard form.



Base settings

Now it was time to set up some sort of base setting on the new suspension so I could establish a start point to work from. This meant inviting a couple of mates around to enjoy a beer whilst at the same time coerce them into holding the bike and measure the front and rear suspension sag distances whilst I sat on it.

First up though we had to flex a fair bit of muscle to lift each end of the FZR up in the air (they were made of real metal back in the day.....) this was so that we could measure the full extended length of both the front fork sliders and the rear end (from axle bolt to a set mark on the rear sub-frame), this gave us the 'free sag' figures. Then we used the same measuring points with the bike resting in a static position on a level surface (without rider on board), closely followed by measuring the same points again but this time with me sitting on the bike whilst in a race crouch with my leather race suit on whilst a mate held the rear of the

bike to stop it from toppling over.

All of this gave us the information to see if we had approximately the correct spring rates fitted and we were able to fine tune the bike's sag using the front and rear spring pre-load adjusters. As it turned out the settings of the front were pretty close – but the rear required most of the pre-load to be wound off – and ultimately a slightly lighter rated spring might be required to achieve the right 'sag' settings. With this done it was time to stand around the bike and enjoy a couple of Mr Heinekens' finest and discuss our handywork.

Track test time:

Time to head to the track and compare the machine to the standard suspension that was fitted to the bike for its first track ride a few weeks beforehand.

To get straight to the point the changes were quite profound and gave an immediate and large improvement. Most noticeable was the bike's ability to steer into turns much faster and also have a reduced propensity to run wide in the corners. This allowed me to turn in later than previously and gave me confidence that the bike would hold its line and hit my desired apex points. I was also able to get on the gas earlier and with a lot more vigor! These improvements along with the almost two seconds reduction in lap time meant that we were very much benefiting from better corner speed and more traction at the rear resulting in more drive out of corners and faster speeds along the straights.

All was not a total bed of roses though, as overall we still had a pretty plush ride and the bike's balance 'front to rear' was not well matched. In saying this I mean that the rate of rise



and fall of the front forks compared to the rear was different and this then resulted in the bike having pretty average 'pitch control' and losing a bit of balance through the middle of some of the faster turns of the Manfeild race circuit than I would have liked.

Time to make some change to the compression and rebound clickers on the rear YSS unit, me thinks! There are over 60 clicker setting on both adjusters however only three clicks onto both rebound and compression resulted in an improved ride and a further three clicks on compression dampening made a further noticeable difference in ride and a faster lap-time. One of my favorite quotations is 'The stopwatch doesn't lie' and I am a firm believer that the stopwatch (or lap-timer) is one of the most important tools in your toolbox. When you have changed the set up on your bike and your lap-times have improved then assuming that all other things are equal – you should stay with that setting or continue to change your settings in the direction

that you were working towards (until your times slow down of course!).

At days end we had made some great progress and we were going almost 2.5 seconds a lap faster than with the stock suspension set up. This together with the fact that the rear and front tyres were providing both better side grip also improved traction for greater drive. The surface of the Dunlop tyres were also looking a lot less haggard and were wearing much more evenly.

So it's a thumbs-up for the YSS suspension and Dukic Suspension additional fine tuning thus far, with it easily handling the strains of a 210kg motorcycle with 140hp on tap and giving me more confidence in the bike with much improved feedback.

Good enough to take racing?

The next step is to take the YSS suspended FZR to the track for a true test at race pace and see if it can cut the mustard in the heat of competition, its debut will be the



White's Adrian Cox's YSS-kitted Gixer

first round of the 2010 Victoria Clubs Winter Series at Manfield and by the time you read this it should be public knowledge how it all went. Lookout for the race performance update and any detailed developments made to this new YSS suspension setup in a future issue of BRM.

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The first race meeting for Glen on his FZR1000 and he crossed the line in first place, an impressive start. The competition at the pointy end of the Post Classics has another strong contender, watch this space.

