



Whiteline Worked XR6T

We take a look at - and drive - the Whiteline handling upgrade for the Ford XR6 Turbo...

Words by Michael Knowling



With astounding straight-line performance, great accommodation and a high equipment level it's no wonder the Ford XR6 Turbo is hot property on the performance car market. We've already seen a couple of aftermarket workshops getting stuck into the DOHC 4.0-litre turbomotor extracting more kilowatts, but what's been happening in the area of chassis development, you ask?

We recently visited Sydney's Whiteline Suspension to talk with Jim Gurieff regarding their yet-to-be-released XR6T handling upgrade and had a chance to drive the car they've been using for development - the car owned by AutoSpeed contributor, Andrew Pade.

Andrew tells us: "The standard XR6 Turbo isn't too bad for a factory set-up. It's good for running through the supermarket carpark, but it can get a bit light in the rear through corners and it's a bit unsettling. There can also be a

bit of understeer on entry to corners."

But with the Whiteline upgrade? "It's much more stable - it gives me a lot more confidence and my cornering speeds are well up," he says.

After driving Andrew's Whiteline-equipped XR6T, we can only agree with his sentiments...

Details of the XR6T Suspension upgrade

At the time of writing, the configuration and pricing of the Whiteline XR Falcon kits were yet to be confirmed, but Andrew's car - as the development mule - had been fitted with 'the works'. We're talking springs, dampers, bump-stops, front and rear swaybars and, of course, an optimised wheel alignment.

Jim from Whiteline says the Ford XR6 Turbo is one of the few vehicles he's encountered that needs *immediate* attention to the shocks and springs. "The main issue with the XR6 Turbo is the spring and damper relationship - it's a heavy car and there's no avoiding the fact that you need good dampers," he says.

So let's look at dampers first.

In standard form, the XR6T comes with conventional mono-tube dampers that, as Jim says, are obviously built to a fairly tight price - as you'd expect in a \$40-odd grand car with this amount of accommodation and performance.

The dampers that Whiteline is using on the XR6 are from the same family as those being proven on the company's P-REX II MY03 WRX and feature 10-position adjustment of bump and rebound (separately) and have a 40mm shaft (a figure based on the shaft ID). Fitment of these dampers alone makes a tremendous difference to the car - despite being dearer than, say, a swaybar, Jim says a set of rear dampers makes the biggest bang for buck improvement. The biggest advantage is enhanced rear-end stability.

We're told the standard springs are a fairly good ride/handling compromise for a factory effort, but the rear springing is proportionately softer. Standard spring rates (ignoring the relevant motion ratios, etc) are 450lb/inch at the front and 250lb/inch at the rear (both rates measured with the spring compressed to its normal ride height).

Whiteline currently offers two different replacement spring sets. The 'Control' set uses a 389>509lb spring rate on the front and a 203>279lb rate on the rear (again, these rates are measured with the springs in their normal ride height position). Both of these springs (part numbers 73191 and 73192) lower the ride height by about 35mm.

For a further reduction in ride height the Whiteline 'Flatout' springs lower the car by about 50mm from factory and provide the same 389>509 front and 203>279lb/inch rear spring rate as the Control springs. These are part numbers 73211 and 73212 respectively.

After lowering the BA XR6, Jim says the car will likely be resting on the factory bump-stops.

"The bump-stops in many modern cars don't act as the 'last line of defence' that they used to. They now effectively form a secondary spring rate, which gives a lot better NVH and control over an older 'hit-it-and-bang' bump-stop."

For the XR6, Whiteline has produced a shortened replacement bump-stop, which allows small amplitude suspension movement without interference.

And now onto swaybars.

Jim says the BA XR6 swaybars are bigger than found in previous models, but still leave scope for further stiffening. The factory 'bars are solid items measuring 24mm diameter at the front and 19mm at the rear.

While the exact swaybar configuration for the Whiteline kit is yet to be confirmed, Andrew's car was equipped with a 27mm front and 20mm rear bar. Note that these were 3-position adjustable (front and rear) to allow easy chassis tuning development - it's likely the marketed kit will come with an adjustable rear swaybar and a fixed front swaybar.

Unlike some vehicles, the factory Ford swaybar links and mounts are rigid enough to tolerate the extra swaybar loads.

Wheel alignment settings are of critical importance on any car and it seems Ford has all the settings pretty well sorted. Front castor is left factory-standard (at a fairly generous 7.5 degrees) as is camber (at about -1.0 degrees), but Whiteline elect to change from 0.5mm toe-in per side to neutral. This improves turn-in response. At the rear,

camber remains at -1.0 degrees while toe-in is reduced from 1.5mm per side to 0.5mm per side. Again, this enables quicker direction change response.

Jim says the Ford has quite good front-end geometry that exhibits minimal bump-steer. "For 20mm of compression, the front-end toes-in by an extra 0.5mm." At the rear, however, 30mm of compression gives another 1.5mm toe-in, which is partly responsible for a counter-steer effect that Jim says is common to late-model Ford Falcons. Although bound by the limits of the factory suspension mounting locations, the altered rear alignment and reduced lateral weight transfer (provided by the firmer shocks and springs) helps reduce this rear-steer characteristic.

We're told that suspension tower bars are not an important part of a Falcon handling upgrade - a wishbone front-end doesn't benefit as much from bracing as a strut front-end. "It's always nice to have tower bars, but it's not particularly important on the Falcon," says Jim.

So that's Whiteline's 'the works' upgrade!

On the Road

The first thing you notice behind the wheel of the Whiteline enhanced XR6 is the slightly firmer ride - it's certainly not uncomfortable being similar to, say, a 300kW HSV. Speed humps can be tackled without having to slow r-i-g-h-t down and the damping performance is obvious once you've gone over the bump. Of course, the dampers can be set to deliver a firmer or softer ride as the owner requires - we drove the car with them set to nearly full stiffness and they seemed fine for street use.

Through the twisties, the car feels much more composed than standard - there's still adequate roll to let the standard tyres 'bite', but weight transfer is much reduced. Enter a tight corner and jump on the power early and the rear wheels light up momentarily. Still, the rear-end is very controlled and progressive.

Andrew (the owner) also tells of improved steering response and feel along with much improved driver confidence, which enables previously unnerving cornering speeds.

The only downside we noticed related to NVH - over poor surfaces there were numerous creaks and bangs from the front-end. The bang, Andrew says, later turned out to be a loose airbox bracket. The squeaks, meanwhile, Jim assures us are typical of their prototype hand-made swaybars - fitment is not as precise as the final production part, which should be squeak-free.

We also noticed considerable tram-lining, which Andrew says has been getting progressively worse - especially after a day of track testing. Tyre wear, it appears, is the culprit.

Speaking of track use, Whiteline has achieved a considerable improvement in G-circle testing and Andrew is considerably quicker around the Wakefield racetrack. "My corner entry and exit speeds are so much higher it actually lets me hit a higher top-speed on the straights. It gets its power down so much better," he says. "Even with the traction control switched off, it can accelerate out of corners much better."

On the other side of the coin - with no further adjustment of the swaybars or dampers - both Andrew and his wife are perfectly happy with the ride quality around town. Only a very well-sorted suspension set-up can perform successfully over such a tremendous range of tasks.

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