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The Ultimate STi - MRT's P-25 Package

We test MRT's comprehensive P-25 package for the Subaru STi

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At a glance...

- The ultimate aftermarket package for STis?
- 2.5-litre grunt
- Matching suspension and brake upgrades
- Countless hours in development

The MRT P25 is a significant car for the Australian aftermarket industry. Forget about building a car with a mishmash of parts from a variety of suppliers – the P-25 is a complete high-performance package developed along similar lines to the Litchfield Type-25 produced in the UK.

But MRT decided they could do better.

MRT claims to have invested around eight months in developing the P-25, including 20 separate dyno sessions, racetrack development, flow bench testing and assessing a host of different camshaft, turbo, head and piston configurations. Developed in partnership with Whiteline Suspension, the P-25 is perhaps the most exhaustive aftermarket development ever seen in Australia.

The MRT P-25 package is designed to suit Subaru Impreza STis from 2002 onward (GD series). Brett Middleton of MRT says, "Our aim was to produce a package that gives Porsche-beating performance while ensuring reliability, economy and drivability."



So what does the P-25 package envelope?



Well, first is the 2.5-litre engine which provides much greater low rpm torque and useable performance than the MY02-05 2-litre STi engine. MRT employs a US-spec STi 2.5-litre block prepared with forged rods and pistons, heavy-duty bearings and head studs, steel head gaskets and a balanced crank. The DOHC heads are extensively modified including enlargement and shaping of the ports, bigger valves, and custom inlet and exhaust cams to make the most of Subaru's AVCS variable inlet valve timing. The STi inlet manifold is also honed with an abrasive paste and achieves even cylinder-to-cylinder airflow distribution.

After extensive testing, the turbo chosen for the job is a custom Garrett '500hp' unit with a twin ball-bearing core. This is mounted on stainless steel headers for maximum response and power. The turbocharger's integrated turbine/wastegate system exhales into a 3 inch mandrel bent exhaust with a splitter in the dump pipe. A 3 inch cat is normally mounted in the standard location (immediately after the turbo) but a high-flow 4 inch cat can be mounted under the floor as an option.

Interestingly, P-25 retains the standard airbox (though the inner guard mounted resonator is removed), turbo inlet pipe, intercooler and associated Y-pipe. As an option, you can specify a larger top-mount or front-mount intercooler, a polished cold air intake pipe and silicone high-flow pipes/hoses. Note that, wherever possible, MRT aims to keep a standard under-bonnet appearance.

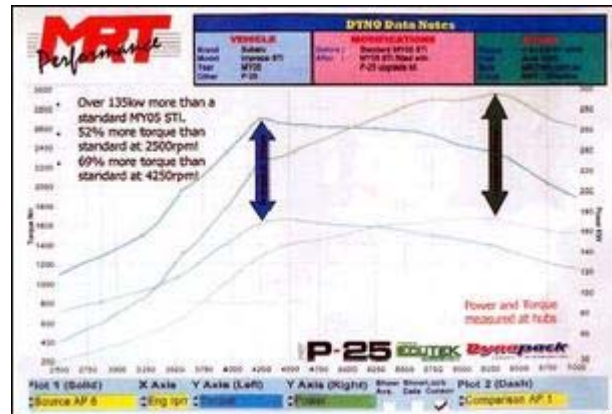


The fuel system is also upgraded with a high-flow in-tank pump, 650cc injectors and custom billet fuel rails with dual pressure regulators (which helps avoid cylinder specific lean-out problems). The standard management hardware remains but is comprehensively reprogrammed using EcuTeK software. Mapping is intended for 98 RON fuel and boost pressure typically reaches a mid-range maximum of 19 psi.

Power output is increased to 297kW at 6250 rpm and torque peaks with 514Nm at 4250 rpm – as measured at the hubs on MRT’s Dynapack dyno. That is 75 percent more power and 69 percent more torque than the standard MY02-05 STi!

P-25 also includes an upgrade single-plate clutch with a heavy-duty pressure plate giving 35 percent greater clamping force. If you’re planning motorsport use, an optional multi-plate clutch and lightened flywheel are recommended. The standard STi six-speed has no problem handling the increased output.

In keeping with the ‘total package’ theme, P-25 includes suitably upgraded suspension and brakes.



At the heart of the suspension upgrade are replacement Whiteline Group 4 coil-overs which give adjustable ride height and damping. Adjustable 22mm swaybars are installed at both ends, an anti-lift kit is fitted to the front lower control arms, and there’s a front upper strut brace and rear camber adjustment bolts. Interestingly, the suspension upgrade also includes heavy-duty steering rack support bushes and the package is completed with corner weighing and a ‘sport spec’ four wheel alignment.

Jim Gurieff from Whiteline Suspension explains the P-25 upgrade is about as

extreme as you can go while maintaining a comfortable day-to-day ride. There’s also a huge amount of adjustment in the ride height, damping and swaybars – this makes it possible to cater for a variety of driving styles and conditions.

MRT and Whiteline have tested the P-25 package with numerous different sets of tyres and can provide valuable advice on the suitable rubber for your purpose. Tested tyres include Bridgestone Potenza, Yokohama AVS V102A Sport and Michelin Pilot Sport Cup.

In the braking department, the standard MY02-05 STi is pretty capable thanks to its Brembo 326mm front and 316mm rear discs working with four and two-pot calipers respectively. The P-25 package involves a conversion to DBA 500-series two-piece front discs and SBS carbon/ceramic pads. These provide an improvement in stopping power and consistency while maintaining acceptable levels of pad dust and noise.



The final touch on each P-25 package is the fitment of badges on the grille and boot while a numbered build plate is added to the interior. Nothing gaudy.



Everything we've mentioned is part of the base P-25 package - but MRT offers a range of options that are primarily aimed at further improving performance. At extra cost you can opt for an upgrade top-mount or front-mount intercooler, race-spec cams, a large capacity sump, roll cage, race seats, firmer springs, six-pot front calipers and more. The base P-25 package has also been designed with legality in mind – for an extra AUD\$995 you can obtain official engineering compliance relevant in your State/Territory.

P-25 on the Road

AutoSpeed recently had the opportunity to drive MRT's P-25 demo vehicle. The vehicle was equipped with the P-25 package and a few optional extras – an upgrade top-mount intercooler, silicone intake pipe, twin-plate clutch, HID headlights and, at the time, firmer springs.

After starting just like a stocker, the first thing we noticed was the quick take-up of the multi-plate clutch. Almost inevitably, you'll stall the engine on first attempt but, once learnt, it is quite controllable and predictable.

The 2.5-litre engine offers much greater average torque across the rev range than the standard 2-litre but on our drive it didn't deliver the convincing punch that we were expecting. This may be due to the combination of 30-odd degrees Celsius ambient temperature, stop-start driving and a top-mount intercooler. After idling around during a photo shoot, the engine felt decidedly flat. Torque is plentiful from about 4000 rpm and, although there's no need to wind the engine to redline, it spins happily despite its extra capacity.



heat soak issues.

The suspension was also a mixed bag. The firmer than usual race-spec springs gave an extremely hard ride – even with the dampers wound back to their softest setting. Jim GuriEFF from Whiteline explains these springs are intended more for motorsport – the run-of-the-mill P-25 springs are considerably softer and more compliant. We're inclined to believe him after previous sampling of a Whiteline-enhanced Subaru (see [MY03 With Poise](#)).

So while we can recognise all the right ingredients are there in the P-25 package, they didn't combine as effectively as they should have. There are also two important lessons learnt - don't buy the race-spec springs for street use and, depending on your intended application, a front-mount intercooler would be a good idea to avoid

Cost Breakdown

If you want to purchase the base MRT P-25 package as a turn-key proposition you're up for a total of AUD\$29,990. If you've already upgraded the car with a MRT XB kit (which comprises a 3 inch exhaust, upgrade fuel pump and EcuTeK tune) you can deduct AUD\$4295. Also, note that the current 2.5-litre STi is cheaper to upgrade as it doesn't require a new block.

At nearly thirty thousand dollars the P-25 is not cheap but, as Brett Middleton is quick to point out, there's really nothing else in Australia that's comparable from a whole-car development perspective. With this in mind, it's a great package for mature motoring enthusiasts wanting to battle Porsches GT3s and BMW M3s.



And what about warranty coverage?

Well, MRT says "Subaru reserves the right to refuse claims on warranty where the item being claimed has been modified or changed from factory specification – or has been affected by another modified part." But the modifications and parts installed by MRT are covered by an in-house 10,000km/6 month warranty – contact MRT for conditions and further information.

Installation and tuning of the P-25 package takes place at MRT's Sydney workshop and typically takes three to six weeks (depending on options). Once upgraded, the car should then follow the standard Subaru service intervals to ensure reliability.

MRT's P-25 Demo Car for Sale!



MRT's MY05 STi P-25 demo car is currently being offered for sale. Sure, it may have been used for some pretty 'spirited' driving but it is a bargain at around AUD\$60,000 (actual price depends on whether you keep the optional extras). A bog-stock example of a '05 STi will typically set you back around AUD\$50,000 so get in quickly for this one!

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