



WORDS AND PHOTOGRAPHY BY MARK ALLEN

POWER UP GUNNINA

The LandCruiser cops an intercooler and mandrel bent exhaust for the MTQ turbo kit

Last issue, AMMS in Brisbane installed the brilliant MTQ turbo kit that consists of a DTS water-cooled Mitsubishi TD05H turbo and all associated fittings. I was keen to transform the big, lazy 100 into a decent long-distance hauler, regardless of steepness of terrain or type of trailer in tow, so fitting an intercooler was a sure-fire way to finish off the power upgrade.

THE INTERCOOLER

Many people have had their say on whether a top or front-mount intercooler is best. Yep, most seem to suggest that a front-mounted unit will provide more power, but they also require more plumbing and can restrict airflow to the engine and radiator.

On the other hand, top mounts can suffer from a bit of heat-soak when driving slowly and only have a letterbox style of opening for the air – which also means you need to cut a hole in your bonnet.

After much head-scratching, we decided that the extra plumbing for a front mount may interfere with the dual-battery installation, and the decreased airflow may inhibit the radiator too much – especially when we add nice large driving lights to the TJM bullbar.

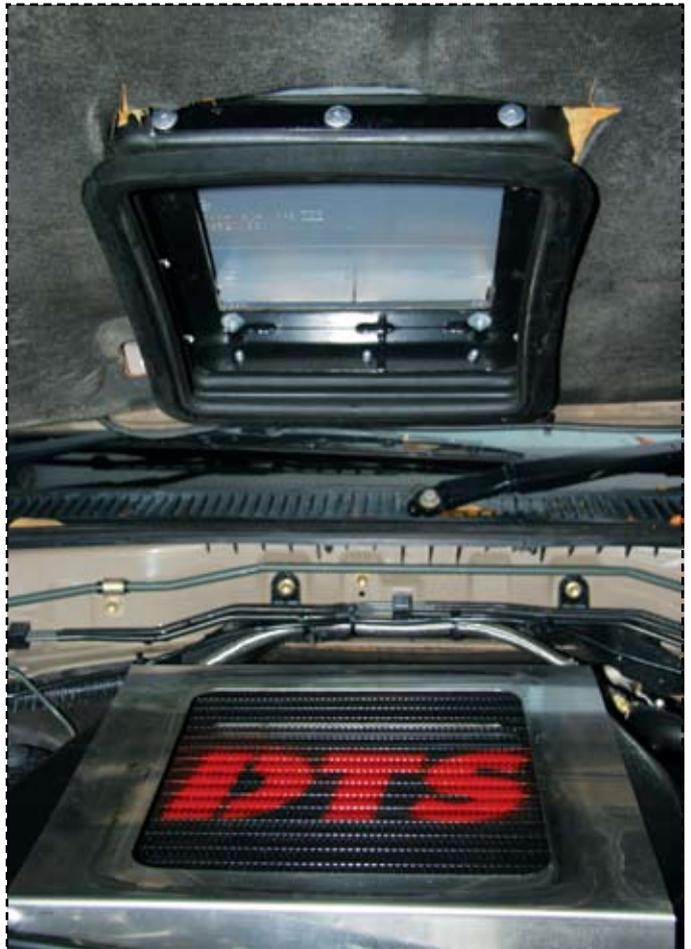
The MTQ top-mount kit has a stainless steel heat guard included, uses the GU Patrol bonnet scoop (there you go Nissan fans, something to cheer about at last!) and looks oh-so-good on top of the old 1HZ engine. So, a top mount it was.

Both Glen at AMMS and Tony at MTQ were informed of the decision to go top mount, and they tell me it is one of the harder things for people to decide as there is no right or wrong answer – it all depends on each vehicle set-up. My advice is to ring these guys and spell out what you have and what your needs are.

WHY INTERCOOL IT?

It's all very well compressing and forcing all that extra air and fuel into your engine, but a negative side effect of a turbo is the additional heat that is developed. An intercooler (or heat exchanger) can somewhat alleviate the problem by cooling the air after the turbo has done its job and before the air enters the engine.

This cooler air is now denser (provided it's at the same pressure), which means more air and fuel can be forced into your engine. This results in a higher power output, and maintains engine safety and longevity.



A rubber seal is fitted to the underside of the bonnet to push against the top of the intercooler heat shield

**THE LANDCRUISER
 NOW GETS UP AND BOOGIES
 WITH MOST OTHER
 CARS ON THE FREEWAY**



A GU Patrol bonnet scoop is included in the MTQ kit, and it is colour-coded to match your vehicle's paintwork



Glen from AMMS and the final dyno readout of 125.2hp at the rear wheels



THE EXHAUST

It's all very well pumping more power into an engine, thanks to the MTQ turbo and top-mount intercooler kit, but we forget about what happens after the power has been processed. Letting the exhaust gasses escape quickly and easily also helps maintain the maximum amount of power developed from your engine.

We approached Brian at Beadesert Exhaust in Brisbane for his suggestions on what system to use with Project Gunna. "A 3in mandrel-bent mate. That'll be the best bet for that engine." With more than 25 years discussing exhaust options with his customers, Brian doesn't need more than a fleeting moment to give you the good oil, err... gasses on what will work best for each application.

Beadesert Exhaust is one of the few that actually manufactures its own systems and have the equipment to do it all with mandrel bends. To make it even better, the boys make kits for most vehicles and can send them Australia-wide for you to fit at home or by your own mechanic to fit at their workshop.

Everything is included in the kits – from the tubing and mufflers right down to the nuts, bolts, gaskets and all other hardware needed to finish the job.

WHAT IS MANDREL BENDING?

Mandrel bending is the maintaining of the full original diameter of a pipe around the whole length of the bend, without causing any deforma-

tion to the pipe. Non-mandrel bending (press bending) doesn't allow the outside wall in a bend to stretch, or the inside wall to compress, which in turn deforms the tubing through the bends.

This restricts airflow and therefore performance. Have a look at Beadesert's website. There is a series of photos and a chart showing exactly how much deformation occurs – it's surprising the damage a press-bend actually does to a tube!

RETURN DRIVE TIME

With Glen and Tony's promise of 153kW and 430Nm (at the flywheel) with the DTS turbo and intercooler (compared to a sluggish 95kW of power and 260Nm as standard), real on-road driving would have the final say.

Quite simply, WOW! The once-bulbous slug of a LandCruiser now gets up and boogies with most others on the freeway. Gunna now holds a minimum of one and often two gears better while climbing long, steep hills, can overtake those silly drivers dawdling at 80km/h in a 100km/h zone and to top it all off returns the same fuel consumption as pre-turbo.

Off-road, the 1HZ develops much more power in the low rev range to help maintain the use of high-range gears, which negates the need to drop into low range in the transfer box. This is especially helpful in soft sand driving that requires a heap of low-down torque to maintain a steady speed in the steep dunes.

Towing off-road camper trailers in the bush is also much easier with the almost instant boost of power from the turbo. ■



The dump pipe is bolted to the turbo



The main muffler is a small-diameter, straight-through unit that gets tucked up out of harm's way



The tailpipe follows to finish the DIY kit



A flex joint helps with engine vibration and twisting



The tailpipe exits nice and high, so it doesn't get caught up on obstacles

CONTACTS

Thanks go to MTQ Engine Systems Australia, Toowoomba branch. The team supplied the technical information, advice on which kit best suited our needs and the DTS turbo kit. MTQ can be contacted through www.mtqes.com.au, or call Toowoomba on (07) 4633 1355 for your nearest supplier.

Thanks also go to Glen Hadden at AMMS who fitted and tuned the turbo kit. AMMS can be found at 92 Connaught Street, Sandgate QLD and can be contacted on (07) 3269 6555 or www.amms.net.au.

And finally to Brian at Beadesert Exhaust who supplied the exhaust kit. The boys can be contacted at 62 Brisbane Street, Beadesert, QLD. Phone (07) 5541 2767 or check out the website at www.beauxhausts.com.au.