

# UP YOUR **POWER!**

What if we could show you a way to get more power  
without sacrificing economy?



**W**hen it comes to the diesel chip market, there are many options available but only a few that have been purposely built for the Aussie 4WDer. Chip-It began by specialising in producing LPG systems for motor vehicles, but during the development of its LPG computer chip, they realised its potential for the common-rail diesel market.

The chip was producing up to 50% more power from common-rail engines and offered the ability for custom tuning, a feature not previously available on the diesel chip market. In addition, the tuneability of the chip meant that the same chip was able to work

on many different vehicles, and thereby production costs could be kept to a reasonable level.

The team at Chip-It decided to pass these savings on to their customers and now offer a diesel chip at often half the price of their competitors. "I challenge any potential buyers to check out what the competition has to offer," Justin says. "Ten times out of 10 they come back and purchase our product because of the flexibility it offers, the value for money and the safety features provided."

### HOW DOES A DIESEL CHIP WORK?

Despite what you may hear, there is really only one way to get more power from a diesel and that's

quite simply adding more fuel. It is the way in which this additional fuel is added that differentiates the products of various chip manufacturers and allows them to achieve their stated performance results.

One way is called 'Injector Signal Interception'. Exactly as it sounds, the process involves intercepting the injector signals between the engine management system (EMS) and the injector. This allows the chip to control the closing point of your injectors. The chip achieves the extra power by keeping the injector open longer. This process allows a controlled amount of additional fuel to be injected into the engine.

The second way to improve power is to control the common-

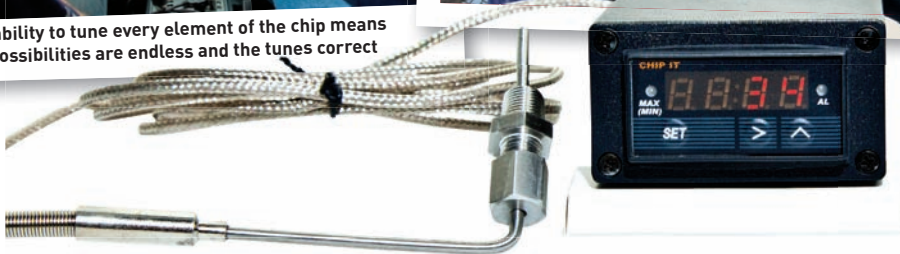
rail system by intercepting the signal to the ECU, allowing the OEM EMS to control the fuel flow. When the factory EMS requires more fuel pressure, the EMS controls the two valves within the common rail pump and redirects the fuel pressure up to the rail. The factory EMS then also controls injector timing to suit the new parameters.

On pre-common-rail systems, one concern with this method is if your fuel pump is not operating at its optimum and not delivering the fuel as required. As this method requires your factory pump to work harder, any slight issues can develop much quicker. This is not the case with common-rail systems as the pump is gear driven by the motor and only the pressure control valves are varied.

Finally, the third solution is reflashing the OEM EMS or reprogramming the whole system. This is considered a very effective way to create extra



The ability to tune every element of the chip means the possibilities are endless and the tunes correct



power. However, more often than not, it will end in a voided warranty for the factory EMS. The other issue is that once you have done the reprogram, if your dealer needs to do a computer update you will lose the reflash. You can have the factory EMS locked, however the dealer will no longer be able to provide any manufacturer's EMS updates

For common-rail diesel 4WDs, interceptor chips are considered a better alternative for providing power without permanent changes to your vehicle. By simply unplugging the chip, your vehicle will return to its standard configuration.

To confirm which method is best for modern vehicles, Toyota



**UP TO 50% MORE POWER AND TORQUE WITHOUT ANY NEGATIVE EFFECT ON YOUR FUEL ECONOMY**



All chips are 100% Aussie made – now that's unusual in the Aussie Performance market

An EGT gauge is essential for any diesel performance upgrade, but does yours automatically detune your chip when EGTs starts to heat up?

Racing Developments (TRD) has produced a power-up option for its UK market. After plenty of research and testing, the company decided on a unit that controlled the common-rail engine very similarly to the Chip-It module. When the performance arm of a manufacturer chooses a certain method to go with, you know it is because the developers have weighed up all the pros and cons and gone with the most effective tuning method. The TRD tuning box costs around \$3000 and is actually dealer option in the UK

**WHAT'S DIFFERENT ABOUT CHIP-IT?**

Tuneability is one element that significantly differentiates the

Chip-It power module from other modules. Unlike many chips available on the market today that only offer incremental power increases tuned by a simple variable resistor knob on the front of the chip, the Chip-It module provides a complete mapped tune for your vehicle. As mentioned previously, the way to get more power is to add more fuel, but what good is more fuel when your vehicle is cruising in top gear on the highway or sitting in traffic – that extra fuel is just going to waste.

The Chip-It module is built, tested and tuned here in Australia and Chip-It offers its customers free support, including custom tunes and updates on its product.

Each chip comes standard with up to 15 different tunes from mild to wild that can be updated by simply using the software and USB comms cables provided. Custom tunes can be emailed and then installed in just minutes meaning the chip is completely customisable for the driver.

The best part about the Chip-It product is that it is only used when it's needed. When the engine is under load, the chip intercepts the signals, and adds fuel that in turn draws more power from the engine. But when you are cruising along the highway or other low-load conditions, the chip's advanced mapping returns the signal to the factory economical settings

minimizing fuel use and maximizing efficiency.

**WHAT ABOUT EGTs?**

There is no compromise for engine protection, and EGTs (Exhaust Gas Temperatures) are the key factor in ensuring your diesel engine stays safe. EGT is an essential parameter to ensure any performance upgrade does not damage your engine. As you increase the amount of fuel in the system, the exhaust temperature will rise, and when this temperature exceeds a safe level, damage can result very quickly.

Chip-It has a great solution for this, and is the only chip on the market to offer EGT monitoring and control. When fitted, the Chip-It

module is connected to the EGT probe that constantly monitors the EGT. Should the temperature rise above safe margins, the chip will

is not necessarily so. While many diesel chip manufacturers claim an improvement in economy, most Chip-it customers have

**WHAT'S THE COST?**

Purchasing the Chip-It diesel chip is easy, with two options depending on your budget. For

nesses and tunes for your specific vehicle.

However, for just \$1299, the same price that many other manufacturers are charging for a simple fuel-modifying chip set-up, you can get the whole package complete with the Control Chip, EGT LED monitor and controller with data logger and all the associated wiring and tunes to ensure your engine is always protected. Plus, you are protected by the true blue Chip-It warranty. *4WD*

**THERE IS NO COMPROMISE FOR ENGINE PROTECTION**

actually return the tune to standard until the temperatures return to safe levels.

In addition, the Chip-It system provides an in-cabin monitor to display what EGT is being produced, real time – no driver inputs are necessary as the Chip will self-adjust when needed. The display also has a data-logger built-in, which will display the highest temps reached. This can be re-set for each trip if needed.

Chip-It is so confident that any vehicle fitted with the full EGT kit and power chip will not damage your vehicle, despite the level of the tune. To back this up, Chip-It offers to cover any damage to the engine resulting from the addition of the chip whereby the dealer refuses to accept the claim on any new car warranty! That is great peace of mind from an Aussie company that is happy to stand by its product.

**DOESN'T MORE FUEL MEAN LESS ECONOMY?**

More fuel with better economy sounds like a contradiction, but it

reported anywhere from a 7–10% increase in economy.

However, it is important to note that a diesel chip is not a fuel-saving device but a performance device. The fuel economy often comes from being able to get up to cruising speed faster and from being able to hold gears longer when under load. However, up to 50% more power and torque without any detrimental effect on your fuel economy is an attractive prospect in anyone's book.

**VALUE FOR MONEY**

It is great to see an Aussie company making an Aussie product and offering it at an Aussie price! Chip-It prides itself on offering a full-featured product to Australian 4WDers at a very competitive price. In fact, for the same price some other manufacturers charge for their chip alone, Chip-It offers its customers the diesel chipping with Turbo Boost Control and the complete EGT monitoring system to ensure your engine is always protected plus a full five-year warranty.

just \$899, you can get yourself the basic package that includes the Chip-it diesel chip with built-in boost controller and the appropriate plugs and har-



Modern common-rail vehicles should expect anywhere up to 50% more power and torque!



**SPECIAL OFFER**

Contact Chip-it today and mention the 4WD Action special offer when ordering your new diesel chip, and you will save

**10% OFF PERFORMANCE EXHAUST SYSTEMS WHEN YOU PURCHASE A CHIP IT PERFORMANCE MODULE FOR \$899!**

Give the guys a call on **1800 78 48 82** to place your order or visit [www.chipit.com.au](http://www.chipit.com.au) for more info.

