

# 4X4

## MOUNTAIN HIGH

> YOUR MASSIVE GUIDE TO  
THE VIC HIGH COUNTRY

A U S T

JANUARY 2015  
NO.372 \$8.95  
(NZ \$10.00) incl GST



**REVEALED!**

[www.4x4australia.com.au](http://www.4x4australia.com.au)

facebook.com/4X4Aus

Tablet via Magshop app

# FORD EVEREST

Aussie engineered Ford 4x4 on its way



T POST APPROVED 100000188

01





WORDS MATT RAUDONIKIS PHOTOS MICK HURRAN

# SLICK SHIFTER

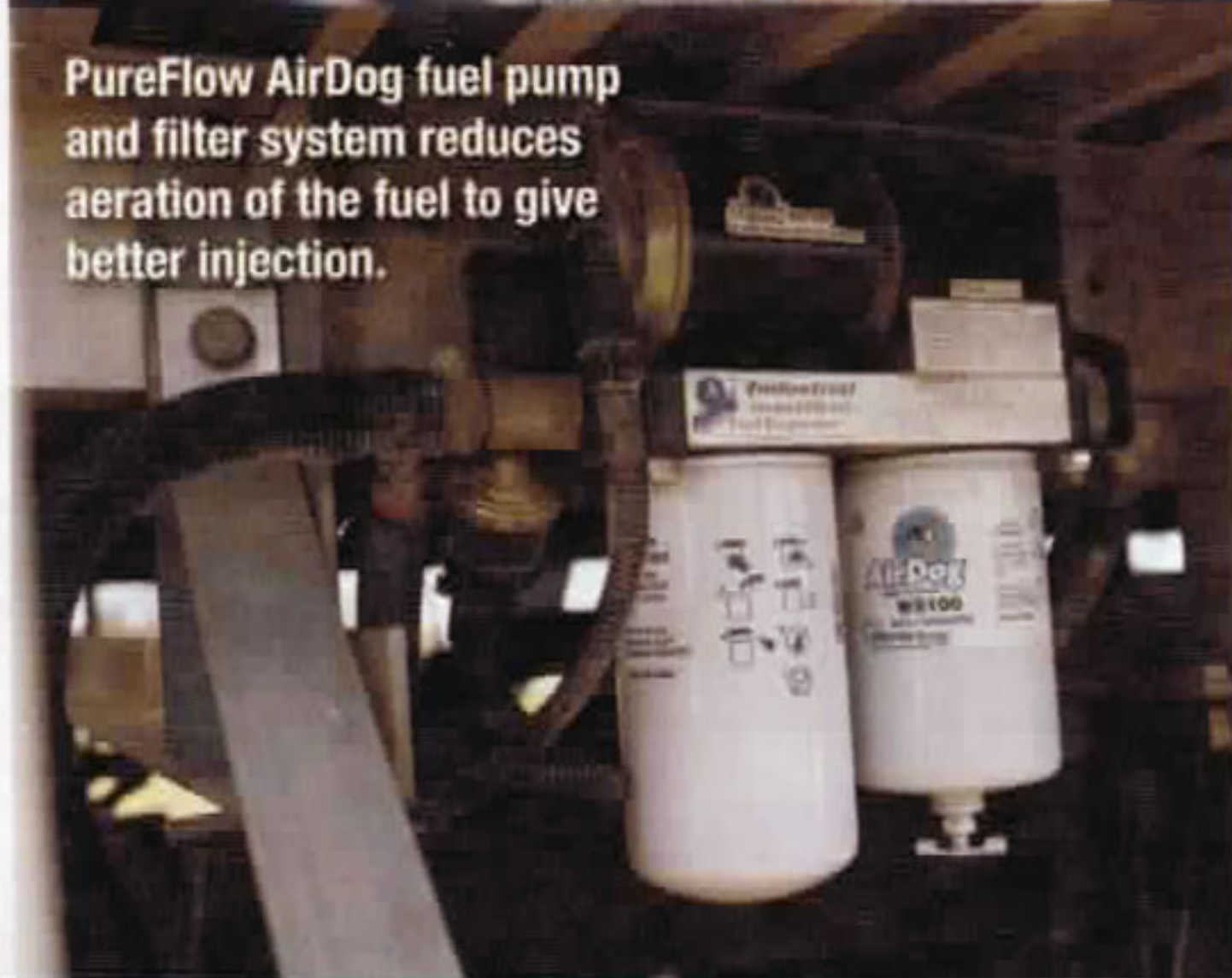
Marks 4WD Adapters gives the Land Cruiser 70 Series the auto transmission buyers have craved. We put it to the test.







PureFlow AirDog fuel pump and filter system reduces aeration of the fuel to give better injection.



bits and pieces needed. These included the flexplate which is a Toyota part, the shifter, console, wiring, ECU, trans cooler, pedals and an alloy radiator. The parts have all since been refined in to production ready pieces. But, before that, this LC79 became the R&D mule.

We first drove the 79 some six months ago, shortly after it was first put on the road. It impressed straight away with its driveability and ease of use, however there was still a long way to go to tune the shift protocols and improve shift feel and quality. Marks boss Leigh Hardman was riding shotgun with his laptop at the time and the adjustments he made on the run showed improvements, but also highlighted the many variables that need to be accurate in such a job.

The Transmission Control Unit (TCU) is a TCM 2600 from Powertrain Control Systems in the USA and is custom tuned

using software from PCS who specialise in these sort of auto conversions. But with Toyota diesel 4x4s being pretty thin on the ground in the US, all the development and tuning on this conversion was done here by the crew at Marks 4WD Adapters.

Since that first drive there have been thousands of test kilometres driven, many off road and with a heavily laden tray and trailer. Countless fine tuning adjustments and upgrades have also been implemented to get the transmission set up right. The aim has been to achieve OE quality and performance whether you are using the vehicle for general driving, towing, off road or whatever.

#### ON THE ROAD

After that promising drive six months ago, we were keen to sample the Cruiser in its production ready form. So, while Leigh was off at the

## GRUNTER

LEIGH Hardman has also made a few modifications to improve the Cruiser's performance. This includes a 'Grunter' turbocharger from GTurbo in Western Australia, a PureFlow AirDog fuel pump, adjustable Unichip and dual three-inch Redback Extreme exhaust system. The Unichip was supplied and tuned by Andrew at Diesel-Tec in Lilydale.

From an original 94kW at the tyres the Cruiser now makes 180kW at the treads – close enough to double the grunt! That power can easily be wound back using the Unichip, but it sure is nice when you want it.

On the road the exhaust barks like a V8 supercar when the throttle is opened yet isn't intrusive at cruising speeds. The acceleration is impressive and far quicker than the standard engine. It's a handful to drive in 2WD on a gravel road, and will spin the tyres forever on wet tar, so using high range 4WD on dirt is needed more than it's desired.

With the added comfort of Stratos suspension seats and Dynamat sound insulation material under the carpet, this automatic transmission equipped Cruiser is a transformed farm truck with bite.

**Our drive took in 1000km of highways, back roads, cow paddocks and high country tracks**





Over a period of 35 years, Marks 4WD Adapters has formed a healthy business by making good things better. Engineering and manufacturing V8 and V6 engine conversion kits for popular 4x4s, making speedo correction units, and the amazing portal axle conversions are just some of the company's impressive products. But it's the latest conversion to come from Marks' Melbourne headquarters that we think will have 4x4 owners lining up at the door.

Not quite as old as Marks 4WD Adapters, Toyota's venerable 70 Series Land Cruiser has been with us in various guises for three decades and remains one of, if not *the* most versatile heavy duty 4x4 on sale today. It's been available in multiple wheelbases, body styles and with a plethora of different engines. But aside from a handful of older models, an auto transmission has not been an option and is still not

available from Toyota.

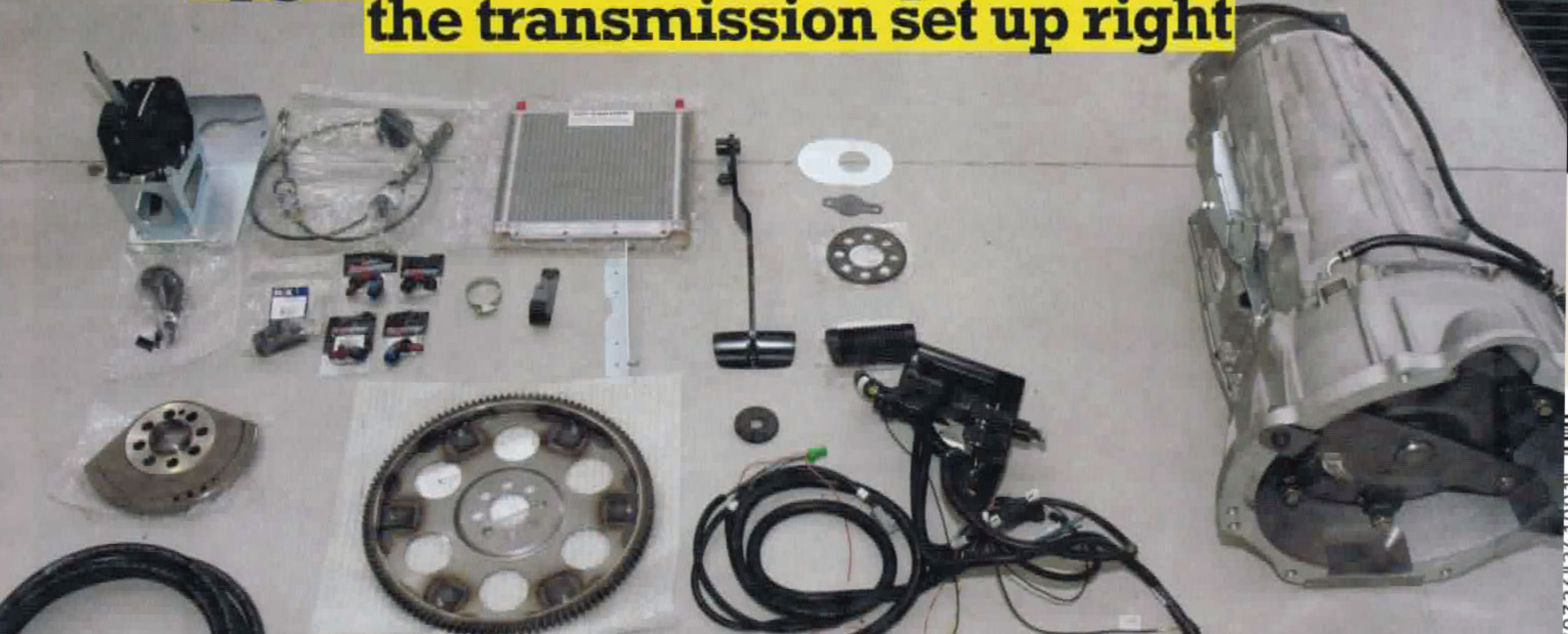
Marks to the rescue again, this time with a conversion to fill the void and answer the prayers of many wanting a HD 4x4 with a self-shifting transmission. The transmission used here is the 6L90 six-speed auto from General Motors. This is the trans that GM fits to its HD pick-up trucks and vans and it's rated up to 6,803kg GVM and 9,525kg GCM – that should be higher than your 70 can safely handle even if it has a GVM upgrade.

Marks uses brand new transmissions and torque converters shipped direct from GM USA for these conversions but there's more to it than simply dropping out the manual and bolting up the auto; a lot more really.

Design and engineering on the six-speed conversion kit started more than 12 months ago with the team at Marks drawing the adapters to mate to the 1VD engine and Toyota transfer case on CAD (Computer-aided design). The team then began manufacturing the prototypes and sorting the many ancillary



**Countless fine tuning adjustments and upgrades have been implemented to get the transmission set up right**







Bell housing and transfer case adapter designed and made by Marks to fit the six-speed auto.

SEMA Show in Las Vegas, we stole his truck for a long weekend of testing. The 79 has benefitted from a host of other improvements (see sidebars) but the main reason for the road test was the automatic transmission conversion. Our drive took in 1000km of highways, back roads, cow paddocks and high country tracks – the places you'd drive a truck like this.

Possibly the biggest improvement over the standard five-speed manual gearbox becomes obvious as soon as you hit the highway. At 100km/h the V8 diesel engine is ticking over at just 1800rpm (riding on OE size 265/75-16 rubber). That's a damn sight lower than with the short-geared manual 'box which has the engine working overtime at around 2400rpm at the same road speed. The six-speed automatic benefits

from overdrives in both fifth and sixth cogs, the tallest being 0.667:1.

This represents a considerable saving in fuel with the Marks 79 recording 12.8L/100km on the highway and 14.5L/100km average over the test which included plenty of high country climbing.

It must be noted that this testing was done with the Unichip engine control set at its highest setting – which doubles the power of the engine. So further fuel saving could be achieved with the chip set at a lower or standard calibration. The lower cruising revs makes the car feel a lot more relaxed and quieter at highways speeds, while there's plenty of grunt available on tap with just a press of the go-pedal.

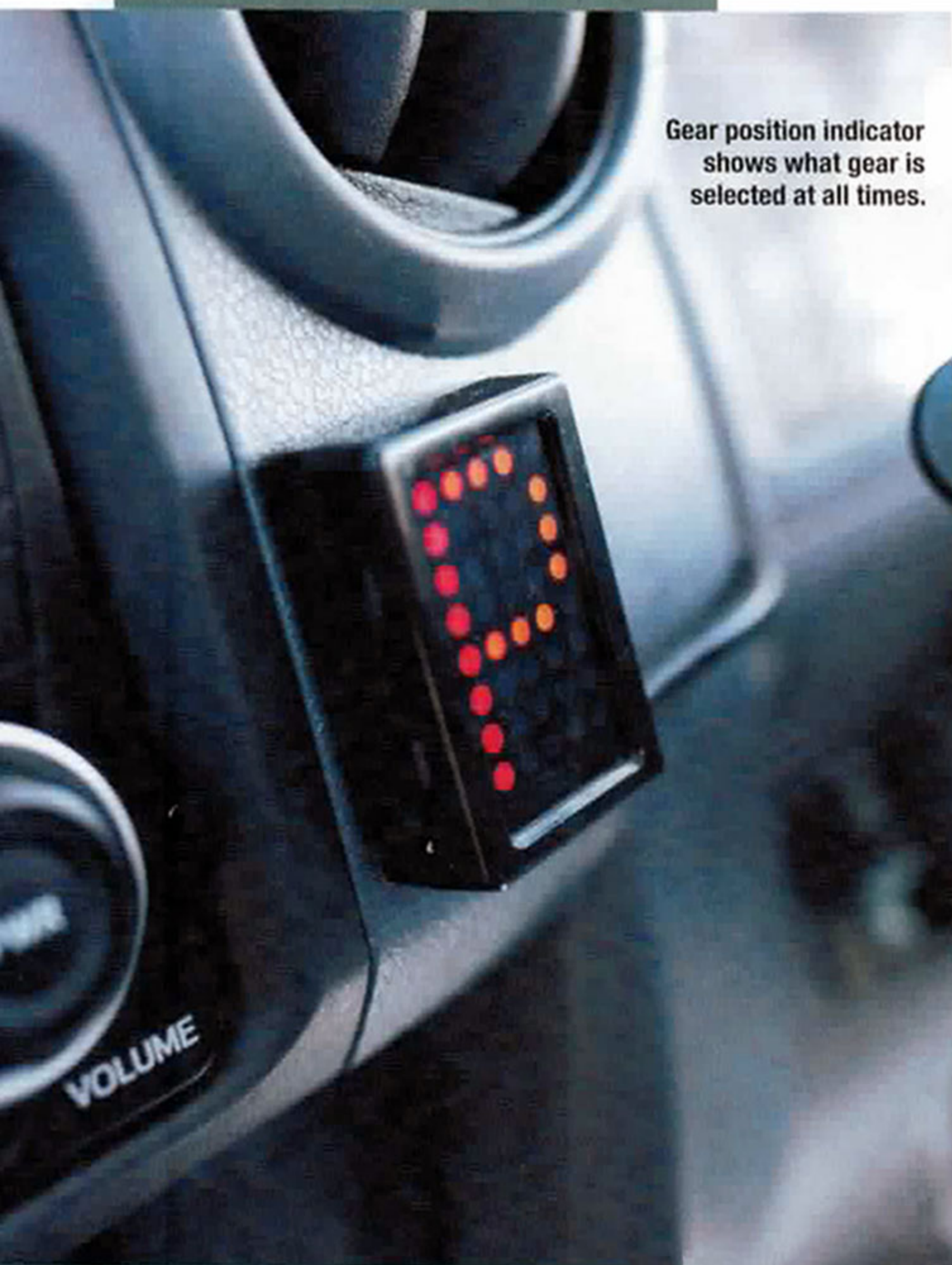
The converted 79 can be driven like any other two-pedal, auto transmission

**At 100km/h the V8 diesel engine is ticking over at just 1800rpm, that's a damn sight lower than with the short-geared manual**

Herding cattle has never been so much fun!







Gear position indicator shows what gear is selected at all times.

vehicle – just put it in drive and off you go. Alternatively you can pull the selector back a notch and choose the gears tip-shift style using the rocker switch on top of the lever. This is especially handy for off-road use when you want to hold a low gear for longer.

A third mode is accessed via the Tow/Haul button on the console which changes the shift protocols to hold the gears longer, shift firmer and downshift faster for engine braking. We found this useful when climbing and descending steep hills in the Alps and think it would also work well for driving in heavy sand or towing (as it was intended for).

The Marks 4WD Adaptors six-speed auto conversion suits any current model 1VD equipped 70 Series, including the 79 ute, 79 double-cab, 78 Series Troopy or 76 Series wagon. The kit includes the brand new GM transmission and torque converter, flexplate, shifter, console,

all mounting hardware, two pedal conversion, electronic transmission control unit, wiring, aluminium PWR radiator and all ancillaries. Everything bar the auto transmission fluid!

The conversion can be carried out by a qualified mechanical workshop in three to four days and Marks has 'approved' workshops it deals with around Australia. The transfer case remains in the standard location so the conversion is literally a bolt in job. The conversion kit and components are backed by a two-year warranty from Marks.

The LC 70 6-speed auto will cost you around \$17,000 fully installed by one of the approved workshops, so you'd really have to want an auto equipped 70! But think of the few alternatives – none of which offer the heavy-duty performance or be as good off road as the Cruiser. After our time in this 79, we know what we'd choose. **4WD**

## SPEED SAFE

ANOTHER interesting Marks 4WD Adaptors product fitted to the 79 is the Digital Speedo Corrector module that you see sitting in the console. As the name suggests, the DSC allows you to adjust the speedometer for accuracy if you have altered the vehicle gearing by either changing the transmission, the final drive diff gears or simply fitting bigger tyres. And with so many speed cameras and highway patrol cars around, you need an accurate speedo.

Leigh usually runs 35-inch tyres on the 79 but we asked to test it with the standard 265/75-16s fitted. With the smaller rubber installed, recalibrating the speedo is as easy as the push of a button on the DSC module. Marks has these units to suit most popular 4x4s and they are priced from \$220 to \$240.

No second-hand parts from the wreckers in this kit. The gear shifter and all parts are new.

