

MORE IS MORE



With the introduction of the new Hino 500 range, the Japanese truck builder is now offering more trucks, with more options and more engines. **TIM GILES** checks out the new models.

The modern truck has a lot of built-in flexibility, and the Hino 500 range is no exception. The models available cover from the lighter end of the medium-duty range up to some serious heavy-duty rigid trucks. This means the trucks are going to experience very different working lives and need to be capable, no matter what the task.

Hino has looked at what it has on offer in the 500 Series and made a number of changes to increase the breadth and depth of its offering to the market. This means new chassis, new engines and new combinations of existing components.

"Our previous range offered 33 models and we have now expanded that to 51, so when it comes to choice of engine capacity, transmissions, suspensions and wheel bases, customers have myriad options," says Daniel Petrovski, Manager Product Strategy, Hino. "The new FG, GH, FL and FM offer a broader range of applications than ever before.

"The all-new 500 Series has taken a long time to get here. The last release of an all-new model range was in 2011. In commercial vehicle terms the wait is just about right on time. The basic DNA from design and manufacturing on any Hino truck is 'QDR' – quality, durability and reliability. The new 500 Series project began 2009, when Hino carried out back-to-back testing and benchmarking against

our competitors on Australian roads over a number of weeks.

"Some of the changes from that testing were put into place on upgrades in 2010 and 2013, like SRS airbags, Isri driver's seat and electric heated mirrors. But the work on delivering the results of the 2009 testing didn't stop there.

"Australia is not the first to get these new models, they were released in Thailand and Indonesia in 2015. Australia is the first advanced market to receive this new model. It is a major new model for us, there are new engines, new exhaust emissions, new exterior, new staircase for entry and exit, new manual transmissions, Allisons across the range, new chassis and chassis layouts, diffs, drives steering axles, suspensions and new levels of safety."

At the heavier end of the range, Hino is now using the chassis design and concept featured on the Hino 700 heavy-duty truck. This is a more flexible design with pre-drilled holes on the web of the chassis members and with a rivet-less flange.

The holes are 50mm apart along the length of

the chassis, enabling both Hino and body builders to place components like fuel tanks and body mounts anywhere along the chassis. The name of the game in this segment of the market is to ensure the truck buyers can build whatever kind of truck they like from a generic base model, without having to resort to major vehicle modifications.

"We call the new chassis, 'body-builder friendly'," says Daniel. "It is an



840mm-wide, grid-hole chassis. It features a vaulted frame structure and a clean top flange, eliminating the need for a space between the chassis and a subframe. This is already showing real efficiency for body builders.

"They are high tensile 620MPa steel now, the same as the 700 Series," says Daniel. "It is electro plated, which helps with rust resistance. The modular chassis pattern means things like batteries, exhausts and air dryers are now all modular components. We have spent a lot of time talking to Australian body builders about where different components need to go in certain applications."

LOOKING FOR MORE POWER

As we have seen for many years, the truck market is always looking for more power in its trucks. The desire to have just a bit more oomph every time a truck is replaced won't be going away any time soon.

As a result, we see a new engine from Hino appear as an option in the heavier end of the 500 range. In fact, both engines now available are new to Australia. The existing eight-litre engine has been modernised as the Hino J08E. It is rated at 280hp (206kW) at 2,500rpm and puts out an increased torque level at 883Nm (651 ft lb), an increase of seven per cent on its predecessor.

The new kid on the block is the nine-litre engine, the A09C, again this is a six-

cylinder engine, but it has a completely different nature to its smaller alternative. This is an engine designed with a more European style; the way the power comes in and drives the truck is different from the run-of-the-mill Japanese engines we are used to.

"The new wide cab does look different," says Daniel. "The eight-litre has a three-bar horizontal grille and the nine-litre models have a four-bar grille. The new nine-litre has a very flat torque curve, which,



combined with the new transmission, makes the 350 a real pleasure to drive. It's also the only Japanese truck of its size to feature a true Jacobs-type engine brake."

Hino has also made a step change with its emission control technology. The EGR and DPF system that has been favoured up until now has been replaced with an SCR system to clean up nitrogen oxides and particulate matter.

There are pros and cons to this approach. By going to SCR, it is possible to tune the engine to run at its most efficient, advance ignition and get a full clean burn. This not only makes for a free running engine, it also reduces particulate matter in the exhaust and the extra nitrogen oxides produced by the higher ignition temperatures can be cleaned up in the SCR after treatment. The con in the equation is the addition of an AdBlue supply. This adds complication for the owner of the truck as they have to ensure the AdBlue tank is topped up as well as the fuel tank. Another tank on the chassis, plus the expense of buying the AdBlue in the first place adds to the issue. The improved efficiency of the engine does mean the costs are probably lower with the new engine, though, and chassis real estate is not a major issue in this segment of the market.

"We proved the SCR solution on our 700 Series models," says Daniel. "It is a fuel-efficient solution, particularly in the 280+hp engines. The engine burns the fuel more



efficiently and retains less heat. It runs cooler, allowing the improved performance to be delivered."

GOING AUTO

Another trend affecting this area of the market is the move across to automatic transmissions. Several truck makers have offered automated manual transmissions as an option, but the market seems to be locking itself into a preference for Allison fully automatic gearing.

As a result, Allison is an option on just about every model in the new 500 Series line-up. The substantial improvement in auto performance with improved electronics – the ability to monitor the truck's behaviour and demands so precisely via the CANbus means the transmission has an effective answer to every question posed by the truck and the task at hand.

There are manuals on offer, with a Hino six-speed and an Eaton nine-speed available. There is also an impressive newcomer to the 500 – Hino's M009OD nine-speed box is a four-over-four H-pattern range change box with a short throw and positive linkage. Ratios are available from 10.781:1 all the way to an overdrive 0.724:1 at the top end. Changing the nine-speed from Hino from a constant mesh to a synchro box makes a substantial difference to the quality of the drive available.

The new nine-litre engine offers 350hp (257kW) of power under the right foot and 1,422Nm (1,050 ft lb) of torque. This much horsepower in a rigid truck is more than

enough, but it is the ripping torque that impresses out on the road. Especially when combined, as it is, with the Hino nine-speed manual.

Unfortunately, for those who go with the Allison option, the engine gets less power and torque. The power comes in at 320hp (235kW) and torque is cut to 1,275Nm (940 ft lb). Hino has chosen to fit the 3500 version from Allison and have not engineered in the 4000 Series to cope with the higher torque of the top-end engine.

All of the Allison transmissions used in the 500 are six-speed models.

"The move of the production of our 500 models to the new Koba plant in Tokyo means we can get synthetic fluid into the Allison transmissions down the production line," says Daniel. "This means we have service intervals on the Allison out to 480,000km."

OUT ON THE ROAD

A driver can't help but be impressed when taking these new combinations out on the road. The smoothness of the Allison in combination with the eight- and nine-litre engines sees the driver's task minimised, however, get into the 6x4 rigid with the top power nine-litre and manual box and the fun begins. This is a top performer, with the amount of power and torque available at all times and the smooth changing of the gear box enabling the driver to get the most out of what's available, and there's plenty there.

Pulling up at some traffic lights for the first time in these models can be

a little disconcerting. Pull up, hit the brake and disengage the gear and the engine dies, even on the manual. The stop-start technology Hino first introduced over 10 years ago in the hybrid models has now made it across to the conventional manual models.

Yet another pervasive trend in trucking has been the increasing adoption of sophisticated safety systems. Hino are in on this trend, with vehicle stability control now standard across the range. This goes along with all of the other safety features like antilock braking systems (ABS), Front Underrun Protections (FUPs) and Anti-Slip Regulation (ASR) that have been introduced in the last ten years or so.

What Hino has now is something that has been designed and built to suit Australian truck buyers. With each new generation of truck model Hino gets closer to the ideal truck for the market. In recent years the brand has impressed with the kind of power and flexibility it has designed into its models, in both the 500 and the 300 ranges.

This new range gives the Japanese truck importer the right mix for the market, from the basic low-spec option at the lower end, through a series of excellent fleet performers with Allison transmission and sufficient power, to the top end and a rip snorter with a great new transmission. **IID**

