



# THE GREAT LEAP FORWARD FOR HINO

With the introduction of the new 500 Series Standard Cab range this year, Hino looks like it's about to take a great leap forward in its standing in the Australian market. **Tim Giles** went to Japan to speak to the engineers, both from Australia and Japan, who have developed the latest model for the Australian market.

In the world of medium duty trucks, Japanese truck manufacturers have complete control of the market in Australia. There are four brands from Japan which play in this space and they sell 95 per cent of all the trucks sold in this segment. Of these four, Isuzu and Hino are the dominant players, with Isuzu coming out as number one for most of the last 30 years.

The innovations in the new model range take the 500 Series Standard Cab well beyond its competitors in this market segment, in terms of electronic safety equipment offered as standard. The Hino 500 now includes a Pre-Collision System (PCS) which includes Autonomous Emergency Braking (AEB), Pedestrian Detection (PD) and Safety Eye (SE). There is also Adaptive Cruise Control and a Lane Departure Warning System.

There's also a new five litre engine, based on the nine litre introduced last year, with plenty of torque. Transmission choices are now between manual, automated manual transmission (AMT)

and fully auto across the range. The new A05 engine is a four cylinder derivative of the larger A09 six cylinder heavy duty engine fitted to the 700 Series heavy duty models in Japan as well as the medium and heavy duty 500 Series Wide Cab models in Australia.

"The level of safety on this truck has never been seen before in a Japanese-built medium duty truck in Australia – this is complemented by the superior torque, increased power and reduced fuel consumption of the all-new heavy duty Hino A05 turbo charged five litre four-cylinder diesel engine," said Hino Australia's Manager of Product Strategy Daniel Petrovski.

This new model represents a step change in the Japanese offering in the medium duty truck market. There has been a gradual evolution in the past 15 years as the Japanese truck makers have introduced incremental improvements in the sophistication in their trucks. Cruise control, antiskid braking system (ABS), improved entertainment systems, et al





have come along piece by piece at the same time as the sophistication of the driveline improved to include electronic engines with exhaust gas recirculation, selective catalytic reduction (SCR) and so on.

This time it's different. Hino is taking this whole truck segment and driving it forward into the 21st century. The safety technology coming into the Hino range is at a level comparable with the latest technologies fitted in new European trucks. (see page 30 for Diesel's story about UD Trucks introducing this technology into heavy duty trucks)

The electronic architecture in the new models is all new and will provide the platform for much more powerful sophistication in the coming years. This takes Hino a couple of steps ahead of its direct Japanese rivals in the medium duty segment.

With the introduction of the new 500 Series Standard Cab, Hino has thrown down the gauntlet to its rivals. The question is, whether they will be willing or able to match the offer.

**ALTHOUGH THE CAB SHELL AND DOOR SHELL REMAIN THE SAME, THE REST OF THE PANELS MAKING UP THE CABIN ARE NEW.**

**CHANGING PARADIGMS**

One of the features of the parts of the truck market in which the Japanese truck brands are most important has been the way in which the Japanese have set the agenda in terms of what is and what is not included in the price and which level of sophistication, in terms of equipment, is included.

In the last 10 years we have seen an acceleration in the improvement of sophistication offered onboard these workhorse Japanese Trucks. Before 2003 Japanese Trucks used mechanical diesel engines and relatively unsophisticated systems throughout the vehicle. All of them concentrated on durability and reliability in the truck.

The series of new exhaust emission regulations which were introduced in Australia over the following 10 years forced the hand of the Japanese into

upgrading the levels of sophistication available in their trucks. Simultaneously, there was also an increased demand from fleets for better safety systems, as they looked to their duty of care and the chain of responsibility.

As a result, ABS and stability control became the norm in Japanese medium duty trucks. Simple things like cruise control started to appear and the comfort levels within the cabin was upgraded several times. Automatic and automated gearboxes were fitted in the models on offer. They had been unheard of 10 years before, apart from in very specific applications.

So now, with the paradigm shifting, we are moving from the simple basic truck to one which has an inbuilt navigation system, reversing camera, electronic engine, stability control and so on, as standard. Each iteration of a particular

model sees growth in the amount and sophistication of the equipment be offered in a truck.

One of the major issues around these kinds of changes in truck design is the fact that it costs a lot of money. The dollars needed in research and development to increase the sophistication within these trucks does put a limitation on their availability. To integrate a new system into an existing truck and test it to ensure compatibility, durability and long term reliability runs to millions of dollars on the annual budget.

In terms of development, large global players have a distinct advantage. The big boys can spread the cost of developing highly sophisticated systems across a number of brands and types of vehicle. For those who are not part of a global conglomerate, all of the costs have to be borne by a single company.

In global terms, Freightliner, Fuso and Mercedes-Benz can leverage off development dollars being spent across all of their truck brands, plus Mercedes-Benz cars. Similarly, Volvo, Mack and UD trucks can develop technology across a wide range of trucks.

This is also the case for Hino who are owned by the massive Toyota empire. The availability of hybrid technology in Hino has come directly from the system

developed by Toyota for the car market. Now, the suite of safety systems on offer in these latest Hino trucks has come out of a Toyota-wide development program.

This gives Hino a distinct advantage over its greatest rival, Isuzu, which is a standalone independent Japanese truck manufacturer. Isuzu does sell across the world but it does not have the research and development funding, at a level which can be spread across a large number of models.

**THE SPECIFICATIONS IN DETAIL**

Although there are a lot of changes in the new 500 standard cab, when compared to its predecessor, there are two major items which stand out. These are the features which are going to push the Hino medium duty truck closer to the top of many shopping lists.

It's difficult to judge which of the two aspects of the new truck will have the most impact. The new five litre engine seems to be something which will impress



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Hino Australia's Manager of Product Strategy Daniel Petrovski

**THE ELECTRONIC ARCHITECTURE IN THE NEW MODELS IS ALL NEW AND WILL PROVIDE THE PLATFORM FOR MUCH MORE POWERFUL SOPHISTICATION IN THE COMING YEARS. THIS TAKES HINO A COUPLE OF STEPS AHEAD OF ITS DIRECT JAPANESE RIVALS IN THE MEDIUM DUTY SEGMENT.**

many drivers. It is a development from the nine litre engine which came in with the wider and heavier 500 Series trucks launched last year. Hino have cut it down from 6 to 4 cylinders and reduced the stroke to bring it down to a five litre engine.

The engine's heavier pedigree is reflected in the kind of torque levels available from the engine. It will come to Australia in both 240 and 260hp versions. Each will reach maximum power at 2300rpm and have torque, maxing out at 1400rpm, which is 794Nm in the 240 and 882 Nm in the 260. This engine produces more torque than the current seven litre engine being sold with these models. In fact, it matches the torque available from the eight litre engine in some of the 500 Series wide cab models.

In the limited driving available at the Hino Hamura test facility in the west of Tokyo, the depth of the torque available was obvious. The engine would lug up from well below 1000rpm with a full load on board, effortlessly. The combination of the larger, heavier block and the twin

turbos managing the airflow, makes this an impressive engine.

The engine has another innovation for a Japanese truck in the Australian market, a Jake brake. Instead of the, usually, ineffective exhaust brakes we have become used to from Japanese product, here we have a genuine engine brake which can aid retardation, protecting brakes and improving performance.

**GREAT LEAP FORWARD**

The new engine is an evolution in the development of engines in Hino trucks. Similarly, innovations introduced into the electronic platform could also be seen as an evolution. However, it is not just the equipment and its capabilities which is being changed, Hino are changing the way truck manufacturers and customers will think about Japanese trucks into the future.

This step change is based on an evolution in the electronic architecture of the truck. This is, all new, the electronic system is a generational change. It is an architecture on which the next generation

of electronic equipment and aids for the operator and driver will need to operate. With these changes, Hino are revealing their vision of the future in truck development.

In the past, the Japanese truck manufacturers have specified equipment on trucks to meet the requirements of the Australian market, without needing to go very much further. On the other hand, Australian truck buyers looking at European products have been offered leading edge electronic safety systems and other vehicle management systems, way beyond what they are listing as their requirements.

The Hino organisation has decided to take a European attitude to specifications within the new 500. The designers have gone way beyond the ABS and stability control offered in the past. The safety systems offered may come with a different set of acronyms from their European counterparts, but we are dealing with what is, basically, a very similar set of safety inclusions.

"Not content with simply leading the market with the standard inclusion of vehicle stability control and reversing camera, the 500 series standard cab will be the first Japanese truck in Australia to offer the next level in active safety technology," says Daniel.

The PCS, SE, AEB, PD, ACC and LD are going to be fitted as standard across this section of the Hino range. And we can expect these systems to appear on the rest of the range as it gets renewed over the next few years.

"PCS is a true active safety system that, via the combination of camera and radar technology can detect potential collisions with another vehicle, a pedestrian and/or other object," says Daniel. "PCS continuously scans the road in front of the truck and assists the driver to actively minimise the type of accidents that regularly occur through poor vision, driver distraction or poor judgement.

"A common accident scenario that we believe PCS will reduce is a rear-end collision with another vehicle - for instance, on a single lane road where a driver may not notice that the vehicle ahead is slowing or already at a standstill. In this case, PCS detects the vehicle ahead via the camera and radar, and warns the driver both audibly and visually on the

multi information display.

"If the driver fails to react to the imminent danger, PCS can, as a last resort, engage AEB to apply the brakes to minimise the vehicle's speed and subsequent damage to the vehicle in the event of an accident, or in some circumstances, assist the driver to avoid the collision altogether."

**OVERALL RANGE**

Although the sophisticated safety package and the new engine are the headliners in this story, there are other aspects of this release which may prove to be significant. Although the cab shell and door shell remain the same, the rest of the panels making up the cabin are new. The 500 retains a familiar shape and style, but when placed side by side with the predecessor model it is clear this is something new.

The engine has been designed to meet the requirements of the Japanese post-Post New Long-Term exhaust emission standards. This level of exhaust emission is equivalent to Euro 6. The new 500 is ready for the next level of emission standards in Australia whenever they arrive in the 2020s.

There is more technological innovation in the cabin with a major upgrade to the multi information display unit in the dashboard. We have become used to



these double DIN units in Japanese Trucks, but the latest generation, which is now available, has the capacity to extend their capabilities way beyond what we've seen before.

The new multimedia unit runs on the Android platform and, as a result, can be loaded with apps which can perform whatever function the driver or operator require. This technology is only just beginning in this market segment, but the ability to write apps customised to the needs of the truck operator suggests innovative ideas will be available down the track.

For instance, it would be possible to link the unit with the driver's mobile device on which they can take photographs, record their signature and more. The new unit can also be connected to cameras both inside and outside of the truck. It will also include the HinoTraq telematics software which is being developed further over time.

The new 500 will also be on offer with a selection of transmissions. Some form of automation is becoming normal in this segment of the truck market, but a manual option will remain within the range. There will also be a choice between automatic

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and automated transmissions. The former being the Allison transmission and the other Hino's own AMT.

In the limited test driving available on Diesel's visit to Japan, the AMT appeared to be smooth and effective out on the road, unlike some of the Japanese AMT units we have seen in Australia in the past. In terms of fully automatic, the Allison is a known quantity here.

## WHERE TO FROM HERE?

The new Hino 500 Series Standard Cab comes into the Australian truck market at a point which we may see a paradigm shift, if this new product from Hino gets the kind of cut through it needs. The last 20 years have seen the Australian truck market in a very stable mode. Isuzu has been number one in the overall truck market and Kenworth number one in heavy.

While 2019 is not going to see a radical change in this balance of power, if Hino can match this quantum leap in specification with a corresponding sales and support campaign. It will take



something which matches the product's innovative design, but then we may see a sea change in the medium-duty sector of the market.

People within the Hino organisation may not be willing go on the record, as such, but there is a confidence in the group, this product is capable of taking Hino to the number one position in truck

sales in medium duty. The product is certainly good enough to do the job. The question is whether the Hino organisation in Australia is capable of taking on the highly effective marketing machine which is Isuzu Trucks. To make it happen will take a massive effort on the part both of the manufacturer and the entire Hino organisation across the country. **IID**

