STREET SMART

Hino shows its 500-Series is based on clever thinking – Words by Warren Caves.

Hino's 500 Series Wide Cab range entered service with Australian fleets in early 2017, teaming a choice of two different capacity, six-cylinder, turbocharged diesel engines with the Allison 3000 World Series six-speed automatic transmission.

Visually, the difference between the two engines was evident in the cab positioning being lower – a two-step cab entry for the 8.0-litre, versus the three-step up to the 9.0-litre.

At the time of its launch there were more than 50 variants in the 500 Series range, encompassing models such as the FG, GH, FL and FM, and running from 4x2 to 6x4 and with a 6x2 featuring an additional lifting lazy axle alternative as an aftermarket fitment by the bodybuilder.

In what was an Australian first for this class, Vehicle Stability Control (VSC) was fitted as standard across the 500 Series range. Additional class-leading safety features include ABS, traction control (ASR), a driver airbag, cruise control, fog lamps and Hill Start Assist (with manual gearbox only).

Although a standard cab version of the 500 Series was previewed at the Tokyo Motor Show in 2017, it wasn't available for the Australian market until November 2018.

The arrival of the standard cab to join the wide cab versions was destined to gain the attention of medium duty truck buyers and operators, where the additional interior space of the wide cab versions is not needed for inner city application.

Hino Trucks Australia has a lot riding on its decision to include a raft of safety features as standard inclusions on this truck, and is obviously excited to be able to increase the available product range. *PowerTorque* was invited to preview the all-new 500 Series standard cab at the Hino Motors Limited (HML) test facility in Hamura, Japan.

One of the reasons for delaying the arrival of the standard cab was the introduction of an all-new smaller displacement engine that brings increased power and torque outputs. The gain for operators is improved fuel economy and lower exhaust emissions that comply with Japan's stringent post-Post New Long Term (pPNLT) emissions standards, which is equivalent to Euro6.

With its cleaner, greener attitude, the standard cab 500 Series brings to the table new levels of both active and passive safety, together with technology benefits not previously seen in the Australian medium duty truck segment.

Versatility and choice have been increased with 54 model variants available across the FC, FD and FE range, up from the previous 35 model line-up.

Cabin variations across the 500 standard cab range include a short cab (FC), a rest cab with ADR42 sleeper compliance (FD&FE), and a crew cab (FD&FE).

For the new 500 Series standard cab, the FC now joins the FD in the 11,000kg GVM category, a significant increase over the previous FC model's 10,400kg GVM. The FE model continues to be offered with GVMs of 12,000kg and 14,000kg, depending on requirements.

Beneath the cab sits the new heavy-duty AO5, 5.0-litre, four-cylinder, turbocharged engine, replacing the previous five-cylinder AO7 that was fitted to the original versions of the standard cab truck.

The AO5 is designed around the AO9 six-cylinder engine fitted to the 500 Series wide-cab models in Australia. Sharing some core engine componentry from the AO9 including crankshaft and bearing dimensions, and utilising a shorter stroke, the AO5 is claimed by Hino engineers to be under less stress and easily able to cope for the long term with the increased outputs.

Interestingly, the new AO5 four-cylinder engine produces the same amount of torque as the larger JO8 engine fitted to the 500 Series wide-cab models, plus it offers 10 to 20 percent more torque than the JO7 five-cylinder engine that featured in the outgoing standard cab models.

The AO5 engine should be more than up to the task, as explained by Daniel Petrovski, Manager of Product Strategy, Hino Motor Sales Australia (HMSA): "The AO5 engine is basically an AO9 with two-cylinders cut off – it's a big, heavy-duty engine".

Three power ratings are available depending on model selection, with 240hp @ 2300 rpm and 794Nm of torque @ 1400 rpm for the AO5-TE fitted to FC & FD 1124 models.

The FE crew cab models receive the AO5-TD with 240hp at 2300 rpm and with 833Nm of torque at 1400 rpm, while the range-topping FD 1126 and FE 1426 models are powered by the AO5C-TC with 260hp at 2300 rpm and 882Nm of torque @ 1400 rpm.

The 240hp variants are fed by a single variable nozzle turbo, while the 260hp versions benefit from a two-stage variable nozzle turbo.

The low-revving nature of the new engines and a torque curve plateau from 1200 rpm to 2200 rpm, results in great low-engine rpm performance and should produce solid pulling power, with subsequent fuel economy gains from the down-speeding of the engine operation.

Exhaust emissions are controlled by selective catalytic reduction (SCR), exhaust gas recirculation (EGR) and diesel particulate reduction (DPR) to the equivalent of Euro6.

The Standard Cab 500 Series is the only sub 15-tonne truck in the Australian medium-duty truck market to be fitted with a true engine brake - a “Jacobs Engine Brake”, to be precise. This is an offering that, when used in addition to the traditional exhaust brake, should increase brake service intervals and reduce operating costs.

Manual transmission offerings are from the LXO6 six-speed manual transmission, proven in the outgoing 500 Series standard cab, and additionally the MXO6 and MXO7 have been added to support the extra torque of the AO5 engine.

A six-speed Allison 2500 series fully automatic transmission is available across the range of 500 Series standard-cab models, which sees Hino Trucks as the only Japanese truck manufacturer to offer a true fluid automatic transmission from a car licence truck right through to a 6x4 prime mover. Crew-cab models are now available with an automatic transmission, unlike the previous 500 Series models.

The Hino Automated Manual Transmission (AMT) is also available, controlled via a rotary dial function on the dash to the left of the steering wheel, with a manual selection paddle on the underside of the steering wheel. All manual and AMT FD & FE models are also fitted with a Hino stop/start system, automatically stopping and restarting the engine when the vehicle comes to a stop.

Bill Gillespie, HMSA’s General Manager of Brand and Franchise Development says: “We predict that 70 percent of 500 Series sales in Australia will be fitted with automatic or AMT transmissions”.

On the outside, there are subtle changes from the outgoing 500 Series, a distinct two-bar grille, larger Hino badge and redesigned headlights (low-beam LED for the FD and FE), daytime running lights and cornering fog lights. These redefine the look a little and an Emergency Guard Impact System (EGIS) cab with door impact beamsrounds out the changes.

Inside the cab is where the major differences will be noticed, with a refreshed dash design and colour palette on offer that marries earthy tones and carbon fibre.

Technology advancements come in to play with the all-new 6.5-inch smart multimedia unit and seven-inch LCD multi-information display in the centre of the instrument cluster, giving the driver easier access via the steering wheel control switches to more information than any other Hino before.

Smart thinking also extends to the wireless mobile phone charging mat, located within the dash.

The new multimedia system and in-dash display could warrant an article all to themselves, so I'll condense things a bit. There's app integration for music and audiobooks, and wi-fi connectivity for the telematics options available in conjunction with Hino Traq. This builds a wealth of driver and truck performance data for owners and fleet managers which is both broad and encompassing, warranting the title of "the smart truck".

For driver comfort, the latest ISRI NTS-2 driver's seat is standard fitment with rearward travel increased by a generous 48mm for taller drivers and also containing integrated seatbelt fitment with pre-tensioner.

When asked what is standard fitment and what's optional, Bill Gillespie's answer was simple. "There are no options from Hino when it comes to safety", he said.

"We had some very robust discussions about what would, and what would not be standard inclusions when it came to the safety features on the new model 500 Series standard cab. In the end it was decided that all the safety features would be standard across the range".

These include Pre-Collision System (PCS), which includes Autonomous Emergency Braking (AEB), Pedestrian Detection (PD) and Safety Eye (SE), Adaptive Cruise Control (ACC), and Lane Departure Warning (LDW). Vehicle Stability Control (VSC), which incorporates ABS and Traction Control (TC), is also standard, bringing the VSC feature across the entire Hino truck range from the 300 Series through to the 500 Series.

Taking part in a drive evaluation at a Japanese test and development centre usually generates a degree of concern for the hosts, mainly because of the constraints placed on the employees accompanying the media and their belief that the incumbent driver might reduce their chance of enjoying a company pension.

Upon arrival at Hino's Hamura plant, we were transferred from our roadgoing bus to a fully curtained plant transfer bus, denying us any unauthorised gazing upon Hino development projects, for the transfer to the test track facility and our drive evaluation of the new 500 Series standard cab.

Having completed the customary greetings extended by the senior management of the test facility and manufacturing plant, the media group was introduced to the three 500 Series standard-cab trucks poised for evaluation on the circular Hamura test track.

Available for test were an example of each available transmission variation, being a five-speed manual, a Hino AMT and the Allison 2500 fully automatic.

Entry to the cabin is excellent thanks to the low step, wide 90-degree door opening, and grab handles both side of the door opening, allowing for three points of contact.

The ISRI seat afforded ample adjustment, providing a comfortable driving position when combined with the tilt-and-telescopic steering wheel adjustment.

Immediately noticeable from take-off was the low-down torque from low engine rpm levels, enabling things to start happening without undue lag. Getting up to speed even with a six-tonne payload of concrete blocks seemed effortless. Noise levels were non-intrusive unless the fan happened to be engaged, at which point the usual drone was apparent.

The test circuit is reasonably flat with only a small incline of two or three percent, which did not provide enough resistance to inhibit road speed to any great extent. It did, however, provide an opportunity to test the Hill Start Assist feature, which perfectly removed any roll-back on take-off.

The new dash and gauge layout are well positioned, with all main function gauges and the multi-information LCD display unobscured by the steering wheel. Steering was light and precise while ride comfort was ironed out smoothly, thanks in part to the 90 percent payloads and smooth test circuit.

For the first test drive, the foreign media were invited to ride “shotgun” with the Hino driver trainers to experience a simulated Pre-Collision System (PCS) event, utilising the top-of-dash-mounted Safety Eye and front-of-grille-mounted radar unit. The vehicle was driven at 50 km/h towards a stationary mock car, prompting the truck to automatically grind to a halt after the audible warnings were ignored by our driver.

The remainder of our drive experiences were a little more sedate and carried out from the driver’s seat with yours truly at the wheel, accompanied by our driver trainer and an interpreter. During this exercise, the translation of driving instructions took a little while to make it into English, and hand gestures seemed a little speedier, with gesticulation increasing in direct ratio to the participation of the instructor.

On our test, I would be hard-pressed to decide whether I preferred the AMT or the Allison automatic transmission – only a longer, real-world test drive would do as a decider. That’s not to say the manual transmission wasn’t any good, it’s just that the two-pedal models worked really well.

HMSA has made a brave move in incorporating so many advanced safety features and technical functions as standard equipment - presumably at a price premium over competitors’ base models - but I applaud the move. Any improvement in the driver’s workplace is welcome in my book, and it’s high time truck drivers in the medium duty segment were treated to basic safety advancements taken for granted in passenger cars.

Perhaps the Australian truck industry will one day see mandated minimum safety requirements for the workplace to include drivers once they leave the depot. Until that time, Hino Trucks are well in front of the game with the new 500 Series.

In summary, our initial drive introduction to the 500 Series standard cab reveals what seems to be a notable all-rounder in the medium-duty truck segment with sensible, forward-thinking improvements over its 15-year-run predecessor.