

A NEW CONSTRUCT

Latest in an unrelenting programme of heavy-duty range replacements from Mercedes-Benz is its new construction truck, the Arocs. Ian Norwell reports from Munich

Mercedes-Benz's Arocs for the construction sector is new, but not unproven. With an engine line-up, cab derivatives and AMTs already in use in its other truck models, Daimler engineers have been able to call on proven components and layouts

With its long-distance Actros range renewed last year, and a new heavy and medium distribution offering, the Antos, also sent down the slipway in 2012, Mercedes-Benz has turned its sights on the construction sector.

Arocs heralds the arrival of the highest output version of Daimler's HDEP (heavy duty engine platform) for Europe, the OM473. This 15.6-litre engine breaches the 600hp ceiling and will also be available in the Actros, with immediate effect. It's no surprise that this power plant has not been rushed into production. Volumes of these high horsepower engines will undoubtedly be small. Nevertheless, the full power unit provision is now officially complete.

That said, Arocs itself will now replace the current Axor and Actros construction vehicles, with a broad church encompassing gross weights from 18 to 41 tonnes, and chassis layouts that stretch from a modest 4x2, up to a specialised 8x8. The fact is that driveline components and cab panels now available from Daimler's recently-launched ranges have given it

the opportunity to give construction fleet buyers a very wide choice of chassis and an opportunity to select a specification according to duty, in terms of strength or sheer payload and productivity.

The variety of cabs alone will certainly challenge buyers to say they're not catered for – with 2.3m and 2.5m-wide options, and seven variants of each. Also, as with the Actros, where the practicality, elbow room and driver feel-good factor of a flat floor design came to distribution tractors, now it has come to tippers.

Automatic transmission

Engine options give 16 power outputs and the four engine sizes (7.7, 10.7, 12.8 and 15.6 litres) can deliver between 238hp and 625hp, with from 1,000Nm to 3,000Nm torque. In driveability terms, Mercedes claims that 90% of maximum torque is available from 800rpm. It will also come as no surprise to fleet engineers that the automated transmission's march continues apace. Indeed, it does a range-change here, in that the fully automated PowerShift 3 takes over as the standard, with eight- or 12-speeds and 16 as an option.

Those wedded to the manual gearbox can choose from either a nine- or 16-speed, but they will have to pay extra. As developments move forward, fleet buyers in the construction sector who have stuck with manual boxes should ask themselves why they wouldn't want the driveline protection that this level of automation now brings. We've driven it in other model ranges, and the speed of shifting and general ease of use are both very good.

No doubt, the standard v option bias will put a lot more AMTs (automated manual transmissions) into this market. There are safety advantages, too, with an overrun mode that will maintain a gear on a descent and a choice of driving programs – 'off-road' or 'power' – and various modes within each that maintain control, while keeping a driver's





attention on site traffic, rather than shifting ranges and ratios manually.

As Georg Weiberg, Mercedes head of truck product engineering, puts it: "If a driver shifts into the wrong gear on the motorway, it's not a big problem. If he makes a mistake on an excavation site, that could be a disaster." And the drivetrain now gets a higher degree of protection, too, with some drivers' skills automated. 'Rocking' mode can manage the process of extracting a stuck truck with less stress on components than many drivers can manage. Also, increased torque values are acknowledged, with the introduction of a double-disc clutch on double-drive models that deploy over 2,600Nm.

Productivity choices

In common with the Actros and Antos ranges, the new Arocs can be specified in weight- or duty-conscious versions that will appeal to aggregate and muckaway fleets respectively. The Arocs Loader 8x4/4 32-tonne cement mixer chassis claims a kerb weight of 9,250 kg and a payload that reaches that sought-after eight cubic metres of concrete. A raft of measures to cut kerb weight includes: chassis frames in different widths and thicknesses; aluminium wheels, tanks and air reservoirs; and even a practical cab that deletes the passenger seat.

For those wanting a heavier-duty chassis, the Arocs Grounder offers a robust package that includes a 744mm width frame (90mm less than the Loader), with eight or nine mm thick steel and 100mm wide steel springs. For tandem axle weights above 26 tonnes, a tandem suspension with flange socket bearings is used and, depending on gvw, two, three or four-leaf spring assemblies.

Meanwhile, new technology includes the claimed world first of electro-hydraulic steering for the four-axle chassis. This variable-power steering with active return claims to offer a taut on-road feel, yet still remains easy to operate when off it. We'll be looking

for confirmation of that when the test drives emerge.

New to Mercedes, but not to the market, is also a hydraulic auxiliary drive (HAD) for occasional off-road work. It can temporarily convert a 4x2 into a 4x4, using engageable wheel hub motors. There's a weight saving of nearly half a tonne, compared to a conventional driven axle. However, there will also be an attendant cost and a possible impact at re-sale from a conservative market. It's similar to Renault's OptiTrack hydrostatic drive, where the front axle is driven by a pair of hydraulic motors, supplied by an engine-driven pump. While this arrangement does allow continuous drive to the front axle, with none of the transmission breaks of a conventional gearbox, there is a deal of pipework and a hydraulic pump that will eventually need maintenance.

The truck certainly looks the part, and the design of bumpers, headlights and steps – with added protection underneath for the heaviest-duty versions – is all aimed at speedy repair for the classic tipper damage items. However, the myriad versions and options also mean that prospective buyers would be well advised to get a brochure, and a knowledgeable sales person, when seeking out a specification.

Verdict: Arocs is new, but not unproven. With an engine line-up, cab derivatives and AMTs already in use in its other truck models, Daimler engineers have been able to call on proven components and layouts. It's just that they haven't been arranged this way before. The cab manages to look sufficiently different, with design cues from an earthmover's bucket teeth adorning the front. But, under the skin, there is a familial skeleton. It will be at the Birmingham CV Show (NEC, 9–11 April 2013) and RHD production starts in May this year.

Asked the inevitable question, where did the name come from, Ulrich Bastert, head of sales and marketing at Mercedes-Benz trucks, dryly quipped: "It is the Greek god of trucks." Only time will tell if this elevated status will add to the 1,041 multi-axle rigids and the 16.2% market share that Mercedes took in the UK last year. 

