

MAN on a MISSION



As MAN sets out its Euro 6 trucks stall, John Challen and Brian Tingham discover how this OEM expects to maintain or reduce operating costs, despite its huge development programme

Highlighting just how far the commercial vehicle industry has come in 20 years, Des Evans, charismatic CEO of MAN Truck and Bus UK, points out that it would now take 70 Euro 6 trucks to match the emissions of a single Euro 0 vehicle. And the move from Euro 5 to Euro 6 alone has seen NOx emissions slashed by a further 80% and particulates 66%. Quite a challenge for the manufacturers, then, but MAN now declares it is Euro 6-ready.

Like many other truck builders, MAN says it took the arrival of Euro 6 as an opportunity to overhaul its entire range. Indeed, the firm invested €1.6 billion to do so. Demonstrators are available from this month, but Evans believes his company started with a technological advantage. "The integration of EGR

[exhaust gas recirculation] and SCR [selective catalytic reduction] might be new to most in the industry, but it's not new to us," he reminds us. "We have been pioneering the technologies for 18 years or so, so we believe we are ready."

The irony – given MAN's former 'add nothing' anti AdBlue, EGR-only campaign – will not be lost on readers, but it's certainly true that, in continental Europe, MAN has been running with EGR and SCR for a long time. What's new, however, is the configuration, conversion rates, the now mandatory DOC/DPF (diesel oxidation catalyst/diesel particulate filter) – and the components and connections designed to optimise performance, while keeping fuel consumption at or below the magic Euro 5 number.

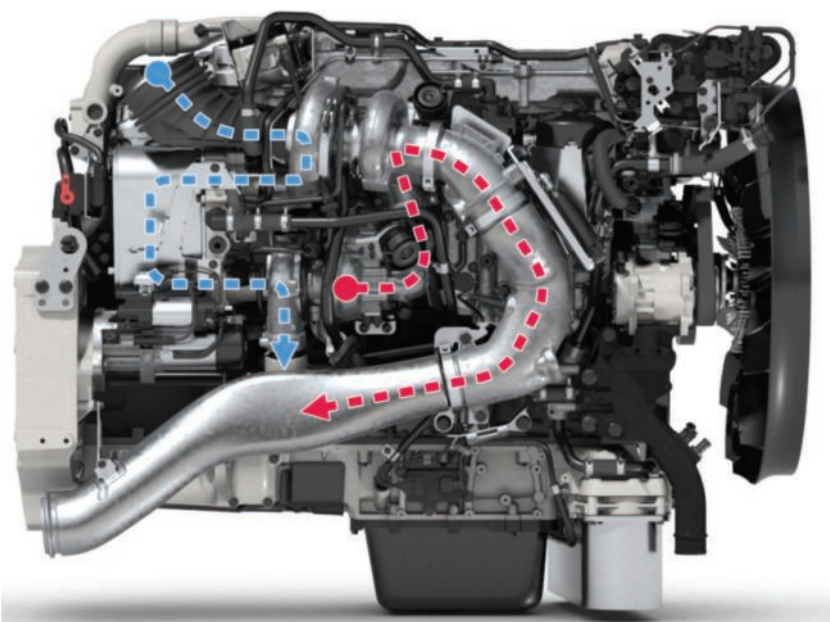
Engine technology fest

As for the engine line-up – which ranges from 4.6- and 6.9-litre D08 line-up to the 10.4- and 12.4-litre D20 units, all with the same power and torque as at Euro 5 – MAN has specified two-stage turbocharging throughout. The firm argues that the arrangement optimises boost and maximises efficiency across the load range. It also says that its individually controlled turbos have been configured for faster charge pressure build-up, as well as more efficient cooling (through a separate charge air cooling circuit) to minimise losses. And it says that using two units, as opposed to one larger turbo, means less load on each, thereby increasing reliability and reducing the risk of failure.

As for the rest, Euro 6 legislation has meant that, while

MAN Euro 6 engines all have two-stage turbocharging to optimise boost and maximise efficiency across the load range

— — — Charge air circulation — — — Exhaust gas circulation



MAN could adopt tried and tested technologies for its engines – reference the 1,800 bar, multi-injection common rail system and continually variable EGR recirculation controls – new componentry was also vital. For example, CRT (continuously regenerating trap) technology has been combined with its SCR system. The CRT comprises a DOC and a closed diesel particulate filter located ahead of the SCR, with electronic monitoring to recognise any need for active regeneration. As a result, the exhaust package has grown in size and now includes eight sensors.

Face facts

Away from the Euro 6 engines themselves, there is a new MAN family face at the front end and new chassis packaging across its TGL (7.5–12 tonnes), TGM (15–26 tonnes), TGS (18–44 tonnes) and TGX (18–44 and above tonnes) long-haul ranges. Many alterations are doubtless aesthetic – such as a redesigned A pillar and exposed wiper arms – but, elsewhere, the cab and body redesigns have been predicated on aerodynamic improvements.

Air deflectors now contain visible air ducts that improve airflow through the engine housing and along the sides of the vehicle, further aiding the heat rejection process. A three-piece plastic bumper has also been incorporated, complete with under-ride protection. Large cooling air intakes, housed in the bumper, also funnel air to the radiator surface. And additional air ducts on the radiator guard make for more uniform airflow underneath the vehicle.

Moving to a three-part bumper makes sense in that, in the event of an accident, there are fewer parts



“it would now take 70 Euro 6 trucks to match the emissions of a single Euro 0 vehicle from the early 1990s.”

Des Evans

to replace. That’s part of MAN’s story about saving operational time and money, given the high cost of repair bills – although integrating the light array, with its cornering lights, in the area where they’re most likely to be knocked might raise eyebrows.

Diagnostic delights

That said, in line with Euro 6 requirements, more advanced OBD (on-board diagnostics) systems, designed to quickly discover and pinpoint the causes of emissions deviations, will assist in maintaining legal and fuel-efficient running. In MAN’s case, the technology offers three warning stages for drivers: first, a visual alarm on the vehicle’s dashboard; then, if no action is taken after 36 running hours, a reduction of engine torque to 75%; and finally, after 64 hours, a forced speed reduction, to 20km/h.

MAN, like the other heavy-duty truck manufacturers, is making all the right performance noises. Indeed, on the subject of costs, it boasts an average fuel improvement of 3–5%, compared to its Euro 5 models, with Adblue consumption also cut in half – and trots out pre-launch, albeit unnamed, customers to confirm its claims. What’s more, the extra weight that has worried high-payload operators with Euro 6 models has been minimised, with the TGX and TGS trucks coming in at 200kg more, while the TGL and TGM weigh an extra 150kg, compared with the outgoing models.

And so to the UK price list, which is very transparent. MAN says a 7.5-tonne 4x2 TGL kicks off the range at £42,900 (or £235 a week on a contract hire plan). Meanwhile, an 18-tonne 4x2 TGM with box or curtainsider body will set you back £59,500 (£299pw) and a 35-tonne 8x4 TGS with a tipper body will command a capital cost of £92,900 (£457pw). Then, at the top end, a 44-tonne 6x2 TGX with XLX cab works out at £79,000 (£393pw). **TE**

MAN’s total cost of ownership

MAN is now offering a range-wide new warranty plan with Euro 6 trucks that, it says, will give operators peace of mind and allow them to control costs. WarrantyXtra provides for three-years (or 450,000km, reduced to 300,000 on TGM 6x4s and the TGL) comprehensive parts and labour cover. It includes engine oil servicing (oil and fuel filters and adjustment and checking of valve clearances etc), roadside recovery and assistance, and DPF servicing (at up to 500,000km for TGX and TGS, and 250,000km on the TGL and TGM).

Incidentally, the company is also promising a 0% increase in maintenance costs, compared to Euro 5 EfficientLine R&M pricing. Also, right in line with the industry trend, MAN’s fleet management system has been enhanced, enabling real-time data to be captured and transmitted to fleet managers and workshops. Data highlights where improvements could be made, in terms of driving styles and performance, illustrating the potential for efficiency gains.

Vehicles are now fitted with forward-facing cameras and an incident data recorder (black box), which transmits data four times a second, so that operators can see how their drivers are performing. This data can be used with Google maps to assist with driver training, and may also be provided as evidence in insurance claims.