# SAVING WEIGHT

**The latest models of light commercial vehicles aim to maintain and even increase payloads in tippers, dropsides and conversions by revising powertrains, incorporating new materials and eliminating duplicated systems, among other means. Dan Gilkes reports**

While the move to Euro 6 emissions standards in light commercial vehicles seems to have gone fairly smoothly, with none of the last-minute rush to register that was seen in the heavy truck market, the change has had a knock-on effect on some other areas of vehicle design. As is so often the case, the main problem for vehicle manufacturers and converters is weight.

Fitting an AdBlue tank and exhaust dosing system doesn't just require space on the chassis, it adds to the unladen weight of the vehicle. For a large van, this can be more than 30-40kg – in the case of Ford's Transit Custom, turning a 2.8-tonne van into a 2.9-tonne model.

While in a medium van the manufacturer can simply raise the gross weight of the vehicle, this is not possible for small vans, as the regulatory requirements for models over 3.5 tonne gvw (tachograph fitment and O-licensed driver) create a de-facto hard stop for the market at that point.

Manufacturers and converters of light commercial vehicles therefore have had to look for weight savings elsewhere in the vehicle, reducing the weight of the body or the donor chassis.

At this year's Commercial Vehicle Show in Birmingham, Ford did both. The full-size Transit is perhaps the most popular chassis for tipper and dropside conversion in the UK and, for the tipper at least, most customers still opt for a twin wheel rear-wheel drive chassis.


Ford asked customers if they really need the added traction of a twin rear-wheel model, or the towing ability. The firm pointed out that customers can save around 100kg by moving to a single rear-wheel chassis. Taking this idea even further, Ford offered a Transit tipper with front-wheel drive for the first time, under its One-Stop Shop programme. This provides a further 100kg weight saving, boosting payload by 200kg against the traditional twin rear-wheel model.

The tipper conversion is built by Ford's main tipper and dropside supplier, VFS, in Southampton. The company is also working on a front-wheel drive Luton van body for Ford, again offering the reduction in unladen weight to boost payload. Front-wheel drive also allows for a lower load floor, an equally useful feature for a Luton body.

There are of course already front-wheel driven tippers and dropsides available, from the likes of Citroen (see picture, p44, bottom) and Fiat, however other traditionally rear-drive manufacturers will no doubt be keeping a close eye on how this goes for Ford.

At the show, VFS also launched an aluminium tipper body that can be used with a range of manufacturers' chassis. This lightweight body could save as much as 160kg on a single or double cab chassis, compared to the firm's regular high-strength steel tipper. The alloy body, which will cost around 10% more than a steel tipper, was to be shown on both Ford Transit and Renault Master chassis at the event. Also developed was an ultra-lightweight nylon fabric mesh

to replace the traditional steel mesh on a tipper cage, offering further potential weight savings.

For cost-conscious operators less concerned by weight, the firm is also adding an entry-level steel tipper body called Excalibur to its line-up. This body has a 50kg weight penalty versus the high-strength steel tipper, but will provide a lower entry cost.

Volkswagen in particular will be watching Ford's progress, as it launched its new Crafter (above) in the UK in April, initially in front-wheel drive form. Later in the year Crafter will be offered with rear and all-wheel drive chassis as well. VW has traditionally offered customers ready-bodied rear-drive Crafters under its 'Engineered to go' programme and is currently looking at a range of conversions, both for that scheme and for its more bespoke 'Engineered for you' line-up.

The company is also establishing an in-house conversion centre at the new Crafter plant in Poland to offer a range of bodied vehicles, including tippers and dropsides. VW already has a conversion centre within its Caddy plant in Poland that installs all of the racking and livery for British Gas Caddy vans, and the Crafter site will mirror this facility.

## READY MONEY

Almost every van manufacturer now offers a range of ready-bodied or approved conversions. This is in part due to the introduction of European Whole Vehicle Type Approval, which made it easier to have a single point of order and invoice, but it's also a sign that manufacturers are keen to grab a share of this lucrative market sector. There are very few large panel vans that don't undergo some sort of conversion work, even if that is just the addition of ply lining, racking, flashing beacons or a towbar.

Regardless, ready-bodied conversions offer several advantages for potential buyers. One is rapid supply, particularly if the vehicle is already in stock within the manufacturer's dealer network. Having a single point of order also allows the buyer to put the complete vehicle on a single invoice, or into one leasing deal. Also, because the conversion comes as a single finished vehicle, it gets one all-encompassing warranty. This means that if there are problems at a later date, there is no squabbling between manufacturer and converter about responsibility.

Most manufacturers also have a second tier of approved converters, ready to offer a more bespoke vehicle build. In this case, though ordered through the main dealer, the vehicle will carry two warranties, one for the chassis and one for the body, though the converter will usually match the terms and duration of the chassis cover.

There is a huge range of approved vehicle conversions available, from minibuses to fridges, ambulances to welfare buses. All of these tend to be accredited by the manufacturer and supported by their technical departments, to ensure that conversions meet the highest standards. In both cases the completed vehicle will be supplied fully type-approved and ready for use.

In such conversions, weight saving is again a driver. For example, Cartwright Conversions has been working to reduce the weight of its welfare units, to provide increased carrying capacity. Where a welfare bus usually has an on-board battery to charge the welfare unit and a generator to power tools outside the vehicle, the company is now offering a removable lithium-ion battery pack that performs both tasks (two 12V batteries also power test equipment installed in a Renault Master van, left).

The firm has also developed a mechanical toilet that doesn't require a fresh water tank to operate. The unit recirculates water and must be emptied like a chemical toilet. However, by not having a 45-litre fresh water tank and the electrics required to make it work, Cartwright can save over 50kg. At the all-important 3.5-tonne break point, every kilogramme matters. TE