

Coupling up

Fifth wheels and drawbar couplings are safety-critical items on trucks and must be treated as such. Toby Clark examines some of the remaining issues and some new solutions

Fifth wheels and drawbar couplings are hardly the most glamorous of components, and neither do they show rapid innovation. However, they are safety-critical components, and correct operation and maintenance are crucial. And that's where some new products can help – from making lubrication easier to automating almost the entire process of coupling and uncoupling trailers.

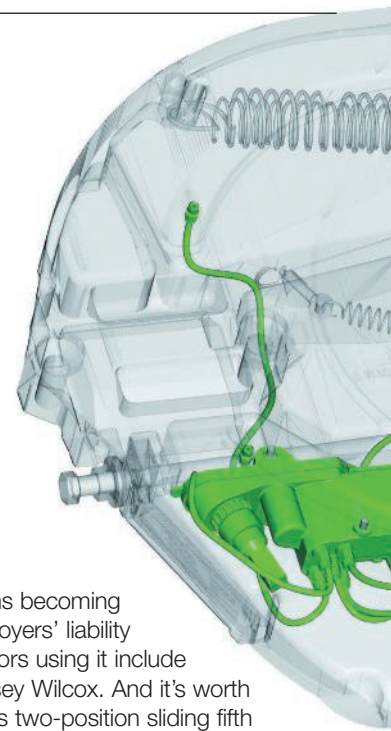
Despite the apparent simplicity of the fifth wheel's locking mechanism, incidents do occur and are generally down to driver error – usually due to failing to check that the locking mechanism is correctly closed before setting off. The interlock handle may not have engaged, and the safety dog clip may not have been fitted. Straightforward measures, such as longer and more visible handles, can reduce such accidents, but more sophisticated features are also now available.

Fontaine's Tech-Lock, for example, is designed to prevent high hitching, while also reducing the risk of a dropped trailer, with a green LED provided to confirm safe coupling. UK sales manager Steve

Marshall sees such systems becoming more common, "with employers' liability issues on the rise". Operators using it include West Country haulier Massey Wilcox. And it's worth investigating the company's two-position sliding fifth wheel, with the slider incorporating a sensor that restricts the speed of the truck if the fifth wheel is left in the wrong position.

Lubrication requirements can also be cut with a reduced-lube fifth wheel, which incorporates replaceable low-friction polymer pads on the top plate and elsewhere. A further development is the 'no-lube' fifth wheel – seen in the US for years but yet to reach European operators. There is also an environmental argument for 'no-lube' equipment, as US sources reckon that a conventional fifth wheel can shed more than 15kg of grease each year.

SAF Holland is currently testing its SK-S 36.20 NoLube model with operators in Europe. This is based on an established low-lube design, adding an injection-moulded wear ring and a forged steel coupler jaw with a low-friction surface treatment. Andy Seymour, key account manager at UK



Coupling care and maintenance

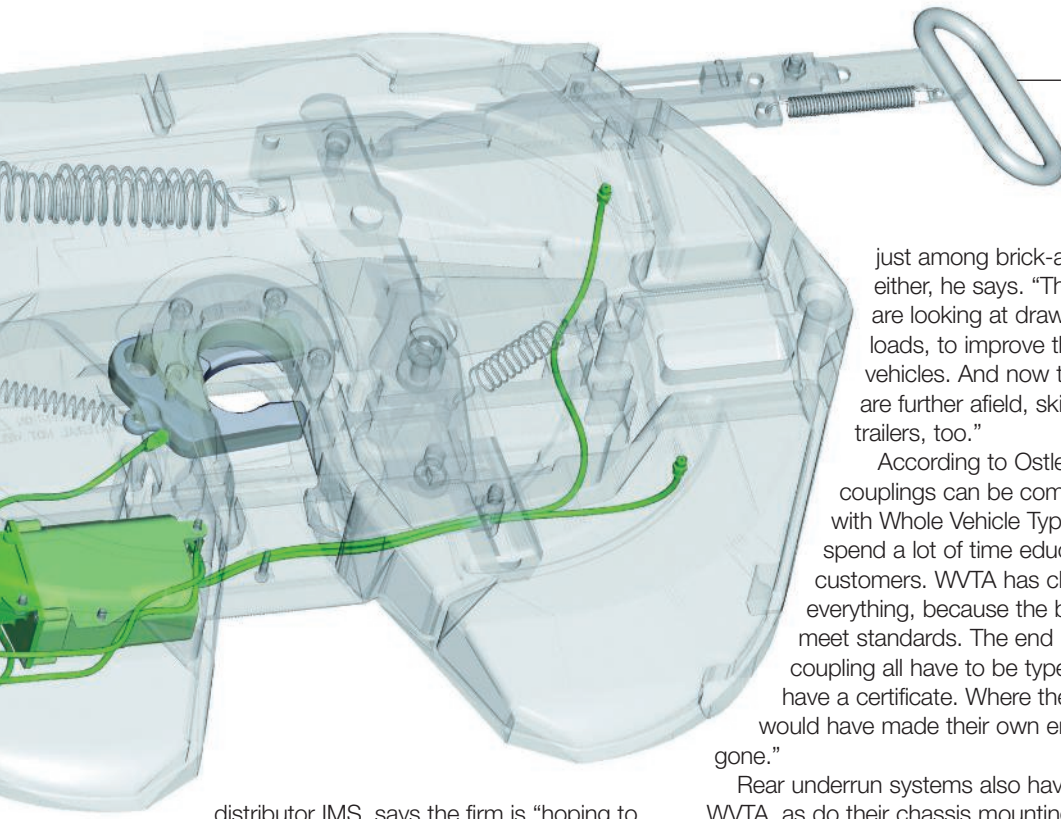
"Maintenance of drawbar couplings has always been a worry for us," says Howard Ostle of VBG, "especially at this time of year, with the salt and grit". He points out that sitting behind the rear wheels, the coupling is in the firing line for road debris. And, being out of sight, maintenance can be forgotten. Moreover, R&M contracts don't always cover such items.

Regular lubrication is essential but VBG advises against using grease, as it attracts abrasive grit. The firm's own MechOil aerosol lubricant can be injected through lubrication holes in the lid of the mechanism and the locking device at the side.

VBG also offers the MechMatic automatic cleaning and lubrication system, connected to the truck's electrical and air supplies. Every six working hours, it blasts compressed air through a connection in the lid of the coupling, driving out dust and moisture. Every 24 hours it injects MechOil through the same connection. The lubricant canister should last around 3,000 operating hours (approximately one year) and the device can be retrofitted.



Automated lubrication systems, such as Jost's LubeTronic 1Point, cover all main fifth wheel points



Left: A026 Jost LubeTronic 5Point fifth wheel lubricating system

distributor IMS, says the firm is “hoping to see production within the next 12 months”. And he adds that not only is there is no weight penalty (in fact, an aluminium option could save up to 33kg) but also the NoLube couplings have proved durable enough for military applications. However, he warns: “No-lube doesn’t mean no maintenance. It does need to be checked and adjusted at recommended intervals.”

Automated lubrication

In fact, automated lubrication systems can be as simple as Jost’s LubeTronic 1Point, which consists of a sealed, single-use cartridge — “the size of a coke can”, according to Mike Johnson, sales and marketing director of Jost UK. This device can lubricate the locking jaw for three years, with a self-contained battery and motor regularly feeding lubricant via a hose to the drilled and tapped jaw. Meanwhile, Jost’s LubeTronic 5Point covers all lubrication points for a fifth wheel. The pump unit is installed in the tail of the fifth wheel, connected to the truck electrical system, and provides a defined volume of grease, depending on truck usage.



That said, regular inspection remains vital, and most coupling manufacturers produce useful service documentation. Summarising: the main spring and handles require regular checks, not least because handles can be bent by drivers missing the fifth wheel and catching the handle with the kingpin – which can stop the fifth wheel from fully closing. The main spring can also become overstretched when not fitted correctly, and lose closing force. Fontaine estimates that such damage contributes to “95% of problems seen”.

What about drawbar couplings? VBG supplies about 80% of the UK’s drawbar couplings, and UK sales and marketing manager Howard Ostle sees this market growing. It’s not

just among brick-and-block carriers, either, he says. “The supermarkets are looking at drawbars for split loads, to improve the utilisation of vehicles. And now that landfill sites are further afield, skip lorries have trailers, too.”

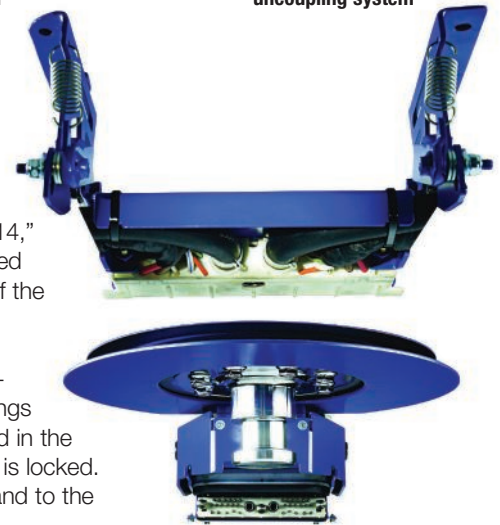
According to Ostle, drawbar couplings can be complex, especially with Whole Vehicle Type Approval. “We spend a lot of time educating and helping customers. WVTA has changed everything, because the bodybuilder has to meet standards. The end plate, beam and coupling all have to be type approved, and have a certificate. Where the [bodybuilder] would have made their own end plate ... that’s gone.”

Rear underrun systems also have to comply with WVTA, as do their chassis mountings. Ostle says that VBG is the only company that manufactures the coupling, beam, end plate, underrun equipment, drawbar and eye – the whole system from the trailer to the truck – from one manufacturing site.

But there’s more than WVTA affecting component design. “Coupling position can also cause problems, now that we have to comply with EC Regulation 55 2014,” says Ostle. “Couplings that are fitted more than 420mm from the rear of the truck body must have a remote actuation mechanism.”

In practice, this is usually an air-actuated coupling. Remote couplings must also have warning lights fitted in the cab to indicate when the coupling is locked. “That’s a cost to the bodybuilder and to the customer,” comments Ostle. **TE**

Jost KKS2 automatic fifth wheel coupling and uncoupling system



Hands-free coupling

The Hanover, Germany, IAA Show saw a demonstration of Jost’s KKS2 system for automatic fifth wheel coupling and uncoupling. This latest version, which has been in development for almost a decade, includes a single slide-fit connector for air and electrical connections.

Mike Johnson, of Jost UK, says that recent changes to the ISO EBS connector standard have made this possible. A cab-mounted remote control lets the driver see coupling status and landing leg position (legs are electrically powered). KKS2 is “out on field trials at the moment,” he says. It will be released “when it’s ready, robust and reliable”.

In the US, Fontaine has introduced the Fontaine Dual Assist Camera System, which uses twin chassis-mounted cameras to give a live in-cab view of the fifth wheel, with crosshairs to make accurate coupling easier.