

How often do HGV operators give a second thought to the few kilogrammes of steel that keep the partnership between their prime movers and trailers together?

Peter Shakespeare reports

# The forgotten linkage

While there is no specific legal requirement to have couplings examined or tested, they remain part of the DVSA annual test, points out Martin Candish, engineering and technical manager at the FTA (Freight Transport Association), which carries out more than 71,500 HGV inspections annually through its vehicle inspection service.

He adds the most frequent faults the FTA finds in fifth wheels and drawbar couplings are: that the coupling mechanisms have seized; that one element is not operating correctly; or that an element is completely broken. "When our inspectors find problems, it's often evident that maintenance is not carried out often enough, or is not completed correctly. Systematic maintenance of fifth wheels and drawbar couplings should be part of the regular servicing programme."



Candish advises: "Following the manufacturer's guidelines correctly is the best way to avoid costly repairs and the risk of accidents."

Jost supplies up to 70% of the fifth wheels used in the UK. Paul Clayton, national and regional technical sales and support manager, does not hold back when he says that couplings are, without doubt, the least maintained part of most heavy trucks. "Given the value of the loads it carries and the carnage that can result from a trailer parting from its prime mover, the coupling is one of the most important parts of an HGV combination.

"Fifth wheels are initially a factory fit, but they are not fit-and-forget. Checking to ensure that they remain securely mounted on the chassis is also important. So mounting bolts also need to be periodically checked and tightened with a correctly set torque wrench," he explains.

Jost recommends that inspections

every six weeks should involve checks for cleanliness - removing excess grease; a visual inspection for damage, cracks and bent components; a function test; torque checks for the wear ring and chassis securing bolts; and a re-lubrication of the wheel. Every three months or 48,000km, wear checks should be carried out and adjustments made, or components replaced, as required.

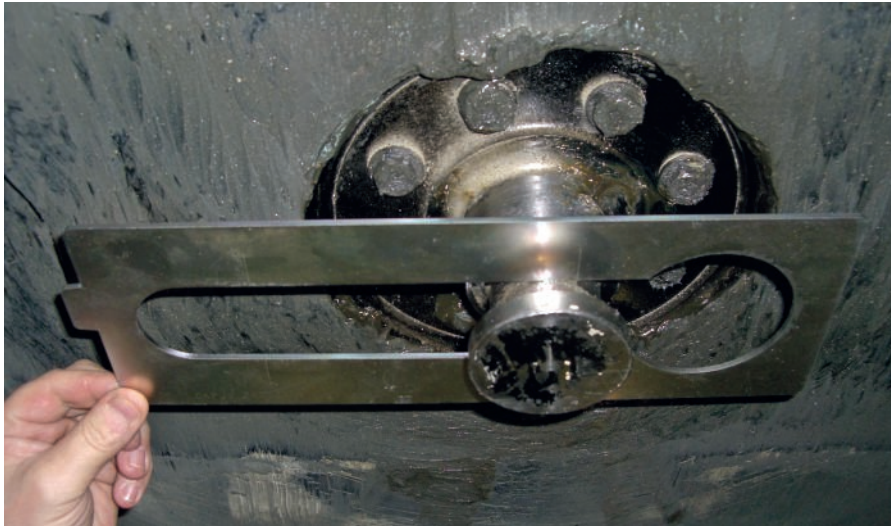
The trailer kingpin is also a key part of the coupling; kingpin failures are very rare, according to trailer manufacturer Don-Bur. But a kingpin is prone to wear, and there are tolerances beyond which it must be changed: otherwise it won't be securely held by the fifth wheel's lock jaws and lock bar.

British trailer kingpin manufacturer Capus (UK) urges fleet engineers to ensure trailer kingpins are inspected every six months or 40,000km. It manufactures a wear gauge (top right) that ensures the kingpin is square to the trailer rubbing plate and is

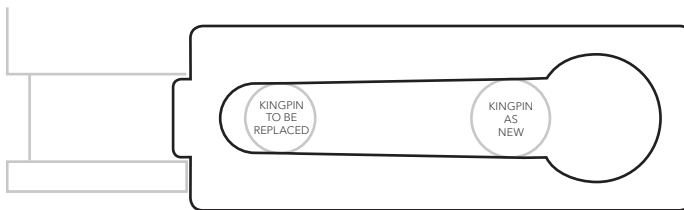


**“When accelerating and braking, or during manoeuvres, if the driver feels mechanical knocks or clunks, it is an indication there could be an issue that requires workshop attention”**

Paul Clayton



Capus wear gauge confirms kingpin girth; side tab checks pin mounting remains square



dimensionally within tolerance.

Capus manager Stephen Geffen says: “Key signs of damage are: scoring; cracks and dents; wear around the circumference; and securing bolts that are missing or incorrectly torqued. If there is not absolute certainty that the kingpin will engage the fifth wheel correctly every time, it should be replaced. When [doing so], we recommend all the mounting bolts are replaced with new ones. They must also be the correct type; otherwise they could hamper the fifth wheel,” he says.

Jost’s Paul Clayton adds that drivers should be able to detect excess wear in either the trailer kingpin or the fifth-wheel locking mechanism. “When accelerating and braking, or during manoeuvres, if the driver feels mechanical knocks or clunks, it is an indication there could be an issue that requires workshop attention,” he explains. “If a knock is detected, it normally means the jaws on the fifth

wheel need adjusting. But if the fifth wheel is being correctly inspected, tested and maintained, the knock could mean the trailer kingpin is overly worn.”

Another issue with fifth wheels is in specification. Off-road operations experienced by vehicles such as bulk tipper and forestry vehicles are more arduous than on-road applications, so a standard general-haulage fifth wheel specification might not be sufficiently robust. States Clayton: “A standard one won’t fail, but it will wear out far quicker, and there is also a danger the rubbing plate could warp and crack under the increased lateral forces acting on it.”

**DRAWBAR COUPLINGS**

In working with drawbar trailers, drivers can damage a coupling guide when reversing the towing eye of a prime mover into the jaw body, Clayton says. This is normally because alignment checks have not been carried out prior to reversing.

If this happens, the coupling should be inspected immediately, as there is a risk that the jaws will have been distorted, compromising operation of the pin.

Drawbar couplings range from air-operated to spring-loaded to manual types. To actuate the latter, a removable pin drops into a jaw fitted with a locking device. Pneumatic and spring-loaded types involve a mechanism that automatically drops the pin into the towing eye (an example of the former is the VBG 795V-2, far left). According to guidance developed partly by the IRTE, one potential fault involves the pin occasionally failing to drop, or not fully engaging (appendix 3 in last link below). This is normally an alignment problem that can be rectified by the driver. Pin engagement issues can also be due to a mechanical failure.

Drawbar coupling manufacturer VBG’s service guidelines state that the major wear points of the coupling are the towing pin and the lower jaw bushing. These should be checked for correct tolerances. If the pin cannot be freely rotated in the jaws, it could be an indication that the jaws are distorted. Wear pads within the jaws must also be checked periodically, and the mechanism should be lubricated. VBG provides special lubricant for this, as grease is not suitable. The draw beam should be inspected and lubricated if removed. Maintenance checks on trailers involve checking the towing eye for damage, stress cracks and corrosion. The thickness of the eye casting should also be checked, as well as that of the wear ring. [IE](#)

**FURTHER INFORMATION**

VBG coupling service guidelines – <https://is.gd/vavoyo>

Jost fifth wheel service guidance (by product) - <https://is.gd/elobip>

IRTE safe coupling guidance – <https://is.gd/jevese>