

# SERVED UP ON A PLATE

Fifth wheels form the vital link between tractor unit and trailer, yet DVSA seems remarkably imprecise about wear and maintenance standards.

Richard Simpson explains what's actually required

The ever-increasing number of operators undertaking traction work on behalf of trailer fleets is a feature of post-Brexit/COVID Britain. It's now often easier and more economical for European operators to send trailers to the UK unaccompanied than it is to pay drivers to wait while paperwork is completed, and the boost in internet shopping has led to online retailers investing in large fleets of trailers to carry their goods, with third-party hauliers engaged to pull them.

All this has come into a British transport market where trailer-swaps were already more common than in other nations, yet many drivers and hauliers seemed stuck in the stone age when it came to the correct procedures. With air suspension long standard on the vast majority of tractors, why are lead-up ramps still to be found on so many British units, unless drivers are graduates of the crash, bang, wallop school of trailer coupling?

All this abuse puts tremendous stress on the tractor-trailer interface, and worn or damaged components pose a serious safety hazard. Fortunately, most 'trailer drops' appear to be the result of mis-coupling, and thus occur within a few metres of travel, but the consequences of a failure on the road are potentially devastating. For example, in 2020 the M50 was blocked for over 12 hours after

an artic trailer became detached from its tractor unit and smashed through the central reservation, although fortunately no one was hurt.

Correct coupling procedures are now covered in the relevant driving test and driver CPC training, so hopefully new drivers at least are conversant with the proper process. But old habits die hard,



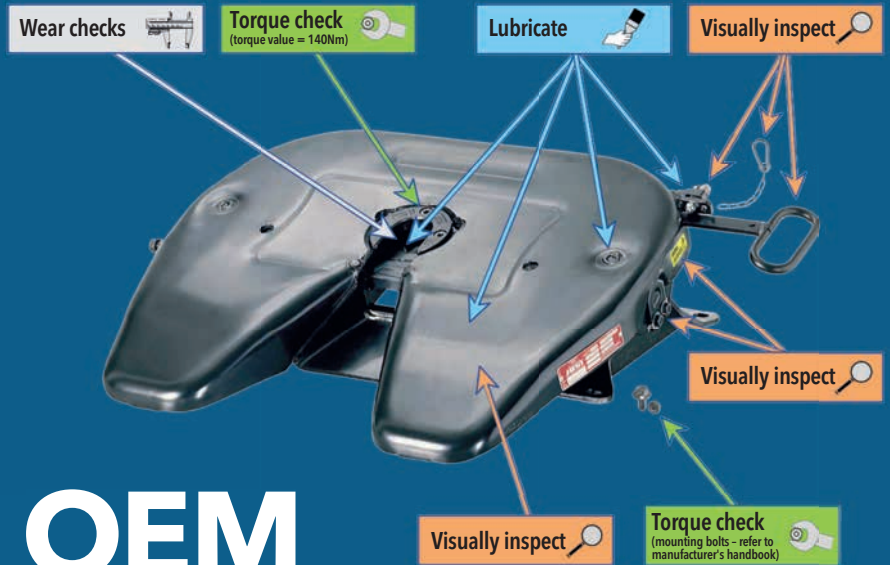
and experienced drivers may be the ones most tempted to take short cuts, particularly when time is pressing.

Workshop staff inspecting tractors and trailers should be advised to take note if certain units show sign of repeated abuse, and fleet managers consider extra training for some drivers.

## INSPECTION

An MOT pass should certainly not be taken as an indication that the coupling condition is satisfactory: the official tester's manual is very imprecise as to what constitutes a serviceable coupling, falling well short of what is recommended in the industry SAE J2228 standard, and the fifth wheel manufacturer's own literature should be the primary source of information when periodic inspections are undertaken.

The fifth wheel itself is literally only half the story, of course. Trailer kingpins and rubbing plates also need to be



# OEM ADVICE

Fifth wheel supplier Jost offers maintenance advice and best practice for fifth wheels to ensure safety for operators and other road users

Maintenance of Jost fifth wheels is minimal, but ensuring that procedures are carried out is essential to the longevity of the Jost fifth wheel and reducing downtime. Periodically greasing, and visual inspections, will ensure couplings are maintained for the future.

At Jost GB's head office in Bolton, fleet operators and truck drivers can take advantage of a free, while-you-wait 10-point safety check to ensure regular maintenance is actioned and trouble-free service is continued. This includes an inspection report to provide a comprehensive breakdown of any parts that may need attention.

Jost GB's managing director Danny Broomfield comments: "The most common problems that occur are due to lack of maintenance, as often fifth wheels are regarded as 'fit and forget' products. We'd like to encourage operators to take advantage of this essential safety service to ensure their fleet is in optimum condition."

Broomfield continues: "Fifth wheel couplings are vehicle connecting parts that must comply with high safety regulations and must also undergo design approval tests. The Jost fifth wheels are designed to only be fitted with genuine Jost spare parts when making any repairs or adjustments to your fifth wheel couplings. Modifications of any kind will render both the truck's warranty and the type approval void."

More information about the Jost range, and the full test and maintenance schedule for Jost systems can be found via [www.is.gd/ezefid](http://www.is.gd/ezefid). In the meantime, a summary is provided below.

## CHECKS BY SERVICE INTERVAL

### 12,000KM OR 6 WEEKS / 24,000KM OR 12 WEEKS / 36,000KM OR 18 WEEKS

- Clean by removing enough grease to enable a visual inspection
- Visually inspect for broken, bent, missing or cracked items
- Conduct a function check; if this fails, see repair manual for help
- Conduct torque checks
- Lubricate with high-pressure grease such as Jost high-performance lubricant

### 48,000KM OR 24 WEEKS

- Steam clean for visual inspection
- Visually inspect for broken, bent, missing or cracked items
- Check for wear and tear
- Conduct a function check; if this fails, see repair manual for help
- Conduct torque checks
- Adjust fitment of fifth wheel if needed
- Lubricate with high-pressure grease such as Jost high-performance lubricant

examined at periodic inspection, and the condition of the rubbing plate and pin assessed. The plate should be flat and true in all directions. Bumps, valleys and warping can all put uneven loading on the coupling, causing damage and reducing component life.

The kingpin should be inspected for straightness using a manufacturer's gauge or a try-square. A deviation of more than one degree from vertical in any direction indicates damage, and the component should be replaced to avoid damage or excessive wear to the fifth wheel locking mechanism.

Kingpin length should also be noted: an excessively long or short kingpin will cause difficulty coupling and may damage the fifth wheel.

Kingpin diameter must also be checked: manufacturers suggest that wear of more than 3mm from the original size on either the waist or the end of the pin and in any direction should be considered excessive, and the pin replaced.

DVSA is rather less specific in its HGV Inspection Manual, only saying that excessive wear and serious deformation are reasons to fail a trailer on the kingpin at annual test (without defining those terms). A cracked or insecure kingpin will also, unsurprisingly, fail.

Welding to repair the protruding part of the kingpin or replace worn

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material should not be considered, as this will have an adverse impact on the pin material and surface, manufacturers say.

Inspection and maintenance of the fifth wheel itself is probably one of the least popular jobs in the truck workshop, given that the component itself is usually splattered in dirty grease (as pictured, pp12-13). Drivers need to include the locking mechanism, dog clip, etc, as part of their daily walk-around checks, and a more thorough examination should be included as part of the tractor's periodic maintenance inspection (see also sidebar, p13).

Bolts securing the fifth wheel to the vehicle are crucial to the integrity of the coupling, and can also determine the plated weight of the tractor-trailer combination, so all must be present and in good order. Checking with a torque wrench is more effective than tapping them with a hammer.

An oddity of the UK market is that while most tractor units are delivered with sliding fifth wheels, these are often bolted into a fixed position by the truck's first owner. If the mechanism is operable, it needs to be checked.

The DVSA test standard for fifth wheel condition appears to fall rather short of the manufacturers' ideal: a truck will only fail the test if "the jaws (are) so worn and out of adjustment that the trailer kingpin might not be securely held".

In contrast, manufacturers specify defined limits on wear to locking jaws and wearing rings, and also play in the mounting bushes. Locking bars can be adjusted to reduce the movement of the kingpin in the jaws to an acceptable



limit, and this should be attempted before replacing components that are really only lightly worn.

**LUBRICATION**

Lubrication of fifth wheels is a necessity, but also a curse. Under-lubrication can cause difficulties when coupling and uncoupling, plus excessive wear in use. Handling of the tractor-trailer combination can be impacted, even causing premature wear to steer-axle tyres and other components.

However, if grease becomes over-contaminated, then it becomes a grinding paste and causes all the things it is supposed to prevent. Excessive grease can also splatter on to the tractor catwalk and exhaust, becoming a slip or fire hazard.

All grease should be removed prior to inspection, as it can obviously obscure signs of wear and damage. Old sheets of newspaper can be spread around to catch the grease, which can be removed using a paint scraper and putty knives. The contaminated paper should be disposed of as workshop waste.

Regreasing should be done with care, and time taken to work the lubricant into the mechanism before it is used again. CV aftermarket specialist TTC offers a product specific to this application: biodegradable fifth wheel grease. This is effective from -20°C to +149°C. It is said to be highly resistant to water, weathering, oxidation and heavy loads, as it was developed from a product successfully used on the jacking gears of North Sea oil rigs.

Lucas Oil offers a liquid alternative in the form of its 5th Wheel and Slider Lube, which it says is designed to operate as a thin film and does not leave a sticky residue behind when its properties are exhausted.

As an alternative to coating the fifth wheel plate itself with fresh grease (pictured above), a lubricating liner-plate can be fitted, although care must be taken to ensure that the extra depth it affords to the plate will not make the trailer kingpin too short. Aide Automotive claims its fifth wheel liner will last between 250,000 and 500,000 miles, yet takes only 20 minutes to fit. Fitting the liner does not remove the need to lubricate the jaw mechanism, or inspect for damage. [TE](#)

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