

VEHICLE TO TRAILER COUPLING

APPLICATION

This examination applies to all vehicles fitted with a trailer coupling and to all trailers. This inspection also covers fifth wheel couplings mounted on converter dollies.

PROCEDURE AND STANDARDS

Where tractor units are presented for inspection, they must be accompanied by a semi-trailer.

Where a trailer or semi-trailer is coupled to a drawing vehicle at the time of the inspection, staff should ask the driver to disconnect the red Susie (i.e. the breakaway protection line) and request the driver to move the drawing vehicle back-wards and forwards. Check for excessive movement between drawing vehicle and trailer or semi trailer. If the Examiner is not satisfied that the couplings are in order he should have the driver uncouple the trailer or semi-trailer in order that the towing mechanism on the drawing vehicle and trailer or semi-trailer may be examined more-effectively. Having carried out the required examination request the driver to reconnect the drawing vehicle.

Where a trailer or semi-trailer is presented for test in combination, a defect in the drawing, vehicle will not be a, reason for failing the trailer. However, the owner of the vehicle should be made aware of any such defect.

This inspection applies only where a vehicle is fitted with equipment for towing trailers or semi-trailers.

Care should be taken to ensure that an automatic tow hitch on a drawing vehicle is suitably matched to the towing eye on-the accompanying trailer (where a combination of vehicles is presented) and that adequate provision is made for oscillation of the hitch/eye assembly.

Security including bed plates and sub-frames on fifth wheel couplings, check also the coupling is secure to the trailer. (Note: many manufacturers determine gross train weights by the number and size of bolts fitted to fifth wheel bed plates and sub-frames, these bolts are therefore considered to be mandatory.)

Normal safety precautions should be taken when examining semi-trailer king pins.

Check the trailer coupling on the drawing vehicle and the trailer for; **distortion, cracking and excessive wear** in components.

Note:

When assessing wear/lift between bracket/bush or pin/bush consideration should be given to those bushes which have been designed to provide a cushioning effect in order to relieve shock loadings. The load when the bush is compressed is taken from the main plate directly onto the mounting bracket and therefore some degree of controlled lift, up to 8 mm in some units is acceptable in the trunnion pin and bush. (Up to 12 mm lateral movement is acceptable in some cases in fifth wheel couplings, lateral movement of draw-bar turntable top plate movement relative to the lower plate should not exceed 10 mm).

Wear should be considered excessive if a drawing hitch, bar, hook, eye, ball or ball socket has the metal reduced to 3/4 of its original thickness.

DRAWING VEHICLE**DRAWING COUPLING**

Where visible examine the drawing vehicle coupling jaws/pin/hook/eye/ball. Note the condition of these components and ensure that they are free from distortion and/or fracture.

- Check the hook/ball or pin/bushes for wear.
- Check the body of the coupling for wear, distortion or cracks.

Examine the cross member to which the coupling is mounted paying particular attention to the inner face of the cross member for security and cracks.

- Note that the coupling assembly is securely attached to the vehicle.
- Check that locking or safety devices are in position and working correct
- Check any rubber components for deterioration (e.g., wear/cracks or swellings)

FIFTH WHEEL COUPLING

- Examine the security of the fifth wheel assembly to the chassis.
- Where possible examine the jaws of the fifth wheel coupling for wear.
- Where possible examine the fifth wheel coupling plate for cracks or wear.
- Examine the safety locking device of the fifth wheel assembly for presence, cracks or damage.
- Examine the articulating brackets of the fifth wheel assembly for cracks or damage.
- Check any adjustable mechanism (e.g., sliding mechanism) for wear and security

Note: Examples of locking devices are-

- a. A dog clip. (a chain or wire missing or damaged is not a Reason for Failure as its only purpose is to prevent loss of the dog clip).
- b. Spring loaded pin between the operating handle and the body of the 5th wheel housing.
- c. Lever dropped behind the operating handle.

AUTOMATIC COUPLING

- Examine the coupling hooks and operating members for wear and security.

TRAILER OR SEMI-TRAILER

DRAWBAR TRAILER

- Examine the drawbar and note its condition and that it is free from distortion and/or fracture.
- Examine the drawbar assembly for security.
- Examine the drawbar eye and bushes for wear and provision for vertical articulation.
- Note that safety devices are in position and working correctly.

FIFTH WHEEL COUPLING

Where possible examine the rubbing plate for cracks. Examine the king pin for security, damage, cracks or excessive wear using a king pin gauge if uncoupled.

Examine the rubbing plate attachment to the semi-trailer. If it is possible to examine the attachment of the king pin to the chassis/rubbing plate (e.g., via a hatch in the floor) check that the king pin "mushroom" is securely attached to the trailer framework/rubbing plate.

Note:

Where more than one king pin is fitted or used all are required to be checked.

AUTOMATIC COUPLING

Check the condition of the operating members for wear and security.

Note that safety devices are in the correct position.

ARTICULATED BUSES

Examine the coupling and operating members for condition and security. The examination is limited to those parts which can be seen without dismantling or uncoupling. However the presenter must part the bellows and lift trap doors and the turntable floor as far as is necessary to gain sight of the coupling. Ensure that these are replaced before the vehicle leaves the test centre.

Examine the condition and security of the turntable floor and of the concertina bellows and the presence and condition of sheathing on safety chains.

Examine locking or safety devices and warning lamps intended to automatically limit the angle of articulation on articulated buses. It will probably be necessary to reverse the vehicle on an area outside the test lane to check that these devices are working correctly.

REASONS FOR FAILURE

	Deficiency Category
1. A drawing hitch, bar, hook, eye, ball or ball socket; or a fifth wheel king pin and its mounting or a turntable which:	
a. Is excessively worn.	MAJOR
b. Is excessively worn with obvious risk of detachment	DANGEROUS
c. Is seriously deformed or modified impairing its effectiveness and or weakens the component (no trailer attached).	MAJOR
d. Is seriously deformed or modified impairing its effectiveness and or weakens the component (trailer attached).	DANGEROUS
e. Is cracked or fractured (no trailer attached)	MAJOR
f. Is cracked or fractured (trailer attached)	DANGEROUS
g. Is insecure.	MAJOR
h. Is insecure to such an extent that detachment is likely	DANGEROUS
i. Has excessive movement between the tractor and trailer.	DANGEROUS
j. A turntable which has no clearance between mating surfaces, i.e. evidence of contact between surfaces.	MAJOR
k. Has a missing, damaged, seized and or inadequate safety or locking device.	MAJOR

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| I. | Has a coupling too weak. | MAJOR |
| 2. A Fifth Wheel Coupling with: | | |
| a. | Insecurity between the fifth wheel and its mounting sub-frame and or chassis. | MAJOR |
| b. | Insecurity between the fifth wheel and its mounting sub-frame and or chassis to such an extent that detachment is likely. | DANGEROUS |
| c. | A mandatory bolt loose or missing. | MAJOR |
| d. | A mandatory bolt loose or missing to such an extent that detachment is likely. | DANGEROUS |
| e. | Jaws so worn or out of adjustment | MAJOR |
| f. | Jaws so worn or out of adjustment that the trailer kingpin might not be securely held. | DANGEROUS |
| g. | A safety locking device is inoperative. | MAJOR |
| h. | An articulating bracket or pivot excessively worn or insecure. | MAJOR |
| i. | An articulating bracket or pivot excessively worn or insecure to such an extent that detachment is likely. | DANGEROUS |
| j. | Any crack in a load bearing member. | MAJOR |
| k. | An operating member insecure or worn to such an extent the coupling is unsafe. | DANGEROUS |

ARTICULATED BUSES

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| 1. Coupling articulating bracket, operating member or safety device: | | |
| a. | Insecure | MAJOR |
| b. | Insecure to such an extent that detachment is likely | DANGROUS |
| c. | Excessively worn | MAJOR |
| d. | Excessively worn with obvious risk of detachment | DANGEROUS |
| e. | Defective | MAJOR |

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| f. | Load bearing member cracked or fractured | DANGEROUS |
| 2. Bellows: | | |
| a. | Insecure | MAJOR |
| b. | Insecure to such an extent that detachment is likely | DANGEROUS |
| c. | So damaged or deteriorated that injury to passengers is likely | DANGEROUS |
| d. | With safety chains sheathing so damaged or deteriorated that injury to passengers is likely. | DANGEROUS |
| 3. Turntable floor: | | |
| a. | Insecure | MAJOR |
| b. | Insecure to such an extent that detachment is likely | DANGEROUS |
| c. | Covering in such a condition that it could cause slipping or tripping. | MAJOR |