



Guidelines for inspection and servicing

Hook couplings

2022

General information

General information

The components used to couple vehicles and trailers are exposed to very high stress, even during normal use. Regular service and maintenance is a prerequisite if the coupling is to function well for the duration of its service life. Clean and lubricate the coupling every week.

The length of the service interval depends on the type of trailer, loads, road and climatic conditions, etc. The service should ideally be carried out in conjunction with other inspection of the vehicle, e.g. every 3 months. If daily inspection or safety checks show that any of the wear limits have been exceeded or that the function of the product has been impaired, servicing must be carried out immediately.

If any of the product's wear limits have been exceeded, this is an indication that other parts also require servicing.

Check that all type plates and warning/information labels are legible and have not been painted over, washed off or otherwise damaged. Illegible labels must be replaced and can be ordered from VBG Truck Equipment.

If the coupling is damaged as a result of jackknifing or bendet, the vehicle must be stopped and the coupling replaced.

Always follow the vehicle manufacturer's bodybuilding instructions.

Guidelines for inspection and servicing Hook couplings 2022

© VBG GROUP TRUCK EQUIPMENT GMBH

11/2022 - Id. -Nr. 10090735a

The content of this publication may not be reproduced either in full or in part without the prior approval of VBG GROUP TRUCK EQUIPMENT GMBH.

This prohibition is applicable for all forms of reproductions in all types of media, including electronic media.

Explanation of symbols



Warning!

Never put your fingers into the coupling mouth as they may be crushed. An open coupling always involves a risk of crushing.




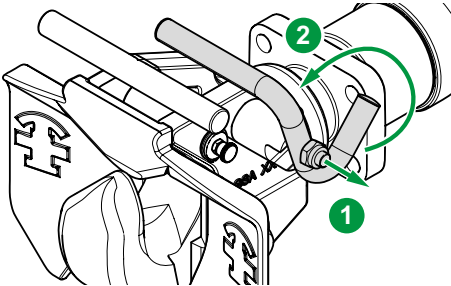
Severity





3 = STOP to ensure future use.

2 = Rectify as soon as possible, within four weeks.

1 = Rectify when able or during next service. Within no more than one year.

General information	4
Wear areas	6
Lubrication	8
Coupling jaw for fixed and/or articulated drawbars	14

Checkpoint	Symptom	Fault
<p>Complete hook coupling - RUWG (ECE), RUWG K0E, 663 (ECE), 663, RU K5 DV.</p> 	<p>Deformed coupling mouth. The coupling is askew and bent. The coupling turns when there is no drawbar connected. The coupling rattles.</p>	<p>Bent horizontal bolt. Loose drawbeam sleeve bolts. Worn rubber elements. The castellated nut's protective cover is missing. The castellated nut's locking device is incorrectly fitted/damaged/missing. The locking pin jams. The mechanism is worn out.</p>
<p>Complete hook coupling - RUWG (ECE), RUWG K0E, 663 (ECE), 663, RU K5 DV.</p>	<p>May be noise or play during use of the coupling. Connection and disconnection does not work 100%.</p>	
<p>Complete hook coupling - RUWG (ECE), RUWG K0E, 663 (ECE), 663, RU K5 DV.</p>	<p>The coupling is bent to the side, up or down. The coupling mouth is bent, signs of jackknifing, etc.</p>	<p>Deformation of horizontal bolt/coupling jaw or other load-carrying part.</p>
<p>Complete hook coupling - RUWG (ECE), RUWG K0E, 663 (ECE), 663, RU K5 DV.</p>	<p>Narrow rust-coloured streaks, cracks in the paint or paint is peeling.</p>	<p>Cracks.</p>
<p>Complete hook coupling - RUWG (ECE), RUWG K0E, 663 (ECE), 663, RU K5 DV.</p>	<p>Coupling opens and closes with difficulty.</p> 	<p>Rust and dirt in the bearing points.</p>

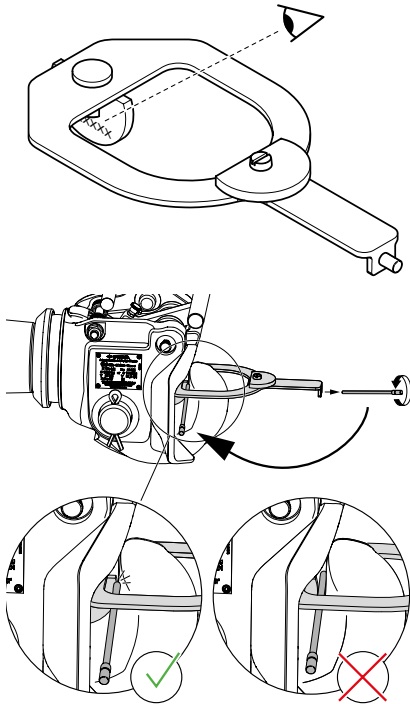
<p style="text-align: center;">Inspection method</p> <p>Visually check, take simple readings and operate coupling. Inspect function, attachment, damage, wear. Attachment also applies to coupling parts such as the lock mechanism's attachment to the coupling jaw.</p>	<p style="text-align: center;">Requirements, wear limits, etc.</p> <p>Information on the coupling's labels, signs' location, performance, spare parts, driver manuals, assembly instructions, space requirements, etc. can be found on Ringfeder's website. Information on important daily inspection/ maintenance that can be performed without workshop equipment and the coupling's function is included in the "Driver's Manual" available on the Ringfeder website.</p> <p>Examples of important requirements. If the coupling is damaged the vehicle must be stopped and the coupling replaced. The coupling equipment must be equipped with warning and information labels. Welding, drilling or otherwise modifying the coupling is not permitted. Wear limits, see specific coupling model.</p>	<p style="text-align: center;">Instructions for rectification</p>
<p>Visual check of the attachment, damage and discolouration of rust-coloured water near the joint surfaces. Torque-tighten the bolts if you suspect low tension.</p>	<p>No movement is permitted and there should be no rotation during test-tightening to the prescribed tightening torque; see installation instructions for each coupling model.</p>	<p> ① ② ③ ② In the event of any movement or too low a tightening torque, the parts should be dismantled and checked. If there is any visible damage, these parts must be replaced. When the components have been dismantled, they must be re-tightened after driving 2,500 km.</p>
<p>Visual check of centring around the coupling's centreline in vehicle direction and functional test. Dismantling and measuring in the event of jackknifing damage.</p>	<p>No deformations permitted. Deviations of more than 2 mm from the original position are defined as deformations. In the event of deviation of 2 mm or more, driving with a trailer is not permitted. However, max. 0.5 mm for the horizontal bolt; see checkpoint "Coupling jaw for fixed drawbar".</p>	<p> ① ② ③ ③ Load-bearing components with deformations measuring 2 mm or more from their original position must be replaced and driving stopped.</p>
<p>To be checked visually, corners, radius transitions, holes, bolted joints, welded joints, etc. The surfaces must be dry and well cleaned.</p>	<p>No cracks are permitted.</p>	<p> ① ② ③ ③ Driving must be stopped immediately; cracked parts must always be replaced.</p>
<p>Visual check of bearing points.</p>	<p>Coupling must be open and closed by hand.</p>	<p> ① ② ③ ② Lubrication of the bearing points.</p>

Checkpoint	Symptom	Fault
<p>The coupling hook wear area for: RUWG (ECE), RUWG K0E, 663 (ECE), 663, RU K5 DV.</p> 		
<p>The coupling hook wear area for: RUWG (ECE), RUWG K0E, 663 (ECE), 663, RU K5 DV.</p>	<p>Quick wear, which leads to play between the vehicle and trailer; constant jolting between the vehicle and trailer may occur.</p>	<p>The drawbar is not in horizontal position (max. +/- 3°).</p>

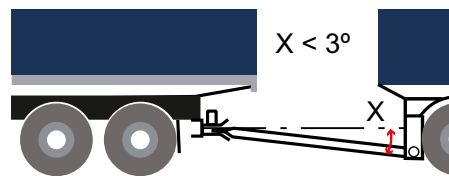
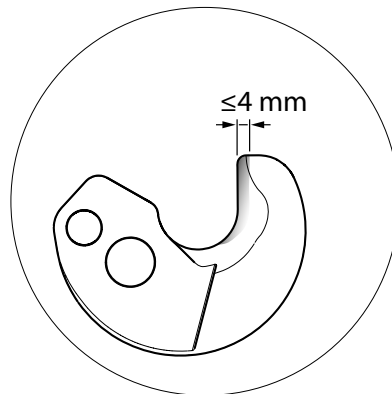
Inspection method

Observe any vertical movement of the coupling hook when the vehicle pushes and pulls at the braked trailer.
Check the coupling hook wear pattern.

K0D-K4D	R 22,5 mm
K5D/K5DV	R 23 mm



Requirements, wear limits, etc.



The drawbar closure should be less than 3°.

Instructions for rectification



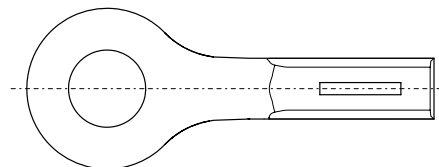
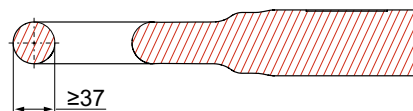
① ② ③

③

If the wear on the hook is too big, it must be replaced.

Visually check the drawbar eye.
Measure the ring cross section diameter.



All measured diameters must be within the limits specified below.



① ② ③

②

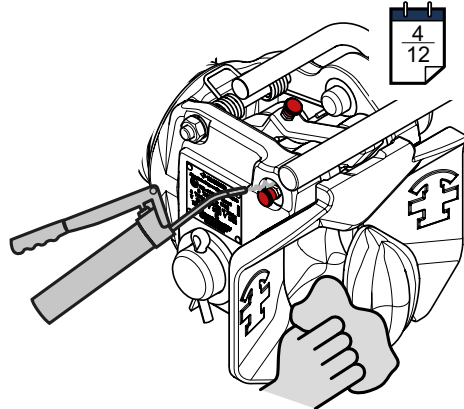
Replace components.

Checkpoint	Symptom	Fault
<p>Lubrication for: Hook coupling RUWG (ECE) Hook coupling 663 (ECE) Hook coupling 663</p> 		
<p>Lubrication for: Hook coupling RUWG K0E</p> 		
<p>Lubrication for: Hook coupling RU K5 DV</p> 		

Inspection method

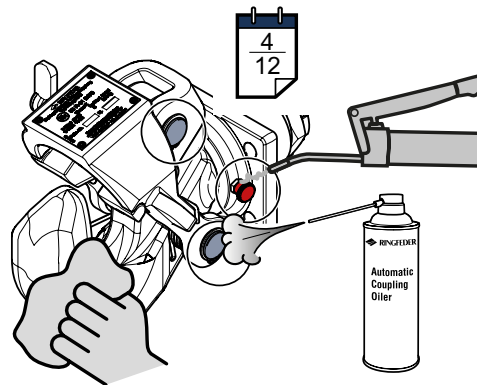
Requirements, wear limits, etc.

Instructions for rectification



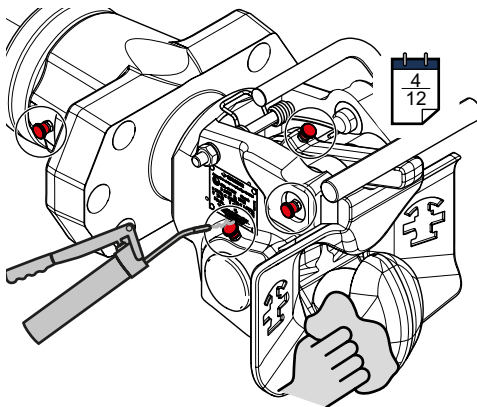
Greasing and cleaning.

2




Greasing and cleaning.

2



Greasing and cleaning.

2

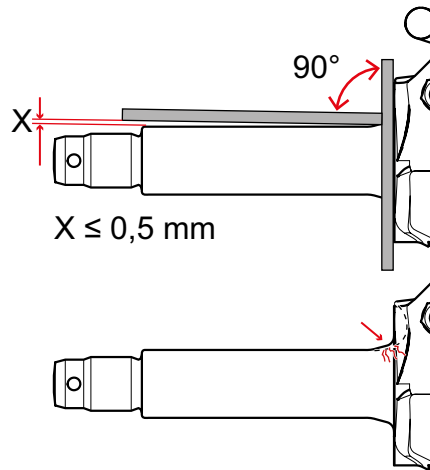
Checkpoint	Symptom	Fault
<p>Coupling jaw for fixed and/or articulated drawbars for: Hook coupling RUWG (ECE) Hook coupling 663 (ECE) Hook coupling 663</p> 	<p>Askew in the attachment, vertical and/or lateral deformation, damaged/broken coupling mouth. Damaged surrounding equipment such as endplates, beams and coupling mouth. Suspicion of reversing, off-road driving, jackknifing, etc. Other symptoms may include differences in the build-up of dust and residual rubber on the contact surfaces between rubber elements and the coupling jaw.</p>	<p>Bent horizontal bolt and/or cracks in the horizontal bolt.</p>
<p>Coupling jaw for fixed and/or articulated drawbars for: Hook coupling RUWG (ECE) Hook coupling 663 (ECE) Hook coupling 663</p>	<p>Reduced comfort, more noise and more noticeable jolting during driving.</p>	<p>Coupling jaw stuck with rust or deformation. Cannot be rotated.</p>
<p>Coupling jaw for fixed and/or articulated drawbars for: Hook coupling RUWG (ECE) Hook coupling 663 (ECE) Hook coupling 663</p>	<p>The coupling will rotate when no trailer is connected. Difficult to connect.</p>	<p>The coupling jaw rotates too easily.</p>

Inspection method

Dismantle the coupling jaw. Measure the perpendicular alignment between the coupling jaw's circular part (the rubber element's contact surface) and the horizontal bolt, see picture. Visually check that the horizontal bolt does not have cracks in the radius transition against the rubber element's contact surface. Check other surrounding equipment such as endplates, drawbeam and underrun protection etc.

Requirements, wear limits, etc.

The horizontal bolt must be perpendicular to the coupling jaw's circular part for 0.5 mm of the horizontal bolt's length. No cracks are allowed.



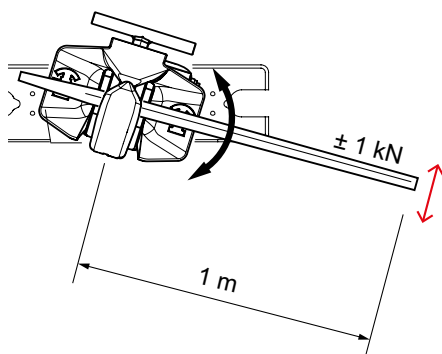
Instructions for rectification



If there are cracks, replace the coupling. In the event of deviation greater than 0.5 mm, replace the coupling.

③

Rotate the coupling by inserting a rod through the coupling mouth. Length 1 m, power 1 kN.



The coupling should rotate at 1,000 Nm.



If the coupling jaw is stuck, it must be removed from the drawbeam sleeve. Clean the horizontal bolt and the drawbeam sleeve.

③

In the event of worn bearings, replace bushings including rubber elements.



In the event of a damaged horizontal bolt, replace the coupling.

① ② ③

If the drawbeam sleeve is damaged, it must be replaced.

③


Visual check of rubber elements. Must not be easy to rotate by hand.

Minimum torque for rotation 100 Nm.



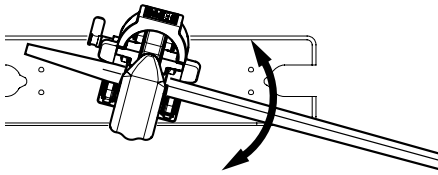
In the event of worn bearings, replace bushings including rubber elements.

②

<p>Checkpoint</p>	<p>Symptom</p>	<p>Fault</p>
<p>Coupling jaw for fixed and/or articulated drawbars for: Hook coupling RUWG K0E</p> 	<p>Reduced comfort, more noise and more noticeable jolting during driving.</p>	<p>Coupling jaw stuck with rust or deformation. Cannot be rotated.</p>
<p>Coupling jaw for fixed and/or articulated drawbars for: Hook coupling RUWG K0E</p>	<p>The coupling will rotate when no trailer is connected. Difficult to connect.</p>	<p>The coupling jaw rotates too easily.</p>

Inspection method

Rotate the coupling.



Requirements, wear limits, etc.

The coupling should rotate at 1,000 Nm.

Instructions for rectification



①②③

If the coupling jaw is stuck, it must be removed from the drawbeam sleeve.

Clean the horizontal bolt and the drawbeam sleeve.

②



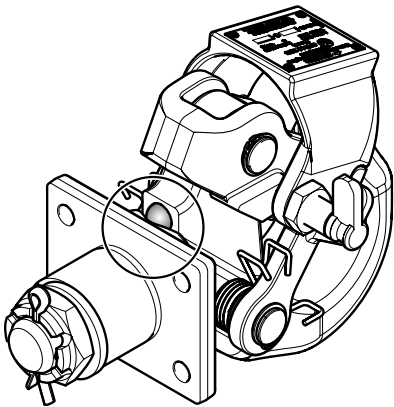
①②③


In the event of a damaged horizontal bolt, replace the coupling.

If the drawbeam sleeve is damaged, it must be replaced.

③

Visual check of detent cam.
Must go in and out when coupling turns.



Checkpoint	Symptom	Fault
<p>Coupling jaw for fixed and/or articulated drawbars for: Hook coupling RU K5 DV</p> 	<p>Askew in the attachment, vertical and/or lateral deformation, damaged/broken coupling mouth. Damaged surrounding equipment such as endplates, beams and coupling mouth. Suspicion of reversing, off-road driving, jackknifing, etc. Other symptoms may include differences in the build-up of dust and residual rubber on the contact surfaces between rubber elements and the coupling jaw.</p>	<p>Bent horizontal bolt and/or cracks in the horizontal bolt.</p>
<p>Coupling jaw for fixed and/or articulated drawbars for: Hook coupling RU K5 DV</p>	<p>Reduced comfort, more noise and more noticeable jolting during driving.</p>	<p>Coupling jaw stuck with rust or deformation. Cannot be rotated.</p>
<p>Coupling jaw for fixed and/or articulated drawbars for: Hook coupling RU K5 DV</p>	<p>The coupling will rotate when no trailer is connected. Difficult to connect.</p>	<p>The coupling jaw rotates too easily.</p>

Inspection method

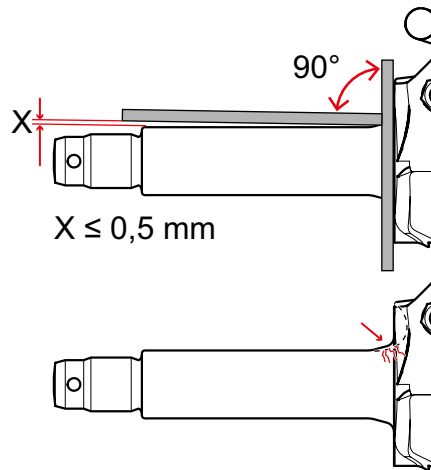
Dismantle the coupling jaw. Measure the perpendicular alignment between the coupling jaw's circular part (the rubber element's contact surface) and the horizontal bolt, see picture.

Visually check that the horizontal bolt does not have cracks in the radius transition against the rubber element's contact surface.

Check other surrounding equipment such as endplates, drawbeam and underrun protection etc.

Requirements, wear limits, etc.

The horizontal bolt must be perpendicular to the coupling jaw's circular part for 0.5 mm of the horizontal bolt's length. No cracks are allowed.



Instructions for rectification

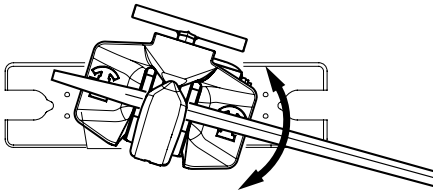


① ② ③

If there are cracks, replace the coupling. In the event of deviation greater than 0.5 mm, replace the coupling.

③

Rotate the coupling.



① ② ③

If the coupling jaw is stuck, it must be removed from the drawbeam sleeve. Clean the horizontal bolt and the drawbeam sleeve.

②

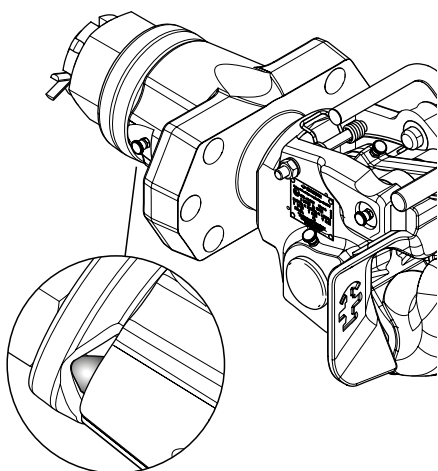


① ② ③

In the event of a damaged horizontal bolt, replace the coupling.

③

Visual check of detent cam.
Must go in and out when coupling turns.





Produced in a certified company

VBG GROUP TRUCK EQUIPMENT GMBH · Girmesgath 5 · D-47803 Krefeld
www.ringfeder-rf.com