

Liability

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Emphasis in the text**Explanation of symbols**

For ease of readability and to provide a clear overview, different types of information are marked in different ways.

Sentences introduced with an arrow contain instructions to perform certain actions:

- Carry out instructions one after the other in the sequence described.

The following information is introduced by a dash:

- Lists
- Preconditions for actions to be executed subsequently
- Descriptions of previous work steps
- Descriptions of statuses

Warnings of hazards and risks

Important passages which must be observed, are especially emphasised:

**DANGER!**

Warns against immediate dangers which could lead to serious injury or death.

- Provides instructions for defence against or avoidance of dangers.

**WARNING!**

Warns against risks which could lead to serious injury or death.

- Demands safety measures to protect the persons concerned.

**CAUTION!**

Warns against risks which could lead to damage to property or personal injury (light injury).

- Provides information for prevention of damage.

Illustrations

As necessary, texts are illustrated by pictures. The reference to a figure is made with a number in [square brackets]. Capital letters after a figure number, e.g. [12A] refer to the corresponding position in the picture.

Binding information**LUBRICANTS:**

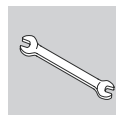
- Lubricant for the previously described activity

**TIGHTENING TORQUES:**

- Tightening torques for the listed bolted connections.

**Supplementary information**

The information symbol refers to instructions and recommendations as well as additional information.

**TOOLS:**

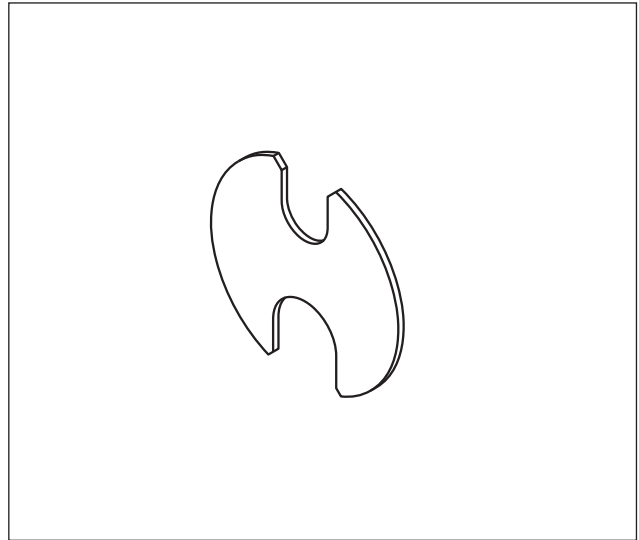
- List of the tools necessary for the subsequently described activities.



Tools

For the work described in these instructions the following tools are required:

- mechanical pliers, angled
- combination pliers or pipe wrench
- 2x open-end, ring or fork spanner, 8 mm
- torque wrench
- flat-tip screwdriver, medium
- locking plate for control pin [2], parts no. ROE65632
- plastic hammer



[2] Locking plate for control pin, part no. ROE65632

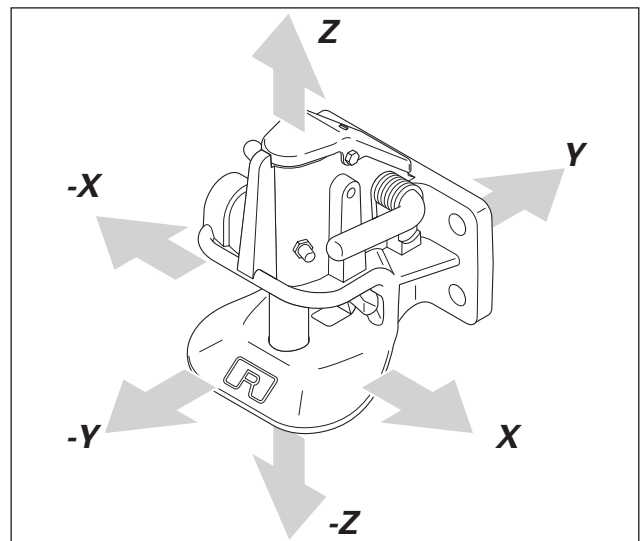
Direction information

Direction information is standardised throughout the text. To establish the directions, see figure [3].

Function test

After every repair, before starting-up the trailer coupling:

- Carry out a function test.
See also Section 3.7.



[3] Direction information

- X** to the right
- Y** to the back
- Z** upwards
- X** to the left
- Y** to the front
- Z** downwards

Problems with the coupling

For wear dimensions, see Annex, Section 4.3 Wear limits

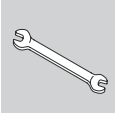
Fault	Possible causes	Remedy	See section
Coupling pin fails to engage	– Cap spring defective	→ Replace cap	3.2 Locking lever
	– Cap spring not correctly fitted	→ Remove cap spring and fit correctly	3.2 Locking lever
	– Locking lever worn on the contour	→ Replace locking lever	3.2 Locking lever
Coupling does not release	– Release spring defective	→ Replace release spring	3.5 Release lever
	– Release lever worn	→ Replace release lever	3.5 Release lever
Coupling will not close	– Incorrect drawbar eye	→ Check drawbar eye	–
	– Locking spring defective	→ Replace locking spring	3.1 Hand lever
Excessive longitudinal play in the connection	– Coupling pin worn	→ Replace coupling pin	3.4 Coupling pin
	– Drawbar eye worn	→ Replace drawbar eye	–
Excessive vertical play at the coupling pin	– Hand lever incorrectly fitted	→ Remove hand lever and fit correctly	3.1 Hand lever
	– Locking bolt worn	→ Replace locking bolt	3.6 Locking device
Excessive vertical play in the drawbar eye	– Drawbar eye worn	→ Replace drawbar eye	–

3.1 Hand lever

Hand lever

Requirements

- Coupling closed



TOOLS:

- mechanical pliers, angled
- combination pliers or pipe wrench
- flat-tip screwdriver, medium

Removal

- Remove washer and split pin [4A]
- Remove washer and split pin [4B]



CAUTION

- **RISK OF INJURY!** The tension on the locking spring [4A] is released when the hand lever [4D] is pulled out. Wear gloves!
- Release the tension on the locking spring [4C] by levering it out with a flat-tip screwdriver
- Pull out hand lever [4D]

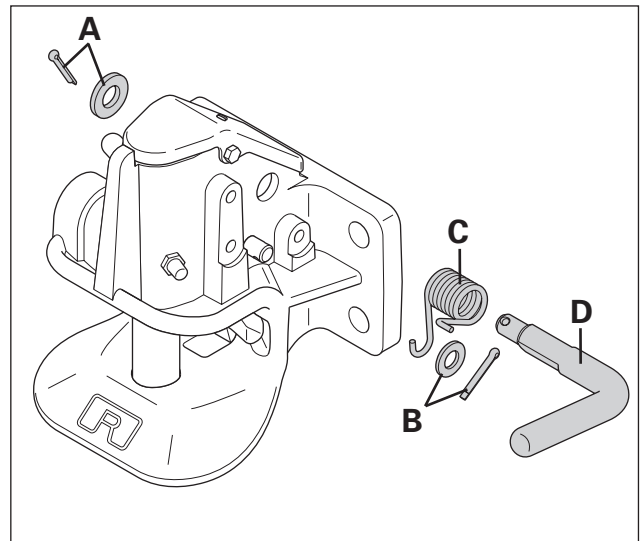
Installation

- Press the closing lever [5A] all the way down and hold it there
- Slide in the hand lever with spring
- Check that the hand lever is fitted correctly
- When the coupling is closed, the lever is pointing to the front
- Tension the spring with the pipe wrench and hang it onto the closing lever
- Fit washers and two new split pins [5B]
- Secure the split pins against falling out: bend the end of the pin
- Check the coupling for correct functioning; Section 3.7

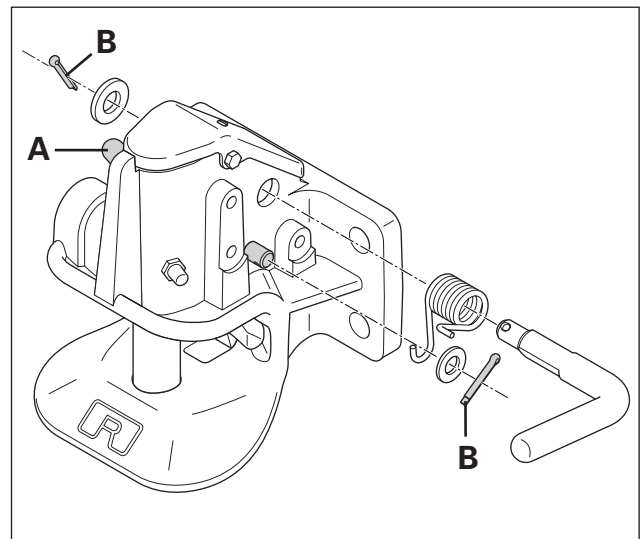


LUBRICANTS

- Multi-purpose grease



- [4] **A** Split pin and washer, hand lever
B Split pin and washer, closing lever
C Locking spring
D Hand lever



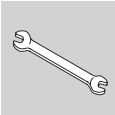
- [5] **A** Closing lever
B Split pins

3.3 Closing lever

Closing lever

Requirements

- Coupling closed
- Hand lever removed; Section 3.1
- Locking lever removed; Section 3.2



TOOLS:

- flat-tip screwdriver, medium

Removal

- Press the release lever [8B] slightly back and hold it there
- Pull out the closing lever [8A]

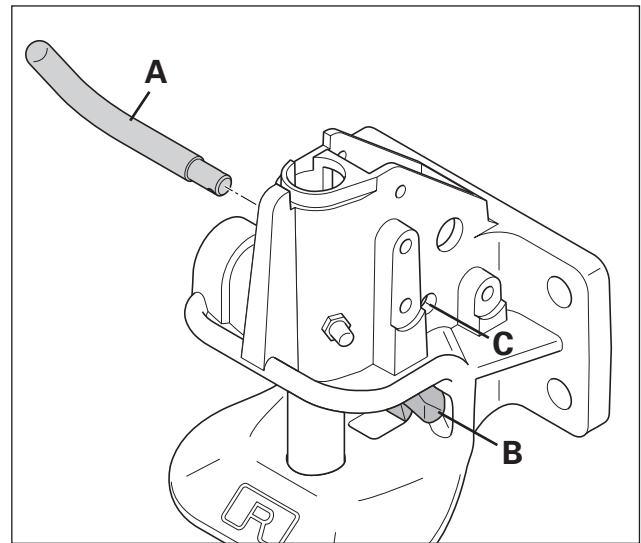
Installation

- Press the release lever [8B] slightly back (y-direction) and hold it there
- Slide in the closing lever [8A]
- Check the release lever [8B] for correct function and smooth running
- Install the locking lever; Section 3.2
- Install the hand lever; Section 3.1
- Check the coupling for correct functioning; Section 3.7



NOTE!

If the release lever slips, it can be centred through the housing boring [8C] using the flat-tip screwdriver.



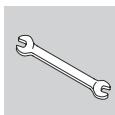
- [8] **A** Closing lever
B Release lever
C Housing boring

3.4 Coupling pin

Coupling pin

Requirements

- Coupling closed
- Hand lever removed; Section 3.1
- Locking lever removed; Section 3.2
- Closing lever removed; Section 3.3



TOOLS:

- flat-tip screwdriver, medium
- Locking plate for control pin, part no. ROE65632

Removal

- Use the screwdriver to press the control pin [9A] outwards and arrest it using the locking plate [9B]
- Remove the coupling pin [9C] from the top

Installation

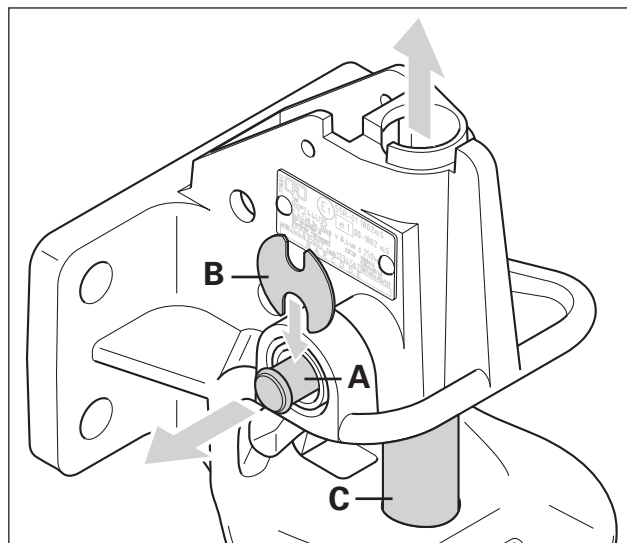
The installation takes place in the reverse sequence. Please take note of the following points:

- Clean and grease the guide boring for the coupling pin thoroughly
- Install closing lever; Section 3.3
- Install locking lever; Section 3.2
- Install hand lever; Section 3.1
- Check the coupling for correct functioning; Section 3.7



LUBRICANTS

- Multi-purpose grease



- [9] **A** Control pin
B Locking plate, part no. ROE65632
C Coupling pin

3.5 Release lever

Release lever

Requirements

- Coupling closed
- Hand lever removed; Section 3.1
- Locking lever removed; Section 3.2
- Closing lever removed; Section 3.3
- Coupling pin removed; Section 3.4

Removal

- Remove the release lever [10A]
- Remove the release spring [10B]

Installation

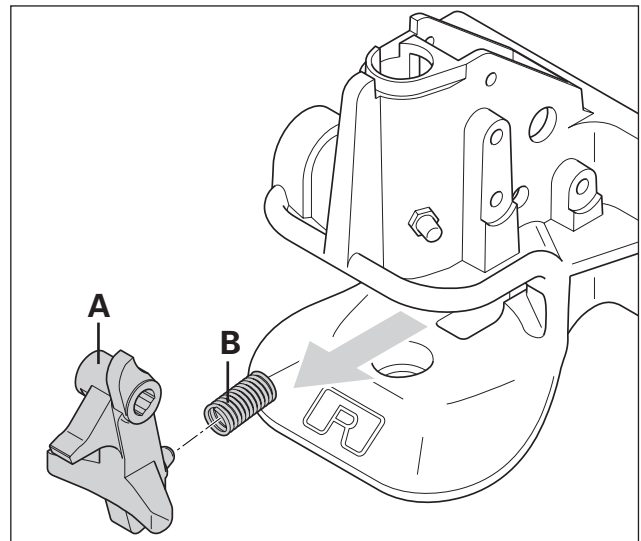
The installation takes place in the reverse sequence. Please take note of the following points:

- Make sure that the release lever is fitted in the correct position:

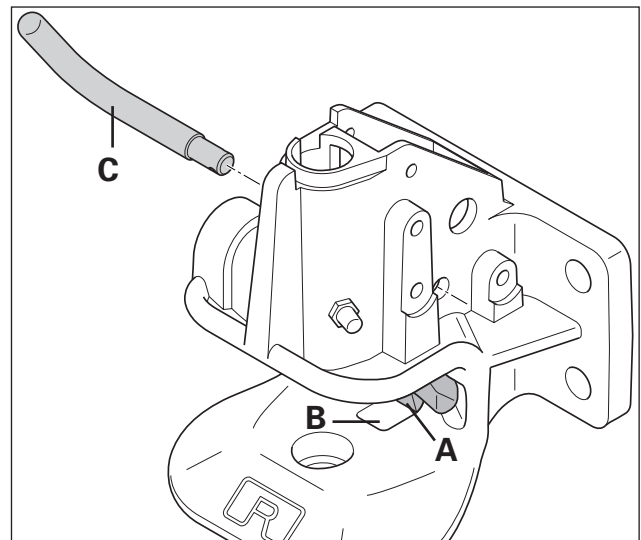
NOTE!

The lower edge of the release lever [11A] must protrude into the housing recess [11B] of the coupling.

- Secure the release lever from falling out by inserting the closing lever [11C]; Section 3.3
- Check that the release lever is operating smoothly
- Install the coupling pin; Section 3.4
- Install the locking lever; Section 3.2
- Install the hand lever; Section 3.1
- Check the coupling for correct functioning; Section 3.7



[10] A Release lever
B Release spring



[11] A Lower edge of the release lever
B Housing recess
C Closing lever



3.6 Locking device

Locking device

Requirements

- Coupling closed



TOOLS:

- Vice-grip wrench
- Screwdriver
- Plastic hammer
- Assembly plug, part no. ROE84001

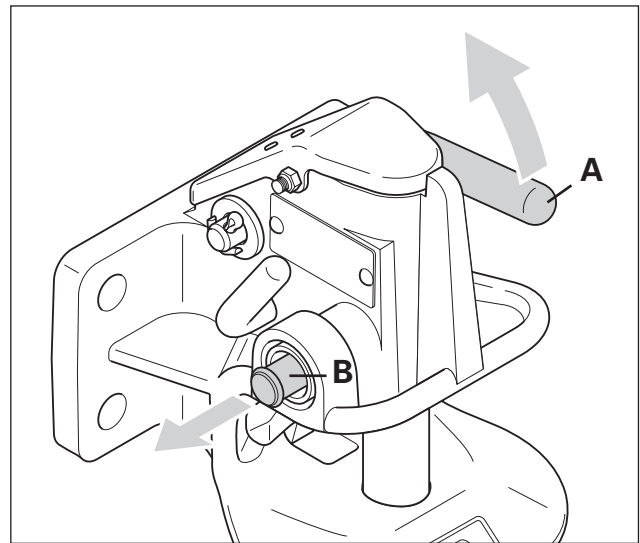
Removal

- Press the hand lever [12A] slightly upwards and hold it there so that the control pin [12B] is protruding slightly
- Grip the control pin with the vice grips and lever out the locking device [13A]

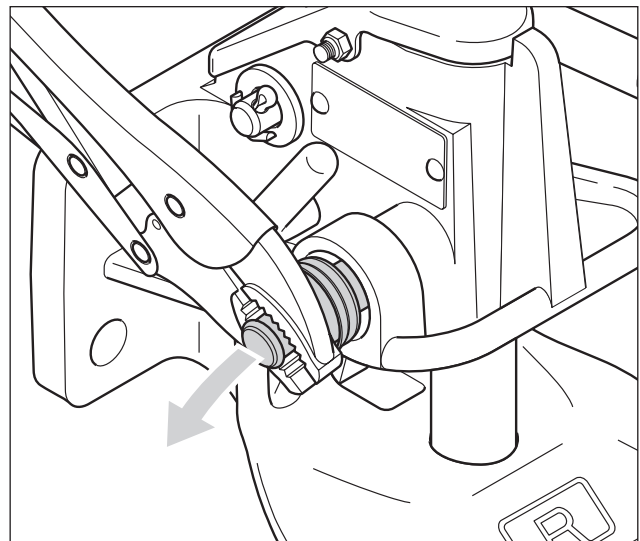
NOTE:

This will necessarily destroy both the control pin and the plastic sleeve [14A]. See Section 4.1, Spare Parts

- Use the screwdriver to lever out the locking bolt [14B]



[12] A Hand lever
B Control pin



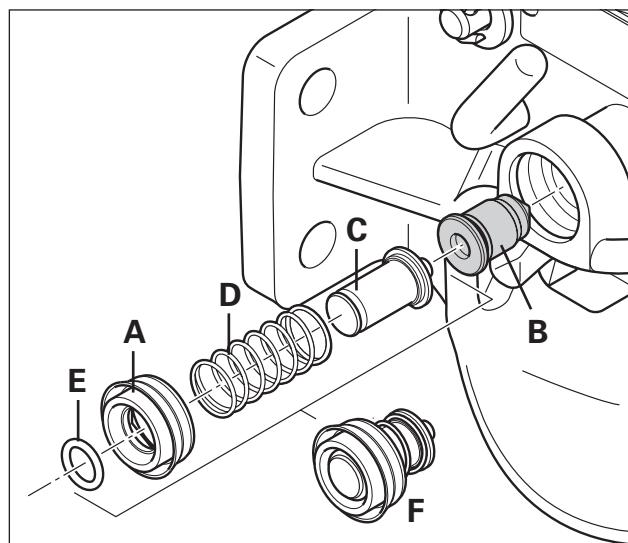
[13] A Lever out locking device with vice grips.

3.6 Locking device

Locking device

Installation

- Thoroughly clean and grease the exposed parts of the housing boring
- The installation takes place with a complete new locking device set, see Section 4.1
- Stick the control pin [14C] through the spring [14D] and the plastic sleeve [14A] and use the O-ring [14E] to secure against falling out
- Grease the locking bolt [14B] and slide it into the boring
- Grease the assembled locking device [14F] around the area of the spring and slide it into the slide to the end, making sure that it is correctly centred
- Place the assembly pin [15A] in position and bang the locking device [15B] in until it is flush with the edge of the housing [16]
- Check the coupling for correct functioning; Section 3.7

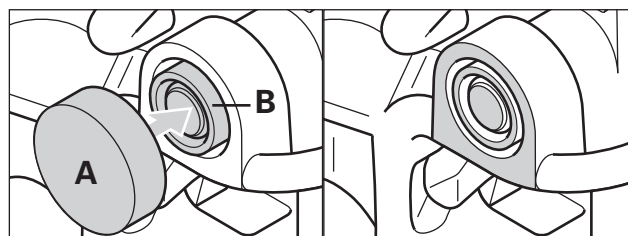


- [14] A Plastic sleeve
 B Locking bolt
 C Control pin
 D Spring
 E O-ring
 F Assembled locking device



LUBRICANTS:

- Special grease ROE96040



[15] A Assembly pin,
part no. ROE84001

[16] Locking device flush with
the edge of the housing

3.7 Function check

Function check

Procedure

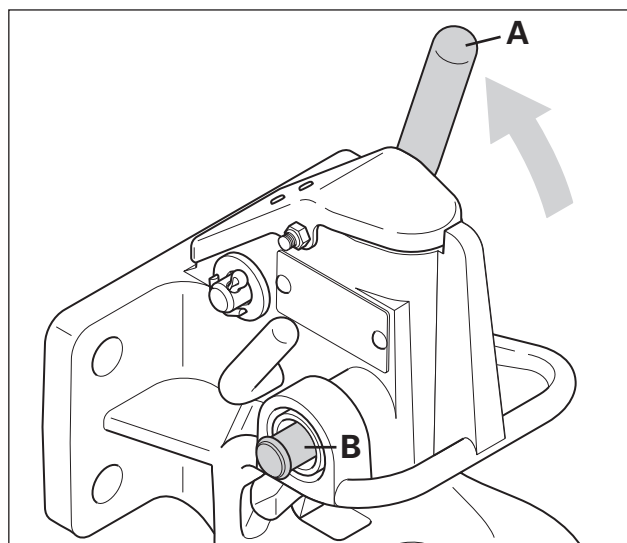
- Press the hand lever [17E] upwards until it engages
- The control pin [17B] must now be clearly projecting (12 mm)
- Press the closing lever [18A] down all the way.
- The control pin [18B] should now be no longer projecting



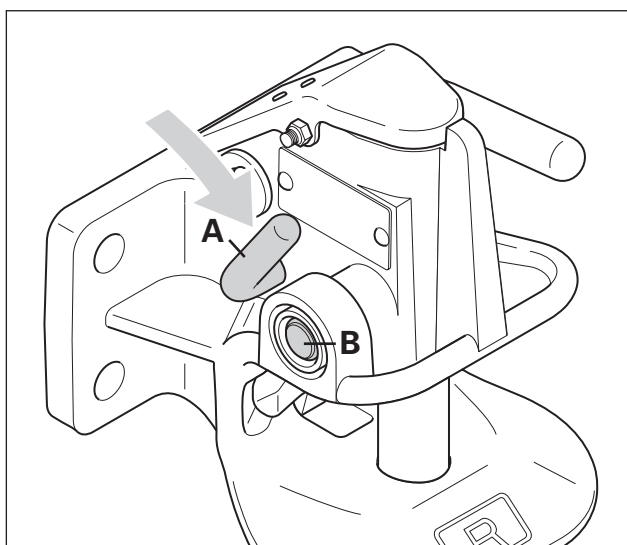
NOTE!

If the control pin is still projecting when the coupling is closed [19A]

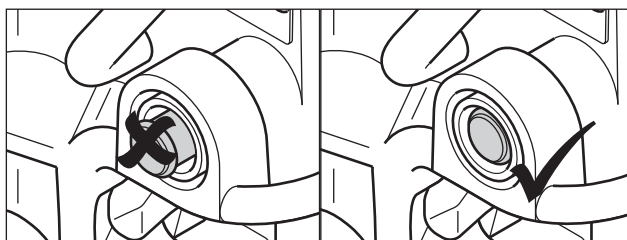
- Replace the locking device, Section 3.6
- Replace the locking lever; Section 3.2



[17] **A** Hand lever
B Control pin



[18] **A** Closing lever
B Control pin

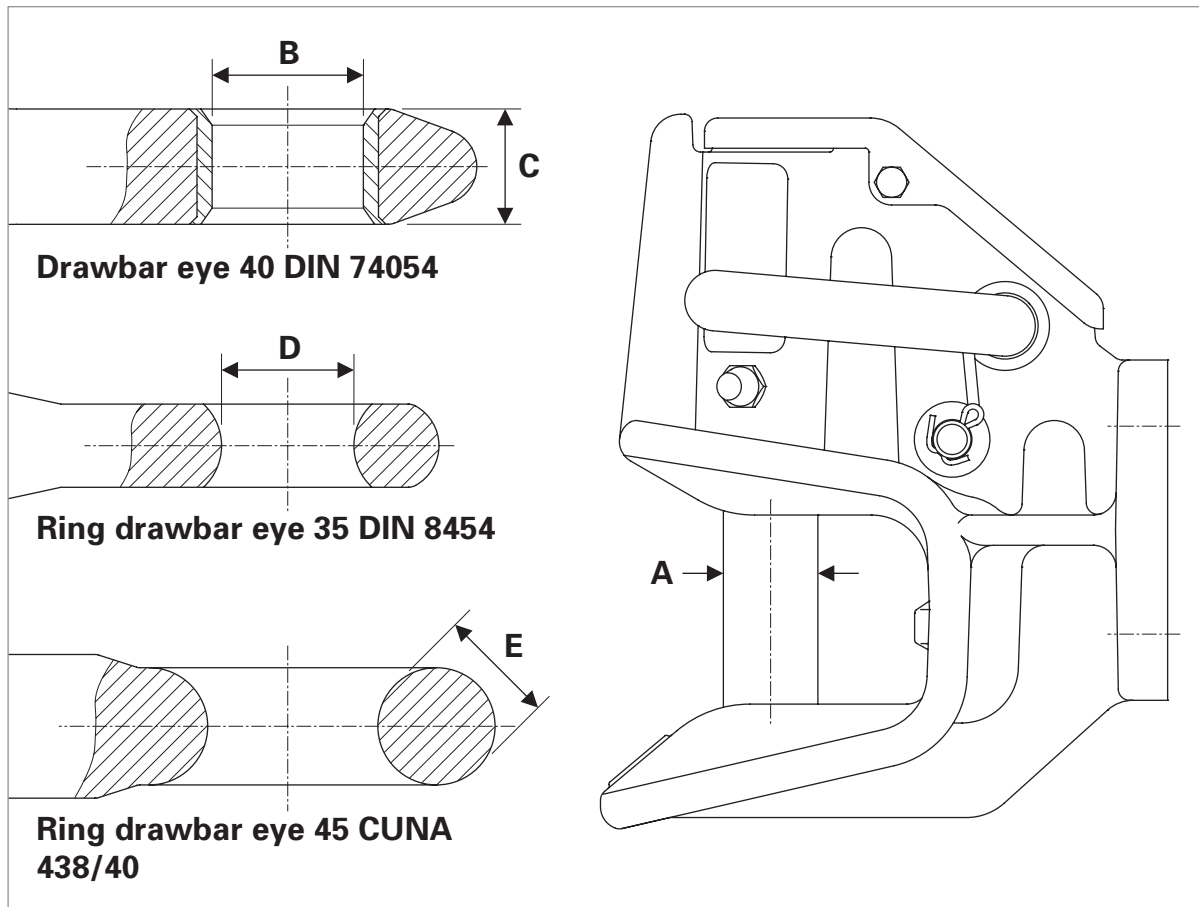


[19] **A** Wrong

[19] **B** Correct

4.3 Wear limits

Coupling pin and drawbar eye



[22] Wear dimensions in the area of the coupling pin and the drawbar eye

Dimension	Gauge Part no.	Designation	Wear limit (mm)
A	-	Coupling pin	Ø 22
B	ROE57026	Drawbar eye 40 DIN 74054	Ø 41,5
C	-	Drawbar eye 40 DIN 74054	Ø 28
D	-	Ring drawbar eye 35 DIN 8454	Ø 37
E	-	Ring drawbar eye CUNA 438/40	Ø 32