



Montage- und Betriebsanleitung

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Installation and operating instructions

GB

Instructions de montage et d'utilisation

F

Istruzioni per il montaggio e la manutenzione

I

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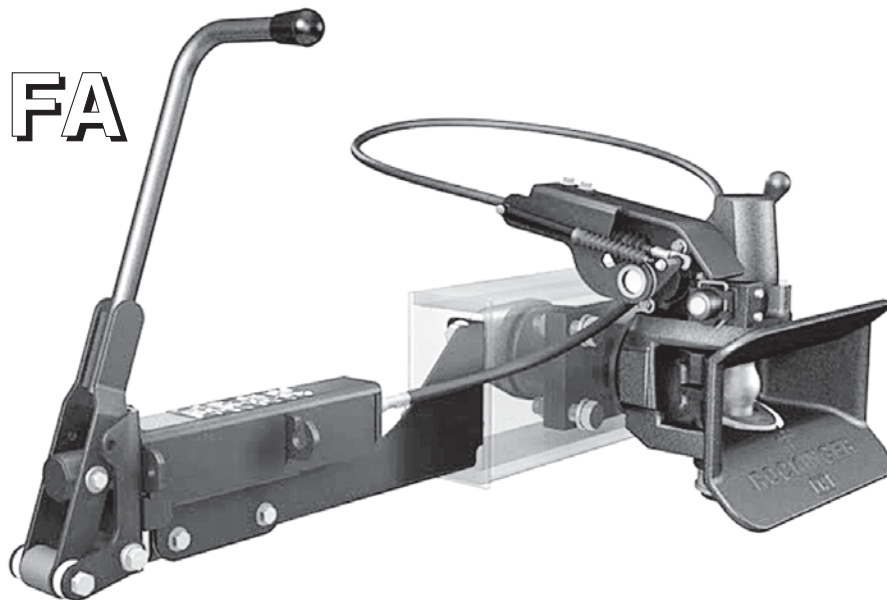
ROE 71469 FA

**Mechanische Fernbedienung
kraftunterstützt**

**Mechanical remote control
power assisted**

**Commande à distance mécanique
à transmission de force**

**Comando a distanza meccanico,
servoassistito**



ROE 71469 FA

Mechanical remote control

for model series

RO*400 up to technical status C

RO*430 up to technical status 0

RO*500, RO*530 from technical status 0



Installation must be carried out by an authorised workshop!

Before installation, please read these instructions carefully!

Official note:

When installing the retrofit kit, EC Directive 94/20, in particular Annex VII, and the relevant national regulations must be observed. The fitting and operating instructions must be kept in the vehicle.

Subject to technical changes without prior notice.

Please find the latest informations at www.jost-world.com

1. Safety instructions	22
1.1 Safety instructions for operation	22
1.1 Safety instructions for maintenance	22
1.1 Safety instructions for installation	22
<hr/>	
2. Correct use	23
2.1 Retrofit kit for mechanical remote control	23
2.2 Retrofit kit for mechanical remote indicator	23
2.3 Technical status	23
<hr/>	
3. Installation	24 – 34
3.1 General instructions for installation	25
3.2 Mounting the master cylinder	26
3.3 Mounting the coupling actuator on the trailer coupling	27 – 32
3.4 Mounting the remote indicator on the trailer coupling	33
3.5 Setting the remote indicator	34
3.6 Function check	34
<hr/>	
4. Operation	35 – 38
4.1 Trailer coupling closed	35
4.2 Trailer coupling open	35
4.3 Trailer coupling ready for insertion	36
4.4 Unhitching	37
4.5 Hitching	37
4.6 Padlock	38
4.7 Checking the coupling status	38
<hr/>	
5. Maintenance	38



The safety instructions are summarised in a single chapter. In any situation where the user of the trailer coupling is at risk, the safety instructions are repeated in the individual sections and marked with the warning symbol shown here.

When handling trailer couplings, tractor vehicles and trailers the relevant safety regulations in the respective country must be observed (e.g. Berufsgenossenschaft in Germany). Any safety instructions in the operating manual of the tractor vehicle and the trailer remain valid and must be observed.

For operation, maintenance and assembly the safety instructions listed below must be observed. Further safety instructions are then given in the individual case which relate directly to the respective activity.

1.1 Safety instructions for operation

- The trailer coupling may only be operated by authorised persons.
- The installation and operating instructions of the respective trailer coupling retain their validity and must be observed.
- Only use the trailer coupling and the towing eye of the trailer if they are in perfect technical condition.
- Only carry out hitching / unhitching operations on firm, level ground.
- During hitching, nobody may stand between the tractor vehicle and the trailer.
- After every hitching operation the correct locked status of the trailer coupling must be checked by means of the control pin or the remote indicator. Only drive the rig in the correctly locked status.
- The remote indicator does not exempt the driver from the obligation to check before driving off subject to StVZO (Regulations Authorising the Use of Vehicles for Road Traffic). Before driving off, among other things, the coupling status of the mechanical connection device for the tractor vehicle and the trailer must be checked.

1.2 Safety instructions for maintenance

- For maintenance work, only use the prescribed lubricants.
- Maintenance work may only be carried out by qualified personnel.

1.3 Safety instructions for installation

- Installation may only be carried out by authorised workshops.
- Installation must be carried out in compliance with the relevant accident prevention regulations and the technical regulations for mechanical equipment.
- Only original components may be used.
- Instructions and installation guidelines of the vehicle manufacturer must be observed, e.g. type of fastening, clearances etc.
- All screwed connections must be tightened with the prescribed tightening torque.
- Work may only be carried out on the trailer coupling when it is closed.

Risk of accident!

The installation of the trailer coupling on the tractor vehicle must be carried out in accordance with Annex VII of EC Directive 94/20 and must be checked accordingly. As applicable, the relevant licensing regulations in the respective country must be observed.

§§ 19, 20 and 21 StVZO apply in Germany. The mechanical remote control and the mechanical remote indicator are equipment with safety components. This is why the installation must be documented.



The trailer coupling, the mechanical remote control and the mechanical remote indicator are connection devices which require model approval and are subject to the highest safety requirements.

Alterations of any kind shall cause the warranty to lapse and invalidate the model approval, which in turn invalidates the vehicle operation permit. In order to avoid unauthorised opening of the lock, a padlock should be used on the master cylinder.

2.1 Retrofit kit for mechanical remote control

The retrofit kit for mechanical remote control is used for opening and closing the trailer coupling. The mechanical remote control is used particularly in tractor vehicles where there is not sufficient free space pursuant to EC/94/20 to open the trailer coupling with the hand lever. Depending on how it is installed in the tractor vehicle, the mechanical remote control is available in two lengths:

ROE 71469 FA, length of the Bowden cable 1,700 mm

ROE 71469 FA2, length of the Bowden cable 2,200 mm

The mechanical remote control may only be installed on the following trailer couplings:

RO*400 up to technical **status C**

RO*430 up to technical **status 0**

RO*500 and **RO*530** as of technical **status 0**

Information on the technical status (see Chapter 2.3).

2.2 Retrofit kit for mechanical remote indicator (optional)

The retrofit kit for mechanical remote indicator serves as a control indicator on the locking status of the trailer coupling. The installation of a remote indicator is required by the EC directive. Depending on the desired degree of convenience

the mechanical remote indicator **ROE 71410**

or the electrical remote indicator **ROE 70936**

can be installed.

The mechanical remote indicator may only be installed in the following trailer couplings:

RO*400 up to technical **status C**

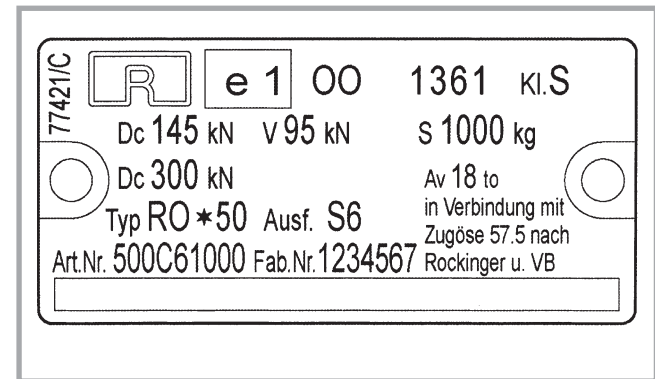
RO*430 up to technical **status 0**

RO*500 und RO*530 as of technical **status 0**

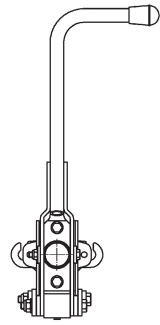
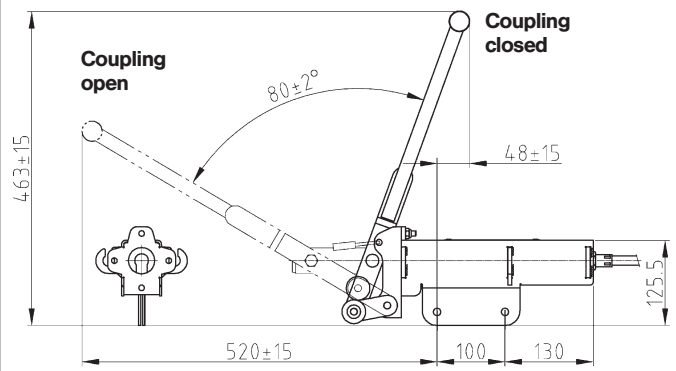
Information on the technical status (see Chapter 2.3).

2.3 Technical status

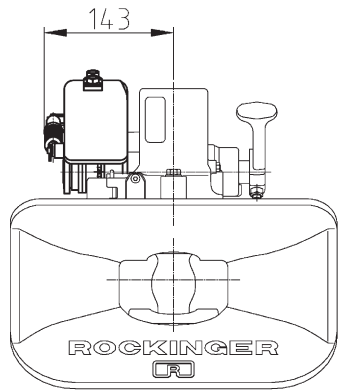
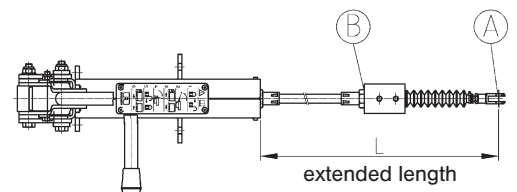
The technical status is shown on the type plate on the trailer coupling. The ninth digit of the article number refers to the technical status (see illustration below).



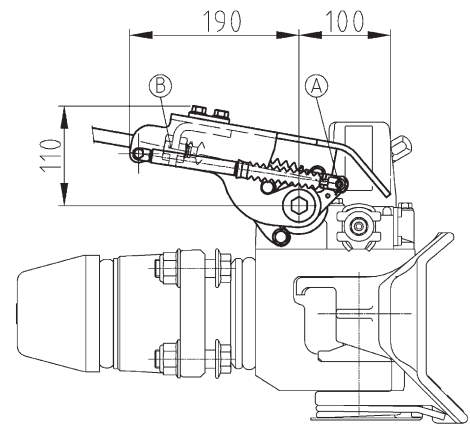
1 = ninth digit of the article number



Hand lever complete



Slave cylinder complete



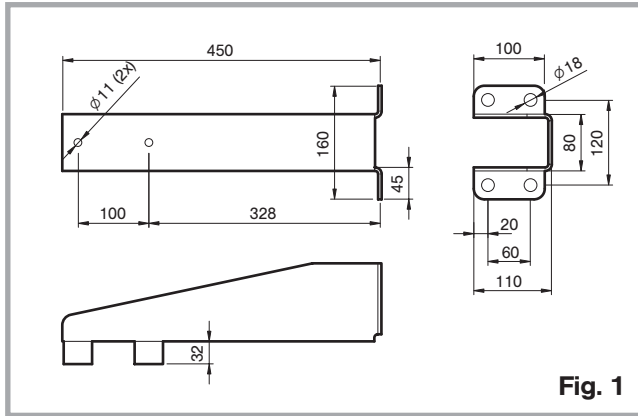


Fig. 1

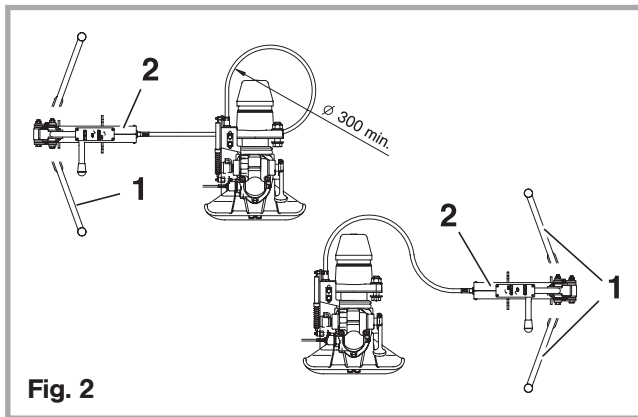


Fig. 2

3.1 General instructions for installation

The following chapters describe the installation of the mechanical remote control and the mechanical remote indicator.

The master cylinder of the mechanical remote control is designed to be fastened on a bracket on the tractor vehicle. If no such suitable bracket is present, this can be ordered as part number ROE 71581 (see Fig. 1).

- The master cylinder is fastened at the two borings (\varnothing 11 mm) with the aid of bolts size M 10.

The hand lever (1) on the master cylinder (2) must be fitted in such way that it can be moved freely.

If necessary, the hand lever (1) can be fitted at an angle of 90° (see Fig. 2). To do this release the bolts, turn the hand lever (1) in the desired direction and then tighten the bolts.

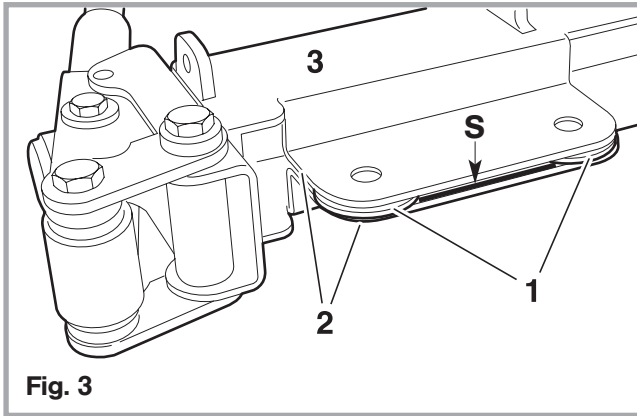
ATTENTION: Do not turn the hand lever (1) by more than 90° .

The master cylinder (2) can be fitted on the left or right on the tractor vehicle (see Fig. 2).

Depending on the situation, the Bowden cable is available in two lengths (1,700 mm or 2,200 mm).



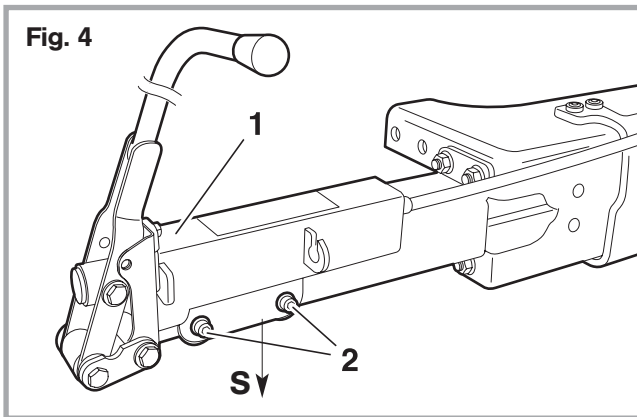
In order to ensure correct functioning and a long service life, it is important that the bending radius is at least 300 mm, the cable is laid without kinks and fixed with cable binders.



3.2 Mounting the master cylinder

- Slide the distance washers (1) between the plates of the housing angle (2) of the master cylinder (3) .

Note: The gap (S) serves to remove dirt



- Bolt the master cylinder (1) onto the corresponding bracket with bolts M10 (2), tightening torque 45 +10 Nm.

Note: Mount the master cylinder in such a way that the gap (S) is pointing downwards.

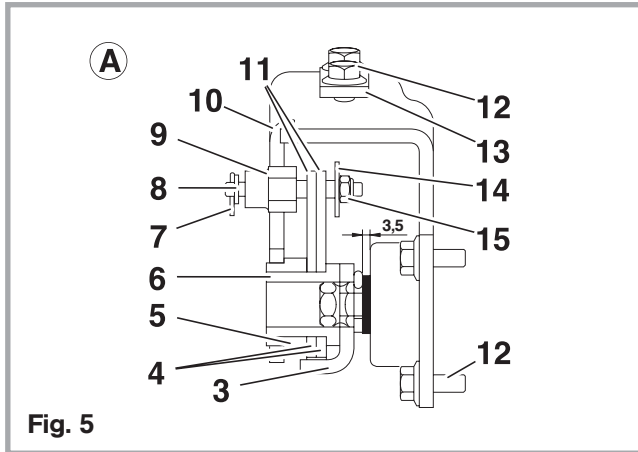


Fig. 5

- | | |
|---------------------|------------------------|
| 1 Distance washer * | 9 Hex bolt 17x 59.3 mm |
| 2 Distance washer * | 10 Angle bracket |
| 3 Tappet | 11 Fork head |
| 4 Drive lever | 12 Bolt M8 x 20 mm |
| 5 Bearing bush | 13 Guide plate |
| 6 Bearing sleeve | 14 Underlay washer |
| 7 Splint | 15 Hex nut |
| 8 Underlay washer | |

** not required in RO★500 as of technical status 3

3.3 Mounting the coupling actuator on the trailer coupling

Note:

For the sake of clarity, the following work steps are shown without the remote indicator fitted.

To install the coupling actuator it is important that the distance washers are installed or omitted depending on the type of trailer coupling.

Fig. 5 (A) only applies for trailer couplings type 500 and 530 as of **technical status 3**.

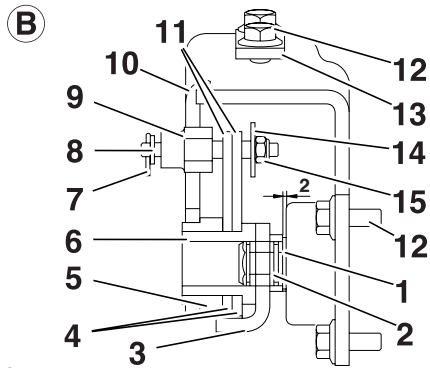


Fig. 6

Fig. 6 (B) only applies for trailer coupling type 400 and 430 as of **technical status C** and for trailer couplings type 500 and 530 **with technical status 0, 1 and 2.**

- | | |
|--------------------------|------------------------|
| 1 Distance washer 2 mm | 9 Hex bolt 17x 59.3 mm |
| 2 Distance washer 1,5 mm | 10 Angle bracket |
| 3 Tappet | 11 Fork head |
| 4 Drive lever | 12 Bolt M8 x 20 mm |
| 5 Bearing bush | 13 Guide plate |
| 6 Bearing sleeve | 14 Underlay washer |
| 7 Splint | 15 Hex nut |
| 8 Underlay washer | |

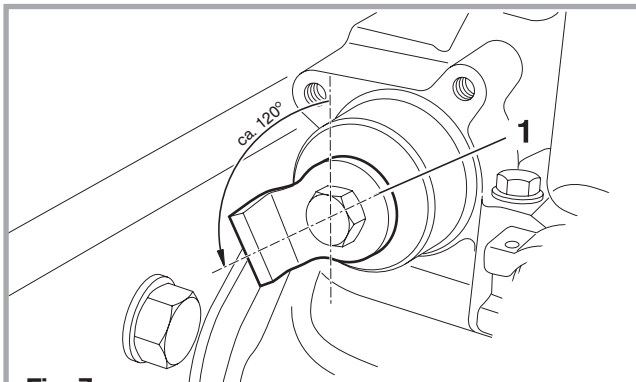


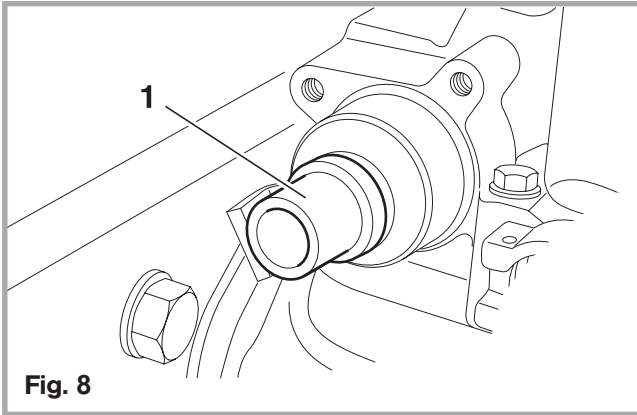
Fig. 7

Note:

Before installing the tappet (1), any distance washer present must be removed and replaced by the distance washers according to the technical status (see Figs. 6 und 7)

The tappet (1) must be fitted as illustrated with the trailer coupling closed (turned at ca. 120° to the vertical axis)

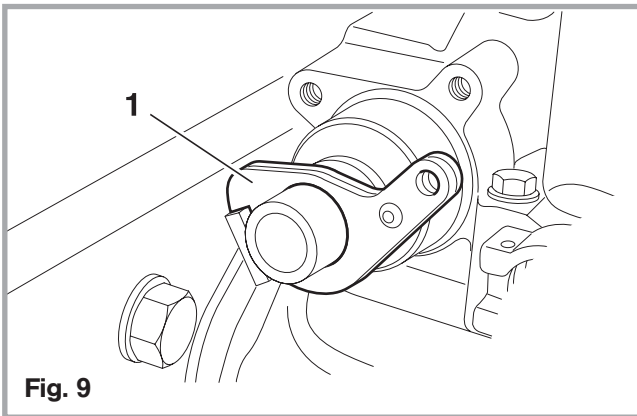
- Slide on the tappet (1).



- Slide on the bearing bush (1)

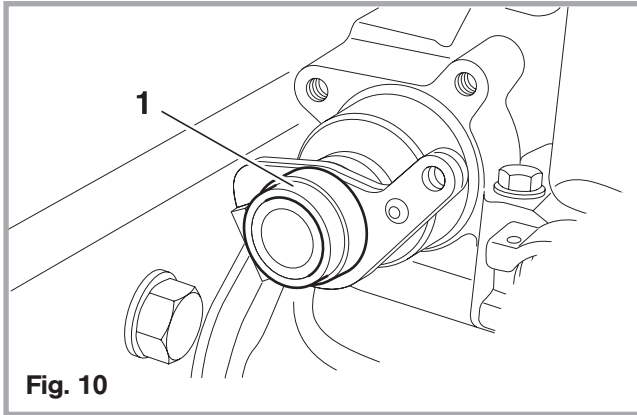
Note:

Apply ROCKINGER lubricating grease 96042 to the bearing bush (1)



- Slide on the actuation lever (1).

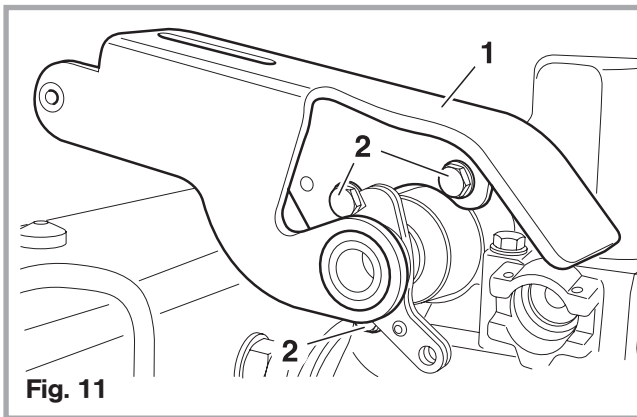




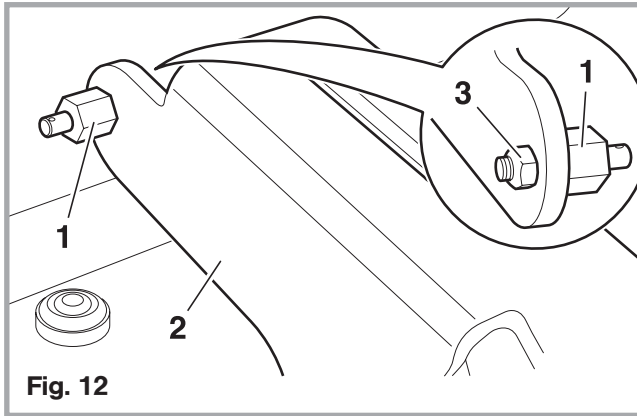
- Slide on the bearing sleeve (1).

Note:

Apply ROCKINGER lubricating grease 96042 to the bearing sleeve (1).



- Fit the angle bracket (1) and fix with the three bolts M8 x 20 mm (2).
Tightening torque 45 + 5 Nm.

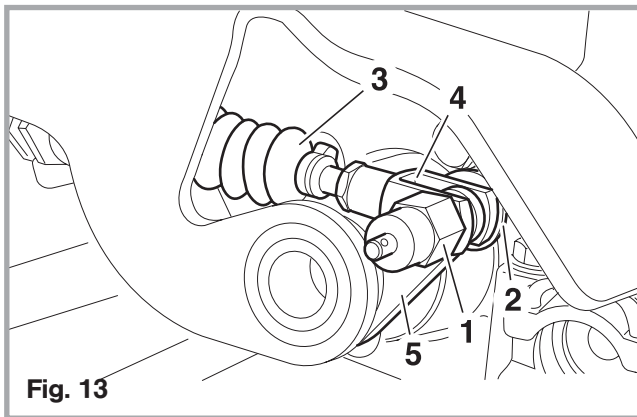


Note:

Only applies to trailer coupling **version B** (see Fig. 6)

If, after bolting on the angle bracket (1), the mounting of the tappet or the actuation lever is jammed, the distance washer 2 mm must be removed.

- Fasten hex bolt 13 x 35 mm (1) on the angle bracket (2) with the self-locking hex nut M6 (3). Tightening torque 10 + 3 Nm.



Note:

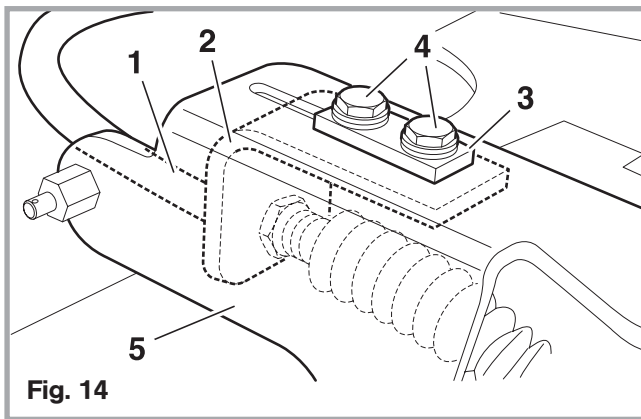
Before installation, the Bowden cable (3) must be laid in its final position **without kinks or abrasion**. When laying the cable, **the bending radius must be at least 150 mm**.

- Fit the fork head (4) with the hex bolt 17 x 59.3 mm (1), washer (2) and self-locking hex nut M6 on the actuation lever (5). Tightening torque 10 + 3 Nm.

Note:

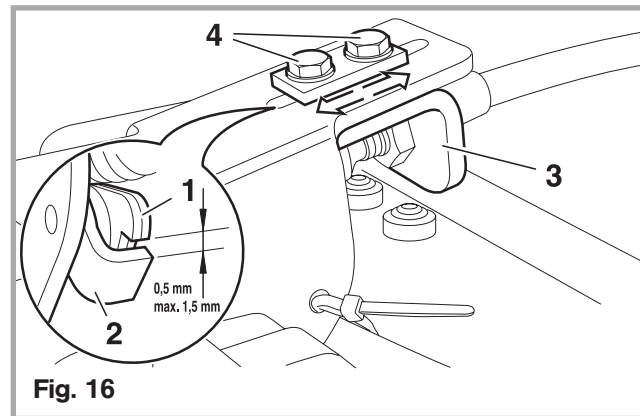
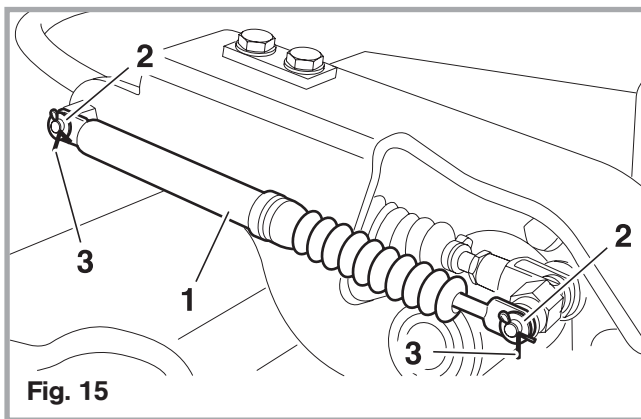
Apply ROCKINGER lubricating grease 96042 to the area around the fork head mounting (4).





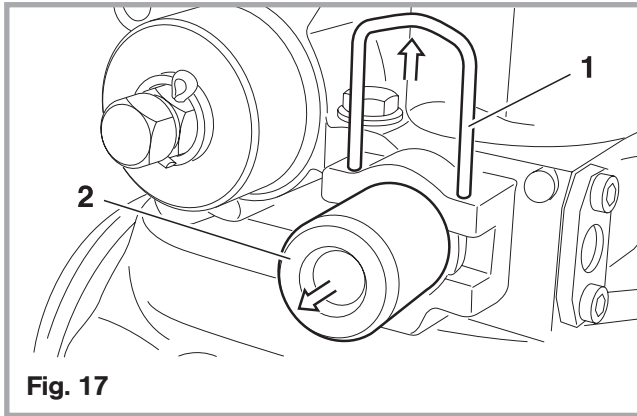
- Screw the Bowden cable (1) with bracket (2), guide plate (3) and hex nuts M8 x 20 mm (4) loosely onto the angle bracket (5) (see Fig. 14)
- Press on the pneumatic spring (1) as shown in the illustration and secure with washers (2) and splints (3) (see Fig. 15).

Note: Apply ROCKINGER lubricating grease 96042 around the mountings of the pneumatic spring (1) (see Fig. 15).



Note: The clearance between the tappet (1) and the drive lever (2) must be set at least 0.5 mm up to a maximum of 1.5 mm.

- Press the hand lever to the position closed (see Chapter 4.1).
- Set the clearance by sliding the angle bracket (3).
- Fit the hex bolts M8 x 20 mm (4). Tightening torque 45 + 5 Nm.



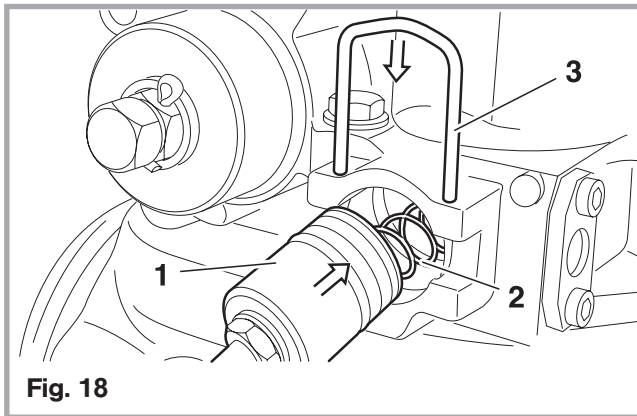
3.4 Mounting the mechanical remote indicator on the trailer coupling (optional) (ROE 71410)

Danger of injury! Work may only be carried out on the trailer coupling in the locked position.

- Bend the U-clip (1) open at both ends and slide upwards. Remove the locking bolts (2) in the direction of the arrow.

Note:

Once removed, the U-clip can be discarded.



- Slide in the remote indicator (1) with the spring (2) and secure with a new U-clip (3). Bend the U-clip at both ends.

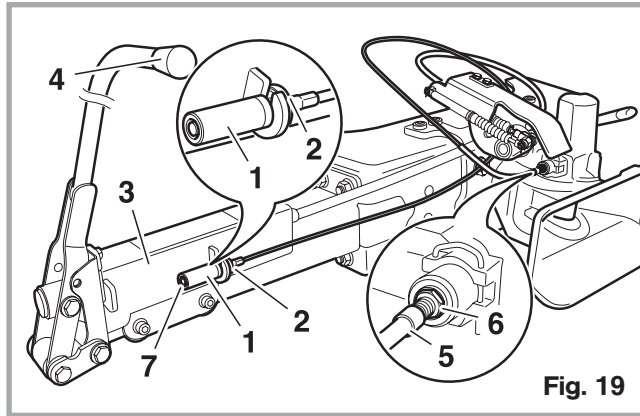


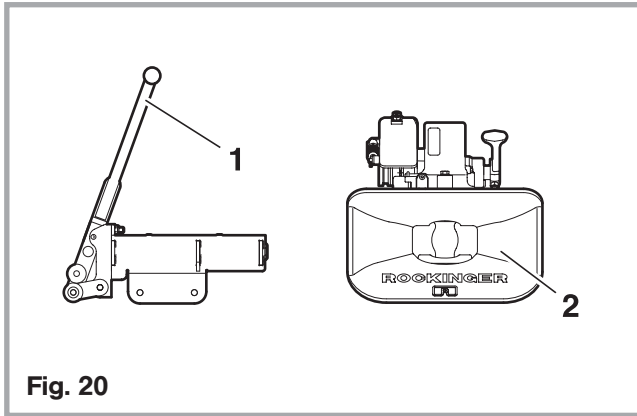
Fig. 19

3.5 Setting the remote indicator (optional)

- Fit the remote indicator (1) with the fastening clip (2) on the master cylinder (3).
- Press the hand lever (4) to the closed positions (see Chapter 3.1).
- Turn the hex nut (6) to set the Bowden cable (5) in such a way that the red control pin (7) is flush in the remote indicator (1).

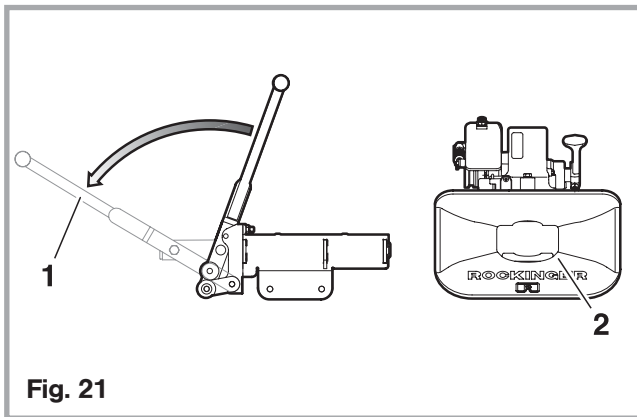
3.6 Function check

- Pull the hand lever outwards from the closed position to the open position (see Chapter 4.1 and 4.2).
- The trailer coupling is now in the open position.
- By pressing the hand lever quickly to the closed position the trailer coupling is closed and locked. Check this by making sure that the locking pin on the mechanical remote indicator is flush with the guide (see Chapter 4.7).
- By pressing the hand lever slowly to the closed position, the trailer coupling remains open. The trailer coupling is now ready for hitching.



4.1 Trailer coupling closed

- 1 Hand lever
- 2 Trailer coupling



4.2 Trailer coupling open

- 1 Hand lever
- 2 Trailer coupling

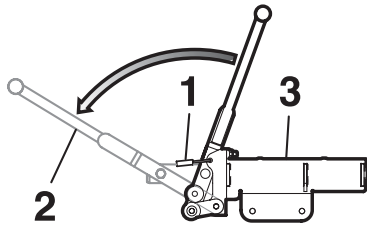


Fig. 22

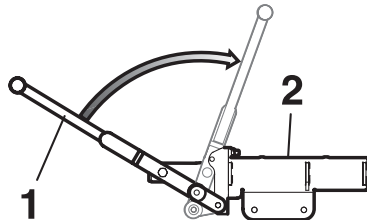


Fig. 23

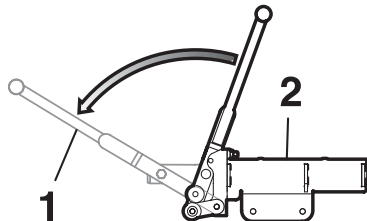


Fig. 24

4.3 Trailer coupling ready for insertion

- Remove the padlock (1).
- Pull the hand lever (2) on the master cylinder (3) fully outwards (over-press) (Fig. 22)
- Push the hand lever (1) on the master cylinder (2) slowly back in. The trailer coupling remains open and is ready for hitching (Fig. 23)

Note: If no trailer is to be hitched, the hand lever (1) on the master cylinder (2) must be **pushed in quickly**. This closes the coupling without the towing eye.

4.4 Unhitching

- Park the rig on sound, level ground.
- Secure the trailer against rolling away. In the case of rigid draw-bar trailers, extend the support device in accordance with the operating instructions until the trailer coupling and towing eye are almost unburdened.
- Disconnect the supply lines.
- Remove the padlock.
- Pull the hand lever (1) on the master cylinder (2) fully outwards (over-press). (Fig. 24)
- Drive out the tractor vehicle.

Note: If there are tensions between the tractor vehicle and the trailer, facilitate the unhitching process by **"jerking"** or with the **pneumatic spring**. The tensioned pneumatic spring in the master cylinder (2) supports the opening process until the coupling bolt has been drawn upwards (coupling open).

- Push the hand lever back into the starting position.
- Fit the padlock (see 4.3 and 4.6).

4.5 Hitching

- Secure the trailer against rolling away.
- The trailer coupling must be ready for insertion (see Chapter 4.3).
- In the case of articulated draw-bar trailers, release the brake on the front axle.
- In the case of rigid draw-bar trailers, the towing eye must be at the centre of the funnel as otherwise the funnel, the towing eye, the automatic unit or the support device can be damaged
- Reverse the tractor vehicle slowly until the towing eye is hitched.
- Locking is automatic.

Note: If there are tensions between the tractor vehicle and the trailer, facilitate the unhitching process by "jerking" or with the **pneumatic spring**.

- Check the coupling status (see Chapter 4.7 or operating instructions for the trailer coupling).

Check: After every hitching operation the correct coupling status must be checked at the coupling or by remote indicator. **If the trailer is not correctly hitched, there is a danger of accident. In this case do not drive with the trailer!**

Remedy: Stretch the rig (drive approx. 1 m forwards, then reverse). **Then check again.**

A mechanical or electrical remote indicator is available for retrofitting (see Chapter 4.7)

- Connect supply lines.
- In the case of rigid draw-bar trailers, insert the support device in accordance with the operating instructions.
- Fit the padlock.
- Release the brake and remove the chocks.



Always check the coupling status before driving off (see Chapter 4.7).

4.6 Pad lock

Note:

To secure the trailer coupling against unauthorised opening fit a pad lock (1) in the boring of the master cylinder as shown in fig. 25.

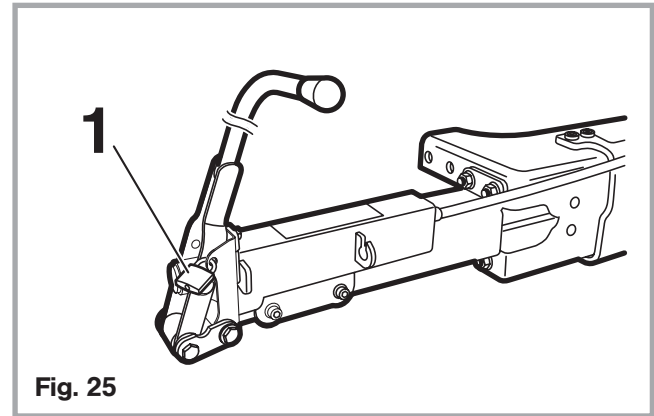


Fig. 25

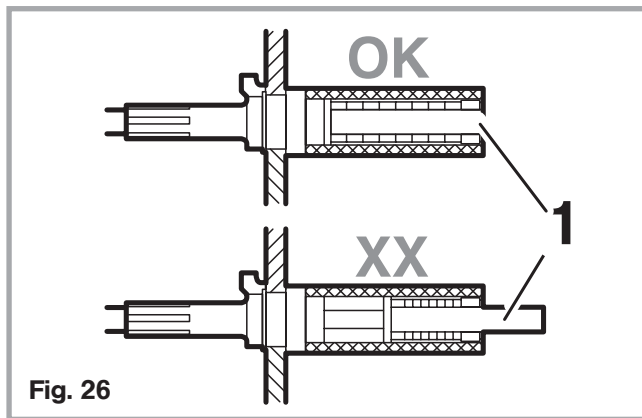


Fig. 26

4.7 Checking the coupling status

Mechanical remote indicator (optional) ROE 71410

- The control pin (1) on the master cylinder may not project out of the guide (red) (Fig. 26).



If the control pin (1) is projecting out of the guide (red), then the trailer is not correctly hitched and there is a danger of accident. Do not drive with the trailer in this condition.

Electrical remote indicator (optional) ROE 70936

If an electrical remote indicator is used, the corresponding control indicator must be lit up in the driver's cab (see separate operating instructions).



The remote indicator does not exempt the driver from the obligation to check before driving off subject to StVZO. Before driving off, among other things, the coupling status of the mechanical connection device for the tractor vehicle and the trailer must be checked.

The mechanical remote control and the mechanical remote indicator do not have to be maintained separately. Remote indicators must be checked at regular intervals for correct functioning. Bearing bush, bearing sleeve, fork head of the Bowden cable and the mountings for the pneumatic spring must be greased in the course of normal maintenance on the trailer coupling with ROCKINGER lubrication grease 96042.



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