



Montage- und Betriebsanleitung

D

Installation and operating instructions

GB

Instructions de montage et d'utilisation

F

Istruzioni per il montaggio e la manutenzione

I

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Modellreihe

Series

Type

Modelli serie

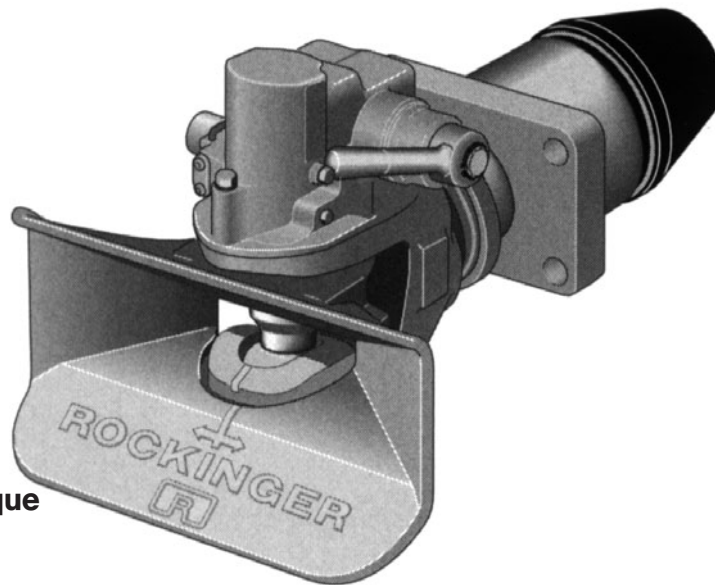
RO*500 G 65

Vollautomatische Anhängerkupplung

Automatic Trailer Coupling

Attelage de remorque entièrement automatique

Gancio di traino completamente automatico



Series RO*500 G 65 Fully Automatic Trailer Coupling

*94/20*e1*00-1468 Klasse C 50 X

Suitable for drawbar eyes 50 DIN 74053 and class D (EC)
and ROCKINGER type 57005



**The coupling must be installed by
authorised personnel!**

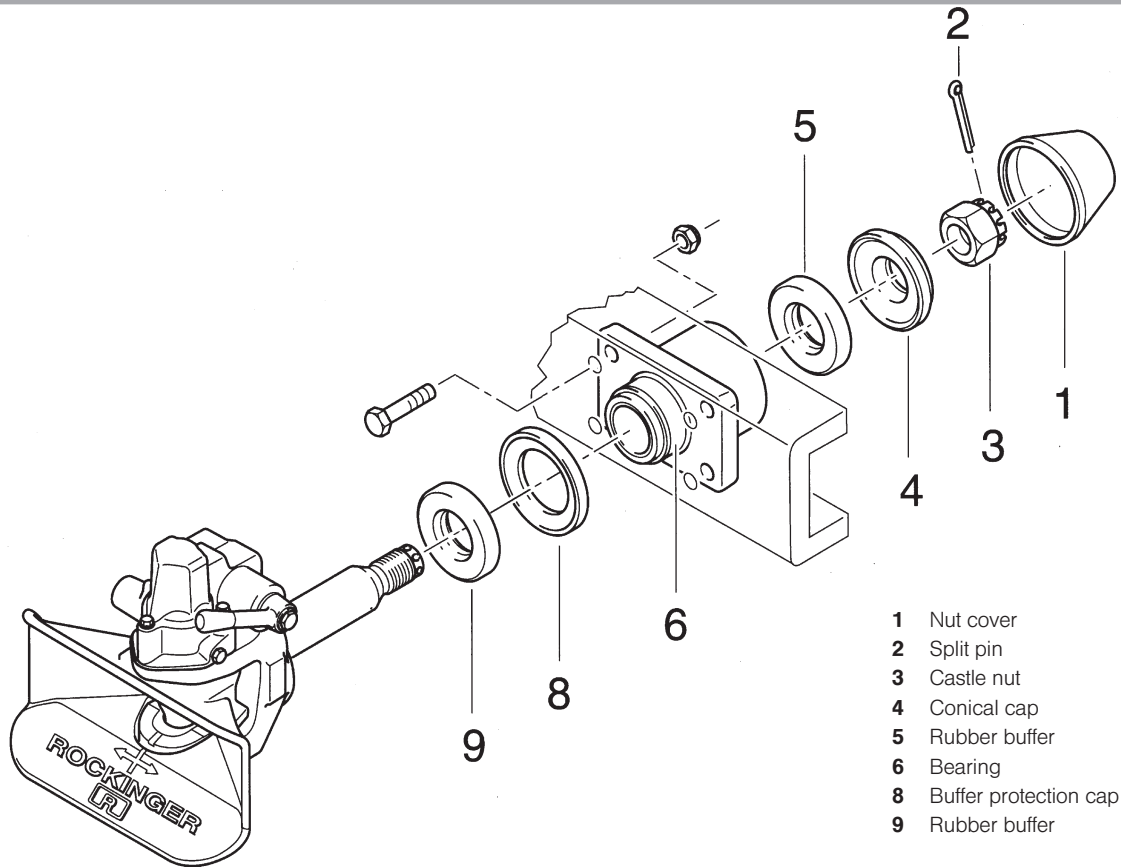
**Read these instructions carefully
before fitting!**

Official note

When fitting the trailer coupling the regulations for fitting mechanical fastening systems in accordance with Appendix VII of Directive 94/20/EC and the national regulations for commercial vehicles must be observed.

Subject to technical changes without prior notice

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- 1 Nut cover
- 2 Split pin
- 3 Castle nut
- 4 Conical cap
- 5 Rubber buffer
- 6 Bearing
- 8 Buffer protection cap
- 9 Rubber buffer

Fig. 1

1.1 Before Mounting

Towing hitch

Note: Please comply with following when fitting hitch:

- applicable national regulations
- vehicle manufacturers specifications
- clearance for axial rotation of coupling head of at least ± 25 min.

Pneumatic remote control

(Version RO★500 A65403)

The following must be observed:

- vehicle manufacturers mounting specifications
- technical regulations for the installation of pneumatic systems
- the operation unit must be installed in the driver's field of view to the towing hitch

1.2 Mounting

Towing hitch

- Install the bearing (6) onto the inner side of the crossbar.
- Secure with 4 hexagonal bolts, quality spec. 10.9 and self-locking nuts, quality spec. 10.

Size of bolts and nuts to be chosen (see table).

Advice: Observe manufacturers' instructions in case different bolts or nuts are recommended!

Attention:

Mount bolt heads on the side directed towards the jaw (outside of crossbar) to avoid fouling the hitch when it is turning.



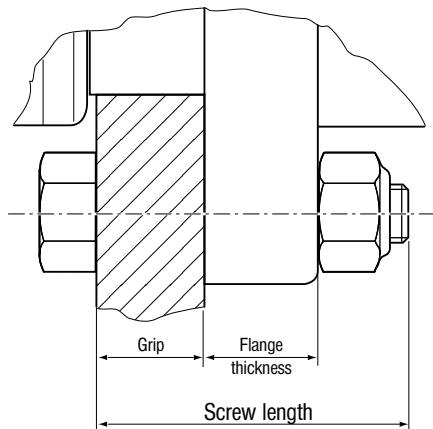


Fig. 2

thickness of crossbar and support plate (s. fig. 2)

- Central-axle-trailer: 65 13 – 28 mm
- Drawbar trailer: 65 max. 28 mm

Torque of bolts on the bearing:

Size of coupling	Size of bolts	Grade	Tightening torque (Nm)	ROCKINGER set of bolts part no.
65	M 20	10.9	580	71122

- Insert buffer protection cap (8)
- Carefully insert coupling shaft with buffer (9) into the bearing (6) (do not remove the grease from the shaft; if necessary re-grease the shaft)
- Insert the back rubber buffer (5)
- Insert the conical cap (4)
- Tighten castellated nut (3)
torque min. 500 Nm = 50 mkg.
- Insert split pin (2) and bend correctly.
Attention: If the position of the castellated nut does not allow insertion of split pin, **tighten castellated nut further to next hole for split pin.**
Never let torque fall below the value shown in the above table!
Never loosen castellated nut!
- Fit the nut cover (1) to protect against corrosion.

Advice: Before painting, coupling must be closed and coupling pin must be protected or greased.

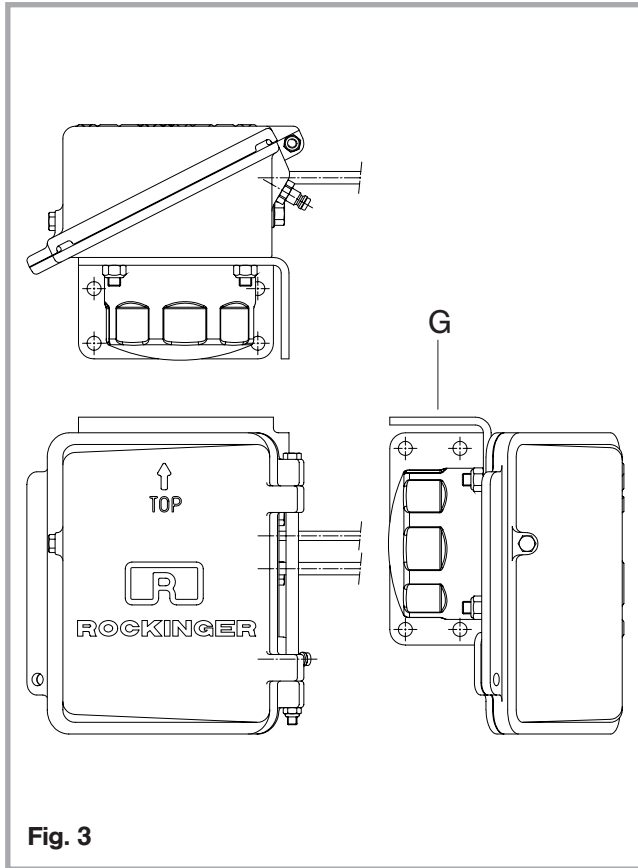
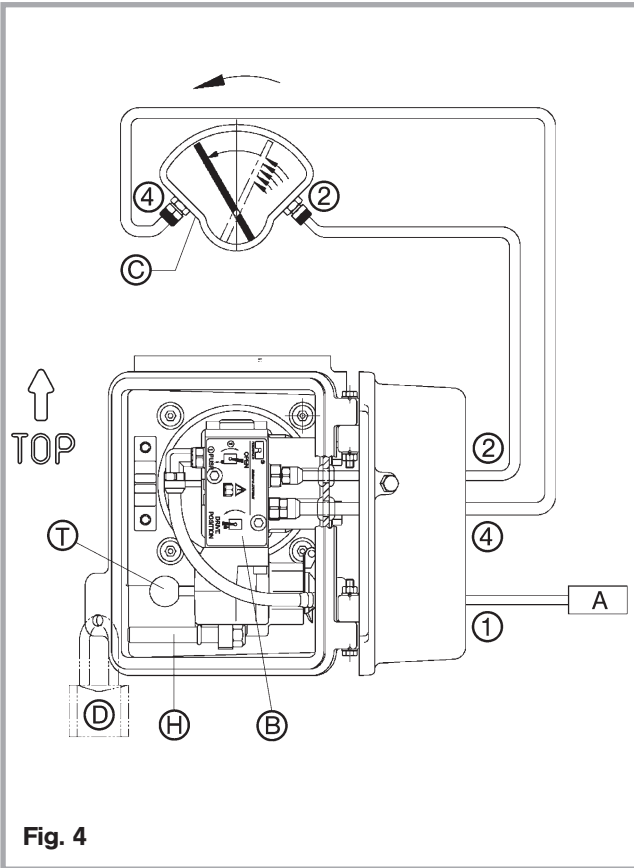


Fig. 3

Control unit (see fig. 3)

(optional)

- **Note installation position:** the Head of arrow (TOP) pointing upwards
- Mount control unit via adapter (G) with 4 screws M8 in suitable location on vehicle from where hitching process can be observed
- Controlunit **must be locked against unauthorised use**

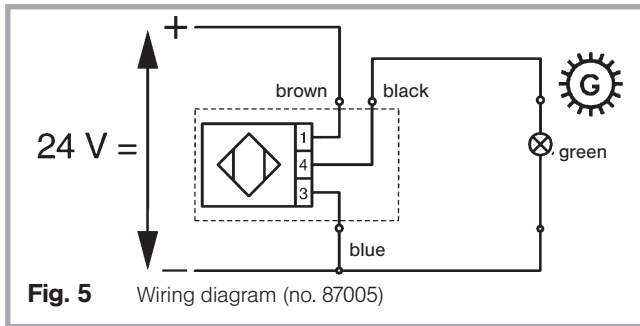


Pneumatic system connection (max. 10 bar, Fig. 4) (optional)

For vehicles of an operating pressure in excess of 10 bar fit a pressure reducer in front of **S 1** (setting pressure 8 bar).

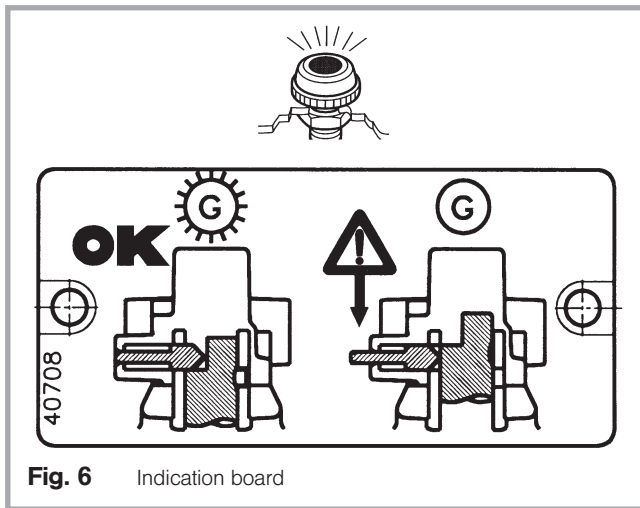
It is **essential** for the compressed-air connections between the threaded connectors on the control unit and the part-turn actuator to be made **exactly as shown**:

- Supply from auxiliary consumer (**A**) to the quick coupling of the control unit **S 1** (\varnothing 8 x 1, black)
- Part-turn actuator **2** to control unit **2** (\varnothing 6 x 1, red)
- Part-turn actuator **4** to control unit **4** (\varnothing 8 x 1, black)



Remote indicator (optional)

- The tell-tale lamp is to be installed in the cabin, namely in the driver's field of view (hole 17 mm)
- The filament bulb should be inserted into tell-tale lamp
- The indication board is to be fitted
- The limit switch and the tell-tale lamp should be connected according to the wiring diagram as follows (see fig. 5):
 - Use three-core cable (3 x 0.34 mm²)
 - Lay cable carefully, avoiding places where chafing can occur
 - Connect tell-tale in cab
 - Connect cable to limit switch cable (taking adequate steps to prevent corrosion)



Check

- The coupling is **safety locked**: The **green** tell-tale lights are up
- Hand lever is slowly to be moved into the position **OPEN**:
The indication disappears: The function **OK**

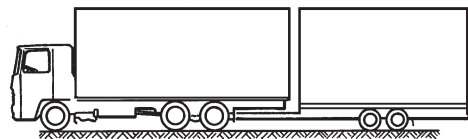
In case there are no lights, the following **re-adjustment** should be carried out:

- The lock nut of limit switch is to be released
- The limit switch should carefully be turned as long as the lights are on
- The lock nut can now be screwed: **2,5 Nm**
- The function is to be **checked once again** (see the above)
If the function is **OK**, then the lock nut should be fixed in its safety position the tightening torque



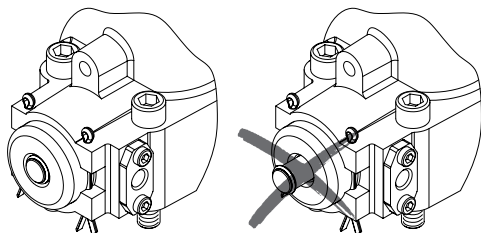


Tractor unit with drawbar trailer



Tractor unit with central-axle trailer

Fig. 7



o.k.

Fig. 8

2.1 Towing hitch manually (Fig.7)

It is very important to observe the regulations laid down by professional trade association when hitching and unhitching.

No one must stand between the vehicles!

- For fully automatic coupling push the operating lever up fully (it self-locks in that position).
- Check that the jaw is locked, i. e. cannot swing
- **Release front axle brakes of drawbar trailer** (see fig. 7)
- Back up towing vehicle

When coupling to a central-axle trailer (see fig. 7):

- Reverse the towing vehicle slowly
- The drawbar eye must be inserted into the middle of the jaw. Otherwise the jaw, the drawbar eye or the drawbar support legs might be damaged.

Check

After each coupling-up procedure, it is essential to check that the coupling is correctly closed and locked.

The lock-control pin must not protrude out of its guide after coupling-up (see fig. 8)

If the lock-control pin protrudes from its guide (in the dark detectable by touching it), the coupling procedure has been carried out incorrectly and there is the **risk of an accident!**

Driving a trailer in that condition is not allowed.

If not correctly coupled:

- move the towing vehicle forward (approximately 1 m)
 - **check again**
- In-cab status indicator upgrade kit available for retrofitting.

Closing hitch manually

(e.g. for tow-rope):

Lift coupling pin using suitable tool.

Note: Should the drawbar eye not activate the coupling pin during hitching, this can be because the necessary standby gap (gap between the drawbar eye and the coupling pin) is insufficient (see Fig. 16).

Remedy: Check the drawbar eye and coupling pin.

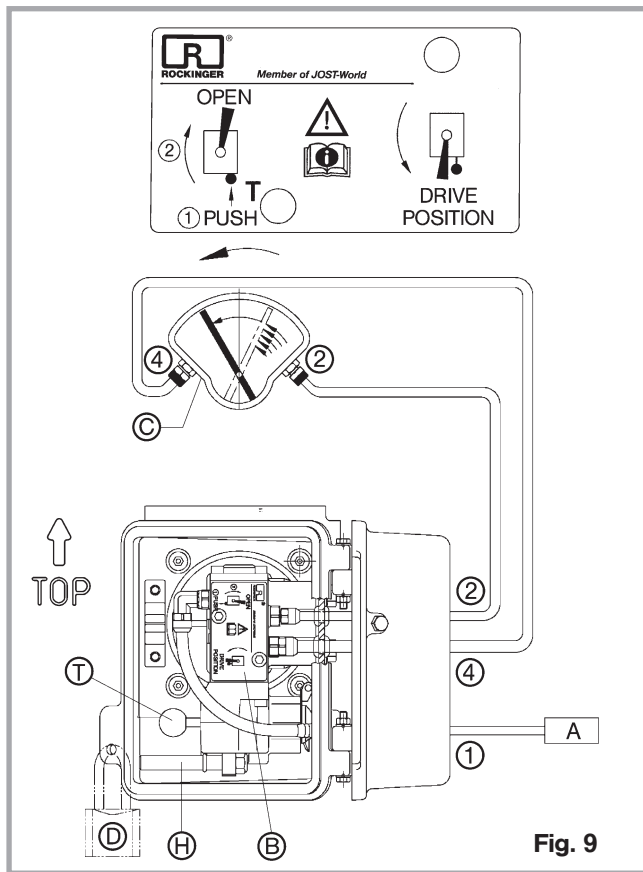
Unhitching

Observe the regulations laid down by professional trade associations when hitching and unhitching!

- Secure trailer to prevent it from rolling away.
- Disconnect supply lines to trailer.
- Open coupling.

In the event of bracing between the tractor unit and trailer assist the unhitching process by **moving the vehicle backwards and forwards** or by using the **air suspension system**.

- Advance prime mover.



2.2 Trailer coupling with pneumatic remote control

Hitching

- Coupling open (see 2)
- Check that control lever (H) is in **DRIVE POSITION**.
- Reverse tractor unit.

The air stored in the compressed-air reservoir assists the closing process when hitching.

In the event of bracing between the tractor unit and trailer assist the hitching process by **moving the vehicle backwards and forwards** or by using the **air suspension system**.

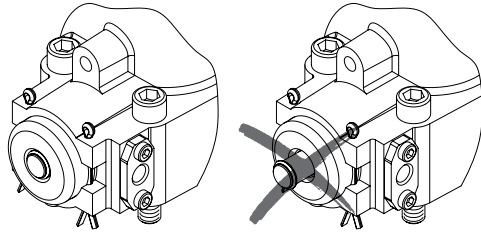
Unhitching

Observe the regulations laid down by professional trade associations when hitching and unhitching!

- Secure trailer to prevent it from rolling away.
- Disconnect supply lines to trailer.
- Open the lock (D) with the key.
- Press safety button (T) on control unit and hold down.
- Move control lever (H) to end position: coupling opens.

In the event of bracing between the tractor unit and trailer assist the unhitching process by **moving the vehicle backwards and forwards** or by using the **air suspension system**.

- Unhook tractor unit.
- Return control lever (H) to **DRIVE POSITION** until the safety button (T) is engaged.



o.k.

Fig. 10

Check

After every hitching operation it is essential to check that the coupling is engaged as specified in regulations or with the in-cab status indicator:

The check pin must be flush with its guide bush after hitching (see Fig. 10)!

If the check pin protrudes (this can also be felt in the dark), this indicates that hitching has not been carried out correctly and that you are **at risk of an accident! The truck and trailer may not be driven in this condition.**

Remedial action:

- Extend tractor unit/trailer connection (drive approx. 1 m forwards and then reverse again).
- Then **check again.**

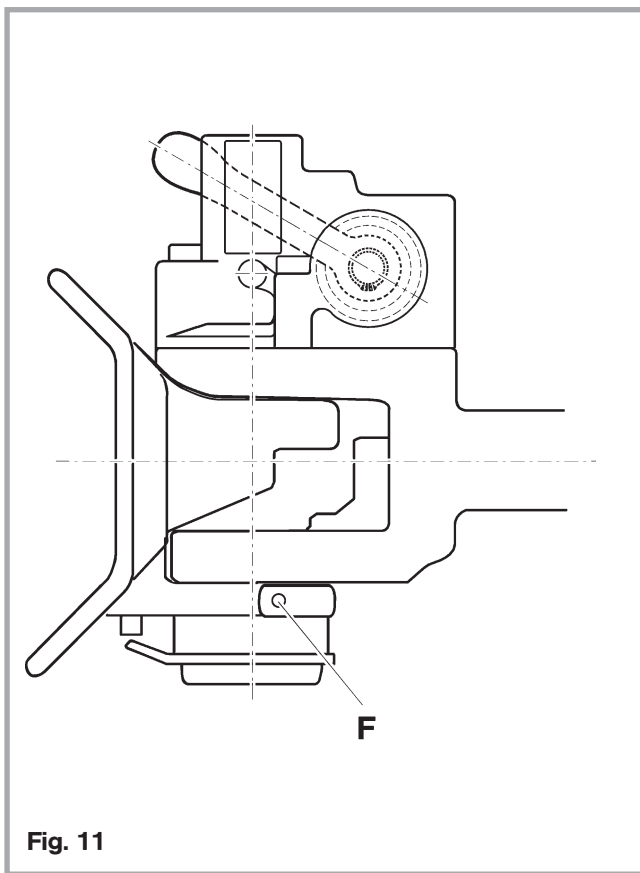


Fig. 11

3.1 Towing hitch with remote control

Before starting maintenance work on the coupling:

- Ensure that hitch is closed. **Accident risk** (see 2.1)
- Disconnect quick coupling (**S** see Fig. 4) from control unit.
- Open/close several times using lever (**H**) until compressed air has been released.

3.2 Care

- Lubricate coupling pin, support ring and drawbar eye with heavy-duty grease (EP3) which is waterproof if possible before first use and after extended period in use.
- Low-maintenance automatic unit has a grease reservoir (regular greasing unnecessary, please see below for repair information)
- Lubricate lower funnel bearing (**F**) with EP3.
- Close coupling before cleaning with high-pressure washers (see para. 2.2)
- After cleaning, relubricate coupling pin and support ring with EP3.

Please note following when carrying out repairs on coupling (e. g. changing coupling pin):

- Remove as much of old grease as possible.
- Please use the enclosed grease.

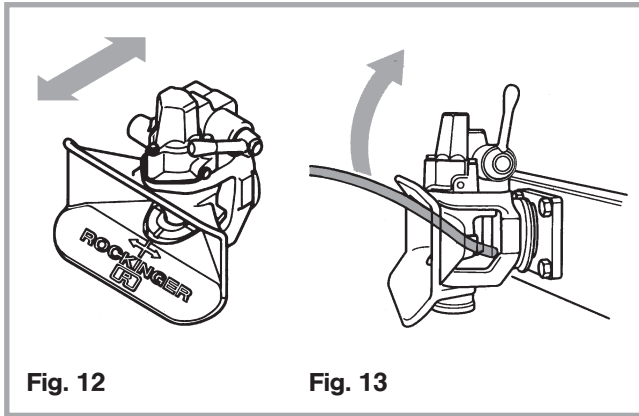


Fig. 12

Fig. 13

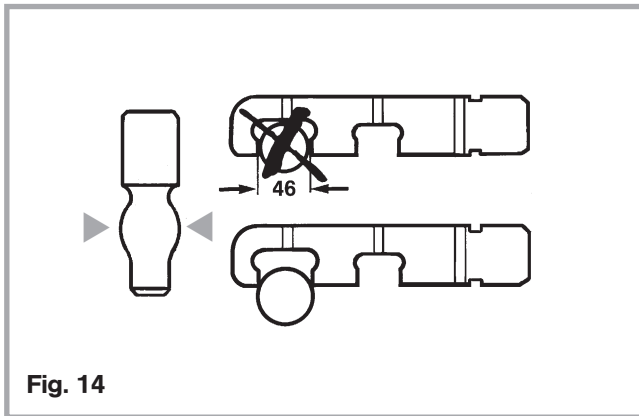


Fig. 14

3.3 Inspection

Bearings:

– Longitudinal play

- Grip coupling head (not jaw funnel) with both hands when uncoupled and move vigorously in longitudinal direction (see fig. 12):

No longitudinal play is allowed.

– Vertical play

- Open coupling
- Move coupling head up and down with appropriate tool (see fig. 13):

Vertical play may not exceed 3 mm measured at coupling head (centre axis of coupling pin).

Coupling pin:

To check the wear of the coupling pin, use the ROCKINGER reference gauge (part no. 57122, see fig. 14).

When the main ovalated section has worn down to **46 mm** – or before – the coupling pin must be replaced.

The maximum vertical play of the coupling pin may be **2 mm** at the most (see fig. 15).

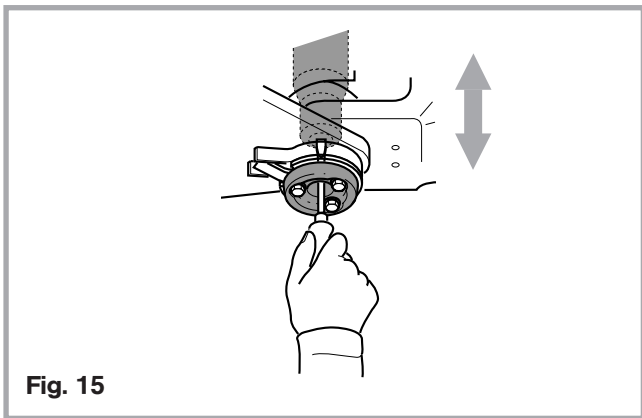


Fig. 15

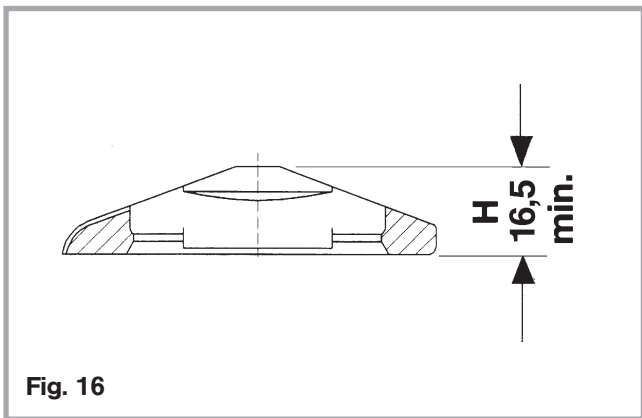


Fig. 16

Lower bush:

To check the wear use the ROCKINGER reference gauge (part no. 57334).

The minimum inner diameter of the lower bush must not be more than **35,9 mm**.

For replacement see repair instructions (on request).

Support ring:

The support ring for the drawbar eye must be replaced when due to wear, the drawbar eye can contact the lower bush or when the height H (see fig. 16) is 16,5 mm or less.

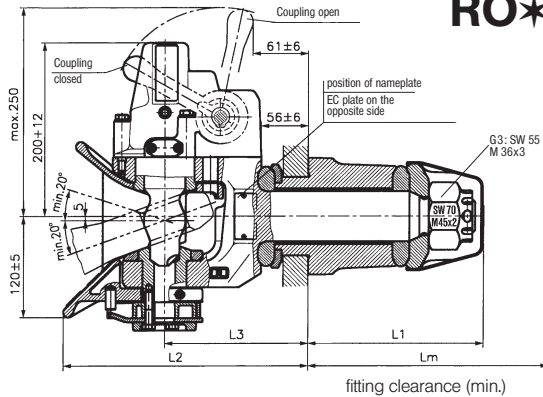
The lower bush must not be damaged under any circumstances as this will impair closure of coupling!

Take care to prevent risk of accident!

Always grease support ring to reduce wear (please consult repair leaflet, available on request, for details of replacing).

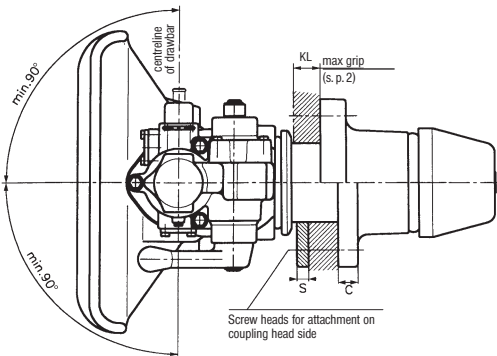
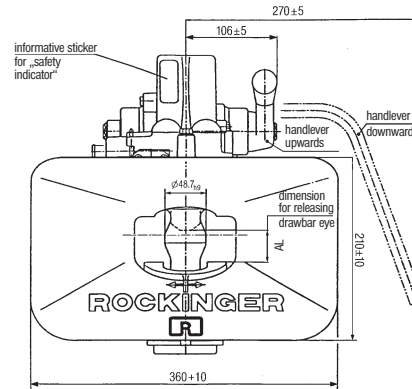
Remote control (optional)

- Check the operation of limit switch in connection with coupling check pin **at regular intervals**
- In case of malfunction of the safety-locked coupling it is required to carry out the **visual check** and examination of the coupling's operating conditions before considering the possibility of repair.



RO*500 G 65

Technical data



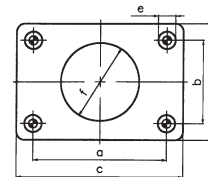
Series RO*500

class C50-X

Type 500 G 65 e1 00-1468

for drawbar eyes 50

DIN 74053, EC 94/20 class D
and ROCKINGER Type 57005



Flange size
to 94/20/EG

Size	a (mm)	b (mm)	c (mm)	d (mm)	e (mm)	f (mm)
6	160	100	200	140	21	94

Size Vers.	L1 (mm)	L2 (mm)	L3 (mm)	Lm (mm)	C (mm)	S (mm)
6	214	299	179	min. 285	30	–

Part no.	Size	Hole pattern (mm)	maximum D-Value ² (kN)	CENTRAL - AXLE TRAILER			Weight (kg)
				maximum Dc-Value ² (kN)	maximum static vertical load ³ (kg)	maximum V-Value ² (kN)	
RO500A65003	6	160x 100	200	135	1000	90	48
			200	135	2500	55	
RO500B65003 ¹	6	160x 100	200	135	1000	90	48
			200	135	2500	55	
RO500A65203 ⁴	6	160x 100	200	135	1000	90	48
			200	135	2500	55	
RO500A65403 ⁵	6	160x 100	200	135	1000	90	48
			200	135	2500	55	

¹ Hand lever downwards

² Calculation see catalogue

³ When using a central-axle trailer, the vertical load should amount to at least 4% of the trailer weight, in order to prevent increased wear caused by bouncing of the drawbar eye.

⁴ Remote indicator pre-installed

⁵ Remote indicator and pneumatic remote operation are pre-installed

Upgrade kits

RO★500 G 65

Upgrade kit electropneumatic remote operation	<u>Order no.</u>	Upgrade kit remote operation	<u>Order no.</u>
Mechanical remote operation	part no. 70962	In-cab status indicator from technical revision 1	part no. 70936
Pneumatic remote operation	part no. 71270	Turn-angle alarm system	part no. 70935

Repair instructions and parts list to be obtained upon request!



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ZDE 199 88 202-D1-3-Index 00 · 05/2005