



Montage- und Betriebsanleitung

DE

Installation and operating instructions

EN

Instructions de montage et d'utilisation

FR

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Modellreihe

Series

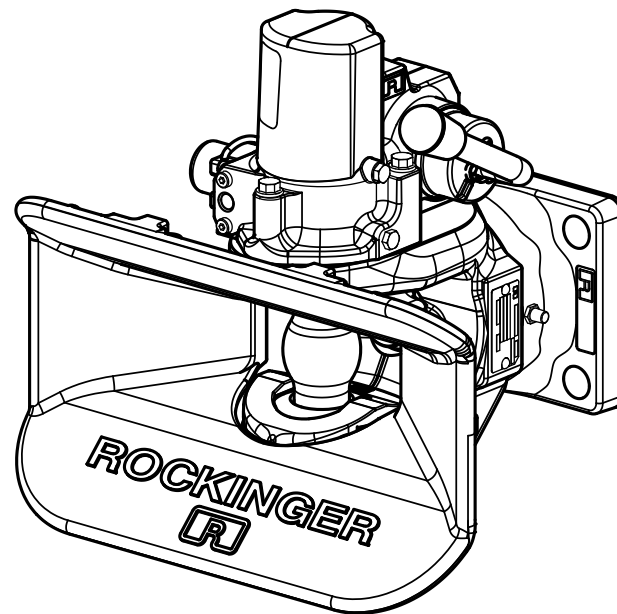
Type

RO*560

Vollautomatische Anhängerkupplung

Automatic Towing Hitch

Attelage de remorque entièrement automatique

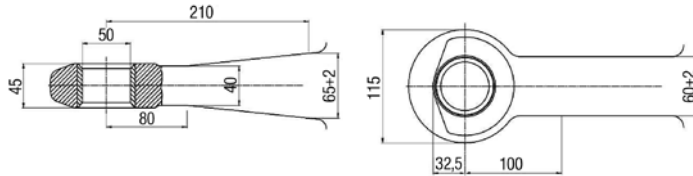


Series RO*560 Automatic Towing Hitch

ECE (E1) 55 R-010404 class C 50X

Suitable for:

– drawbar eye 50 mm ISO 1102, DIN 74053 and EC/ECE-class D50



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 7 of Directive ECE R 55-01 and the national regulations for commercial vehicles must be observed.

Subject to technical changes without prior notice

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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 hitches, prime movers 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.

Safety instructions for operation

- The hitch may only be operated by authorised persons.
- The installation and operating instructions of the respective hitch retain their validity and must be observed.
- Only use the hitch 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.

Safety instructions for maintenance

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

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 injuries!

The installation of the hitch on the prime mover must be carried out in accordance with Annex VII of EC Directive 94/20, Annex 7 of ECE R 55 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 hitch, the remote control and the 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 type approval, which in turn invalidates the vehicle operation permit.

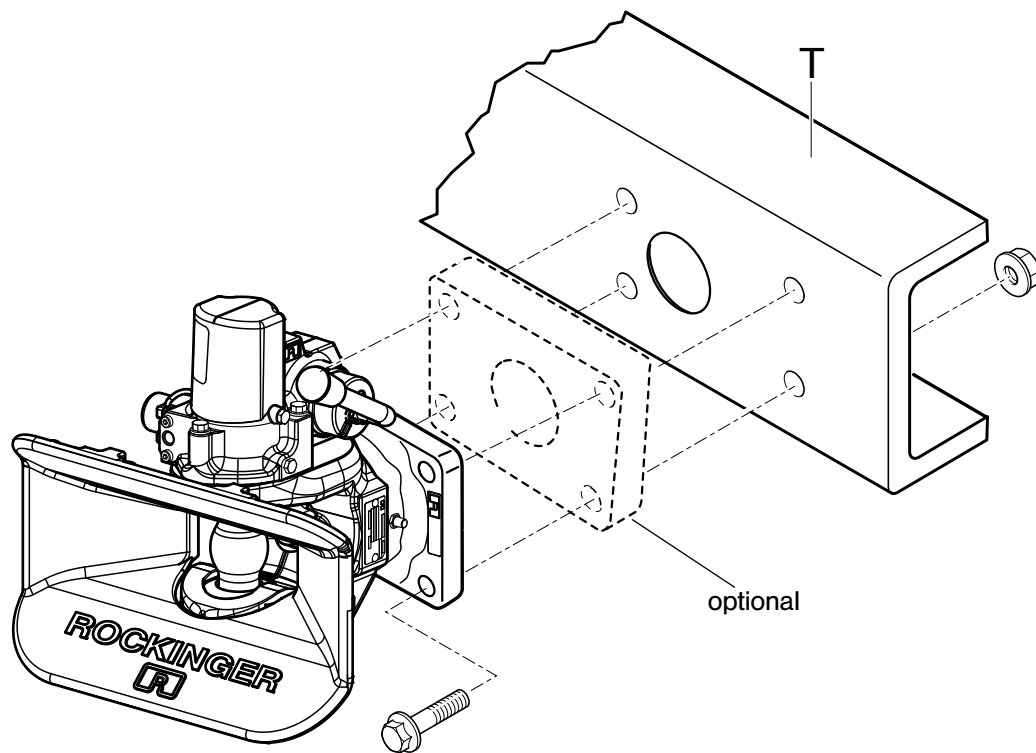


Fig. 1

1.1 Before installation

Note: Please comply with following when fitting hitch:

- applicable national regulations
- vehicle manufacturer's specifications
- clearance for axial rotation of coupling head of at least $\pm 25^\circ$

1.2 Installation

- Install the bearing onto the cross member (**T**)
 - position tow hitch's shaft end of body into the middle bore of cross member (**T**) **or if not applicable**
 - use the separate adapterplate (see fig. 1, order nr. 71053)

- Secure with:
 - 4 hexagon bolts (DIN 6921, **grade 10.9**)
 - 4 selflocking nuts (DIN 6923, **grade 10**)

Size of bolts, nuts and torque to be chosen, see table

Note: Observe manufacturers' instructions in case of different bolts and nuts are recommended!

ATTENTION: Mount bolt heads on the side directed towards the jaw (outside the cross member) to avoid impairing movability of the hitch (see fig. 1).

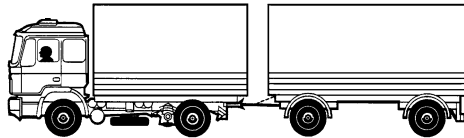
Torque of bolts on the bearing

Size of hitch	Size of bolts	Tightening torque (Nm)	Wrench size S (mm)
6	M 20	480*	30

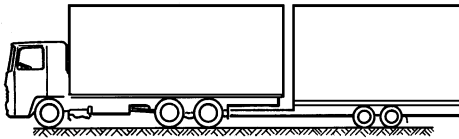
* Tightening torque for screws use a torque meter to fix according to DIN EN ISO 6789, class A or B (friction coefficient $\mu = 0,08 - 0,14$)

Cross members with mounting holes through the entire surface (according to ECE Size 6) grip (thickness) corresponding to cross member design of the vehicle manufacturer, with S=2000 kg: min. strain length 60 mm, surface pressure 430 N/mm²

Note: Before painting, it is essential to close hitch and grease or cover coupling pin. **After painting clean and regrease the coupling pin.**



Tractor unit with drawbar trailer



Tractor unit with rigid trailer

Fig. 2

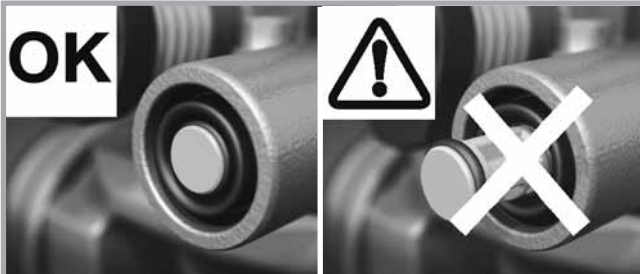


Fig. 3

2.1 Hitching

Note: The relevant national regulations (f.e. safety-at-work) must be observed when hitching and unhitching.

No one must stand between the vehicles!

- To engage, press hand lever upwards until it engages
- Check whether funnel is **locked**.
- Position drawbar eye in centre of funnel
- **Disengage brake on front axle** of turntable drawbar trailer
- Set drawbar eye to height of coupling point (centre of funnel).
- Slowly reverse prime mover

When hitching to a central-axle trailer (see fig. 2):

- Reverse prime mover very slowly
- The drawbar eye must be inserted into the middle of the funnel.
Otherwise the funnel, the drawbar eye or the drawbar support legs might be damaged.

Check:

After each hitching procedure, it is essential to check that the hitch is correctly closed and locked.

The lock-control pin must not protrude out of its guide after hitching (see fig. 3)

If the lock-control pin protrudes from its guide (in the dark detectable by touching it), the hitching 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 prime mover forward (approximately 1 m)
- **check again**

In-cab status indicator upgrade kit available for retrofitting.

2.2 Closing hitch manually

(e.g. for tow-rope):

- Lift the coupling bolt using a suitable tool

WARNING: Danger of injury!

2.3 Unhitching

Observe the relevant national regulations (f.e. safety-at-work) when hitching and unhitching!

- Secure trailer to prevent it from rolling away.
- In case of central axle trailer wind down landing leg(s)
- Disconnect supply lines to trailer.
- Push hand lever upwards until it engages in its upper position (hitch is open)
- In the event of seizing between the hitch and trailer assist the unhitching process by moving the vehicle backwards and forwards **or** by using the air suspension system.
- unhitch prime mover.

Note: When driving without a trailer, keep the hitch closed to protect the ingress of dirt of the lower bush (see 2.2).

3. Maintenance

RO*560

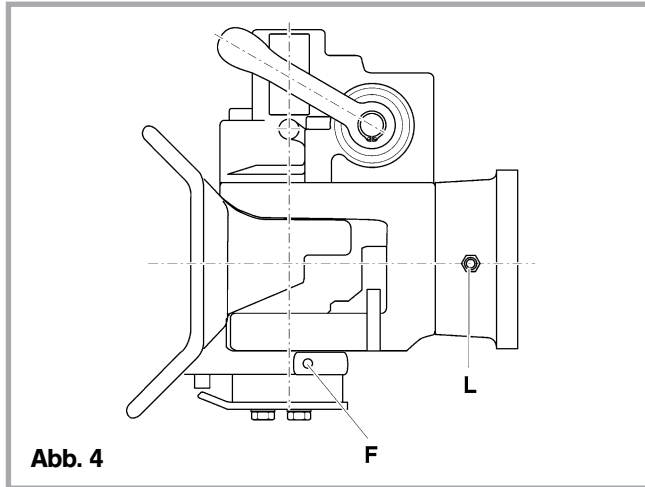


Abb. 4

F

L

3.1 Care

- Before first use and after extended period in use.
Lubricate coupling pin, support ring and drawbar eye with heavy-duty grease (3EP f. e. ROE 96042) which is waterproof if possible.
- Low-maintenance automatic unit has a grease reservoir (regular regreasing unnecessary, please see below for repair information).
Note: Under harsh operating conditions or severe exposure to dirt or water regrease automatic unit (A) when coupling is open (see fig. 4):
 - use ROCKINGER Special grease (ROE 96017)
 - intervals: 6 months or 50.000 km
- Lubricate lower funnel bearing (F) and pressure bar on underside of coupling (K) with 3EP.
- Close coupling before cleaning with high-pressure washers (s.para.2.2).
- After cleaning, relubricate coupling pin and support ring.
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 (f.e. ROE 96017)

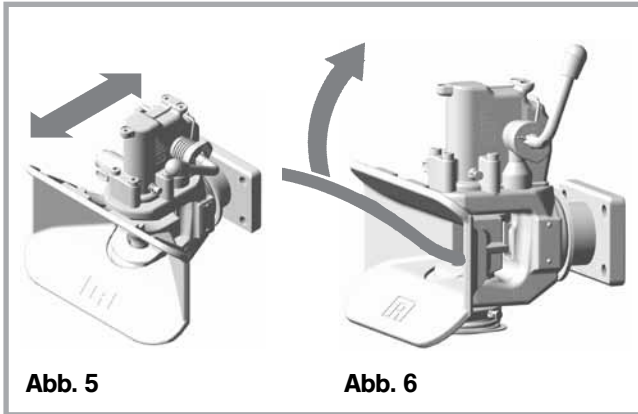


Abb. 5

Abb. 6

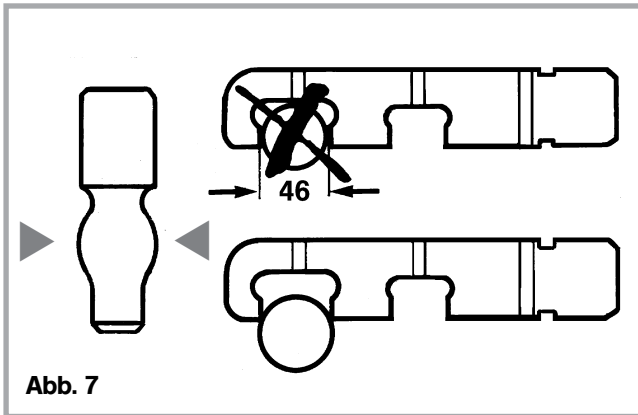


Abb. 7

3.2 Inspektion

Bearings:

– Longitudinal play

- Grip coupling head (not jaw funnel) with both hands when uncoupled and move vigorously in longitudinal direction (see fig. 5):

No longitudinal play is allowed.

– Vertical play

- Open coupling.
- Move coupling head up and down with appropriate tool (see fig. 6):

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. 7).

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

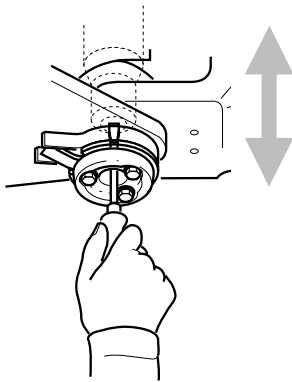


Abb. 8

The maximum vertical play of the coupling pin may be **2 mm** at the most (see fig. 8).

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 35,9mm. The Passage below pin must be free (see fig. 8)

For replacement see repair instructions (on request).

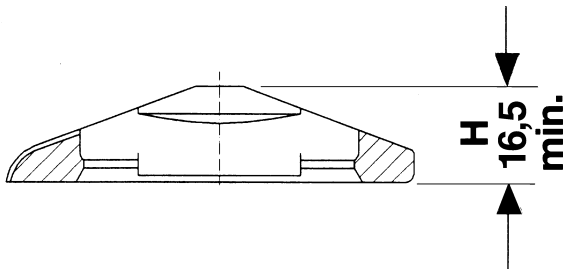


Abb. 9

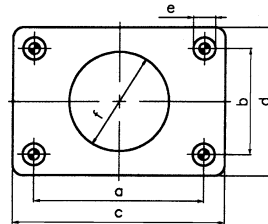
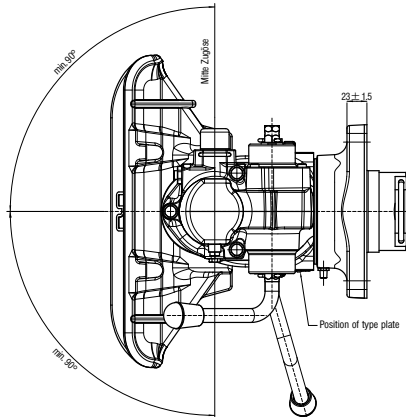
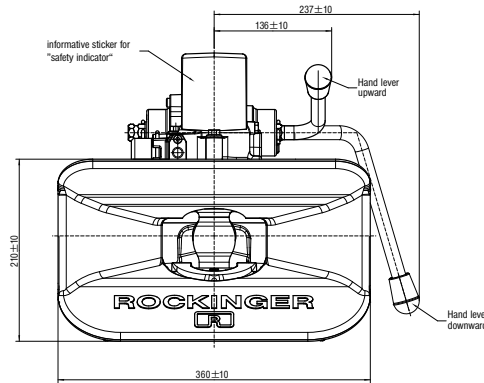
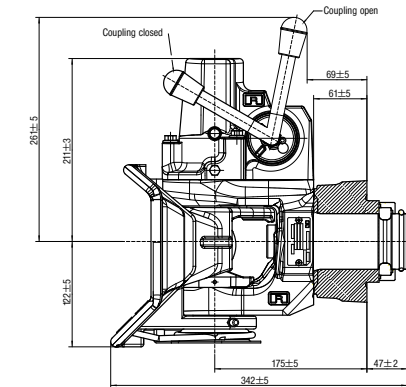
Support ring:

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. 9) 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 manual, available on request, for details of replacing).



Flange size to ECE 55 R-01

Series RO*560

Type RO*560 U6

Type 560 U6 (E1) 55 R-01 0404
Classe C 50-X

for drawbar eyes 50 according to
DIN 74053, ECE 55 R-01 class D,
ISO 1102;
drawbar eye RO*57005

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

Technical data

RO*560

Handlever upwards	Part no.		Size	Hole pattern (mm)	CENTRAL - AXLE TRAILER			maximum V-Value (kN)	Weight (kg)
	Handlever downwards				maximum D-Value (kN)	maximum Dc-Value (kN)	maximum stat. vertical load (kg)		
560A60000*	560B6000*	6	160x100	190	106	1000	45,6	38	
560A60000*	560B6000*	6	160x100	190	106	2000	35,8	38	

* Distance plate order no. 71053 if necessary

Upgrade kits

RO*560

- Mechanical remote operation Bestell-Nr. 70962
- Electro-pneumatic remote operation Bestell-Nr. 70844 C
- In-cab status indicator Bestell-Nr. 70936



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