



Montage- und Betriebsanleitung

DE

Installation and operating instructions

EN

Instructions de montage et d'utilisation

FR

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Modellreihe

Series

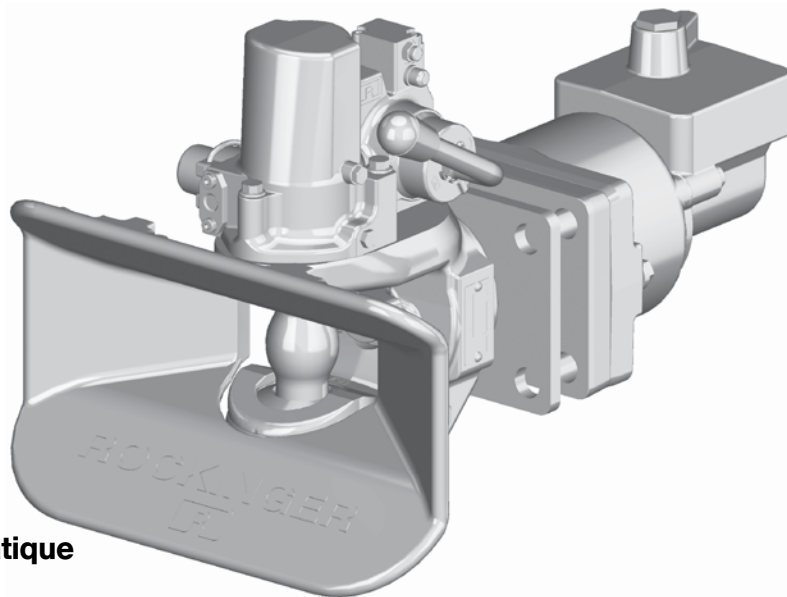
Type

RO*530

Vollautomatische Anhängerkupplung

Automatic Trailer Coupling

Attelage de remorque entièrement automatique



Series RO*530

Technical release 0

ECE (E1) 55 R-010407

Suitable for:

– drawbar eye 50 mm ISO 1102, DIN 74053 and EG/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.

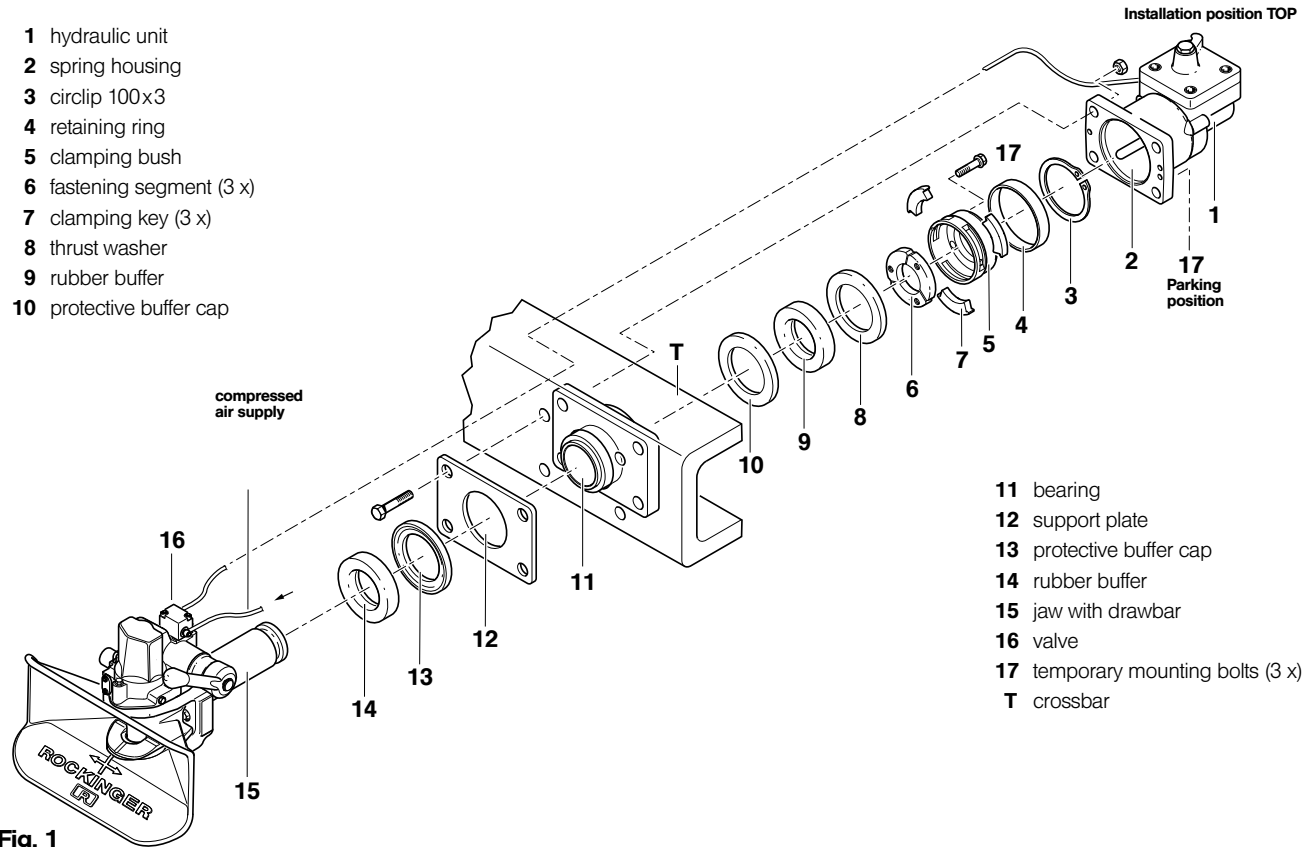


Fig. 1



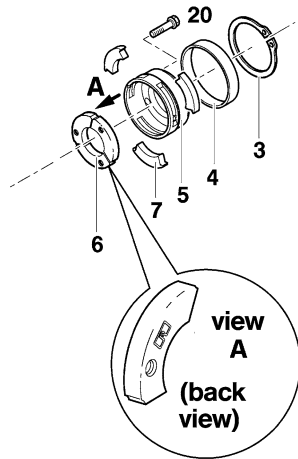


Fig. 2

1.1 Before installation (see fig. 1)

Note: Please comply with following when fitting coupling:

- applicable national regulations
- vehicle manufacturer's specifications
- clearance for axial rotation of coupling head of 25°

The pre-assembled coupling must be dismantled before installation:

- Release transport bracket from spring housing (2), mounting plate (11) and support plate (12) (screws no longer required).

- Remove hydraulic unit (1) with spring housing (2) completely.
- Remove circlip (3) with circlip pliers ZGA 4 DIN 5254 and retaining ring (4).
- Unscrew 3 temporary bolts (20) from spring housing (2) (width-across-flats 17 mm).
- Screw 3 temporary bolts (20) gradually into clamping bush (5) as far as stop (approx. 80 Nm) until the 3 clamping keys (7) can be easily removed.
- Unscrew 3 temporary bolts (20) again and withdraw clamping bush (5), remove 3 fastening keys (6).
- Withdraw thrust washer (8), rubber buffer (9), protective buffer cap (10) from jaw with drawbar (15).
- Withdraw mounting plate (11) with support plate (12) and protective buffer cap (13) from drawbar (15), while rubber buffer (14) remains on drawbar (15).

1.2 Installation (see fig. 1)

- Attach mounting plate (11) preliminarily from inside to crossbar (T) and support plate (12) from outside to crossbar (T) using 2 of 4 mounting screws (please refer to p. 3 for size and grade).
- Fit protective buffer cap (13) onto mounting plate (11) with concave side towards rubber buffer (14).
- Slide jaw with drawbar (15) and rubber buffer (14) into mounting plate (11):
 - Note:** Do not remove special grease.
- Fit protective buffer cap (10) onto mounting plate (11) with concave side towards rubber buffer (9).
- Slide rubber buffer (9) onto drawbar (15).
- Slide on thrust washer (8) with concave side towards rubber buffer (9).

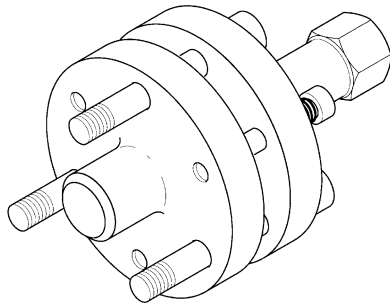
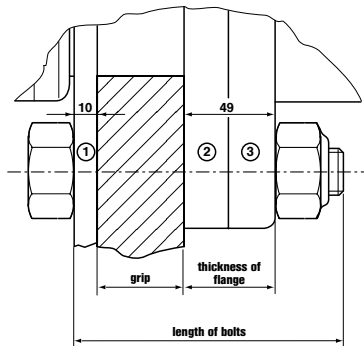


Fig. 3



- ① support plate
- ② mounting plate
- ③ spring housing

Fig. 4

Fitting of fastening keys (see fig. 2)

Recommendation: Use fitting tool part no. 57351 (see fig. 3) for facilitating mounting when standard equipment

- **Note:** Locate fastening keys (6) in splines of drawbar (15):
The inscribed surface in the direction of the hydraulic unit (2).
- Slide clamping bush (5) carefully over fastening keys (6) onto drawbar (15):
Observe the locking snugs in clamping bush (5) and verify that bores of clamping bush (5) and fastening keys (6) mate.
- Lightly grease end face and thread of 3 temporary bolts (20), screw them in by hand as far as stop and tighten alternately until slots in clamping bush (5) are free.
- Insert 3 clamping keys (7) into slots and hold in place.
- Slide retaining ring (4) over clamping bush (5).
- Fasten circlip (3) with circlip pliers ZGA 4 (see above).
- Unscrew 3 temporary bolts (20) from clamping bush (5) and fasten keys (6), generously grease and screw into spring housing (2) (required for later dismantling).
- Apply thorough coat of grease to retaining ring (4), clamping bush (5), fastening keys (6) and clamping keys (7) (to protect against corrosion).
- Unscrew 2 bolts from mounting plate (11).
- Slide on hydraulic unit (1) with spring housing (2):
Caution: Take care not to damage bellows!
- Fasten with (not supplied):
 - 4 hexagon head cap screws to DIN 931, grade 8.8 or 10.9
 - 4 self-locking nuts to DIN 6925, grade 8 or 10
 Please see table for details of nut and screw size, and fig. 4 for screw length.

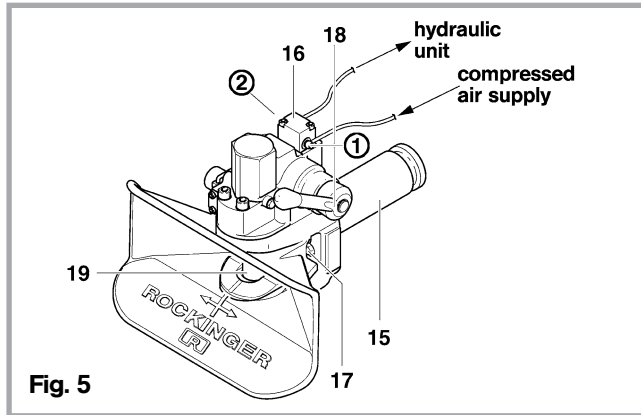


Fig. 5

Note: Please comply with vehicle manufacturer's specifications regarding nut and screw grade if these differ from above!

Caution: Screw heads should be on coupling head side (outer side of crossbar) to avoid impairing movability of coupling.

Tightening torques when attaching screws to mounting plate:

Coupling size	Screw size	Tightening torque (Nm) Grade 8.8	Width across flats S (mm)	ROCKINGER screw set part no. ROE
G6	M 20	410*	30	70252

* Tightening torque for screws use a torque meter to fix according to DIN ISO 6789, class A or B

Grip (see fig. 4)

- central-axle trailer: 11 - 28 mm
- steerable-drawbar trailer: max. 28 mm
- Fit pneumatic **connection set not supplied** (see fig. 5):
 - technical status C (**ROE 70981**; Voss-System NG6/NW4)
 - technical status 0 (**ROE 71610**; Schäfer-System 232/NG6)
- Remove plastic plugs.
- Locate right-angle plug on valve. Connect right-angle plug to hose.
- From valve (16) connection ② to hydraulic unit.
- From valve (16) connection ① to compressed air supply (secondary consumer – max. 10 bar, min. 5 bar).

1.3 Verification (with compressed air)

- Coupling closed: pressure bar (17) protrudes 15 mm.
- Raise lever (18) slightly: compressed air can be heard to escape and relieves hydraulic unit, pressure bar (17) can be pressed back (use tool, danger of accident).
- Open coupling with hand lever (18).
- Close coupling, see para. 2.2: pressure bar (17) moves in direction of coupling pin.

Note: Before later painting, it is essential to close coupling and grease or cover coupling pin and head of pressure bar.



Tractor unit with steerable-axle trailer

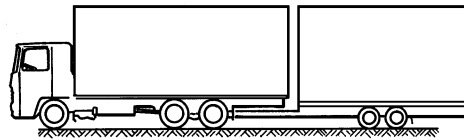


Fig. 6

Tractor unit with rigid-drawbar trailer

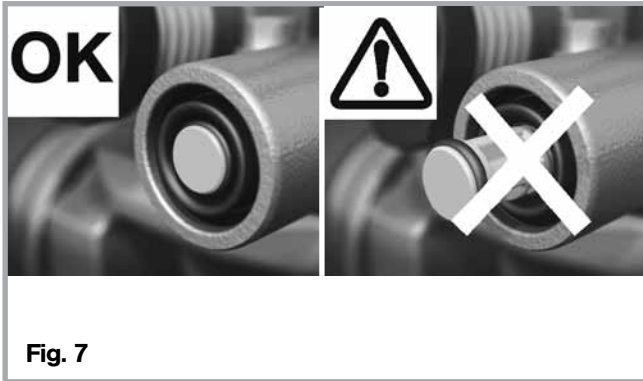
2.1 Hitching

Note: The regulations of the relevant employer's liability insurance association must be observed when hitching and unhitching.

- Push hand lever upwards (lever engages, residual area escapes via 16) for fully automatic hitching.
- **Check whether funnel is locked.**
- Release brake on front axle of steerable-axle trailer (see fig. 6).

When hitching a central-axle trailer (see fig. 6) please note following:

- Slowly reverse tractor unit.
- Drawbar eye must mate with centre of funnel. If not, this can result in damage to funnel, drawbar eye and support unit.



Check

After every hitching operation it is essential to check that the coupling is engaged as required by regulations.

The check pin **must be flush** with its guide bush after hitching (see fig. 7/7a).

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

Remedy:

- Advance tractor unit approx. 1 m and then reverse again.
- Then check again.

In-cab status indicator upgrade kit available for retrofitting.

2.2 Closing coupling manually

(e.g. for tow-rope)

- Raise coupling pin with suitable tool.
- or
- Carefully strike hand lever knob briefly in **opening direction** with heel of hand.

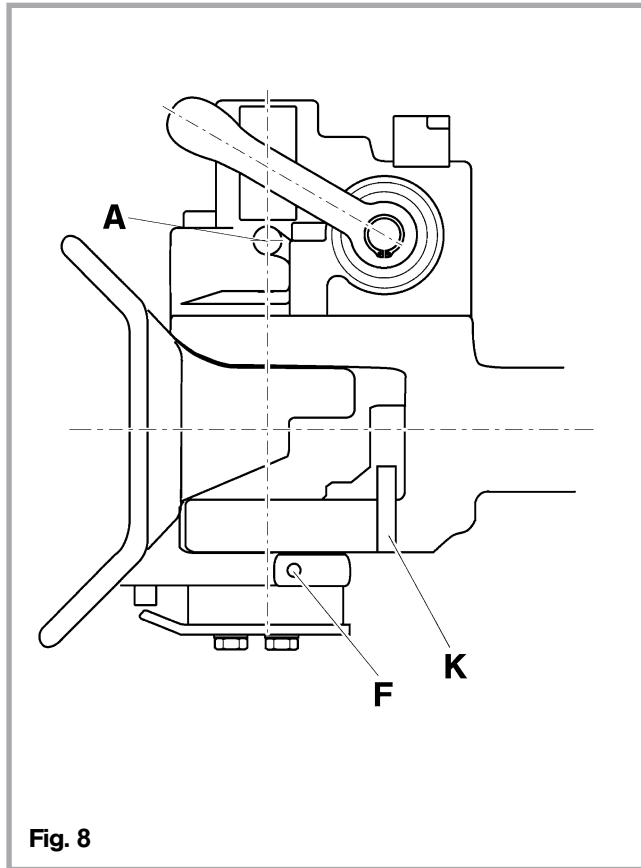


Fig. 8

3.1 Care

- Lubricate coupling pin, support ring and drawbar eye with heavy-duty grease (3EP f. e. ROE 96042) which is waterproof if possible before first use and after extended period in use.
- Low-maintenance automatic unit has a grease reservoir (regular regreasing unnecessary, please see below for repair information).
- Under harsh operating conditions or severe exposure to dirt or water regrease automatic unit (A) when coupling is open (see fig. 8):
 - 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 (see 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)



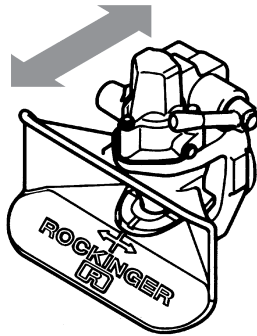


Fig. 9

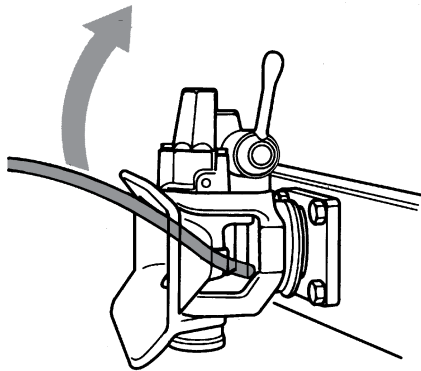


Fig. 10

3.2 Testing

Bearings:

– Longitudinal play

- Grip coupling head (not jaw funnel) with both hands when uncoupled and move vigorously in longitudinal direction (see fig. 9):

No longitudinal play is allowed.

– Vertical play

- Open coupling.
- Move coupling head up and down with appropriate tool (see fig. 10):

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. 11).

When the main ovulated 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. 12).

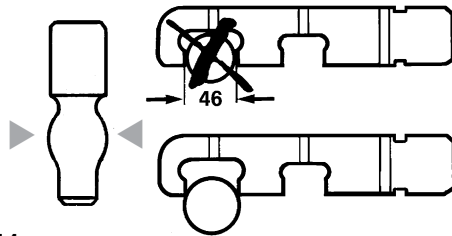


Fig. 11

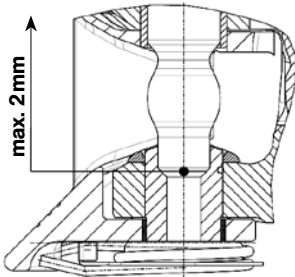


Fig. 12

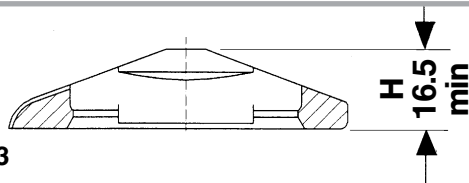


Fig. 13

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. 12)
For replacement see repair instructions (on request).

Support ring:

The supporting 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. 13) 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).

Hydraulic connection:

No oil mist may escape from valve (16) when coupling is opened.
In case a hydraulic unit (for installation position see fig.1) has been turned over/aside during transportation or mounting, some oil drops may appear after actuation for 4 or 5 times. Such a state is harmless!
Hydraulic unit contains no user-serviceable parts.



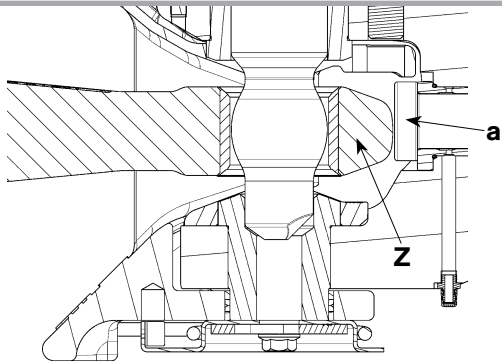


Fig. 14

Pressure bar / Stopp Prisma:

In event of pressure loss, check for wear:

- drawbar eye (Z)
- coupling pin (see above)
- pressure bar end (a) face to max. 2 mm

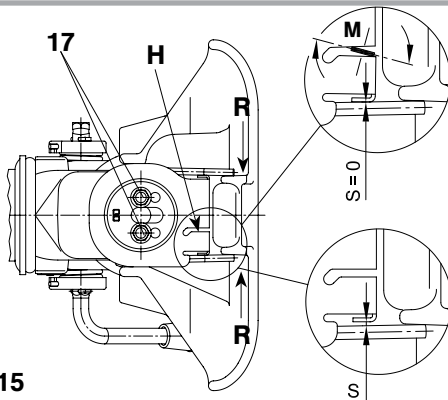
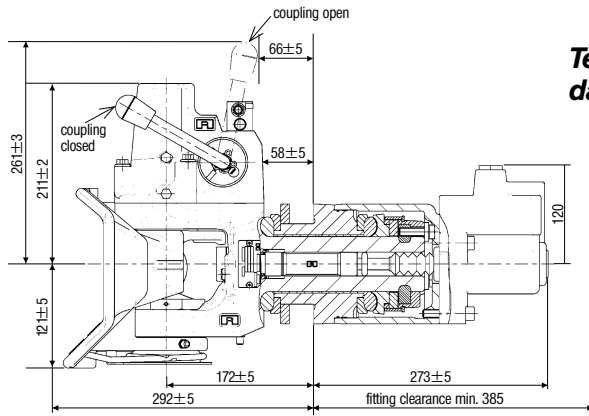


Fig. 15

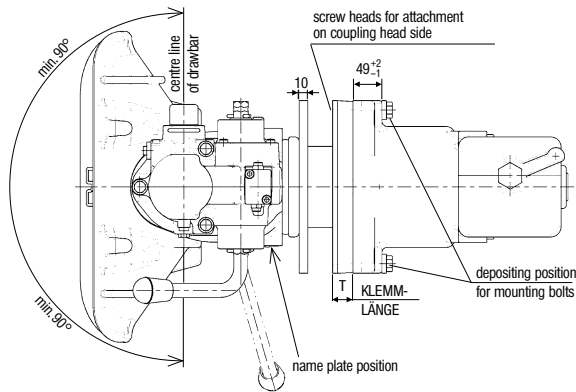
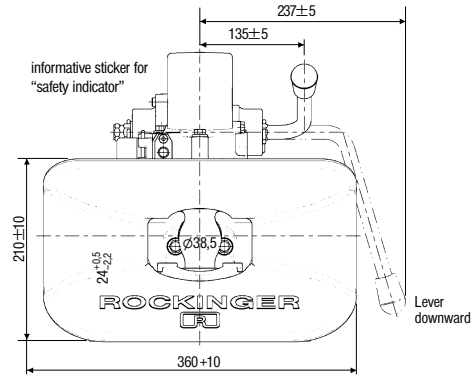
Check lock of the funnel:

Note: The funnel must be locked in its central position when coupling is opened to be prepared for coupling on!

- Push the funnel sideways
- Move handlever in locking direction (up)
- Release funnel
- The funnel must swing back in central position and be locked again
- If not, adjust the central position by the lower unit as below.
- Loosen screws (17) and bring the funnel into the central position:
- Open coupling: Funnel lock should be inserted
- Tighten screws (17) – **Tightening torque 85 Nm.**
- Both ends of torsion springs (R) must lie slack free (S) against the rib of the funnel. Between the spring holder (H) and the lay-on points of the torsion springs should also be no gap.
- In case there is gap you can close it very easily by bending the spring holder with a screwdriver (M) (see fig. (S = 0)).
- Please, check the lock and movement of the funnel again



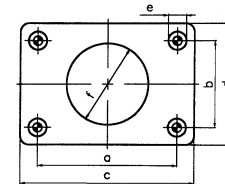
Technical data



Series RO*530

Typ RO*530-G6

ECE (E1) 55 R-010407
for drawbar eyes 50
according to DIN 74053,
eg. according to regularities
ECE R55-01,
class D, ISO 1102



Flange size to 94/20/EG

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



ROCKINGER

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