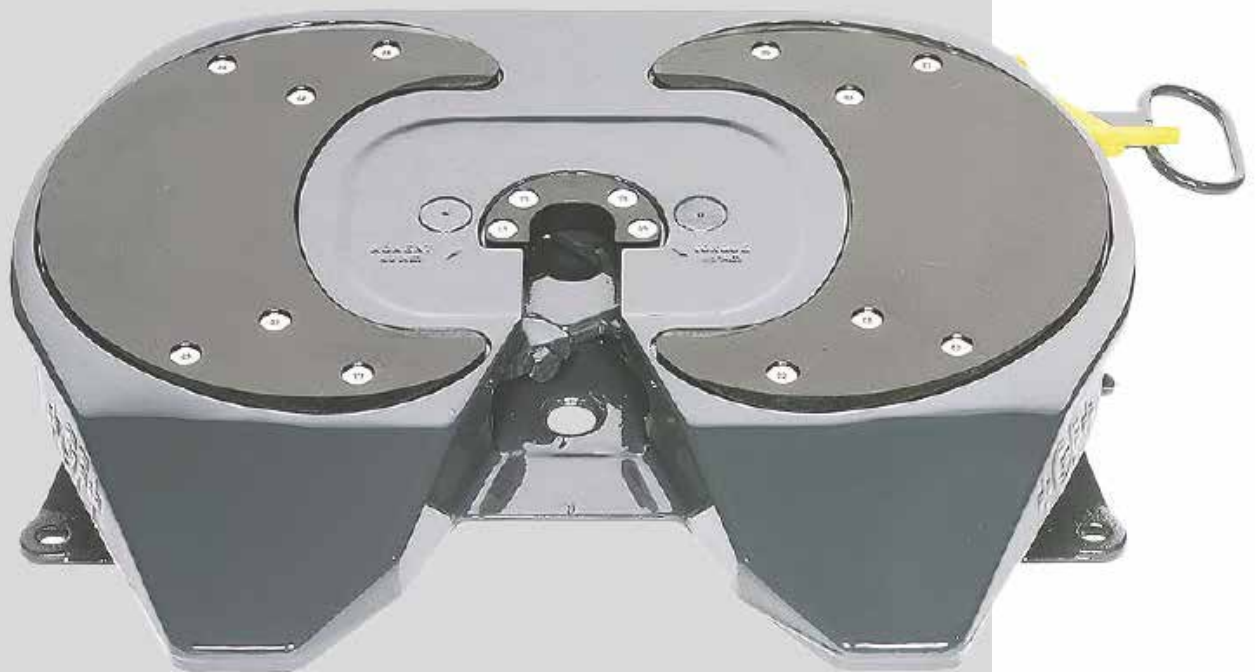


Mounting - Operation - Maintenance

Fifth Wheel

SK-S 36.22 W



Fifth Wheel SK-S 36.22 W

Mounting / Operation / Maintenance

List of contents

1.	Mounting Instructions	4
2.	Operating Instructions	7
3.	Lubrication	10
4.	Maintenance	11
5.	Wear Limits	12
6.	Adjusting Play	13
7.	Repair Instructions	14

General Information

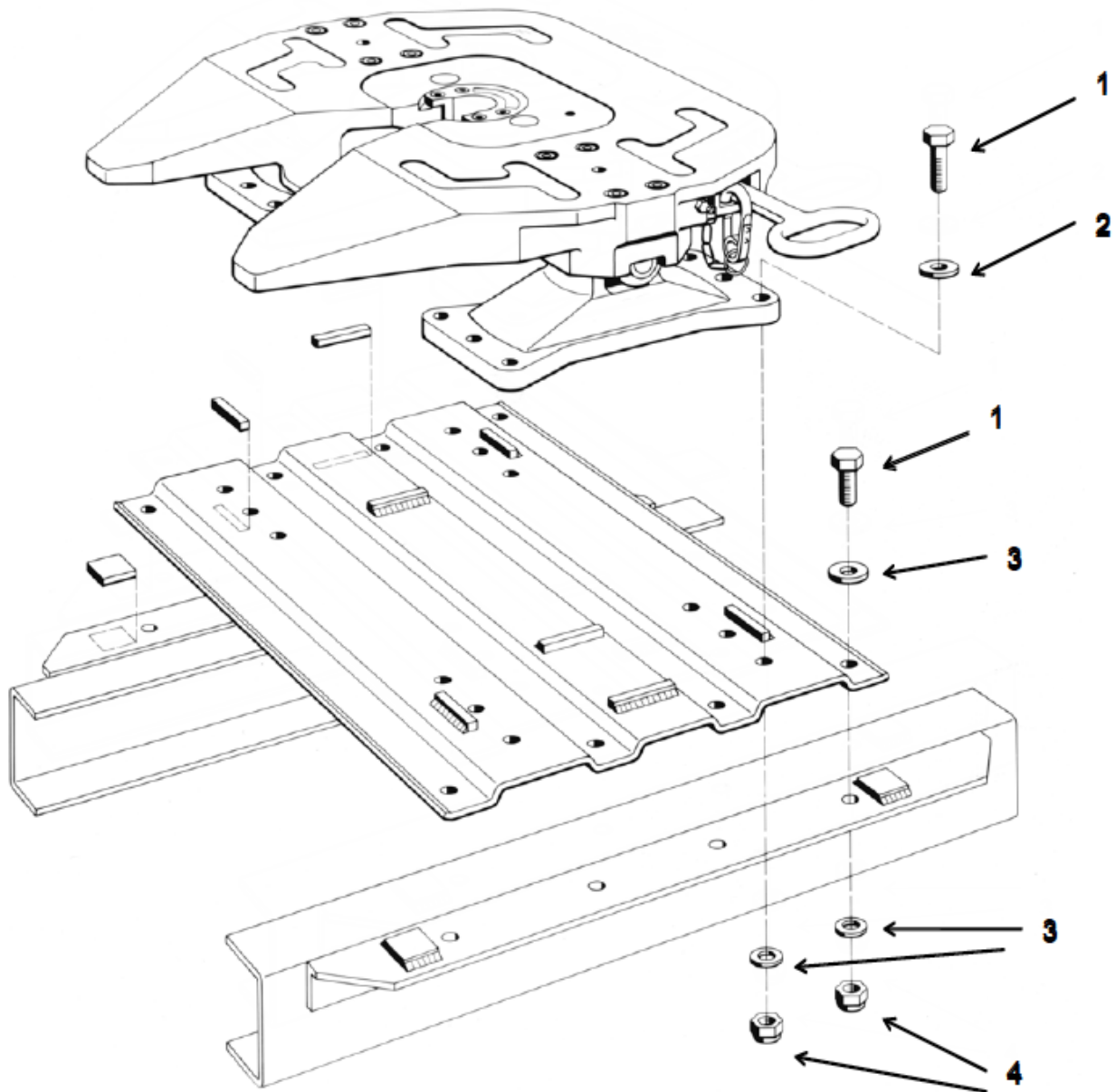
Failure to observe these instructions can lead to dangerous operating conditions. Please read through and carefully follow these instructions before mounting the fifth wheel and using it for the first time.

- Modifications of any kind will invalidate warranty claims and result in the cancellation of the design approval.
- The mounting of fifth wheels, mounting plates, sliders and kingpins, as well as repair work, may only be carried out by trained personnel or in suitable workshops.



1. Mounting Instruction

- Pos. 1 Hex. head bolts DIN EN 28676 or DIN EN 28765
- Pos. 2 Washer DIN 7349
- Pos. 3 Washer DIN 125
- Pos. 4 Nut DIN 980



-
- When mounting fifth wheels, please follow the relevant mounting instructions as provided by SAF-HOLLAND and the vehicle manufacturer.
 - The fifth wheel will be fitted on a mounting plate. We recommend the use of our mounting plates and the respective mounting kits.
 - The mounting plate and the fifth wheel must be positioned to the articulation point recommended by the vehicle manufacturer.
 - The mounting plate must be selected depending on the width of the vehicle frame and the desired overall height.

- Attach the fifth wheel to the mounting plate with at least eight M16 bolts, grade 8.8.

- We recommend the following torques for tightening:

190 Nm for M16-8.8 x1,5 fifth wheel to mounting plate
350 Nm for M20-8.8 x1,5 mounting plate to subframe

Observe the truck manufacturer's, recommended tightening torques

- If the fifth wheel is mounted on a slider, the relevant mounting instructions must be followed.
- In the Federal Republic of Germany, the mounting of fifth wheels is subject to approval under paragraphs 19 - 21 of the Regulations Governing the Use of Vehicles for Road Traffic.
- It is a requirement that the technical data be entered into the appropriate Vehicle Registration Documents in accordance with the local Vehicle Registration Regulations (e.g. §27 of the Regulations Governing the Registration of Road Vehicles in Germany).

-
- The thickness of the paint layer in the locking region of the bolts must comply with standards prescribed by law so as not to impair the clamping pressure. Compliance with Governmental inspection regulations on bolts and the locking of these in vehicle construction is required.
 - The fifth wheel must be able to move freely, and may not touch either the mounting plate or parts of the frame or auxiliary frame when used for its foreseen application.
 - Applicable national regulations must be observed when installing the fifth wheel.
 - Beside the superimposed load, the criterion for determining the max. permissible load for a fifth wheel and mounting plate is the D-value, which can be calculated according to DIN 74081, with the following formula:

Example of a calculation:

$$D = g \cdot \frac{0,6 \cdot m_K \cdot m_A}{m_K + m_A - A} \text{ in kN}$$

$$D = 9,81 \cdot \frac{0,6 \cdot 20 \cdot 30}{20 + 30 - 15} = 100,9 \text{ kN}$$

Key:

m_K = permissible gross weight of the tractor in t **Example:**
 m_A = permissible gross weight of the semitrailer in t
 A = permissible vertical load on the tractor in t
 g = Earthgravitation 9,81 m/sec.²

m_K = 20 t
 m_A = 30 t
 A = 15 t

The data for permissible loads for SAF-HOLLAND fifth wheels and mounting plates can be found on the respective pages in the brochure. These data apply for use on paved roads and transport conditions as customary in Central Europe. Please enquire for conditions of use other than these.

2. Operating Instructions

Attention

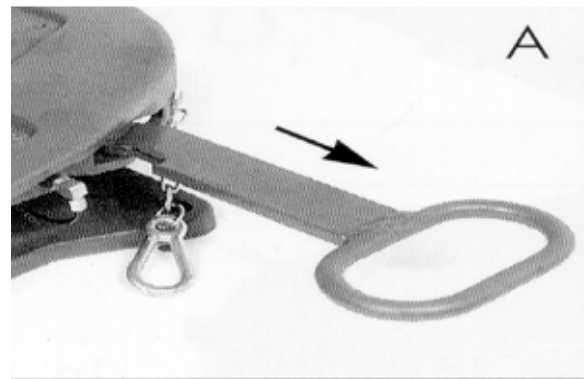
Before putting the fifth wheel into operation, apply ample coatings of long-life, high- pressure grease to the fifth wheel plate, the locking parts and the wearing ring.

2.1 Coupling

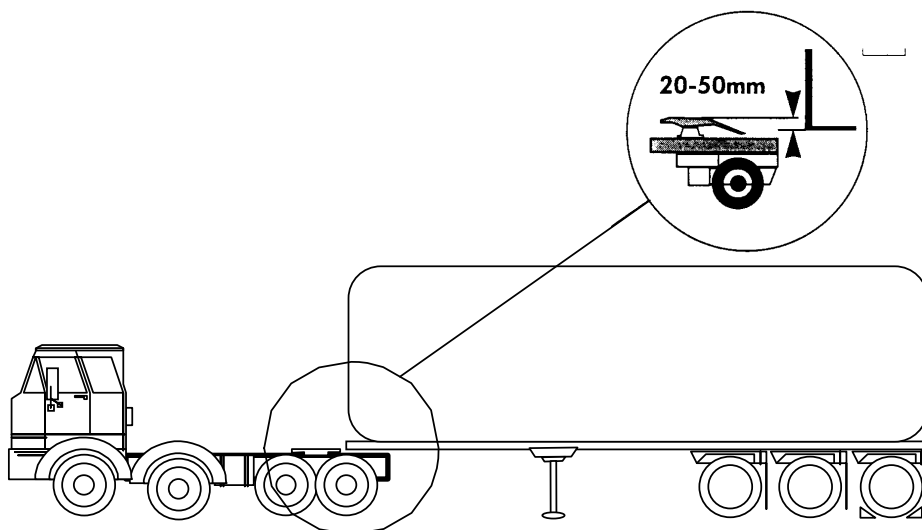
The semitrailer must be chocked and supported.

The fifth wheel must be ready for coupling, i.e. the unlocking handle must be fully extended.

The locking mechanism is in the open position.



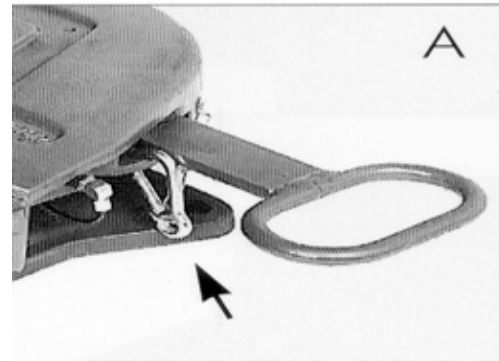
- The semitrailer plate must be approx. 5 cm lower than the fifth wheel coupler plate.
- Make sure there is no one between the tractor and semitrailer.
- Reverse with the tractor slowly under the semitrailer.
- The locking mechanism engages automatically.



Securing:

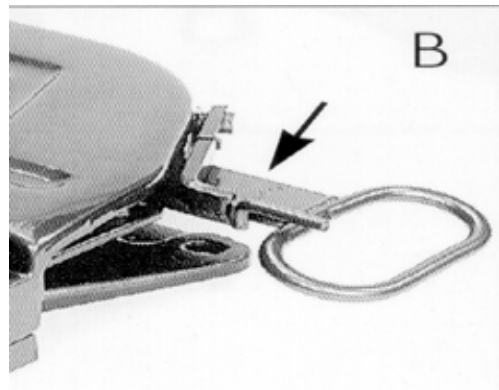
Variation a) with snap hook

Inserting the hook into the slot beside the operating handle provides a check if the mechanism is properly locked. If it is not possible to engage the hook, the coupling operation must be repeated.



Variation b) with spring hook

- The spring hook falls automatically into the closed position.
- The handle lies on the side of the cam.
The cam prevents the handle moving.
- If the hook does not click, and the cam does not lie on the side of the handle, the coupling operation must be repeated.



Start-up jerk to be made in low gear.

Attention! Do not commence driving under any circumstances without first having checked the locking mechanism is properly locked !

Connect the supply cables, raise the landing gear, remove the chocks and release the brakes.

2.2 Uncoupling

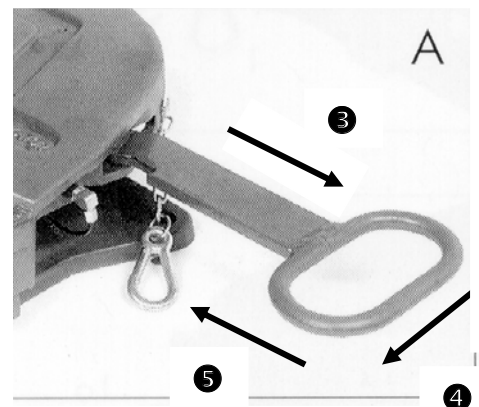
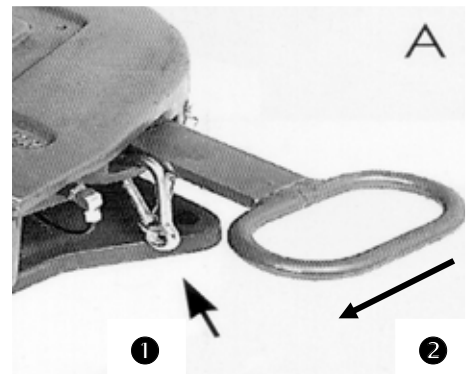
Secure the wheels of the semitrailer with chocks.

Raise the semitrailer using the landing gear until sufficient relief is given to the suspension of the towing vehicle.

Disconnect the supply cables.
Open the locking mechanism:

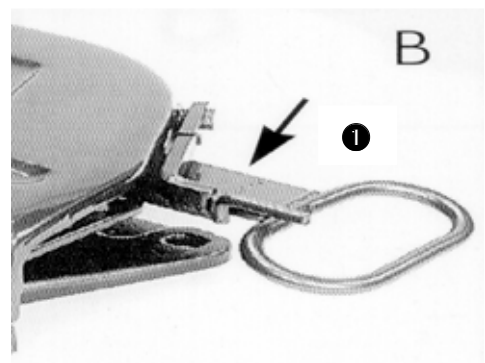
Variant a) with snap hook:

Disengage snap hook ❶
Swivel the unlocking handle to the rear ❷, pull it out ❸, and hook its lug onto the edge of the plate ❹ ❺.



Variant b) with spring hook:

Push hook upward ❶ (One hand operation).
Swivel the unlocking handle, like variant a), to the rear ❷, pull it out ❸, and hook its lug onto the edge of the plate ❹ ❺.

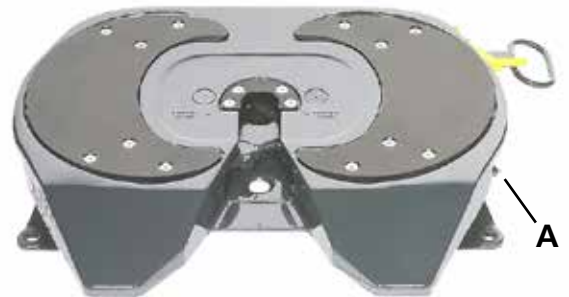


Drive the tractor out.
The fifth wheel is automatically ready for coupling again.

3. Lubrication for SK-S 36.22 W

The SAF-HOLLAND Verkehrstechnik fifth wheel Type SK-S 36.22 W is equipped with a special plastic-slideplate and -Wearing ring.

The lubricating point for the locking mechanism is at the rim of the plate (see A). This lubrication process has to be carried out without uncoupling the vehicle.



The lubrication-intervals are prior to first time use, and then regular every 10.000 km. Connection to central greasing installation is possible.

Caution:

In order to reach a long service life we recommend that a thin layer of long-life pressure grease* be applied to the plastic bearings and king pin, after thoroughly cleaning the semitrailer plate to prevent the formation of rust.

The front edge of the semitrailer plate should not be sharp and the surface of the fifth wheel must be flat.

In any case, grind the sharp points out and brake all edges.

The condition of the semi-trailer plate influences the long life of the slide plate!

* We recommend using a long-time high pressure lubricant (NLGI class 2) with MoS₂ or graphite additives, e.g. MOTOREX MOLY 218, SHELL RETINAX HDX2, Renolit LZR 2 (suitable for central lubrication systems), Renolit FG 150. If other lubricants are used, the lubrication intervals are to be adapted accordingly. When used with a central lubrication system obey the instructions of the manufacturer.

4. Maintenance

A fifth wheel is normally subject to wear during operation. This can be reduced to a minimum by proper maintenance. The following points must therefore be observed before putting the fifth wheel into operation and each time it is serviced:

Attention!

- Apply long-life high-pressure grease to the locking parts and the kingpin, after cleaning the pieces.
- Lubricate the locking mechanism in coupled position every 10.000 km.
- We recommend that the bearing surfaces of the fifth wheel and the semi-trailer plate are checked for damage each time they are serviced and repaired if necessary.(see chapter 5 **Wear limits**)
- Replace worn-out or damaged parts with original SAF-HOLLAND spares.
- The functionality of the fifth wheel must be checked depending on the working conditions, however at the latest every 50,000 km.
We recommend a visual control every 50,000 km.

5. Wear Limits

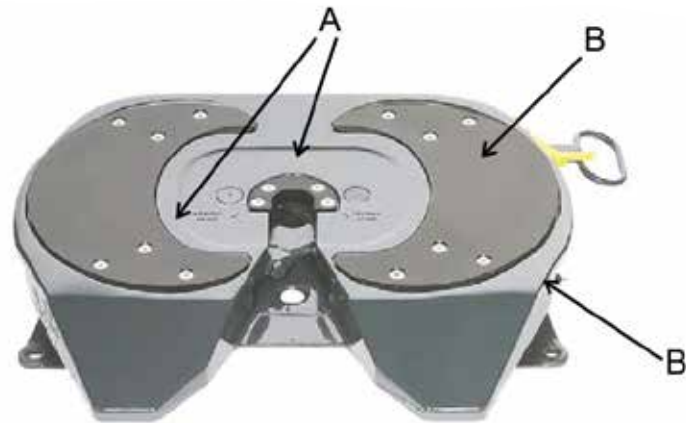
The wear on the coupler plate and the plastic bearings can be checked by means of visible evidence of wear, i.e. without using any tools. The limit gauge (SAF-HOLLAND Order No.: A 659 920 032) is required for checking wear on the fifth wheel locking mechanism and the kingpin.

5.1 Coupler plate

Visual control

If there are marks at **A**, or the slide plates are worn down to the collar screws, change both slide plates.

Wear of the protector edge **B** is normal, and has no negative influence on the functionality and life of the fifth wheel.

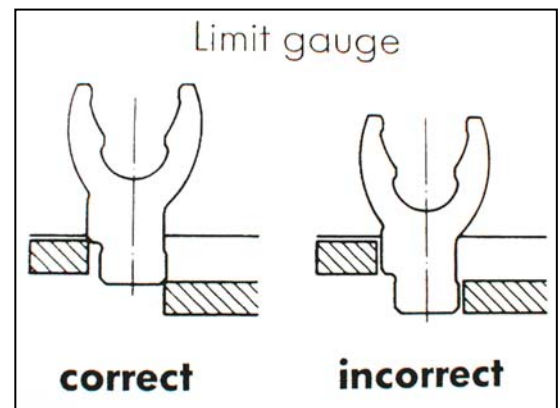


5.2 Locking mechanism

Use the limit gauge to check wear on the locking mechanism. If the limit gauge slips into the locking mechanism from above, the parts must be replaced.

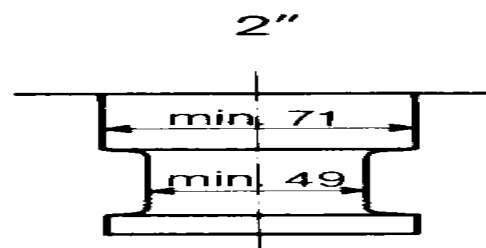
(see chapter 6 Adjusting play)

If there is no further possibility for adjusting play, the wearing ring and the coupler jaw must be replaced. (see chapter 7 Repairs)



5.3 Kingpin

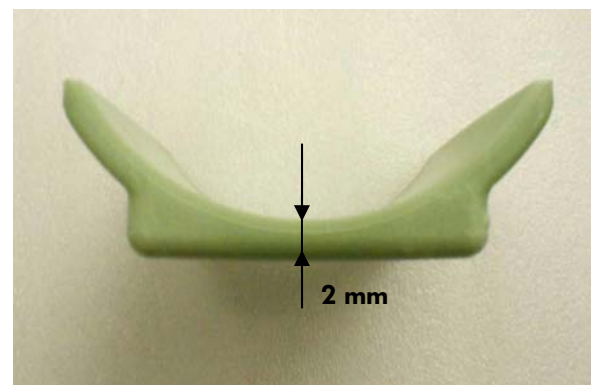
Measure both diameters in the longitudinal and transverse directions using the limit gauge. If the diameters have been worn down to 71 mm and 49 mm, it is imperative that the kingpin be replaced.



5.4 Plastic Bearings

Exchange the bearings if there is no more space between the bracket and the coupler plate

Check the bearings, depending on the operational conditions, at least every 250'000 km for signs of wear. If the bearings have a thickness of less than 2 mm they have to be replaced by original SAF-HOLLAND spares.



Adjusting play

The locking mechanism of a fifth wheel is subject to a certain degree of wear, depending upon mileage and maintenance.

The SAF-HOLLAND SK-S 36.22 W fifth wheel is equipped with an adjusting mechanism to compensate for play.

This mechanism is intended to compensate for wear on the coupling parts, but not on the kingpin.

Adjusting the fifth wheel's locking mechanism



The adjustment must be carried out with a **new kingpin**.

- Unscrew the screw (27 across flats) on the locking hook. Removal of one washer under the screw produces an adjustment of 0,4 mm. Reinsert the screw and tighten it with 170 +/- 10 Nm.
- Repeat this procedure as required when making further adjustments.



Warning

When adjusting the locking mechanism, ensure that the kingpin has a play of at least 0,5 mm in the locking mechanism of the fifth wheel. If necessary, add further washers until the degree of play is correct.

After coupling, the snap hook must be inserted resp. the spring hook fall into place to ascertain, that the mechanism is properly locked. If mechanism does not close properly, remove one more washer.

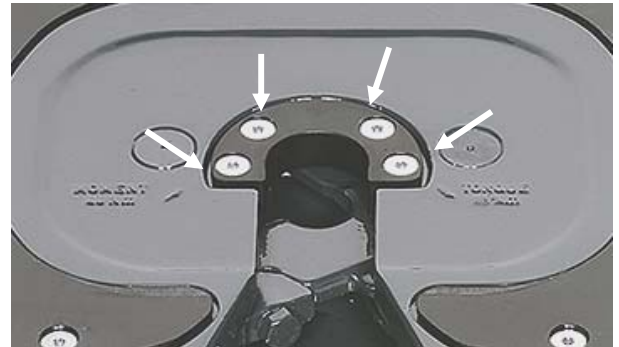
If no further adjustment is possible on the locking mechanism, the locking hook and the wearing ring must be replaced.

If the kingpin is below the minimum permitted limits (see page 4), it must be replaced.

7. Repairs

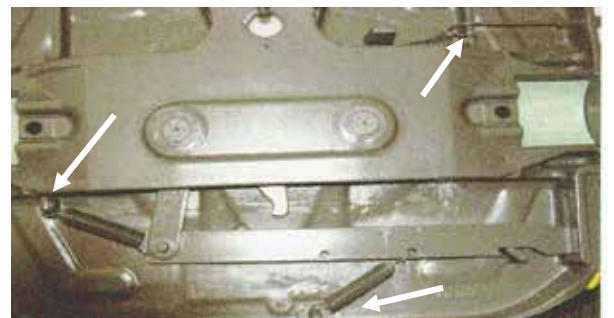
Replacing the wearing ring

1. Unscrew all 4 collar-screw and remove the wearing ring. Clean the wearing ring seat on the coupler plate.
2. Insert the new wearing ring.
Use new self securing collar screws and tighten them with a torque of 46 Nm.

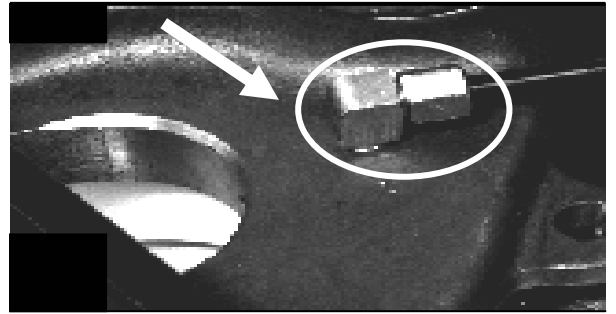


Replacing the coupler jaw, the plastic bearing and the rubber cushion

1. Remove the slide plates.
2. Undo all 4 screws (30 mm across flats) of the bracket assembly.
3. Unhook the springs from the coupler jaw and the unlocking handle.
4. Remove the external locking ring from the coupler jaw pin.



5. Remove the lock nut from the coupler jaw.



6. Remove the pin from the coupler jaw.

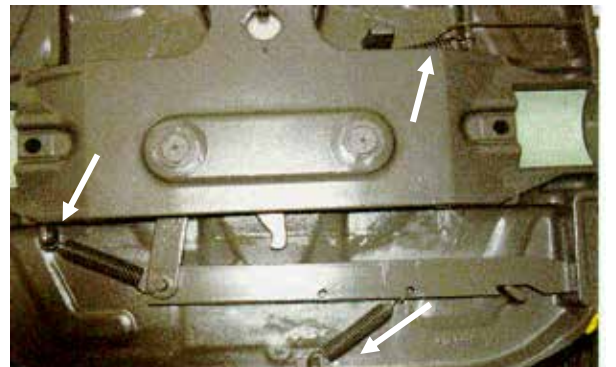


7. Remove the coupler jaw, clean the borehole on the coupler plate and coat the pin with multi-purpose grease.



8. Pull the unlocking handle right out before inserting the new coupler jaw.

9. -After inserting the coupler jaw, move the unlocking handle into the closed position.
-Secure pin with the external locking ring.
-Fasten the lubrication pipe for the couple jaw.



10. Attach all three tension springs on the coupler jaw and the unlocking handle. Pull the unlocking handle outwards and set the locking mechanism in the coupling position.

11. Check the rubber cushion for wear (visual inspection) and if necessary replace it. Ensure it is perfectly seated when inserted into the bracket.



Plastic bearing

Replacing worn down plastic bearings when there is no gap between brackets and coupler plate.

Mounting the fifth wheel on the brackets:

1. Place the coupler plate on the brackets.
2. Insert the rubber cushion into the brackets.
3. Place the coupler plate on the brackets. Ensure that the plastic bearings are in the right position.
4. Insert the tension bows from the side. The chamfer facing upwards.



Attention:
New self-locking bolts must be used for each mounting.

5. Tighten all four (30 mm across flats) hex. head screws with a torque of 400 Nm.



6. Tighten the slide plates, using new self-locking bolts with a torque of 10 Nm.





SAF   **NEWAY** TRILEX®

Notruf
Emergency Hotline **+49 6095 301-247**

Kundendienst
Customer Service **+49 6095 301-602**

Aftermarket
Spare Parts **+49 6095 301-301**

Fax **+49 6095 301-259**

service@safholland.de
www.safholland.com