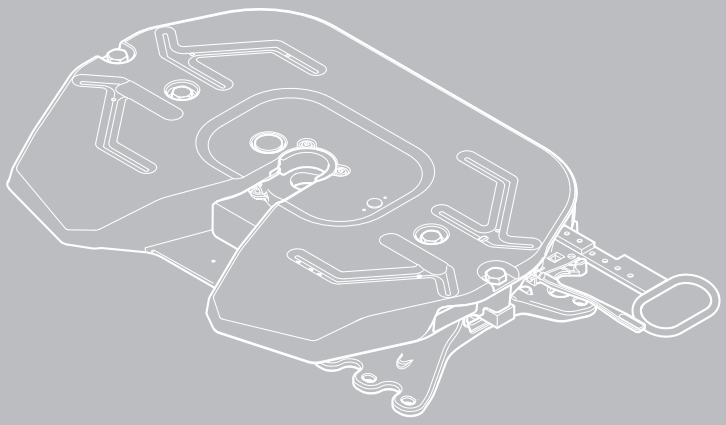
SAF-HOLLAND Group

Owner's Manual

Fifth wheel coupling SK-S 36.20; 36.20 W; 36.20 NoLube

SK-S 36.20 D; 36.20 DW; 36.20 D NoLube



XL-FW11724UM-en-DE

Translation of the original owner's manual

1.1 Dear customer,

This operating manual will help you to familiarise yourself with the SAF-HOLLAND product and use it for its proper use.

The operating manual contains important instructions on how to operate the product safely, properly and economically. Adherence to it helps prevent hazards, faults and reduce down times and increase the reliability and service life of the product. Read the operating manual through carefully and follow the instructions accurately.

It must be ensured that all personnel with responsibility for performing tasks on the vehicle are able to consult the operating manual at all times.

The operating manual must be kept in the glove compartment in the driver's cabin of the towing vehicle at all times.

1.1 Copyright

Table of Contents

1 Product data

1.1 Identification of the model

Please have the exact type designation of the product ready when ordering spare parts.

The 11-digit number (serial no.) can be found on the type plate -arrow 1-.

In addition, the "D-value" in kilonewtons -arrow 2- and the "fifth wheel load" in tonnes-arrow 3- can be taken from the type plate.

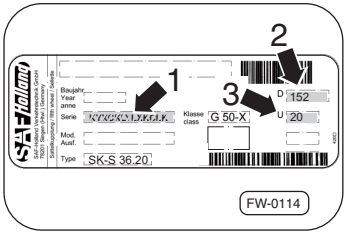


Fig. 1 · · Type plate

1.2 Position of the type plate

The type plate Fig. 2, –arrow– is located on the right-hand side in the direction of travel.

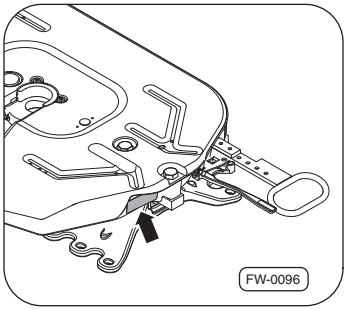


Fig. 2 · Type plate position

1.3 Specifications

EU Declaration of Conformity

The manufacturer SAF-HOLLAND hereby declares that the **fifth wheel coupling described below** fulfils the health and safety requirements of the following EC guidelines:

Fifth wheel type:

- SK-S 36.20
- SK-S 36.20 D
- SK-S 36.20 W
- SK-S 36.20 DW
- SK-S 36.20 NoLube
- SK-S 36.20 D NoLube

Harmonised standards used	
ECE R55	Mechanical coupling devices for vehicle combinations
70/156/EWG	Legal regulations for type approval for vehicles and trailers
ISO 1726	Vehicle compatibility
ISO 3842	Road Vehicles - Fifth Wheels - Interchangeability

National standards and technical specifications used	
DIN 74081	Mechanical coupling devices for articulated vehicles
TA 31	Technical requirements of vehicle parts for type testing according to § 22a StVZO
KBA Directive	For delivery and testing, load-bearing components made of cast iron with nodular graphite on vehicle connecting devices
BGF Bulletin	Bulletin for safe coupling of vehicles

Design changes, which affect the technical data provided in the owner's manual and the designated use, that significantly alter the system, render this Declaration of Conformity invalid!

2 Ordering spare parts

When ordering original spare parts from SAF-HOLLAND, make sure that you pay attention to the assembly groups of the respective product.

Third party parts have a negative effect on the function of the product, have a shorter lifetime and cause risks and hazards which SAF-HOLLAND cannot evaluate. They also increase the testing requirement.

SAF-HOLLAND has a tight service network of partner companies for technical support for SAF-HOLLAND products and supply of parts (see back page or visit us on the internet at **www.safholland.com**).

For further instructions on identifying spare parts, refer to the "Aftermarket" section of our homepage **www.safholland.com**.

Updates are published as necessary on the internet at **www.safholland.com**.

3 General information

3.1 Liability

SAF-HOLLAND GmbH's "General Terms and Conditions" apply.

SAF-HOLLAND does not accept any liability claims for personal injury or material damage which are caused by one or more of the following:

- Improper use of the product Page 8,
- disregarding the operating manual or the safety instructions contained therein,
- structural changes to the product not carried out by the company,
- insufficient inspection of parts subject to wear Page 22,
- maintenance and repair work carried out incorrectly or too latePage 34,
- The use of any spare parts other than original SAF-HOLLAND parts,
- the use of damaged parts,
- disasters due to external influences or force majeure.

3.2 Warranty and general terms and conditions of business

Refer to the "Sales" section of our home page **www.safholland.com** for information on our current warranties and general terms and conditions.

3.3 Environmental protection

All components and consumables used for maintenance and care must be disposed of in an environmentally friendly manner.

Recyclable components must be cleaned of oil and lubricants and recycled. When doing so, you must adhere to the disposal instructions for the respective consumables and the valid national and regional regulations.

4 Safety

4.1 Target group

The chapters **Operation** and **Inspection** in the owner's manual are restricted exclusively to use by the operator and personnel authorised and trained by the operator.

The operator must ensure that the personnel authorised by him receive regular instruction on the content of the owner's manual and in particular the safety instructions it contains.

The chapters **Installation** and **Implementation** in the owner's manual are restricted exclusively to use by the original equipment manufacturer (OEM) and personnel authorised and trained by the OEM.

The chapter **Repair** is restricted exclusively to use by authorised workshops and appropriately trained personnel using the proper tools and safety procedures.

4.2 Proper use

The product has been constructed using state-of-the-art technology and in accordance with the recognised rules of technical safety. However, its use may result in hazards for the operator or third parties or damage to the device or other objects of material value.

The fifth wheel described in this operating manual is designed for the mechanical coupling of the fifth wheel tractor with the semi-trailer. During operation the fifth wheel kingpin of the semi-trailer is locked by the locking mechanism of the fifth wheel. A secondary lock prevents an unintended opening movement of the handle during the journey.

The product may be used exclusively with semi-trailers according to ISO 1726, and the fifth wheel kingpin according to ISO 337/DIN 74080 with the usual road conditions in West Europe.

Proper use also includes:

- Adherence to the owner's manual and implementation of the working steps stipulated in the owner's manual,
- Adherence to the performance limits Fig. 1 of the product,
- Adherence to all information regarding checks and care Page 25,
- The use of the auxiliary and operating materials listed Page 31 as well as the environmentally-friendly disposal of these Page 7.

Operationally safe functioning can only be guaranteed if all the instructions, setting and performance limits for the product are adhered to.

4.3 Improper use

- Use with non-standard or damaged fifth wheel kingpins (ISO 337 or DIN 74080) e.g. bent, incorrect size or dimensions, fitted on bent trailer bolster plates or lube discs/plates.
- Towing operations which damage or interfere with the proper operation of the fifth wheel,
- The attachment of lifting devices,
- Transport of loads in excess of the rated capacity or D-value,
- OFF ROAD applications,
- Use on stationary or sliding mount compensators,
- Use of a tipping device with a kinked tractor,

- Applications other than those recommended.

Note:

SAF-HOLLAND defines the term "terrain/OFF ROAD" as an unsurfaced and uneven or unlevelled driving surface with regard to an articulated vehicle. Any terrain not considered part of the public highway system falls under this heading.

4.4 Safety instructions and symbols used

The following symbols are used to denote particularly important information and sections of the text. Make sure that they are always read and adhered to before working with the product.

Danger!

This safety instruction with the exclamation mark warns of a possible safety risk or serious and fatal injuries.

Careful!

This safety instruction with the exclamation mark warns of possible damage to the product.

Note:

Marking for special user tips and other particularly useful and important information for efficient work and economical use.

4.5 Marking used for sections of text

- Marking for instructions for actions and information in safety instructions

1., 2., 3., ... Marking used for working steps

4.6 General safety instructions

It is imperative that you adhere to the following safety instructions in order to maintain the operational safety and traffic safety of your SAF-HOLLAND fifth wheel coupling:

Danger!

Risk of serious traffic accidents which may lead to serious or fatal injuries.

Operation

- Check the fifth wheel lock each time before operation. Failure to correctly hitch the semi-trailer can lead to the semi-trailer detaching from the tractor during the journey.

General safety instructions

- The safety and warning signs attached to the fifth wheel must not be removed and must be kept in legible condition. Signs that have become damaged or illegible must be replaced immediately.
- The articulated vehicle must be parked in a straight line with the trailer during tipping operations.
- No modifications may be made to the fifth wheel system – that also applies to welding work - invalidation of the type approval.

  All planned modifications must be approved by SAF-HOLLAND in writing before being carried out.

5 Installation

5.1 General instructions for installation

Danger!

Risk of serious traffic accidents due to the loss of traffic safety and operational safety, which may lead to serious or fatal injuries!

- The installation must be performed by articulated vehicle manufacturers or authorised workshops and by appropriately trained personnel.
- Reverse installation is not permitted.
- During transport and lifting of the fifth wheel, do not damage any fifth wheel components or wires.
- On the contact surface for screws, nuts and/or washers, the paint thickness must not exceed 120 µm, in order to ensure a sufficient clamping force.
- Observe the legal clauses and approved technical safety rules for the installation of fifth wheels in the respective country of operation.
- If the fifth wheel is mounted on a sliding device, the applicable construction regulations must be observed.

Note:

- National rules of approval apply for the installation of the fifth wheel.
- In Germany, the mounting of fifth wheel couplings requires approval from the Road Traffic Registration Regulation (STVZO§19 - 21).

5.2 D Value / fifth wheel vertical load

Danger!

Risk of serious accidents due to the loss of traffic and operational safety, which may lead to serious or fatal injuries!

- For safe operation, the calculated D-value must not exceed the specified D-value or maximum vertical load of the fifth wheel.
- In order to be able reach the load limits of the maximum D-value, the installation must be carried out according to the SAF-HOLLAND installation instructions.

The specific value for the loading capacity of the fifth wheel coupling pin is the D-value Fig. 1, –arrow 2–. The sum of the influence quantity or its relation defines the strength, that is affected by the connecting direction. This strength (called shaft strength or D-value for short) is connected to the fifth wheel vertical load, the weight of the fifth wheel tractor and the weight of the semi-trailer and will also be disclosed in the type testing.

Calculation according to DIN 74081

D	D-value in kN
g	Gravity; g = 9.81 m/s^2
m_K	Maximum permissible laden weight of the tractor in t
m_A	Maximum permissible laden weight of the semi-trailer in t
U	Permitted fifth wheel vertical load in t

$$D = g \times \frac{0{,}6 \times m_K \times m_A}{m_K + m_A - U} \; [kN]$$

FW-0004

Fig. 3 · D-value calculation formula

The permitted load data for products from SAF-HOLLAND are given on the type plate Fig. 1 or can be found in the applicable type approvals or on our home page www.safholland.com. They apply to the operation on sealed, tarred roads and road conditions that are customary in West Europe. In the case of operational conditions which differ from these, or for OFF ROAD use, please consult customer services beforehand. When using several coupling devices and components, the one with the lowest D-value should be observed.

Calculation example

g	= 9.81 (gravity)
m_K	= 17 (maximum permissible laden weight of the tractor)
m_A	= 33 (maximum permissible laden weight of the semi-trailer)
U	= 10 (permitted fifth wheel vertical load)

$$D = 9.81 \times \frac{0{,}6 \times 17 \times 33}{17 + 33 - 10}\ [kN]$$

D - Wert = 82,55 [kN]

FW-0005

Fig. 4 · D-value calculation example

5.3 Mounting of the fifth wheel

DIN mounting

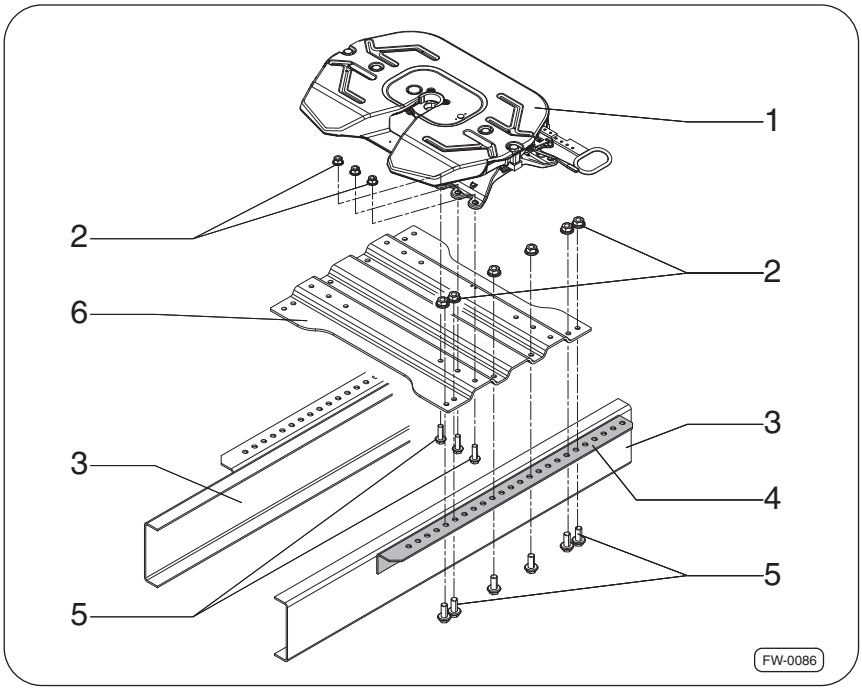


Fig. 5 · DIN mounting overview

DIN mounting overview

Fig. 5.3, Pos (item)	designation	Fig. 5.3, Pos (item)	designation
–1–	Fifth wheel SK-S 36.20/ SK-S 36.20 W/SK-S 36.20 NoLube	-2–	Nuts (according to the vehicle manufacturer's guidelines)
-3–	Vehicle frame (2x)	-4–	Auxiliary bracket
-5–	Screws (according to the vehicle manufacturer's guidelines)	-6–	Mounting plate

Direct mounting

Note:

- The different hole pattern for direct mounting of the fifth wheel must be observed.
- To maintain the installation height of 148 mm, a manufacturer-specific **intermediate plate** must be used. For all other installation heights, the cross member provided must be used.

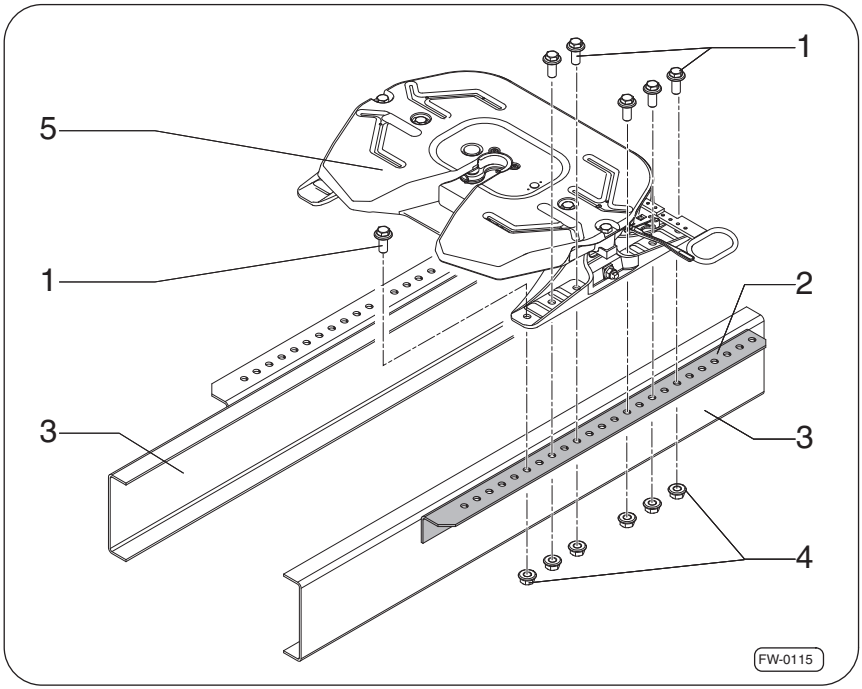


Fig. 6 · Direct mounting overview

Direct mounting overview

Fig. 5.3, Pos (item)	designation	Fig. 5.3, Pos (item)	designation
–1–	Screws (according to the vehicle manufacturer's guidelines)	-2–	Auxiliary bracket
-3–	Vehicle frame (2x)	-4–	Nuts (according to the vehicle manufacturer's guidelines)
-5–	Fifth wheel SK-S 36.20 D/ SK-S 36.20 DW/SK-S 36.20 NoLube		

Mounting requirements

- For the mounting of fifth wheels SK-S 36.20; SK-S 36.20 D; SK-S 36.20 W; SK-S 36.20 DW; SK-S 36.20 NoLube & SK-S 36.20 D NoLube, the special SAF HOLLAND fastening set must be used.
- The fifth wheel must be able to move freely in all operating conditions and cannot touch any part of the vehicle frame:
  - **Pitch angle**: In vehicle longitudinal direction according to ISO 1726 min. 6° forwards and 7° backwards.

Procedures

The mounting is done according to the vehicle manufacturer's guidelines.

5.4 Functional test

Danger!

Risk of serious traffic accidents due to the loss of traffic safety and operational safety, which may lead to serious or fatal injuries!

- The bolster plate must be flat and can neither be welded nor have sharp edges - uneven bolster plates cause the articulated vehicle to run unevenly causing instability in the trailer and extensive wear to the lube plates, fifth wheel top plate, locking mechanism and fifth wheel kingpin.
- For reasons of stability, we recommend that a bolster plate within a minimum thickness of 12 mm be used. If bolster plates of lower thicknesses are used, then the bolster plate must meet the requirements from ISO 1726 Teil 1-3 and ISO 3842.

- Test the function of the system:
  - after finishing inspection or repair work
  - before the implementation

1. Check that screw connections are securely tightened.
2. Check the flatness and strength of the bolster plate.
3. Remove all tools, materials and other equipment used from the work area.
4. Check the function of the locking mechanism.

6 Implementation

Danger!

Risk of serious traffic accidents due to the loss of traffic safety and operational safety, which may lead to serious or fatal injuries!

The fifth wheel coupling must be correctly mounted onto the vehicle Page 13.

Careful!

Risk of damage to the fifth wheel!

The condition of the bolster plate has a significant influence on the service life of the lube plates for fifth wheels SK-S 36.20 W; SK-S 36.20 DW; SK-S 36.20 NoLube & SK-S 36.20 D NoLube.

1. Check the fifth wheel for damage.
2. Check the fifth wheel coupling for correct mounting Page 13.
3. Lubricate the lube plates of the fifth wheel coupling (SK-S 36.20 W; SK-S 36.20 DW; SK-S 36.20 NoLube & SK-S 36.20 D NoLube) Page 31.
4. Lubricate the fifth wheel plate (SK-S 36.20; SK-S 36.20 D) Page 32.
5. Lubricate lock Page 31.
6. Thoroughly clean the bolster plates of the semi-trailer and check for damage.
7. If necessary remove sharp edges from the front edge of the semi-trailer bolster plate and in the contact to the fifth wheel and ensure that there is a chamfer on the front edge.
8. Apply a thin layer of grease to the bolster plate of the semi-trailer according to the manufacturer's information, in order to prevent corrosion.
9. Lubricate the fifth wheel kingpin according to the manufacturer's information.

7 Operation

7.1 Open the fifth wheel lock

Open the lock with snap hooks

1. Unclip the snap hooks Fig. 7, –arrow 1– and swivel the release handle to the left –arrow 2–.
2. Pull the release handle out completely –arrow 3– and hook it onto the edge of the plate.
3. Ensure that the lock part swings open fully and the handle remains in a position to engage Fig. 9.

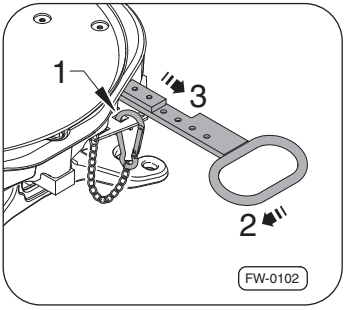


Fig. 7 · Unclip the snap hooks

Open the lock with safety handle

1. Push the safety handle down by thumb Fig. 8, –arrow 1– and swivel the release handle to the left –arrow 2–.
2. Pull the release handle out completely –arrow 3– and hook the release device onto the edge of the plate.

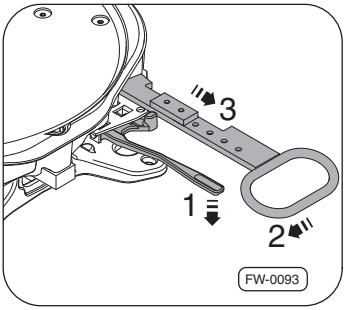


Fig. 8 · Open the lock

3. Ensure that the lock part swings open fully and the handle remains in a position to engage Fig. 9.

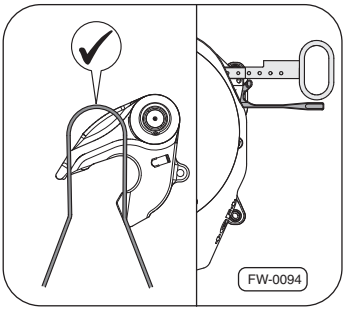


Fig. 9 · Opening the lock part

7.2 Coupling the trailer

Danger!

Risk of serious traffic accidents due to the loss of traffic safety and operational safety, which may lead to serious or fatal injuries!

Failure to correctly hitch the semi-trailer can lead to the semi-trailer detaching from the tractor during the journey.

- During the coupling no person or obstacle may be located between the tractor and semi-trailer.
- The semi-trailer must be secured and supported according to the vehicle manufacturer's instructions as well as the respective legal regulations.
- Following the hitching process the visual inspection of the entire locking mechanism and safety latch should be carried out by the driver.
- Before departure the secondary lock (safety latch) connection between tractor and semi-trailer must be checked by means of a tug test.
- Before the first hitching procedure, the lock and fifth wheel plate must be lubricated Page 31.

The fifth wheel is equipped with a safety handle, which automatically falls into closed position during the coupling process. The handle can then no longer be moved left or right. If the safety handle does not engage, the coupling of the trailer must be repeated.

1. Lock and support the semi-trailer according to the vehicle manufacturer's instructions.
2. Check the fifth wheel coupling and coupling pin for a sufficient D-value or vertical load Page 12.
3. The fifth wheel coupling must be ready for engagement, i.e. the fifth wheel coupling lock must be open Page 18.

4. Position the tractor in front of the semi-trailer Fig. 10, –pos. 1–.
5. Check the lateral alignment of the fifth wheel tractor to the semi-trailer and adjust if necessary.

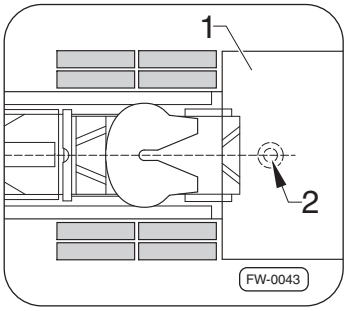


Fig. 10 · Aligning the tractor and semi-trailer

6. Set up the fifth wheel plate Fig. 11 so that there is a distance of **min. 20 mm to max. 50 mm** from the bolster plate.

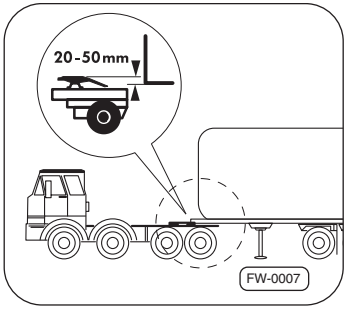


Fig. 11 · Lock the semi-trailer

7. Lift the fifth wheel with help from the air suspension system until the semi-trailer is slightly raised Fig. 12.

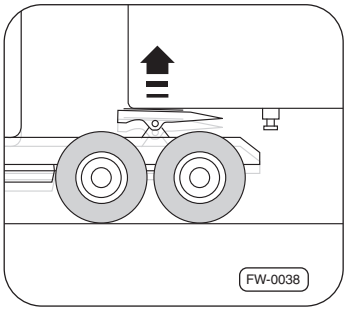


Fig. 12 · Raising the air suspension system

8. **Slowly reverse** the tractor until the fifth wheel coupling locks. The lock will close automatically Fig. 13.
9. Check that the safety handle is fully locked, if the safety handle is not fully locked, the complete coupling procedure must be repeated.
10. Perform a visual inspection of the complete lock and safeguard Page 24.
11. Perform tug test: Set the semi-trailer brake and drive the fifth wheel tractor away in a low gear - the semi-trailer should not disengage.
12. Connect the supply lines and connecting cables between the tractor and semi-trailer.
13. Finish the coupling process according to the vehicle manufacturer's instructions.

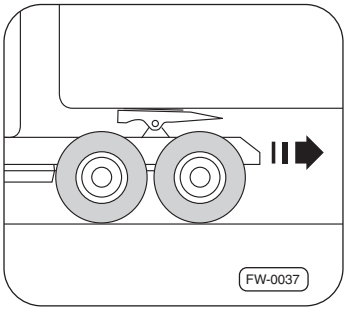


Fig. 13 · Coupling the fifth wheel tractor with the semi-trailer

7.3 Decoupling the trailer

Danger!

Risk of serious traffic accidents due to the loss of traffic safety and operational safety, which may lead to serious or fatal injuries!

- The semi-trailer must be secured and supported according to the vehicle manufacturer's instructions as well as the respective legal regulations.
- During the unhitching procedure, no person or obstacle may be located between the tractor and semi-trailer.

1. Park the semi-trailer on firm and even ground.
2. Lock and support the semi-trailer according to the vehicle manufacturer's instructions.
3. Disconnect the supply lines and connecting cables between the tractor and semi-trailer.
4. Fifth wheel coupling with open release handle Page 18.

5. Using the tractor, drive **slowly and in a straight line** out from under the semi-trailer Fig. 14.
6. Finish the decoupling process according to the vehicle manufacturer's instructions.

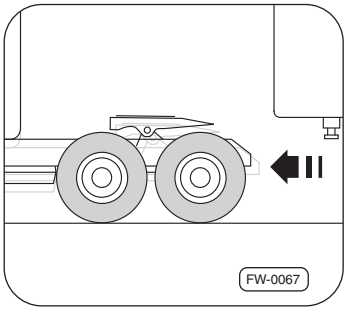


Fig. 14 · Removing the fifth wheel tractor

Note:

The fifth wheel is automatically ready-to-couple again after unlocking (handle in open position).

8 Inspection

8.1 General test instructions

Danger!

Risk of serious traffic accidents due to the loss of traffic safety and operational safety, which may lead to serious or fatal injuries!

- Repair work must only be carried out by authorised specialist workshops and by staff with the appropriate training.
- All components which are not in a serviceable condition must be replaced.
- The general safety inspection must be performed as per legal regulations.
- Daily inspection of the vehicle for traffic safety before starting the journey is part of the duty of the driver Page 23.

Danger!

- SAF-HOLLAND fifth wheel couplings require continuous care, inspections and maintenance so that wear and faults can be detected in good time, and in order to maintain operational and traffic safety.
- SAF-HOLLAND recommends that you carry out the inspections and tasks described in the chapter "Inspection". In case of repairs you must always follow the SAF-HOLLAND repair instructions and directions.

8.2 Before each journey

Danger!

Risk of serious traffic accidents due to the loss of traffic safety and operational safety, which may lead to serious or fatal injuries!

- The maximum permitted D-value as well as the fifth wheel vertical load must not be exceeded.
- The load must be secured and positioned with an even distribution.

1. Check that the safety handle is locked and the snap hooks are in the correct position.
2. Carry out a general visual inspection of the fifth wheel coupling to make sure it is securely locked and to check for wear, corrosion and damage.
3. Carry out lock check Page 24.
4. Perform tug test: Set the semi-trailer brake and drive the fifth wheel tractor away in a low gear – the semi-trailer must not disengage.

8.3 Lock check

Danger!

Risk of serious traffic accidents due to the loss of traffic safety and operational safety, which may lead to serious or fatal injuries!

Perform lock check of the complete lock and safeguard.	
Fig. 15, Image	**points to be checked**
A	Adjustment part –pos. X– of the release handle is in contact with the fifth wheel plate and the safety handle with cam is fully in front of the release handle.
B	No gap between semi-trailer and fifth wheel.
C	Coupler jaw –pos. 2– securely locked around coupling pin –pos. 1–.

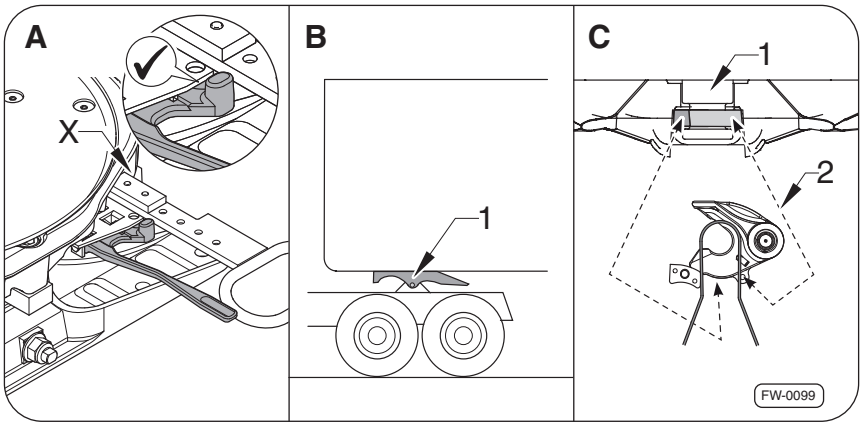


Fig. 15 · Lock check of the complete lock

Perform a visual inspection of the complete lock and safeguard.

8.4 Test schedule

Danger!

Risk of serious traffic accidents due to the loss of traffic safety and operational safety, which may lead to serious or fatal injuries!

- Repair work must only be carried out by authorised specialist workshops and by staff with the appropriate training.
- In the case of vehicles with extreme operating conditions, the inspection intervals must be reduced.

Note:

When the lubrication groove for fifth wheel plates SK-S 36.20; SK-S 36.20 D is worn, it must be replaced without fail. The bolster plate must also be checked and replaced if necessary.

Inspection intervals

	Every 5,000 km	Every month or 10,000 km	Every 3 months or 50,000 km	Every 6 months or 100,000 km	Every 2 years or 500,000 km
General safety inspection as per legal regulations.					
Visual inspection					

	Every 5,000 km	Every month or 10,000 km	Every 3 months or 50,000 km	Every 6 months or 100,000 km	Every 2 years or 500,000 km
Fifth wheel plates SK-S 36.20 W; SK-S 36.20 DW; SK-S 36.20 NoLube & SK-S 36.20 D NoLube	-	-	X	-	-
SK-S 36.20 W; SK-S 36.20 DW; SK-S 36.20 NoLube & SK-S 36.20 D NoLube lube plates	-	X	-	-	-
SK-S 36.20; SK-S 36.20 D NoLube fifth wheel plate	-	-	X	-	-
Bolster plate	-	-	X	-	-
Wear ring	-	X		-	-
Bearing inserts	-		X	-	-
Rubber dampers, fifth wheel plates, mounting brackets	-		X	-	-
Visual inspection of all parts for damage	-	X	X	X	X
Functional test					
Check that bolts are tightly fastened. Prior to initial use.	-	-	-	X	-
Check the locking function of the fifth wheel by closing and opening it Page 18. Prior to initial use.	-	-	-	X	-
Check play in the fifth wheel lock/wear on the wear ring via limit gauge and adjust as necessary Page 27.	-	-	-	X	-
Check the position and fit of the lube plates SK-S 36.20 W; SK-S 36.20 DW; SK-S 36.20 NoLube & SK-S 36.20 D NoLube.	-	-	-	X	-
Check wear on the bearing inserts and rubber dampers Page 30.	-	-	-	-	X

	Every 5,000 km	Every month or 10,000 km	Every 3 months or 50,000 km	Every 6 months or 100,000 km	Every 2 years or 500,000 km
Lubricate					
Lubricate wear pieces SK-S 36.20 W; SK-S 36.20 DW Page 31. In the coupled position when commissioning.	-	X	-	-	-
Lubricate lock SK-S 36.20 NoLube once when commissioning Page 31.					
Lubricate lube plates SK-S 36.20 W; SK-S 36.20 DW; SK-S 36.20 NoLube & SK-S 36.20 D NoLube Page 31. In the coupled position when commissioning.	-	-	X	-	-
Lubricate SK-S 36.20; SK-S 36.20 D fifth wheel plate Page 31.	-	X	-	-	-
Lubricate SK-S 36.20; SK-S 36.20 D lock Page 31.	X	-	-	-	-
Care					
Clean and lubricate the lube plates SK-S 36.20 W; SK-S 36.20 DW; SK-S 36.20 NoLube & SK-S 36.20 D NoLube.			X[1)]		

8.5 Wear check

Danger!

Risk of serious traffic accidents which may lead to serious or fatal injuries.

- Park the articulated vehicle on firm ground.
- Secure the articulated vehicle so that it does not roll away.
- You must ensure that the fifth wheel is fully functional!

[1)] NLGI class 2 with MoS2 or graphite additives

Danger!

- Once the wear limits have been reached the respective parts must be replaced immediately by an authorised specialist workshop and by personnel with the appropriate training.

Wear on the fifth wheel plate can be checked without aids at the visible wear limits Fig. 16. The SAF-HOLLAND limit gauge order number 659 920 032 is recommended for checking wear on the fifth wheel coupling lock and coupling pin.

SK-S 36.20; SK-S 36.20 D NoLube fifth wheel plate

Danger!

Risk of serious traffic accidents due to the loss of traffic safety and operational safety, which may lead to serious or fatal injuries!

Once the wear limits have been reached, the fifth wheel plate must be replaced immediately.

Visual inspection
If the fifth wheel plates SK-S 36.20; SK-S 36.20 D are worn down to the wear indicator or to the base of the lubrication groove, it must be replaced.

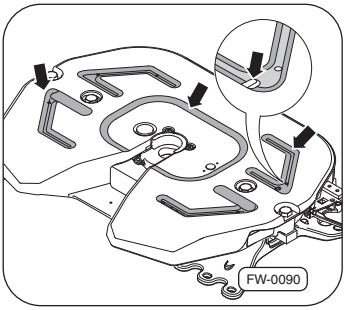


Fig. 16 · Wear check of fifth wheel plates SK-S 36.20; SK-S 36.20 D

SK-S 36.20 W; SK-S 36.20 DW; SK-S 36.20 NoLube & SK-S 36.20 D NoLube lube plates

Danger!

Risk of serious traffic accidents due to the loss of traffic safety and operational safety, which may lead to serious or fatal injuries!

Once the wear limits have been reached, both lube plates must be replaced immediately.

Visual inspection, Fig. 17

- Both lube plates must be replaced immediately, if
  - If grooves have appeared at –Pos. A–,
  - the lube plates have worn down to the mounting bolts.

Wear to the protective edges –pos. B– is normal and has no negative influence on the function and service life of the fifth wheel coupling.

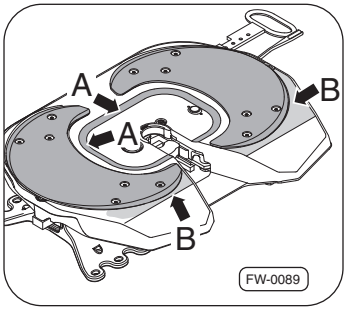


Fig. 17 · Wear check of lube plates SK-S 36.20 W; SK-S 36.20 DW; SK-S 36.20 NoLube & SK-S 36.20 D NoLube

Fifth wheel lock / Wear ring

- Check the wear on the fifth wheel coupling lock and wear ring via the SAF-HOLLAND two-zone limit gauge order number 659 920 032.
  - If the limit gauge slides into the lock, then the play of the fifth wheel coupling must be adjusted Page 33.

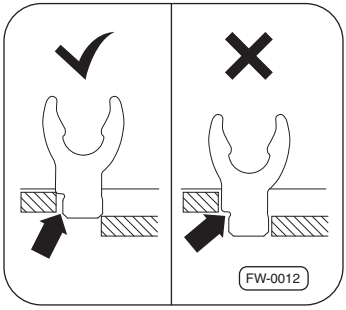


Fig. 18 · Wear checks of the fifth wheel lock and wear ring

Fifth wheel kingpin

- Measure both diameters in the longitudinal and transverse directions using the SAF-HOLLAND two-zone limit gauge Fig. 19.
  - Once the respective dimensions of 71 mm and 49 mm have been reached, the kingpin must be replaced immediately according to the manufacturer's instructions.

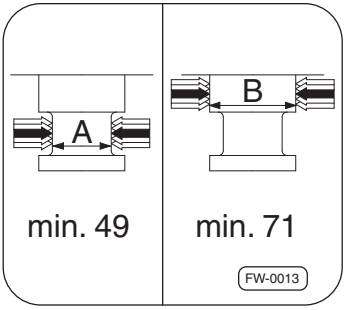


Fig. 19 · Check wear of the fifth wheel kingpin

Bearing

Danger!

Risk of serious traffic accidents due to the loss of traffic safety and operational safety, which may lead to serious or fatal injuries!

Do not lubricate the fifth wheel in the area of the bearing inserts and mounting brackets. The bearing inserts are supplied with a special coating.

- The rubber dampers and bearing inserts must be replacedPage 46, if:
  - noticeable play exists between the fifth wheel top plates and the mounting brackets along the length or across the width of the vehicle on one or both of the bearing ends,
  - Noise produced between the fifth wheel plate and bearings during driving, or tipping movements of the fifth wheel plate occur (possible metallic contact between bearing block [bracket] and bearing pocket).

Note:

there are creaks or squeaking noises in the area of the bearing, the mounting brackets must be thoroughly cleaned and paint or similar must be removed from the bracket in the bearing area.

8.6 Lubricate

Careful!

Damage to lock and plate!

- Only use the stipulated lubricant.
- Only lubricate the stipulated lubricating points.

Lubrication of fifth wheel coupling SK-S 36.20; SK-S 36.20 D

- Prior to the first coupling, the surface of the plate must be sufficiently lubricated with long-lasting high-pressure grease NLGI class 2 with MoS2 or graphite additives.
- Thoroughly lubricate the lock around the grease nipple Fig. 21, –arrow A– on the edge of the plate and thereafter regularly **every 10,000 km**.
- Before this lubrication process, remove **the old grease** from the surface with a spatula.
- The lubrication intervals must be adapted to the respective operating conditions, so that short or long intervals are also possible.

Fifth wheel coupling central lubrication distributor SK-S 36.20; SK-S 36.20 D

- When mounting a central lubrication, the fastening options provided for this should preferably be applied:
  - Four lubrication point connections Fig. 20, –pos. A– plate M8x1
  - One lubrication point connection –pos. B– lock (lengthen hose Ø8 with corresponding adaptor piece)
  - Two distributor attachments –pos. C– M6x1

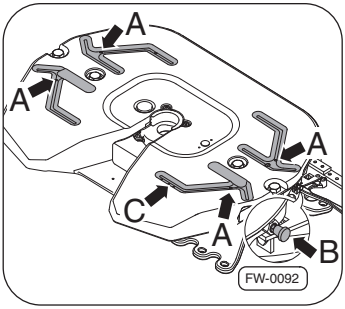


Fig. 20 · Lubricating point connections of fifth wheel SK-S 36.20

Lubrication of fifth wheels SK-S 36.20 W; SK-S 36.20 DW; SK-S 36.20 NoLube; SK-S 36.20 D NoLube

Note:

The fifth wheel SK-S 36.20 NoLube/SK-S 36.20 D NoLube must not be lubricated.

1 Thoroughly lubricate the lock around the grease nipple Fig. 21, –arrow A– on the edge of the plate and thereafter regularly **every 10,000 km**.
2 The lubricating process can only be carried out in coupled position.

For lubrication, use long-lasting high-pressure grease [1]. When using other lubricants the lubricating intervals should be adapted accordingly.

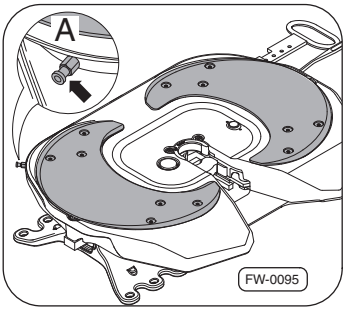


Fig. 21 · Lubricating point on the lock SK-S 36.20 W/SK-S 36.20 DW

[1] NLGI class 2 with MoS2 or graphite additives

8.7 Play adjustment

The lock of a fifth wheel undergoes wear, dependent on driving conditions, operation and maintenance. The SAF-HOLLAND fifth wheel coupling types described here are equipped with a play adjustment for the lock.

Danger!

Risk of serious traffic accidents due to the loss of traffic safety and operational safety, which may lead to serious or fatal injuries!

- Incorrect play adjustment may lead to a malfunction of the fifth wheel coupling.
- Do NOT use fifth wheels that do not operate!
- In the event of a MALFUNCTION, check the play adjustment or contact SAF HOLLAND.
- The play adjustment only offsets wear to the lock parts. Wear to the fifth wheel kingpin is not offset.
- In the event of a worn out lock adjustment, the wear ring Page 40 and the coupler jaw Page 41 must be replaced.
- Check locking function Page 24.

1. For decoupled semi-trailers, unscrew the two screws from the adjustment part Fig. 22 of the release handle.
2. Place the adjustment part around a bore –arrow– and screw tight Page 36. The placement of the adjustment piece around a bore gives an adjustment of 0.5 mm in locking.

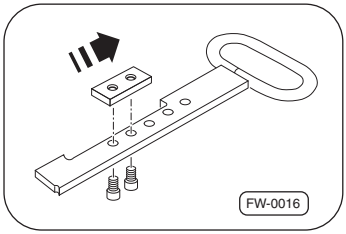


Fig. 22 · Adjustment pin on the handle

Danger!

Risk of serious traffic accidents due to the loss of traffic safety and operational safety, which may lead to serious or fatal injuries!

- The function of the locking mechanism must be tested using a semi-trailer that does not have forced steering, using a new kingpin.
- There must be at least 0.5 mm play between the locking mechanism of the fifth wheel and the kingpin.

3. Carry out coupling Page 19.
4. If the lock does not quite close or the adjustment part does not lie totally on the edge of the plate, the adjustment part must be put back by one hole. If increased play is still present after adjustment, then the lock adjustment is worn out and the wear ring Page 40 and coupler jaw Page 41 must be replaced.
5. Carry out lock check Page 24.

9 Repair

9.1 General repair instructions

Danger!

Risk of serious traffic accidents due to the loss of traffic safety and operational safety, which may lead to serious or fatal injuries!

- Repair work must only be carried out by authorised specialist workshops and by staff with the appropriate training.
- All components which are not in a serviceable condition must be replaced.
- Do not use any damaged tools. SAF-HOLLAND recommends using the tools described in the chapter "Tool List" Page 35, which correspond to the legally valid standards and regulations.

Danger!

- Do not use any pneumatic impact screwdrivers to fit screws and nuts.
- Only use screws and safety elements once.
- Do not weld to the parts of the fifth wheel.
- Perform a function check of the fifth wheel after every repair.
- The fifth wheel will be mounted on a mounting plate for DIN mounting. We recommend the use of our mounting plates and the accompanying fastening sets.
- The design of the mounting plate is dependent on the frame width of the vehicle and the required total installation height.
- The fifth wheel must be fastened with at least 8 screws M16, quality 8.8 to the mounting plate.
- The specifications for tightening torques must strictly be observed Page 36.

9.2 Tool list

Tools required for the maintenance positions

	Quantity	Bearing	Lock	Wear ring	Lube plates
Torque key	1	X	X	X	X
Insert hexagon socket 7	1	-	-	X	-
Insert hexagon socket 17	1	X	-	-	-
Insert WAF 30	1	-	-	-	-
Hammer	1	-	X	X	-
Combination pliers	1	-	X	-	-
Drift Ø 30 mm	1	-	X	-	-
Middle size screwdriver	1	X	-	X	-
Ring/open-end spanner WAF 17	1	X	-	-	-
Round-nose pliers for outer safety ring Ø 2.3 mm	1	-	X	-	-

	Quantity	Bearing	Lock	Wear ring	Lube plates
Spring hook	1	-	X	-	-
Insert nut torx T 50	1	-	-	-	X

9.3 Torques

Danger!

Risk of accidents due to loose screw connections.

- Threads must not be oiled or greased.
- Tighten screws with the torque wrench.
- Only use original screws with screw safeguard (micro-encapsulated).
- Only use screws once.

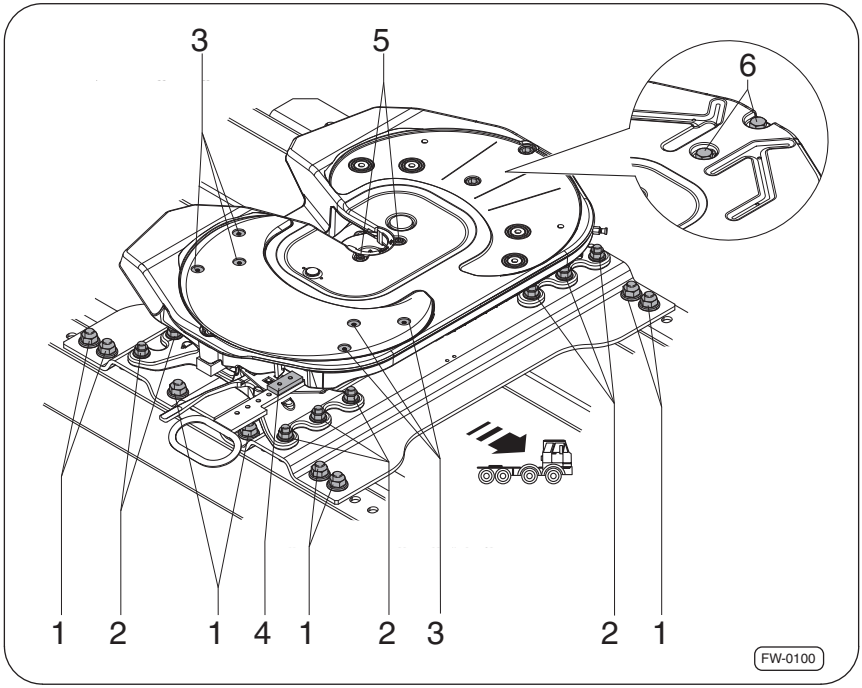


Fig. 23 · Fifth wheel tightening torques

Fig. 23, Item	Mounting location	Screw connection	Tightening torque (Nm)	Tool insert (WAF)
–1–	Mounting plates on auxiliary bracket [2)]	Outer or inner hexagon screws (8x) min. M20x1,5 min. 8.8	350	WAF 30
-2–	Fifth wheel on mounting plate	Outer hexagon screws (8x) min. M16x1,5 min. 8.8	190	WAF 24
-3–	Lube plates only for SK-S 36.20 W/SK-S 36.20 DW & SK-S 36.20 NoLube/SK-S 36.20 D NoLube	Collar screw, special (12x)	10	Torx 50
-4–	Handle	Cylinder bolts with hexagon socket (2x)	25	Inner hexagon 6
-5–	Wear ring	Cylinder bolts with hexagon socket (2x)	46	Inner hexagon 7
-6–	Fifth wheel on bracket	SK-S 36.20/SK-S 36.20 D: Outer hexagon screws (4x)	400	WAF 30
		SK-S 36.20 W/SK-S 36.20 DW & SK-S 36.20 NoLube/SK-S 36.20 D NoLube: Inner hexagon screws (4x)		Inner hexagon 17

[2)] the specifications from the respective trailer manufacturer must be observed

9.4 Replace the fifth wheel plate

Removal of the fifth wheel plate

Note:

Remove the lube plates only for fifth wheel plate SK-S 36.20 W/SK-S 36.20 DW & SK-S 36.20 NoLube/SK-S 36.20 D NoLube.

1. Remove the lube plates Page 45.

Note:

- For the removal of the fifth wheel plate SK-S 36.20 W/SK-S 36.20 DW & SK-S 36.20 NoLube/SK-S 36.20 D NoLube, use tool insert "inner hexagon 17".
- For the removal of the fifth wheel plate SK-S 36.20/SK-S 36.20 D, use tool insert WAF 30".

2. Loosen the screws (4x) Fig. 24, –arrow– from the bracket fastening with a suitable tool and dispose of them.

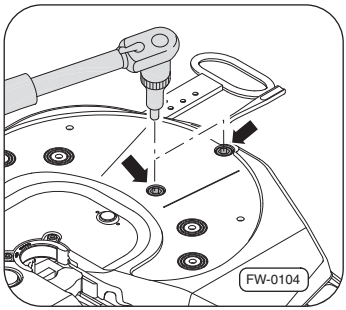


Fig. 24 · Removal of the fifth wheel plate from the bracket fastening

3. Pull sideways on both sides of the clamp Fig. 25, –arrow 1–. The rubber damper remains in the bracket (bearing block).
4. With a lifting device, place the fifth wheel plate on a suitable workbench. The mounting brackets remain on the tractor.

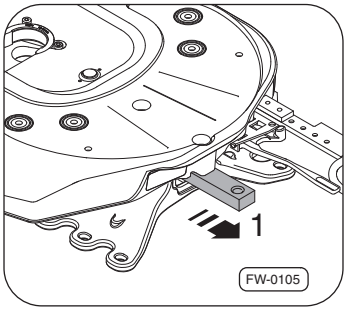


Fig. 25 · Pull the clamps out.

Mounting of the fifth wheel plate

Careful!

When setting the fifth wheel plate down on the mounting bracket, ensure that it fits correctly!

Note:

- In order to help with mounting, a dot of glue or silicon can be applied to the bearing inserts on the underside of the bearing shell Fig. 43
- Dry clean the mounting bracket (bearing block) without using a cleaning agent Fig. 41.

1. With a lifting device, lie the fifth wheel plate on the mounting brackets fitted on the tractor (observe direction of travel).
2. Fit tensioning bars Fig. 26, –arrow 1– in sideways on both sides, at the same time ensuring the correct position of the chamfer on the thread –arrow 2– (chamfer points upwards).

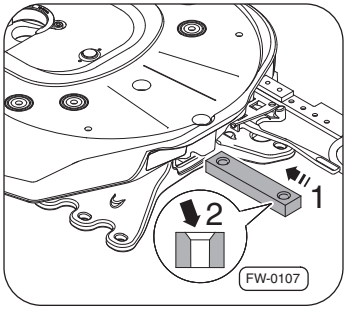


Fig. 26 · Insert clamps

Note:

- For the mounting of the fifth wheel plate SK-S 36.20 W/SK-S 36.20 DW & SK-S 36.20 NoLube/SK-S 36.20 D NoLube on the bearing blocks (brackets), use tool insert "inner hexagon 17".
- Only fit lube plates for fifth wheel plate SK-S 36.20 W/SK-S 36.20 DW & SK-S 36.20 NoLube/SK-S 36.20 D NoLube.
- For mounting the fifth wheel plate SK-S 36.20/SK-S 36.20 D onto the bearing blocks (brackets), use tool insert "inner hexagon WAF 30".

3. Screw new screws (4x) Fig. 27, –arrow– into the bearing blocks (brackets) and tighten to the prescribed torque Page 36.
4. Fit the lube plates Page 45.
5. Pull the release handle out in order to bring the lock into the open position Page 18.

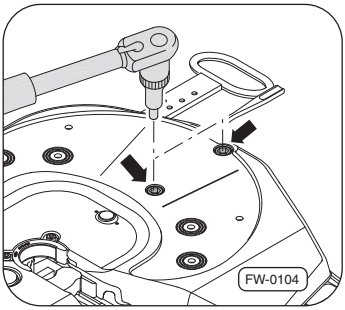


Fig. 27 · Mounting the fifth wheel plate onto the (bearing blocks) brackets.

9.5 Replace wear ring

Dismantling the wear ring

1. Unscrew and dispose of the screws (2x) Fig. 28, –pos. 1–.
2. Remove the wear ring –pos. 2– by turning it by 90°.
3. Clean the wear ring location on the fifth wheel plate (attachment and detachment areas), (e.g. with alcohol).

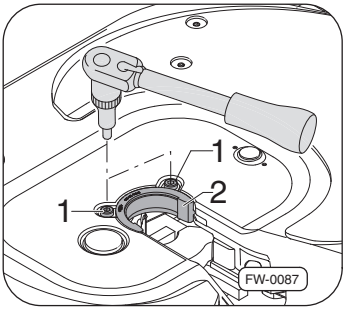


Fig. 28 · Replace wear ring

Mounting the wear ring

Danger!

Risk of serious traffic accidents due to the loss of traffic safety and operational safety, which may lead to serious or fatal injuries!

- Reverse installation is not permitted!
- The top edge of the wear ring must be flush with the fifth wheel plate!

1. Bring the wear ring into the correct position for installation. For mounting, the marking on the wear ring (SAF HOLLAND logo and part number) and the wide recess must point upwards.
2. Insert the new wear ring on the formed points with long-lasting high-pressure grease [1] and turn by 90°.
3. Fit new wear ring with new screws (2x) by hand.
4. Tighten the screws to the prescribed tightening torque Page 36.

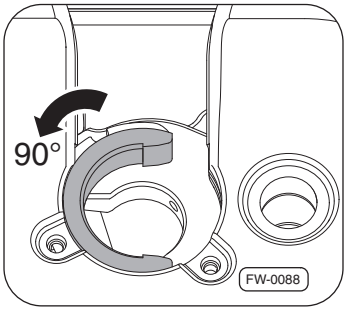


Fig. 29 · Mounting the wear ring

9.6 Replace lock part

Dismantling the lock jaw

Danger!

When removing the kingpins, protective gloves must be worn.

[1] NLGI class 2 with MoS2 or graphite additives

Careful!

Cleaning materials can contain metal and paint. The manufacturer's instructions must be observed.

Note:

The catch must **always** be replaced together with the coupler jaw.

1. Dismount the fifth wheel plate Page 38 and place it flat-side down on a suitable workbench with two min. 10 cm high supports. The mounting brackets remain on the tractor.
2. Unhook the spring from the coupler jaw Fig. 30, –arrow 1–.
3. Bring the lock –arrow 2– into the closed position and likewise unhook the spring from the release handle –arrow 3–.

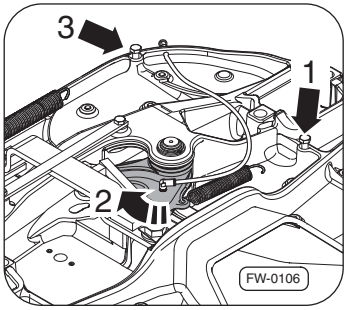


Fig. 30 · Unhook the spring

4. Remove circlip Fig. 31, –pos. 1– and support washer –pos. 2–.
5. Remove the lubrication line SK-S 36.20 W/SK-S 36.20 DW –pos. 3– from the coupler jaw.

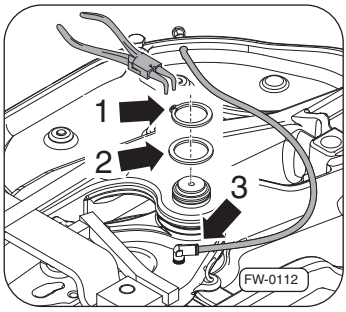


Fig. 31 · Remove bolt retainer

6. Remove bolt Fig. 32, –arrow– from coupler jaw by punching through Page 35.

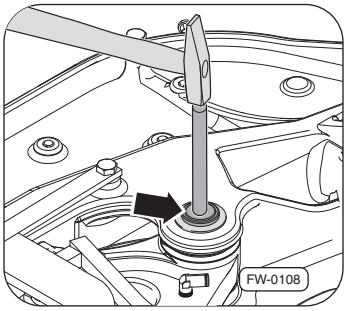


Fig. 32 · Dismantling the bolt

7. Remove coupler jaw Fig. 33, –arrow–.
8. Clean the bolt fitting on the fifth wheel plate (e.g. with alcohol) and apply long-lasting high pressure-grease .
9. Remove catch.

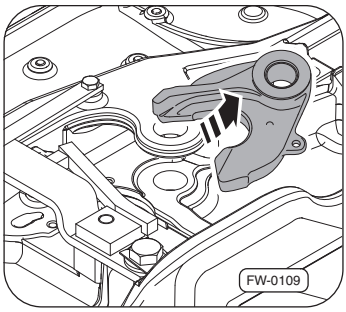


Fig. 33 · Dismantle the lock part

Mounting lock part

Danger!

When inserting the kingpins, wear protective gloves!

Careful!

Observe correct installation position of the tension spring on the coupler jaw, Fig. 36 - during driving, the eyelet opening must face downwards–direction of arrow–!

1. Check the locking bar Fig. 34, –arrow 1– for visible damage, replace if necessary.
2. Insert the new catch.
3. Insert and Fit the new coupler jaw Fig. 34.

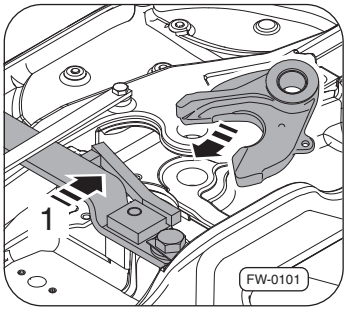


Fig. 34 · Insert lock part

Note:

For SK-S 36.20 W/SK-S 36.20 DW attach the lubrication line–pos. 3– to the coupler jaw.

4. Insert the bolt Fig. 32, with support washer Fig. 35, –pos. 2– and secure circlip –pos. 1–.
5. Hook the spring Fig. 36, –arrow 2– on to the coupler jaw and release lever –arrow 1–.

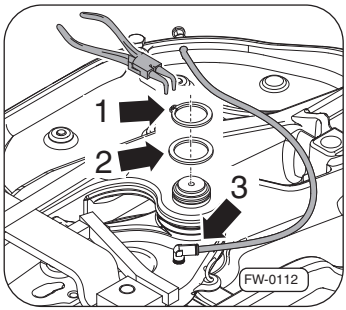


Fig. 35 · Secure bolt

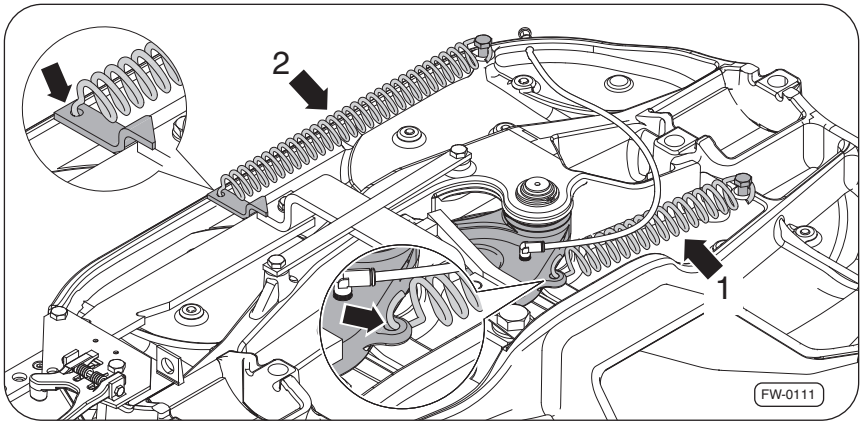


Fig. 36 · Hook spring on

6. Fit the fifth wheel plate Page 39.
7. Open the fifth wheel lock Page 18.

9.7 Replace lube plates (SK-S 36.20 W; SK-S 36.20 NoLube & SK-S 36.20 DW)

Dismantling the lube plates

1. Unscrew and dispose of the screws (12x) Fig. 37, –pos. 2–.
2. Remove the lube plates –pos. 1–.
3. Clean attachment areas and threads on the fifth wheel plate (e.g. with alcohol).

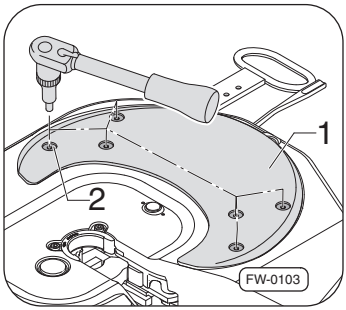


Fig. 37 · Remove the lube plate screws

Mounting lube plates

1. Insert the lube plates Fig. 38, –pos. 1– into the recess in the fifth wheel plate.
2. Insert the new screws (12x) –pos. 2– and tighten to the prescribed torque Page 36.
3. Lubricate the lube plates with high-pressure grease [1].

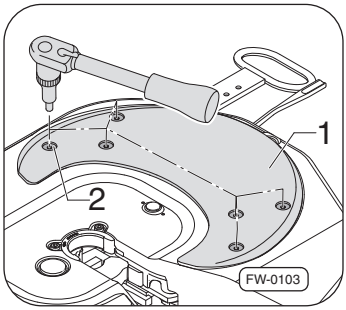


Fig. 38 · Fit lube plates

[1] NLGI class 2 with MoS2 or graphite additives

9.8 Replace the bearing insert/rubber damper

Removal of the bearing inserts/rubber dampers

Note:

Rubber dampers and bearing inserts must always be replaced in pairs.

1. Remove the fifth wheel plate Page 38 and then place it flat-side down on a suitable workbench. The mounting brackets remain on the tractor.
2. Lever out the bearing inserts Fig. 39, –arrow 1– using a screwdriver.

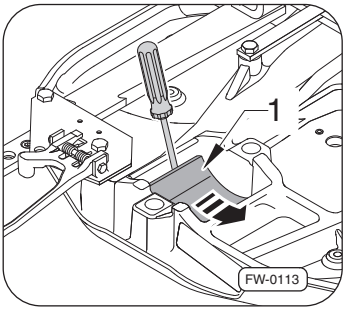


Fig. 39 · Replace bearing

3. Check and press out –arrow 1– the rubber dampers Fig. 40 to the side from both mounting brackets (bearing blocks).

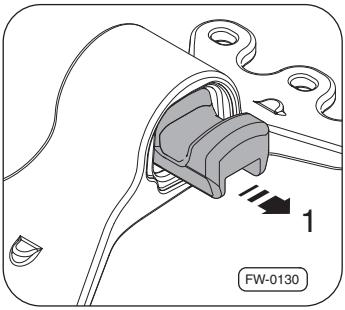


Fig. 40 · Remove rubber dampers

4. Dry clean the mounting bracket (bearing block) Fig. 41–arrow 1– (without cleaning agent).

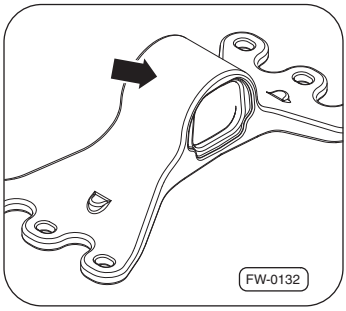


Fig. 41 · Clean mounting bracket (bearing block)

Mounting of the bearing inserts/rubber dampers

Careful!

When setting the fifth wheel plate down on the mounting bracket, ensure that it fits correctly!

Note:

- Do not lubricate or apply grease to the bearing inserts or pockets.
- In order to help with mounting, a dot of glue or silicon can be applied to the bearing inserts on the underside of the bearing shell.

1. Press new rubber dampers Fig. 42 sideways into the openings of the mounting brackets (bearing blocks) –Pfeil 1–, whilst at the same time ensuring the correct position.
2. Apply a dot of glue or silicon to the new bearing inserts Fig. 43 on the underside of the bearing shell –arrow 2–.

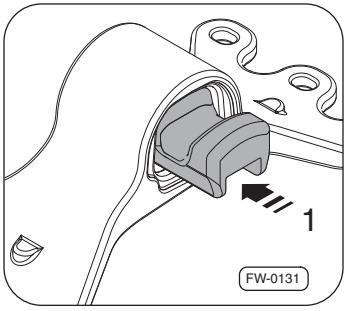


Fig. 42 · Insert the rubber dampers

3. Press the new bearing inserts –arrow 1– into the bearing pockets by hand.
4. Fit the fifth wheel plate Page 39.

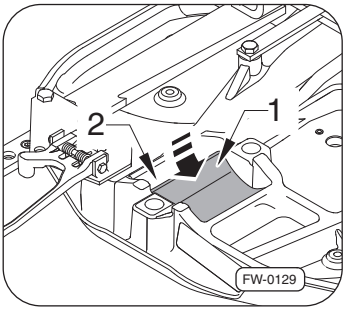


Fig. 43 · Insert bearing inserts

Notes

Emergency hotline +49 6095 301-247

Customer Service +49 6095 301-602

Fax +49 6095 301-259

Spare Parts +49 6095 301-301

service@safholland.de

www.safholland.com

XL-FW11724UM-en-DE · 02.2015 · Errors and changes excluded · © SAF–HOLLAND