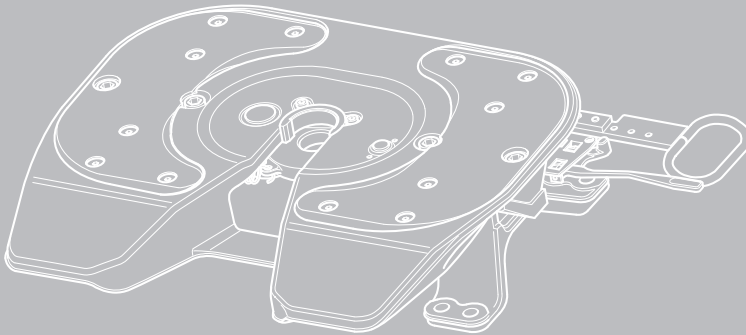




SAF-HOLLAND Group

## Owner's Manual

Fifth Wheel FW3214-W  
Assembly, Operation, Maintenance, Repair



XL-FW11694UM-en-DE



## 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

This operating manual is classified as in accordance with the law on unfair competition.

All rights reserved by

SAF-HOLLAND GmbH

Hauptstr. 26

63856 Bessenbach, Germany

This operating manual contains text and drawings that without the express permission of the manufacturer cannot be either fully or partly

- duplicated,
- distributed or
- in any other way disclosed.

Any breach or infringement will result in liability for damages.

## Table of Contents

<b>1 Product data</b>	<b>5</b>
1.1 Identification of the model	5
1.2 Position of the type plate	5
1.3 Identification in case of missing type plate	5
1.4 Specification	6
<b>2 Ordering spare parts</b>	<b>6</b>
<b>3 General information</b>	<b>7</b>
3.1 Liability	7
3.2 Warranty and general terms and conditions of business	7
3.3 Environmental protection	7
<b>4 Safety</b>	<b>7</b>
4.1 Target group	7
4.2 Proper use	8
4.3 Improper use	8
4.4 Safety instructions and symbols used	9
4.5 Marking used for sections of text	10
4.6 General safety instructions	10
<b>5 Installation</b>	<b>11</b>
5.1 General instructions for installation	11
5.2 D Value / fifth wheel vertical load	11
5.3 Mounting of the fifth wheel	13
5.4 Functional test	14
<b>6 Implementation</b>	<b>14</b>
<b>7 Operation</b>	<b>15</b>
7.1 Open the fifth wheel lock	15
7.2 Coupling the trailer	16
7.3 Decoupling the trailer	18
<b>8 Testing</b>	<b>18</b>
8.1 General test instructions	18
8.2 Before each journey	19
8.3 Test schedule	20
8.4 Wear check	21
8.5 Lubricate	23
8.6 Play adjustment	24

<b>9 Repair.....</b>	<b>26</b>
9.1 General repair instructions .....	26
9.2 Tool list .....	26
9.3 Torque .....	27
9.4 Replace fifth wheel plate .....	28
9.5 Replace wear ring .....	29
9.6 Replace lock jaw .....	30
9.7 Replace bearing .....	31
9.8 Replace lube plates .....	33

## 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 -.

The "D-value" -arrow 2- and the "fifth wheel vertical load" in tons -arrow 3- are also indicated on the type plate.

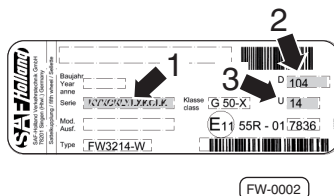


Fig. 1 · Type plate

### 1.2 Position of the type plate

The type plate is located on the inside of the throat of the fifth wheel.

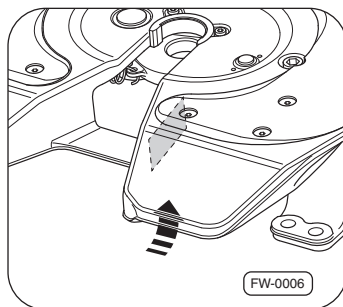


Fig. 2 · Position of the type plate fifth wheel FW3214-W

### 1.3 Identification in case of missing type plate

The serial no. of the fifth wheel is engraved on the edge of the fifth wheel top plate.

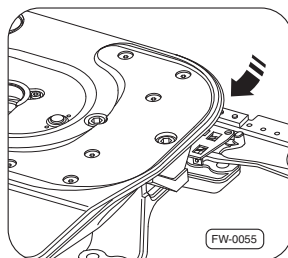


Fig. 3 · Position of the serial no. on the fifth wheel FW3214-W

## 1.4 Specification

### EU Declaration of Conformity

The manufacturer **SAF-HOLLAND GmbH** hereby declares that the **fifth wheel typeFW3214-W** described below fulfills the health and safety requirements of the following EU guidelines: **ECE R55**

#### Harmonised standards used

ECE R55	Mechanical connections set-up of the vehicle
70/156/EC	Approval type for vehicles and their semi-trailers
ISO 1726	Vehicle compatibility

#### National standards and technical specifications used

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 pay attention to the assembly groups of the respective product.

Reproduction 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 available for technical support of SAF-HOLLAND products and the supply of parts (see back page or visit us on the internet at [www.safholland.com](http://www.safholland.com)).

For further instructions on identifying spare parts refer to the "After-market" section of our homepage [www.safholland.com](http://www.safholland.com).

Updates are published as necessary on the internet at **[www.safholland.com](http://www.safholland.com)**.

## 3 General information

### 3.1 Liability

The "General Terms and Conditions" of SAF-HOLLAND GmbH apply. SAF-HOLLAND does not recognise any liability claims for personal injury or material damage, which are caused by one or more of the following causes:

- non-designated use of the product Page 8,
- Failure to observe the owner's manual and the safety instructions included within this,
- arbitrary changes or modifications to the product,
- inadequate inspection of parts, which are subject to wear Page 18,
- improper maintenance / repair work or maintenance / repair work that is not performed on time Page 18,
- the use of 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](http://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, adhere to the disposal instructions for the respective consumables and the valid national and regional regulations.

## 4 Safety

### 4.1 Target group

The chapter on **operation** and **inspection** in the owner's manual is restricted exclusively to use by the owner and personnel authorised and trained by the owner.

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

The chapter on **installation** and **implementation** is restricted exclusively to use by the original equipment manufacturer (OEM) and personnel authorised and trained by them.

The chapter on **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 FW3214-W mechanically connects the 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 unexpected opening 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 Western Europe.

Proper use also includes:

- Adherence to the operating manual and implementation of the working steps stipulated in the operating manual.
- Adherence to the performance limits (see type plate) of the product Fig. 1.
- Adherence to all inspection and care instructions Page 20,
- the use of the auxiliary and operating materials listed Page 23 as well as their environmentally-friendly disposal Page 7.

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

### 4.3 Improper use

- Use of fifth wheel kingpins, that do not correspond to the standard construction (ISO 337 or DIN 74080),
- use with non-standard fifth wheel kingpins (ISO 337 or DIN 74080) e.g. bent, incorrect size or dimensions, mounted on bent trailer bolster plates or upper coupler lube disks/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 rated capacity or D-value,
- OFF ROAD applications,
- use on stationary or sliding mount compensators,
- when the truck is not parked in a straight line with the trailer for tipping operations,
- applications other than those recommended.

**Note:**

SAF-HOLLAND defines the term "OFF ROAD" as unpaved, uneven or unflattened terrain on which the articulated vehicle operates. 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 a possible damage to the product.**

**Note:**

Marking for special user tips and other particularly useful and important information for efficient 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

**In order to maintain the operational and traffic safety of your SAF-HOLLAND fifth wheel, it is imperative that the following safety instructions are observed:**



#### **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 truck must be parked in a straight line with the trailer during tipping operations.
- No modifications to the fifth wheel system may be made – This also applies to welding work - Invalidation of the design approval.

All planned changes must be approved in writing by SAF-HOLLAND 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 bolts, nuts and / or washers, the paint thickness must not exceed 120  $\mu$ , 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.



#### **Note:**

- National rules of approval apply for the installation of the fifth wheel.
- In Germany the installation of fifth wheels requires approval (STVZO §19 - 21).

### 5.2 D Value / fifth wheel vertical load



#### **Danger!**

**Risk of serious accidents!**

- For safe operation the calculated D-value must not exceed the specified D-value of the fifth wheel.

**Danger!**

- In order to achieve the maximum D-value rating, the installation must be performed according to the SAF-HOLLAND installation instructions.

All fifth wheels and king pins, tested and approved under EC type approval regulations are given a D-value Fig. 1 -arrow 2-rating as an indication of the maximum horizontal force permitted between the towing vehicle and trailer. In order to confirm the suitability of a particular fifth wheel or king pin for a given tractor/trailer combination it is necessary to carry out a D-value calculation.

**Calculation according to DIN 74081**

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

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

FW-0004

**Fig. 4** · D-value calculation formula

The permissible capacity limits for products from SAF-HOLLAND GmbH can be taken from the valid EC type of approvals and our homepage [www.safholland.com](http://www.safholland.com). They apply to the operation on sealed, tarred roads and road conditions in customary in Western Europe. In the case of deviation from the installation requirements or OFF ROAD use, please consult customer services in advance.

**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 (Permissible fifth wheel vertical load)

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

$$D - \text{Wert} = 82,55 \text{ [kN]}$$

FW-0005

**Fig. 5**

## 5.3 Mounting of the fifth wheel

### Mounting overview

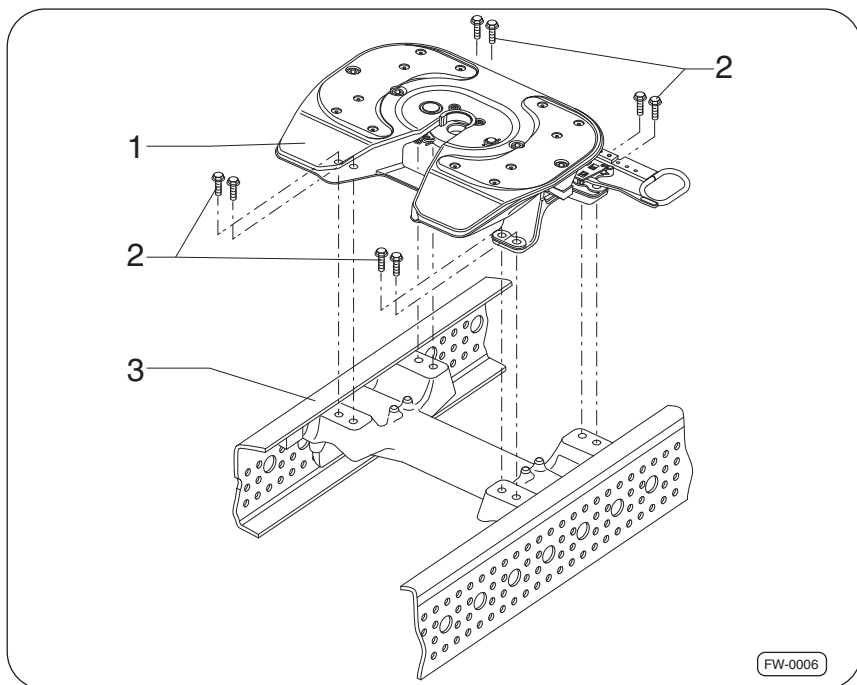


Fig. 6 · Mounting overview fifth wheel FW3214-W

Item	Designation	Item	Designation
-1-	Fifth wheel	-3-	Vehicle frame
-2-	Mounting bolts (according to the vehicle manufacturer's guidelines)		

### Mounting requirements

- For the mounting of the fifth wheel FW3214-W the special mounting kit from Daimler should 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 performed according to the vehicle manufacturer's guidelines.

## 5.4 Functional test



### **Danger!**

#### **Risk of serious accidents!**

- 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. Should weaker bolster plates be used, the bolster plate must be reinforced and meet the requirements of ISO 1726 parts 1-3 and ISO 3842.
- Test the function of the system:
    - after finishing inspection or repair work
    - before being taken into service.
1. Check that bolt 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 accidents!**

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



### Careful!

#### Risk of damage to the fifth wheel!

The condition of the bolster plate significantly influences the service life of the fifth wheel lube plates.

1. Check the fifth wheel for damage.
2. Check the fifth wheel is correctly mounted Page 13.
3. Apply grease to the lube plates Page 24.
4. Lubricate the lock Page 23.
5. Thoroughly clean the bolster plates of the semi-trailer and check for damage.
6. 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.
7. Apply a thin layer of grease to the bolster plate of the semi-trailer according to the manufacturer's instructions, in order to prevent corrosion.
8. Lubricate the kingpin according to the manufacturer's instructions.

## 7 Operation

### 7.1 Open the fifth wheel lock

1. Press the safety lever down all the way with the thumb –arrow 1– (single-handed operation).
2. Pull the handle sideways all the way opposite to the direction of travel –arrow 2–.

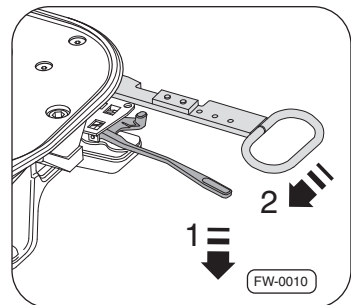


Fig. 9 · Open the handle

3. Pull the handle all the way out –arrow 3–.
4. Pull the handle opposite to the direction of travel –arrow 4– and hang it on the plate cam.

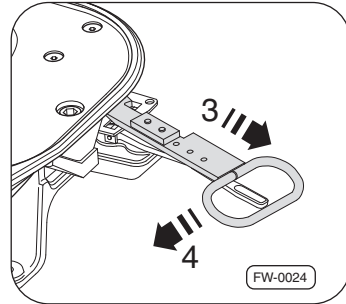


Fig. 10 · Open the handle

### 7.2 Coupling the trailer



#### **Danger!**

#### **Risk of serious accidents!**

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

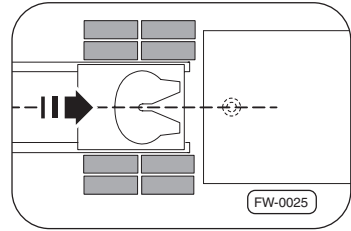
- During hitching no person or obstacle may be located between the tractor and semi-trailer.
- The semi-trailer must be secured and supported according to the vehicle manufacturer's instructions as well as the respective legal regulations.
- Following the hitching process the visual inspection of the 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.

The fifth wheel is equipped with a safety latch, which automatically falls into the closed position during the coupling process. The handle can then no longer be moved left or right. If the latch does not click and the cam is not in the correct position Fig. 12, the coupling process must be repeated. Support in monitoring the fifth wheel is offered by the RECOSS safety sensor system - available as an add-on kit under SAF-HOLLAND order number 662 129 417 The system monitors the lock and connection of the fifth wheel with sensors.

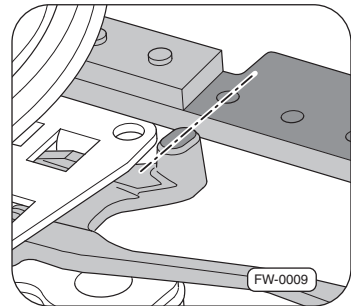
1. Lock and support the semi-trailer according to the manufacturer's instructions.
2. Position the tractor in front of the semi-trailer.



3. Check the bolster plate and kingpin mounting for sufficient D-value Page 11.
4. Check whether the fifth wheel is ready-to-couple and the safety latch is lowered beneath the handle. If necessary open the fifth wheel lock Page 15.
5. Check and if necessary correct the sideways alignment of the tractor (fifth wheel to the kingpin).
6. Adjust the air suspension system on the tractor so that the fifth wheel lies underneath the bolster plate.
7. With the tractor under the trailer, drive until the fifth wheel is approx. 50 cm in front of the kingpin.
8. Lift the fifth wheel with help from the air suspension system, until the trailer is slightly raised.
9. With the tractor, drive **slowly and in a straight line** under the semi-trailer. The lock will close automatically.
10. Check whether the safety latch is in closed position - the cam lies on the handle. If the safety latch is not in closed position, the coupling process must be repeated.
11. Visual inspection of the complete locking mechanism and safety latch.
12. Perform tug test: Apply the semi-trailer brakes attempt to pull the semi-trailer forwards with the tractor - the semi-trailer must not disconnect.
13. Complete the coupling process according to the vehicle manufacturer's instructions.



**Fig. 11** · Align tractor and semi-trailer



**Fig. 12** · Safety latch in closed position - the cam is on

## 7.3 Decoupling the trailer



### Danger!

#### Risk of serious accidents!

- 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 process 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 manufacturer's instructions.
3. Disconnect the supply lines and connecting cables between the tractor and semi-trailer.
4. Open the fifth wheel with the handle Page 15.
5. With the tractor, reverse **slowly and in a straight line** out from under the semi-trailer. The fifth wheel is automatically ready-to-couple again (handle in open position).
6. Finish the decoupling process according to the vehicle manufacturer's instructions.

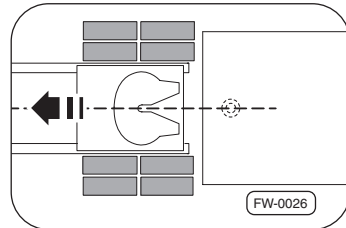


Fig. 13 · Decoupling the trailer

## 8 Testing

### 8.1 General test instructions



### Danger!

#### Risk of serious accidents!

- Repair work must only be carried out by authorised specialist workshops and by staff with the appropriate training.
- All components which are not in perfect condition must be replaced.





### Danger!

- The general safety inspection must be performed as per legal regulations.
- It is the duty of the driver to perform daily inspection of the articulated vehicle for traffic safety before starting the journey Page 19.

In order to maintain operational and traffic safety, SAF-HOLLAND fifth wheels require continuous maintenance, inspection and testing so that natural wear and faults can be detected in good time.

SAF-HOLLAND recommends to perform tests and test tasks described in the "Testing" chapter. In case of repairs always follow the SAF-HOLLAND repair instructions and directions.

## 8.2 Before each journey



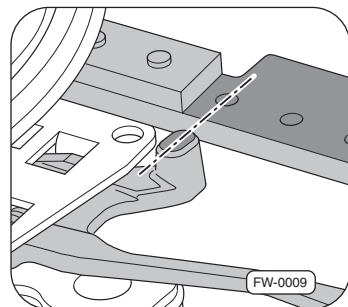
### Danger!

#### Risk of serious accidents!

The maximum permissible D-value and the fifth wheel vertical load must not be exceeded.

The load must be secured and positioned with an even distribution.

1. Check whether the safety latch is in closed position - the cam is next to the handle.
2. Perform a general visual inspection of the fifth wheel to make sure it is securely locked and to check for wear, corrosion and damage.
3. Perform tug test: Apply the semi-trailer brakes, attempt to pull the semi-trailer forwards with the tractor - the semi-trailer must not disconnect.



**Fig. 14** · Safety latch in closed position - the cam is on

## 8.3 Test schedule



### Danger!

#### Risk of serious accidents!

- Missing or damaged parts should be replaced immediately by an authorised workshop and by appropriately trained personnel.
- In the case of vehicles with extreme operating conditions, the inspection intervals must be reduced.

### Inspection intervals

	Every 3 months 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.				
<b>Visual inspection</b>				
Lube plates	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
<b>Functional test</b>				
Check that bolts are tightly fastened. Prior to initial use.			X	
Check the locking function of the fifth wheel by closing and opening it. Prior to initial use.			X	
Check for play in the fifth wheel lock or for wear of the wear ring with the limit gauge and adjust if necessary Page 22.			X	
Check the position and tight fit of the lube plates Page 21.			X	

	Every 3 months 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
Check the wear of the bearing inserts and rubber dampers Page 23.				X
<b>Lubricate</b>				
Lubricate the lock parts Page 23. Prior to initial use in coupled position.	X			
Dampen the lube plates Page 24. Prior to initial use in decoupled position.		X		
<b>Care</b>				
Clean lube plates.		X <sup>1)</sup>		

## 8.4 Wear check



### Danger!

#### Risk of serious accidents!

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

### Lube plates



### Danger!

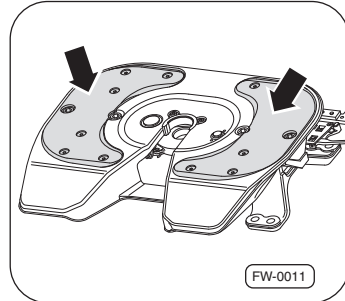
#### Risk of serious accidents!

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

<sup>1)</sup> dampen lube plates after each clean Page 24

- Both lube plates must be replaced immediately, if
  - there are grooves in the inner area of the fifth wheel plates,
  - the lube plates have worn down to the mounting bolts

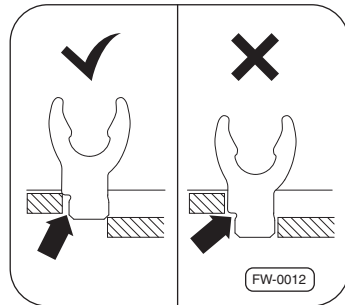
Wear to the side and back protective edges is normal and has no negative influence on the function and service life of the fifth wheel.



**Fig. 15** · Check the lube plates for wear

### Fifth wheel lock / Wear ring

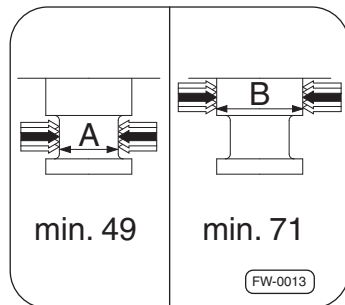
- With the two position limit gauge<sup>2)</sup> check the wear to the fifth wheel and wear ring.
  - When the applied SAF-HOLLAND limit gauge enters the lock, the play of the fifth wheel must be adjusted Page 24.



**Fig. 16** · Wear checks of the fifth wheel lock and wear ring

### Kingpin

- Measure both diameters with the two position limit gauge<sup>2)</sup> lengthwise and diagonally.
  - 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. 17** · Check wear of the kingpin

<sup>2)</sup> SAF-HOLLAND order number 659 920 032

## Bearing



### **Danger!**

#### **Risk of serious accidents!**

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 replaced Page 31, 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,
  - noises occur between the fifth wheel plate and the bearing during driving operation or when tilting the fifth wheel plate (possible metallic contact between mounting bracket and bearing pocket),
  - stiffness of the tilting movement of the fifth wheel plate occurs on the vehicle transverse axis.



### **Note:**

rubbing or squeaking noises are detected in the bearings, the mounting brackets should be cleaned and residues of paint or anything similar should be removed from the contact area to the bearing on the mounting bracket.

## 8.5 Lubricate



### **Careful!**

#### **Damage to lock and plate!**

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

### Lock

- Lubricate the lock via the lubricating nipple.

To lubricate use long-lasting high pressure grease, use NLGI class 2 with MoS<sub>2</sub> or graphite additives, e.g. MOTOREX MOLY 218, SHELL RETINAX HDX2, Renolit LZR 2 H, Renolit FG 150. When using other lubricants the lubricating intervals should be adapted accordingly.

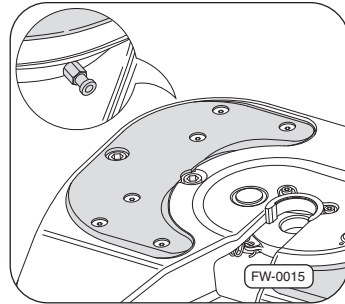


Fig. 18 · Lock lubricating points

### Lube plates

- Moisten the lube plates.

Moisten with long-lasting high pressure grease, NLGI class 2 with MoS<sub>2</sub> or graphite additives, e.g. MOTOREX MOLY 218, SHELL RETINAX HDX2, Renolit LZR 2 H, Renolit FG 150. When using other lubricants the lubricating intervals should be adapted accordingly.

## 8.6 Play adjustment

The lock of a fifth wheel undergoes wear, dependent on driving conditions, operation and maintenance. The SAF-HOLLAND fifth wheel FW3214-W is equipped with a play adjustment for the lock.



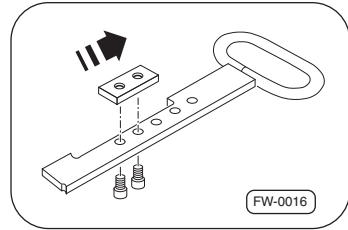
### Danger!

#### Risk of serious accidents!

- The play adjustment only offsets wear to the lock parts and does not compensate wear to the kingpin.
- When the lock adjustment is worn out, the wear ring and the lock jaw part must be replaced Page 29, Page 30.
- Check the function of the locking mechanism.



1. For decoupled semi-trailers, unscrew the two Allen bolts (WAF 6) of the handle at the stop of the handle (adjustment pin).
2. Move the adjustment plate by one hole in the direction indicated and tighten securely - torque 25 Nm. One hole position correlates to an adjustment of 0.5 mm.



**Fig. 19** · Adjustment pin on the handle



### **Danger!**

#### **Risk of serious accidents!**

The function of the locking mechanism must be tested using a semi-trailer that does not have forced steering, using a new kingpin.

3. Coupling the trailer Page 16.



### **Danger!**

#### **Risk of serious accidents!**

There must be at least 0.5 mm play between the locking mechanism of the fifth wheel and the kingpin.

4. Should the lock not close completely or the adjustment plate not completely contact the edge of the fifth wheel top plate, the adjustment pin should be set back by one hole position. If after adjustment the play is excessive, the lock adjustment mechanism is worn out and the wear ring and the lock jaw must be replaced Page 29, Page 30.
5. Check function of locking mechanism Page 16.

## 9 Repair

### 9.1 General repair instructions



#### Danger!

#### Risk of serious accidents!

- Repair work must only be carried out by authorised specialist workshops and by staff with the appropriate training.
- All components which are not in perfect condition must be replaced.
- Do not use any damaged tools. SAF-HOLLAND recommends the use of the tools described in the “tool list” chapter, which correspond to the legally valid standards and regulations.
- Do not use any pneumatic impact screwdrivers to tighten bolts and nuts.
- Only use bolts and fasteners once.
- Do not weld any parts of the fifth wheel.
- Perform a function check of the fifth wheel after every repair.

### 9.2 Tool list

#### Tools required for the maintenance positions

	Quantity	Bearing	Lock	Wear ring	Lube plates
Torque key	1	X	-	X	X
Insert hexagon socket WAF 7	1	-	-	X	-
Insert hexagon socket WAF 17	1	X	-	-	-
Hammer	1	-	X	-	-
Drift Ø 30 mm	1	-	X	-	-
Combination pliers	1	-	X	-	-

	Quantity	Bearing	Lock	Wear ring	Lube plates
Round-nose pliers for outer safety ring $\varnothing$ 2,3 mm	1	-	X	-	-
Spring hook	1	-	X	-	-
Middle size screwdriver	1	X	-	X	-
Insert nut Torx T 50	1	-	-	-	X

### 9.3 Torque



#### Danger!

#### Risk of accidents due to loose screw connections.

- Threads must neither be oiled nor greased.
- Tighten bolts with the specified torque wrench.
- Only use original bolts (with micro-encapsulated thread-locking patch).
- Only use bolts once (due to micro-encapsulated thread-locking patch).

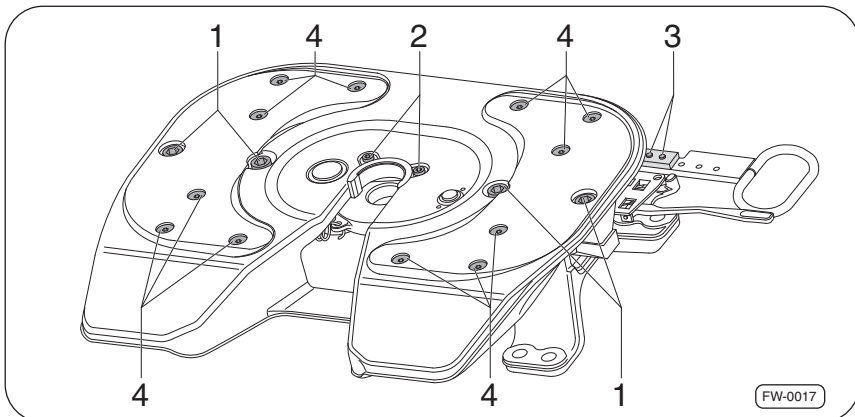


Fig. 20 · Torque FW3214-W

Item	Screw connection	Torque [Nm]	Width across flats (WAF)
-1-	Cylinder bolts with hexagon socket (4x)	430 ± 35	17
-2-	Cylinder bolts with hexagon socket (2x)	46 ± 5	7
-3-	Cylinder bolts with hexagon socket (2x)	25	6
-4-	Cylinder bolts (12x)	10	Torx 45

## 9.4 Replace fifth wheel plate

### Dismantling fifth wheel plate

1. Unscrew and dispose of Fig. 20, -item 1- bolts (4x).
2. Pull out tensioning bars from the side.
3. With a lifting device place the fifth wheel on a suitable workbench. The mounting brackets remain on the tractor.

### Mounting the fifth wheel plate

1. With a lifting device place the fifth wheel plate on the mounting brackets mounted on the tractor (observe direction of travel).
2. Fit tensioning bars in sideways on both sides, at the same time ensuring the correct position of the chamfer on the thread (chamfer points upwards!)
3. Tighten new bolts hand-tight (4x).
4. Tighten bolts with the specified torque Page 27.
5. Pull the handle out, in order to bring the lock into the open position.

## 9.5 Replace wear ring

### Dismantling wear ring

1. Unscrew and dispose of bolts (2x).
2. Loosen wear ring with screwdriver, rotate through 90° and remove.
3. Clean the wear ring location on the fifth wheel plate (attachment and detachment areas), (e.g. with alcohol).

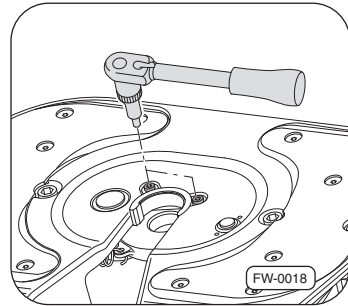


Fig. 21 · Dismantling wear ring

### Mounting wear ring



**Danger!**

**Risk of serious traffic accidents!**

Reverse installation is not permitted.

1. Locate installation position of the wear ring. For mounting the marking on the wear ring (HOLLAND logo and part number) and the wide recess should be pointing upwards.
2. Apply specified grease to the mating surfaces of the wear ring <sup>3)</sup> install and rotate through 90°.
3. Secure new wear ring with new bolts (2x). Tighten bolts hand-tight.
4. Tighten bolts with the specified torque Page 27.

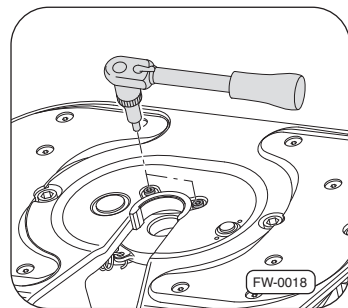


Fig. 22 · Mounting wear ring

<sup>3)</sup> To lubricate use long-lasting high pressure NLGI class 2 with MoS<sub>2</sub> or Graphite consumables, e.g. MOTOREX MOLY 218, SHELL RETINAX HDX2, Renolit LZR 2 H, Renolit FG 150.

## 9.6 Replace lock jaw

### Dismantling lock jaw



#### Note:

- For the dismantling of the tension spring SAF-HOLLAND recommends that gloves are worn.
- Cleaning materials can contain metal and paint. Observe manufacturer's instructions.

1. Dismantle the fifth wheel plate Page 28 and place it flat on a suitable workbench. The mounting brackets remain on the tractor.
2. Unhook the springs from the lock jaw -arrow 1- and handle -arrow 2-.
3. If necessary bring the lock jaw into the "OPEN" position -arrow 3-.

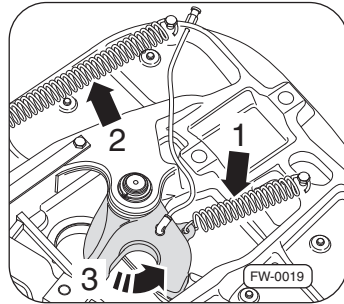


Fig. 23 · Dismantling lock jaw

4. Disconnect the grease line on the lock jaw from the fitting -arrow 1-.
5. Remove safety ring -arrow 2-.
6. Remove supporting washer.

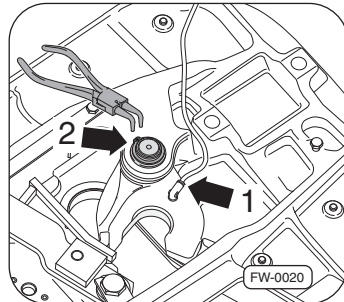
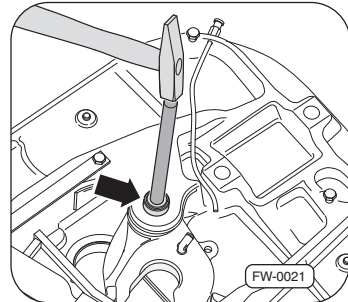


Fig. 24 · Remove safety ring, supporting washer

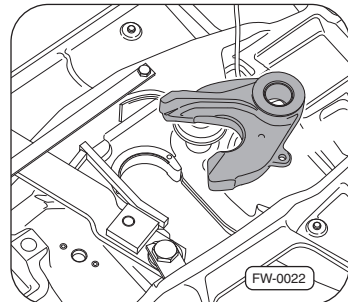
7. Push out pin from lock jaw.



**Fig. 25** · Dismantle pin

8. Remove lock jaw.

9. Clean the bore on the fifth wheel plate (e.g. with alcohol) and apply long-lasting high pressure grease.



**Fig. 26** · Replace lock jaw

### Mounting lock jaw

1. Check the locking bar for visible damage, if necessary replace.
2. Install new lock jaw.
3. Install pin and secure with outer safety ring and supporting washer.
4. Insert the grease line into the lock jaw.
5. Hook the springs onto the lock jaw and handle again - hook the spring to the lock jaw so that the hook faces downwards in the driving position.
6. Re-install the fifth wheel plate Page 28.
7. Open the fifth wheel lock Page 15.

## 9.7 Replace bearing



### Note:

Always replace rubber dampers and bearing inserts in pairs.

### Dismantling bearing / rubber dampers

1. Dismantle the fifth wheel plate Page 28 and lie it flat on a suitable workbench. The mounting brackets remain on the tractor.
2. Lever bearing inserts out of the bearing pocket with screwdriver.
3. Check and press out the rubber dampers to the side on both mounting brackets.

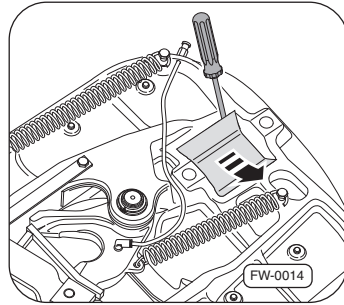


Fig. 27 · Replace bearing

### Mounting bearing / rubber dampers

1. Press new rubber dampers in the openings in the mounting brackets from the side whilst ensuring the correct position.
2. Press new bearing pockets in the bearing recesses. In order to assist mounting, a point of glue or silicone sealant can be applied to the underside of the bearing inserts.



**Note:**

Do not lubricate or apply grease to the bearing.

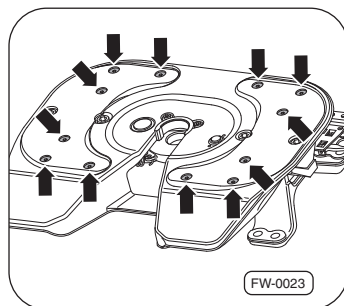
3. Re-install the fifth wheel plate Page 28.



## 9.8 Replace lube plates

### Dis-assembling lube plates

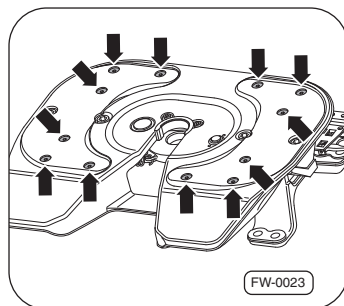
1. Unscrew and dispose of the flanged bolts -arrow- (12x).
2. Remove lube plates.
3. Clean attachment areas and threads on the fifth wheel plate (e.g. with alcohol).



**Fig. 28** · Lube plate tighten mounting bolts

### Mounting lube plates

1. Place lube plates in the recess in the fifth wheel plate.
2. Install new self-securing flanged bolts -arrow- (12x) and tighten hand-tight.
3. Tighten bolts with the specified torque Page 27.
4. Moisten the lube plates with grease Page 23.



**Fig. 29** · Lube plate tighten mounting bolts



**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](mailto:service@safholland.de)**

**[www.safholland.com](http://www.safholland.com)**