gigant
trailer axles

ALL IN ONE
Maintenance and repair manual

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trailer axles

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MAINTENANCE AND REPAIR MANUAL

Edition 4 I 01/2021 I 703018040

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trailer axles

1 GENERAL INFORMATION

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Axle load	Type designation	Product description
Axles		
12 t	GH7… / GNH7… / GZH7… DH7… / DNH7… / DZH7…	Rigid axles, self-steering axles (conventional dual-bearing technology) from generation: …7
5.5 - 12 t	GKH2… / GNKH2… / GZKH2… DKH2… / DNKH2… / DZKH2…	Rigid axles, self-steering axles, steering axles Axle stub, DLS (Compact bearing axles) From generation: …K…2
9 t	DOKH2… / DNOKH2…	EURO axle/EURO self-steering axle (flange with wheel connection) From generation: …K…2
9 t	GAH1…	Rigid axle (drum behind the hub) From generation: …A…1
Air suspension unit		
7 - 9 t	GL70…	Air suspension unit (spring width 70 mm)
8 - 14 t	FB100…	Air suspension unit (spring width 100 mm)
Mechanical suspensions		
4 - 10 t	GK…	Mechanical suspensions (spring with link eye)
10 - 16 t	LK…	Mechanical suspensions with dynamic axle compensation (Spring with two sliding ends)

This maintenance and repair manual provides you with information regarding the maintenance, repair and warranty of GIGANT current products. Updates are published on a regular basis. They can be identified by the consecutive version numbering. Example: Issue 1 I 1/2018.

The manual provides information to the user and serves as a source of information for trained specialist personnel and authorised commercial vehicle specialist shops.

These illustrations are exemplary and serve as a guide for performing maintenance and repair steps on GIGANT axles and suspensions.

Please read the information in this maintenance and repair manual carefully and take particular note of the safety information on the following pages. If there should be any questions, please contact:

GIGANT GmbH
Märschendorfer Str. 42
49413 Dinklage
contact@gigant.com

1. LIMITED RESPONSIBILITY STATEMENT

We accept no responsibility for the accuracy, completeness or topicality of the information provided in this maintenance and repair manual. The content and information do not constitute warranties or warranted characteristics nor can they be construed as such. Claims due to the information, recommendation or consulting cannot be derived from the provisioning.

Responsibility for damages is generally not allowed, unless we are liable for intent or gross negligence or other obligatory laws prevent it. The text and graphics used are subject to the usage right of GIGANT GmbH. Any form of copying or sharing requires our written permission. The brand names used, even if they are not marked in every case, are still subject to the rules of trademark law.

If disputes of a legal nature should arise from the use of the information in this maintenance and repair manual, such disputes are exclusively subject to German law. If specific clauses of this statement of responsibility limitation do not or no longer complies with the law, then the validity of the other clauses will not be affected.

2. GENERAL SAFETY RULES

The vehicle operator is responsible for using it properly. This includes following the existing maintenance and repair information, following maintenance instructions and traffic and operational safety guidelines.

GIGANT axles and suspensions may only be loaded with the maximum specified axle load. GIGANTdoes not assume any responsibility for the installation of unsuitable or unauthorised parts onto the product. Replaced components must be disposed of in an environmentally friendly manner, in compliance with legal provisions or guidelines or sent to recycling.

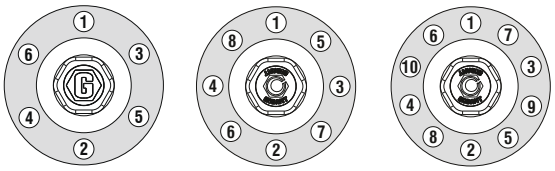
Only GIGANT-approved grease may be used. When using other greases, ensure that it does not contain any molybdenum disulphide, since this disintegrates seals. A maximum operating pressure of 5 bar is permissible when using compressed-air grease guns. You may connect it to a central lubrication system that is able to deliver special long-life grease with consistency class 2-3. The use of fluid greases is not allowed!

During driving operation, ensure that the brakes do not overheat in continuous operation since it affects road safety. Overheated brakes negatively affect braking performance (e.g. brake drums) and the surrounding components (e.g. bearing unit). Reasonable driving behaviour with respect to the road/traffic conditions is important.

Do not operate the parking brake until the brake unit has cooled down. Actuating it when the brakes are overheated can cause damage to the brake components (e.g. brake drums) due to different stresses. The vehicle must be secured against rolling away by other means (e.g. with stop wedges).

Always test the function and effectiveness on the brake test stand after working on the brake system. New brake linings do not brake at their best until they've been braked a few times. Avoid sudden braking when retracting the brake linings.

The wheel nuts must be checked for tightness after initial delivery, laden trip, and 100 km after each tyre fitting. The required inspection/tightening torque must be used.



After completing the job, a functional check and a test drive are required to put the vehicle in the proper state to be used in traffic again.

Mechanical and air suspensions, axles and the corresponding wheel brakes are safety-relevant components and may not be changed, processed or modified under any circumstances. The following are not allowed: Welding work (if it differs from the specifications of the installation guidelines), straightening, drilling, or heating GIGANT components.

With an air suspension system, you are only allowed to drive in ride height. Do not overstretch the air bellows when working on a raised chassis. The air suspension units must be secured before the maximum driving height is reached.

The vehicle manufacturer's safety guidelines must be observed along with their operational and service guidelines.

3. REQUIREMENTS FOR EXPERT PERSONNEL

Generally, only an expert in qualified expert workshops or authorised expert commercial vehicle and farm equipment companies that have all the qualifications and required tools to perform this work may fix detected flaws and replace worn components. Generally, maintenance should only be performed by a specialist in qualified workshops or by authorised specialist companies in the motor vehicle trade, who work in compliance with all generally valid safety regulations. Repair or maintenance performed by expert personnel with insufficient qualification results in incalculable risks for people, material assets, and the environment.

4. INFORMATION ON DLS

The hub unit of axle GKH2 3020 is installed in the DLS (independent suspension). You can find more information on DLS on our partner's website: TRIDEC - www.tridec.com

5. EXPLANATION OF SYMBOLS

The following shows the various explanations of the pictograms.

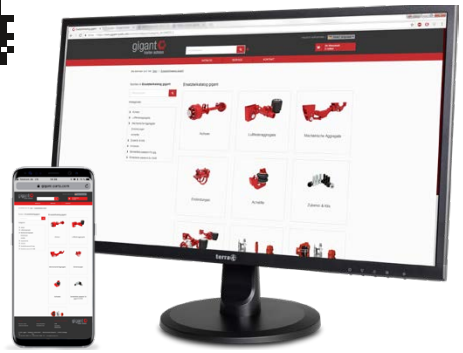
!	**IMPORTANT NOTE - COMPLIANCE IS MANDATORY!**
!	**Helpful information!**
	Insert tool
Nm	Tighten fitting with a certified torque wrench at the indicated torque

1

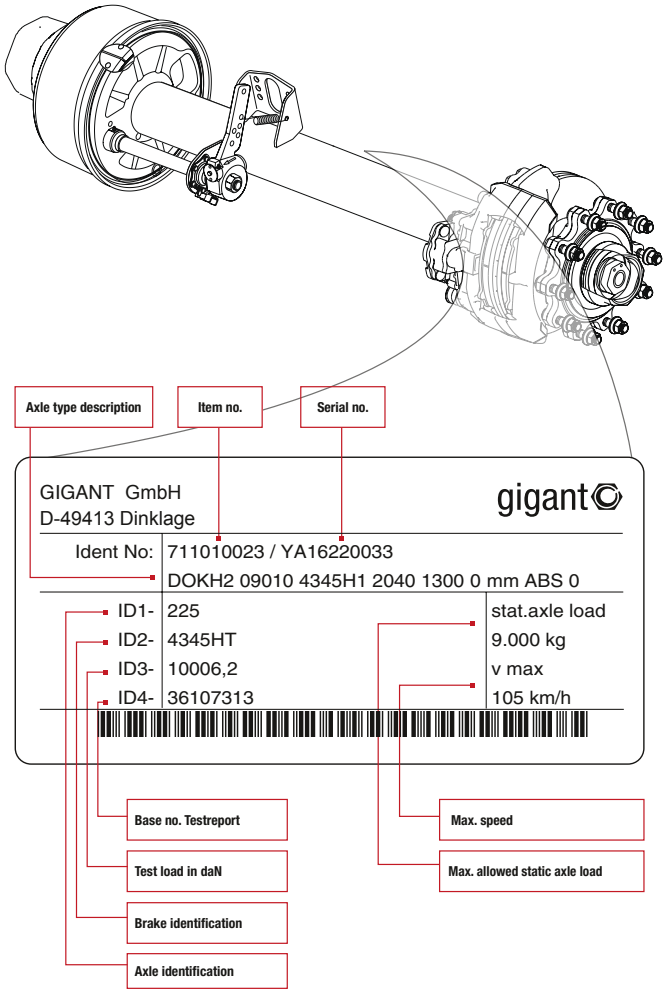
6. SALE OF SPARE PARTS

You can procure our original spare parts via our spare parts store.

To identify the spare parts,
visit our online catalogue:
www.gigant-parts.com

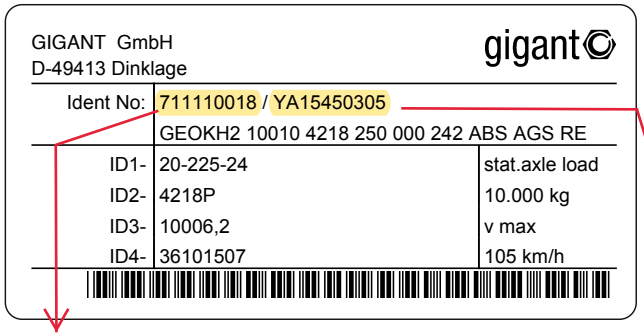


7. AXLE IDENTIFICATION



	DE	
D	D » Disc brake G » Drum brake	
O	Without » Rigid axle A » Special version E » Special axle G » Cranked axle N » Self-steering axle	O » Axle with offset P » Swivel axle S » Welded axle beam Z » Power-steering axle
K	K » Compact bearing	
H	H » Hollow axle beam	
2	Axle generation	
090	Axle load, e.g. 090 » 9.0 t	
10	Number of wheel studs	
4345	3334 = D335 x 34 3745 = D377 x 45 4345 = D430 x 45 3010 = 300 x 100 3015 = 305 x 150	3020 = 300 x 200 3620 = 360 x 200 4218 = 420 x 180 4220 = 420 x 200
H	H » Haldex W » Wabco K » Knorr	Does not apply for drumbraked axles
1	Close axle attachment of the brake calliper	Does not apply for drumbraked axles
2040	Track (Distance in mm)	
1300	Spring centre (Distance in mm)	
0344	Air chamber bracket centre (Distance in mm)	Does not apply for discbraked axles
ABS	With/without ABS	
AUTO-MATIC SLACK ADJUSTER	With/without automatic slack adjuster NGS » Normal slack adjuster	Does not apply for discbraked axles
B22	B3 » Top spring pads B7 » Top & bottom spring pads B22 » Top air suspension spring plates B24 » Bottom air suspension spring plates	
S0	S0 » Single tyres Z0 » Twin tyres	

8. WARRANTY CARD


GIGANT GmbH
D-49413 Dinklage

gigant

Ident No: 711110018 / YA15450305

GEOKH2 10010 4218 250 000 242 ABS AGS RE

ID1-	20-225-24	stat.axle load
ID2-	4218P	10.000 kg
ID3-	10006,2	v max
ID4-	36101507	105 km/h

DATE OF INITIAL REGISTRATION

CHASSIS NUMBER

ENTER ITEM NUMBER

AXLE 1

AXLE 2

AXLE 3

AXLE 4

AXLE 5

AXLE 6

ENTER SERIAL NUMBER

AXLE 1

AXLE 2

AXLE 3

AXLE 4

AXLE 5

AXLE 6

The work and designs were carried out in accordance with the valid GIGANT regulations.
(See current information at www.gigant.com.) ☐

DATE

SIGNATURE OF THE VEHICLE MANUFACTURER

STAMP OF THE VEHICLE MANUFACTURER

The seller hereby certifies _____ that the vehicle was handed over to the
COMPANY NAME

first end user _____ .
COMPANY NAME

With their signatures, the seller and the first end user confirm that the vehicle has been procured for use

☐ On-road (definition → 2, pg. 14) or ☐ Off-road (definition → 2, pg. 14)

With their signatures, the seller and the first end user confirm that the vehicle is in a fault-free condition on handover.

The first end user also confirms with his/her signature that they have taken note of the GIGANT warranty conditions.

DATE

SIGNATURE OF THE FIRST END USER

STAMP OF THE FIRST END USER

DATE

SIGNATURE OF THE VEHICLE MANUFACTURER

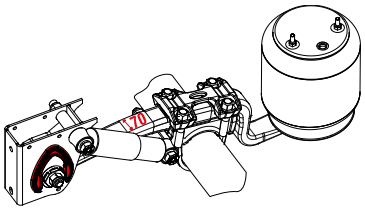
STAMP OF THE VEHICLE MANUFACTURER

1

9. SUSPENSIONS IDENTIFICATION

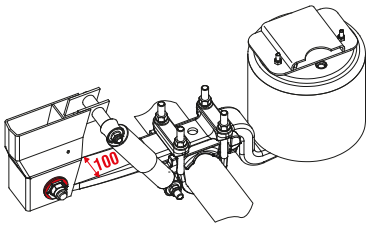
GIGANT distinguishes between two versions: air and mechanical suspensions. In addition to the air suspensions, GIGANT also provides axle lifts as needed:

9.1 AIR SUSPENSIONS



GL70

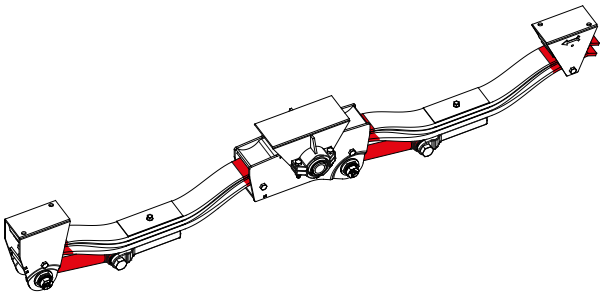
70 mm spring width, slot with welded support for eccentric nut



FB100

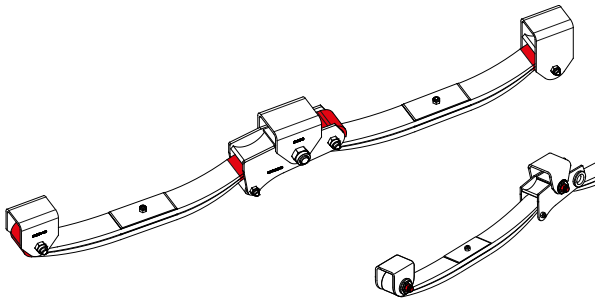
100 mm spring width, welded cone bush in air suspension bracket

9.2 MECHANICAL SUSPENSIONS



LK

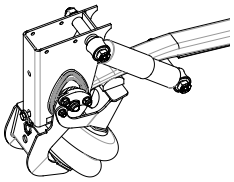
Spring with two sliding ends, with torque arm, rubber bearing system of the equalizer is outside



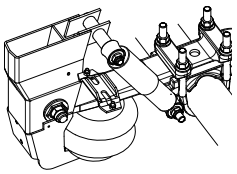
GK / GKT

Spring with spring eye and a sliding end, silent block of the equalizer is inside

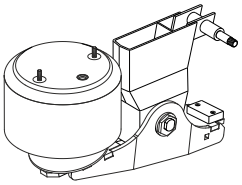
9.3 AXLE LIFTS



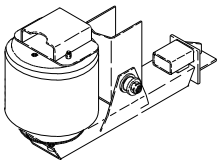
Twin lift GL70



Twinlift FB100



Side axle lift



Centre axle lift

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2 GIGANT WARRANTY CONDITIONS

These warranty conditions are only valid if GIGANT components have been installed, serviced, and repaired in accordance with the specified guidelines (e.g. installation guidelines and technical notes), while taking safety provisions into account. These warranty provisions begin with the vehicle's initial registration, but no later than 6 months after delivery by GIGANT GmbH.

2

1. SCOPE OF THE GIGANT WARRANTY

GIGANT provides a warranty for product defects that are proven to be caused by a material or manufacturing flaw within the warranty period. The warranty exists in addition to the seller's legal warranty obligations that come from the purchase contract with the first end user, and is not affected by this. The warranty is geographically restricted to vehicles that are approved and operated in Europe (EU 2014), Switzerland, Norway, or Turkey. Purchasing the vehicle in a country outside the warranty's geographical scope shall void the warranty. The warranty covers replacement of defective components listed in the warranty duration with new ones. The warranty does not extend in the event of the warranty being used. The warranty period for parts used as part of a warranty claim is 6 months, but at least the current warranty period. Generally, this does not include labour and workshop costs for removal and installation according to reference time specifications by GIGANT and inspection of the components – unless previously stipulated with GIGANT. To this end, a filled warranty application must be submitted in advance, approved by GIGANT, and cost absorption must be approved. This warranty only applies for damage to GIGANT products. Consequential damage, towing costs, rental costs for replacement vehicles, claims for lost profit or damage compensation are not included in the warranty. Any additional responsibility due to obligatory law remains unaffected by this.

The warranty expires if original GIGANT spare parts are not used.

2. DEFINITION OF ON-ROAD AND OFF-ROAD

On-road: Use on metalled, asphalted and/or concreted roads in Europe (EU 2014), Norway, Switzerland, and Turkey

Off-road: Use away from metalled, asphalted, and/or concreted roads (on unsurfaced terrain such as construction sites, gravel roads, sand pits, in agriculture, for military purposes) and in all countries outside of Europe (EU 2014), Norway, Switzerland, and Turkey

3. LIABILITY EXCLUSIONS

The following are not included in the warranty:

- Damage to worn parts (e.g. brake linings, brake drums, brake discs)
- Damage caused by:
  - Improperly installing GIGANT products
  - Failure to tune the brake power/train tuning
  - Mechanical damage due to accident, event, and/or impact
  - Reckless or wilful destruction and fire
  - Not using the vehicle properly (for example: Overload, overheating, use under abnormal conditions)
  - No maintenance, particularly after not doing the regular maintenance work required by GIGANT
  - Adding components or modifying GIGANT components
  - Using third-party components instead of original GIGANT components and lubricants and liquids that are not compatible
  - Phenomena such as noises, odours, vibrations, oil leaks that have no effect on the serviceability of the GIGANT axle systems

4. WARRANTY DURATION

Only for vehicles that were equipped with components according to the application matrix of the GIGANT product catalogue!

	Duration	Components
ON-ROAD	6 years unlimited km Wear is excluded as grounds for warranty claims	Axle beam, steering knuckle (steering axles), steering arm, air suspension bracket, spring, attachment plates, front suspension bracket, torque arm, torque arm support, main suspension bracket, slide show, equalizer
	24 months without km limit Wear is excluded as grounds for warranty claims	Brake cylinder, brake calliper, brake camshaft, brake linkage adjuster, axle lift, air bellow, inductive sensor ABS and ABS sensor ring, steering knuckle pin, brake shoes, fittings such as spring bolts, shock absorber bracket, U-bolt, shock absorber, direction bar incl. stabilisation and locking system
	24 months Wear is excluded as grounds for warranty claims	Brake disc, brake drum, brake linings, bearings and seals, return springs, hinges/silent block, springs (mechanical suspensions)
OFF-ROAD	1 year without km limit	Wear parts excluded!
	See following table Geographically restricted to Europe (EU 2014, Norway, Switzerland, and Turkey)	Wheel hub unit

"Wheel hub unit" table

Axle type	On-Road		Off-Road	
	Years	Kilometres	Years	Kilometres
Rigid axles 5.5 - 7.1 t				
GKH2 05506 3010	10	without	3	300,000
DKH2 05506 3334	10	without	3	300,000
DKH2 07010 3334	6	without	3	300,000
GKH2 07006 3015	6	without	3	300,000
GKH2 07010 3015	6	without	3	300,000
GOKH2 07108 3515	6	600,000	3	300,000
Rigid axle 9 t				
DOKH2 09010 3745	6	without	3	without
DOKH2 09010 4345	6	without	3	without
DKH2 09010 3745	6	without	3	300,000
DKH2 09010 4345	6	without	3	300,000
GKH2 09010 4218	6	without	3	300,000
GAH1 09010 4218	5	1,000,000	1	100,000
Rigid axles 10.5 - 12 t, 3020				
GKH3 10510 3020	6	600,000	3	300,000
GKH3 12010 3020	6	300,000	1	100,000

Axle type	On-Road		Off-Road	
	Years	Kilometres	Years	Kilometres
Rigid axles 10 - 12 t				
DKH2 10008 3745	6	600,000	3	300,000
GKH3 11010 3020	6	600,000	3	300,000
DKH2 10510 4345	6	600,000	3	300,000
GKH2 10508 3620	6	600,000	3	300,000
GKH2 10510 3620	6	600,000	3	300,000
GKH2 10510 4220	6	600,000	3	300,000
GKH2 12008 3620	6	600,000	3	300,000
GH7 12010 4220	6	500,000	3	300,000
DH7 12010 4345	6	500,000	3	300,000
Axle stub				
GOKH2 09010 4218	6	600,000	1	100,000
GEOKH2 10010 4218	6	600,000	1	100,000
Swivel axles				
G(0)KPS 06010 3015	6	600,000	1	100,000
G(0)KPS 07010 3015	6	600,000	1	100,000
G(0)KPS 10010 3015	6	600,000	1	100,000
GOKPS 07008 3515	6	600,000	1	100,000

The expanded warranty for wheel hub units is limited to tyres with the “Road” application segment.

The same conditions apply to the wheel bearing in steering axles of the aforementioned series.

For special axles and axles that are not used according to their intended purpose, different requirements may apply for the warranty services.

2

The displays of ABS, EBS, and similar measuring systems are important to find out the exact mileage, if a seamless recording of the vehicle's total mileage can be done using these displays. Giving the wrong mileage or manipulating the measurement devices results in invalidation of the warranty.

Using the warranty does not extend the warranty duration.

5. WARRANTY CLAIMS

A warranty claim must be made without delay after finding the error by sending GIGANT an application. The application must contain the information requested. The following needs to be attached to the application:

- Copy of maintenance proof (GIGANT reserves the right to ask for the original documents!)
- Digital EBS/ODR data sets (in case of complaints about the wheel hub unit or upon request)
- Log of the brake compatibility check (if there are complaints about the brake components)

GIGANT must always be contacted first for providing the necessary information, components, etc. to rectify errors.

In addition to the documents required above to assess the warranty claim, supplementary documents (e.g. workshop report, cost statements, etc.) must be received by GIGANT at the latest 14 days after the service (repair) is completed.

The faulty components that are taken off must be kept safe free of charge and must only be disposed of by the customer after explicit permission (e.g. final report) from GIGANT.

Costs that result from unjustified warranty claims may be charged by GIGANT.

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3 MAINTENANCE INFORMATION

3

1. INFORMATION ON BRAKE WEAR

The condition of the brakes depends on how the vehicle is used. GIGANT has no control over this, and it depends on the vehicle operator. Wear parts (e.g. brake disc, brake drum, brake linings) and the functionality of the brakes must be inspected at the appropriate regular intervals depending on the vehicle-specific use.

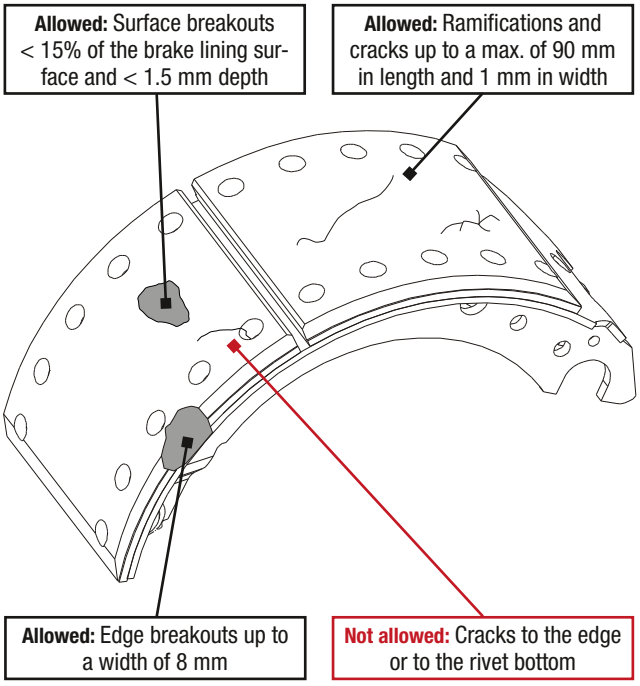
After longer periods of non-use, the brake components must be inspected for freedom of movement and functionality.

1.1 DRUM BRAKE

1.1.1 BRAKE LININGS

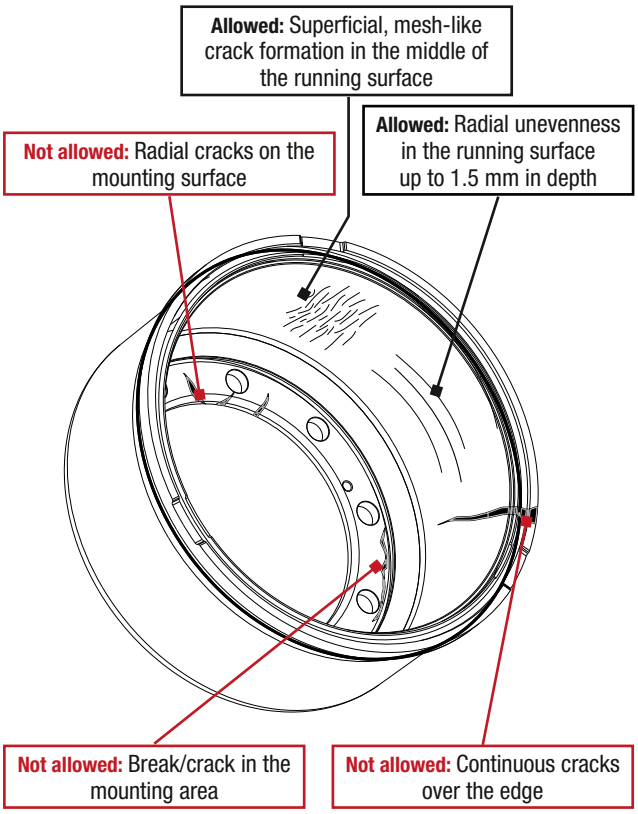
Not allowed: Brake linings that are burned, vitrified or contaminated with grease ➞ must be replaced immediately

Not allowed: Brake lining: < 5 mm ➞ 3.1.3, pg. 60

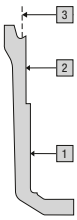


1.1.2 BRAKE DRUM

Not allowed: Obvious cracks and strong hotspots ➞ must be replaced immediately



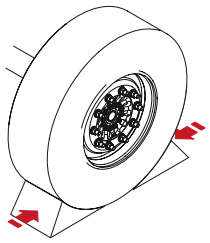
Pay attention to the original, repair and wear degree!



	Brake type	300x100	300x200	305x150	355x150	360x200	420x180	420x200
1	Original dimensions	300	300	305	355	360	420	420
2	First repair dimensions	302	302	307	357	362	422	422
3	Max. wear	305	305	308	358	365	425	425

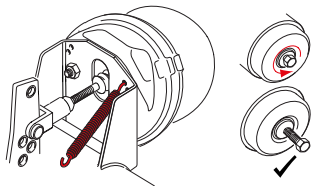
1.1.3 FUNCTIONALITY TEST FOR AUTOMATIC SLACK ADJUSTER

[1] Secure the vehicle from rolling away on even, firm ground



[2] Release the brake

[3] Unhook the tension spring (mark the position)



[4] If necessary, mechanically release the spring-loaded cylinder

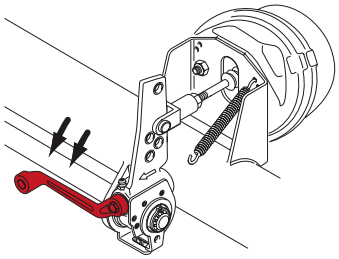
[5] Lubricate the automatic slack adjuster until grease comes out

[6] Set the torque wrench to 18 Nm

⌶ SW12

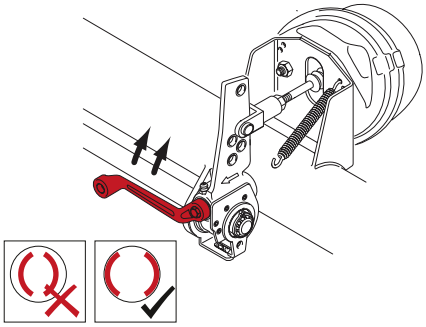
[7] Place the torque wrench and turn counterclockwise

- **! Audible “clicking” sound → automatic slack adjuster is in working order**
- **! No sound → replace automatic slack adjuster**
- **! Effort > 18 Nm → automatic slack adjuster in working order**
- **! Effort < 18 Nm → replace automatic slack adjuster**



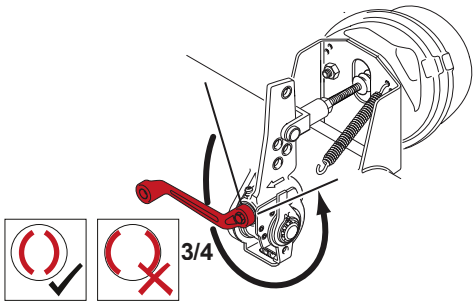
[8] Slowly turn the brake drum

[9] Carefully tighten the automatic slack adjuster's adjusting nut with a ring spanner until the brake linings grind on the brake drum



[10] Turn the automatic slack adjuster's adjusting screw by 3/4 of a turn (270°) counterclockwise

- **! Audible “clicking” sound → automatic slack adjusters in working order**

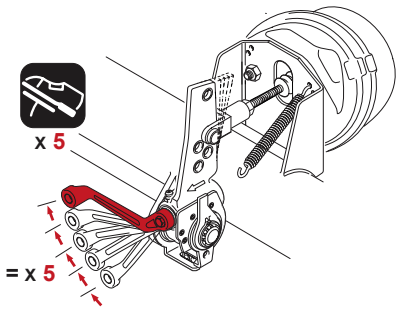


[11] Place the ring spanner on the automatic slack adjuster's adjusting screw

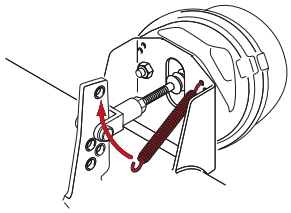
⌶ SW 12

[12] Actuate the brake 5 times

- **! If the ring spanner moves back 5x clockwise → automatic slack adjuster is in working order**
- **! If the ring spanner or adjusting unit does not move → replace the automatic slack adjuster** → 3.1.5, pg. 60



[13] Attach the return springs (pay attention to the marking)



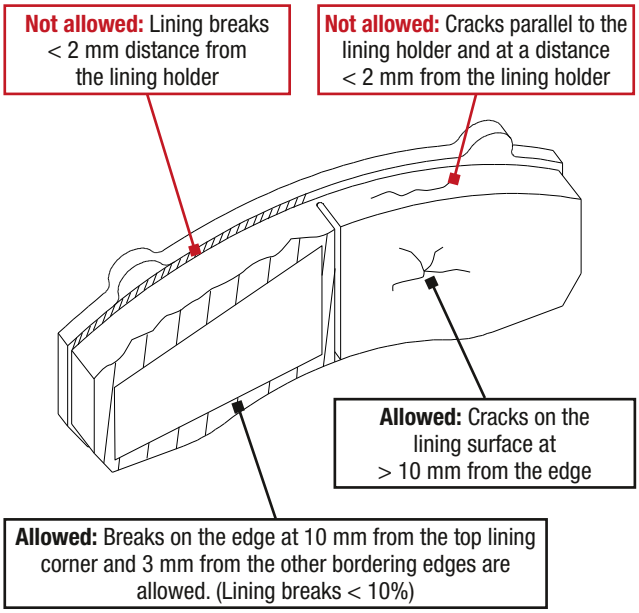
[14] If the functional test turns out positive, then perform a basic adjustment (air clearance) of the brake → 1.4.1, pg. 52

3

1.2 DISC BRAKE

1.2.1 BRAKE LININGS

Not allowed: Brake linings that are burned, vitrified or contaminated with grease ➝ must be replaced immediately



Not allowed: Brake lining: < 2 mm ➝ Please consult the brake manufacturer's instructions on replacing the brake linings:

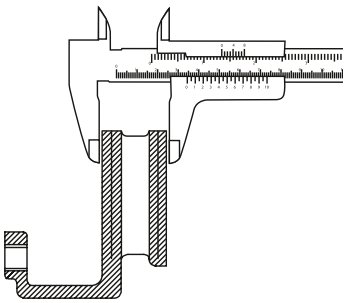
www.haldex.de
➝ Services & Support
➝ Literature and Documents

inform.wabco-auto.com

www.knorr-bremse.de
➝ Commercial vehicles
➝ Download & Services
➝ Download Documentation

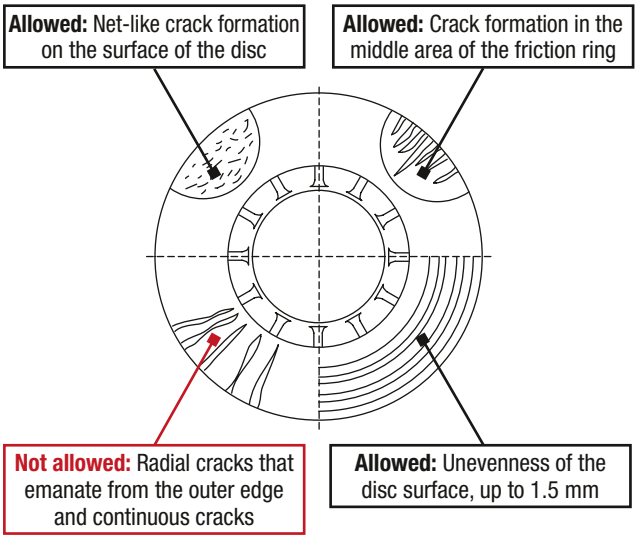
1.2.2 BRAKE DISC

» Measure brake disc thickness at the thinnest point with a slide gauge (pay attention to any burrs on the edge of the disc)



Brake type	3334	3745	4345
Brake disc dimensions	335	377	430
Original thickness	34	45	45
Min. thickness	28	37	37

» Carefully check the surface of the brake disc for further use
➝ 4.3, pg. 73



1.2.3 BRAKE CALLIPER

The inspection intervals of the components/function on the brake calliper are based on the information from the brake calliper manufacturer. They can be viewed on the manufacturer homepage for the brake calliper installed on your axle:

www.haldex.de
➝ Services & Support
➝ Literature and Documents

inform.wabco-auto.com

www.knorr-bremse.de
➝ Commercial vehicles
➝ Download & Services
➝ Download Documentation

2. COMPACT BEARING

The compact bearing is a maintenance-free bearing (see extended GIGANT warranty). The following inspections should be done every time the brake linings are changed (D…OKH2… visual inspection only when changing brake disc) and if there are signs of incorrect functioning or defects in the braking system (e.g. overheated brakes):

2.1 NOISE CHECK

» Lift wheel and turn in both directions by hand
» In case of uneven running and a "grinding" noise, ➝ replace the compact bearing

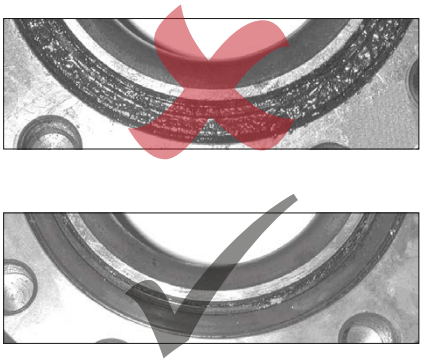
Note: A ticking or clicking noise is normal when the bearing is not loaded.

2.2 AXIAL CLEARANCE MEASUREMENT

» Lift axle
» Attaching the measuring gauge
  » **Axle type "DOKH2/DNOKH2":** Fasten magnetic base to the axle beam (measuring needle touches wheel hub)
  » **Axle type "...KH2":** Disassemble hub cap and fasten magnetic base onto the rim (measuring needle touches steering knuckle pin)
» Swivel the wheel under constant pressure until the pointer of the dial gauge no longer changes.
» Set measuring gauge to zero
» Afterwards, pull down and swivel the wheel
» Difference between both measurements ➙ Axial clearance
» Result: > 0.2 mm (200 µm) ➙ Replace compact bearing

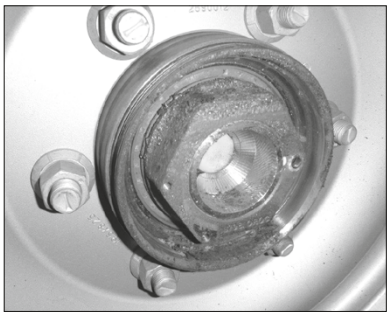
2.3 GREASE LEAKAGE

» If the inside of the cover, axle nut, axle tube, and sealing are moistened with grease, ➙ replace the compact bearing
Note: There may be a little grease on the edge of the seal.



2.4 WATER INGRESS

» If the interior shows **clear** signs of water ingress (moisture, corrosion), ➙ replace the compact bearing and eliminate the cause of the leak (e.g. internal axle stub seal, O-ring hub cap).
! The outside bearing seal does not prevent the ingress of water.



3. STEERING KNUCKLE BEARING

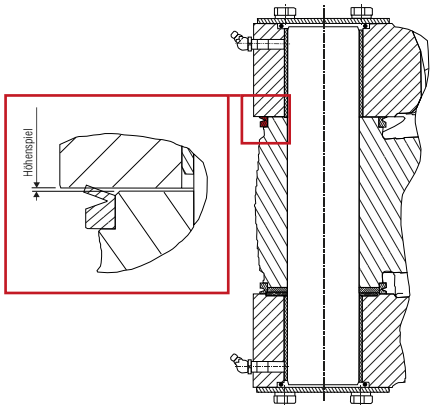
The steering knuckle pin is adhered to the axle stub and is guided in the axle pivot by two bushes. A wear plate is installed on the lower steering knuckle.

3.1 BEARING CLEARANCE

» Lift the axle without wheel until it is unloaded
» Tilt, pull and push to check bearing clearance ➙ Replace the bushes if there is noticeable clearance

3.2 HEIGHT CLEARANCE

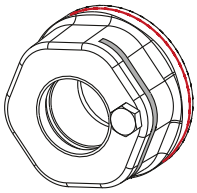
» When the axle is loaded, press down on the sealing lip of the upper V-seal (do not damage)
» Use the feeler gauge to measure the height clearance between the axle stub and steering knuckle
  » Replace the wear plate if the dimensions are greater than 2.4 mm ➙ 5.6, pg. 75
» Put the undamaged V-rings in the initial position



4. AXLE NUT

The GIGANT axle nut is installed in the right and left design. The left axle nut is marked with a circumferential groove. On the D/GH7, the left axle nut has a notch. During removal, the clamping must be bent up, e.g. using a screwdriver.

! Do not damage the threads!

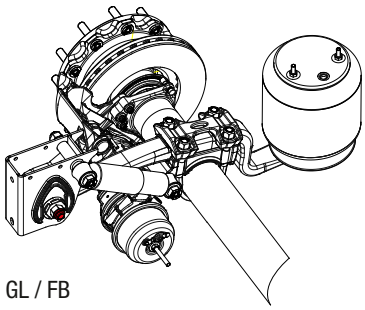


3

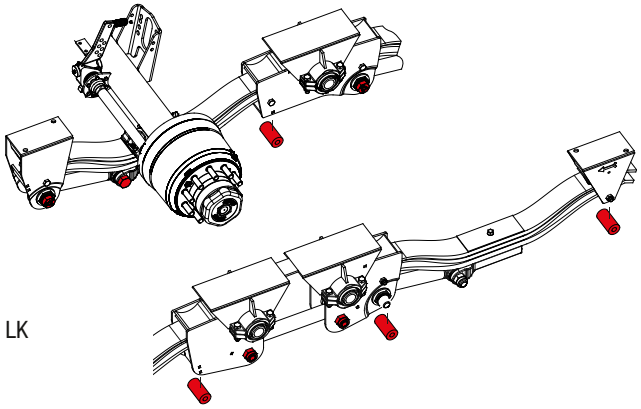
5. SILENT BLOCKS AND RUBBER ROLLERS

The condition of the silent blocks and rubber rollers depends on how the vehicle is used. GIGANT has no control over this, and it depends on the vehicle operator. Depending on the vehicle-specific use, the components must be inspected regularly for proper function and damage, wear, and freedom of movement and, if necessary, replaced.

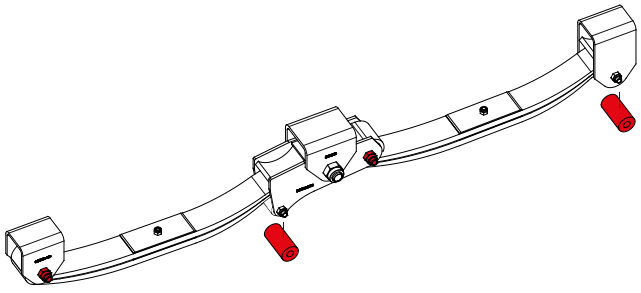
	AIR-SUSPENDED SUSPENSIONS	MECHANICAL SUSPENSIONS	
Component	GL / FB	LK	GK / GKT
Silent blocks on spring	✓		
Silent blocks on torque arm		✓	
Silent blocks of the connecting bar		✓	
Silent blocks on spring eye			✓
Rubber rollers		✓	✓



GL / FB



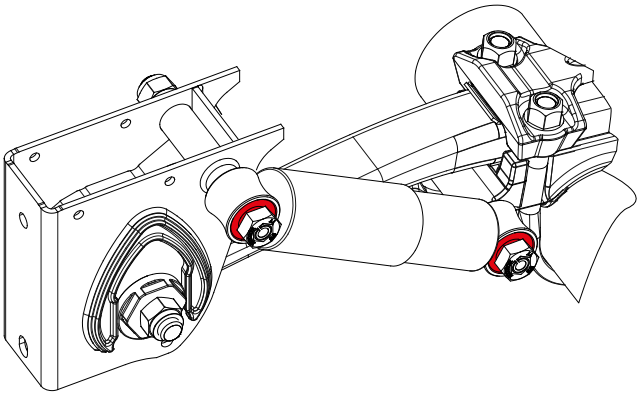
LK



GK / GKT

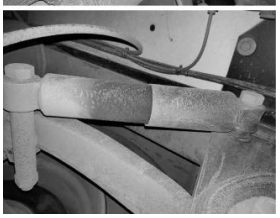
6. SHOCK ABSORBER

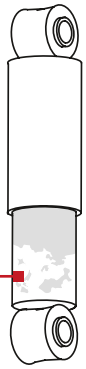
Check the silent blocks on the shock absorber for wear and clearance and replace the shock absorber if necessary.



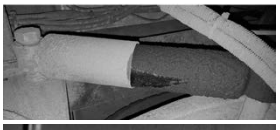
! Only check when the vehicle is dry, not during rain or after the vehicle has been washed!

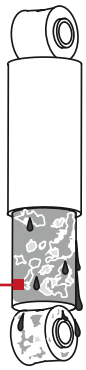
Allowed: Light sweating, partly greasy and dry surface on the container (desired for lubrication)





Not allowed: Dripping oil and oil on adjacent components → Leaky shock absorber





After a longer period of non-use, very oily contamination could appear due to light, acceptable sweating without cleaning. In case of any doubt, clean the shock absorber and check it again after a short period of driving use.

gigant
trailer axles

4 MAINTENANCE INTERVALS

Careful compliance with the specified maintenance intervals guarantees long-lasting use of the GIGANT axles and GIGANT suspensions. The intervals are practically compatible with the rhythm of the statutory tests. The maintenance steps for on-road use are divided into time intervals (considering first installation by technical staff according to GIGANT guidelines).

In addition to the maintenance intervals listed in the following, it is sensible to include the maintenance instructions from page 17-22 in the maintenance schedule. This is due to the fact that the state of the listed components, depends on the type of vehicle and its use. For example, with heavy off-road applications and the associated frequent cleaning with a high-pressure cleaner, the lubrication points must be greased more frequently. GIGANT has no control over these factors, and they depend on the vehicle operator.

Before start-up, after a long period of non-use, and after paint work, the grease nipples must be inspected for clearance and lubricated with grease until fresh grease emanates from the bearing point. Before starting every trip, GIGANT recommends checking the vehicle for driving readiness.

After the first 1,000 km or after the first laden trip, the fittings (e.g. spring bolts, bonding, etc.) along with the axle components (wheel nuts, brake cylinder fastening, bolts, AGS/cable lug), suspensions, and add-on elements (e.g. Twinlift) must be inspected.

Along with the general safety checks in accordance with the legal requirements, the components and fittings must be visually checked and the tightness must be checked. If necessary, fittings must be tightened to the indicated torques (the appearance of rust and settling could be signs of loose screws) or replaced.

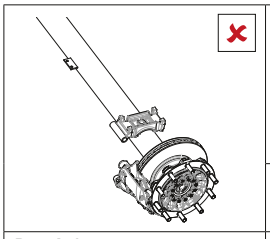
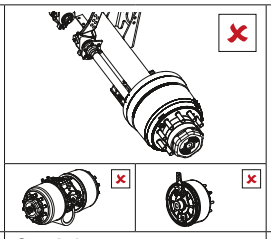
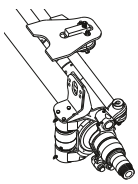
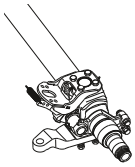
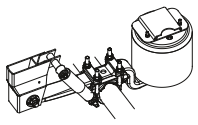
If necessary, maintenance must be performed more often according to how it is used, e.g. if used in a construction site, city traffic, etc.

Shorter maintenance intervals must furthermore be performed using the given maintenance information.

This signature confirms that the maintenance has been properly performed according to the maintenance intervals.

! All of the tasks described in the maintenance intervals must be performed.
For example, for maintenance at the 12-month mark, the previous maintenance intervals (after 1 month at the latest, every three and every six months) must also be performed.

1. MAINTENANCE INSTRUCTIONS FOR AIR SUSPENSIONS - AFTER THE FIRST LADEN TRIP, NO LATER THAN ONE MONTH

					
D = Axle With disc brake	G = Axle With drum brake	N = Self-steering axle	Z = Power-steering axle	FB100 = Spring width 100 mm	

MAINTENANCE INTERVALS

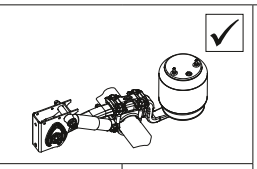
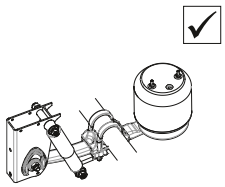
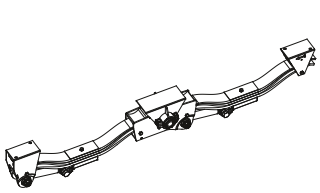
for air suspensions

after the first laden trip, no later than one month

4

1

AFTER THE FIRST LADEN TRIP	
DATE	**ODOMETER READING IN KILOMETRES**
COMMENT	
Stamp signature	

					
	GL70	GL70L, GL70HD	GL70 with T-suspension	Axle lifts	LK, GK, GKT = Mechanical suspensions

! **Only a visual inspection is required for the GL70 suspension! Observe the specified maintenance intervals when performing the initial installation without the torque screwdriver!**

1 **Check the spring bolt fitting** and replace, if necessary

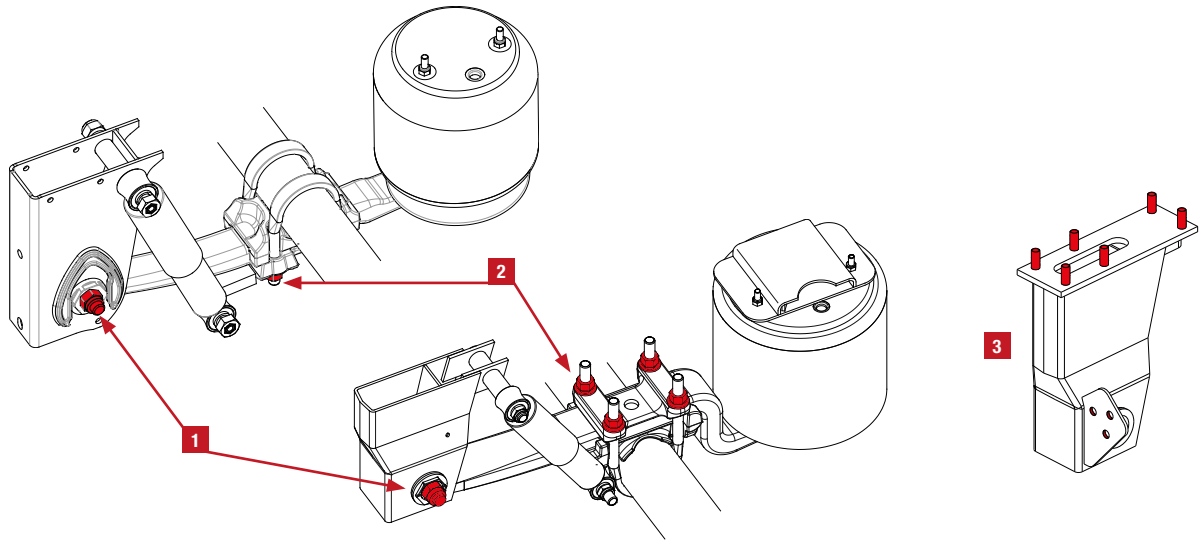
FITTING	TEST TORQUE	TIGHTENING TORQUE
M24	680 Nm	900 Nm ± 50 Nm
M27x1.5		575 Nm ± 25 Nm

2 **Check the U-bolt fitting** and replace, if necessary

FITTING	TEST TORQUE	TIGHTENING TORQUE
M20x1.5 (locknut/washer)	480 Nm	550 Nm ± 25 Nm
M22x1.5 (locknut/washer)	600 Nm	700 Nm ± 25 Nm
M22x1.5 (spigot wheel nut)		675 Nm ± 25 Nm
M24 (Nut/washer)		900 Nm ± 50 Nm

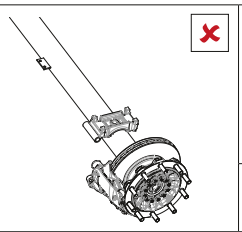
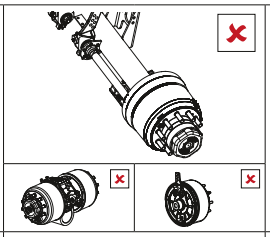
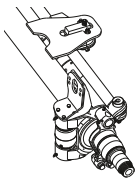
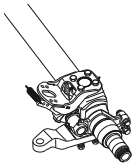
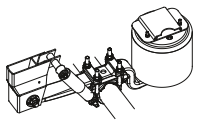
3 Check the **air suspension bracket fitting** (according to installation guidelines) and replace, if necessary

FITTING	TEST TORQUE	TIGHTENING TORQUE
M16 (locknut)		280 Nm ± 10 Nm
M24 (locknut)		550 Nm ± 10 Nm



Loosened fittings and their components must be inspected for damage and replaced if necessary.

2. MAINTENANCE INSTRUCTIONS FOR MECHANICAL SUSPENSIONS - AFTER THE FIRST LADEN TRIP, NO LATER THAN ONE MONTH

					
D = Axle With disc brake	G = Axle With drum brake	N = Self-steering axle	Z = Power-steering axle	FB100 = Spring width 100 mm	

MAINTENANCE INTERVALS

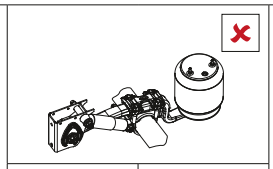
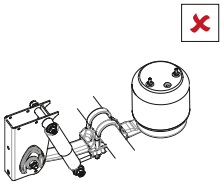
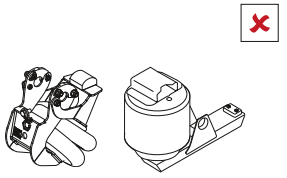
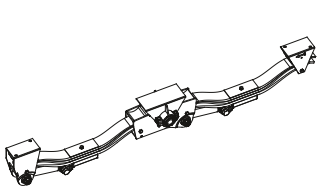
for mechanical suspensions

after the first laden trip, no later than one month

4

1

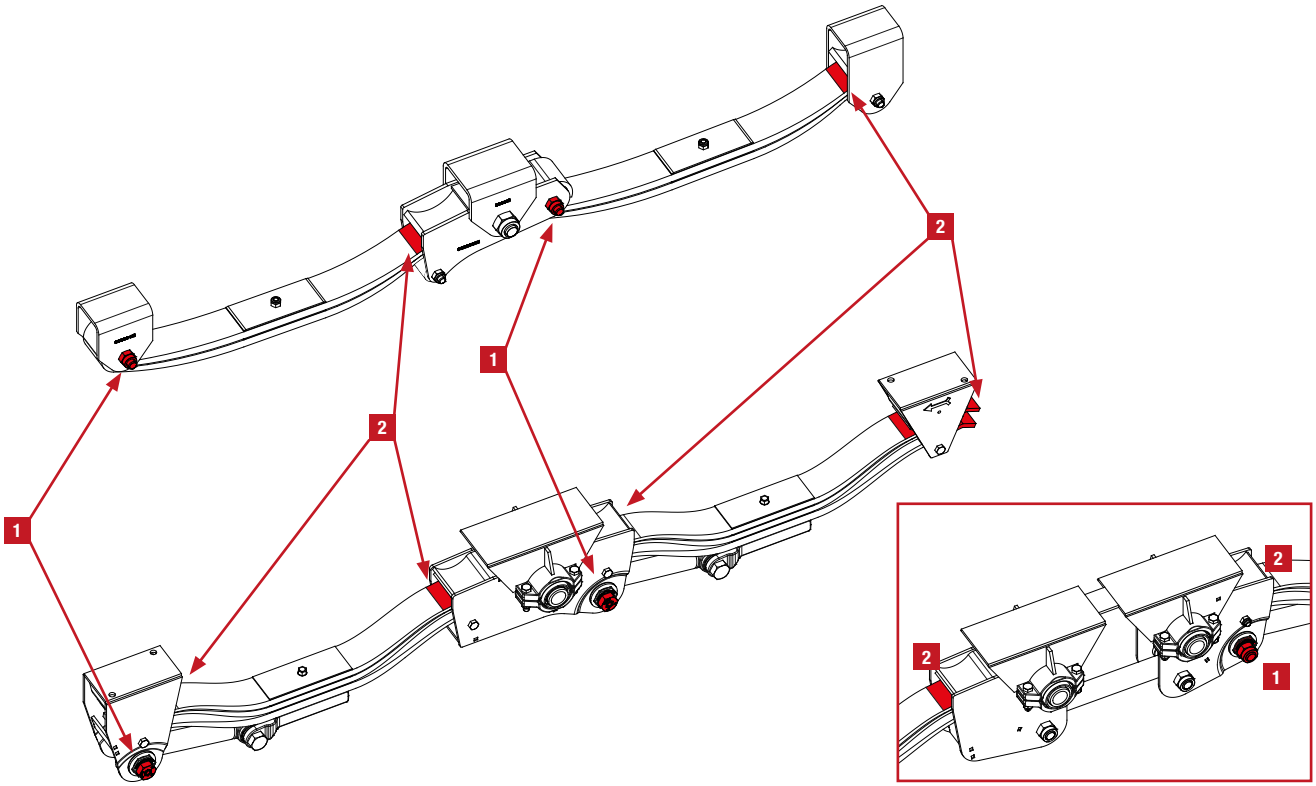
AFTER THE FIRST LADEN TRIP	
DATE	**ODOMETER READING IN KILOMETRES**
COMMENT	
Stamp signature	

					
	GL70	GL70L, GL70HD	GL70 with T-suspension	Axle lifts	LK, GK, GKT = Mechanical suspensions

1 **Check the spring bolt fitting** and replace, if necessary

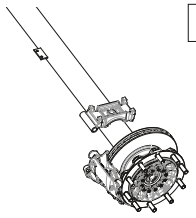
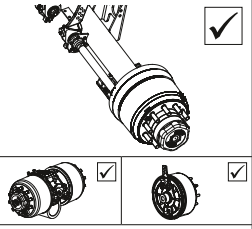
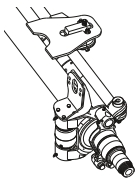
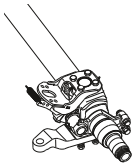
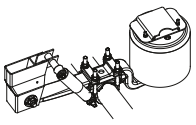
FITTING	TEST TORQUE	TIGHTENING TORQUE
M20		400 Nm ± 20 Nm
M24		675 Nm ± 25 Nm
M27x1.5		575 Nm ± 25 Nm
M30		775 Nm ± 25 Nm

2 Grease **the sliding spring ends**



Loosened fittings and their components must be inspected for damage and replaced if necessary.

3. MAINTENANCE INSTRUCTIONS FOR SWIVEL AXLES AND AXLE STUBS - EVERY THREE MONTHS

					
D = Axle With disc brake	G = Axle With drum brake	N = Self-steering axle	Z = Power-steering axle	FB100 = Spring width 100 mm	

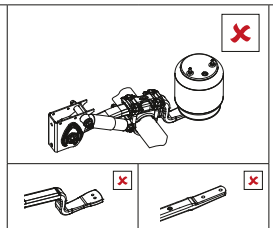
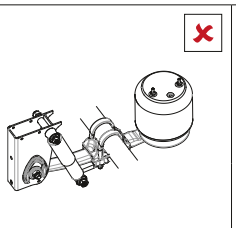
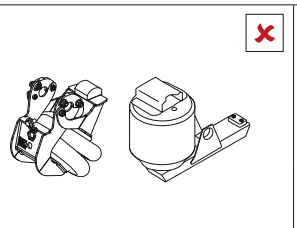
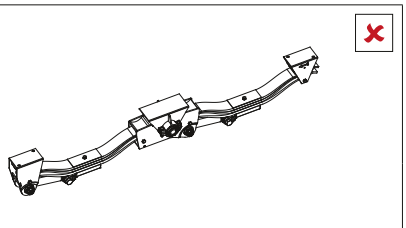
MAINTENANCE INTERVALS

for swivel axles and axle stubs

every three months

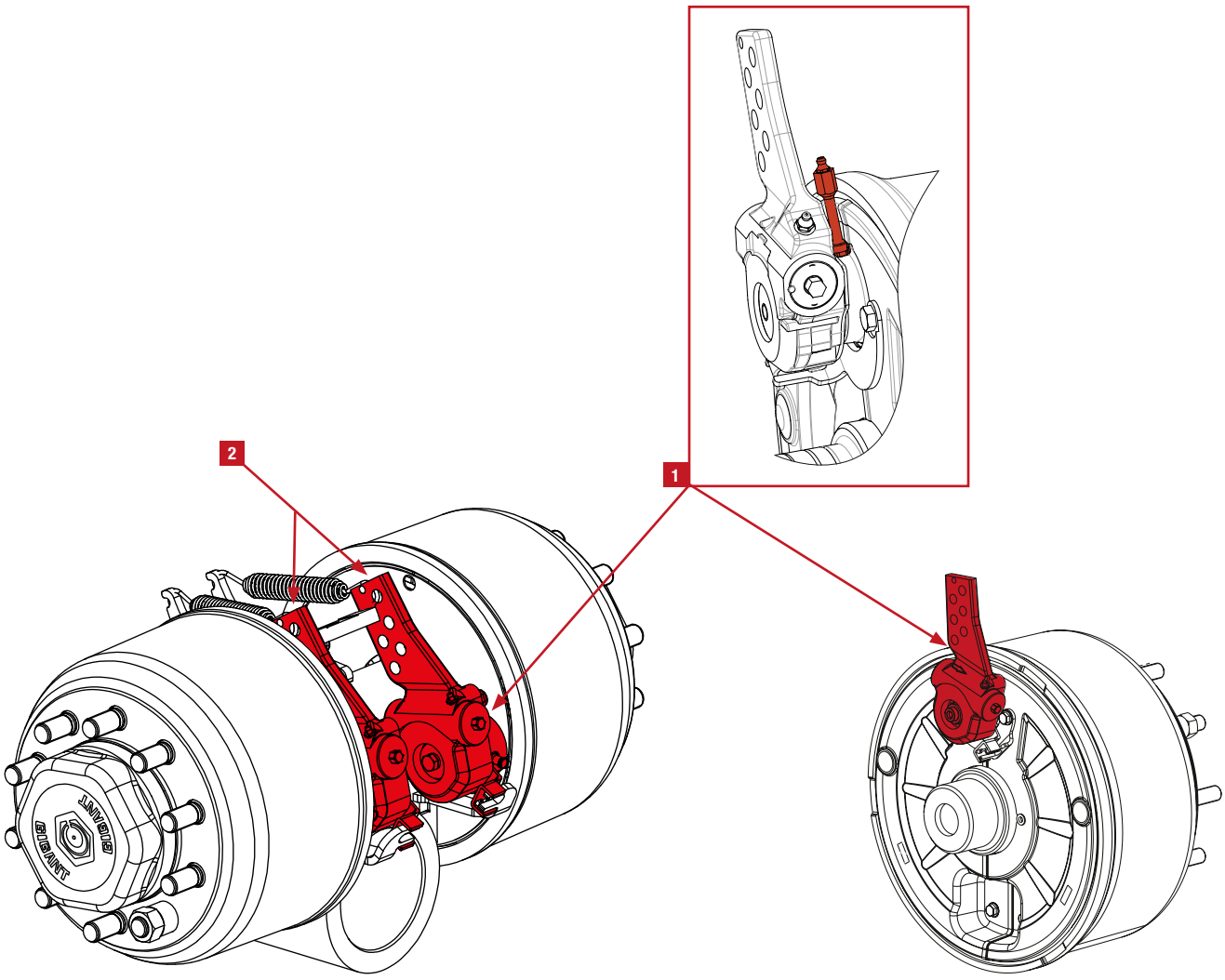
4

3

					
	GL70	GL70L, GL70HD	GL70 with T-suspension	Axle lifts	LK, GK, GKT = Mechanical suspensions

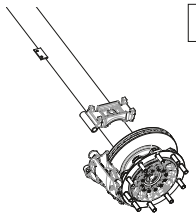
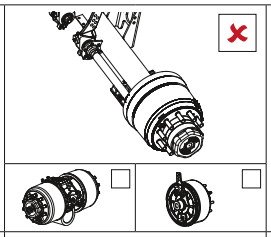
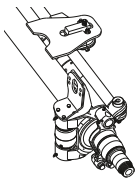
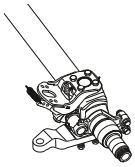
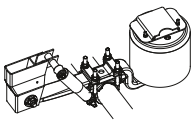
1 **Brake camshaft bearing** grease until fresh grease emanates from the automatic slack adjuster's splines

2 Check **the parallel positioning of the automatic slack adjuster**



Loosened fittings and their components must be inspected for damage and replaced if necessary.

4. ADDITIONAL MAINTENANCE INSTRUCTIONS FOR AIR SUSPENSIONS WITH SCREWED AIR SUSPENSION BRACKETS - EVERY THREE MONTHS

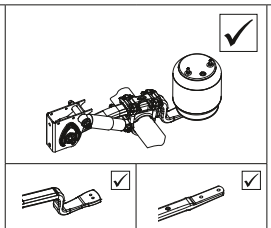
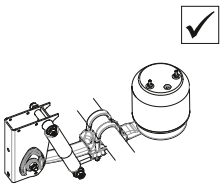
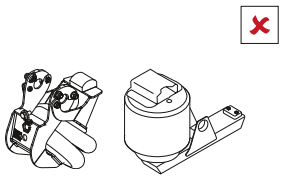
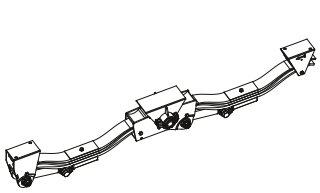
					
D = Axle With disc brake	G = Axle With drum brake	N = Self-steering axle	Z = Power-steering axle	FB100 = Spring width 100 mm	

MAINTENANCE INTERVALS

Additional for air suspensions
with screwed air suspension brackets, every three months

4

3

					
	GL70	GL70L, GL70HD	GL70 with T-suspension	Axle lifts	LK, GK, GKT = Mechanical suspensions

1 Check the spring bolt fitting (according to installation guidelines) and replace, if necessary

FITTING	TEST TORQUE	TIGHTENING TORQUE
M16 (locknut)		280 Nm ± 10 Nm
M24 (locknut)		550 Nm ± 10 Nm

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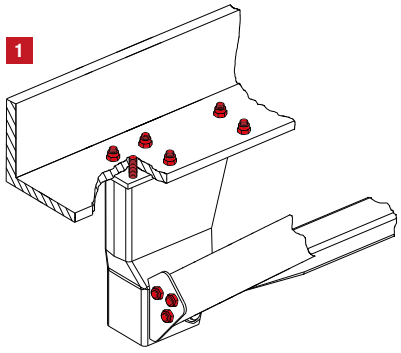
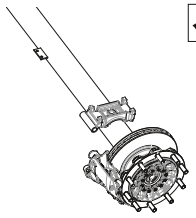
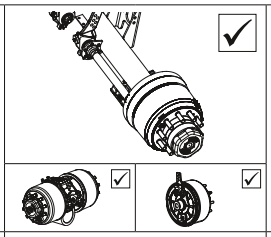
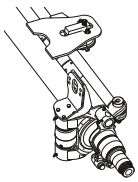
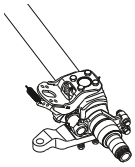
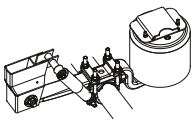


Loosened fittings and their components must be inspected for damage and replaced if necessary.

5. MAINTENANCE INSTRUCTIONS FOR AXLES - EVERY SIX MONTHS

					
D = Axle With disc brake	G = Axle With drum brake	N = Self-steering axle	Z = Power-steering axle	FB100 = Spring width 100 mm	

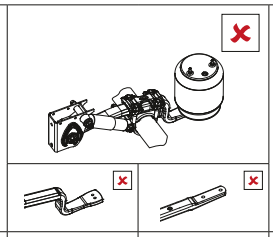
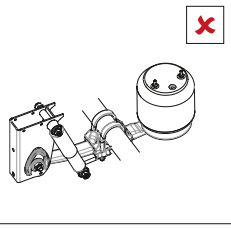
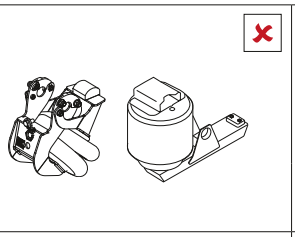
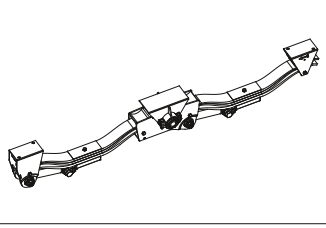
MAINTENANCE INTERVALS

for axles

every six months

4

6

					
	GL70	GL70L, GL70HD	GL70 with T-suspension	Axle lifts	LK, GK, GKT = Mechanical suspensions

! Observe the previous shorter maintenance intervals!

1

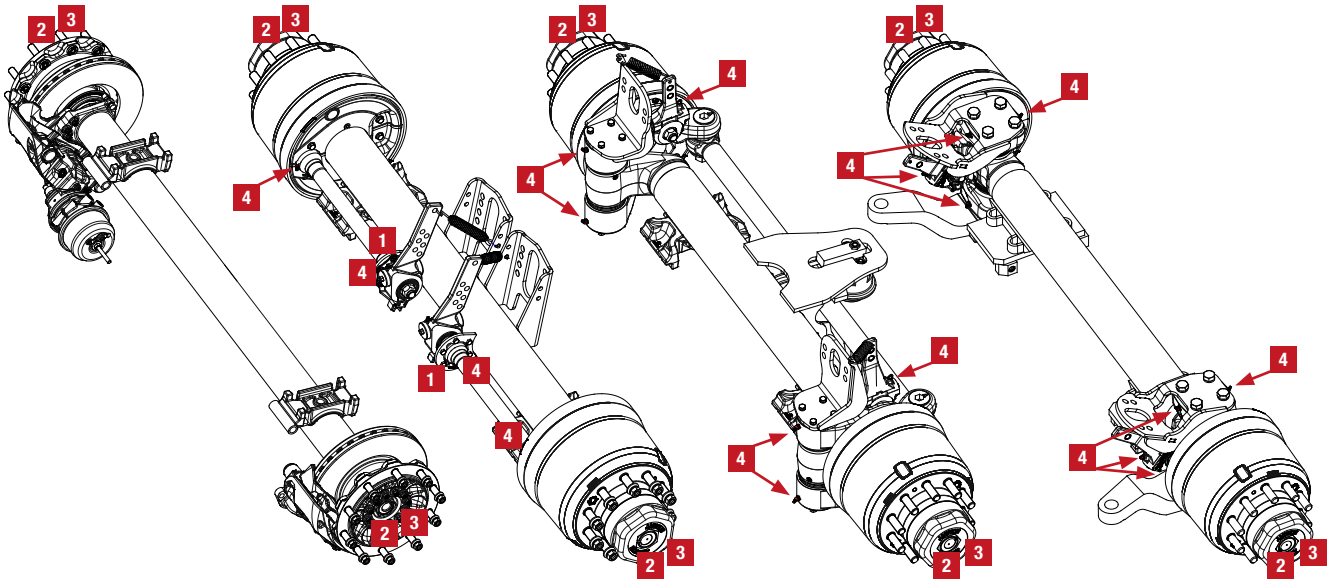
» **Check the brake camshaft clearance**
» **Check the fitting on the brake camshaft bracket**

FITTING	TEST TORQUE	TIGHTENING TORQUE
M8		22.5 Nm ± 2.5 Nm
M12		80 Nm ± 5 Nm

2 **Check bearing clearance on the G/DH7 and GAH1** → 2.2, pg. 21

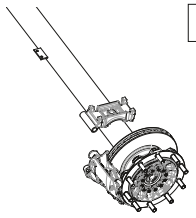
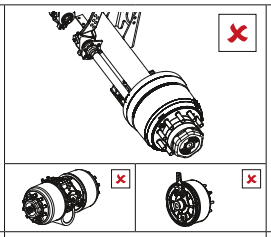
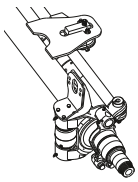
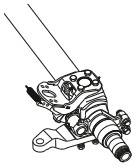
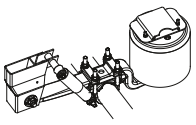
3 **Check bearing clearance on G/D....K... If necessary, conduct axial clearance measurement** → 2.2, pg. 21

4 **Lubricate until grease comes out**



Loosened fittings and their components must be inspected for damage and replaced if necessary.

6. MAINTENANCE INSTRUCTIONS FOR AIR SUSPENSIONS - EVERY SIX MONTHS

					
D = Axle With disc brake	G = Axle With drum brake	N = Self-steering axle	Z = Power-steering axle	FB100 = Spring width 100 mm	

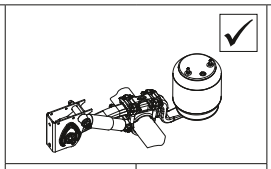
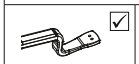
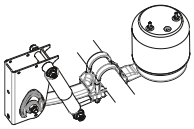
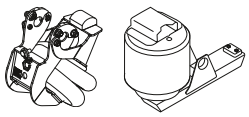
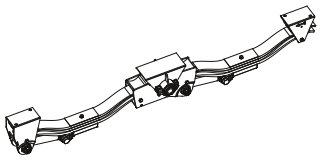
MAINTENANCE INTERVALS

for air suspensions

every six months

4

6

	  				
	GL70	GL70L, GL70HD	GL70 with T-suspension	Axle lifts	LK, GK, GKT = Mechanical suspensions

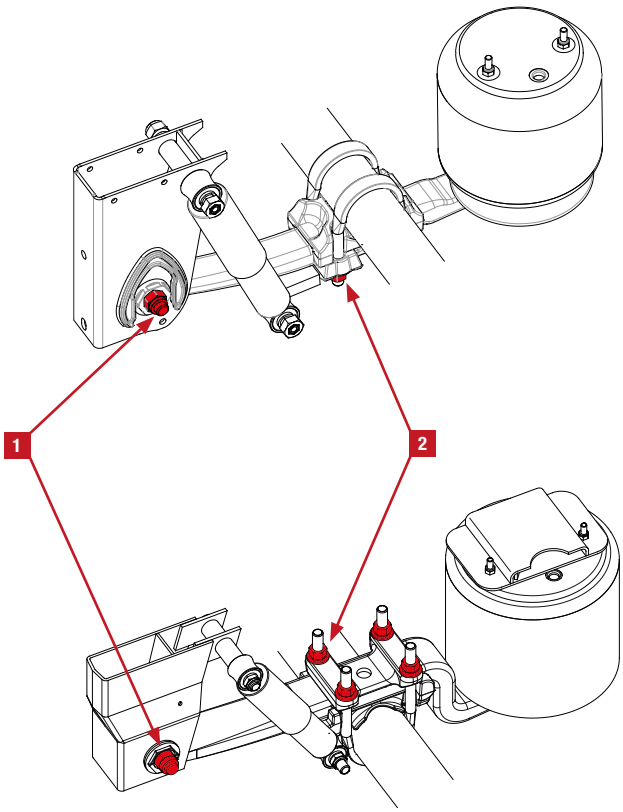
! Does not apply to GL70/GL70HD suspensions belonging to type T(K)LR!

1 **Check the spring bolt fitting** and replace, if necessary

FITTING	TEST TORQUE	TIGHTENING TORQUE
M24	680 Nm	900 Nm ± 50 Nm
M27x1.5		575 Nm ± 25 Nm

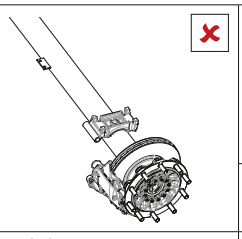
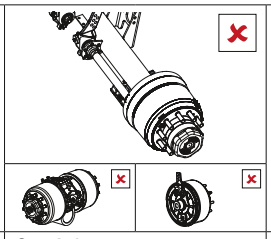
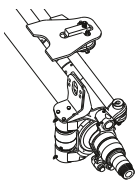
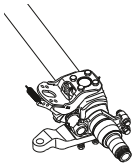
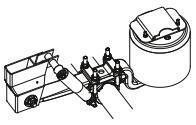
2 **Check the U-bolt fitting** and replace, if necessary

FITTING	TEST TORQUE	TIGHTENING TORQUE
M20x1.5 (locknut/washer)	480 Nm	550 Nm ± 25 Nm
M22x1.5 (locknut/washer)	600 Nm	700 Nm ± 25 Nm
M22x1.5 (spigot wheel nut)		675 Nm ± 25 Nm
M24 (Nut/washer)		900 Nm ± 50 Nm



Loosened fittings and their components must be inspected for damage and replaced if necessary.

7. MAINTENANCE INSTRUCTIONS FOR MECHANICAL SUSPENSIONS - EVERY SIX MONTHS

					
D = Axle With disc brake	G = Axle With drum brake	N = Self-steering axle	Z = Power-steering axle	FB100 = Spring width 100 mm	

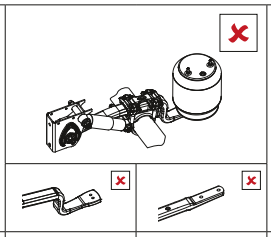
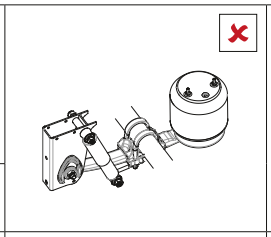
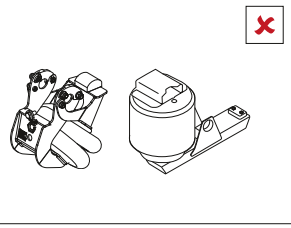
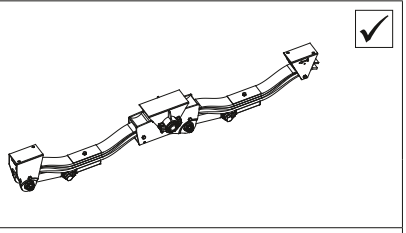
MAINTENANCE INTERVALS

for mechanical suspensions

every six months

4

6

				
	GL70	GL70L, GL70HD	GL70 with T-suspension	Axle lifts	LK, GK, GKT = Mechanical suspensions

! Observe the previous shorter maintenance intervals!

1 **Check the U-bolt fitting** and replace, if necessary

FITTING	TEST TORQUE	TIGHTENING TORQUE
M20x1.5 (Nut/washer)		605 Nm ± 25 Nm
M22x1.5 (spigot wheel nut)		675 Nm ± 25 Nm
M24x2 (Nut/washer)		900 Nm ± 50 Nm

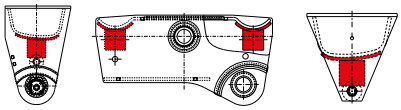
2 Check the **rubber rollers** to see if they move freely → replace if damaged and worn

3 Check the **equalizer** bearing→ replace the silent block if damaged and if there is considerable clearance

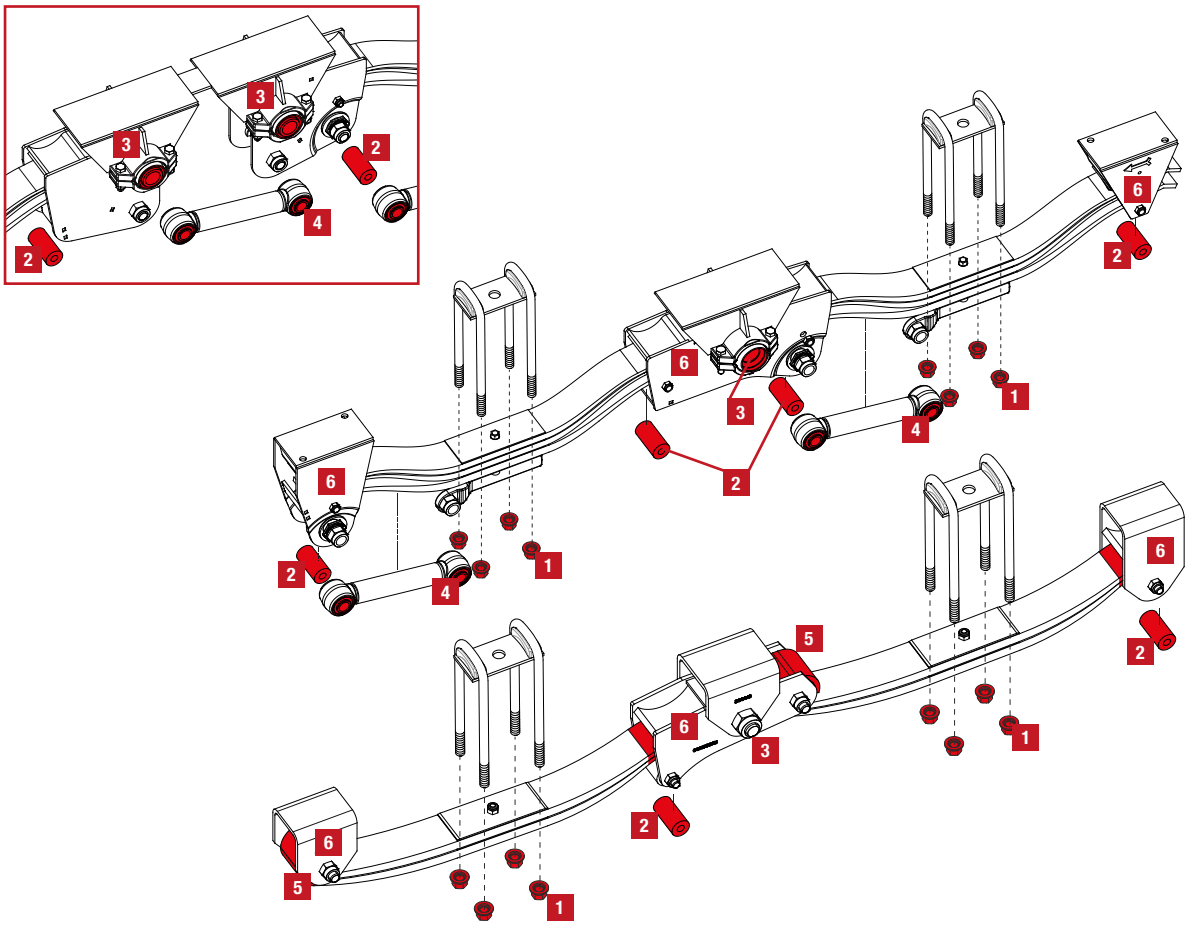
4 **LK:** Check the **torque arm (LK17 in addition to pendulum arm)** → replace the silent block if damaged and if there is considerable clearance

5 **GK:** Check the **silent block in spring eye** → replace if damaged and if there is considerable clearance

6 **LK/GK:** Check the **sliding plate** → replace if < 3 mm, 4.1.4, pg. 82
LK: Check the **wear plates** → replace if < 3 mm, 4.2.4, pg. 84

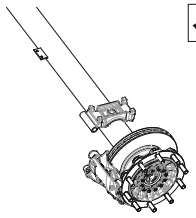
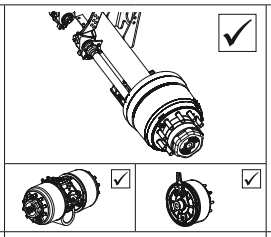
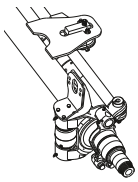
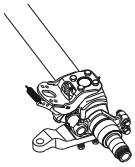
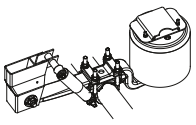


GK: Check the **side plate** → replace if < 3 mm



Loosened fittings and their components must be inspected for damage and replaced if necessary.

8. MAINTENANCE INSTRUCTIONS FOR AXLES - EVERY TWELVE MONTHS

					
D = Axle With disc brake	G = Axle With drum brake	N = Self-steering axle	Z = Power-steering axle	FB100 = Spring width 100 mm	

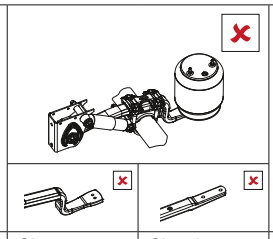
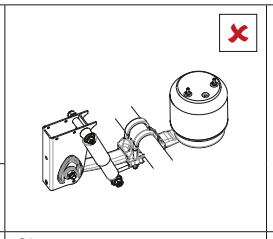
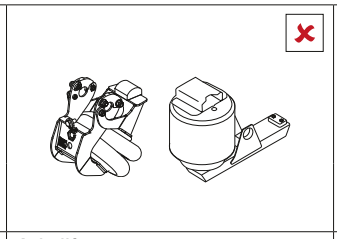
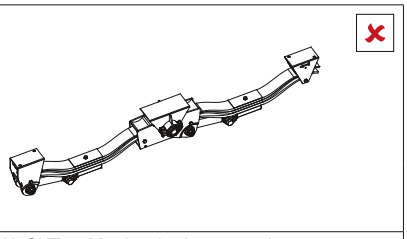
MAINTENANCE INTERVALS

for axles

every twelve months

4

12

					
	GL70	GL70L, GL70HD	GL70 with T-suspension	Axle lifts	LK, GK, GKT = Mechanical suspensions

! Observe the previous shorter maintenance intervals!

1 **Check Torx screws**

FITTING	TEST TORQUE	TIGHTENING TORQUE
E 24		470 Nm ± 25 Nm

2 **Check wheel bearing**

Axle type G/D...K2: Check axial clearance → 2.2, pg. 21

Axle type G/DH...7 and GAH1: Replace bearing grease

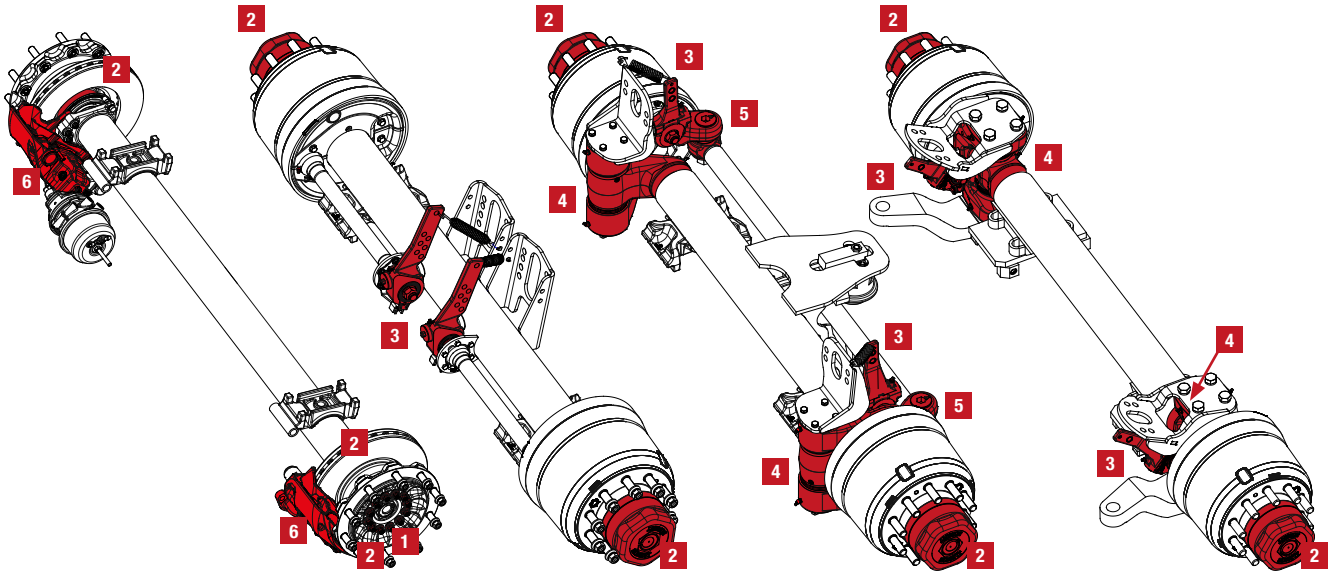
The following could be signs of bearing damage:
- » Heavily discoloured and burnt-smelling grease
- » Grinding noises
- » Discolourations, imprints, peeling, etc. on the bearing ring or on the roller

3 **Grease the automatic slack adjuster and check theair gap**

4 **Check the height clearance of the spring bolts** → 3.2, pg. 21

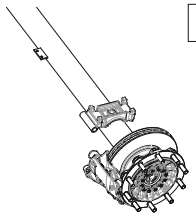
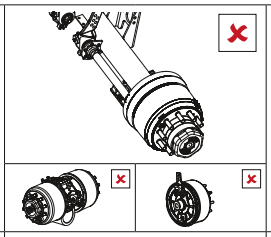
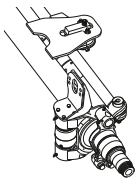
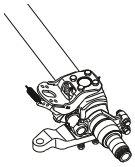
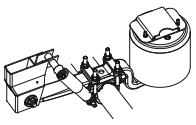
5 Check the **direction bar end** and → replace the silent block if damaged and if there is considerable clearance

6 Check **brake calliper**→ see manufacturer's specifications → 1.2.3, pg. 20



Loosened fittings and their components must be inspected for damage and replaced if necessary.

9. MAINTENANCE INSTRUCTIONS FOR AXLES WITH ADDITIONAL STEERING - EVERY TWELVE MONTHS

					
D = Axle With disc brake	G = Axle With drum brake	N = Self-steering axle	Z = Power-steering axle	FB100 = Spring width 100 mm	

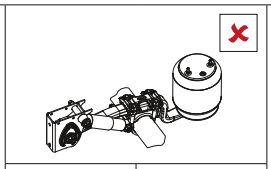
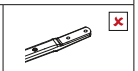
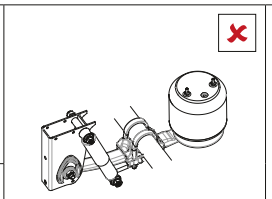
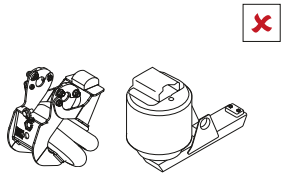
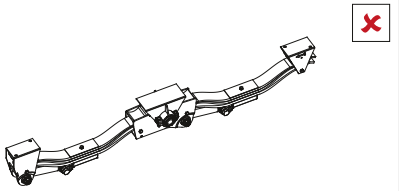
MAINTENANCE INTERVALS

for axles with additional steering

every twelve months

4

12

	  				
	GL70	GL70L, GL70HD	GL70 with T-suspension	Axle lifts	LK, GK, GKT = Mechanical suspensions

1 Check the **clamp**

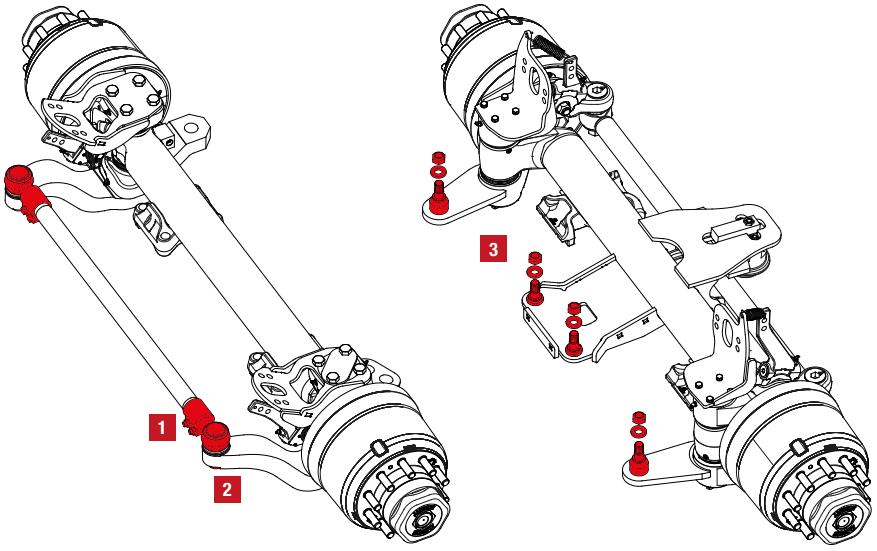
FITTING	TEST TORQUE	TIGHTENING TORQUE
M12x1.5 (locknut)		80 Nm ± 10 Nm

2 Check the **steering rod end**→ and replace if damaged and if there is considerable clearance

FITTING	TEST TORQUE	TIGHTENING TORQUE
M30x1.5 (castellated nut)		450 Nm

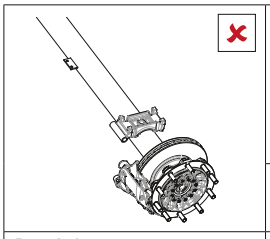
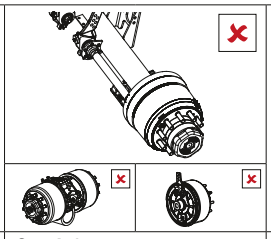
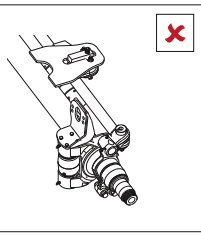
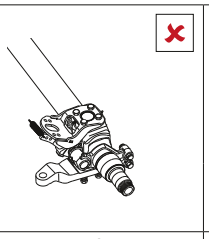
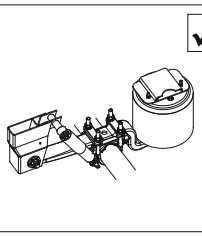
3 Check the **threaded bolt of the cylinder connection**

FITTING	TEST TORQUE	TIGHTENING TORQUE
M22x1.5		500 Nm



Loosened fittings and their components must be inspected for damage and replaced if necessary.

10. MAINTENANCE INSTRUCTIONS FOR AIR SUSPENSIONS - EVERY TWELVE MONTHS

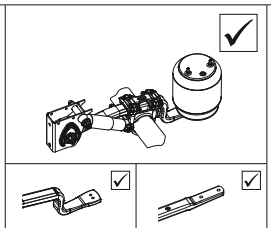
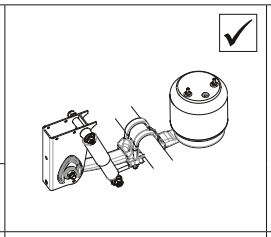
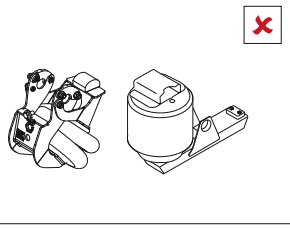
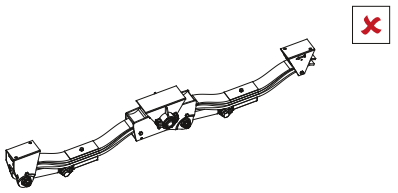
					
D = Axle With disc brake	G = Axle With drum brake	N = Self-steering axle	Z = Power-steering axle	FB100 = Spring width 100 mm	

MAINTENANCE INTERVALS

for air suspensions
every twelve months

4

12

					
	GL70	GL70L, GL70HD	GL70 with T-suspension	Axle lifts	LK, GK, GKT = Mechanical suspensions

! Only a visual inspection is required for the GL70 suspension when used on the road!

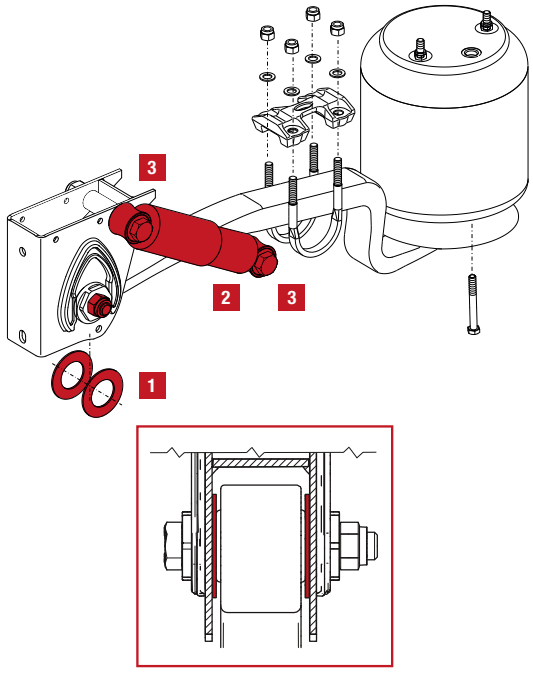
! Observe the previous shorter maintenance intervals!

1 **Check wear**
→ on the GL70: Replace if < 2 mm
→ On the FB100: Replace if < 4.5 mm

2 **Check shock absorber** → 6, pg. 22

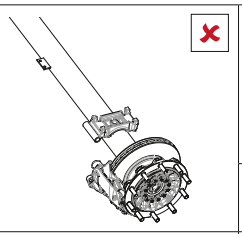
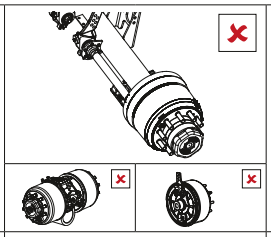
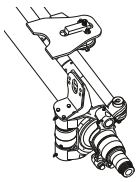
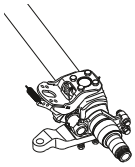
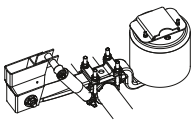
3 **Check shock absorber fitting**

FITTING	TEST TORQUE	TIGHTENING TORQUE
M24 (SK screw/S-nut)	480 Nm	530 Nm ± 30 Nm
M24 (S-nut on pin)	260 Nm	400 Nm ± 20 Nm
M22x1.5 (SK screw/S-nut)		350 Nm



Loosened fittings and their components must be inspected for damage and replaced if necessary.

11. MAINTENANCE INSTRUCTIONS FOR AIR BELLOWS - EVERY TWELVE MONTHS

					
D = Axle With disc brake	G = Axle With drum brake	N = Self-steering axle	Z = Power-steering axle	FB100 = Spring width 100 mm	

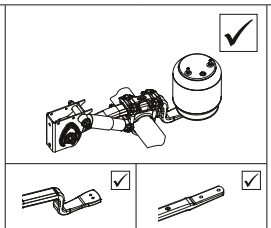
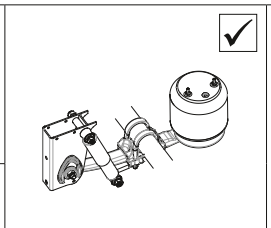
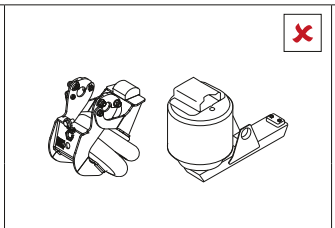
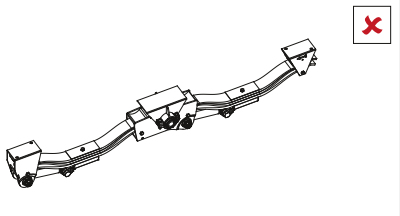
MAINTENANCE INTERVALS

for air bellows

every twelve months

4

12

					
	GL70	GL70L, GL70HD	GL70 with T-suspension	Axle lifts	LK, GK, GKT = Mechanical suspensions

! Only a visual inspection is required for the GL70 suspension!

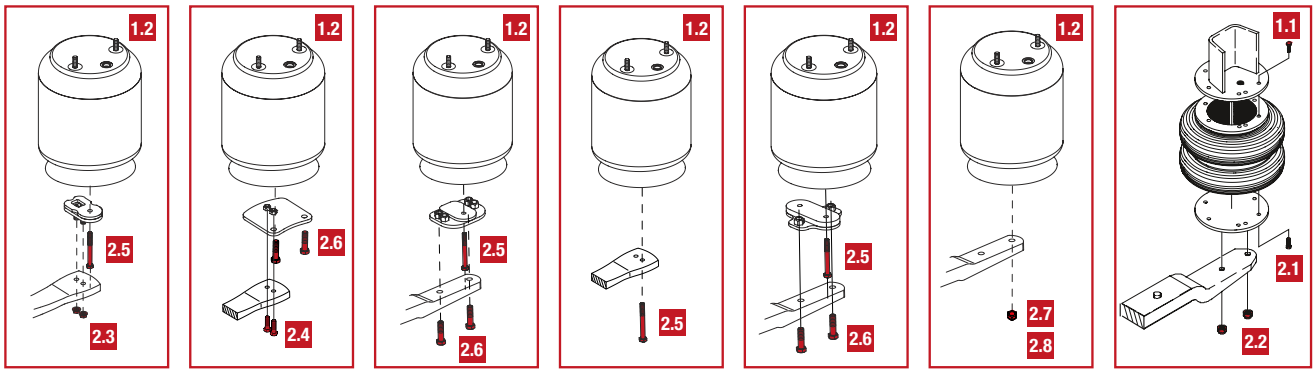
1 Check the **upper air bellow attachment**

	FITTING	TEST TORQUE	TIGHTENING TORQUE
1.1	M8 (locknut)		22.5 Nm ± 2.5 Nm
1.2	M12 (locknut)		55 Nm ± 5 Nm

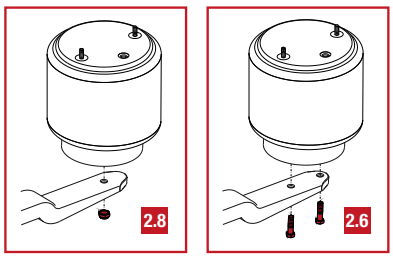
2 Check the **lower air bellow attachment**

	FITTING	TEST TORQUE	TIGHTENING TORQUE
2.1	M8 (screw)		22.5 Nm ± 2.5 Nm
2.2	M16 (locknut)		180 Nm ± 10 Nm
2.3	M12 (nut with flange/locking teeth)		110 Nm ± 10 Nm
2.4	M12 (SK screw/adapter plate)		110 Nm ± 10 Nm
2.5	M12 (SK screw)	45 Nm	55 Nm ± 5 Nm
2.6	M16 (SK screw)	200 Nm	280 Nm ± 10 Nm
2.7	M16 (locknut)		120 Nm
2.8	M20 (locknut)		350 Nm

GL70 variants:

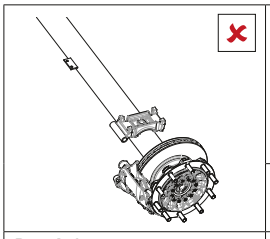
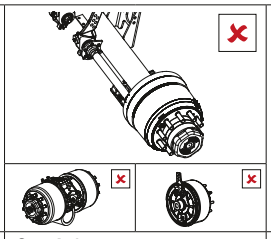
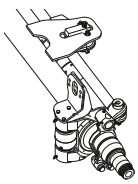
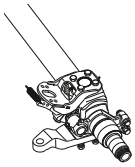
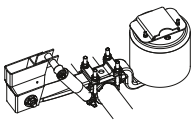


FB100 variants:



Loosened fittings and their components must be inspected for damage and replaced if necessary.

12. MAINTENANCE INSTRUCTIONS FOR AXLE LIFTS - EVERY TWELVE MONTHS

					
D = Axle With disc brake	G = Axle With drum brake	N = Self-steering axle	Z = Power-steering axle	FB100 = Spring width 100 mm	

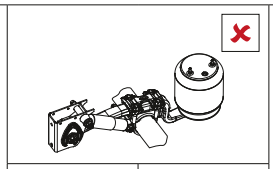
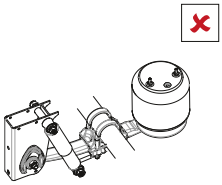
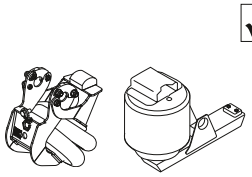
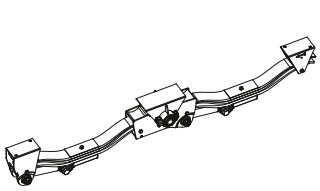
MAINTENANCE INTERVALS

for axle lifts

Every twelve months

4

12

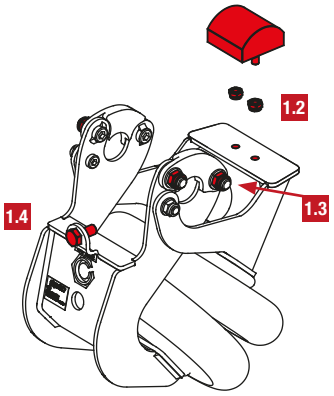
	  				
	GL70	GL70L, GL70HD	GL70 with T-suspension	Axle lifts	LK, GK, GKT = Mechanical suspensions

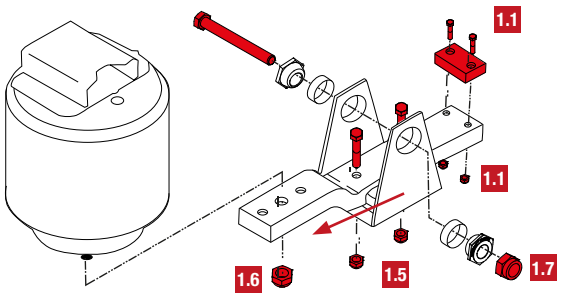
1 Check the **plastic pad** , replace if necessary **and check the fitting**

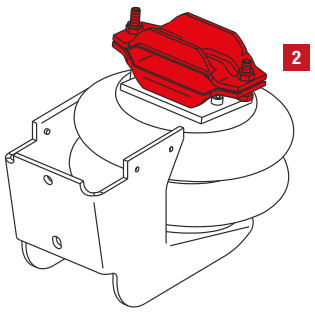
	FITTING	TEST TORQUE	TIGHTENING TORQUE
1.1	M8		25 Nm
1.2	M8		40 Nm ± 5 Nm
1.3	M14 (locknut)		120 Nm ± 10 Nm
1.4	M14 (screw)		80 Nm ± 5 Nm
1.5	M16		180 Nm ± 10 Nm
1.6	M20		275 Nm ± 25 Nm
1.7	M27x1.5		575 Nm ± 25 Nm

2 **Check the clamp** and replace, if necessary

FITTING	TEST TORQUE	TIGHTENING TORQUE
M10		43 Nm ± 3 Nm







Loosened fittings and their components must be inspected for damage and replaced if necessary.

Maintenance interval: WI

AFTER 3 MONTHS	WI	3		
DATE	**ODOMETER READING IN KILOMETRES**			
COMMENT				
Stamp signature				

AFTER 6 MONTHS	WI	3	6	
DATE	**ODOMETER READING IN KILOMETRES**			
COMMENT				
Stamp signature				

AFTER 9 MONTHS	WI	3		
DATE	**ODOMETER READING IN KILOMETRES**			
COMMENT				
Stamp signature				

AFTER 12 MONTHS	WI	3	6	12
DATE	**ODOMETER READING IN KILOMETRES**			
COMMENT				
Stamp signature				

AFTER 15 MONTHS	WI	3		
DATE	**ODOMETER READING IN KILOMETRES**			
COMMENT				
Stamp signature				

AFTER 18 MONTHS	WI	3	6	
DATE	**ODOMETER READING IN KILOMETRES**			
COMMENT				
Stamp signature				

AFTER 21 MONTHS	WI	3		
DATE	**ODOMETER READING IN KILOMETRES**			
COMMENT				
Stamp signature				

AFTER 24 MONTHS	WI	3	6	12
DATE	**ODOMETER READING IN KILOMETRES**			
COMMENT				
Stamp signature				

Maintenance interval: WI

AFTER 27 MONTHS	WI	3		
DATE	ODOMETER READING IN KILOMETRES			
COMMENT				
Stamp signature				

AFTER 30 MONTHS	WI	3	6	
DATE	ODOMETER READING IN KILOMETRES			
COMMENT				
Stamp signature				

AFTER 33 MONTHS	WI	3		
DATE	ODOMETER READING IN KILOMETRES			
COMMENT				
Stamp signature				

AFTER 36 MONTHS	WI	3	6	12
DATE	ODOMETER READING IN KILOMETRES			
COMMENT				
Stamp signature				

AFTER 39 MONTHS	WI	3		
DATE	ODOMETER READING IN KILOMETRES			
COMMENT				
Stamp signature				

AFTER 42 MONTHS	WI	3	6	
DATE	ODOMETER READING IN KILOMETRES			
COMMENT				
Stamp signature				

AFTER 45 MONTHS	WI	3		
DATE	ODOMETER READING IN KILOMETRES			
COMMENT				
Stamp signature				

AFTER 48 MONTHS	WI	3	6	12
DATE	ODOMETER READING IN KILOMETRES			
COMMENT				
Stamp signature				

Maintenance interval: WI

AFTER 51 MONTHS	WI	3		
DATE	**ODOMETER READING IN KILOMETRES**			
COMMENT				
Stamp signature				

AFTER 54 MONTHS	WI	3	6	
DATE	**ODOMETER READING IN KILOMETRES**			
COMMENT				
Stamp signature				

AFTER 57 MONTHS	WI	3		
DATE	**ODOMETER READING IN KILOMETRES**			
COMMENT				
Stamp signature				

AFTER 60 MONTHS	WI	3	6	12
DATE	**ODOMETER READING IN KILOMETRES**			
COMMENT				
Stamp signature				

AFTER 63 MONTHS	WI	3		
DATE	**ODOMETER READING IN KILOMETRES**			
COMMENT				
Stamp signature				

AFTER 66 MONTHS	WI	3	6	
DATE	**ODOMETER READING IN KILOMETRES**			
COMMENT				
Stamp signature				

AFTER 69 MONTHS	WI	3		
DATE	**ODOMETER READING IN KILOMETRES**			
COMMENT				
Stamp signature				

AFTER 72 MONTHS	WI	3	6	12
DATE	**ODOMETER READING IN KILOMETRES**			
COMMENT				
Stamp signature				

gigant
trailer axles

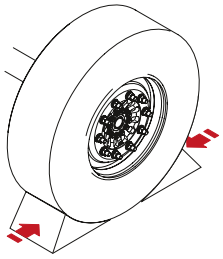
5 REPAIR AXLES

AXLES

1. GENERAL PREPARATIONS AND ACTIVITIES

1.1 SECURE THE VEHICLE

» Secure the vehicle from rolling away on level, firm ground
» Disconnect the brake and air supply lines from the tractor; disassemble the wheel, if necessary
» Jack up the frames in an accident-proof manner, if necessary
» If necessary, raise the axle or component and support it in an accident-proof manner
» Support the chassis accident-proof at driving height with the chassis completely lifted



1.2 DISASSEMBLING/REASSEMBLING THE WHEEL

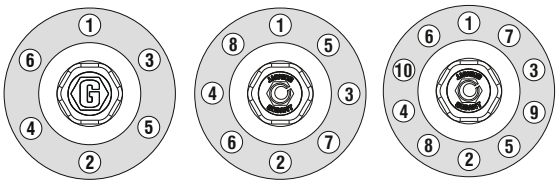
[1] Take off the wheel nuts
- SW 24
- SW 27
- SW 32

[2] Raise the axle on even, metalled ground
[3] Take off the wheel
[4] Clean the hub seating, rim seating and wheel nuts

! **Pre-centring devices must be used depending on the rim and hub design!**

[5] Install wheel
[6] Tighten the wheel nuts at the tightening torque clockwise in a criss-cross pattern:
- » Bolt centring
  - SW 24 / M18x1.5 270 Nm ± 25 Nm
  - SW 32 / M22x1.5 475 Nm ± 25 Nm
- » Spigot centring
  - SW 27 / M18x1.5 320 Nm ± 15 Nm
  - SW 32 / M22x1.5 600 Nm ± 30 Nm

[7] Lower the axle on even, firm ground



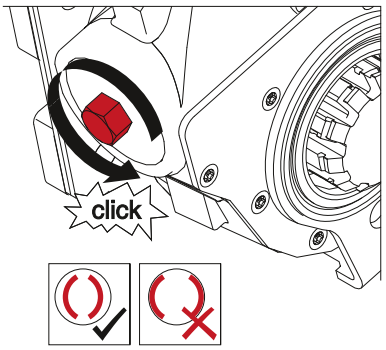
1.3 RELEASE THE BRAKE

[1] Release the service or parking brake
[2] Disconnect the compressed air supply

! **On spring-loaded brake cylinders, the mechanical release device must be activated!**

1.3.1 DRUM BRAKE

» Turn the automatic slack adjuster's setting disc counterclockwise (clicking sounds are normal) until the brake drum can be removed
- SW 12



1.3.2 DISC BRAKE

» Manually remove the adjuster's protection cup to prevent damaging the seal
» Turn back the adjuster using a tool/adapter
» Please check the brake calliper manufacturer's information for the procedure:

www.haldex.de
→ Services & Support
→ Literature and Documents

inform.wabco-auto.com

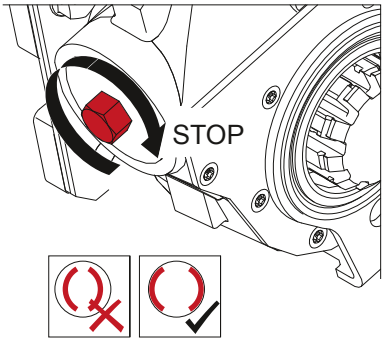
www.knorr-bremse.de
→ Commercial vehicles
→ Download & Services
→ Download Documentation

1.4 ADJUST THE BRAKE

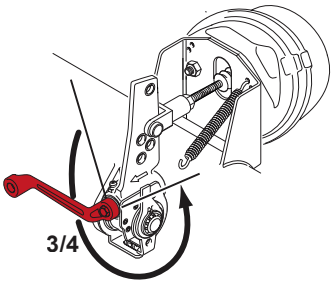
1.4.1 DRUM BRAKE (AIR CLEARANCE)

! **In the "drum in front of the hub" system, the tyre must be installed or the brake drum must be secured with two wheel nuts!**

[1] Turn the automatic slack adjuster's adjusting screw clockwise until the brake lining fits on the brake drum



[2] Turn back the adjusting screw on the automatic slack adjuster by approx. ¾ turns
- SW 12
- **! If the adjustment coupling works flawlessly, a torque of at least 18 Nm can be felt when turning back!**
- **! Creaking sound can be heard!**
- **! On spring-loaded brake cylinders, the mechanical release device must be dismounted and placed on the bracket!**
- **! On the swivel axle, the automatic slack adjuster must be positioned in parallel!**



1.4.2 DISC BRAKE

» Please check the brake calliper manufacturer's information for the procedure:

www.haldex.de
→ Services & Support
→ Literature and Documents

inform.wabco-auto.com

www.knorr-bremse.de
→ Commercial vehicles
→ Download & Services
→ Download Documentation

2. AXLE TYPE-INDEPENDENT REPAIR

This chapter will explain repair steps that involve several types of axles.

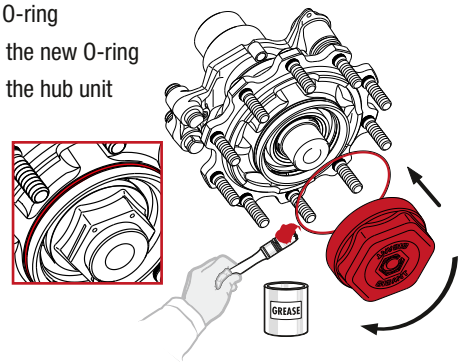
2.1 DISASSEMBLING/ASSEMBLING THE HUB CAP

2.1.1 SCREWED HUB CAP (AXLE TYPES K2, K3, H7 - 12T)

[1] Disassemble the hub cap by rotating counterclockwise
- SW 120
- SW 160
- SW 170

[2] Dispose of the O-ring

[3] Slightly grease the new O-ring and place it on the hub unit



[4] Install hub cap and tighten clockwise at the tightening torque:
750 Nm ± 50 Nm
- **! O-ring must not be squeezed out after tightening!**
- **! Assemble the hub cap for the hubodometer watertight according to the manufacturer's specifications!**

2.1.2 CLIPPED HUB CAP (AXLE TYPE GAH1)

[1] Leverage the hub cap from the provided groove

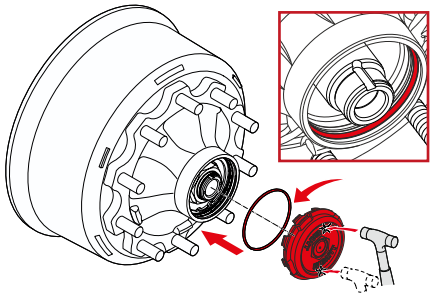
[2] Dispose of the O-ring

[3] Clean groove and system areas

[4] Lightly grease the new O-ring (Mobilith SHC 220) and place it in groove

[5] Install the hub cap and turn it a little to make sure that the O-ring is seated OK

[6] Use a plastic hammer to carefully hammer in the hub cap and make sure that it is properly seated
- **! No gap is allowed!**



2.2 DISASSEMBLING/ASSEMBLING THE HUB UNIT/BEARING UNIT

2.2.1 COMPACT BEARING (AXLE TYPE K2, K3) WITH SCREWED HUB CAP

- **! Be mindful of the left/right thread on the axle nut and mounting mandrel!**

[1] Disassemble the wheel → 1.2, pg. 52

[2] Release the brake → 1.3, pg. 52

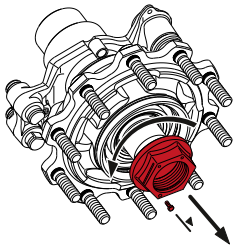
[3] Axles with brake drum: Remove, inspect and, if necessary, replace brake drum → 3.1.1, pg. 59
Disc brake axles:
Disassemble, inspect and, if necessary, replace the brake calliper → 4.2, pg. 71

[4] Disassemble the hub cap → 2.1, pg. 53

[5] Detach the retainer bolt of the axle nut
- SW 10

[6] Bend open the clamping on the axle nut
- **! Do not damage the threads!**

[7] Detach, inspect and, if necessary, replace the axle nut
- SW 95

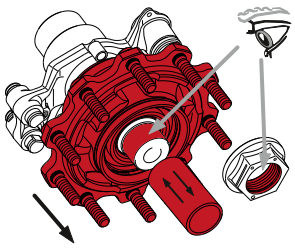


5

[8] Screw on the mounting mandrel

[9] Take off the hub unit

! **Do not tilt the hub unit!**



[10] Disassemble and dispose of the O-ring, if necessary

[11] Disassemble the mounting mandrel

[12] Clean axle stub, check the thread and, if necessary, rework with the thread chaser

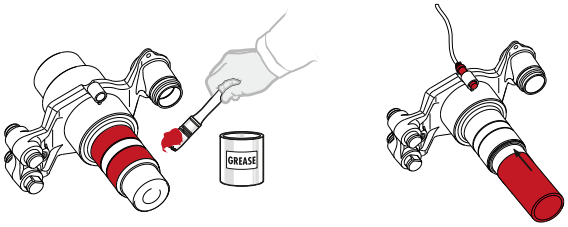
! **The use of chemical cleaners is allowed. For stubborn residues, the use of an abrasive pad is allowed if the locations can be cleaned by hand!**

[13] If necessary, slide on the O-ring until stop

[14] Check ABS sensor ring; replace if unevenness is > 0.2 mm → 2.3, pg. 57

[15] Slightly grease bearing seat (Molykote TP42)

! **Do not grease the contact surface of the bearing shoulder and the thread!**



[16] Screw on the mounting mandrel

[17] Rear inductive sensor ABS on the hub or on the brake disc:

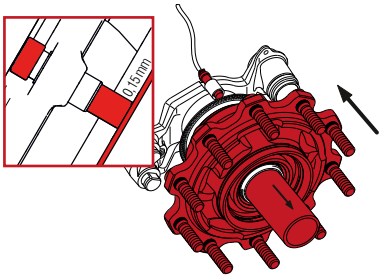
» Push the inductive sensor ABS through until the front is visible

» Clean the front

(if the inductive sensors ABS are stiff or stuck, they must be removed - including the bush - re-greased and re-installed.)

[18] Push the hub unit until stop

! **Do not tilt the hub unit!**



[19] Rear inductive sensor ABS on the hub or on the brake disc: Adjust the distance to the ABS sensor ring at 0.15 mm

[20] Disassemble the mounting mandrel

[21] Lightly grease the bearing surface of the axle nut

! **The threads must be free of grease!**

[22] Tighten the axle nuts while turning the wheel hub

! **Be sure to observe the tightening torques according to the material number!**

SW 95 M68x1.5

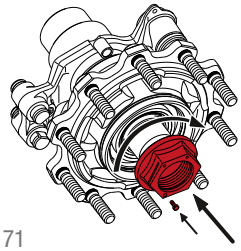
Material number: ...535/536	700 Nm ± 25 Nm
Material number: ...070	480 Nm ± 20 Nm

SW 95 M76x1.5

Material number: ...001/002	870 Nm ± 25 Nm

[23] Tighten retainer bolt

SW 10 15 Nm



[24] Assemble the hub cap → 2.1, pg. 53

[25] Axles with brake drum: Assemble the brake drum → 3.1.1, pg. 59

Disc brake axles:

Assemble the brake calliper → 4.2, pg. 71

[26] Adjust the brake → 1.4, pg. 52

[27] Assemble the wheel → 1.2, pg. 52

[28] Check the brake

2.2.2 COMPACT BEARING/STEPHUBUNIT (AXLE TYPE K2) WITH WHEEL FLANGE

! **Be mindful of the axle nut's left/right thread!**

[1] Disassemble the wheel → 1.2, pg. 52

[2] Release the brake → 1.3, pg. 52

[3] Disassemble the brake linings according to the manufacturer's directions

[4] Disassemble the brake calliper → 4.2.2, pg. 72

[5] Replace the two Torx screws with assembly bolts

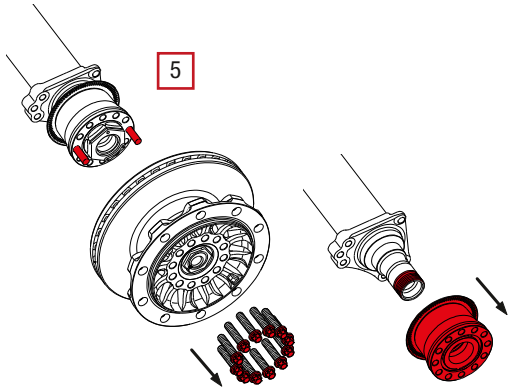
E 24

[6] Disassemble and dispose of the remaining Torx screws; remove the hubodometer bracket, if necessary

[7] Take off the flange with brake disc via the assembly bolts

[8] Detach the retainer bolt of the axle nut

SW 10



[9] Bend open the clamping on the axle nut

! **Do not damage the threads!**

[10] Detach, inspect and, if necessary, replace the axle nut

SW 95

[11] Take off the StepHubUnit

! **If the StepHubUnit is stiff or stuck, it can be taken off using a puller tool. To do this, the adapter pieces can be screwed into the StepHubUnit!**

[12] Remove O-ring from axle stub or from StepHubUnit and dispose of it

[13] Clean the axle stub, check the thread and, if necessary, rework with the thread chaser

! **The use of chemical cleaners is allowed. For stubborn residues, the use of an abrasive pad is allowed if the locations can be cleaned by hand!**

[14] Slightly grease bearing seat (Molykote TP42)

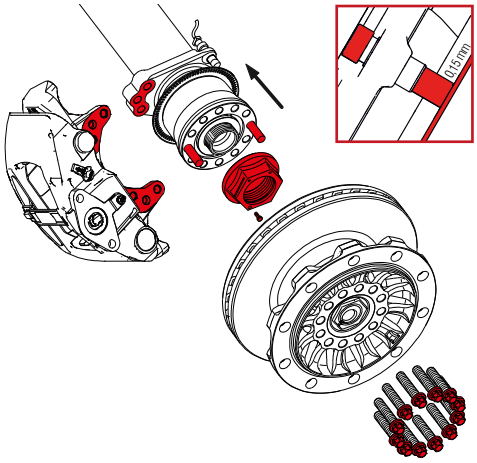
! **Do not grease the bearing surfaces and the threads!**

[15] Check ABS sensor ring; replace if unevenness is > 0.2 mm
→ 2.3, pg. 57

[16] Rear inductive sensor ABS on the hub or on the brake disc:
» Push the inductive sensor ABS through until the front is visible
» Clean the front (if the inductive sensors ABS are stiff or stuck, they must be removed - including the bush - re-greased and re-installed.)

[17] Insert and slide new O-ring onto the StepHubUnit

! **Make sure that the O-ring is properly seated!**



[18] Lightly grease the bearing surface of the axle nut

! **The threads must be free of grease!**

[19] Tighten the axle nuts while turning the StepHubUnit (be mindful of the left/right threads)

SW 95 M68x1.5 700 Nm ± 25 Nm

[20] Tighten retainer bolt

SW 10 15 Nm

[21] Rear inductive sensor ABS on the StepHubUnit:
Adjust the distance to the ABS sensor ring at 0.15 mm

[22] Clean the surface areas of the brake calliper and brake carrier

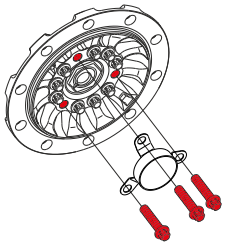
[23] Slide on flange with brake disc

[24] Insert new Torx screws by hand

! **For safety reasons, Torx screws must always be replaced with <u>new</u> ones!**

[25] Replace assembly bolts with Torx screws; if necessary, attach the hubodometer bracket with 3 Torx screws and shifted by 120°!

! **Mount the hubodometer on the bracket according to the manufacturer's specifications!**



[26] Evenly tighten the Torx screws in a criss-cross pattern

E 24 470 Nm ± 25 Nm

[27] Assemble the brake calliper → 4.2.2, pg. 72

[28] Assemble the brake linings according to the manufacturer's directions

[29] Adjust the brake → 1.4, pg. 52

[30] Assemble the wheel → 1.2, pg. 52

[31] Check the brake

2.2.3 CONVENTIONAL DUAL-BEARING TECHNOLOGY H7 - 12T

(DRUM IN FRONT OF THE HUB OR WASHER, WITH SCREWED HUB CAP)

! **Be mindful of the axle nut's left/right thread!**

[1] Disassemble the wheel → 1.2, pg. 52

[2] Release the brake → 1.3, pg. 52

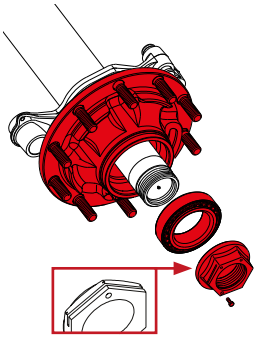
[3] Take off, check and, if necessary, replace the brake drum
→ 3.1.1, pg. 59

[4] Disassemble the hub cap → 2.1, pg. 53

[5] Detach the retainer bolt of the axle nut
SW 13

[6] Bend open the clamping on the axle nut

! **Do not damage the threads!**



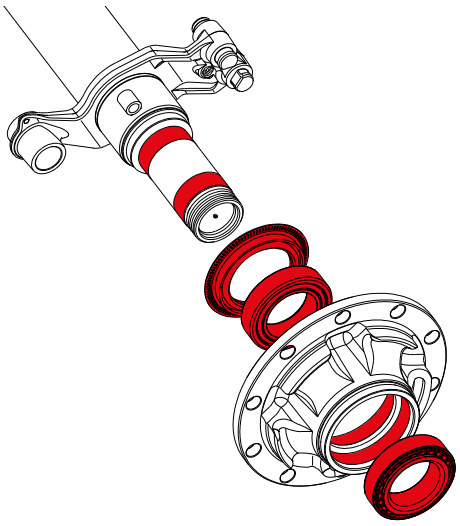
[7] Detach, inspect and, if necessary, replace the axle nut
SW 120

[8] Take off the front tapered roller bearing

[9] Remove hub from the axle stub

[10] Check thread and, if necessary, rework with the thread chaser

[11] Disassemble, inspect and, if necessary, replace the combined hub sealing ring with ABS sensor ring from the back of the hub



[12] Disassemble rear tapered roller bearing

[13] Clean the tapered roller bearing and bearing seats and check for wear or damage (tempering colours, significant run marks and noticeable imprints and breaks) and replace if necessary
→Replacement: Push out the bearing clamps, clean the bearing seats and evenly insert the new bearing clamps

5

[14] Clean the axle stub

! **The use of chemical cleaners is allowed. For stubborn residues, the use of an abrasive pad is allowed if the locations can be cleaned by hand!**

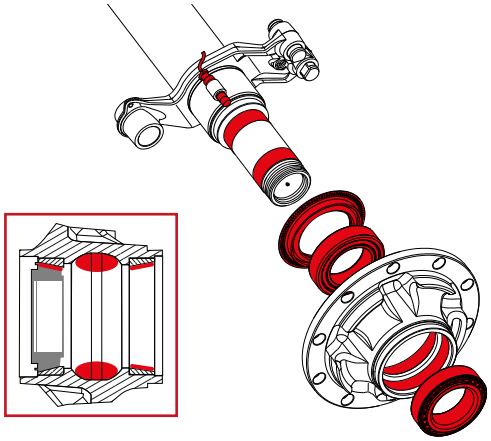
[15] Slightly grease bearing seat (Molykote TP42)

[16] Rear inductive sensor ABS on the hub or on the brake disc:

» Push the inductive sensor ABS through until the front is visible

» Clean the front

(if the inductive sensors ABS are stiff or stuck, they must be removed - including the bush - re-greased and re-installed.)



[17] Grease the tapered roller bearing until the empty spaces between the rollers are filled

[18] Grease the bearing clamps

[19] Insert the rear greased tapered roller bearing into the hub

[20] Insert the hub sealing ring (filled with 75% grease) with ABS sensor ring into the hub without tilting

[21] Check ABS sensor ring;
replace if unevenness is > 0.2 mm ➞ 2.3, pg. 57

[22] Push the hub unit until stop

[23] Use grease to fill the empty space between the hub and axle stub to the seat of the front tapered roller bearing

[24] Grease and insert the front tapered roller bearing

[25] Install axle nut and pre-tighten while turning the wheel hub to set the bearing

SW 120 200 Nm

! **The threads must be free of grease!**

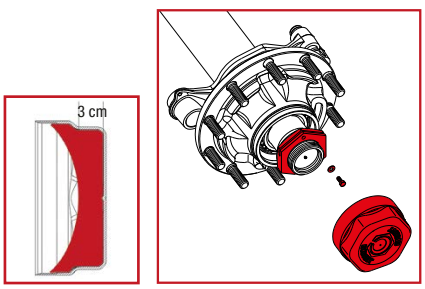
[26] Detach the axle nut

[27] Tighten the axle nuts while turning the wheel hub

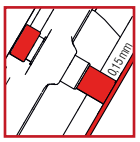
SW 120 120 Nm ± 10 Nm

[28] Tighten retainer bolt

SW 13 22.5 Nm ± 2.5 Nm



[29] Rear inductive sensor ABS on the hub or on the brake disc:
Adjust the distance to the ABS sensor ring at 0.15 mm



[30] Fill the hub cap with grease

[31] Assemble the hub cap ➞ 2.1.1, pg. 53

[32] Assemble the brake drum ➞ 3.1.1, pg. 59

[33] Adjust the brake ➞ 1.4, pg. 52

[34] Assemble the wheel ➞ 1.2, pg. 52

[35] Check the brake

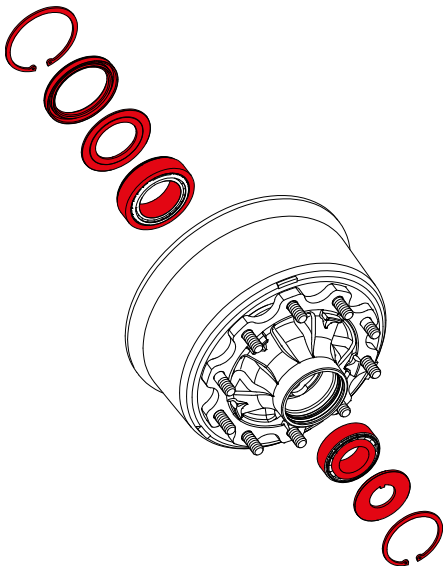
2.2.4 CONVENTIONAL DUAL-BEARING TECHNOLOGY GAH1

(DRUM BEHIND THE HUB, CLIPPED HUB CAP)

[1] Disassembling the hub unit with brake drum ➞ 3.2.2, pg. 67

[2] Disassemble, clean, inspect and, if necessary, replace the circlip, thrust washer, and front tapered roller bearing

[3] Clean the front tapered roller bearing and bearing ring and check for wear or damage (tempering colours, significant run marks and noticeable imprints and breaks) and replace,
if necessary➞ Replacement: Push out bearing ring, clean bearing seat and evenly insert in new bearing ring (do not tilt)



[4] Remove the circlip of the rear tapered roller bearing

[5] Take off and dispose of the seal

[6] Take off wear ring and rear tapered roller bearing

[7] Clean the rear tapered roller bearing and bearing ring and check for wear or damage (tempering colours, a lot of run marks and noticeable imprints and breaks) and replace, if necessary

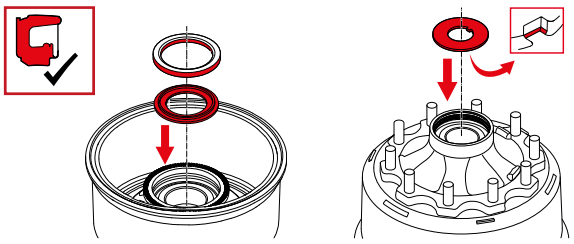
[8] Lightly grease the front and rear bearing ring, fill the gaps with approx. 165 g Mobilith SHC220

[9] Evenly grease and insert the rear tapered roller bearing with approx. 90 g Mobilith SHC220

[10] Insert the thrust washer with the flat side facing the bearing

[11] Evenly grease and insert the seal's inner and outer ring with Mobilith SHC220 and insert it

5

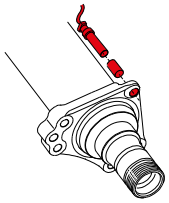


[12] Insert the circlip of the rear tapered roller bearing
[13] Grease front bearing seat
[14] Evenly grease the front tapered roller bearing with approx. 65 g Mobilith SHC220 and insert it
[15] Insert the thrust washer with the chamfer facing the bearing
[16] Insert the front circlip
[17] Assemble the hub unit with brake drum → 3.2.2, pg. 67

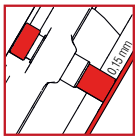
2.3 DISASSEMBLING/ASSEMBLING ABS

2.3.1 INDUCTIVE SENSOR ABS ON THE HUB/BRAKE DISC

2.3.1.1 DISASSEMBLE/ASSEMBLE THE INDUCTIVE SENSOR ABS



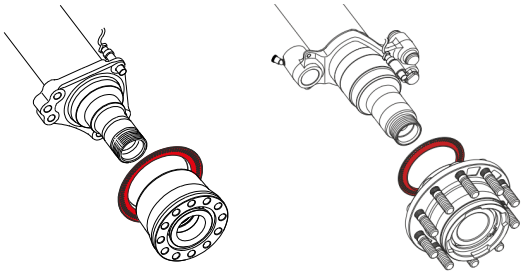
[1] Remove the inductive sensor ABS and bush
[2] Grease the new bush and press in until stop
[3] Push through the inductive sensor ABS until the front is visible
[4] Clean the front (if the inductive sensors ABS are stiff or stuck, they must be removed - including the bush - re-greased and re-installed.) Clean the hole for the ABS sensor bracket



[5] Adjust the distance to the ABS sensor ring at 0.15 mm
! **While doing so, do not deform the ABS sensor ring!**
[6] Check ABS functionality

2.3.1.2 DISASSEMBLE/ASSEMBLE THE ABS SENSOR RING

[1] Disassemble the wheel → 1.2, pg. 52
[2] Release the brake → 1.3, pg. 52
[3] Disassemble the hub cap → 2.1, pg. 53
[4] Disassemble the hub unit → 2.2, pg. 53
[5] Disassemble the ABS sensor ring from the hub unit

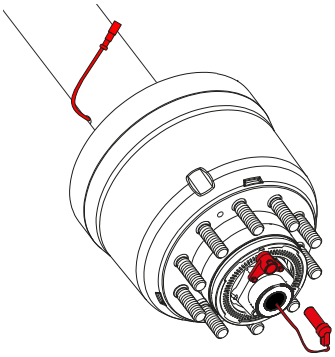


[6] Install (new) ABS sensor ring on the hub unit and evenly press until the stop (using the washer with a diameter of 220 mm and thickness of 15 mm)
[7] Assemble the hub unit → 2.2, pg. 53
[8] Adjust the distance to the ABS sensor ring at 0.15 mm
! **While doing so, do not deform the ABS sensor ring!**
[9] Check ABS functionality and inspect the inductive sensor ABS, if necessary
[10] Assemble the hub cap → 2.1, pg. 53
[11] Adjust the brake → 1.4, pg. 52
[12] Assemble the wheel → 1.2, pg. 52
[13] Check the brake

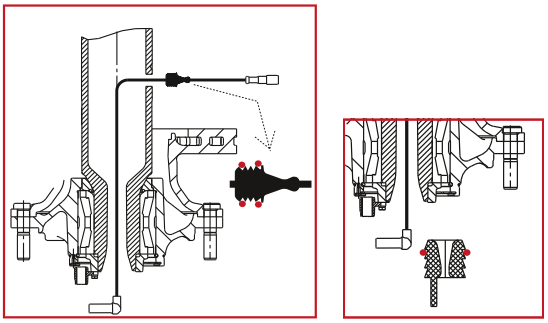
2.3.2 INDUCTIVE SENSOR ABS BEHIND THE HUB CAP

2.3.2.1 DISASSEMBLING/ASSEMBLING THE INDUCTIVE SENSOR ABS

[1] Disassemble the hub cap → 2.1.2, pg. 53
[2] Remove the inductive sensor ABS and bush
[3] Check the inductive sensor ABS and replace, if necessary
» Axles with brake drum
1. Disassemble the wheel → 1.2, pg. 52
2. Release the brake → 1.3, pg. 52
3. Disassemble brake drum, and disassemble the dust cover, if necessary → 3.1.1, pg. 59
» Disc brake axles
1. Disassemble the wheel → 1.2, pg. 52
[4] Disconnect inductive sensor ABS from sensor cable
[5] Take off rubber profiles from the axle tube



[6] Take off the ABS cable with rubber grommet from the hole in the axle tube.
[7] Clean all ducts and make sure that they are free of grease
[8] Run a wire forward through the hole in the axle beam to the axle stub
[9] Fasten new inductive sensor ABS cable to wire
[10] Thread the inductive sensor ABS cable from the axle stub to the hole in the axle beam using the wire



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[11] Coat the rubber sealing rings with sealant (Teroson MS 9120) and insert them

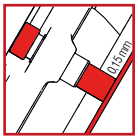
[12] Clean the hole for the ABS sensor bracket

[13] Grease the new bush and press in until stop

[14] Grease and push through the inductive sensor ABS until the front is visible

[15] Clean the front
(if the inductive sensors ABS are stiff or stuck, they must be removed - including the bush - re-greased and re-installed.)

[16] Adjust the distance to the ABS sensor ring at 0.15 mm



! While doing so, do not deform the ABS sensor ring!

» Axles with brake drum

1. Install the brake drum, install the dust cover if necessary ➞ 3.1.1, pg. 59
2. Adjust brake ➞ 1.4, pg. 52
3. Assemble the wheel ➞ 1.2, pg. 52

» Disc brake axles

1. Assemble the wheel ➞ 1.2, pg. 52

[17] Check the brake

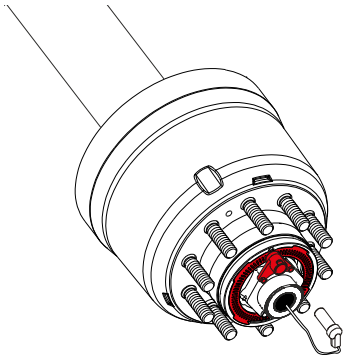
2.3.2.2 DISASSEMBLING/ASSEMBLING ABS SENSOR RING

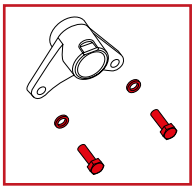
[1] Disassemble the hub cap ➞ 2.1.2, pg. 53

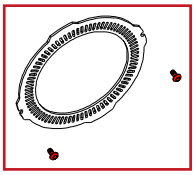
[2] Remove the inductive sensor ABS and bush

[3] Check the inductive sensor ABS and replace, if necessary ➞ 2.3.1.1, pg. 57

[4] Check ABS sensor ring on the hub unit and if unevenness is > 0.2 mm, replace ➞ if OK, then continue with [10]







[5] Removing the ABS sensor bracket
I SW 10

[6] Detach the screws on the ABS sensor ring and disassemble by turning
I S 3

[7] Clean the ABS sensor bracket and ABS sensor ring contact areas

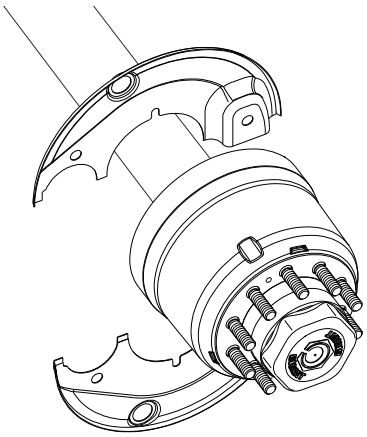
[8] Install new ABS sensor ring by turning and screw tight
S 3 5 Nm

[9] Installing the ABS sensor bracket
SW 10 15 Nm

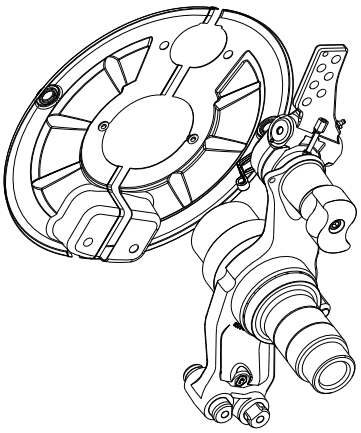
[10] Installing the inductive sensor ABS ➞ 2.3.1.1, pg. 57

2.4 DISASSEMBLING/ASSEMBLING THE DUST COVER(S)

GIGANT differentiates between two types of dust covers:



Screwed version with locknut/screw and washer



Screwed version through brake carrier (GEOKH2)

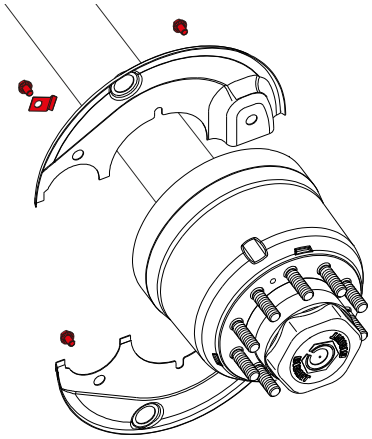
2.4.1 DISASSEMBLING/ASSEMBLING THE DUST COVER(S)

! Dust covers can be in one or two pieces!

[1] Disassemble, inspect and, if necessary, replace the dust cover(s) and, if necessary, the fixed-point latch

I SW 10
I SW 13
I SW 17

! On some axle types, the clamp for the cable of the inductive sensor ABS cable is fastened using the fastening screw!



[2] Assemble dust cover(s) and, if necessary, the fixed-point latch (For axle type GEOKH2 10010 4218, the microencapsulated fastening screws must be replaced; use Loctite 2701, if necessary)
- SW10 10 Nm
- SW13 22.5 Nm ± 2.5 Nm
- SW17 22.5 Nm ± 2.5 Nm

[3] Check that the dust cover is correctly fitted

! **The dust cover must sit in the brake drum but cannot touch it! This could lead to noise formation and dust cover damage!**

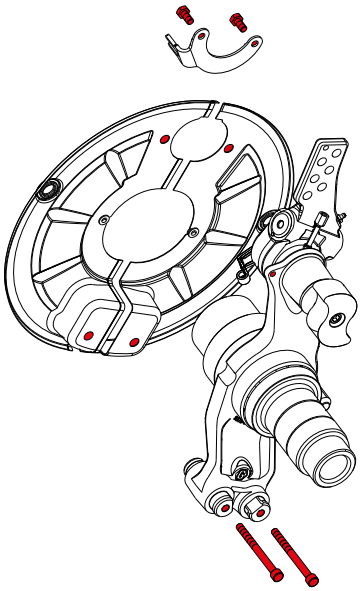
2.4.2 DISASSEMBLE/ASSEMBLE THE DUST COVERS WITH SCREW THROUGH THE BRAKE CARRIER

[1] Disassemble the brake drum → 3.1.1, pg. 59

[2] Disassemble, inspect and, if necessary, replace the dust covers and fixed-point latch
- S 8
- SW 13

[3] Install the dust covers and fixed-point latch

! **Replace the microencapsulated fastening screws of the fixed-point latch and use Loctite 2701 where applicable!**
- S 8 45N m ± 5 Nm
- SW 13 22.5 Nm ± 5 Nm



[4] Assemble the brake drum → 3.1.1, pg. 59

[5] Check that the dust cover is correctly fitted

! **The dust cover must sit in the brake drum but cannot touch it! This could lead to noise formation and dust cover damage!**

3. DRUM-BRAKED AXLES

GIGANT makes a distinction between two different axle types
- » K2, K3 and GH7 Drum in front of the hub
- » GAH1 Drum behind the hub

3.1 AXLE TYPES K2, K3 AND GH7 - 12T

3.1.1 DISASSEMBLING/ASSEMBLING THE BRAKE DRUM

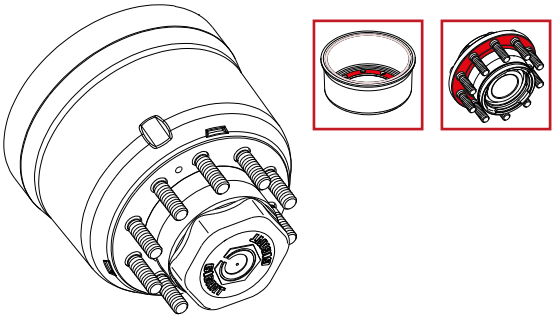
! **In case the braking system does not work due to overheating of the brakes, check the bearings and replace, if necessary!**

[1] Disassemble the wheel → 1.2, pg. 52

[2] Release the brake → 1.3, pg. 52

[3] Disassemble, inspect and, if necessary, replace the brake drum

! **If the brake drum is stuck: Insert two SK screws through the threaded holes and press the brake drum from the hub!**



[4] Clean the brake drum and hub contact surface

[5] If necessary, take off the brake drum and slide on until stop

[6] Assemble the wheel → 1.2, pg. 52

[7] Adjust the brake → 1.4, pg. 52

[8] Check the brake

3.1.2 DISASSEMBLING/ASSEMBLING THE COMPLETE BRAKE SHOE

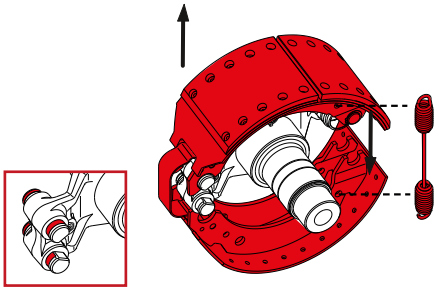
! **In case the braking system does not work due to overheating of the brakes, check the bearings and replace, if necessary!**

[1] Disassemble the brake drum → 3.1.1, pg. 59

[2] Disassemble the fixed point spring

[3] Remove the complete brake shoe via the brake camshaft and mark, if necessary

[4] Remove the return spring and dispose of it



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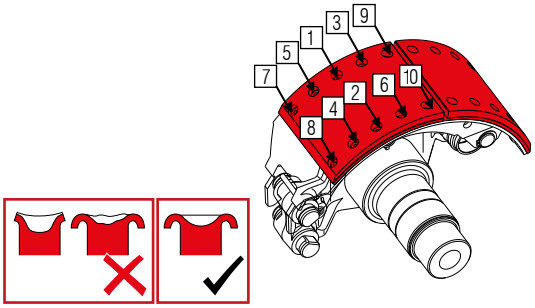
[5] Clean, inspect and, if necessary, replace the anchor pin bushes and coat with copper paste
[6] Check the brake linings and replace, if necessary → 3.1.3, pg. 60
[7] Check the cam roller and replace, if necessary → 3.1.4, pg. 60
[8] Attach new return springs
[9] Place the complete brake shoe over the brake camshaft
! **Pay attention to the marking, if necessary!**
! **Ensure proper fit and correct with a plastic hammer, if necessary!**
[10] Assemble the fixed point spring using a plastic hammer
! **For the best wear pattern, overtighten the brake linings!**
[11] Assemble the brake drum → 3.1.1, pg. 59

3.1.3 DISASSEMBLING/ASSEMBLING THE BRAKE LININGS

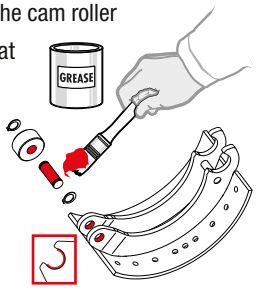
! **In case the braking system does not work due to overheating of the brakes, check the bearings and replace, if necessary! → 2.2, pg. 53**
[1] Disassemble the brake drum → 3.1.1, pg. 59
[2] Disassemble and mark the complete brake shoe → 3.1.2, pg. 59
[3] Take off the rivets on the brake linings
[4] Clean the brake shoes
! **Take off rust and unevenness from the contact surface and, if necessary, thinly and evenly spray corrosion protection (zinc spray)!**
! **Use the brake linings with the appropriate oversize on skimmed brake drums!**
[5] Rivet the brake lining according to the given order
I Riveting force = 20.5 kN ± 2.5 kN



[6] Monitor the riveting process
! **Crack formation is not allowed!**
! **Use the feeler gauge to measure the gap between the lining and the brake shoe (≥ 0.15 mm is not allowed)!**
! **Sound test:**
» **If a clear sound is produced when gently hit by a hammer, then the riveting is OK!**
» **If the sound is muffled, then the riveting is loose!**
[7] Check the cam roller and replace, if necessary → 3.1.4, pg. 60
[8] Attach new return springs
[9] Assemble the complete brake shoe → 3.1.2, pg. 59
[10] Assemble the brake drum → 3.1.1, pg. 59

3.1.4 DISASSEMBLING/ASSEMBLING THE CAM ROLLER

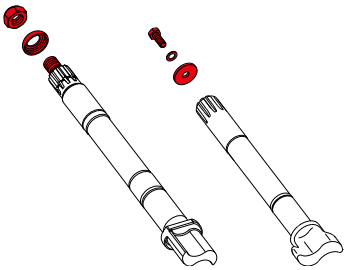
! **In case the braking system does not work due to overheating of the brakes, check the bearings and replace, if necessary! → 2.2, pg. 53**
[1] Disassemble the brake drum → 3.1.1, pg. 59
[2] Disassemble the complete brake shoe → 3.1.2, pg. 59
[3] Remove and dispose of the circlips
! **Brake shoes can have different openings: closed or opened by¼!**
[4] Take off bolt, take off and dispose of the cam roller
[5] Clean the brake lining carrier's pin seat and cover with copper paste
[6] Coat bolt and bolt guide with copper paste and assemble
[7] Assemble new circlips
[8] Take off excess copper paste and check functionality



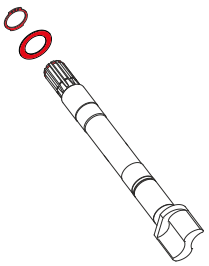
[9] Assemble the complete brake shoe → 3.1.2, pg. 59
[10] Assemble the brake drum → 3.1.1, pg. 59

3.1.5 DISASSEMBLE/ASSEMBLE THE AUTOMATIC SLACK ADJUSTER

GIGANT differentiates between two types of automatic slack adjuster fastenings:



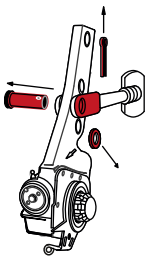
Screwed version with locknut/screw and washer



Version with circlip and washer

3.1.5.1 DISASSEMBLE/ASSEMBLE AUTOMATIC SLACK ADJUSTER (SCREWED VERSION WITH LOCKNUT/SCREW AND WASHER)

[1] If necessary, disassemble the wheel for axle types N, Z or P → 1.2, pg. 52
[2] Release the brake → 1.3, pg. 52
[3] Unhook the return spring
[4] Mark bolt hole
[5] Remove split pin and bolt



[6] Disassemble, inspect and, if necessary, replace the automatic slack adjuster fastening
- Screw: SW 17
- Nut: SW 32

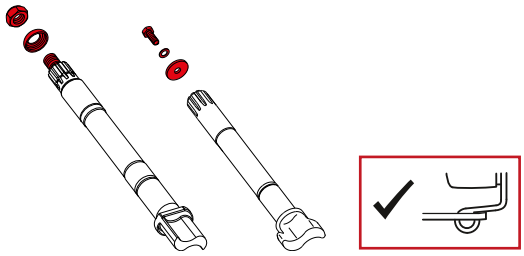
[7] Disassemble, inspect and, if necessary, replace the automatic slack adjuster

[8] Check the brake camshaft splines and replace the brake camshaft, if necessary → 3.1.6, pg. 62

[9] Coat the brake camshaft splines with copper paste

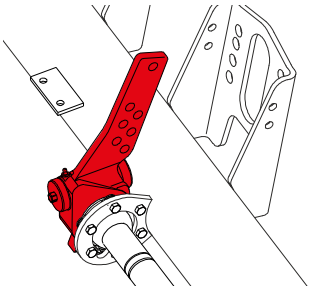
[10] Check the fixed-point latch and replace, if necessary → 3.1.10, pg. 65

[11] Slide on the automatic slack adjuster until it hits the stop (be mindful of the working direction), tighten
- Screw: SW 17 43 Nm ± 3 Nm
- Nut: SW 32 65 Nm ± 5 Nm



! **Ensure that the fixed-point latch is properly seated**

[12] Grease the automatic slack adjuster, bearing points and bolts
- ! **LB = Long Brake camshaft**
  » Grease should emerge from the protective sleeves!
- ! **KB = Short Brake camshaft**
  » Grease should emerge between the brake carrier and automatic slack adjuster!
- ! **Check for grease leaks on the brake camshaft head on the brake side. In case of grease leaks, check seals and bushes and replace if necessary!**



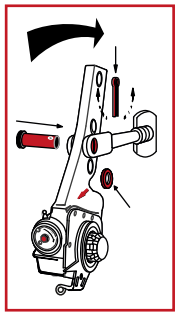
[13] Adjust the automatic slack adjuster until a connection can be made between the cable lug and lever arm
- ! **Be mindful of the marking on the automatic slack adjuster!**
- ! **Pay attention to the brake power calculation!**
- Ring spanner SW 17

[14] Grease bolt, insert, and secure with a split pin

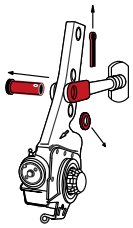
[15] Adjust the brake → 1.4, pg. 52

[16] Assemble the wheel → 1.2, pg. 52

[17] Check the brake



3.1.5.2 DISASSEMBLE/ASSEMBLE AUTOMATIC SLACK ADJUSTER (VERSION WITH CIRCLIP AND WASHER)



[1] If necessary, disassemble the wheel for axle types N, Z or P → 1.2, pg. 52

[2] Release the brake → 1.3, pg. 52

[3] Unhook the return spring

[4] Mark bolt hole

[5] Remove split pin and bolt

[6] Disassemble, inspect and, if necessary, replace the automatic slack adjuster fastening

[7] Disassemble, inspect and, if necessary, replace the automatic slack adjuster

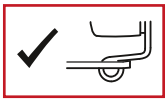
[8] Check the brake camshaft splines and replace the brake camshaft, if necessary → 3.1.6, pg. 62

[9] Check that the snap ring is properly seated on the splines, replace if necessary

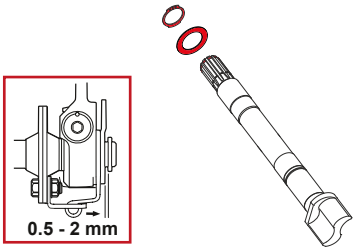
[10] Coat the brake camshaft splines with copper paste

[11] Check the fixed-point latch and replace, if necessary → 3.1.10, pg. 65

[12] Slide on the automatic slack adjuster until the stop (be mindful of the working direction), and ensure that the fixed-point latch is properly seated

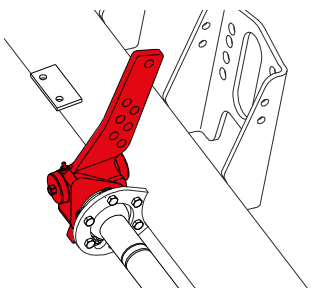


[13] Slide on the washer and secure with the circlip
- ! **Ensure that the circlip is properly seated in the groove of the splines!**
- ! **NGS: The spacer ring ø39/58/6 must also be installed between the washer and NGS!**



[14] Check lateral clearance » 0.5 - 2 mm permissible

[15] Grease the automatic slack adjuster, bearing points and bolts
- ! **LB = Long Brake camshaft**
  » Grease should emerge from the protective sleeves!
- ! **KB = Short Brake camshaft**
  » Grease should emerge between the brake carrier and automatic slack adjuster!
- ! **Check for grease leaks on the brake camshaft head on the brake side. In case of grease leaks, check seals and bushes and replace if necessary!**



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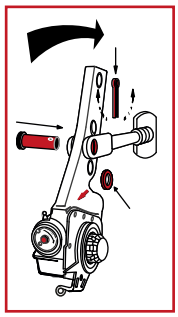
[16] Adjust the automatic slack adjuster until a connection can be made between the cable lug and lever arm



! **Be mindful of the marking on the automatic slack adjuster!**

! **Pay attention to the brake power calculation!**

I Ring spanner SW 17

[17] Grease bolt, insert, and secure with a split pin

[18] Adjust the brake ➞ 1.4, pg. 52

[19] Assemble the wheel ➞ 1.2, pg. 52

[20] Check the brake

3.1.6 DISASSEMBLING/ASSEMBLING THE BRAKE CAMSHAFT

The standard brake camshaft is installed in the long and short versions.

» **LB** = **L**ong **B**rake camshaft» **rigid axles**

» **SB** = **S**hort **B**rake camshaft» **self-steering, power-steering, and swivel axles**

[1] Disassemble the wheel ➞ 1.2, pg. 52

[2] Disassemble the brake drum ➞ 3.1.1, pg. 59

[3] Disassemble the complete brake shoe ➞ 3.1.2, pg. 59

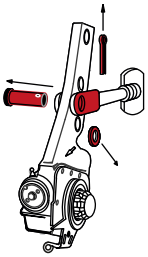
[4] Disassemble the hub unit ➞ 2.1, pg. 53

[5] Unhook the return spring

[6] Mark bolt hole

[7] Remove split pin and bolt

[8] Check the brake camshaft clearance on the brake carrier and on the AGS (LB) ➞3.1.7, pg. 63



[9] Disassemble, inspect and, if necessary, replace the automatic slack adjuster

» Screwed version with locknut/screw and washer ➞ 3.1.5.1, pg. 60

» Version with circlip and washer ➞3.1.5.2, pg. 61

[10] LB: Slightly loosen the fitting on the spherical camshaft bearing

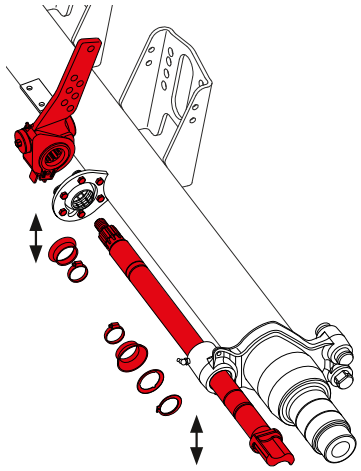
I SW 13

I SW 19

[11] LB ➞

» If necessary, remove the circlip from the brake camshaft splines, and remove the cable ties, protective sleeve, and circlip

» Remove the brake camshaft and the components



[12] SB ➞

» Remove the brake camshaft and the components

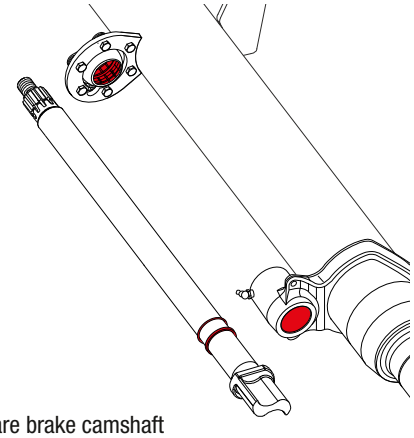
[13] Clean and inspect the brake carrier's brake camshaft, fixed-point latch, spherical camshaft bearing (LB), and bush and replace if there is > 0.8 mm bearing clearance

» Disassembling/assembling the fixed-point latch ➞ 3.1.10, pg. 65

» Disassembling/assembling the spherical camshaft bearing ➞ 3.1.11, pg. 66

» Disassembling/assembling the brake carrier bush ➞ 3.1.12, pg. 66

[14] Grease the brake carrier and spherical camshaft bearing (LB) bush until all grease pockets are filled



[15] Prepare brake camshaft

➞ **Brake 3010, 3020**

Slide on plastic ring and greased O-ring

➞ **Brake 3015, 3515**

Slide on washer (OD = 58 mm) and greased O-ring

➞ **Brake 3620, 4218, 4220**

Slide on circlip and insert in the groove

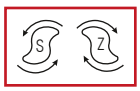
Slide on washer (OD = 55 mm), plastic bushing, and greased O-ring

[16] Insert the brake camshaft

➞ **SB:** insert completely

➞ **LB:** insert halfway

! **Pay attention to the camshaft's working direction with respect to the travel and rotation direction!**



! **S = left travel direction**
Z = right travel direction

! **If the working direction of the brake cylinder runs against the travel direction in SS and PS axles, this information may be reversed!**

[17] Slide on the components

➞ **LB, Brake 3010, 3020, 3620, 4218, 4220**

Slide on conical sealing ring, circlip, and two protective sleeves

➞ **LB, Brake 3015, 3515**

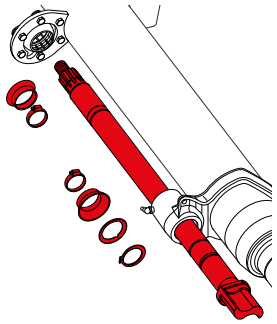
Slide on washer (outer diameter = 58 mm), circlip, and two protective sleeves

➞ **SB, Brake 3015, 3515**

Slide on spacer and washer (outer diameter = 58 mm, only use when the clearance on the automatic slack adjuster > 2 mm)

➞ **SB, Brake 3020, 3620, 4218, 4220**

Slide on washer



[18] **LB →**

» Slide the brake camshaft through the spherical camshaft bearing until the stop

» Slide on conical sealing ring or washer until the stop and place circlip in the groove

» Install circlip (brake 3010, 3020, 3620, 4218, 4220)

» Tighten the fastening screws of the spherical camshaft at the torque

SW 13 22.5 Nm ± 5 Nm

SW 19 80 Nm ± 5 Nm

» Check the brake camshaft's freedom of movement

» Slide on protective sleeves until the stop and secure with cable ties

» Grease the bush of the brake carrier and the spherical camshaft bearing until grease emerges from the protective sleeves

! Grease leakage on the bush on the brake carrier is not permitted » disassemble and re-assemble!

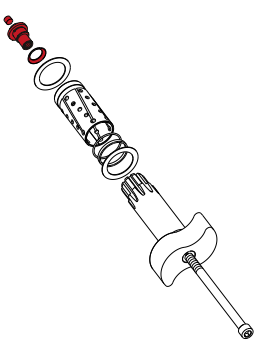
[19] Assemble the automatic slack adjuster

» Screwed version with locknut/screw and washer → 3.1.5.1, pg. 60

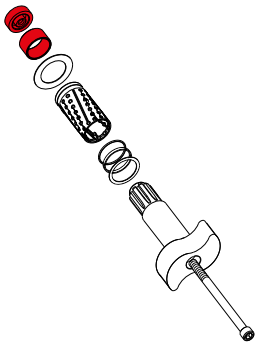
» Version with circlip and washer →3.1.5.2, pg. 61

3.1.7 DISASSEMBLING/ASSEMBLING THE AUTOMATIC SLACK ADJUSTER AND BRAKE CAMSHAFT ON THE AXLE STUB WITH 4218 BRAKE

! If this axle stub is installed in inner loaders and the AGS is controlled via the brake linkage, follow the vehicle manufacturer's instructions!



Kit 1: Brake camshaft kit with eccentric nut replaced by Kit 2



Kit 2: Brake camshaft kit with eccentric nut and spacer sleeve replaces Kit 1

[1] Disassemble the complete brake shoe → 3.1.2, pg. 59

[2] Disassemble the hub unit → 3.2.2, pg. 67

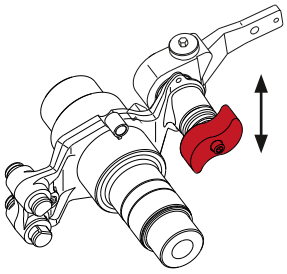
[3] Unhook the return spring

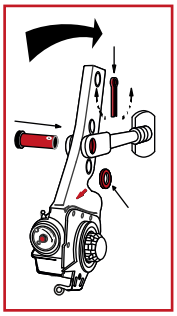
[4] Mark bolt hole

[5] Remove split pin and bolt

[6] Completely loosen the head cap screw

S 10





[7] Disassemble, inspect and, if necessary, replace the brake camshaft

! Secure the automatic slack adjuster and other components against falling down!

! If the brake camshaft cannot be removed → screw in the head cap screw by three rotations and detach the eccentric nut with hammer blows!

! Kit 1 must be replaced by Kit 2!

[8] Clean and inspect the bush and replace if bearing clearance is > 0.8 mm → 3.1.12, pg. 66

! The maximum wear limit has been reached if the grease leaks on the brake side or if the lubrication groove's base groove depth has been reached!

[9] Push the disc (OD = 51 mm), plastic bushing, and O-ring seal onto the brake camshaft

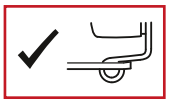
[10] Grease the brake camshaft and bush

[11] Glue the washer (OD = 65 mm) with some grease to the bearing seat on the rear

[12] Insert the brake camshaft until the spline is visible

[13] Slide on the spacer sleeve (outer diameter = 42 mm, length = 23 mm)

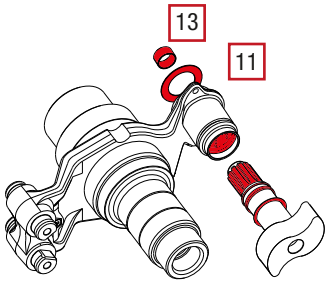
[14] Slide on the automatic slack adjuster (be mindful of the working direction) and ensure that the fixed-point latch is properly seated



[15] Push through the brake camshaft until the plastic bushing and O-ring seal are in front of the brake carrier

[16] Slide in the brake camshaft swivelling with pressure until it hits the stop

! The swivelling motion centres the plastic ring

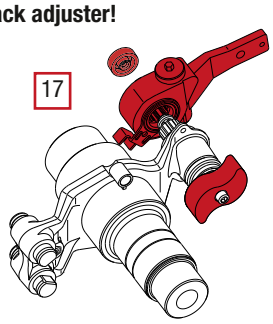


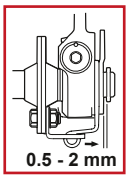
5

[17] Insert the eccentric nut into the automatic slack adjuster and slide in and tighten the head cap screw

S 10 65 Nm ± 5 Nm

! **The eccentric nut [17] must be flush with the automatic slack adjuster!**





[18] Check lateral clearance » 0.5 - 2 mm permissible

[19] Grease the brake camshaft and automatic slack adjuster until fresh grease emerges

! **Grease must emerge between the automatic slack adjuster and brake carrier! Grease leakage on the head of the brake camshaft is not permitted » disassemble and re-assemble!**

[20] Adjust the automatic slack adjuster until a connection can be made between the cable lug and lever arm

! **Be mindful of the marking on the automatic slack adjuster!**

! **For inloaders: Follow the manufacturer's instructions!**

[21] Insert bolt and secure with a split pin or screws

[22] Assemble the complete brake shoe ➞ 3.1.2, pg. 59

! **In the "drum in front of the hub" system, the tyre must be installed or the brake drum must be secured with two wheel nuts!**

5

3.1.8 DISASSEMBLING/ASSEMBLING THE AUTOMATIC SLACK ADJUSTER FOR SWIVEL AXLE

[1] Disassemble the wheel on the side of the slack adjuster to be changed ➞ 1.2, pg. 52

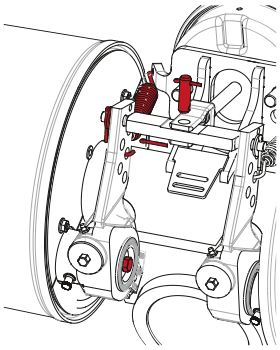
[2] Disassemble the brake drum ➞ 3.1.1, pg. 59

[3] Disassemble the complete brake shoe➞ 3.1.2, pg. 59

[4] Unhook the return spring

[5] Mark bolt hole

[6] Take out the split pin, bolt, cable lug, washer and brake bridge



[7] Disassemble, inspect and, if necessary, replace the automatic slack adjuster fastening

Screw: SW 17

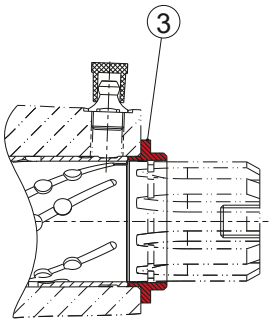
[8] Tighten the brake camshaft until the slack adjuster and the spacer [3] can be removed

! **Do not completely pull out the brake camshaft!**

! **Check the brake camshaft splines and replace if necessary** ➞ 3.1.12, pg. 66

[9] Coat the brake camshaft splines with copper paste

[10] Slide on the spacer Ø 50 [3] and fasten in the brake carrier



[11] Slide on the slack adjuster

! **Observe the correct position of the spacer [3]**

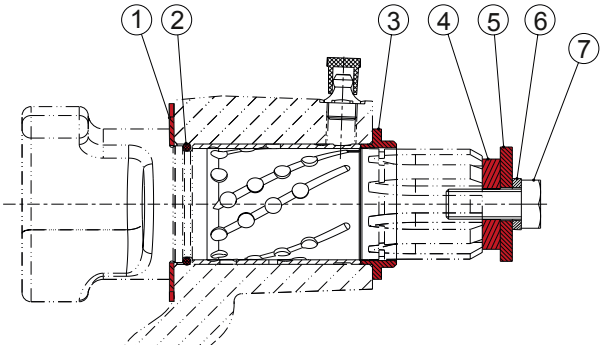
! **In doing so, insert the bolt of the brake bridge in the marked hole of the slack adjuster!**

! **Automatic slack adjuster: Check the fixed-point latch for proper seating!**

[12] Insert the spring ring [6], washer Ø 38 mm [5] and washer ø 30 mm [4] on the screw [7], screw in and tighten at the tightening torque

SW 17 43 Nm ± 3 Nm

! **Insert the washer (OD = 58 mm, ID = 44 mm, use only when the axial clearance of the automatic slack adjuster > 2 mm) between the automatic slack adjuster and washer [5]**



[13] Grease the brake camshaft on the brake carrier grease nipple

! **Grease must emerge between the brake carrier and the slack adjuster**

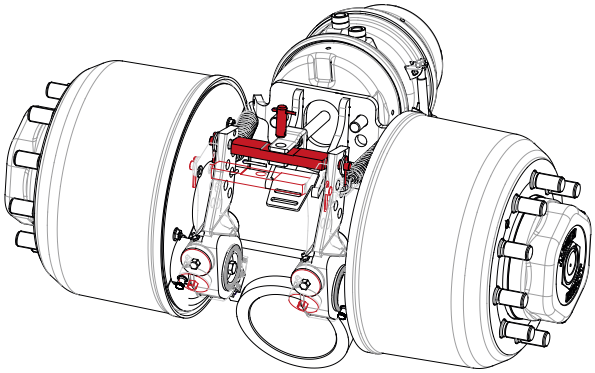
! **Check for grease leaks on the brake camshaft head on the brake side. In case of grease leaks, check seals and bushes and replace, if necessary!**

[14] Move the slack adjuster in a parallel position relative to the other slack adjuster and secure the brake bridge with a washer and split pin

! **Pay attention to the slack adjuster marking!**

! **Pay attention to the brake power calculation!**

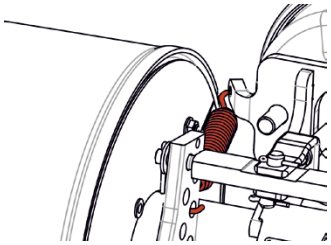
Ring spanner SW 17



[15] By evenly and alternately turning the adjusting screw, move the control arms of the slack adjuster in parallel towards the cable lug, until the cable lug and brake bridge holes are lined up.
- Ring spanner SW 17

[16] Grease bolt, insert, and secure with a split pin

[17] Attach the tension spring



[18] Adjust the brake → 1.4, pg. 52

[19] Assemble the wheel → 1.2, pg. 52

[20] Check the brake

3.1.9 DISASSEMBLING/ASSEMBLING THE BRAKE CAMSHAFT SWIVEL AXLE

[1] Disassemble the wheel → 1.2, pg. 52

[2] Disassemble the brake drum → 3.1.1, pg. 59

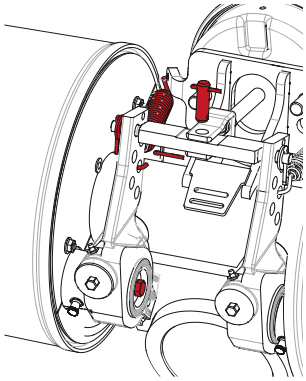
[3] Disassemble the complete brake shoe → 3.1.2, pg. 59

[4] Disassemble the hub unit → 2.2.1, pg. 53

[5] Unhook the return spring

[6] Mark bolt hole

[7] Take out the split pin and bolt on the brake bridge and the cable lug



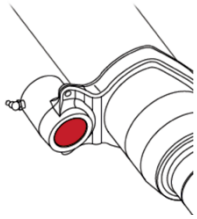
[8] Loosen the fastening screw on the side of the slack adjuster where the brake camshaft should be disassembled
- Screw: SW 17

[9] Pull out the brake camshaft, and while doing so, secure the slack adjuster and the spacer against falling down

[10] Clean the brake camshaft, fixed-point latch (automatic slack adjuster) and brake carrier bush

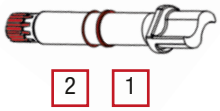
! **Check the brake carrier bush and replace if bearing clearance is > 0.8 mm** → 3.1.2, pg. 59

! **Check the fixed-point latch (automatic slack adjuster) and replace if necessary** → 3.1.12, pg. 66



[11] Check the brake camshaft splines and replace the brake camshaft if necessary

! **New brake camshaft: Slide on the washer Ø 58/39 mm [1] and slightly greased O-ring [2]**



[12] Coat the brake camshaft splines with copper paste

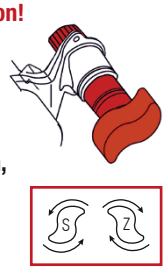
[13] Push the brake camshaft through until the splines can be seen

! **Pay attention to the camshaft's working direction with respect to the travel and rotation direction!**

S = left travel direction

Z = right travel direction

If the working direction of the brake cylinder runs against the travel direction, this information may be reversed



[14] Install the slack adjuster → 3.1.10, pg. 65

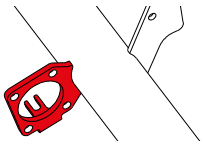
3.1.10 DISASSEMBLING/ASSEMBLING THE FIXED-POINT LATCH

GIGANT differentiates between two fastening types of the fixed-point latch

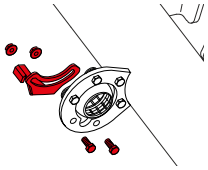
» **Welded version on the axle beam**

» **Screwed version on the retainer plate of the spherical camshaft bearing**

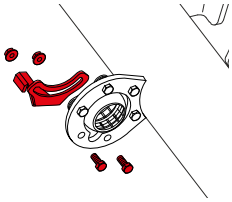
[1] **Welded version:** Clean and inspect the fixed-point latch and align if necessary



Screwed version: Disassemble the fixed-point latch
- SW 13
- SW 19



[2] Align the new fixed-point latch



[3] Assemble screws with new locknuts or, for the GEOKH2, with microencapsulated fastening screws (or screw with Loctite 2701)

! **Place the washers below the locknut if there are four fastening screws on the spherical camshaft bearing!**

SW 13 22.5 Nm ± 5 Nm

SW 19 80 Nm ± 5 Nm

3.1.11 DISASSEMBLING/ASSEMBLING THE SPHERICAL CAMSHAFT BEARING

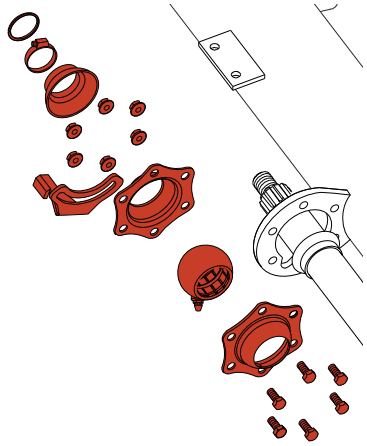
[1] Disassemble the fitting

SW 13

SW 19

[2] Remove, clean, inspect fixed-point latch, half-shells, and spherical camshaft bearings and replace if the bearing clearance is > 0.8 mm

! **If the half-shells are installed from the inside, disassemble the brake camshaft!** → 3.1.6, pg. 62



[3] Check the grease nipple for clearance and replace, if necessary

[4] Grease O-rings

[5] Install half-shells

! **The spherical camshaft bearing must be movable in the half-shells!**

[6] Slide half-shells and spherical camshaft bearing into the brake camshaft with the grease nipple first

[7] Insert the screws towards the middle of the axle

[8] Install fixed-point latch with nose facing the middle of the axle

[9] Assemble screws with new locknuts

! **Place the washers below the locknut if there are four fastening screws on the spherical camshaft bearing!**

SW 13 22.5 Nm ± 5 Nm

SW 19 80 Nm ± 5 Nm

[10] Slide on protective sleeves

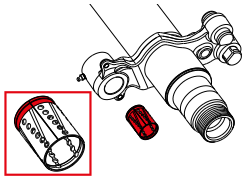
3.1.12 DISASSEMBLING/ASSEMBLING THE BRAKE CARRIER BUSH

! **These bushes may only be removed/installed using the appropriate drifts/burr arbours!**

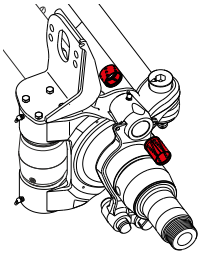
! **Align the circumferential lubricating groove to the grease nipple's through bore!**

[1] Disassemble the brake camshaft → 3.1.6, pg. 62

[2] Clean the bush and brake carrier



[3] Push out the bush



→ Brake **3015, 3515 – all axle types**
Bush: ID = 37 mm / OD = 40 mm

→ **Brake 3010, 3020, 3620, 4218, 4220** – Rigid axles
Bush: ID = 42 mm / OD = 46 mm

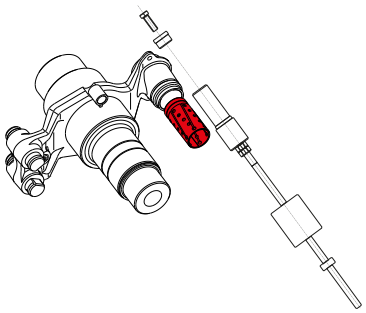
→ **Brake 3020, 3620, 4218, 4220 – SS and FS axles**
Bush: ID = 42 mm / OD = 46 mm

→ **Brake 4218 – GEOKH2 10010 4218 / axle stub**
Bush: ID = 42 mm / AD = 46 mm

» Insert the long mandrel through the bush

» Insert and secure short dismantling mandrel from the rear

» Screw on the striker and push out the bush towards the front



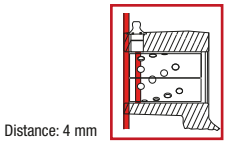
[4] Check the grease supply and replace grease nipple, if necessary

[5] Clean the bearing seat

[6] Lightly grease the new bush on the outside and, with the circumferential lubrication groove on the front, insert towards the grease nipple

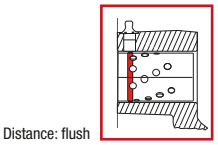
→ **Brake 3015, 3515 – all axle types**

Distance in the bearing seat on the grease nipple side: 4 mm



→ **Brake 3010, 3020, 3620, 4218, 4220 – rigid axles**

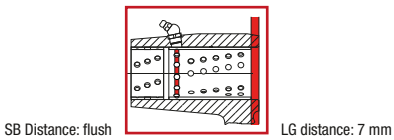
Bush fits flush on the grease nipple side



→ **Brake 3020, 3620, 4218, 4220 – SS and FS axles**

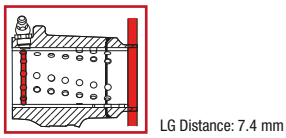
» Short bush: Fits flush on the grease nipple side

» Long bush: Distance in bearing seat towards axle stub: 7 mm



→ **Brake 4218 – GEOKH2 10010 4218 / axle stub**

Distance in bearing seat towards axle stub: 7.4 mm



[7] Insert brake camshaft and test ease of movement

[8] Re-check grease supply

[9] Fill the grease pockets with grease

[10] Assemble brake camshaft → 3.1.6, pg. 62

3.2 AXLE TYPE GAH1

3.2.1 DISASSEMBLE/ASSEMBLE THE AUTOMATIC SLACK ADJUSTER

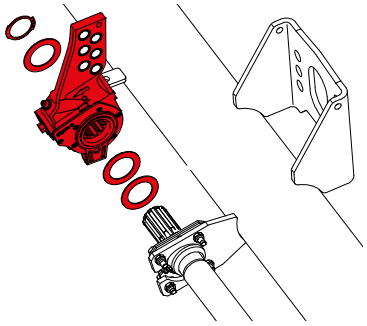
[1] Release the brake → 1.3, pg. 52

[2] Unhook the return spring

[3] Mark bolt hole

[4] Remove split pin and bolt

[5] Disassemble, inspect and, if necessary, replace the circlip and washer



[6] Disassemble, inspect and, if necessary, replace the automatic slack adjuster and two washers

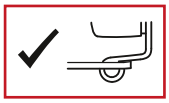
[7] Clean, inspect and, if necessary, replace the brake camshaft spline → 3.1.6, pg. 62

[8] Coat the brake camshaft splines with copper paste

[9] Check the fixed-point latch and replace, if necessary → 3.1.10, pg. 65

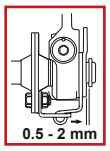
[10] Slide on two washers

[11] Slide on the automatic slack adjuster until the stop (be mindful of the working direction), and ensure that the fixed-point latch is properly seated



[12] Slide on a washer and circlip

[13] Check lateral clearance » 0.5 - 2 mm permissible



[14] Grease the automatic slack adjuster until fresh grease emerges

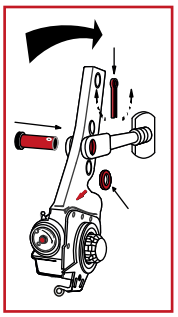
[15] Adjust the automatic slack adjuster until a connection can be made between the cable lug and lever arm

! **Be mindful of the marking on the automatic slack adjuster!**

[16] Insert bolt and secure with a split pin

[17] Adjust the brake → 1.4, pg. 52

[18] Check the brake



3.2.2 DISASSEMBLING/ASSEMBLING HUB UNIT WITH BRAKE DRUM

[1] Disassemble the wheel → 1.2, pg. 52

[2] Release the brake → 1.3, pg. 52

[3] Disassemble the hub cap → 2.1.2, pg. 53

[4] Pry open, disassemble, and dispose of the safety collar on the axle nut

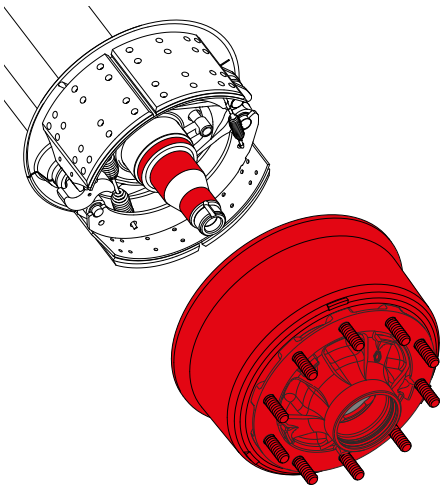
SW 75

[5] Take off hub unit incl. bearings and brake drum

[6] Clean axle stub, check the thread and, if necessary, rework with the thread chaser

! **The use of chemical cleaners is allowed.**

For stubborn residues, the use of an abrasive pad is allowed if the locations can be cleaned by hand.



5

[7] Slightly grease bearing seat (Optimol white paste)

! **Do not grease the bearing surfaces and the threads!**

[8] Check the ABS sensor ring and replace, if necessary ➞ 3.2.4.2, pg. 71

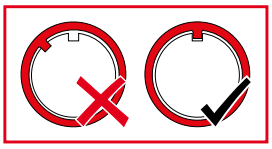
[9] Grease inductive sensor ABS and press until the front is just visible

! **If the inductive sensors ABS are stiff or stuck, they must be removed – including the bush – re-greased and reinstalled!**

[10] Clean the front of the inductive sensor ABS

[11] Push the hub unit until stop

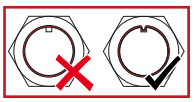
! **Place the hub unit's thrust washer with nose into the axle stub's groove!**



[12] Tighten the new axle nuts while turning the wheel hub

SW 75 630 ± 30 Nm

[13] Using a mandrel and hammer, drive the axle nut safety collar into the groove of the axle stub



[14] Adjust the distance to the ABS sensor ring at 0.15 mm

! **While doing so, do not deform the ABS sensor ring!**

[15] Assemble the hub cap ➞ 2.1.2, pg. 53

[16] Adjust the brake ➞ 1.4, pg. 52

[17] Assemble the wheel ➞ 1.2, pg. 52

[18] Check the brake

3.2.2.1 DISASSEMBLING/ASSEMBLING THE BRAKE DRUM

! **In case the braking system does not work due to overheating of the brakes, check the bearings and replace, if necessary!**

! **The bearings must be protected from contamination!**

[1] Disassemble the hub unit ➞ 3.2.2, pg. 67

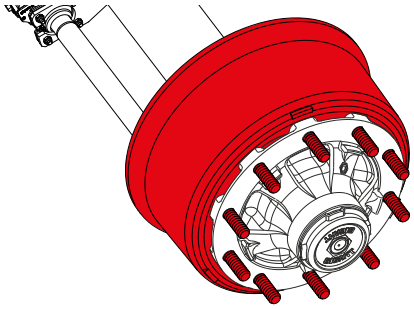
! **Cover open bearing areas on the hub unit!**

[2] Push out, inspect and, if necessary, replace wheel studs

! **Do not damage the threads!**

[3] Take off and dispose of the brake drum

[4] Clean the hub and brake drum contact surface



[5] Position the brake drum on the hub

[6] Push in wheel stud

! **Pay attention to the position of the anti-rotation protection!**

[7] Assemble the hub unit ➞ 3.2.2, pg. 67

3.2.2.2 DISASSEMBLING/ASSEMBLING THE COMPLETE BRAKE SHOE

! **In case the braking system does not work due to overheating of the brakes, check the bearings and replace, if necessary!**

[1] Disassemble the hub unit ➞ 3.2.2, pg. 67

[2] Disassemble and dispose of fixed-point spring

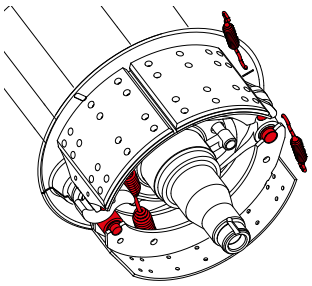
[3] Remove, inspect and, if necessary, replace the complete brake shoe

! **Mark the upper and lower brake shoe!**

[4] Remove the return spring and dispose of it

[5] Push out, check and, if necessary, replace the fixed-point bearing ➞ 3.2.2.3, pg. 69

[6] Push out, check and, if necessary, replace the roller unit ➞ 3.2.2.4, pg. 69

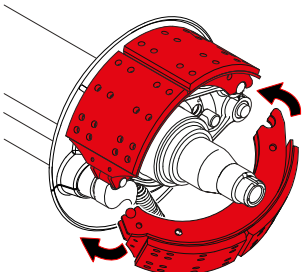


[7] Attach new return springs

[8] Place the upper brake shoe on the brake camshaft and the fixed point

[9] Slightly bend the lower brake shoe and place it on the brake camshaft and the fixed point

! **Ensure proper fit and correct with a plastic hammer, if necessary!**



[10] Attach new release fixed point spring

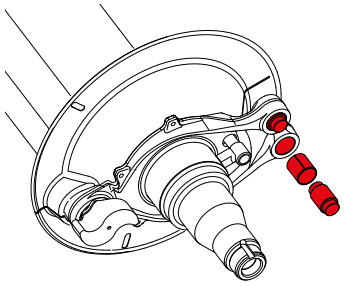
! **For the best wear pattern, overtighten the brake linings!**

[11] Assemble the hub unit ➞ 3.2.2, pg. 67

3.2.2.3 DISASSEMBLING/ASSEMBLING THE FIXED-POINT BEARINGS

! In case the braking system does not work due to overheating of the brakes, check the bearings and replace, if necessary!

[1] Disassemble the complete brake shoe→ 3.2.2.2, pg. 68

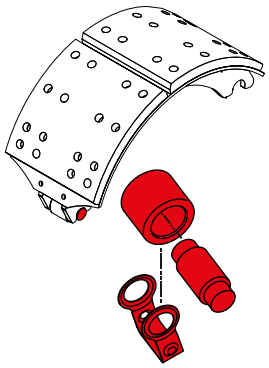


[2] Push out, check and, if necessary, replace the fixed-point bearing
[3] Push out, check and, if necessary, replace the fixed-point bearing bush
[4] Push out the bush and clean the bearing seat
[5] Drive in the new bush until it is flush
[6] Grease and insert the fixed-point bearing (Mobilith SHC 220); remove excessive grease
[7] Coat the brake shoe seat of the fixed-point bearing with copper paste
[8] Assemble the complete brake shoe → 3.2.2.2, pg. 68

3.2.2.4 DISASSEMBLING/ASSEMBLING THE ROLLER UNIT

! In case the braking system does not work due to overheating of the brakes, check the bearings and replace, if necessary!

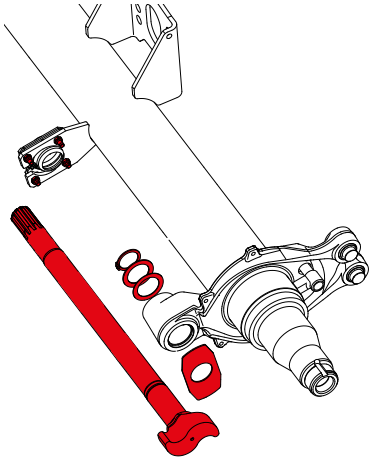
[1] Disassemble the complete brake shoe → 3.2.2.2, pg. 68
[2] Push out, check and, if necessary, replace the fixed-point bearing → 3.2.2.3, pg. 69
[3] Clean, check and, if necessary, replace the cam roller unit → if OK, continue with [11]



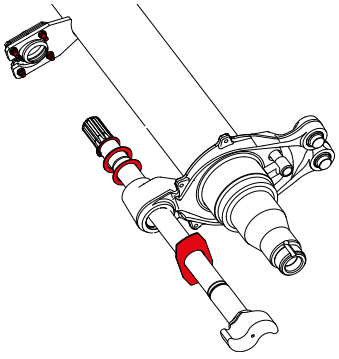
[4] Remove, disassemble, and clean the cam roller with bracket
[5] Clean, check and, if necessary, replace the cam roller axle
[6] Clean and inspect bush; replace if the inner diameter is ≥24.5 mm
[7] Check the bracket and replace if deformed or if it shows cracks
[8] Grease the roller (Mobilith SHC 220) and place in the bush
[9] Install bracket and take off excess grease
[10] Insert the roller unit into the brake shoe
[11] Assemble the complete brake shoe → 3.2.2.2, pg. 68

3.2.3 DISASSEMBLING/ASSEMBLING THE BRAKE CAMSHAFT

[1] Disassemble the automatic slack adjuster → 3.2.1, pg. 67
[2] Disassemble the complete brake shoe → 3.2.2.2, pg. 68
[3] Take off fitting on spherical brake camshaft bearing
⌶ SW 13
[4] Detach circlip on brake carrier
[5] Inspect the spherical brake camshaft bearing and replace if bearing clearance is > 0.8 mm
[6] Disassemble, inspect and, if necessary, replace brake camshaft, washers and lock plate



[7] Clean, inspect and, if necessary, replace brake camshaft
[8] Check the seal on the brake carrier's bearing seat
! If the brake camshaft's head leaks grease, replace the seal! → 3.2.3.2, pg. 70
[9] Clean, inspect and, if necessary, replace the bush on the brake carrier → 3.2.3.2, pg. 70
[10] Check the consistency of the lubrication channel and, if necessary, replace the grease nipple
! The maximum wear limit has been reached if the grease leaks or if the lubrication groove's base depth has been reached!
[11] Grease the brake carrier and spherical camshaft bearing (Mobilith SHC 220) bush until all grease pockets are filled
[12] Lightly grease the inner surfaces of the sealing ring on both sides of the brake carrier
[13] Slide on the lock plate onto the brake camshaft
[14] Slide in the brake camshaft halfway



[15] Slide the washers and circlip onto the brake camshaft
[16] Fully insert the brake camshaft into the spherical camshaft bearing
[17] Insert circlip into the groove

5

[18] Take off excess grease

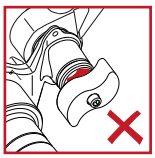
[19] Tighten fastening screws

SW 13 22 Nm

[20] Check the brake camshaft's freedom of movement

[21] Lubricate the brake camshaft on the brake carrier and spherical camshaft bearing until grease emerges

! **No grease may leak on the brake carrier's seal on the brake side » disassemble and reinstall!**



[22] Assemble the automatic slack adjuster → 3.2.1, pg. 67

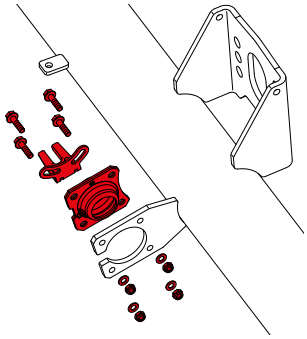
[23] Assemble the complete brake shoe → 3.2.2.2, pg. 68

3.2.3.1 DISASSEMBLING/ASSEMBLING THE SPHERICAL CAMSHAFT BEARING

[1] Disassemble the automatic slack adjuster → 3.2.1, pg. 67

[2] Detach fitting and remove fixed-point latch

SW 13



[3] Take off and dispose of the spherical camshaft bearing

[4] Clean contact surfaces

[5] Position new spherical camshaft bearing in the bracket

! **The spherical camshaft bearing must be movable in the half-shells!**

[6] Put on and assemble the fixed-point latch

SW 13 22 Nm

! **Brake camshaft must move freely!**

[7] Lubricate spherical camshaft bearing until grease comes out

[8] Assemble the automatic slack adjuster → 3.2.1, pg. 67

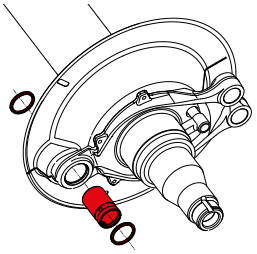
3.2.3.2 DISASSEMBLING/ASSEMBLING THE BRAKE CARRIER'S SEAL/ BUSH

[1] Disassemble the brake camshaft → 3.2.3, pg. 69

[2] Take off and dispose of the seals

[3] Push out and dispose of the bush

Bush: ID = 42, OD = 46

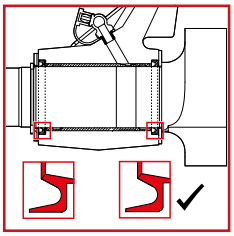


[4] Clean the bush's seat

[5] Check the consistency of the lubrication channel and, if necessary, replace the grease nipple

[6] Insert new bush up to the inner stop

! **Align the surrounding lubrication groove to the axle stub's bearing seat!**



[7] Insert both sealing rings with the openings facing the middle of the axle

[8] Grease bush until all grease pockets are filled

[9] Assemble brake camshaft → 3.2.3, pg. 69

3.2.4 DISASSEMBLE/ASSEMBLE THE ABS

3.2.4.1 DISASSEMBLE/ASSEMBLE THE INDUCTIVE SENSOR ABS

[1] Detach, inspect and, if necessary, replace the dust cover

SW 13

[2] Remove the ABS plug and bush

[3] Clean, inspect and, if necessary, replace the ABS sensor ring → 3.2.4.2, pg. 71

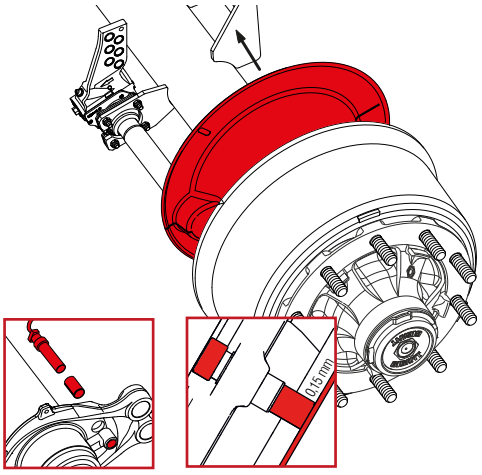
[4] Grease the new bush and press in until stop

[5] Push through the inductive sensor ABS until the front is visible

[6] Clean the front

(if the inductive sensors ABS are stiff or stuck, they must be removed - including the bush - re-greased and re-installed.)

! **While doing so, do not deform the ABS sensor ring!**



[7] Adjust the distance to the ABS sensor ring at 0.15 mm

! **While doing so, do not deform the ABS sensor ring!**

[8] Install dust cover and tighten screws

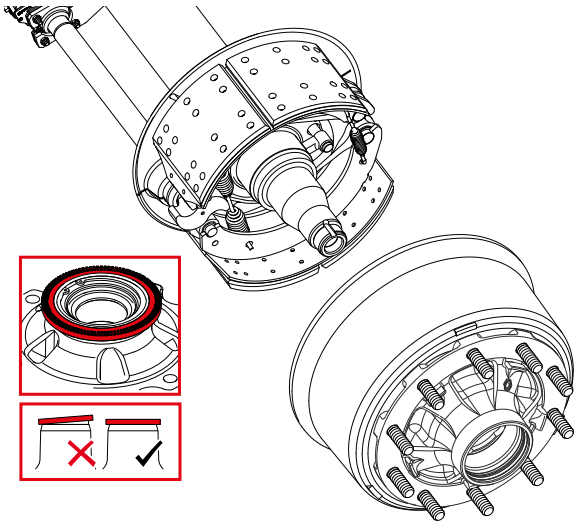
SW 17 22.5 Nm ± 2.5 Nm

! **The dust cover must sit in the brake drum but cannot touch it! This could lead to noise formation and dust cover damage!**

5

3.2.4.2 DISASSEMBLE/ASSEMBLE THE ABS SENSOR RING

[1] Disassemble the hub unit → 3.2.2, pg. 67
[2] Disassemble and inspect the ABS sensor ring
! **While doing so, do not deform the ABS sensor ring!**
[3] Clean contact surfaces
[4] Install new ABS sensor ring on the hub unit and evenly press until stop (using the washer whose diameter is 220 mm and thickness is 15 mm)
[5] Assemble the hub unit → 3.2.2, pg. 67



4. DISC-BRAKED AXLES

! **Please follow the brake calliper manufacturer's installation, approval, testing, and installation instructions!**

www.haldex.de
→ Services & Support
→ Literature and Documents

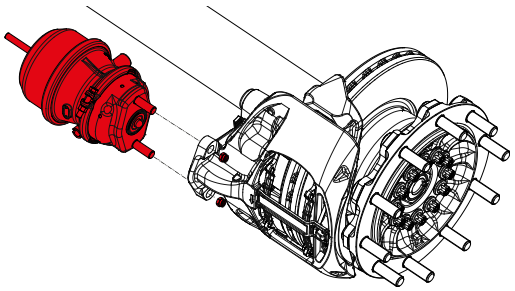
inform.wabco-auto.com

www.knorr-bremse.de
→ Commercial vehicles
→ Download & Services
→ Download Documentation

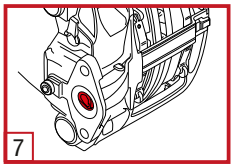
4.1 DISASSEMBLING/ASSEMBLING THE BRAKE CYLINDER

! **Please follow the brake cylinder manufacturer's installation, approval, testing, and installation instructions!**

[1] If necessary, disassemble the wheel → 1.2, pg. 52
[2] Release the brake → 1.3, pg. 52
! **Make sure of following for brake cylinders with parking brake functionality:**
» **No pressure in the system!**
» **Fully take off and mechanically lock the spring-loaded brake cylinder!**
[3] Clean, take off and protect the air connections from contamination
[4] Take off and dispose of the fastening nut
SW 24
[5] Disassemble the brake cylinder



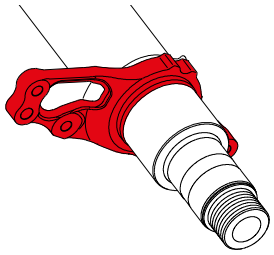
[6] Clean the brake cylinder and brake calliper contact surfaces and leave them free of dirt, moisture, and rust
[7] Grease the spherical cap (molybdenum disulphide-free)



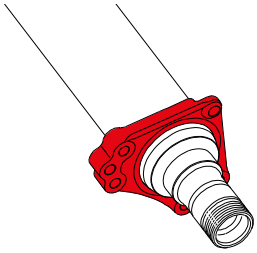
[8] Assemble the brake cylinder with the ventilation/drainage hole facing downwards (disassemble the lower plugs)
[9] Alternately and evenly tighten the new fastening nuts
SW 24 180 Nm ± 20 Nm
! **Avoid tension! This can lead to leaking and therefore brake failure!**
[10] Install the air connections
! **Do not disconnect or clamp the brake hoses!**
! **The brake calliper must remain movable!**
! **Trigger the pressure-relief mechanism on brake cylinders with parking brake functionality!**
[11] Fill the system with pressurised air and check for leaks
[12] Adjust the brake → 1.4, pg. 52
[13] Assemble the wheel → 1.2, pg. 52
[14] Check the brake

4.2 DISASSEMBLING/ASSEMBLING THE BRAKE CALLIPER

GIGANT differentiates between two versions of the brake calliper connection



6-hole brake carrier, large



6-hole brake carrier, small

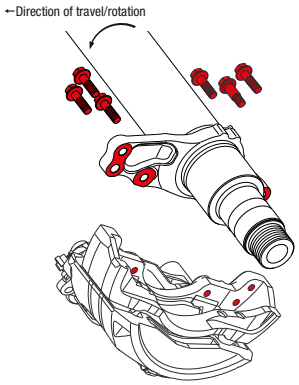
5

4.2.1 DISASSEMBLING/ASSEMBLING THE BRAKE CALLIPER OF THE LARGE 6-HOLE BRAKE CARRIER

[1] Disassemble the wheel → 1.2, pg. 52
[2] Release the brake → 1.3, pg. 52
[3] Disassemble the brake cylinder → 4.1, pg. 71
[4] Take off the brake linings according to the brake calliper manufacturer
[5] Take off and dispose of the screws

! Mark the position of the fitting screw!

SW 22
SW 24
SW 30

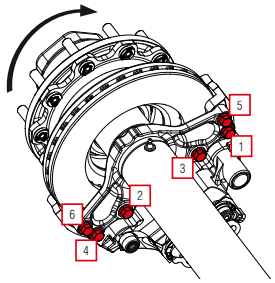


[6] Check the brake calliper and repair or replace, if necessary
[7] Clean the surface areas of the brake carrier and brake calliper
[8] Assemble the brake calliper

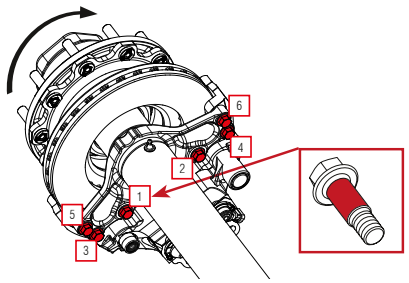
! Pay attention to the rotation direction!

[9] Insert fitting screw and screws and evenly tighten according to the order

Manufacturer	Type	SW	Screws	Quantity	Fitting screw	Tightening torque
WABCO	PAN17	22	M14x1.5x35	6	No	180 Nm ± 20 Nm
WABCO	PAN 19	24	M16x1.5x55	6	Yes	290 Nm ± 20 Nm
WABCO	PAN 22	24	M16x1.5x55	6	Yes	290 Nm ± 20 Nm
KNORR	SB/SN6	24	M16x1.5x55	6	Yes	290 Nm ± 20 Nm
KNORR	SB/SN/SK7	24	M16x1.5x55	6	Yes	290 Nm ± 20 Nm



Without fitting screw



With fitting screw

4.2.2 DISASSEMBLING/ASSEMBLING THE SMALL 6-HOLE BRAKE CARRIER'S BRAKE CALLIPER

[1] Disassemble the wheel → 1.2, pg. 52
[2] Release the brake → 1.3, pg. 52
[3] Disassemble the brake cylinder → 4.1, pg. 71
[4] Take off the brake linings according to the brake calliper manufacturer
[5] Take off and dispose of the brake calliper screws

! Mark the position of the fitting screw!

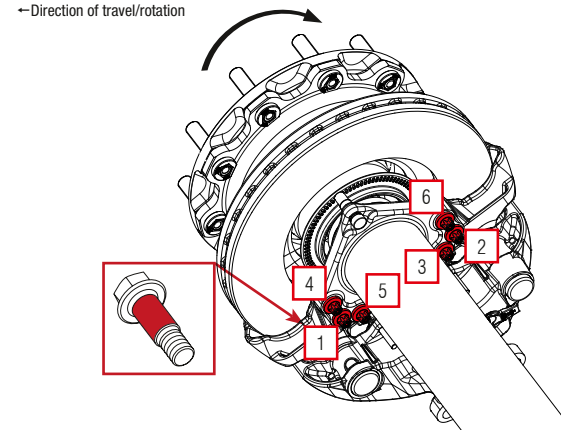
E 24

[6] Check the brake calliper and repair or replace, if necessary
[7] Clean the surface areas on the brake carrier and brake calliper
[8] Assemble the new brake calliper

! Pay attention to the rotation direction!

[9] Insert fitting screw and screws and evenly tighten according to the order

25 Nm



[10] Fully tighten the fitting screw and screws

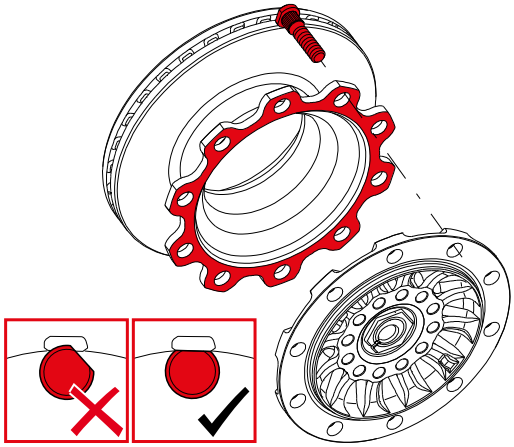
Manufacturer	Type	SW	Screws	Quantity	Fitting screw	Tightening torque
HALDEX	DBT22LT	24	M16x1.5x57	6	Yes	190 Nm ± 5 Nm + 60° ± 5°
HALDEX	DBT19	24	M16x1.5x55	6	Yes	190 Nm ± 5 Nm + 60° ± 5°
KNORR	ST7-430	24	M16x1.5x55	6	Yes	190 Nm ± 5 Nm + 60° ± 5°

4.3 DISASSEMBLING/ASSEMBLING THE BRAKE DISC

[1] Disassemble the hub unit
- » Compact bearing (K2) with hub cap → 2.2.1, pg. 53
- » Compact bearing (K2) with wheel flange → 2.2.2, pg. 54
- ! **The compact bearing must be protected from contamination!**

[2] Push out, inspect and, if necessary, replace wheel studs
- ! **Do not damage the threads!**

[3] Clean the surface areas of the new brake disc and the hub or flange

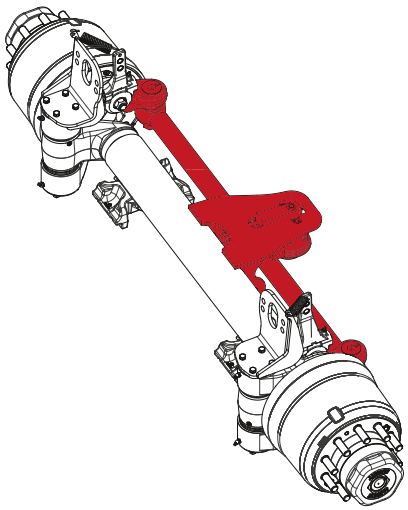


[4] Align and insert the bolts
- ! **Pay attention to the position of the anti-rotation protection!**

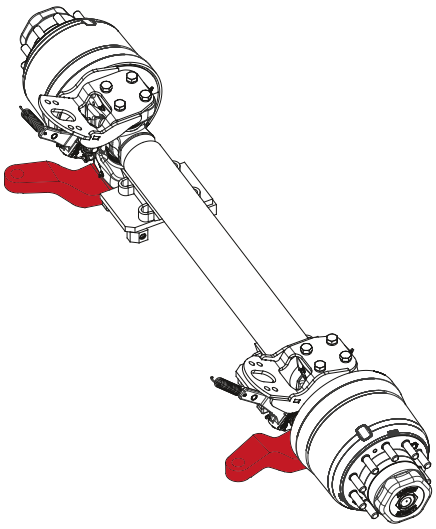
[5] Assemble the hub unit
- » Compact bearing (K2) with hub cap → 2.2.1, pg. 53
- » Compact bearing (K2) with wheel flange → 2.2.2, pg. 54

5. STEERING AXLES

GIGANT differentiates between two variants



Self-steering axles (SS) with direction bar, stabilising and locking unit

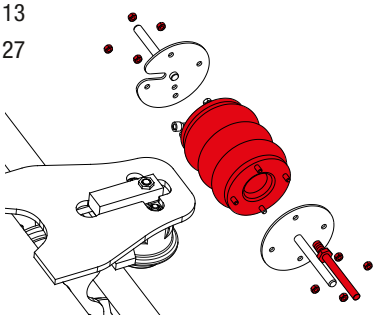


Power-steering axles (PS) with steering arm for hydraulic or mechanical steering

5.1 DISASSEMBLING/ASSEMBLING THE STABILISATION UNIT

- ! **Make sure of the following: No pressure in the system!**

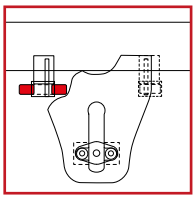
[1] Disassemble the locknuts and stop shafts
- SW 13
- SW 27



[2] Press together and remove the convoluted boot

[3] Clean the convoluted boot contact surfaces

[4] Check and, if necessary, replace the guide flange → continue to [10] if OK



[5] Pull out guide flange towards the inside and clean

[6] Push out the bush
- Bush: ID = 20 mm / OD = 22.5 mm

[7] Clean the bearing seats

[8] Insert a new bush per bearing flush from the interior and exterior

[9] Insert a new guide flange
- ! **Observe the left and right side, see the recess on the stop shaft!**

[10] Assemble convoluted boot with new nuts

[11] Coat the stop shaft threads with Loctite 2701 and tighten firmly
- SW 27

[12] Tighten locknuts
- SW 13 43 Nm ± 3 Nm

5

[13] Apply pressurised air to the system and check for leaks

! **Adjust the pressure in the stabilisation bellow to the loading pressure:**

» **Empty state: min. 1 bar**

» **Loaded: approx. 6 bar**

5.2 DISASSEMBLING/ASSEMBLING THE LOCKING UNIT

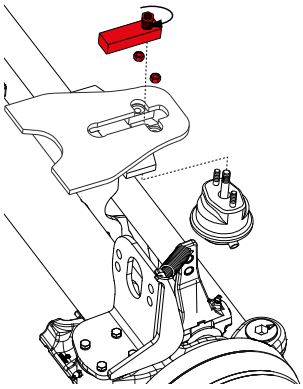
! **Make sure of the following: No pressure in the system!**

[1] Take off the double nut

⌶ SW 24

[2] Detach and dispose of the locknuts

⌶ SW 19



[3] Inspect the brake cylinder and replace, if necessary

[4] Clean, check and, if necessary, replace locking block

[5] Assemble brake cylinder with new locknuts

SW 19 70 Nm ± 15 Nm

[6] Coat the double nut on the outside and inside with Loctite 2701 and assemble it on the brake cylinder's piston rod via the locking block (align the chamfer towards the locking plate)

SW 24 200 Nm ± 20 Nm

! **Assembly pressure: 2-3 bar**

[7] Apply pressurised air to the system and check for leaks

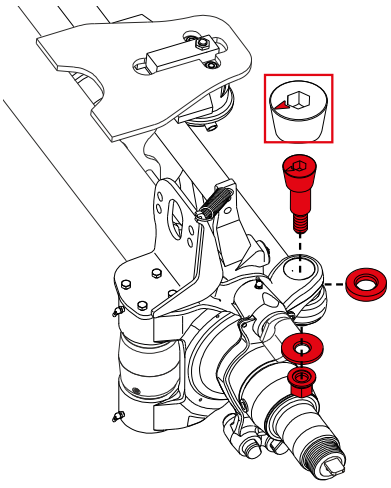
! **Engagement pressure in locking cylinder: 6-8 bar**

5.3 DISASSEMBLING/ASSEMBLING THE DIRECTION BAR AND SILENT BLOCK ON SELF-STEERING AXLES

! **Make sure of the following: No pressure in the system!**

! **Raise the axle and support it in an accident-proof manner!**

[1] Disassemble the locking unit → 5.2, pg. 74



[2] Take off the nut of the eccentric bolt until no thread can be seen

⌶ SW 36

! **If necessary, detach the eccentric bolt with a plastic hammer!**

[3] Disassemble the direction bar

[4] Check and, if necessary, replace the silent block → continue to [5] if OK

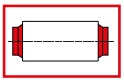
» Push out the silent block

» Clean the bearing seat

» Press in the new silent block using a suitable tool

! **For silent blocks made of rubber/steel: Soapy solution = allowed, oils and greases = not allowed!**

! **The silent block protrudes equally on both sides!**



[5] Push the eccentric bolt through the bracket, conical cap (chamfer towards the top) and direction bar

! **Align the arrows on the eccentric bolts forwards in the direction of travel!**

[6] Assemble locknut with washer under bearing

SW 36 Pre-tightening 10 - 15 Nm

[7] Installing the locking unit → 5.2, pg. 74

[8] Apply 3 bar of air pressure to the stabilisation unit

[9] Adjust the toe-in by turning the eccentric bolt → 5.5, pg. 75

[10] Tighten the locknut of the eccentric bolt

SW 36 550 Nm ± 25 Nm

! **Do not warp the eccentric bolt!**

5.4 DISASSEMBLING/ASSEMBLING THE STEERING ROD AND STEERING ROD END ON POWER-STEERING AXLES

! **Only on power steering axles with hydraulic additional steering; for other versions, follow the instructions of the vehicle manufacturer.**

! **Make sure of the following: » No pressure in the system!**

! **Raise the axle and support it in an accident-proof manner!**

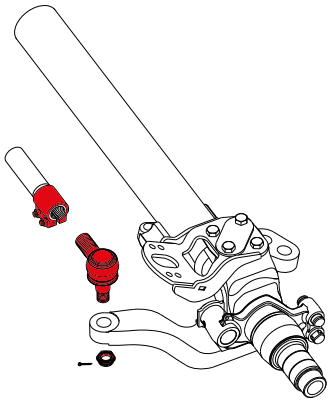
[1] Disassemble and dispose of the castellated nut's split pin

[2] Detach the castellated nut

⌶ SW 46

[3] Disassemble the steering rod → if the steering rod ends are in working order, continue to [8]

[4] Make note of the clearance of the steering rod ends from each other!



[5] Detach the locknuts on the clamp
- SW 19

[6] Unscrew the steering rod end and dispose of it

[7] Screw in the new steering rod end and adjust to the clearance

[8] Mount the steering rod
- SW 46 450 Nm, continue turning until the split pin fits

[9] Adjust the toe-in by turning the steering rod → 5.5, pg. 75

[10] Align the clamps of the steering rod ends with the spring clamp and tighten
- SW 19 80 Nm ± 10Nm

5.5 CAMBER AND TOE-IN AXLE

» Self-steering axles Adjusting the toe-in → 5.3, pg. 74

» Power-steering axles Adjusting the toe-in → 5.4, pg. 74

Axle type	**Camber**	
Rigid axles	0° ± 12‘	0 mm/m ± 3 mm/m
Power-steering axles	0° 30‘ ± 10‘	8 mm/m ± 3 mm/m
Self-steering axles	0° 30‘ ± 10‘	8 mm/m ± 3 mm/m
Axle type	**Toe-in**	
Rigid axles	0° ± 12‘	0 mm/m ± 3 mm/m
Power-steering axles	0° ± 12‘	0 mm/m ± 3 mm/m
Self-steering axles	0° 17‘ ± 4‘	5 mm/m ± 1 mm/m

5.6 DISASSEMBLING/ASSEMBLING THE STEERING KNUCKLE PIN AND BUSH

[1] Remove the axle

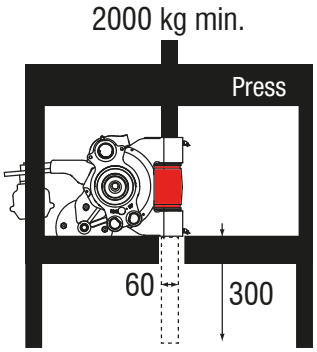
[2] Disassemble the direction bar, brake, and hub unit

[3] Disassemble dust cover, brake carrier or steering arm from axle pivot
- SW 17
- SW 30

[4] Remove and dispose of the V-ring

[5] Place and support the axle on a press

! **Ensure at least 2 t of compressive force and 300 mm empty space!**



[6] Heat the axle stub to 300°C for approx. 5 minutes

[7] Press out the steering knuckle pin with a dummy pin
- Diameter 57.7 mm ± 0.1 mm x 300 mm

[8] Remove and dispose of both hexagon sockets from the axle stub
- S 5

[9] Take off axle from the press

[10] Take off axle stub from the steering knuckle and clean (take off all adhesive residue)

[11] Take off and dispose of the wear plate and washer with the holes

[12] Clean, inspect and, if necessary, replace the axle pivot's bush
→ if OK, continue with [13]

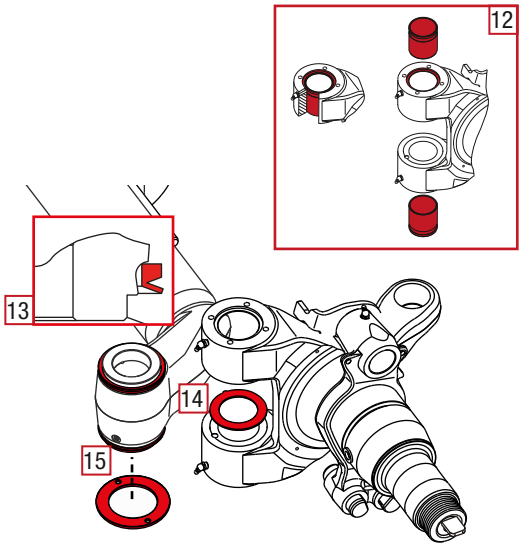
! **Maximum wear limit: The lubrication groove's base groove depth has been reached!**

» Push out the bushes with the expulsion mandrel (ID = 60 mm, OD = 65 mm)

» Clean the bearing seats

» Insert new bushes (circumferential groove towards the grease nipple) flush towards the first stop

» Check the bush ID: 60H9



[13] Slide the V-rings onto the larger diameter of the axle stub

[14] Grease the wear plate and, with the flat side with the nose in the groove, install onto the lower steering knuckle

[15] Place the washer with the holes on the axle stub's hollow dowel pin

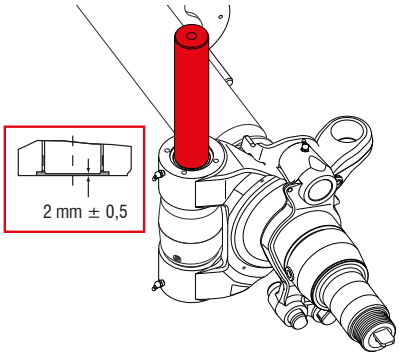
! **If the washer cannot be attached by the hollow dowel pin, replace it!**

[16] Assemble the axle beam and axle pivot

[17] Insert dummy pin

[18] Place and support the axle on the press

! **If no press is available: Drive in with a hammer if a screw (M20) is screwed on top in the steering knuckle pin until stop!**



[19] Press in the new spring bolt grease-free

! **Press in 2 mm ± 0.5 mm up to the lower edge!**

[20] Lubricate O-ring and insert on top and on the bottom

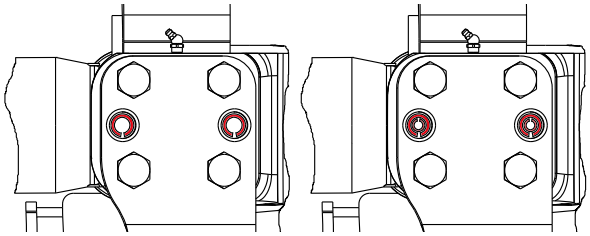
5

[21] Install the dust covers, brake cylinder carriers or steering arms

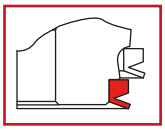
SW 17 45 Nm ± 3 Nm

SW 30 415 Nm ± 15 Nm

! **When installing the dowel pins (1 or 2 per hole) in the steering arm, the slot must be aligned according to the illustrations!**



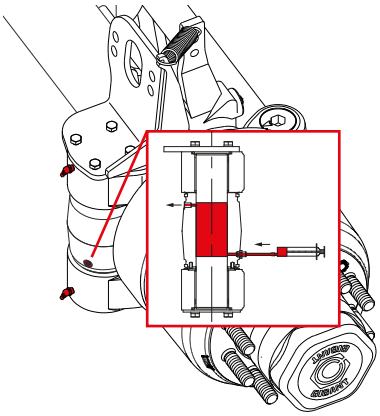
[22] Move the installed V-ring to the smaller diameter of the axle stub



[23] Install the direction bar, brake, and hub unit

[24] Press in the full content of the adhesive injector to the lower opening of the axle stub

! **The temperature of the components that touch the adhesive must be at least 15°C; heat them, if necessary heat up (max. 40°C)!**



[25] Press in the adhesive until adhesive comes out of the upper opening

[26] Screw in the upper hexagon socket flush

S 5

[27] Take off adhesive injector

[28] Screw in the lower hexagon socket flush

S 5

! **Do not move the axle for 30 minutes after the gluing process!**

! **Axles may be installed at the earliest 24 hrs. after the gluing process!**

[29] Lubricate the spring bolt while moving it

5

gigant
trailer axles

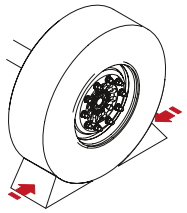
6 REPAIR SUSPENSIONS

SUSPENSIONS

1. GENERAL PREPARATIONS AND ACTIVITIES

1.1 SECURE THE VEHICLE

» Secure the vehicle from rolling away on even, firm ground



» Disconnect the brake and air supply lines from the tractor; disassemble the wheel, if necessary
» Jack up the frames in an accident-proof manner, if necessary
» If necessary, raise the axle or component and support it in an accident-proof manner
» Support the axle set accident-proof at driving height with the vehicle completely lifted

2. SUSPENSION-INDEPENDENT REPAIRS

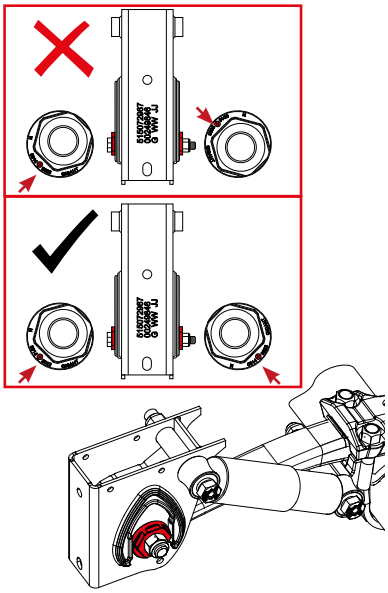
2.1 ADJUSTING THE TRACK

! Steering axles must be aligned in the straight driving position!

! Self-steering axles: Apply at least 3 bar pressure to the stabilisation bellow!

[1] Align the eccentric nut marking to 6:00
[2] Tighten the locknut at the spring bolt at 200 Nm
[3] Adjust the air suspension to driving height
[4] Fit and align the track measuring device in accordance with the manufacturer's instructions
[5] Check track alignment and, if necessary, make adjustments via the eccentric nuts

! Configure both eccentric nuts identically per side!



[6] Tighten spring bolt

GL70	SW 36	M24	340 Nm ± 20 Nm + 90° ± 3°
FB 100	SW 41	M27x1.5	575 Nm ± 25 Nm
LK	SW 46	M30	775 Nm ± 25 Nm
GKT	SW 36	M24	675 Nm ± 25 Nm

! Do not warp the eccentric nut!

[7] Remove the track measuring device in accordance with the manufacturer's instructions

2.2 CHECK TRACK ALIGNMENT

General aspects

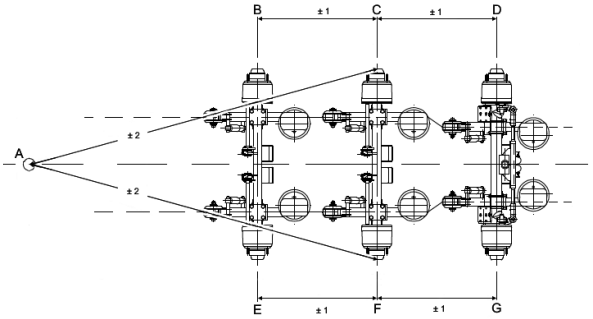
It is necessary to check the track alignment and correct it if necessary to compensate for manufacturing tolerances. With the GIGANT eccentric nut for adjusting the track, a maximum wheelbase correction of ± 5 mm is possible per axle line. For optimum track adjustment, e.g. for a vehicle with a kingpin, the centre axle (third axle for a 5-axle vehicle) must always be used as a reference axle.

Prerequisites

Vehicles with air suspension must be adjusted to driving height. With mechanical suspensions, it must be checked in an unloaded state. For the visual track alignment check, it must always be ensured that the vehicle is level. The operating and adjustment instructions from the manufacturer of the measuring systems must be observed.

2.2.1 Conventional adjustment

Example of a 3-axle semitrailer

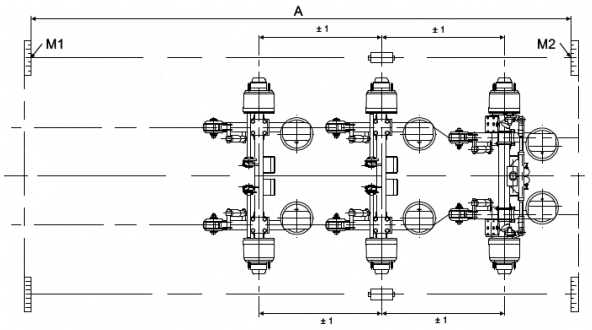


The diagonal distances A-C and A-F for the centre axle (reference axle) must be determined by comparative measurements. The permitted tolerance is ± 2 mm. Check the wheelbase distances B-C and E-F for the axle in front in the travel direction as well as C-D and F-G for the axle at the rear in the travel direction relative to the reference axle. The permitted tolerance for the wheelbase is ± 1 mm. If necessary, correct the wheelbase by evenly adjusting the eccentric nuts.

6

2.2.2 Visual adjustment

Example of a 3-axle semitrailer



Calculation of the toe-in and toe-out values:

$$\frac{\text{M1 (mm)} - \text{M2 (mm)}}{\text{A (m)}} = \text{X (mm/m)}$$

The measurement must be performed on both sides. The two measured values X must be added. The sum X2 indicates the toe-in/toe-out value for the axle and must lie in the permitted tolerance range in the “Track and toe-in” table. ➞ 5.5, pg. 75

X2 – value positive = toe-in

X2 – value negative = toe-out

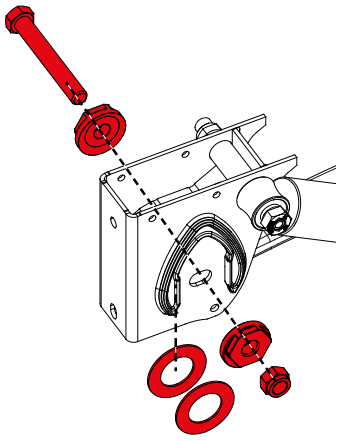
3. AIR SUSPENSIONS

3.1 DISASSEMBLING/ASSEMBLING THE SPRING BOLT/SILENT BLOCK

! No grease may be used!

[1] Detach the spring bolt

- GL70 SW 36
- FB100 SW 41
- » Disassemble the axle lift on GL70 suspensions, if necessary ➞ 5.2.2, pg. 85
- » Disassemble the upper clamp of the twin lift on FB100 suspensions, if necessary ➞ 5.3.1, pg. 86



[2] Remove the locknut, eccentric nut, and spring bolt

[3] Lower the spring until the spring eye is visible

! Avoid overstretching the bellow!

[4] Check the thrust washer and thrust plate and replace, if necessary:

- » GL70 < 2 mm
- » FB100 < 4.5 mm

[5] Push out the silent block on the inner steel bush

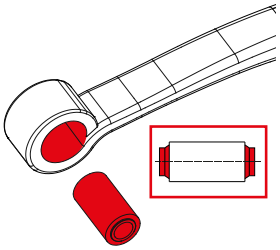
! If necessary, remove the spring if the silent block is made of steel/rubber/steel!

[6] Clean the link eye

[7] Press in the silent block using a suitable tool

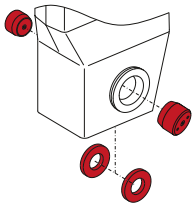
! For silent blocks made of rubber/steel: Soapy solution = allowed, oils and greases = not allowed!

! The inner steel sleeve evenly protrudes on both sides!



[8] Slide the thrust washers onto the silent block's steel bush

- » FB100: Fix the spacers inside the air suspension bracket using a magnet



[9] Lift spring and insert spring bolt with the eccentric nut fitted

[10] Install eccentric nut and locknut

[11] Align the eccentric nut marking to 6:00

- SW 60

[12] Pre-tighten the locknut

- GL70 SW 36 200 Nm
- FB100 SW 41 200 Nm

[13] Adjust the track ➞ 2.1, pg. 78

3.2 DISASSEMBLING/ASSEMBLING THE SHOCK ABSORBER

! Replace each shock absorber per axle!

! No grease may be used!

[1] Detach the locknuts on the shock absorber

- SW 36

[2] Pull out the screws and take off the shock absorber from the pin

[3] Clean and check the retaining tube, screw, and shock absorber pin

! GIGANT recommends replacing the screws and locknuts.

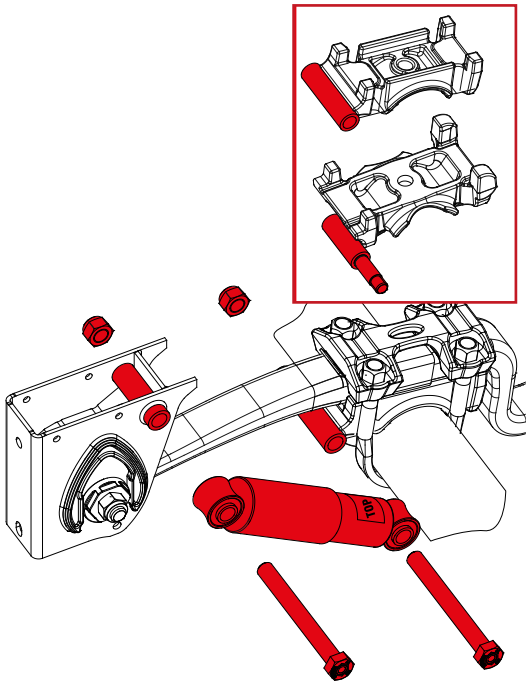
! Trim the pin if there is damage on the threads!

[4] Slide the shock absorber onto the pin until stop and fasten with screws

where applicable, pay attention to the "TOP” marking!

6

[5] Assemble the shock absorber and ensure proper fit
(inner diameter Washer = inner diameter Mount tube)



[6] Tighten shock absorber fitting connection

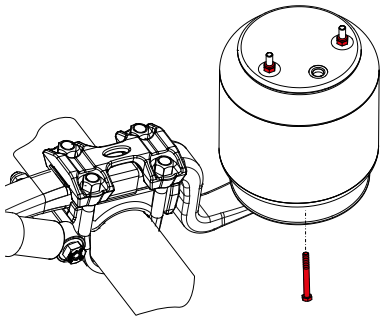
Screw/nut	SW 36	M24	530 Nm ± 30 Nm
Threaded pin/ nut	SW 36	M24	400 Nm

3.3 DISASSEMBLING/ASSEMBLING THE AIR BELLOW

[1] Disassemble the wheel, if necessary
[2] Ventilate the air bellow
[3] Clean and disconnect the compressed air supply and protect it from contamination
[4] Take off the lower bellow fitting (dispose of the microencapsulated screws) → 11, p. 44

! Mark the fastening position on the spring, the adapter plate, or the piston plate!

! The cone does not need to be removed for suspensions for rail loading!



[5] Detach and dispose of the top locknut → 11, p. 44
[6] Remove, inspect and, if necessary, replace the air bellow
[7] Clean the contact surfaces on the spring and on the chassis
[8] Assemble the air bellow with new locknut onto the chassis
[9] Tighten the lower bellow mount → 11, p. 44
[10] Tighten the upper bellow mount → 11, p. 44
[11] Connect and apply compressed air supply
[12] Set the vehicle to driving height and check the air bellow for leaks

3.4 DISASSEMBLING/ASSEMBLING THE BONDING/SPRING

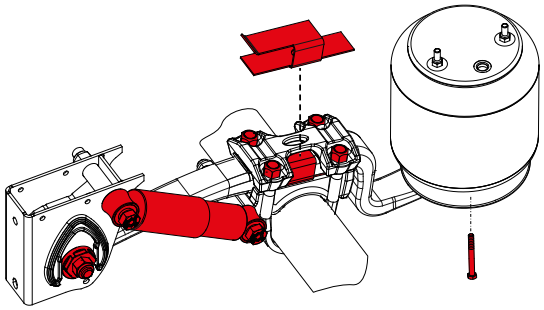
[1] Slightly detach the locknuts on the U-bolt
- SW 30
- SW 32
- SW 36

! GL70: Replace the pad!

[2] Disassemble the spring bolt → 3.1, pg. 79
[3] Disassemble the shock absorber → 3.2, pg. 79
[4] Detach the lower bellow mount → 11, p. 44

! Mark the fastening position on the spring, the adapter plate or the bevelled plate!

! The cone does not need to be removed for suspensions for rail loading!

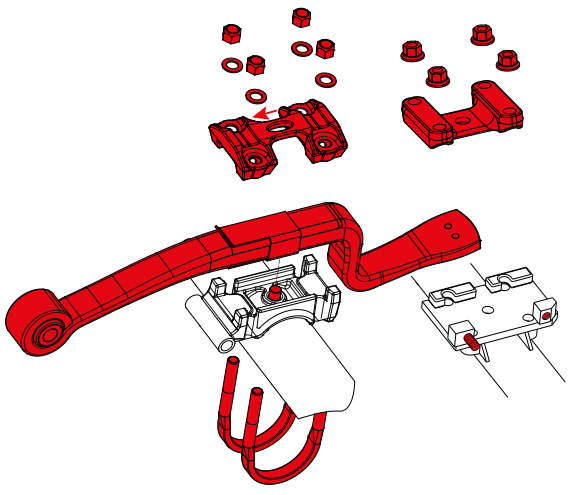


[5] Lower the axle
[6] Fully detach the locknuts on the U-bolt
[7] If necessary, detach the threaded pin of the axle plate
- S 10

[8] Remove, check and, if necessary, replace the spring

! If the spring breaks, the bonding, axle plate, and spring on the other side must also be inspected and replaced, if necessary!

[9] Check the axle plate for concavity (concave permissible = ◡)



[10] GL70: Insert spring bolt into axle plate
FB100: The spring bolt is a component of the spring

[11] GL70: Slide the pad over the spring

[12] Place and align the spring on the axle plate at a 90° angle

! **Be mindful of the spring bolt position!**

[13] Install the clamp plate (if necessary, with the arrow in the direction of travel)

[14] Assemble U-bolt with washers and locknuts

! **The U-bolt must not tilt!**

! **Gradually and evenly tighten the locknuts crosswise!**

! **Axle plate with threaded pins:**

» **Before** tightening the U-bolt, slide the spring in the axle plate forward until it hits the spring bolt

» Tighten the U-bolt hand-tight

» Tighten the threaded pin

S10 415 Nm +/- 15 Nm

! **The thread ends must protrude evenly!**

Locknut	M20x1.5	SW30	550 Nm ± 25 Nm
Locknut	M22x1.5	SW32	700 Nm ± 25 Nm
Spigot wheel nut	M22x1.5	SW32	675 Nm ± 25 Nm
Nut with washer	M24x1.5	SW36	875 Nm ± 25 Nm

! **Hold the spring in position while tightening!**

[15] Assemble the spring bolt → 3.1, pg. 79

[16] Assemble the air bellow → 3.3, pg. 80

[17] Assemble the shock absorber → 3.2, pg. 79

[18] Adjust the track → 2.1, pg. 78

4. MECHANICAL SUSPENSIONS

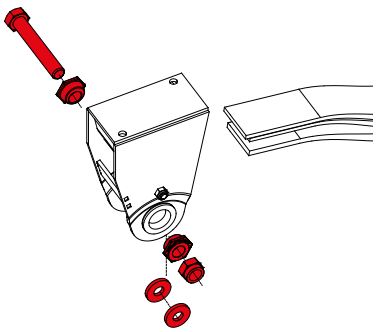
4.1 SUSPENSION-INDEPENDENT REPAIRS

4.1.1 DISASSEMBLING/ASSEMBLING THE SPRING BOLT/SILENT BLOCK

! **No grease may be used!**

[1] Detach the spring bolt

GK	Spring width 80 mm	SW 30
GK	Spring width 100 mm	SW 36
GKT		SW 36
LK		SW 46



[2] Remove the locknut, eccentric nut, and spring bolt

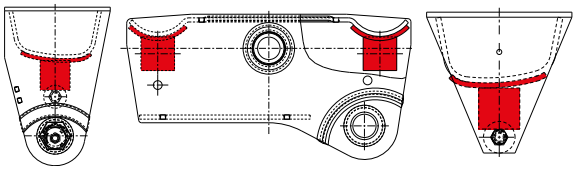
[3] Lower the spring until the silent block is visible

[4] Inspect the sliding plates and wear plates and replace, if necessary:

» Sliding plate < 3 mm → 4.1.4, pg. 82

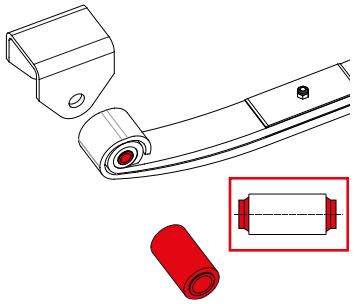
» Wear plate < 3 mm → 4.2.4, pg. 84

» Side plate < 3 mm



[5] Push out the silent block on the inner steel bush

[6] Clean the spring eye



[7] Press in the silent block using a suitable tool

! **For silent blocks made of rubber/steel: Soapy solution = allowed, oils and greases = not allowed!**

! **The inner steel sleeve evenly protrudes on both sides!**

[8] LK: Place grease-free spacers inside the equalizer

[9] Lift torque arm/spring and insert spring bolt with the eccentric nut fitted

[10] Install eccentric nut and locknut

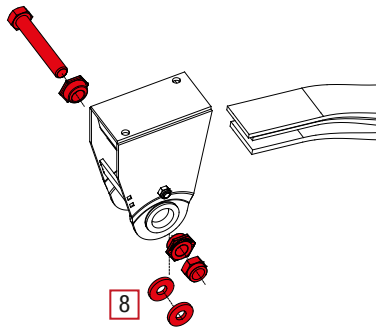
[11] Align the eccentric nut marking to 6:00

SW 60

[12] Pre-tighten the locknut

GK	Spring width 80 mm	SW 30	400 Nm ± 20 Nm
GK	Spring width 100 mm	SW 36	675 Nm ± 25 Nm
GKT		SW 36	200 Nm
LK		SW 46	200 Nm

[13] Adjust the track → 2.1, pg. 78



6

4.1.2 DISASSEMBLING/ASSEMBLING THE RUBBER ROLLER

[1] Detach and dispose of the locknuts and remove, inspect and, if necessary, dispose of screws
- SW 24

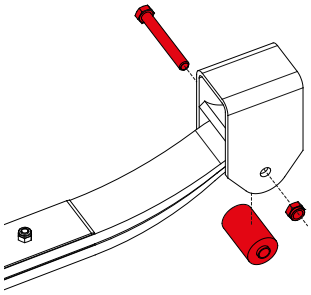
[2] Dispose of rubber roller with distance tube

[3] Insert new rubber roller with distance tube

[4] Insert the screw and tighten the locknut

GK	SW 24	120 Nm ± 10 Nm
LK	SW 24	180 Nm ± 10 Nm

! Spring/rubber roller must be able to move freely!



4.1.3 DISASSEMBLING/ASSEMBLING THE BONDING/SPRING

[1] Detach the U-bolt's locknut
- SW 30
- SW 32
- SW 36

! Secure the torque arm support if it is located below the spring!

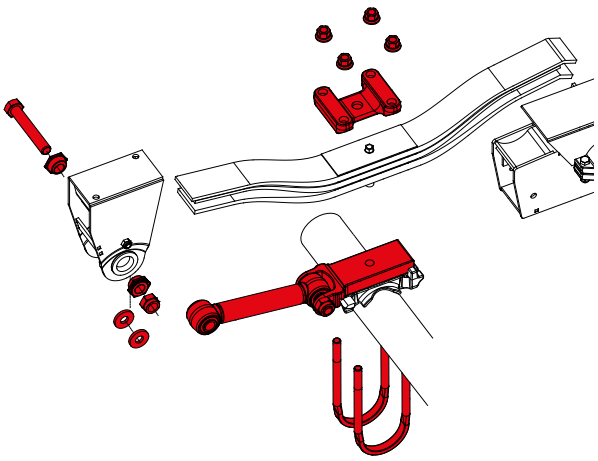
[2] Disassemble the spring bolt → 4.1.1, pg. 81

[3] Disassemble the rubber roller

[4] Lower the axle

[5] Take off, check and, if necessary, replace the spacers

[6] Disassemble, inspect and, if necessary, replace the U-bolt and torque arm support



[7] Disassemble, inspect and, if necessary, replace the spring

[8] Check the axle plate (concave permissible = ◡)

[9] Insert spring with spring bolt into the axle plate

[10] Place and align the torque arm support and spring on the axle plate at a 90° angle

! Be mindful of the spring bolt position!

[11] Assemble U-bolt with washers and locknuts

! The U-bolt must not tilt!

! Gradually and evenly tighten the locknuts crosswise!

! The thread ends must protrude evenly!

M20x1.5 (nut/washer)	SW 30	605 Nm ± 25 Nm
M22x1.5 (spigot wheel nut)	SW 32	675 Nm ± 25 Nm
M24x2 (nut/washer)	SW 36	900 Nm ± 25 Nm

[12] LK: Place grease-free spacers inside the equalizer

[13] Assemble the spring bolt → 4.1.1, pg. 81

[14] Assemble the rubber roller → 4.1.2, pg. 82

[15] Adjust the track → 2.1, pg. 78

4.1.4 SLIDING PLATES

[1] Disassemble spring and equalizer
→ 4.1.3, pg. 82 & 4.2.1, pg. 82

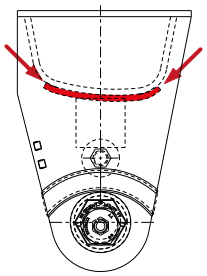
[2] Separate weld seam

! Do not take off any carrier material!

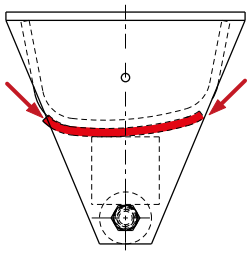
[3] Fully detach the sliding plate (use a hammer and chisel, if necessary)

[4] Fully remove weld seam residues and clean

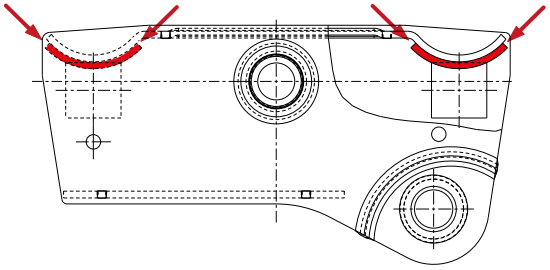
[5] Insert and weld on the new form-fitting sliding plate:
5 ◺ 30 centre



Front suspension bracket



Sliding shoe



Equalizer

4.2 LK

4.2.1 DISASSEMBLING/ASSEMBLING THE EQUALIZER BEARING

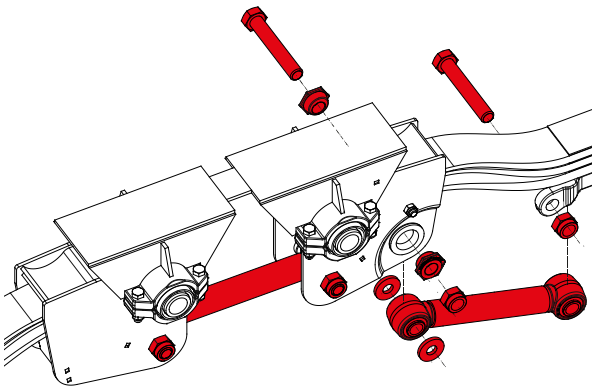
! Replace the equalizer bearings on each axle!

[1] Disassemble the torque arm → 4.2.2, pg. 83

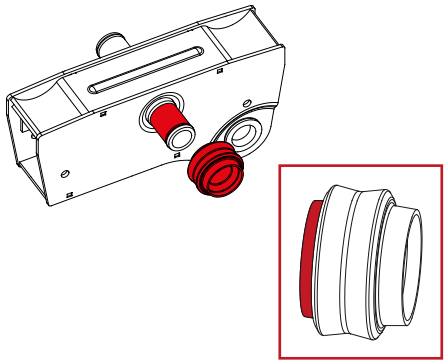
[2] If necessary, disassemble the connecting bar

[3] Disassemble the rubber rollers

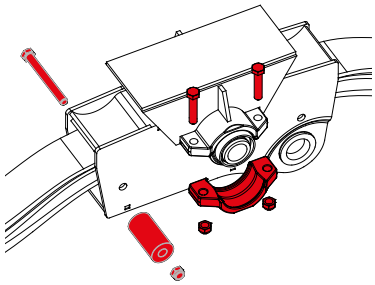
[4] Detach and dispose of the bearing clamps' locknuts
- SW 24



[5] Secure the equalizer and detach the lower bearing clamp
[6] Check the equalizer and replace, if necessary
[7] Disassemble the rubber bush
! **GIGANT tool** → 4.2.1, pg. 90
[8] Clean the bearing seat
[9] Coat the new rubber bush with soap water and press fit using a suitable tool (the short nose facing the equalizer)
! **GIGANT tool** → 4.2.1, pg. 90

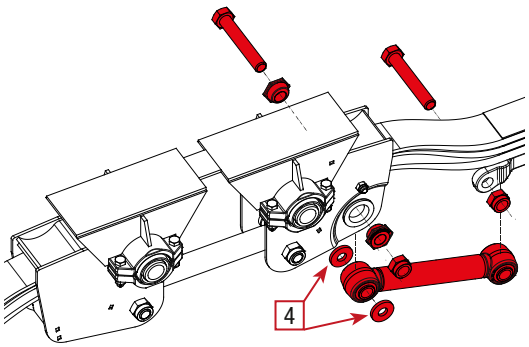


[10] Position the equalizer
[11] Assemble the bearing clamps with new locknuts and tighten them crosswise gradually and alternately
SW 24 180 Nm ± 10 Nm
[12] If necessary, assemble the connecting bar
SW 46 775 Nm ± 25 Nm
[13] Assemble rubber rollers with distance tube and tighten using new locknuts
SW 24 180 Nm ± 10 Nm
! **Spring/rubber roller must be able to move freely!**
[14] Assemble the torque arm → 4.2.2, pg. 83
[15] Adjust the track → 2.1, pg. 78

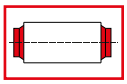


4.2.2 DISASSEMBLING/ASSEMBLING THE SILENT BLOCK ON THE TORQUE ARM

[1] Detach the spring bolt fitting and dispose of locknuts
SW 46
[2] Disassemble the eccentric nut
[3] Detach the torque arm supports' screws and dispose of the locknuts
[4] Remove the screws and torque arm with spacers (check and, if necessary, replace)
[5] Press out and dispose of the silent block; clean the bush



[6] Press in the new silent block using a suitable tool
! **For silent blocks made of rubber/steel:**
Soapy solution = allowed, oils and greases = not allowed!
! **The silent block protrudes equally on both sides!**



[7] Fasten the torque arm with screw and eccentric nut to the torque arm support
[8] Install eccentric nut on the screw
[9] Place torque arm with spacers in the front suspension bracket and the equalizer
! **The screw connection and components must be absolutely free of grease!**
[10] Install and tighten the eccentric nut and new locknut on the steering plate
SW 46 775 Nm ± 25 Nm
[11] Install and tighten the eccentric nut and new locknut on the front suspension bracket and on the equalizer
[12] Pre-tighten the locknut
! **Align the eccentric nut marking to 6:00!**
SW 60
SW 46 200 Nm
[13] Adjust the track → 2.1, pg. 78

4.2.3 DISASSEMBLING/ASSEMBLING THE CONNECTING BAR'S SILENT BLOCK

[1] Detach and dispose of the connecting bar fitting's locknuts
SW 46
[2] Tighten screws and remove connecting bar along with spacers

[3] Press out the silent block and clean the bush

[4] Press in the new silent block using a suitable tool

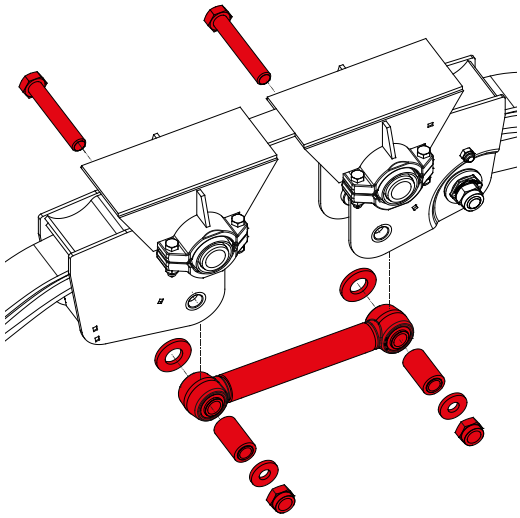
! **For silent blocks made of rubber/steel:**

Soapy solution = allowed, oils and greases = not allowed!

! **The silent block protrudes identically on both sides!**

[5] Assemble and tighten connecting bar with spacers and new locknuts

SW 46 775 Nm ± 25 Nm



4.2.4 DISASSEMBLING/ASSEMBLING THE WEAR PLATE

[1] Mark the position of the wear plate on the side plate

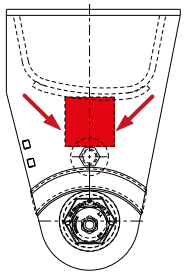
[2] Disconnect the tack weld on the front side

! **Do not take off any carrier material!**

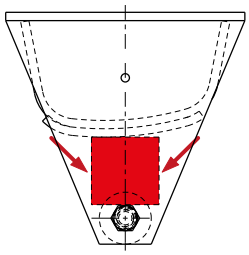
[3] Fully detach the wear plates (use a hammer and chisel, if necessary)

[4] Fully remove weld seam residues and clean

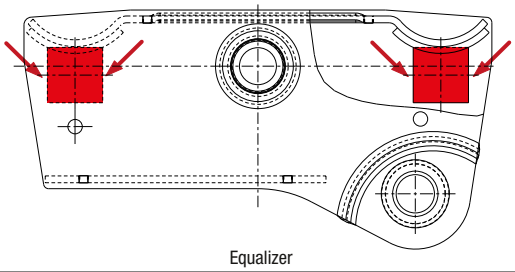
[5] Install the new wear plates according to the markings and adhere approx. 1 cm on both sides



Front suspension bracket



Sliding shoe



Equalizer

4.3 GK / GKT

4.3.1 DISASSEMBLING/ASSEMBLING THE EQUALIZER BEARING

[1] Detach the spring eye fitting and dispose of locknuts

SW 30

[2] Disassemble the rubber roller

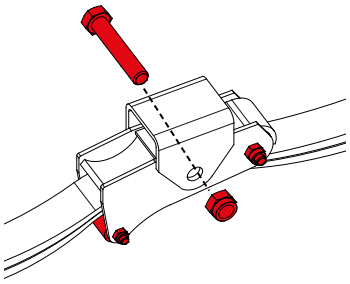
SW 24

[3] Detach the equalizer bearing fitting and dispose of locknuts

SW 46

[4] Take off screw and take off, check and, if necessary, replace the equalizer

! **Side plate thickness < 3 mm → Replace equalizer!**



[5] Check the silent block in the spring eye and replace, if necessary → 4.3.2, pg. 85

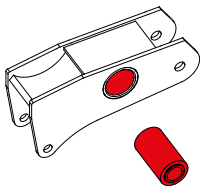
[6] Press out the equalizer's silent block and clean the bush

[7] Press in the new silent block using a suitable tool

! **For silent blocks made of rubber/steel:**

Soapy solution = allowed, oils and greases = not allowed!

! **The silent block protrudes identically on both sides!**



[8] Position the equalizer and assemble with new locknuts

SW 46 775 Nm ± 25 Nm

[9] Assemble the spring eye fitting (GKT: Assemble the eccentric nut)

SW 30 400 Nm ± 20 Nm

SW 36 675 Nm ± 25 Nm

! **Align the eccentric nut marking to 6:00!**

SW 30 Pre-tightening: 200 Nm

[10] Assemble rubber rollers with distance tube

[11] Tighten locknuts

SW 24 120 Nm ± 10 Nm

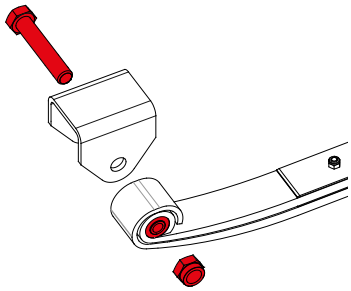
! **Spring/rubber roller must be able to move freely!**

[12] GKT: Adjust the track → 2.1, pg. 78

6

4.3.2 DISASSEMBLING/ASSEMBLING THE SILENT BLOCK SPRING EYE

[1] Detach the spring eye fitting and dispose of locknuts
  SW 30
[2] Lower the spring on the front until the spring eye is freely accessible
[3] Press out the silent block
[4] Clean the bush
[5] Press in the new silent block
  ! For silent blocks made of rubber/steel:
  Soapy solution = allowed, oils and greases = not allowed!
  ! The silent block protrudes identically on both sides!
[6] Lift the spring until the spring eyes align in the suspension bracket/equalizer
[7] GKT: Place the spacers inside the suspension bracket/equalizer
[8] Place the spring bolts (GKT: Assemble the eccentric nut)
[9] Assemble new locknuts



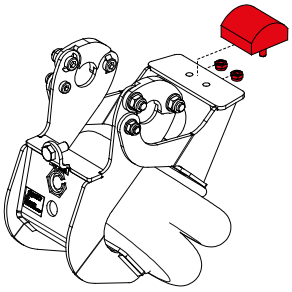
[10] Tighten fitting on the spring eye
  GK SW 30 400Nm ± 20 Nm
  GKT SW 30 Pre-tightening 200 Nm
[11] GKT: Adjust the track → 2.1, pg. 78

5. AXLE LIFTS

GIGANT differentiates between the Twinlift, side axle lift (EAL, EAL-T) and centre axle lift (MAL) versions.

5.1 DISASSEMBLING/ASSEMBLING THE WEAR BLOCK

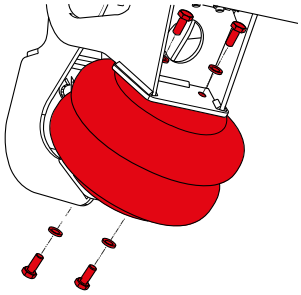
[1] Relieve the pressure in the axle lift system
[2] Detach and dispose of the locknuts
[3] Take off wear block and clean the contact surfaces
[4] Install new wear block and tighten using new locknuts:
  GL70 SW 13 40 Nm ± 5 Nm
  EAL/MAL, EAL-T/MAL-T SW 13 25 Nm
[5] Apply pressurised air to the system
[6] Perform a leak and functionality test



5.2 GL70

5.2.1 DISASSEMBLING/ASSEMBLING THE AIR BELLOW

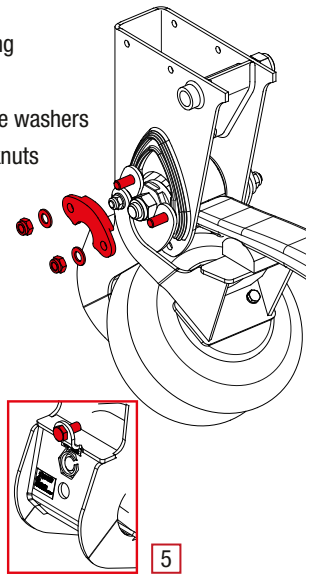
[1] Relieve the pressure in the axle lift system and take off the air connection
[2] Press down on the lift support
[3] Detach fastening screws and dispose with the spring washers
  SW 17



[4] Dispose of the two-fold bellow and clean the contact surfaces
[5] Connect the air connection to the new two-fold bellow
  ! GIGANT recommends that you always assemble a new air connection!
[6] Insert two-fold bellow
[7] Assemble with new spring washers and screws (use Loctite 2701)
  SW17 M12 40 Nm ± 5 Nm
[8] Apply pressurised air to the system
[9] Perform a leak and functionality test

5.2.2 DISASSEMBLING/ASSEMBLING THE AXLE LIFT

[1] Relieve the pressure in the axle lift system and take off the air connection
[2] Detach the anchor plate fitting and dispose of the locknuts
  SW 22
[3] Take off the axle lift
[4] Disassemble the anchor plate of the new axle lift
  SW 22
[5] Turn back the axle lift's screw (do not unscrew)
  SW 22
[6] Position the axle lift on the spring bolt fitting
[7] Secure the anchor plate with the washers under bearing and the new locknuts
  SW 22 120 Nm ± 10 Nm
[8] Lift axle lift and tighten with a screw through the long hole on the air suspension bracket
  SW 22 80 Nm ± 5 Nm
[9] Connect air connection and apply pressurised air to the system
[10] Perform a leak and functionality test



5.2.3 DISASSEMBLING/ASSEMBLING THE LIFT SUPPORT

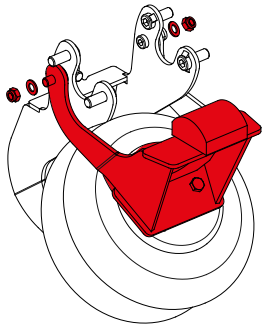
[1] Disassemble the axle lift

[2] Loosen the screw for the air bellow fastening on the lift support

- SW 17

[3] Detach the locknuts of the lift support fitting and dispose of the locknuts

- SW 19
- S 8



[4] Remove the socket head screws and dispose of the lift support

[5] Position the new lift support and insert the socket head screws from the inside

! Install new lift support and, if necessary, a wear block!

→ 5.1, pg. 85

[6] Install washers under bearing

[7] Coat the new locknuts with Loctite 2701 and tighten.

- SW 19 80 Nm ± 5 Nm
- S 8

[8] Assemble the two-fold bellow with screws (use Loctite 2701) and washers

- SW 17 40 Nm ± 5 Nm

[9] Assemble the axle lift → 5.2.2, pg. 85

5.3 FB100

5.3.1 DISASSEMBLING/ASSEMBLING THE AIR BELLOW

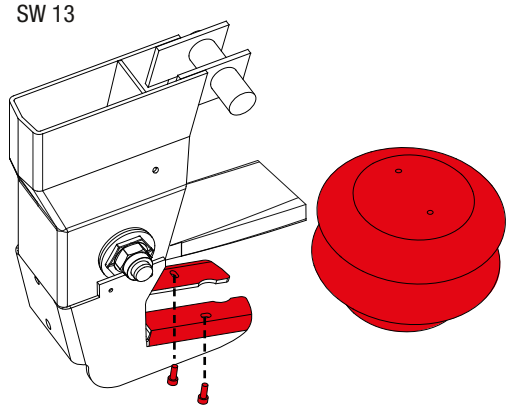
[1] Detach the clamp and dispose of the locknuts

- SW 17

[2] Press down on the two-fold bellow and remove, clean, inspect and, if necessary, replace the rubber pad

[3] Detach the lower fastening screws of the two-fold bellow, remove, and clean the lift unit's contact surfaces

- SW 13



[4] Assemble the lower clamp and air connection to the two-fold bellow

! GIGANT recommends that you always assemble a new air connection!

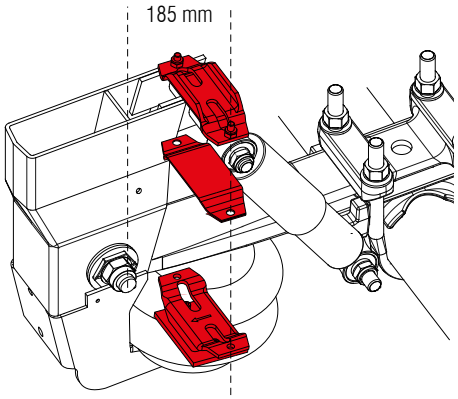
- SW 13 M8 25 Nm ± 2.5 Nm

[5] Insert two-fold bellow and tighten with the lower fastening screws

- SW 13 M8 25 Nm ± 2.5 Nm

[6] Place the rubber pad around the spring and assemble the upper clamp with the new locknuts

! No contact is allowed between the spring and the clamps!



[7] Align and tighten the clamp 185 mm from the centre of the spring bolt

- SW 17 M10 43 Nm ± 3 Nm

[8] Connect air connection and apply pressurised air to the system

[9] Perform a leak and functionality test

5.4 EAL, MAL

5.4.1 DISASSEMBLING/ASSEMBLING THE AIR BELLOW

[1] If necessary, disassemble the wheel

[2] Relieve the pressure in the axle lift system and take off the air connection

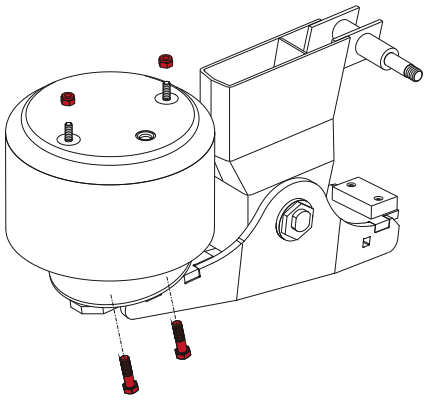
[3] Detach and dispose of the top locknuts

- SW 19

[4] Take off and dispose of the lower attachment

- SW 30
- SW 24

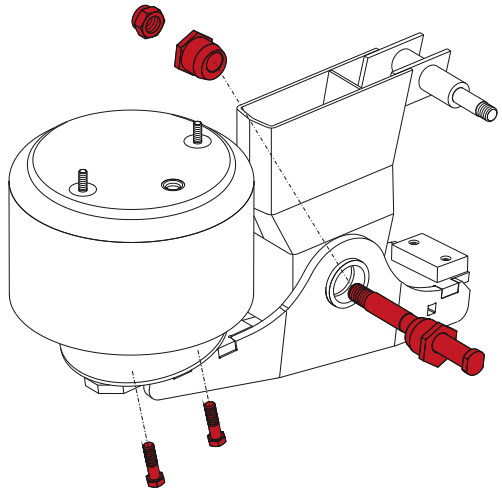
[5] Dispose of the air bellow and clean the contact surfaces



[6] Install new air bellow on top with new locknuts
[7] Screw the air bellow onto the lift support and tighten
» 2 x M16 hex. screw
SW 24 280 Nm ± 10 Nm
» M 20 locknut with distance tube
SW 30 275 Nm ± 25 Nm
[8] Tighten top locknuts
SW 19 M12 55 Nm ± 5 Nm
[9] Connect air connection and apply pressurised air to the system
[10] Perform a leak and functionality test

5.4.2 DISASSEMBLING/ASSEMBLING THE LIFT SUPPORT

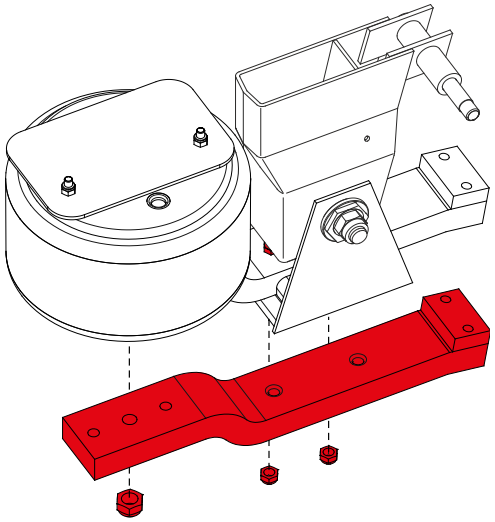
[1] Relieve the pressure in the axle lift system and take off the air connection
[2] Detach the spring bolt fitting and dispose of the locknut
[3] Detach the lower fitting on the air bellow
SW 24
SW 30 (dispose of the locknut)
[4] Remove spring bolt and remove lift support
! **Hold the spring in position for subsequent installation!**



[5] Check the spring bolt and eccentric nuts and replace if necessary
[6] Disassemble wear plate, if necessary → 5.1, pg. 85
[7] Slide the eccentric nut onto the spring bolt
! **The spring bolt, eccentric nut, and eccentric bush must be grease-free!**
[8] Put the new lift support in position and insert the spring bolt
[9] Insert eccentric nut and screw on the new locknut
[10] Screw the air bellow onto the lift support and tighten
» 2 x M16 hex. screw
SW 24 280 Nm ± 10 Nm
» M 20 locknut with distance tube
SW 30 275 Nm ± 25 Nm
[11] Tighten the spring bolt's new locknut
! **Align the eccentric nut marking to 6:00!**
SW 41 Pre-tightening: 200 Nm
[12] For EAL/EAL-T: Adjust the track → 2.1, pg. 78
[13] Tighten axle lift type MAL/MAL-T
SW 41 575 Nm ± 25 Nm
[14] Connect air connection and apply pressurised air to the system
[15] Perform a leak and functionality test

5.4.3 DISASSEMBLING/ASSEMBLING THE EAL-T SPRING

[1] Relieve the pressure in the axle lift system and take off the air connection
[2] Detach the lower air bellow attachment and dispose of the locknut
SW 30
! **Mark the bolt position on the spring!**
[3] Detach and dispose of the locknuts of the spring attachment on the suspension bracket
SW 24
[4] Remove screws and remove spring from the suspension bracket



[5] Assemble new spring with screws and locknuts on the suspension bracket
[6] Assemble the lower air bellow pin on the spring
! **Be mindful of the marking on the old spring!**
[7] Tighten the locknuts of the link fitting
SW 24 180 Nm ± 10 Nm
[8] Tighten the locknut of the lower bellow attachment
SW 30 275 Nm ± 25 Nm
[9] Connect air connection and apply pressurised air to the system
[10] Perform a leak and functionality test

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7 LUBRICANT AND SEPARATING AGENT I TOOLS

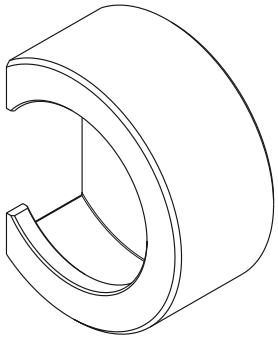
Product	Description	Containers	Item no.
GIGANT grease	Rhenus LKR25	1.0 kg	704290061
GIGANT grease	Rhenus LKR25	4.5 kg	704290063
GIGANT grease	Rhenus LKR25	9.3 kg	704290064
Grease (for GAH1)	Mobil Mobilith SHC 220	380 g	703016984
Copper paste	WEICON copper paste C-6	500 g	700000188
Separating agent, bearing seat	Molykote TP 42	100 g	704290082
Separating agent, bearing seat	Molykote TP 42	1.0 kg	704290080
Separating agent, bearing seat (GAH1)	Optimol White RV	100 g	703016907
Thread-locking fluid	Loctite 2701	5 ml	703013327
Sealant	Teroson MS 9120	310 ml	703450020

Product	Axle/suspension type or area of application	Dimensions	Example illustration	Item no.
Puller tool for brake camshaft	KPS	ID = 113	1	703017059
Axle nut socket	K2, K3, KPS	SW 95	2	710500968
Eccentric centring device	GL70	B = 125	3	700311130
Eccentric centring device	FB100	B = 153	3	700311047
Eccentric centring device	LK , GKT	B = 134	3	700311045
Magnet holder	FB100, LK, GKT		4	700090015
Mounting mandrel	K2, K3 (9t/10t, 3020 / 10.5t, 3020, 3620 / 12t, 3020) H7 12t Swivel axles (6 - 10t, 3015, 3515)	Ø = 82, M68x1.5	5	709297005
Mounting mandrel	K2, K3 (12t, 3620, 4220, 4345) Axle stub (9/10t, 4218) Swivel axles (10t, 4218)	Ø = 90, M76x1.5	5	709297006
Mounting mandrel	K2 (5.5t/7t; 3015)	Ø = 78, M68x1.5	5	709297008
Mounting mandrel	Axle pivot pin: Disassembling/ assembling the bush	Ø ~59 / Ø ~65 L125	6	709713925
Extraction and puller tool (suitable for puller tool for brake camshaft)	Brake camshaft: Disassembling/ assembling the bush, Axle stub (9/10t, 4218)	Ø ~ 36 / Ø ~ 39 L115 Z = 7	7	770000000
Assembly bolts	D(N)OKH2	M18x1.5	8	700000606
Assembly bolts	D(N)OKH2 (adapter puller tool)	M18x1.5 / G5/8	9	700190254

Product	Axle/suspension type or area of application	Dimensions	Example illustration	Item no.
Installation help	Threading pin rubber bush equalizer LK	Øi1 = 51, Øi2 = 60.5, Øi3 = 41, l1 = 45, l = 75	10	700100021
Installation help	Push tool pin rubber bush equalizer LK	ID = 65, OD = 88.9 l = 85	11	700100020
Hubcap key	K2 (5.5t/7t, 3015)	SW 120	12	710500965
Hubcap key	K2, K3 (9t/10t, 3020 / 10.5t, 3020, 3620 / 12t, 3020) H7 - 12 t Swivel axles (6-10 t, 3015, 3515)	SW 160		710500962
Hubcap key	K2, K3 (12t, 3620, 4220, 4345) Axle stub (9/10t, 4218) Swivel axles (10t, 4218)	SW 170	12	710500963
Wheel nut spanner, thin-walled	K2, K3, 3020	SW 32	13	700190191
Torx wrench	D(N)OKH2	E 24	14	700190182

Example illustrations:

1



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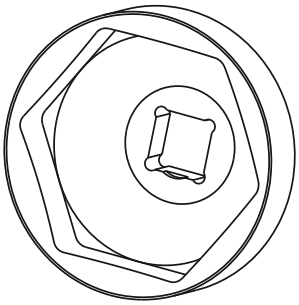

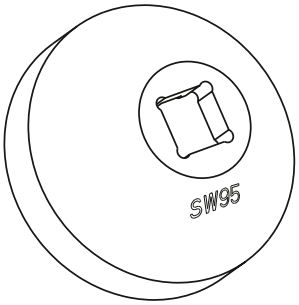

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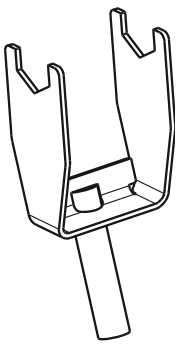

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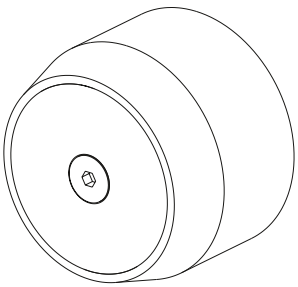

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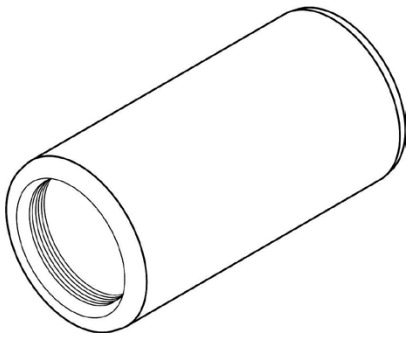

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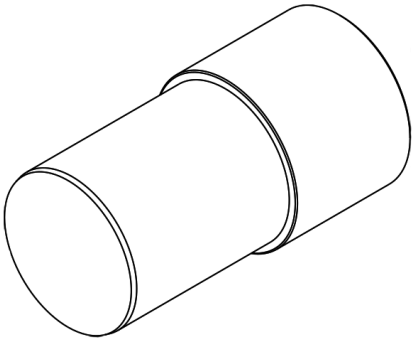

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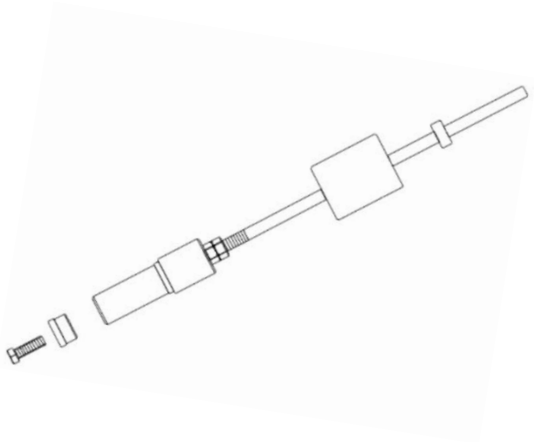

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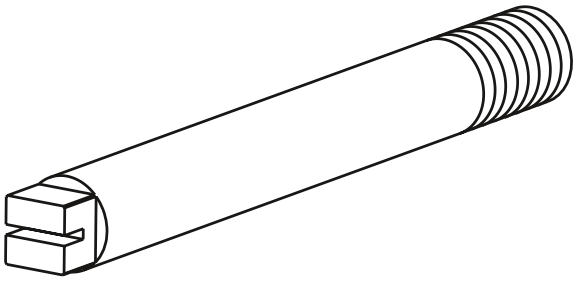

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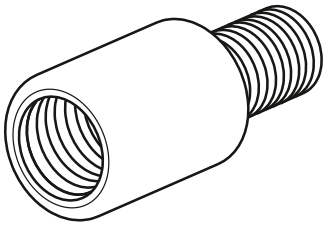

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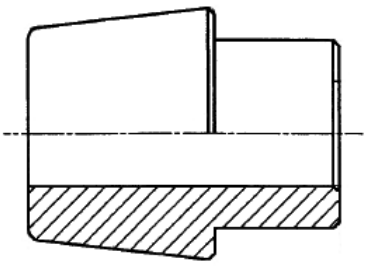

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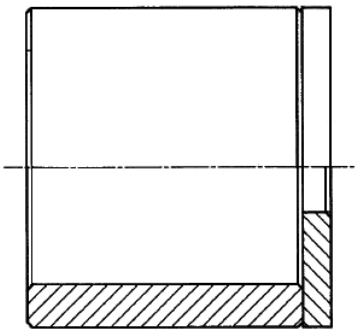

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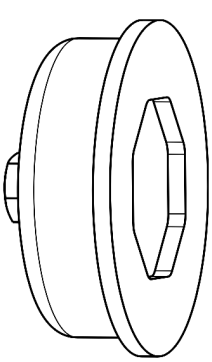

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8 ALPHABETIC SORTING

A

B

C

D

8

8

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