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1. CHASSIS

1.1 GENERAL

Chassis materials

Type	Chassis type	Material
LF	All	KF 450

Note:

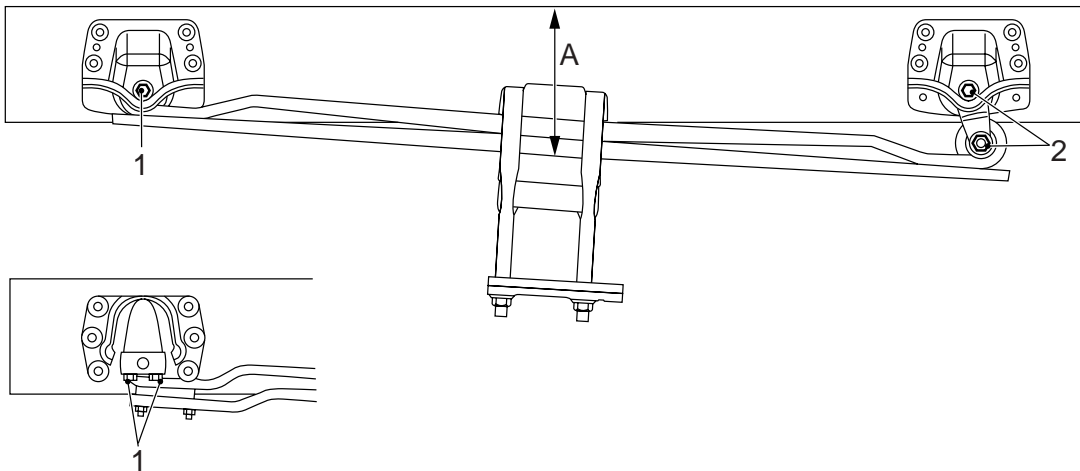
KF 450 is a "High Tensile Strength"-steel grade.

2. SHOCK ABSORBERS, STABILISERS, TORQUE RODS AND LEAF SUSPENSION

2.1 GENERAL

Fixing the attachment bolts for the leaf spring

Ensure that when fixing the attachment bolts (1) for the leaf spring that the leaf spring is at the prescribed height (A). The height (A) is to be measured above the axle, between the top edge of the chassis cross member and the underside of the leaf spring.



C9 00 409

Front axle

MODEL	HEIGHT (A)	
	frontmost attachment point (1)	rearmost attachment point (2)
LF45 All models	404 mm	459 mm
LF45 All models	502 mm	566 mm

Rear axle

MODEL	HEIGHT (A)
LF45 7.5T GVW	295 mm
LF45 7.5T GVW A-symmetric	295 mm
LF45 10-12T GVW	327 mm
LF45 10-12T GVW A-symmetric	295 mm
LF55 13-15T GVW	391 mm
LF55 13-15T GVW A-symmetric	362 mm
LF55 16-18T GVW	414 mm
LF55 16-18T GVW type Kipper	391 mm
LF55 16-18T GVW A-symmetric	362 mm

Note:

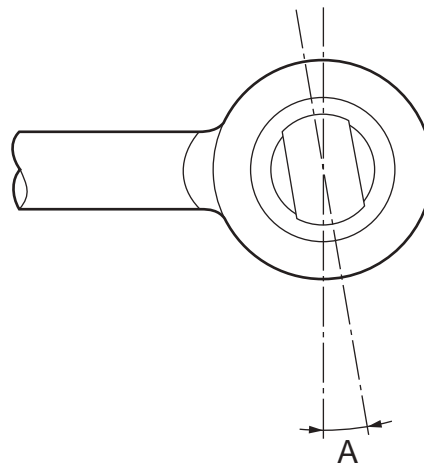
With the rear axle height (A) applies to both the frontmost (1) and the rearmost attachment point (2) of the leaf spring.

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Transverse guide torque rod, air sprung rear axle LF45

Fitting angle (A) for mounting rubber on rear axle side

8 - 12 °



C9 00 408

Torque rods stabiliser length (A)

A is the centre-to-centre-distance between the attachment points.

Front axle

LF45 all models

342 - 344 mm

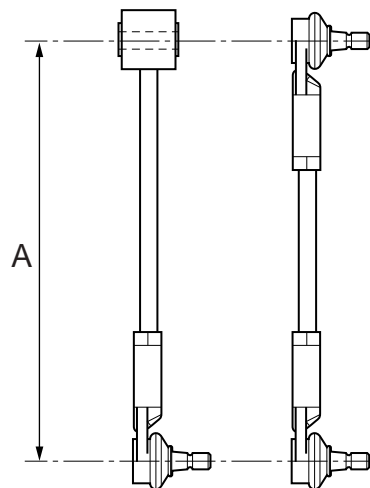
LF55 all models

348 - 352 mm

Rear axle

LF55 FAN steered rear axle

598 - 602 mm



C9 00 413

2.2 TIGHTENING TORQUES

The tightening torques stated in this paragraph are different from the standard tightening torques stated in the overview of the standard tightening torques. The other threaded connections which are not stated must therefore be tightened to the tightening torque stated in the overview of standard tightening torques.

When attachment bolts and nuts are to be replaced, it is important - unless stated otherwise - that these bolts and nuts are of exactly the same length and property class as the removed ones.

U-bolt nuts

MODEL	FRONT AXLE	REAR AXLE
LF45 all models	215 Nm*	468 Nm*
LF55 13 - 15 ton GVW	468 Nm*	468 Nm*
LF55 16-18 ton GVW Leaf suspension	537 Nm*	537 Nm*
LF55 16-18 ton GVW Air suspension	537 Nm*	880 Nm*
LF55 FAN steered rear axle		468 Nm*

* Tighten the U-bolt nuts evenly and alternately.

Shock absorbers

If using self-locking nut M14x2

52 Nm

Front axle torque rod locking nut

LF45

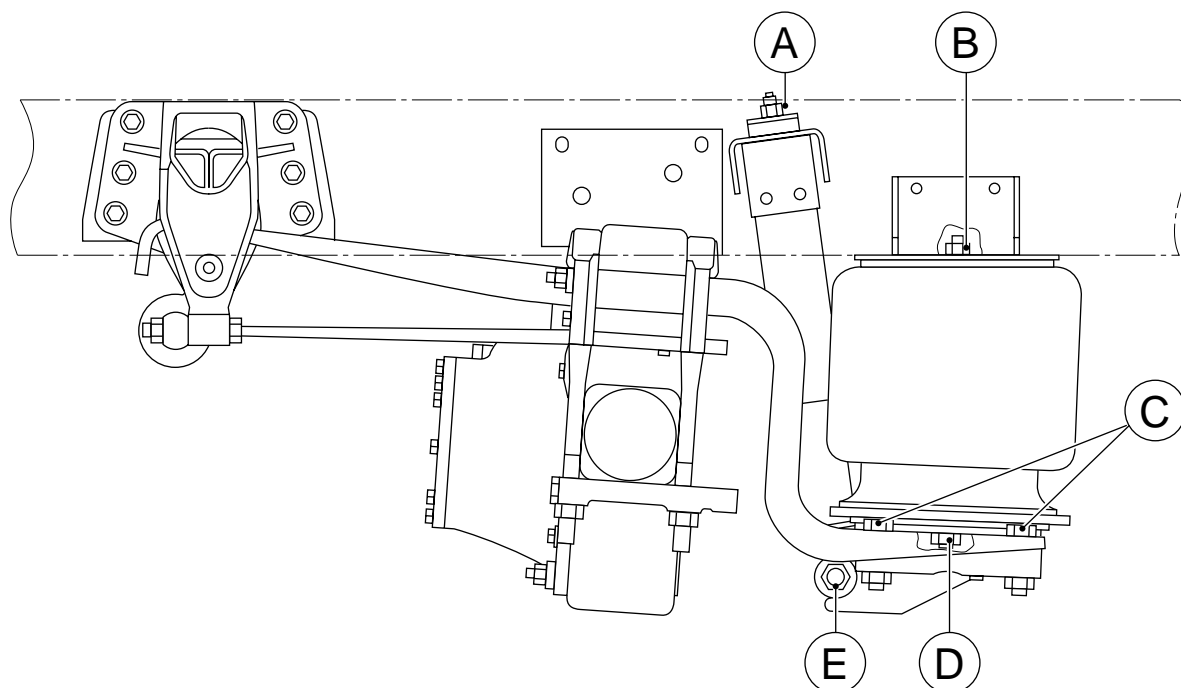
135 Nm

LF55

80 Nm

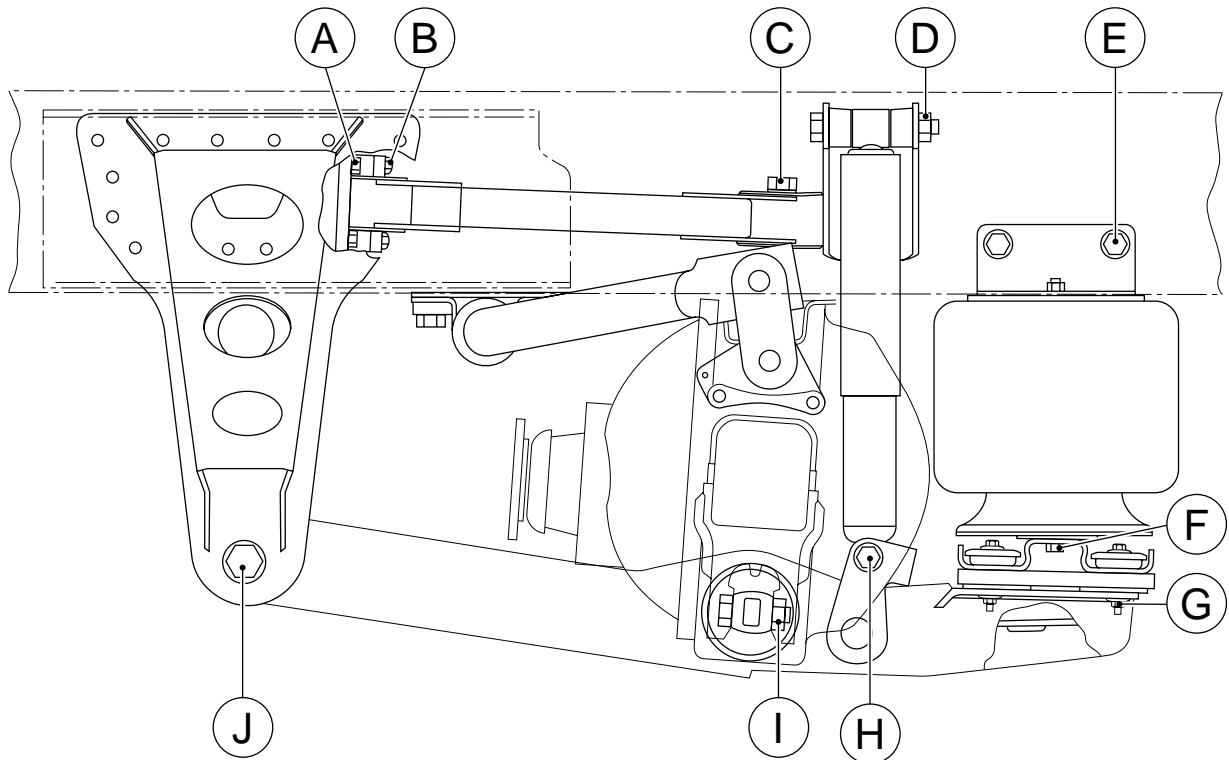
LF45 rear axle, air suspension

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C9 00 323

A	M14 shock absorber attachment nut	52 Nm
B	M12 air bellows attachment nut	31 Nm
C	M20 bolt	525 Nm
D	M12 air bellows attachment nut	60 Nm
E	M20 shock absorber attachment bolt	525 Nm

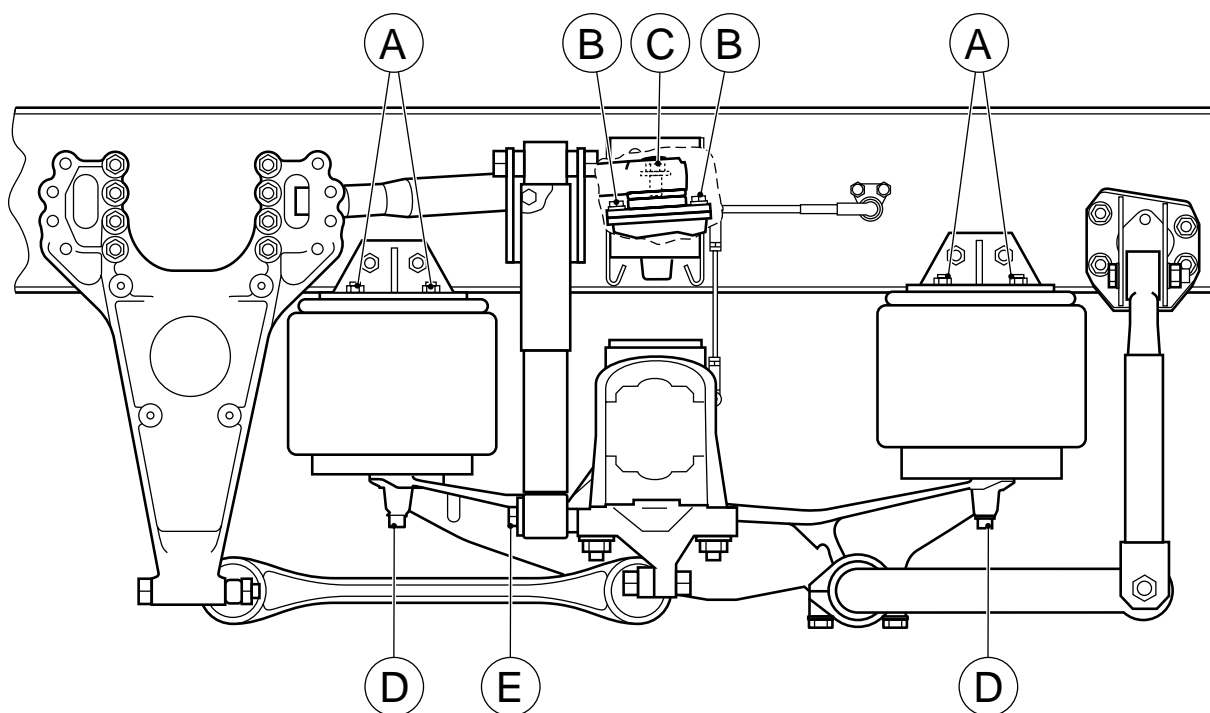
Rear axle, air suspension LF55 13- 15 ton
GVW

C9 00 324

A	M16 triangular adjustment block attachment bolt	360 Nm
B	M20 triangle attachment bolt	475 Nm
C	Attachment nut for triangle on differential M22	235 Nm
D	M20 shock absorber attachment bolt	525 Nm
E	M20 air bellows support attachment bolt	465 Nm
F	M12 air bellows attachment bolt	31 Nm
G	M16 attachment bolt	285 Nm
H	M20 shock absorber attachment bolt	525 Nm
I	Attachment bolt	385 Nm
J	M22 bolt with break nut, breakpoint nut	+/- 750 Nm

**Rear axle, air suspension LF55 16- 18 ton
GVW**

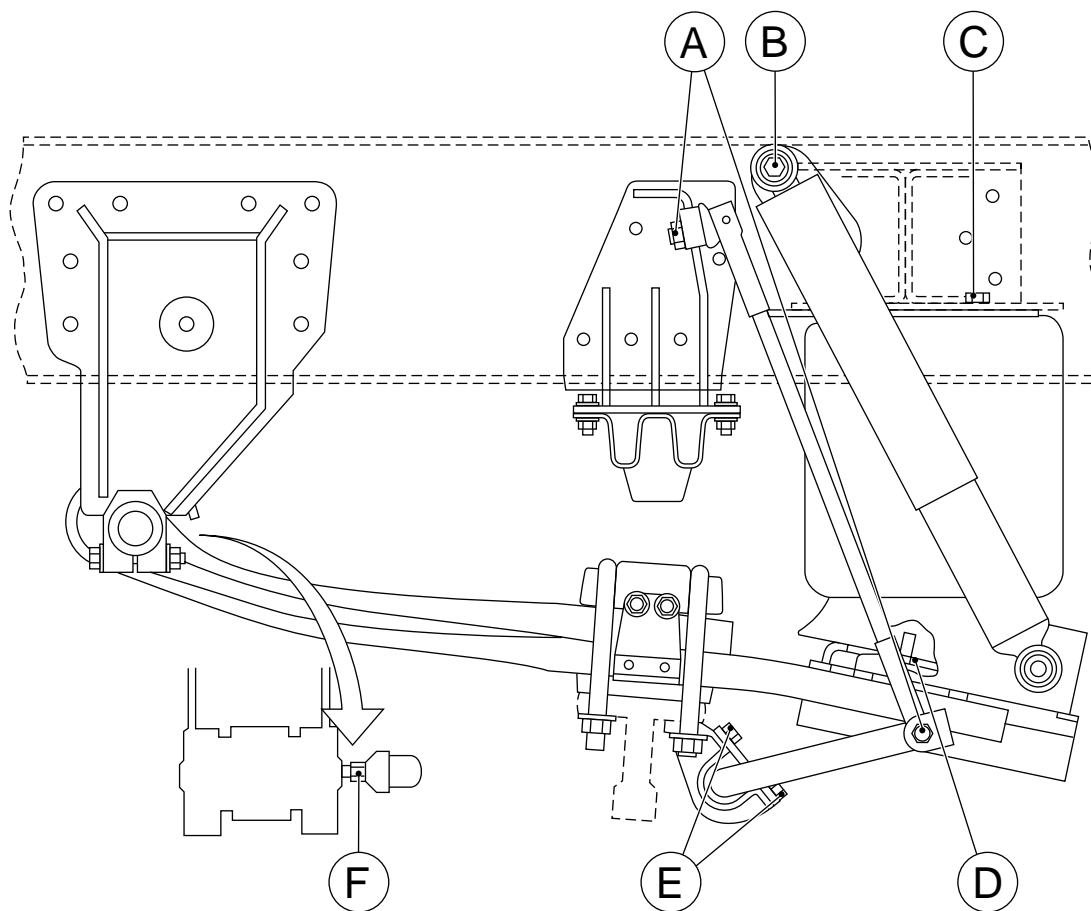
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C9 00 325

A	M10 air bellows attachment nut	46 Nm
B	Clamping flange bolt M18	460 Nm
C	M14 attachment bolt, property class 10.9	135 Nm
D	M16 air bellows attachment bolt	195 Nm
E	M20 attachment bolt, property class 10.9, shock absorber	520 Nm

Steered rear axle, air suspension LF55 FAN



C9 00 397

A	Self-locking nut, torque rod ball joint	88 Nm
B	M20 shock absorber attachment bolt	250 Nm
C	M10 air bellows attachment bolt	32 Nm
D	M12 air bellows attachment bolt	34 Nm
E	M12 attachment bolt, stabiliser bar retaining plate	25 Nm
F	Automatic lubricating nipple	5 Nm

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1. SHOCK ABSORBERS

1.1 FAULT-FINDING TABLE

COMPLAINT: SHOCK ABSORBER PRODUCES NOISE (CHATTERING, BUMPING ETC.)	
Possible cause	Remedy
Shock absorber is loose.	Tighten.
Attachment rubbers too soft.	Fit new rubbers.
Shock absorber comes into contact with other components.	Remove components or fasten them.
Shock absorber cover is loose.	Tighten cover or replace shock absorber.

COMPLAINT: SHOCK ABSORBER DOES NOT FUNCTION	
Possible cause	Remedy
Internal defect.	Replace shock absorber.
Loss of oil.	Replace shock absorber.

COMPLAINT: LEAKY SHOCK ABSORBER	
Possible cause	Remedy
Defective piston rod sealing. Caution: a thin, greasy layer is normal.	Replace shock absorber.

COMPLAINT: SHOCK ABSORBER TOO HARD	
Possible cause	Remedy
Incorrect shock absorber type fitted.	Fit correct type.
Internal shock absorber defect.	Check shock absorber using a test bench and replace, if required.

COMPLAINT: SHOCK ABSORBER TOO SOFT

Possible cause	Remedy
Incorrect shock absorber type fitted.	Fit correct type.
Internal wear.	Check shock absorber using a test bench and replace, if required.
Loss of oil due to leakage.	See under Leaky shock absorber.
Vehicle overloaded.	Adjust vehicle loading.

COMPLAINT: POOR DRIVING CHARACTERISTICS/FLAT WEAR SPOTS ON THE TYRES

Possible cause	Remedy
Incorrect damping.	Check shock absorbers using a test bench and replace, if required.
Vehicle overloaded.	Adjust vehicle loading.

COMPLAINT: SHOCK ABSORBER HITS END STOP

Possible cause	Remedy
Defective stop rubber.	Replace rubber.
Insufficient damping.	See under Shock absorber too soft.
Vehicle overloaded.	Adjust vehicle loading.

2. LEAF SUSPENSION

2.1 FAULT-FINDING TABLE

COMPLAINT: LOOSE U-BOLTS	
Possible cause	Remedy
Use of a U-bolt or nut of an incorrect property class.	Use U-bolts and nuts of the correct property class.
The tightening torque used for the U-bolt nut was too low.	Tighten the U-bolt to the specified torque.
Reuse of a U-bolt with corroded or damaged thread.	Fit new U-bolt.
No or inadequate cleaning of the thread (which includes removal of paint) before reuse of the U-bolt.	Clean the thread thoroughly before re-use.
No oil or faulty application of oil on the thread and the bearing surface of the nut.	Apply the oil as prescribed.
Coating (i.e. paint) on the contact faces of the connection.	Clean the contact faces before assembly.
Inadequate retorquing of the U-bolt nut or no retorquing.	Tighten the U-bolt nut as specified.

COMPLAINT: BROKEN SPRING	
Possible cause	Remedy
Regular overloading.	Adjust vehicle loading.
Driving too fast over bad roads.	Adjust speed when the road is bad.
Notching effect due to welding or grinding activities.	Cover spring assembly when welding or grinding.
Spring damaged due to impact of a steel hammer.	Never hit the springs using a steel hammer or some other hard tool.
Incorrect repair of a spring leaf which has broken before.	When replacing a broken spring leaf, always replace the leaf on top and under the broken leaf; better yet, replace the entire spring assembly.
Spring has been heated.	Replace spring assembly. Springs should never be heated.

COMPLAINT: SPLAYING OF THE SPRING ASSEMBLY (BROKEN SPRING CLAMPS)

Possible cause	Remedy
Incorrect pre-tension of the U-bolts.	See under complaint Loose U-bolts.

COMPLAINT: SPRING HITS END STOP

Possible cause	Remedy
Overloading.	Adjust vehicle loading.
Sagged spring assembly.	Check height of both spring assemblies. Replace spring assemblies.
Broken spring.	Repair spring assembly or replace.

COMPLAINT: SHIFTING OR BREAKING OF CENTRE BOLT

Possible cause	Remedy
Incorrect pre-tension of the U-bolts.	See under complaint Loose U-bolts.

COMPLAINT: BUMPING OR CHATTERING OF THE SPRING

Possible cause	Remedy
Loose U-bolts.	See under complaint Loose U-bolts.
Spring bracket is loose.	Secure the spring bracket.
Spring comes into contact with other components during spring action.	Check freedom of movement of spring.

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1. GENERAL

1.1 REPAIRS TO THE CHASSIS

- Any welding, aligning, drilling and wheelbase alteration activities that are not described in this workshop manual or in any of the latest releases of DAF's Chassis Guidelines must be authorised by DAF.
- Following chassis repair, the cause of the chassis damage should be rectified.

Welding

- Chassis welding may only be carried out by welders holding a valid EN 287-1 certificate.
- Slag inclusions and other contamination in the welds are totally unacceptable.

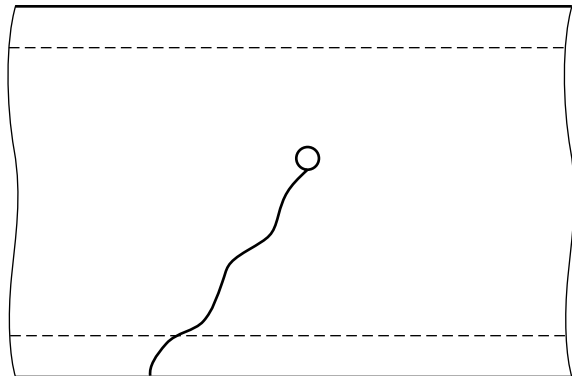
Note:

Welding a chassis made from High Tensile Strength steel KF 450 is strongly advised against. If, however, you do wish to weld a High Tensile Strength steel chassis, contact DAF always first.

The welding electrode must meet the standard: EN 757: EY 4666 MNB.

To repair cracks in the chassis, proceed as follows, taking account of the guidelines given above:

1. Remove all parts restricting a clear working area.
2. Thoroughly clean the crack so that the course of the crack is clearly visible.
3. Drill a small hole at the end of the crack. This will prevent the crack from continuing.



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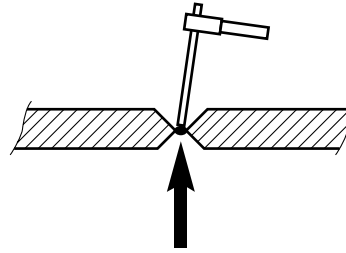
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4. Thoroughly grind out the crack on both sides.
5. Take the necessary precautions to prevent damage to electronic components. Place the earth clamp as close as possible to the weld and avoid bridges.



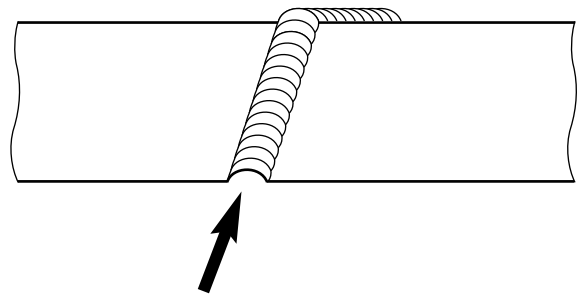
W9 01 002

6. Lay a bead on one side of the ground-out crack.
7. Gouge or grind off the material at the back of the bead (see the arrow) so that the new weld material is clearly visible.
8. Finish-weld the X-seam in the usual manner.
9. Fill in the drilled hole.

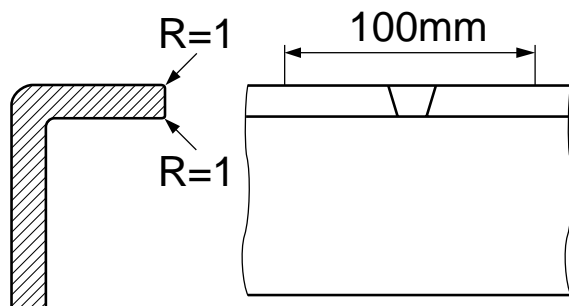


W9 01 003

10. Grind down the new weld so that it is flush. Take care not to grind the chassis flange in the process.
11. The beginning and end of a weld should not curve inwards (see the arrow).
12. Round off the weld at the edge of the chassis member.



W9 01 004



W9 01 005

Straightening

Do not forget your own safety during straightening operations. When working with presses, take care that parts cannot fly out.

The straightening of a chassis demands a high degree of craftsmanship as in every case of damage, an individual assessment must be made to establish whether or not straightening would be a sensible measure.

Deformations found after accidents will mainly be of the following 6 types:

- chassis is bent sideways
- chassis has a double bend sideways ("S-bend")
- chassis sags
- chassis bulges upwards
- chassis is twisted
- chassis is out of square.

In many cases, the damage will be a combination of two or more of these basic deformations. In general, the deformations should be dealt with in the sequence shown above, although some combinations can be dealt with in one straightening operation. When deciding whether or not to straighten a chassis, you must consider not only the degree of chassis bending but also the angle of a bend. If there is a sharp angular bend or fold in the chassis, the material in that area is likely to be severely deformed. If such a chassis were to be realigned to its original form, there would be a high risk of overstretching the already weakened material and causing a crack to develop.

"Warm" straightening

DAF chassis should not be warm straightened. Heating can cause grains in the material which will adversely affect the material properties.

General

For every straightening operation, all stresses in the stiffer parts of the chassis, for example in the tandem axle attachment cross member, should be relieved. If this is not done, these stresses will later cause new distortions or cracks in the chassis.

It is obvious from the above points that straightening is a highly specialised job for which the specialist involved bears full responsibility. Always contact DAF when in doubt about complicated "straightening operations".

1.2 DRILLING IN THE CHASSIS

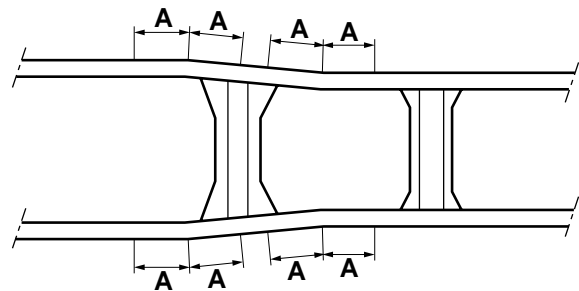
Note:

There are several stress zones in a chassis. Working on the chassis without the appropriate knowledge (and not according to DAF instructions) may cause irreversible damage to the chassis. The repair shop or bodybuilder would be held fully responsible for such work and for any superstructure fitted.

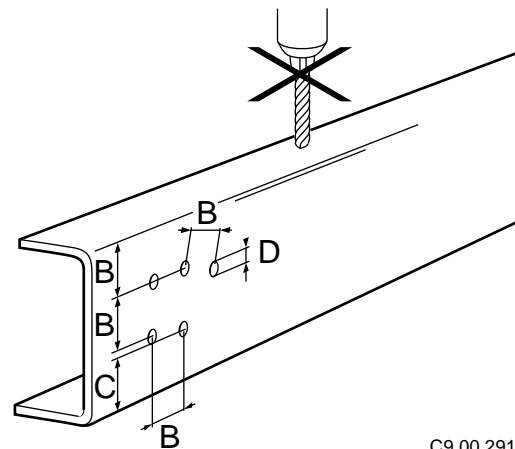
If holes must be drilled in the chassis frame, note the following points:

Drilling holes within a distance of 70 mm (distance A) from a bend in the chassis is not permitted.

- It is on no account permitted to drill holes in the tapered ends at the rear of a tractor chassis.
- Drilling holes in the flanges of the chassis side members is not permitted.
- The maximum diameter for drilled holes is 17 mm (dimension D in the drawing).
- The distance between the holes, and between the holes and the side member flange, must be at least 3xD - with a minimum of 30 mm (dimension B in the drawing).
- The distance between the lower stud hole and the chassis underside should at least be equal to distance C. Distance C is > 70 mm for a tractor chassis. Distance C is > 50 mm for all other chassis.
- Deburr (at an angle of 45°) and lacquer coat the drilled hole.



C9 00 304



C9 00 291

Wheelbase alteration

Any alteration to the wheelbase or changes to the rear overhang should be done in accordance with the latest DAF Trucks Bodybuilders' Guidelines.

Note:

When using the Bodybuilders' Guidelines, you are advised to first read the "General" section.

1.3 REPLACING THE RIVETS BY BOLTS

Note:

A rivet may either be replaced by a flange bolt M14 x 2, property class 8.8 (DIN 6921), or a flange bolt M16 x 2, property class 10.9.

Removing the rivet

1. Remove the rivet head. Make sure not to damage the chassis during this procedure.
2. Use a 10 mm drill to drill a hole in the rivet. Remove the rivet from the chassis.

Installing flange bolt M14

1. Ream the rivet hole to fit 14 H7 (14 + .000 - 14 + .018 mm). Make sure not to damage any lines running behind the rivet hole. Deburr the edges.
2. Repair the chassis lacquer coating. The new paintwork should be no thicker than 50 microns.
3. It is important that part of the bolt shank is not threaded. Determine the length (L) of the non-threaded shank part using the formula below.

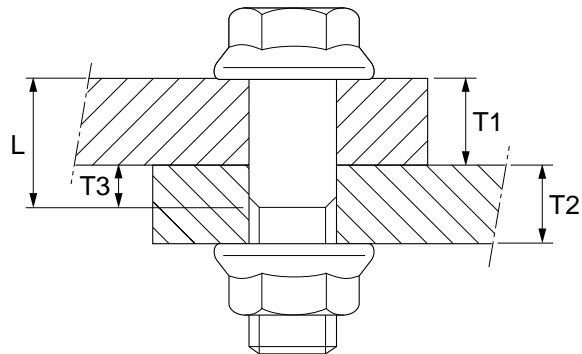
$$L = T1 + T3, \text{ in which } T3 \text{ must be } > \frac{1}{2} T2.$$

L = shank length without thread

T1 = part to be clamped

T2 = part to be clamped

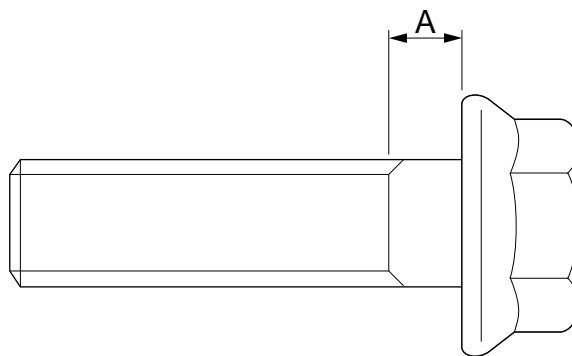
4. Tighten the flange bolt to the standard tightening torque for bolts, property class 8.8.



C9 00 295

Installing M16 flange bolt

1. Drill the rivet hole out to $\varnothing 17$ mm. Make sure not to damage any lines running behind the rivet hole. Deburr the edges.
2. Repair the chassis lacquer coating. The new paintwork should be no thicker than 50 microns.
3. Install a flange bolt M16 x 2, property class 10.9, with a non-threaded shank (A) of 6 mm.
4. Tighten the flange bolt to the standard tightening torque for bolts, property class 10.9.



C9 00 296

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1. GENERAL

1.1 OPERATION OF SHOCK ABSORBER

The function of the shock absorber is twofold:

- to control the movements of chassis and superstructure in relation to the axle. Optimum comfort is achieved when the chassis and superstructure remain truly horizontal and are not subjected to any vertical accelerations when moving;
- to control the movements of the wheels on the road. Optimum handling is achieved when all wheels remain in constant contact with the road surface.

The rate of the above-mentioned movements depends on the available spring travel. The available spring travel is the difference in height between an unloaded spring and a fully loaded spring.

A well-functioning shock absorber with characteristics appropriate to the operating conditions will be the best possible compromise to fulfil the above-mentioned functions.

DAF only uses double acting type shock absorbers.

On vehicles with air suspension, hydraulic stroke limitation is used.

The shock absorber consists of:

- an operating cylinder, in which the actual damping is done by a piston with piston rod of which the valve unit damps the rebound stroke;
- a bottom valve which, in combination with the piston valve unit, damps the bump stroke.
- a reservoir tube which draws in oil surplus (result of the volume taken up by the piston rod) via the bottom valve;
- a dust cover, attached to the piston rod.

Double acting shock absorbers

The operation of the shock absorber is as follows:

the bump stroke moves the cylinder (1) down in relation to the operating cylinder (2).

Subsequently, oil flows from the bottom chamber of the piston (1) through the piston holes and valves to the top chamber where the volume increases. The oil pressure is equal on either side of the piston (1).

To compensate for the volume taken up by piston rod (3), oil flows from under the piston (1), via the bottom valve (4), to the reservoir tube (5).

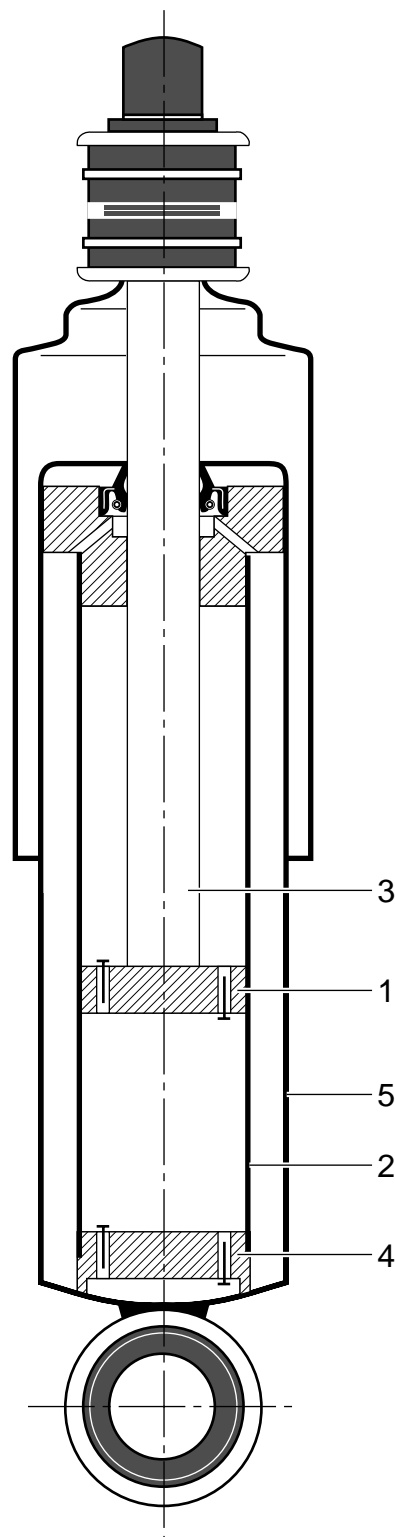
The resistance met by the oil during this movement dampens the bump stroke of the shock absorber.

The rebound stroke moves the piston (1) up in relation to the operating cylinder (2).

Subsequently, pressure is exerted on the oil in the upper chamber of the piston (1) causing the oil to flow to the bottom chamber under the piston (1), via the piston holes and valves.

The resistance met by the oil during this movement dampens the bump stroke of the shock absorber.

To compensate for the volume taken up by the piston rod (3) in the upper chamber, oil flows via bottom valve (4) from the reservoir tube (5) to the bottom chamber under the piston (1).



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2. REMOVAL AND INSTALLATION

2.1 REMOVAL AND INSTALLATION OF SHOCK ABSORBERS

Removing the shock absorber

1. Remove the attachment nuts and/or bolts.
2. Mark the exact positions and location of the mounting rubbers.
3. Remove the shock absorber from under the vehicle.

Installing the shock-absorber

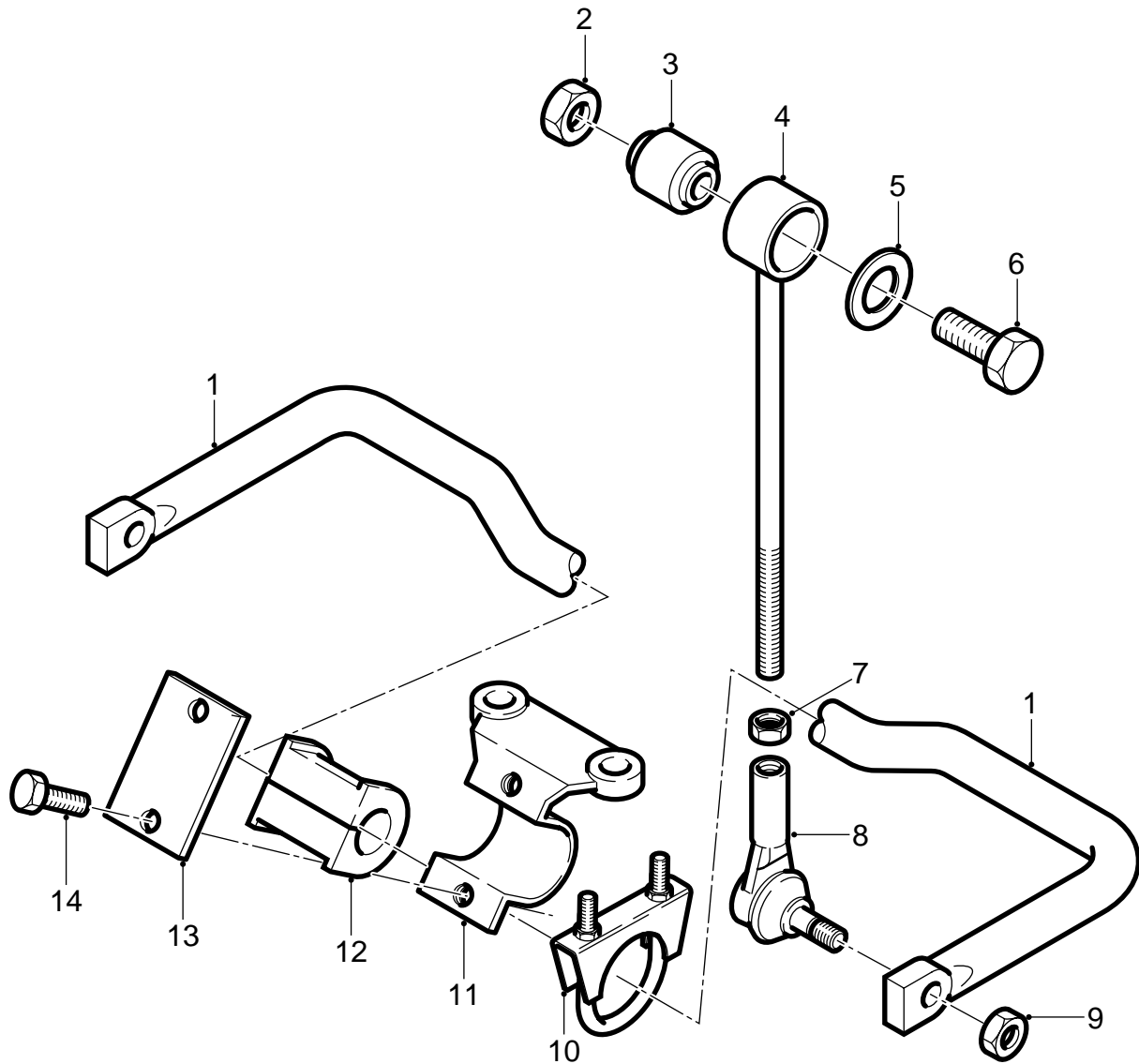
1. Check the shock absorber mountings for hair-line cracks.
2. If the old rubbers are to be reused, check them for hair-line cracks and ageing. Install the rubbers in the original locations and positions.
3. When replacing the rubbers, use only the specified types.
4. Replace any self-locking nuts. Tighten the attachment bolts to the specified tightening torque, see "Technical data".

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1. GENERAL

1.1 OVERVIEW DRAWING, FRONT-AXLE STABILISER

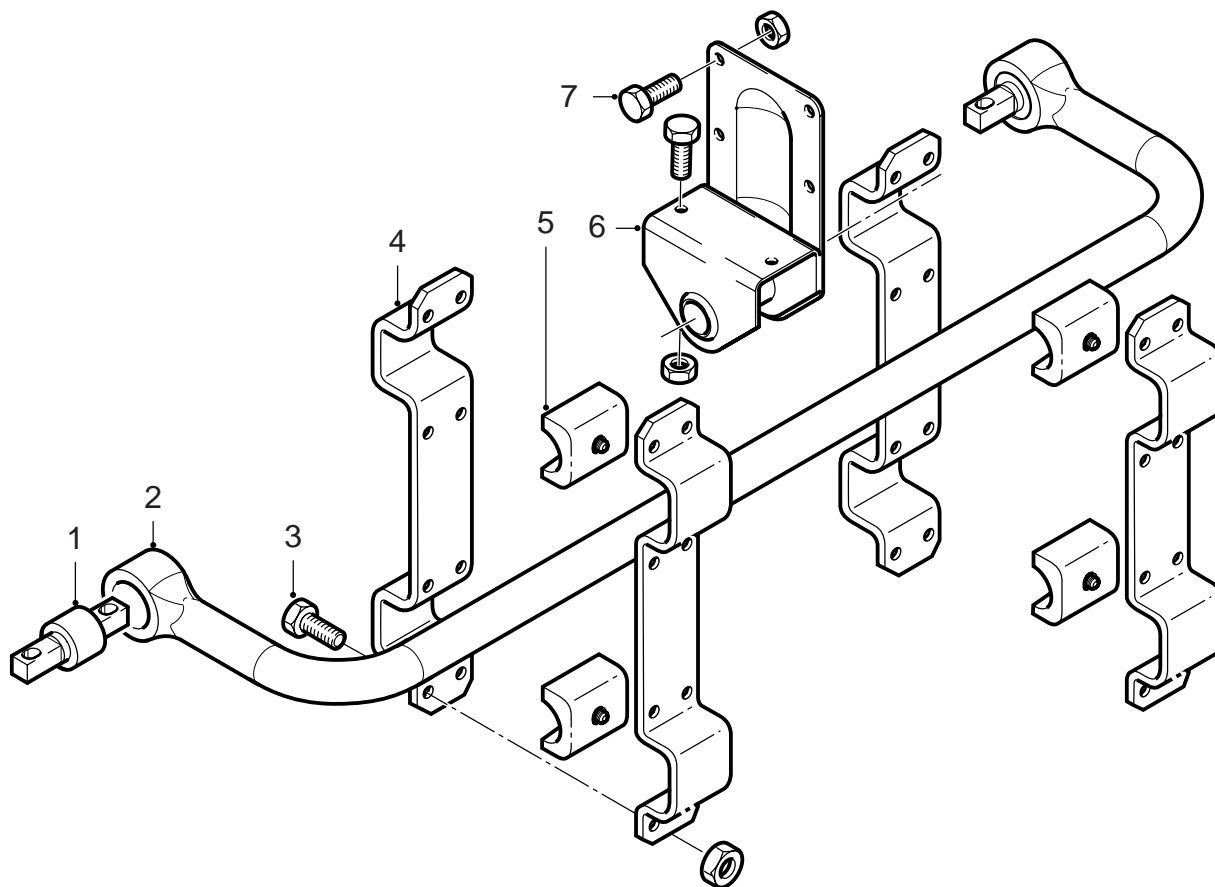


C9 00 400

1. Stabiliser bar
2. Attachment bolt
3. Silentblock
4. Torque rod
5. Shim
6. Attachment bolt
7. Lock nut
8. Torque rod ball joint
9. Attachment bolt
10. Clamp
11. Stabiliser bracket
12. Bearing bush
13. Retaining plate
14. Attachment bolt

1.2 OVERVIEW DRAWING, LEAF-SPRUNG REAR AXLE STABILISER

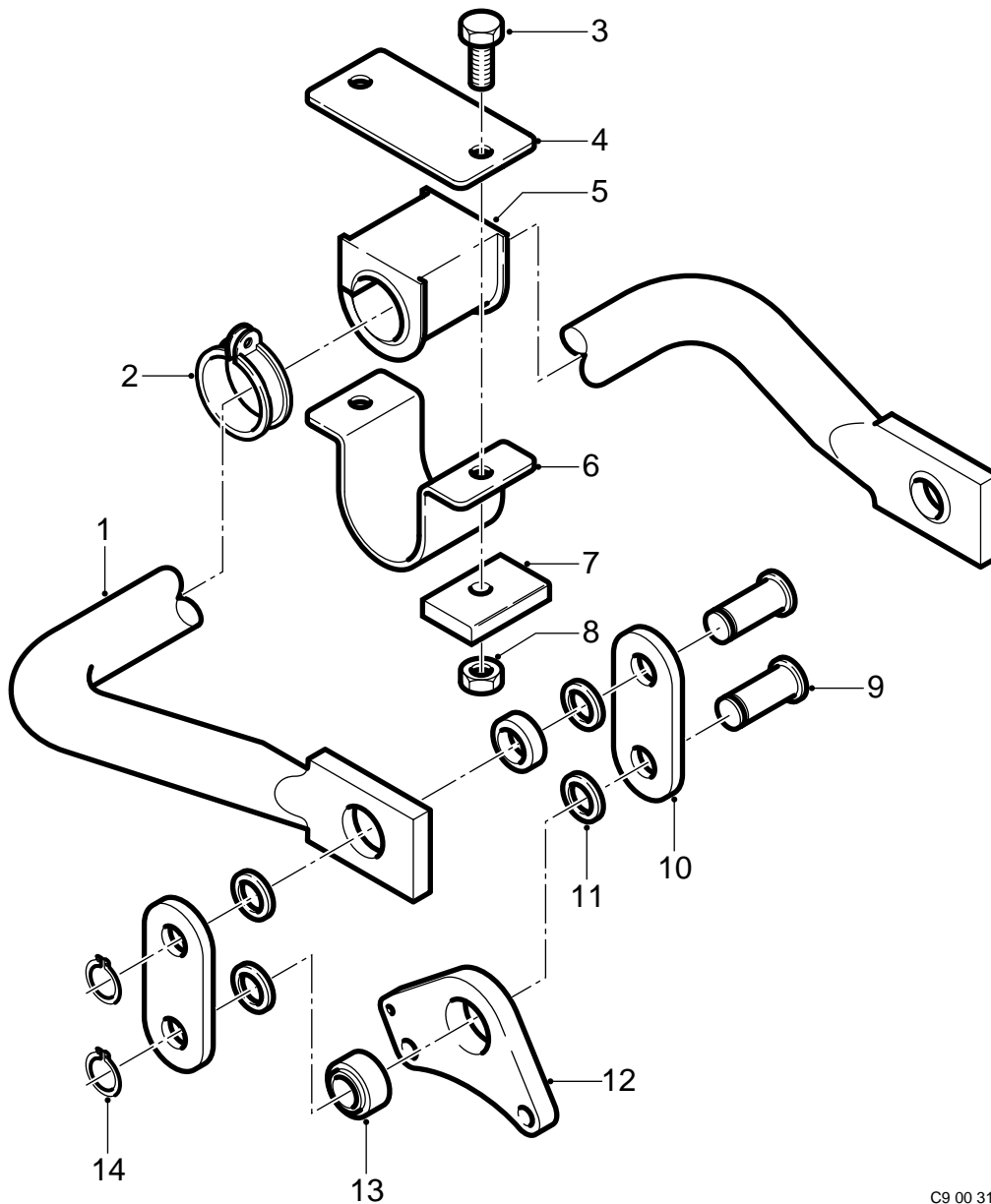
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C9 00 401

- 1. Silentblock
- 2. Stabiliser bar
- 3. Attachment bolt
- 4. Bearing bush cover
- 5. Bearing bush
- 6. Bearing-bush cover

1.3 OVERVIEW DRAWING, AIR-SPRUNG REAR AXLE STABILISER LF55 13-15 TON GVW

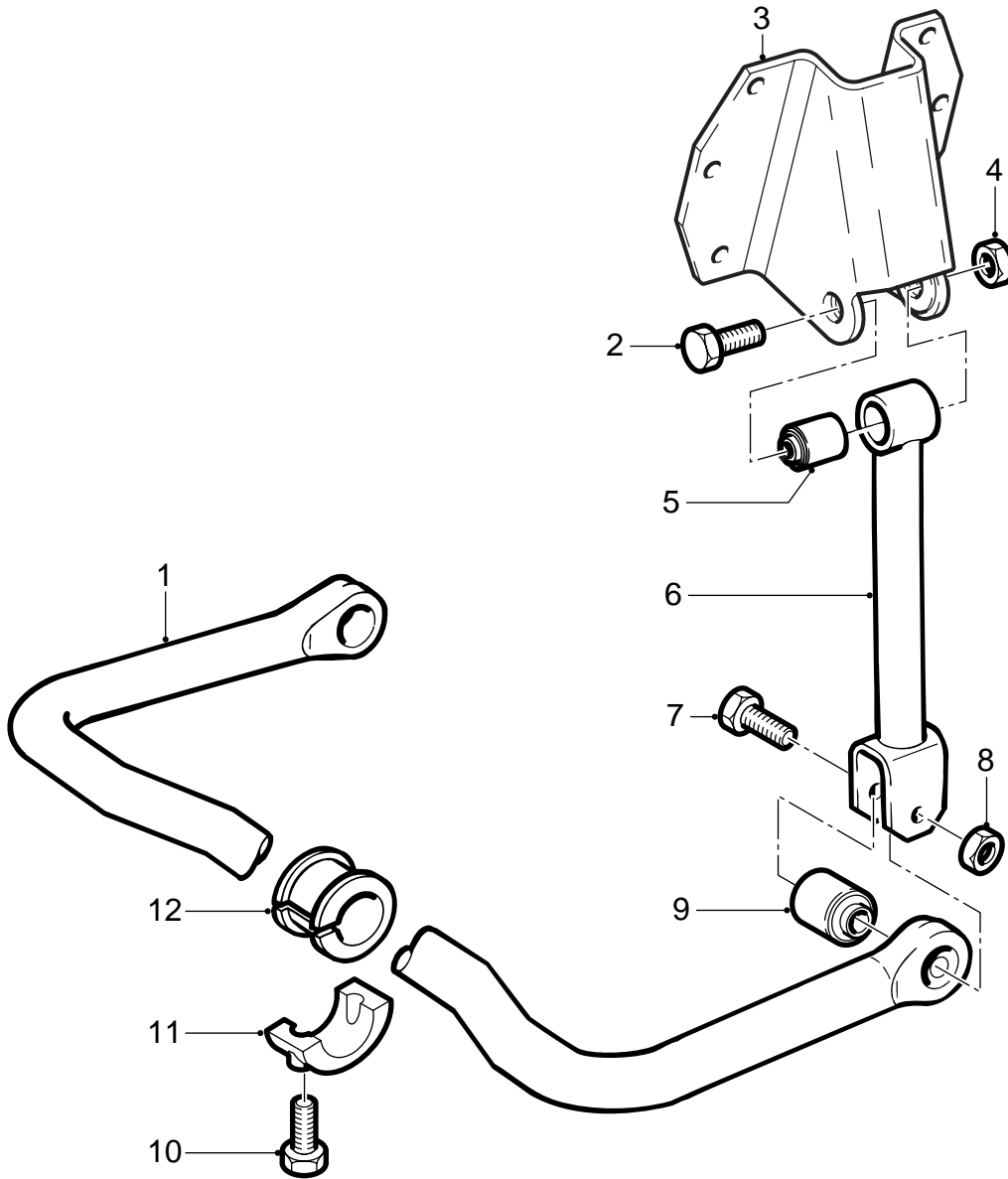


C9 00 319

1. Stabiliser bar
2. Clamp
3. Bolt
4. Retaining plate
5. Bearing bush
6. Bearing bush cover
7. Stiffener
8. Nut
9. Connecting pin
10. Shackle
11. Spacer ring
12. Shackle bracket
13. Bush
14. Circlip

1.4 OVERVIEW DRAWING, AIR-SPRUNG REAR AXLE STABILISER LF55
16-18 TON GVW

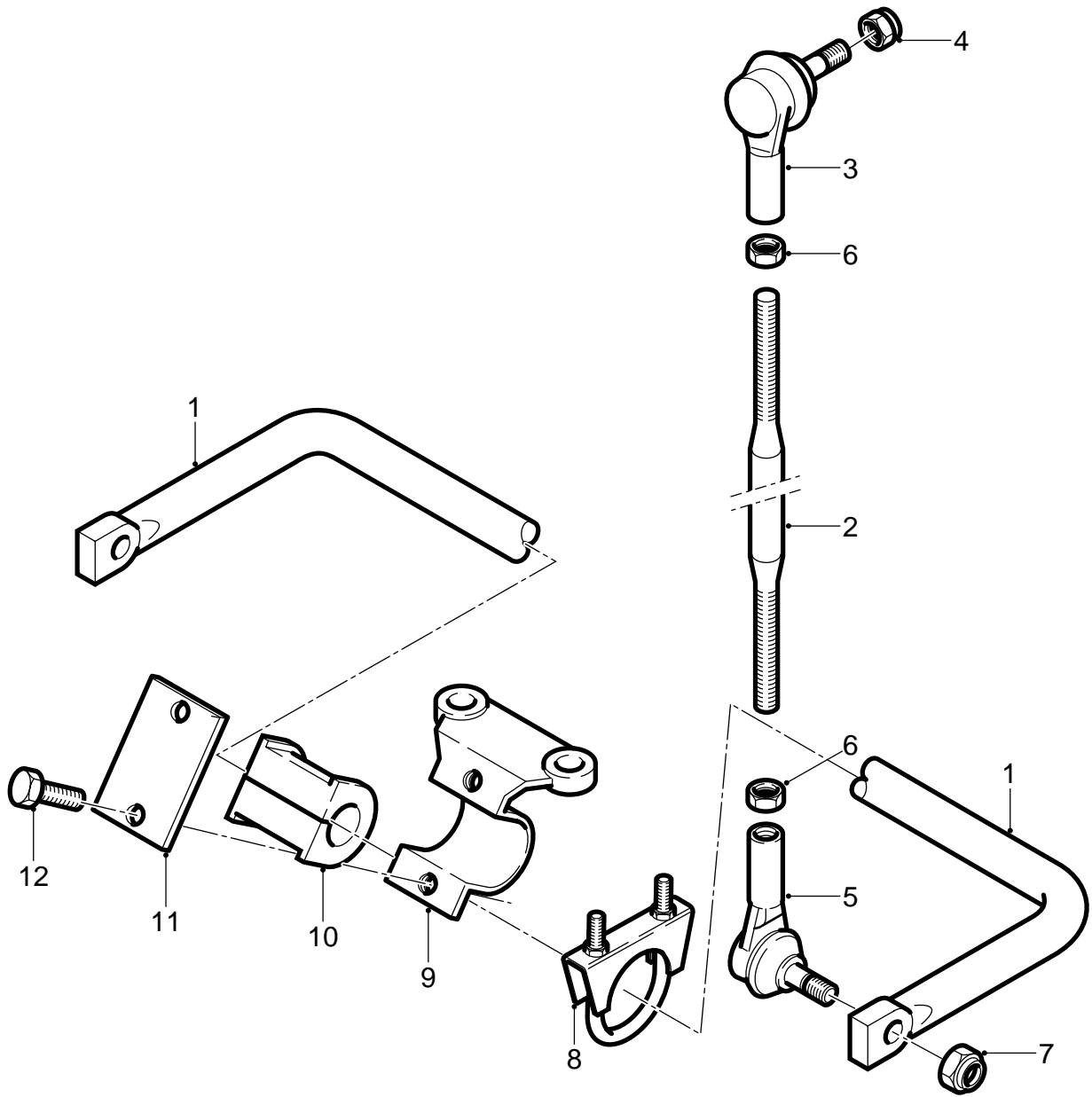
4



C9 00 320

- 1. Stabiliser bar
- 2. Bolt
- 3. Bracket
- 4. Nut
- 5. Silentblock
- 6. Shackle
- 7. Bolt
- 8. Nut
- 9. Silentblock
- 10. Nut
- 11. Bearing bush cover
- 12. Bearing bush

1.5 OVERVIEW DRAWING, STEERED REAR AXLE STABILISER LF55 FAN

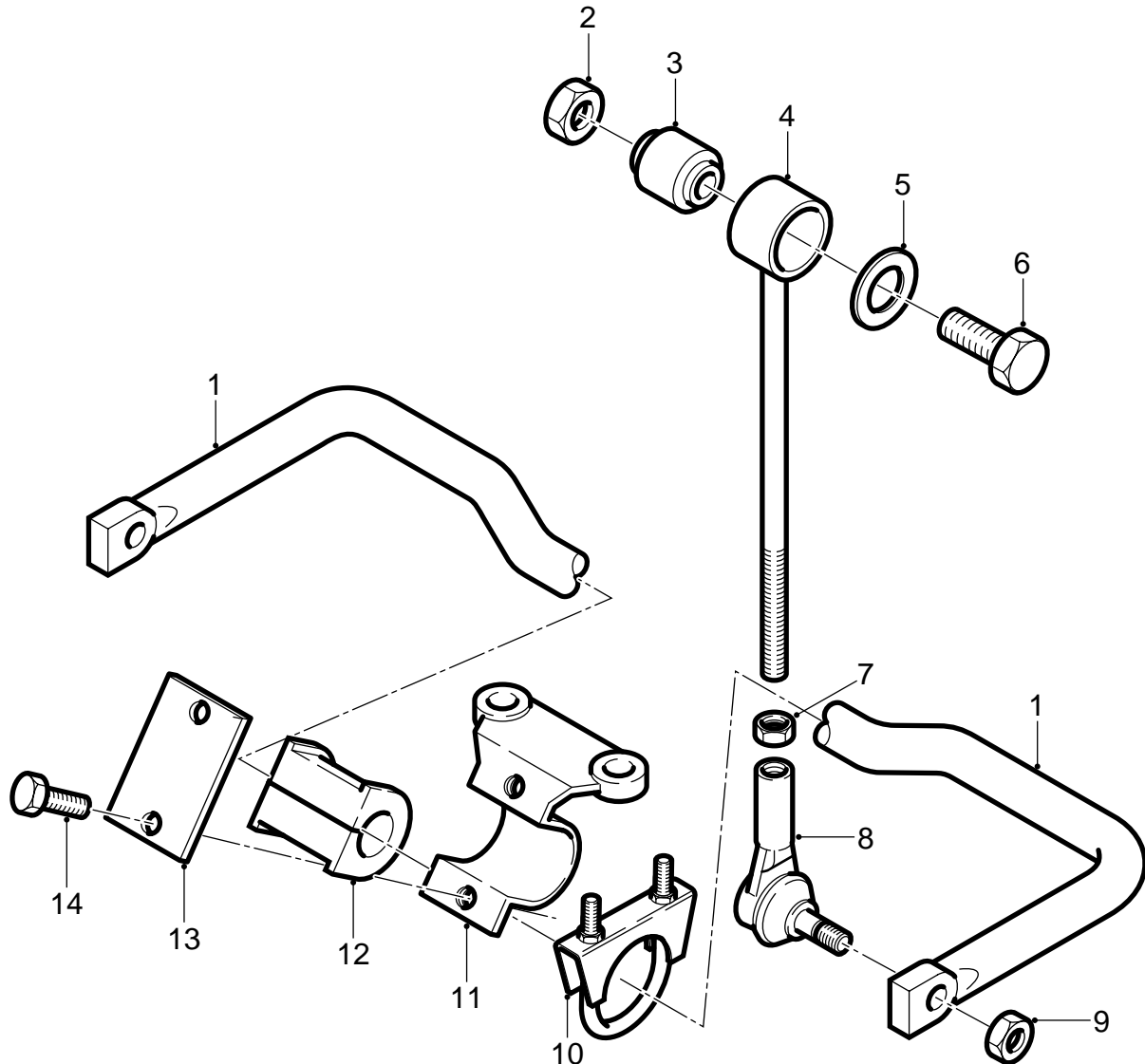


- 1. Stabiliser bar
- 2. Torque rod
- 3. Torque rod ball joint
- 4. Lock nut
- 5. Torque rod ball joint
- 6. Nut
- 7. Lock nut
- 8. Clamp
- 9. Stabiliser bracket
- 10. Bearing bush
- 11. Retaining plate
- 12. Attachment bolt

C9 00 399

2. REMOVAL AND INSTALLATION

2.1 REMOVAL AND INSTALLATION, FRONT-AXLE STABILISER



C9 00 400

Removal, front-axle stabiliser

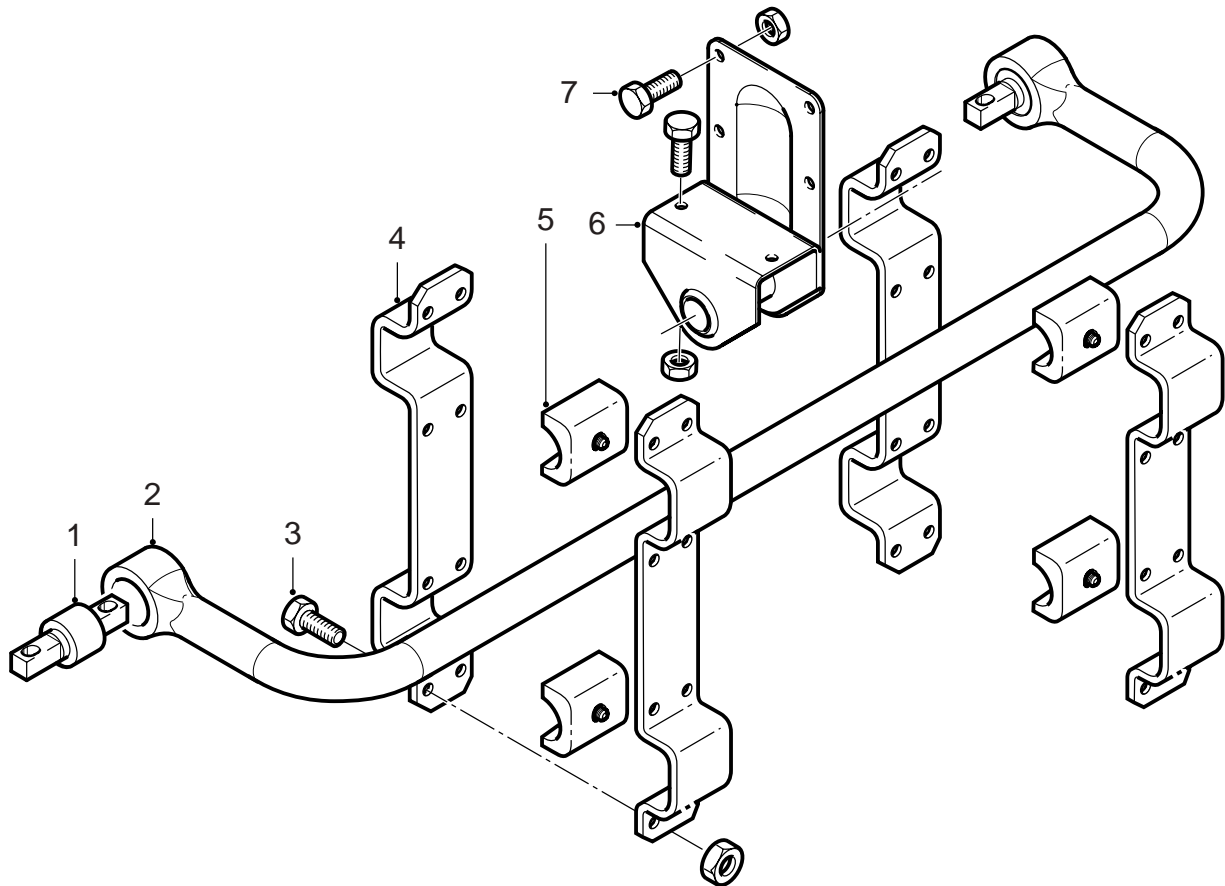
1. Remove the lock nut (9) from the ball joint (8).
2. Press the ball joint (8) out of the stabiliser bar (1).
3. Remove the attachment bolts (14) together with the retaining plates (13) that are mounted to the stabiliser brackets (11) of the stabiliser bar.

4. Remove the stabiliser together with the bearing bushes (12) out of the vehicle supports (11).
5. Remove the attachment bolts (6) and remove the torque rods (4).

Installation, front-axle stabiliser

1. Check the condition of the silentblocks (3), the bearing bushes (12) and the ball joints (8).
2. Fit the torque rod (4) with the attachment bolt (6) to the chassis.
3. Turn the bearing bushes (12) on the stabiliser bar (1), so that the bearing bushes (12) can be positioned in the brackets (11).
4. Fit the stabiliser bar (1).
5. Check whether the stabiliser bar is situated in the centre of the vehicle. Move the positioning clamps (10), if necessary.
6. Fit the retaining plates (13), using the attachment bolts (14). Tighten the attachment bolts evenly to the specified torque.
7. Fit the ball joint (8) to the stabiliser bar (1). Tighten the lock nuts (9) to the specified tightening torque, see "Technical data".

2.2 REMOVAL AND INSTALLATION, LEAF-SPRUNG REAR AXLE STABILISER



4

C9 00 401

Removal, leaf-sprung rear axle stabiliser

1. Remove the U-bolt nuts by means of which the mounting rubbers (1) of the stabiliser bar (2) are attached to the rear axle.
2. Remove the attachment bolts (3) from the bearing bush covers (4).
3. Remove the stabiliser (2) from under the vehicle.
4. Remove the bearing bushes (5) from the stabiliser bar (2).

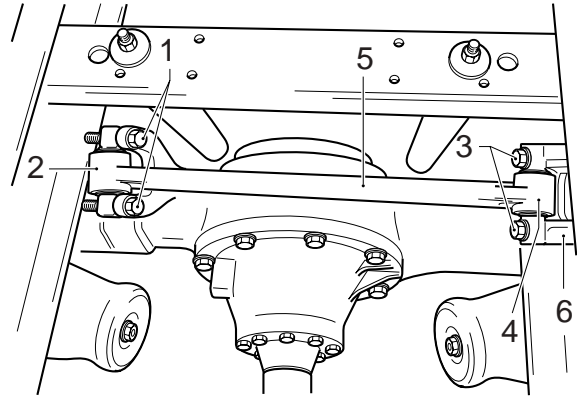
Installation, leaf-sprung rear axle stabiliser

1. Check the condition of the silentblocks (1) and the bearing bushes (5).
2. Clean the threaded ends of the U-bolts.
3. Fit the bearing bushes (5) in the bearing bush covers (4).
4. Fit the bearing caps (4) and the stabiliser bar (2) simultaneously to the stabiliser bracket (5).
5. Fit the attachment bolts (12) with the heads facing towards the front of the vehicle and hand-tighten them.
6. Fit the mounting rubber to the U-bolts. Tighten the U-bolts to the specified tightening torque, see "Technical data".
7. Apply grease to the threaded ends of the U-bolts.
8. Tighten the attachment bolts (12).

2.3 REMOVAL AND INSTALLATION, TRANSVERSE GUIDE TORQUE ROD, AIR SPRUNG REAR AXLE LF45

Removal, transverse guide torque rod

1. Remove the attachment bolts (1) on the side (2) at which the torque rod (5) is attached to the rear axle.
2. Remove the attachment bolts (3) on the side (4) at which the torque rod (5) and the attachment bracket (6) are attached to the chassis.
3. Remove the torque rod (5) together with the attachment bracket (6).



C9 00 403

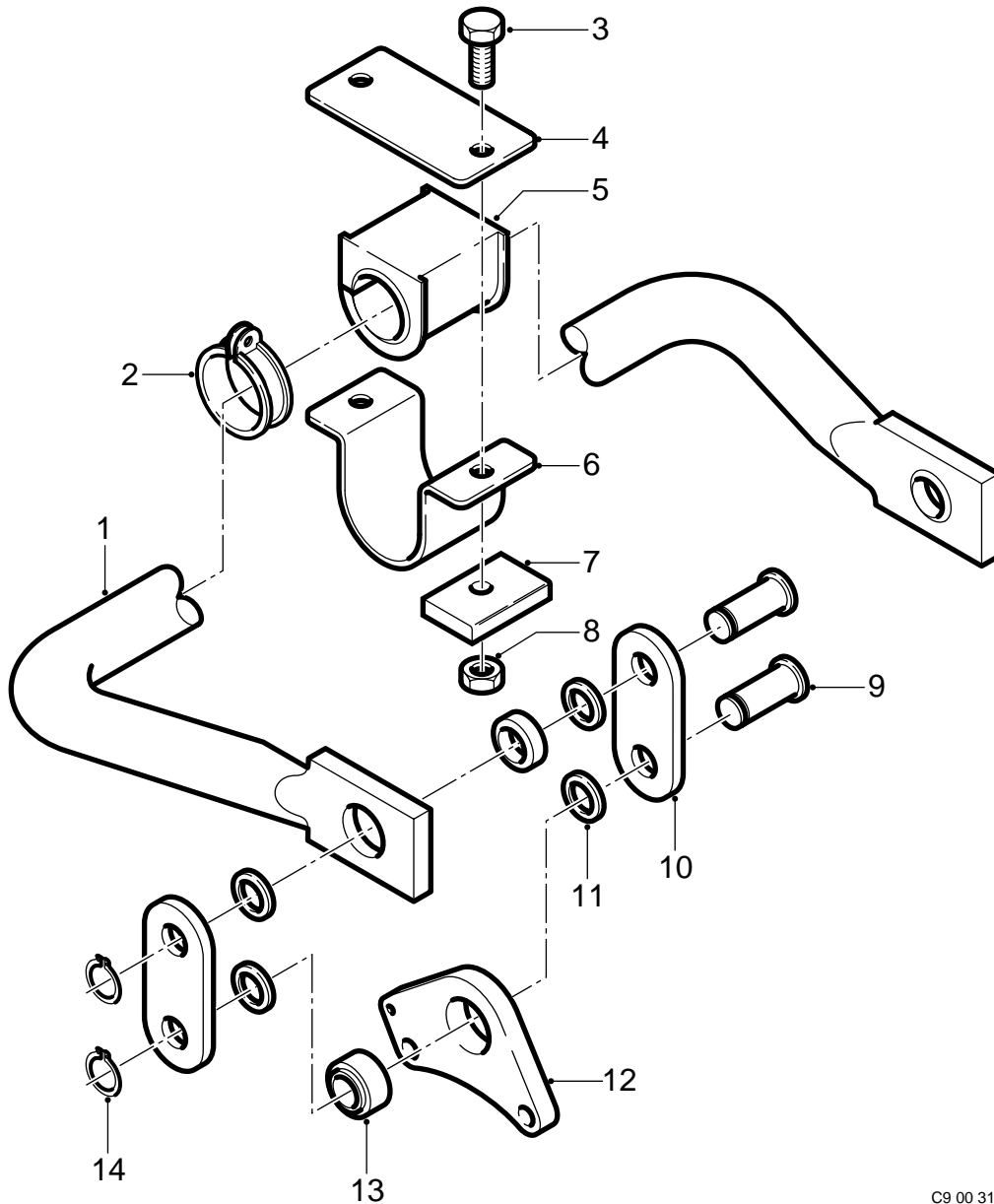
Installation, transverse guide torque rod

Caution: on one side of the torque rod, the mounting rubber is fitted into the eye of the torque rod at an angle. This side must be fitted to the rear axle.

1. Fit the torque rod (5) with the attachment bolt (6) to the chassis. Hand-tighten the attachment bolts (3).
2. Position the other side (2) of the torque rod (5) on the attachment point of the rear axle and fit the attachment bolts (1).
3. Tighten all attachment bolts (1 and 3).

2.4 REMOVAL AND INSTALLATION, AIR-SPRUNG REAR AXLE STABILISER LF55 13-15 TON GVW

4



C9 00 319

Removal, air-sprung rear axle stabiliser bar LF55 13-15 ton GVW

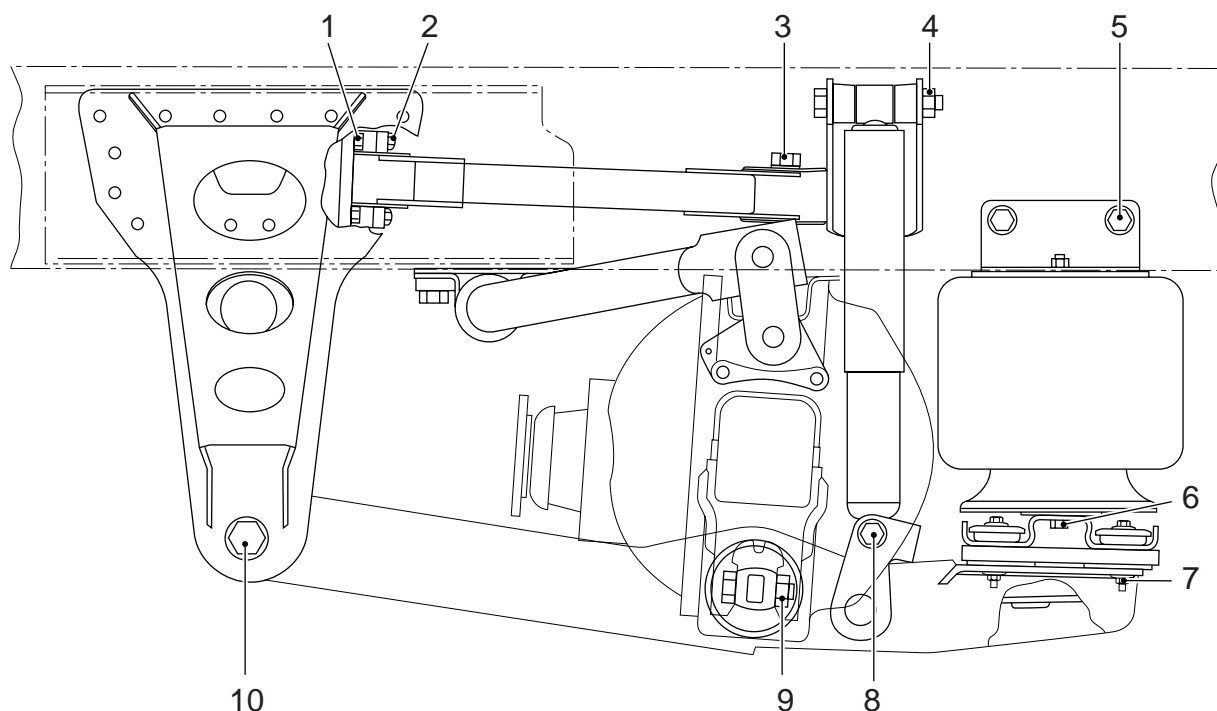
1. Remove the attachment bolts (3) and nuts (8) from the bearing bush covers (6) and stiffeners (7).
2. Remove the bearing bush covers (6) from the stiffeners (7).

3. Remove the attachment bolts and nuts from the shackle brackets (12) in the differential.
4. Remove the stabiliser bar.

Installation, air-sprung rear axle stabiliser bar LF55 13-15 ton GVW

1. Check the condition of all the rubbers and hinge points.
2. Fit the stabiliser bar (1) under the chassis.
3. Fit the shackle brackets (12) of the stabiliser bar in the hinge points on the differential.
4. Fit the attachment nuts and bolts of the shackle brackets (12) and tighten them.
5. Fit the bearing bush cover (6) together with the stiffeners (7) over the silentblocks (5) and the retaining plates (4). Tighten the attachment bolts (3) and nuts (8).

2.5 REMOVAL AND INSTALLATION, TRIANGULAR LINK, AIR-SPRUNG REAR AXLE LF55 13-15 TON GVW



4

C9 00 410

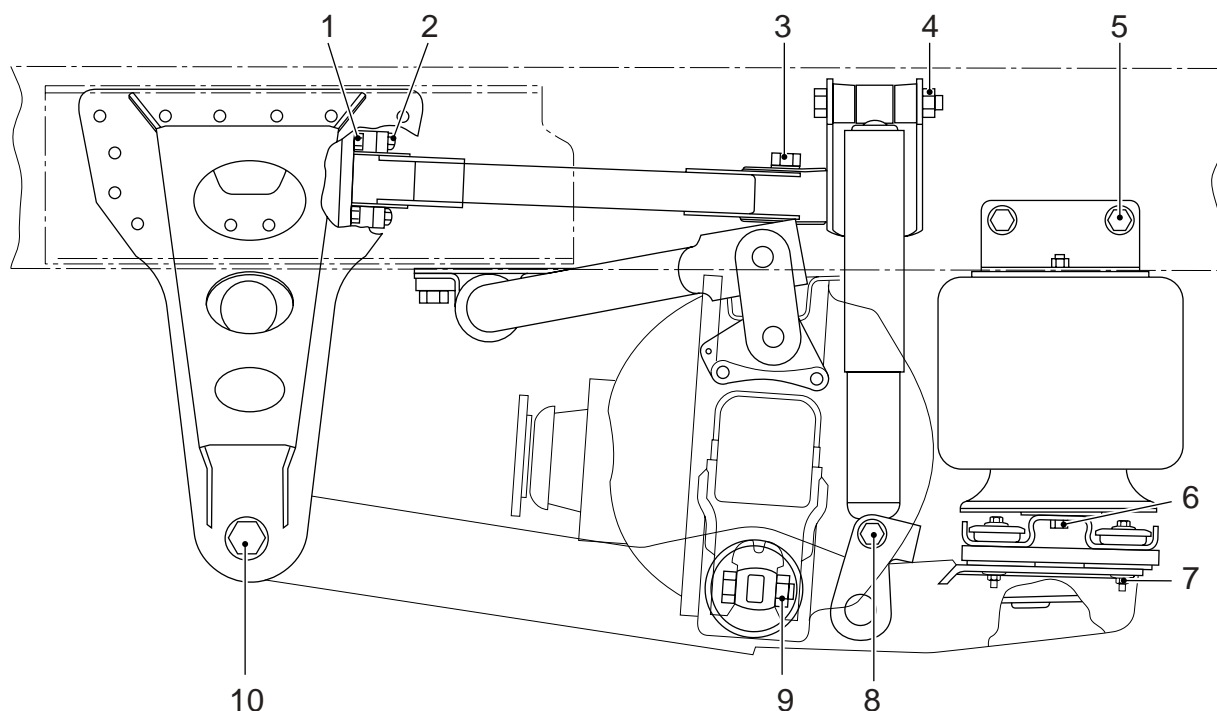
Removal, triangular link, air-sprung rear axle LF55 13-15 ton GVW

1. Detach any valves on the inside of the chassis that may hinder removal of the triangular link.
2. Remove the attachment nut (3) of the silentblock on the differential.
3. Remove the attachment bolts (2) and nuts (1) of the mounting rubbers on the triangle legs.
4. Jack up the chassis until the triangle is free of stress.
5. Remove the triangle from the differential. Use a pulley puller if the silentblock does not come off the attachment pin on the differential.

Installation, triangular link, air-sprung rear axle LF55 13-15 ton GVW

1. Check the condition of the mounting rubbers and the silentblock in the triangle.
2. Apply Copaslip to the silentblock attachment pin on the differential.
3. Position the triangle on the attachment pin and check that the mounting rubbers are positioned straight against the support points on the chassis. Hand-tighten the attachment nut.
4. Lower the chassis and fit the attachment bolts (2) and nuts (1) for the mounting rubbers. Tighten the bolts to the specified tightening torque, see "Technical data".
5. Tighten the attachment nut (3) to the specified tightening torque, see "Technical data".
6. Fix any detached valves on the inside of the chassis.

2.6 REMOVAL AND INSTALLATION, AIR-SPRUNG REAR AXLE YOKE LF55 13-15 TON GVW



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C9 00 410



Support the vehicle securely and work safely.
Make sure that the axle cannot tilt if both yokes are removed at the same time.

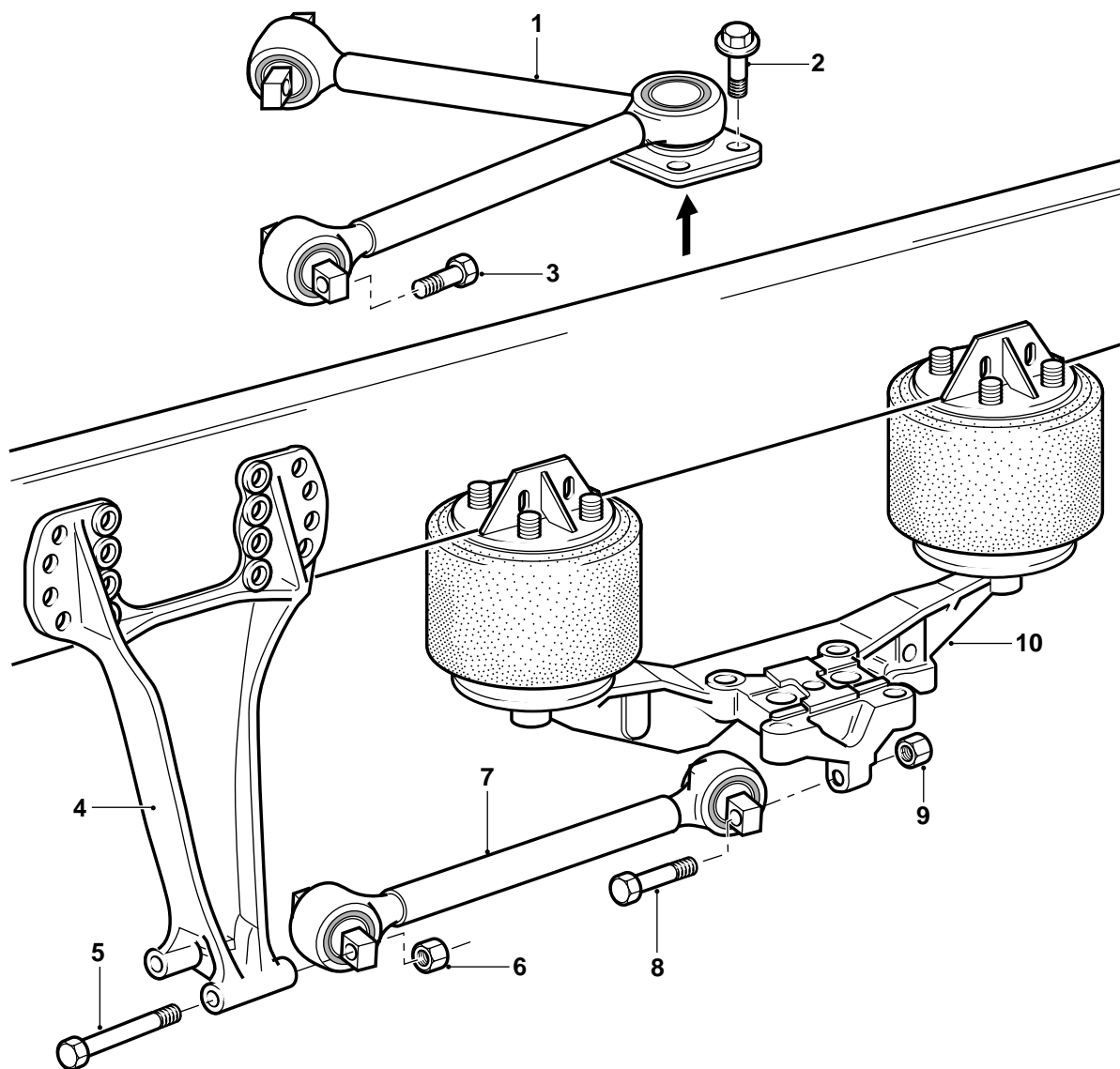
Removal, air-sprung rear axle yoke LF55 13-15 ton GVW

1. Support the chassis with a jack.
2. Remove the lower attachment bolt (8) of the shock absorber.
3. Support the yoke at the centre.
4. Support the fixing bar for the air bellows using a jack. Remove the attachment bolts (7) by means of which the fixing bar for the air bellows is attached to the yoke.
5. Remove attachment bolt (10) from the silentblock.
6. Remove the attachment bolts (9) from the mounting rubber.
7. Remove the yoke.

**Installation, air-sprung rear axle yoke LF55
13-15 ton GVW**

1. Check the condition of the mounting rubber and the silentblock of the yoke.
2. Position the yoke using a jack underneath the axle.
3. Fit the attachment bolts (9) for the mounting rubber. Tighten the attachment bolts to the specified tightening torque, see "Technical data".
4. Fit the attachment bolt (10) together with the lock washer, centring ring, jack support and plastic rings in the torque rod support and the silentblock. **Caution:** Fit a **new** break nut. For the breaking torque of the break nut, see "Technical data".
5. Position the attachment bolts of the fixing bar for the air bellows in the yoke.
6. Fit the attachment nuts (7). Tighten the nuts to the specified tightening torque, see "Technical data".
7. Fit the shock absorber on the yoke. Tighten the attachment bolt (8) to the specified tightening torque, see "Technical data".

2.7 REMOVAL AND INSTALLATION, TRIANGULAR LINK AND AIR-SPRUNG REAR AXLE TORQUE ROD LF55 13-18 TON GVW



4

C9 00 299

Removal, triangular link, air-sprung rear axle LF55 16-18 ton GVW, axle top

1. Remove the bolts (2).
2. Remove the bolts (3) and remove the torque rod (1). This can only be done by two persons working together.

Installation, triangular link, air-sprung rear axle LF55 16-18 ton GVW, axle top

1. Before installation, check the rubber bushes of the triangular link and the silentblock for hair-line cracks and wear.
Check to see if the contact surface of the triangular link flange (1) (see arrow) and the contact surface on the axle housing are free from grease and paint.
2. Install the triangular link (1) to the vehicle. This can only be done by two persons working together. Fit the bolts (2 and 3). Tighten the bolts (2) evenly to the specified torque. See "Technical data".

Removal, air-sprung rear axle torque rod LF55 16-18 ton GVW, axle bottom

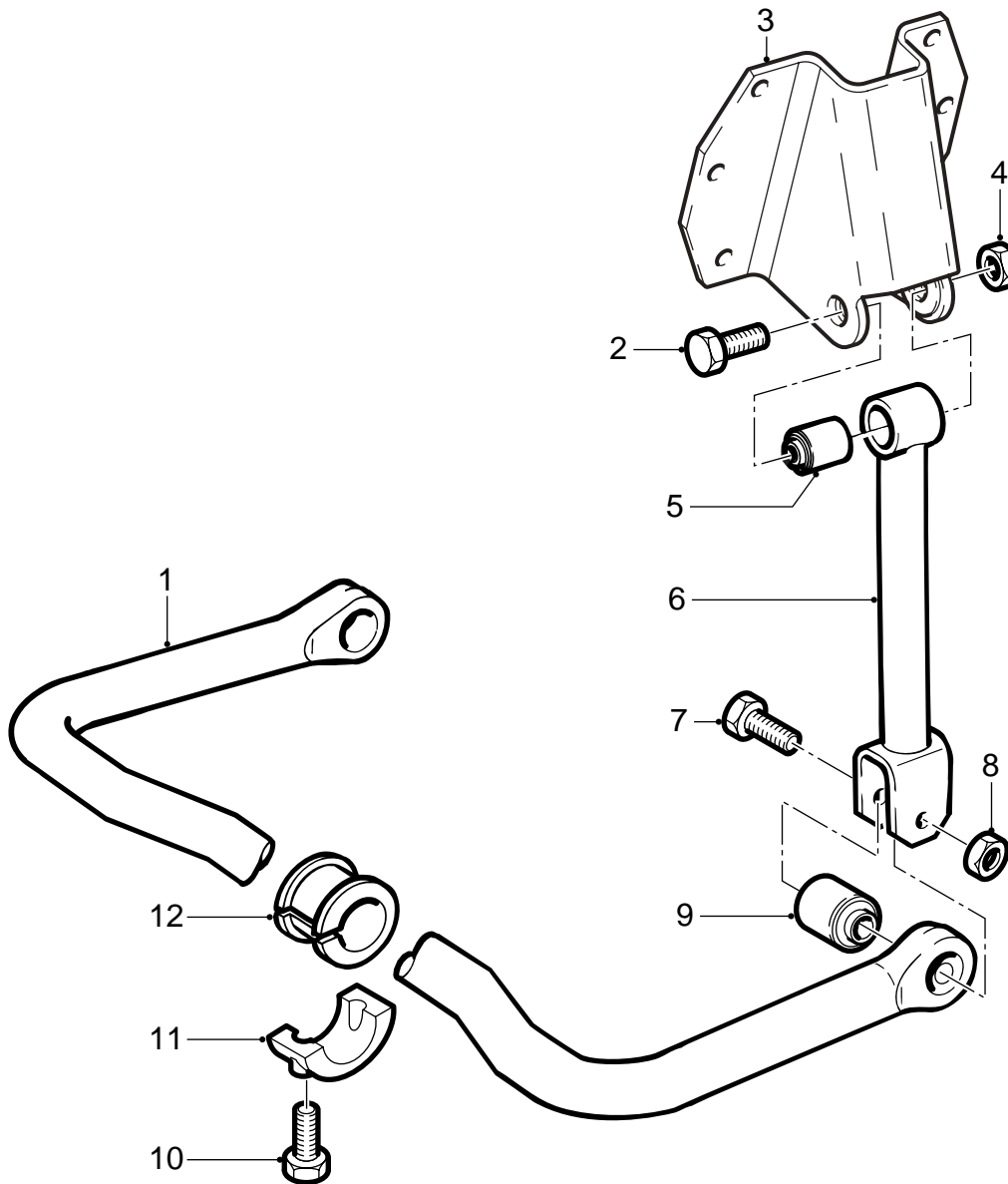
1. Remove the bolts (5 and 8) and remove the torque rod (7).

Installation, air-sprung rear axle torque rod LF55 16-18 ton GVW, axle bottom

1. Before installation, check the rubber bushes of the torque rod (7) for hair-line cracks and wear.
2. Clean the contact surfaces if necessary. These should be free from dirt and grease.
3. Fit the torque rod (7) between the torque rod support (4) and the yoke (10).
4. Fit the bolts (5 and 8) with the heads facing towards the front of the vehicle. Tighten the bolts (5 and 8).

2.8 REMOVAL AND INSTALLATION, AIR-SPRUNG REAR AXLE STABILISER LF55 16-18 TON GVW

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C9 00 320

Removal, air-sprung rear axle stabiliser bar LF55 16-18 ton GVW

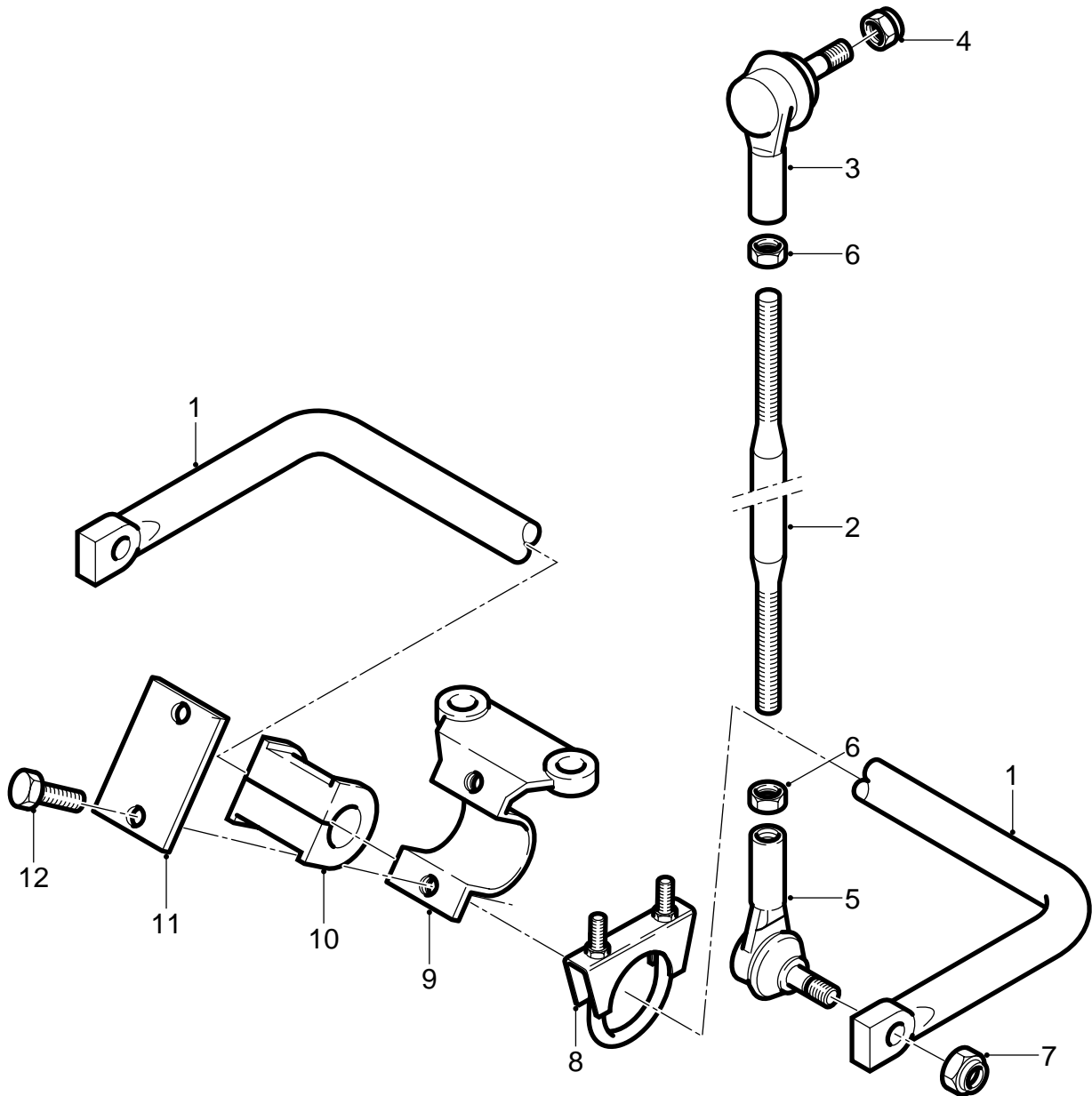
1. Remove the attachment nuts (10) from the bearing bush covers (11).
2. Remove the attachment bolts (7) and the attachment nuts (8) from the silentblocks (8).
3. Remove the stabiliser bar (1).

Installation, air-sprung rear axle stabiliser bar LF55 16-18 ton GVW

1. Position the stabiliser bar (1) together with the bearing bushes (12) in the bearing bush cover halves underneath the differential.
2. Fit the bearing bush covers (11) using the attachment bolts (10), but do not yet tighten the bolts.
3. Install the stabiliser bar (1) together with the silentblocks (9) in the shackles (6).
4. Fit the attachment bolts (7) and nuts (8) and tighten the bolts and nuts to the specified tightening torque, see "Technical data".
5. Tighten the attachment bolts (10) of the bearing bush covers (11) to the specified tightening torque, see "Technical data".

2.9 REMOVAL AND INSTALLATION, STEERED REAR AXLE STABILISER LF55 FAN

4



C9 00 399

Removal, steered rear axle stabiliser bar
LF55 FAN

1. Remove the lock nuts (7) from the torque rod balls (5) on the side of the stabiliser bar (1) and press the balls out of the stabiliser bar.

2. Remove the attachment bolts (12) together with the retaining plates (11) that are mounted to the stabiliser brackets (9) of the stabiliser bar.
3. Remove the stabiliser together with the bearing bushes (10) out of the supports (9).
4. Remove the lock nuts (4) from the torque rods on the chassis side and press the torque rods out of the spring stop brackets.

Installation, steered rear axle stabiliser bar LF55 FAN

1. Check the condition of the bearing bushes (10) and the torque rod ball joints (3 and 5).
2. Install the torque rods to the spring stop brackets. Tighten the lock nuts (4) to the specified tightening torque, see "Technical data".
3. Turn the bearing bushes (10) on the stabiliser bar (1), so that the bearing bushes (10) can be positioned in the brackets (9).
4. Fit the stabiliser bar (1).
5. Check whether the stabiliser bar is situated in the centre of the vehicle. Move the positioning clamps, if necessary.
6. Fit the retaining plates (11), using the attachment bolts (12). Screw in the attachment bolts evenly and tighten them to the specified torque. See "Technical data".
7. Fit the torque rod balls (5) to the stabiliser bar (1). Tighten the lock nuts (7) to the specified tightening torque, see "Technical data".

3. DISASSEMBLY AND ASSEMBLY

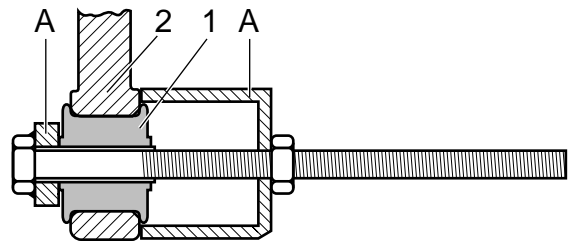
3.1 DISASSEMBLY AND ASSEMBLY, STABILISER BAR / TORQUE ROD SILENTBLOCK WITH RUBBER CASING

Notes

- The silentblocks for the stabiliser bar and the stabiliser bar shackle are identical to one another.
- The silentblock should be fitted using special tool (DAF no. 1310476). It is not possible to install the silentblock undamaged, without using this puller.
- The stabiliser bar need not be removed when replacing the silentblocks on the stabiliser bar.

Removing silentblock with rubber casing

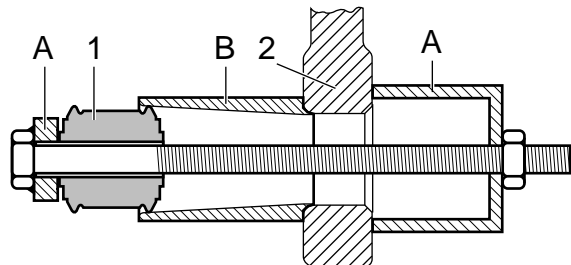
1. Force the silentblock (1), using the puller (A), special tool (DAF no. 1310476) from the stabiliser bar (2) or the stabiliser bar shackle (2).
Before fitting the puller, apply a lubricant to the contact surface of the puller or the silentblock, for example tyre grease or a soap solution.



C9 00 308

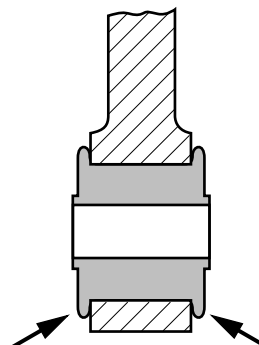
Installing silentblock with rubber casing

1. Before fitting the puller, apply plenty of lubricant to the outer circumference of the new silentblock (1) and the contact surface of the puller/silentblock, for example tyre grease. Never apply any grease or oil product to the new silentblock.
2. Place the guide sleeve (B), which forms part of the puller, on the stabiliser bar or the shackle.
3. Place the new silentblock (1) on guide sleeve (B) and, using puller (A), special tool (DAF no. 1310476), pull the silentblock (1) into the stabiliser bar (2) or the shackle (2).



C9 00 135

4. Pull the silentblock into the eye until the collar of the silentblock has been pulled fully through the eye.
Remove the guide sleeve (B) and, if necessary, slightly force the silentblock backwards so that the collars of the silentblock protrude from both sides of the stabiliser bar or the shackle. See arrows in drawing.



C9 00 307

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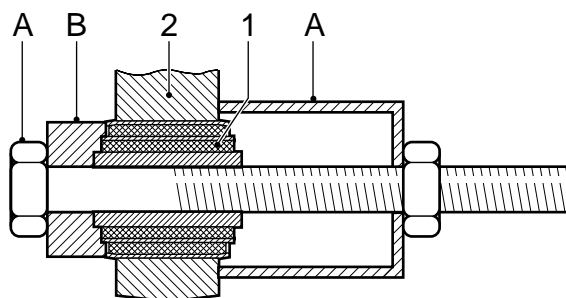
3.2 DISASSEMBLY AND ASSEMBLY, STABILISER BAR / TORQUE ROD SILENTBLOCK WITH STEEL CASING

Notes

- The silentblocks with steel casing should be fitted using special tool (DAF no. 1310479). It is not possible to install the silentblock undamaged, without using this puller.
- The stabiliser bar need not be removed when replacing the silentblocks.

Removing silentblock with steel casing

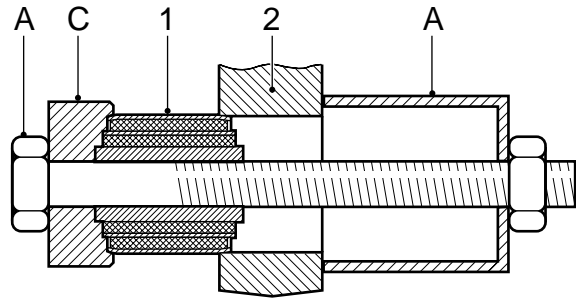
1. Fit the thrust piece with the smallest diameter (B in the drawing) on the puller (A), special tool (DAF no. 1310479).
2. Apply a lubricant to the thrust piece, for example tyre grease, and fit the puller.
3. Using the puller, force the silentblock from the stabiliser bar.



C9 00 149

Installing silentblock with steel casing

1. Place the thrust piece with the largest diameter (C in the drawing) on the puller (A).
2. Apply for example tyre grease to the thrust piece, and place the puller (A) with the silentblock (1) on the stabiliser bar (2).
3. Force the silentblock into the stabiliser bar using the puller. The thrust piece (C) must just touch the stabiliser bar.
4. Check whether the two sides of the silentblock protrude equally out of the stabiliser bar.



C9 00 150

3.3 DISASSEMBLY AND ASSEMBLY, TRANSVERSE GUIDE TORQUE ROD MOUNTING RUBBER, AIR-SPRUNG REAR AXLE LF45

4

Disassembling the transverse guide torque rod mounting rubber, air-sprung rear axle LF45, rear axle side

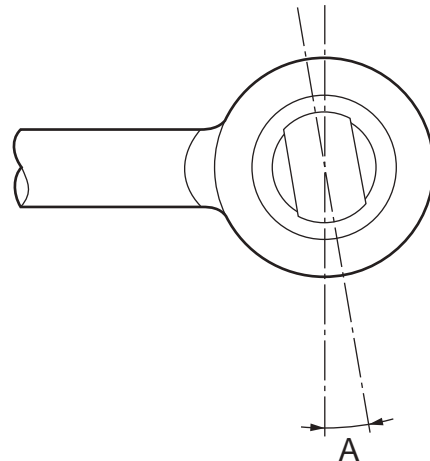
Note:

The mounting rubber is fitted at an angle (A) in the eye of the torque rod, on the side of the rear axle.

1. Remove the torque rod from the vehicle.
2. Drive the pin and rubber bush unit from the eye of the torque rod.

Assembling the transverse guide torque rod mounting rubber, air-sprung rear axle LF45, rear axle side

1. Apply a thin film of acid-free petroleum jelly or tyre grease to the rubber.
2. Force the mounting rubber at the right mounting angle (A) in the eye of the torque rod. See "Technical data" for the correct mounting angle (A).
3. Force the mounting rubber so far until the rubber collars protrude an equal distance on both sides of the eye.
4. Fit the torque rod to the vehicle.



C9 00 408

Disassembling the transverse guide torque rod mounting rubber, air-sprung rear axle LF45, chassis side

1. Remove the torque rod from the vehicle.
2. Drive the pin and rubber bush unit from the eye of the torque rod.

Assembling the transverse guide torque rod mounting rubber, air-sprung rear axle LF45, chassis side

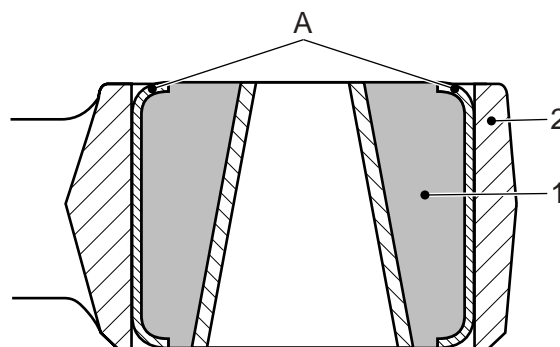
1. Apply a thin film of acid-free petroleum jelly or tyre grease to the rubber.
2. Force the pin in the eye of the torque rod. Make sure that the bolt holes are parallel with the torque rod.
3. Force the mounting rubber so far until the rubber collars protrude an equal distance on both sides of the eye.
4. Fit the torque rod to the vehicle.

4

3.4 DISASSEMBLY AND ASSEMBLY, TRIANGULAR LINK SILENTBLOCK, AIR-SPRUNG REAR AXLE LF55 13-15 TON GVW

Disassembly, triangular link silentblock, air-sprung rear axle LF55 13-15 ton GVW

1. Remove the triangular link from the vehicle.
2. Remove the silentblock (1) from the triangular link (2) using a puller. Make sure that the puller rests on the outer rim (A) of the silentblock (1).



C9 00 407

Assembly, triangular link silentblock, air-sprung rear axle LF55 13-15 ton GVW

1. Clean the chamber in the triangular link.
2. Apply a thin layer of acid-free petroleum jelly to the outer shell of the new silentblock.
3. Force the silentblock into the triangular link. Make sure that the puller rests on the outer rim (A) of the silentblock.
4. Force the silentblock into the triangular link so that both sides of the silentblock are equally far into the triangle chamber.
5. Fit the triangular link to the vehicle.

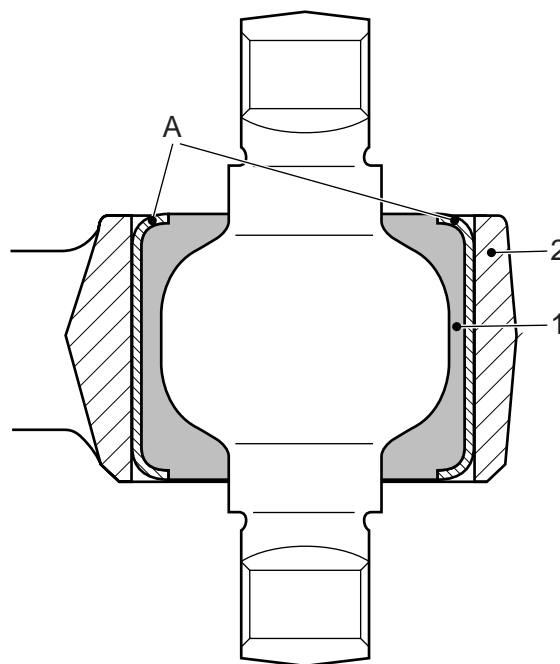
3.5 DISASSEMBLY AND ASSEMBLY, TRIANGULAR LINK MOUNTING RUBBER, AIR-SPRUNG REAR AXLE LF55 13-15 TON GVW

Disassembly, triangular link mounting rubber

1. Remove the triangular link from the vehicle.
2. Remove the mounting rubber (1) from the triangular link (2) using a puller. Make sure that the puller rests on the outer rim (A) of the mounting rubber (1).

Assembly, triangular link mounting rubber, air-sprung rear axle LF55 13-15 ton GVW

1. Apply a thin film of acid-free petroleum jelly or tyre grease to the rubber.
2. Force the mounting rubber into the triangular link. Make sure that the puller rests on the outer rim (A) of the mounting rubber. Make sure that the bolt holes are parallel with the triangle rod.
3. Force the mounting rubber into the triangular link so that both sides of the mounting rubber are equally far into the triangle chamber.
4. Fit the triangular link to the vehicle.

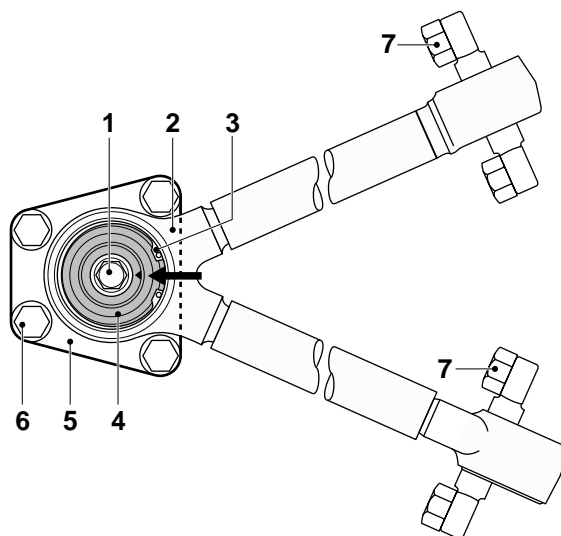


C9 00 406

3.6 DISASSEMBLY AND ASSEMBLY, TRIANGULAR LINK SILENTBLOCK, AIR-SPRUNG REAR AXLE LF55 16-18 TON GVW

Disassembly, triangular link silentblock, air-sprung rear axle LF55 16-18 ton GVW

1. Loosen the attachment bolts (7) a few turns.
2. Remove the bolt (1).
3. Screw an M24 x 1.5 bolt into the silentblock (4). This will remove the triangular link (2) from the tapered attachment pin. If the triangular link (2) cannot be removed, the flange (5) must be removed from the axle housing and be forced from the triangular link (2) using a puller.
4. Remove the attachment bolts (7). Remove the triangular link from under the vehicle. This can only be done by two persons working together.
5. Remove the circlip (3).
6. Remove the silentblock (4) from the triangular link (2) using a puller. Make sure that the puller rests on the outer rim of the silentblock (4).



C9 00 300

Assembly, triangular link silentblock, air-sprung rear axle LF55 16-18 ton GVW

1. Clean the chamber in the triangular link (2).
2. Remove all rust and grease from the tapered part of the flange (5).
3. Apply a thin layer of acid-free petroleum jelly to the outer shell of the new silentblocks (4).
4. Position the new silentblock (4) such that the marking (see arrow) is positioned in between the torque rods as indicated.
5. Force the silentblock (4) into the triangular link (2). Make sure that the puller rests on the outer rim of the silentblock (4).

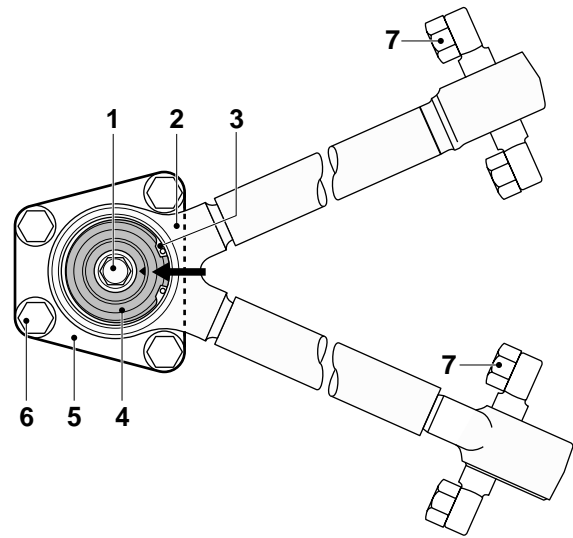
9

STABILISERS AND TORQUE RODS

LF45/55 series

Disassembly and assembly

6. Fit the circlip (3) as indicated. Make sure that the entire circlip (3) is positioned correctly in the groove.
7. Install the flange (5), if removed, on the axle housing. Check to see if the contact surface of the flange (5) and the contact surface on the axle housing are free from grease and paint. Tighten the attachment bolts (6) to the specified tightening torque, see "Technical data".
8. Install the triangular link (2) under the vehicle. This will take two persons working together. Tighten the attachment bolts (7) by hand.
9. Fit the bolt (1). Tighten the bolt (1) to the specified tightening torque, see "Technical data".
10. Tighten the attachment bolts (7).



C9 00 300

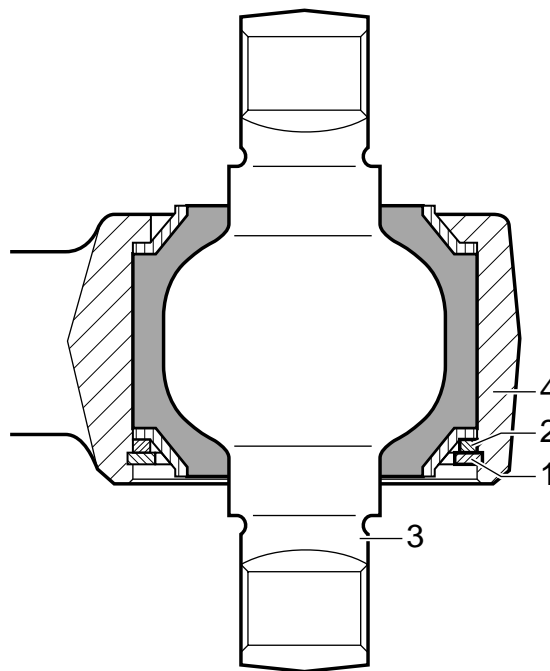
3.7 DISASSEMBLY AND ASSEMBLY, TRIANGULAR LINK/TORQUE ROD MOUNTING RUBBER, AIR-SPRUNG REAR AXLE LF55 16-18 TON GVW

Note:

Disassembly and assembly of the mounting rubbers are identical for the triangular link and the torque rod.

Disassembly, triangular link/torque rod mounting rubber, air-sprung rear axle LF55 16-18 ton GVW

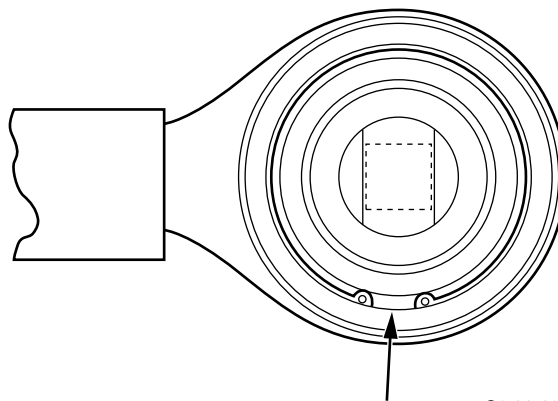
1. Remove the triangular link or torque rod from the vehicle.
2. Remove the circlip (1) and the shim (2).
3. Drive the pin and rubber bush unit (3) from the torque rod housing (4).



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Assembly, triangular link/torque rod mounting rubber, air-sprung rear axle LF55 16-18 ton GVW

1. Apply a thin film of acid-free petroleum jelly or tyre grease to the rubber.
2. Push the pin (3) into the housing (4). Make sure that the bolt holes are parallel with the torque rod.
3. Fit the shim (2).
4. Fit the circlip (1) as indicated. Ensure that the circlip (1) is correctly fitted into the groove of the housing.
5. Fit the triangular link or torque rod to the vehicle.



C9 00 133

CONTENTS

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1. SAFETY INSTRUCTIONS

Spring leaves

- Spring leaves should not be subjected to blasting. Blasting will cause indentations in the leaf spring which could initiate pitting corrosion.
- Corrosion should be prevented as this will considerably shorten the service life of the spring.
- Any type of damage should be prevented. Damage will considerably shorten the service life.
- Spring leaves should not be heated.
- Bear this in mind when welding on the vehicle. Take precautionary measures against weld and fire damage (notching effect).
- Never hit a parabolic spring leaf with a hammer. This could cause the leaf to break.
- Never replace a single broken leaf within a spring assembly, because this will substantially shorten the service life of the other spring leaves.

Spring brackets

Spring brackets should be removed, if:

- there is doubt about the dimensional accuracy after having been subjected to a heavy load (e.g. a collision). The spring bracket should be magnaflux tested. If cracks are detected, the spring bracket should be replaced. If it is not possible to magnaflux test the spring bracket, the spring bracket should always be replaced.
- such a degree of wear has occurred that it must be replaced.

2. GENERAL

2.1 DESCRIPTION OF LEAF SUSPENSION

Parabolic springs are used on the LF series

In a parabolic spring all the leaves are approximately the same length but the thickness of each leaf varies parabolically along its length. Except at the centre clamping and at the spring leaf ends, the spring leaves of a parabolic leaf spring assembly should not come into contact with each other. To that end spacer plates have been fitted between the spring leaves. Because the leaves of a parabolic spring do not move over each other, the vehicle is more comfortable.

Apart from the spring function, the leaf spring assemblies also have the task of guiding the axle. This means that braking, driving and lateral forces are passed on to the chassis via the spring assembly and the front spring bracket.

During fierce braking on a rough road surface, the leaf spring and the spring bracket have to deal with the forces of the weight of the vehicle (which is increased by driving over holes) and with the braking forces at the same time. This results in a considerable total force exerted on the leaf spring and the spring bracket.

Spring opening

The spring opening (P in the drawing) indicates the deflection of the spring.

The spring assembly is tailored to the optimum spring opening for a laden vehicle. If possible, check the spring opening on both sides of an evenly laden vehicle.

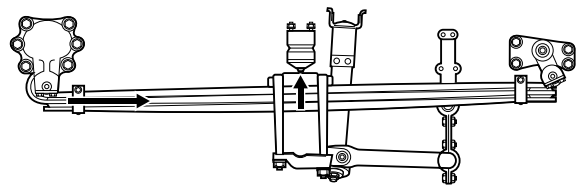
As a result of tolerances in the manufacturing process, the spring openings may differ from each other when the springs are unloaded, but are equal when the springs are loaded.

When spring assemblies are new, the difference in spring opening is small. As a result of settling of the spring assembly, the difference in spring opening may increase.

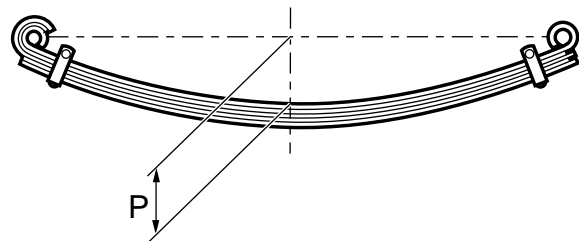
When the springs are loaded they become longer and the axle will move backwards. If the left and right spring openings of one axle differ too much, the result will be misalignment of both the vehicle and the axle.



w9 04 002



w9 04 004

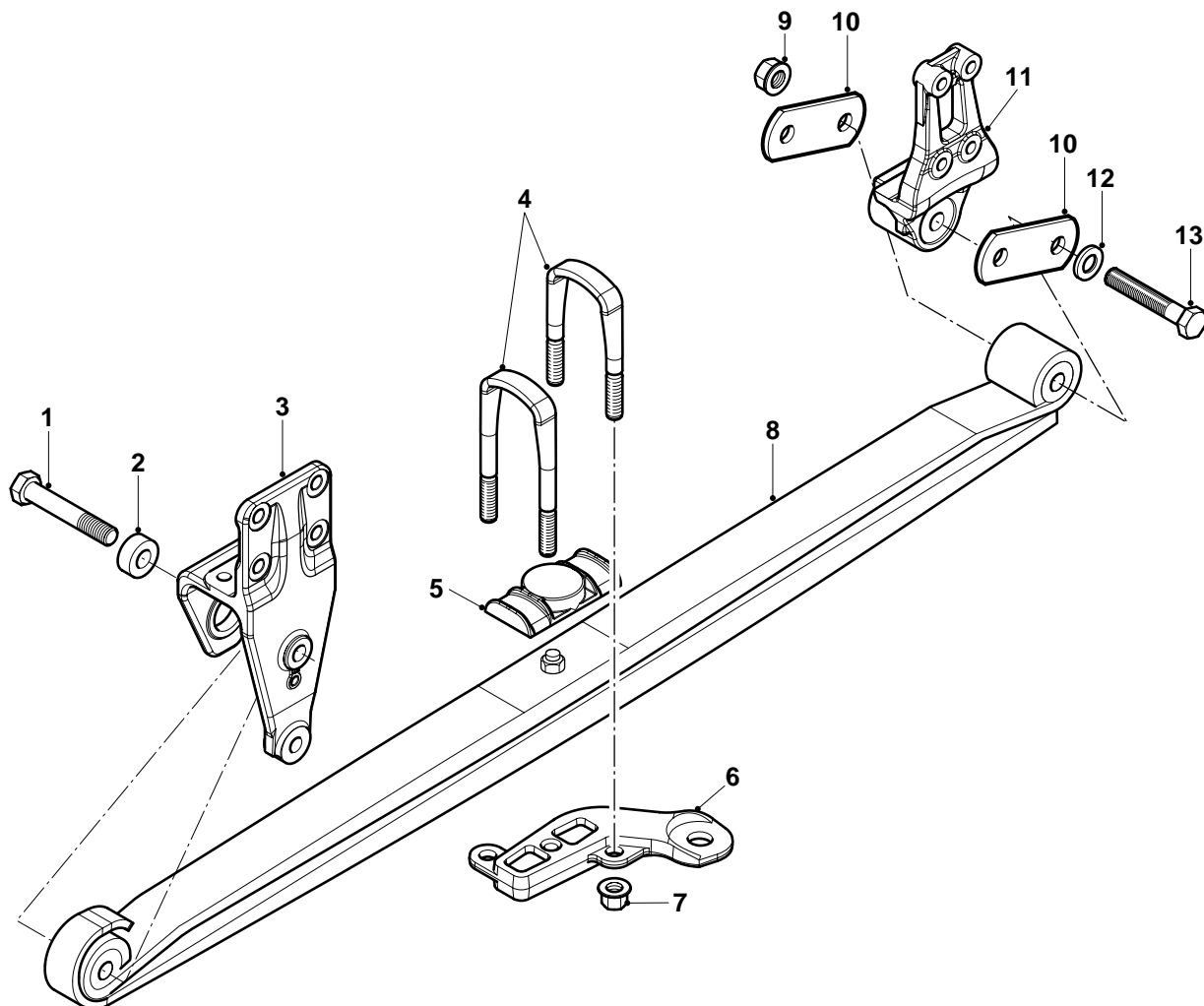


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2.2 OVERVIEW DRAWING, SPRING ASSEMBLY WITH BOLT ATTACHMENT

Note:

This drawing gives a general view and may differ from the actual situation on the vehicle.



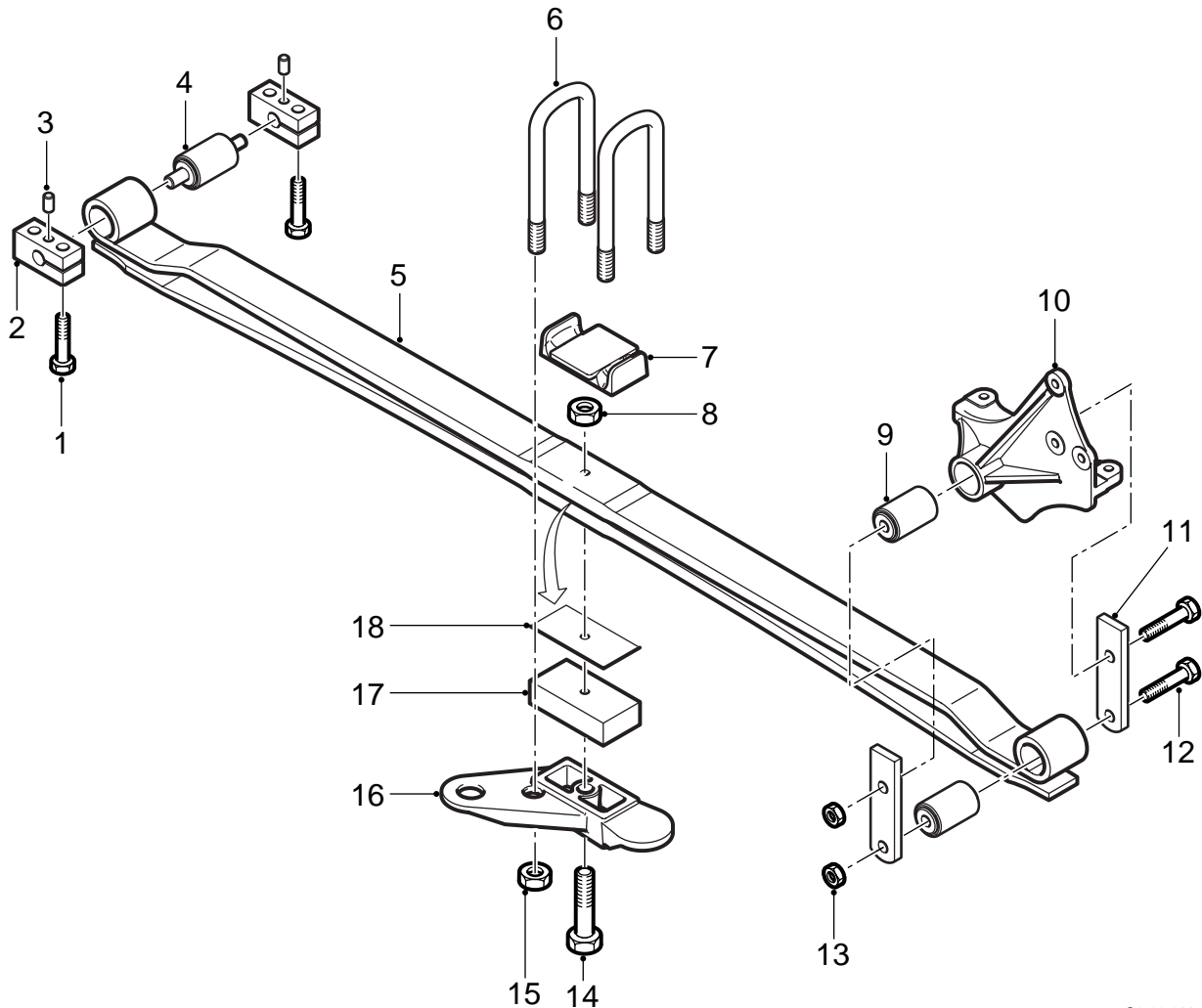
C9 00 305

1. Attachment bolt
2. Centring sleeve
3. Spring bracket
4. U-bolt
5. Upper spring seat
6. Shock absorber support
7. U-bolt nut
8. Spring assembly
9. Attachment nut
10. Shackle seat
11. Spring bracket
12. Ring
13. Attachment bolt

2.3 OVERVIEW DRAWING, SPRING ASSEMBLY WITH PIN ATTACHMENT

Note:

This drawing gives a general view and may differ from the actual situation on the vehicle.

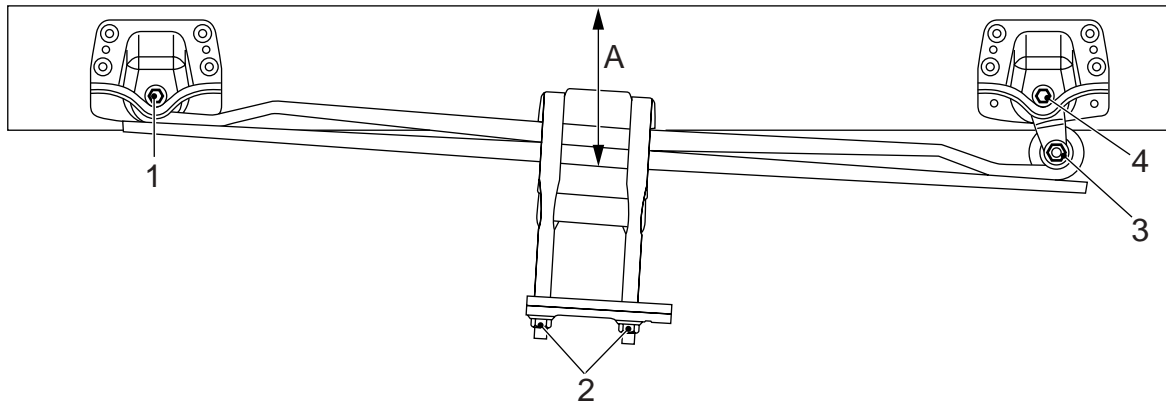


- | | |
|-------------------------------|----------------------------|
| 1. Attachment bolt | 10. Spring bracket |
| 2. Mounting bracket | 11. Shackle seat |
| 3. Centring pin | 12. Attachment bolt |
| 4. Silentblock | 13. Attachment nut |
| 5. Spring assembly | 14. Centre bolt |
| 6. U-bolt | 15. U-bolt nut |
| 7. Upper spring seat | 16. Shock absorber support |
| 8. Insert nut for centre bolt | 17. Lower block |
| 9. Silentblock | 18. Spacer |

C9 00 326

3. REMOVAL AND INSTALLATION

3.1 REMOVAL AND INSTALLATION, SPRING ASSEMBLY WITH BOLT ATTACHMENT



C9 00 411



**Support the vehicle securely and work safely.
Make sure that the axle cannot tilt if both spring assemblies are removed at the same time.**

5

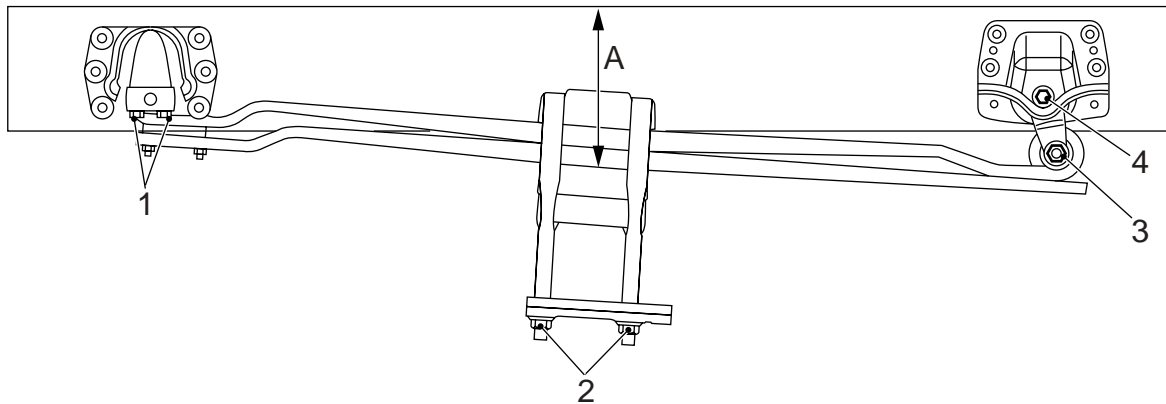
Removal, spring assembly with bolt attachment

1. Remove all components which are in the way when removing the attachment bolts.
2. Remove the U-bolt nuts (2).
3. Loosen the attachment bolts (1, 3 and 4) of the spring assembly.
4. Jack up the chassis until the spring assembly is free of stress.
5. Mark the position of the bolt heads (3). Remove the attachment bolts (1 and 3).
6. Jack up the chassis until the spring assembly is released from the spring bracket.
7. Make sure that the spring assembly cannot tilt after the U-bolts have been removed.
8. Remove the U-bolts.
9. Mark the position of any wedge (if present).
10. Remove the spring assembly safely. This can only be done by two persons working together.

Installation, spring assembly with bolt attachment

1. Check that all contact faces are free of dirt, grease and paint.
2. If applicable, fit the wedge in the correct position.
3. Install the spring assembly to the spring plate/shock absorber plate. This can only be done by two persons working together. Make sure that the centre bolt, if present, fits into the centring hole.
4. When reusing the U-bolts, check for corrosion and damage. Replace them if necessary. If they are to be re-used, thoroughly clean the thread and remove any paint.
If hexagonal U-bolt nuts are used, fit a hardened steel ring under the U-bolt nut.
5. Fit the U-bolts and hand-tighten the U-bolt nuts (2).
6. Lower the chassis or raise the axle such that the attachment bolts can be installed. Press the centring sleeve partly back, if necessary. Fit the attachment bolts (1 and 3) and hand-tighten them.
7. Lower the chassis. Tighten the U-bolt nuts (2) evenly to the specified tightening torque, see "Technical data".
8. Apply grease to the threaded ends of the U-bolts.
9. Adjust the chassis to the prescribed height (A), see "Technical data". **Note**, when tightening the frontmost and rearmost blade spring bracket of the **front axle**, that height (A) differs.
10. Tighten the attachment bolts (1, 3 and 4).
11. Fit all removed parts, if applicable.

3.2 REMOVAL AND INSTALLATION, SPRING ASSEMBLY WITH PIN ATTACHMENT



C9 00 412



**Support the vehicle securely and work safely.
Make sure that the axle cannot tilt if both spring assemblies are removed at the same time.**

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Removal, spring assembly with pin attachment

1. Remove all components which are in the way when removing the attachment bolts.
2. Remove the U-bolt nuts (2).
3. Loosen the attachment bolts (1, 3 and 4) of the spring assembly.
4. Jack up the chassis until the spring assembly is free of stress.
5. Mark the position of the bolt heads (3). Remove the attachment bolts (1 and 3).
6. Jack up the chassis until the mounting brackets at the front of the spring assembly are clear of the support. If necessary, use a rim tool to detach the mounting brackets.
7. Make sure that the spring assembly cannot tilt after the U-bolts have been removed.
8. Remove the U-bolts and the upper spring seat.
9. Mark the position of any wedge (if present).
10. Remove the spring assembly safely. This can only be done by two persons working together.

Installation, spring assembly with pin attachment

1. Check that all contact faces are free of dirt, grease and paint.
2. If applicable, fit the wedge in the correct position.
3. Install the spring assembly to the spring plate/shock absorber plate. This can only be done by two persons working together. Make sure that the centre bolt, if present, fits into the centring hole.
4. When reusing the U-bolts, check for corrosion and damage. Replace them if necessary. If they are to be re-used, thoroughly clean the thread and remove any paint.
If hexagonal U-bolt nuts are used, fit a hardened steel ring under the U-bolt nut.
5. Fit the upper spring seat and the U-bolts and hand-tighten the U-bolt nuts (3).
6. Lower the chassis or raise the axle such that the mounting brackets and attachment bolts (1 and 3) can be installed. Ensure that the centring pins at the front are located exactly in front of the centring holes in the mounting brackets.
7. Lower the chassis. Tighten the U-bolt nuts (2) evenly to the specified tightening torque, see "Technical data".
8. Apply grease to the threaded ends of the U-bolts.
9. Adjust the chassis to the prescribed height (A), see "Technical data". **Note**, when tightening the frontmost and rearmost blade spring bracket of the **front axle**, that height (A) differs.
10. Tighten the attachment bolts (1, 3 and 4).
11. Fit all removed parts, if applicable.

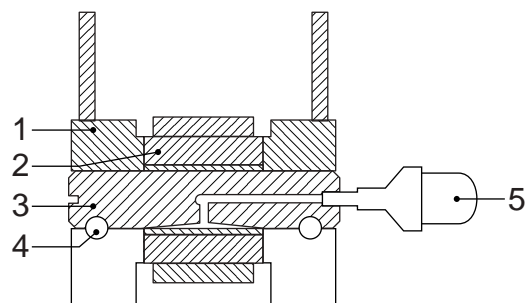
3.3 REMOVAL AND INSTALLATION, STEERED REAR AXLE SPRING ASSEMBLY LF55 FAN



**Support the vehicle securely and work safely.
Make sure that the axle cannot tilt if both spring assemblies are removed at the same time.**

Removal, steered rear axle spring assembly LF55 FAN

1. Remove the stabiliser bar together with the torque rods.
2. Jack up the chassis, until the spring package is clear of the spring stop.
3. Remove the spring stop.
4. Remove the U-bolt nuts.
5. Remove the attachment bolts by means of which both spring packages are attached to the fixing bar for the air bellows.
6. Jack up the fixing bar for the air bellows.
7. Remove the U-bolts and the upper spring seat.
8. Remove the two clamp bolts from the lower spring seat.
9. Check that the spring package is not under stress.
10. Remove the automatic lubricating nipple (5) from the shackle pin (3).
11. Remove the clamp bolts from the shackle pin (3) and press the shackle pin (3) out of the spring bracket (1) and the leaf spring (2). Prevent the spring assembly from tilting after removal of the shackle pin.
12. Remove the spring assembly safely. This can only be done by two persons working together.

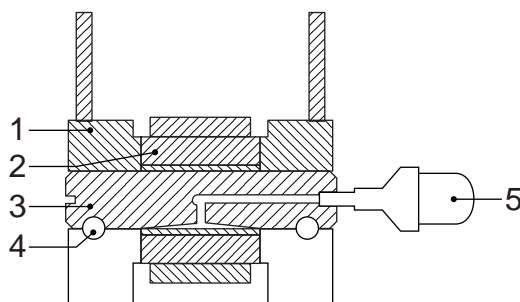


C9 00 398

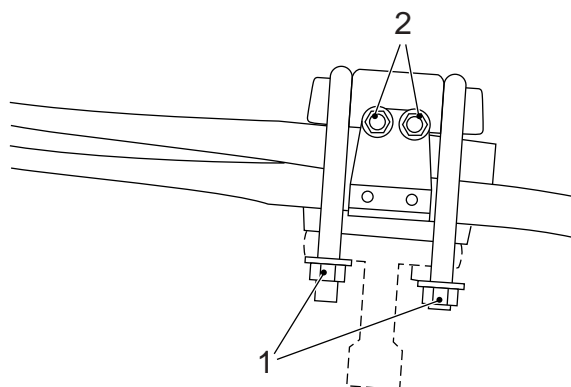
Installation, steered rear axle spring assembly LF55 FAN

1. Check that all contact faces are free of dirt, grease and paint.
2. Install the spring assembly to the lower spring seat. This can only be done by two persons working together. Make sure that the centre bolt fits properly into the centring hole.
3. Fit the two clamp bolts in the lower spring seat and hand-tighten them.
4. Put the U-bolts in place, preferably use new ones. When reusing the U-bolts, check for corrosion and damage. Thoroughly clean the threads and remove any paint from them.
5. Fit the upper spring seat and the U-bolts. Hand-tighten the U-bolts.
6. Apply a thin layer of grease to the shackle pin.
7. Fit the shackle pin (3) in the spring bracket (1) and the leaf spring (2) so that the connection for the automatic lubricating nipple (5) is on the inside of the chassis and the notches (4) for the clamp bolts are on the underside.
8. Fix the clamp bolts of the shackle pin.
9. Fit the automatic lubricating nipple (5) in the shackle pin (3).
10. Lower the fixing bar for the air bellows onto the leaf springs. Install the attachment bolts and tighten them.
11. Fit the spring stop.
12. Lower the chassis. First tighten the U-bolt nuts (1) evenly to the specified tightening torque, see "Technical data". Then tighten the two clamp bolts (2) in the lower spring seat of the spring assembly.
13. Apply grease to the threaded ends of the U-bolts.
14. Fit the stabiliser bar with the torque rods.

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C9 00 398



C9 00 402

3.4 REMOVAL AND INSTALLATION, SPRING BRACKET



Support the vehicle, axle or spring assembly securely and work safely.

Removal, spring bracket

1. Jack up the chassis until the spring or the yoke is free of stress.
2. Remove the spring or yoke bracket.
3. Jack up the chassis further until the spring assembly or the yoke has been released from the spring bracket.
4. Watch the position of the attachment bolts (in view of the difference in length). Remove the attachment bolts. Remove the spring bracket from the chassis.

Installation, spring bracket

1. Install the spring bracket in the same position as before removing it. Place the spring bracket on the spring-bracket outline on the chassis.
2. Check the contact surfaces of spring bracket, chassis and stiffening plates. These should be absolutely free from dirt and grease.
3. Fit the attachment bolts in the correct position and the correct location.
4. Tighten the attachment bolts of the spring bracket.
5. Fit the spring or yoke bracket. **Caution:** use a **new** break nut to attach the yoke. For the breaking torque of the break nut, see "Technical data".

