

## Contents

<b>00 - Technical data</b>	<b>1</b>
<b>1 General notes</b>	<b>1</b>
1.1 Running gear	1
1.2 Steering	3
1.3 Types of tyre	3
1.4 General notes on drive shaft	3
<b>2 Safety information</b>	<b>4</b>
2.1 Safety precautions when working on vehicles with start/stop system	4
2.2 Safety precautions when working on vehicles with active suspension	4
2.3 Safety precautions when working in the vicinity of high-voltage components	4
2.4 Safety precautions when using testers and measuring instruments during a road test	5
2.5 Safety precautions when working on the subframe	5
<b>3 Repair instructions</b>	<b>6</b>
3.1 Identification plates	6
3.2 Use of impact wrenches	6
3.3 Routing and attachment of pipes, hoses and wiring	7
3.4 Leaks at shock absorbers	7
3.5 Checking shock absorbers when removed	9
3.6 Checking shock absorbers on shock tester	9
3.7 Maximum values "a" in mm	10
3.8 Rules for cleanliness	11
3.9 General notes	11
3.10 General repair instructions	12
3.11 Contact corrosion	12
3.12 Steering rack	13
3.13 Gaskets, seals	13
3.14 Nuts, bolts	13
3.15 Electrical components	13
3.16 Repairing damaged threads in longitudinal member (subframe to body)	14
3.17 Lifting suspension to unladen position - vehicles with coil springs	14
3.18 Lifting suspension to normal level - vehicles with air suspension	17
3.19 Raising and lowering vehicle when air spring system has/not been opened	21
<b>4 Disposal</b>	<b>23</b>
4.1 Releasing gas and draining front gas-filled shock absorbers	23
4.2 Releasing gas and draining rear gas-filled shock absorbers	24
4.3 Discharging front suspension strut (air suspension)	25
4.4 Discharging accumulator	25
<b>5 Electrical components</b>	<b>27</b>
5.1 Starting diagnosis	27
<b>40 - Front suspension</b>	<b>32</b>
<b>1 Safety information</b>	<b>32</b>
Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.	32
<b>2 Front axle</b>	<b>33</b>
2.1 Overview - front axle	33
2.2 Overview - front axle	33
<b>3 Subframe</b>	<b>34</b>
3.1 Assembly overview - subframe	34
3.2 Fixing subframe in position	38
3.3 Lowering subframe	41
3.4 Removing and installing subframe with steering rack	46
3.5 Removing and installing subframe cross brace	56
3.6 Removing and installing subframe shield	59
<b>4 Anti-roll bar</b>	<b>62</b>

4.1	Assembly overview - anti-roll bar .....	62
4.2	Removing and installing anti-roll bar .....	67
4.3	Removing and installing coupling rod .....	72
4.4	Removing and installing roll stabiliser control unit J924 .....	74
<b>5</b>	<b>Suspension strut, upper suspension links .....</b>	<b>78</b>
<del>5.1</del>	<del>Assembly overview - suspension strut, upper suspension links</del> <small>part or in whole, is not</small> .....	<del>78</del>
<del>5.2</del>	<del>Removing and installing suspension strut</del> <small>part or in whole, is not</small> .....	<del>87</del>
<del>5.3</del>	<del>Servicing suspension strut</del> <small>part or in whole, is not</small> .....	<del>90</del>
<del>5.4</del>	<del>Removing and installing upper suspension link</del> <small>part or in whole, is not</small> .....	<del>93</del>
5.5	Renewing bush for upper suspension link .....	96
5.6	Renewing boot .....	98
5.7	Charging suspension strut .....	99
5.8	Removing and installing shock absorber fork .....	102
5.9	Removing and installing strut brace .....	104
<b>6</b>	<b>Lower suspension links, swivel joint .....</b>	<b>111</b>
6.1	Assembly overview - lower suspension links, swivel joint .....	111
6.2	Removing and installing track control link .....	113
6.3	Removing and installing guide link .....	117
6.4	Renewing bush for track control link .....	119
6.5	Removing and installing swivel joint .....	125
6.6	Removing and installing bonded rubber bush for guide link .....	126
<b>7</b>	<b>Wheel bearing .....</b>	<b>131</b>
7.1	Assembly overview - wheel bearing .....	131
7.2	Removing and installing wheel bearing housing .....	131
7.3	Removing and installing wheel bearing unit .....	135
7.4	Servicing wheel bearing unit .....	137
<b>8</b>	<b>Drive shaft .....</b>	<b>143</b>
8.1	Assembly overview - drive shaft .....	143
8.2	Removing and installing drive shaft .....	146
8.3	Removing and installing heat shield for drive shaft .....	147
8.4	Loosening and tightening bolt securing drive shaft .....	148
8.5	Dismantling and assembling drive shaft .....	149
8.6	Servicing constant velocity joint .....	164
8.7	Checking outer constant velocity joint .....	166
8.8	Tightening hose clip on triple roller joint and outer joint .....	167
<b>42 - Rear suspension .....</b>	<b>170</b>	
<b>1</b>	<b>Safety information .....</b>	<b>170</b>
<b>2</b>	<b>Rear axle .....</b>	<b>171</b>
2.1	Overview - rear axle .....	171
<b>3</b>	<b>Subframe .....</b>	<b>172</b>
3.1	Assembly overview - subframe .....	172
3.2	Fixing position of subframe .....	175
3.3	Removing and installing subframe .....	179
3.4	Servicing subframe .....	182
<b>4</b>	<b>Anti-roll bar .....</b>	<b>195</b>
4.1	Assembly overview - anti-roll bar .....	195
4.2	Removing and installing anti-roll bar .....	198
4.3	Removing and installing coupling rod .....	202
4.4	Removing and installing roll stabiliser control unit 2 J1096 .....	204
<b>5</b>	<b>Suspension links, track rod .....</b>	<b>206</b>
5.1	Assembly overview - transverse links .....	206
5.2	Removing and installing upper transverse link .....	210
5.3	Removing and installing lower transverse links .....	214

5.4	Removing and installing track rod .....	219
5.5	Removing and installing wind deflector .....	222
<b>6</b>	<b>Suspension strut/shock absorber, spring .....</b>	<b>224</b>
6.1	Assembly overview - suspension strut/shock absorber, spring .....	224
6.2	Removing and installing shock absorber .....	229
6.3	Servicing shock absorber .....	231
6.4	Removing and installing spring .....	232
<b>7</b>	<b>Wheel bearing, trailing arm .....</b>	<b>244</b>
7.1	Assembly overview - wheel bearing .....	244
7.2	Removing and installing wheel bearing housing .....	245
7.3	Removing and installing wheel bearing unit .....	248
7.4	Servicing wheel bearing unit .....	249
<b>8</b>	<b>Drive shaft .....</b>	<b>255</b>
8.1	Assembly overview - drive shaft .....	255
8.2	Removing and installing drive shaft .....	258
8.3	Loosening and tightening bolt securing drive shaft .....	260
8.4	Dismantling and assembling drive shaft .....	260
8.5	Checking outer constant velocity joint .....	269
8.6	Checking inner constant velocity joint .....	270
<b>43 - Self-levelling suspension</b>	.....	<b>273</b>
<b>1</b>	<b>Safety information .....</b>	<b>273</b>
<b>2</b>	<b>Vehicle level senders .....</b>	<b>274</b>
2.1	Assembly overview - front vehicle level senders .....	274
2.2	Assembly overview - rear vehicle level senders .....	274
2.3	Protected by copyright. Copying for private, non-commercial purposes, in part or in whole, is not permitted. Removing and installing front vehicle level sender G78/G289 .....	275
2.4	Removing and installing rear vehicle level sender G76/G77 .....	276
<b>3</b>	<b>Air suspension</b> .....	<b>277</b>
3.1	Overview of fitting locations - electrical components .....	277
3.2	Overview of fitting locations - air suspension .....	279
3.3	Assembly overview - air pipes .....	280
3.4	Assembly overview - air supply unit .....	283
3.5	Setting normal level and permanently disabling control .....	285
3.6	Re-adapting normal level .....	285
3.7	Bleeding and charging air spring system .....	286
3.8	Removing and installing running gear control unit J775 .....	286
3.9	Removing and installing adaptive suspension compressor electronics J1135 .....	287
3.10	Checking air suspension for leaks .....	287
3.11	Servicing air pipe .....	290
3.12	Renewing connection piece .....	293
3.13	Removing and installing air supply unit .....	296
3.14	Removing and installing filter .....	298
3.15	Removing and installing solenoid valve block .....	299
3.16	Removing and installing accumulator .....	301
<b>44 - Wheels, tyres, vehicle geometry</b>	.....	<b>302</b>
<b>1</b>	<b>Safety information .....</b>	<b>302</b>
<b>2</b>	<b>Wheels, tyres .....</b>	<b>303</b>
<b>3</b>	<b>Tyre Pressure Monitoring System .....</b>	<b>304</b>
3.1	Removing and installing Tyre Pressure Monitoring System control unit J502 .....	304
<b>4</b>	<b>Wheel alignment .....</b>	<b>305</b>
4.1	Notes on wheel alignment .....	305
4.2	Test requirements .....	305
4.3	Preparations for measurement .....	307

4.4	When does wheel alignment have to be checked? . . . . .	309
4.5	Wheel alignment procedure . . . . .	311
4.6	Explanatory notes on production control numbers (PR numbers) . . . . .	313
4.7	Wheel runout compensation . . . . .	313
4.8	Checking maximum steering angle . . . . .	314
4.9	Checking unladen position for wheel alignment - vehicles with coil springs . . . . .	314
4.10	Checking normal level for wheel alignment - vehicles with air suspension . . . . .	317
4.11	Wheel alignment specifications . . . . .	320
4.12	Adjusting camber at rear wheels . . . . .	324
4.13	Adjusting toe setting at rear wheels . . . . .	324
4.14	Centralising camber at front wheels . . . . .	326
4.15	Adjusting toe setting at front wheels . . . . .	327
4.16	Basic setting for steering angle sender G85 . . . . .	328
<b>5</b>	<b>Adaptive cruise control</b> . . . . .	<b>330</b>
5.1	Adjusting adaptive cruise control . . . . .	330
<b>6</b>	<b>Front camera for driver assist systems</b> . . . . .	<b>338</b>
6.1	Calibrating front camera for driver assist systems . . . . .	338
<b>7</b>	<b>Night vision system</b> . . . . .	<b>346</b>
7.1	Calibrating night vision system . . . . .	346
<b>48 - Steering</b> . . . . .		<b>355</b>
<b>1</b>	<b>Safety information</b> . . . . .	<b>355</b>
<b>2</b>	<b>Steering wheel</b> . . . . .	<b>356</b>
2.1	Assembly overview - steering wheel . . . . .	356
2.2	Removing and installing steering wheel . . . . .	360
<b>3</b>	<b>Steering column</b> . . . . .	<b>362</b>
3.1	Assembly overview - steering column . . . . .	362
3.2	Checking steering column for damage . . . . .	366
3.3	Handling and transporting steering column . . . . .	366
3.4	Removing and installing steering column . . . . .	367
3.5	Removing and installing intermediate steering shaft . . . . .	369
3.6	Removing and installing control unit for electrically adjustable steering column J866 . . . . .	372
3.7	Removing and installing control unit for electronic steering column lock J764 . . . . .	373
<b>4</b>	<b>Steering rack</b> . . . . .	<b>375</b>
4.1	Assembly overview - steering rack . . . . .	375
4.2	Handling and transporting steering rack . . . . .	379
4.3	Removing and installing steering rack . . . . .	380
4.4	Removing and installing boot . . . . .	385
4.5	Removing and installing track rod . . . . .	386
4.6	Removing and installing track rod ball joint . . . . .	388
4.7	Re-adapting end stops of steering rack . . . . .	391
<b>5</b>	<b>Rear wheel steering rack</b> . . . . .	<b>392</b>
5.1	Assembly overview - rear wheel steering . . . . .	392
5.2	Removing and installing rear wheel steering rack . . . . .	393
5.3	Aligning rear wheel steering rack . . . . .	399
5.4	Bringing rear wheel steering rack into zero position . . . . .	404

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## 00 – Technical data

### 1 General notes

(ARL008360; Edition 01.2023)



⇒ g1.1 ear", page 1

⇒ 1.2 , page 3

⇒ o1.3 f tyre", page 3

⇒ n1.4 otes on drive shaft", page 3

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#### 1.1 Running gear

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⇒ g1.1.1 ear - Audi Q7 before product upgrade", page 1

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⇒ g1.1.2 ear - Audi Q7 from product upgrade onwards", page

1

⇒ g1.1.3 ear - Audi Q8", page 2

#### 1.1.1 Running gear - Audi Q7 before product upgrade

Front axle	Multi-link suspension and anti-roll bar Coil springs: twin-tube gas-filled shock absorbers, coil springs Air suspension: air springs with variable level settings and damping characteristics, Guide links with hydraulically damped mountings
Rear axle	Multi-link suspension with separate spring/shock absorber layout and anti-roll bar Coil springs: twin-tube gas-filled shock absorbers, coil springs Air suspension: air spring struts with variable level settings and damping characteristics

Running gear	Standard coil springs 1BA in unladen position ⇒ <u>page 306</u>	Standard air suspension 1BK at normal level ⇒ <u>page 306</u>	Sport air suspension 2MA at normal level ⇒ <u>page 306</u>
Wheelbase	mm	2994	2999
Track width (front)	mm	1679	1686
Track width (rear)	mm	1691	1692

- These specifications are applicable for all engines.
- Front/rear track width only applicable to 255/65/R18 tyres on 8Jx18 rims.
- Different track width figures will apply if different wheel/tyre combinations are used.
- For equipment versions with air suspension, the specified dimension applies to the normal level.

#### 1.1.2 Running gear - Audi Q7 from product upgrade onwards

Front axle	Multi-link suspension and anti-roll bar Coil springs: twin-tube gas-filled shock absorbers, coil springs Air suspension: air springs with variable level settings and damping characteristics, Guide links with hydraulically damped mountings
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Rear axle	Multi-link suspension with separate spring/shock absorber layout and anti-roll bar Coil springs: twin-tube gas-filled shock absorbers, coil springs Air suspension: air spring struts with variable level settings and damping characteristics		
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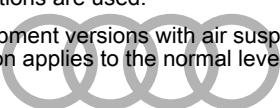
Running gear	Standard coil springs 1BA in unladen position ⇒ page 306	Standard air suspension 1BK at normal level ⇒ page 306	Sport air suspension 2MA at normal level ⇒ page 306	Sport air suspension 2MB at normal level ⇒ page 306
Wheelbase	mm	2995 <sup>1)</sup>	2999 <sup>1)</sup>	3002 <sup>1)</sup>
Wheelbase, TFSI e	mm	2995 <sup>1)</sup>	3000 <sup>2)</sup>	3002 <sup>2)</sup>
Track width (front)	mm	1679 <sup>1)</sup>	1685 <sup>1)</sup>	1688 <sup>1)</sup>
Track width (front), TFSI e	mm	1673 <sup>1)</sup>	1680 <sup>2)</sup>	1682 <sup>2)</sup>
Track width (rear)	mm	1690 <sup>1)</sup>	1693 <sup>1)</sup>	1692 <sup>1)</sup>
Track width (rear), TFSI e	mm	1685 <sup>1)</sup>	1686 <sup>2)</sup>	1685 <sup>2)</sup>

<sup>1)</sup> 235/65 R18 ET20 tyres

<sup>2)</sup> 255/55 R19 ET23 tyres

<sup>3)</sup> 285/45 R20 ET28 tyres

- These specifications are applicable for all engines.
- Front/rear track width only applicable to corresponding tyre sizes.
- Different track width figures will apply if different wheel/tyre combinations are used.
- For equipment versions with air suspension, the specified dimension applies to the normal level.



### 1.1.3 Running gear - Audi Q8

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Front axle	permitted unless explicitly authorised. Audi does not guarantee or accept any liability with respect to the use of this document.	Multi-link suspension and anti-roll bar Coil springs: twin-tube gas-filled shock absorbers, coil springs Air suspension: air springs with variable level settings and damping characteristics. Guide links with hydraulically damped mountings
Rear axle		Multi-link suspension with separate spring/shock absorber layout and anti-roll bar Coil springs: twin-tube gas-filled shock absorbers, coil springs Air suspension: air spring struts with variable level settings and damping characteristics

Running gear	Standard coil springs 1BL in unladen position ⇒ page 306	Standard air suspension 1BK/2MA/2MB at normal level ⇒ page 306	
Wheelbase	mm	2995	2998
Track width (front)	mm	1679	1683

<b>Running gear</b>	<b>Standard coil springs 1BL in unladen position ⇒ <a href="#">page 306</a></b>	<b>Standard air suspension 1BK/2MA/2MB at normal level ⇒ <a href="#">page 306</a></b>	
Track width (rear)	mm	1691	1693

- These specifications are applicable for all engines.
- Front/rear track width only applicable to 265/55 R19 tyres on 8.5Jx19 rims.
- Different track width figures will apply if different wheel/tyre combinations are used.
- For equipment versions with air suspension, the specified dimension applies to the normal level.

## 1.2 Steering

Steering rack	Electro-mechanically assisted, maintenance-free rack-and-pinion steering
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## 1.3 Types of tyre

For general information on wheel/tyre combinations, winter tyres, snow chains and recommended tyre makes, refer to ⇒ Wheel/Tyre Guide.

## 1.4 General notes on drive shaft

Before fitting the outer joint in the wheel hub, apply a thin coat of assembly paste to the splines on the outer joint ⇒ Electronic parts catalogue.

Do not let drive shaft hang down under its own weight when performing repair work, as otherwise excessive bending could damage inner CV joint.

Wheel bearings must not be subjected to load after loosening bolt securing drive shaft at wheel hub.

If the wheel bearings are subjected to the full weight of the vehicle they will be overloaded, resulting in reduced service life. For this reason please note the following points:

- ◆ Procedure for slackening bolt securing drive shaft to wheel hub ⇒ [a8.4 nd tightening bolt securing drive shaft", page 148](#)

Do not attempt to move the vehicle without the drive shafts fitted; this would result in wheel bearing damage. If moving the vehicle is unavoidable, note the following points:

- Fit an outer joint in place of the drive shaft.
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## 2 Safety information

**⇒ p2.1 recautions when working on vehicles with start/stop system", page 4**

**⇒ p2.2 recautions when working on vehicles with active suspension", page 4**

**⇒ p2.3 recautions when working in the vicinity of high-voltage components", page 4**

**⇒ p2.4 recautions when using testers and measuring instruments during a road test", page 5**

**⇒ p2.5 recautions when working on the subframe", page 5**

### 2.1 Safety precautions when working on vehicles with start/stop system

#### Risk of injury - engine may start unexpectedly

The engine can start unexpectedly if the vehicle's start/stop system is activated. A message in the instrument cluster indicates whether the start/stop system is activated.

- To deactivate the start/stop system, switch off the ignition.

### 2.2 Safety precautions when working on vehicles with active suspension

#### Risk of injury caused by crash lifting function

Moving parts can trap parts of the body. On vehicles with active suspension, the crash lifting function must be deactivated during work that is performed in an inspection pit or on a scissor-type lifting platform.

- To deactivate the crash lifting function, switch off the ignition and open the driver door once.

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#### Risk of injury caused by vehicle being lowered or raised by elevated entry function

Moving parts can trap parts of the body. On vehicles with active suspension, the vehicle can be raised or lowered by the elevated entry function when the ignition is switched off.

- Deactivate elevated entry function (refer to ⇒ Owner's Manual).

### 2.3 Safety precautions when working in the vicinity of high-voltage components

#### High voltage can cause fatal injury.

The voltage levels in the high-voltage system constitute a safety hazard. Danger of severe or fatal injuries from electric shock or electric arcs if high-voltage components or high-voltage wiring are damaged.

- Carry out a visual inspection of high-voltage components and high-voltage wiring.
- Never use cutting/forming tools or other sharp-edged implements in the vicinity of high-voltage components and high-voltage wires.
- Never perform work using welding, brazing, thermal bonding or hot air in the vicinity of high-voltage components or high-voltage wires.

## 2.4 Safety precautions when using testers and measuring instruments during a road test

### Risk of injury if test equipment is not secured

If an accident occurs and the front passenger airbag is triggered, test equipment which is not secured adequately may be catapulted through the vehicle with potentially serious consequences.

- Secure test equipment on the rear seat with a strap.

Or:

- Have a second mechanic operate test equipment on the rear seat.

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## 2.5 Safety precautions when working on the subframe

### Risk of damage to components

Lowering the vehicle onto its wheels can damage components if the assembly mountings, steering rack or subframe cross brace are not fitted as specified.

- Never lower vehicle onto its wheels with suspension components unfastened or detached.
- Never support weight of vehicle on subframe or subframe cross brace with suspension components unfastened or detached.

### 3 Repair instructions

- ⇒ p3.1 lates", page 6
- ⇒ o3.2 f impact wrenches", page 6
- ⇒ a3.3 nd attachment of pipes, hoses and wiring", page 7
- ⇒ a3.4 t shock absorbers", page 7
- ⇒ s3.5 hock absorbers when removed", page 9
- ⇒ s3.6 hock absorbers on shock tester", page 9
- ⇒ v3.7 alues "a" in mm", page 10
- ⇒ f3.8 or cleanliness", page 11
- ⇒ n3.9 otes", page 11
- ⇒ r3.10 epair instructions", page 12
- ⇒ c3.11 orrosion", page 12
- ⇒ r3.12 ack", page 13
- ⇒ s3.13 eals", page 13
- ⇒ b3.14 olts", page 13
- ⇒ c3.15 omponents", page 13
- ⇒ d3.16 amaged threads in longitudinal member (subframe to body)", page 14
- ⇒ s3.17 uspension to unladen position - vehicles with coil springs", page 14
- ⇒ s3.18 uspension to normal level - vehicles with air suspen-sion", page 17
- ⇒ a3.19 nd lowering vehicle when air spring system has/has not been opened", page 21

#### 3.1 Identification plates

When renewing vehicle components, the identification plates on the old parts that have a replacement part number (see ⇒ Electronic parts catalogue) must be attached to the new parts due to approval regulations.

#### 3.2 Use of impact wrenches

In general, it is permitted to use an impact wrench to unscrew bolts and nuts. An exception to this is when work is performed inside an open high-voltage battery. For this work, it is not permitted to use an impact wrench.

An impact wrench may be used to screw in bolts and nuts when performing repair work if the following requirements are ob-served. In general, electric and compressed-air impact wrench-es should be used.

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- Only screw in bolts with locking fluid or self-locking nuts at low speed. With respect to the correctness of information in this document. Copyright by AUDI AG.
- Use a suitable impact wrench with variable speed and ad-justable torque range.

- Use suitable bits when working in the vicinity of sensitive surfaces, e.g. plastic-coated bits for aluminium rims.
- When working in the vicinity of natural gas systems, observe the information in the Workshop Manual "Natural gas engines - General information".

**Use:**

- Fit bolts/nuts by hand.
- Only use an impact wrench to screw in bolts/nuts until the head of the bolt/nut makes contact and then continue tightening with a torque wrench.
- Clean threaded pins before unscrewing the bolt/nut.

### 3.3 Routing and attachment of pipes, hoses and wiring

Make sketches or take photographs when unfastening or removing and installing hydraulic and pneumatic lines or electrical wires. This ensures re-installation at the original location.

**Risk of damage to pipes/hoses/wiring**

Moving or hot components may cause damage to pipes/hoses/wiring.

- Restore original routing when installing pipes/hoses/wiring.
- Renew damaged cable ties and cable retainers.
- Ensure sufficient clearance from all moving or hot components.

### 3.4 Leaks at shock absorbers

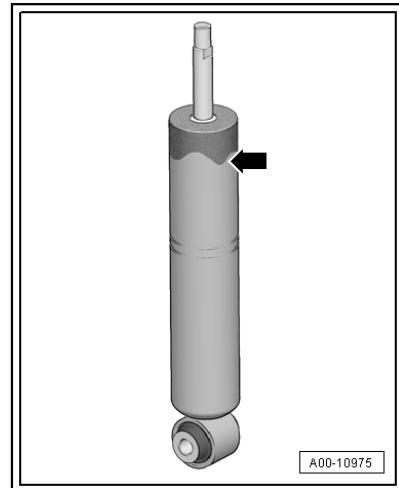
**Equipment version with coil springs**

Shock absorbers are often replaced because of externally visible leakage. Inspections on the test rig and in the vehicle have shown that in the majority of cases this renewal is not justified.

Slight loss of fluid ("sweating") at the piston rod seal is not a reason for renewing a shock absorber. A shock absorber with slight fluid leakage can be accepted as OK under the following conditions:



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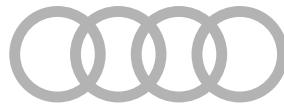
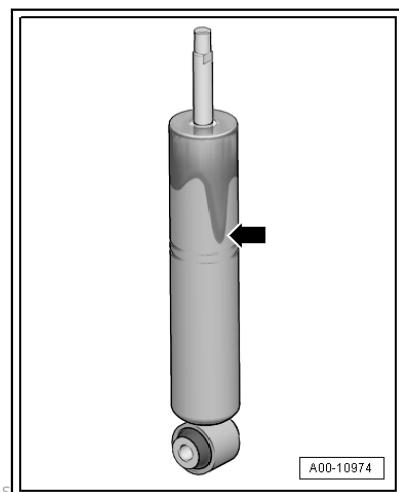


**Note:**

Slight fluid leakage is actually beneficial, as it lubricates the piston rod seal and thus extends the life of the shock absorber. This applies to shock absorbers on both the front and rear axles.

- ◆ Fluid seepage -arrow- is visible, but the fluid is dull and possibly dried by dust.
- ◆ A thin film of fluid or dirt has formed on one side; no drips.

A shock absorber cannot be accepted as OK if the following occurs:



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- ◆ Drips running down the side -arrow-; large area wet with fluid. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.
- ◆ If the shock absorber has a wet film of fluid running down the side of the tube, it is leaking and must be renewed.

### 3.5 Checking shock absorbers when removed

#### Equipment version with coil springs

Defective shock absorbers can be identified by loud rumbling noises when driving, caused by wheel hopping, especially on bad roads. Heavy fluid leakage is an additional visual indication.

#### Note:

Shock absorbers are maintenance-free; shock absorber fluid cannot be topped up.

After removal, a shock absorber can be checked by hand as follows:

- Compress shock absorber by hand.
- The piston rod should move smoothly over the entire stroke with uniform resistance and without jolts.
- Release piston rod.
- If the shock absorber has sufficient gas pressure the piston rod will return by itself to its original position.

#### Note:

- ◆ If this is not the case, the shock absorber does not necessarily need to be renewed. Provided there has been no major loss of fluid, it will still be as effective as a conventional shock absorber.
- ◆ Even without gas pressure, the shock absorber will provide full damping effect as long as there has been no major loss of fluid. However, it may produce more noise.

### 3.6 Checking shock absorbers on shock tester

#### Equipment version with coil springs or air suspension

The shock tester allows shock absorbers to be tested without removing them from the vehicle. The damping effect can be assessed on the basis of the pointer deflection or the print-out.

#### Special tools and workshop equipment required

- ◆ Shock absorber tester -V.A.G 1990S-
- ◆ Suspension strut test stand -VAS 6636-  
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- ◆ Suspension strut test stand -VAS 6640-

**Test requirements** with respect to the correctness of information in this document. Copyright by AUDI AG.

- Temperature: +10...+40 °C.
- Driver in vehicle
- Tyre pressure OK
- Wheels of vehicle in a central and straight position on the tyre contact plates
- Front wheels in straight-ahead position
- Mechanical parking brake not applied, brake pedal not depressed.

#### Test results

The condition of the shock absorbers can only be evaluated as follows:

◆ Satisfactory damping effect

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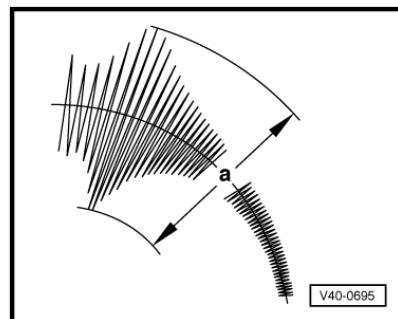
◆ Unsatisfactory damping effect orised by AUDI AG. AUDI AG does not guarantee or accept any liability

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- ◆ It is not possible to obtain intermediate readings specifying the exact degree of impairment of damping effect.
- ◆ A forecast of the remaining service life is not permissible.
- ◆ Test results will be falsified if the suspension contacts the bump stops when the readings are taken.

The following values apply only to tests conducted on the test equipment listed above. If the maximum values listed below are exceeded, the effectiveness of the shock absorber has deteriorated significantly and renewal is recommended.

**Example:**



V40-0695

Maximum value = 70

- ◆ a = higher than 70: unsatisfactory damping effect
- ◆ a = lower than 70: satisfactory damping effect

The damper combinations fitted in the vehicle are indicated by the corresponding PR number on the vehicle data sticker.

Maximum values -a- in mm [⇒ v3.7 values "a" in mm", page 10](#)

Explanatory notes on production control numbers (PR numbers)  
[⇒ n4.6 notes on production control numbers \(PR numbers\)"](#)  
[page 313](#)

### 3.7 Maximum values "a" in mm

**Note:**

- ◆ If the reading is higher than the maximum value "a" listed in the table, the damping effect is unsatisfactory ⇒ renew the shock absorber.
- ◆ If the reading is lower than the maximum value "a" listed in the table, the damping effect is satisfactory ⇒ the shock absorber does not have to be renewed.
- ◆ On vehicles with air suspension, the vehicle level setting has no influence on this test.

Running gear	Front axle	Rear axle	Remarks
Standard running gear, coil springs 1BA	t.b.a.	t.b.a.	Unladen Tank full <sup>1)</sup>

Running gear	Front axle	Rear axle	Remarks
Air suspension, standard running gear 1BK	t.b.a.	t.b.a.	Unladen Tank full <sup>1)</sup>
Air suspension, sports running gear 2MA	t.b.a.	t.b.a.	Unladen Tank full <sup>1)</sup>
Air suspension, sports running gear 2MB	t.b.a.	t.b.a.	Unladen Tank full <sup>1)</sup>

1) Test must be carried out with tyre inflation pressures for "part load".

### 3.8 Rules for cleanliness

- ◆ Thoroughly clean all joints and connections and the surrounding areas before disconnecting.
- ◆ Place removed parts on a clean surface and cover them up to keep them clean. Use plastic sheeting or paper for this purpose. Only use lint-free cloths.
- ◆ Only install clean components; replacement parts should only be unpacked immediately prior to installation.
- ◆ Use only the grease and sealants with the part number stated.
- ◆ Carefully cover or seal open components if repairs cannot be carried out immediately.

#### Version with air suspension

- ◆ Make sure that no dirt enters the compressed air system.
- ◆ Clean the affected area before detaching connection pieces, air pipes or components of the compressed air system.
- ◆ Cover or seal off open compressed air lines and connections of the compressed air system immediately with a plug.

### 3.9 General notes

#### NOTICE

Protective film on threads in body due to improper handling, in part or in whole, is not permitted unless authorized by AUDI AG. AUDI AG does not guarantee or accept any liability  
 – Never use an impact wrench to loosen or tighten.  
 – Fit bolts by hand only; make the first few turns by hand.  
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- ◆ All contact surfaces must be cleaned when installing wax-coated components. The contact surfaces must be free of wax and grease.
- ◆ Load-bearing components and other suspension parts must not be welded or straightened.
- ◆ Do not subject coil springs to hammer blows or weld splashes and do not make any new colour markings.
- ◆ Do not perform welding or cutting operations (using power grinders) near the coil springs or suspension struts. Cover up coil springs or suspension struts if necessary.
- ◆ Make sketches or take photographs when unfastening or removing and installing hydraulic and pneumatic lines or electrical wires. This ensures re-installation at the original location.

- ◆ Any cable ties, brackets or fasteners removed during repair work must be re-fitted at their original standard locations.
- ◆ Before fitting the outer joint in the wheel hub, apply a thin coat of assembly paste to the splines on the outer joint  
⇒ Electronic parts catalogue.
- ◆ When working on the vehicle, do not allow the drive shafts to hang down under their own weight and never let the joints bend to such an extent that they contact the end stop.
- ◆ Do not attempt to move the vehicle without the drive shafts fitted; this would result in wheel bearing damage. If moving the vehicle is unavoidable, note the following points:
  - ◆ Fit an outer joint in place of the drive shaft.
  - ◆ Tighten outer joint to 200 Nm.
- ◆ Bonded rubber bushes can only be turned to a limited extent. The suspension mountings must therefore only be tightened when the suspension is in the unladen position or normal level.
  - ◆ Lift suspension to unladen position ⇒ [s3.17 uspension to unladen position - vehicles with coil springs](#), page 14 or normal level ⇒ [s3.18 uspension to normal level - vehicles with air suspension](#), page 17 .
- ◆ Always renew bonded rubber bushes on both sides of vehicle.
- ◆ If the wheel alignment has to be checked and adjusted at a later stage, all bolts and nuts which need to be slackened to make adjustments should initially only be tightened to the specified torque figure. After wheel alignment has been checked and adjusted, bolts and nuts must then be fully tightened by turning them through the specified angle.

**⚠ CAUTION**

Risk of accident if bolts/nuts are not tightened as specified.  
– Always tighten bolts/nuts as specified before driving the vehicle on public roads.

### 3.10 General repair instructions

To avoid repetition, a number of generally applicable instructions for the various repair procedures are summarised here. They apply to the work described in this Manual.

- If a component has a defective bonded rubber bush, the bonded rubber bush must be renewed individually if it is available as a replacement part.
- Full renewal of a component with bonded rubber bush is only permissible if, for example, its basic structure or joint is damaged.

### 3.11 Contact corrosion

Contact corrosion can occur if unsuitable fasteners are used (e.g. bolts, nuts, washers, etc.).

For this reason, only fasteners with a special surface coating are fitted. permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability

Additionally, all rubber and plastic parts and all adhesives are made of non-conductive materials.

Always install new parts as listed in the Electronic parts catalogue if you are not sure whether used parts can be refitted.

- ◆ We recommend using only genuine replacement parts; these have been tested and are compatible with aluminium.
- ◆ We recommend the use of Audi accessories.
- ◆ Damage caused by contact corrosion is not covered by the warranty.

### 3.12 Steering rack

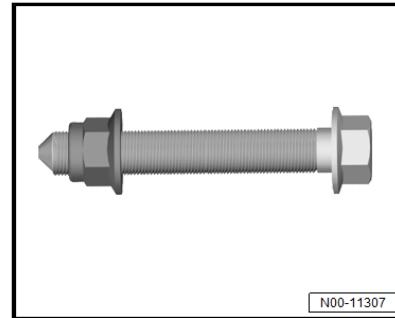
To achieve the desired results when performing repairs on the steering rack it is important to work with the greatest possible care and cleanliness, and to use proper tools in good condition. The usual basic safety precautions also naturally apply when carrying out repair work.

### 3.13 Gaskets, seals

- ◆ Always renew gaskets and seals.
- ◆ Check contact surface on housings or shafts for burrs and damage after removing the seals, and repair as required.
- ◆ Remove residues of liquid gaskets completely from sealing surfaces.

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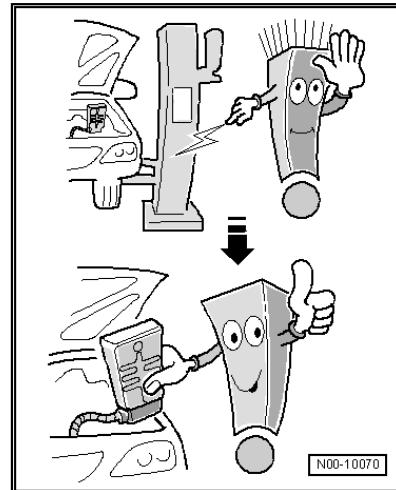
### 3.14 Nuts, bolts



- ◆ Loosen and tighten bolts and nuts securing covers and housings in diagonal sequence.
- ◆ Take care not to tilt sensitive components such as the servo motor with control unit when removing and installing; slacken off and tighten progressively in diagonal sequence.
- ◆ The tightening torques stated apply to non-oiled nuts and bolts.
- ◆ Always renew self-locking bolts/nuts.
- ◆ Always renew bolts and nuts which are tightened by turning through a specified angle.

### 3.15 Electrical components

You will, at some point, have experienced a slight electric shock when touching a metal object. This is due to the electrostatic charge accumulated by the human body. This charge can cause malfunctions if you touch the electric steering rack components.



- Before working on electrical components, touch an earthed object (e.g. water pipe or lifting platform). Do not touch the contact pins of the electrical connectors.

### 3.16 Repairing damaged threads in longitudinal member (subframe to body)

Instructions for repairing damaged threads ⇒ Body Repairs;  
Rep. gr. 50.

### 3.17 Lifting suspension to unladen position - vehicles with coil springs

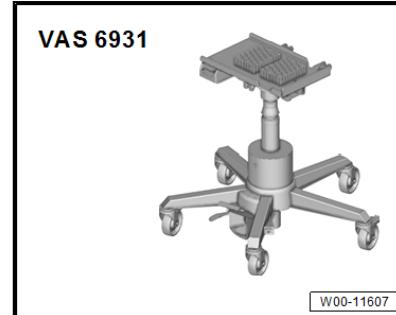
#### Note:

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All bolts on running gear components with bonded rubber bushes must always be tightened with the suspension in the unladen position. [u4.9 nladen position for wheel alignment - vehicles with coil springs](#), page 314.

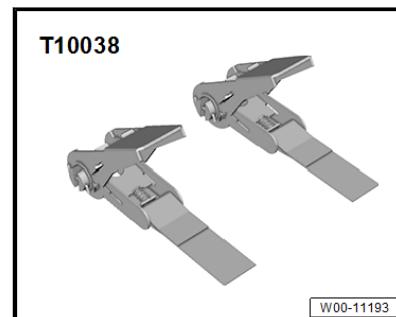
- ◆ Bonded rubber bushes can only be turned to a limited extent. Therefore, before tightening the bolts, suspension components with bonded rubber bushes must be brought into a position corresponding to the normal position while driving (unladen position).
- ◆ Otherwise, the bush would be subject to torsion loading and its service life would be shortened.
- ◆ This position can be simulated on the lifting platform by raising the appropriate part of the suspension with the engine and gearbox jack -VAS 6931- and support device -VAS 6931/1-.

#### Special tools and workshop equipment required

- ◆ Engine and gearbox jack -VAS 6931-



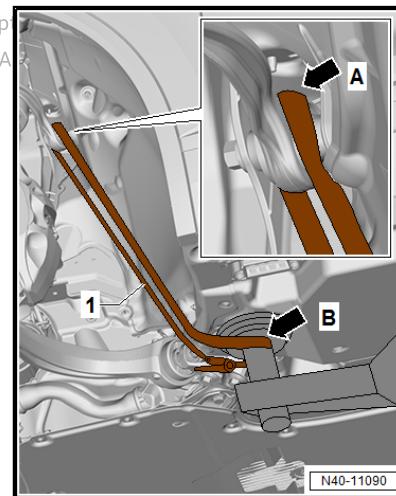
- ◆ Support device -VAS 6931/1- (not illustrated)
- ◆ Tensioning strap -T10038-



#### Procedure

- Determine unladen position [⇒ u4.9 nladen position for wheel alignment - vehicles with coil springs](#), page 314 .
- Make a note of the measured value. This will be needed when tightening the bolts and/or nuts.
- Before raising wheel unit, secure vehicle to arms of lifting platform using tensioning straps -T10038-.

**Front axle**  
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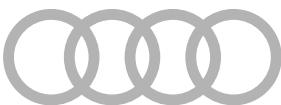
**CAUTION**

The vehicle could slip off the lifting platform.

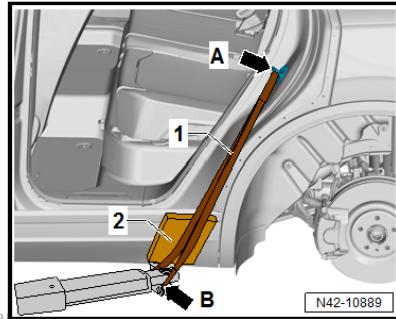
- Secure vehicle to lifting platform.

- On both sides, partly take up weight of vehicle with support arms of lifting platform -arrow B- with tensioning straps -T10038- -item 1- secured around mounting for upper link (rear) -arrow A-; to do so, place a piece of rubber -2- in between to protect the paintwork.

**Rear axle**



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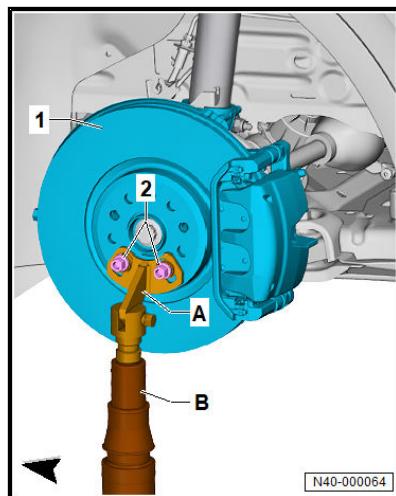
**The vehicle could slip off the lifting platform.**

- Secure vehicle to lifting platform.

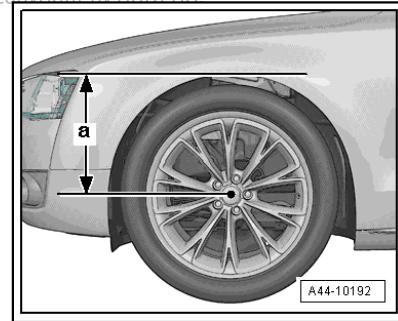
- On both sides, partly take up weight of vehicle with support arms of lifting platform -arrow B- with tensioning straps -T10038- -item 1- secured around striker -arrow A- of rear doors.

**Both axles (continued)**

- Remove wheel [t2 yes](#), page 303 .
- Fit support device -VAS 6931/1- -item A- to brake disc -1- with two wheel bolts -2-.



- Apply engine and gearbox support -VAS 6931- -item B- to support device.
- The bolts/nuts on the relevant suspension mountings must not be tightened until the distance between the wheel centre and the lower edge of the wing/wheel arch is the same as the distance measured before commencing work.
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- **Raise wheel bearing housing until distance -a- is obtained.**



### CAUTION

**Risk of accident if vehicle is lowered when engine and gearbox jack is positioned underneath.**

- Never lower the vehicle when the engine and gearbox jack is underneath it.
- Never leave the engine and gearbox jack under the vehicle for longer than necessary.

- Tighten relevant nuts and bolts.
- Lower wheel bearing housing.
- Move engine and gearbox jack -VAS 6931- aside.

#### Tightening torques

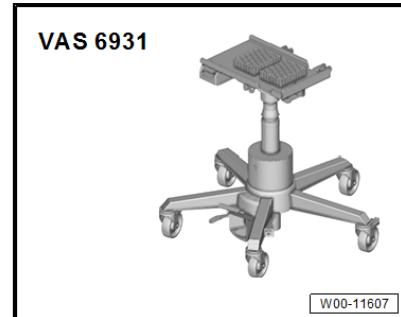
◆ [⇒ t2 yres", page 303](#)

### 3.18 Lifting suspension to normal level - vehicles with air suspension

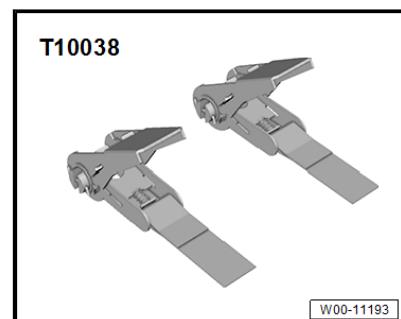
- All bolts on running gear components with bonded rubber bushes must always be tightened with the suspension at the normal level [⇒ n4.10 normal level for wheel alignment - vehicles with air suspension", page 317](#).
- ◆ Bonded rubber bushes can only be turned to a limited extent. Therefore, before tightening the bolts, suspension components with bonded rubber bushes must be brought into a position corresponding to the normal position of the unladen vehicle while driving (normal level).
- ◆ Otherwise, the bush would be subject to torsion loading and its service life shortened.
- ◆ This position can be simulated on the lifting platform by raising the appropriate part of the suspension with the engine and gearbox jack -VAS 6931- and support device -VAS 6931/1-.

#### Special tools and workshop equipment required

- ◆ Engine and gearbox jack -VAS 6931-



- ◆ Support device -VAS 6931/1- (not illustrated)
- ◆ Tensioning strap -T10038-



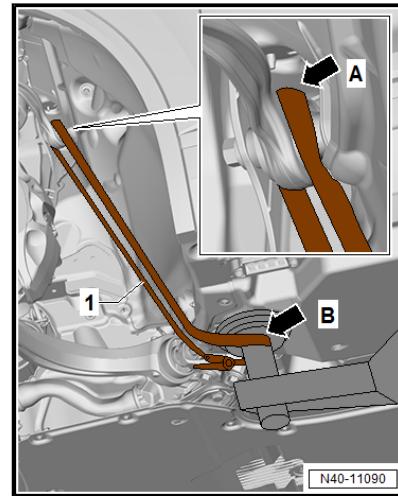
#### Procedure

- Vehicles with active suspension: Observe safety precautions [≥ p2.2 precautions when working on vehicles with active suspension](#), page 4 .
- Determine normal level [≥ n4.10 ormal level for wheel alignment - vehicles with air suspension](#), page 317 .
- Make a note of the measured value. This will be needed when tightening the bolts and/or nuts.
- Before raising wheel unit, secure vehicle to arms of lifting platform using tensioning straps -T10038-.



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### Front axle



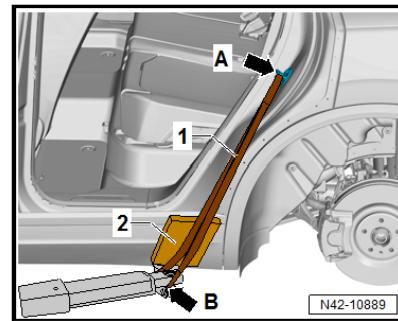
#### CAUTION

The vehicle could slip off the lifting platform.

- Secure vehicle to lifting platform.

- On both sides, partly take up weight of vehicle with support arms of lifting platform -arrow B- with tensioning straps -T10038- -1- secured around mounting for upper link (rear) -arrow A-.

### Rear axle



#### CAUTION

The vehicle could slip off the lifting platform.

- Secure vehicle to lifting platform.

- On both sides, partly take up weight of vehicle with support arms of lifting platform -arrow B- with tensioning straps -T10038- -item 1- secured around mounting for upper link (rear) -arrow A-; to do so, place a piece of rubber -2- in front of the mounting to protect the paintwork.

### Both axles (continued)

#### CAUTION

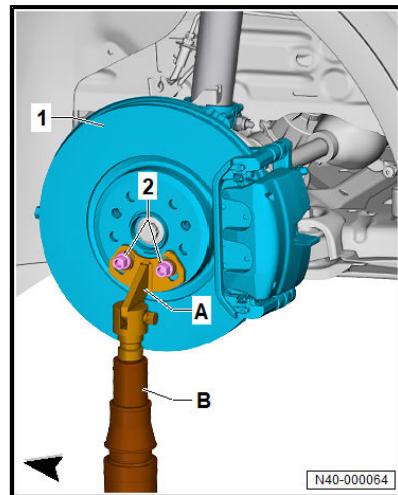
Risk of accident if vehicle slips off lifting platform due to spring force of air suspension.

The spring force of the air suspension remains unchanged when the vehicle is lifted onto the lifting platform.

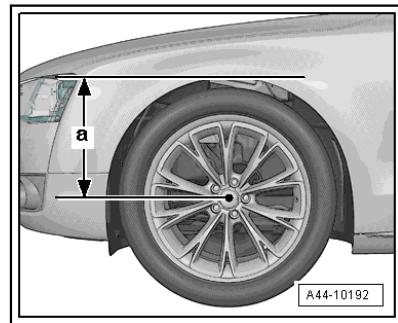
- Before lifting the suspension to the normal level, dissipate the spring force of the air suspension by bleeding the system completely.

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- Bleed air spring system [⇒ a3.7 nd\\_charging\\_air\\_spring\\_system", page 286](#).  
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- Remove wheel [⇒ i2 yres", page 303](#).
- Fit support device -VAS 6931/1- -item A- to brake disc -1- with two wheel bolts -2-.



- Apply engine and gearbox support -VAS 6931- -item B- to support device.
- Raise wheel bearing housing until distance -a- is obtained.



**⚠ CAUTION**

Risk of accident if vehicle is lowered when engine and gearbox jack is positioned underneath.

- Never lower the vehicle when the engine and gearbox jack is underneath it.
- Never leave the engine and gearbox jack under the vehicle for longer than necessary.

- Tighten relevant nuts and bolts.
- Lower wheel bearing housing.
- Move engine and gearbox jack -VAS 6931- aside.
- Charge air spring system [⇒ a3.7 nd charging air spring system", page 286](#).
- The vehicle must not be lowered from the lifting platform until the system has been recharged.

### 3.19 Raising and lowering vehicle when air spring system has/not been opened

#### Raising vehicle when air spring system has not been opened

- If there is not sufficient clearance for support arms, use "Raise" function to set high suspension level and activate "Jacking mode" before raising vehicle with lifting platform.

This procedure ensures that the support arms of the lifting platform can be moved under the vehicle and that there are no uncontrolled changes of the air suspension system settings.

- Position support arms of lifting platform below specified lifting points on longitudinal members and raise vehicle.

#### Lowering vehicle when air spring system has not been opened

- Lower lifting platform and set vehicle down on its wheels.
- Swivel back support arms of lifting platform.
- Deactivate "Jacking mode" and set desired drive mode.

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"Jacking mode" is also deactivated automatically at road speeds in excess of 10 km/h.

#### Raising vehicle when air spring system has been opened

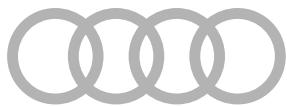
- If the vehicle has been raised and the air spring system has been opened, perform the steps listed under "Lowering vehicle when air spring system has been opened", in the sequence given, before lowering the vehicle back onto its wheels.

#### Lowering vehicle when air spring system has been opened

- Connect all air lines to affected components.
- Charge system [⇒ a3.7 nd charging air spring system", page 286](#).
- Lower vehicle onto its wheels.
- Deactivate "Jacking mode".

**Note:**

“Jacking mode” is also deactivated automatically at road speeds in excess of 10 km/h.



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## 4 Disposal

⇒ [g4.1 as and draining front gas-filled shock absorbers", page 23](#)

⇒ [g4.2 as and draining rear gas-filled shock absorbers", page 24](#)

⇒ [f4.3 front suspension strut \(air suspension\)", page 25](#)

⇒ [a4.4 accumulator", page 25](#)

### 4.1 Releasing gas and draining front gas-filled shock absorbers

Special tools and workshop equipment required

- ◆ Hand-held drill
- ◆ Drill bit, Ø 3 mm
- ◆ Drill bit, Ø 6 mm
- ◆ Drip tray
- ◆ Safety goggles

#### Procedure

- Clamp gas-filled shock absorber vertically in vice, with piston rod pointing downwards.

#### CAUTION

Risk of injury caused by flying metal shavings.

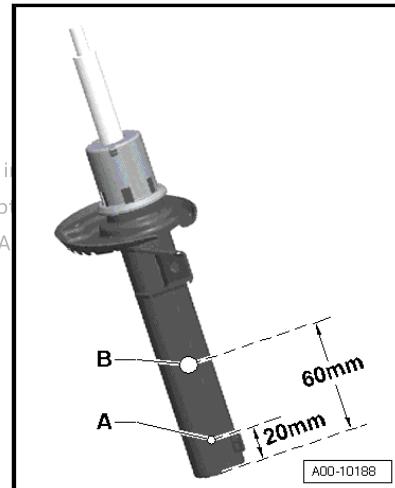
Eyes and skin can suffer irritation or injuries.

- Put on safety goggles.
- Put on protective gloves.

- Drill a 3 mm Ø hole -item A- through outer tube of shock absorber.



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#### Note:

Gas will escape during drilling.

- Continue drilling until inner tube is fully penetrated (approx. 25 mm deep).
- Drill a second hole (6 mm Ø) -item B- through outer and inner tubes of shock absorber.
- Hold shock absorber over a drip tray and move piston rod up and down several times through entire stroke until no more fluid comes out.

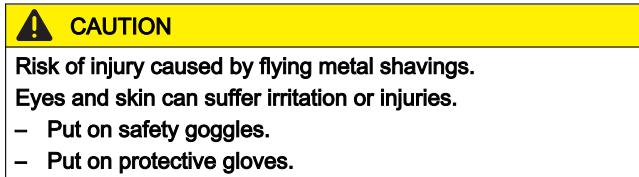
## 4.2 Releasing gas and draining rear gas-filled shock absorbers

### Special tools and workshop equipment required

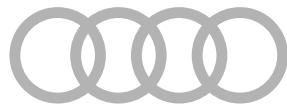
- ◆ Hand-held drill
- ◆ Drill bit, Ø 3 mm
- ◆ Drill bit, Ø 6 mm
- ◆ Drip tray
- ◆ Safety goggles

### Procedure

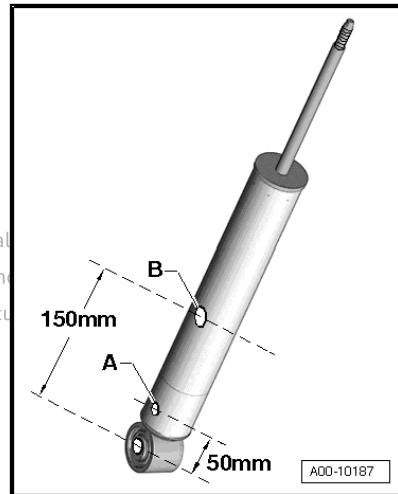
- Clamp gas-filled shock absorber vertically in vice, with piston rod pointing downwards.



- Drill a 3 mm Ø hole -item A- through outer tube of shock absorber.



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### Note:

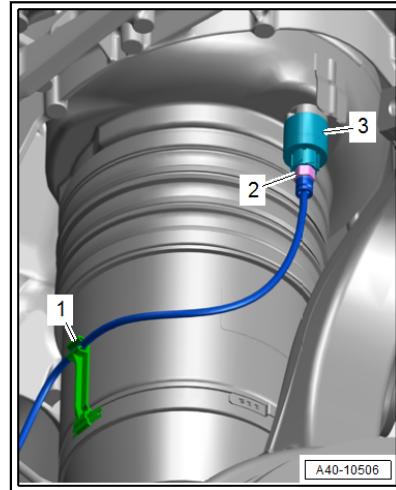
Gas will escape during drilling.

- Continue drilling until inner tube is fully penetrated (approx. 25 mm deep).

- Drill a second hole (6 mm Ø) -item B- through outer and inner tubes of shock absorber.
- Hold shock absorber over a drip tray and move piston rod up and down several times through entire stroke until no more fluid comes out.

#### 4.3 Discharging front suspension strut (air suspension)

##### Procedure



- Remove air springs:
  - ◆ Front [⇒ a5.2 nd installing suspension strut](#), page 87
  - ◆ Rear [⇒ a6.2 nd installing shock absorber](#), page 229
- Release residual pressure valve -3- on air spring to dissipate air pressure.
- Dispose of air spring.

##### Note:

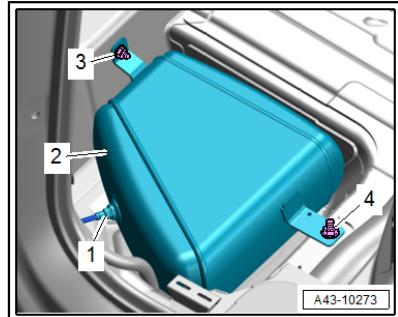
- ◆ The front air spring is shown installed as an example.
- ◆ When unscrewing the air pipe from a component, check whether the cutting ring is seated on the air pipe.

#### 4.4 Discharging accumulator

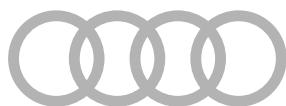
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- Bleed system [⇒ a3.7 nd charging air spring system](#), page 286.
- Switch off ignition.
- Remove air duct for vent in B-pillar ⇒ General body repairs, interior; Rep. gr. 70; Passenger compartment trim panels; Assembly overview - B-pillar trim.
- Slowly loosen air pipe -1- at accumulator -2- to dissipate air pressure. Unscrew air pipe when air pressure has been dissipated.



- Remove and dispose of accumulator [⇒ a3.16 nd installing accumulator", page 301](#).
- When unscrewing the air pipe from a component, check whether the cutting ring is seated on the air pipe.



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## 5 Electrical components

[⇒ d5.1 diagnosis", page 27](#)

### 5.1 Starting diagnosis

- ◆ 1. Setting normal level and permanently disabling control
- ◆ 2. Basic setting complete
- ◆ 3. Bleed air spring system
- ◆ 4. Charge air spring system
- ◆ 5. Replace running gear control unit -J775-
- ◆ 6. Initiate roll stabilisation for front axle
- ◆ 7. Replace roll stabiliser control unit -J924- for front axle
- ◆ 8. Initiate roll stabilisation for rear axle
- ◆ 9. Replace roll stabiliser control unit 2 -J1096- for rear axle
- ◆ 10. Calibration of steering angle sender -G85-
- ◆ 11. Replace steering column electronics control unit -J527-
- ◆ 12. Basic setting for control unit for electrically adjustable steering column -J866-
- ◆ 13. Replace control unit for electronic steering column lock -J764-
- ◆ 14. Replace steering rack together with power steering control unit -J500-
- ◆ 15. Re-adapt end stops of steering rack
- ◆ 16. Bring rear wheel steering rack into zero position
- ◆ 17. Replace rear wheel steering rack together with rear wheel steering control unit -J1019-

#### 1. Setting normal level and permanently disabling control

Audi Q7	Audi Q8
<ul style="list-style-type: none"> <li>◆ Running gear</li> <li>◆ 0001 - Self-diagnosis compatible systems</li> <li>◆ 0074 - Chassis control unit J775</li> <li>◆ 0074 - Chassis control unit, functions</li> <li>◆ 0074 - Basic setting unless authorised by AUDI AG.</li> <li>◆ 0074 - Set normal level and permanently disable control</li> </ul>	<ul style="list-style-type: none"> <li>◆ Diagnostic capable system</li> <li>◆ 0074 - Chassis control J775</li> <li>◆ 0074 - Chassis control, functions</li> <li>◆ 0074 - Basic setting</li> <li>◆ 0074 - Set normal level and permanently disable control</li> </ul>

## 2. Basic setting complete

Audi Q7	Audi Q8
<ul style="list-style-type: none"> <li>◆ Running gear</li> <li>◆ 0001 - Self-diagnosis compatible systems</li> <li>◆ 0074 - Chassis control unit J775</li> <li>◆ 0074 - Chassis control unit, functions</li> <li>◆ 0074 - Basic setting</li> <li>◆ 0074 - Basic setting complete</li> </ul>	<ul style="list-style-type: none"> <li>◆ Diagnostic capable system</li> <li>◆ 0074 - Chassis control J775</li> <li>◆ 0074 - Chassis control, functions</li> <li>◆ 0074 - Basic setting</li> <li>◆ 0074 - Basic setting complete</li> </ul>

## 3. Bleed air spring system

Audi Q7	Audi Q8
<ul style="list-style-type: none"> <li>◆ Running gear</li> <li>◆ 0001 - Self-diagnosis compatible systems</li> <li>◆ 0074 - Chassis control unit J775</li> <li>◆ 0074 - Chassis control unit, functions</li> <li>◆ 0074 - Basic setting</li> <li>◆ 0074 - Bleed air spring struts</li> </ul>	<ul style="list-style-type: none"> <li>◆ Diagnostic capable system</li> <li>◆ 0074 - Chassis control J775</li> <li>◆ 0074 - Chassis control, functions</li> <li>◆ 0074 - Basic setting</li> <li>◆ 0074 - Bleed air spring struts</li> </ul>

## 4. Charge air spring system

Audi Q7	Audi Q8
<ul style="list-style-type: none"> <li>◆ Running gear</li> <li>◆ 0001 - Self-diagnosis compatible systems</li> <li>◆ 0074 - Chassis control unit J775</li> <li>◆ 0074 - Chassis control unit, functions</li> <li>◆ 0074 - Basic setting</li> <li>◆ 0074 - Charge air spring struts</li> </ul>	<ul style="list-style-type: none"> <li>◆ Diagnostic capable system</li> <li>◆ 0074 - Chassis control J775</li> <li>◆ 0074 - Chassis control, functions</li> <li>◆ 0074 - Basic setting</li> <li>◆ 0074 - Charge air spring struts</li> </ul>

## 5. Replace running gear control unit -J775-

Audi Q7	Audi Q8
<ul style="list-style-type: none"> <li>◆ Running gear permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.</li> <li>◆ 0001 - Self-diagnosis compatible systems</li> <li>◆ 0074 - Chassis control unit J775</li> <li>◆ 0074 - Chassis control unit, functions</li> <li>◆ 0074 - Replace control unit</li> </ul>	<ul style="list-style-type: none"> <li>◆ Diagnostic capable system</li> <li>◆ 0074 - Chassis control J775</li> <li>◆ 0074 - Chassis control, functions</li> <li>◆ 0074 - Replace control unit</li> </ul>

## 6. Initiate roll stabilisation for front axle

Audi Q7	Audi Q8
<ul style="list-style-type: none"> <li>◆ Running gear</li> <li>◆ 0001 - Self-diagnosis compatible systems</li> <li>◆ 00D4 - Roll stabilisation control unit J924 (front axle)</li> <li>◆ 00D4 - Roll stabilisation control unit (front axle), functions</li> <li>◆ 00D4 - Basic setting</li> <li>◆ 00D4 - Commissioning</li> </ul>	<ul style="list-style-type: none"> <li>◆ Diagnostic capable system</li> <li>◆ 00D4 - Roll stabilisation control unit J924 (front axle)</li> <li>◆ 00D4 - Roll stabilisation control unit (front axle), functions</li> <li>◆ 00D4 - Basic setting</li> <li>◆ 00D4 - Commissioning</li> </ul>

## 7. Replace roll stabiliser control unit -J924- for front axle

Audi Q7	Audi Q8
<ul style="list-style-type: none"> <li>◆ Running gear</li> <li>◆ 0001 - Self-diagnosis compatible systems</li> <li>◆ 00D4 - Roll stabilisation control unit J924 (front axle)</li> <li>◆ 00D4 - Roll stabilisation control unit (front axle), functions</li> <li>◆ 00D4 - Replace control unit</li> </ul>	<ul style="list-style-type: none"> <li>◆ Diagnostic capable system</li> <li>◆ 00D4 - Roll stabilisation control unit J924 (front axle)</li> <li>◆ 00D4 - Roll stabilisation control unit (front axle), functions</li> <li>◆ 00D4 - Replace control unit</li> </ul>

## 8. Initiate roll stabilisation for rear axle

Audi Q7	Audi Q8
<ul style="list-style-type: none"> <li>◆ Running gear</li> <li>◆ 0001 - Self-diagnosis compatible systems</li> <li>◆ 00D5 - Roll stabilisation control unit J1096 (rear axle)</li> <li>◆ 00D5 - Roll stabilisation control unit (rear axle), functions</li> <li>◆ 00D5 - Basic setting</li> <li>◆ 00D5 - Commissioning</li> </ul> <p><small>Prohibited copying or reproduction of part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.</small></p>	<ul style="list-style-type: none"> <li>◆ Diagnostic capable system</li> <li>◆ 00D5 - Roll stabilisation control unit J1096 (rear axle)</li> <li>◆ 00D5 - Roll stabilisation control unit (rear axle), functions</li> <li>◆ 00D5 - Basic setting</li> <li>◆ 00D5 - Commissioning</li> </ul>

## 9. Replace roll stabiliser control unit 2 -J1096- for rear axle

Audi Q7	Audi Q8
<ul style="list-style-type: none"> <li>◆ Running gear</li> <li>◆ 0001 - Self-diagnosis compatible systems</li> <li>◆ 00D5 - Roll stabilisation control unit J1096 (front axle)</li> <li>◆ 00D5 - Roll stabilisation control unit (rear axle), functions</li> <li>◆ 00D5 - Replace control unit</li> </ul>	<ul style="list-style-type: none"> <li>◆ Diagnostic capable system</li> <li>◆ 00D5 - Roll stabilisation control unit J1096 (front axle)</li> <li>◆ 00D5 - Roll stabilisation control unit (rear axle), functions</li> <li>◆ 00D5 - Replace control unit</li> </ul>

#### 10. Calibration of steering angle sender -G85-

Audi Q7	Audi Q8
<ul style="list-style-type: none"> <li>◆ Electrical system</li> <li>◆ 0001 - Self-diagnosis compatible systems</li> <li>◆ 0016 - Steering wheel electronics -J527</li> <li>◆ 0016 - Steering column electronics control unit, functions</li> <li>◆ 0016 - Calibration of steering angle sender -G85</li> </ul> <p style="text-align: center;">Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted.</p>	<ul style="list-style-type: none"> <li>◆ Diagnostic capable system</li> <li>◆ 0016 - Steering column electronics -J527</li> <li>◆ 0016 - Functions</li> <li>◆ 0016 - Calibration of steering angle sender -G85</li> </ul> <p style="text-align: center;">Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted.</p>

#### 11. Replace steering column electronics control unit -J527-

Audi Q7	Audi Q8
<ul style="list-style-type: none"> <li>◆ Electrical system</li> <li>◆ 0001 - Self-diagnosis compatible systems</li> <li>◆ 0016 - Steering wheel electronics -J527</li> <li>◆ 0016 - Steering column electronics control unit, functions</li> <li>◆ 0016 - Replace control unit</li> </ul>	<ul style="list-style-type: none"> <li>◆ Diagnostic capable system</li> <li>◆ 0016 - Steering column electronics -J527</li> <li>◆ 0016 - Functions</li> <li>◆ 0016 - Replace control unit</li> </ul>

#### 12. Basic setting for control unit for electrically adjustable steering column -J866-

Audi Q7	Audi Q8
<ul style="list-style-type: none"> <li>◆ Electrical system</li> <li>◆ 0001 - Self-diagnosis compatible systems</li> <li>◆ 0009 - Vehicle Electrical System Control Module -J519</li> <li>◆ 0009 - Power Adjustable Steering Column Control Module</li> <li>◆ 0009 - J866 - Power Steering Column Control Module, basic setting</li> </ul>	<ul style="list-style-type: none"> <li>◆ Diagnostic capable system</li> <li>◆ 0009 - Vehicle Electrical System Control Module -J519</li> <li>◆ 0009 - Power Adjustable Steering Column Control Module -J866</li> <li>◆ 0009 - J866 - Power Steering Column Control Module, basic setting</li> </ul>

#### 13. Replace control unit for electronic steering column lock -J764-

Audi Q7	Audi Q8
<ul style="list-style-type: none"> <li>◆ Electrical system</li> <li>◆ 0001 - Self-diagnosis compatible systems</li> <li>◆ 002B - Electronic steering column lock J764</li> <li>◆ 002B - Electronic steering column lock functions</li> <li>◆ 002B - Replace control unit</li> </ul>	<ul style="list-style-type: none"> <li>◆ Diagnostic capable system</li> <li>◆ 002B - Electronic steering column lock J764</li> <li>◆ 002B - Electronic steering column lock functions</li> <li>◆ 002B - Replace control unit</li> </ul>

**14. Replace steering rack together with power steering control unit -J500-**

Audi Q7	Audi Q8
<ul style="list-style-type: none"> <li>◆ Running gear</li> <li>◆ 0001 - Self-diagnosis compatible systems</li> <li>◆ 0044 - Power steering control unit J500</li> <li>◆ 0044 - Power steering control module, functions</li> <li>◆ 0044 - Replace control unit</li> </ul>	<ul style="list-style-type: none"> <li>◆ Diagnostic capable system</li> <li>◆ 0044 - Power steering control unit J500</li> <li>◆ 0044 - Power steering control module, functions</li> <li>◆ 0044 - Replace control unit</li> </ul>

**15. Re-adapt end stops of steering rack**

Audi Q7	Audi Q8
<ul style="list-style-type: none"> <li>◆ Running gear</li> <li>◆ 0001 - Self-diagnosis compatible systems</li> <li>◆ 0044 - Power steering control unit J500</li> <li>◆ 0044 - Power steering control module, functions</li> <li>◆ 0044 - Basic setting</li> </ul> <p><small>Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.</small></p>	Not required because "Replace power steering control module -J500" included in program <a href="#">⇒ page 31</a>

**16. Bring rear wheel steering rack into zero position**

Audi Q7	Audi Q8
<ul style="list-style-type: none"> <li>◆ Running gear</li> <li>◆ 0001 - Self-diagnosis compatible systems</li> <li>◆ 00CB - Rear axle steering J1019</li> <li>◆ 00CB - Rear wheel steering control unit, functions</li> <li>◆ 00CB - Adaption</li> </ul>	<ul style="list-style-type: none"> <li>◆ Diagnostic capable system</li> <li>◆ 00CB - Rear axle steering J1019</li> <li>◆ 00CB - Rear wheel steering control unit, functions</li> <li>◆ 00CB - Adaption</li> </ul>

**17. Replace rear wheel steering rack together with rear wheel steering control unit -J1019-**

Audi Q7	Audi Q8
<ul style="list-style-type: none"> <li>◆ Running gear</li> <li>◆ 0001 - Self-diagnosis compatible systems</li> <li>◆ 00CB - Rear axle steering J1019</li> <li>◆ 00CB - Rear wheel steering control unit, functions</li> <li>◆ 00CB - Replace control unit</li> </ul>	<ul style="list-style-type: none"> <li>◆ Diagnostic capable system</li> <li>◆ 00CB - Rear axle steering J1019</li> <li>◆ 00CB - Rear wheel steering control unit, functions</li> <li>◆ 00CB - Replace control unit</li> </ul>

## 40 – Front suspension

### 1 Safety information

Observe safety information [⇒ i2 nformation", page 4](#).



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## 2 Front axle

⇒ [-2.1 front axle", page 33](#)

### 2.1 Overview - front axle

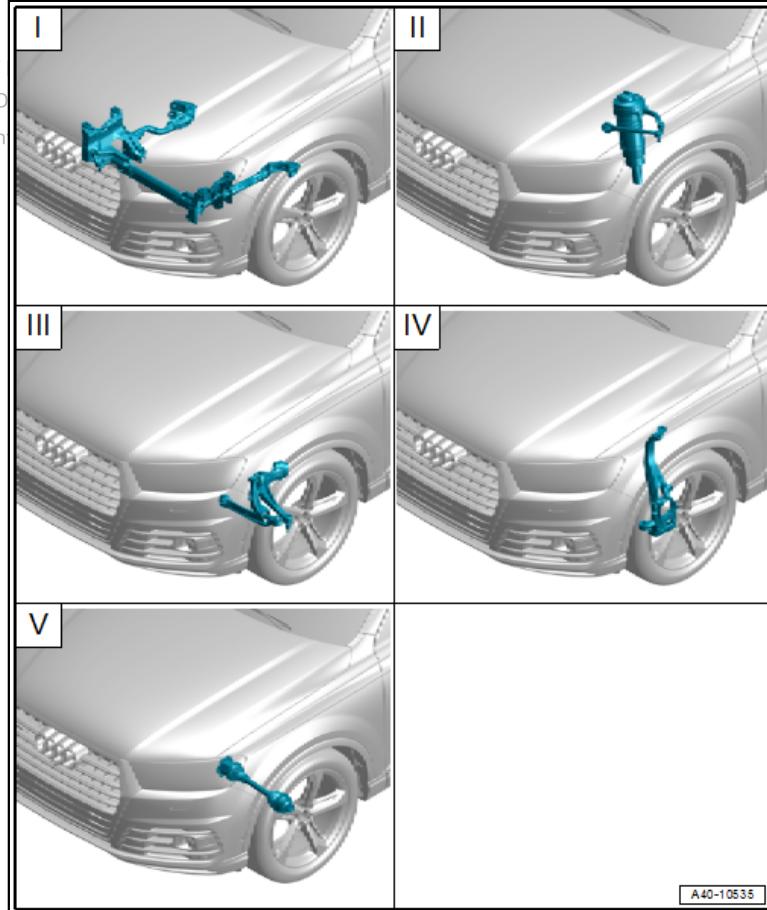
I - ⇒ [3 , page 34](#)

II - ⇒ [s5 strut, upper suspension links", page 78](#)

III - ⇒ [s6 suspension links, swivel joint", page 111](#)

IV - ⇒ [b7 earing", page 131](#)

V - ⇒ [s8 haft", page 143](#)



A40-10535



### 3 Subframe

- ⇒ [o3.1 overview + subframe", page 34](#)
- ⇒ [s3.2 ubframe in position", page 38](#)
- ⇒ [s3.3 ubframe", page 41](#)
- ⇒ [a3.4 nd installing subframe with steering rack", page 46](#)
- ⇒ [a3.5 nd installing subframe cross brace", page 56](#)
- ⇒ [a3.6 nd installing subframe shield", page 59](#)

#### 3.1 Assembly overview - subframe

- ⇒ [o3.1.1 overview - subframe, version without roll stabilisation", page 34](#)
- ⇒ [o3.1.2 overview - subframe, version with roll stabilisation", page 36](#)

##### 3.1.1 Assembly overview - subframe, version without roll stabilisation

**1 - Bolt**

- 20 Nm

**2 - Subframe cross brace**

- Different versions available ⇒ Electronic parts catalogue
- Safety precautions ⇒ [p2.5 precautions when working on the subframe", page 5](#)
- Removing and installing ⇒ [a3.5 nd installing subframe cross brace", page 56](#)

**3 - Subframe**

- Fixing in position ⇒ [s3.2 ubframe in position", page 38](#)
- Lowering ⇒ [s3.3 ubased bframe", page 41](#) with respect to the correctness
- Removing and installing ⇒ [a3.4 nd installing subframe with steering rack", page 46](#)
- The subframe must be pre-adjusted if it has been renewed or if it has been removed and the cross brace has been loosened for subsequent work ⇒ [page 55](#).

**4 - Bracket**

- For electrical wiring harness

**5 - Bolt**

- 9 Nm

**6 - Bolt/nut**

- 5 Nm

**7 - Shield (top section)**

- Removing and installing ⇒ [a3.6.2 nd installing two-piece subframe shield", page 59](#)

**8 - Shield (bottom section)**

- Removing and installing ⇒ [a3.6.2 nd installing two-piece subframe shield", page 59](#)

**9 - Nut**

- For vehicles with high-voltage system
- 5 Nm

**10 - Bolt**

- 9 Nm

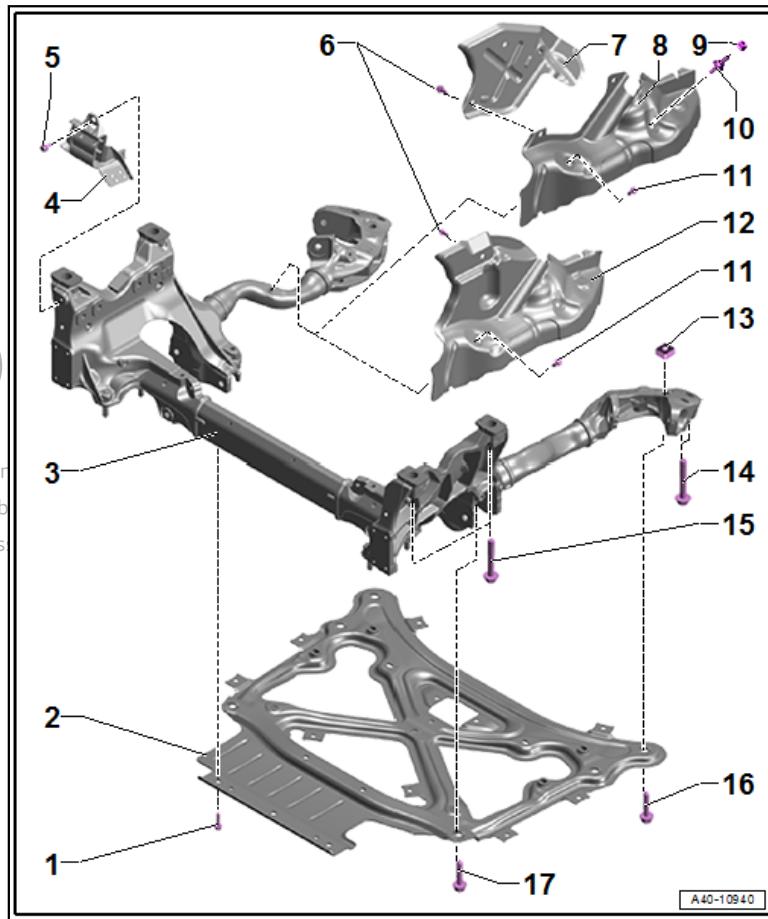
**11 - Bolt**

- 9 Nm

**12 - Shield**

- Removing and installing ⇒ [a3.6 nd installing subframe shield", page 59](#)

**13 - Square nut**



- Renew after removing

**14 - Bolt**

- Renew after removing
- Unscrew and tighten together with -item 15- in several stages in diagonal sequence
- 130 Nm +180°

**15 - Bolt**

- Renew after removing
- Unscrew and tighten together with -item 14- in several stages in diagonal sequence
- 115 Nm +90°

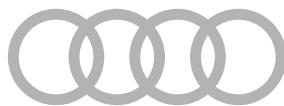
**16 - Bolt**

- 42 mm long
- Renew after removing
- 90 Nm +135°

**17 - Bolt**

- 51 mm long
- Renew after removing
- 90 Nm +90°

**3.1.2 Assembly overview - subframe, version with roll stabilisation**



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**1 - Bolt**

- 20 Nm

**2 - Subframe cross brace**

- Safety precautions [⇒ p2.5 precautions when working on the subframe](#), page 5
- Removing and installing [⇒ a3.5 nd installing subframe cross brace](#), page 56

**3 - Bolt**

**4 - Nut**

- 20 Nm

**5 - Bolt**

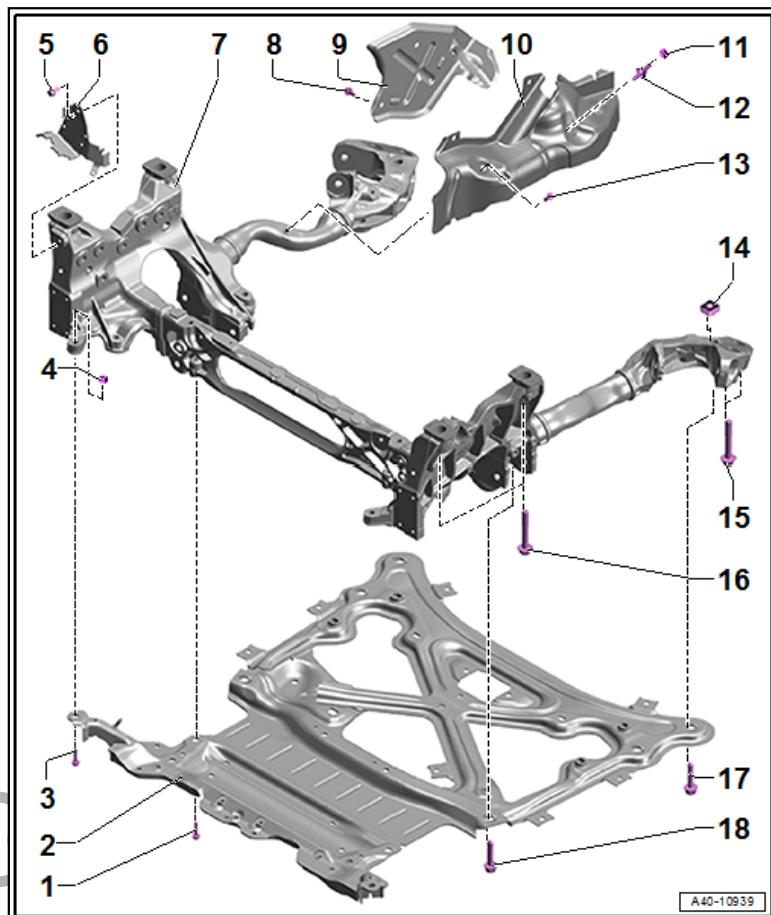
- 9 Nm

**6 - Bracket**

- For electrical wiring harness

**7 - Subframe**

- Fixing in position [⇒ s3.2 ubframe in position](#), page 38
- Lowering [⇒ s3.3 ubframe](#), page 41
- Removing and installing [⇒ a3.4 nd installing subframe with steering rack](#), page 46
- The subframe must be pre-adjusted if it has been renewed or if it has been removed and the cross brace has been loosened [for subsequent work](#) [⇒ page 55](#).



**8 - Bolt**

- 5 Nm

**9 - Shield (top section)**

- Removing and installing [⇒ a3.6.2 nd installing two-piece subframe shield](#), page 59

**10 - Shield (bottom section)**

- Removing and installing [⇒ a3.6.2 nd installing two-piece subframe shield](#), page 59

**11 - Nut**

- For vehicles with high-voltage system
- 5 Nm

**12 - Bolt**

- 9 Nm

**13 - Bolt**

- 9 Nm

**14 - Square nut**

- Renew after removing

**15 - Bolt**

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- Renew after removing
- Unscrew and tighten together with -item 16- in several stages in diagonal sequence
- 130 Nm +180°

**16 - Bolt**

- Renew after removing
- Unscrew and tighten together with -item 15- in several stages in diagonal sequence
- 115 Nm +90°

**17 - Bolt**

- 42 mm long
- Renew after removing
- 90 Nm +135°

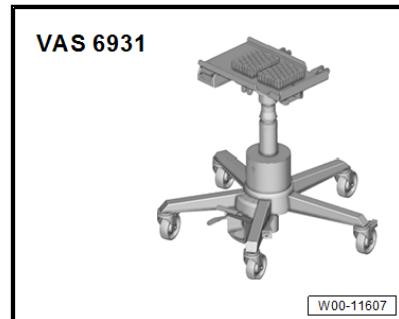
**18 - Bolt**

- 51 mm long
- Renew after removing
- 90 Nm +90°

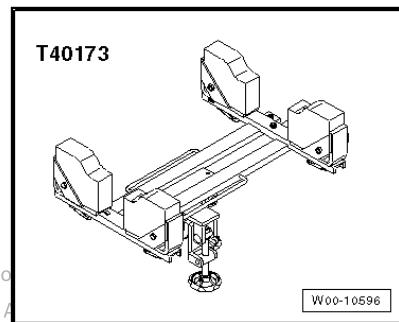
### 3.2 Fixing subframe in position

**Special tools and workshop equipment required**

- ◆ Engine and gearbox jack -VAS 6931-



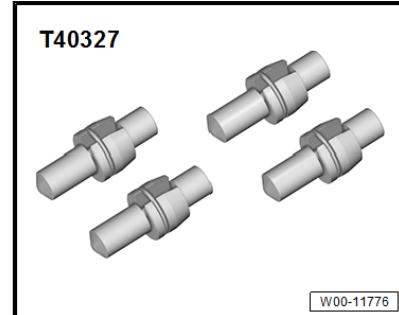
- ◆ Gearbox support -T40173-



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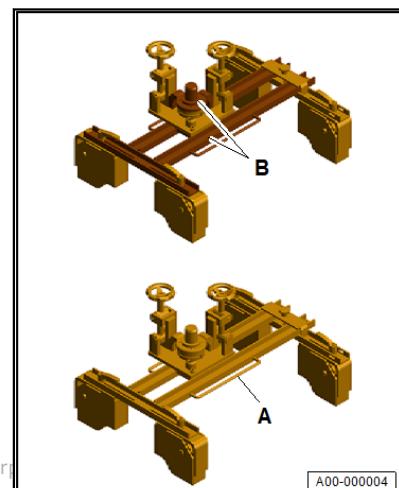
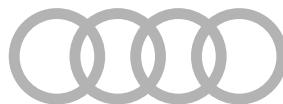
◆ Locating pins -T40327-



**Procedure**

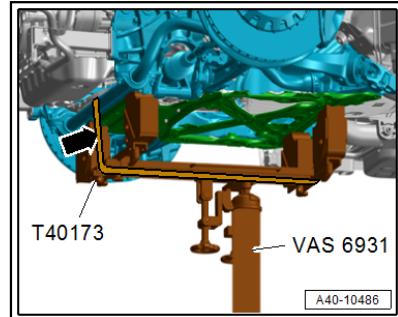
- Vehicles with active suspension: Observe safety precautions  
⇒ p.2.2 recautions when working on vehicles with active sus-  
pension", page 4 .
- Support engine in installation position ⇒ Rep. gr. 10; Assembly mountings; Supporting engine in installation position.
- Remove front wheels ⇒ page 303 .
- Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; Assembly overview - noise insulation.
- Remove front section of wheel housing liner (both sides)  
⇒ General body repairs, exterior; Rep. gr. 66; Wheel housing liners; Assembly overview - front wheel housing liner.

**Important**



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- Use gearbox support -T40173- with yellow-chromated base plate and swivel head -B- or valid CE marking -A-.
- Support subframe using engine and gearbox jack -VAS 6931- and gearbox support -T40173-. (Illustration shows a vehicle without roll stabilisation.)

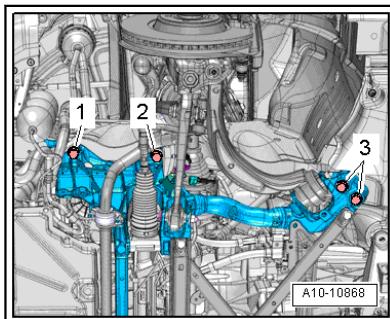


- Secure subframe with tensioning strap -arrow-.

 **NOTICE**

Risk of damage to threads in body due to improper handling.

- Never use an impact wrench to loosen or tighten.
- Fit bolts by hand only; make the first few turns by hand.
- To fix position of subframe, locating pins -T40327- must be screwed in one after the other on left and right at positions -1, 2-.



- The locating pins must not be tightened to more than 20 Nm; otherwise the threads of the pins will be damaged.
  - The holes in the subframe are peened slightly from the ribbed washers of the securing bolts; it may be necessary to de-burr them.
  - Fit locating pins -T40327- one after the other in place of securing bolts -1, 2- on both sides of the vehicle and tighten to 20 Nm.
  - The position of the subframe is now fixed.
  - Remove bolts -3- on both sides.
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**Removing locating pins -T40327-**

Removal is performed in reverse sequence; note the following:

- Working in a diagonal sequence, unscrew only one locating pin at a time. Screw in a new bolt in its place and tighten.

 **NOTICE**

Risk of damage to threads in body due to improper handling.

- Never use an impact wrench to loosen or tighten.
- Fit bolts by hand only; make the first few turns by hand.

- Remove engine support bracket -10-222A- ⇒ Rep. gr. 10; Assembly mountings; Supporting engine in installation position.

#### CAUTION

Risk of accident if bolts/nuts are not tightened as specified.

- Always tighten bolts/nuts as specified before driving the vehicle on public roads.

- Perform test drive after completing repair work. Wheel alignment must be checked and adjusted if the steering wheel is not straight [⇒ a4 alignment", page 305](#).

#### Tightening torques

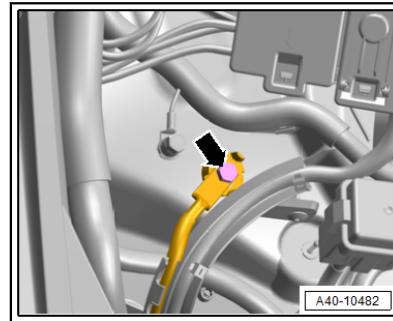
- ◆ [⇒ o3.1 overview - subframe", page 34](#)
- ◆ [⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; Assembly overview - noise insulation](#)
- ◆ [⇒ General body repairs, exterior; Rep. gr. 66; Wheel housing](#)  
Prüfungen; Assembly overview; front wheel housing liner purposes, in part or in whole, is not  
[⇒ t2 yes", page 303](#)
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### 3.3 Lowering subframe

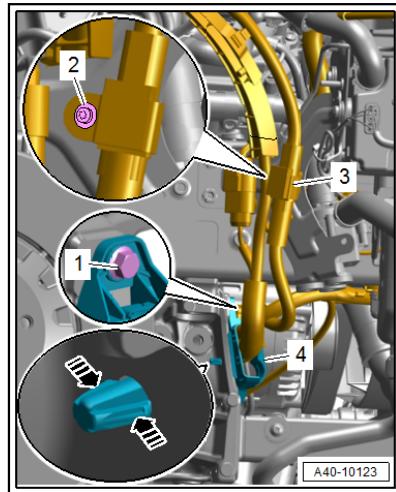
#### Procedure

- Vehicles with active suspension: Observe safety precautions [⇒ p2.2 recatutions when working on vehicles with active sus-](#)  
[pension", page 4](#).
- Equipment version with coil springs: ascertain unladen position [⇒ s3.17 uspension to unladen position - vehicles with coil springs", page 14](#).
- Equipment version with air suspension: ascertain normal level [⇒ s3.18 uspension to normal level - vehicles with air suspension", page 17](#).
- Remove noise insulation (front) ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; Assembly overview - noise insulation.

#### Version without roll stabilisation:



- Remove bolt -arrow- and move earth wire clear.
- Remove bolt -2-.



- Unplug electrical connector -3- and move wiring clear.

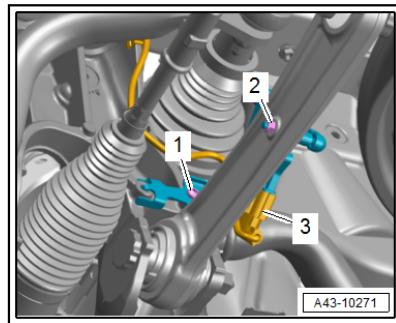
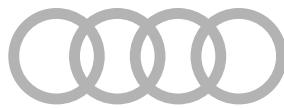
**All vehicles (continued):**

- Remove bolt -1-.
- Release catches -arrows- and move bracket -4- for electrical wiring clear at subframe.

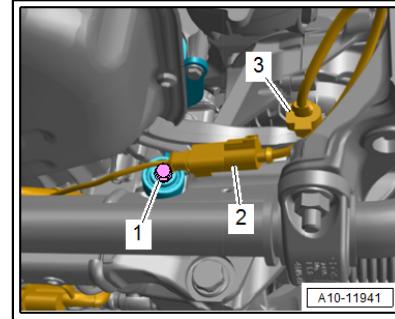
**Note:**

Illustration shows installation position on a vehicle without auxiliary heater as an example.

- Move electrical wiring leading to steering rack and to anti-roll bar clear.
- Fix subframe in position [⇒ s3.2 ubframe in position](#), page 38 .
- Remove front longitudinal member (bottom) on both sides  
→ General body repairs, exterior; Rep. gr. 50; Lock carrier; Assembly overview - lock carrier.
- Unplug electrical connector -3- from vehicle level sender on both sides. Move electrical wiring clear.



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 – Unplug electrical connectors -3- (left and right) for electrohydraulic engine mounting solenoid valves. AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.

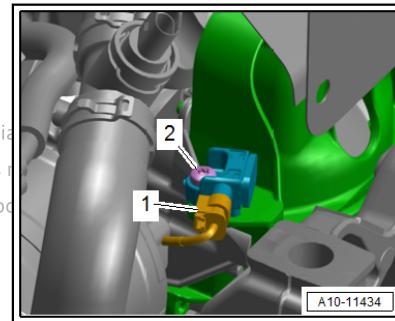


- Detach electrical connector -2- from bracket and unplug.
- Move electrical wiring clear.
- Equipment version with support mountings: Unscrew bolts -1- (left and right) for support mountings.

**On relevant equipment versions:**

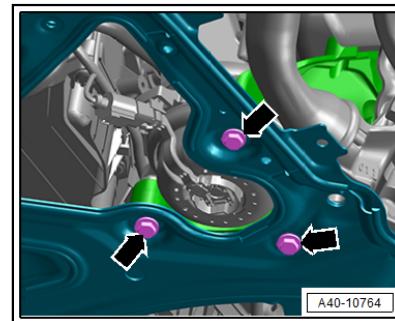


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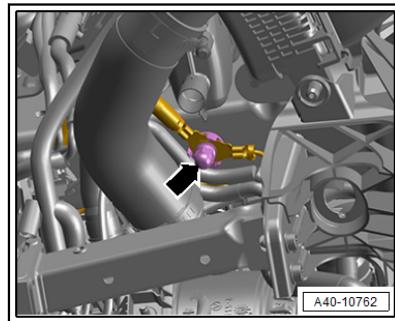
- If fitted, unplug electrical connector -1- from power unit mounting sender with power unit mounting actuator on both sides.

**Version with gearbox mountings (side):**

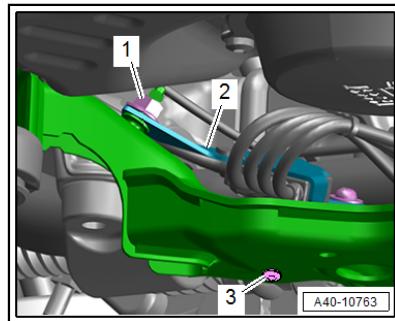


- Remove bolts -arrows- on both sides.

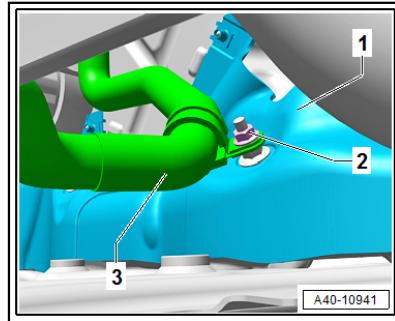
**Version with roll stabilisation:**



- Remove nut -arrow-. Move earth wire for roll stabilisation clear.
- Unscrew nut -1- and remove bolt -3-. Move bracket -2- with electrical wiring clear.



**Left-hand drive vehicles with high-voltage system:**



- Unscrew nut -2- on right side of vehicle.

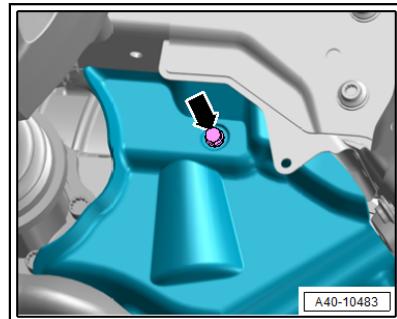
**RS Q8, vehicles with high-voltage system:**

- Unscrew nut -2- on left side of vehicle.

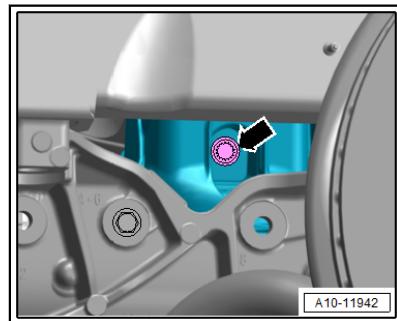
**All vehicles (continued):**

- Move hose -3- clear at shield (bottom section) -1-.
- Remove bolt -arrow- for subframe shield on both sides.

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- Detach intermediate steering shaft from steering rack and slide shaft together [⇒ a3.5 nd installing intermediate steering shaft](#), page 369 .
- Remove bolt -arrow- for engine mounting on both sides; if necessary, move electrical wiring clear at longitudinal member to do so.



- Lower subframe with engine and gearbox jack -VAS 6931-.
- When lowering subframe, make sure there is enough clearance for electrical wiring.
- The drive shafts must not make contact with the suspension struts.

#### Installing

Installation is carried out in reverse order; note the following:

- Remove locating pins -T40327- [⇒ s3.2 ubframe in position](#), page 38 .
  - Install intermediate steering shaft [⇒ a3.5 nd installing intermediate steering shaft](#), page 369 .
  - Bonded rubber bushes can only be turned to a limited extent. The suspension mountings must therefore only be tightened when the suspension is in the unladen position or normal level.
  - Lift suspension to unladen position [⇒ s3.17 uspension to unladen position](#) vehicles with coil springs, page 14 or [⇒ s3.18 uspension to normal level](#) vehicles with air suspension, page 17 .
- Commercial purposes, in part or in whole, is not  
normal level [⇒ s3.18 uspension to normal level](#) vehicles with air suspension, page 17 .
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#### CAUTION

**Risk of accident if bolts/nuts are not tightened as specified.**

- Always tighten bolts/nuts as specified before driving the vehicle on public roads.

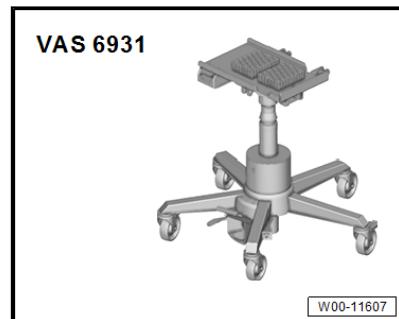
### Tightening torques

- ◆ [⇒ o3.1 overview - subframe", page 34](#)
- ◆ ⇒ General body repairs, exterior; Rep. gr. 50; Lock carrier; Assembly overview - lock carrier
- ◆ ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; Assembly overview - noise insulation
- ◆ ⇒ General body repairs, exterior; Rep. gr. 66; Wheel housing liners; Assembly overview - front wheel housing liner
- ◆ [⇒ t2 yres", page 303](#)
- ◆ Earth wire ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

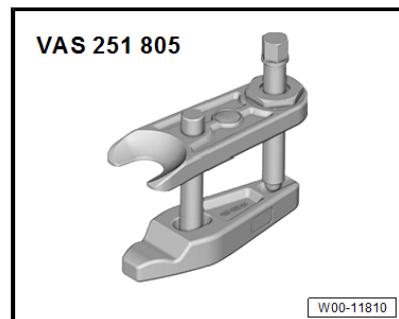
## 3.4 Removing and installing subframe with steering rack

### Special tools and workshop equipment required

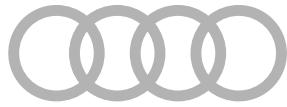
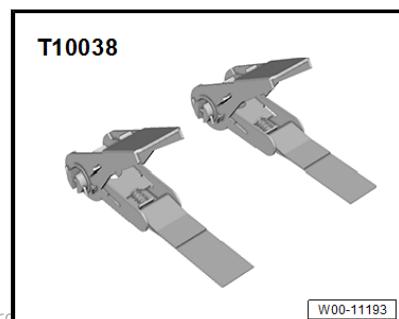
- ◆ Engine and gearbox jack -VAS 6931-



- ◆ Ball joint ejector -VAS 251 805-



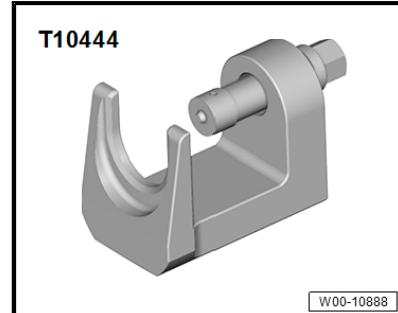
- ◆ Tensioning strap -T10038-



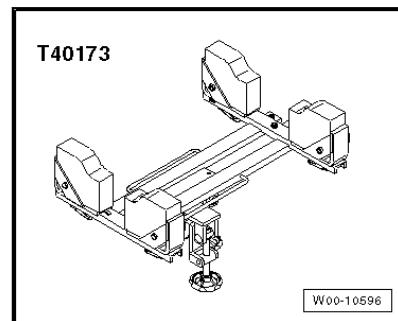
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- ◆ Ball joint puller -T10444-



- ◆ Gearbox support -T40173-

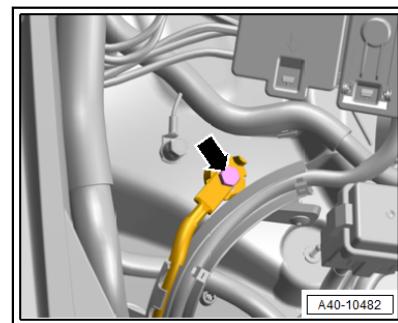


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**Removing**  
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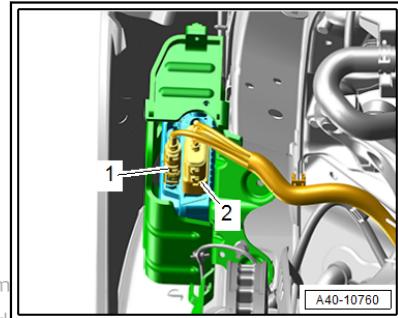
- Vehicles with active suspension: Observe safety precautions  
⇒ p2.2 precautions when working on vehicles with active suspension", page 4 .
- Equipment version with coil springs: ascertain unladen position  
⇒ s3.17 suspension to unladen position - vehicles with coil springs", page 14 .
- Equipment version with air suspension: ascertain normal level  
⇒ s3.18 suspension to normal level - vehicles with air suspension", page 17 .
- Remove noise insulation (front) ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; Assembly overview - noise insulation.
- Remove bolt -arrow- and move earth wire clear.



- Fix subframe in position ⇒ s3.2 subframe in position", page 38 .

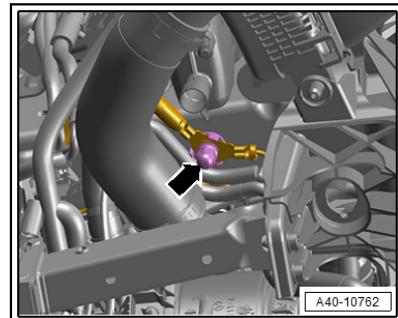
- Remove front longitudinal members (bottom) on both sides  
 ⇒ General body repairs, exterior; Rep. gr. 63; Bumper (front); Assembly overview - impact bar.

**Equipment version with roll stabilisation - roll stabiliser control unit in wheel housing:**

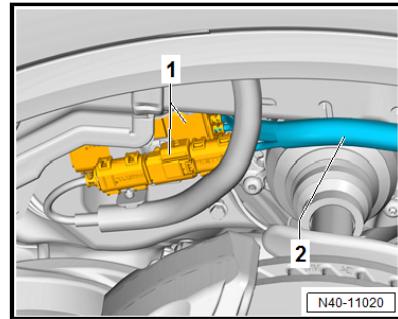


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- Remove rear section of front right wheel housing liner  
 ⇒ General body repairs, exterior; Rep. gr. 66; Wheel housing liners; Assembly overview - front wheel housing liner.
- Unplug electrical connectors -1, 2- at roll stabiliser control unit -J924-. Move electrical wiring clear.
- Remove nut -arrow- and move earth wire for roll stabilisation clear.

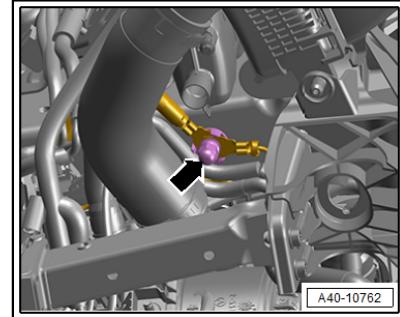


**Equipment version with roll stabilisation - roll stabiliser control unit on A-pillar (right-side) in interior:**



- Remove wheel housing liner (front right) ⇒ General body repairs, exterior; Rep. gr. 66; Wheel housing liners; Assembly overview - front wheel housing liner.
- Unplug electrical connectors -1- in wheel housing (front right).

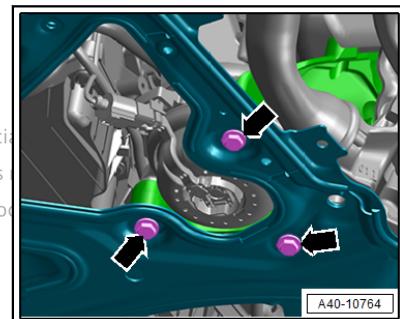
- Move electrical wiring harness -2- clear.
- Remove nut -arrow- and move earth wire for roll stabilisation clear.



**Version with gearbox mountings (side):**

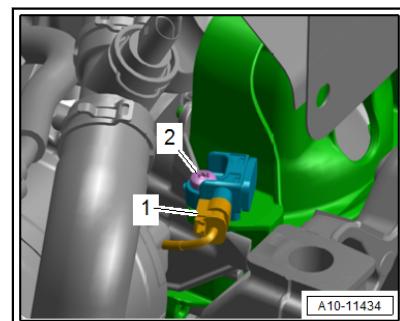


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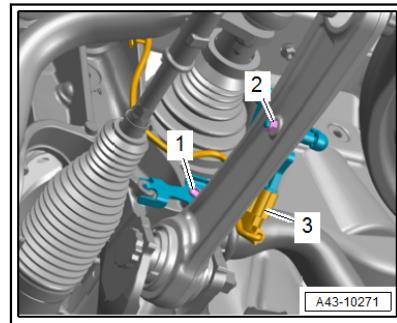
- Remove bolts -arrows- on both sides.

**On relevant equipment versions:**

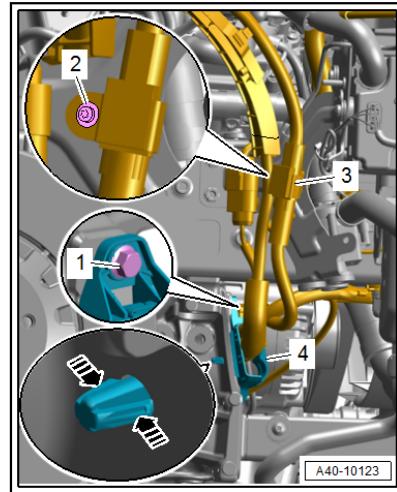


- If fitted, unplug electrical connector -1- from power unit mounting sender with power unit mounting actuator on both sides.

**All vehicles (continued):**



- Unplug electrical connector -3- from vehicle level sender on both sides. Move electrical wiring clear.
- Remove nut -2-. Move coupling rod clear at track control link.
- Remove bolt -2-.



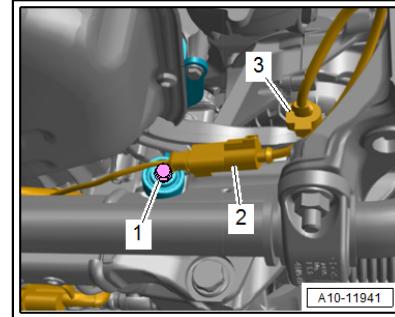
- Unplug electrical connector -3- and move wiring clear.
- Remove bolt -1-.
- Release catches -arrows- and move bracket -4- for electrical wiring clear at subframe.

**Note:**

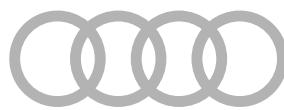
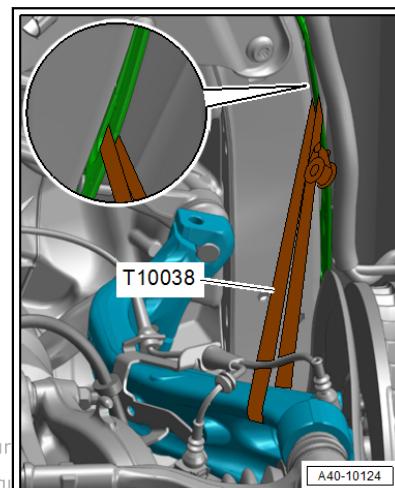
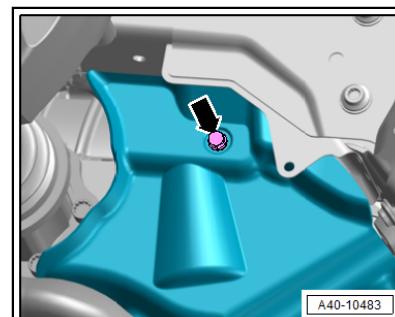
Illustration shows installation position on a vehicle without auxiliary heater as an example.

- Move electrical wiring leading to steering rack and to anti-roll bar clear.
- Unplug electrical connectors -3- (left and right) for electrohydraulic engine mounting solenoid valves.

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- Detach electrical connector -2- from bracket and unplug.  
Move electrical wiring clear.
- Equipment version with support mountings: Unscrew bolts  
-1- (left and right) for support mountings.
- Remove bolt -arrow- for subframe shield on both sides.



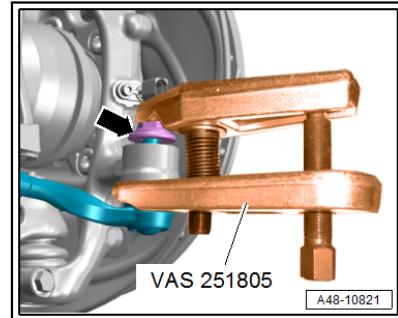
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 **NOTICE**

Risk of damage if joints of upper suspension links are overstrained.

- Support wheel bearing housing.

- Tie up wheel bearing housing with tensioning strap -T10038- on both sides as shown in illustration.
- To protect thread, unscrew nut -arrow- on joint pin of track rod ball joint (on both sides) until nut is flush with thread of joint pin.



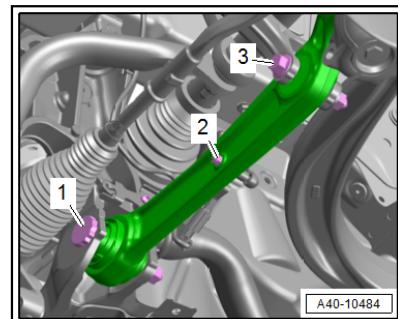
**⚠ CAUTION**

Track rod ball joint is released abruptly when it is pressed out  
- risk of injury.

Risk of contusions.

- Secure tools by placing engine and gearbox jack underneath.

- Use ball joint ejector -VAS 251 805- to press track rod ball joint off wheel bearing housing on both sides.
- Unscrew nut; if necessary, counterhold at joint pin with a 6 mm hexagon socket.
- On both sides, separate bolted connections -1, 3- for track control links.

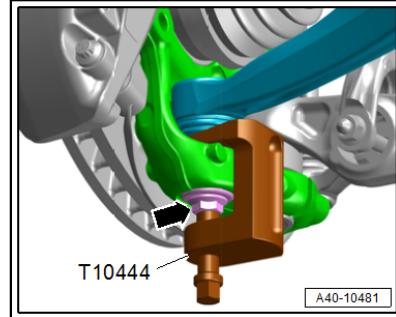


- Swivel track control link to the front.

**Note:**

To remove bolt -1-, turn steering to full left/right lock. It is expressly prohibited to copy or use this document for private or commercial purposes, in part or in whole, is not

- To protect thread, unscrew nut -arrow- on joint pin of guide link (on both sides) until nut is flush with thread of joint pin.
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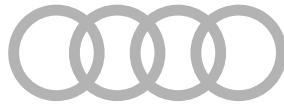
### CAUTION

Swivel joint is released abruptly when it is pressed out - risk of injury.

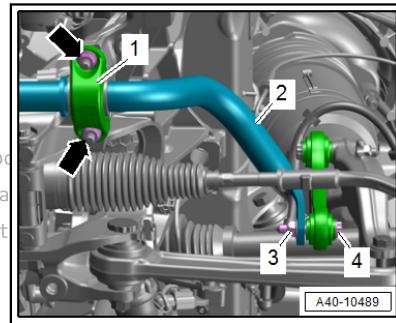
#### Risk of contusions.

- Secure tools by placing engine and gearbox jack underneath.

- Press joint pin of guide link out of tapered seat using ball joint puller -T10444-, taking care not to damage boot.
- Unscrew nut and move guide link clear at wheel bearing housing. If necessary, counterhold at joint pin with a TX 40 socket.
- Slacken nuts -arrows- (left and right) by a few turns and unscrew nut -3-.

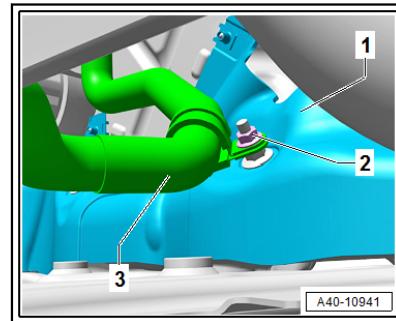
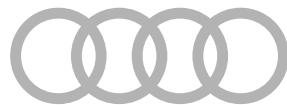


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- Remove bolt -4- on both sides.
- Detach intermediate steering shaft from steering rack and slide shaft together [⇒ a3.5 nd installing intermediate steering shaft](#), page 369 .

**Left-hand drive vehicles with high-voltage system:**



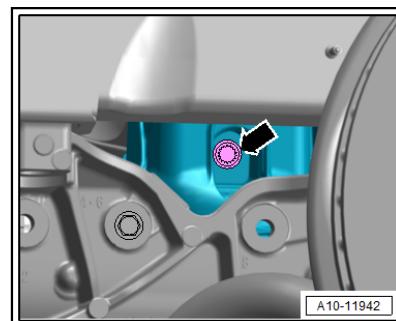
- Unscrew nut -2- on right side of vehicle.

**RS Q8, vehicles with high-voltage system:**

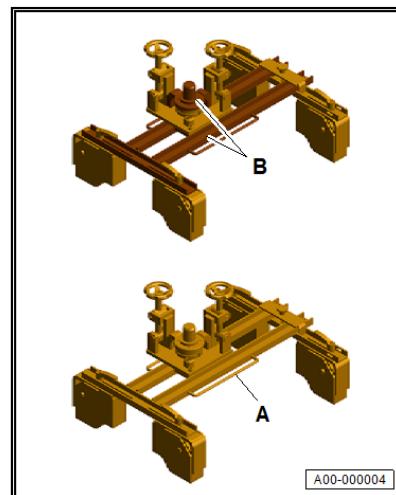
- Unscrew nut -2- on left side of vehicle.

**All vehicles (continued):**

- Move hose -3- clear at shield (bottom section) -1-.
- Remove bolt -arrow- for engine mounting on both sides.



**Important**

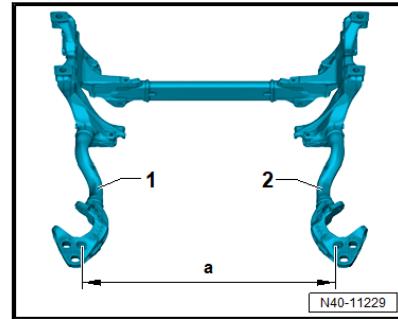


- Use gearbox support -T40173- with yellow-chromated base plate and swivel head -B- or valid CE marking -A-.



- Lower subframe with engine and gearbox jack -VAS 6931-.
    - When lowering subframe, make sure there is enough clearance for electrical wiring.
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- Installing:** authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with regard to installation carried out in reverse order; note the following:
- Installation is carried out in reverse order; note the following:

**Pre-adjustment of subframe:**



**Note:**

The subframe must be pre-adjusted if it has been renewed or if it has been removed and the cross brace has been loosened for subsequent work.

- 1 - Place subframe upside down.
- 2 - Attach steering rack and guide links provisionally (hand-tighten bolts).
- 3 - Adjust longitudinal arms -1- and -2- so that distance -a- is attained. Distance -a- = distance between inside edges of facing holes
- 4 - Fit cross brace and secure with rear 6 bolts. Subframe is now pre-adjusted and self-supporting.
- 5 - Secure steering rack.
- 6 - Tighten 2 front bolts to secure cross brace.

- Dimension -a- = 738 mm

**Installing (continued):**

- Remove locating pins -T40327- [⇒ s3.2 ubframe in position](#), [page 38](#).
- Install intermediate steering shaft [⇒ a3.5 nd installing inter-mediate steering shaft](#), [page 369](#).
- Bonded rubber bushes can only be turned to a limited extent. The suspension mountings must therefore only be tightened when the suspension is in the unladen position or normal level.
- Lift suspension to unladen position [⇒ s3.17 uspension to unladen position - vehicles with coil springs](#), [page 14](#) or normal level [⇒ s3.18 uspension to normal level - vehicles with air suspension](#), [page 17](#).

**CAUTION**

Risk of accident if bolts/nuts are not tightened as specified.

- Always tighten bolts/nuts as specified before driving the vehicle on public roads.

- Install anti-roll bar [⇒ a4.2 nd installing anti-roll bar", page 67](#).

- Overview table: when does wheel alignment have to be checked? [⇒ d4.4 oes wheel alignment have to be checked?", page 309](#)

#### Equipment version with coil springs:

- Adjust headlights ⇒ Electrical system; Rep. gr. 94; Headlights; Adjusting headlights.
- Calibrate front camera for driver assist systems [⇒ f6.1 ront camera for driver assist systems", page 338](#). with respect to the correctness of information in this document. Copyright by AUDI AG.
- Calibrate night vision system [⇒ n7.1 ight vision system", page 346](#).

#### Equipment version with air suspension:

- Re-adapt normal level [⇒ n3.6 ormal level", page 285](#).

#### Tightening torques

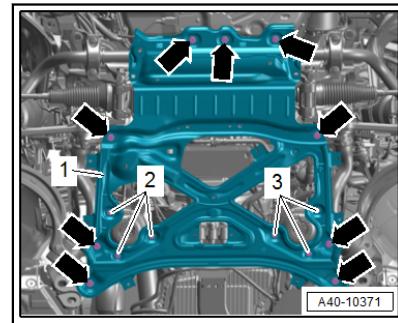
- ◆ [⇒ o3.1 verview - subframe", page 34](#)
- ◆ [⇒ o5.1 verview - suspension strut, upper suspension links", page 78](#)
- ◆ [⇒ o6.1 verview - lower suspension links, swivel joint", page 111](#)
- ◆ [⇒ o7.1 verview - wheel bearing", page 131](#)
- ◆ ⇒ 8-speed automatic gearbox 0DY, 0D7; Rep. gr. 37; Assembly mountings; Assembly overview - assembly mountings
- ◆ ⇒ General body repairs, exterior; Rep. gr. 63; Bumper (front); Assembly overview - impact bar
- ◆ ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; Assembly overview - noise insulation
- ◆ ⇒ General body repairs, exterior; Rep. gr. 66; Wheel housing liners; Assembly overview - front wheel housing liner
- ◆ [⇒ t2 yres", page 303](#)
- ◆ Earth wire ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

### 3.5 Removing and installing subframe cross brace

#### Removing

- Vehicles with active suspension: Observe safety precautions [⇒ p2.2 recautions when working on vehicles with active sus-](#)  
[ension", page 4](#).
- Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; Assembly overview - noise insulation.

**Version with gearbox mountings (side):**



- Remove bolts -2, 3-.

 **NOTICE**

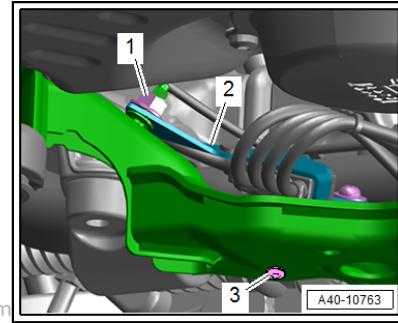
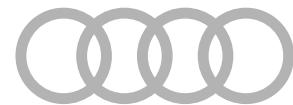
**Risk of damage to threads in body due to improper handling.**

- Never use an impact wrench to loosen or tighten.
- Fit bolts by hand only; make the first few turns by hand.

**Version without roll stabilisation:**

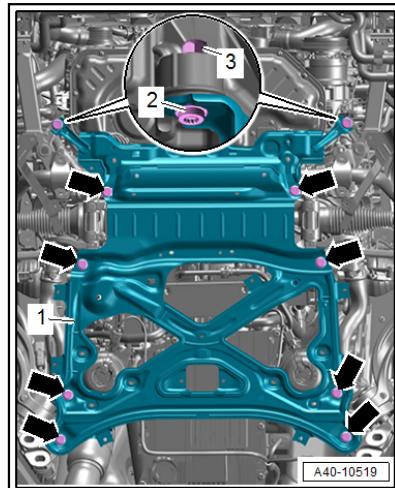
- Remove bolts -arrows- and detach subframe cross brace -1-.

**Version with roll stabilisation:**



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- Unscrew nut -1- and remove bolt -3-. Move bracket -2- with electrical wiring clear  
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- Unscrew bolt -2- (left and right); counterhold nut -3- to do so.



- Remove bolts -arrows- and detach subframe cross brace  
-1-.

 **NOTICE**

Risk of damage to threads in body due to improper handling.

- Never use an impact wrench to loosen or tighten.
- Fit bolts by hand only; make the first few turns by hand.

All vehicles (continued):

 **NOTICE**

Risk of damage to components due to improper handling.

Lowering the vehicle onto its wheels can damage components. AG does not guarantee or accept any liability if the assembly mountings, steering rack or subframe cross brace are not fitted as specified.

- Never lower vehicle onto its wheels with suspension components unfastened or detached.
- Never support weight of vehicle on subframe or cross brace with suspension components unfastened or detached.

### Installing

Installation is carried out in reverse sequence.

### Tightening torques

- ◆ [⇒ o3.1 overview - subframe", page 34](#)
- ◆ ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; Assembly overview - noise insulation
- ◆ ⇒ Engine; Rep. gr. 10; Assembly mountings; Removing and installing gearbox mounting

### 3.6 Removing and installing subframe shield

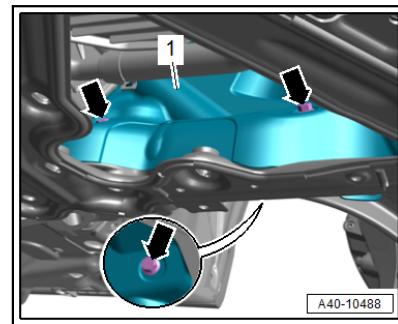
⇒ [a3.6.1 nd installing one-piece subframe shield", page 59](#)

⇒ [a3.6.2 nd installing two-piece subframe shield", page 59](#)

#### 3.6.1 Removing and installing one-piece subframe shield

##### Removing

- Vehicles with active suspension: Observe safety precautions  
[⇒ p2.2 recatutions when working on vehicles with active sus-](#)  
[pension", page 4 .](#)
- Equipment version with 3.0 ltr. TFSI engine: Remove noise insulation (rear) ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; Assembly overview - noise insulation.
- Equipment version with 3.0 ltr. TDI engine: Remove noise insulation (centre) ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; Assembly overview - noise insulation.
- Turn front wheels to right.
- Remove bolts -arrows- and detach subframe shield -1-.



##### Installing

Installation is carried out in reverse sequence.

##### Tightening torques

- ◆ ⇒ [o3.1 verview - subframe", page 34](#)
- ◆ ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; Assembly overview - noise insulation

### 3.6.2 Removing and installing two-piece subframe shield

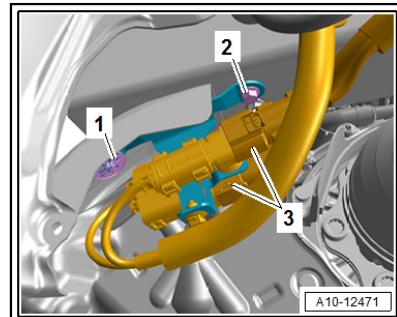
##### Removing

- Vehicles with active suspension: Observe safety precautions  
[⇒ p2.2 recatutions when working on vehicles with active sus-](#)  
[pension", page 4 .](#)

##### Removing shield (top section)

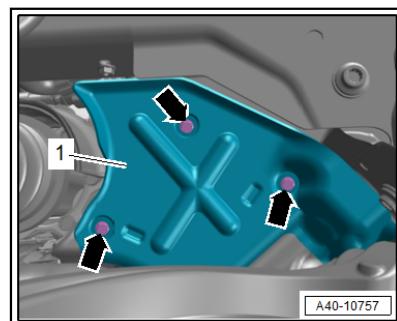
- Turn front wheels to right.

Vehicles with roll stabiliser control unit -J924- in vehicle interior  
at A-pillar (right-side):



- Move electrical connectors -3- for actuators for suspension stabilisation clear at bracket.
- Unscrew bolt -2- and clamping washer -1- and detach bracket.

All vehicles (continued):

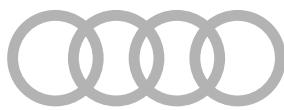


- Remove bolts/nuts -arrows- and detach subframe shield (top section) -1-.

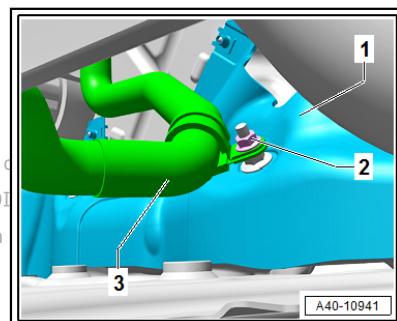
#### Removing shield (bottom section)

- Remove gearbox mounting ⇒ Engine; Rep. gr. 10; Assembly mountings; Removing and installing gearbox mounting.

#### Left-hand drive vehicles with high-voltage system:



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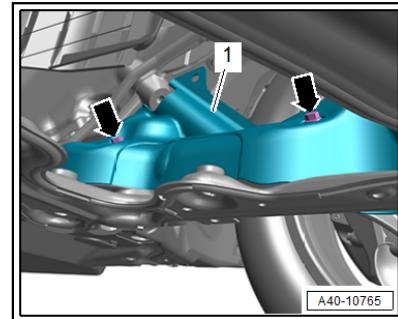
- Unscrew nut -2- on right side of vehicle.

#### RS Q8, vehicles with high-voltage system:

- Unscrew nut -2- on left side of vehicle.

**All vehicles (continued):**

- Move hose -3- clear at shield (bottom section) -1-.
- Remove bolts -arrows-.



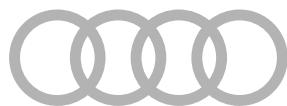
- Remove subframe shield (bottom section) -1-.

**Installing**

Installation is carried out in reverse sequence.

**Tightening torques**

- ◆ [⇒ o3.1 overview - subframe”, page 34](#)



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## 4 Anti-roll bar

- [⇒ o4.1 overview - anti-roll bar", page 62](#)
- [⇒ a4.2 nd installing anti-roll bar", page 67](#)
- [⇒ a4.3 nd installing coupling rod", page 72](#)
- [⇒ a4.4 nd installing roll stabiliser control unitJ924", page 74](#)

### 4.1 Assembly overview - anti-roll bar

- [⇒ o4.1.1 verview - anti-roll bar, without roll stabilisation", page 62](#)
- [⇒ o4.1.2 verview - anti-roll bar, with roll stabilisation/roll stabil-er control unitJ924 in wheel housing \(front right\)", page 63](#)
- [⇒ o4.1.3 verview - anti-roll bar, with roll stabilisation/roll stabil-iser control unitJ924 in vehicle interior at A-pillar \(right-side\)", page 65](#)

#### 4.1.1 Assembly overview - anti-roll bar, without roll stabilisation



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**1 - Nut**

- Renew after removing
- Unscrew and tighten evenly in stages
- 55 Nm

**2 - Clamp**

**3 - Anti-roll bar**

- With rubber bush
- Rubber bush cannot be renewed separately
- Removing and installing [⇒ a4.2.1 nd installing anti-roll bar, with roll stabilisation, page 67](#)

**4 - Nut** with respect to the clamp

- Renew after removing
- 40 Nm +90°

**5 - Subframe**

**6 - Bolt**

- Renew after removing

**7 - Coupling rod**

- Removing and installing [⇒ a4.3 nd installing coupling rod", page 72](#)

**8 - Shock absorber fork**

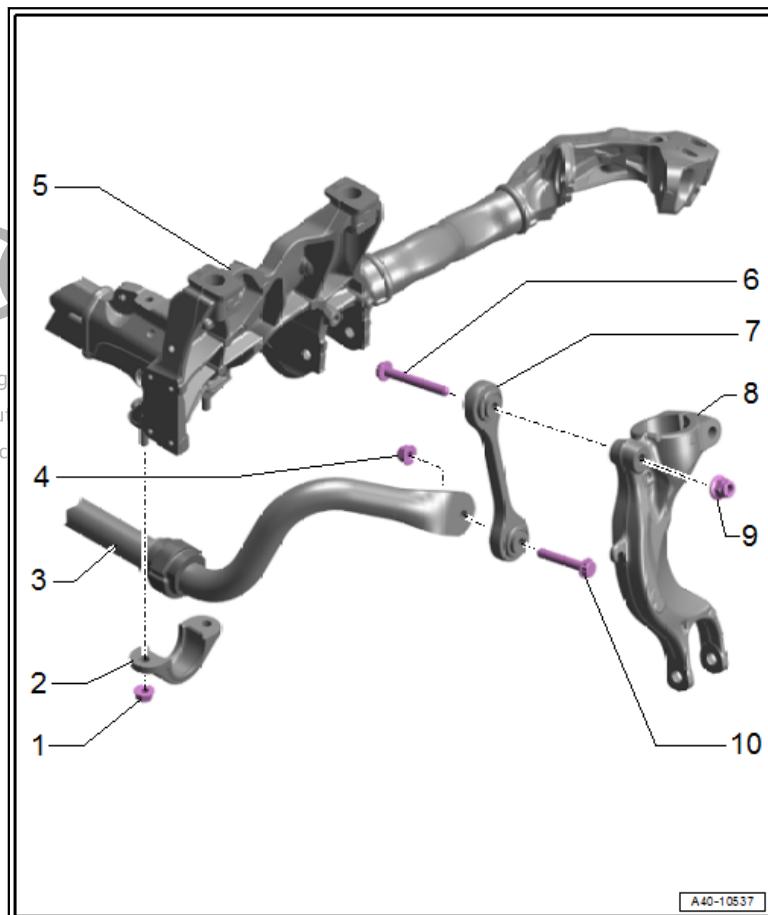
- Removing and installing [⇒ a5.8 nd installing shock absorber fork", page 102](#)

**9 - Nut**

- Renew after removing
- 40 Nm +90°

**10 - Bolt**

- Renew after removing

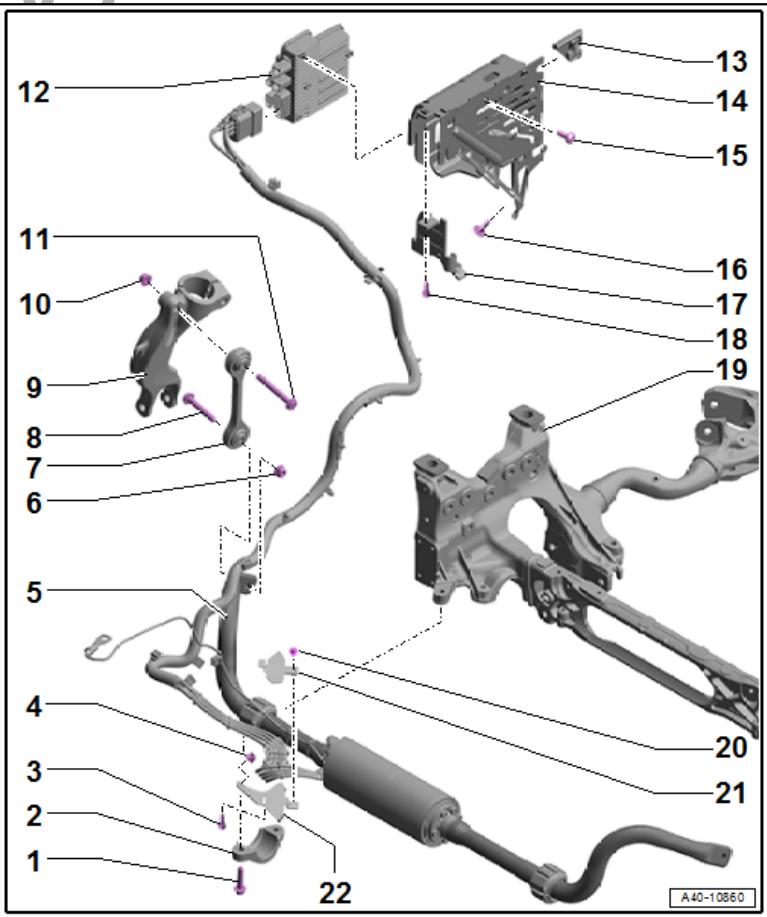


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#### 4.1.2 Assembly overview - anti-roll bar, with roll stabilisation/roll stabiliser control unit -J924- in wheel housing (front right)



- 1 - Bolt**
- Renew after removing
  - Unscrew and tighten evenly in stages
  - 55 Nm permitted unless otherwise specified
- 2 - Clamp**
- 3 - Bolt**
- 8 Nm
- 4 - Nut**
- 8 Nm
- 5 - Anti-roll bar with roll stabilisation**
- With actuator for chassis stabilisation (front left) -V634-
  - With actuator for chassis stabilisation (front right) -V635-
  - With rubber bush
  - Rubber bush cannot be renewed separately
  - When removing and installing anti-roll bar with roll stabilisation, do not disconnect it from electrical wiring harness. Do not unplug connectors.
  - Removing and installing anti-roll bar with roll stabilisation [≥ a4.2.2 nd installing anti-roll bar - with roll stabilisation", page 68](#)
- 6 - Nut**
- Renew after removing
  - 60 Nm +90°
- 7 - Coupling rod**
- Removing and installing [≥ a4.3 nd installing coupling rod", page 72](#)
- 8 - Bolt**
- Renew after removing
- 9 - Shock absorber fork**
- Removing and installing [≥ a5.8 nd installing shock absorber fork", page 102](#)
- 10 - Nut**
- Renew after removing
  - 60 Nm +90°
- 11 - Bolt**
- Renew after removing
- 12 - Roll stabiliser control unit -J924-**
- Fitting location on vehicles without electrical connector in wiring harness in wheel housing (front right) at top on A-pillar
  - Removing and installing [≥ a4.4 nd installing roll stabiliser control unitJ924", page 74](#)



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**13 - Retaining clip**

**14 - Bracket**

- For roll stabiliser control unit -J924-

**15 - Bolt**

- 8 Nm

**16 - Bolt**

- 8 Nm

**17 - Reinforcement**



**18 - Bolt**

- 8 Nm Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not

**19 - Subframe** permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability

**20 - Bolt** with respect to the correctness of information in this document. Copyright by AUDI AG.

- 20 Nm

**21 - Bracket**

- For electrical wiring harness

**22 - Bracket**

- For electrical wiring harness

**4.1.3 Assembly overview - anti-roll bar, with roll stabilisation/roll stabiliser control unit -J924- in vehicle interior at A-pillar (right-side)**

**1 - Bolt**

- Renew after removing
- Unscrew and tighten evenly in stages
- 55 Nm

**2 - Clamp**

**3 - Bolt**

- 8 Nm

**4 - Nut**

- 8 Nm

**5 - Earth wire**

- Tightening torque  
→ Current flow diagrams, Electrical fault finding and Fitting locations

**6 - Wiring harness to anti-roll bar with roll stabilisation**

- Do not disconnect electrical wiring harness from anti-roll bar with roll stabilisation. Do not unplug electrical connectors from anti-roll bar with roll stabilisation.

**7 - Coupling rod**

- Removing and installing [⇒ a4.3 nd installing coupling rod](#), page 72

**8 - Bolt**

- Renew after removing

**9 - Shock absorber fork**

- Removing and installing [⇒ a5.8 nd installing shock absorber fork](#), page 102

**10 - Nut**

- Renew after removing
- 60 Nm +90°

**11 - Bracket**

- For roll stabiliser control unit -J924-

**12 - Roll stabiliser control unit -J924-**

- Fitting location on vehicles with electrical connector in wiring harness in vehicle interior at centre of A-pillar (right-side)
- Removing and installing [⇒ a4.4 nd installing roll stabiliser control unit J924](#), page 74

**13 - Bolt**

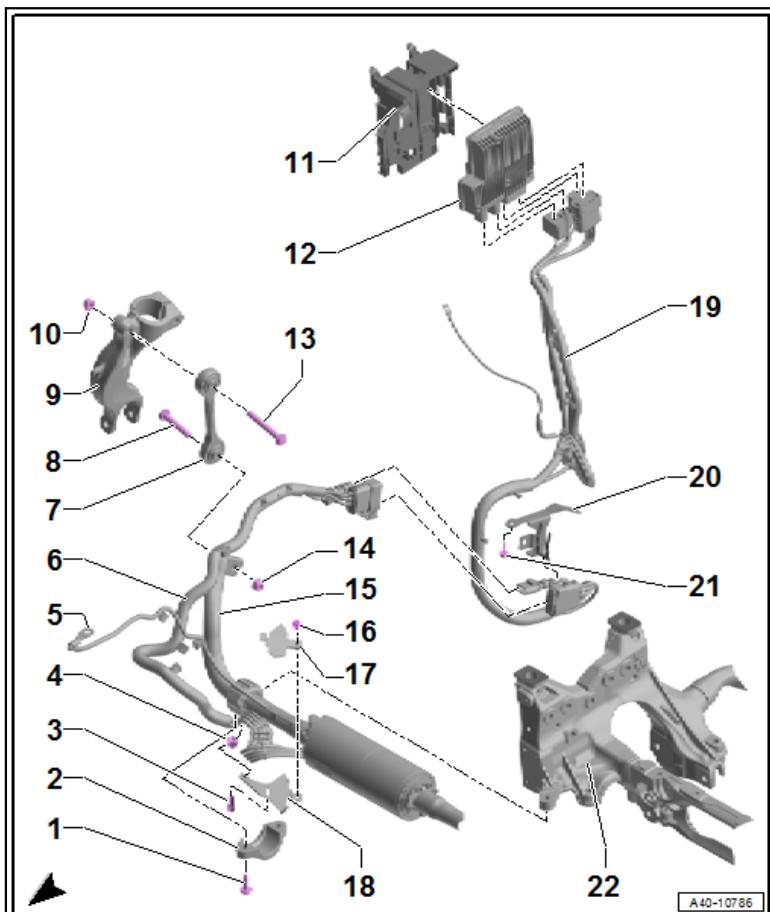
- Renew after removing

**14 - Nut**

- Renew after removing
- 40 Nm +90°

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With actuators for chassis stabilisation (front left) V634 This document. Copyright by AUDI AG.



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- With actuator for chassis stabilisation (front right) -V635-
- With rubber bush
- Rubber bush cannot be renewed separately
- When removing and installing anti-roll bar with roll stabilisation, do not disconnect it from electrical wiring harness. Do not unplug electrical connectors from anti-roll bar with roll stabilisation.
- Removing and installing anti-roll bar with roll stabilisation [⇒ a4.2.2 nd installing anti-roll bar - with roll stabilisation", page 68](#)

**16 - Bolt**

- 20 Nm

**17 - Bracket**

- For electrical wiring harness

**18 - Bracket**

- For electrical wiring harness

**19 - Wiring harness to roll stabiliser control unit -J924-**

**20 - Bracket**

- For connector

**21 - Bolt**

- 8 Nm

**22 - Subframe**

## 4.2 Removing and installing anti-roll bar

[⇒ a4.2.1 nd installing anti-roll bar - without roll stabilisation", page 67](#)

[⇒ a4.2.2 nd installing anti-roll bar - with roll stabilisation", page 68](#)

### 4.2.1 Removing and installing anti-roll bar - without roll stabilisation

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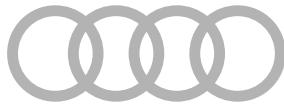
• with vehicles with active suspension: Observe safety precautions

[⇒ p2.2 recatutions when working on vehicles with active sus- pension", page 4 .](#)

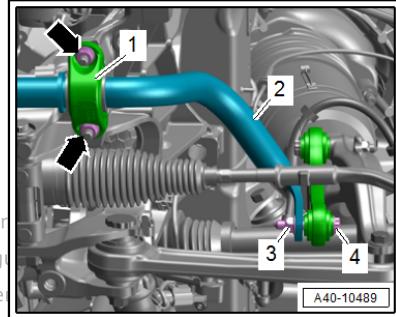
**Note:**

Reinstall all cable ties in the same locations when installing.

- Equipment version with coil springs: ascertain unladen position [⇒ s3.17 uspension to unladen position - vehicles with coil springs", page 14 .](#)
- Equipment version with air suspension: ascertain normal level [⇒ s3.18 uspension to normal level - vehicles with air suspension", page 17 .](#)
- Remove noise insulation (front) ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; Assembly overview - noise insulation.
- Remove nuts -arrows- and -3- on both sides.



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- Remove clamp -1- and bolt -4- on both sides.
- Detach anti-roll bar -2-.

#### Installing

Installation is carried out in reverse order; note the following:

- Anti-roll bar and rubber bushes must be free of grease.
- Tighten any loose studs for clamps as far as stop.
- Screw in bolts for anti-roll bar initially until they make contact, but do not tighten to final torque yet.
- Bonded rubber bushes can only be turned to a limited extent. The suspension mountings must therefore only be tightened when the suspension is in the unladen position or normal level.
- Lift suspension to unladen position [⇒ s3.17uspension to unladen position - vehicles with coil springs](#), page 14 or normal level [⇒ s3.18uspension to normal level - vehicles with air suspension](#), page 17.

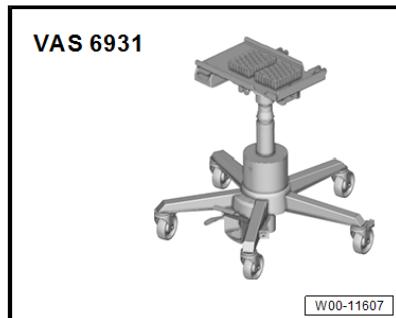
#### Tightening torques

- ◆ [⇒ o4.1.1 overview - anti-roll bar, without roll stabilisation](#), page 62
- ◆ [⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; Assembly overview - noise insulation](#)

#### 4.2.2 Removing and installing anti-roll bar - with roll stabilisation

##### Special tools and workshop equipment required

- ◆ Engine and gearbox jack -VAS 6931-



### Removing

- Vehicles with active suspension: Observe safety precautions  
[⇒ p2.2 precautions when working on vehicles with active suspension", page 4](#).
- Equipment version with air suspension: ascertain normal level  
[⇒ s3.18 suspension to normal level - vehicles with air suspension", page 17](#).

 **CAUTION**

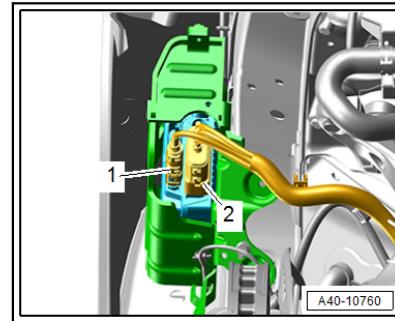
Risk of injury as a result of unintended regulation of roll stabilisation  
 Permitted by your right of freedom of information for internal purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability

- Only perform work on the roll stabilisation with the ignition switched off.

- De-energise 48 V system ⇒ Electrical system; Rep. gr. 27;  
 Battery; Disconnecting and connecting battery.

#### Vehicles with roll stabiliser control unit -J924- in wheel housing (front right)

- Remove front right wheel [⇒ t2 yres", page 303](#).
- Remove rear section of front right wheel housing liner  
[⇒ General body repairs, exterior; Rep. gr. 66; Wheel housing liners; Assembly overview - front wheel housing liner](#).
- Unplug electrical connectors -1, 2- for roll stabiliser control unit -J924-. Move electrical wiring clear. [⇒ a3.3 nd attachment of pipes, hoses and wiring", page 7](#)

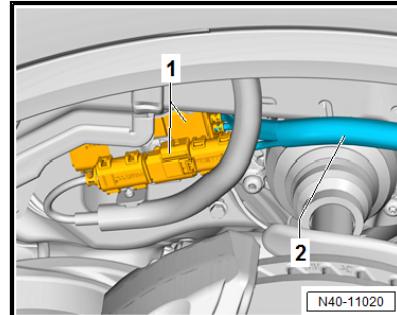


 **NOTICE**

Risk of malfunctions due to corrosion in the electrical connector.

- When removing and installing anti-roll bar with roll stabilisation, do not disconnect it from electrical wiring harness.  
 Do not unplug electrical connectors from anti-roll bar with roll stabilisation.

**Vehicles with roll stabiliser control unit -J924- in vehicle interior  
at A-pillar (right-side)**



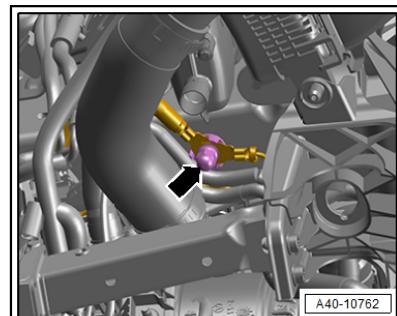
- Unplug electrical connectors -1- on longitudinal member (right-side).
- Move electrical wire -2- going to anti-roll bar clear.

**! NOTICE**

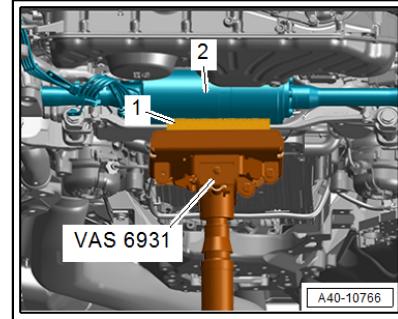
**Risk of malfunctions due to corrosion in the electrical connector.** Copying or commercial purposes, in part or in whole, is not permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability

- When removing and installing anti-roll bar with roll stabilisation, do not disconnect it from electrical wiring harness. Do not unplug electrical connectors from anti-roll bar with roll stabilisation.

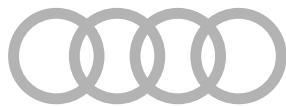
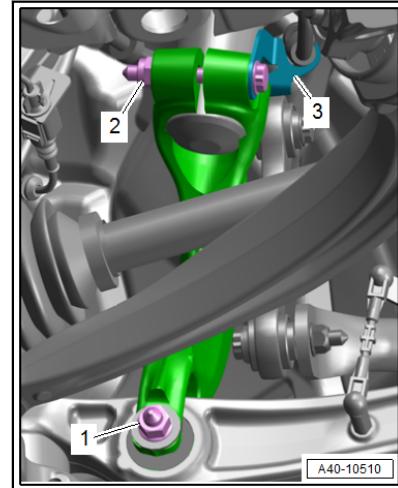
**All vehicles (continued)**



- Remove subframe cross brace [⇒ a3.5 nd installing subframe cross brace](#), page 56 .
- Remove nut -arrow- and move earth wire for roll stabilisation clear.
- Support anti-roll bar with roll stabilisation -2- using engine and gearbox jack -VAS 6931- (place a rubber block -1- in between).



- On both sides, separate bolted connection -1- between track control link and shock absorber fork.

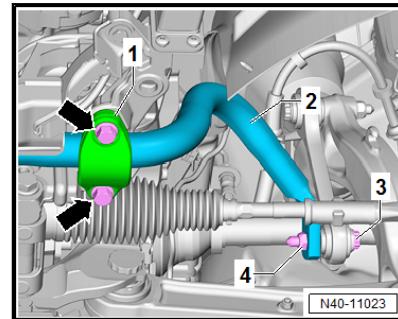


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~~Remove bolt and push shock absorber fork to one side.~~

~~Remove bolts -arrows- on both sides.~~

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- Remove nut -4-.
- Remove clamp -1- and bolt -3- on both sides.
- Detach anti-roll bar with roll stabilisation -2-.

#### Installing

Installation is carried out in reverse order; note the following:

- Minimum bending radius = 30 mm

- Re-energise 48 V system ➔ Electrical system; Rep. gr. 27;  
Battery; Disconnecting and connecting battery.
- Select “Initiate roll stabilisation for front axle” after installing a new anti-roll bar with roll stabilisation ➔ [d5.1 diagnosis](#), page 27 .
- Start selected program and follow instructions on display of vehicle diagnostic tester.

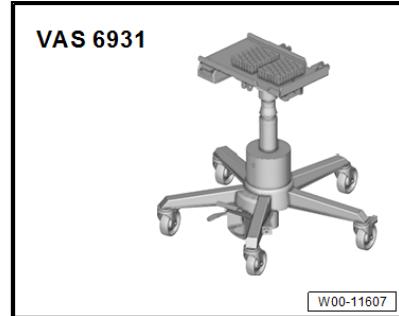
#### Tightening torques

- ◆ ➔ [o4.1.2 overview - anti-roll bar, with roll stabilisation/roll stabiliser control unitJ924 in wheel housing \(front right\)](#), page 63
- ◆ ➔ [o6.1 overview - lower suspension links, swivel joint](#), page 111
- ◆ ➔ General body repairs, exterior; Rep. gr. 66; Wheel housing liners; Assembly overview - front wheel housing liner
- ◆ ➔ [t2 yres](#), page 303
- ◆ Earth wire ➔ Current flow diagrams, Electrical fault finding and Fitting locations

### 4.3 Removing and installing coupling rod

#### Special tools and workshop equipment required

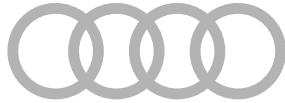
- ◆ Engine and gearbox jack -VAS 6931-



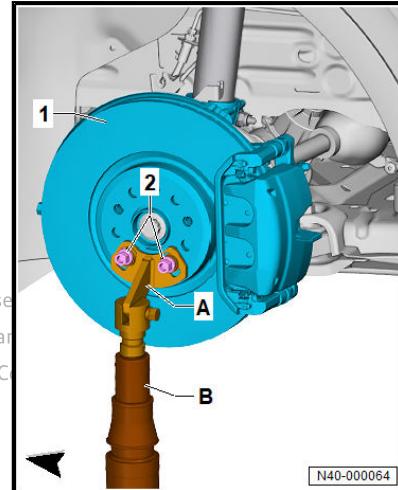
- ◆ Support device -VAS 6931/1- (not illustrated)

#### Removing

- Vehicles with active suspension: Observe safety precautions ➔ [p2.2 precautions when working on vehicles with active suspension](#), page 4 .
- Equipment version with coil springs: ascertain unladen position ➔ [s3.17 uspension to unladen position - vehicles with coil springs](#), page 14 .
- Equipment version with air suspension: ascertain normal level ➔ [s3.18 uspension to normal level - vehicles with air suspension](#), page 17 .
- Remove front wheel ➔ [t2 yres](#), page 303 .
- Fit support device -VAS 6931/1- -item A- to brake disc -1- with two wheel bolts -2-.  
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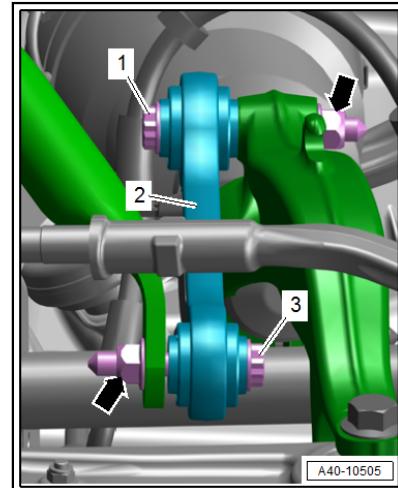
- Apply engine and gearbox support -VAS 6931- -item B- to support device.

#### CAUTION

Risk of accident if vehicle is lowered when engine and gearbox jack is positioned underneath.

- Never lower the vehicle when the engine and gearbox jack is underneath it.
- Never leave the engine and gearbox jack under the vehicle for longer than necessary.

- Use engine and gearbox jack -VAS 6931- attached to support device -VAS 6931/1- to raise wheel bearing housing slightly so that bolts can be removed more easily.
- Remove nuts -arrows-.



- Remove bolts -1, 3- and detach coupling rod -2-.
- Turn front wheels to left or right as necessary to unscrew bottom bolt.

## Installing

Installation is carried out in reverse order; note the following:

- Screw in bolts for components with bonded rubber bushes initially until they make contact, but do not tighten to final torque yet.
- Bonded rubber bushes can only be turned to a limited extent. The suspension mountings must therefore only be tightened when the suspension is in the unladen position or normal level.
- Lift suspension to unladen position [⇒ s3.17 uspension to unladen position - vehicles with coil springs", page 14](#) or normal level [⇒ s3.18 uspension to normal level - vehicles with air suspension", page 17](#).

## Tightening torques

- ◆ [⇒ o4.1 verview - anti-roll bar", page 62](#)
- ◆ [⇒ t2 yres", page 303](#)

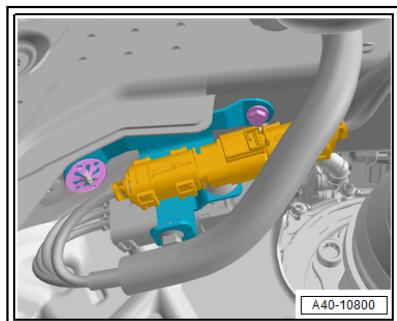
## 4.4 Removing and installing roll stabiliser control unit -J924-

[⇒ a4.4.1 nd installing roll stabiliser control unitJ924 - Audi Q7, in wheel housing \(front right\)", page 74](#)

[⇒ a4.4.2 nd installing roll stabiliser control unitJ924 - Audi Q7/Q8, in vehicle interior at A-pillar \(right-side\)", page 76](#)

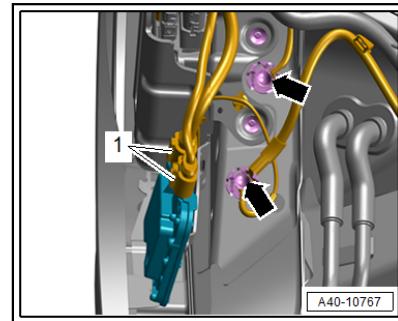
### 4.4.1 Removing and installing roll stabiliser control unit -J924- - Audi Q7, in wheel housing (front right)

- ◆ On vehicles with electrical connector in wiring harness on longitudinal member (right-side), roll stabiliser control unit -J924- is fitted in vehicle interior at A-pillar (right-side) [⇒ page 76](#).

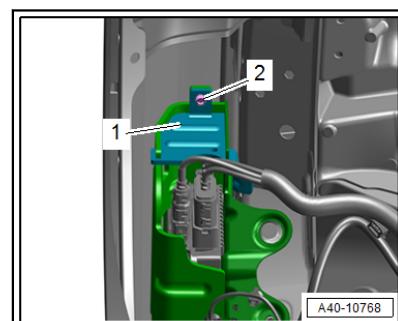


## Removing

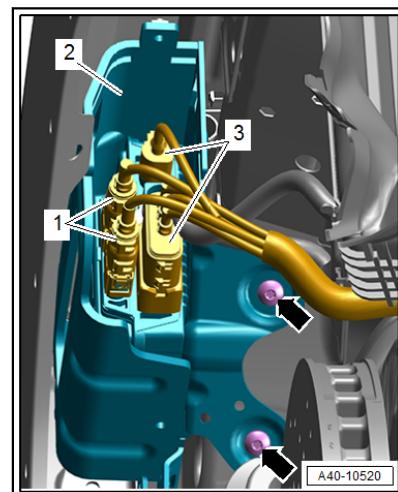
- If renewing roll stabiliser control unit -J924-, select "Replace control module" program [⇒ d5.1 iagnosis", page 27](#).
- Start selected program and follow instructions on display of vehicle diagnostic tester.
- Remove rear section of front right wheel housing liner  
⇒ General body repairs, exterior; Rep. gr. 66; Wheel housing liners; Assembly overview - front wheel housing liner.  
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- De-energise 48 V system [⇒ Electrical system; Rep. gr. 27; Battery; Disconnecting and connecting battery](#).
- Unplug electrical connectors [⇒ with respect to the correctness of information in this document. Copyright by AUDI AG.](#)



- Remove nuts -arrows- and move earth wires clear.
- Unscrew bolt -2- and detach reinforcement -1-.

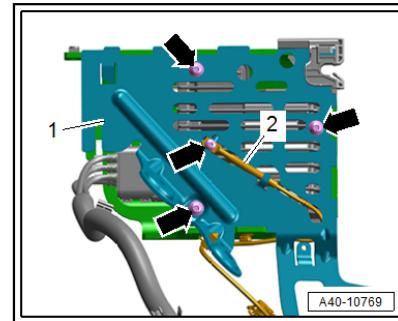


- Unplug electrical connectors -1, 3-.



- Remove bolts -arrows-, detach bracket with control unit towards front and remove it.
- Remove bolts -arrows- and detach roll stabiliser control unit -J924- -item 2- from bracket -1-.  
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### Installing

Installation is carried out in reverse order; note the following:

- Re-energise 48 V system ⇒ Electrical system; Rep. gr. 27; Battery; Disconnecting and connecting battery.
- After renewing control unit -J924-, complete "Replace control module" program ⇒ **Vehicle diagnostic tester**. or commercial purposes, in part or in whole, is not

**Tightening torques** unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability

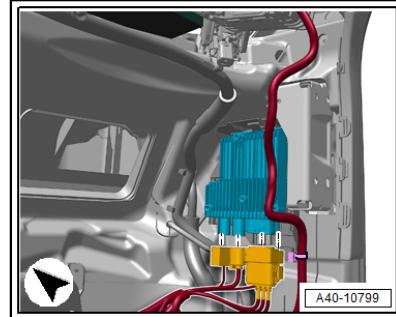
- ◆ ⇒ [o3.1 Overview - subframe](#), page 34 information in this document. Copyright by AUDI AG.
- ◆ ⇒ General body repairs, exterior; Rep. gr. 66; Wheel housing liners; Assembly overview - front wheel housing liner
- ◆ Earth wire ⇒ Current flow diagrams, Electrical fault finding and Fitting locations

### 4.4.2 Removing and installing roll stabiliser control unit -J924- - Audi Q7/Q8, in vehicle interior at A-pillar (right-side)

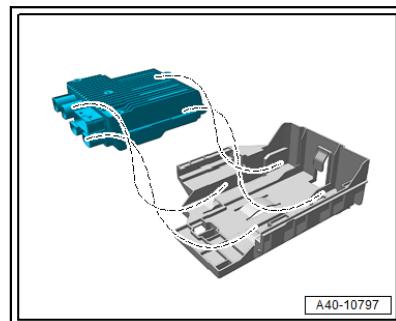
- ◆ On Audi Q7 vehicles without electrical connector in wiring harness, roll stabiliser control unit -J924- is fitted in wheel housing (right-side) ⇒ [a4.4.1 und installing roll stabiliser control unit J924 - Audi Q7, in wheel housing \(front right\)](#), page 74 .

### Removing

- If renewing roll stabiliser control unit -J924-, select "Replace control module" program ⇒ [d5.1 diagnosis](#), page 27 .
- Start selected program and follow instructions on display of vehicle diagnostic tester.
- Remove glove compartment ⇒ General body repairs, interior; Rep. gr. 68; Storage compartments/covers/trim panels; Assembly overview of glove compartment.
- Remove lower A-pillar trim (right-side) ⇒ General body repairs, interior; Rep. gr. 70; Passenger compartment trim panels; Assembly overview - A-pillar trim.
- De-energise 48 V system ⇒ Electrical system; Rep. gr. 27; Battery; Disconnecting and connecting battery.
- Unplug connector from roll stabiliser control unit -J924-.



- Press back both retaining tabs on bracket using a screwdriver. Pull roll stabiliser control unit -J924- downwards out of bracket.



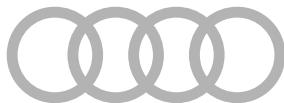
### Installing

Installation is carried out in reverse order; note the following:

- Re-energise 48 V system ⇒ Electrical system; Rep. gr. 27; Battery; Disconnecting and connecting battery.
- After renewing control unit -J924-, complete “Replace control module” program ⇒ Vehicle diagnostic tester.

### Tightening torques

- ◆ Earth wire ⇒ Current flow diagrams, Electrical fault finding and Fitting locations



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## 5 Suspension strut, upper suspension links

⇒ [o5.1 verview - suspension strut, upper suspension links", page 78](#)

⇒ [a5.2 nd installing suspension strut", page 87](#)

⇒ [s5.3 uspension strut", page 90](#)

⇒ [a5.4 nd installing upper suspension link", page 93](#)

⇒ [b5.5 ush for upper suspension link", page 96](#)

⇒ [b5.6 oot", page 98](#)

⇒ [s5.7 uspension strut", page 99](#)

⇒ [a5.8 nd installing shock absorber fork", page 102](#)

⇒ [a5.9 nd installing strut brace", page 104](#)

### 5.1 Assembly overview - suspension strut, upper suspension links

⇒ [o5.1.1 verview - suspension strut, upper suspension links", page 78](#)

⇒ [o5.1.2 verview - suspension strut \(coil springs\)", page 80](#)

⇒ [o5.1.3 verview - suspension strut \(air suspension\)", page 82](#)

⇒ [o5.1.4 verview - strut brace", page 86](#)

#### 5.1.1 Assembly overview - suspension strut, upper suspension links



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**1 - Track control link**

**2 - Bolt**

- Renew after removing

**3 - Shock absorber fork**

- Removing and installing ⇒ [a5.8 nd installing shock absorber fork", page 102](#)

**4 - Bracket**

- For brake hose

**5 - Bolt**

- Renew after removing

**6 - Nut**

- Renew after removing

- Tighten in unladen position ⇒ [s3.17 uspen-](#)

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with respect to coil springs ⇒ [page 14](#)

- sion to unladen position - vehicles with coil springs ⇒ [page 14](#)

- or at normal level ⇒ [page 17](#)

- 40 Nm +180°

**7 - Suspension strut**

- Shown for equipment version with air suspension

- ◆ Assembly overview - suspension strut (coil springs) ⇒ [o5.1.2 verview - suspen-](#)

sion strut (coil springs)" ⇒ [page 80](#)

- ◆ Assembly overview - suspension strut (air suspension) ⇒ [o5.1.3 verview - suspension strut \(air suspen-](#)

- sion)" ⇒ [page 82](#)

- Installation position ⇒ [page 83](#)

**8 - Trim cap**

**9 - Suspension turret**

**10 - Bolt**

- Different versions available ⇒ Electronic parts catalogue

- Renew after removing

- Tightening torques

- ◆ Bolt M8x28 with collar: 20 Nm +45°

- ◆ Coil springs: Self-locking bolt M8x34 with washer: 20 Nm +90°

- ◆ Air suspension: Self-locking bolt M8x34 with washer: 30 Nm +90°

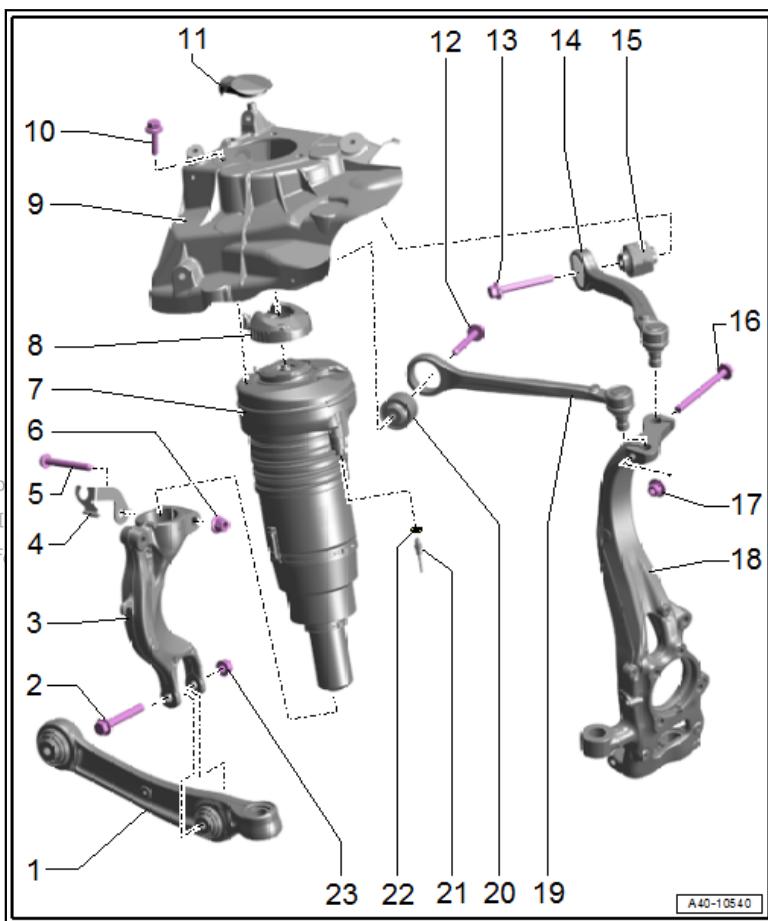
- Clean threaded holes for self-locking bolts (using a thread tap or similar)

**11 - Cover**

- For electrical connector

- For equipment version with air suspension

**12 - Bolt**



A40-10540

- Renew after removing
- Tighten in unladen position [⇒ s3.17uspension to unladen position - vehicles with coil springs", page 14](#) or at normal level [⇒ s3.18uspension to normal level - vehicles with air suspension", page 17](#)
- 50 Nm +90°

**13 - Bolt**

- Renew after removing
- Tighten in unladen position [⇒ s3.17uspension to unladen position - vehicles with coil springs", page 14](#) or at normal level [⇒ s3.18uspension to normal level - vehicles with air suspension", page 17](#)
- 50 Nm +90°

**14 - Upper suspension link (rear)**

- Removing and installing [⇒ a5.4nd installing upper suspension link", page 93](#)

**15 - Bonded rubber bush**

- Renewing [⇒ b5.5ush for upper suspension link", page 96](#)

**16 - Bolt**

- Renew after removing

**17 - Nut**

- Renew after removing
- 40 Nm

**18 - Wheel bearing housing**

**19 - Upper suspension link (front)**

- Removing and installing [⇒ a5.4nd installing upper suspension link", page 93](#)

**20 - Bonded rubber bush**

- Renewing [⇒ b5.5ush for upper suspension link", page 96](#)

**21 - Air pipe**

- Do not loosen residual pressure valve
- Tightening torque [⇒ Item 5 \(page 281\)](#)

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**22 - O-ring**  
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**23 - Nut**

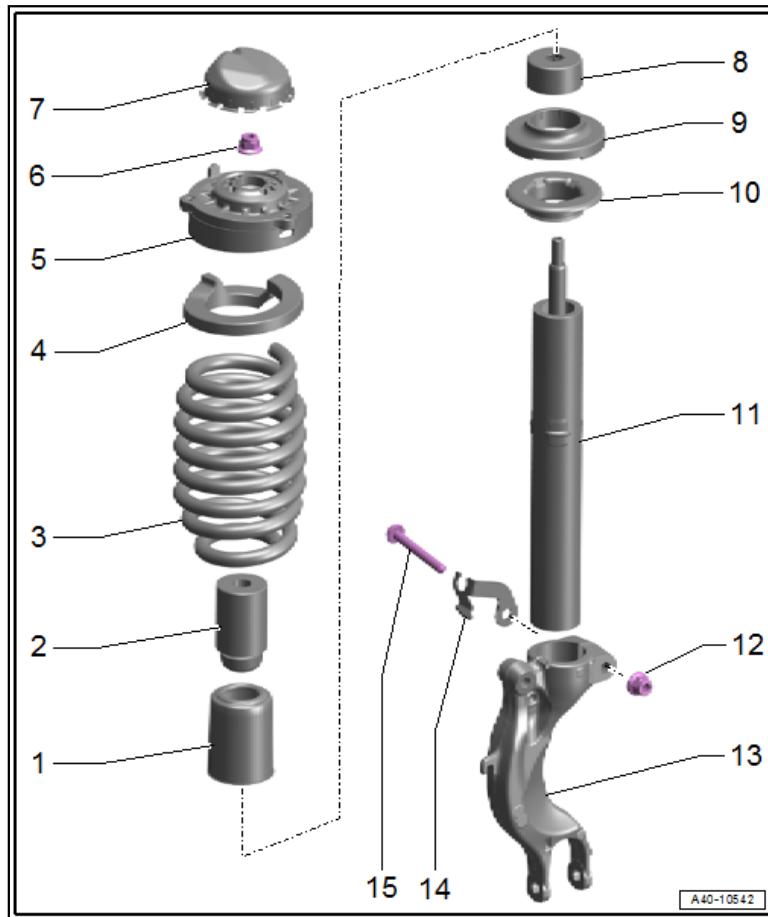
- Renew after removing
- Tighten in unladen position [⇒ s3.17uspension to unladen position - vehicles with coil springs", page 14](#) or at normal level [⇒ s3.18uspension to normal level - vehicles with air suspension", page 17](#)
- 90 Nm +90°

## 5.1.2 Assembly overview - suspension strut (coil springs)

- 1 - Protective sleeve**
- 2 - Bump stop**
- 3 - Coil spring**
- 4 - Spring seat**
- 5 - Suspension strut mounting**
  - Installation position [page 81](#)
- 6 - Nut**
  - Renew after removing
  - 50 Nm
- 7 - Trim cap**
  - Installation position [page 82](#)
- 8 - Protective cap**
- 9 - Support**
- 10 - Bottom spring plate**
- 11 - Shock absorber**
  - Because of the different shock absorber valve systems, shock absorbers on both sides of an axle should always be from the same manufacturer whenever possible
  - Removing and installing ["s5.3 suspension strut", page 90](#)
- 12 - Nut**
  - Tightening torque [Item 6 \(page 79\)](#)

- 13 - Shock absorber fork**
  - Removing and installing ["a5.8 nd installing shock absorber fork", page 102](#)
- 14 - Bracket**
  - For brake hose

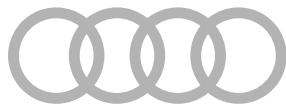
- 15 - Bolt**
  - Renew after removing



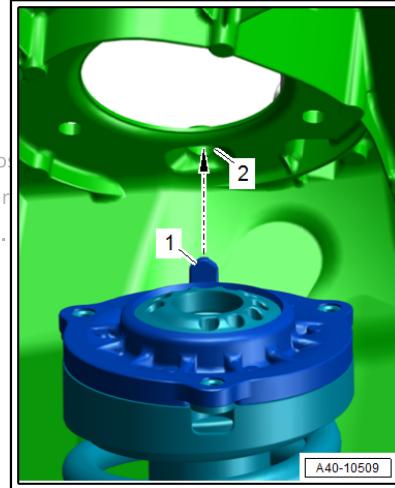
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#### Installation position of suspension strut (coil spring)

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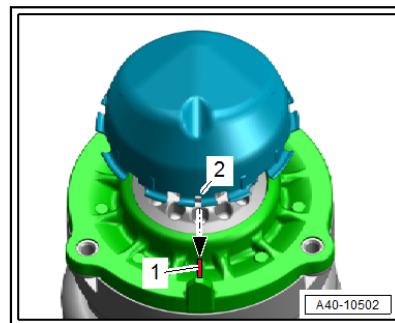


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- The locating pin -1- on the suspension strut mounting must engage in the hole -2- in the suspension turret -arrow-.

#### Installation position of protective cap (coil springs)



- The recess -2- on the protective cap must align with the locating pin -1- in the suspension strut mounting -arrow-.

### 5.1.3 Assembly overview - suspension strut (air suspension)

**1 - Air spring strut**

- With front left shock absorber damping adjustment valve -N336-/ front right shock absorber damping adjustment valve -N337-
- Renew entire air spring if damping adjustment valve is defective

**2 - Trim cap**

- Installation position [⇒ page 84](#)

**3 - Bracket**

- For air pipe
- 2x
- Installation position [⇒ page 84](#)

**4 - Hose clip**

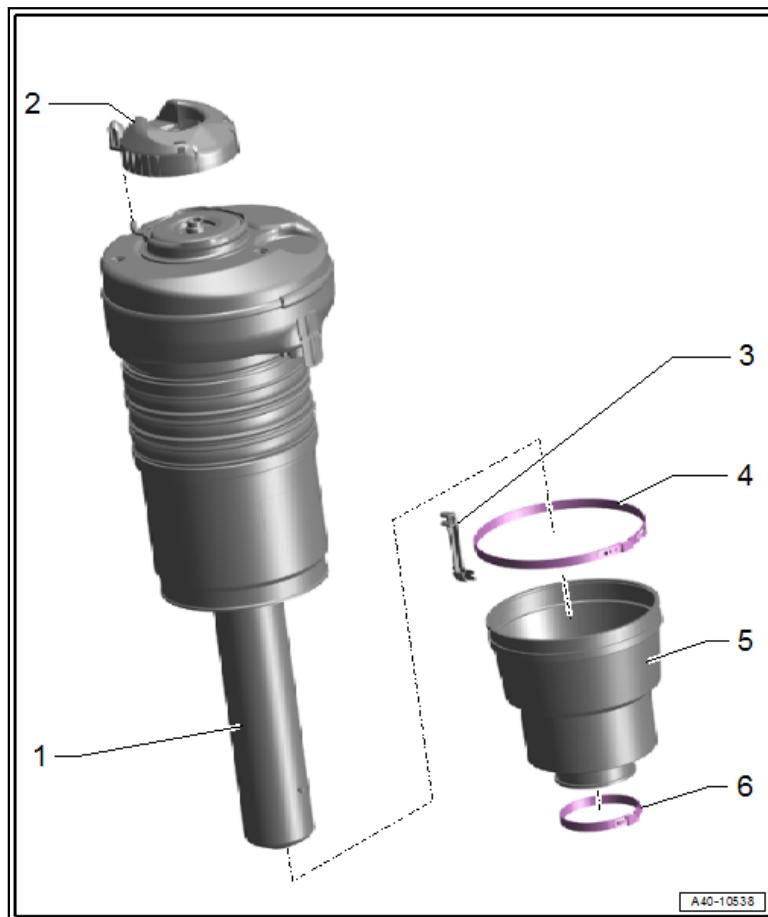
- Renew after removing
- Installation position [⇒ page 84](#)
- Tightening [⇒ page 85](#)

**5 - Boot**

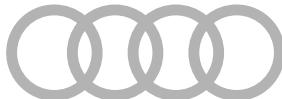
- Must not be kinked, eliminate indentations by hand if necessary
- Slide top over shoulder of suspension strut housing
- Renewing [⇒ b5.6 oot", page 98](#)
- Installation position [⇒ page 85](#)

**6 - Hose clip**

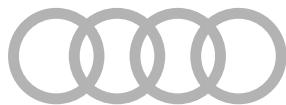
- Renew after removing
- Installation position [⇒ page 84](#)
- Tightening [⇒ page 85](#)



**Installation position of suspension strut (air springs)**



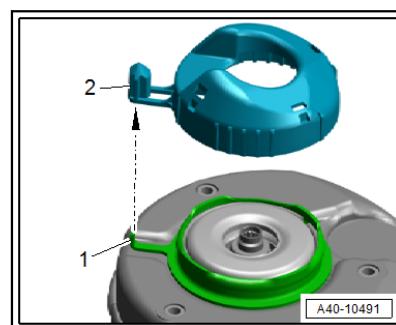
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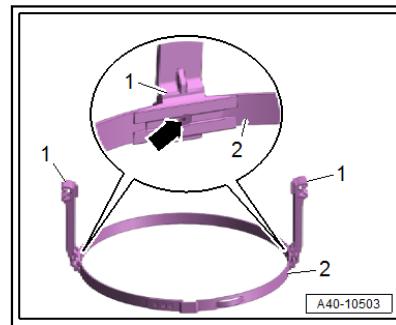
- The locating pin -1- of the protective cap must engage in the hole -2- in the suspension strut -arrow-.

#### Installation position of protective cap (air springs)



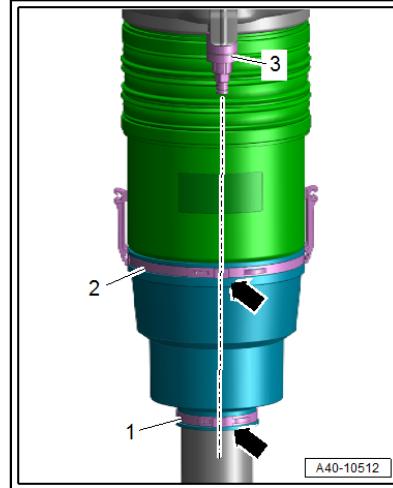
- The locating pin -1- on the suspension strut must engage in the protective cap -2- -arrow-.
- Press protective cap on until it engages audibly.

#### Installation position of bracket for air pipe



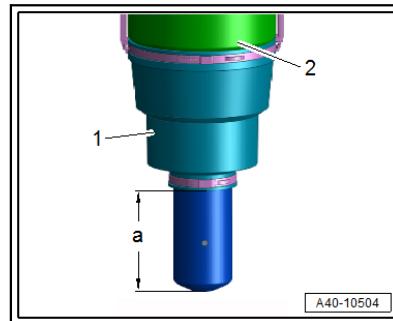
- Position the bracket -1- above the raised dot -arrow- on the hose clip -2-, as shown in the illustration.

#### Installation position of clips



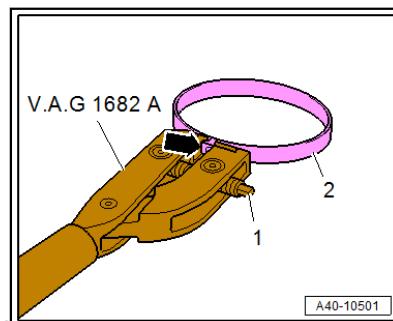
- The lugs -arrows- of the clips -1, 2- must align with the residual pressure valve -3-, as shown in the illustration.

#### Installation position of boot



- Slide top of boot -1- over collar on suspension strut housing -2-.
- Note dimension -a- at bottom.
- Dimension -a- = 96 mm

#### Tightening clips on air spring



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- Before tightening clips, check installation position [page 84](#). AG does not guarantee or accept any liability and [page 84](#) with respect to the correctness of information in this document. Copyright by AUDI AG.
- Turn front wheels as necessary to tighten bottom clip.

- Lift suspension to normal level [⇒ s3.18 uspension to normal level - vehicles with air suspension", page 17](#) to tighten top clip.
- Apply clamp tensioner -V.A.G 1682A- as shown. Make sure tips of tool are applied centrally -arrow- to clip -2-.

**Note:**

- ◆ Make sure thread of spindle on clamp tensioner moves freely. Lubricate with MoS<sub>2</sub> grease if necessary.
- ◆ If the thread is stiff (e.g. due to dirt), the required clamping force will not be attained at the hose clip when the specified tightening torque is applied.
- Tighten hose clip by turning spindle -1- with torque wrench (take care to keep clamp tensioner straight).
- ◆ Tightening torque: 8 Nm

#### 5.1.4 Assembly overview - strut brace

##### 1 - Strut brace

- Removing and installing [⇒ a5.9 nd installing strut brace", page 104](#)

##### 2 - Bolt

- 35 Nm

##### 3 - Bolt

- 35 Nm

##### 4 - Trim

##### 5 - Clamping washer

##### 6 - Bolt

- 25 Nm

##### 7 - Bolt

- Tightening torque  
→ General body repair pairs, exterior; Rep. gr. 50; Bulkhead; Assembly overview - bulkhead

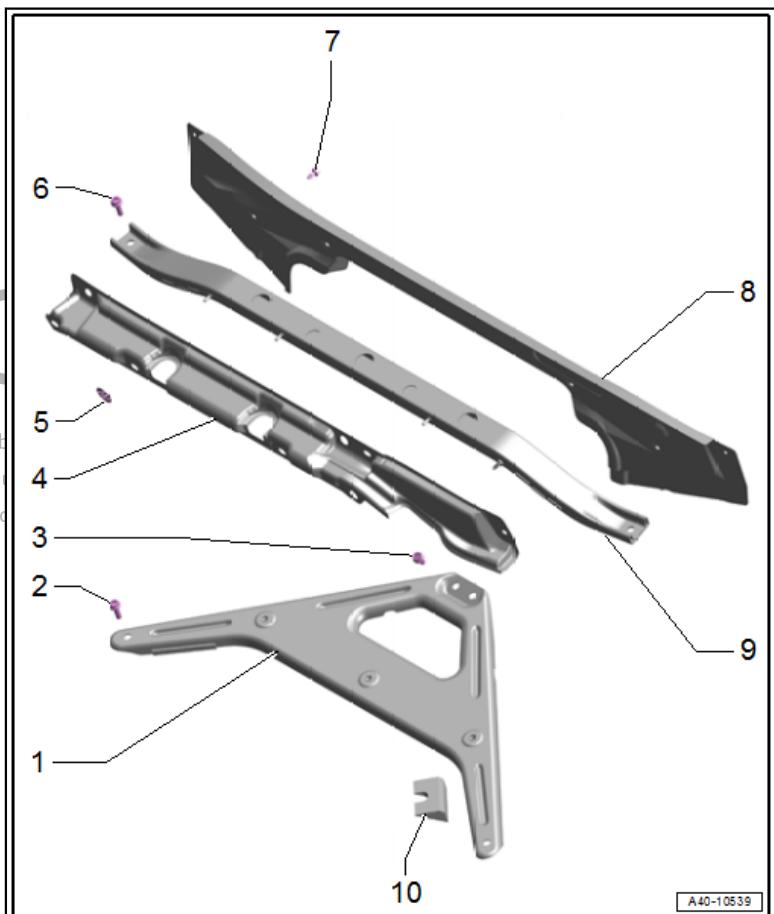
##### 8 - Plenum chamber closure plate

- Assembly overview  
→ General body repairs, exterior; Rep. gr. 50; Bulkhead; Assembly overview - bulkhead

##### 9 - Additional reinforcement

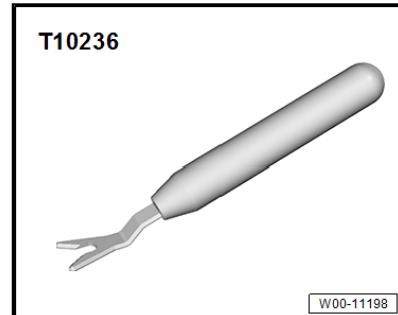
- For strut brace
- Removing and installing [⇒ a5.9 nd installing strut brace", page 104](#)

##### 10 - Sealing element

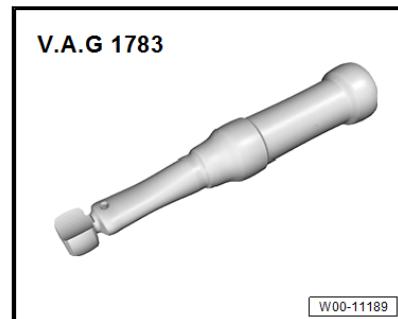


## 5.2 Removing and installing suspension strut

- ◆ Release tool -T10236-



- ◆ Torque wrench -V.A.G 1783- for equipment version with air suspension



- ◆ Open end spanner insert (10 mm) -V.A.G 1783/1- for equipment version with air suspension



### Removing

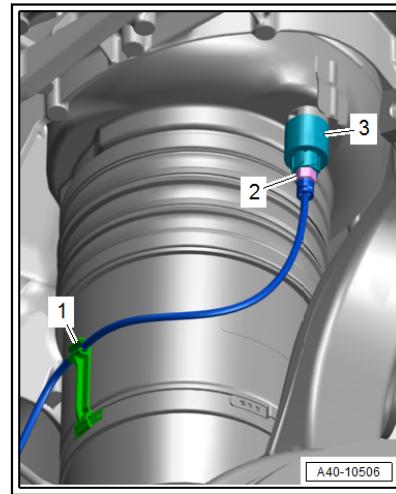
- Remove shock absorber fork [⇒ a5.8 nd installing shock absorber fork", page 102](#).
- Remove additional reinforcement for strut brace [⇒ a5.9 nd installing strut brace", page 104](#).



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5. Suspension strut, upper suspension links **87**

**Equipment version with air suspension:**



- Observe rules for cleanliness [⇒ f3.8 or cleanliness](#), page [11](#).
- Take care to prevent indentations forming in boot on air spring during assembly work.
- When unscrewing the air pipe from a component, check whether the cutting ring is seated on the air pipe.
- Unscrew air pipe -2- from residual pressure valve -3-. This will allow air to escape.
- Move air pipe clear from bracket -1-.

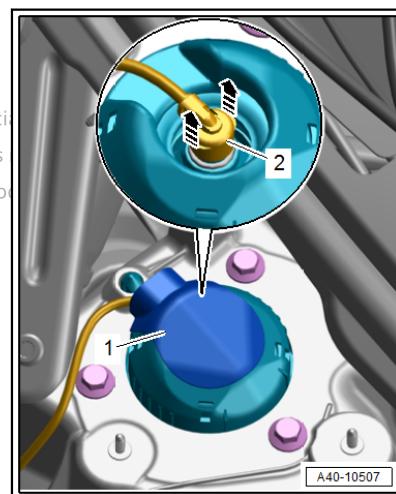
**Note:**

The residual pressure valve cannot be removed separately.

- Close both connections.
- Detach cover -1-.

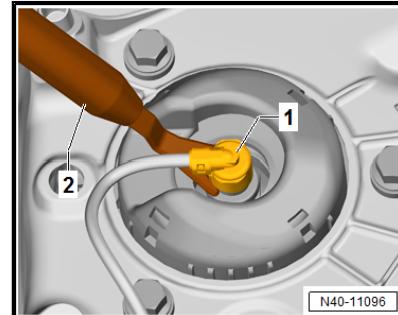


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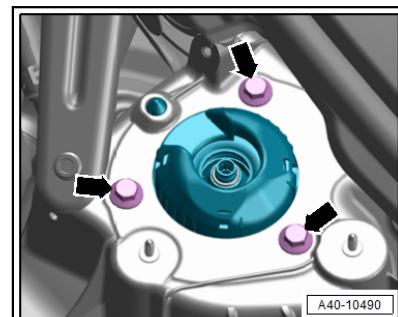


- Release locking ring -2- upwards -arrows-.

- Press off electrical connector -1- using release tool -T10236-  
 -item 2-.



All vehicles (continued):



- Remove bolts -arrows- and detach suspension strut.
- Take care not to damage boots on steering and drive shaft or boot on suspension strut.

### Installing

Installation is carried out in reverse order; note the following:

- Observe steps when installing a new air spring [⇒ s5.7 us-pension strut](#), page 99 .
- Note correct installation positions:
  - ◆ [⇒ Fig. ““Installation position of suspension strut \(coil spring\)”, page 81](#)
  - ◆ [⇒ Fig. ““Installation position of protective cap \(coil springs\)”, page 82](#)
  - ◆ [⇒ Fig. ““Installation position of suspension strut \(air springs\)”, page 83](#)
  - ◆ [⇒ Fig. ““Installation position of protective cap \(air springs\)”, page 84](#)

### Equipment version with coil springs (after renewing springs):

- Adjust headlights ⇒ Electrical system; Rep. gr. 94; Headlights; Adjusting headlights.
- Calibrate front camera for driver assist systems [⇒ f6.1 ront camera for driver assist systems](#), page 338 .
- Calibrate night vision system [⇒ n7.1 ight vision system](#), page 346 .

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**Equipment version with air suspension:**

- Charge air spring system [⇒ a3.7 nd charging air spring system", page 286 .](#)
- Re-adapt normal level [⇒ n3.6 ormal level", page 285 .](#)

**Tightening torques**

- ◆ [⇒ o5.1 verview - suspension strut, upper suspension links", page 78](#)
- ◆ [⇒ o6.1 verview - lower suspension links, swivel joint", page 111](#)

### 5.3 Servicing suspension strut

**Note:**

Because of the different shock absorber valve systems, shock absorbers on both sides of an axle should always be from the same manufacturer whenever possible.

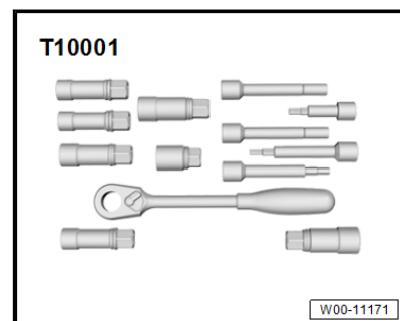
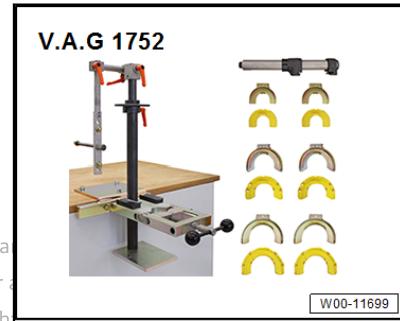
**Special tools and workshop equipment required**

- ◆ Suspension strut tensioner -V.A.G 1752- with spring retainer -V.A.G 1752/6-

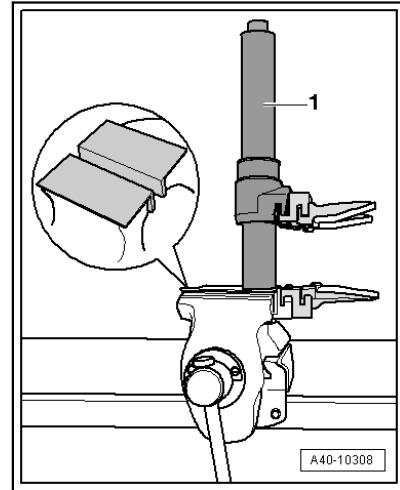


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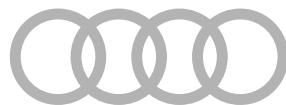
- ◆ Shock absorber tool set -T10001-



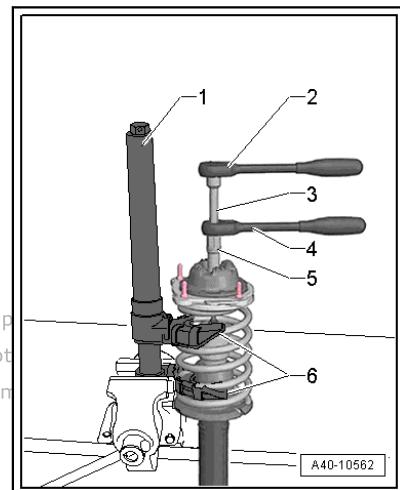
### Removing coil spring



- Clamp spring compressor -V.A.G 1752/1- -item 1- in a vice using protective jaw covers.
- Clamp coil spring/shock absorber in spring compressor - V.A.G 1752/1- -item 1-, as shown in illustration.



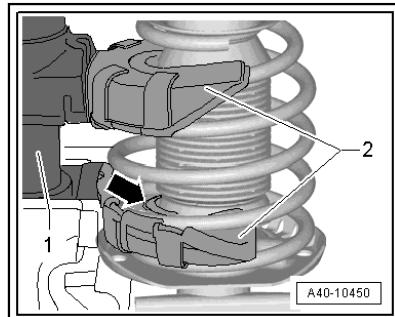
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- Compress coil spring using spring compressor until top spring plate with spring seat is free.
- Unscrew nut from piston rod.
- Take off suspension strut components and coil spring together with spring compressor.

- 1 - Spring compressor -V.A.G 1752/1-
- 2 - Commercially available ratchet
- 3 - Extension -T10001/7-
- 4 - Reversible ratchet -T10001/11-
- 5 - Socket -T10001/5-
- 6 - Spring retainer -V.A.G 1752/6-

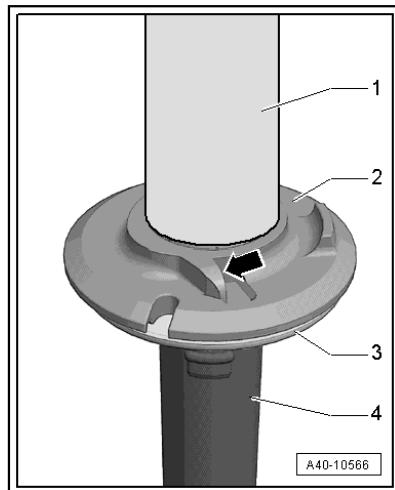
- Ensure that coil spring is correctly seated -arrow- in spring retainer -V.A.G 1752/6-.



1 - Spring compressor -V.A.G 1752/1-

2 - Spring retainer -V.A.G 1752/6-

#### Renewing shock absorber



- Take off protective cap -1- and bottom spring seat -2-.

- Knock spring plate -3- loose using plastic-headed hammer and lift it off shock absorber -4-.

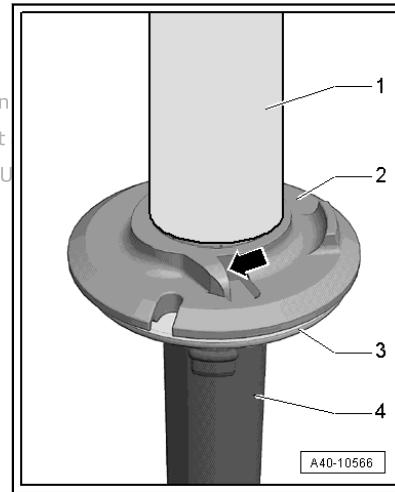


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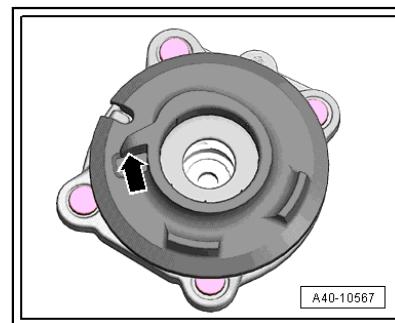


### Installing coil spring

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- Using plastic-headed hammer, knock spring plate -3- onto new shock absorber -4-.
- Install bottom spring seat -2- and protective cap -1-.
- Position compressed coil spring on bottom spring seat. End of spring coil must make contact with stop -arrow- (maximum permissible clearance 2 mm).
- Fit component parts of suspension strut.
- Install top spring plate with spring seat on compressed coil spring so that spring seat makes contact with end of spring coil -arrow-.

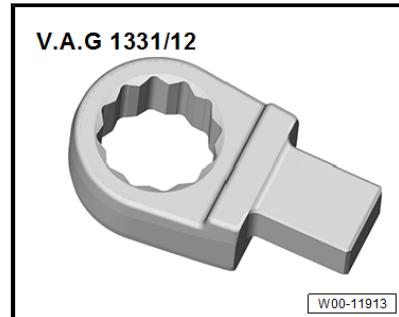


- Maximum permissible clearance: 2 mm
- Fit shock absorber mounting.
- Tighten new nut using special tools [⇒ Item 6 \(page 81\)](#).
- Slacken and remove spring compressor -V.A.G 1752/1-.
- When slackening the spring compressor, make sure that the ends of the spring remain in contact with the stops on the spring seats in the upper and lower spring plates.

## 5.4 Removing and installing upper suspension link

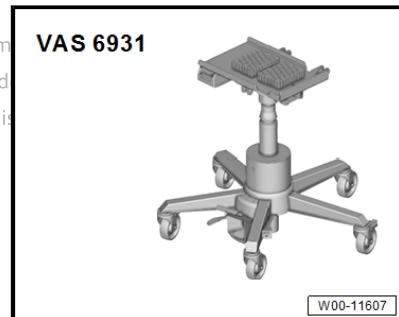
### Special tools and workshop equipment required

- ◆ Vehicle diagnostic tester
- ◆ Ring spanner insert, 16 mm -V.A.G 1331/12-



- ◆ Engine and gearbox jack -VAS 6931-

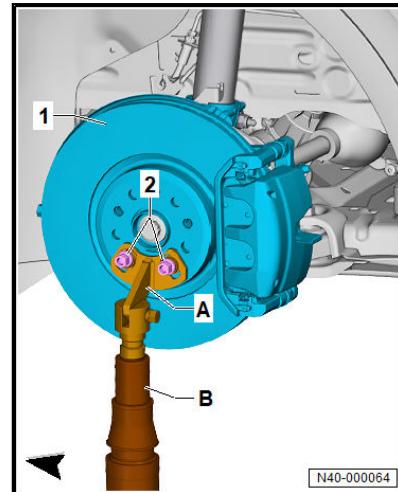
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- ◆ Support device -VAS 6931/1- (not illustrated)

#### Removing

- Vehicles with active suspension: Observe safety precautions  
[⇒ p2.2 recautions when working on vehicles with active suspension](#), page 4 .
- Equipment version with coil springs: ascertain unladen position  
[⇒ s3.17 uspension to unladen position - vehicles with coil springs](#), page 14 .
- Equipment version with air suspension: ascertain normal level  
[⇒ s3.18 uspension to normal level - vehicles with air suspension](#), page 17 .
- Remove front wheel [⇒ t2 yres](#), page 303 .
- Fit support device -VAS 6931/1- -item A- to brake disc -1- with two wheel bolts -2-.



N40-000064

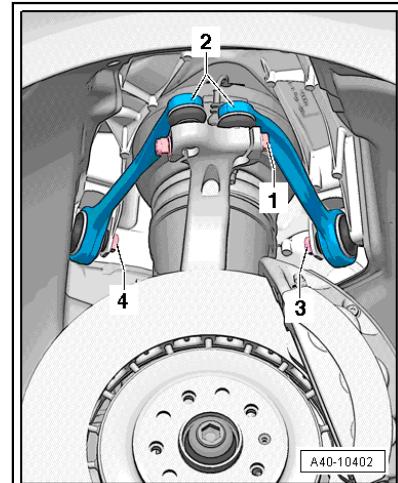
- Apply engine and gearbox support -VAS 6931- -item B- to support device.

#### **⚠ CAUTION**

Risk of accident if vehicle is lowered when engine and gearbox jack is positioned underneath.

- Never lower the vehicle when the engine and gearbox jack is underneath it.
- Never leave the engine and gearbox jack under the vehicle for longer than necessary.

- Use engine and gearbox jack -VAS 6931- attached to support device -VAS 6931/1- to raise wheel bearing housing slightly so that bolts can be removed more easily.
- Unscrew bolt -1-.



A40-10402

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**! NOTICE**

**Risk of damage to wheel bearing housing due to deformation.**

- Do not enlarge the slots in the wheel bearing housing.
- Pull appropriate joint pins of upper suspension links -2- out of wheel bearing housing.
- Lower wheel bearing housing only as far as necessary.
- Unscrew bolt -4- or -3- and detach appropriate upper suspension link.

**Installing**

Installation is carried out in reverse order; note the following:

- Screw in bolts for components with bonded rubber bushes initially until they make contact, but do not tighten to final torque yet.
- Bonded rubber bushes can only be turned to a limited extent. The suspension mountings must therefore only be tightened when the suspension is in the unladen position or normal level.
- Lift suspension to unladen position [⇒ s3.17 uspension to unladen position - vehicles with coil springs](#), page 14 or normal level [⇒ s3.18 uspension to normal level - vehicles with air suspension](#), page 17 .

**Tightening torques**

- ◆ [⇒ o5.1 verview - suspension strut, upper suspension links](#), page 78
- ◆ [⇒ t2 yres](#), page 303

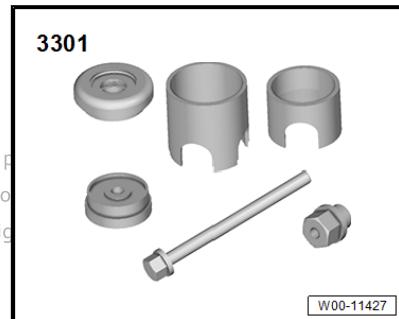
## 5.5 Renewing bush for upper suspension link

**Special tools and workshop equipment required**

- ◆ Assembly tool -3301-



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◆ Assembly tool -3348-

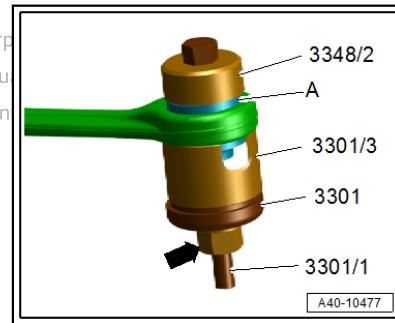


**Procedure**

- Upper suspension link removed [→ a5.4 nd installing upper suspension link", page 93](#).
- Mark installation depth of bonded rubber bush using a waterproof felt-tip pen or similar.

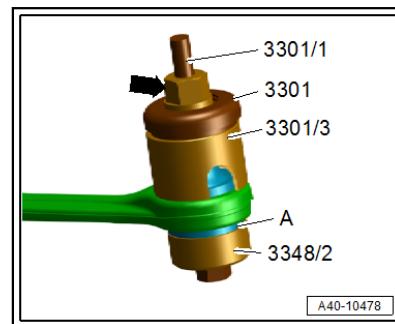
**Extracting bonded rubber bush**

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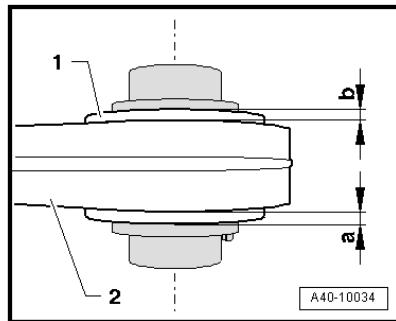
- Clamp suspension link in jaws of vice. Use protective jaw covers.
- Set up special tools as shown in illustration.
- Extract bonded rubber bush -A- by turning nut -arrow-.

**Installing bonded rubber bush**



- Do not use lubricant.
- Transfer marking for installation depth from old bonded rubber bush to new bush.
- Set up special tools as shown in illustration.

- Install bonded rubber bush -A- by turning nut -arrow-, using the installation depth marking made earlier as a guide.
- Check installation depth of bonded rubber bush -1- in suspension link -2-.



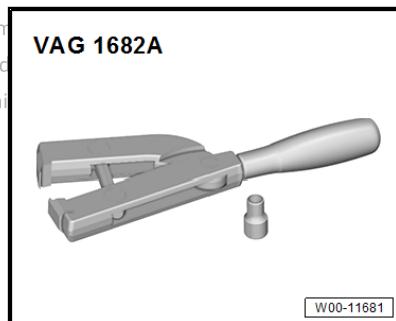
- Specification: Dimension -a- = dimension -b-
- Increase depth of bonded rubber bush if dimensions are not equal.

## 5.6 Renewing boot

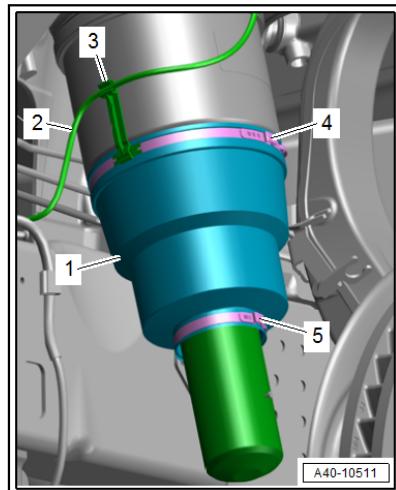
### Special tools and workshop equipment required

- ◆ Clamp tensioner V.A.G 1682A-

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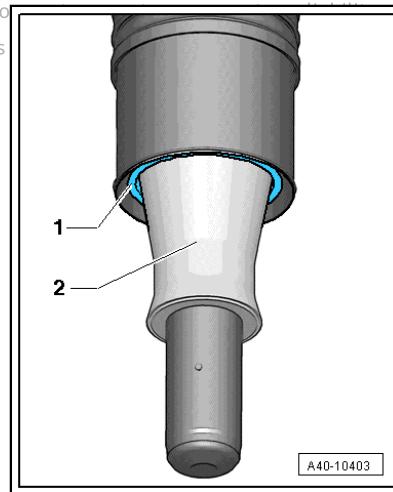


### Removing



- Remove shock absorber fork [⇒ a5.8 nd installing shock absorber fork", page 102](#).
- Move air pipe -2- clear at bracket -3-.
- Mark position of air line clip -3-.
- Detach hose clips -4, 5-.
- Carefully pull dust boot -1- off collar on suspension strut housing (at top end) and collar of piston for U-bellows (at bottom end) and remove boot from air spring.

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- Before fitting the dust boot, check the surface of the piston for U-bellows and the rubber boot for damage and dirt, and rectify if necessary.
- Check rubber boot -1- for damage.
- Creases around boot must be regular and even.
- Replace air spring if damaged.
- Check piston -2- for U-bellows for damage and dirt.
- If necessary, re-work surface with fine sandpaper. Take care to avoid scoring and scratches.

#### Installing

Installation is carried out in reverse order; note the following:

- Install shock absorber fork [⇒ a5.8 nd installing shock absorber fork", page 102](#).
- Ensure correct installation position of boot [⇒ page 85](#).
- Before tightening hose clips ensure that boot is not twisted.
- Note installation position of hose clip and air line clips [⇒ page 84](#) and [⇒ page 84](#).
- Use hose clip pliers -V.A.G 1682A- to tighten hose clip [⇒ page 85](#).

#### 5.7 Charging suspension strut

Replacement air springs are supplied with a minimum gas filling. After a period of storage, they may lose some of this initial pressure (in the same way as a tyre). The minimum pressure must therefore be checked, and if necessary »recharged« to

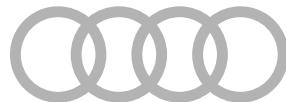
the required level before the air springs are taken out of their packaging. If the spring is taken out of its packaging without checking and recharging the pressure, this can cause indentations or kinks to form in the U-bellows before it reaches its normal shape. This can damage the bellows and cause premature failure of the air spring.

#### **Special tools and workshop equipment required**

- ◆ Filler unit for air suspension strut -VAS 6231-



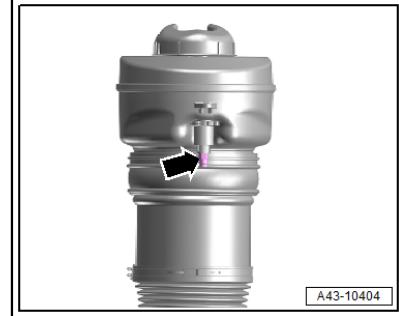
- ◆ Adapter -T10157-



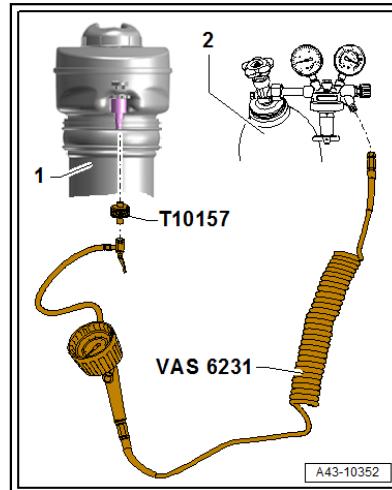
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- ◆ Gas cylinder: Argon or Cargon

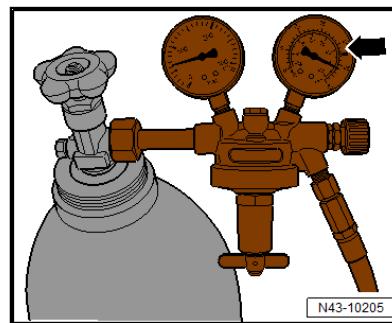
#### **Procedure**



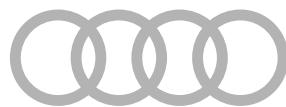
- Remove sealing plug -arrow- from residual pressure valve.
- Close valve on gas cylinder.
- Make sure that you are familiar with the relevant safety instructions for the use of pressurised containers and industrial gases.
- Connect filler unit for air suspension strut -VAS 6231- and adapter -T10157- as illustrated.



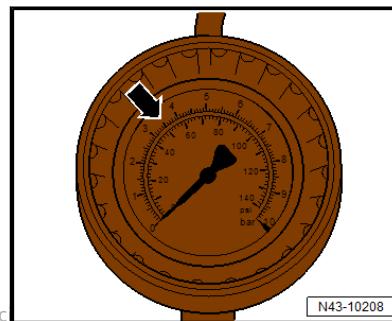
- 1 - Air spring in its packaging
- 2 - Gas cylinder for argon or Cargon with fittings
- To stop "unfiltered" air entering the air spring system, the air spring may only be »recharged« with the gases listed above.
- Set restrictor valve to 2.0 ltr./min -arrow-.



- Charge the air spring with gas up to approx. 5.0 bar, using several separate bursts of pressure.



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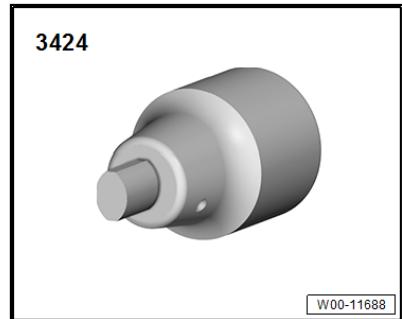
- Disconnect filler unit for air suspension strut -VAS 6231- from adapter -T10157-; gas pressure in excess of 3.5 bar -arrow- will then be released.
- The minimum pressure has now been restored. You can take the air spring out of the packaging.

- After installation, set the suspension to the raised level setting and then back to the normal level.
- Repeat the procedure.
- Most of the gas will be replaced with the filtered and dried air from the air supply unit once the suspension has twice moved up and down to these settings.
- Install air spring [page 89](#).

## 5.8 Removing and installing shock absorber fork

### Special tools and workshop equipment required

- ◆ Spreader -3424-

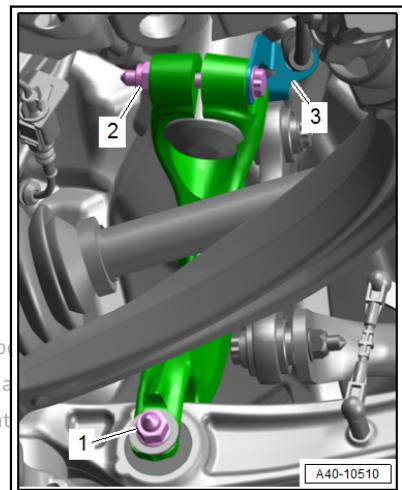


### Removing

- Remove coupling rod [a4.3 and installing coupling rod", page 72](#).
- Detach bolt connections -1, 2- for shock absorber fork.



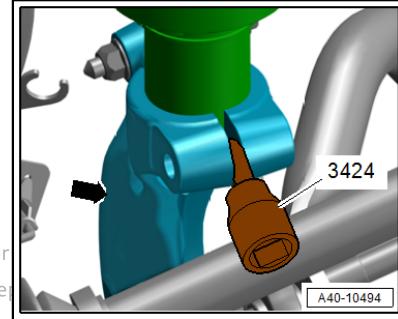
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- Push bracket -3- with brake hose to one side.
- Insert spreader -3424- in slot in shock absorber fork -arrow-.



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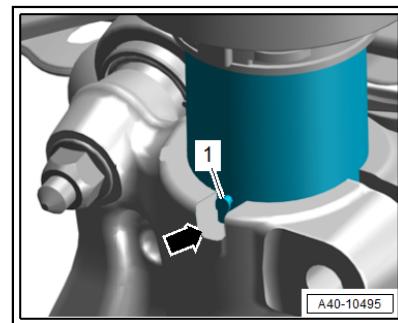


#### NOTICE

##### Risk of damage to swivel joints if force is applied.

- Never force the joints of the upper suspension links beyond their maximum articulation point.
- Pull shock absorber fork downwards off shock absorber tube.
- Carefully push wheel bearing housing downwards and remove shock absorber fork.

#### Installing



Installation is carried out in reverse order; note the following:

- Attach shock absorber fork.
- T-bolt -1- of suspension strut must engage as far as stop in groove -arrow- on shock absorber fork.
- Install coupling rod [⇒ a4.3 nd installing coupling rod", page 72](#).
- Overview table: when does wheel alignment have to be checked? [⇒ d4.4 oes wheel alignment have to be checked?", page 309](#)

#### Tightening torques

- ◆ [⇒ o5.1 verview - suspension strut, upper suspension links", page 78](#)
- ◆ [⇒ o6.1 verview - lower suspension links, swivel joint", page 111](#)
- ◆ [⇒ t2 yres", page 303](#)

## 5.9 Removing and installing strut brace

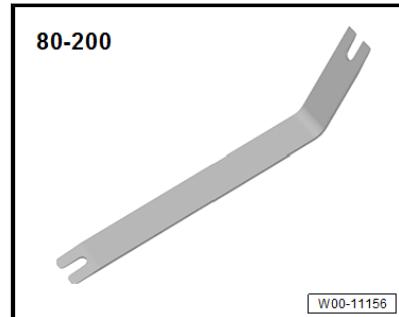
⇒ [a5.9.1 and installing additional reinforcement for strut brace](#),  
[page 104](#)

⇒ [a5.9.2 and installing strut brace](#), [page 106](#)  
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 ⇒ [a5.9.3 and installing strut brace with additional reinforcement](#),  
[page 108](#) with respect to the correctness of information in this document. Copyright by AUDI AG.

### 5.9.1 Removing and installing additional reinforcement for strut brace

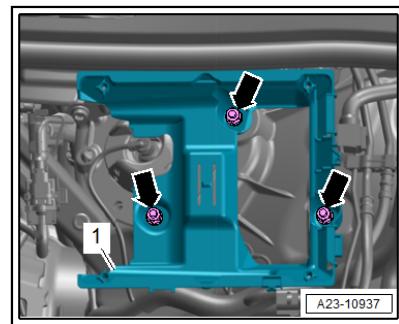
#### Special tools and workshop equipment required

- ◆ Removal lever -80-200-



#### Removing

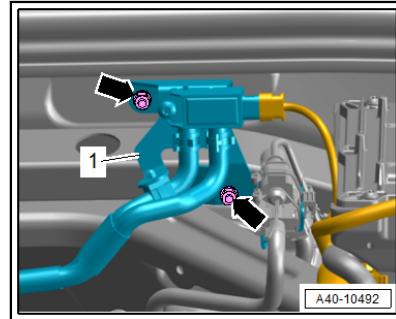
- Remove plenum chamber cover ⇒ General body repairs, exterior; Rep. gr. 50; Bulkhead; Removing and installing plenum chamber cover.
- Take engine control unit -J623- out of bracket and place to one side ⇒ Rep. gr. 23; Engine control unit; Removing and installing engine control unit -J623-, or ⇒ Rep. gr. 24; Engine control unit; Removing and installing engine control unit -J623-.
- Remove nuts -arrows- and push bracket -1- for engine control unit slightly towards front.



- Unclip cover (left and right) at bulkhead ⇒ General body repairs, exterior; Rep. gr. 50; Bulkhead; Assembly overview - bulkhead.
- Detach terminal 30 wiring junction -TV2- from bulkhead and push it slightly towards front ⇒ Electrical system; Rep. gr. 97; Relay carriers, fuse carriers, electronics boxes; Overview of fitting locations - relay carriers, fuse carriers, electronics boxes.

- Remove air filter housing ⇒ Rep. gr. 23; Air filter; Removing and installing air filter housing or ⇒ Rep. gr. 24; Air filter; Removing and installing air filter housing.

#### Vehicles with TDI engine

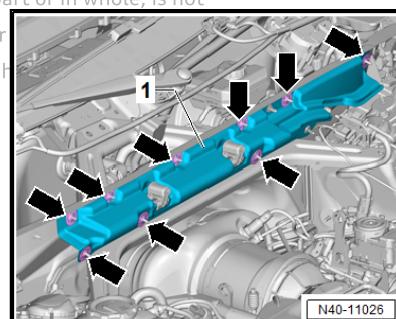


- Remove nuts -arrows- and place bracket -1- for pressure differential sender -G505- to one side.

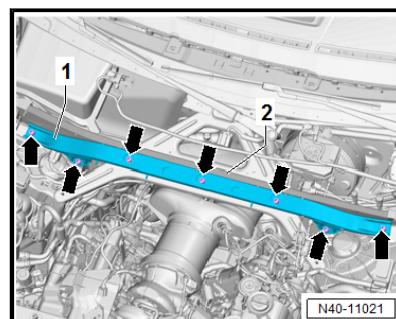
#### All vehicles (continued)

- Remove top cover for plenum chamber closure plate ⇒ General body repairs, exterior; Rep. gr. 50; Bulkhead; Assembly overview - bulkhead.
- Loosen clamping washers -arrows- using removal lever -80-200-.

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- Swivel trim -1- upwards.
- Remove bolts -arrows-.



- Remove additional reinforcement -1- with plenum chamber closure plate -2-.

### Installing

Installation is carried out in reverse order; note the following:

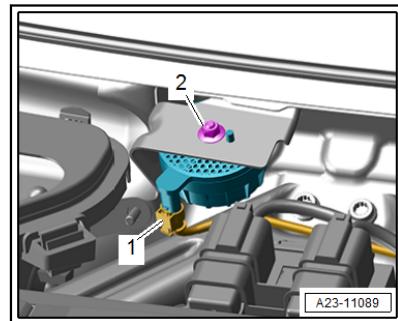
- Install air filter housing ⇒ Rep. gr. 23; Air filter; Removing and installing air filter housing or ⇒ Rep. gr. 24; Air filter; Removing and installing air filter housing.
- Install top cover for plenum chamber closure plate ⇒ General body repairs, exterior; Rep. gr. 50; Bulkhead; Assembly overview - bulkhead.
- Install plenum chamber cover ⇒ General body repairs, exterior; Rep. gr. 50; Bulkhead; Removing and installing plenum chamber cover.

### Tightening torques

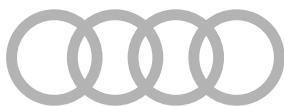
- ◆ ⇒ [o5.1 overview - suspension strut, upper suspension links](#), page 78
- ◆ ⇒ Electrical system; Rep. gr. 97; Relay carriers, fuse carriers, electronics boxes; Overview of fitting locations - relay carriers, fuse carriers, electronics boxes
- ◆ ⇒ Rep. gr. 23; Air filter; Removing and installing air filter housing
- ◆ ⇒ Rep. gr. 24; Air filter; Removing and installing air filter housing
- ◆ ⇒ General body repairs, exterior; Rep. gr. 50; Bulkhead; Removing and installing plenum chamber cover

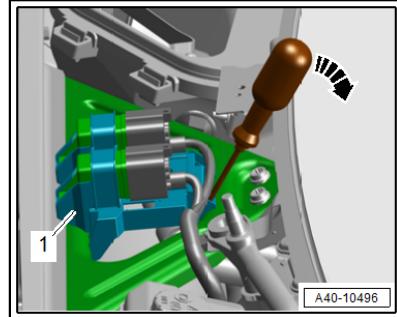
## 5.9.2 Removing and installing strut brace

### Removing

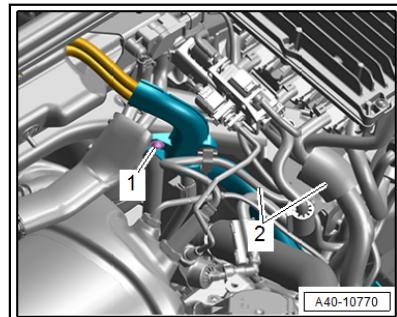


- Remove additional reinforcement for strut brace ⇒ [a5.9.1 nd installing additional reinforcement for strut brace](#), page 104 .
- On relevant versions: Unplug electrical connector -1- for actuator for structure-borne sound -R214-.
- Release catches (if fitted) using a screwdriver -arrow-, detach bracket -1- for relays and control units and place it to one side.

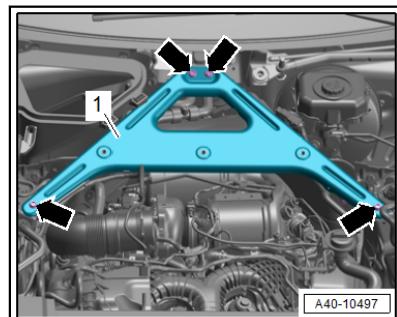




- Equipment version with wiper with integrated washer jet:  
 Detach windscreen washer pump control unit -J1100- from  
 bracket and move it to one side (leave electrical connector  
 plugged in) ➤ Electrical system; Rep. gr. 92; Windscreen  
 washer system; Removing and installing windscreen washer  
 pump control unit -J1100-. not permitted unless authorized by AUDI AG. AUDI AG does not guarantee or accept any liability  
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- Vehicles with 4.0 ltr TDI engine: Remove bolt -1- and move  
 electrical wiring clear -2-.



- Move electrical wiring clear.



- Remove bolts -arrows- and detach strut brace -1-.

#### Installing

Installation is carried out in reverse order; note the following:

- Install additional reinforcement for strut brace ➤ [a5.9.1 nd  
installing additional reinforcement for strut brace", page 104](#).

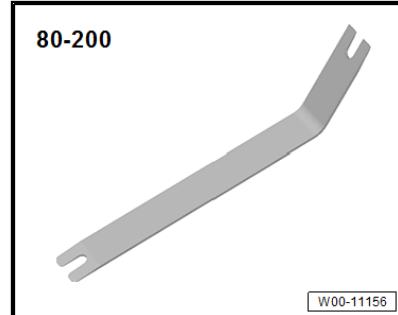
#### Tightening torques

- ◆ ➤ [o5.1 overview - suspension strut, upper suspension links"](#)  
[page 78](#)

### 5.9.3 Removing and installing strut brace with additional reinforcement

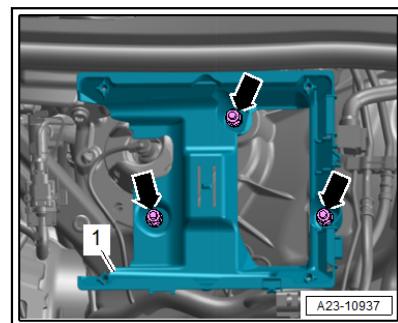
#### Special tools and workshop equipment required

- ◆ Removal lever -80-200-

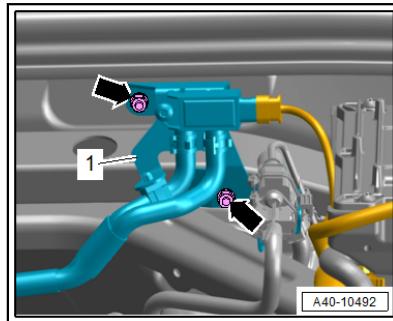


#### Removing

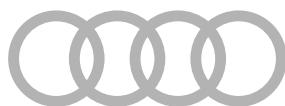
- Remove plenum chamber cover ⇒ General body repairs, exterior; Rep. gr. 50; Bulkhead; Removing and installing plenum chamber cover.
- Take engine control unit -J623- out of bracket and place to one side ⇒ Engine; Rep. gr. 23; Engine control unit; Removing and installing engine control unit -J623-, or ⇒ Engine; Rep. gr. 24; Engine control unit; Removing and installing engine control unit -J623-.
- Remove nuts -arrows- and push bracket -1- for engine control unit slightly towards front.



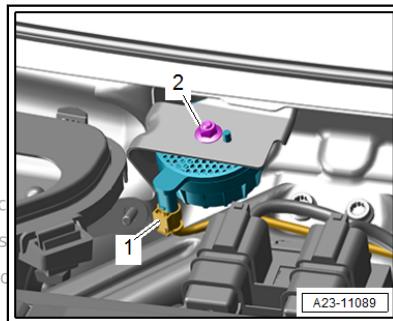
- Unclip cover (left and right) at bulkhead ⇒ General body repairs, exterior; Rep. gr. 50; Bulkhead; Assembly overview - bulkhead.
- Detach terminal 30 wiring junction -TV2- from bulkhead and push it slightly towards front ⇒ Electrical system; Rep. gr. 97; Relay carriers, fuse carriers, electronics boxes; Overview of fitting locations - relay carriers, fuse carriers, electronics boxes.
- Remove air filter housing ⇒ Engine; Rep. gr. 23; Air filter; Information: Copying, photographing, storing and processing data, in whole or in part, for purposes, in part or in whole, is not guaranteed or accept any liability. Removing and installing air filter housing or ⇒ Engine; Rep. gr. 24; Air filter; Removing and installing air filter housing.
- Vehicles with TDI engine: Remove nuts -arrows- and place bracket -1- for pressure differential sender -G505- to one side.



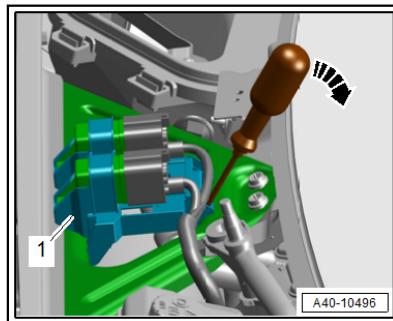
- On relevant versions: Unplug electrical connector -1- for actuator for structure-borne sound -R214-.



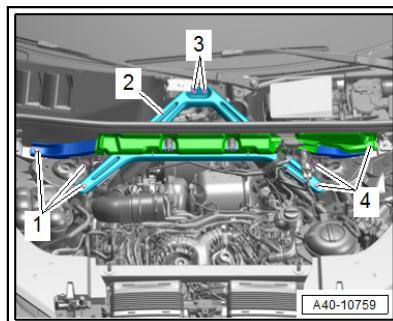
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- Release catches (if fitted) using a screwdriver -arrow-, detach bracket -1- for relays and control units and place it to one side.



- Remove bolts -1, 3, 4-. Detach strut brace -2- with additional reinforcement and plenum chamber closure plate.



### Installing

Installation is carried out in reverse order; note the following:

- Install air filter housing ⇒ Engine; Rep. gr. 23; Air filter; Removing and installing air filter housing or ⇒ Engine; Rep. gr. 24; Air filter; Removing and installing air filter housing.
- Install plenum chamber cover ⇒ General body repairs, exterior; Rep. gr. 50; Bulkhead; Removing and installing plenum chamber cover.

### Tightening torques

- ◆ [⇒ o5.1 overview - suspension strut, upper suspension links](#), page 78
- ◆ ⇒ Electrical system; Rep. gr. 97; Relay carriers, fuse carriers, electronics boxes; Overview of fitting locations - relay carriers, fuse carriers, electronics boxes
- ◆ ⇒ Engine; Rep. gr. 23; Lambda probe; Assembly overview - Lambda probe



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## 6 Lower suspension links, swivel joint

[⇒ 06.1 verview - lower suspension links, swivel joint", page 111](#)

[⇒ a6.2 nd installing track control link", page 113](#)

[⇒ a6.3 nd installing guide link", page 117](#)

[⇒ b6.4 ush for track control link", page 119](#)

[⇒ a6.5 nd installing swivel joint", page 125](#)

[⇒ a6.6 nd installing bonded rubber bush for guide link", page 126](#)

### 6.1 Assembly overview - lower suspension links, swivel joint



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**1 - Bonded rubber bush  
(wheel bearing housing end)**

- Renewing [⇒ b6.4.1 ush for track control link \(wheel bearing housing end\)", page 119](#)

**2 - Track control link**

- Removing and installing [⇒ a6.2 nd installing track control link", page 113](#)

**3 - Bonded rubber bush (sub-frame end)**

- Renewing [⇒ b6.4.2 ush for track control link \(subframe end\)" page 122](#)

permitted unless au

**4 - Bolt**

with respect to the c

- Renew after removing

**5 - Shock absorber fork**

- Removing and installing [⇒ a5.8 nd installing shock absorber fork", page 102](#)

**6 - Nut**

- Renew after removing

- Tighten in unladen position [⇒ s3.17 uspension to unladen position - vehicles with coil springs", page 14](#) or at normal level [⇒ s3.18 uspension to normal level - vehicles with air suspension", page 17](#)

70 Nm +180°

**7 - Bolt**

- Renew after removing

**8 - Subframe**

**9 - Bolt**

- Renew after removing

**10 - Nut**

- Renew after removing
- Tighten in unladen position [⇒ s3.17 uspension to unladen position - vehicles with coil springs" page 14](#) or at normal level [⇒ s3.18 uspension to normal level - vehicles with air suspension", page 17](#)

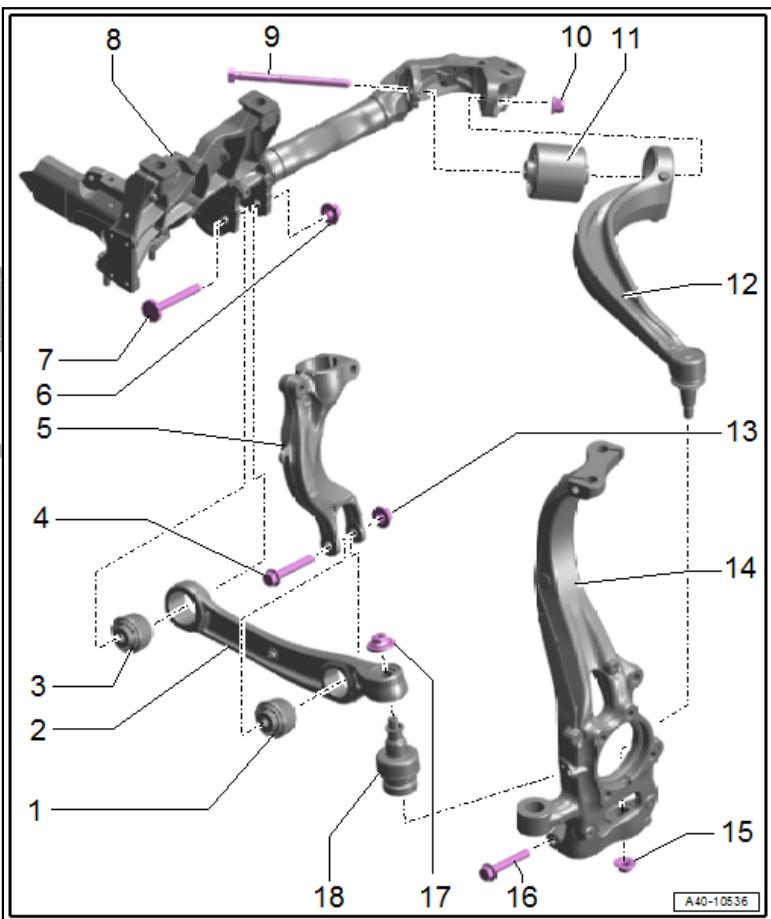
70 Nm +180°

**11 - Bonded rubber bush**

- Bonded rubber bush in guide link may only be renewed once.
- Renewing [⇒ a6.6 nd installing bonded rubber bush for guide link", page 126](#)

**12 - Guide link**

- Bonded rubber bush in guide link may only be renewed once.
- Removing and installing [⇒ a6.3 nd installing guide link", page 117](#)



### 13 - Nut

- Renew after removing
- Tighten in unladen position [⇒ s3.17 uspension to unladen position - vehicles with coil springs", page 14](#) or at normal level [⇒ s3.18 uspension to normal level - vehicles with air suspension", page 17](#)
- 90 Nm +90°

### 14 - Wheel bearing housing

#### 15 - Nut

- Renew after removing
- If re-installing guide link, clean any remaining locking fluid off thread of joint pin
- 140 Nm

#### 16 - Bolt

- Renew after removing
- 40 Nm

#### 17 - Nut

- Renew after removing
- If re-installing swivel joint, clean any remaining locking fluid off thread of joint pin
- 120 Nm

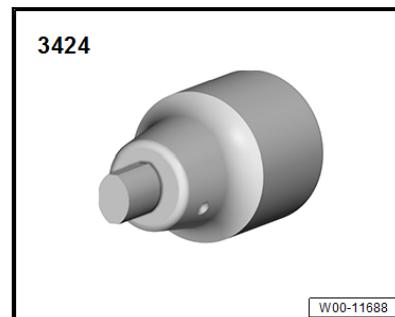
#### 18 - Swivel joint

- Removing and installing [⇒ a6.5 nd installing swivel joint", page 125](#)

## 6.2 Removing and installing track control link

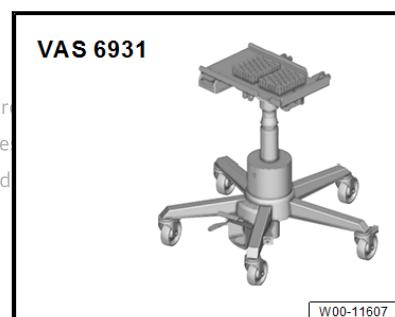
### Special tools and workshop equipment required

◆ Spreader -3424-



W00-11688

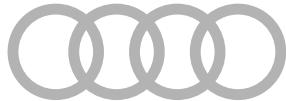
◆ Engine and gearbox jack -VAS 6931-



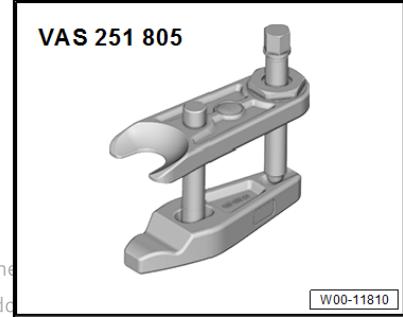
W00-11607

◆ Support device -VAS 6931/1- (not illustrated)

◆ Ball joint ejector -VAS 251 805-

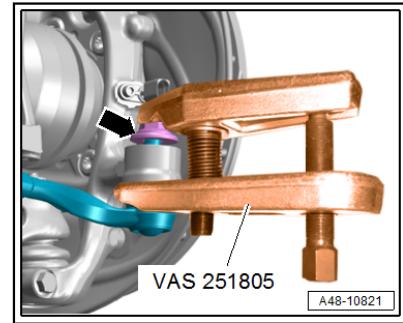


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### Removing

- Vehicles with active suspension: Observe safety precautions  
⇒ p2.2 precautions when working on vehicles with active suspension, page 4 .
- Equipment version with coil springs: ascertain unladen position  
⇒ s3.17 suspension to unladen position - vehicles with coil springs, page 14 .
- Equipment version with air suspension: ascertain normal level  
⇒ s3.18 suspension to normal level - vehicles with air suspension, page 17 .
- Remove front wheel ⇒ t2 yres, page 303 .
- Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; Assembly overview - noise insulation.
- To protect thread, unscrew nut -arrow- on joint pin of track rod ball joint until nut is flush with thread of joint pin.



#### CAUTION

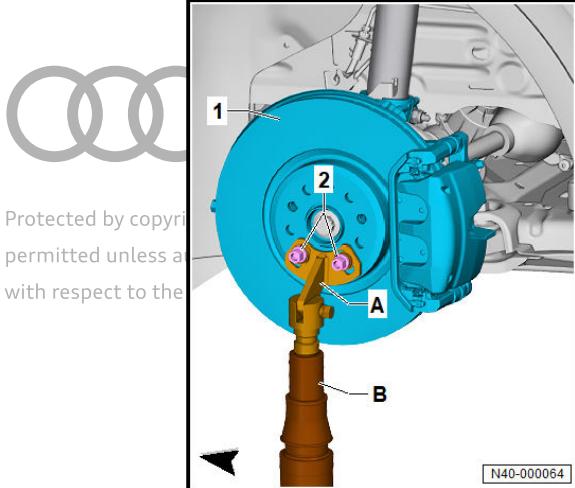
Track rod ball joint is released abruptly when it is pressed out  
- risk of injury.

Risk of contusions.

- Secure tools by placing engine and gearbox jack underneath.

- Press track rod ball joint off wheel bearing housing using ball joint ejector -VAS 251 805-.
- Unscrew nut; if necessary, counterhold at joint pin with a 6 mm hexagon socket.
- Lift track rod clear and tie up.

- To avoid damage to joints of upper links, support wheel bearing housing to prevent the suspension from extending too far.



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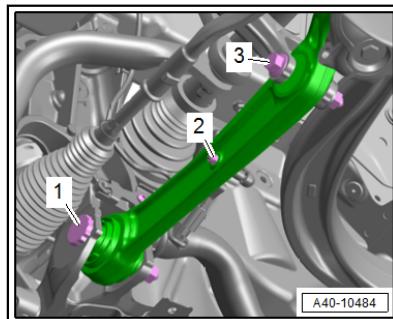
- Fit support device -VAS 6931/1- -item A- to brake disc -1- with two wheel bolts -2-.

#### CAUTION

Risk of accident if vehicle is lowered when engine and gearbox jack is positioned underneath.

- Never lower the vehicle when the engine and gearbox jack is underneath it.
- Never leave the engine and gearbox jack under the vehicle for longer than necessary.

- Support wheel bearing housing using support device -VAS 6931/1- with engine and gearbox jack -VAS 6931-.
- Equipment version with front vehicle level senders: Remove nut -2- and move coupling rod for vehicle level sender clear.

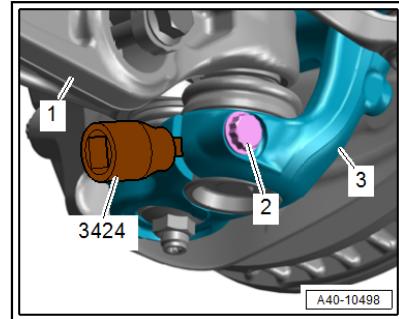


- Detach bolt connections -1, 3- for track control link.
- Swivel track control link to the front.

**Note:**

To remove bolt -1-, turn steering to full left/right lock.

- Remove bolt -2-.

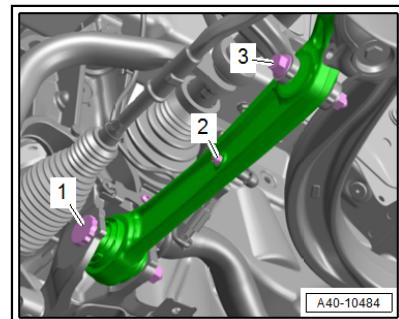


- Insert spreader -3424- in slot in wheel bearing housing -3- and turn it 90°.
- Take out track control link -1- with swivel joint.

#### Installing

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- Move track control link with swivel joint into installation position.
- Screw in bolts for components with bonded rubber bushes initially until they make contact, but do not tighten to final torque yet.
- Bonded rubber bushes can only be turned to a limited extent. The suspension mountings must therefore only be tightened when the suspension is in the unladen position or normal level.
- Lift suspension to unladen position [⇒ s3.17 uspension to unladen position - vehicles with coil springs](#), page 14 or normal level [⇒ s3.18 uspension to normal level - vehicles with air suspension](#), page 17 .
- When tightening bolt connection -1-, track control link must be pressed towards inside of vehicle.



- Overview table: when does wheel alignment have to be checked? [⇒ d4.4 oes wheel alignment have to be checked?](#), page 309

#### Equipment version with front vehicle level senders and coil springs:

- Adjust headlights ⇒ Electrical system; Rep. gr. 94; Headlights; Adjusting headlights.
- Calibrate front camera for driver assist systems [⇒ f6.1 ront camera for driver assist systems](#), page 338 .

- Calibrate night vision system [⇒ n7.1 ight vision system", page 346](#).

**Equipment version with air suspension:**

- Re-adapt normal level [⇒ n3.6 ormal level", page 285](#).

**Tightening torques**

- ◆ [⇒ o6.1 verview - lower suspension links, swivel joint", page 111](#)
- ◆ ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; Assembly overview - noise insulation
- ◆ [⇒ t2 yres", page 303](#)
- ◆ [⇒ o2.1 verview - front vehicle level senders", page 274](#)

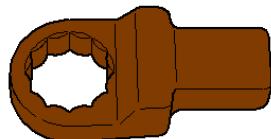
### 6.3 Removing and installing guide link

**Special tools and workshop equipment required**

- ◆ Ring spanner insert, 21 mm -V.A.G 1332/7-

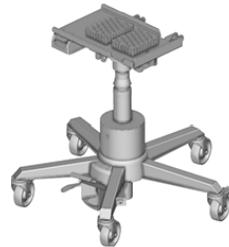
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V.A.G 1332/7



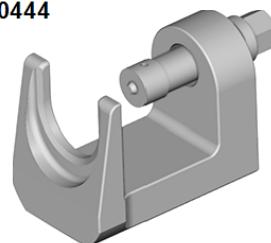
W00-11476

VAS 6931



W00-11607

T10444



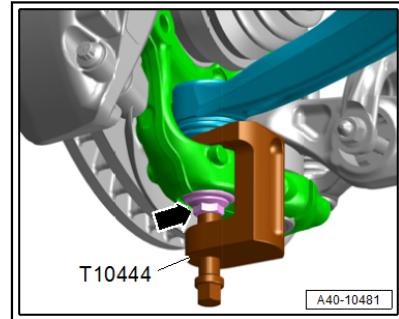
W00-10888

- ◆ Engine and gearbox jack -VAS 6931-

- ◆ Ball joint puller -T10444-

### Removing

- Vehicles with active suspension: Observe safety precautions  
[⇒ p2.2 recautions when working on vehicles with active suspension", page 4 .](#)
- Equipment version with coil springs: ascertain unladen position  
[⇒ s3.17 uspension to unladen position - vehicles with coil springs", page 14 .](#)
- Equipment version with air suspension: ascertain normal level  
[⇒ s3.18 uspension to normal level - vehicles with air suspension", page 17 .](#)
- Remove front wheel [⇒ t2 yres", page 303 .](#)
- Remove noise insulation (rear) ⇒ General body repairs, exterior; Rep. gr. 66; Noise insulation; Assembly overview - noise insulation.
- Remove subframe shield [⇒ a3.6 nd installing subframe shield", page 59 .](#)
- To protect thread, unscrew nut -arrow- on joint pin of guide link until nut is flush with thread of joint pin.



- Press joint pin of guide link out of tapered seat using ball joint puller -T10444-, taking care not to damage boot.

 **CAUTION**

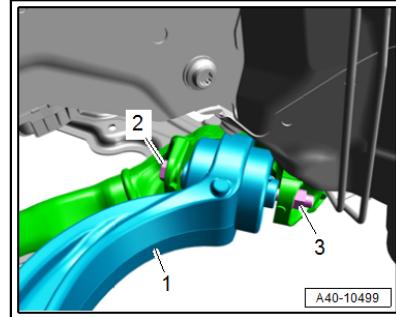
**Swivel joint is released abruptly when it is pressed out - risk of injury.**

**Risk of contusions.**

- Secure tools by placing engine and gearbox jack underneath.

- Remove nut -arrow-. Move guide link clear at wheel bearing housing. If necessary, counterhold at joint pin with a TX 40 socket.
- Unscrew nut -3- and remove bolt -2-.

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- Detach guide link -1-.

### Installing

Installation is carried out in reverse order; note the following:

- If re-installing guide link, clean any remaining locking fluid off thread of joint pin.
- Screw in bolts for components with bonded rubber bushes initially until they make contact, but do not tighten to final torque yet.
- Bonded rubber bushes can only be turned to a limited extent. The suspension mountings must therefore only be tightened when the suspension is in the unladen position or normal level.
- Lift suspension to unladen position → [s3.17 uspension to unladen position - vehicles with coil springs](#), page 14 or normal level → [s3.18 uspension to normal level - vehicles with air suspension](#), page 17 .
- Overview table: when does wheel alignment have to be checked? → [d4.4 oes wheel alignment have to be checked?](#), page 309

### Tightening torques

- ◆ → [o6.1 verview - lower suspension links, swivel joint](#), page 111
- ◆ → [o3.1 verview - subframe](#), page 34
- ◆ → [t2 yres](#), page 303
- ◆ → General body repairs, exterior; Rep. gr. 66; Noise insulation; Assembly overview - noise insulation

## 6.4 Renewing bush for track control link

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 → [b6.4.1 ush for track control link \(wheel bearing housing end\)](#), page 119  
 → [b6.4.2 ush for track control link \(subframe end\)](#), page 122  
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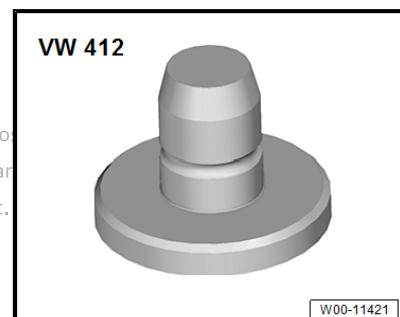
### 6.4.1 Renewing bush for track control link (wheel bearing housing end)

#### Special tools and workshop equipment required

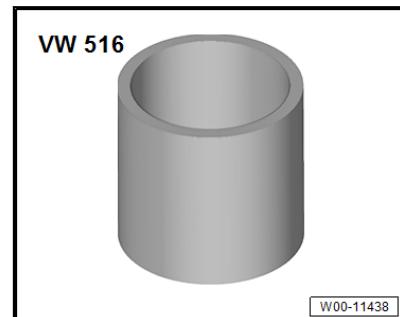
◆ Thrust plate -VW402-



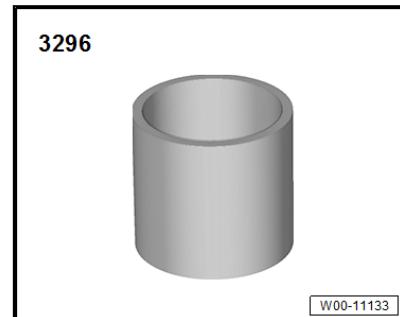
◆ Press tool -VW412-



◆ Tube -VW516-



◆ Tube -3296-

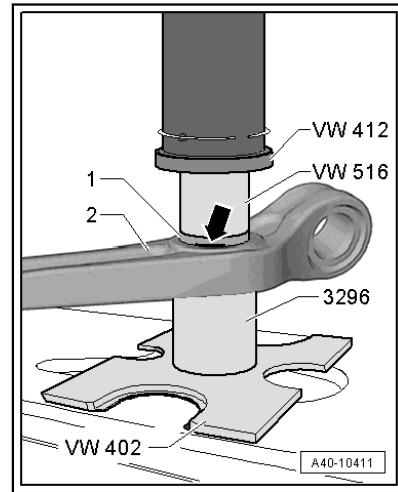


◆ Assembly paste -G 052 109 A2-

**Procedure**

- Track control link removed [⇒ a6.2 nd installing track control link](#), page 113

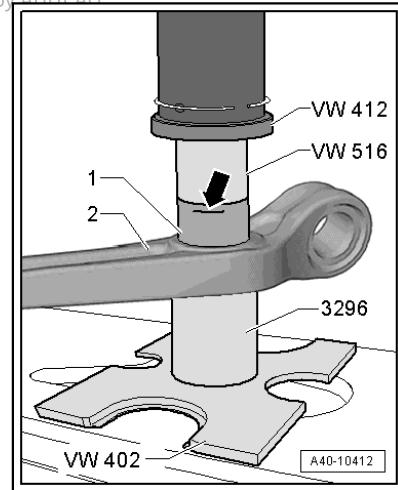
### Pressing out bonded rubber bush



- Mark installation depth -arrow- on bonded rubber bush -1- using a waterproof felt-tip pen or similar.
- Set up special tools as shown in illustration.
  - Hold the track control link when pressing the bonded rubber bush in or out.

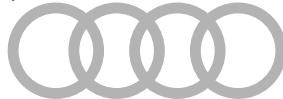
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### Pressing in bonded rubber bush

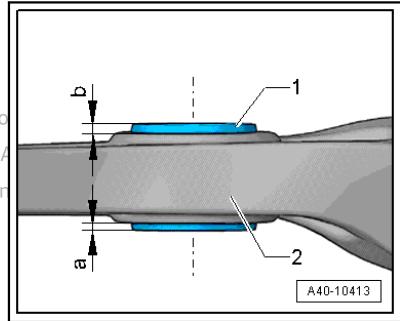


- Transfer marking for installation depth from old bonded rubber bush to new bush.
- Apply a thin coat of assembly paste -G 052 109 A2- to bonded rubber bush.
- Insert bonded rubber bush -1- into track control link -2-.
- Set up special tools as shown in illustration.
- Press bonded rubber bush into track control link, taking care to keep it straight.

- Use marking made before removal -arrow- as a guide.
- Check installation depth of bonded rubber bush -1- in track control link -2-.



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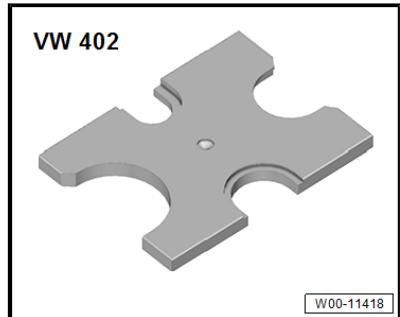


- Specification: Dimension -a- = dimension -b-
- Press bonded rubber bush in further if dimensions are not equal.

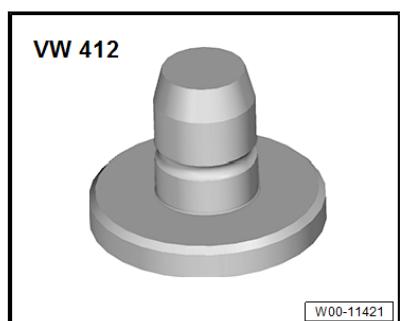
#### 6.4.2 Renewing bush for track control link (subframe end)

##### Special tools and workshop equipment required

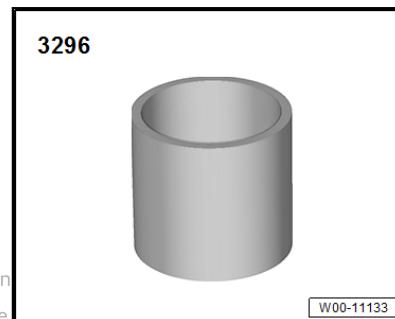
- ◆ Thrust plate -VW402-



- ◆ Press tool -VW412-

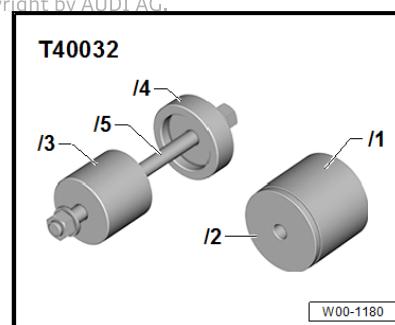


◆ Tube -3296-



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◆ Assembly and removal tool -T40032-

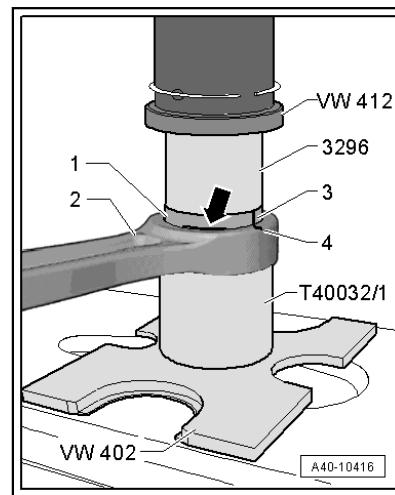


◆ Assembly paste -G 052 109 A2-

**Procedure**

- Track control link removed [⇒ a6.2 nd installing track control link](#), page 113

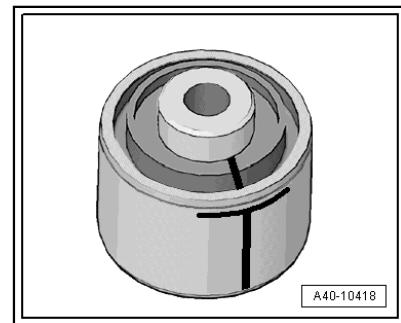
**Pressing out bonded rubber bush**



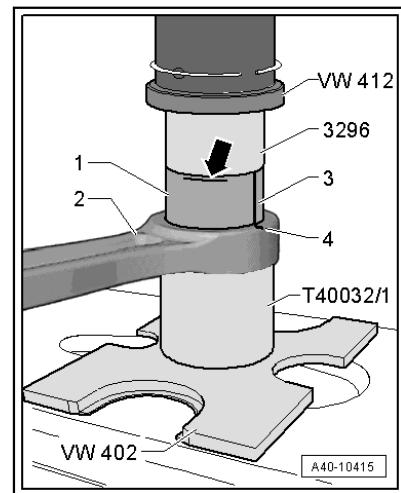
- Mark installation depth -arrow- and position -3, 4- on bonded rubber bush -1- using a waterproof felt-tip pen or similar, as shown in illustration.
- Set up special tools as shown in illustration.
- Hold the track control link when pressing the bonded rubber bush in or out.

- Press bonded rubber bush out of track control link -2-.

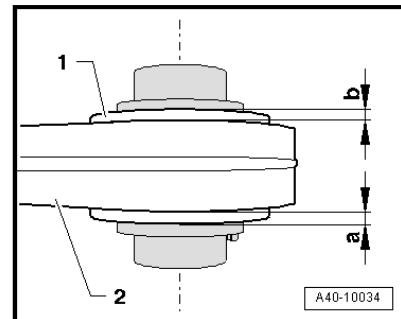
#### Pressing in bonded rubber bush



- Transfer marking for installation depth from old bonded rubber bush to new bush.
- Apply a thin coat of assembly paste -G 052 109 A2- to bonded rubber bush.



- Insert bonded rubber bush -1- into track control link -2-. Align mark -3- with -4-.
- Set up special tools as shown in illustration.  
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- Press bonded rubber bush into track control link, taking care to keep it straight.
- Use marking -arrow- made before removal as a guide.
- Check installation depth of bonded rubber bush -1- in track control link -2-.

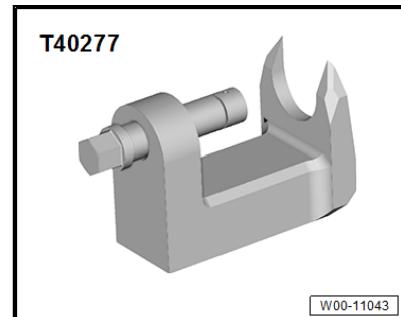


- Specification: Dimension -a- = dimension -b-
- Press bonded rubber bush in further if dimensions are not equal.

## 6.5 Removing and installing swivel joint

### Special tools and workshop equipment required

- ◆ Ball joint puller -T40277-



### Removing

- Track control link removed [⇒ a6.2 nd installing track control link](#), page 113

#### CAUTION

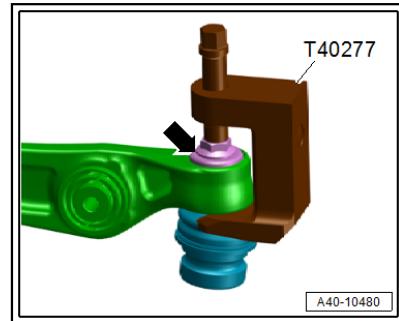
Swivel joint is released abruptly when it is pressed out - risk of injury.

#### Risk of contusions.

- Secure tools by placing engine and gearbox jack underneath.
- Clamp track control link in jaws of vice. Use protective jaw covers.



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- To protect thread, unscrew nut -arrow- on joint pin of swivel joint until nut is flush with thread of joint pin.

**CAUTION**

**Swivel joint is released abruptly when it is pressed out - risk of injury.**

**Risk of contusions.**

- Secure tools.

- Press swivel joint off track control link using ball joint puller -T40277-, taking care not to damage boot.
- Then unscrew nut and detach swivel joint. If necessary, counterhold at joint pin with a TX 40 socket.

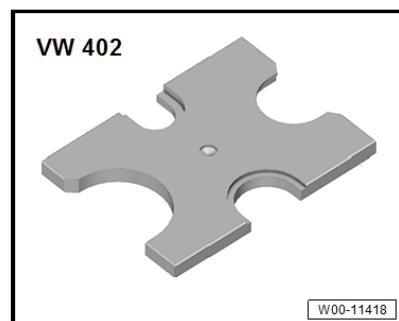
**Installing**

Installation is carried out in reverse sequence.

## 6.6 Removing and installing bonded rubber bush for guide link

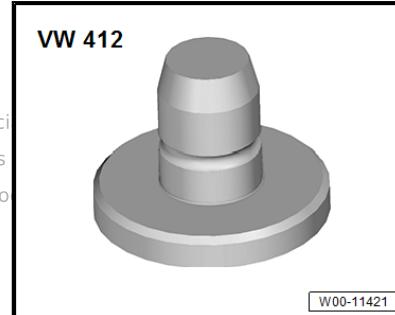
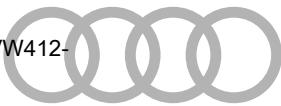
### Special tools and workshop equipment required

- ◆ Thrust plate -VW402-



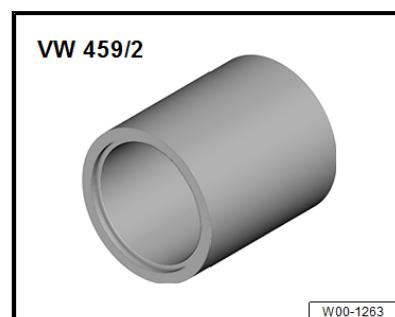
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- ◆ Press tool -VW412-

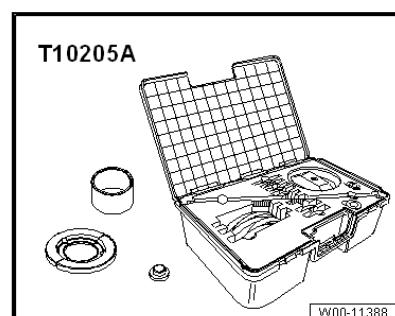


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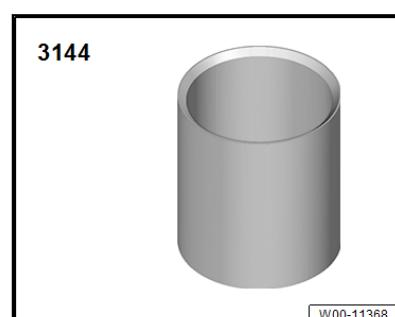
- ◆ Removal tool -VW459/2-



- ◆ Thrust piece -T10205/14- from assembly tool -T10205A-

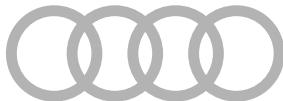


- ◆ Sleeve -3144-

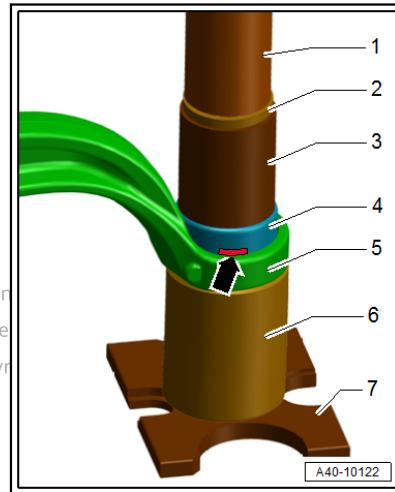


- ◆ Workshop press -VAS 6654-, not illustrated
- ◆ Assembly lubricant -G 294 421 A1- ⇒ Electronic parts catalogue

### Pressing out bonded rubber bush

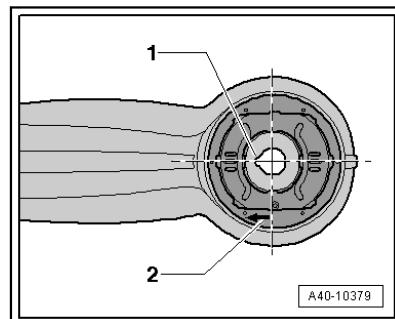


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- Guide link removed [⇒ a6.3 nd installing guide link", page 117](#)
  - Mark installation depth -arrow- on bonded rubber bush -4- using a waterproof felt-tip pen or similar.
  - Set up special tools as shown in illustration.
- 1 - Press tool of workshop press -VAS 6654-
- 2 - Press tool -VW412-
- 3 - Removal tool -VW459/2-
- 4 - Bonded rubber bush
- 5 - Guide link
- 6 - Sleeve -3144-
- 7 - Thrust plate -VW402-
- Hold the guide link when pressing the bonded rubber bush in or out.
  - Press bonded rubber bush out of guide link.

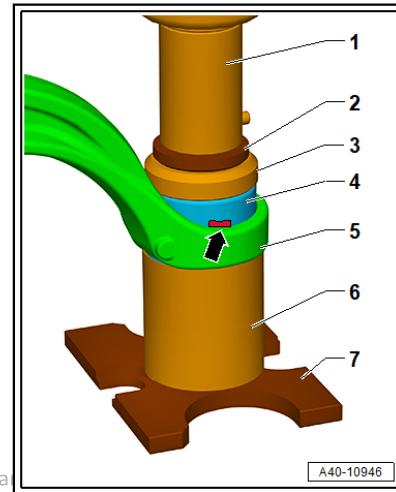
### Pressing in bonded rubber bush



- Transfer marking for installation depth from old bonded rubber bush to new bush.
- Lightly lubricate new bush with assembly lubricant -G 294 421 A1-.

Installation position of bonded rubber bush:

- Notch -1- should be parallel with guide link and should point inwards towards guide link.
- Arrow -2- points inwards towards guide link.
- Fit bonded rubber bush into guide link (note correct installation position).



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1 - Press tool of workshop press -VAS 6654-

2 - Press tool -VW412-

3 - Thrust piece -T10205/14-

4 - Bonded rubber bush

5 - Guide link

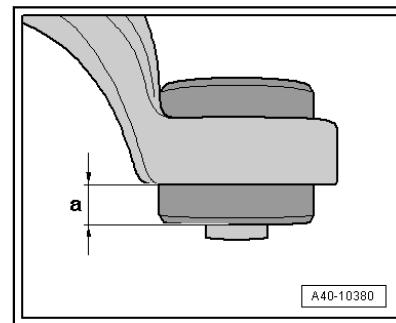
6 - Sleeve -3144-

7 - Thrust plate -VW402-

- Press bonded rubber bush into guide link, taking care to keep it straight.

- Use marking made before removal -arrow- as a guide.

- Check installation depth -a- of bonded rubber bush in guide link.



- Dimension -a- = 23 mm



- Press bonded rubber bush in further if specification is not met.



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## 7 Wheel bearing

- [⇒ 07.1 overview - wheel bearing", page 131](#)
- [⇒ a7.2 nd installing wheel bearing housing", page 131](#)
- [⇒ a7.3 nd installing wheel bearing unit", page 135](#)
- [⇒ w7.4 heel bearing unit", page 137](#)

### 7.1 Assembly overview - wheel bearing

#### 1 - Wheel bearing housing

- Removing and installing [⇒ a7.2 nd installing wheel bearing housing", page 131](#)

#### 2 - Bolt

- Renew after removing
- 100 Nm +90°

#### 3 - Drive shaft

#### 4 - Wheel bearing

- Removing and installing wheel bearing unit [⇒ a7.3 nd installing wheel bearing unit", page 135](#)
- Removing and installing [⇒ w7.4 heel bearing unit", page 137](#)
- Instructions for handling [⇒ Fig. \\*\\*\\*\\*, page 136](#)

#### 5 - Wheel hub

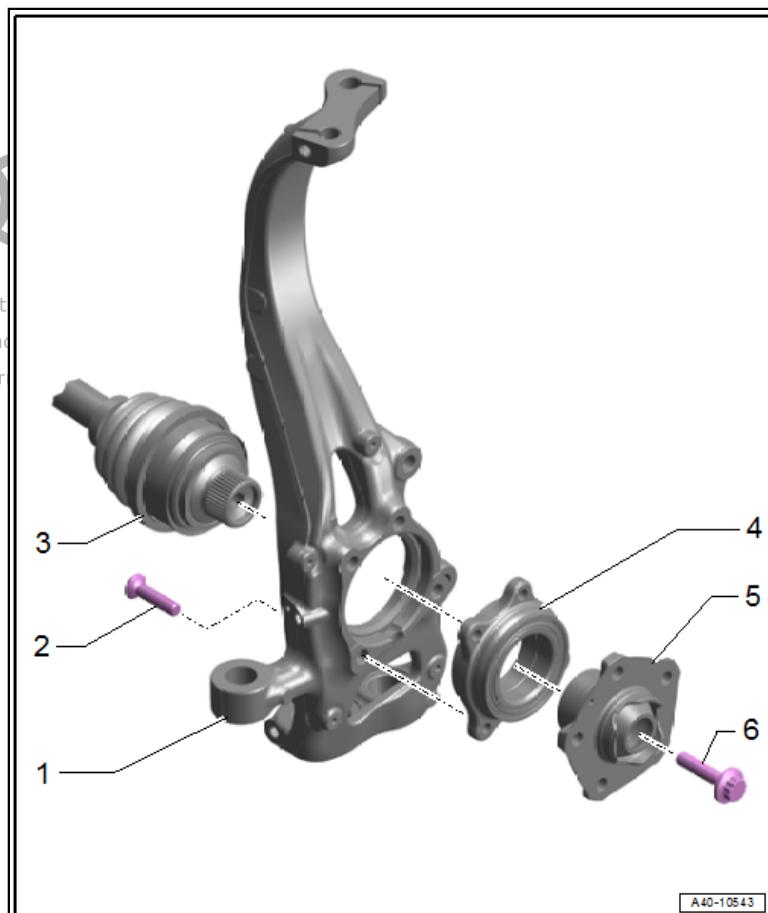
- Permissible lateral run-out of wheel hub (at outer diameter) when installed: max. 0.02 mm
- Measure lateral run-out with dial gauge -VAS 6079- and dial gauge bracket for brake discs -VAS 6079/1-
- Removing and installing [⇒ w7.4 heel bearing unit", page 137](#)

#### 6 - Bolt

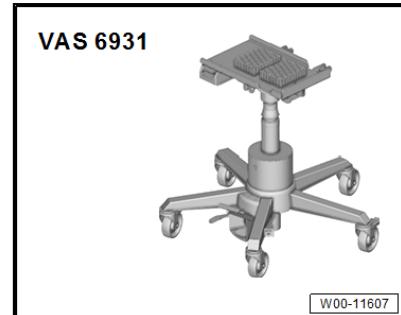
- Renew after removing
- Before securing, clean threads in CV joint using a thread tap
- Loosening and tightening bolt securing drive shaft [⇒ a8.4 nd tightening bolt securing drive shaft", page 148](#)

### 7.2 Removing and installing wheel bearing housing

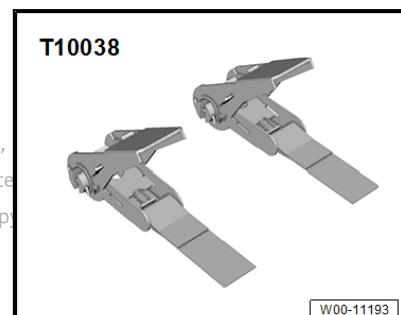
Special tools and workshop equipment required



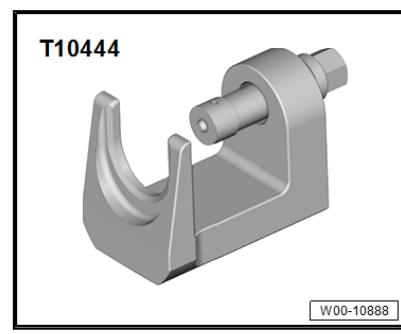
- ◆ Engine and gearbox jack -VAS 6931-



- ◆ Tensioning strap -T10038-
- 



- ◆ Ball joint puller -T10444-



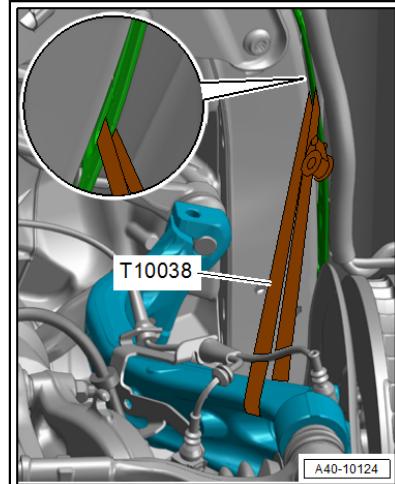
### Removing

- Vehicles with active suspension: Observe safety precautions  
⇒ [p2.2 precautions when working on vehicles with active suspension](#), page 4 .
- Equipment version with coil springs: ascertain unladen position ⇒ [s3.17 suspension to unladen position - vehicles with coil springs](#), page 14 .
- Equipment version with air suspension: ascertain normal level ⇒ [s3.18 suspension to normal level - vehicles with air suspension](#), page 17 .
- Slacken bolt securing drive shaft to wheel hub ⇒ [a8.4 nd tightening bolt securing drive shaft](#), page 148 .
- Remove front section of wheel housing liner ⇒ General body repairs, exterior; Rep. gr. 66; Wheel housing liners; Assembly overview - front wheel housing liner.

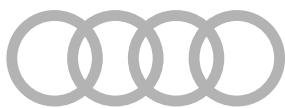
 **NOTICE**

Risk of damage if joints of upper suspension links are overstrained.

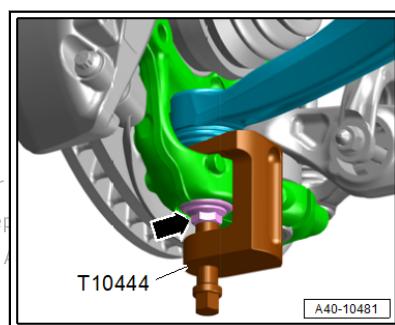
- Support wheel bearing housing.
- Tie up wheel bearing housing with a tensioning strap - T10038- as shown in illustration.



- Remove front speed sensor ⇒ Brake system; Rep. gr. 45; Sensors; Removing and installing front speed sensor -G45--G47-.
- Remove splash plate ⇒ Brake system; Rep. gr. 46; Front brakes; Removing and installing splash plate.
- Remove track control link [⇒ a6.2 nd installing track control link", page 113](#).
- To protect thread, unscrew nut -arrow- on joint pin of guide link until nut is flush with thread of joint pin. Counterhold joint pin if necessary.



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 **CAUTION**

Track rod ball joint is released abruptly when it is pressed out  
 - risk of injury.

Risk of contusions.

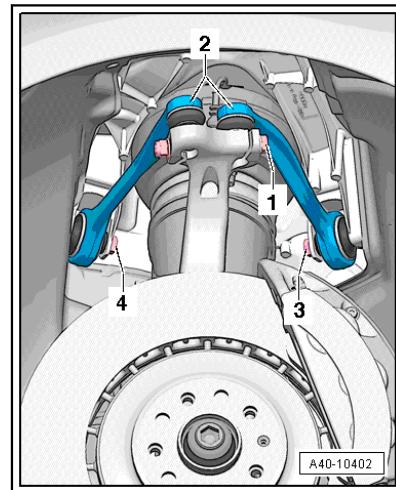
- Secure tools by placing engine and gearbox jack underneath.

- Press joint pin of guide link out of tapered seat using ball joint puller -T10444-, taking care not to damage boot.
- Unscrew nut -arrow- and move guide link clear at wheel bearing housing. If necessary, counterhold at joint pin with a TX 40 socket.

 **NOTICE**

**Risk of damage to wheel bearing housing due to deformation.**

- Do not enlarge the slots in the wheel bearing housing.
- Detach bolted connection -1-.



- Take joint pins of upper suspension links -2- out of wheel bearing housing.
- Release tensioning strap -T10038- and pull wheel bearing housing off drive shaft splines.
- Tie up drive shaft.
- Do not let the drive shaft hang down under its own weight, as otherwise excessive bending could damage the inner CV joint.

### Installing

Installation is carried out in reverse order; note the following:

- Push wheel bearing housing onto drive shaft splines.
- Install track control link [⇒ a6.2 nd installing track control link](#), page 113 .
- Install upper suspension link [⇒ a5.4 nd installing upper suspension link](#), page 93 . Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not allowed unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability
- Install splash plate [⇒ Brake system; Rep. gr. 46, Front](#) in this document. Copyright by AUDI AG. brakes; Removing and installing splash plate.
- Tighten bolt securing drive shaft to wheel hub [⇒ a8.4 nd tightening bolt securing drive shaft](#), page 148 .
- Overview table: when does wheel alignment have to be checked? [⇒ d4.4 oes wheel alignment have to be checked?](#), page 309

### Tightening torques

- ◆ [⇒ 07.1 overview - wheel bearing", page 131](#)
- ◆ [⇒ 06.1 overview - lower suspension links, swivel joint", page 111](#)
- ◆ ⇒ General body repairs, exterior; Rep. gr. 66; Wheel housing liners; Assembly overview - front wheel housing liner

## 7.3 Removing and installing wheel bearing unit

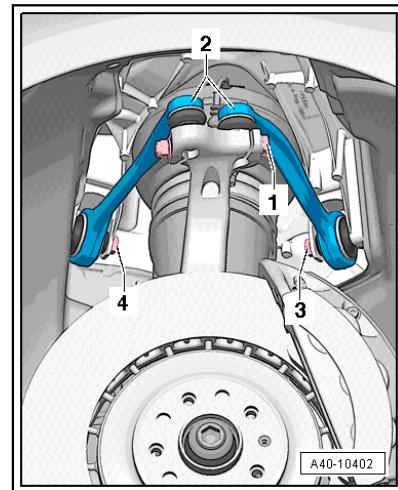
### Removing

- Vehicles with active suspension: Observe safety precautions [⇒ p.2.2 precautions when working on vehicles with active suspension", page 4](#).
- Slacken bolt securing drive shaft to wheel hub [⇒ a8.4 nd tightening bolt securing drive shaft", page 148](#).
- Remove brake disc ⇒ Brake system; Rep. gr. 46; Front brakes; Removing and installing brake disc.

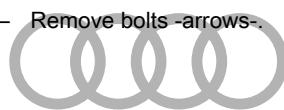
### NOTICE

Risk of damage to wheel bearing housing due to deformation.

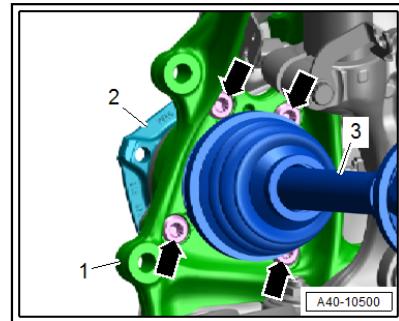
- Do not enlarge the slots in the wheel bearing housing.
- Detach bolted connection -1-.



- Take joint pins of upper suspension links -2- out of wheel bearing housing.
- Remove bolts -arrows-.



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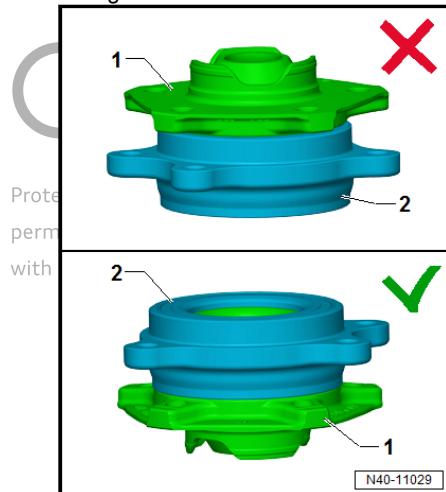


- Detach wheel hub -2- with wheel bearing unit from drive shaft -3- and from wheel bearing housing -1-.

 **NOTICE**

**Risk of irreparable damage to wheel bearing if it is not clean.**

- Protect contact surface of wheel bearing from becoming dirty.
- The wheel bearing -2- must always face upwards when laying down the wheel bearing unit.



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- Always put down the wheel bearing unit with the wheel hub -1- facing downwards.
- Do not touch the inside of the wheel bearing when you pick it up.



• Always take hold of the outside of the wheel bearing.  
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#### Installing

Installation is carried out in reverse order; note the following:  
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- Tighten bolt securing drive shaft to wheel hub [⇒ a8.4 nd tightening bolt securing drive shaft](#), page 148 .

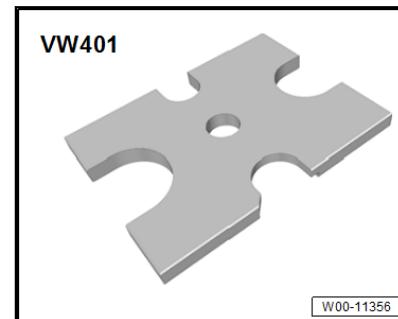
#### Tightening torques

- ◆ [⇒ o7.1 overview - wheel bearing](#), page 131
- ◆ [⇒ t2 yres](#), page 303

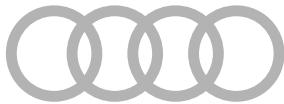
## 7.4 Servicing wheel bearing unit

### Special tools and workshop equipment required

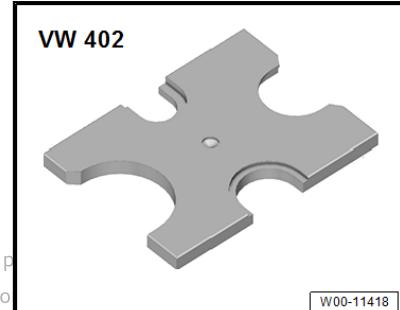
- ◆ Thrust plate -VW401-



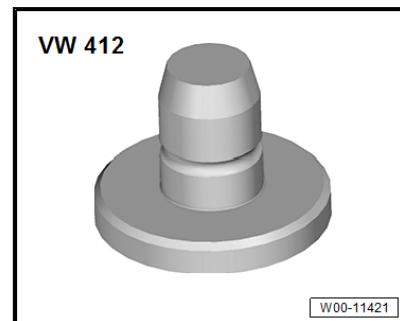
- ◆ Thrust plate -VW402-



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- ◆ Press tool -VW412-



- ◆ Assembly tool -T10230-

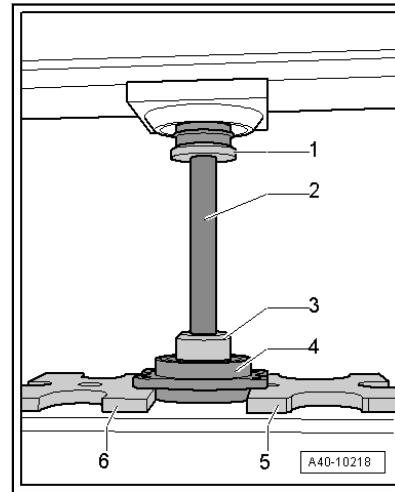


- ◆ Workshop press -VAS 6654-, not illustrated  
◆ Puller set for inner bearing races -VAS 701 003- (not illustrated)

#### Procedure

- Wheel bearing unit removed ⇒ a7.3 nd installing wheel bearing unit", page 135

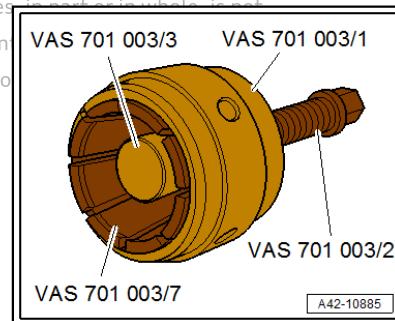
### Pressing wheel hub out of wheel bearing



- Set up special tools as shown in illustration.
- 1 - Press tool -VW412-
- 2 - Sleeve -T10230/3-
- 3 - Thrust piece -T10230/8-
- 4 - Wheel bearing unit
- 5 - Thrust plate -VW402-
- 6 - Thrust plate -VW401-
- Press wheel hub out of wheel bearing.

### Pressing inner bearing race off wheel hub

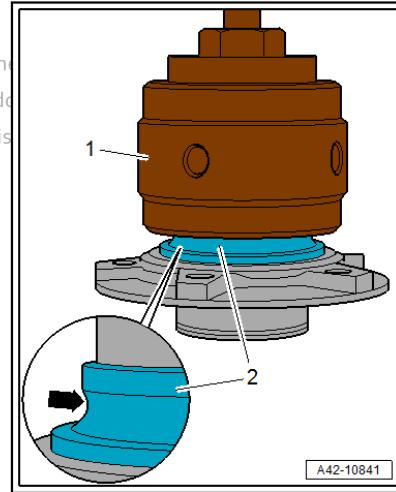
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- Prepare puller from puller set for inner bearing races -VAS 701 003- as follows:
- Screw clamping sleeve -VAS 701 003/1- onto clamp tensioner -VAS 701 003/7-.
- Screw threaded spindle -VAS 701 003/2- into clamping sleeve. Fit thrust piece -VAS 701 003/3-.

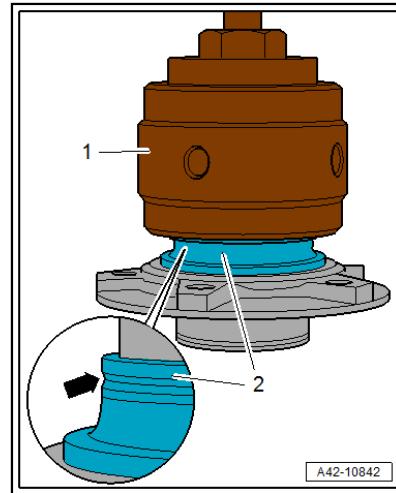
**Inner bearing race version 1:**

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- Remove ball cage from inner bearing race -2-.
- Apply puller -1- to ball raceways -arrow- of inner race, as shown.

**Inner bearing race version 2:**

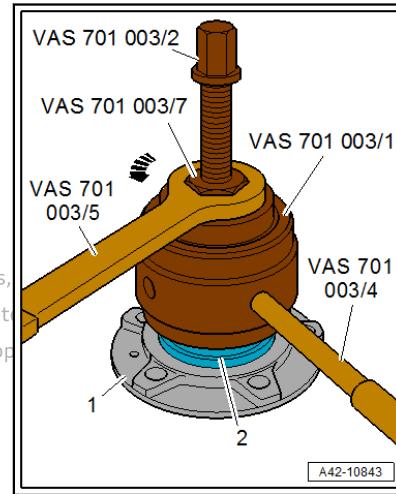


- Apply puller -1- to groove -arrow- of inner race -2-.

All versions (continued):

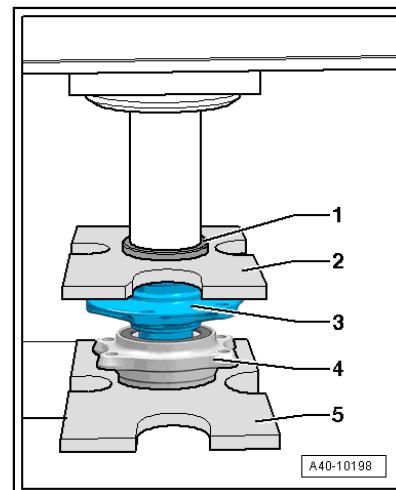


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- Clamp puller onto inner bearing race -2-. To do so, turn clamp tensioner -VAS 701 003/7- in direction of -arrow- using wrench -VAS 701 003/5-.
- Counterhold clamping sleeve -VAS 701 003/1- with tensioner handle -VAS 701 003/4-.
- Use threaded spindle -VAS 701 003/2- to detach inner bearing race from wheel hub -1-.

**Pressing wheel hub into wheel bearing**



- Set up special tools as shown in illustration.

- 1 - Press tool -VW412-
- 2 - Thrust plate -VW402-
- 3 - Wheel hub
- 4 - Wheel bearing
- 5 - Thrust plate -VW401-

- The machined surface of the wheel bearing outer race faces downwards.

 **NOTICE**

**Risk of irreparable damage to wheel bearing if it is not clean.**

- **Protect contact surface of wheel bearing from becoming dirty.**
- **Press wheel hub into wheel bearing.**  
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- **Install wheel bearing unit [➤ a7.3 nd installing wheel bearing unit](#), [page-135](#).**  
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## 8 Drive shaft

- [⇒ \*\*o8.1 verview - drive shaft", page 143\*\*](#)
- [⇒ \*\*a8.2 nd installing drive shaft", page 146\*\*](#)
- [⇒ \*\*a8.3 nd installing heat shield for drive shaft", page 147\*\*](#)
- [⇒ \*\*a8.4 nd tightening bolt securing drive shaft", page 148\*\*](#)
- [⇒ \*\*a8.5 nd assembling drive shaft", page 149\*\*](#)
- [⇒ \*\*c8.6 onstant velocity joint", page 164\*\*](#)
- [⇒ \*\*o8.7 ute constant velocity joint", page 166\*\*](#)
- [⇒ \*\*h8.8 ose clip on triple roller joint and outer joint", page 167\*\*](#)

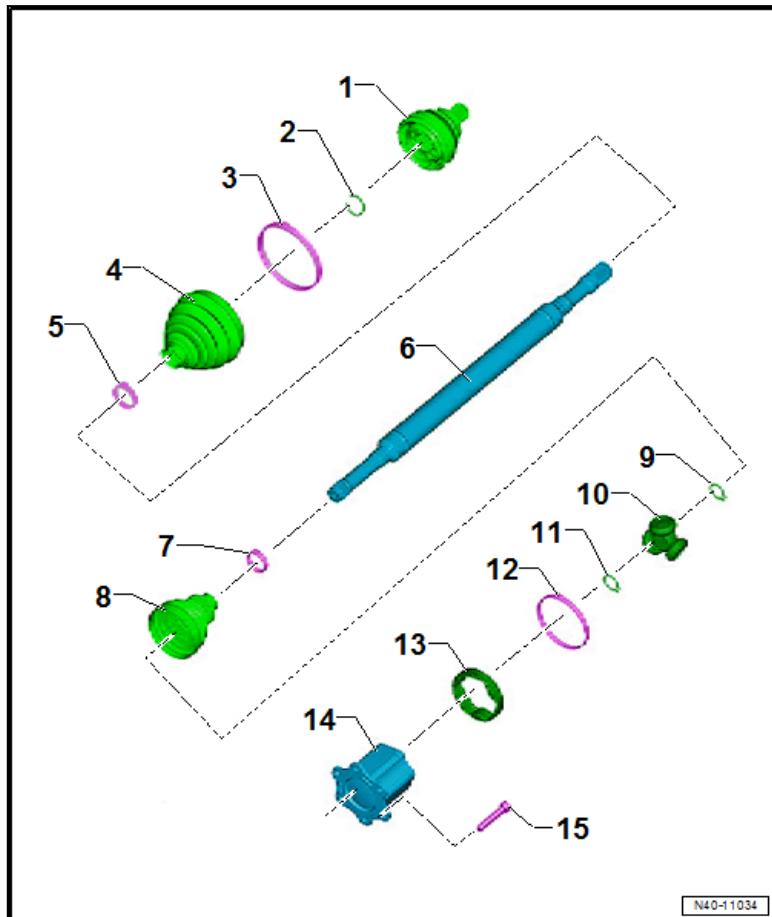
### 8.1 Assembly overview - drive shaft



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### 1 - Outer constant velocity joint

- Renew as a complete unit
- Removing [⇒ page 164](#)
- Checking [⇒ 08.7 outer constant velocity joint", page 166](#)
- Installing [⇒ page 164](#)
- Greasing [⇒ page 146](#)
- Grease splines on drive shaft lightly with grease used in joint before fitting constant velocity joint onto drive shaft



### 2 - Retaining ring

- Renew after removing
- Fit into annular groove on shaft before installing (no longer visible once joint is installed)
- Before fitting constant velocity joint, align retaining ring centrally with opening facing upwards

### 3 - Hose clip

- Renew after removing
- Tightening [⇒ h8.8 hose clip on triple roller joint and outer joint", page 167](#)

### 4 - Boot

- Check for splits and chafing

### 5 - Hose clip

- Renew after removing
- Tightening [⇒ h8.8 hose clip on triple roller joint and outer joint", page 167](#)

### 6 - Drive shaft

- Different versions available:
  - ◆ Triple roller joint AAR 3300 i with outer constant velocity joint (94 mm diameter)
  - ◆ Triple roller joint AAR 3700 i with outer constant velocity joint (98.9 mm diameter)
  - ◆ Triple roller joint AAR 3700 i with outer constant velocity joint (102.7 mm diameter)
- For correct version, refer to [Electronic parts catalogue](#)
- Removing and installing [⇒ a8.2 und installing drive shaft", page 146](#)
- Allocation of triple roller joint [⇒ page 145](#)
- Dismantling and assembling drive shaft [⇒ a8.5 und assembling drive shaft", page 149](#)

### 7 - Hose clip

- Renew after removing
- Tightening [⇒ h8.8 hose clip on triple roller joint and outer joint", page 167](#)

### 8 - Boot

- A triple roller joint adapter [⇒ Item 13 \(page 145\)](#) is installed on drive shafts with peened triple roller joint AAR 3300 i
- Boot must rest in groove and on contour of joint body

#### 9 - Retaining ring

- Renew after removing
- Insert in groove on shaft

#### 10 - Triple roller spider

- Mark installation position for re-installation
- Dismantling and assembling [⇒ a8.5 nd assembling drive shaft", page 149](#)
- Grease splines on drive shaft lightly with grease used in joint before fitting triple roller spider onto drive shaft

#### 11 - Retaining ring

- Renew after removing
- Insert in groove on shaft

#### 12 - Hose clip

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- Renew after removing used by AUDI AG. AUDI AG does not guarantee or accept any liability
- Tightening [⇒ h8.8 ose clip on triple roller joint and outer joint", page 167](#)

#### 13 - Adapter

- On drive shafts with peened triple roller joint AAR 3300 i

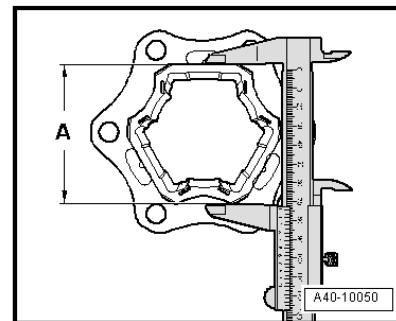
#### 14 - Joint body

- Dismantling and assembling [⇒ a8.5 nd assembling drive shaft", page 149](#)

#### 15 - Bolt

- Renew after removing
- M10: 50 Nm +90°
- M12: 90 Nm +90°

#### Allocation of triple roller joint



- Measure dimension -A- with hose clips released and boot pushed back.
- ◆ Dimension -A- = approx. 76 mm: drive shaft with triple roller joint AAR 3300 i
- Dismantling and assembling drive shaft with triple roller joint AAR 3300 i [⇒ a8.5.1 nd assembling drive shaft - triple roller joint AAR 3300 i", page 149](#)
- ◆ Dimension -A- = approx. 82 mm: drive shaft with triple roller joint AAR 3700 i
- Dismantling and assembling drive shaft with triple roller joint AAR 3700 i [⇒ a8.5.2 nd assembling drive shaft - triple roller joint AAR 3700 i", page 156](#)

#### Grease quantity and type

Re grease joint when renewing boot.

For grease, refer to ⇒ Electronic parts catalogue.

Designation		Grease	of which in:	
	Outer joint Ø mm	Total quantity g	Joint g	Boot g
SX1.41	94.2	approx. 194	approx. 70 <sup>2)</sup>	approx. 124
SX1.46 SX8.1	98.9	approx. 214	approx. 75 <sup>2)</sup>	approx. 139
SX1.51 SX8.1	102.7	approx. 252	approx. 90 <sup>2)</sup>	approx. 162
Inner joint				
AAR 3300 i		approx. 160	approx. 90	approx. 70
AAR 3700 i		approx. 160	approx. 90	approx. 70

2) Pack this amount of grease into joint through splines of ball hub. Distribute remainder on face of joint underneath boot.

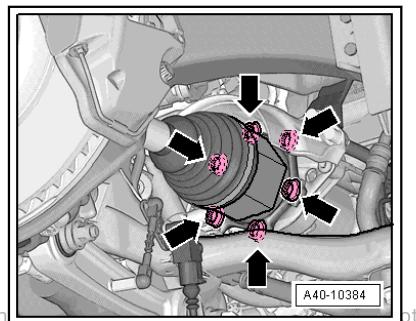
## 8.2 Removing and installing drive shaft

### Removing

- Vehicles with active suspension: Observe safety precautions ⇒ [p2.2 recautions when working on vehicles with active suspension](#), page 4 .
- Slacken bolt securing drive shaft to wheel hub ⇒ [a8.4 nd tightening bolt securing drive shaft](#), page 148 .
- Remove front wheel ⇒ [t2 yres](#), page 303 .
- Remove subframe shield/subframe shield (top section) ⇒ [a3.6 nd installing subframe shield](#), page 59 .
- Remove heat shield for drive shaft ⇒ [a8.3 nd installing heat shield for drive shaft](#), page 147 .
- Unscrew bolts -arrows- securing drive shaft to flange shaft.



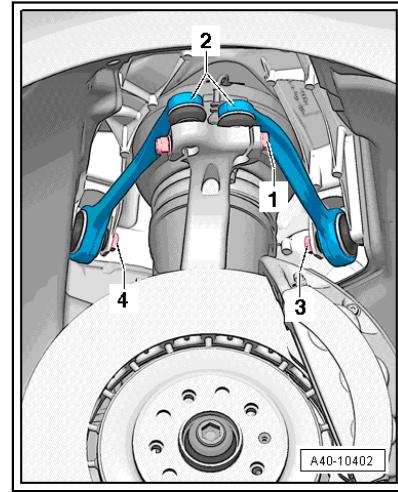
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A40-10384

- Detach drive shaft, taking care not to damage boot and coat. AUDI AG does not guarantee or accept any liability on drive shaft. with respect to the correctness of information in this document. Copyright by AUDI AG.

If it is not possible to remove drive shaft:



#### NOTICE

##### Risk of damage to wheel bearing housing due to deformation.

- Do not enlarge the slots in the wheel bearing housing.
- Detach bolted connection -1-.
- Take joint pins of upper suspension links -2- out of wheel bearing housing.
- Pivot wheel bearing housing outwards and detach drive shaft.

#### Installing

Installation is carried out in reverse order; note the following:

- Tighten bolt securing drive shaft to wheel hub [⇒ a8.4 nd tightening bolt securing drive shaft](#), page 148 .

#### Tightening torques

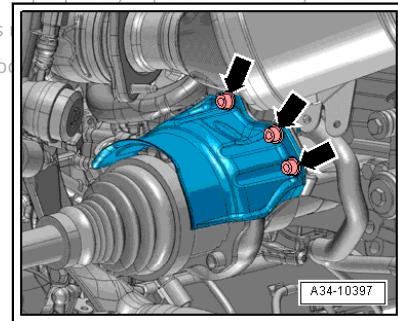
- ◆ [⇒ o8.1 overview - drive shaft](#), page 143
- ◆ [⇒ t2 yres](#), page 303

### 8.3 Removing and installing heat shield for drive shaft

#### Heat shield for left drive shaft

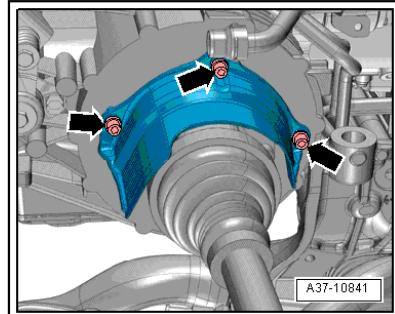
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Component	Tightening torque
Bolts -arrows-	23 Nm

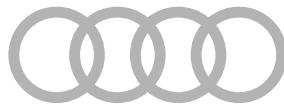
#### Heat shield for right drive shaft



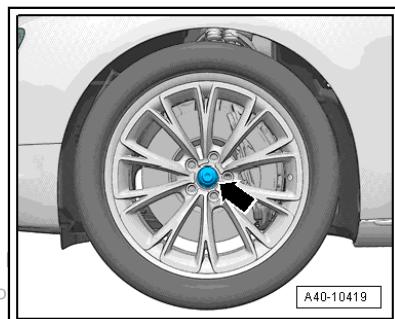
Component	Tightening torque
Bolts -arrows-	23 Nm

#### 8.4 Loosening and tightening bolt securing drive shaft

##### Loosening bolt securing drive shaft to wheel hub



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- To avoid damage to wheel bearing, do not loosen bolt -arrow- using hexagon socket, 19 mm further than 90° with vehicle still standing on its wheels.
- Raise vehicle so that wheels are off the ground.
- Have a second person press the brake pedal.
- Remove bolt.

##### Tightening bolt securing drive shaft to wheel hub

- Always renew bolt after removal.
- Before securing, clean threads in constant velocity joint/stub axle using a thread tap.
- The wheels must not be in contact with the ground when initially tightening the bolt for the drive shaft/stub axle; otherwise the wheel bearing can be damaged.
- Have a second person press the brake pedal.
- Tighten bolt to 200 Nm.
- Lower vehicle onto its wheels.
- Turn bolt 180° further.

## 8.5 Dismantling and assembling drive shaft

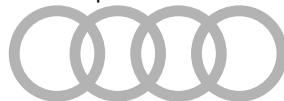
⇒ [a8.5.1 Dismantling and assembling drive shaft - triple roller joint AAR 3300 i", page 149](#)

⇒ [a8.5.2 Dismantling and assembling drive shaft - triple roller joint AAR 3700 i", page 156](#)

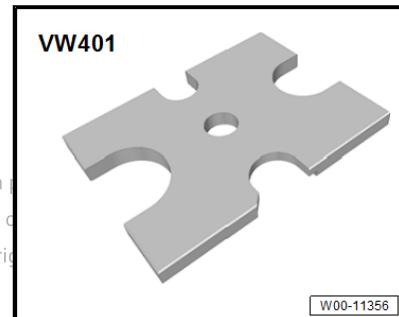
### 8.5.1 Dismantling and assembling drive shaft - triple roller joint AAR 3300 i

Special tools and workshop equipment required

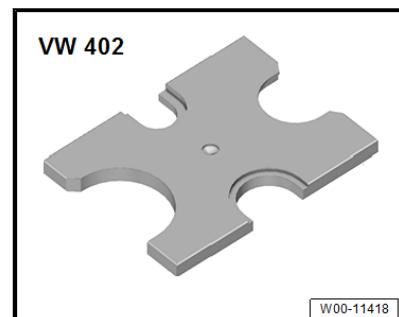
- ◆ Thrust plate -VW401-



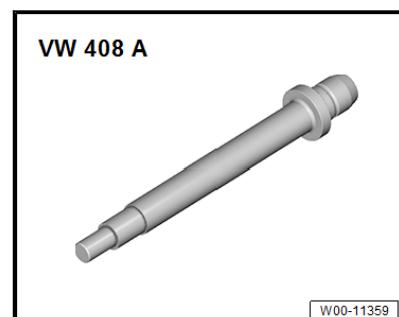
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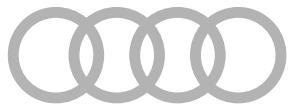
- ◆ Thrust plate -VW402-



- ◆ Press tool -VW408A-



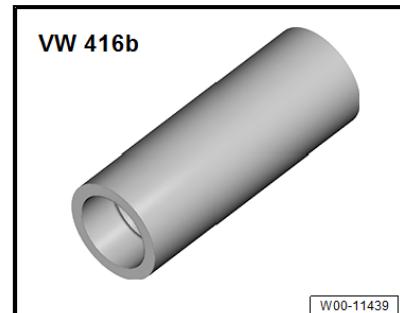
◆ Press tool -VW411-



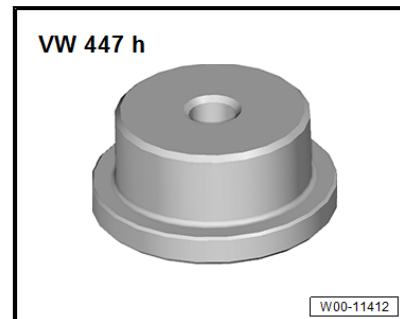
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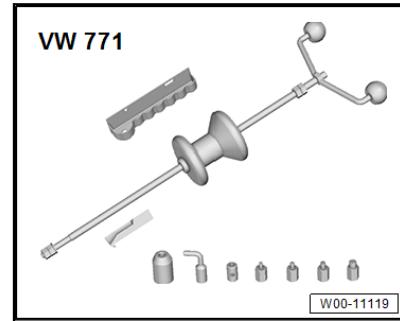
◆ Tube -VW416B-



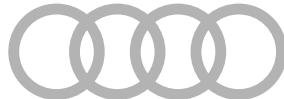
◆ Thrust pad -VW447H-



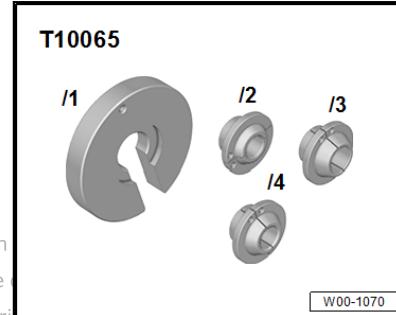
◆ Multi-purpose tool -VW771-



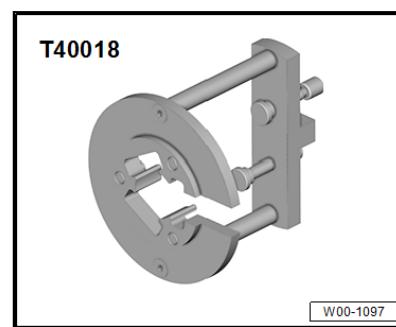
◆ Assembly tool -T10065-



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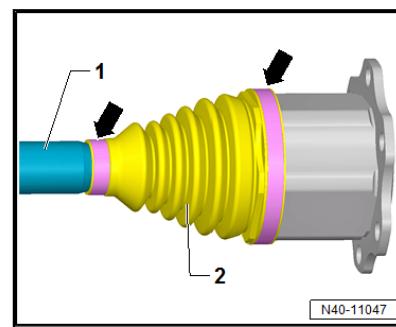
◆ Assembly and removal tool -T40018-



◆ Workshop press -VAS 6654-, not illustrated

◆ Retaining ring pliers, commercially available

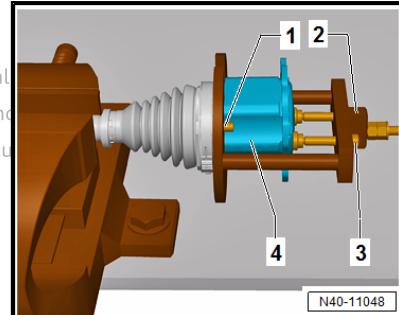
**Dismantling**



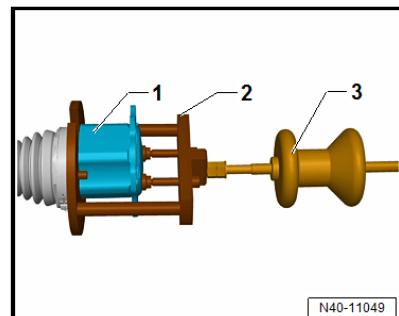
- Clamp drive shaft -1- horizontally in vice using protective jaw covers.
- Take care not to damage drive shaft.
- Open hose clips -arrows-.
- Push back boot -2-.
- Mark position of joint body in relation to drive shaft using a waterproof felt-tip pen or similar.
- Apply assembly and removal tool -T40018- -item 2- behind joint body.



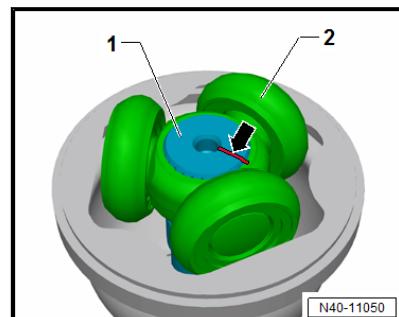
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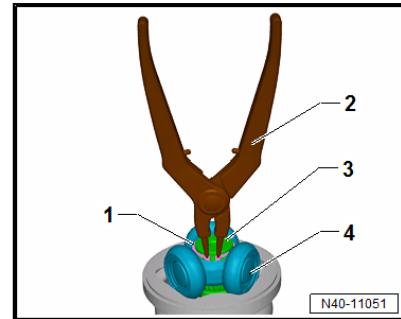
- Locating pin -1- must make contact with outside of joint body -4-.
- Bring assembly and removal tool -T40018- -item 2- into contact with joint body -4- by turning knurled screws -3-.
- The joint body must be fixed in position in assembly and removal tool -T40018- such that there is no play.
- Tighten knurled screws just hand-tight.
- Screw multi-purpose tool -VW771- -item 3- into assembly and removal tool -T40018- -item 2-.



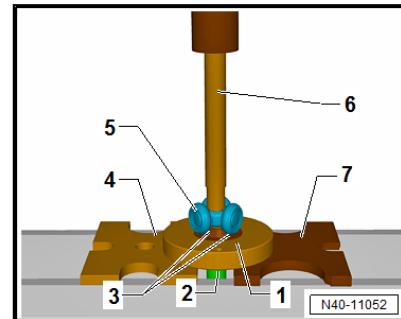
- Use multi-purpose tool -VW771- to detach joint body -1- horizontally.
- Leave joint body in assembly and removal tool -T40018-.
- Mark installation position of drive shaft -1- in relation to triple roller spider -2- using a waterproof felt-tip pen or similar -arrow-.



- Remove grease with a lint-free cloth.
- Remove retaining ring -1- from drive shaft -3- using retaining ring pliers -2-.



- Press triple roller spider -5- off drive shaft -2-.

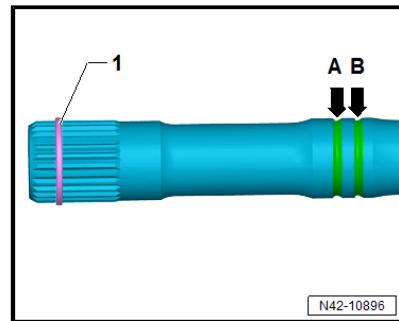


- 1 - Assembly tool -T10065/1-
- 2 - Drive shaft
- 3 - Support -T10065/5-
- 4 - Thrust plate -VW401-
- 5 - Triple roller spider
- 6 - Press tool -VW408A-
- 7 - Thrust plate -VW402-

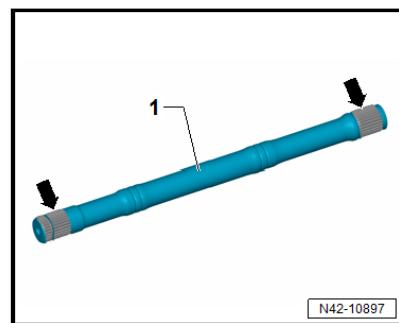
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- Support -T10065/5- must make contact with base of triple roller spider.
  - Support -T10065/5- must not rest on rollers (swivel the roll document. Copyright by AUDI AG. ears aside if necessary).

- Pull off boot.
- Remove grease from shaft splines.
- Check rollers and roller races for wear.
- Clean drive shaft and housing.

### Assembling

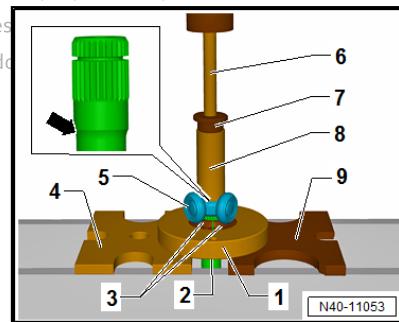


- Slide smaller hose clip on with boot.
- Position boot in outer groove -arrow A-.
- Inner groove -arrow B- remains visible ("identification groove" for correct boot assembly).
- Lightly grease splines -arrows- on drive shaft -1- with grease used in joint.



- Fit triple roller spider onto shaft according to markings.
- Press triple roller spider -5- onto drive shaft -2-

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- 1 - Assembly tool -T10065/1-
- 2 - Drive shaft
- 3 - Support -T10065/6-
- 4 - Thrust plate -VW401-
- 5 - Triple roller spider
- 6 - Press tool -VW411-

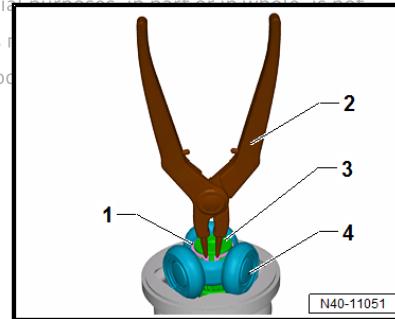
7 - Thrust pad -VW447H-

8 - Tube -VW416B-

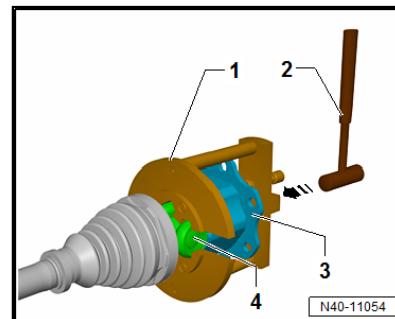
9 - Thrust plate -VW402-

- Support -T10065/6- must grip drive shaft at bottom seam -arrow-.
- Support -T10065/6- must not rest on rollers (swivel the rollers aside if necessary).
- Install retaining ring -1- on drive shaft -3- using retaining ring pliers -2-.

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- Retaining ring should engage audibly.
- Triple roller spider -3- must make contact with retaining ring -1- without gaps.
- Pack half the total quantity of grease from repair kit into triple roller joint.
- Lightly grease the rollers.
- Use plastic-headed hammer -2- to drive joint body -3- over triple roller spider -4- in direction of -arrow-.

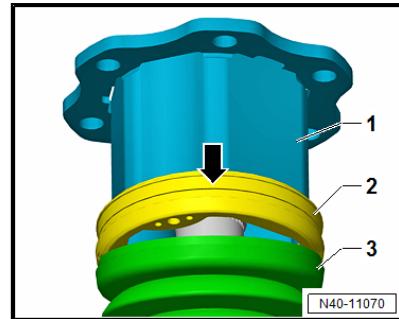


- Ensure that rollers are not tilted.

1 - Assembly and removal tool -T40018-

- Pack remaining quantity of grease into boot.

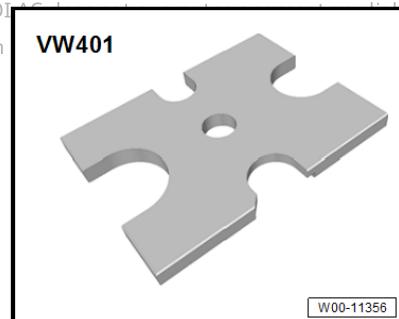
- Press boot adapter -2- onto triple roller joint -1- as far as stop.



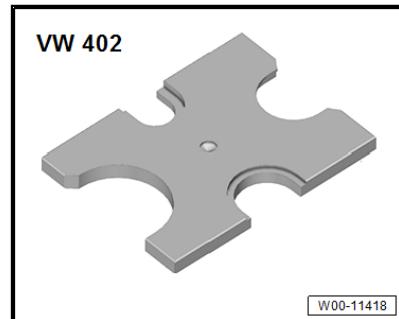
- Press boot -3- onto boot adapter -2-. Ensure that boot -3- engages in groove on adapter -arrow- properly.
- Boot must rest in groove and on contour of joint body.
- Fit and tighten hose clips on triple roller joint [⇒ h8.8 hose clip on triple roller joint and outer joint, page 167](#).

### 8.5.2 Dismantling and assembling drive shaft - triple roller joint AAR 3700 i

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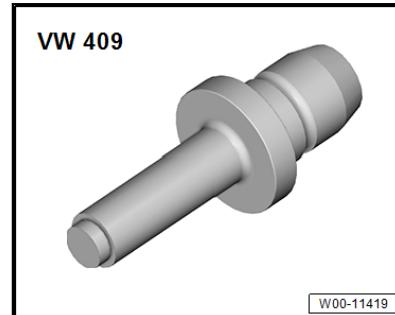


- ◆ Thrust plate -VW401-

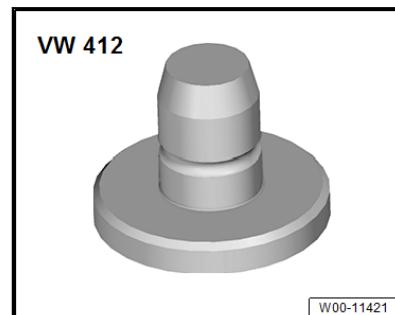




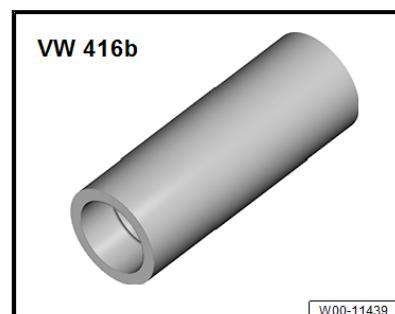
- ◆ Press tool -VW409-



- ◆ Press tool -VW412-



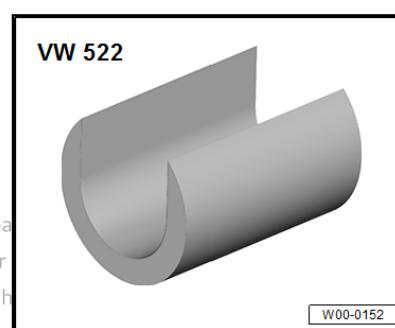
- ◆ Tube -VW416B-



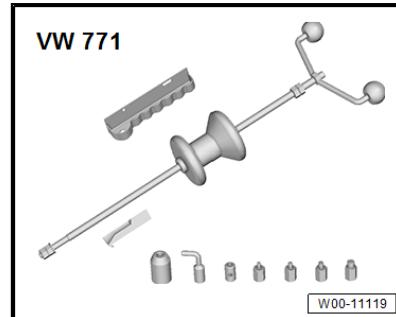
- ◆ Support sleeve -VW522-



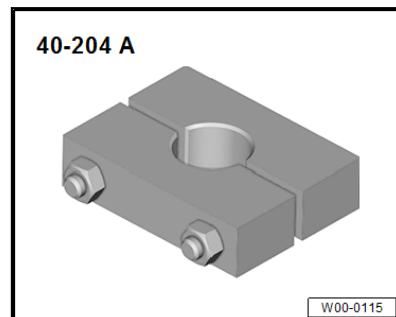
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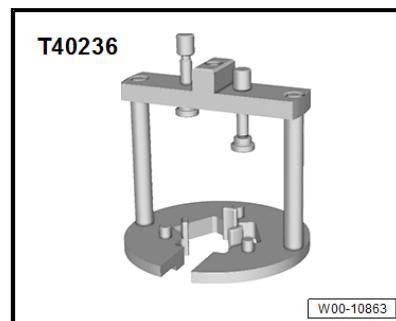
◆ Multi-purpose tool -VW771-



◆ Joint tensioner -40-204A-



◆ Assembly and removal tool -T40236-



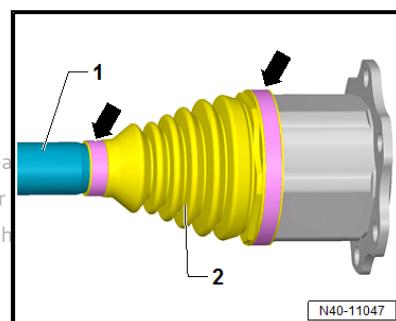
◆ Workshop press -VAS 6654-, not illustrated

◆ Retaining ring pliers, commercially available

**Dismantling**

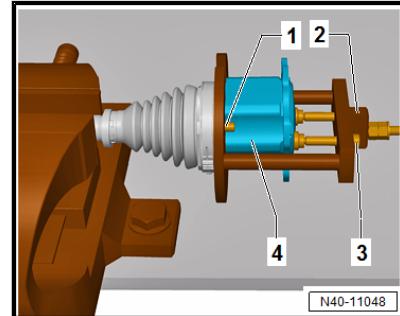


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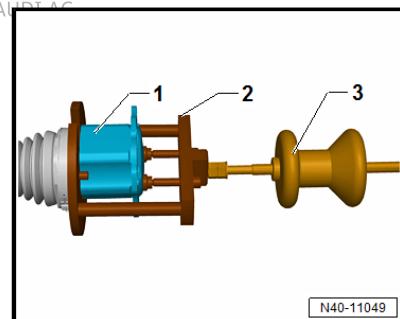
- Clamp drive shaft -1- horizontally in vice using protective jaw covers.

- Take care not to damage drive shaft.
- Open hose clips -arrows-.
- Push back boot -2-.
- Mark position of joint body in relation to drive shaft using a waterproof felt-tip pen or similar.
- Apply assembly and removal tool -T40236- -item 2- behind joint body.

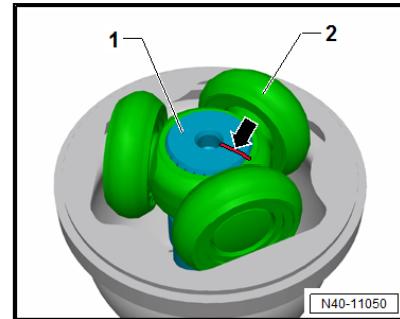


- Locating pin -1- must make contact with outside of joint body -4-.
- Bring assembly and removal tool -T40236- -item 2- into contact with joint body -4- by turning knurled screws -3-.
- The joint body must be fixed in position in assembly and removal tool -T40236- such that there is no play.
- Tighten knurled screws just hand-tight.

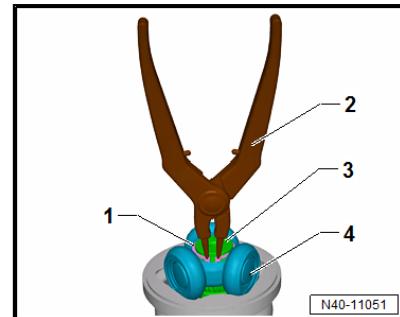
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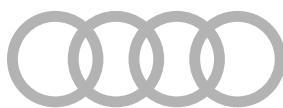
- Use multi-purpose tool -VW771- to detach joint body -1- horizontally.
- Leave joint body in assembly and removal tool -T40236-.
- Mark installation position of drive shaft -1- in relation to triple roller spider -2- using a waterproof felt-tip pen or similar -arrow-.



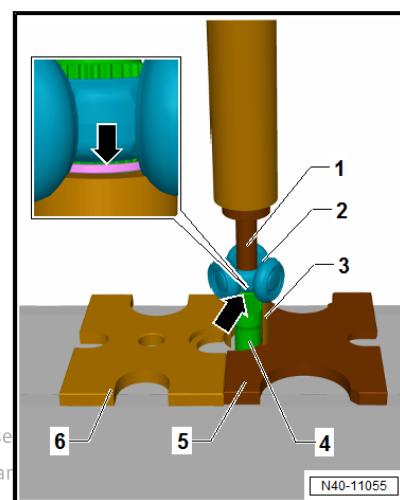
- Remove grease with a lint-free cloth.
- Remove retaining ring -1- from drive shaft -3- using retaining ring pliers -2-.



- Press triple roller spider -2- off drive shaft -4-.



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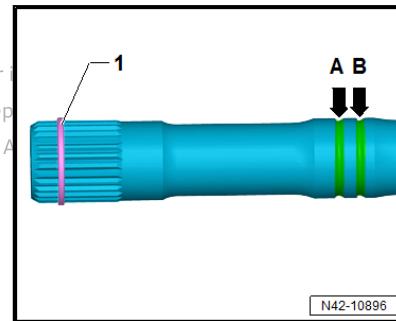
- 1 - Press tool -VW409-
- 2 - Triple roller spider
- 3 - Support sleeve -VW522-
- 4 - Drive shaft
- 5 - Thrust plate -VW401-
- 6 - Thrust plate -VW402-

- Support sleeve -VW522- must lie against retaining ring -arrow-. Retaining ring is removed from drive shaft together with triple roller spider.
- Support sleeve -VW522- must not rest on rollers (swivel the rollers aside if necessary).
- Pull off boot.
- Remove grease from shaft splines.
- Check rollers and roller races for wear.
- Clean drive shaft and housing.

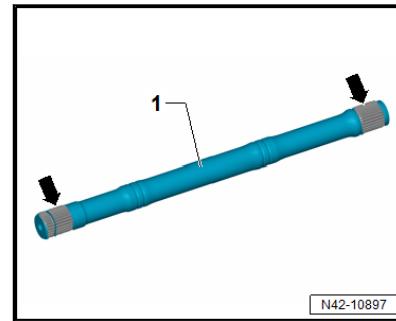
### Assembling



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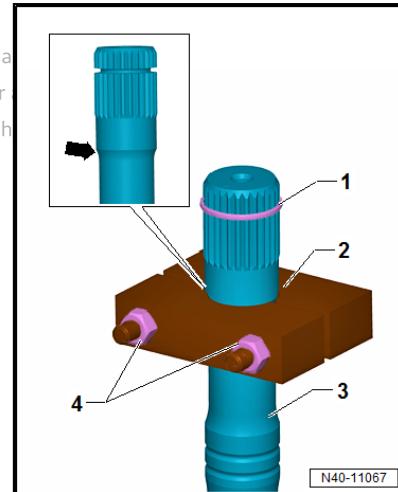


- Slide smaller hose clip on with boot.
- Position boot in outer groove -arrow A-.
- Inner groove -arrow B- remains visible ("identification groove" for correct boot assembly).
- Lightly grease splines -arrows- on drive shaft -1- with grease used in joint.

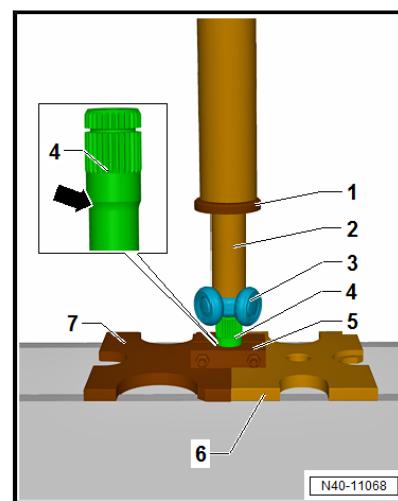


- Attach joint tensioner -40-204A- -item 2- to drive shaft -3-.

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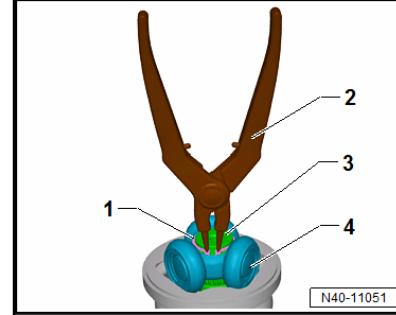


- Joint tensioner -40-204A- must grip drive shaft at bottom seam -arrow-.
- Hand-tighten nuts -4-.
- Fit new retaining ring -1- as far as centre of splines.
- Fit triple roller spider onto shaft according to markings.
- Press triple roller spider -3- onto drive shaft -4-.

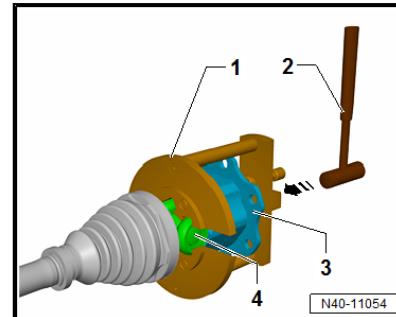


- 1 - Press tool -VW412-
- 2 - Tube -VW416B- (side with larger internal diameter faces triple roller spider)
- 3 - Triple roller spider
- 4 - Drive shaft
- 5 - Joint tensioner -40-204A- (must grip drive shaft at bottom seam -arrow-)
- 6 - Thrust plate -VW402-
- 7 - Thrust plate -VW401-

- Install retaining ring -1- on drive shaft -3- using retaining ring pliers -2-.



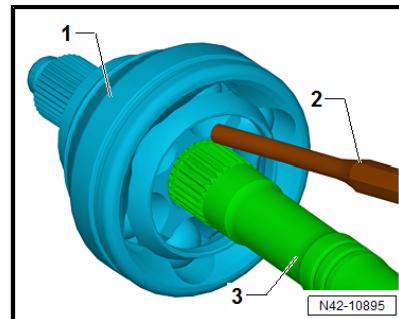
- Retaining ring should engage audibly.
- Triple roller spider -3- must make contact with retaining ring -1- without gaps.
- Pack half the total quantity of grease from repair kit into triple roller joint.
- Lightly grease the rollers.
- Use plastic-headed hammer -2- to drive joint body -3- over triple roller spider -4- in direction of -arrow-.



- Ensure that rollers are not tilted.
  - 1 - Assembly and removal tool -T40236-
  - Pack remaining quantity of grease into boot.
  - Make sure boot is properly positioned on joint body.
  - Boot must rest in groove and on contour of joint body.
  - Fit and tighten hose clip on triple roller joint [⇒ h8.8 use clip on triple roller joint and outer joint, page 167](#).
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## 8.6 Servicing constant velocity joint

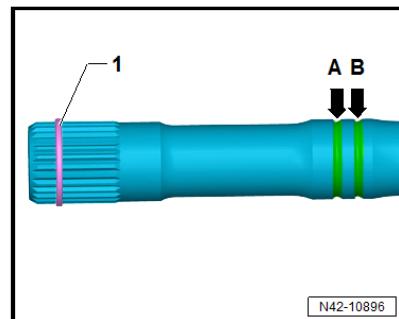
### Removing outer constant velocity joint



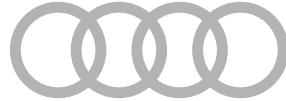
- Clamp drive shaft -3- in a vice using protective jaw covers.
- Unfasten both clips and detach boot from outer joint.
- Drive constant velocity joint -1- off drive shaft by applying a copper or brass drift -2- to inner race.
- Detach joint and boot.

### Installing outer constant velocity joint

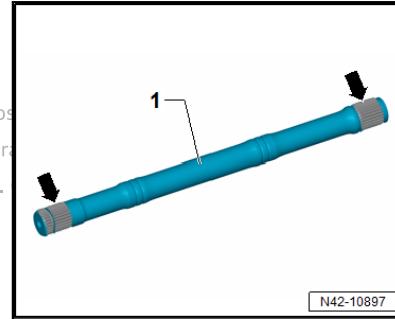
- Boot and drive shaft must be free from grease.
- Fit new retaining ring -1-.



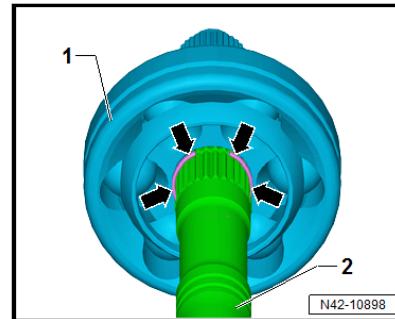
- Slide smaller hose clip on with boot.
- Position boot in outer groove -arrow A-.
- Inner groove -arrow B- remains visible (“identification groove” for correct boot assembly).
- Pack half the total quantity of grease from repair kit into joint body. permitted unless authorised by AUDI AG. AUDI AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by AUDI AG.
- Lightly grease splines -arrows- on drive shaft -1- with grease used in joint.



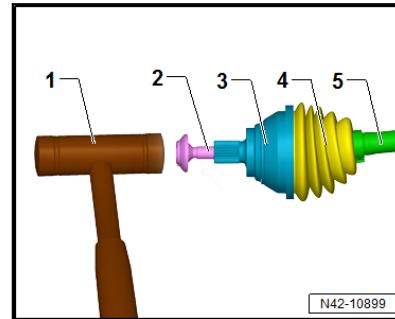
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- Push constant velocity joint -1- onto drive shaft -2- as far as retaining ring.



- Align retaining ring so that opening faces upwards -arrows-.
- Screw old drive shaft bolt -2- into joint body -3-.

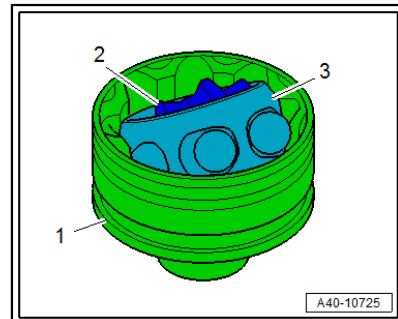


- Use plastic-headed hammer -1- to drive joint onto drive shaft -5- until retaining ring engages.
- Pack remaining quantity of grease from repair kit into rear of joint body.
- Push boot -4- onto joint body -3-.
- Vent air from boot.
- Make sure boot is properly positioned on joint body.
  - Boot must rest in groove and on contour of joint body.
- Tighten hose clips on outer joint [⇒ h8.8 ose clip on triple roller joint and outer joint", page 167](#).

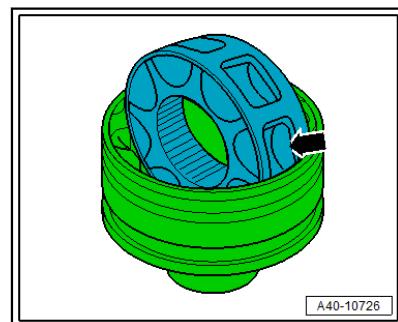
## 8.7 Checking outer constant velocity joint

The joint should be dismantled to renew dirty grease or for checking the balls and ball races for wear and damage.

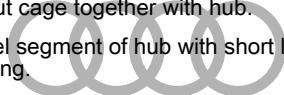
### Dismantling

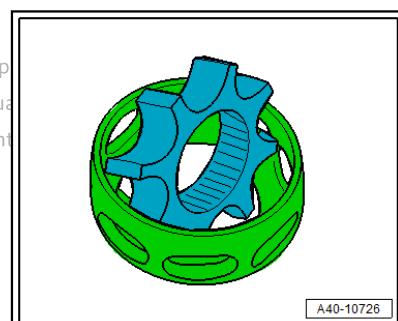


- Before dismantling, mark position of ball hub -2- in relation to ball cage -3- and joint body -1- with an electric scribe or oil stone.
- Swivel ball hub and ball cage.
- Take out balls one after the other.
- Turn the cage until the two rectangular openings -arrow- are level with the joint body.



- Lift out cage together with hub.
- Swivel segment of hub with short lobe into square cage opening.

  
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- Pivot hub out of cage.

### Checking

The balls in each joint belong to one tolerance group. Check stub axle, hub, cage and balls for pitting and signs of seizure. Excessive backlash in the joint will cause knocking or jolts under load change; in such cases the joint must be renewed. Polished areas and visible tracks in the ball races do not justify renewal of the joint.

### Assembling

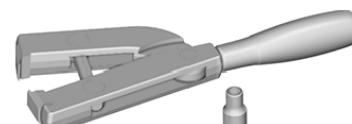
- Fit cage with hub into joint body.
- Make sure cage is inserted in correct position (i.e. sides facing in same direction as original position).
- Press in balls one after the other from opposite sides, taking care to re-establish original position of hub relative to cage and joint body.  
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- Pack required amount of grease into joint body [⇒ page 146](#).

## 8.8 Tightening hose clip on triple roller joint and outer joint

### Special tools and workshop equipment required

- ◆ Clamp tensioner -V.A.G 1682A-

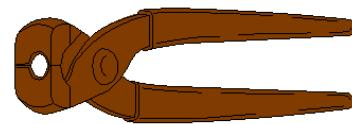
VAG 1682A



W00-11681

- ◆ Locking pliers for Phaeton steering rack -VAS 6199-

VAS 6199



W00-11696