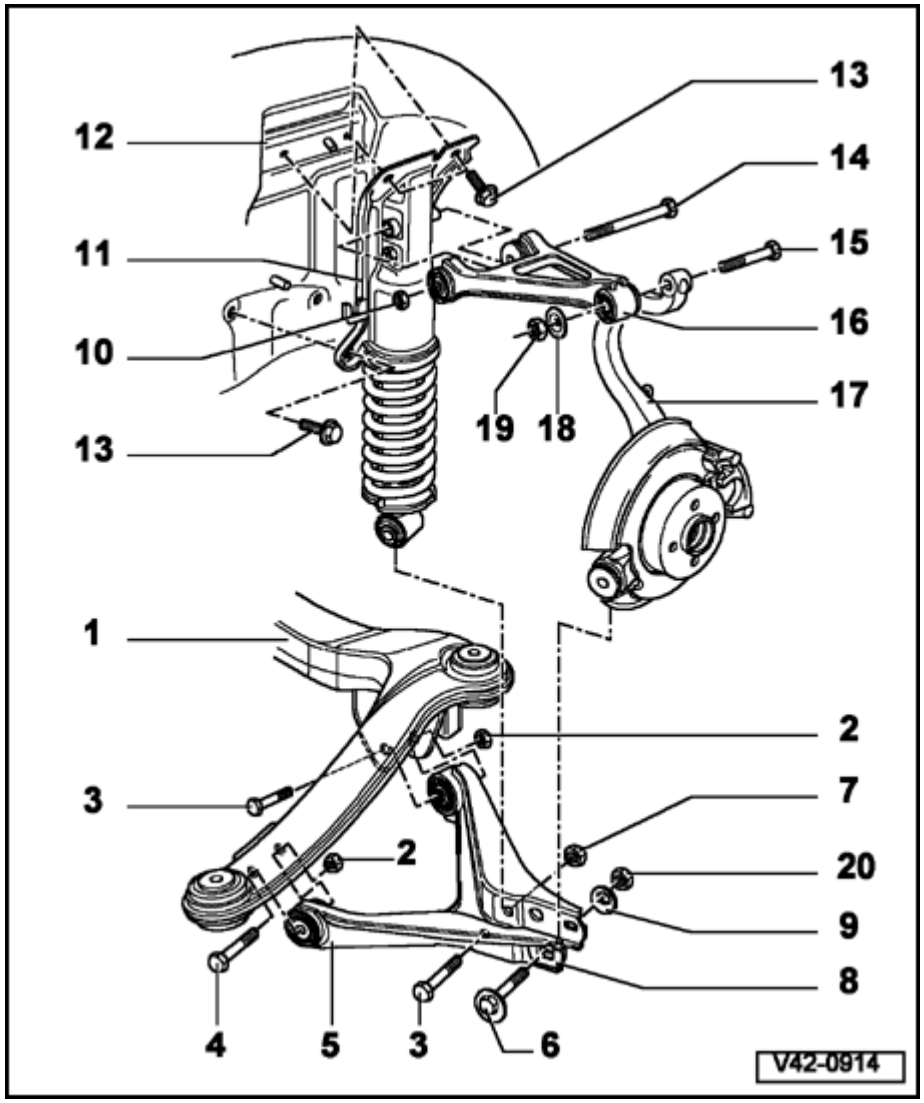
42-39



Rear axle, servicing (all-wheel-drive vehicles)

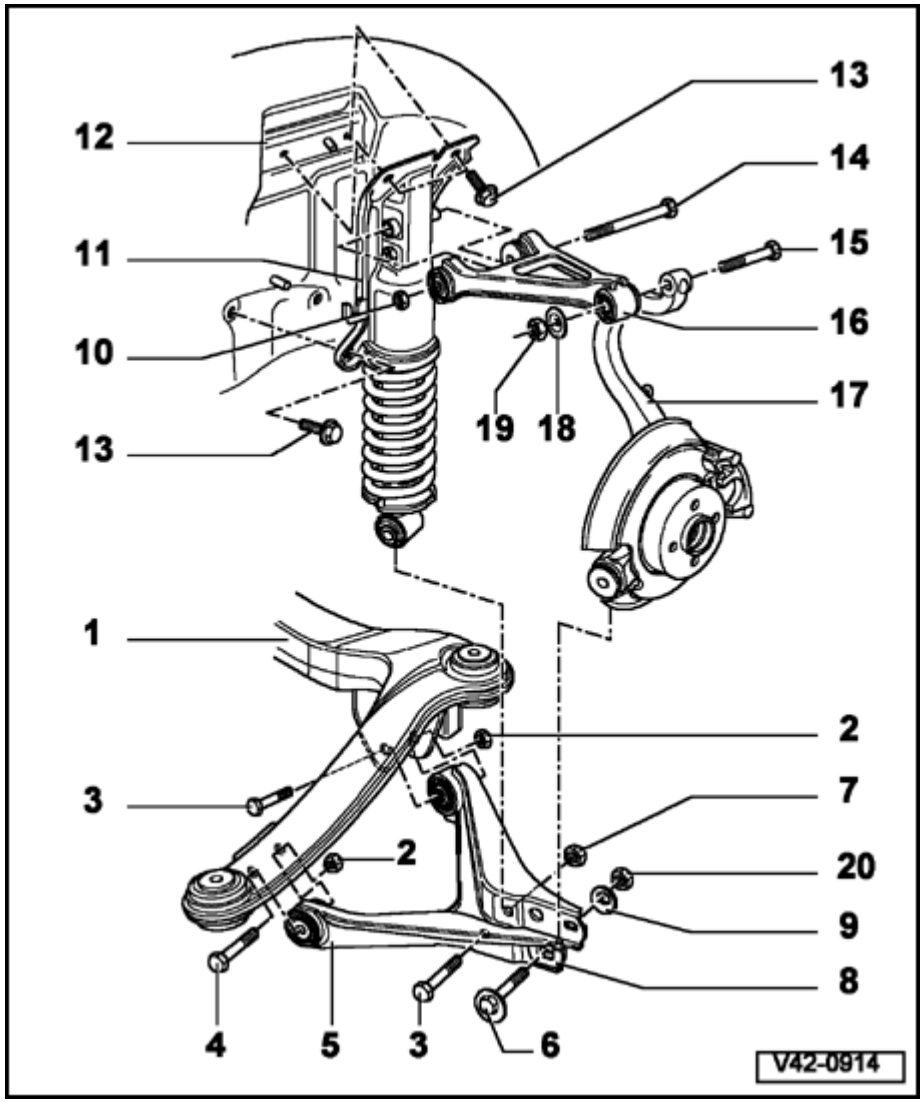
WARNING!

- ***Do not attempt to weld or straighten the load-bearing or wheel locating components of the rear suspension.***
- ***Do not re-use fasteners that are worn or deformed in normal use.***
- ***Some fasteners are designed to be used only once, and are unreliable and may fail if used a second time. This includes, but is not limited to, nuts, bolts, washers, circlips and cotter pins. Always follow recommendations in this manual-replace these fasteners with new parts where indicated, and any other time it is deemed necessary by inspection.***

CAUTION!

Do not attempt to move a vehicle from which the drive axle has been removed. Otherwise wheel bearing damage will result. If the vehicle must be moved, install an outer CV joint in place of the drive axle.

42-40



1 - Rear subframe

- After removing and installing, check wheel alignment and adjust if necessary ⇒ page 44-6
- Servicing ⇒ page 42-50
- Pay attention to removing and installing on vehicles with headlight range control ⇒ page 42-48

2 - Self-locking nut

- Always replace
- 70 Nm (52 ft lb) + 1/4-turn (90°)
- Vehicle must be standing on its wheels when tightening nut

3 - Bolt

- Always replace

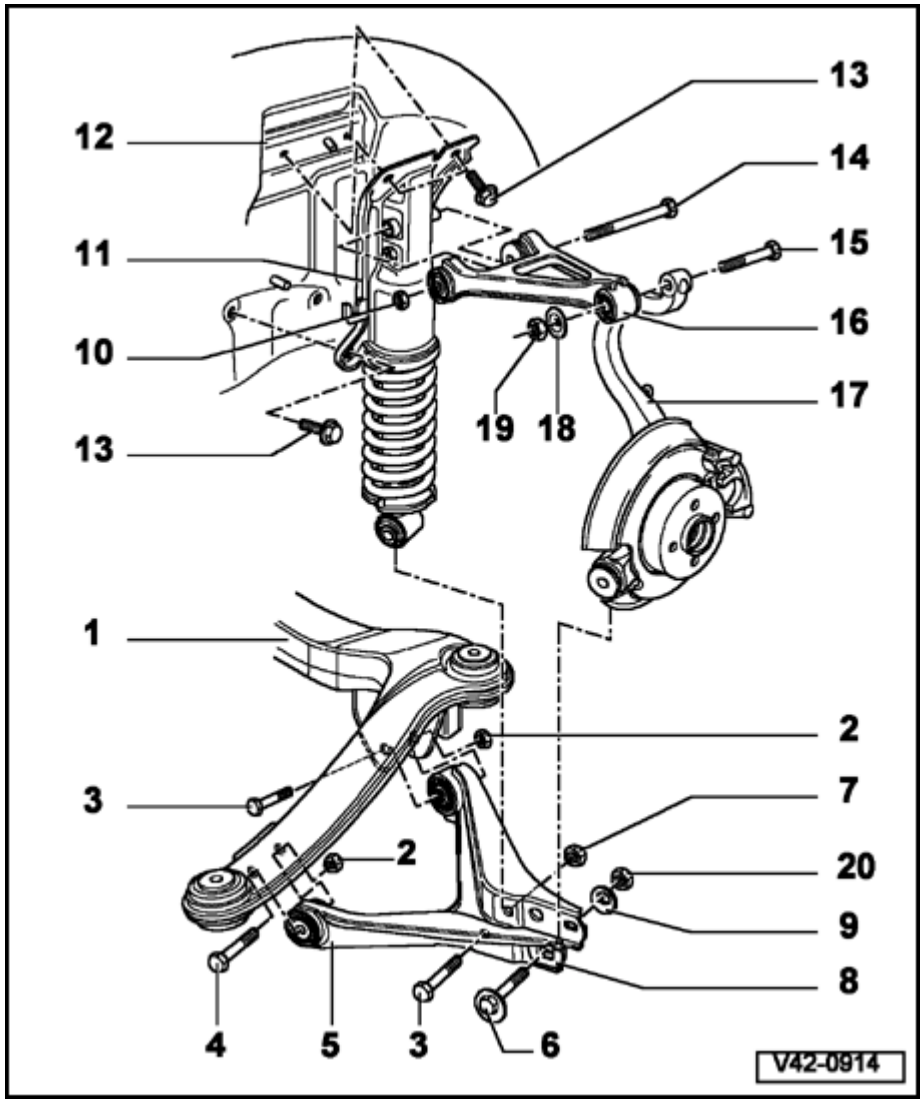
4 - Bolt

- Always replace

5 - Lower control arm

- Pay attention to removing and installing on vehicles with headlight range control ⇒ page 42-48
- Removing and installing ⇒ page 42-84
- Servicing ⇒ page 42-89

42-41



6 - Eccentric bolt

- Adjusting axle camber ⇒ page 44-22
- Do not turn more than 90° from left or right of center position (90° is minimum or maximum adjustment)

7 - Self-locking nut

- Always replace
- 70 Nm (52 ft lb) + 1/4-turn (90°)
- Vehicle must be standing on its wheels when tightening nut

8 - Support for adjusting camber

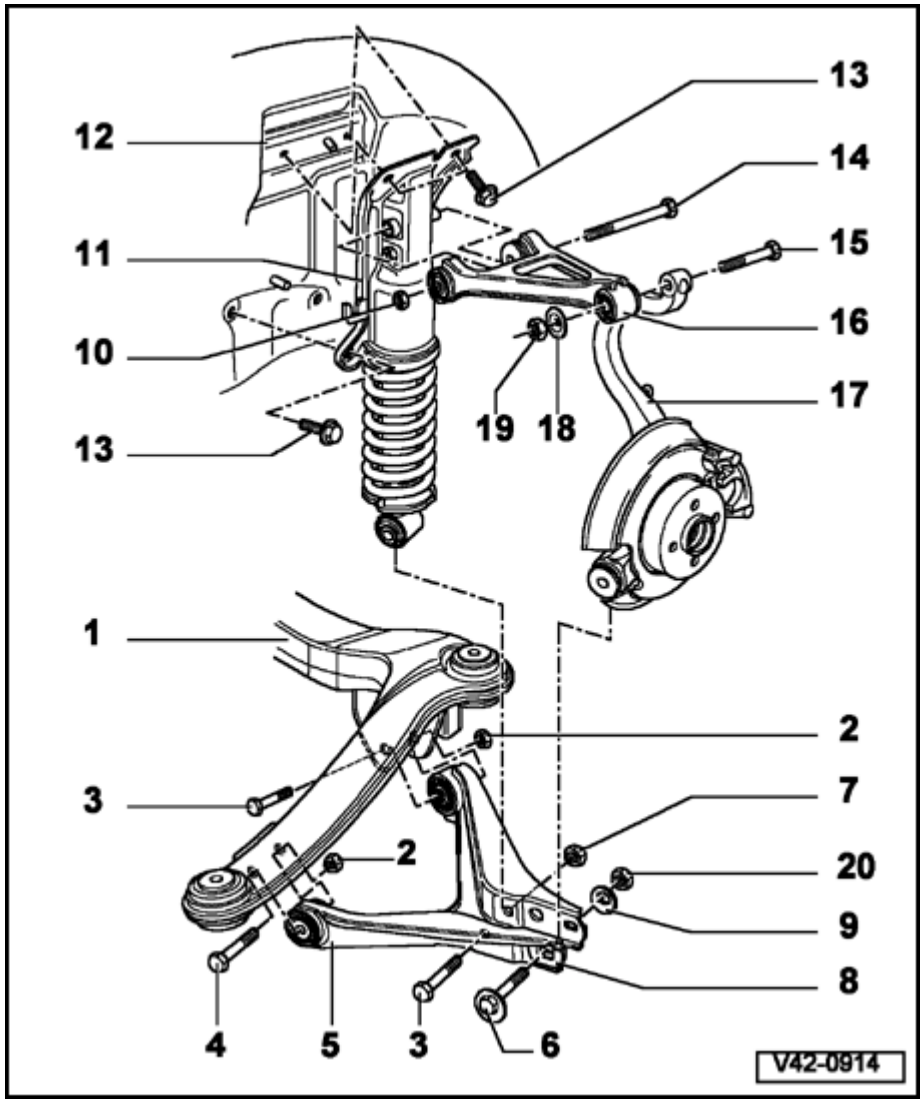
- Welded to control arm on both sides
- Make sure that eccentric bolt and washer are correctly located

9 - Eccentric washer

10 - Self-locking nut

- Always replace
- 50 Nm (37 ft lb) + 1/4-turn (90°)
- When tightening, hold upper control arm horizontal
- Vehicle must be standing on its wheels when tightening nut

42-42



11 - Suspension strut

- Removing and installing ⇒ page 42-65
- Servicing ⇒ page 42-68

12 - Wheelhousing

13 - Bolt + washer

- 55 Nm (41 ft lb)

14 - Bolt

- Always replace

15 - Bolt

- Always replace

16 - Upper control arm

- Removing and installing ⇒ page 42-65
- Servicing ⇒ page 42-81

17 - Wheel bearing housing

18 - Washer

- Always replace

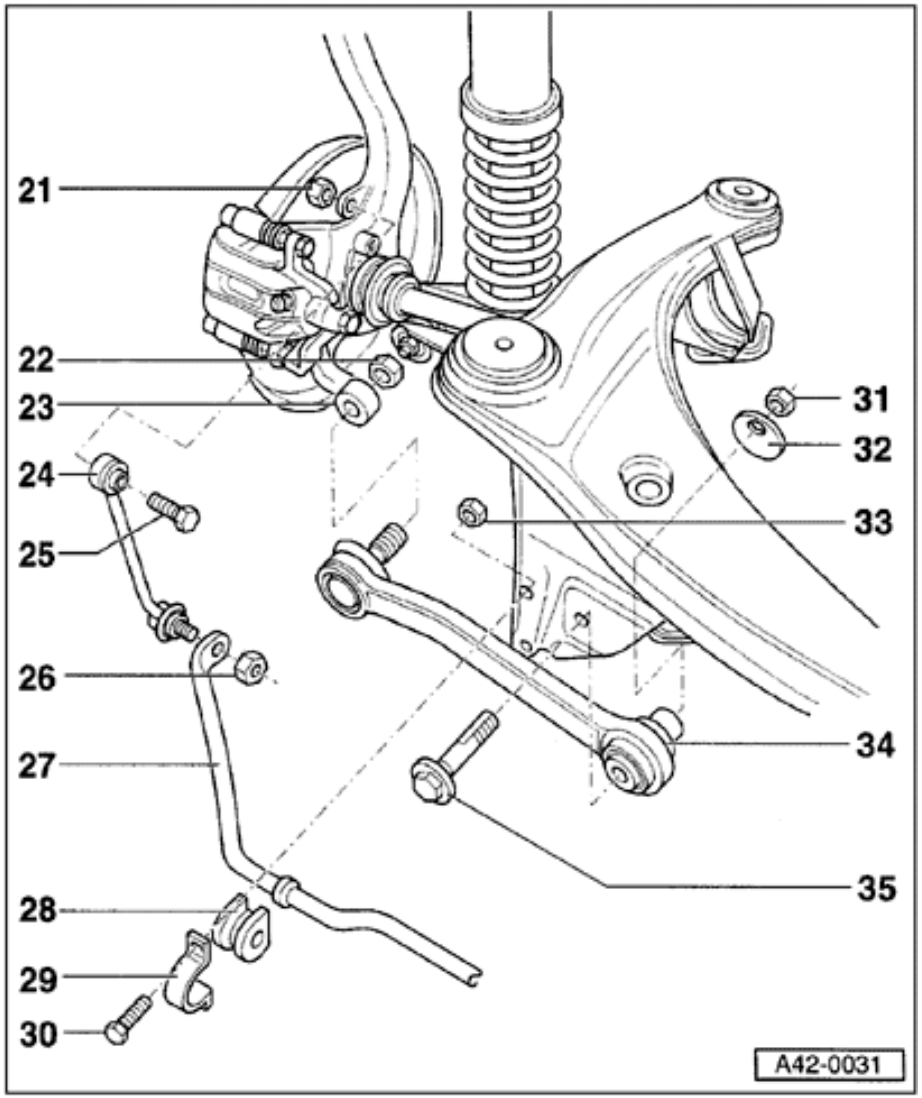
19 - Self-locking nut

- Always replace
- 50 Nm (37 ft lb) + 1/4-turn (90°)

20 - Self-locking nut

- Always replace
- 95 Nm (70 ft lb)

42-43



21 - Self-locking nut

- Always replace
- 50 Nm (37 ft lb)

22 - Self-locking nut

- Always replace
- 50 Nm (37 ft lb)
- Vehicle must be standing on its wheels when tightening nut

23 - Wheel bearing housing

- Removing and installing ⇒ page 42-106
- Servicing ⇒ page 42-110

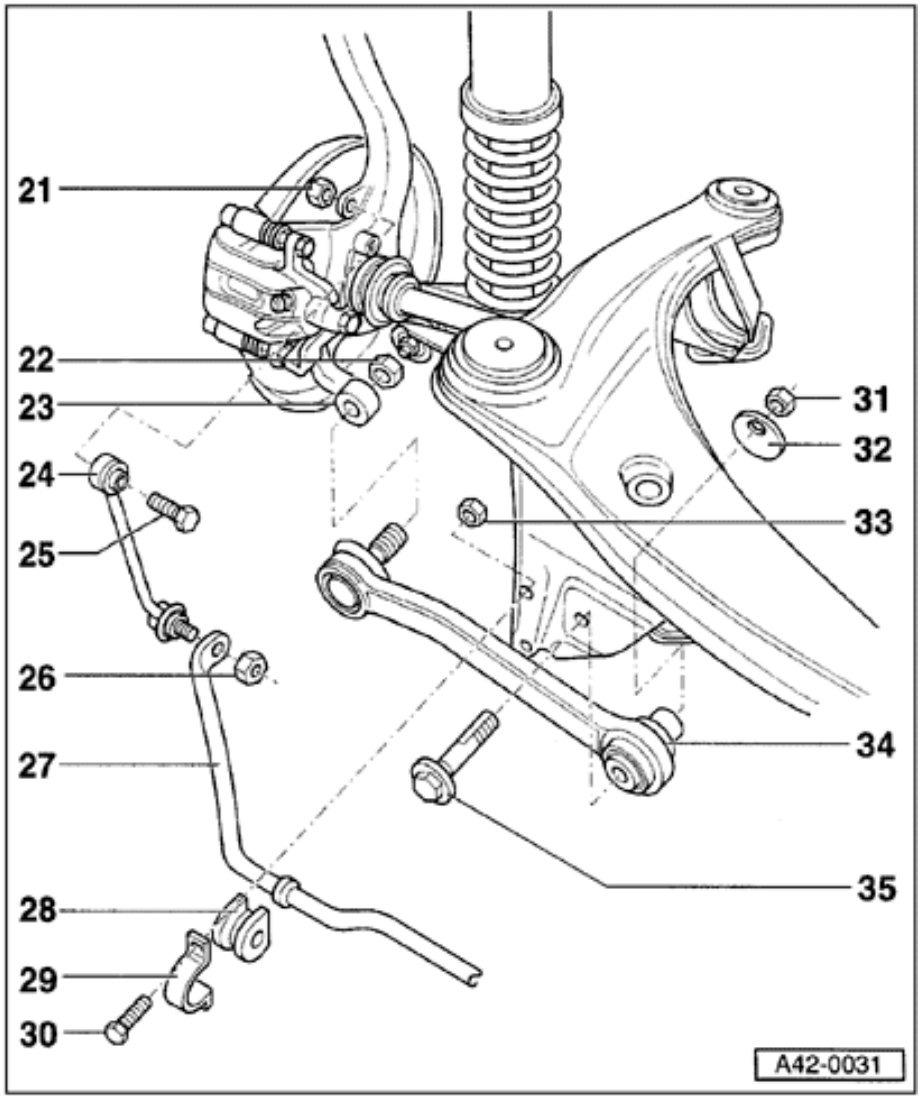
24 - Connecting link

25 - Bolt

26 - Self-locking nut

- Always replace
- 40 Nm (30 ft lb)

42-44



27 - Stabilizer bar

- Different versions depending on suspension version
- Before replacing, refer to vehicle data label to determine correct version ⇒ page 42-37

Suspension codes on data label:

- 1BA = Standard suspension
- 1BC = Special purpose suspension
- 1BP = Heavy duty suspension
- 1BE = Sports suspension
- 1BB = Heavy duty suspension
- 1BD = Audi S4
- 1BT = Heavy duty suspension

28 - Bushing

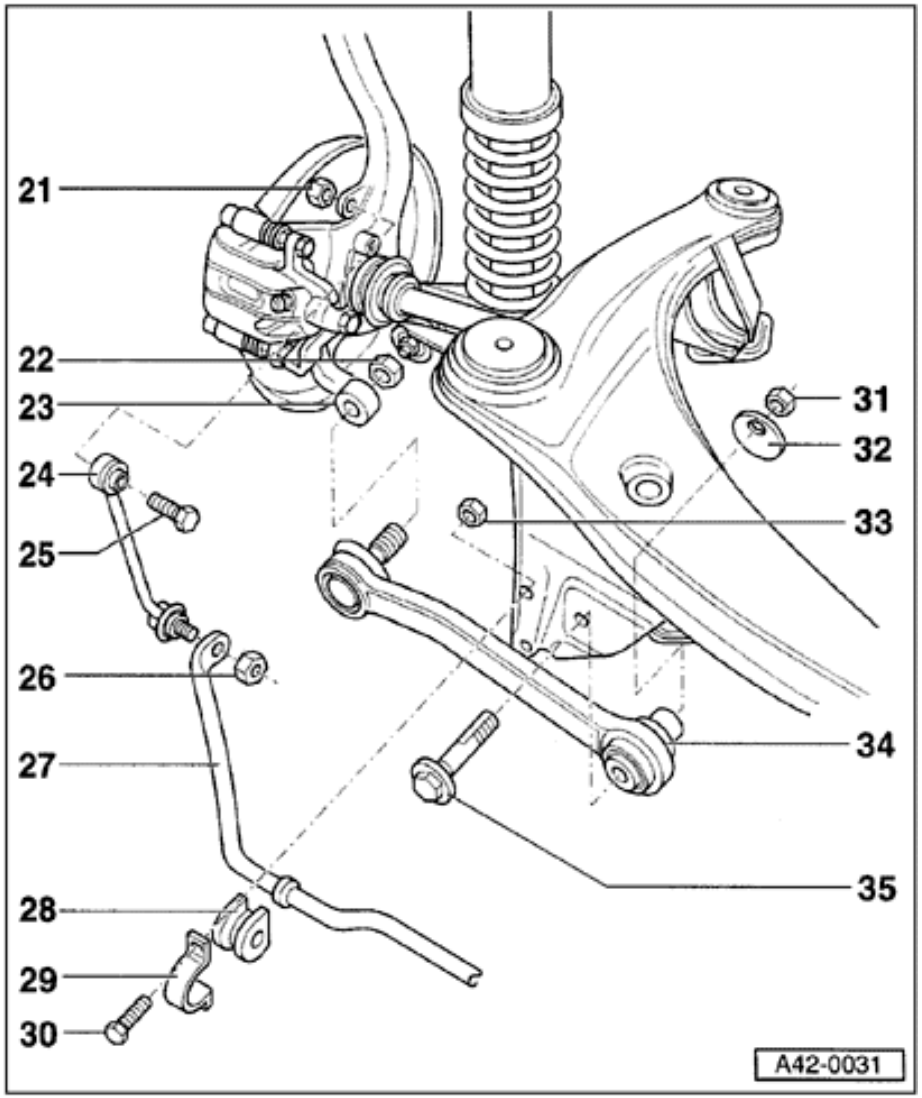
- Different versions depending on suspension version
- Before replacing, refer to vehicle data label to determine correct version ⇒ page 42-37

Suspension codes on vehicle data label:

- 1BA = Standard suspension
- 1BC = Special purpose suspension

- 1BP = Heavy duty suspension
- 1BE = Sports suspension
- 1BB = Heavy duty suspension
- 1BD = Audi S4
- 1BT = Heavy duty suspension

42-45



29 - Bracket

30 - Bolt

- 25 Nm (18 ft lb)

31 - Self-locking nut

- Always replace
- 90 Nm (66 ft lb)
- Vehicle must be standing on its wheels when tightening nut

32 - Eccentric washer

33 - Self-locking nut

- Always replace

34 - Track rod

35 - Eccentric bolt for adjusting wheel toe

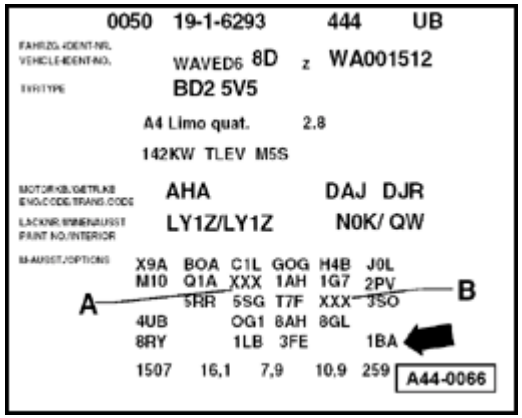
- Adjusting axle toe ⇒ page 44-23
- Do not turn more than 90° from left or right of center position (90° is minimum or maximum adjustment)

42-46

Information on weight codes (code number)

From model year 1998 ➢, spring/shock assemblies will be classified according to weight codes (code number) so that suspension components can be matched easily.

The spring/shock assembly installed in the vehicle is indicated by the weight code on the vehicle data label.



➢ **Example of vehicle data label**

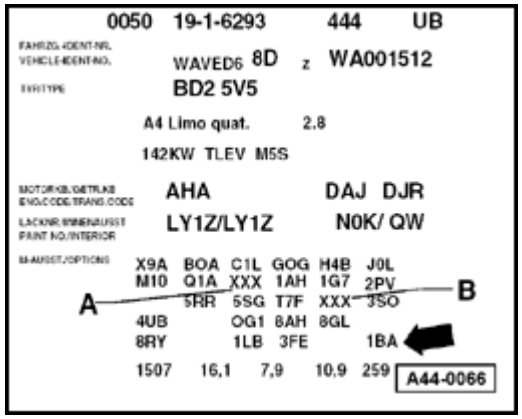
A - Weight code for front suspension

B - Weight code for rear suspension

The vehicle data label is located in the spare wheel well and in the vehicle Maintenance booklet.

The weight codes can be used to identify the correct spring/shock assemblies on the parts catalog microfiche.

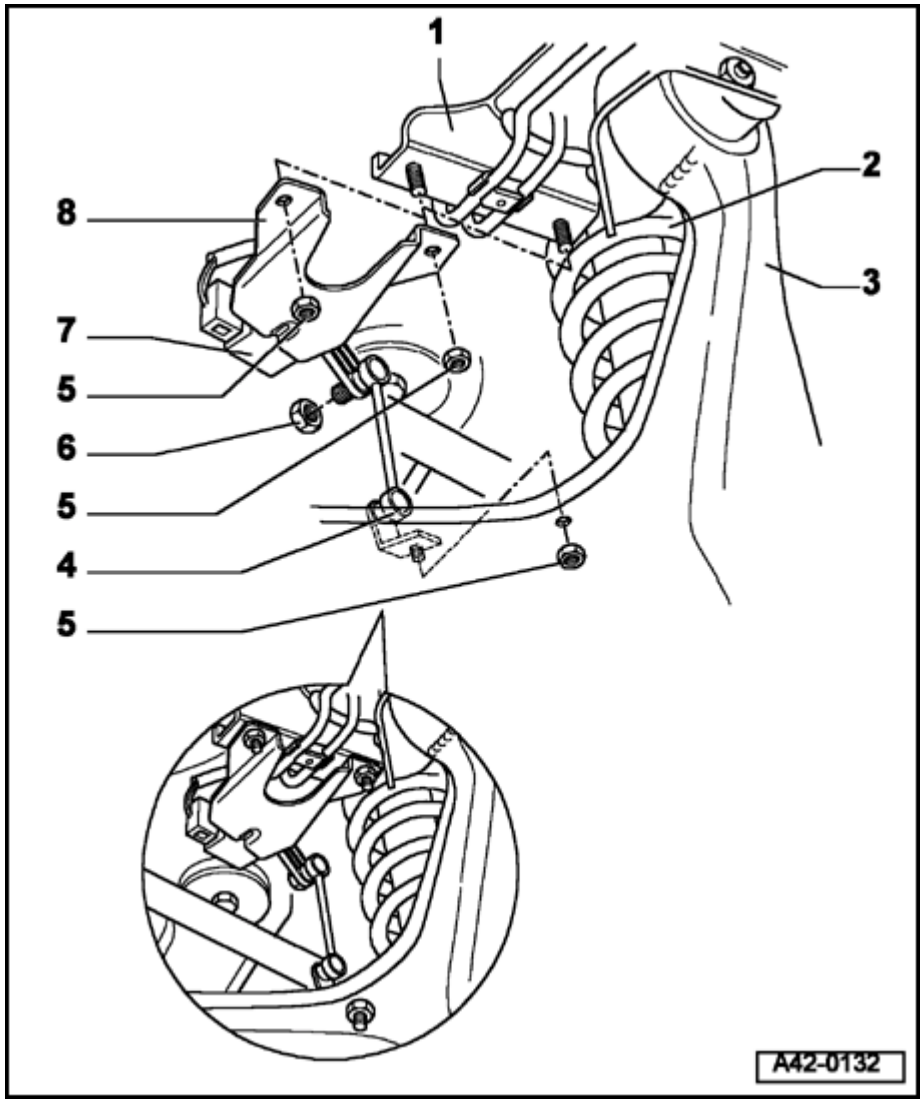
42-47



The weight code for the different suspension versions is indicated by the arrow in the illustration.

- 1BA: Standard suspension
- 1BB: Heavy duty suspension (approx. 20 mm (3/4 in.) higher)
- 1BC: Special purpose vehicles
- 1BD: Sport suspension, Audi S4
- 1BE: Sport suspension
- 1BH: USA
- 1BT: Heavy duty suspension (approx. 7 mm or 1/4 in. higher)
- 1BP: Heavy duty suspension (same ride height as 1BA but with limited bump)

42-48



Headlight range control, removing and installing

As a running change in m.y. 1998 ➢ vehicles with xenon headlights may have a connection for the headlight range control installed in the left-rear of the headlight.

1 - Subframe

2 - Suspension strut

3 - Lower control arm

4 - Linkage for headlight range control

5 - Self-locking nuts

- 10 Nm (7 ft lb)

6 - Nut

- 3 Nm +1/-0 Nm (27 in. lb +9/-0 in. lb)
- Observe Note ⇒ page 42-49

7 - Sensor for headlight range control

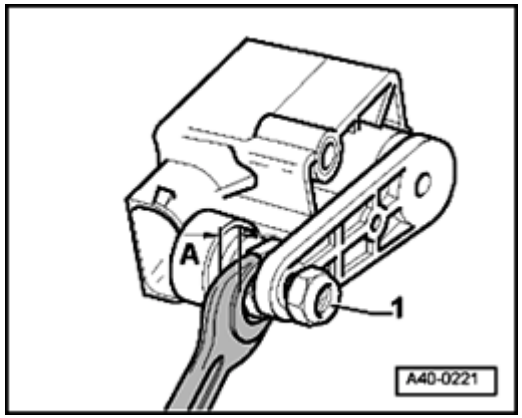
8 - Mounting bracket

42-49

When removing the rear axle or lower control arm It is essential to loosen the linkage for the headlight range control at lower control arm.

Note:

For mounting linkage to sensor for headlight range control use a 10 mm open end wrench with a thickness of distance -A-) to avoid damage to the seal

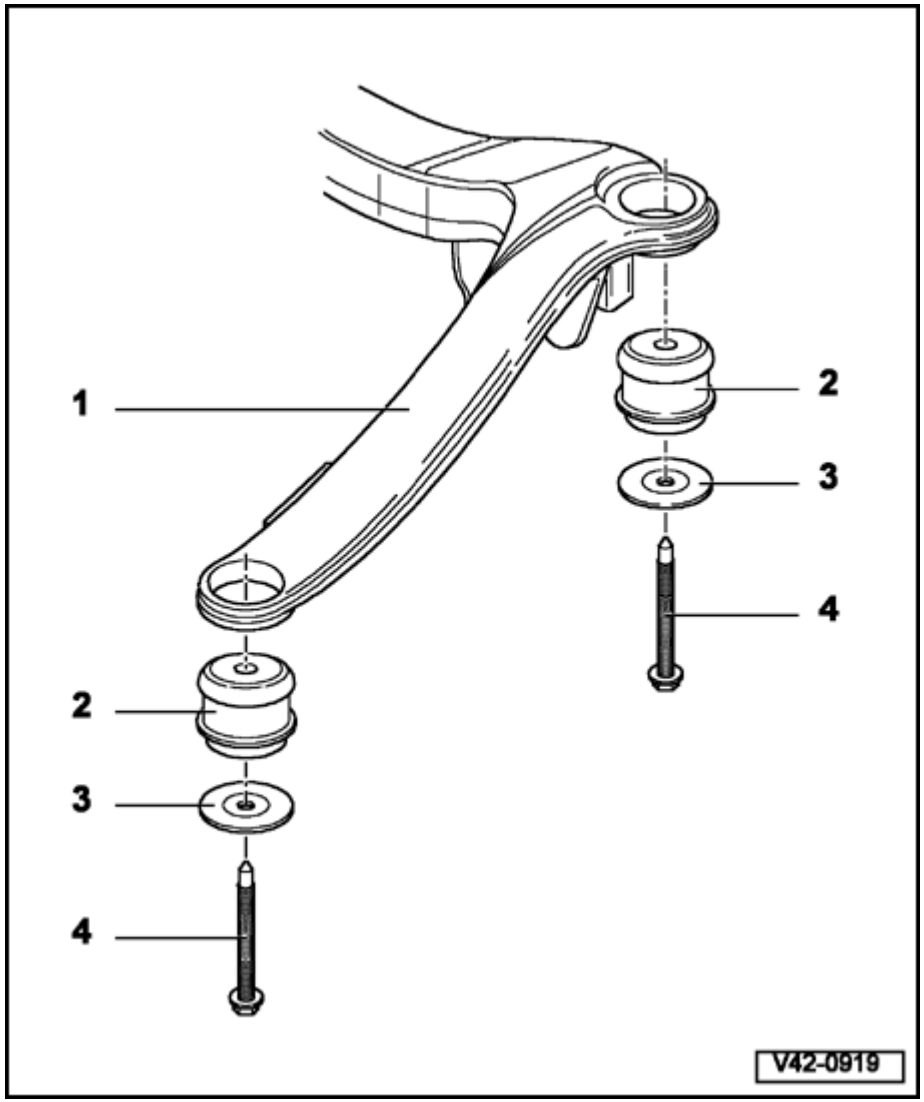


- Distance -A-: 4 mm (0.157 in.)
- Position -1- tightening torque: 3 Nm +1/-0 Nm (27 in. lb +9/-0 in. lb)
- Make sure sensor arm is properly aligned to linkage when installing headlight range control

Notes:

- *The linkage must be aligned vertically.*
- *The sensor arm must point outward and downward.*

42-50



Subframe, servicing

WARNING!

Do not attempt to weld and/or straighten the axle beam.

CAUTION!

If using power tools (pneumatic or electric), do not tighten the bolted connections more than hand-tight. Otherwise, the specified tightening torques could be exceeded.

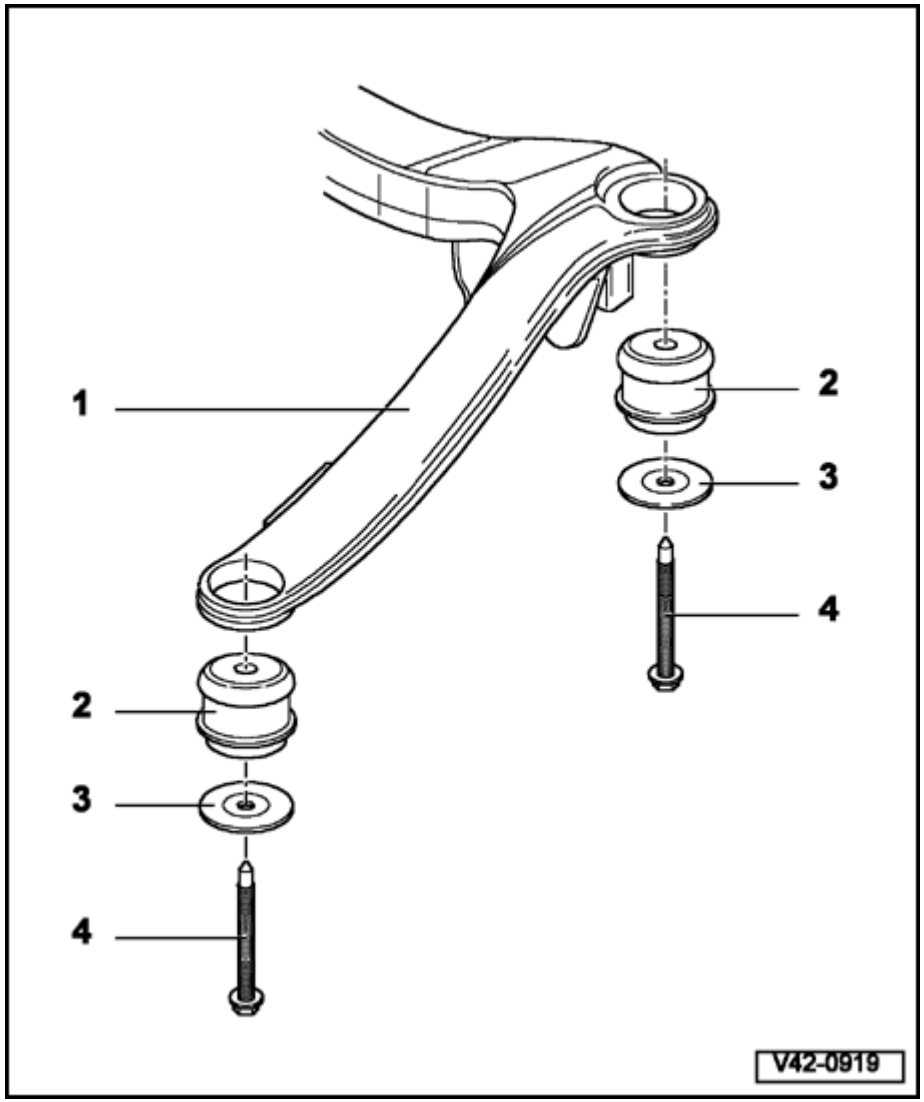
1 - Subframe

Tightening sequence (item - 4 -):

- 1. Right-rear
- 2. Left-rear
- 3. Right-front
- 4. Left-front

- Align rear axle after removal and installation ⇒ page 44-13
- Check and if necessary adjust wheel alignment after installing ⇒ page 44-13

42-51



2 - Bonded rubber bushings

- Installation positions ⇒ Fig. 5

Front bushings:

- Pulling out ⇒ Fig. 1
- Pressing in ⇒ Fig. 2

Rear bushings:

- Pulling out ⇒ Fig. 3
- Pressing in ⇒ Fig. 4

Note:

Apply assembly lubricant G 294 421 A1 before installing.

CAUTION!

Part numbers are listed here for reference only. Always check with your Parts department for the latest information.

3 - Washer

- Always replace
- Ribbed side faces upward

4 - Combi-bolt

- Always replace

♦ 110 Nm (81 ft lb) + 1/4-turn (90°)

42-52

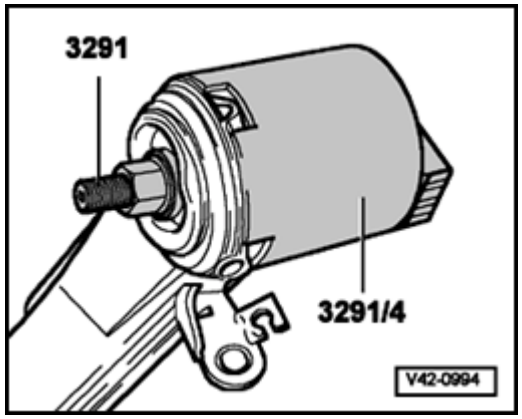


Fig. 1 Pulling out front bonded rubber bushing from subframe

- Assemble 3291/4 tubular section (pay attention to recesses) together with 3291 assembly device at right angle to subframe.
- Attach two brass washers in such a way that annular grooves are next to one another (3291 assembly device). Install washer and screw on nut.
- Pull out bonded rubber bushing by turning nut.

Note:

Insert hex head of 3291 assembly device into the recess in the 3291/4 tubular section. Apply grease to the annular grooves of the brass washers and to the threaded stem.

42-53

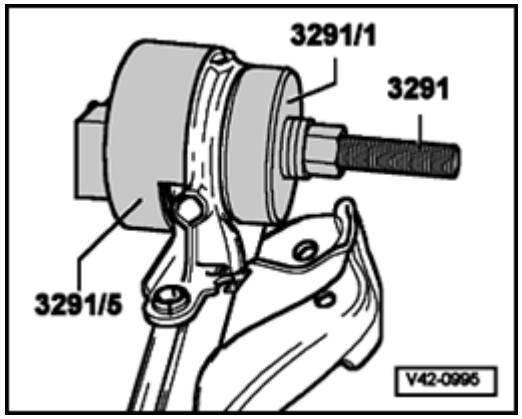


Fig. 2 Pressing in front bonded rubber bushing in subframe

- Apply lubricant (e.g. G 294 421 A1) when pressing in bonded rubber bushings.
- Assemble 3291/1 thrust piece to bonded rubber bushing and insert at right angle into hole in subframe using 3291/5 tubular section (pay attention to recesses) and 3291 assembly device.
- Attach two brass washers with annular grooves facing one another and to 3291 assembly device.
- Install washer and screw on nut.
- Press in bonded rubber bushing fully by turning nut.
  - While pulling in, hold 3291/1 thrust piece or bonded rubber bushing by hand to prevent turning.

Note:

Insert hex head of 3291 assembly device into the recess of 3291/5 tubular section. Apply grease to the annular grooves of the brass washers and to the assembly device.

42-54

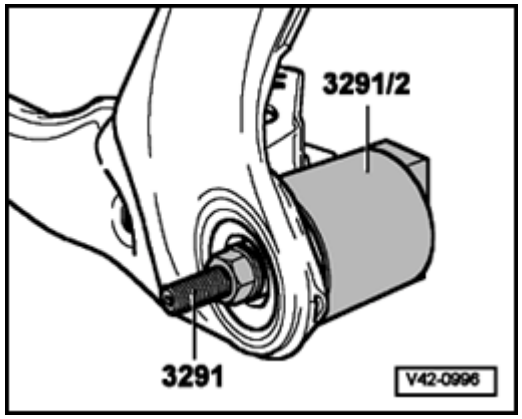


Fig. 3 Pulling out rear bonded rubber bushing from subframe

- Assemble 3291/2 tubular section together with 3291 assembly device at right angle to subframe.
- Attach two brass washers with annular grooves next to one another and to 3291 assembly device. Install washers and screw on nut.
- Pull out bonded rubber bushing by turning nut.

Note:

Insert hex nut of 3291 assembly device into recess in 3291/2 tubular section. Apply grease to the annular grooves of the brass washers and to the assembly device.

42-55

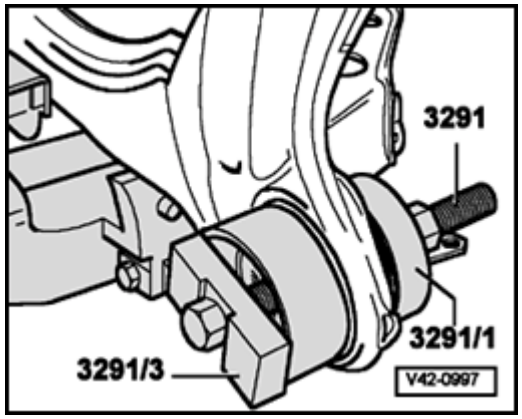


Fig. 4 Pressing in rear bonded rubber bushing in subframe

- Apply lubricant (e.g. G 294 421 A1) when pressing in bonded rubber bushings.
- Attach 3291/1 thrust piece to bonded rubber bushing and insert at right angle into hole in subframe using 3291/3 tubular section and 3291 assembly device.
- Attach two brass washers with annular grooves next to one another and to 3291 assembly device.
- Install washer and screw on nut.
- Press in bonded rubber bushing fully by turning nut.
  - While pulling in, hold 3291/1 thrust piece or bonded rubber bushing by hand to prevent turning.

Note:

Insert hex nut of 3291 assembly device into recess in 3291/3 tubular section. Apply grease to the annular grooves of the brass washers and to the assembly device.

42-56

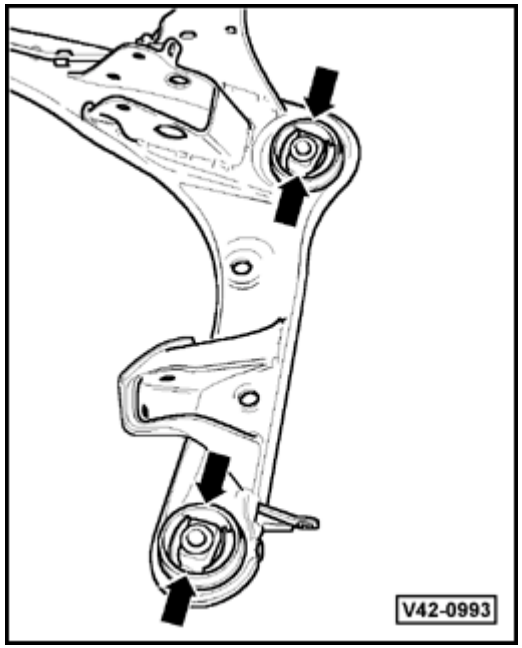


Fig. 5 Installation positions of bonded rubber bushings in rear subframe

Note:

The kidney-shaped recesses (arrows) must be parallel to the center line of the vehicle. Max. deviation of 10° to left or right is permissible.

42-57

Rear axle, removing and installing (all-wheel-drive vehicles)

Special tools, test equipment and auxiliary items

- VAG1752/1 spring compressor
- VAG1752/3 adaptor with protective linings
- VAG1383A engine/transmission lifter
- VAG1359/2 universal mount

Removing

- Remove rear center console:

⇒ *Repair Manual, Body Interior, Repair Group 70*

- Remove both rear wheels.
- Disconnect exhaust system at clamp and remove rear section of exhaust system.

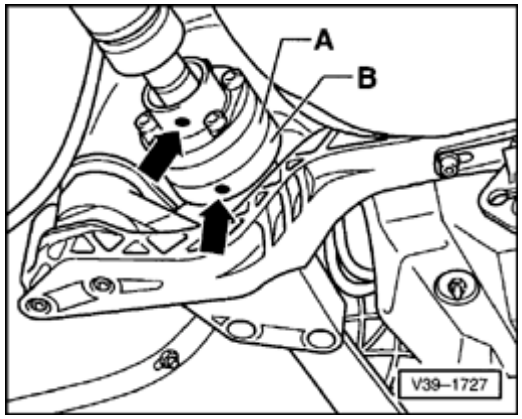
CAUTION!

Do not deflect the isolating element at the front exhaust pipe more than 10° otherwise it could become damaged.

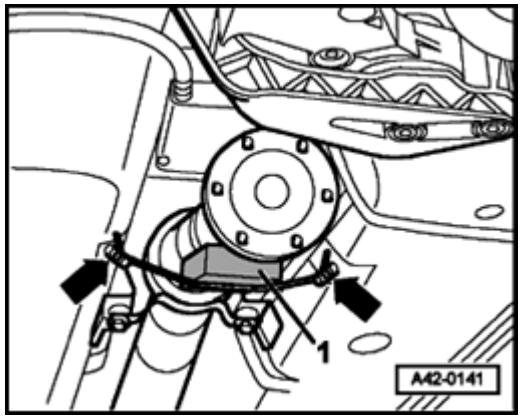
- Remove rear heat shield for driveshaft.

- If applicable, suspend exhaust pipe together with three-way catalytic converter from driveshaft center bearing.

42-58



- Check for factory markings (colored dots -arrows-) for aligning drive flange on driveshaft -A- to drive flange on rear final drive -B-. If necessary, apply colored dots (arrows).
- Remove bolts from drive flange.



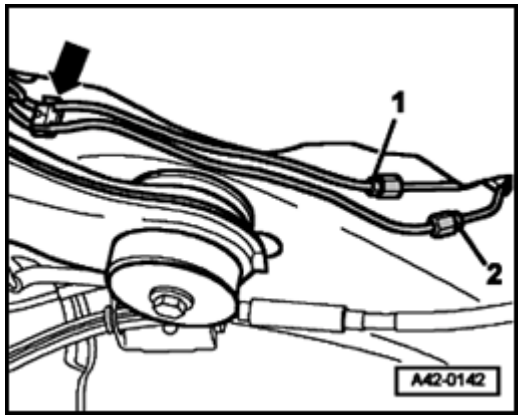
- Support driveshaft using wire attached to underside of vehicle (arrows) and place wooden block -1- below driveshaft.
- Remove parking brake cables:

⇒ *Repair Manual, Brake System, Repair Group 46*

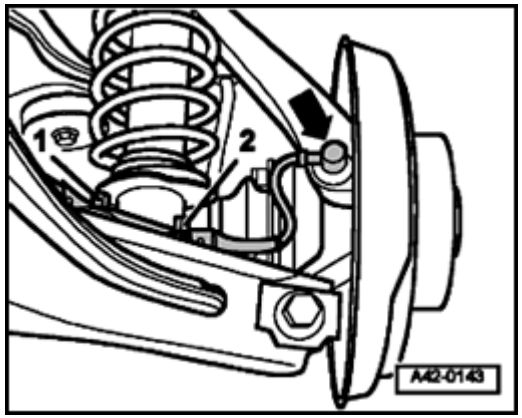
Note:

If the same rear axle is to be re-installed, only disconnect the parking brake cables at the parking brake lever, underbody and at the fuel tank. Leave the parking brake cables in position at the rear axle and at the brake calipers.

42-59

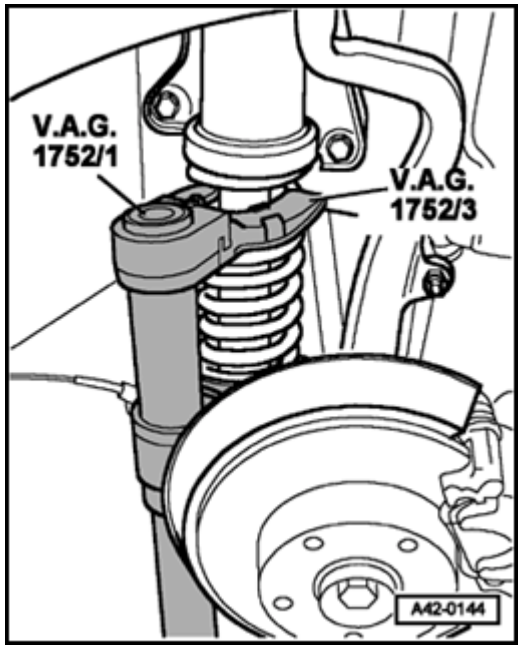


- Disconnect brake lines at fittings -1- and -2- at left-rear below vehicle.
- Unclip brake lines from holder (arrow) below vehicle.



- Remove holders -1- and -2- for wiring to ABS wheel speed sensors -G44- and -G46- at lower control arm.
- Pull ABS wheel speed sensors -G44- and -G46- (arrow) out of wheel bearing housing.
- Unhook wiring for wheel speed sensors at front of subframe.

42-60

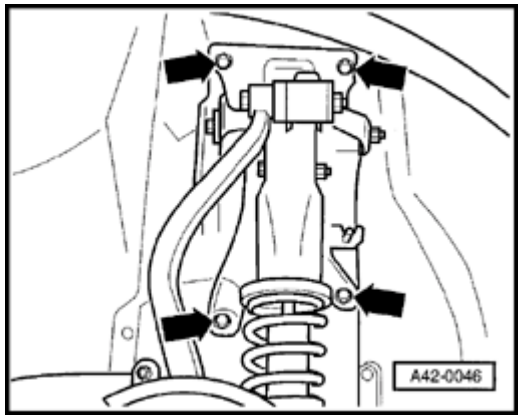


- Attach VAG1752/1 spring compressor and spring holder with VAG1752/3 adaptor and protective linings at second and next to last coils of coil spring.
- Compress coil spring.

Note:

On vehicles with headlight range control, the linkage for the headlight range control must be disconnected to remove the rear axle or lower control arm ⇒ page 42-48 .

42-61

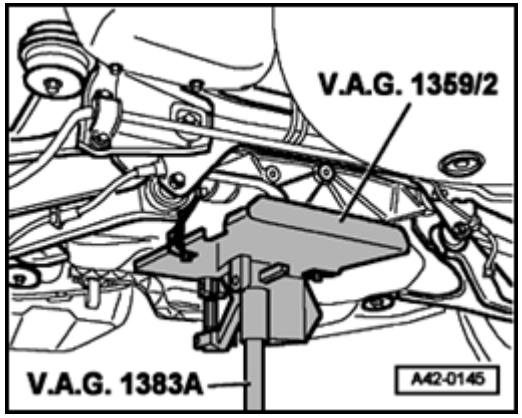


- While coil spring is still compressed, remove bolts (arrows) from suspension strut mounting bracket.
- Swivel suspension strut outward at top and relieve coil spring tension.

CAUTION!

Be careful not to damage the edge of the wheelhousing.

- Using above procedure, remove suspension strut from opposite side.
- Remove exhaust system bracket from rear final drive.

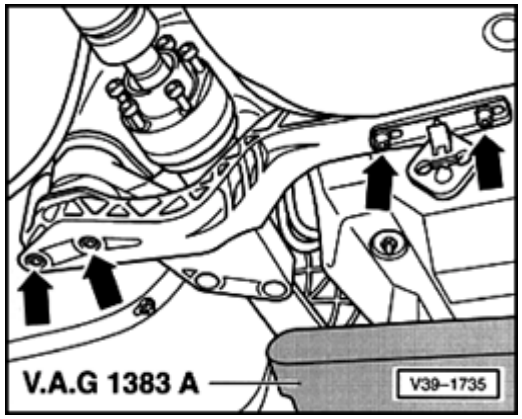


- Support final drive using VAG1383A engine/transmission lifter and VAG1359/2 universal mount.
- Secure rear final drive with strap.

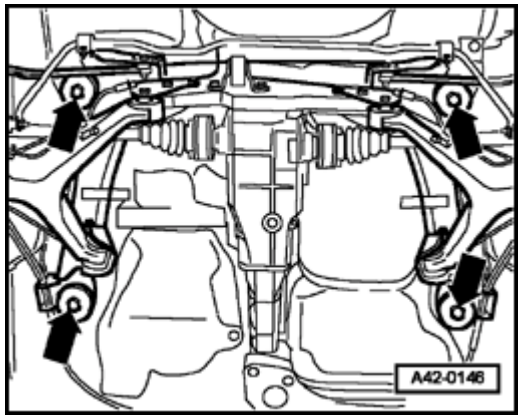
CAUTION!

Be careful not to damage the fuel tank.

42-62



- Remove bolts (arrows) at front cross member for rear final drive.



- Remove four subframe bolts (arrows).
- Slowly lower subframe together with rear final drive.

CAUTION!

Be careful not to damage the edge of the wheelhousing.

42-63

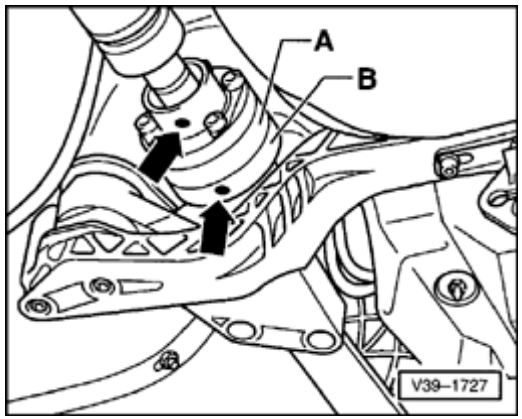
Installing

Installation is the reverse of removal. Observe the following:

CAUTION!

Any residual paint, residual adhesive and/or corrosion in the threads/splines must be removed.

Note:



To prevent imbalance, drive flange -A- on driveshaft and drive flange -B- on rear final drive must be installed with colored markings aligned (arrows).

- Replace gasket between driveshaft and rear final drive drive flanges.
  - Peel off protective backing and bond gasket to drive flange.
  - Bonding surface must be free of grease
- Replace driveshaft bolts (self-locking).
- Bleed brake system:

⇒ *Repair Manual, Brake System, Repair Group 47*

- Adjust parking brake:

⇒ *Repair Manual, Brake System, Repair Group 46*

- Adjust toe and camber at rear axle ⇒ page 44-6 .

- Align exhaust system free of stress:

Repair Manual, Engine Mechanical, Repair Group 26

- Replace four subframe bolts and washers.

  Installation position of washers: ribbed side facing upward

Tightening torques

Component/location		Tightening torque
Subframe to body		110 Nm (81 ft lb) + 1/4-turn (90°)1)
Suspension strut mounting bracket to body		55 Nm (41 ft lb)
Drive shaft to rear final drive	M8	55 Nm (41 ft lb)
Rear final drive front crossmember to body	M10	40 Nm (30 ft lb)
Rear final drive front crossmember (with exhaust system bracket) to body	M8	20 Nm (15 ft lb)

Drive axle to rear final drive	M8	40 Nm (30 ft lb)
	M10	80 Nm (59 ft lb)
1) Always replace bolt		