

SUSPENSION**Rear Suspension (Sedan)****42 REAR SUSPENSION****GENERAL INFORMATION****REAR SUSPENSION**

When installing waxed components, contact surfaces must be cleaned. Contact surfaces must be free of wax and grease.

Tightening specifications for unlubricated bolts and nuts are given.

Always replace self-locking nuts and bolts.

Always replace the bolts and nuts, which are tightened with an additional tightening angle.

Welding or straightening operations are not permitted on load-bearing or wheel-controlling components.

Always avoid the following actions with coil springs: Hammer stroke, welding beads, applying color identification later.

Do not perform any welding or grinding (separating work) in coil spring or suspension strut area! Cover coil spring or suspension struts if necessary.

When loosening, removing or installing hydraulic, pneumatic or electrical line, always make a sketch or take a picture. Doing so, record the original installation locations.

If the cable ties, brackets or mounting elements were removed during the repair procedure, they must be installed at their original location.

Do not let the drive axle hang down. The inner joint could be damaged if it is bent too far.

Vehicles without a drive axle must not be moved, otherwise the wheel bearing will be damaged. If the vehicle does have to be moved, always note the following points:

-- Install an outer joint in place of the drive axle.

-- Tighten the threaded connection between the drive axle and the wheel hub to 200 Nm.

Bonded rubber bushings can only be turned to a limited extent. Only tighten threaded connections at control arms if vehicle is in curb weight position or control position.

- Wheel bearing, lifting to curb weight position on vehicles with coil springs. Refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**.

If the vehicle must still have an axle alignment, every bolt and nut that must be loosened for adjustment must be tightened to the tightening specification. Tighten the bolts and nuts to the specified additional tightening angle after the alignment/adjustment is complete.

WARNING: All bolts and nuts must be tightened properly before driving the vehicle!

For a short period of time, subframes for AWD vehicles were installed on FWD vehicles.

For a short period of time, wheel bearing housings for AWD vehicles were installed on FWD vehicles -item 24-
WHEEL BEARING HOUSING, WHEEL BEARING UNIT AND COIL SPRING SHOCK ABSORBER OVERVIEW. Do not install both types together.

For a short period, steel wheel bearing housings instead of aluminum wheel bearing housings were installed on FWD vehicles, Do not install both types together.

CONTACT CORROSION

Contact corrosion can occur when incorrect fasteners (bolts, nuts, washers, etc.) are used.

For this reason, only fastening elements with a special surface coating (Dacromet) are installed. These elements can be recognized by their green color.

In addition, rubber and plastic parts and adhesive are of non-conducting materials.

If there are doubts as to whether parts should be reinstalled, install new parts.

NOTE: Only use genuine Audi replacement parts. They have been checked and are compatible with aluminum.

Accessories must be approved by Audi AG.

Damage due to contract corrosion is not covered under warranty!

LONGITUDINAL MEMBER THREADS, REPAIRING

Damaged threads can be repaired using wire inserts (heli-coil).

- Servicing work may only be performed once per thread.
- If servicing is necessary after this, the nuts must be replaced.
- Have the thread repair checked by the responsible foreman or next person in charge.
- Thread insert must be same length as thread in body.
- Repair any damage to the underbody sealant.

DRIVE AXLE

The wheel bearing must not be under a load while the drive axle threaded connection on the wheel side is loose.

If the bearings are loaded by the vehicle weight the wheel bearing will be damaged. This reduces the service life of the wheel bearings. Therefore observe the following:

- Bolt loosening procedure, refer to **THREADED CONNECTION BETWEEN DRIVE AXLE AND WHEEL HUB, LOOSENING AND TIGHTENING**.

Vehicles without a drive axle must not be moved, otherwise the wheel bearing will be damaged. If the vehicle does have to be moved, always note the following points:

-- Install an outer joint in place of the drive axle.

-- Tighten the threaded connection between the outer joint and the wheel hub to 200 Nm.

Do not let the drive axle hang down. The inner joint could be damaged if it is bent too far.

DESCRIPTION AND OPERATION

THREADED CONNECTION BETWEEN DRIVE AXLE AND WHEEL HUB, LOOSENING AND TIGHTENING

Special tools and workshop equipment required

- Torque Wrench V.A.G 1576

Loosen the Threaded Connection between the Drive Axle and Wheel Hub

-- With vehicle still standing on its wheels, loosen bolt a maximum of 90°, otherwise wheel bearing will be pre-damaged.

-- Lift the vehicle just enough so that the wheels are hanging free.

-- Apply the brake (a second technician is required).

-- Remove the bolt -arrow-.

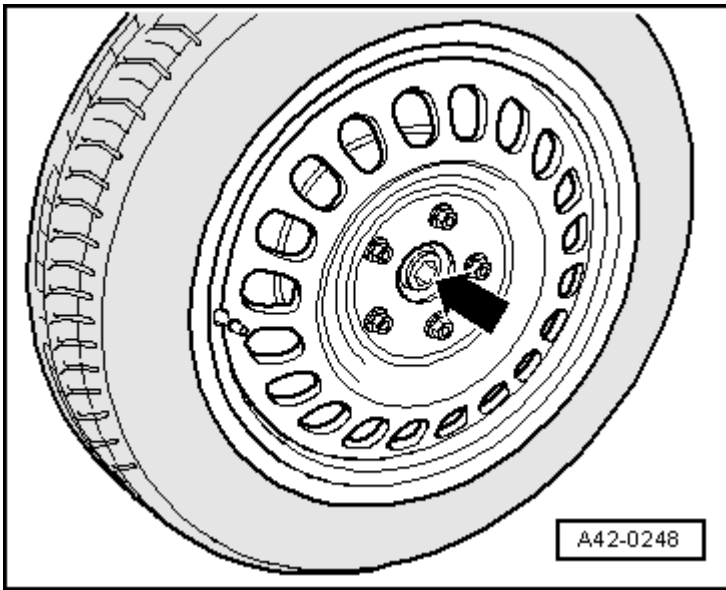


Fig. 1: Identifying Wheel Hex Bolt

Courtesy of AUDI OF AMERICA, LLC

Tighten the Threaded Connection between the Drive Axle and Wheel Hub

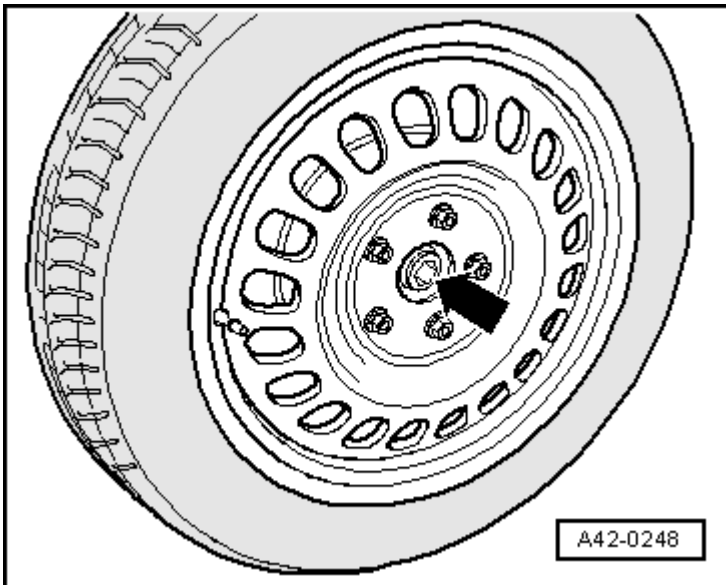


Fig. 2: Identifying Wheel Hex Bolt

Courtesy of AUDI OF AMERICA, LLC

-- Replace bolt -arrow-.

NOTE: Before installing, clean the threads in the CV joint with a tap.

Wheels must not yet touch the ground to tighten the drive axle, wheel bearing may otherwise be damaged.

- Operate brake (second technician required).
- Tighten bolt to 200 Nm.
- Lower the vehicle onto its wheels.
- Tighten bolt an additional 180°.

SPRING TENSIONING SYSTEM VAS 6274, CONVERTING

Special tools and workshop equipment required

- Spring Tensioning System VAS 6274
- Supplementary Set VAS 6274/10

NOTE: It must only be converted once. It is not necessary to convert back again.

- Remove the tensioning system nuts -arrows- (quantity: 6).

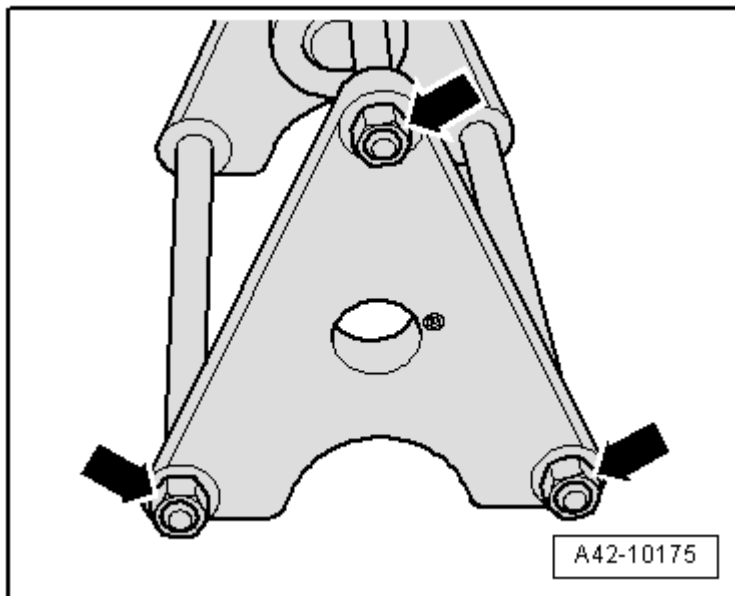


Fig. 3: Identifying Plate And Rods From Tensioning System
Courtesy of AUDI OF AMERICA, LLC

- Remove the plate and remove the rods from the tensioning system.
- Remove the bolt -arrow- and the previous spring plate -1- with the hole -2- without the counter bore.

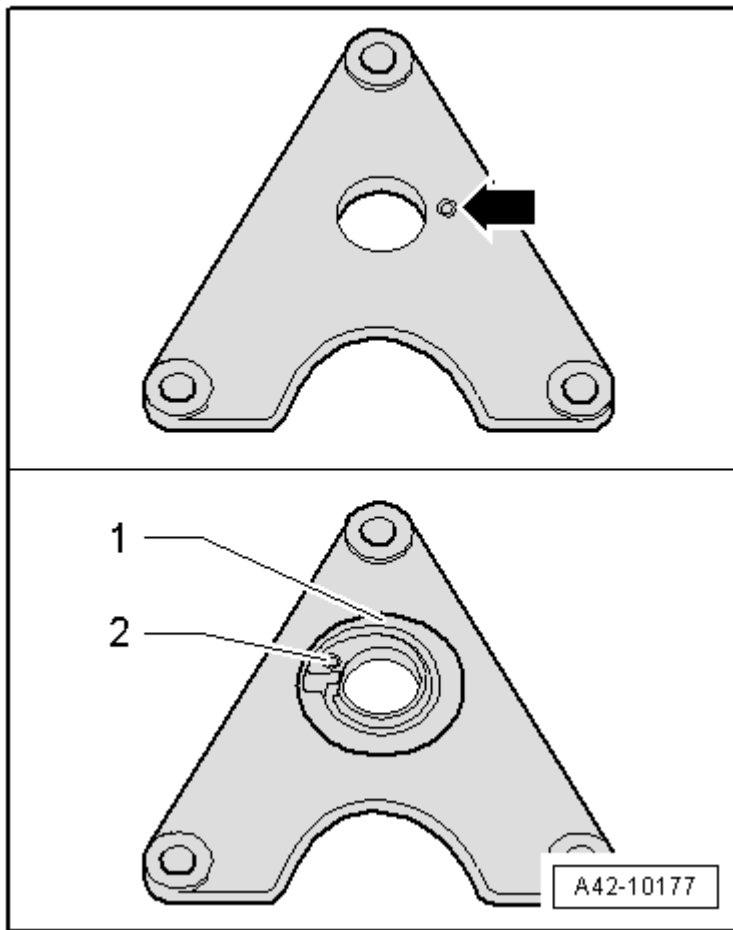


Fig. 4: Identifying Bolt And Previous Spring Plate With Hole Without Counter Bore
Courtesy of AUDI OF AMERICA, LLC

-- Insert the new plate with the threaded holes from the supplementary set so the markings "R" and "L" are horizontal to the plate.

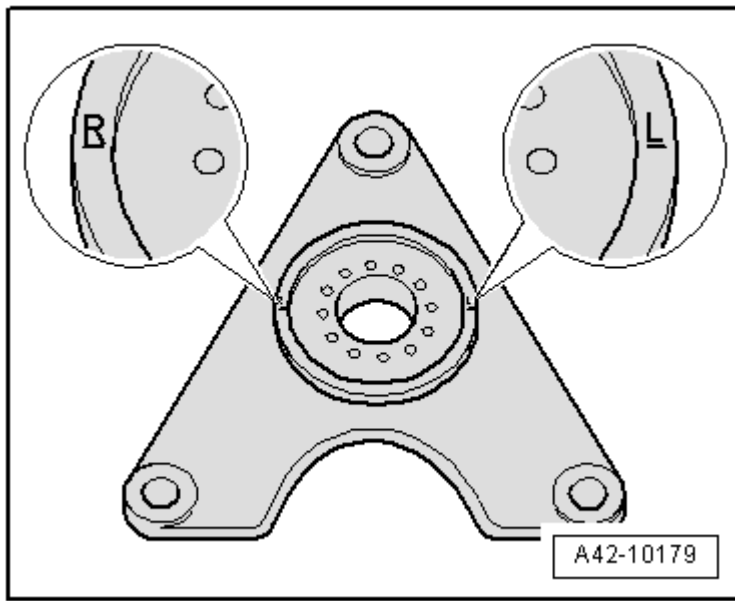


Fig. 5: Inserting New Plate With Threaded Holes From Supplementary Set So Markings "R" And "L" Are Horizontal

Courtesy of AUDI OF AMERICA, LLC

-- Tighten the new plate with the new bolt -arrow- from the supplementary set. Do not rotate the plate.

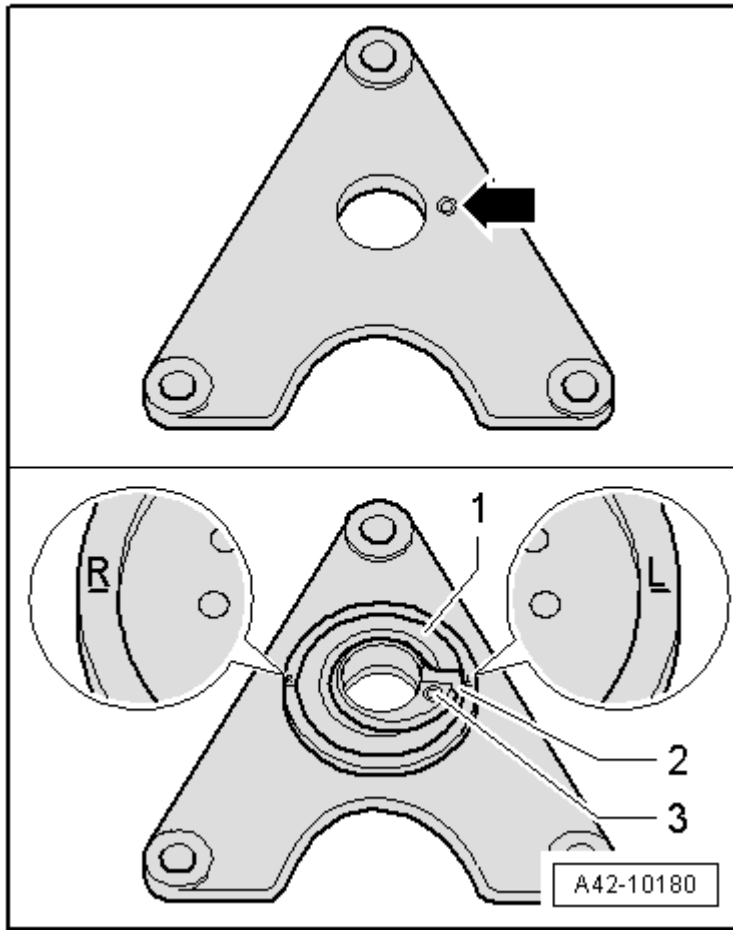


Fig. 6: Tightening New Plate With New Bolt From Supplementary Set
Courtesy of AUDI OF AMERICA, LLC

- Insert the new spring plate -1- with the hole -3- with the counter bore from the supplementary set.
- Insert the new spring plate -1- to the stop -2- aligns with the marking "L".
- Tighten the new spring plate -1- with the new bolt from the supplementary set.
- Remove the spring plate at the hydraulic cylinder.
- Remove the tab -2- and replace with the new tab from the supplementary set.

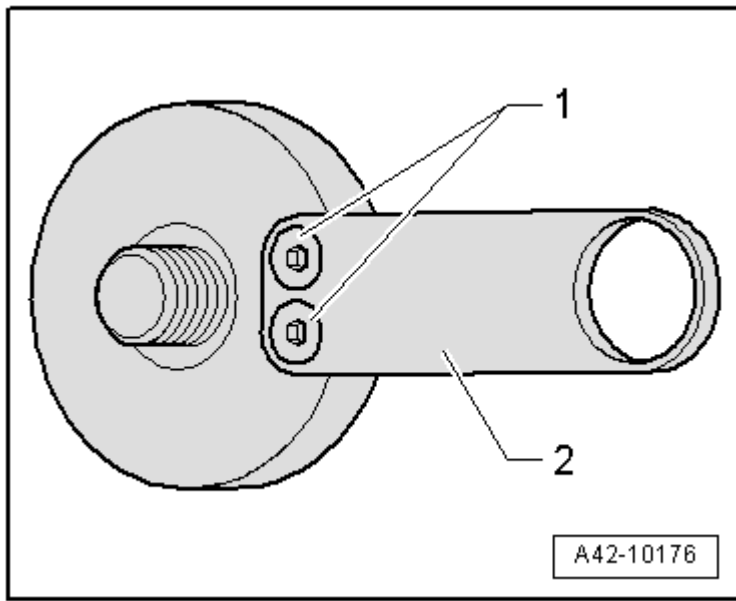


Fig. 7: Tightening New Tab With New Bolts From Supplementary Set
 Courtesy of AUDI OF AMERICA, LLC

- Tighten the new tab -1- with the new bolts -1- from the supplementary set.
- Install the spring plate lightly as far as the stop on the tensioning system and then rotate it back again slightly.
- Insert the new rods with the long taper -1- in the tensioning system plate.

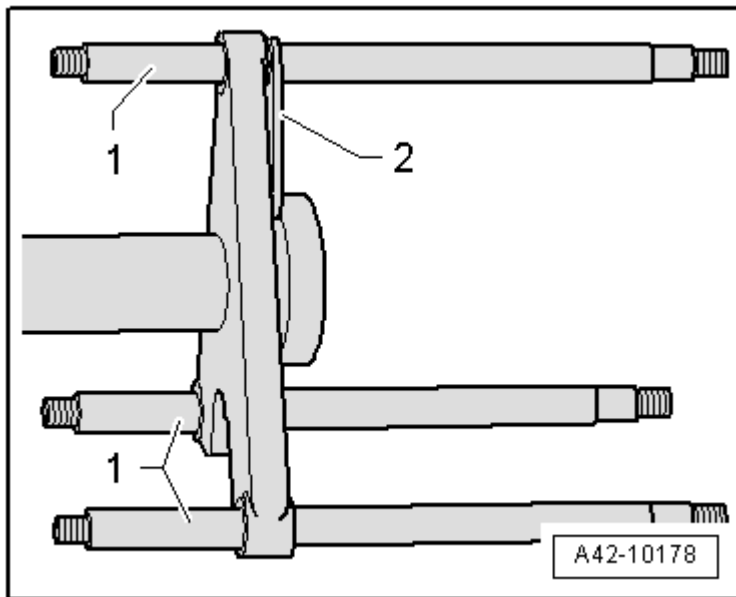


Fig. 8: Identifying New Rods With Long Taper In Tensioning System Plate
 Courtesy of AUDI OF AMERICA, LLC

- Insert the upper rod in the tab -2-.

-- Position the plate on the rods.

-- Install the sleeves -2 and 3- from the supplementary seat and install the nuts -1- lightly.

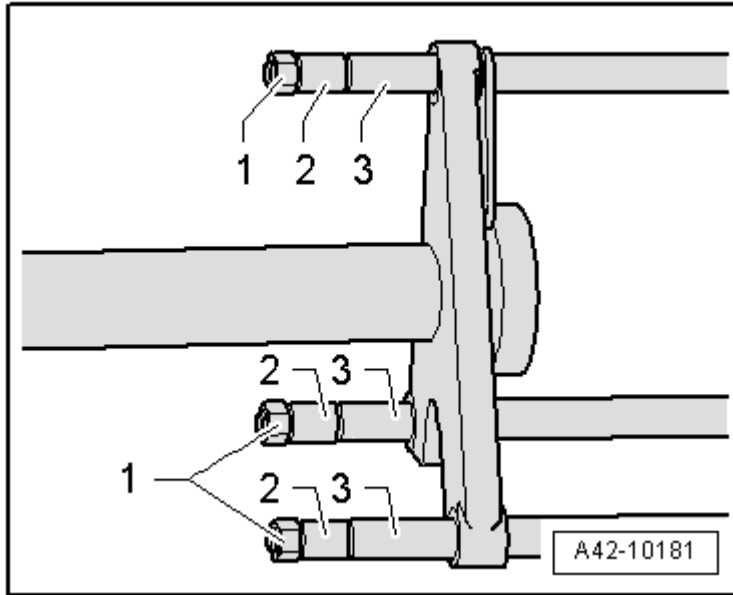


Fig. 9: Identifying Sleeves From Supplementary Seat And Nuts
 Courtesy of AUDI OF AMERICA, LLC

-- Position the tensioning system on a level surface and tighten the nuts -arrows-.

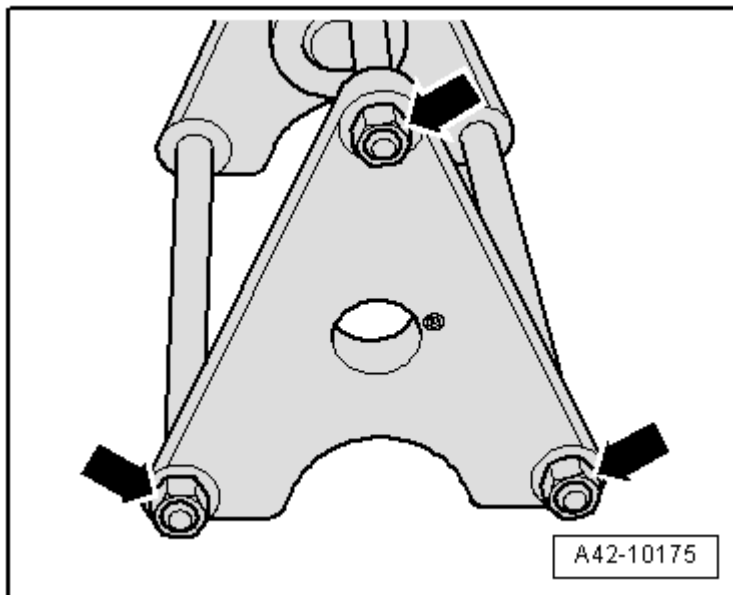


Fig. 10: Positioning Tensioning System On Level Surface And Tighten Nuts
 Courtesy of AUDI OF AMERICA, LLC

WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING

Special tools and workshop equipment required

- Engine-/Gearbox Jack V.A.G 1383 A
- Tensioning Strap T10038
- Wheel Hub Support T10149

NOTE: All bolts at suspension parts with bonded rubber bushings must always be tightened in curb weight position (unloaded condition).

Bonded rubber bushings can only be turned to a limited extent.

Parts with bonded rubber bushings must be brought into a position that corresponds to the position in driving mode before being tightened (curb weight position).

Otherwise, the bonded rubber bushing will be stressed resulting in a shortened service life.

By raising appropriate suspension using V.A.G 1383 A and T10149, this position can be simulated on the hoist.

-- Before starting work, take measurement -a-, for example with tape measure, from the center of the wheel to lower edge of wheel housing.

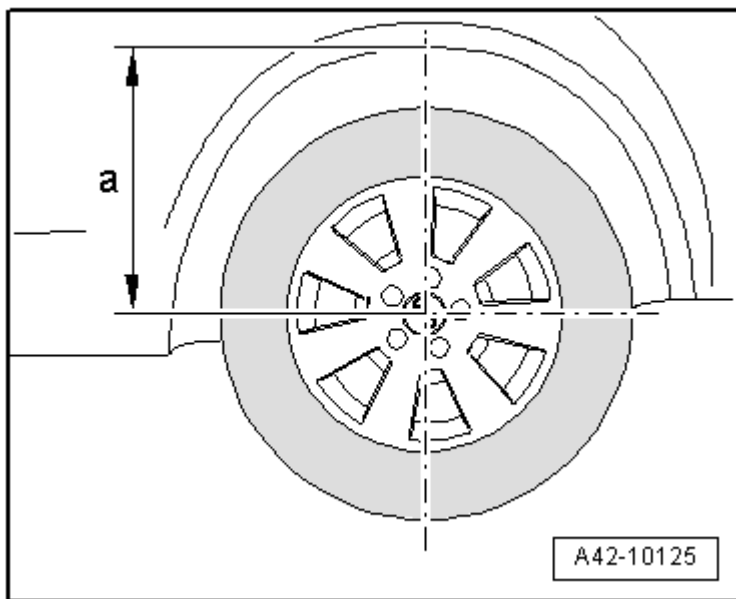


Fig. 11: Measuring Dimension From Center Of Wheel To Lower Edge Of Wheel Housing Using Tape Measure

Courtesy of AUDI OF AMERICA, LLC

Measurement must be performed in curb weight position (unloaded condition).

-- Note measured value. It will be required for tightening bolts/nuts.

Before appropriate suspension is raised, vehicle must be strapped to lift arms of hoist using T10038.

The vehicle could fall off the hoist if it is not secured.

- Remove the wheel.
- Turn the wheel hub until one of the holes for the wheel bolts is on top.
- Install T10149 with wheel bolt on wheel hub.

Tightening of the respective bolts/nuts must only occur if dimension -a-, measured before installation between wheel hub center and lower edge of wheel house, has been attained.

- Using V.A.G 1383 A, lift wheel bearing housing until dimension -a- is reached.

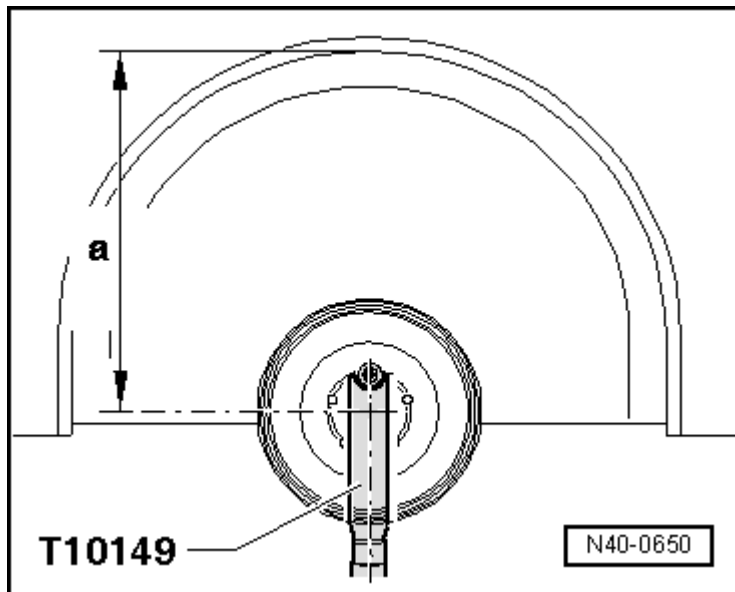


Fig. 12: Identifying Dimension Between Wheel Hub Center And Lower Edge Of Wheel Housing
Courtesy of AUDI OF AMERICA, LLC

WARNING:

- Do not lift or lower the vehicle when the V.A.G 1383 A stands below the vehicle.
- Do not leave V.A.G 1383 A below vehicle any longer than necessary.

- Tighten the bolts and nuts.
- Lower the wheel bearing housing.
- Remove V.A.G 1383 A from under the vehicle.
- Remove T10149.

UPPER TRANSVERSE LINK, TIE ROD, COIL SPRING, LOWER CONTROL ARM AND LEVEL CONTROL SYSTEM SENSOR OVERVIEW

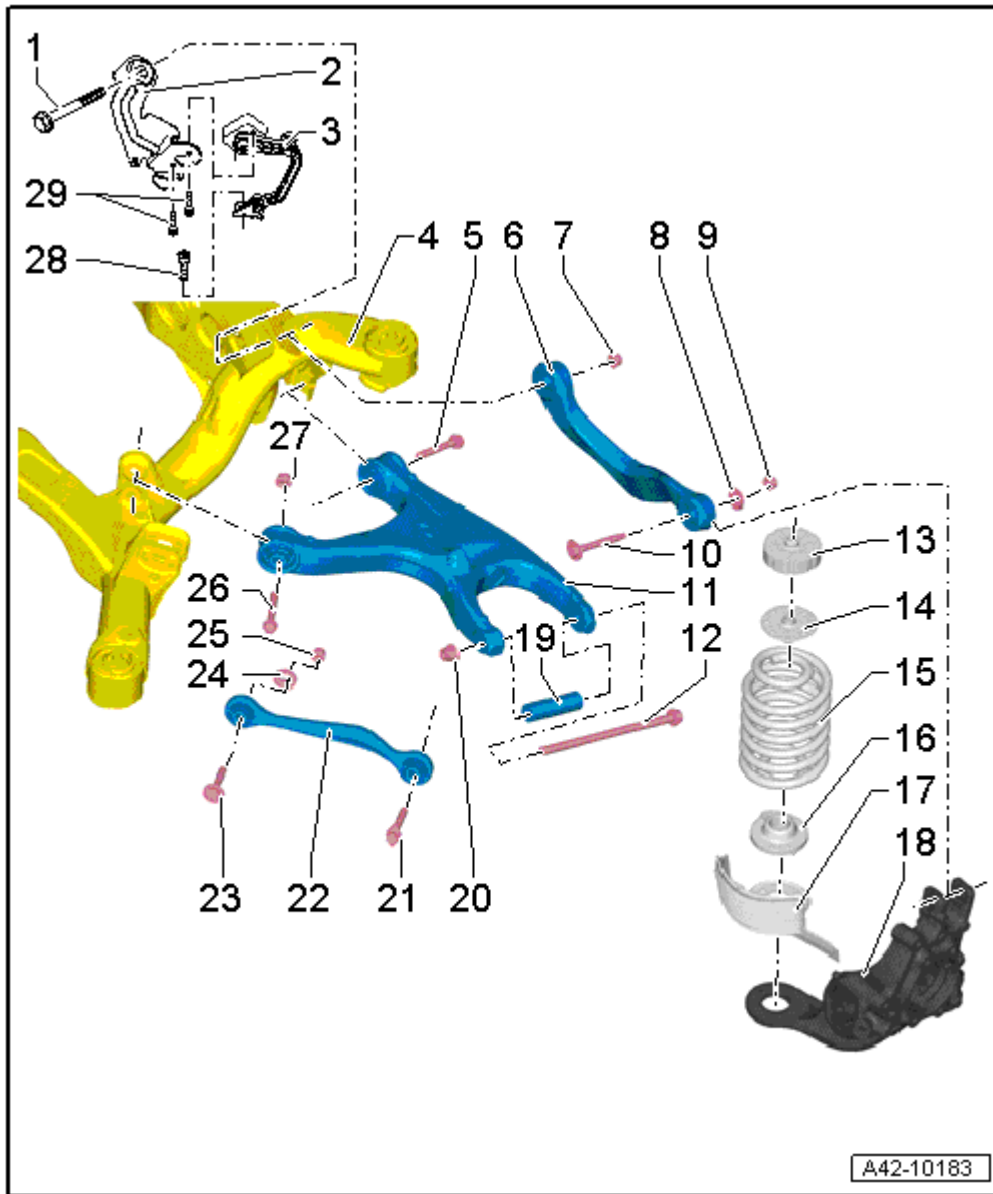


Fig. 13: Identifying Front Suspension

Courtesy of AUDI OF AMERICA, LLC

1. Bolt
 - 70 Nm +180° turn
 - Always replace if removed.
 - Must be tightened in the curb weight position, refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**
2. Bracket
3. Left Rear Level Control System Sensor -G76-

- Only sensors of the same version may be installed.
 - Complete with components
 - The sensor lever must point toward outside
 - Replace in vehicle, refer to **LEVEL CONTROL SYSTEM SENSOR**
 - After loosening, check basic setting of headlamp adjustment. Refer to **Description and Operation**.
 - If the vehicle level sensor -- was removed and installed on a vehicle with electronically controlled damping or if the linkage was loosened, the control position must be reprogrammed. Refer to **PROGRAMMING CONTROL POSITION USING Vehicle Diagnosis, Testing and Information System VAS 5051B**.
 - If the control position was reprogrammed on vehicles with lane assist, the directional stabilization assistance control module -J759- must be recalibrated. Refer to **CALIBRATION PROCEDURE**.
4. Subframe
 5. Bolt
 - 70 Nm + 180° turn
 - Always replace if removed.
 - Must be tightened in the curb weight position, refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**
 6. Upper Transverse Link
 - Removing and installing, refer to **UPPER TRANSVERSE LINK**
 7. Nut
 - Always replace if removed.
 8. Shim
 9. Nut
 - 95 Nm
 - Always replace if removed.
 - Must be tightened in the curb weight position, refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**
 10. Adjustment bolt
 11. Lower Transverse Link
 - Removing and installing, refer to **LOWER TRANSVERSE LINK**
 12. Bolt
 - 120 Nm + 360° turn
 - Always replace if removed.
 - Must be tightened in the curb weight position, refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**

NOTE: Axle alignment is necessary if the bolt is removed.

13. Upper Spring Seat Spacer Washer

- 2 are installed on the allroad
- 14. Upper Spring Support
 - Only installed on vehicles with heavy duty suspension
- 15. Coil Spring
 - There are different versions of the suspension. Refer to **EXPLANATIONS OF THE PRODUCTION CONTROL NUMBERS (PR NUMBER)**.
 - Removing and installing, refer to **COIL SPRING**
- 16. Low Spring Support
- 17. Coil Spring Stone Deflector
- 18. Wheel Bearing Housing
- 19. Spacer Tube
 - Always replace if removed.
- 20. Nut
 - Always replace if removed.

CAUTION: • Do not tighten the threaded connection using the nut.

NOTE: Axle alignment is necessary if the nut is loosened.

- 21. Bolt
 - 90 Nm + 90° turn
 - Always replace if removed.
 - Must be tightened in the curb weight position, refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**
- 22. Tie Rod
 - Removing and installing, refer to **TIE ROD**
 - Note the installation position
 - There are versions made of aluminum and steel. For allocation.
 - A mixed installation is not permitted
- 23. Bolt
- 24. Eccentric Washer
- 25. Nut
 - 95 Nm
 - Always replace if removed.
 - Must be tightened in the curb weight position, refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**
- 26. Bolt
 - 70 Nm + 180° turn

2012 Audi S4

SUSPENSION Rear Suspension (Sedan)

- Always replace if removed.
- Must be tightened in the curb weight position, refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**

27. Nut

- Always replace if removed.

28. Bolt

- 9 Nm

29. Bolt

- 5 Nm

**DRIVE AXLE WITH 88 MM DIAMETER OUTER CV JOINT AND 100 MM DIAMETER INNER CV JOINT
OVERVIEW**

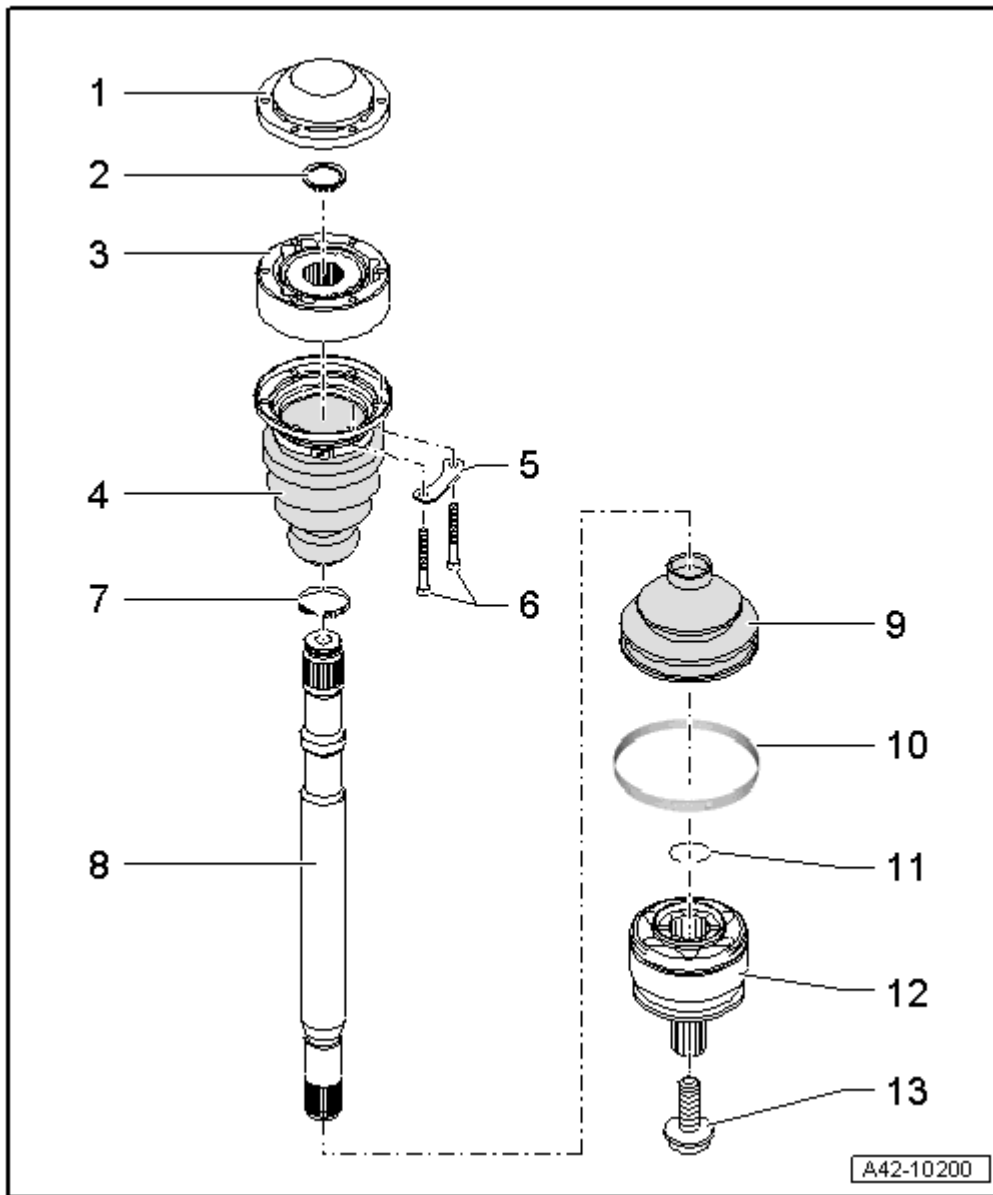


Fig. 14: Identifying Drive Axle

Courtesy of AUDI OF AMERICA, LLC

1. Cover

- Always replace
- Drive the cover off carefully using a drift
- The adhesive surfaces on the cover/inner CV joint must be free of grease when installing.
- Coat the sealing surface with sealant before installing the CV joint **DRIVE AXLE WITH 100 MM DIAMETER OUTER CV JOINT AND 108 MM DIAMETER INNER CV JOINT OVERVIEW.**

2. Locking Ring

- Always replace

- Remove and install with commercially-available circlip pliers

3. Inner CV Joint

- Exterior diameter: 100 mm
- Replace only as complete unit
- Checking, refer to **INNER CV JOINT, CHECKING**
- Pressing off, refer to **INNER CONSTANT VELOCITY JOINT, 100 MM OR 108 MM, INSTALLING**
- Pressing on **INNER CONSTANT VELOCITY JOINT, 100 MM OR 108 MM, INSTALLING**
- Grease quantity and type **INNER CV JOINT, CHECKING**
- The adhesive surfaces on the cover/inner CV joint and protective boot/inner CV joint must be free of grease when installing.
- When installing joint on axle shaft, splines on axle shaft must be lightly coated with grease used in joint.

4. Inner CV Boot with a Cap

- Without ventilation bore
- Carefully drive off cap with drift
- Always replace
- In case of damage, check inner CV joint, refer to **INNER CV JOINT, CHECKING**
- Before mounting on the CV joint, coat the sealing surface with sealant **DRIVE AXLE WITH 100 MM DIAMETER OUTER CV JOINT AND 108 MM DIAMETER INNER CV JOINT OVERVIEW**
- Align cover to screw holes
- The adhesive surfaces on the protective boot/inner CV joint must be free of grease when installing.
- The protective boot/drive axle sealing surfaces must be free of grease when installing.
- Before tightening clamp, briefly raise CV boot to allow pressure to equalize.

5. Locking Plate

6. Bolt

- 20 Nm + 90° turn
- Always replace if removed.

7. Clamp

- Always replace
- Tensioning **INSTALL THE CLAMP ON INNER JOINT AND CLAMP IT.**

8. Drive Axle

- Removing and installing, refer to **DRIVE AXLE**

9. CV Boot for Outer CV Joint

- Without ventilation bore
- Check for tears and chafing; replace if necessary
- In case of damage, check outer CV joint, refer to **OUTER CV JOINT, CHECKING**
- The protective boot/outer CV joint sealing surfaces must be free of grease when installing.

- The protective boot/drive axle sealing surfaces must be free of grease when installing.
- Before tightening clamp, briefly raise CV boot to allow pressure to equalize.

10. Clamp

- Opening **88 MM DIAMETER OR 100 MM DIAMETER OUTER CV JOINT, REPLACING.**
- Tensioning **INSTALL THE CLAMP ON THE 88 MM OR 100 MM OUTER JOINT.**

11. Locking Ring

- Always replace
- Allocation.
- Insert into ring groove of shaft before installation (not visible on installed joint)
- Before installing CV joint, align sealing ring in center with opening facing upward.

12. Outer CV Joint

- Exterior diameter: 88 mm
- Replace only as complete unit
- Checking, refer to **OUTER CV JOINT, CHECKING**
- Driving off, refer to **88 MM DIAMETER OR 100 MM DIAMETER OUTER CV JOINT, REPLACING**
- Installing: Drive onto shaft using plastic hammer until compressed circlip seats.
- Circlip must lie in joint chamfer when guiding in, guide with pliers if necessary.
- Grease quantity and type **INNER CV JOINT, CHECKING.**
- The protective boot/outer CV joint sealing surfaces must be free of grease when installing.
- When installing joint on axle shaft, splines on axle shaft must be lightly coated with grease used in joint.

13. Bolt

- 200 Nm + 180° turn
- Always replace
- Follow the assembly information when loosening and tightening. Refer to **THREADED CONNECTION BETWEEN DRIVE AXLE AND WHEEL HUB, LOOSENING AND TIGHTENING.**

Grease Quantity and Type

Grease joint when replacing CV boot.

Pack the joint with grease.

NOTE: Note that the outer and inner joints use different types of grease.

Outer joint	Grease Quantity Total quantity	Of Total:	
		Joint	Boot
[mm]	[g]	[g]	[g]

2012 Audi S4

SUSPENSION Rear Suspension (Sedan)

88	90	40	50
Inner joint		Apply grease through ball paths	
100	90		

DRIVE AXLE WITH 100 MM DIAMETER OUTER CV JOINT AND 108 MM DIAMETER INNER CV JOINT OVERVIEW

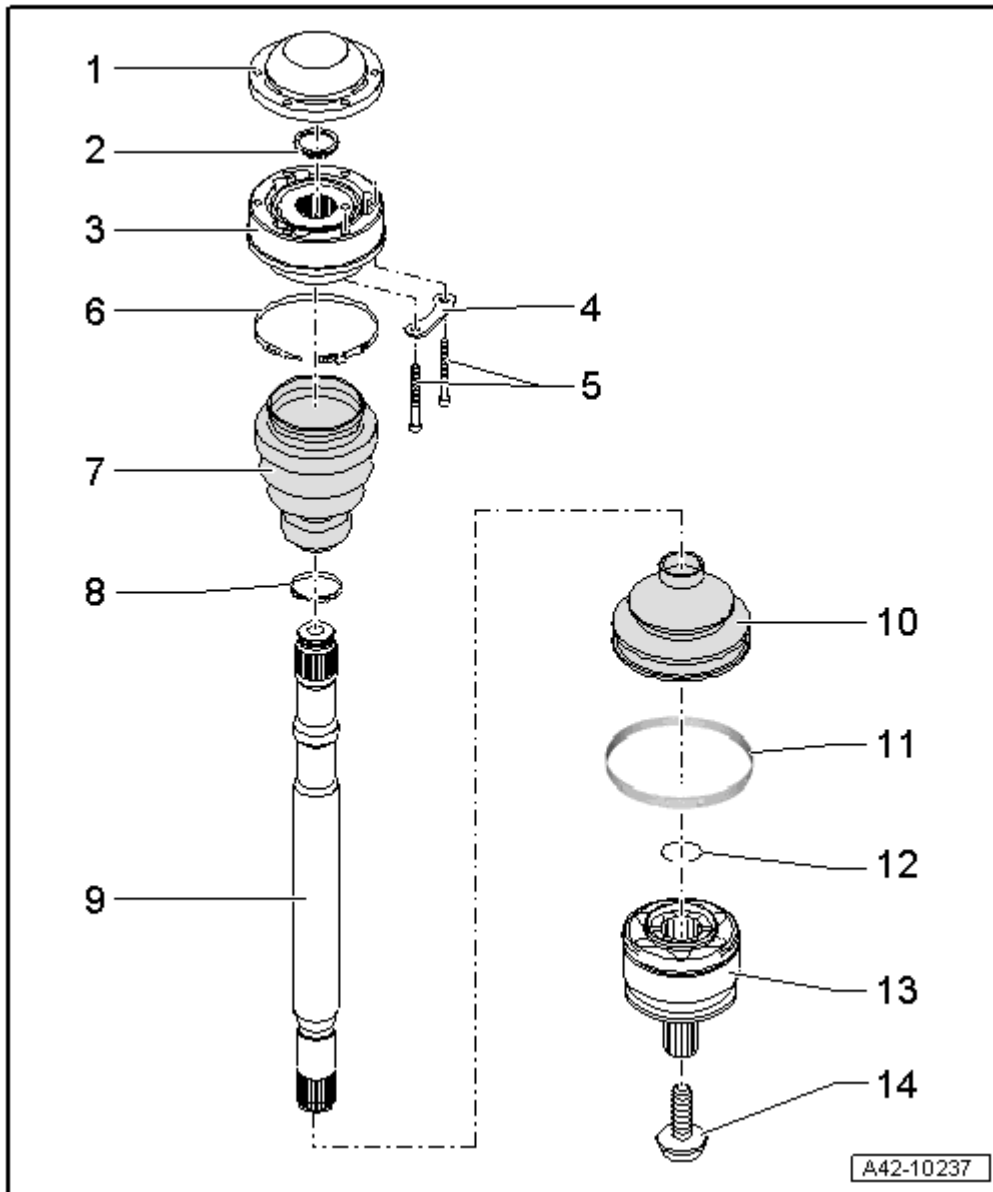


Fig. 15: Identifying Drive Axle
Courtesy of AUDI OF AMERICA, LLC

1. Cover
 - Drive the cover off carefully using a drift
 - Always replace

- The adhesive surfaces on the cover/inner CV joint must be free of grease when installing.
 - Before mounting on the CV joint, coat the sealing surface with sealant **INNER CONSTANT VELOCITY JOINT, 100 MM OR 108 MM, INSTALLING**.
2. Locking Ring
 - Always replace
 - Remove and install with commercially-available circlip pliers
 3. Inner CV Joint
 - Exterior diameter: 108 mm
 - Replace only as complete unit
 - Checking, refer to **INNER CV JOINT, CHECKING**
 - Pressing off, refer to **INNER CONSTANT VELOCITY JOINT, 100 MM OR 108 MM, INSTALLING**
 - Pressing on **INNER CONSTANT VELOCITY JOINT, 100 MM OR 108 MM, INSTALLING**.
 - Grease quantity and type **INNER CV JOINT, CHECKING**.
 - The adhesive surfaces must be free of oil and grease
 - When installing joint on axle shaft, splines on axle shaft must be lightly coated with grease used in joint.
 4. Locking Plate
 5. Bolt
 - 70 Nm
 - Always replace if removed.
 6. Clamp
 - Always replace
 - Tensioning **INNER CONSTANT VELOCITY JOINT, 100 MM OR 108 MM, INSTALLING**.
 7. Inner CV Joint Protective Boot
 - Without ventilation bore
 - In case of damage, check inner CV joint, refer to **INNER CV JOINT, CHECKING**
 - The protective boot/drive axle sealing surfaces must be free of grease when installing.
 - Before tightening clamp, briefly raise CV boot to allow pressure to equalize.
 8. Clamp
 - Always replace
 - Tensioning **INSTALL THE CLAMP ON INNER JOINT AND CLAMP IT.**
 9. Drive Axle
 - Removing and installing, refer to **DRIVE AXLE**
 10. CV Boot for Outer CV Joint
 - Without ventilation bore
 - Check for tears and chafing; replace if necessary
 - In case of damage, check outer CV joint, refer to **OUTER CV JOINT, CHECKING**

- The protective boot/outer CV joint sealing surfaces must be free of grease when installing.
- Before tightening clamp, briefly raise CV boot to allow pressure to equalize.

11. Clamp

- Opening **88 MM DIAMETER OR 100 MM DIAMETER OUTER CV JOINT, REPLACING**
- Tensioning **INSTALL THE CLAMP ON THE 88 MM OR 100 MM OUTER JOINT**

12. Locking Ring

- Always replace
- Allocation.
- Insert before mounting in ring groove (not visible with joint installed)
- Before installing CV joint, align sealing ring in center with opening facing upward.

13. Outer CV Joint

- Exterior diameter: 100 mm
- Replace only as complete unit
- Checking, refer to **OUTER CV JOINT, CHECKING**
- Driving off, refer to **88 MM DIAMETER OR 100 MM DIAMETER OUTER CV JOINT, REPLACING**
- Installing: Drive onto shaft using plastic hammer until compressed circlip seats.
- Circlip must lie in joint chamfer when guiding in, guide with pliers if necessary.
- Grease quantity and type, refer to **INNER CV JOINT, CHECKING**.
- The protective boot/outer CV joint sealing surfaces must be free of grease when installing.
- When installing joint on axle shaft, splines on axle shaft must be lightly coated with grease used in joint.

14. Bolt

- 200 Nm + 180° turn
- Always replace
- Follow the assembly information when loosening and tightening. Refer to **THREADED CONNECTION BETWEEN DRIVE AXLE AND WHEEL HUB, LOOSENING AND TIGHTENING**.

Grease Quantity and Type

Grease joint when replacing CV boot.

Pack the joint with grease.

NOTE: Note that the outer and inner joints use different types of grease.

Outer joint	Grease Quantity Total quantity	Of Total:	
		Joint	Boot
[mm]	[g]	[g]	[g]

2012 Audi S4

SUSPENSION Rear Suspension (Sedan)

100	120	70	50
Inner joint		Apply grease through ball paths	
108	120		

DRIVE AXLE WITH 88/98 MM DIAMETER OUTER CV JOINT AND 100/108 MM DIAMETER INNER CV JOINT WITH CAP

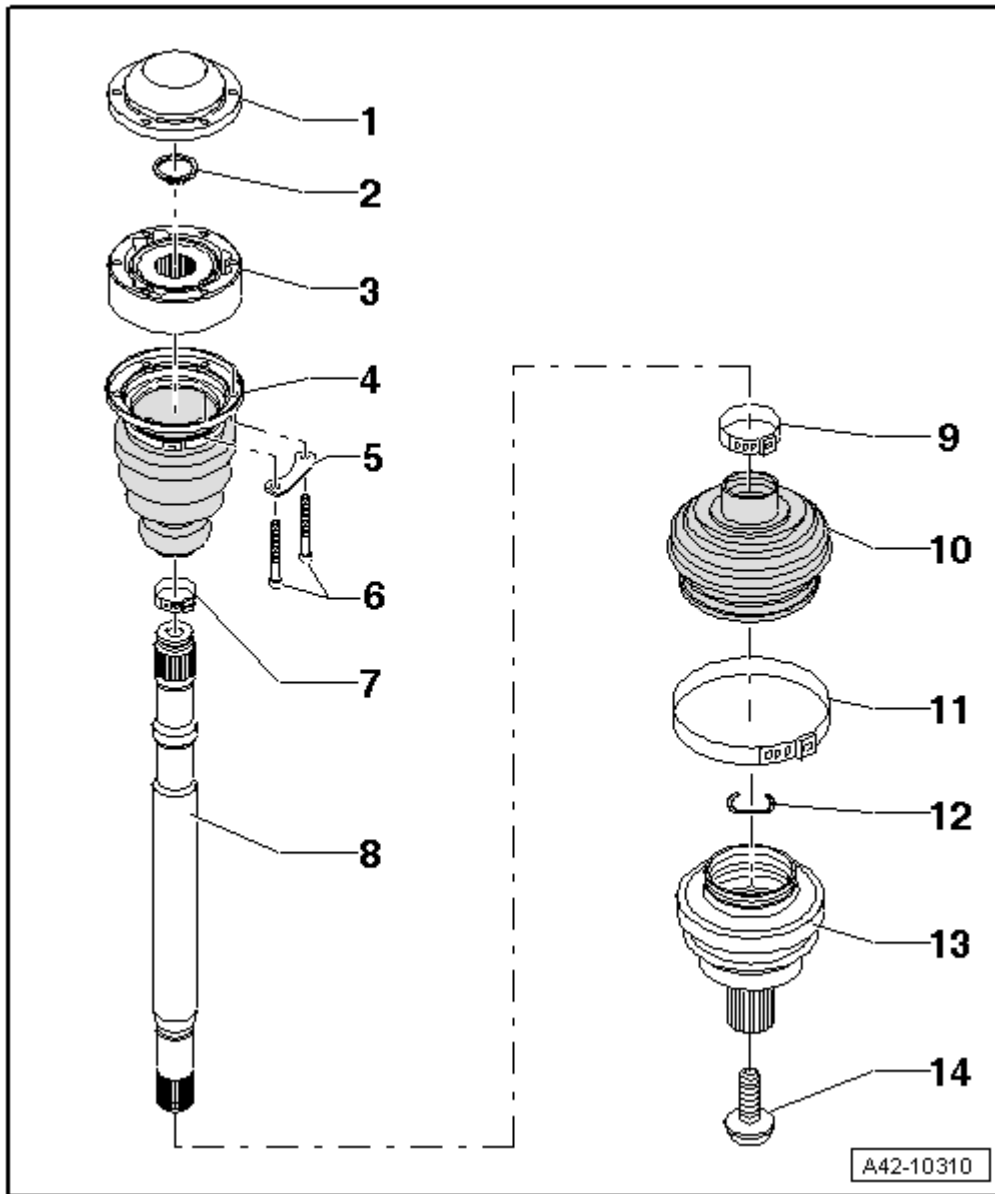


Fig. 16: Identifying Drive Axle
Courtesy of AUDI OF AMERICA, LLC

1. Cover

- Carefully remove the cover using a drift, replace if damaged.
- The adhesive surfaces on the cover/inner CV joint must be free of grease when installing.

- Coat the sealing surface with sealant before installing the CV joint.
2. Locking Ring
 - Remove and install with commercially-available circlip pliers
 - Always replace if removed.
 3. Inner CV Joint
 - Replace only as complete unit
 - Checking, refer to **INNER CV JOINT, CHECKING**
 - Grease quantity and type **INNER CV JOINT, CHECKING**.
 - The adhesive surfaces must be free of oil and grease
 - When installing joint on axle shaft, splines on axle shaft must be lightly coated with grease used in joint.
 4. Inner CV Boot with a Cap
 - Without ventilation bore
 - Carefully remove the cap using a drift, replace if damaged.
 - Check the inner CV joint if there is damage. Refer to **INNER CV JOINT, CHECKING**.
 - The sealing surfaces on the cap/inner CV joint must be free of grease when installing.
 5. Locking Plate
 6. Bolt
 - 70 Nm
 - Always replace if removed.
 - M 10
 7. Clamp
 - Always replace if removed.
 - Tensioning **TIGHTENING CLAMPS ON INNER JOINT**.
 8. Drive Axle
 - Removing and installing, refer to **DRIVE AXLE**
 9. Clamp
 - Always replace if removed.
 - Tensioning **INSTALL THE CLAMP ON THE 88 MM OR 100 MM OUTER JOINT**.
 10. Outer CV Boot
 - Without ventilation bore
 - Check for tears and chafing; replace if necessary
 - The protective boot/metal cap sealing surfaces must be free of grease when installing.
 - The protective boot/drive axle sealing surfaces must be free of grease when installing.
 11. Clamp
 - Always replace if removed.
 - Tensioning **INSTALL THE CLAMP ON THE 88 MM OR 100 MM OUTER JOINT**.
 12. Locking Ring

- Always replace if removed
- Allocation.
- Insert before mounting in ring groove (not visible with joint installed)
- Before installing CV joint, align sealing ring in center with opening facing upward.

13. Outer CV Joint

- Replace only as complete unit
- Driving off, refer to **88 MM DIAMETER OR 100 MM DIAMETER OUTER CV JOINT, REPLACING**
- Installing: Drive onto shaft using plastic hammer until compressed circlip seats.
- Circlip must lie in joint chamfer when guiding in, guide with pliers if necessary.
- Grease quantity and type **INNER CV JOINT, CHECKING**.
- The protective boot/CV joint sealing surfaces must be free of grease when installing.
- When installing joint on axle shaft, splines on axle shaft must be lightly coated with grease used in joint.

14. Bolt

- 200 Nm + 180° turn
- Always replace if removed.
- Follow the assembly information when loosening and tightening. Refer to **THREADED CONNECTION BETWEEN DRIVE AXLE AND WHEEL HUB, LOOSENING AND TIGHTENING**.

Grease Quantity and Type

Grease joint when replacing CV boot.

Pack the joint with grease.

NOTE: Note that the outer and inner joints use different types of grease.

Outer joint	Grease Quantity Total quantity	Of Total:	
		Joint	Boot
[mm]	[g]	[g]	[g]
88/98	80/105	Divide the grease evenly in the joint	
Inner joint			
100/108	80/105	Apply grease through the ball paths into the joint.	

FRONT WHEEL DRIVE (FWD)

SUBFRAME, STABILIZER BAR AND COUPLING ROD OVERVIEW

For a short period of time, subframes for AWD vehicles were installed on FWD vehicles.

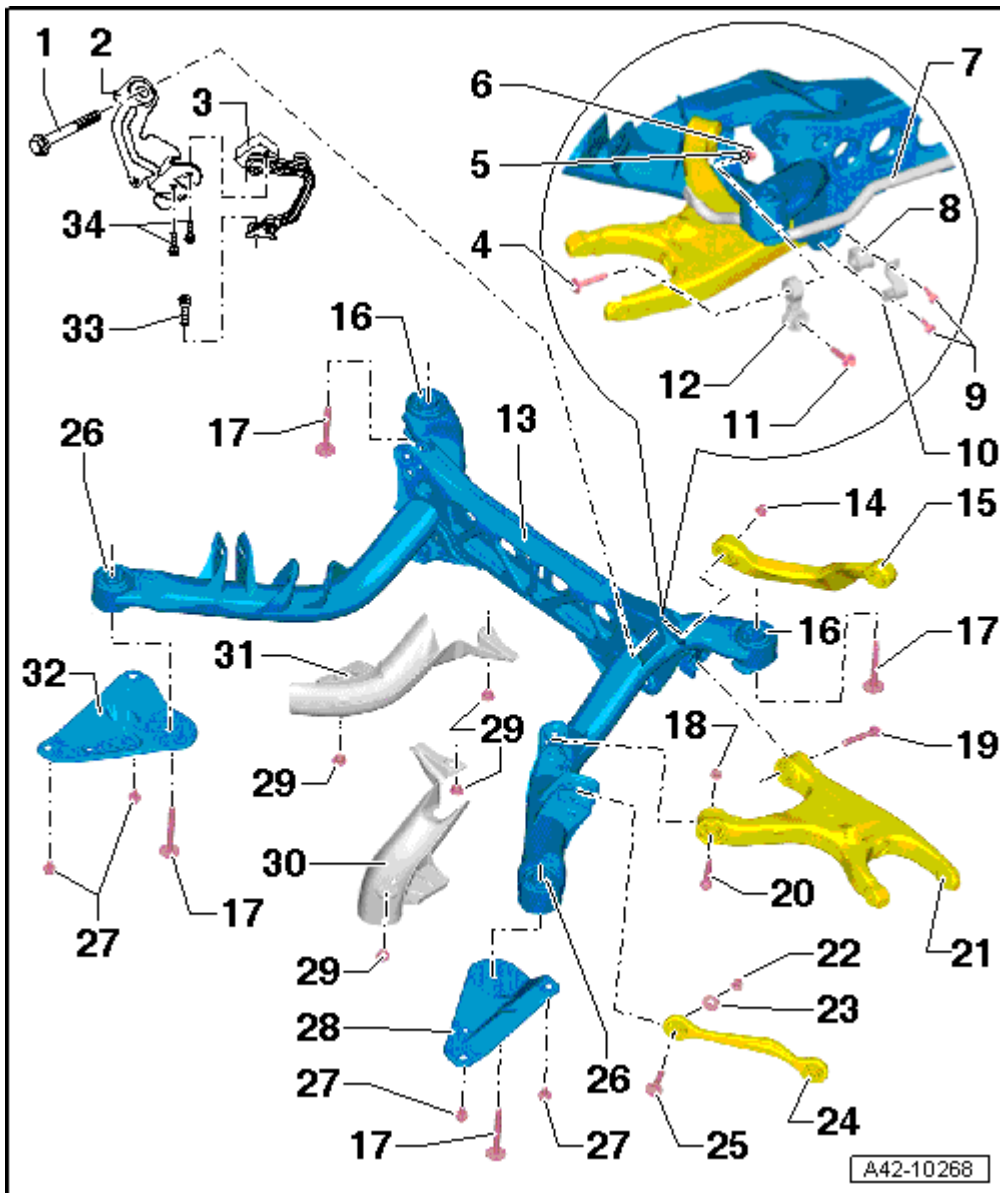


Fig. 17: Identifying Subframe, Stabilizer Bar And Coupling Rod Overview
 Courtesy of AUDI OF AMERICA, LLC

1. Bolt
 - 70 Nm +180°
 - Always replace if removed.
 - Must be tightened in the curb weight position, refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**
2. Securing Clip
3. Left Rear Level Control System Sensor -G76-
 - Only sensors of the same version may be installed.
 - Complete with components

- The sensor lever must point toward outside
 - Replace in vehicle, refer to **LEVEL CONTROL SYSTEM SENSOR**
 - After loosening, check basic setting of headlamp adjustment. Refer to **Description and Operation** .
 - If the vehicle level sensor -- was removed and installed on a vehicle with electronically controlled damping or if the linkage was loosened, the control position must be reprogrammed. Refer to **PROGRAMMING CONTROL POSITION USING Vehicle Diagnosis, Testing and Information System VAS 5051B** . Vehicle diagnostic tester
 - If the control position was reprogrammed on vehicles with lane assist, the directional stabilization assistance control module -J759- must be recalibrated. Refer to **CALIBRATION PROCEDURE** .
4. Bolt
- 40 Nm + 90° turn
 - Always replace if removed.
 - Must be tightened in the curb weight position, refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**
5. Washer
6. Nut
- Always replace if removed.
7. Stabilizer Bar
- The rubber bushing and clamp must not be separated from the stabilizer bar.
 - Stabilizer must be removed together with coupling rod.
 - Removing and installing, refer to **COUPLING ROD AND STABILIZER BAR**
8. Rubber Bushing
- Replaced together with the stabilizer bar -item 7- **SUBFRAME, STABILIZER BAR AND COUPLING ROD OVERVIEW** and the clamp -item 10-.
 - The rubber bushing and clamp must not be separated from the stabilizer bar.
9. Bolt
- 25 Nm + 90° turn
 - Always replace if removed.
 - Tighten evenly
10. Clamp
- The rubber bushing and clamp must not be separated from the stabilizer bar.
11. Bolt
- 40 Nm + 90° turn
 - Always replace if removed.
 - Must be tightened in the curb weight position, refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**
12. Coupling Rod
- The coupling rod must be removed together with the stabilizer bar.

- Removing and installing, refer to **COUPLING ROD AND STABILIZER BAR**

13. Subframe

- Subframe with attachments, removing and installing, refer to **SUBFRAME WITH ATTACHMENTS**

NOTE: For a short period of time, subframes for AWD vehicles were installed on FWD vehicles. Performing repairs on the subframe is not affected.

14. Nut

- Always replace if removed.

15. Upper Transverse Link

16. Rear Bonded Rubber Bushing

- For the subframe mounting
- Depending on the model there are different versions, either a conventional and a hydraulic bonded rubber bushing is installed **REAR BONDED RUBBER BUSHING**. For the correct allocation.
- Oil on the hydraulic bonded rubber bushing is a sign of wear.
- Replace, refer to **SUBFRAME BONDED RUBBER BUSHING AND HYDRAULIC BONDED RUBBER BUSHING, REPLACING**
- Always replace on both sides.

17. Bolt

- 115 Nm + 90° turn
- Always replace if removed.
- The bolts must not be loosened or tightened when the springs are installed. Release the coil springs using the spring tensioner before loosening or tightening.

18. Nut

- Always replace if removed.

19. Bolt

- 70 Nm + 180° turn
- Always replace if removed.
- Must be tightened in the curb weight position, refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**

20. Bolt

- 70 Nm + 180° turn
- Always replace if removed.
- Must be tightened in the curb weight position, refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**

21. Lower Transverse Link

22. Nut

- 95 Nm
- Always replace if removed.

- Must be tightened in the curb weight position, refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**

23. Eccentric Washer

24. Tie Rod

- There are versions made of aluminum and steel. For allocation.
- A mixed installation is not permitted

25. Eccentric Bolt

26. Front Bonded Rubber Bushing

- For the subframe mounting
- Depending on the model there are different versions, either a conventional and a hydraulic bonded rubber bushing is installed **FRONT BONDED RUBBER BUSHING**. For the correct allocation.
- Oil on the hydraulic bonded rubber bushing is a sign of wear.
- Replace, refer to **SUBFRAME BONDED RUBBER BUSHING AND HYDRAULIC BONDED RUBBER BUSHING, REPLACING**
- Always replace on both sides.

27. Bolt

- 55 Nm

28. Left Support

29. Clip

- Not installed on all vehicles.

30. Left Stone Deflector

- Not installed on all vehicles.

31. Right Stone Deflector

- Not installed on all vehicles.

32. Right Support

33. Bolt

- 9 Nm

34. Bolt

- 5 Nm

FRONT BONDED RUBBER BUSHING

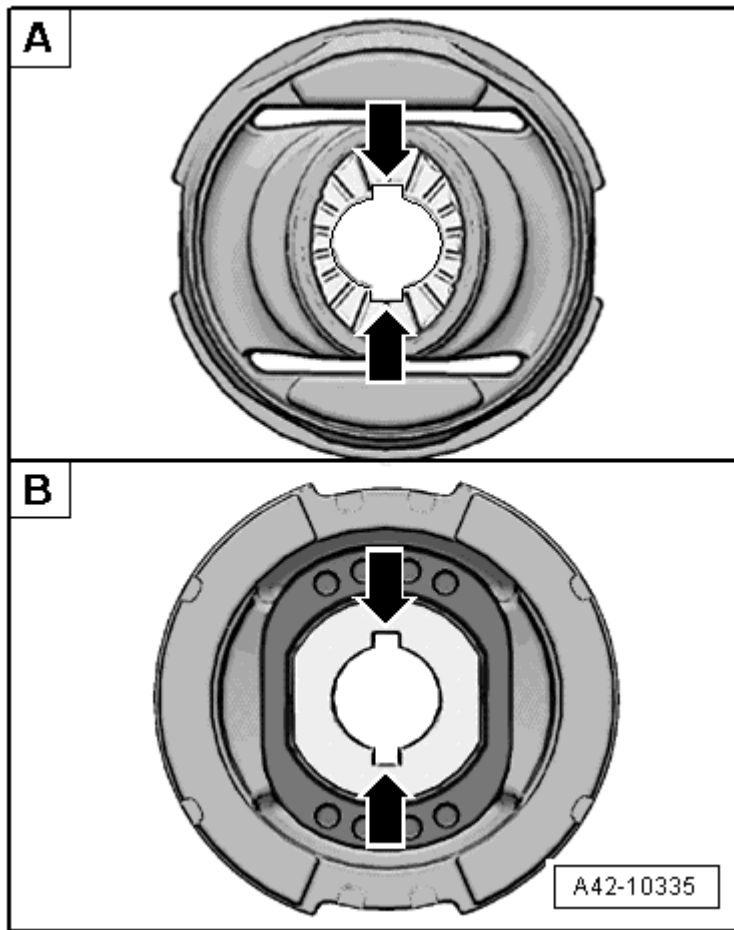


Fig. 18: Identifying Installation Location Of Front Bonded Rubber Bushing
Courtesy of AUDI OF AMERICA, LLC

- -A- conventional bonded rubber bushing
- -B- hydraulic bonded rubber bushing

REAR BONDED RUBBER BUSHING

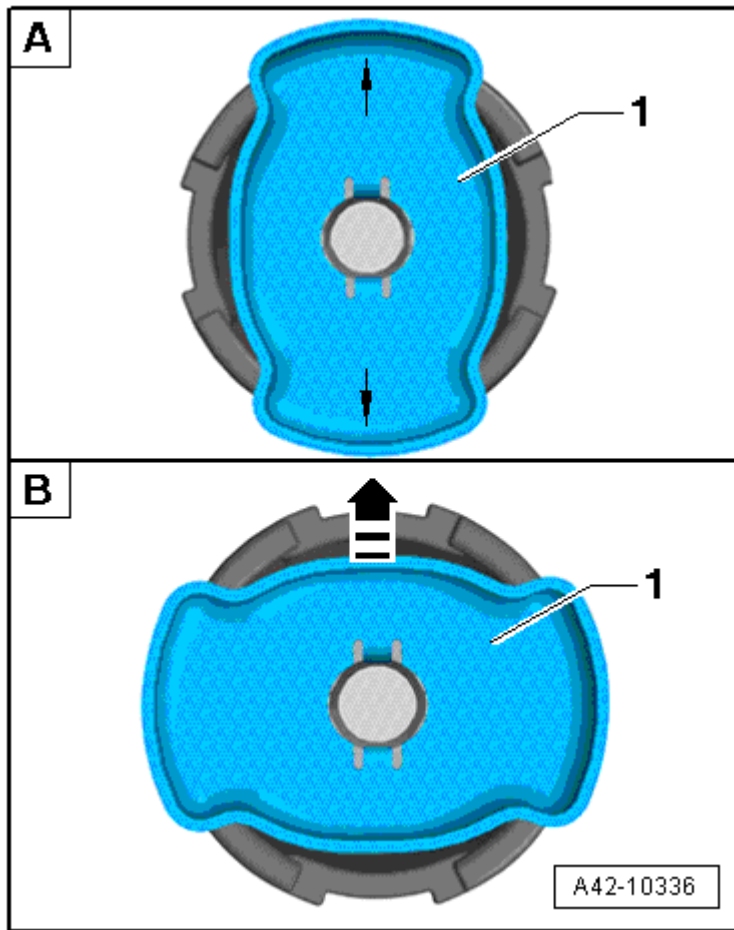


Fig. 19: Installation Location Of Rear Bonded Rubber Bushing
Courtesy of AUDI OF AMERICA, LLC

- -A- conventional bonded rubber bushing
- -B- hydraulic bonded rubber bushing

WHEEL BEARING HOUSING, WHEEL BEARING UNIT AND COIL SPRING SHOCK ABSORBER OVERVIEW

NOTE: There are 2 different wheel bearing housings being used on FWD vehicles.

For a period of time, both the "FWD" wheel bearing housing and the "AWD" wheel bearing housing were being installed. Before starting any work, check which wheel bearing housing was installed.

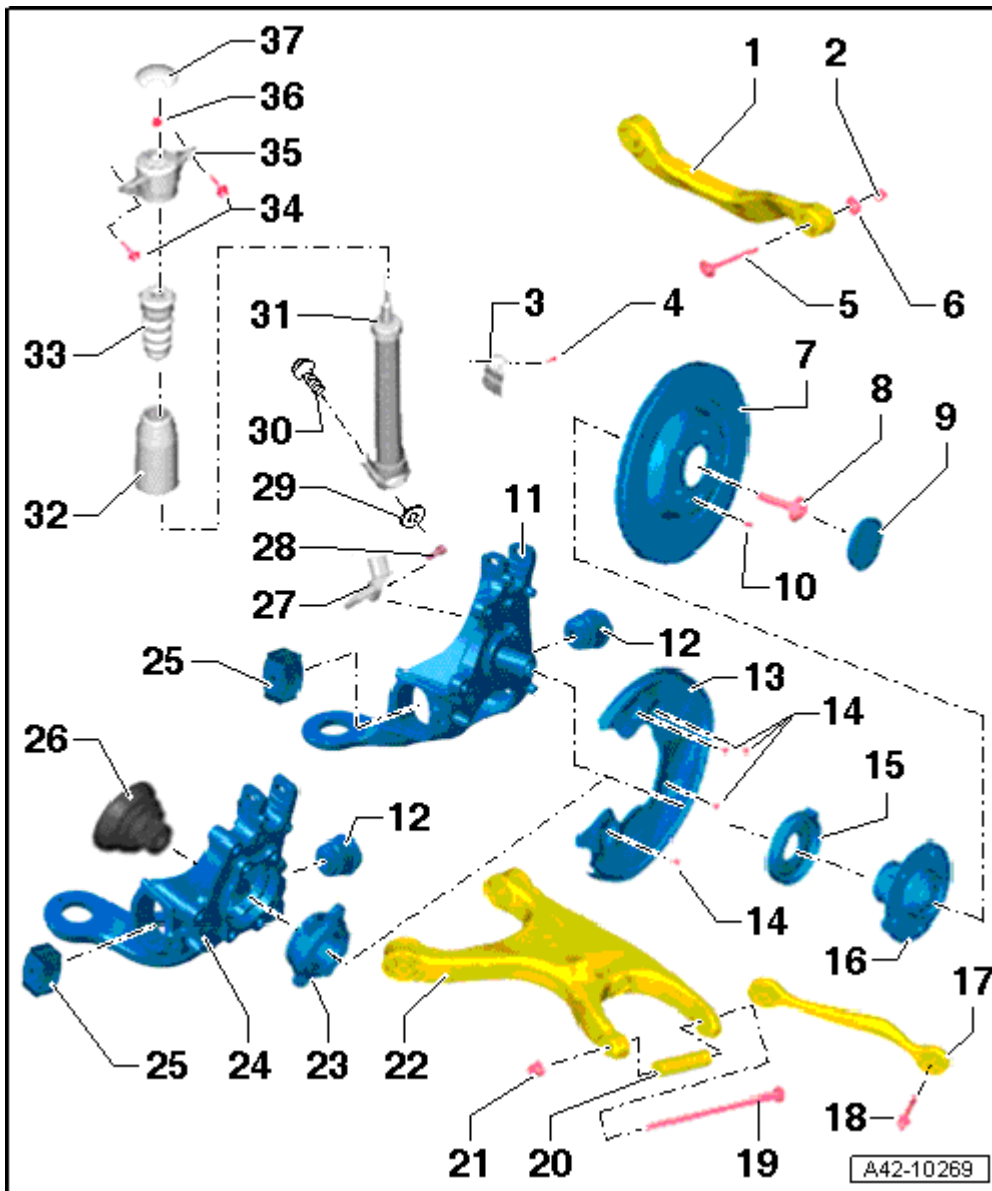


Fig. 20: Identifying Wheel Bearing Housing, Wheel Bearing Unit And Coil Spring Shock Absorber Overview

Courtesy of AUDI OF AMERICA, LLC

1. Upper Transverse Link
2. Nut
 - 95 Nm
 - Always replace if removed.
 - Must be tightened in the curb weight position, refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**
3. Bracket
 - For the brake hose, brake caliper wiring harness and rear wheel speed sensor -- wiring harness

4. Bolt
 - 10 Nm
5. Bolt
6. Eccentric Washer
7. Brake Rotor
8. Collar Screw
 - 200 Nm + 180° turn
 - Always replace if removed.
9. Cap
 - Remove using the grease cap puller VW 637/2
 - Always replace if removed.
10. Bolt
 - 5 Nm
11. Wheel Bearing Housing
 - With axle pins
 - Installed only together with -item 15- **WHEEL BEARING HOUSING, WHEEL BEARING UNIT AND COIL SPRING SHOCK ABSORBER OVERVIEW** and -item 16- **WHEEL BEARING HOUSING, WHEEL BEARING UNIT AND COIL SPRING SHOCK ABSORBER OVERVIEW**.
 - Removing and installing, refer to **WHEEL BEARING HOUSING**

NOTE: For a short period of time, wheel bearing housings for AWD vehicles were installed on FWD vehicles -item 24- **WHEEL BEARING HOUSING, WHEEL BEARING UNIT AND COIL SPRING SHOCK ABSORBER OVERVIEW**. Do not install both types together.

For a short period, steel wheel bearing housings instead of aluminum wheel bearing housings were installed on FWD vehicles, Do not install both types together.

12. Bonded Rubber Bushing
 - Cannot be exchanged separately
13. Brake Shield
14. Bolt
 - 10 Nm
15. Front Seal
16. Wheel Bearing Unit

CAUTION: • Avoid contaminating with dirt and damaging the seal when setting down/storing. Refer to **Fig. 21**.

- Removing and installing, refer to **WHEEL BEARING UNIT**
- The wheel bearing unit cannot be serviced

17. Tie Rod

- There are versions made of aluminum and steel. For allocation.
- A mixed installation is not permitted

18. Bolt

- 90 Nm + 90° turn
- Always replace if removed.
- Must be tightened in the curb weight position, refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**

19. Bolt

- 120 Nm + 360° turn
- Always replace if removed.
- Must be tightened in the curb weight position, refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**

NOTE: Axle alignment is necessary if the bolt is removed.

20. Spacer Tube

- Always replace if removed.

21. Nut

- Always replace if removed.

CAUTION: • Do not tighten the threaded connection using the nut.

NOTE: Axle alignment is necessary if the nut is loosened.

22. Lower Transverse Link

23. Ball Bearing

CAUTION: • Avoid contaminating with dirt and damaging the seal when setting down/storing. Refer to **Fig. 26**.

- Wheel bearing unit, removing and installing, refer to **WHEEL BEARING UNIT**
- Wheel bearing unit, servicing, refer to **WHEEL BEARING UNIT**

24. Wheel Bearing Housing

- Without axle pins
- Installed only together with -item 23- **WHEEL BEARING HOUSING, WHEEL BEARING UNIT AND COIL SPRING SHOCK ABSORBER OVERVIEW** and -item 26- **WHEEL**

BEARING HOUSING, WHEEL BEARING UNIT AND COIL SPRING SHOCK ABSORBER OVERVIEW.

- Removing and installing, refer to **WHEEL BEARING HOUSING**

NOTE: For a short period of time, wheel bearing housings for AWD vehicles were installed on FWD vehicles, Do not install both types together.

25. Bonded Rubber Bushing

- Replace, refer to **WHEEL BEARING HOUSING RUBBER BONDED BUSHING**

26. Driveshaft Stub

- Installed only together with -item 24- **WHEEL BEARING HOUSING**.

27. Bolt

- 9 Nm

28. Rear ABS Wheel Speed Sensor --

29. Washer

- Serves as corrosion protection
- Always use

30. Bolt

- 150 Nm + 180° turn
- Always replace if removed.
- Must be tightened in the curb weight position, refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**

31. Shock Absorbers

- Removing and installing, refer to **SHOCK ABSORBER**

32. Protective Sleeve

33. Buffer Stop

34. Bolt

- 50 Nm + 45° turn
- Always replace if removed.

35. Upper Shock Absorber Mount

- Installed position, refer to **SHOCK ABSORBER**

36. Nut

- 35 Nm
- Always replace if removed.

37. Cap

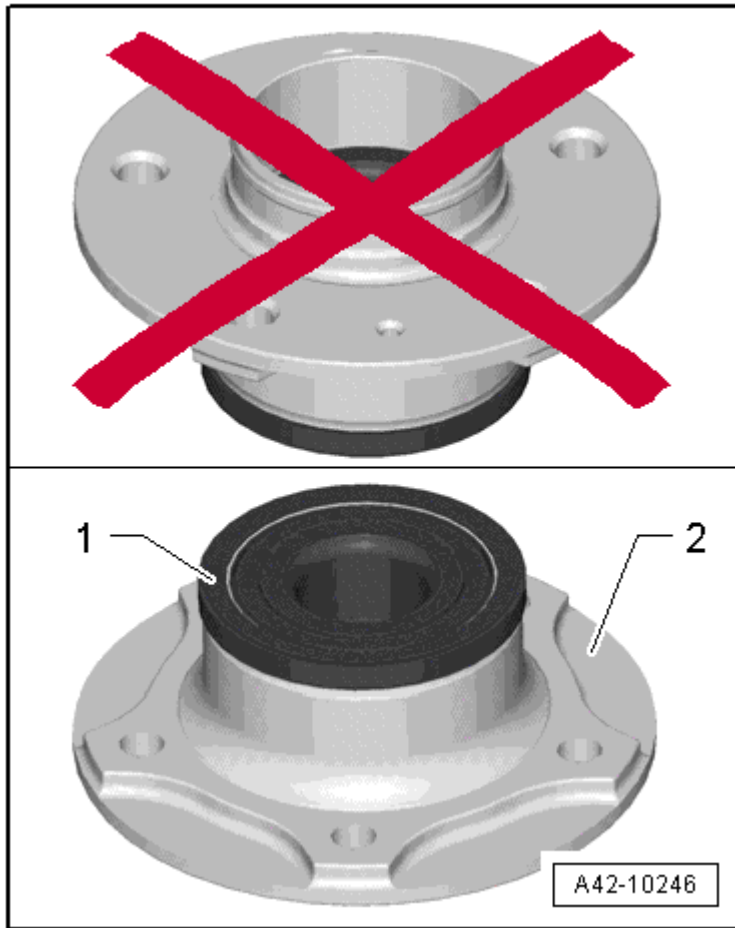


Fig. 21: Identifying Caution -- Avoid Dirt Contamination And Damage To Seal When Setting Down/Storing

Courtesy of AUDI OF AMERICA, LLC

- The wheel bearing -1- must always face up.
- Always set the wheel bearing unit down on the wheel hub -2-.

ALL WHEEL DRIVE (AWD)

SUBFRAMES, STABILIZER BAR AND COUPLING ROD OVERVIEW

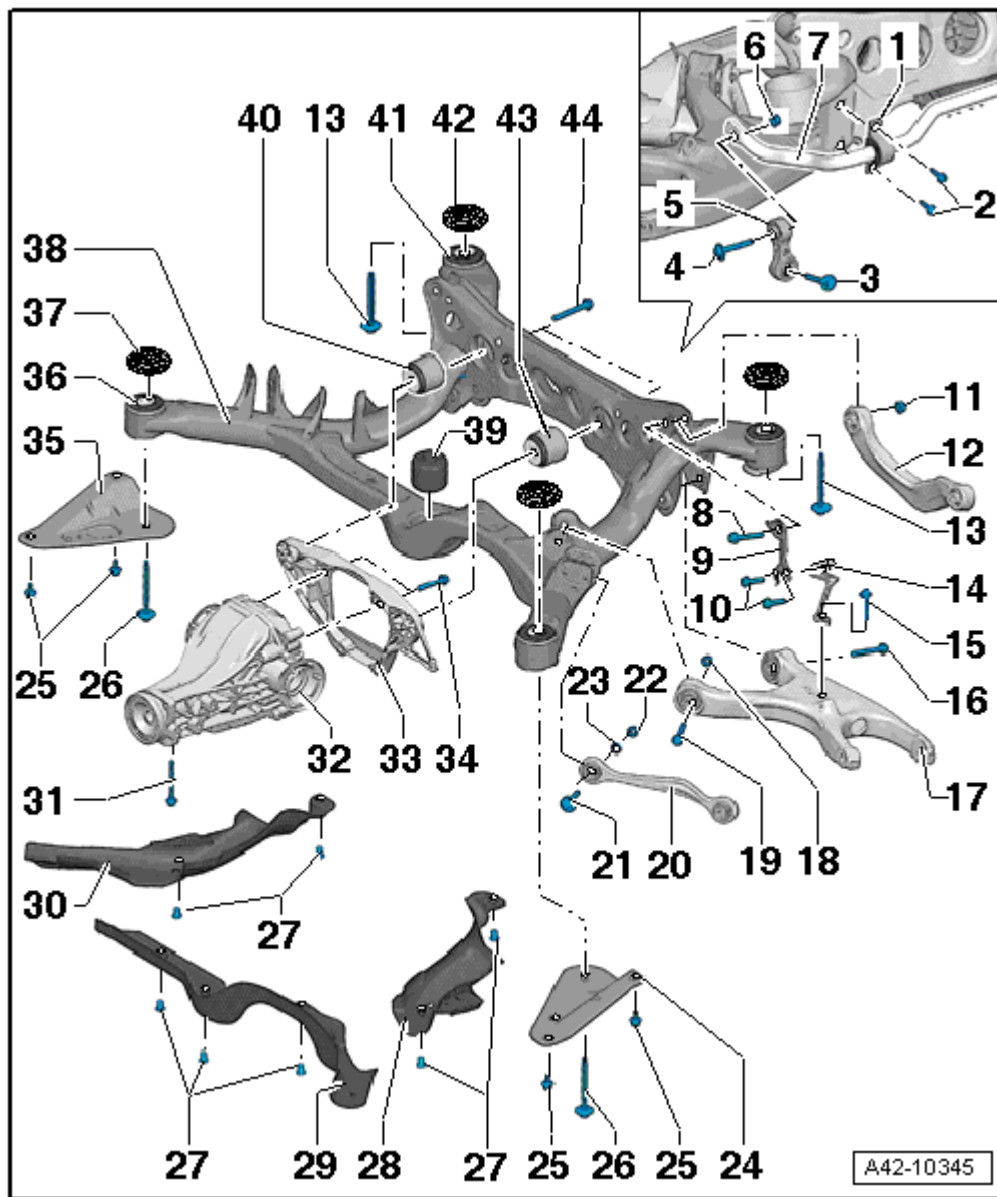


Fig. 22: Identifying Subframes, Stabilizer Bar And Coupling Rod Overview
 Courtesy of AUDI OF AMERICA, LLC

1. Clamp
 - Replaced together with the rubber bushing and stabilizer bar
 - The rubber bushing and clamp must not be separated from the stabilizer bar.
2. Bolt
 - 25 Nm + 90° turn
 - Always replace if removed.
 - Tighten evenly
3. Bolt
 - 40 Nm + 90° turn

- Always replace if removed.
 - Must be tightened in the curb weight position, refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**
4. Bolt
 - 40 Nm + 90° turn
 - Always replace if removed.
 - Must be tightened in the curb weight position, refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**
 5. Coupling Rod
 - The coupling rod must be removed together with the stabilizer bar.
 - Removing and installing, refer to **COUPLING ROD WITH STABILIZER BAR**
 6. Nut
 - Always replace if removed.
 7. Stabilizer Bar
 - Stabilizer must be removed together with coupling rod.
 - Removing and installing, refer to **COUPLING ROD WITH STABILIZER BAR**
 - The rubber bushing and clamp must not be separated from the stabilizer bar.
 8. Bolt
 - 70 Nm + 180° turn
 - Always replace if removed.
 - Must be tightened in the curb weight position, refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**
 9. Bracket
 10. Bolt
 - 5 Nm
 11. Nut
 - Always replace if removed.
 12. Upper Transverse Link
 13. Bolt
 - 115 Nm + 90° turn
 - Always replace if removed.
 - The bolts must not be loosened or tightened when the springs are installed. Release the coil springs using the spring tensioner before loosening or tightening.
 14. Left Rear Level Control System Sensor -G76-
 - Only sensors of the same version may be installed.
 - Complete with components
 - The sensor lever must point toward outside
 - Replace in vehicle, refer to **LEVEL CONTROL SYSTEM SENSOR**

- After loosening, check basic setting of headlamp adjustment. Refer to **Description and Operation**.
- If the vehicle level sensor -- was removed and installed on a vehicle with electronically controlled damping or if the linkage was loosened, the control position must be reprogrammed, refer to **PROGRAMMING CONTROL POSITION USING Vehicle Diagnosis, Testing and Information System VAS 5051B**. Vehicle diagnostic tester
- If the control position was reprogrammed on vehicles with lane assist, the directional stabilization assistance control module -J759- must be re-calibrated, refer to **CALIBRATION PROCEDURE**.

15. Bolt

- 9 Nm

16. Bolt

- 70 Nm + 180° turn
- Always replace if removed.
- Must be tightened in the curb weight position, refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**

17. Lower Transverse Link

18. Nut

- Always replace if removed.

19. Bolt

- 70 Nm + 180° turn
- Always replace if removed.
- Must be tightened in the curb weight position, refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**

20. Tie Rod

- There are versions made of aluminum and steel. For allocation.
- A mixed installation is not permitted

21. Eccentric Bolt

22. Nut

- 95 Nm
- Always replace if removed.
- Must be tightened in the curb weight position, refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**

23. Eccentric Washer

24. Left Support

25. Bolt

- 55 Nm

26. Bolt

- 115 Nm + 90° turn
- Always replace if removed.

- The bolts must not be loosened or tightened when the springs are installed. Release the coil springs using the spring tensioner before loosening or tightening.
27. Clip
- Not installed on all vehicles.
28. Left Stone Chip Protection
- Not installed on all vehicles.
29. Center Stone Chip Protection
- Not installed on all vehicles.
30. Right Stone Chip Protection
- Not installed on all vehicles.
31. Bolt
- Tightening specification, refer to item 3: **Description and Operation** , refer to item 3: **Description and Operation** or refer to **Description and Operation**
32. Rear Final Drive
- Removing and installing, refer to **Removal and Installation** , **Removal and Installation** or **Removal and Installation**
33. Differential Crossmember
- Removing and installing, refer to **Removal and Installation** , **Removal and Installation** or **Removal and Installation**
 - Not installed on vehicles with the Sport differential
34. Bolt
- Tightening specification, refer to **Description and Operation** , **Description and Operation** or **Description and Operation**
35. Right Support
36. Front Bonded Rubber Bushing
- For the subframe mounting
 - Depending on the model there are different versions, either a conventional and a hydraulic bonded rubber bushing is installed **FRONT BONDED RUBBER BUSHING**. For the correct allocation.
 - Oil on the hydraulic bonded rubber bushing is a sign of wear.
 - Replace, refer to **SUBFRAME BONDED RUBBER BUSHING AND HYDRAULIC BONDED RUBBER BUSHING**
 - Always replace on both sides.
37. Spacer
- Installed on the allroad
 - Note the installation position: The ribbed side faces the body
38. Subframe
- Subframe with attachments, removing and installing, refer to **SUBFRAME WITH ATTACHMENTS**
39. Front Bonded Rubber Bushing

- For the rear final drive mount
 - Replace, refer to **FRONT RUBBER BONDED BUSHING FOR REAR FINAL DRIVE**
40. Rear Bonded Rubber Bushing, rear
- For the rear final drive mount
 - Replace, refer to **REAR RUBBER BONDED BUSHING FOR REAR FINAL DRIVE**
41. Rear Bonded Rubber Bushing, Rear
- For the subframe mounting
 - Depending on the model there are different versions, either a conventional and a hydraulic bonded rubber bushing is installed **REAR BONDED RUBBER BUSHING**. For the correct allocation.
 - Oil on the hydraulic bonded rubber bushing is a sign of wear.
 - Replace, refer to **SUBFRAME BONDED RUBBER BUSHING AND HYDRAULIC BONDED RUBBER BUSHING**
 - Always replace on both sides.
42. Spacer
- Installed on the allroad
 - Note the installation position: The ribbed side faces the body
43. Rear Bonded Rubber Bushing, Rear
- For the rear final drive mount
 - Replace, refer to **REAR RUBBER BONDED BUSHING FOR REAR FINAL DRIVE**
44. Bolt
- Tightening specification, refer to **Description and Operation** , **Description and Operation** or **Description and Operation**

FRONT BONDED RUBBER BUSHING

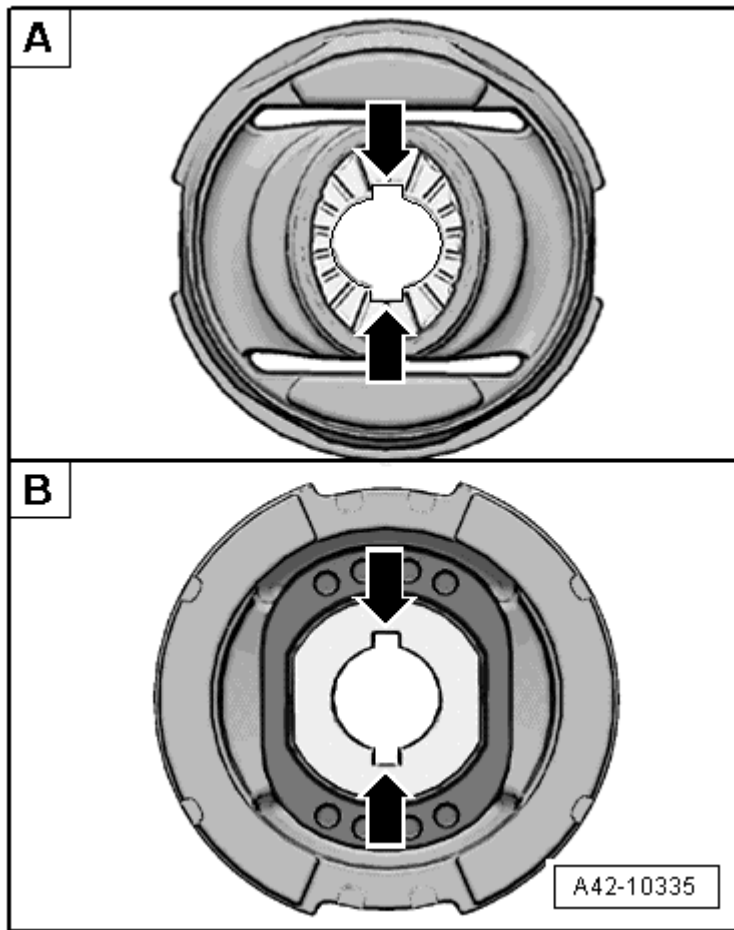


Fig. 23: Identifying Installation Location Of Front Bonded Rubber Bushing
Courtesy of AUDI OF AMERICA, LLC

- -A- conventional bonded rubber bushing
- -B- hydraulic bonded rubber bushing

REAR BONDED RUBBER BUSHING

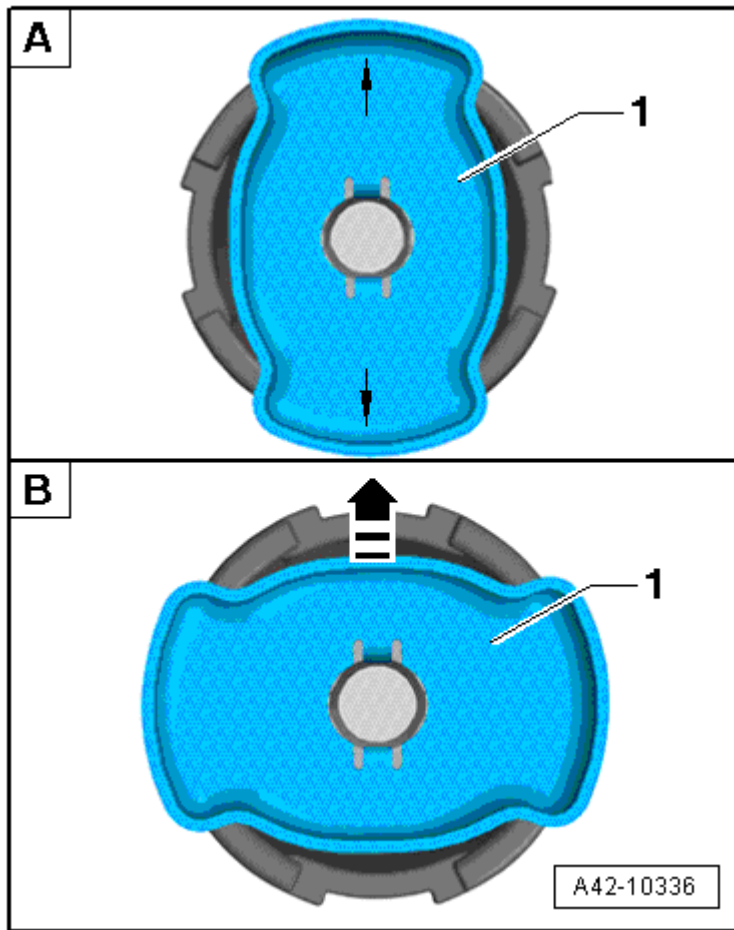


Fig. 24: Installation Location Of Rear Bonded Rubber Bushing
Courtesy of AUDI OF AMERICA, LLC

- -A- conventional bonded rubber bushing
- -B- hydraulic bonded rubber bushing

WHEEL BEARING HOUSING, WHEEL BEARING UNIT AND COIL SPRING SHOCK ABSORBER OVERVIEW

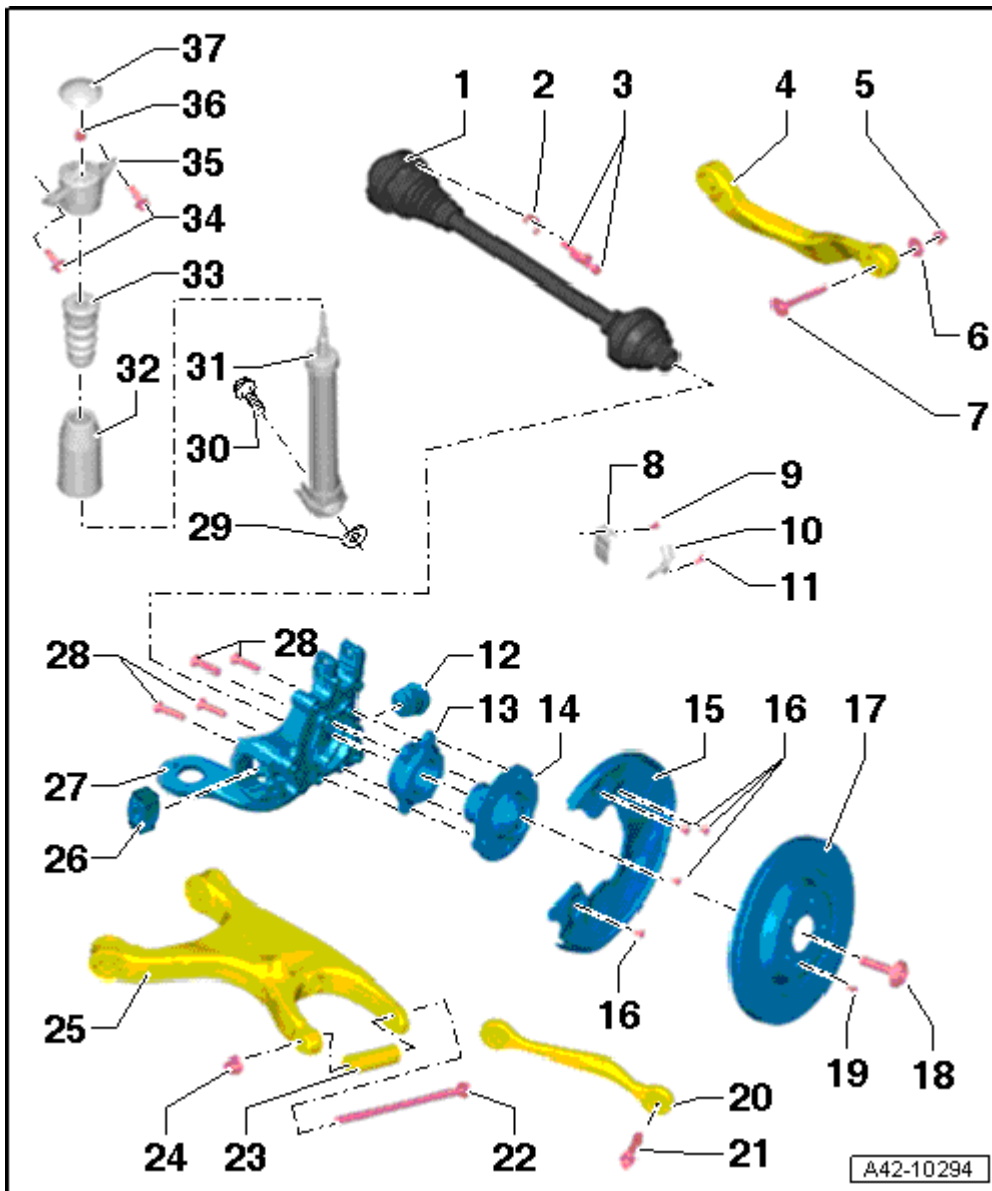


Fig. 25: Identifying Wheel Bearing Housing, Wheel Bearing Unit And Coil Spring Shock Absorber Overview

Courtesy of AUDI OF AMERICA, LLC

1. Drive Axle
 - Different versions.
2. Locking Plate
3. Bolt
 - Tightening specification, refer to **SPECIFICATIONS**
4. Upper Transverse Link
5. Nut
 - 95 Nm

- Always replace if removed.
- Must be tightened in the curb weight position **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**

6. Eccentric Washer
7. Bolt
8. Bracket
 - for the brake hose, brake caliper wiring harness and rear wheel speed sensor -- wiring harness
9. Bolt
 - 10 Nm
10. Rear ABS Wheel Speed Sensor --
11. Bolt
 - 9 Nm
12. Bonded Rubber Bushing
 - Cannot be replaced separately
13. Ball Bearing

CAUTION: • **Avoid contaminating with dirt and damaging the seal when setting down/storing. Refer to Fig. 26.**

- Wheel bearing unit, removing and installing, refer to **WHEEL BEARING UNIT**
- wheel bearing unit, servicing, refer to **WHEEL BEARING UNIT**

14. Wheel Hub

CAUTION: • **Avoid contaminating with dirt and damaging the seal when setting down/storing. Refer to Fig. 26.**

- Wheel bearing unit, removing and installing, refer to **WHEEL BEARING UNIT**
- Wheel bearing unit, servicing, refer to **WHEEL BEARING UNIT**

15. Brake Shield
16. Bolt
 - 10 Nm
17. Brake Rotor
18. Collar Bolt
 - 200 Nm + 180° turn
 - Always replace if removed.
19. Bolt
 - 5 Nm
20. Tie Rod
 - There are versions made of aluminum and steel. For allocation.

- A mixed installation is not permitted

21. Bolt

- 90 Nm + 90° turn
- Always replace if removed.
- Must be tightened in the curb weight position, refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**

22. Bolt

- 120 Nm + 360° turn
- Always replace if removed.
- Must be tightened in the curb weight position, refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**

NOTE: Axle alignment is necessary if the bolt is removed.

23. Spacer Tube

- Always replace if removed.

24. Nut

- Always replace if removed.

CAUTION: • Do not tighten the threaded connection using the nut.

NOTE: Axle alignment is necessary if the nut is loosened.

25. Lower Transverse Link

26. Bonded Rubber Bushing

- Replace, refer to **WHEEL BEARING HOUSING RUBBER BONDED BUSHING**

27. Wheel Bearing Housing

- Removing and installing, refer to **WHEEL BEARING HOUSING**

28. Bolt

- 80 Nm + 90° turn
- Always replace if removed.

29. Washer

- Serves as corrosion protection
- Always use

30. Bolt

- 150 Nm + 180° turn
- Always replace if removed.
- Must be tightened in the curb weight position, refer to **WHEEL BEARING IN CURB WEIGHT,**

LIFTING VEHICLES WITH COIL SPRING

31. Shock Absorbers
 - Removing and installing, refer to **SHOCK ABSORBER**
32. Protective Sleeve
33. Buffer Stop
34. Bolt
 - 50 Nm + 45° turn
 - Always replace if removed.
35. Upper Shock Absorber Mount
 - Installed position, refer to **SHOCK ABSORBER**
36. Nut
 - 35 Nm
 - Always replace if removed.
37. Cap

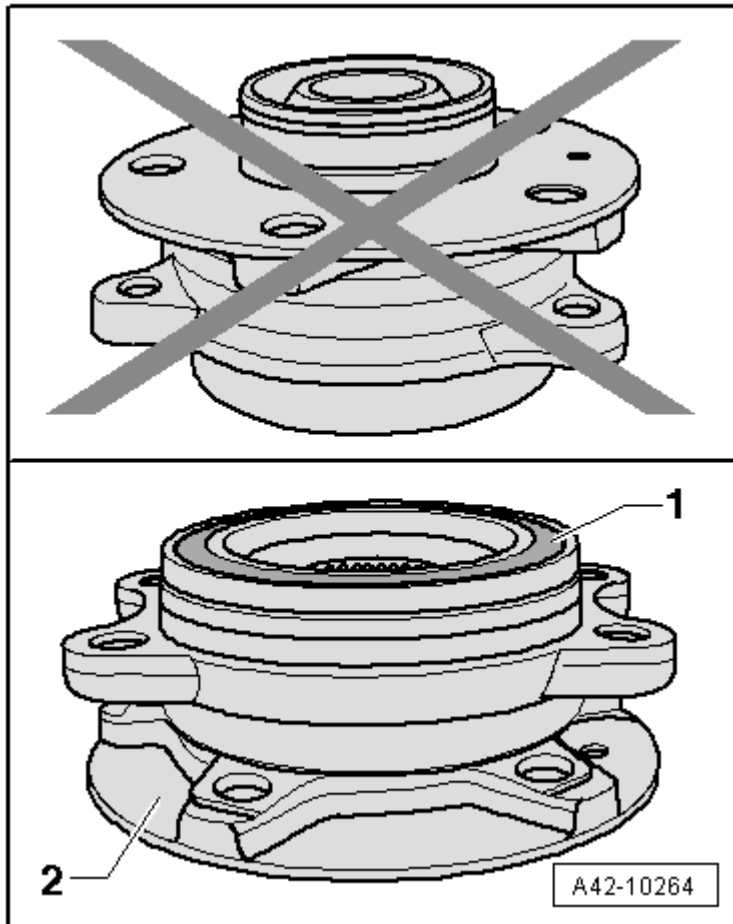


Fig. 26: Identifying Caution: Avoid Contaminating With Dirt And Damaging Seal When Setting Down/Storing

Courtesy of AUDI OF AMERICA, LLC

2012 Audi S4**SUSPENSION Rear Suspension (Sedan)**

- The wheel bearing -1- must always face up.
- Always set the wheel bearing down on the wheel hub -2-.

The same procedure also applies to the wheel bearing without a wheel hub.

SPECIFICATIONS**FASTENER TIGHTENING SPECIFICATIONS**

Component	Fastener Size	Nm
ABS Wheel Speed Sensor Bolt	-	9
Brake Hose Bracket Bolt	-	10
Brake Rotor Mounting Bolt		
- FWD	-	10
- AWD	-	5
Brake Shield to Wheel Bearing Housing Bolt	-	10
Coupling Rod to Stabilizer Bar Bolt ^{1, 2}	-	40 + 90°
Coupling Rod to Subframe Bolt ^{1, 2}	-	40 + 90°
CV Joint Clamp	-	20
Drive Axle Inner CV Joint Cover Bolt ¹		
- 88 mm Outer Constant Velocity Joint and 100 mm Inner Constant Velocity Joint	-	20 + 90°
- 100 mm Outer Constant Velocity Joint and 108 mm Inner Constant Velocity Joint	-	70
Drive Axle to Wheel Hub Bolt ¹	-	200 + 180°
Left Rear Level Control System Sensor to Body Bolt	-	5
Left Rear Level Control System Sensor to Lower Transverse Link Bolt	-	9
Lower Transverse Link to Subframe Bolt ¹	-	70 + 180° turn
Lower Transverse Link to Wheel Bearing Housing Nut ^{1, 2}	-	120 + 360° turn
Securing Clip	-	5
Shock Absorber to Upper Shock Absorber Mount Nut	-	35
Shock Absorber to Wheel Bearing Housing Bolt ¹	-	150 + 180° turn
Stabilizer Bar to Subframe Bolt ¹	-	25 + 90°
Subframe to Body Bolt ^{1, 2}	-	115 + 90°
Subframe Support Bolt	-	55
Tie Rod to Subframe Nut ^{1, 2}	-	95
Tie Rod to Wheel Bearing Housing Bolt ^{1, 2}	-	90 + 90°
Upper Shock Absorber Mount to Body Bolt ¹	-	50 + 45° turn
Upper Transverse Link to Subframe Bolt ¹	-	95

Upper Transverse Link to Wheel Bearing Housing Nut ^{1, 2}	-	70 + 180°
Wheel Bearing Unit to Wheel Bearing Housing Bolt, FWD ¹	-	200 + 180°
Wheel Bearing Unit to Wheel Bearing Housing Bolt, AWD ¹	-	80 + 90°
¹ Always replace after removal. ² Must be tightened in the curb weight position. Refer to <u>WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING</u>		

DIAGNOSIS AND TESTING

OUTER CV JOINT, CHECKING

It is necessary to disassemble the joint whenever replacing the grease or if the ball surfaces show wear or damage.

Disassembling

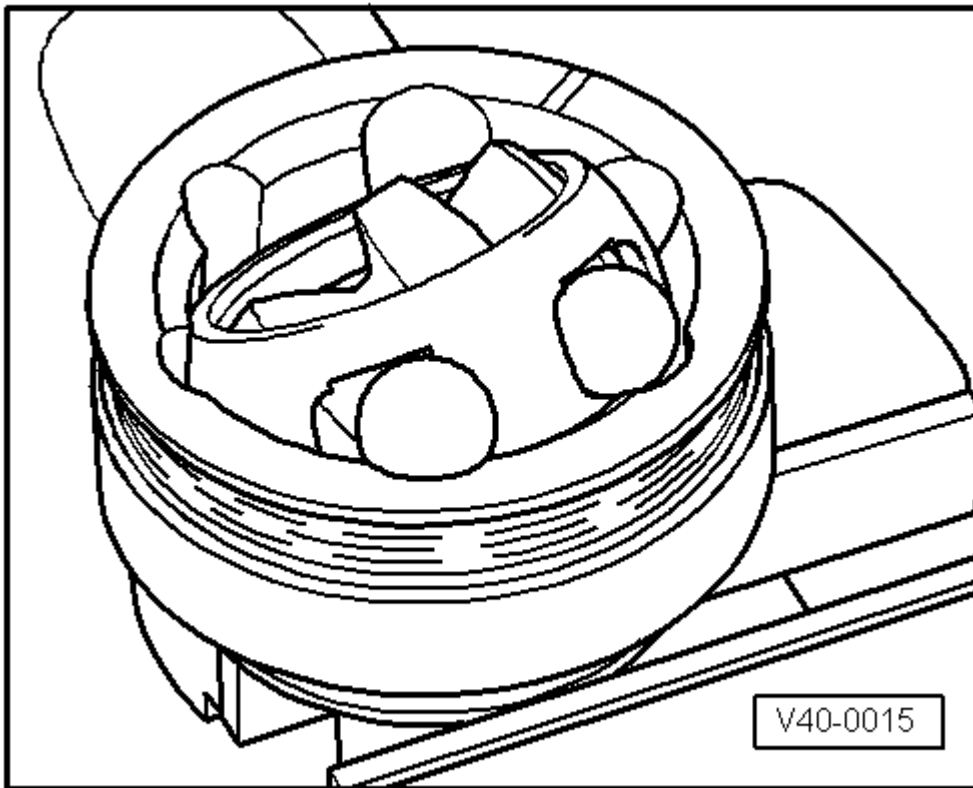


Fig. 27: Identifying Ball Hub And Ball Cage Swiveled
 Courtesy of AUDI OF AMERICA, LLC

-- Mark position of the ball hub to ball cage and to housing before disassembling, using electro-writer or grindstone.

- Swivel the ball hub and ball cage.
- Remove the balls one after the other.
- Turn cage, until two rectangular windows -arrow- contact joint body.

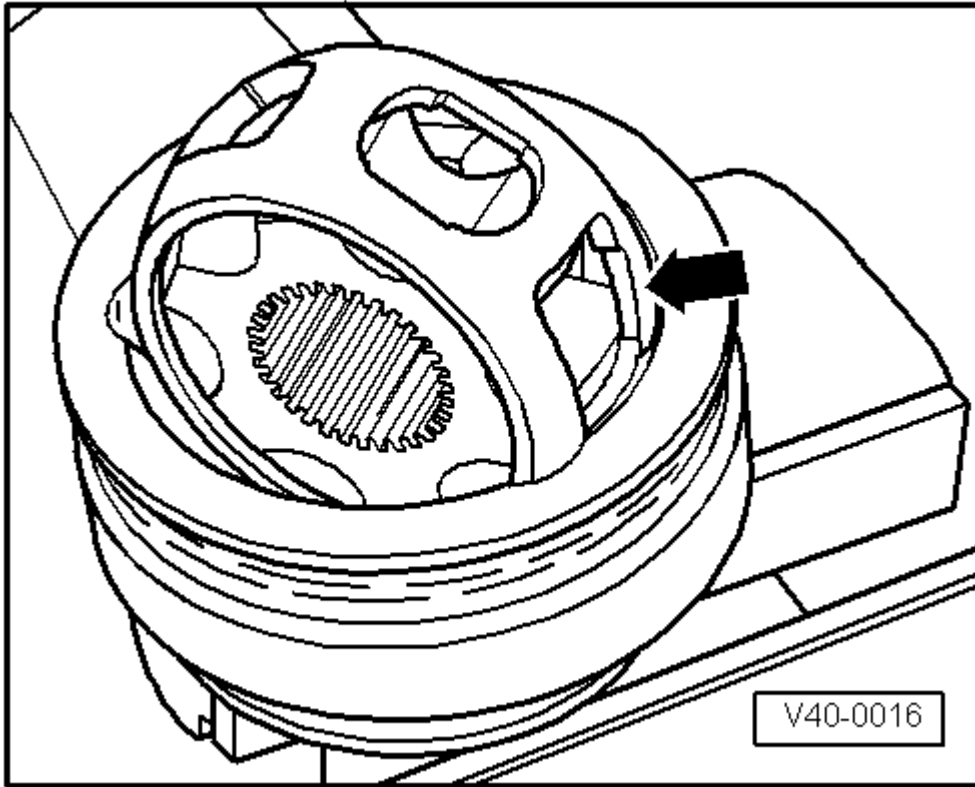


Fig. 28: Identifying Two Rectangular Windows Aligned With The Joint Housing
Courtesy of AUDI OF AMERICA, LLC

- Lift out cage with hub.
- Swing hub segment with smaller pins into rectangular window on cage.

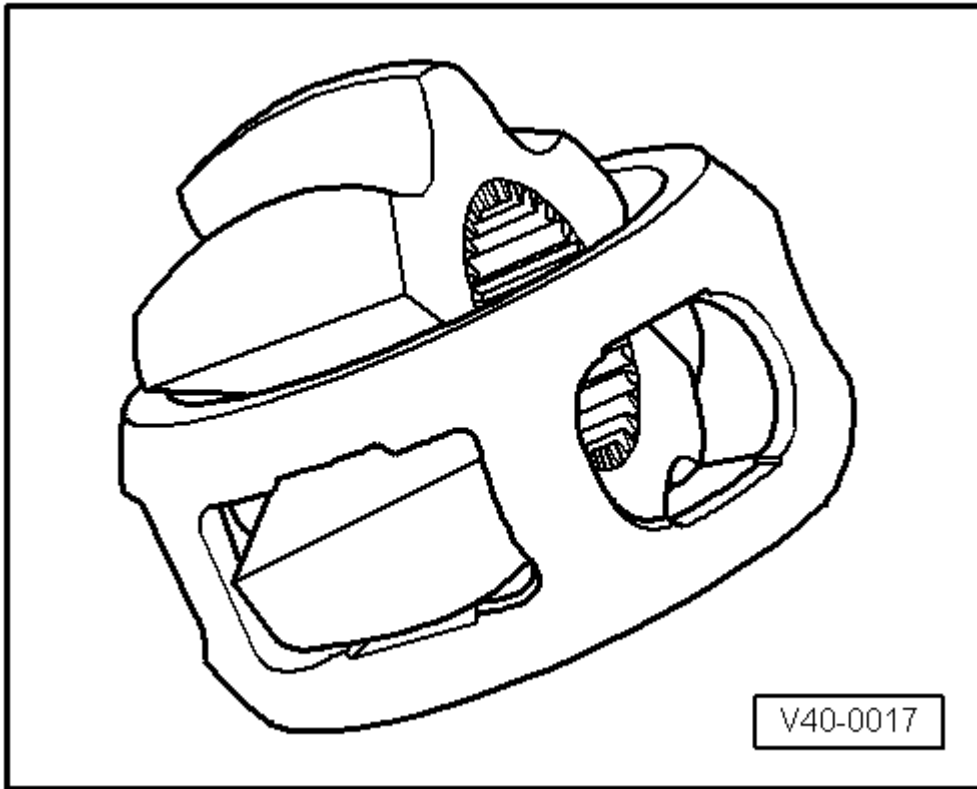


Fig. 29: Identifying Tilting Hub Out Of Cage
Courtesy of AUDI OF AMERICA, LLC

-- Fold hub out from cage.

Checking

6 balls for each joint belong to a tolerance group. Check stub axle, hub, cage and balls for small depressions (pitting build-up) and chafing. Excessive circumferential backlash in joint makes itself noticed via tip-in shock, in such cases joint should be replaced. Flattening and running marks of balls are no reason to replace joint.

Assembling

-- Insert cage with hub into joint body.

NOTE: **Cage must be installed laterally correct.**

-- Press in opposing balls in sequence, during this, previous position of ball hub to ball cage and to joint body must be established again.

-- Press grease into joint body.

Grease capacities and types, drive axle with 88 mm diameter or 100 mm diameter outer CV joint **INNER CV**

JOINT, CHECKING.**INNER CV JOINT, CHECKING**

The joint must be disassembled to replace dirty grease or for checking the balls and ball tracks for wear and damage.

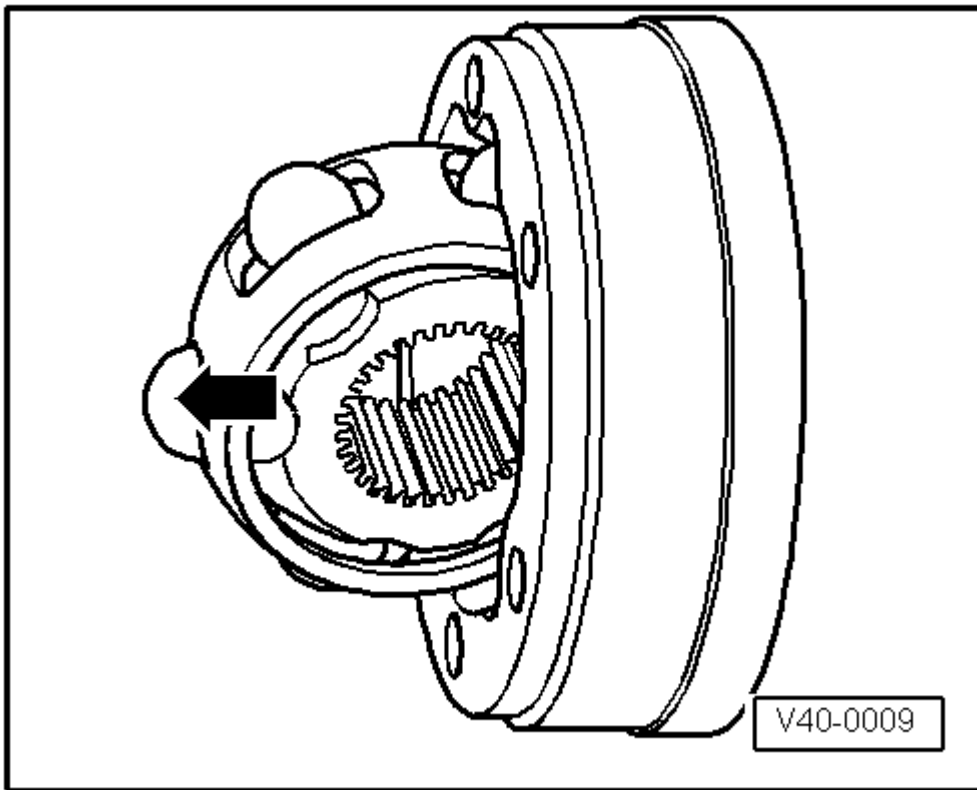
Disassembling

Fig. 30: Identifying Direction To Press Out Ball Joint Housing
Courtesy of AUDI OF AMERICA, LLC

NOTE: Ball hub and joint are paired and should be identified before removal. Do not interchange cage allocation.

- Swivel the ball hub and ball cage.
- Press joint piece out in direction of -arrow-.
- Remove the balls from the cage.
- Flip out ball hub from ball cage via running path of ball -arrows-.

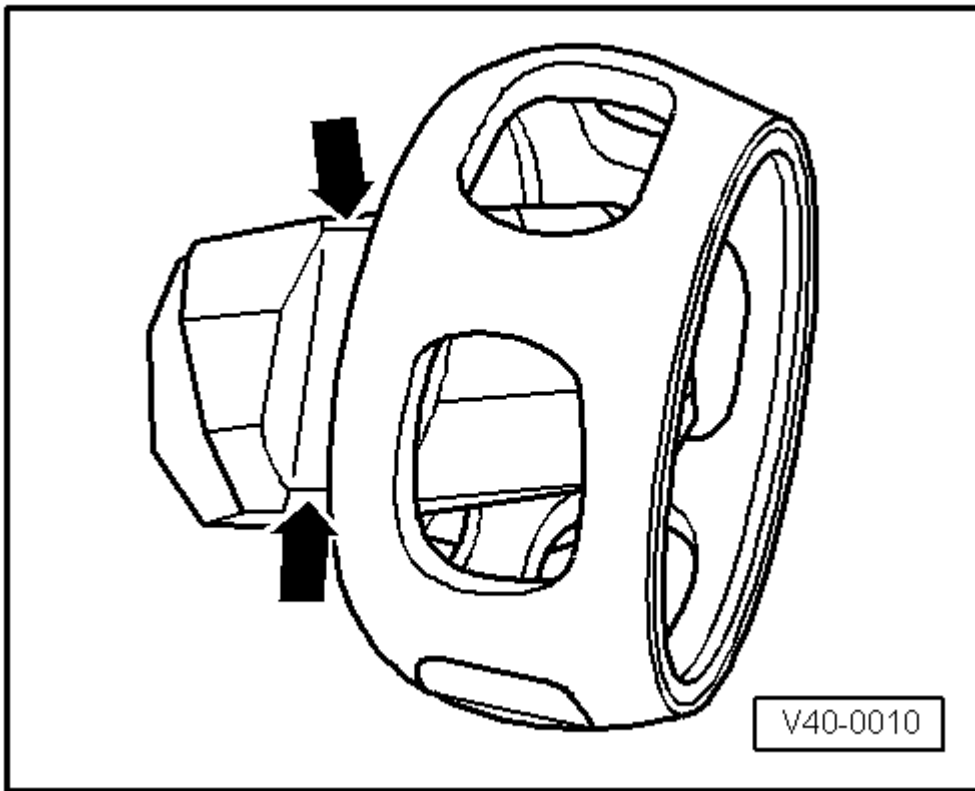


Fig. 31: Flipping Out Ball Hub From Ball Cage Via Running Path Of Ball
Courtesy of AUDI OF AMERICA, LLC

-- Check joint piece, ball hub, ball cage and balls for small broken off depressions (pitting build-up) and chafing.

NOTE: Excessive backlash in joint will be noticed as a knock during load changes. Joint must be replaced in such cases. Flattening and running marks of balls are no reason to replace joint.

Assembling

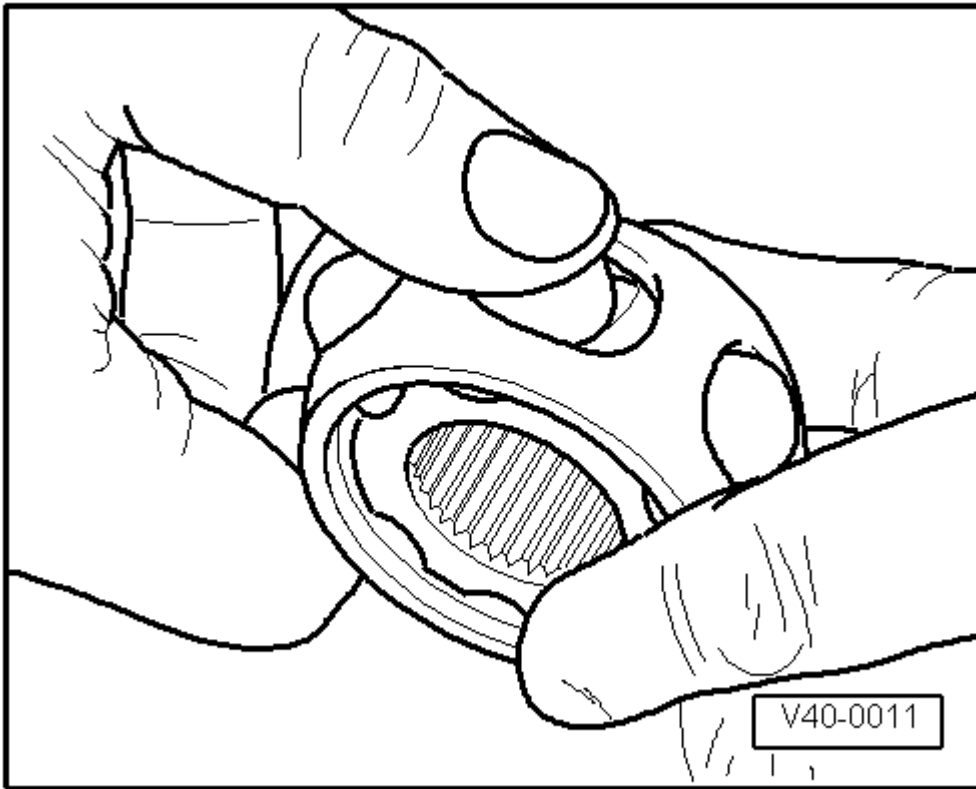


Fig. 32: Inserting Ball Hub Over Both Chamfers Into Ball Cage
Courtesy of AUDI OF AMERICA, LLC

- Insert ball hub into ball cage via two chamfers. The installation position is at random. Press balls into cage.
- Insert hub with cage and balls upright into joint piece.
 - When inserting, make sure that in each case the wide gap -a- at joint piece contacts narrow gap -b- at hub after swinging in.

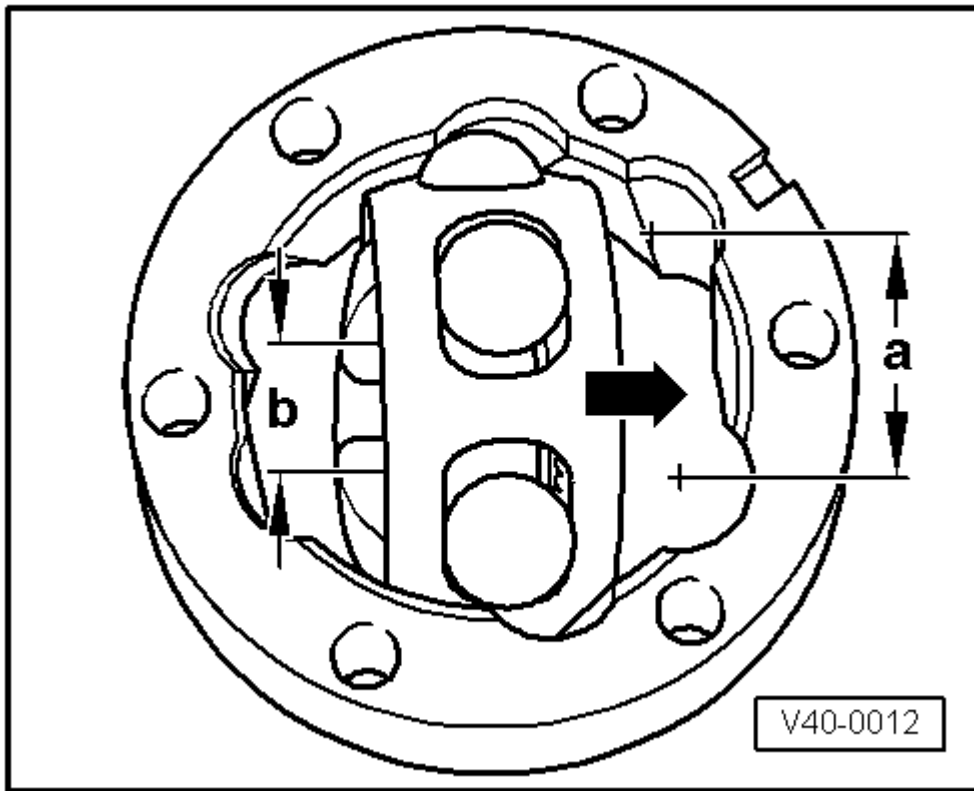


Fig. 33: Identifying Wide Space On Joint Housing Aligned With Narrow Space On Hub
Courtesy of AUDI OF AMERICA, LLC

- Chamfer on inner diameter of wheel hub (splines) must face toward drive axle.

-- Swing in the ball hub, to do so swing out hub far enough from cage -arrows- so that the balls have the distance of the running paths.

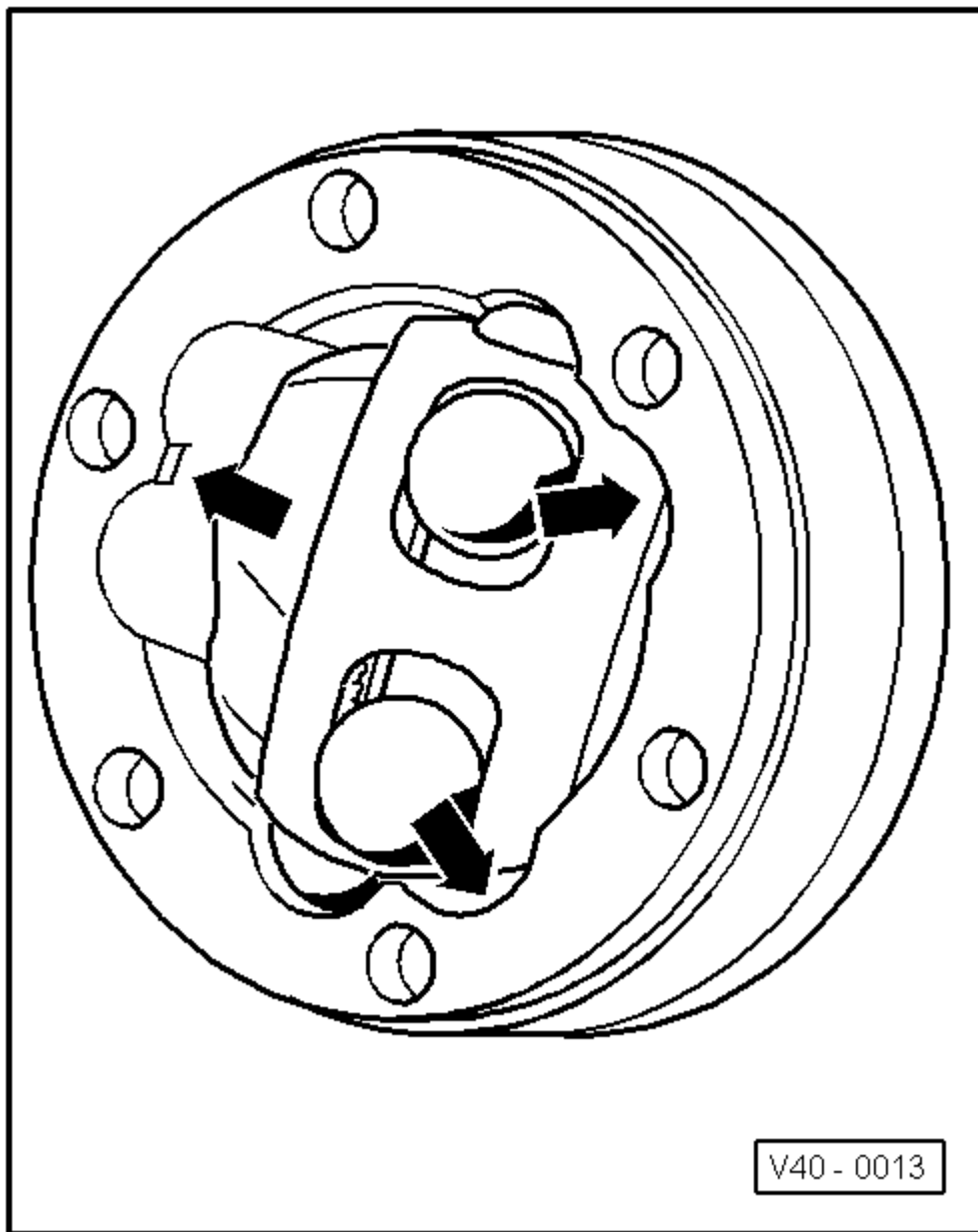


Fig. 34: Identifying Ball Hub Installed With Hub Able To Be Swivelled Out Of Cage
Courtesy of AUDI OF AMERICA, LLC

-- Swing in hub with balls by pressing forcefully onto cage -arrow--.

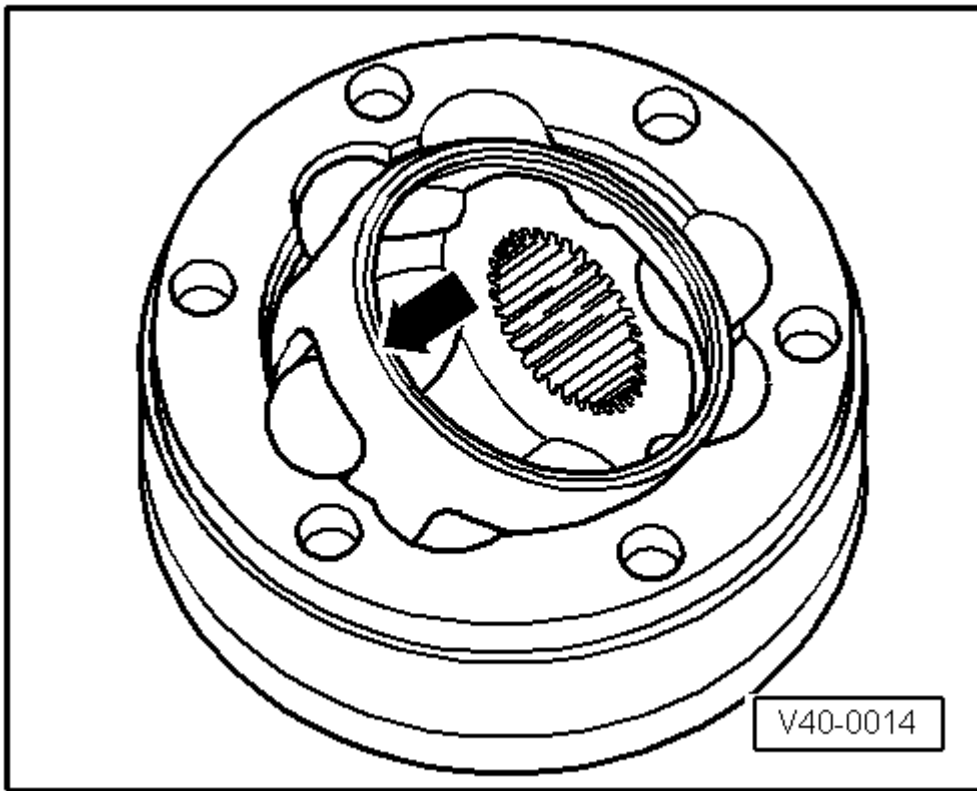


Fig. 35: Identifying Cage Pressed Firmly Until Hub Is In Position
Courtesy of AUDI OF AMERICA, LLC

Checking the Functionality of the CV Joint

The CV joint is correctly assembled when the ball hub can be moved by hand backward and forward over its entire axial movement range.

-- Press grease into joint body.

Grease capacities and types, drive axle with 108 mm inner constant velocity joint **INNER CV JOINT, CHECKING.**

REMOVAL AND INSTALLATION

LOWER TRANSVERSE LINK

Special tools and workshop equipment required

- Torque Wrench 5-50 Nm V.A.G 1331
- Torque Wrench 50-200 Nm V.A.G 1332

Removing

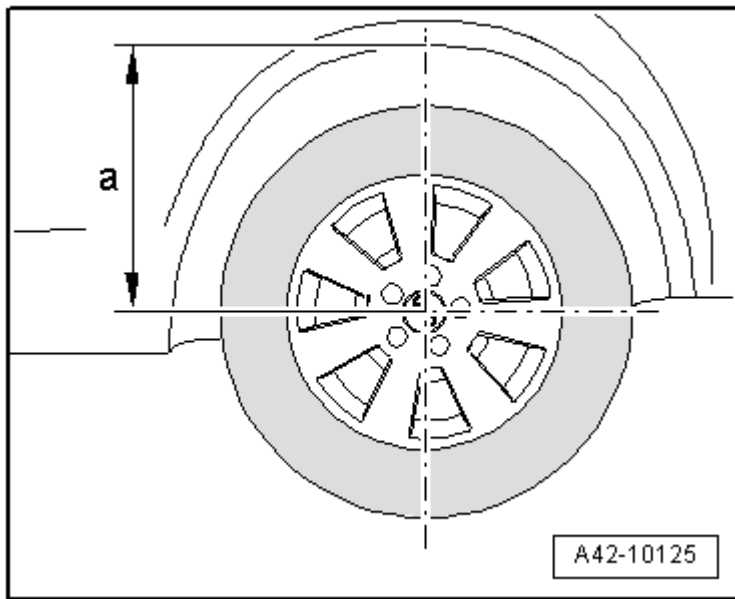


Fig. 36: Measuring Dimension From Center Of Wheel To Lower Edge Of Wheel Housing Using Tape Measure

Courtesy of AUDI OF AMERICA, LLC

- Determine dimension -a- from the center of the wheel to the lower edge of the wheel housing before starting work while the vehicle is resting on its wheels.
- Place the vehicle on a hoist.
- Remove the wheel.
- Remove coil spring. Refer to **COIL SPRING**.
- On vehicles with a level control system sensor -1-, remove the bolt -2-.

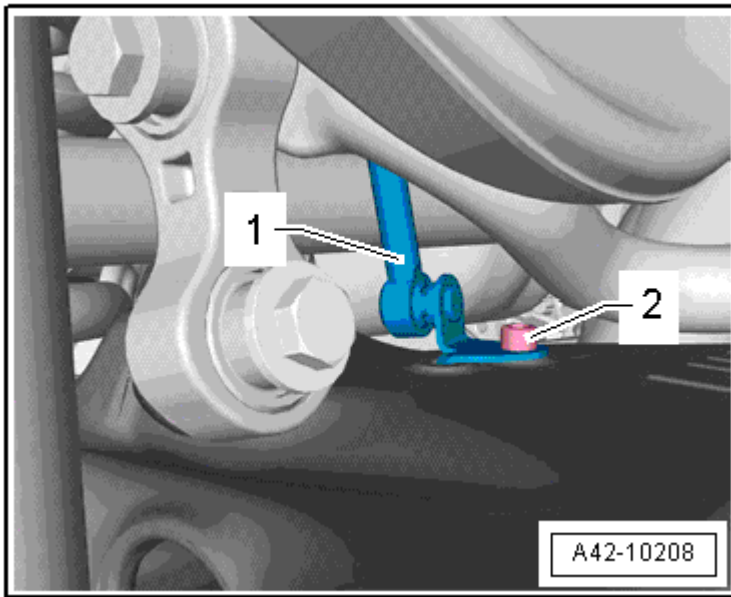


Fig. 37: Identifying Level Control System Sensor And Bolt
 Courtesy of AUDI OF AMERICA, LLC

-- Remove bolt -4-.

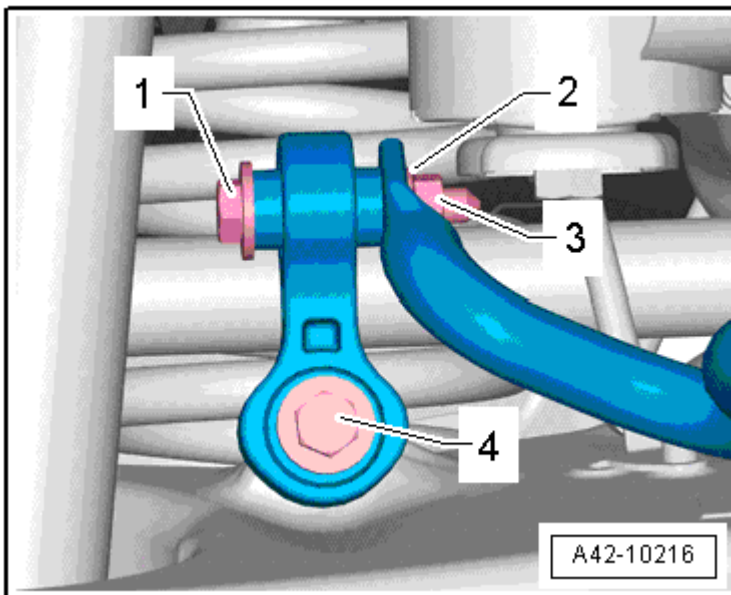


Fig. 38: Identifying Bolt
 Courtesy of AUDI OF AMERICA, LLC

-- Remove nut -3-.

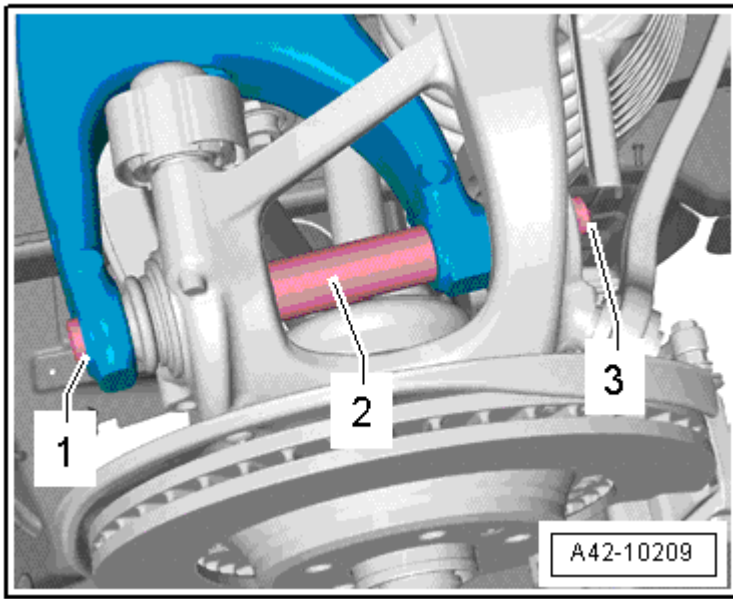


Fig. 39: Inserting Bolt With Spacer Tube To Install Nut Loosely
Courtesy of AUDI OF AMERICA, LLC

-- Remove the bolt -1- and the spacer tube -2-.

NOTE: Axle alignment is necessary if the nut -3- is loosened or the bolt -1- is removed.

-- Remove bolt -1-.

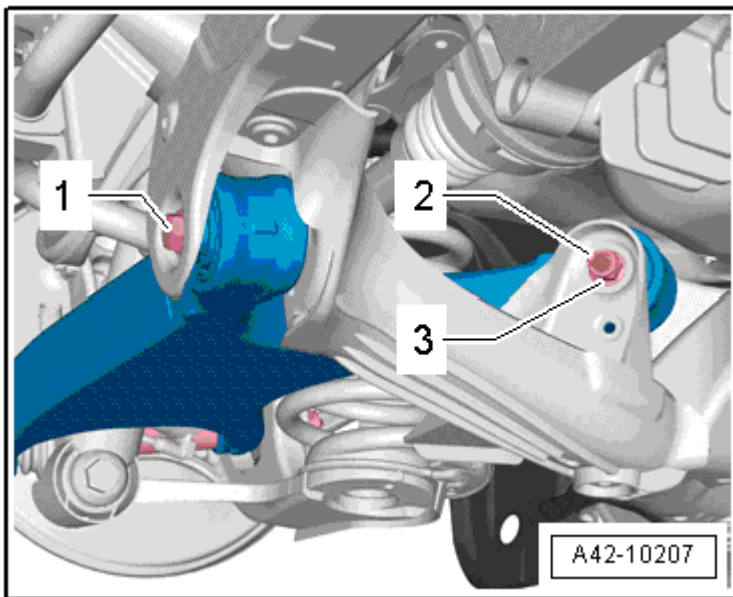


Fig. 40: Identifying Lower Control Arm And Bolt
Courtesy of AUDI OF AMERICA, LLC

-- Remove the nut -3- and bolt -2-.

-- Remove lower transverse link.

Installing

Install in reverse order of removal. Note the following:

Tightening specifications, refer to **UPPER TRANSVERSE LINK, TIE ROD, COIL SPRING, LOWER CONTROL ARM AND LEVEL CONTROL SYSTEM SENSOR OVERVIEW**

NOTE: Bonded rubber bushings can only be turned to a limited extent. Only tighten suspension bolts when the vehicle is in curb weight or control position.

Wheel bearing, lifting to curb weight position on vehicles with coil springs. Refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**.

-- Insert the lower control arm and install the bolt -1- loosely.

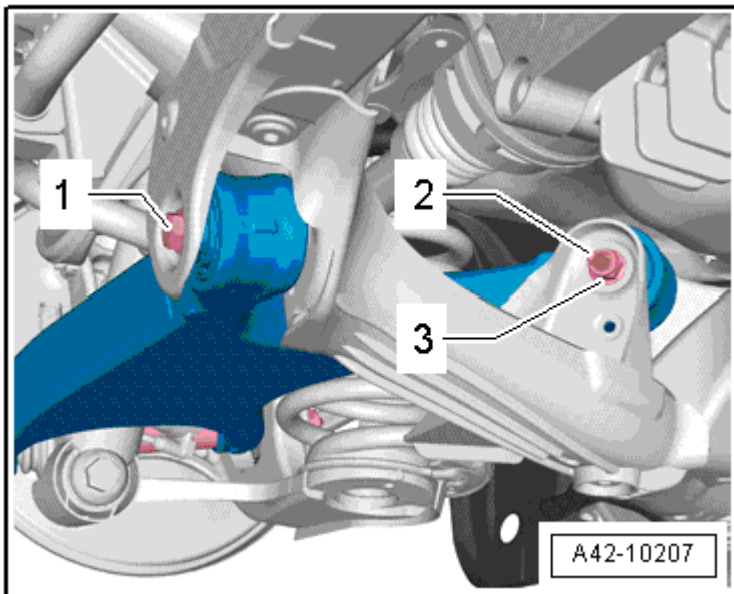


Fig. 41: Identifying Lower Control Arm And Bolt
Courtesy of AUDI OF AMERICA, LLC

NOTE: To make sure there is enough clearance to tighten the bolt -2-, the trim and the wheel spoiler must be removed. Refer to **Removal and Installation** .

-- Install the bolt -2- and install the nut -3- loosely.

-- Insert the bolt -1- with the spacer tube -2- and install the nut -3- loosely.

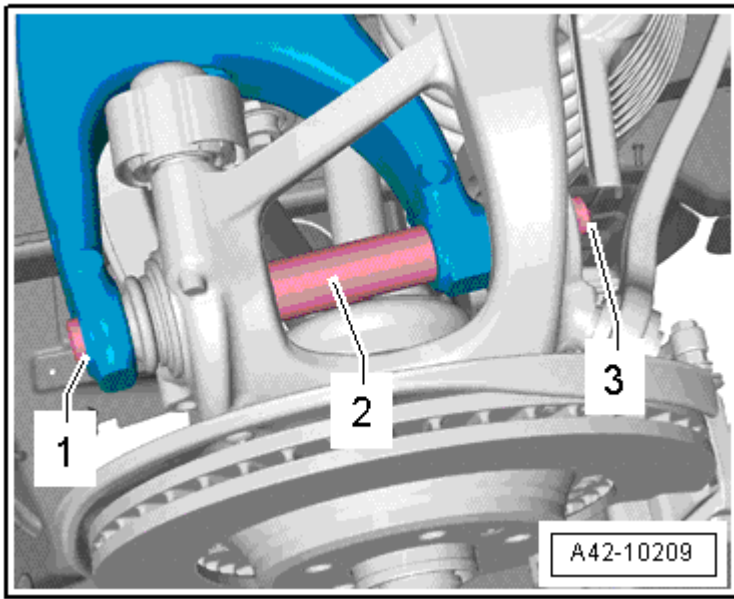


Fig. 42: Inserting Bolt With Spacer Tube To Install Nut Loosely
Courtesy of AUDI OF AMERICA, LLC

CAUTION: • Do not tighten the threaded connection using the nut -3-.

- Tighten the bolt -1-.
- Tighten the rest of the threaded connections.
- Install coil spring. Refer to COIL SPRING.
- Tighten the wheel. Refer to Specifications .
- Axle alignment is required, see table, refer to WHEN VEHICLE ALIGNMENT IS NECESSARY .

The axle alignment on the front and rear axles must be performed on a VW/Audi approved alignment rack.

-- On vehicles with automatic headlamp range control system, perform a basic setting on the headlamps. Refer to Description and Operation .

-- If the vehicle level sensor -- was removed and installed on a vehicle with electronically controlled damping or if the linkage was loosened, the control position must be reprogrammed. Refer to PROGRAMMING CONTROL POSITION USING Vehicle Diagnosis, Testing and Information System VAS 5051B . Vehicle diagnostic tester.

-- If the control position was reprogrammed on vehicles with lane assist, the directional stabilization assistance control module -J759- must be recalibrated. Refer to CALIBRATION PROCEDURE .

UPPER TRANSVERSE LINK

Special tools and workshop equipment required

- Torque Wrench 50-200 Nm V.A.G 1332

NOTE: Due to the inaccessibility of the inner threaded connection -1-, the upper control arm can only be removed when the subframe has been removed.

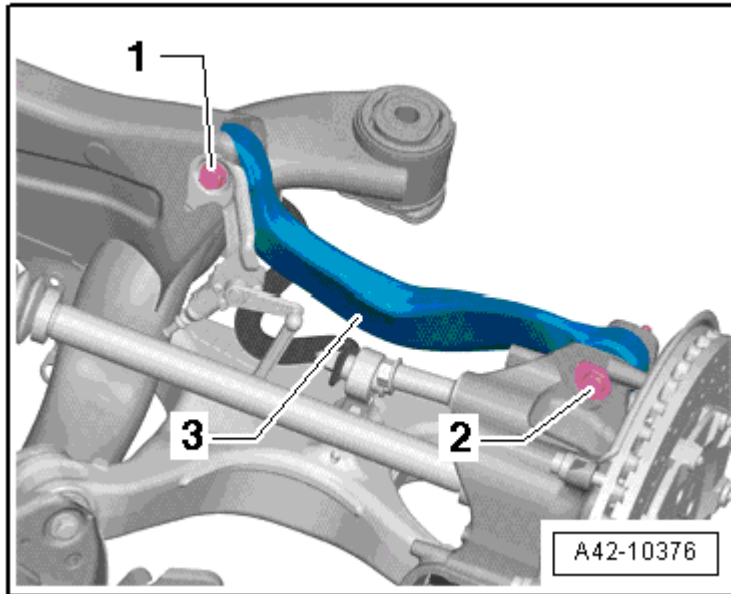


Fig. 43: Identifying Upper Control Arm Can Only Be Removed When Subframe Has Been Removed

Courtesy of AUDI OF AMERICA, LLC

Removing

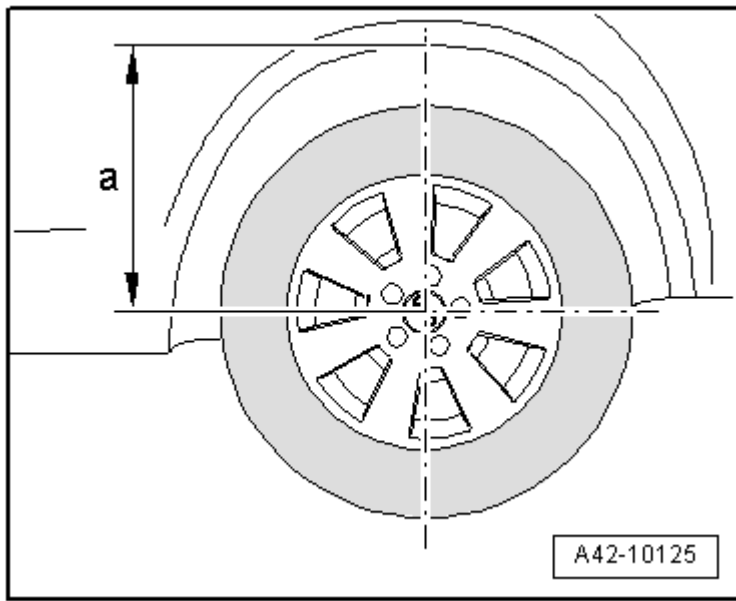


Fig. 44: Measuring Dimension From Center Of Wheel To Lower Edge Of Wheel Housing Using Tape Measure

Courtesy of AUDI OF AMERICA, LLC

- Determine dimension -a- from the center of the wheel to the lower edge of the wheel housing before starting work while the vehicle is resting on its wheels.
- Place the vehicle on a hoist.
- Remove the wheels.
- Remove the subframe on vehicles with front-wheel drive (FWD). Refer to **SUBFRAME WITH ATTACHMENTS**.
- Remove the subframe on vehicles with all-wheel drive (AWD). Refer to **SUBFRAME WITH ATTACHMENTS**.
- Mark the position of the eccentric bolt -2- on the wheel bearing housing, for example using a felt-tip pen.

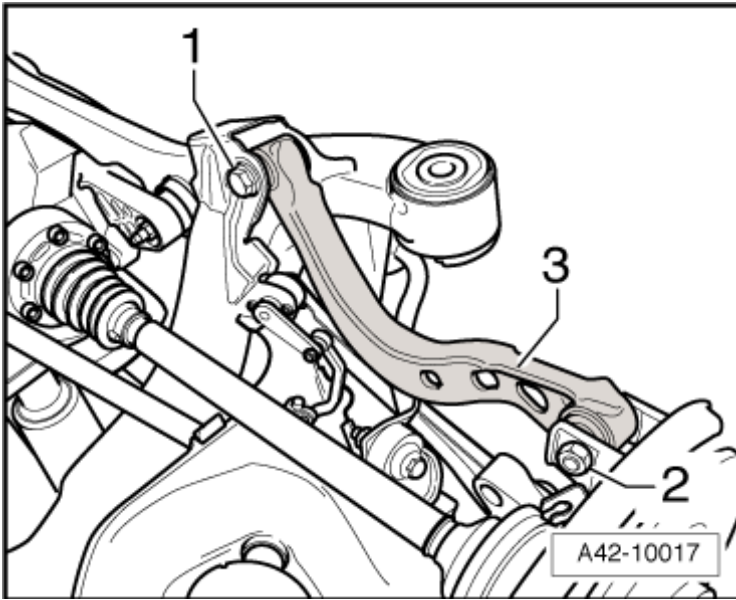


Fig. 45: Identifying Inner Threaded Connection, Eccentric Washer, And Wheel Bearing Housing
Courtesy of AUDI OF AMERICA, LLC

- Separate connections -1 and 2-.
- Remove upper transverse link -3-.

Installing

NOTE: **Replace the bolts and the self-locking nuts.**

Installation position of the transverse link to the subframe

- Install the upper control arm -3- on the threaded connection -1- by hand.

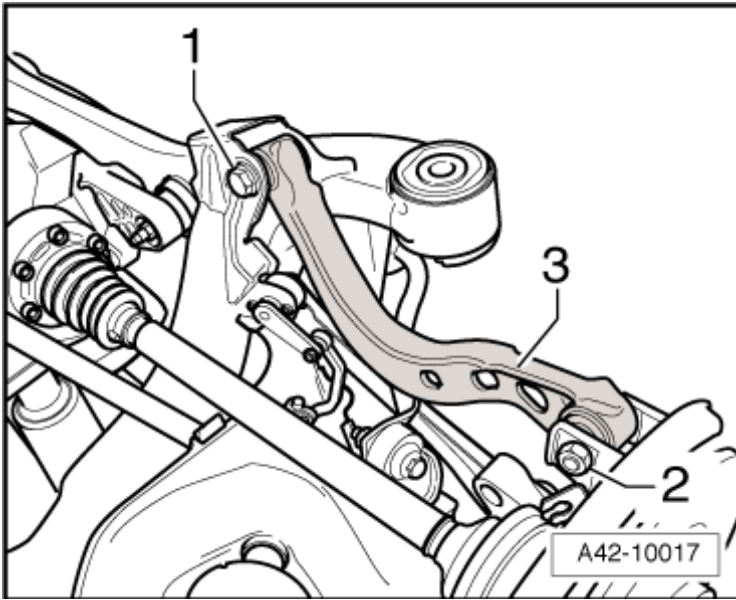


Fig. 46: Identifying Inner Threaded Connection, Eccentric Washer, And Wheel Bearing Housing
Courtesy of AUDI OF AMERICA, LLC

-- Lay a ruler or straight edge -1- flat against the upper control arm -arrows-.

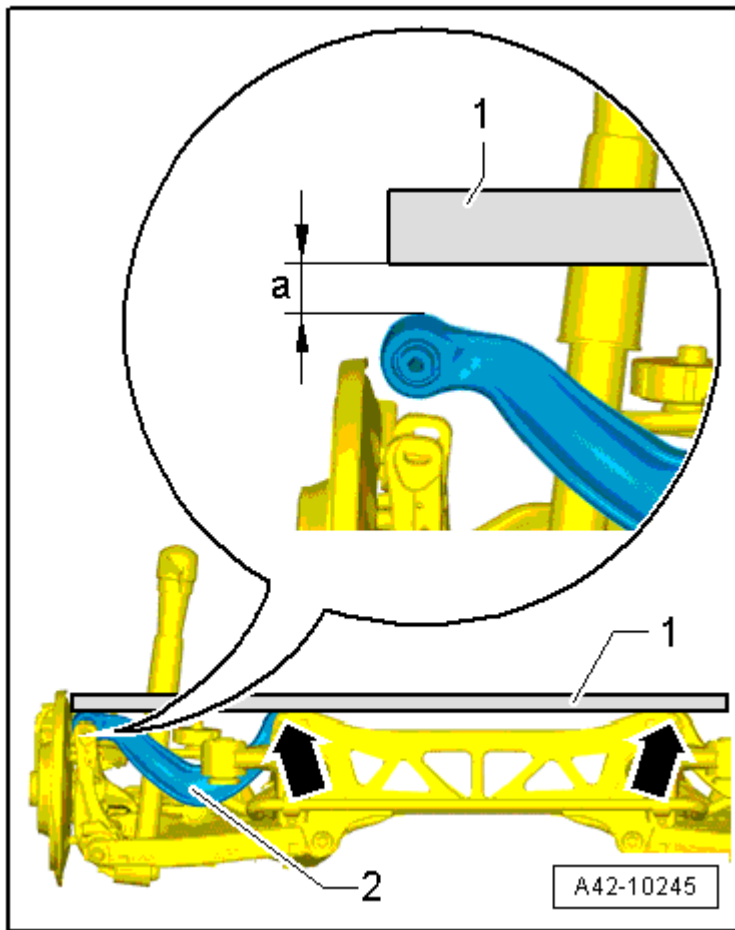


Fig. 47: Laying Ruler Or Straight Edge Flat Against Upper Control Arm
Courtesy of AUDI OF AMERICA, LLC

-- Position the upper control arm -2- so dimension $a = 8 \text{ mm} \pm 1 \text{ mm}$ between the straight edge -1- and the stamping burr on the upper control arm -2-.

-- Tighten the upper control arm -3- on the subframe in this position.

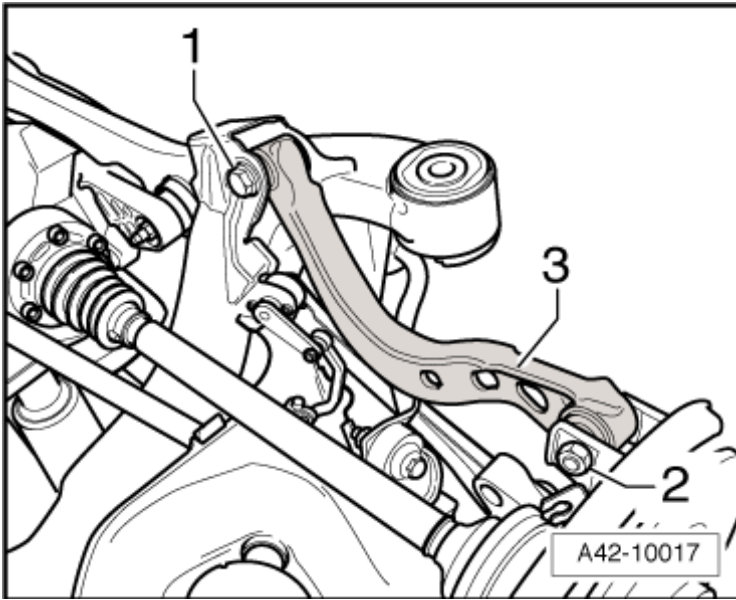


Fig. 48: Identifying Inner Threaded Connection, Eccentric Washer, And Wheel Bearing Housing
Courtesy of AUDI OF AMERICA, LLC

- Install the wheel bearing housing on the control arm and tighten the new nut to 20 Nm. Note the installation position of the centering washer -2-.
- Install subframe on vehicles with FWD. Refer to **SUBFRAME WITH ATTACHMENTS**.
- Install subframe on vehicles with AWD. Refer to **SUBFRAME WITH ATTACHMENTS**.
- Loosen the threaded connection -1-.

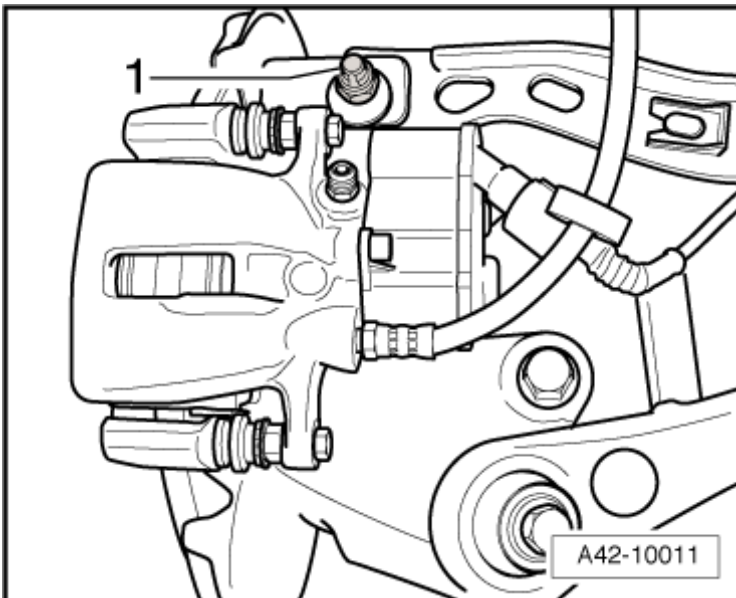


Fig. 49: Identifying Threaded Connection
Courtesy of AUDI OF AMERICA, LLC

-- Lift the wheel bearing hub into curb weight position. Refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING** and tighten the threaded connection -1-.

Tightening specifications, refer to **UPPER TRANSVERSE LINK, TIE ROD, COIL SPRING, LOWER CONTROL ARM AND LEVEL CONTROL SYSTEM SENSOR OVERVIEW**

-- Tighten the wheel. Refer to **Specifications** .

-- Perform an axle alignment. Refer to **WHEN VEHICLE ALIGNMENT IS NECESSARY** .

The axle alignment must be performed on a VW/Audi approved alignment stand.

TIE ROD

Special tools and workshop equipment required

- Torque Wrench 50-200 Nm V.A.G 1332
- Tool Insert T40183
- No illustration, commercially available pawl with fine gear

Removing

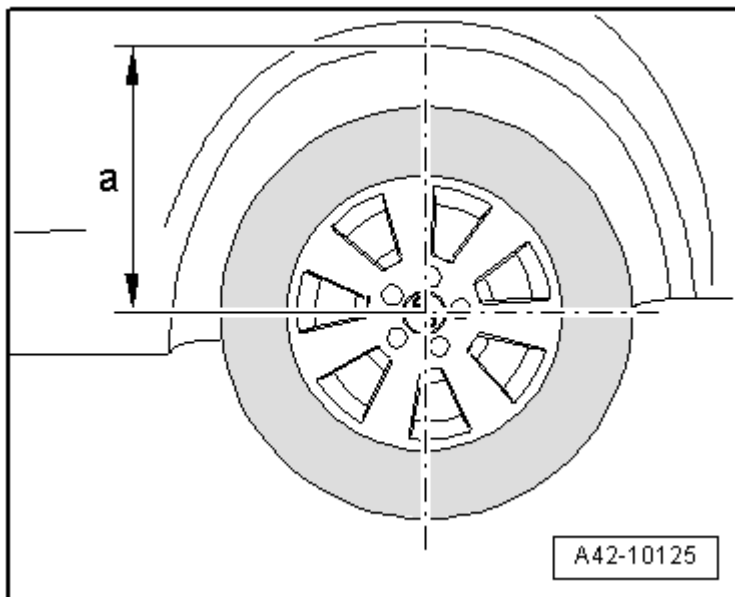


Fig. 50: Measuring Dimension From Center Of Wheel To Lower Edge Of Wheel Housing Using Tape Measure

Courtesy of AUDI OF AMERICA, LLC

-- Determine dimension -a- from the center of the wheel to the lower edge of the wheel housing before starting work while the vehicle is resting on its wheels.

-- Place the vehicle on a hoist.

- Remove the wheel.
- Remove the bolt -4-.

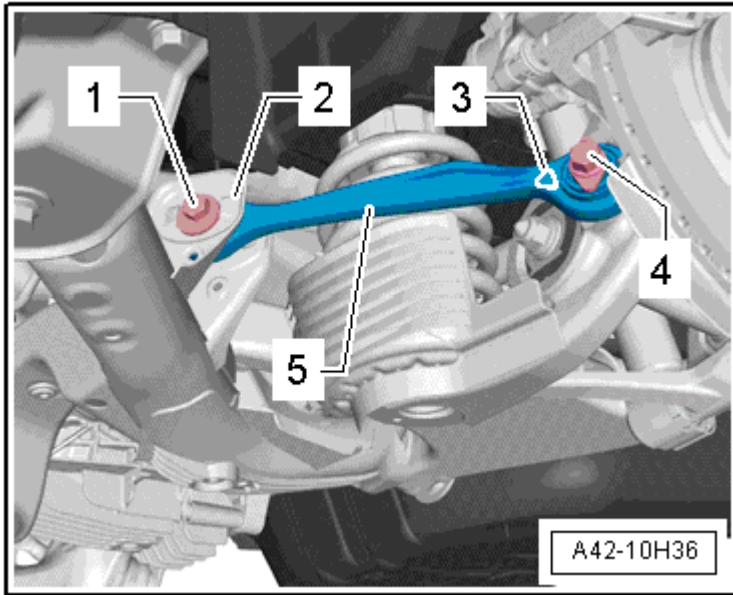


Fig. 51: Identifying Bolt

Courtesy of AUDI OF AMERICA, LLC

- Mark the position of the bolt -1- to the subframe -2-.
- Remove the nut and the bolt -1-.
- Remove tie rod -5-.

Installing

Install in reverse order of removal. Note the following:

Tightening specifications, refer to UPPER TRANSVERSE LINK, TIE ROD, COIL SPRING, LOWER CONTROL ARM AND LEVEL CONTROL SYSTEM SENSOR OVERVIEW

NOTE: Bonded rubber bushings can only be turned to a limited extent. Only tighten suspension bolts when the vehicle is in curb weight or control position.

Wheel bearing, lifting to curb weight position on vehicles with coil springs. Refer to WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING.

- Insert the tie rod -5-.

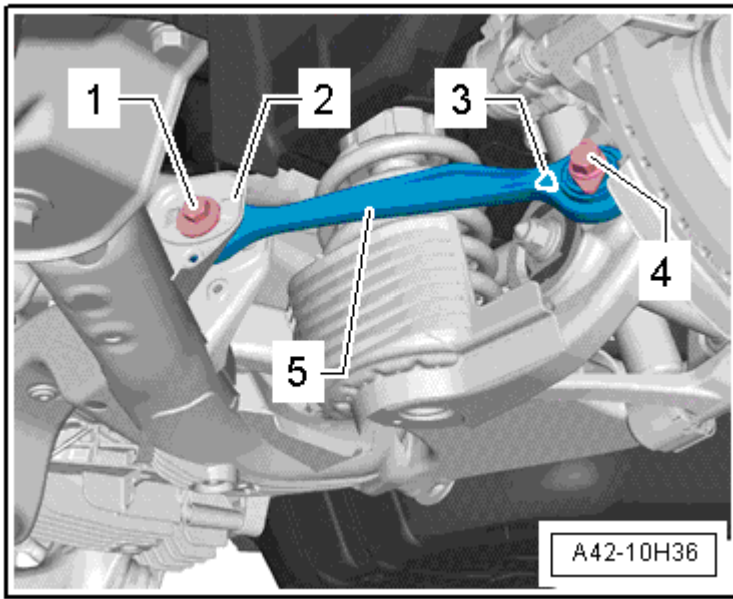


Fig. 52: Identifying Bolt

Courtesy of AUDI OF AMERICA, LLC

The marking -3 (delta)- must be on the outside. The tip of the marking -3- faces up.

-- First insert the bolt -1- completely and then align it according the marking.

-- Insert and tighten the bolt -4-.

-- Install the bolt -1- by hand. Tighten the bolt nut -1- to the tightening specification only after measuring the axle alignment.

-- Tighten the wheel. Refer to **Specifications** .

-- Axle alignment is required, see table, refer to **WHEN VEHICLE ALIGNMENT IS NECESSARY** .

The axle alignment must be performed on a VW/Audi approved alignment stand.

COIL SPRING

Special tools and workshop equipment required

- Pneumatic/Hydraulic Foot Pump VAS 6179
- Spring Tensioning System VAS 6274
- Supplementary Set VAS 6274/10

WARNING:

- The VAS 6274 must be converted using the VAS 6274/10 before removing and installing the coil springs.
- Convert the VAS 6274 using the VAS 6274/10. Refer to **Spring**

Tensioning System VAS 6274, CONVERTING.

NOTE: The rest of the tools from the VAS 6274/10 are needed later in the procedure.

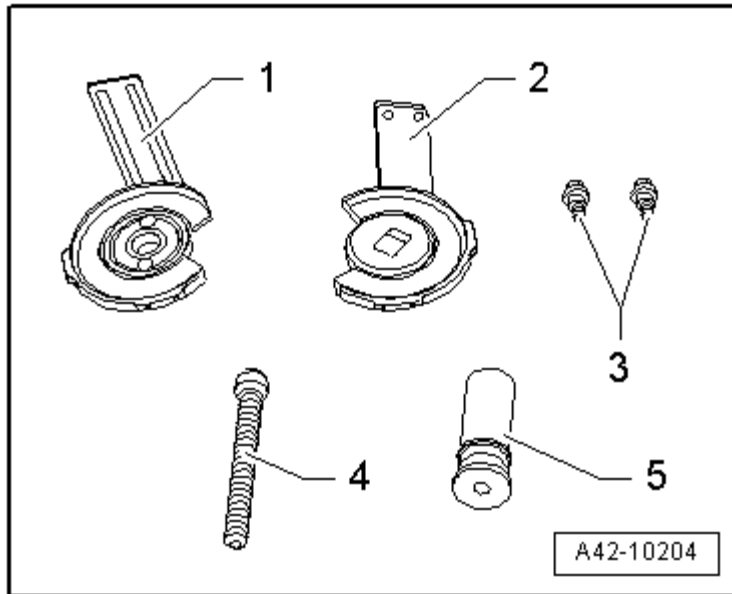


Fig. 53: Identifying Tools From VAS 6274/10 Are Needed Later In Procedure
Courtesy of AUDI OF AMERICA, LLC

1. Pressure plate with pivot bearing VAS 6274/10-1
2. Pressure plate with lock VAS 6274/10-2
3. Locking device bolts
4. Spindle VAS 6274/10-4
5. Sleeve

Removing

- Place the vehicle on a hoist.
- Remove the wheels.
- Slide the securing lever back in the direction of the -arrow- if necessary.

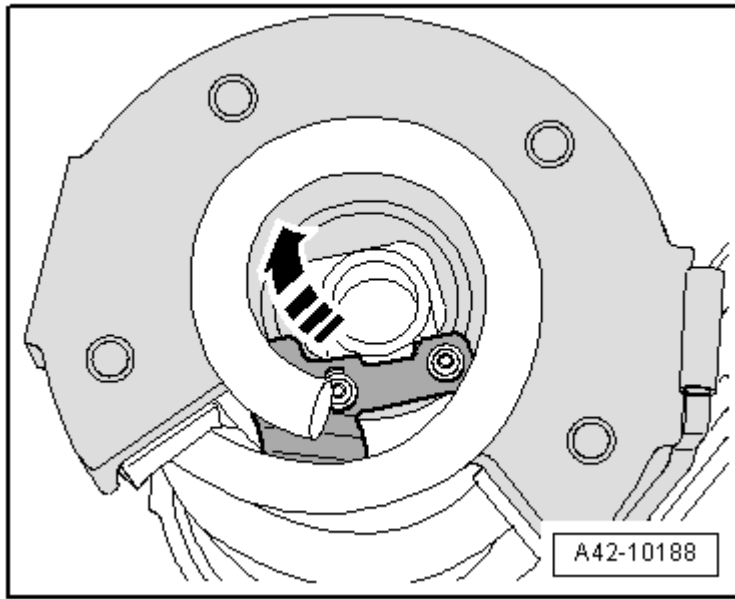


Fig. 54: Sliding And Securing Lever Back In Direction Of If Necessary
Courtesy of AUDI OF AMERICA, LLC

NOTE: This and the following illustrations show the procedure without the stone deflector.

-- Insert the new VAS 6274/10-2 with the locking device bracket from the supplementary seat from the outside.

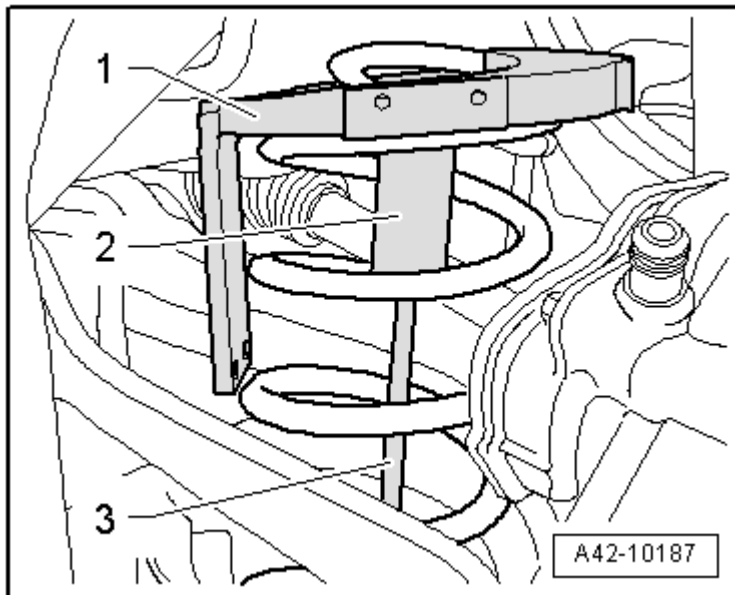


Fig. 55: Inserting New VAS 6274/10-2 With Locking Device Bracket
Courtesy of AUDI OF AMERICA, LLC

1. Pressure plate with lock VAS 6274/10-2

-- Insert the piston -2- with the T-handle -3- in the pressure plate. Slide the locking lever on the pressure plate back toward the outside (open).

-- Press the locking lever in the direction of the -arrow- to secure the piston.

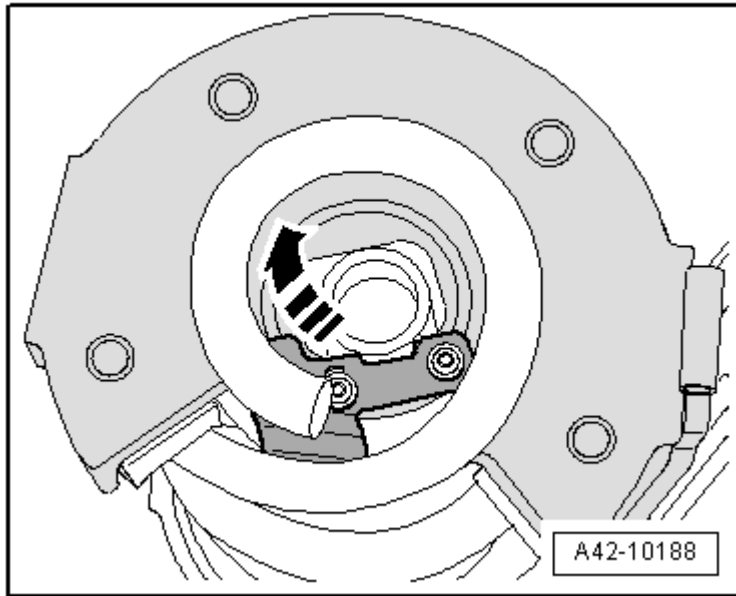


Fig. 56: Pressing Locking Lever In Direction Of To Secure Piston
Courtesy of AUDI OF AMERICA, LLC

-- Rotate the pressure plate with lock all the way up.

-- Insert the new VAS 6274/10-1 with the locking device bracket from the supplementary seat from the inside.

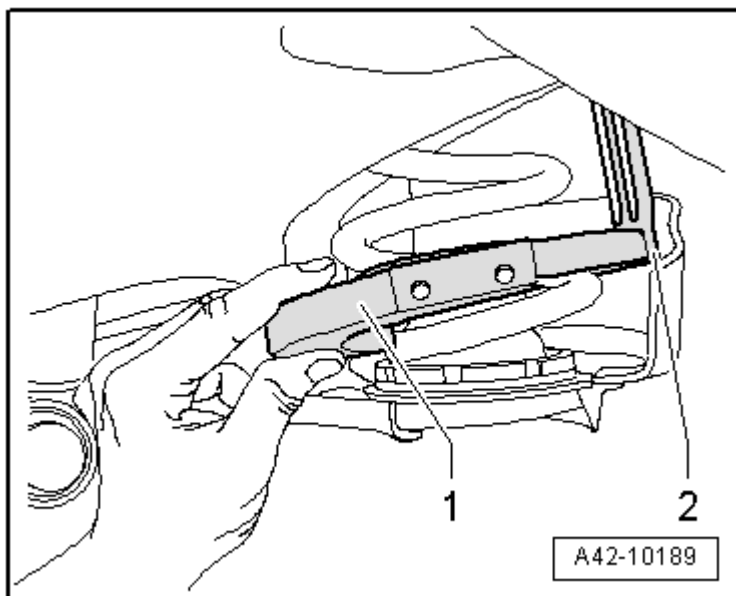


Fig. 57: Inserting New VAS 6274/10-1 With Locking Device Bracket From Supplementary Seat From

Inside**Courtesy of AUDI OF AMERICA, LLC**

1. Pressure plate with pivot bearing VAS 6274/10-1

The locking device bracket -2- must be installed in the front.

-- Rotate the VAS 6274/10-1 all the way down.

CAUTION:

- Coat the front area of the spindle lightly with the accompanying grease before removal and installation of each spring.
- Only grease the spindle with the accompanying grease. The spindle will be damaged if a different grease is used.

-- Coat the front area of the new spindle VAS 6274/10-4 lightly with the appropriate grease.

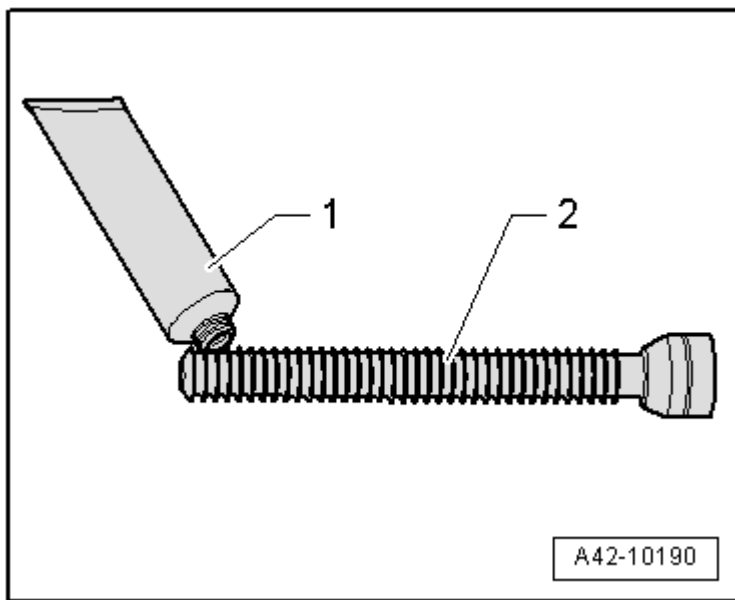


Fig. 58: Coating Front Area Of New Spindle VAS 6274/10-4 Lightly With Appropriate Grease
Courtesy of AUDI OF AMERICA, LLC

1. Tube of grease from the spring tensioning system VAS 6274 or supplementary set VAS 6274/10.
2. Spindle VAS 6274/10-4

-- Install the new spindle VAS 6274/10-4 with the socket VAS 6274/6 by hand.

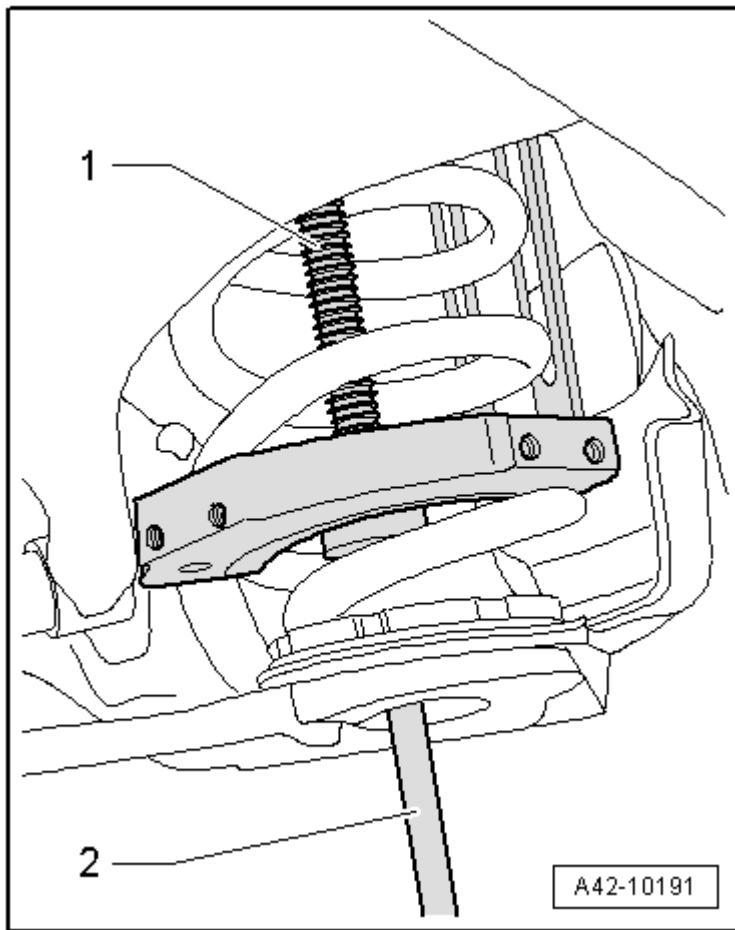


Fig. 59: Identifying New Spindle VAS 6274/10-4 Installed With Socket VAS 6274/6 By Hand
Courtesy of AUDI OF AMERICA, LLC

1. Spindle VAS 6274/10-4
2. Socket VAS 6274/6

-- Attach the locking devices -1 and 2- on both pressure plates to each other.

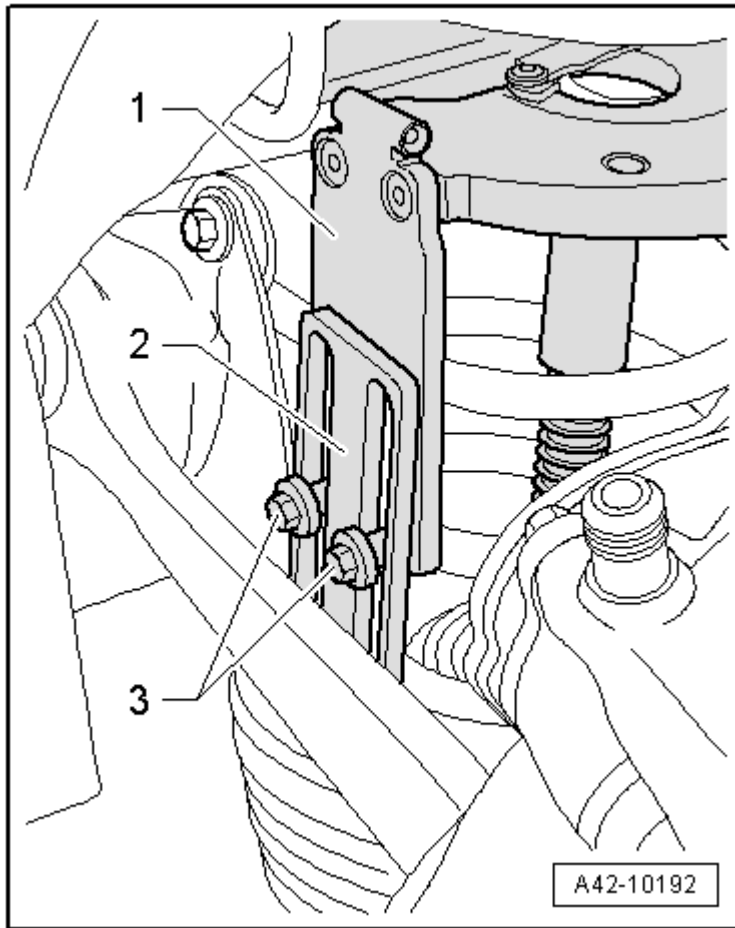


Fig. 60: Attaching Locking Devices On Both Pressure Plates To Each Other
Courtesy of AUDI OF AMERICA, LLC

-- Install the new bolts -3- by hand.

WARNING:

- The coil spring may only be tensioned or released if both locking device brackets -1 and 2- are connected to each other using both bolts -3-.

-- Lightly tension the pressure plates using the new VAS 6274/10-4.

-- Check to see if both coil springs are seated correctly in the pressure plates.

NOTE:

When tensioning the coil spring, the locking device bracket must face forward in the direction of travel.

-- Tension the coil spring using the VAS 6274/6. Counter hold using the counter hold tool VAS 6274/7.

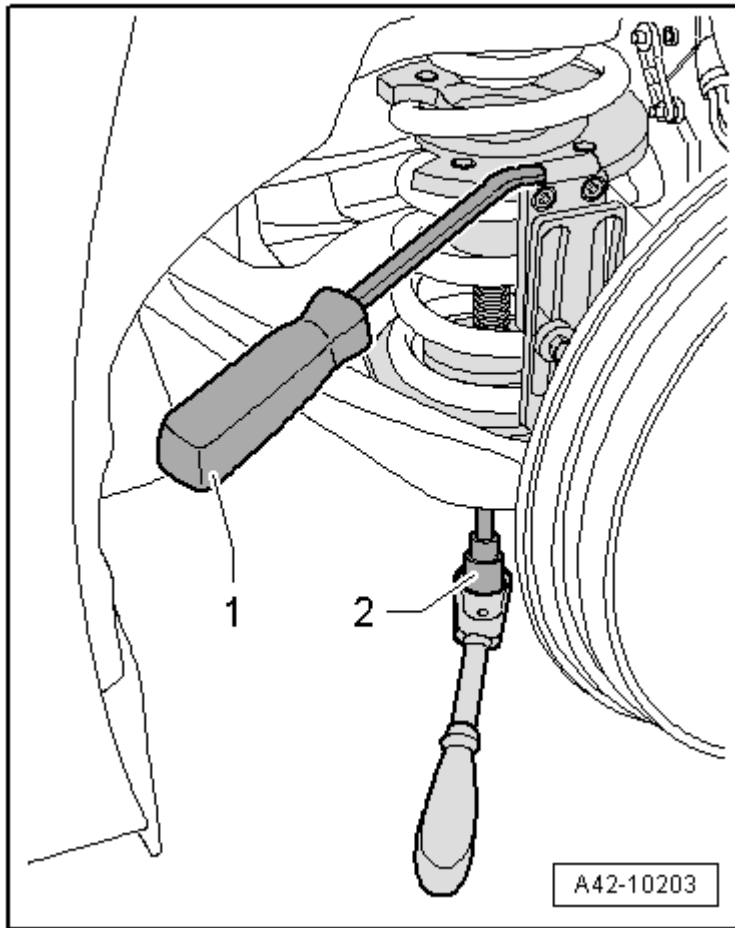


Fig. 61: Tensioning Coil Spring Using VAS 6274/6 Counter Hold Using Counter Hold Tool VAS 6274/7
Courtesy of AUDI OF AMERICA, LLC

1. Counter hold tool VAS 6274/7
2. Socket VAS 6274/6

CAUTION:

- Do not use an impact wrench to tighten the coil spring.
- Use a commercially available ratchet to tighten.

-- Tighten the coil spring -1- until the stone deflector -3- and the lower spring plate -2- can be removed. Tighten the coil spring -1- further if necessary.

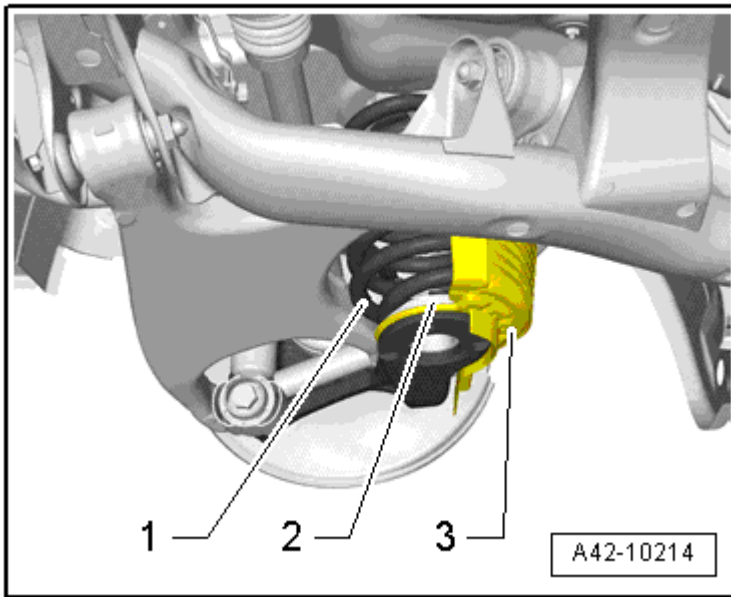


Fig. 62: Identifying Coil Spring And Lower Spring Plate
Courtesy of AUDI OF AMERICA, LLC

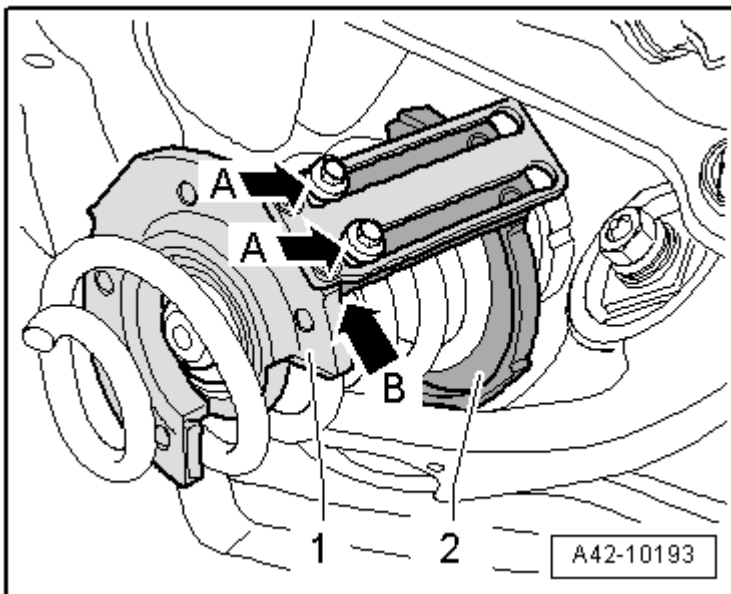


Fig. 63: Ensuring Bolts Do Not Lie On Pressure Plate Stop
Courtesy of AUDI OF AMERICA, LLC

CAUTION:

- When tightening, make sure the bolts -A arrows- do not lie on the pressure plate stop -1-.
- The pressure plate locking device -2- must not lie on the stop -arrow B- on the pressure plate -1-.

-- Remove the coil spring forward and down.

Release the Coil Spring in the VAS 6274.

-- Rotate the spindle -1- back slightly if necessary. The spindle -1- must not project over the end of the coil spring -2-.

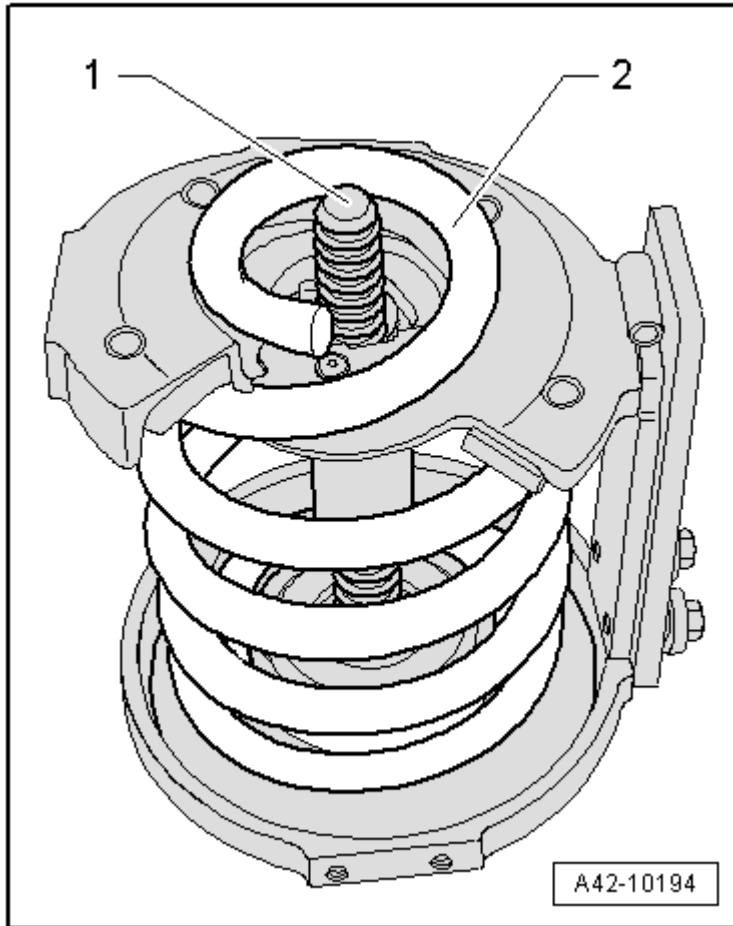


Fig. 64: Tensioning Coil Spring Slightly Using Spindle
Courtesy of AUDI OF AMERICA, LLC

-- Insert the left coil spring on the spring plate -1- so the stop -2- aligns with the marking "L". Only applies to the left coil spring.

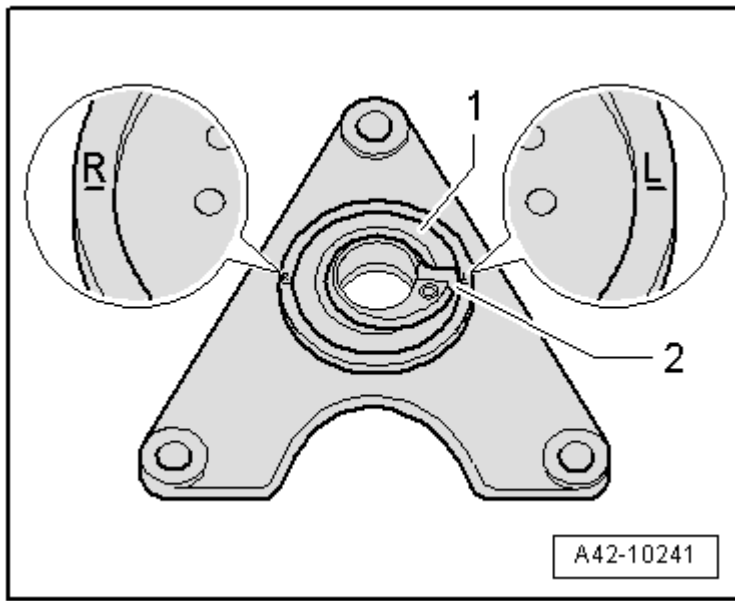


Fig. 65: Inserting Left Coil Spring On Spring Plate So Stop Aligns With Marking
 Courtesy of AUDI OF AMERICA, LLC

For the right coil spring, the stop -2- must align with the "R" marking.

-- Position the bottom side of the end of the left coil spring in the VAS 6274 at the "L" marking -arrow-.

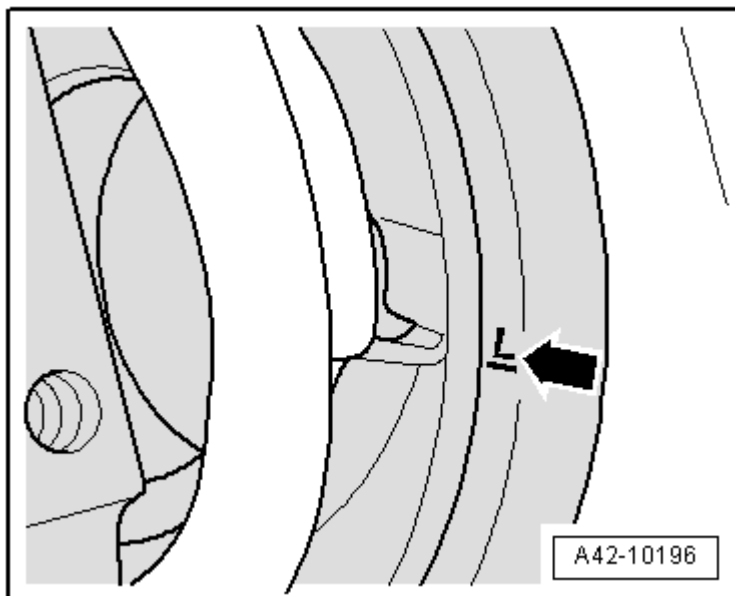


Fig. 66: Positioning End Of Left Coil Spring In VAS 6274 At "L" Marking
 Courtesy of AUDI OF AMERICA, LLC

Position the bottom side of the end of the right coil spring in the VAS 6274 at the "R" marking.

-- Make a marking -1- with a felt-tip marker.

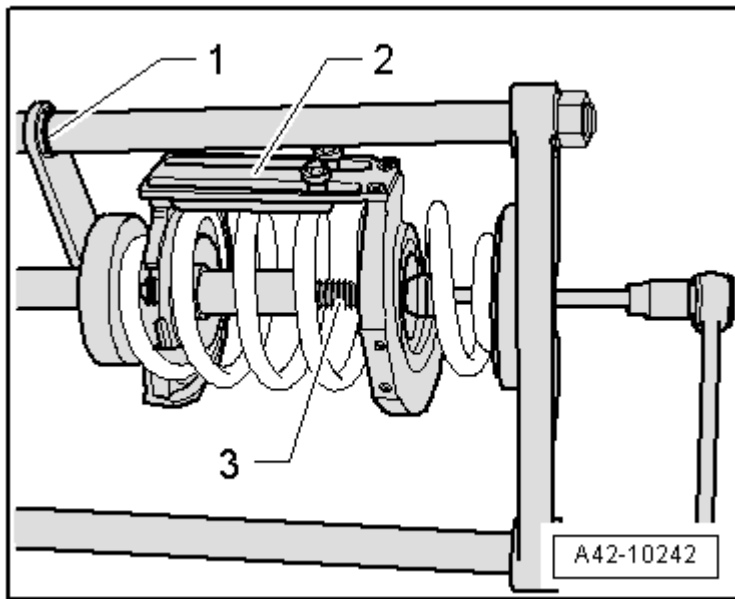


Fig. 67: Positioning Bottom Side Of End Of Right Coil Spring In VAS 6274 At "R" Marking
Courtesy of AUDI OF AMERICA, LLC

NOTE: The marking -1- is needed when tightening for installation.

The locking device -2- faces up.

-- Tighten the bolts -1- slightly by hand.

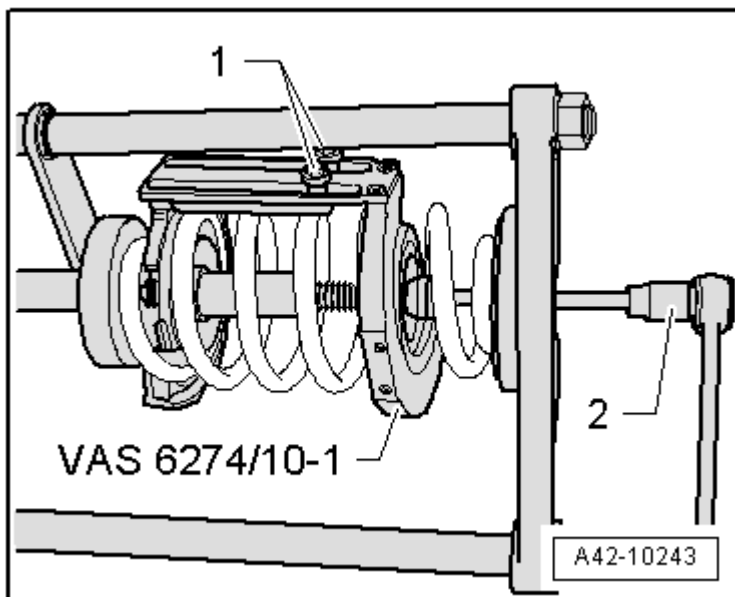


Fig. 68: Tightening Bolts Slightly By Hand
Courtesy of AUDI OF AMERICA, LLC

2 - Socket VAS 6274/6

-- Release the coil spring using the VAS 6274/6. Release the tension at the same time using the VAS 6274 and VAS 6179.

-- Remove the spindle -2- once the coil spring is released.

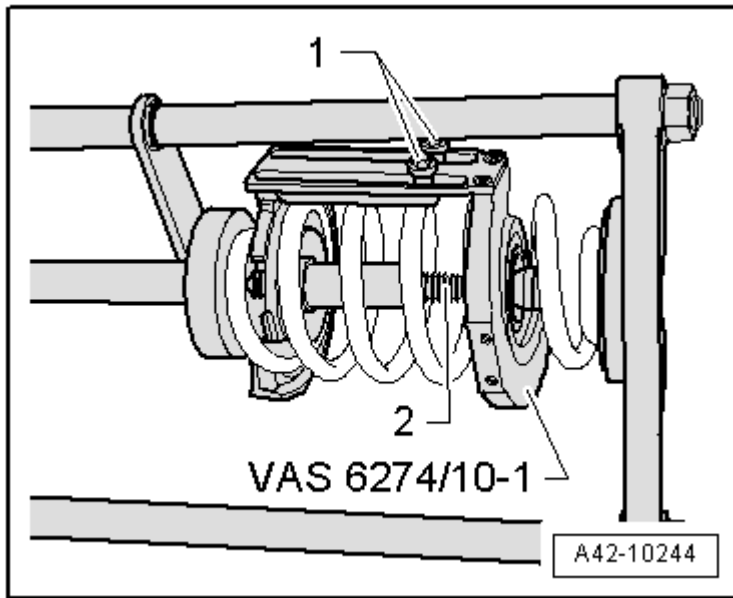


Fig. 69: Identifying Spindle Once Coil Spring Is Released
Courtesy of AUDI OF AMERICA, LLC

-- Remove the locking device bolts -1- and the VAS 6274/10-1.

-- Slide the locking lever -1- back.

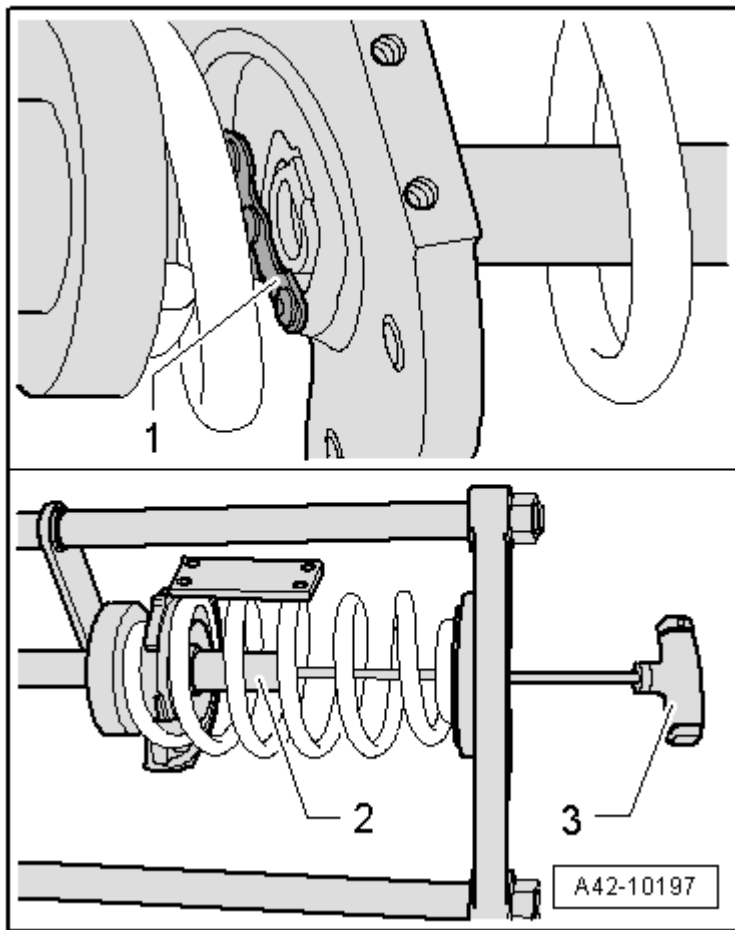


Fig. 70: Securing Piston With Securing Lever
Courtesy of AUDI OF AMERICA, LLC

- Remove the piston -2- with the T-handle -3-.
- Release the coil spring completely.

Installing

Install in reverse order of removal. Note the following:

- Insert the bottom side of the coil spring in the VAS 6274.
- Position the end of the left coil spring in the VAS 6274 at the "L" marking -arrow-.

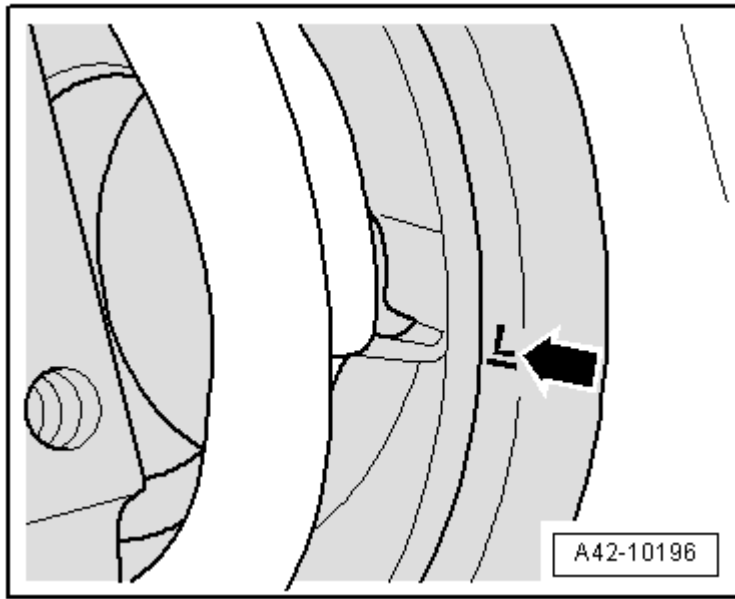


Fig. 71: Positioning End Of Left Coil Spring In VAS 6274 At "L" Marking
Courtesy of AUDI OF AMERICA, LLC

Position the end of the right coil spring in the VAS 6274 at the "R" marking.

-- Insert the VAS 6274/10-2 and install the piston -2- with the T-handle -3-.

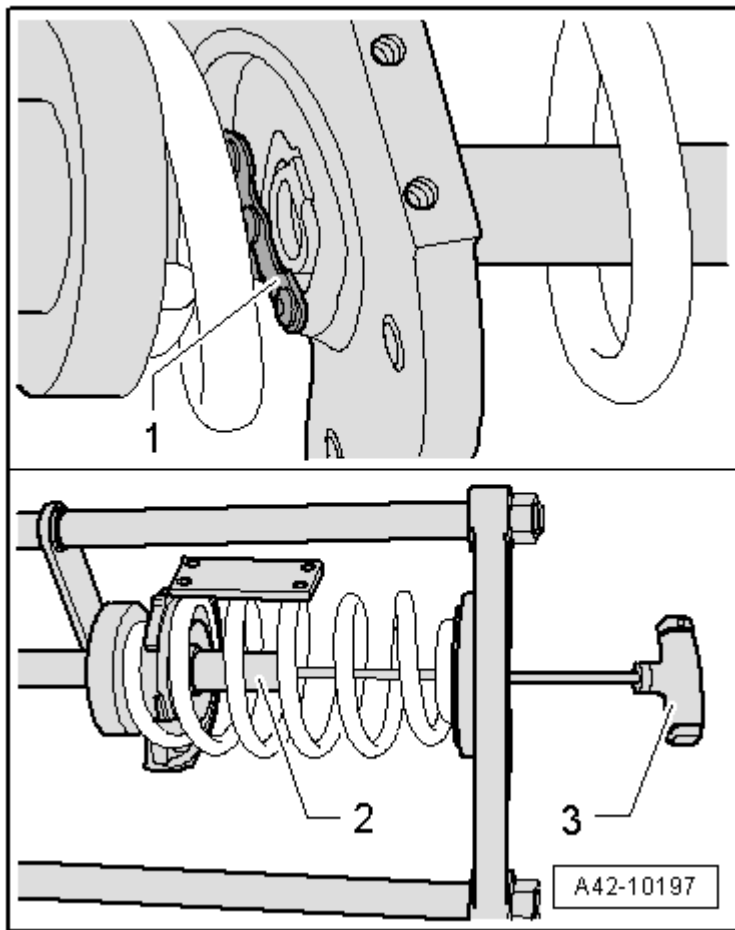


Fig. 72: Securing Piston With Securing Lever
Courtesy of AUDI OF AMERICA, LLC

- Secure the piston -2- with the securing lever -1-.
- Insert the VAS 6274/10-1.

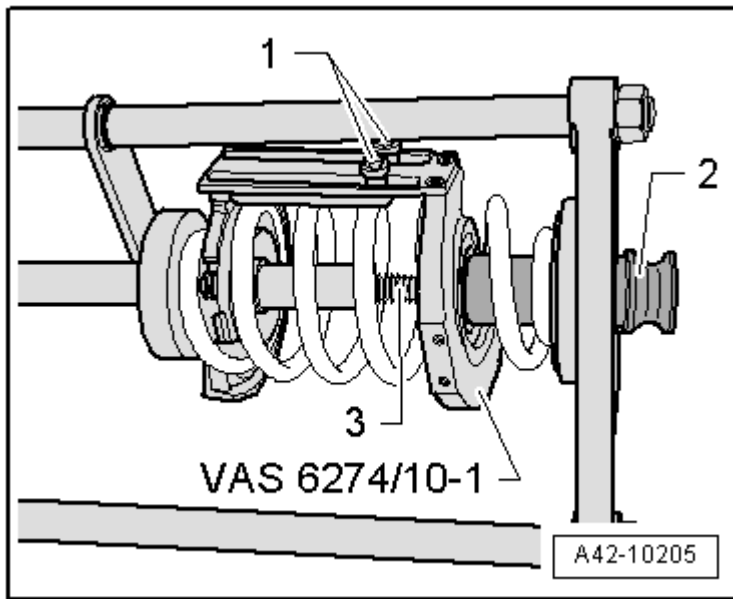


Fig. 73: Identifying Locking Device Bolts
Courtesy of AUDI OF AMERICA, LLC

- Install the locking device bolts -1- loosely.
- Insert the spindle -3-.
- Insert the sleeve -2- as far as the stop.
- Tighten the locking device bolts -1- lightly by hand. The locking device must face upward when tightening the coil spring.

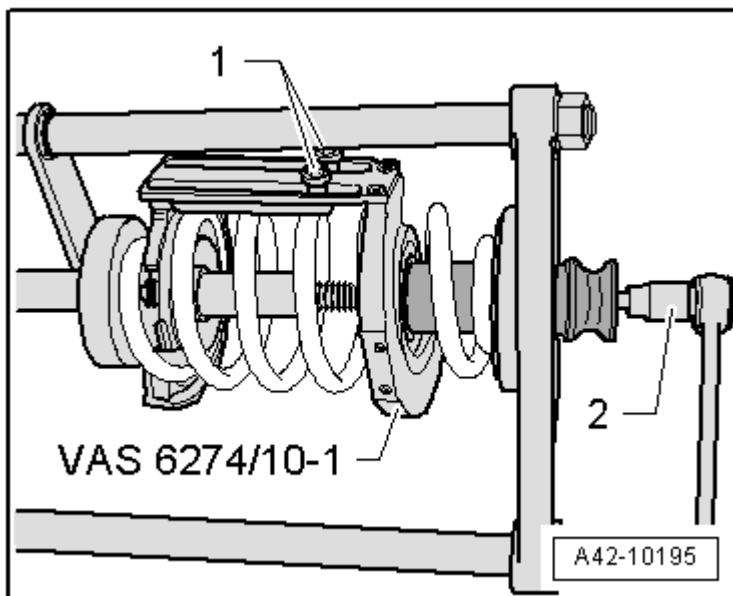


Fig. 74: Tightening Locking Device Bolts Lightly By Hand

Courtesy of AUDI OF AMERICA, LLC

-- Tighten the coil spring using the VAS 6274/6. Tighten at the same time using the VAS 6274 and VAS 6179.

2 - Socket VAS 6274/6

CAUTION:

- When tightening, make sure the locking mechanism bolts do not lie on the VAS 6274/10-1 stop.
- The VAS 6274/10-2 locking device must not lie on the VAS 6274/10-1 stop.

-- Only tighten the coil spring as far as the marking -1-. The locking device -2- must face up.

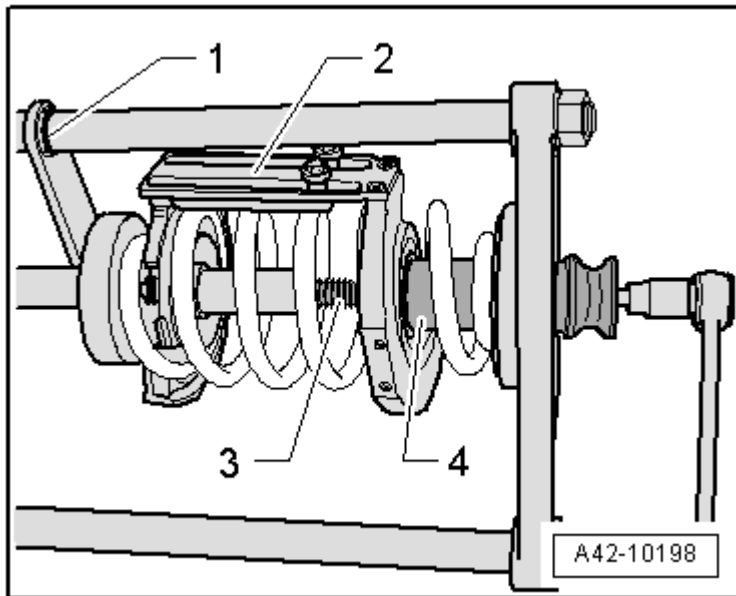


Fig. 75: Tightening Coil Spring As Far As Marking
Courtesy of AUDI OF AMERICA, LLC

-- When tightening using the spindle -3-, make sure the sleeve -4- does not slip out of the VAS 6274/10-1.

-- Release the VAS 6274 and remove the coil spring with the tensioner.

-- Tension the coil spring -2- slightly using spindle -1-.

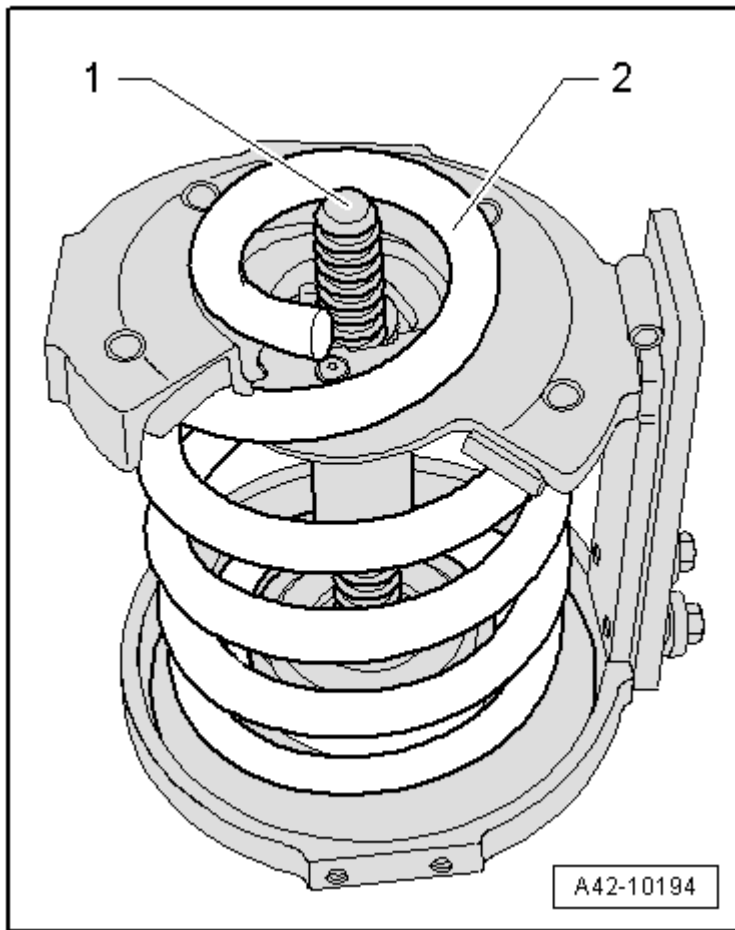


Fig. 76: Tensioning Coil Spring Slightly Using Spindle
Courtesy of AUDI OF AMERICA, LLC

The spindle -1- must only project far enough over the coil spring -2- that the upper spring plate can still rest completely on the coil spring.

-- Position the coil spring with the lower spring plate -3- and stone deflector -1- on the wheel bearing housing -2-.

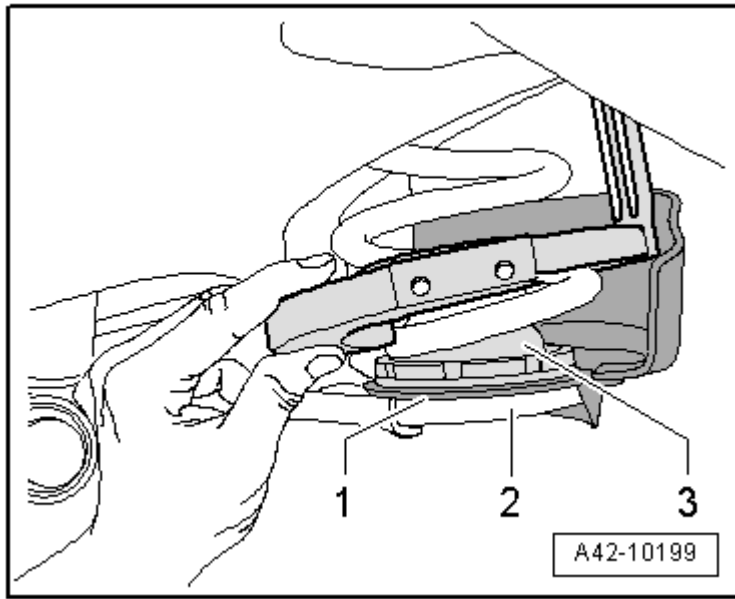


Fig. 77: Positioning Coil Spring With Lower Spring Plate And Stone Deflector
Courtesy of AUDI OF AMERICA, LLC

- Make sure the upper spring plate is installed. Install if necessary.
- Insert the lower spring plate with the pins -arrow A- in the wheel bearing housing hole -arrow B-.

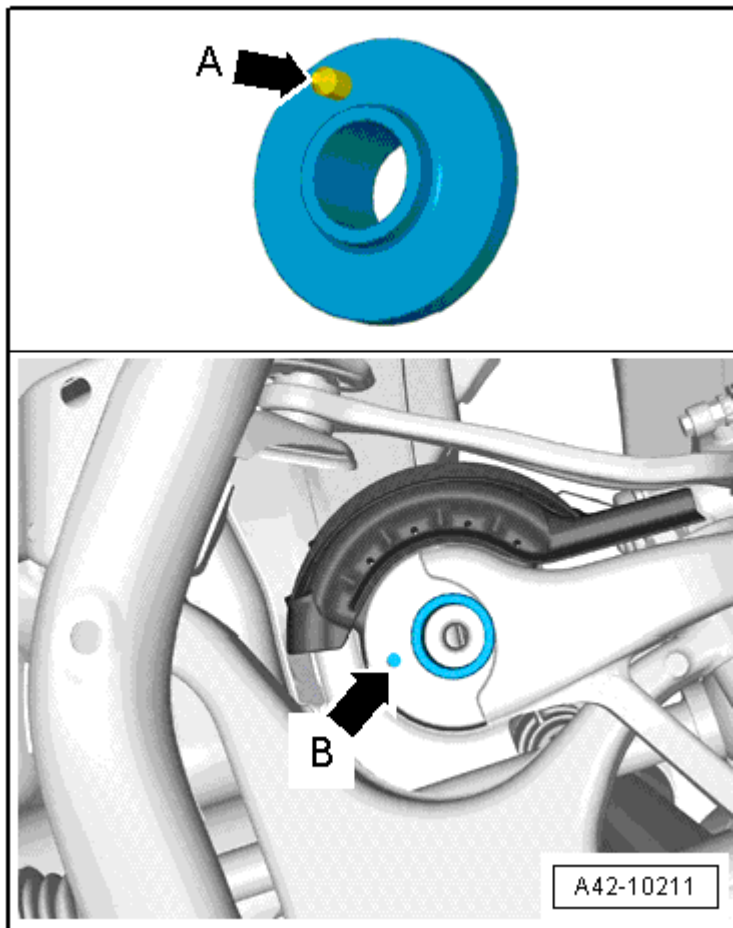


Fig. 78: Inserting Lower Spring Plate With Pins In Wheel Bearing Housing Hole
Courtesy of AUDI OF AMERICA, LLC

-- Install the coil spring -1- in the lower spring plate -2- as far as the stop.

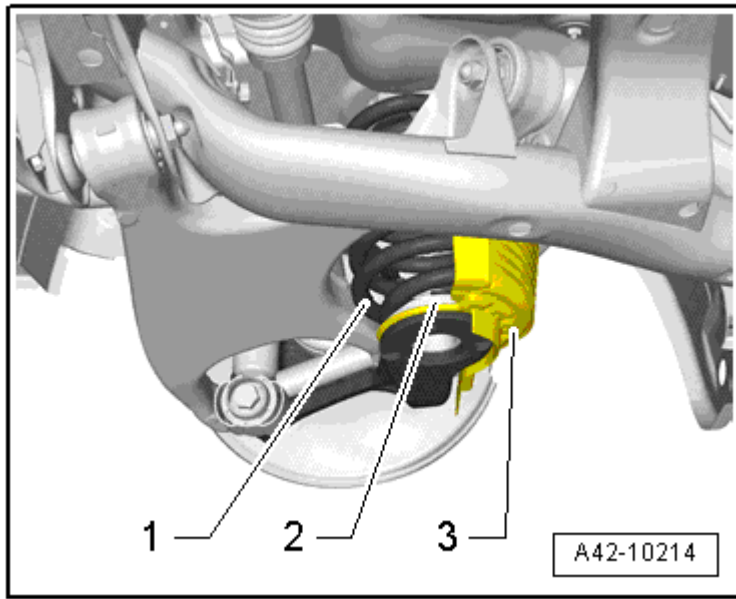


Fig. 79: Identifying Coil Spring And Lower Spring Plate
Courtesy of AUDI OF AMERICA, LLC

- Then release the coil spring.
- Tighten the wheel. Refer to Specifications .
- Axle alignment is required, see table, refer to WHEN VEHICLE ALIGNMENT IS NECESSARY .

NOTE: If the coil springs have been replaced, then it is necessary to adapt the control position. Refer to PROGRAMMING CONTROL POSITION USING Vehicle Diagnosis, Testing and Information System VAS 5051B on vehicles equipped with electronically controlled damping and to check the basic setting of the headlamp. Refer to Description and Operation .

-- If the vehicle level sensor -- was removed and installed on a vehicle with electronically controlled damping or if the linkage was loosened, the control position must be reprogrammed. Refer to PROGRAMMING CONTROL POSITION USING Vehicle Diagnosis, Testing and Information System VAS 5051B . Vehicle diagnostic tester.

-- If the level control system sensor -- was replaced or removed on vehicles with lane assist, the directional stabilization assistance control module -J759- must be calibrated. Refer to CALIBRATION PROCEDURE .

LEVEL CONTROL SYSTEM SENSOR

General Information

Vehicles with electronically controlled damping and/or HID headlamps have standard automatic headlamp range control. Refer to Description and Operation .

To function properly, the electronically controlled damping and automatic headlamp range control system need information about compression travel or rebound travel at the front and rear axles.

For this, the position of the left/right trapezoidal arm in relation to the body is transferred via a coupling rod to left rear level control system sensor -G76- and right rear level control system sensor -G77-. These transmit electrical signals to the electronic damping control module -J250- and/or left/right HID gas discharge lamp control module -J343/344-.

Left/right HID gas discharge lamp control module --, servicing **Description and Operation** .

At the front axle, these signals are transmitted from the left front level control system sensor -G78- and right front level control sensor -G289- to the and/or the left/right HID gas discharge lamp control module --.

These signals are required for determining vehicle level.

The headlamp range control responds automatically to changes in the vehicle level.

The vehicle level can change in the following situations:

- Trailer Mode
- Different load conditions; vehicle empty, vehicle partially or fully loaded

NOTE: **Programming the control position and checking the headlamp basic setting is necessary on vehicles with electronically controlled damping if:**

- the lower transverse link has been removed and reinstalled or replaced
- the upper transverse link was removed and installed or replaced,
- the subframe was replaced,
- installation work has been performed on the level control system sensor,
- the level control system sensor has been replaced,
- the coil springs were replaced,
- The level control system sensor coupling rod threaded connection was loosened at the lower transverse link.

Headlamp basic setting, refer to **Description and Operation** .

If the vehicle has electronically controlled damping, then the control position must be programmed. Refer to **PROGRAMMING CONTROL POSITION USING Vehicle Diagnosis, Testing and Information System VAS 5051B** .

If the control position was reprogrammed on vehicles with lane assist, the directional stabilization assistance control module -J759- must be recalibrated. Refer to **CALIBRATION PROCEDURE** .

Replacing Level Control System Sensor with Subframe Installed.

- Remove the wheel.
- Disconnect the harness connector -3-.

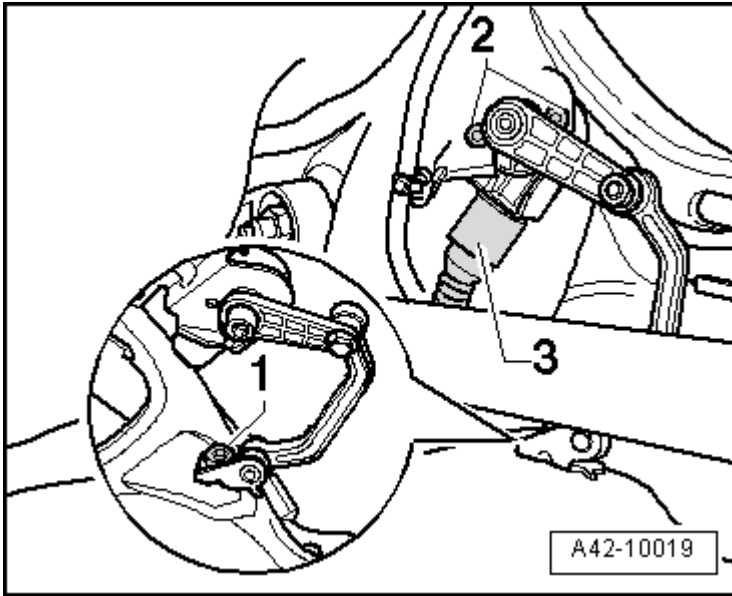


Fig. 80: Identifying Harness Connector And Bolts
Courtesy of AUDI OF AMERICA, LLC

- Remove bolt -1-.
- Remove bolts -2- with offset wrench. Do not bend upper retaining plate when doing so.
- Remove level control system sensor.

NOTE: Only sensors of the same version may be installed.

- Adapt replacement part accordingly and install.
- Install the bolts -2- using an offset wrench. Do not bend upper retaining plate when doing so.

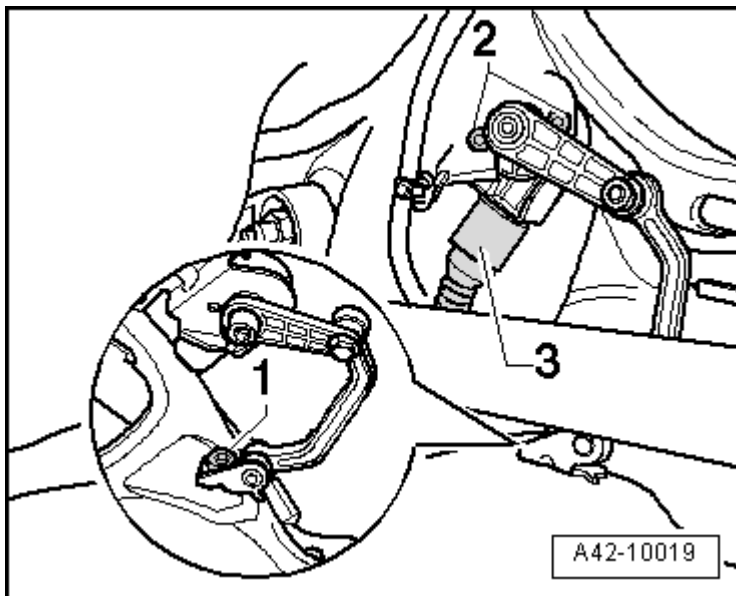


Fig. 81: Identifying Harness Connector And Bolts
Courtesy of AUDI OF AMERICA, LLC

NOTE: Hold level control system sensor securely when tightening bolts -2-.

Sensor lever must point outward.

-- Install the bolt -1-.

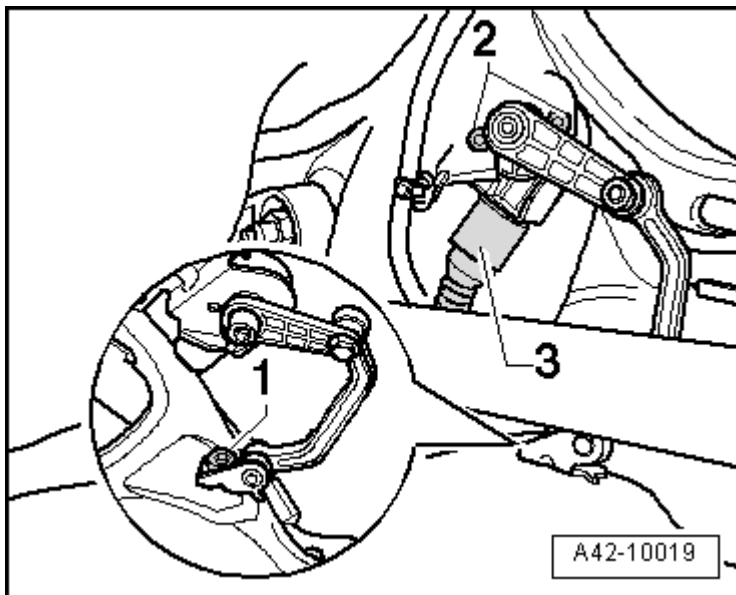


Fig. 82: Identifying Harness Connector And Bolts
Courtesy of AUDI OF AMERICA, LLC

-- Connect the connector -3-.

Tightening specifications, refer to **UPPER TRANSVERSE LINK, TIE ROD, COIL SPRING, LOWER CONTROL ARM AND LEVEL CONTROL SYSTEM SENSOR OVERVIEW**

-- Perform headlamp basic setting. Refer to **Description and Operation** .

-- If the vehicle level sensor -- was removed and installed on a vehicle with electronically controlled damping or if the linkage was loosened, the control position must be reprogrammed. Refer to **PROGRAMMING CONTROL POSITION USING Vehicle Diagnosis, Testing and Information System VAS 5051B** . Vehicle diagnostic tester.

-- If the control position was reprogrammed on vehicles with lane assist, the directional stabilization assistance control module -J759- must be recalibrated. Refer to **CALIBRATION PROCEDURE** .

DRIVE AXLE

Removing

-- Loosen the connection between the drive axle and wheel hub. Refer to **THREADED CONNECTION BETWEEN DRIVE AXLE AND WHEEL HUB, LOOSENING AND TIGHTENING**.

-- Remove the wheel.

-- Remove coil spring. Refer to **COIL SPRING**.

-- Remove the rear mufflers and brackets. Refer to **[For transmission(s) 0AW] [For engine(s) CALA] Description and Operation** or refer to **[For engine(s) CAEB] Description and Operation** or refer to **[For engine(s) CCBA] Description and Operation** .

-- Remove the rear final drive. Refer to **Removal and Installation** , **Removal and Installation** or **Removal and Installation** .

Only Applies to the Left Drive Axle

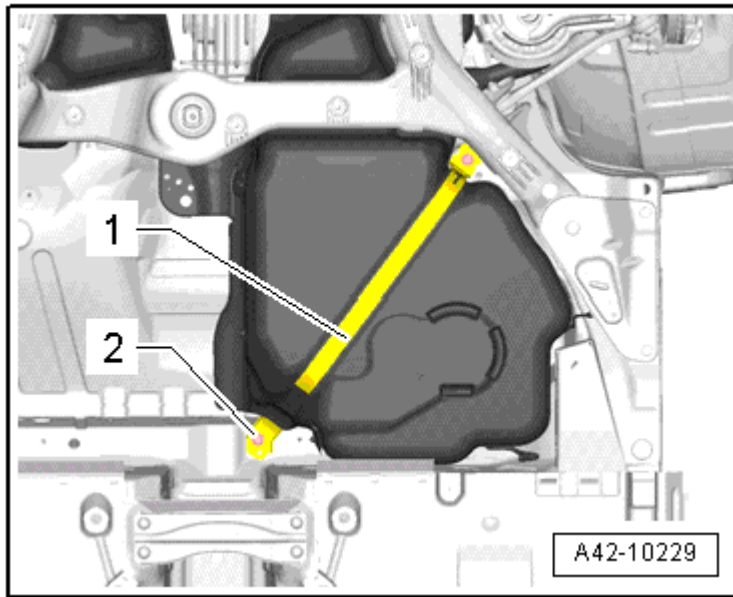


Fig. 83: Identifying Tensioning Strap
Courtesy of AUDI OF AMERICA, LLC

- Install the tensioning strap -1-. Install the bolt -2- and tighten by hand.
- Release the connector -5- from the left rear level control system sensor -G76- and remove it.

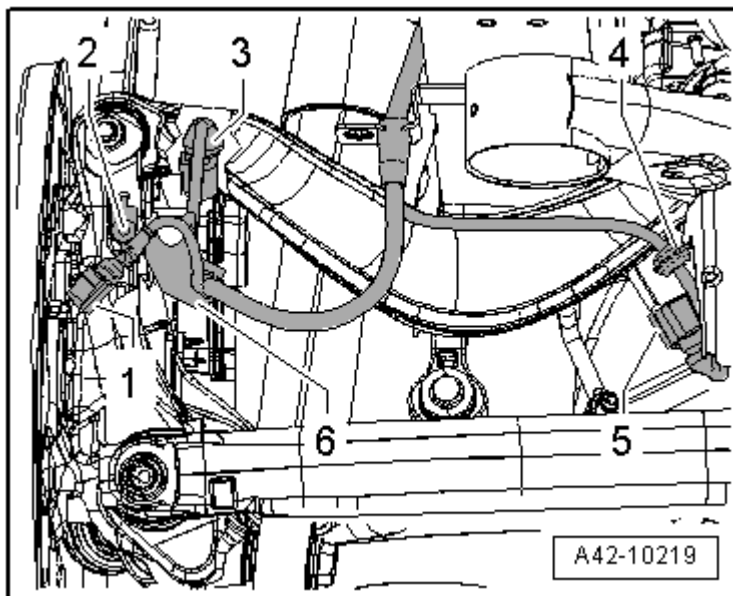


Fig. 84: Releasing Connector From Left Rear Level Control System Sensor
Courtesy of AUDI OF AMERICA, LLC

- Unclip the wiring harness -4-, if applicable.

Continuation for Both Drive Axles

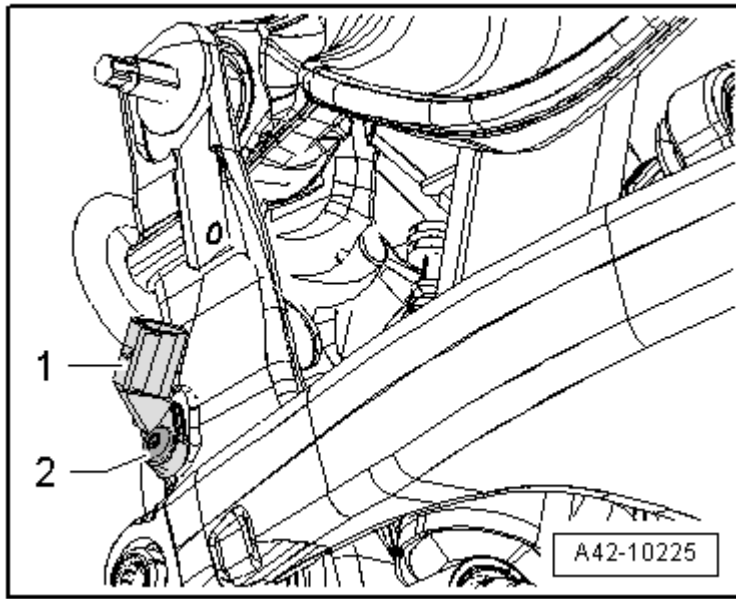


Fig. 85: Identifying Rear Speed Sensor & Bolt
Courtesy of AUDI OF AMERICA, LLC

-- Remove the rear speed sensor -- 1-. Remove bolt 2- to do so.

-- Remove the drive axle toward the inside.

Installing

Install in reverse order of removal. Note the following:

Drive axle tightening specifications, refer to **DRIVE AXLE WITH 88 MM DIAMETER OUTER CV JOINT AND 100 MM DIAMETER INNER CV JOINT OVERVIEW.**

Drive axle tightening specifications, refer to **DRIVE AXLE WITH 100 MM DIAMETER OUTER CV JOINT AND 108 MM DIAMETER INNER CV JOINT OVERVIEW.**

-- Install rear final drive. Refer to **Removal and Installation** , **Removal and Installation** or **Removal and Installation** .

-- Install the rear muffler and brackets. Refer to **[For transmission(s) 0AW] [For engine(s) CALA] Description and Operation** or refer to **[For engine(s) CAEB] Description and Operation** or refer to **[For engine(s) CCBA] Description and Operation** .

-- Install the fuel tank tensioning strap. Refer to **Removal and Installation** .

-- Install coil spring. Refer to **COIL SPRING.**

-- Install the rear speed sensor --. Refer to **Removal and Installation** .

-- Tighten the wheel. Refer to **Specifications** .

-- Tighten the drive axle to the wheel hub threaded connection. Refer to **THREADED CONNECTION BETWEEN DRIVE AXLE AND WHEEL HUB, LOOSENING AND TIGHTENING.**

88 MM DIAMETER OR 100 MM DIAMETER OUTER CV JOINT, REPLACING

Special tools and workshop equipment required

- Pliers 3340
- Circlip pliers (commercially-available)
- Sealant.

Removing an 88 mm Diameter or 100 mm Diameter Outer CV Joint

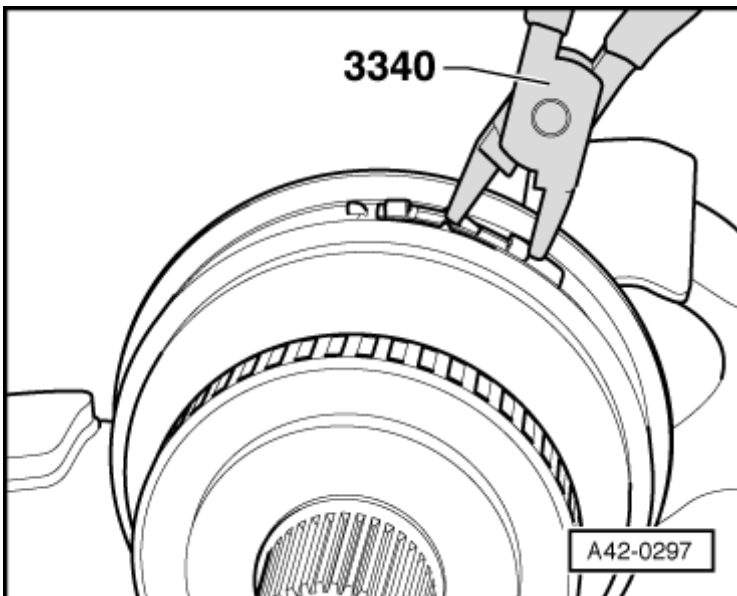


Fig. 86: Inserting Pliers 3340 At Back Of Hose Clamp
Courtesy of AUDI OF AMERICA, LLC

-- Secure the drive axle with protective covers in a vise clamp.

-- Open the clamp using 3340.

Insert the 3340 at the front of the clamp, as shown in the illustration.

-- Slide back protective boot.

-- Strike a copper or brass drift -A- on CV joint inner race with a hammer.

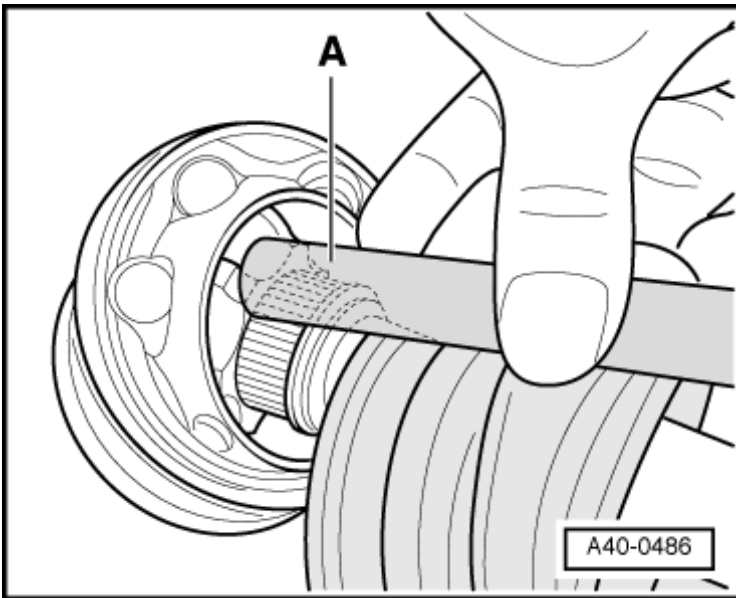


Fig. 87: Hitting Copper Or Brass Mandrel Onto Inner Ring Of Constant Velocity Joint
 Courtesy of AUDI OF AMERICA, LLC

- Remove joint and protective joint boot.
- Remove the circlip.

Installing an 88 mm Diameter or 100 mm Diameter Outer CV Joint

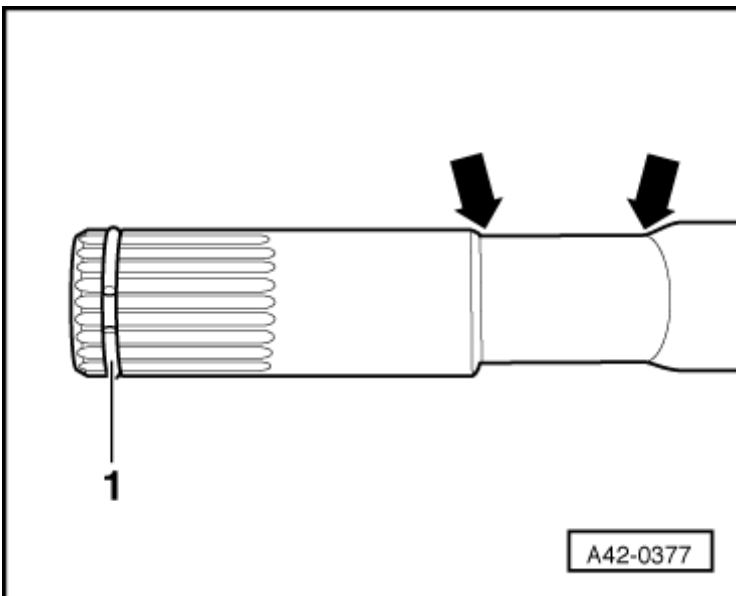


Fig. 88: Identifying Circlip (Snap Ring) & Positioning Protective Joint Boot
 Courtesy of AUDI OF AMERICA, LLC

- Slide joint protective boot onto drive axle.

Joints and protective joint boots must be free of grease.

-- Position protective joint boot between -arrows-.

1 - Circlip (snap ring), must be replaced.

88 mm Diameter Outer CV Joint

-- Apply 40 grams of joint grease to inside of joint.

100 mm Diameter Outer CV Joint

-- Apply 70 grams of joint grease to inside of joint.

Continuation for Both Constant Velocity Joints

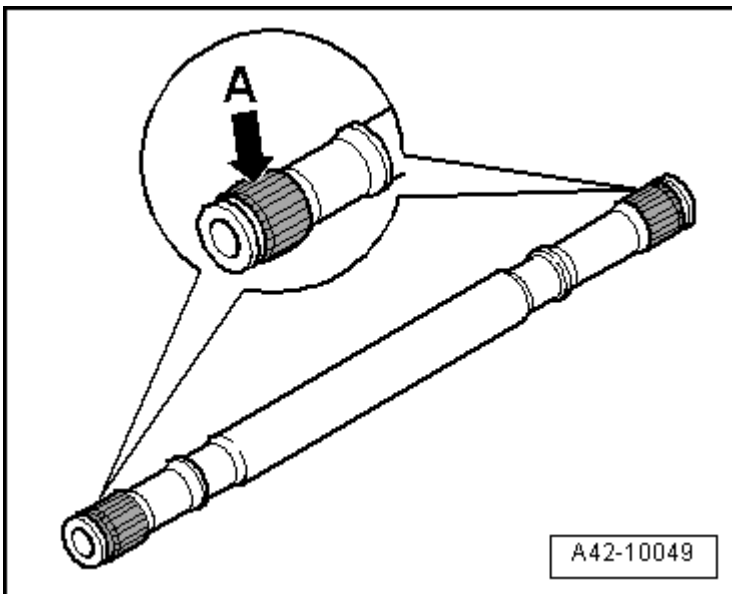


Fig. 89: Identifying Joint/Triple Roller Star Splines

Courtesy of AUDI OF AMERICA, LLC

-- Before installing joint piece, splines -A- must be lightly coated with grease used in joint.

-- Insert sealing ring in groove on shaft.

-- Slide on CV joint up to sealing ring.

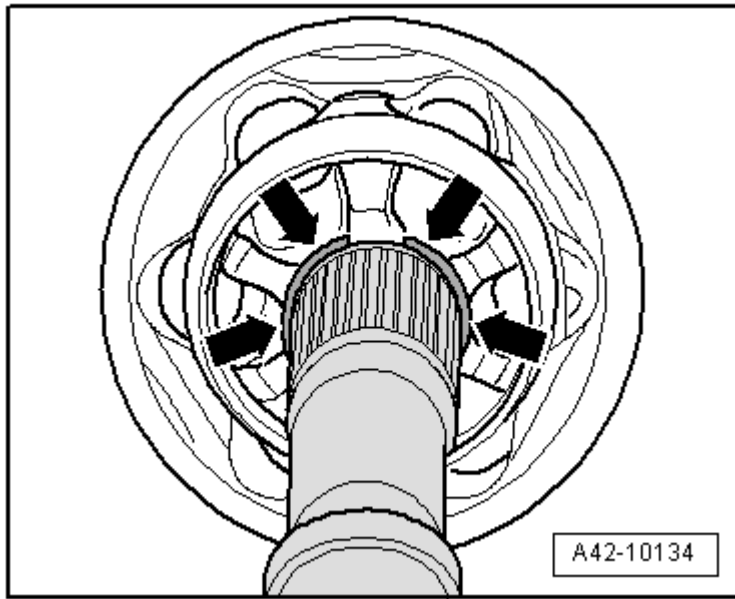


Fig. 90: Aligning Sealing Ring At Center With Opening Upward
Courtesy of AUDI OF AMERICA, LLC

- Align sealing ring at center with opening upward -see arrows-.
- Install the old drive axle bolt in the joint as shown in the illustration.

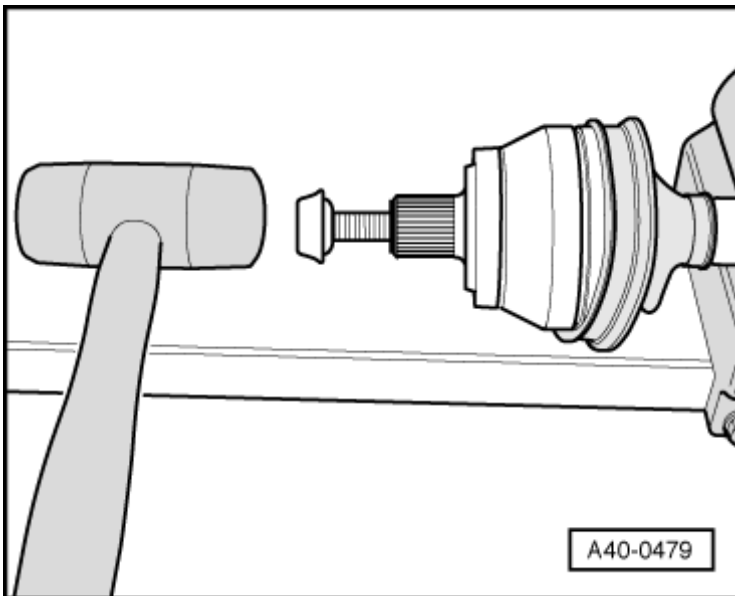


Fig. 91: Identifying Old Driveshaft Bolt Installed Into Joint
Courtesy of AUDI OF AMERICA, LLC

- Drive joint onto drive axle with plastic hammer until circlip engages.
- Insert 50 grams of drive axle grease into joint on boot side.

- Install the protective boot on the outer joint.
- Bleed protective joint boot.
- Make sure the protective boot is seated on the joint correctly.
- Protective joint boot must fit in the groove and on joint contour.

INSTALL THE CLAMP ON THE 88 MM OR 100 MM OUTER JOINT

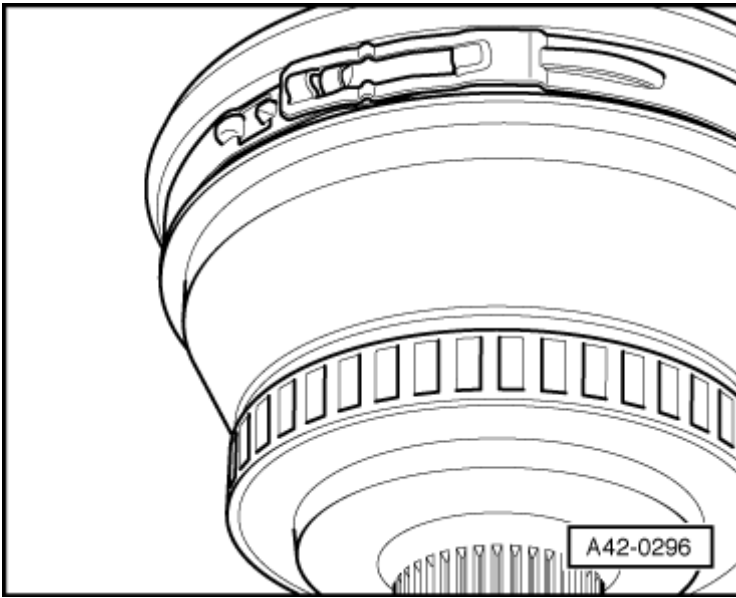


Fig. 92: Identifying Clamping Sleeve On Outer Joint
Courtesy of AUDI OF AMERICA, LLC

- Engage the clamp at the first catch by hand.
- Close the clamp using 3340.

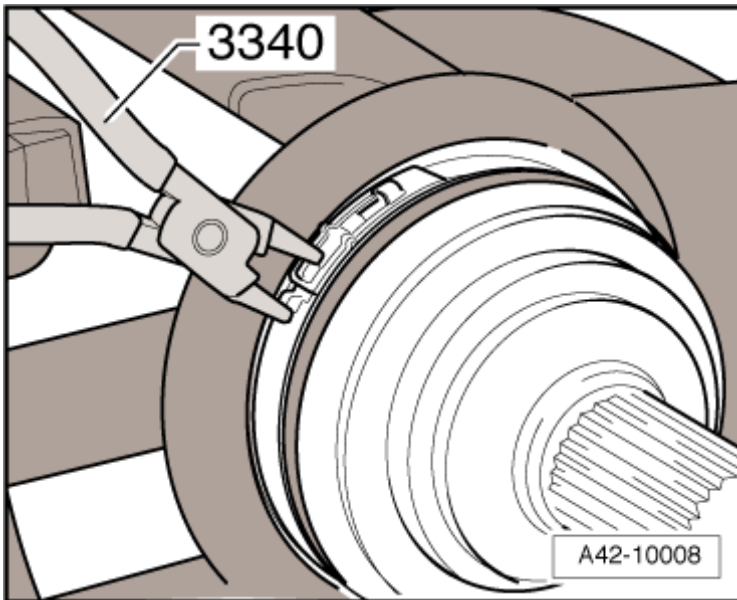


Fig. 93: Closing Clamp Using Pliers 3340
Courtesy of AUDI OF AMERICA, LLC

3340 must be inserted at front of clamp, as depicted in illustration.

INNER CONSTANT VELOCITY JOINT, 100 MM OR 108 MM, INSTALLING

Special tools and workshop equipment required

- Thrust Plate VW 401
- Thrust Plate VW 402
- Punch VW 409
- Thrust Disc VW 412
- Sleeve-Press Tool VW 522
- Press Block 40 - 204 A
- Assembly Tool T10065 can also be used instead of Press Block 40-204 A.
- Torque Wrench 5-50 Nm V.A.G 1331
- CV Joint Boot Clamp Tool V.A.G 1682
- Circlip Pliers (commercially-available)

Removing a 100 mm Diameter or 108 mm Diameter Inner CV Joint

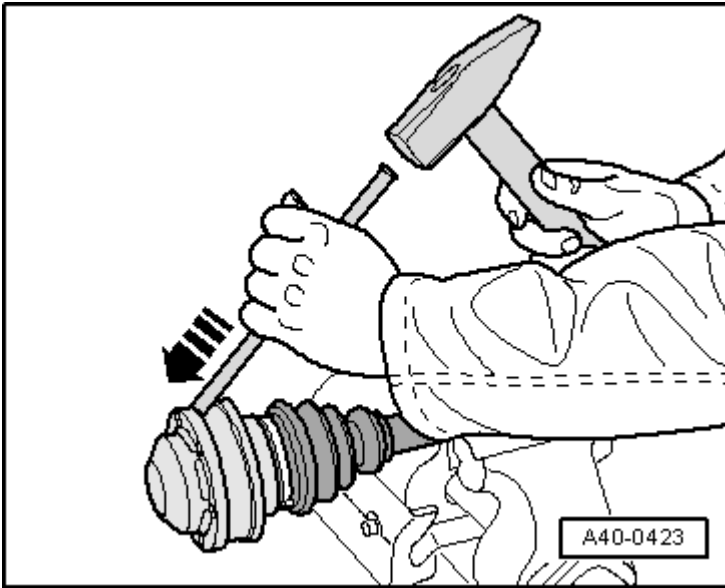


Fig. 94: Driving Cover Down With Copper Or Brass Drift
Courtesy of AUDI OF AMERICA, LLC

- Secure the drive axle with protective covers in a vise clamp.
- Drive cover down with copper or brass drift.
- Drive cover down with copper or brass drift.

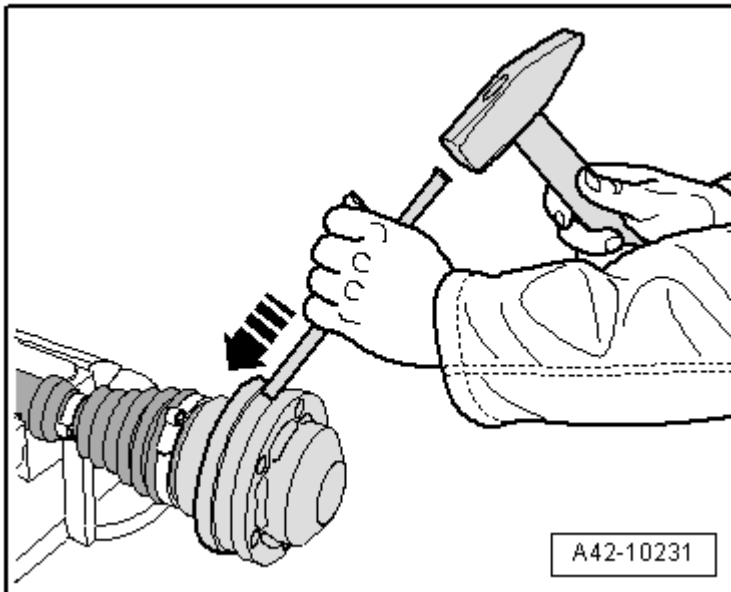


Fig. 95: Securing Drive Axle With Protective Covers In Vise Clamp
Courtesy of AUDI OF AMERICA, LLC

- Only open and remove the "small" protective boot clamp.

-- Remove circlip.

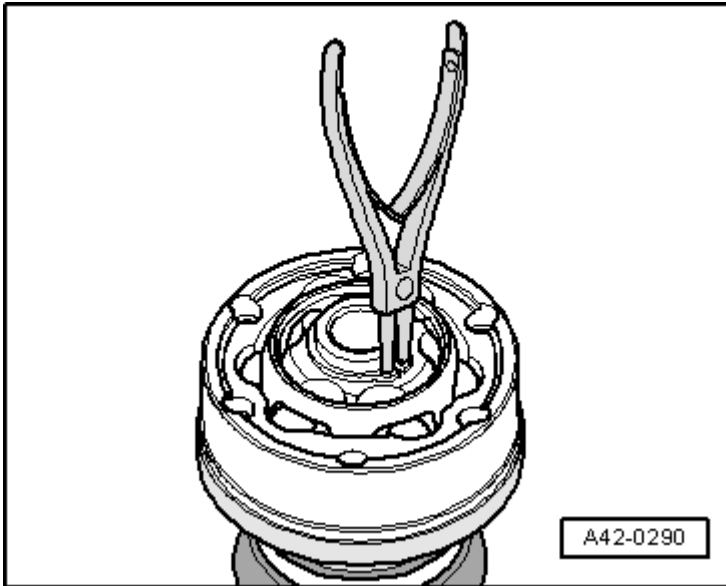


Fig. 96: Opening Clamps And Pulling Off CV Joint Boot From Inner Joint
Courtesy of AUDI OF AMERICA, LLC

-- Remove the inner CV joint from the drive axle using the special tools illustrated.

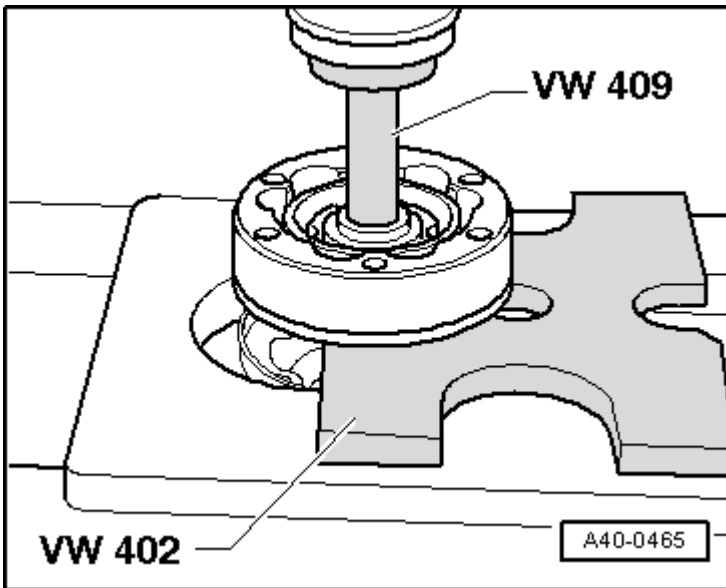


Fig. 97: Pressing CV Joint Off Of Drive Axle
Courtesy of AUDI OF AMERICA, LLC

-- Remove the CV joint boot from the drive axle.

INNER CONSTANT VELOCITY JOINT, 100 MM OR 108 MM, INSTALLING

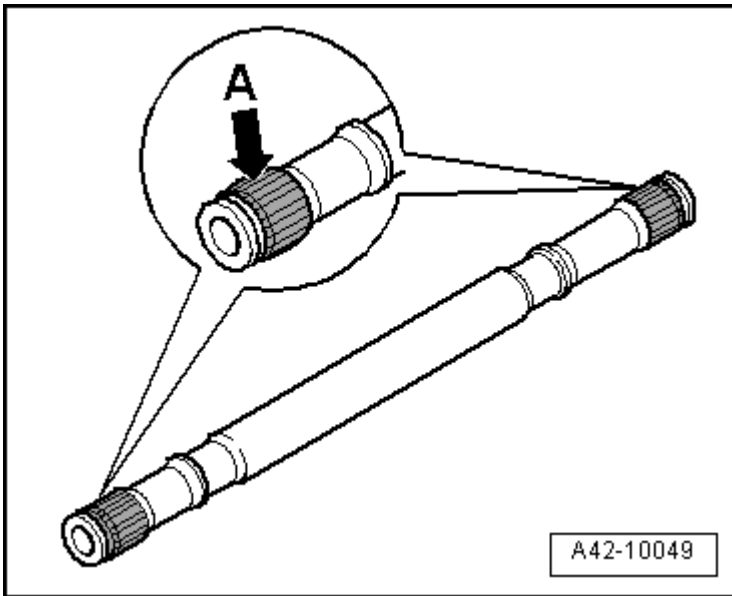


Fig. 98: Identifying Joint/Triple Roller Star Splines
Courtesy of AUDI OF AMERICA, LLC

- Slide the protective joint boot with the "small" clamp onto the drive axle.
- Before installing joint piece, splines -A- must be lightly coated with grease used in joint.
- Press on joint until stop.

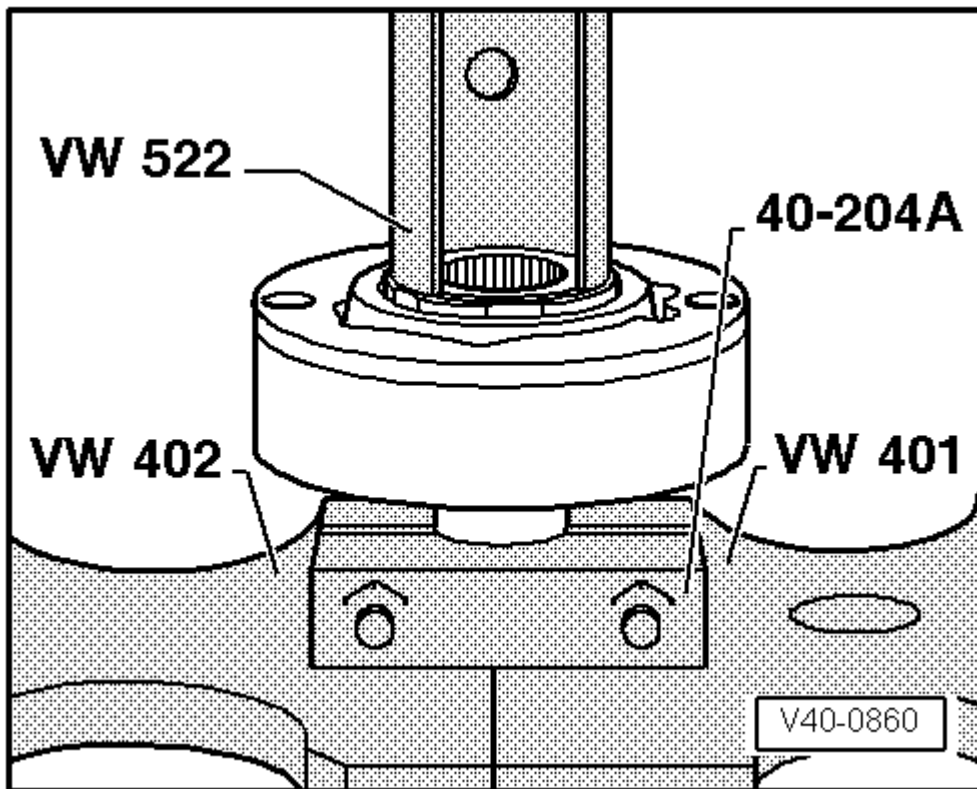


Fig. 99: Identifying Tools To Press On Inner Constant Velocity Joint
Courtesy of AUDI OF AMERICA, LLC

Chamfer on the inner diameter of ball hub (splines) must face the contact shoulder on the drive axle.

Use special tool shown in illustration.

You can also use the T10065 instead of the 40-204 A.

40-204 A or T10065 and clamping surfaces on drive axle must be free of grease.

Circlip must be replaced.

-- Install circlip.

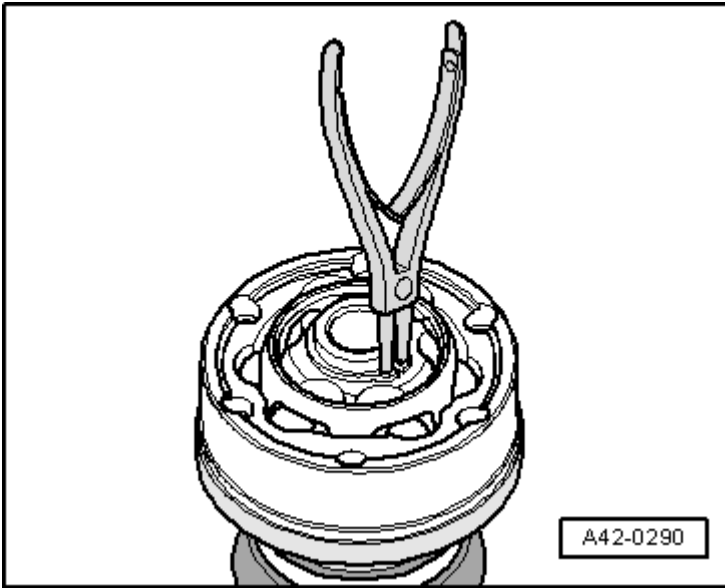


Fig. 100: Opening Clamps And Pulling Off CV Joint Boot From Inner Joint
Courtesy of AUDI OF AMERICA, LLC

- Check circlip for correct seating.
- Insert 50 grams of joint grease in the boot side of the joint before installing the protective boot.
- Lubricate the contact surface on the cover.
- Apply sealant -hatched surface- to clean surface on inner side of protective joint boot cover. Apply a 2 to 3 mm diameter uninterrupted sealant bead in the area of inner holes -arrow-.

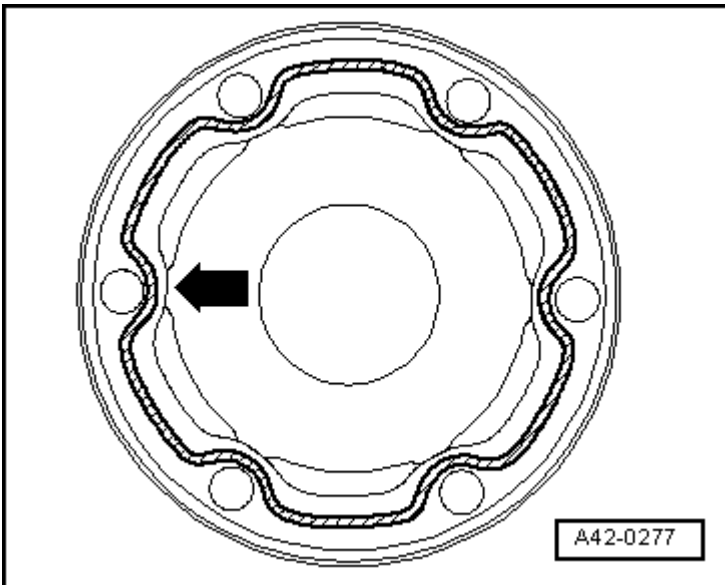


Fig. 101: Coating Sealing Surface Of Cover And Cap With D454300A2
Courtesy of AUDI OF AMERICA, LLC

-- Use sealant.

Protective boot and cap contact surfaces must be free of grease!

-- Align new cover with bolts -arrows- to bolt holes.

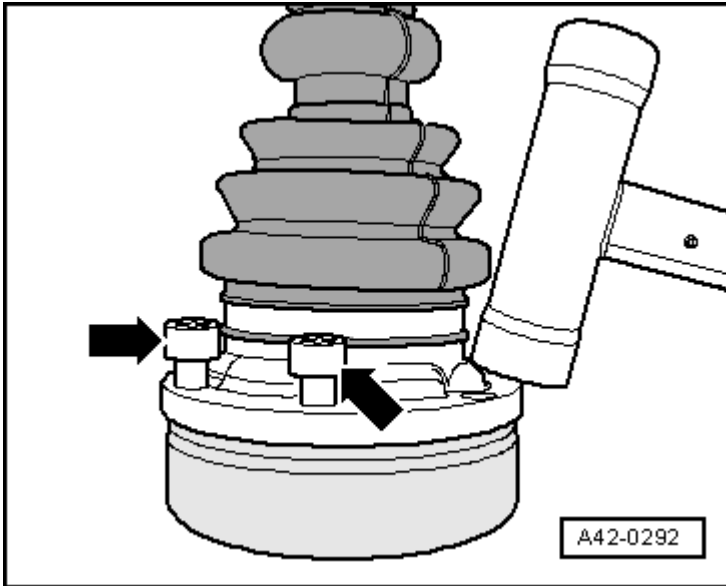


Fig. 102: Aligning Cap With Bolts With Bolt Holes
Courtesy of AUDI OF AMERICA, LLC

It must be aligned exactly because it cannot be aligned after driving on.

-- Drive cover on with a plastic hammer.

-- Clear away leaking sealing immediately.

Inner Constant Velocity Joint, 100 mm

-- Apply 40 grams of joint grease to CV joint through ball paths.

Inner Constant Velocity Joint, 108 mm

-- Apply 70 grams of joint grease to CV joint through ball paths.

Procedure for both CV Joints

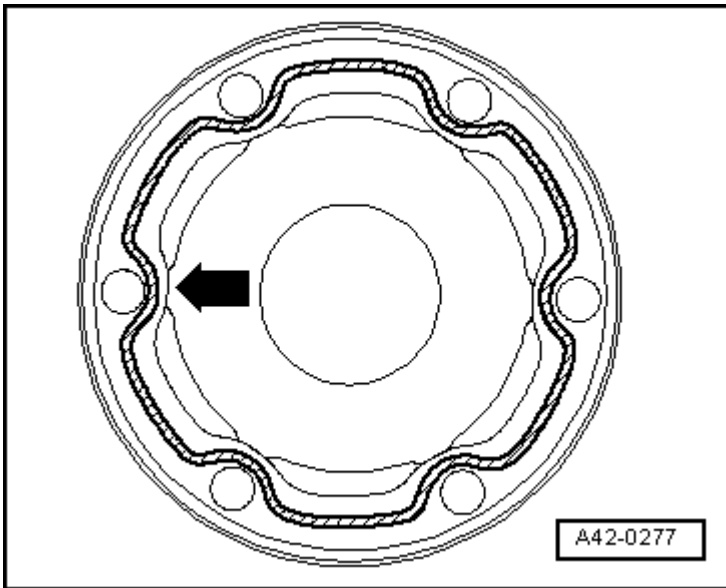


Fig. 103: Coating Sealing Surface Of Cover And Cap With D454300A2
Courtesy of AUDI OF AMERICA, LLC

- Lubricate the contact surface on the cover.
- Apply sealant -hatched area- to the clean surface in the inside of the cover. Apply a 2 to 3 mm diameter uninterrupted sealant bead in the area of inner holes -arrow-.
- Use sealant.
- Align the new cover with bolts -arrows- to bolt holes.

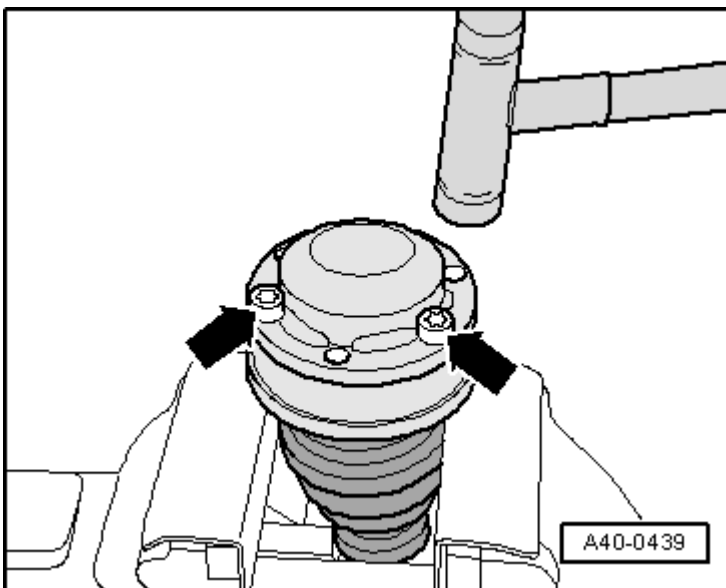


Fig. 104: Aligning New Cover With Bolts To Screw Holes
Courtesy of AUDI OF AMERICA, LLC

It must be aligned exactly because it cannot be aligned after driving on.

- Drive cover on with a plastic hammer.
- Clear away leaking sealing immediately.
- Position CV boot in outer groove -arrow 2-.

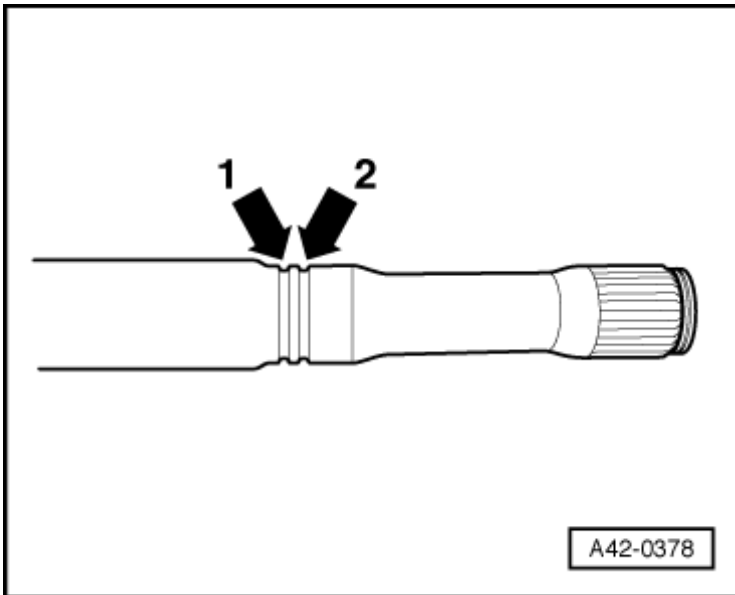


Fig. 105: Identifying Outer And Inner Groove
Courtesy of AUDI OF AMERICA, LLC

Inner groove -arrow 1- must remain visible "identification groove" (for correct installation of CV boot).

INSTALL THE CLAMP ON INNER JOINT AND CLAMP IT.

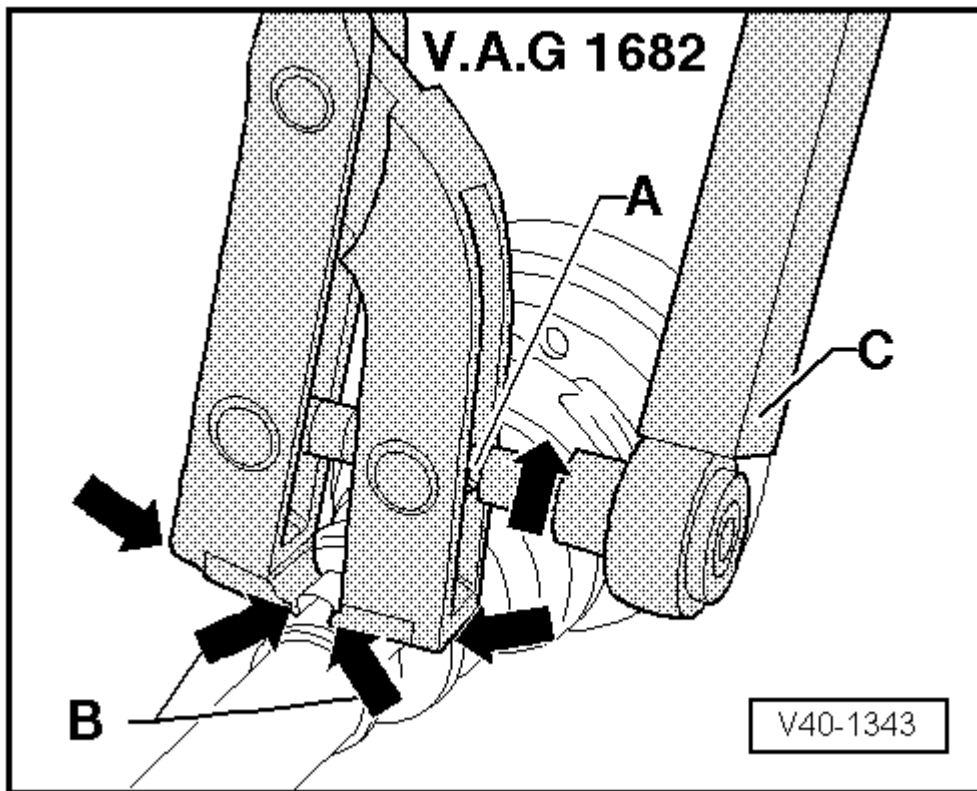


Fig. 106: Identifying Tool Assembly To Tighten Clamp For CV Joint Boot (Inner, Small Dia.)
 Courtesy of AUDI OF AMERICA, LLC

-- Use V.A.G 1682 as shown in illustration. When doing this, make sure that edges of clamping pliers are seated in corners -arrows B- of clamp.

-- Tighten the clamp by turning the spindle using a torque wrench -C- (do not tilt the pliers).

- A stainless steel clamp must be used due to the hardness of the CV boot material (compared to rubber). This clamp can only be tensioned using the V.A.G 1682.
- Tightening specifications: 20 Nm
- Use torque wrench with 5 to 50 Nm range (for example V.A.G 1331).
- Make sure the spindle threads on the pliers -A- move freely. Grease with MoS₂ grease if necessary.
- If the thread is tight for example dirty, the required tensioning force for the hose clamp will not be achieved in spite of correct torque specification settings.

FRONT WHEEL DRIVE (FWD)

SUBFRAME WITH ATTACHMENTS

For a short period of time, subframes for AWD vehicles were installed on FWD vehicles, Performing repairs on the subframe is not affected.

Special tools and workshop equipment required

- Torque Wrench 5-50 Nm V.A.G 1331
- Torque Wrench 50-200 Nm V.A.G 1332
- Engine-/Gearbox Jack V.A.G 1383 A with Universal Transmission Support V.A.G 1359/2
- Tensioning Strap T10038
- 2 wood blocks

A

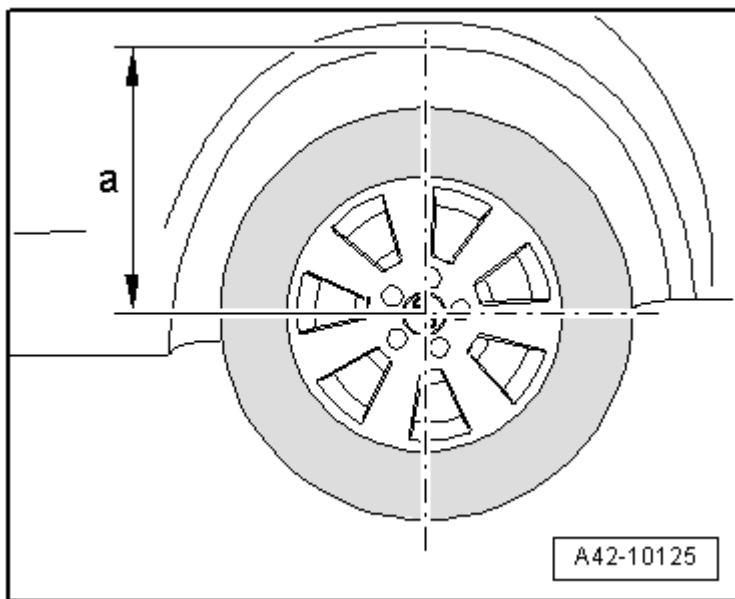
Removing the Subframe and Attachments

Fig. 107: Measuring Dimension From Center Of Wheel To Lower Edge Of Wheel Housing Using Tape Measure

Courtesy of AUDI OF AMERICA, LLC

-- Determine dimension -a- from the center of the wheel to the lower edge of the wheel housing before starting work while the vehicle is resting on its wheels.

-- Place the vehicle on a hoist.

-- Remove the wheels.

-- Remove the coil springs. Refer to **COIL SPRING**.

-- Remove the rear muffler. Refer to **[For transmission(s) 0AW] [For engine(s) CALA] Description and Operation** or refer to **[For engine(s) CAEB] Description and Operation** or refer to **[For engine(s) CCBA] Description and Operation** .

-- Remove the left and right bolt -2- and the bracket with wires -1-.

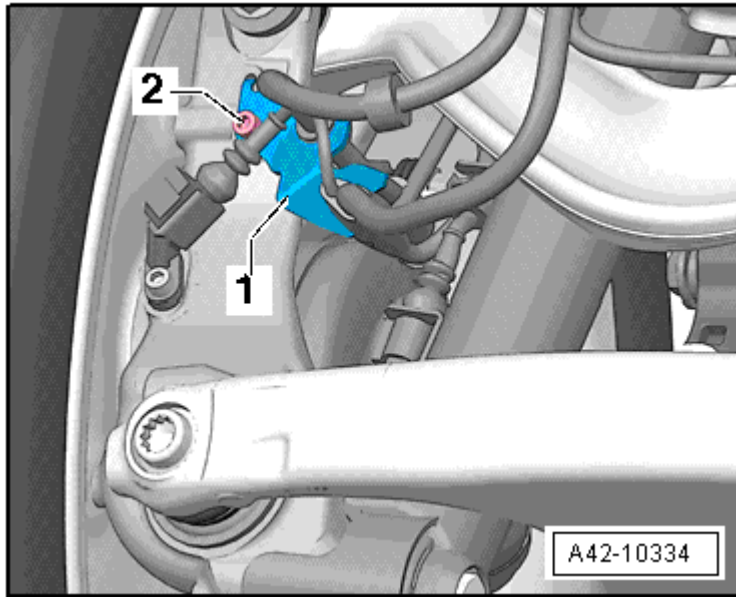


Fig. 108: Identifying Left, Right Bolt And Bracket With Wires
Courtesy of AUDI OF AMERICA, LLC

-- Release the connector -1- from the left ABS wheel speed sensor -G46- and right ABS wheel speed sensor -G44- and remove it.

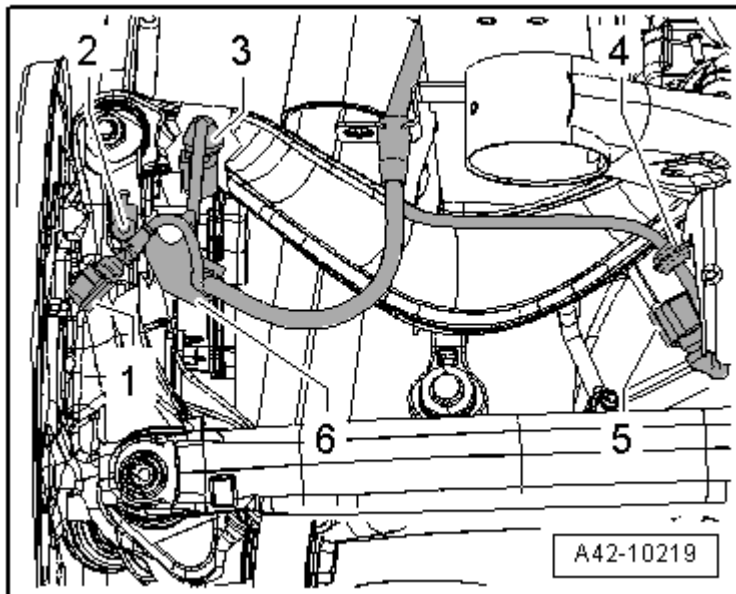


Fig. 109: Releasing Connector From Left ABS Wheel Speed Sensor
Courtesy of AUDI OF AMERICA, LLC

-- Disconnect the right and left electro-mechanical parking brake connectors -3-.

- Disconnect the connector -5- from the left rear level control system sensor -G76- and, if equipped, from the right rear level control system sensor -G77-.
- Remove the left wiring harness -4-, and if equipped, the right one as well.
- If the vehicle has electronically controlled damping, disconnect the connector on the shock absorber and free up the wiring harness.
- Release the retaining tabs -1- and remove the stone deflector -2-.

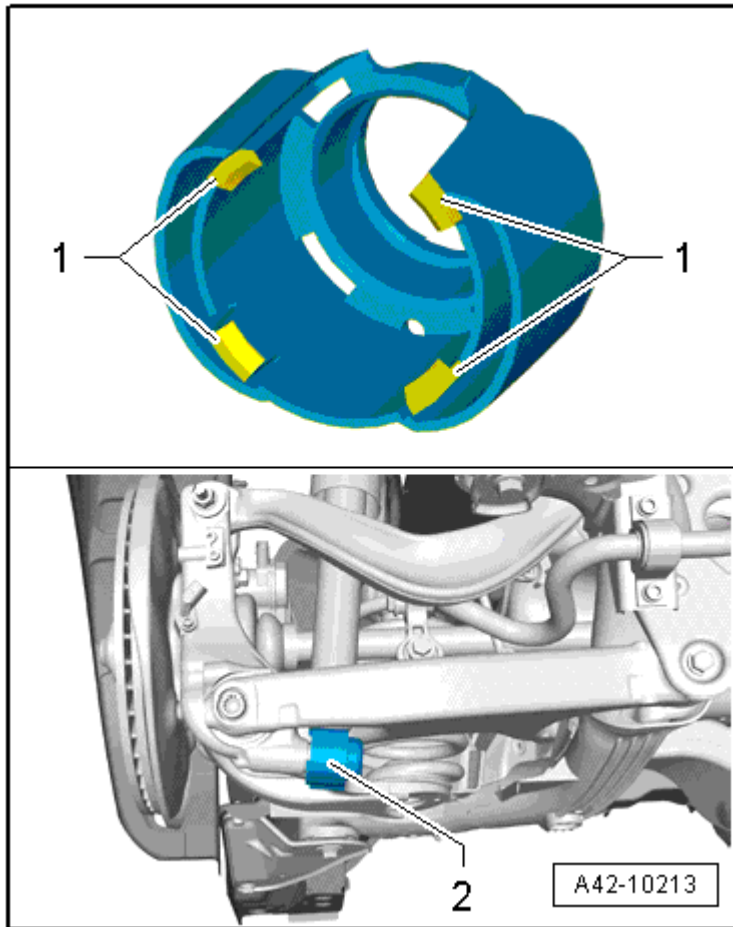


Fig. 110: Identifying Retaining Tabs And Stone Deflector
Courtesy of AUDI OF AMERICA, LLC

- Remove the bolt -arrow- and washer.

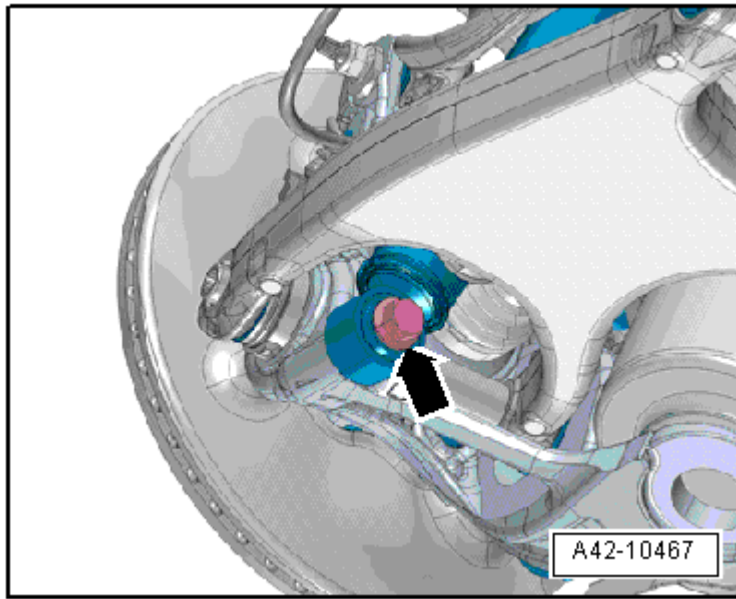


Fig. 111: Identifying Bolt And Washer
Courtesy of AUDI OF AMERICA, LLC

-- Remove the bolt -1-.

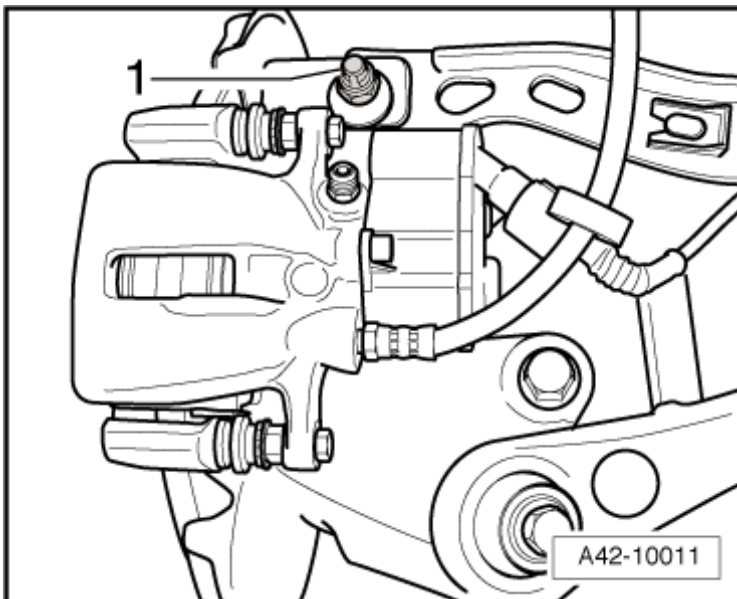


Fig. 112: Identifying Threaded Connection
Courtesy of AUDI OF AMERICA, LLC

-- Remove the brake caliper. Refer to **Removal and Installation** .

-- Guide the brake caliper past the wheel suspension and secure it on the body so the weight of the caliper does not stress or damage the brake hose or line.

- Attach the upper transverse link to the wheel bearing housing by hand -1-.
- Remove the cover -1 and 2-. Refer to **Removal and Installation** .

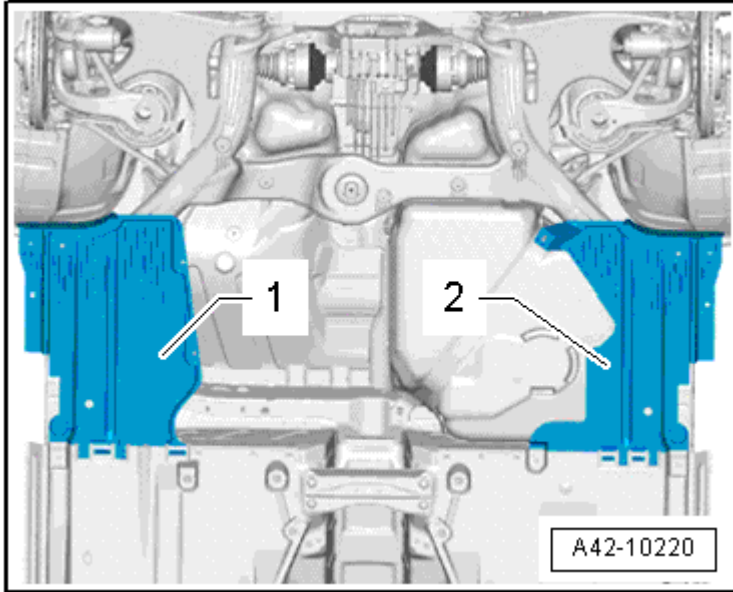


Fig. 113: Identifying Stone Deflectors
Courtesy of AUDI OF AMERICA, LLC

- Install the stone deflectors -1 and 2-, if applicable.

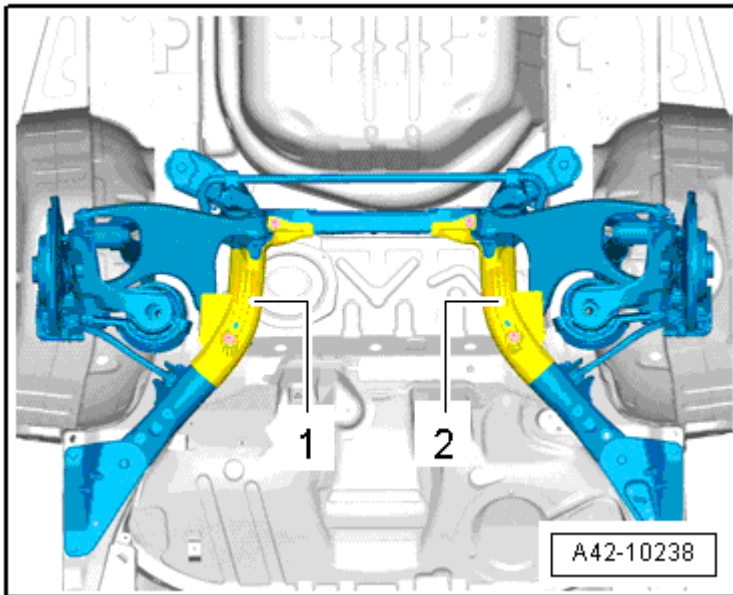


Fig. 114: Identifying Stone Deflectors
Courtesy of AUDI OF AMERICA, LLC

WARNING: Before **-LOOSENING-** the subframe bolts, secure vehicle against tipping over (for example load luggage compartment with approximately 50 kg).

-- Place the V.A.G 1383 A with the V.A.G 1359/2 under the subframe and secure it using the T10038.

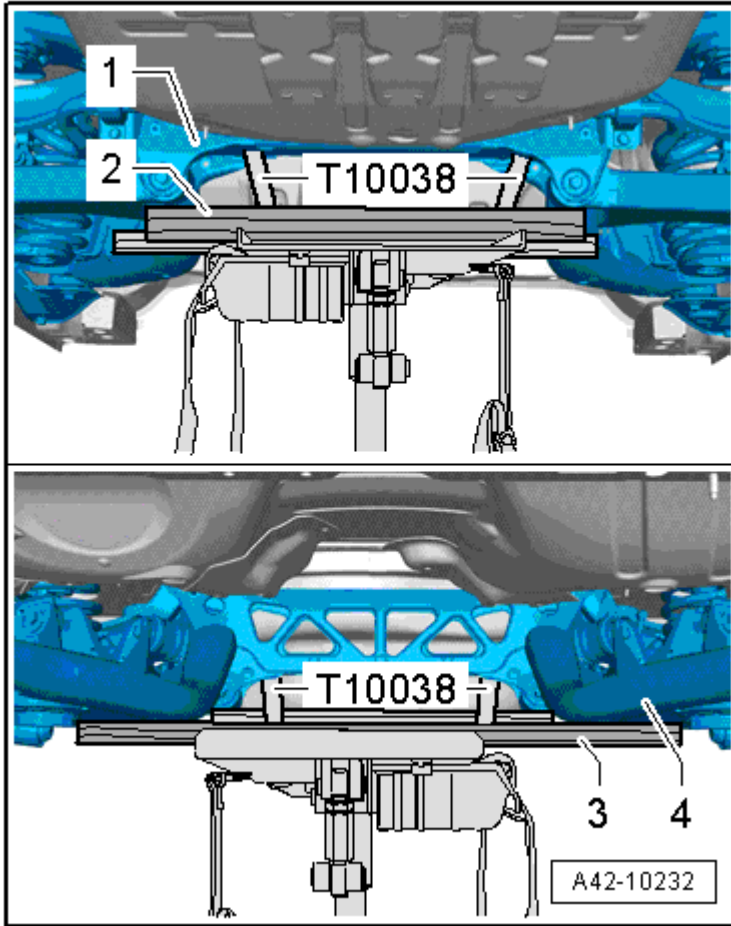


Fig. 115: Supporting Back Of Subframe Using Suitable Wood Block
Courtesy of AUDI OF AMERICA, LLC

- Support the back of the subframe -1- using a suitable wood block -2-.
- Support the front of the subframe -4- using a suitable wood block -3-.
- Guide the T10038 between the subframe and plastic reservoir.
- Route the T10038 under the V.A.G 1359/2 and tighten it.
- Remove the left and right bolts -1 and 2-.

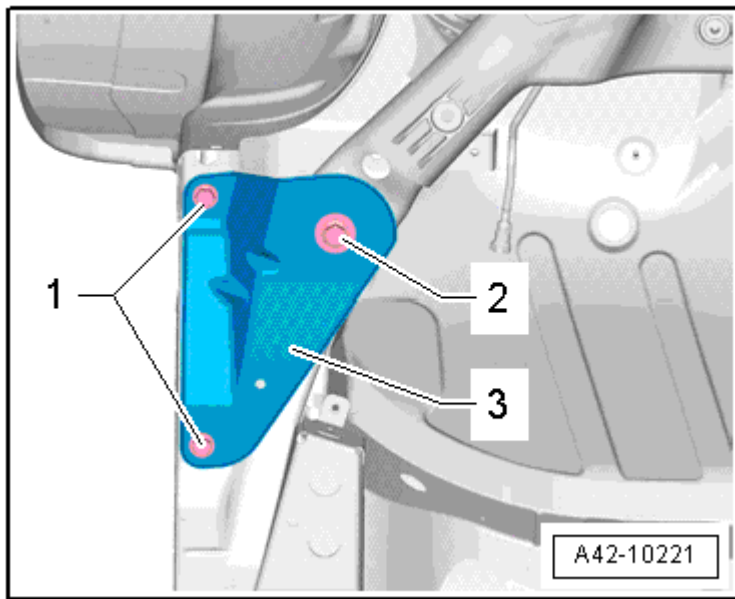


Fig. 116: Identifying Left And Right Bolts
Courtesy of AUDI OF AMERICA, LLC

-- Remove the left and right supports -3-.

-- Remove bolts -arrows-.

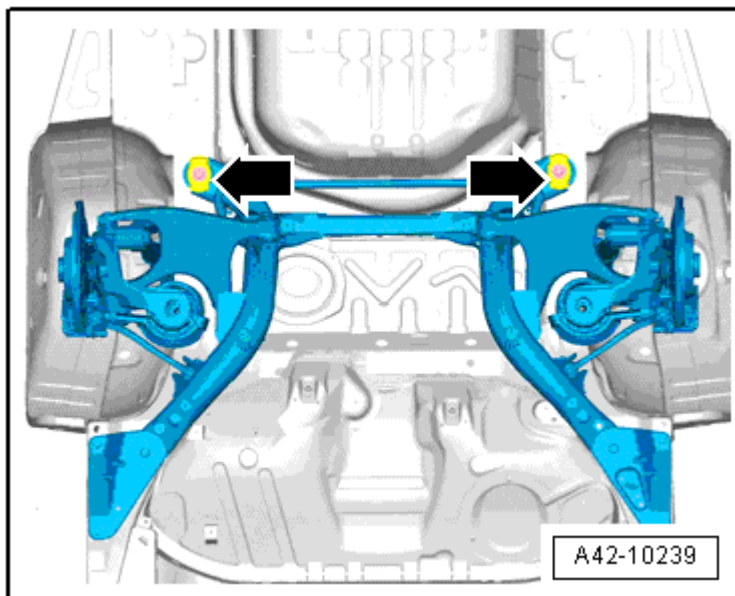


Fig. 117: Identifying Bolts
Courtesy of AUDI OF AMERICA, LLC

-- Carefully lower subframe with components. Be careful of the brake caliper and its lines.

Subframe with Components, Installing

Install in reverse order of removal. Note the following:

Tightening specifications, refer to **SUBFRAME, STABILIZER BAR AND COUPLING ROD OVERVIEW**

WHEEL BEARING HOUSING, WHEEL BEARING UNIT AND COIL SPRING SHOCK ABSORBER OVERVIEW

NOTE: Bonded rubber bushings can only be turned to a limited extent. Only tighten suspension bolts when vehicle is in curb weight or control position.

Wheel bearing, lifting to curb weight position on vehicles with coil springs.
Refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**.

-- The center of the subframe mount holes must be aligned to the bolting points on the body.

-- If the vehicle has the subframe from the AWD, then align the subframe so that the dimension -a- is 19 mm on vehicles without a stone protection plate, and dimension -b- is 14 mm on vehicles with a stone protection plate.

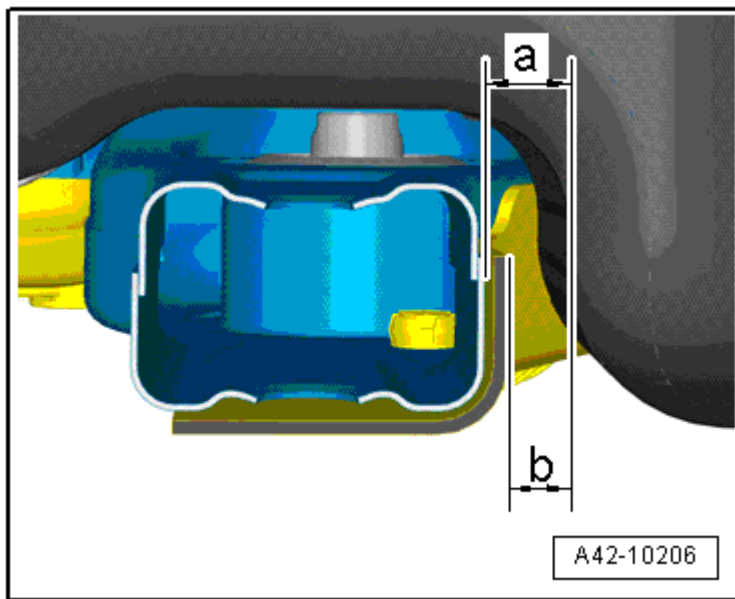


Fig. 118: Identifying Center Of Subframe Mount Holes, Aligned To Bolting Points On Body
Courtesy of AUDI OF AMERICA, LLC

NOTE: Only install the coil springs when the subframe bolts have been tightened to the specification.

-- Tighten the wheel. Refer to **Specifications** .

-- Axle alignment is required, see table, refer to **WHEN VEHICLE ALIGNMENT IS NECESSARY** .

The axle alignment on the front and rear axles must be performed on a VW/Audi approved alignment rack.

SUBFRAME BONDED RUBBER BUSHING AND HYDRAULIC BONDED RUBBER BUSHING, REPLACING**Special tools and workshop equipment required**

- Torque Wrench 50-200 Nm V.A.G 1332
- Engine-/Gearbox Jack V.A.G 1383 A With Universal Transmission Support V.A.G 1359/2
- Hydraulic Press VAS 6178
- Pneumatic/Hydraulic Foot Pump VAS 6179
- Assembly Tool T10205
- Assembly Tool T10263
- Assembly Tool T40033
- Assembly Tool T40185
- Support Arm Bearing Inst. Tool 3346
- Support Arm Bearing Inst. Too l3346/3
- Assembly Tool 3301
- Support T10205/13

NOTE: If a bonded rubber bushing is faulty, then the bonded rubber bushing on the opposite side must also be replaced. For the correct allocation.

Check the other bushings before replacing a faulty bonded rubber bushing.

If cracks, oil leaks or other damage is visible, this bonded rubber busing must be replaced too.

There are different versions, depending on the model, either a conventional bonded rubber bushing or a hydraulic one FRONT BONDED RUBBER BUSHINGREAR BONDED RUBBER BUSHING. Allocation.

-- Place the vehicle on a hoist.

-- Remove the wheels.

-- Remove the coil springs. Refer to COIL SPRING.

NOTE: In order to replace the rubber bonded bushing, the subframe must be lowered either at the front or at the rear. It is not necessary to remove the subframe.

Lower the subframe alternating between the front and rear. This avoid having to perform an axle alignment.

Do not lower the subframe more then 4 cm.

Identify mounting location to subframe before removing the bonded rubber bushing.

Replace the front bonded rubber bushing or the front hydraulic bonded rubber bushing.

Applies to All

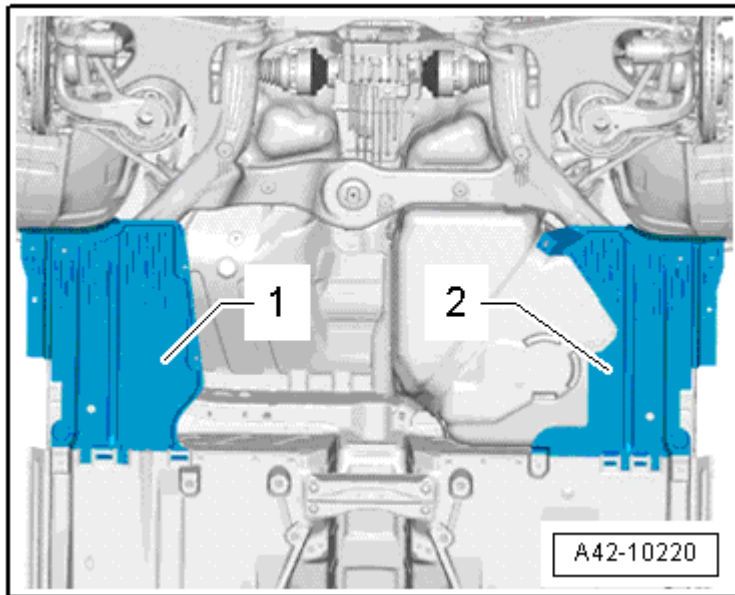


Fig. 119: Identifying Stone Deflectors
Courtesy of AUDI OF AMERICA, LLC

-- Remove the cover -1 and 2-. Refer to **Removal and Installation** .

-- Place V.A.G 1383 A with V.A.G 1359/2 -1- under the subframe.

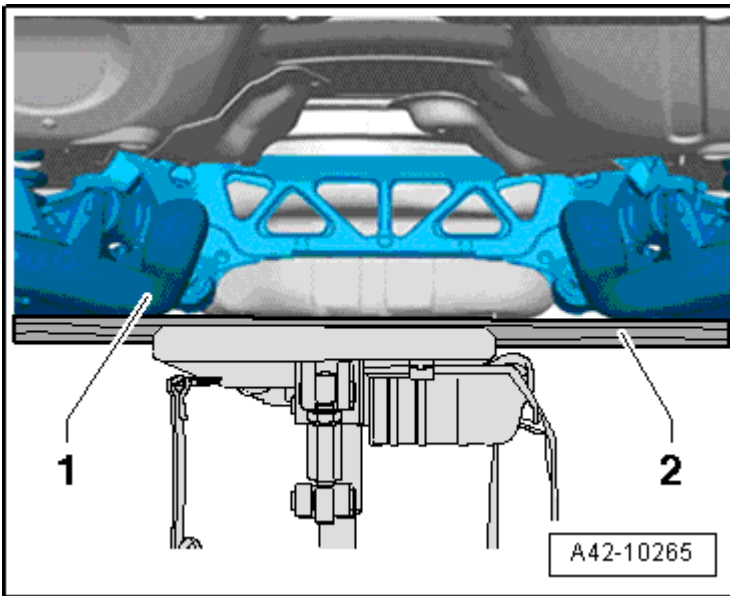


Fig. 120: Placing Block Of Wood Under Subframe
 Courtesy of AUDI OF AMERICA, LLC

- Place a block of wood -2- under the subframe -1-.
- Remove the left and right bolts -1 and 2-.

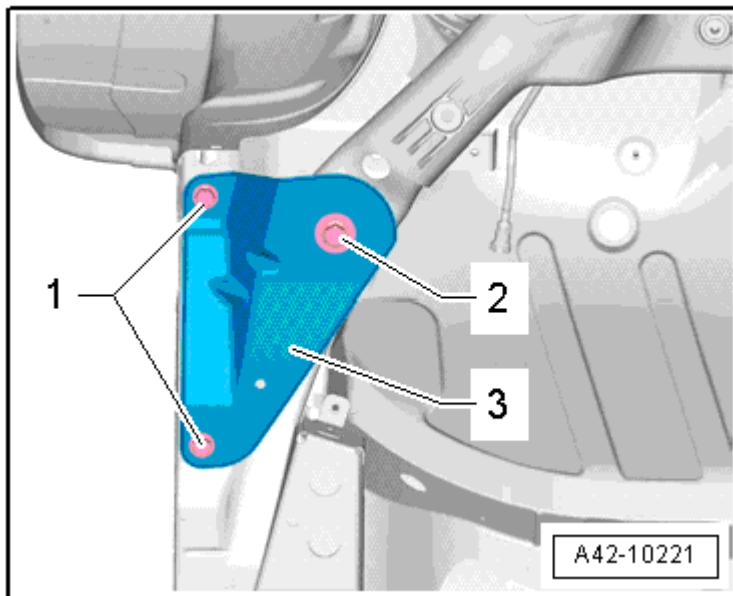


Fig. 121: Identifying Left And Right Bolts
 Courtesy of AUDI OF AMERICA, LLC

- Remove the left and right supports -3-.
- Install the spindle 3346/2 and 3301 and 3346/3 approximately 1.5 cm into the body on the opposite side of

the bonded rubber bushing to be replaced as illustrated.

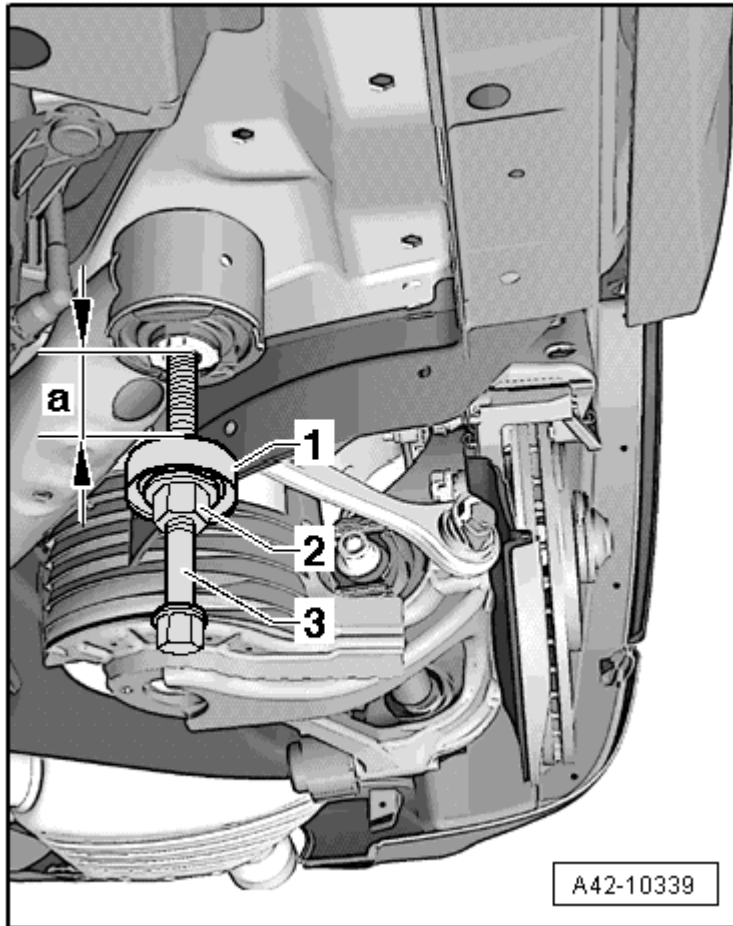


Fig. 122: Identifying Spindle 3346/2, 3301 And Nut 3346/3 (Approximately 1.5 cm)
Courtesy of AUDI OF AMERICA, LLC

1. Assembly tool 3301
2. Support arm bearing installation tool 3346/3
3. Spindle 3346/2

NOTE: Turn 3346/3 on the 3346/2 until dimension -a- 4 cm is reached.

-- Lower the subframe only 4 cm.

Applies to a Hydraulic Bonded Rubber Bushing

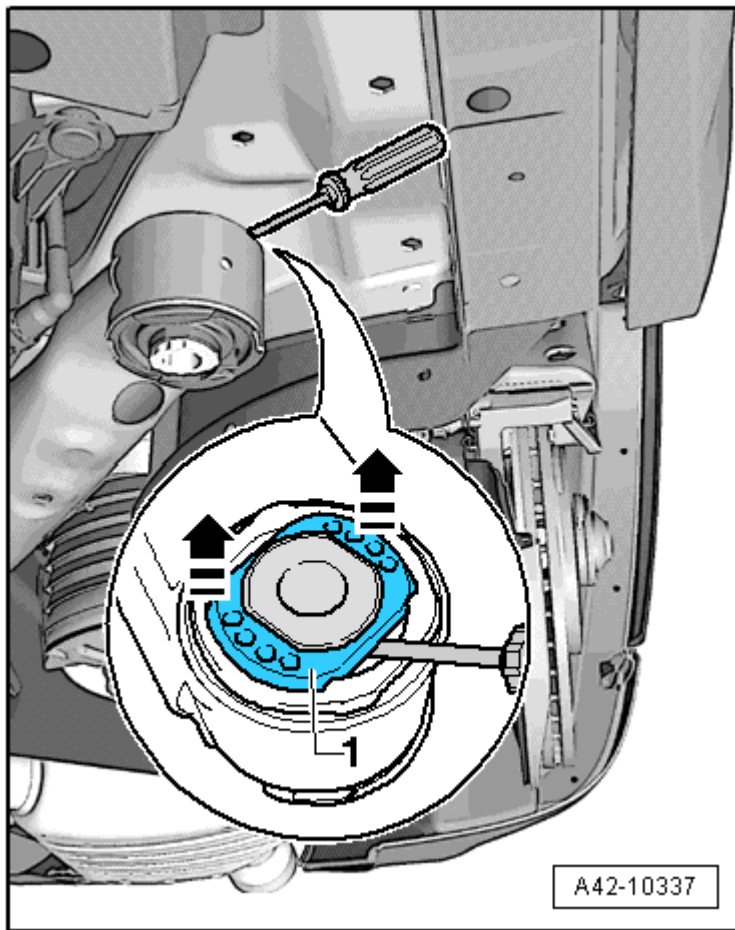


Fig. 123: Inserting Plastic Upward

Courtesy of AUDI OF AMERICA, LLC

-- Remove the plastic insert -1- upward as illustrated.

Applies to All

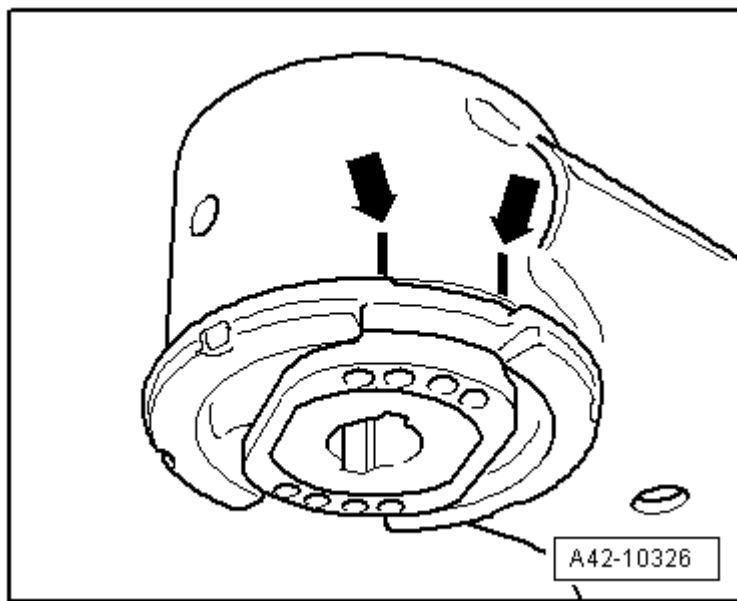


Fig. 124: Marking Installation Position Of Bonded Rubber Bushing Or Hydraulic Bonded Rubber Bushing On Subframe

Courtesy of AUDI OF AMERICA, LLC

-- Mark the installation position of the bonded rubber bushing or the hydraulic bonded rubber bushing on the subframe -arrows-.

The illustration shows a hydraulic bonded rubber bushing. On a conventional bonded rubber bushing, the recesses on the rubber shoulders are turned 90°.

-- If necessary, the support -arrow- with the >>small<< interior diameter must be removed from the Hydraulic Cylinder VAS 6178 and the Support T10205/13 for that installed.

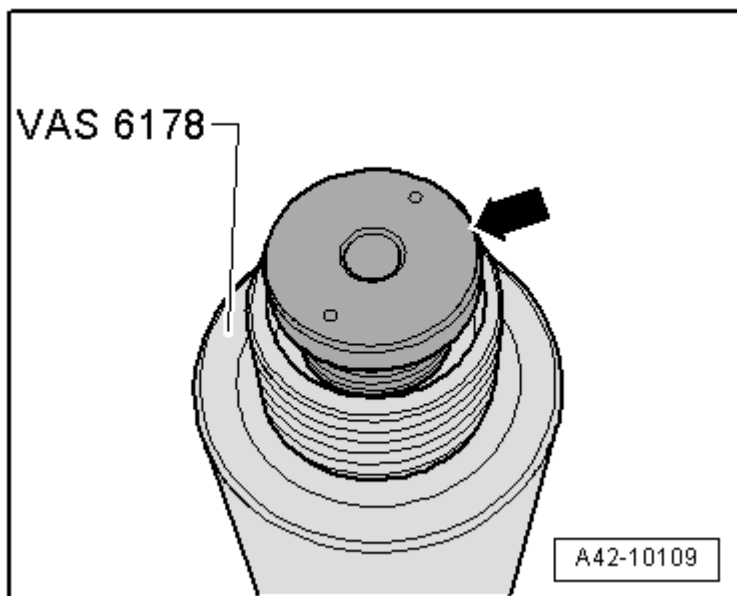
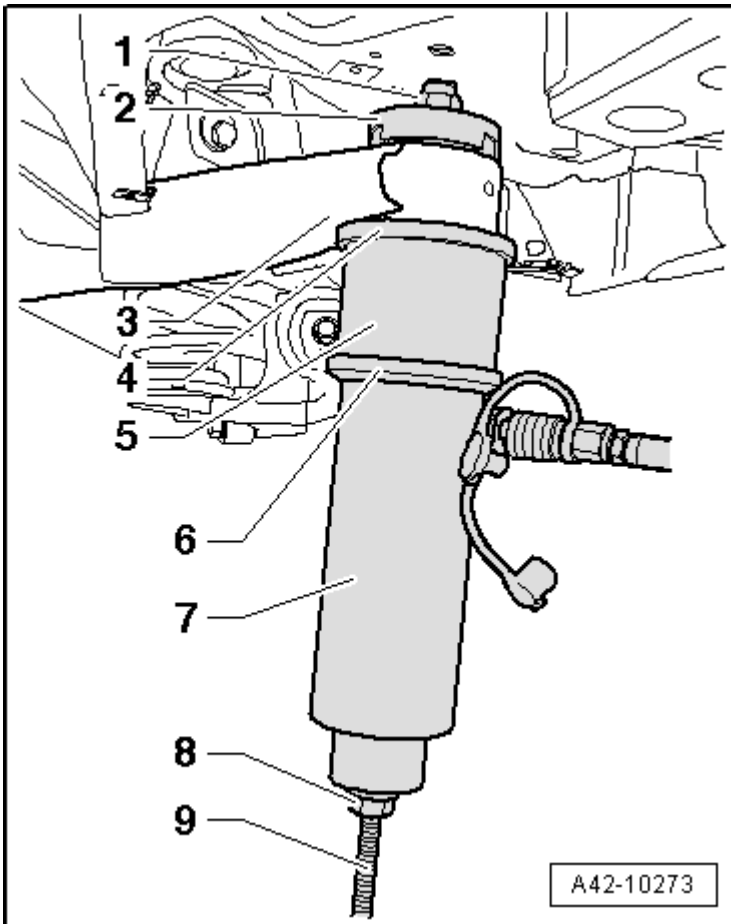


Fig. 125: Identifying Support -Arrow- And VAS 6178

Courtesy of AUDI OF AMERICA, LLC

-- Place the tools on the front bonded rubber bushing as shown in the illustration.

**Fig. 126: Placing Tools On Front Bonded Rubber Bushing**

Courtesy of AUDI OF AMERICA, LLC

1. Nut T10263/5
2. Press piece T40185/5 The opening faces the rubber bonded bushing.
3. Subframe
4. Support Ring T40185/6. The conical side must face upward and the ribs must fit into the openings in the rubber bonded bushing.
5. Tube T40033/3
6. Support ring T10205/4
7. Hydraulic cylinder VAS 6178
8. Nut T10263/5
9. Spindle T10263/4. The spindle pins face downward.

WARNING:

- Secure VAS 6178 while pressing out.
- Bonded rubber bushing loosens >>abruptly<<. There is the risk of injuries by tools and bonded rubber bushing coming off!

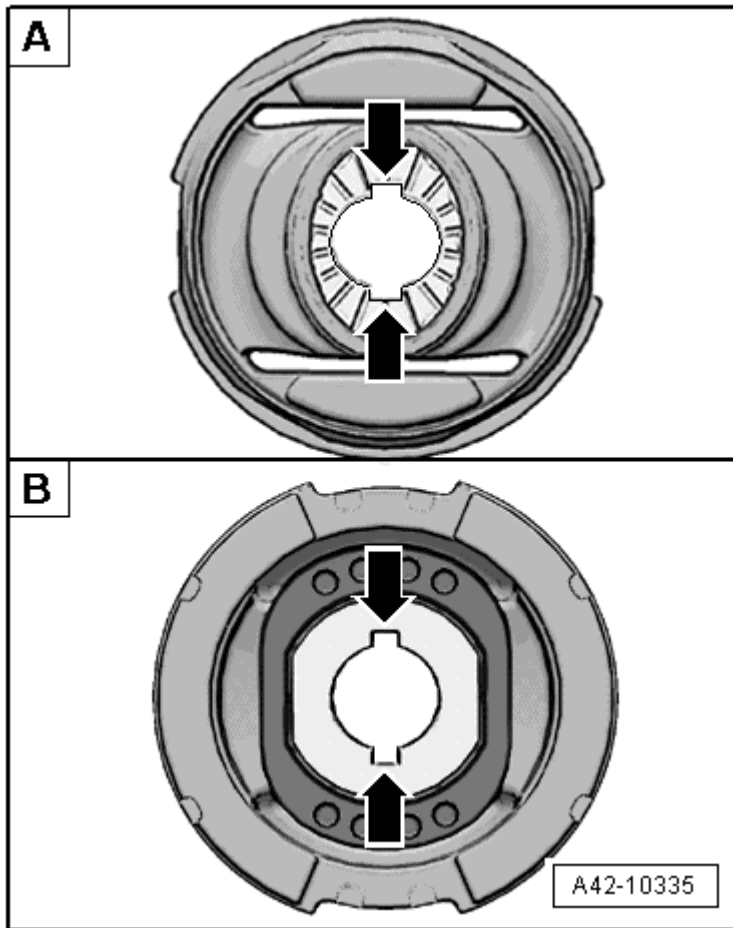


Fig. 127: Identifying Installation Location Of Front Bonded Rubber Bushing
Courtesy of AUDI OF AMERICA, LLC

The grooves -arrows- point in direction of travel.

- -A- conventional bonded rubber bushing
- -B- hydraulic bonded rubber bushing

-- Place the tools on the front bonded rubber bushing as shown in the illustration.

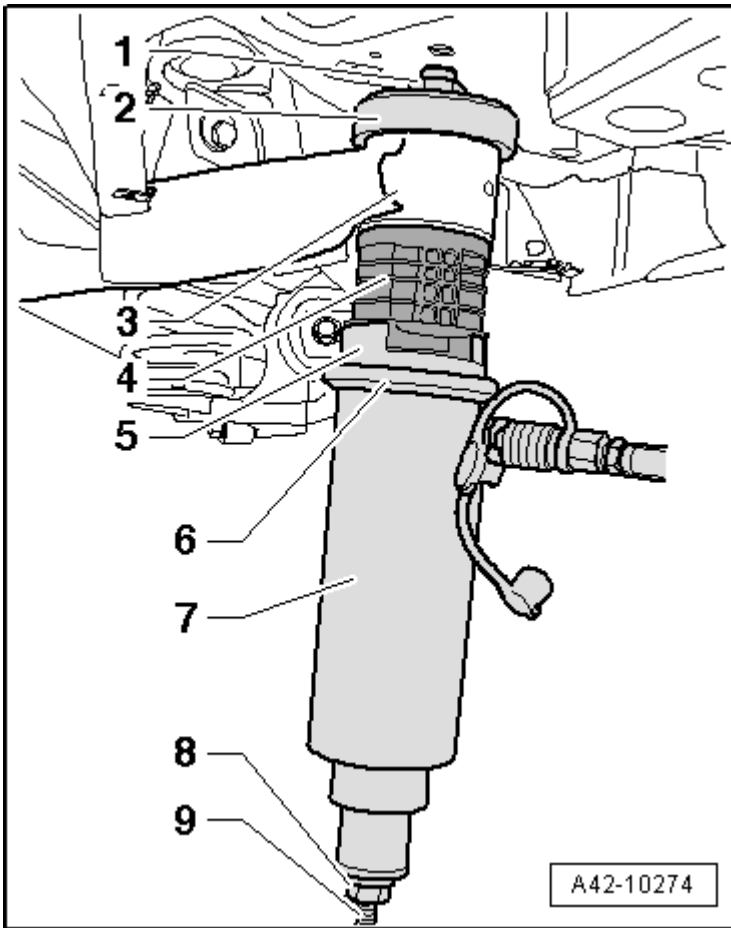


Fig. 128: Placing Tools On Front Bonded Rubber Bushing
 Courtesy of AUDI OF AMERICA, LLC

1. Nut T10263/5
2. Thrust Piece T40185/4
3. Subframe
4. Bonded rubber bushing or the hydraulic bonded rubber bushing
5. Thrust Piece T40185/3
6. Support ring T10205/4
7. Hydraulic cylinder VAS 6178
8. Nut T10263/5
9. Spindle T10263/4. The spindle pins face downward.

-- Align the bonded rubber bushing with the markings made previously and push it in until the collar comes in contact with the bushing in the subframe >>without any gaps<<. If necessary, tension and press over cylinder several times. While pulling in, make sure the bonded rubber bushing does not cant, otherwise outer ring could be damaged.

-- The ends of the rubber bead on the bonded rubber bushing must align with the markings -arrows- on the

subframe.

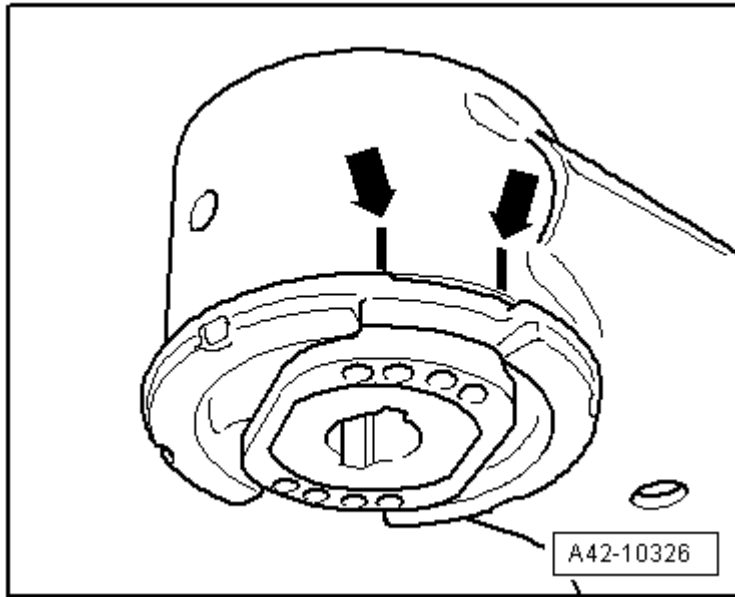


Fig. 129: Marking Installation Position Of Bonded Rubber Bushing Or Hydraulic Bonded Rubber Bushing On Subframe

Courtesy of AUDI OF AMERICA, LLC

The illustration shows a hydraulic bonded rubber bushing. On a conventional bonded rubber bushing, the recesses on the rubber shoulders are turned 90°.

NOTE: After replacing the bearing, fix any paint damage on the subframe with corrosion protection, primer and black top coat.

Install in reverse order of removal.

Replace the rear bonded rubber bushing or the rear hydraulic bonded rubber bushing.

Applies to All

-- Loosen the nuts on both rear muffler brackets but only as far as to where the thread begins.

-- Place V.A.G 1383 A with V.A.G 1359/2 -1- under the subframe.

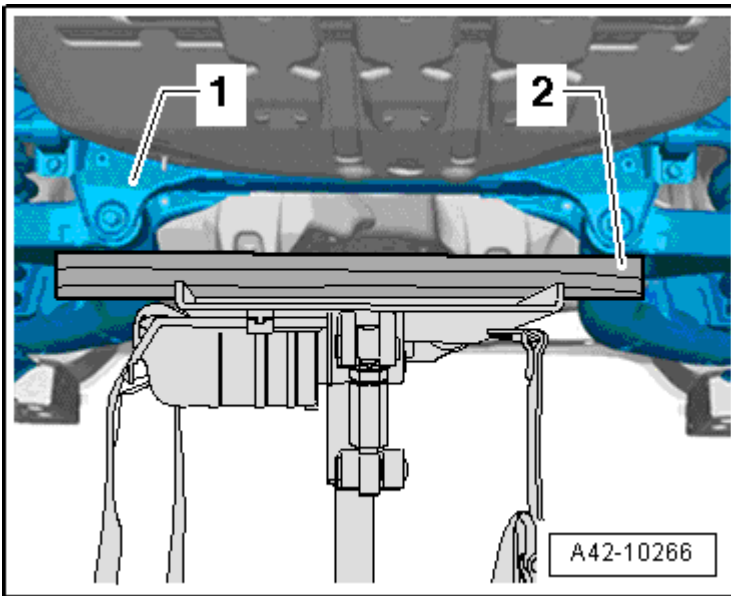


Fig. 130: Placing Block Of Wood Under Subframe
Courtesy of AUDI OF AMERICA, LLC

-- Place a block of wood -2- under the subframe -1-.

-- Remove the rear subframe bolts -item 17- **SUBFRAME, STABILIZER BAR AND COUPLING ROD OVERVIEW**.

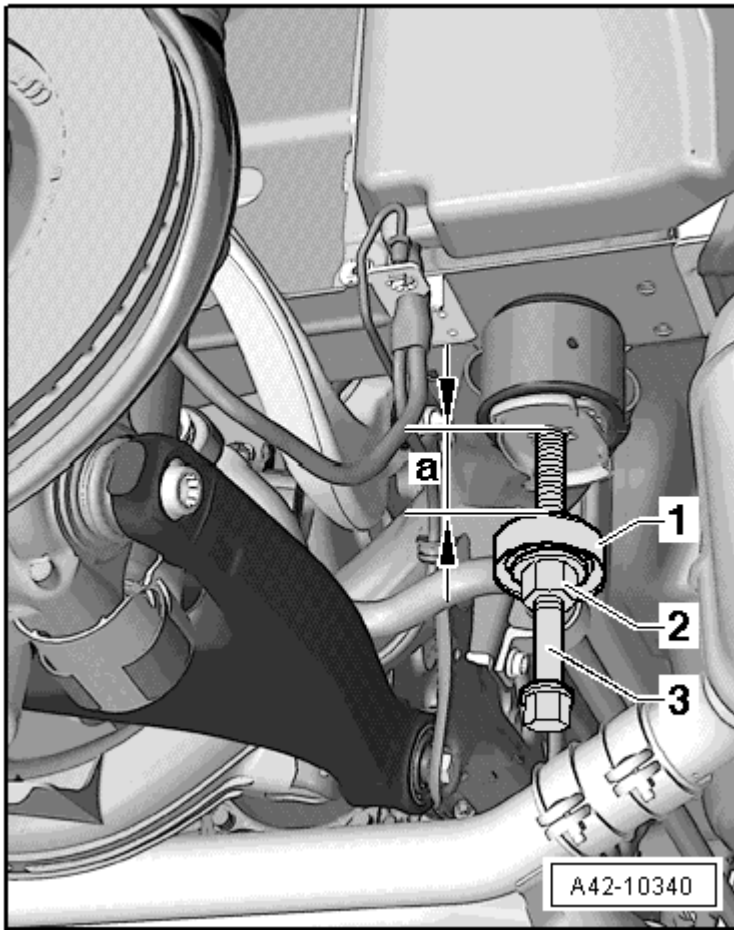


Fig. 131: Identifying Spindle 3346/2, 3301 And 3346/3 (Approximately 1.5 cm)

Courtesy of AUDI OF AMERICA, LLC

-- Install the 3346/2 and 3301 and 3346/3 approximately 1.5 cm into the body on the opposite side of the bonded rubber bushing to be replaced as illustrated.

1. Assembly tool 3301
2. Support arm bearing installation tool 3346/3
3. Spindle 3346/2

NOTE: Turn 3346/3 on the spindle 3346/2 until dimension -a- 4 cm is reached.

-- Lower the subframe 4 cm only.

Applies to a Hydraulic Bonded Rubber Bushing

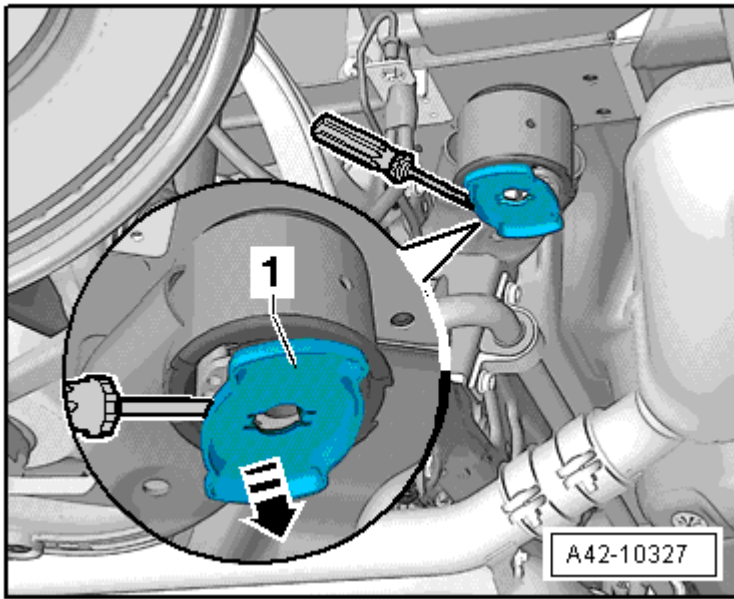


Fig. 132: Carefully Prying Anti-Twist Mechanism Off Hydraulic Bonded Rubber Bushing With Screwdriver Near Retaining Tab

Courtesy of AUDI OF AMERICA, LLC

-- Carefully pry the anti-twist mechanism -1- off the hydraulic bonded rubber bushing with a screwdriver near the retaining tab. Do this in several steps alternating from side to side.

-- Remove the plastic insert -1- upward as illustrated.

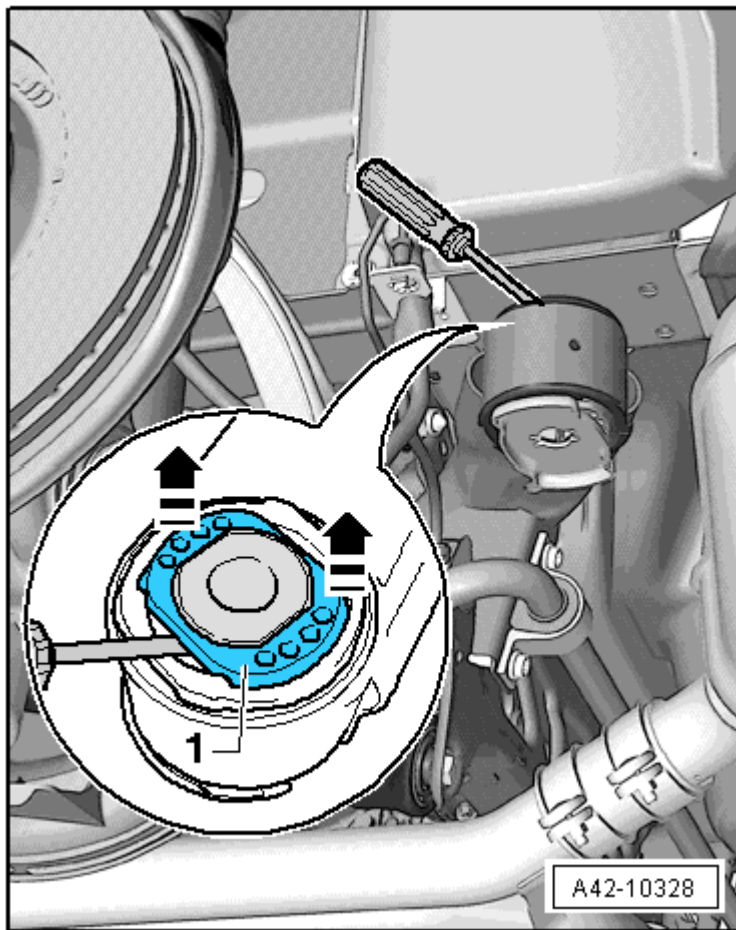


Fig. 133: Inserting Plastic Upward

Courtesy of AUDI OF AMERICA, LLC

Applies to All

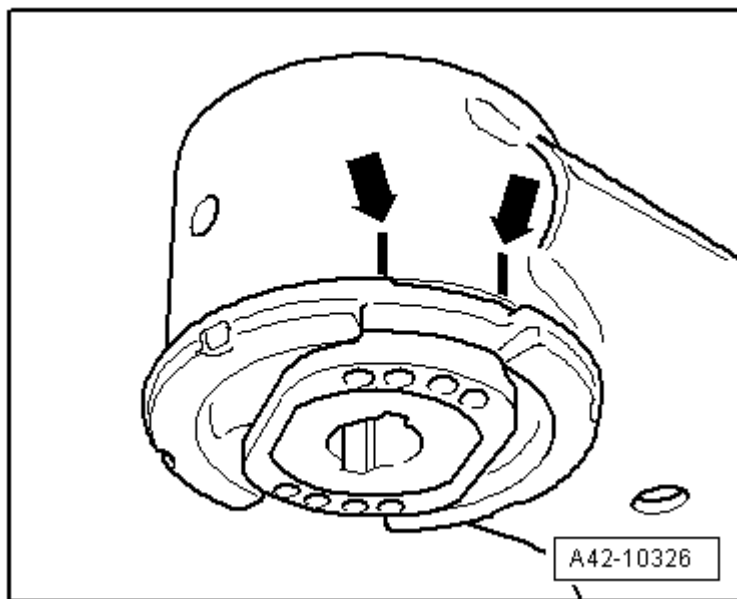


Fig. 134: Marking Installation Position Of Bonded Rubber Bushing Or Hydraulic Bonded Rubber Bushing On Subframe

Courtesy of AUDI OF AMERICA, LLC

-- Mark the installation position of the bonded rubber bushing or the hydraulic bonded rubber bushing on the subframe -arrows-.

The illustration shows a hydraulic bonded rubber bushing. On a conventional bonded rubber bushing, the recesses on the rubber shoulders are turned 90°.

-- If necessary, the support -arrow- with the >>small<< interior diameter must be removed from the VAS 6178 and the T10205/13 for that installed.

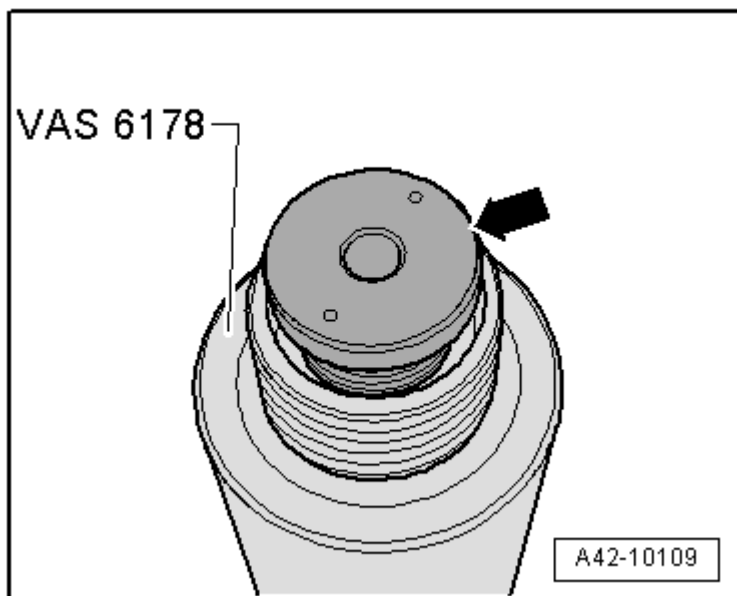
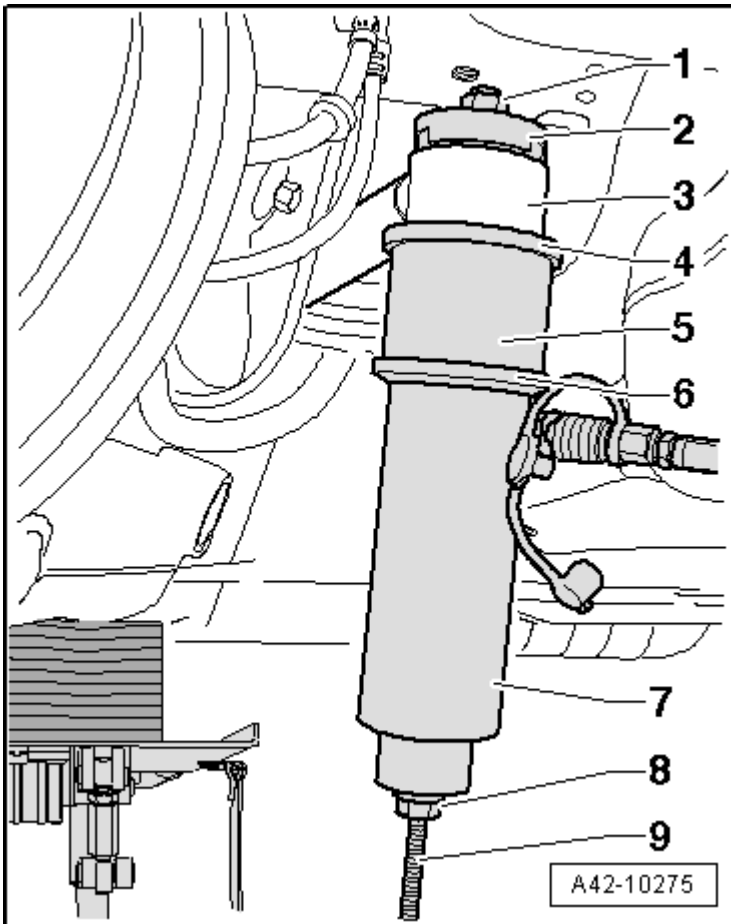


Fig. 135: Identifying Support -Arrow- And VAS 6178

Courtesy of AUDI OF AMERICA, LLC

-- Place the tools on the front bonded rubber bushing as shown in the illustration.

**Fig. 136: Placing Tools On Front Bonded Rubber Bushing**

Courtesy of AUDI OF AMERICA, LLC

1. Nut T10263/5
2. Thrust piece T40185/5. The opening faces the rubber bonded bushing.
3. Subframe
4. Support ring T40185/6. The conical side must face upward and the ribs must fit into the openings in the rubber bonded bushing.
5. Tube T40033/3
6. Support ring T10205/4
7. Hydraulic cylinder VAS 6178
8. Nut T10263/5
9. Spindle T10263/4. The spindle pins face downward.

WARNING:

- Secure VAS 6178 while pressing out.
- Bonded rubber bushing loosens >>abruptly<<. There is the risk of injuries by tools and bonded rubber bushing coming off!

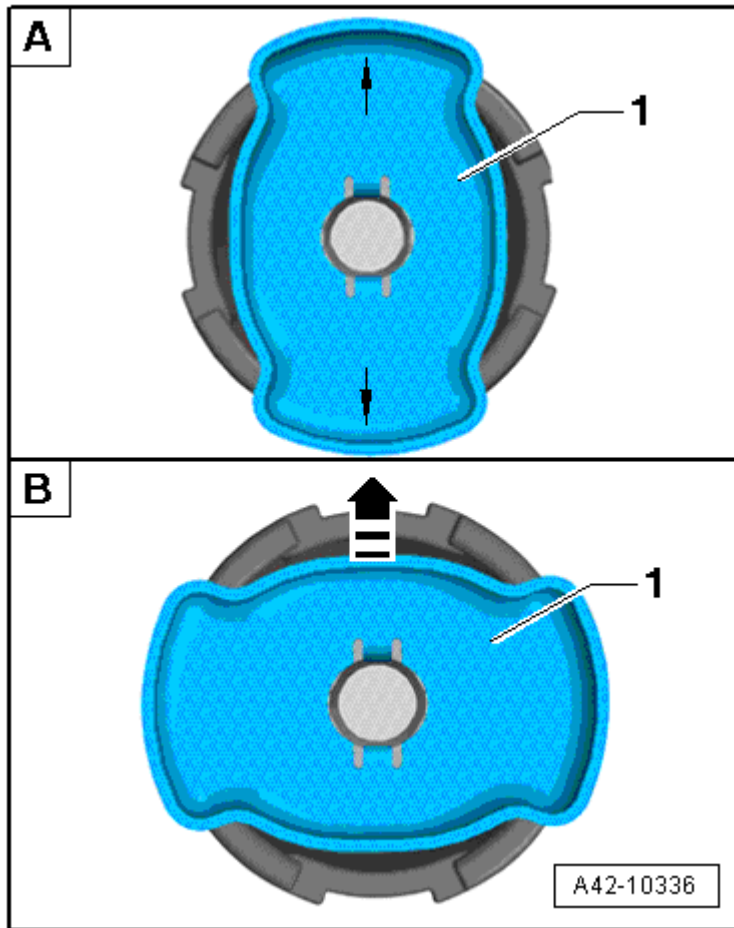


Fig. 137: Installation Location Of Rear Bonded Rubber Bushing
 Courtesy of AUDI OF AMERICA, LLC

- -A- conventional bonded rubber bushing, the arrow point in the drive direction
- -B- hydraulic bonded rubber bushing, the anti-twist element -1- is perpendicular to direction of travel, - arrow- points in direction of travel

Applies to a Hydraulic Bonded Rubber Bushing

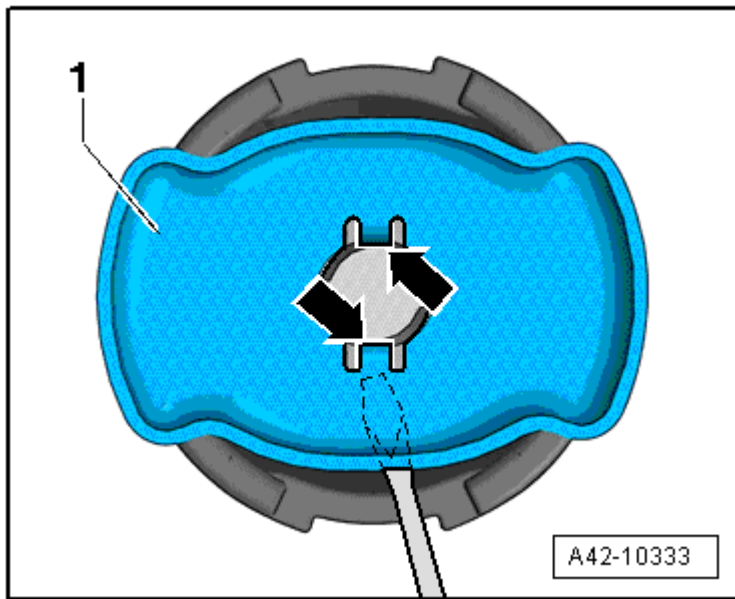


Fig. 138: Prying Off Anti-Twist Mechanism
Courtesy of AUDI OF AMERICA, LLC

Before installing the front hydraulic bonded rubber bushing, carefully pry the anti-twist mechanism -1- off the bushing with a screwdriver near the retaining tab -arrows-. Do this in several steps alternating from side to side.

Applies to All

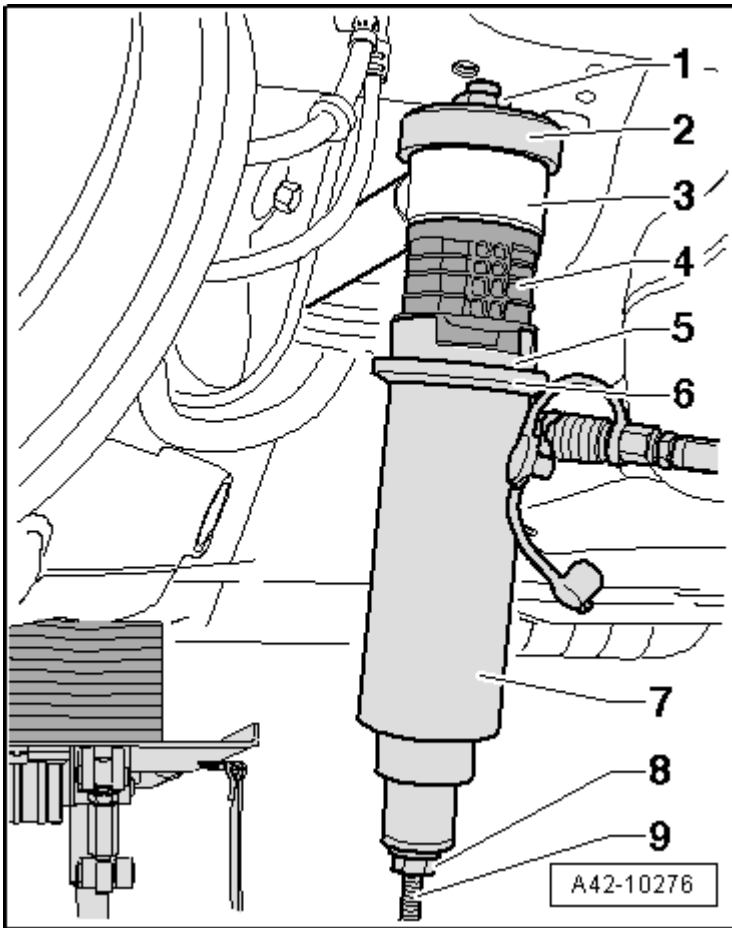


Fig. 139: Placing Tools On Rear Bonded Rubber Bushing
 Courtesy of AUDI OF AMERICA, LLC

-- Place the tools on the rear bonded rubber bushing as shown in the illustration.

1. Nut T10263/5
2. Thrust piece T40185/4
3. Subframe
4. Bonded rubber bushing or the hydraulic bonded rubber bushing
5. Thrust piece T40185/3
6. Support ring T10205/4
7. Hydraulic cylinder VAS 6178
8. Nut T10263/5
9. Spindle T10263/4. The spindle pins face downward.

-- Align the bonded rubber bushing with the markings made previously and push it in until the collar comes in contact with the bushing in the subframe >>without any gaps<<. If necessary, tension and press over cylinder several times. While pulling in, make sure the bonded rubber bushing does not cant, otherwise the outer ring could be damaged.

-- The ends of the rubber bead on the bonded rubber bushing must align with the markings -arrows- on the subframe.

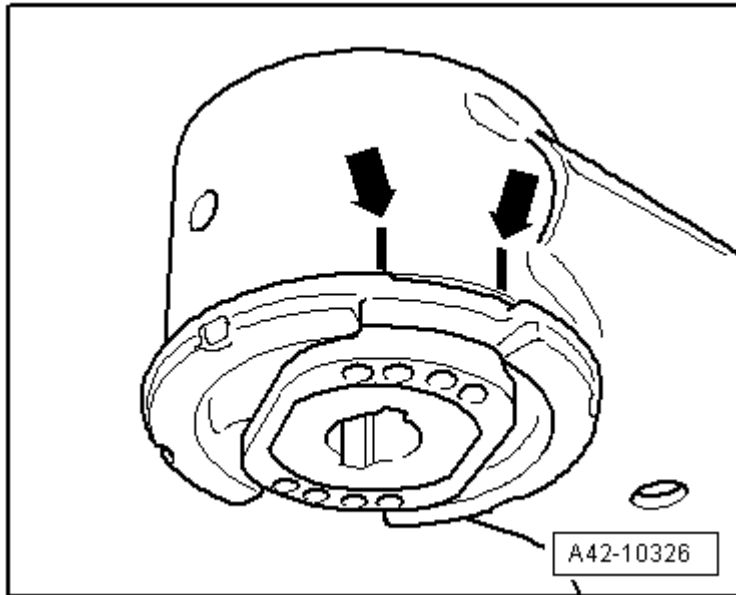


Fig. 140: Marking Installation Position Of Bonded Rubber Bushing Or Hydraulic Bonded Rubber Bushing On Subframe

Courtesy of AUDI OF AMERICA, LLC

The illustration shows a hydraulic bonded rubber bushing. On a conventional bonded rubber bushing, the recesses on the rubber shoulders are turned 90°.

NOTE: After replacing the bearing, fix any paint damage on the subframe with corrosion protection, primer and black top coat.

-- Attach the anti-twist mechanism to the hydraulic bonded rubber bushing.

Install in reverse order of removal.

COUPLING ROD AND STABILIZER BAR

Special tools and workshop equipment required

- Torque Wrench 5-50 Nm V.A.G 1331
- Installation lubricant

Removing

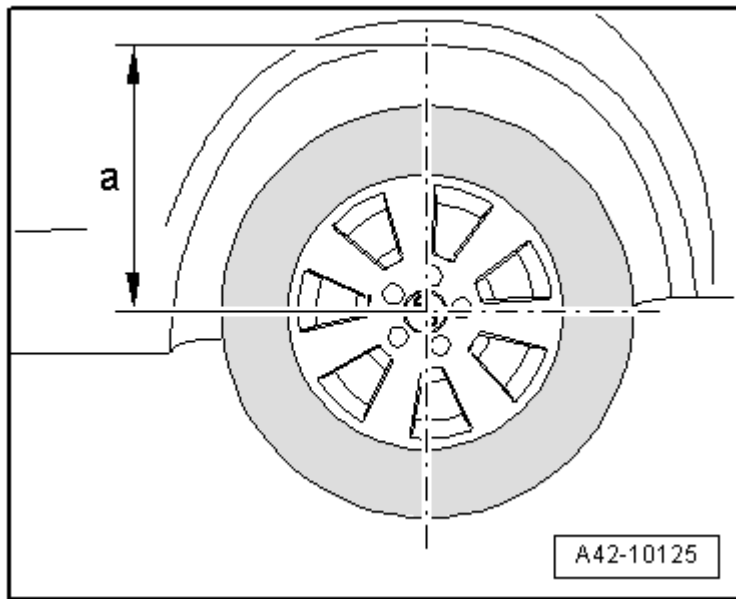


Fig. 141: Measuring Dimension From Center Of Wheel To Lower Edge Of Wheel Housing Using Tape Measure

Courtesy of AUDI OF AMERICA, LLC

-- Determine dimension -a- from the center of the wheel to the lower edge of the wheel housing before starting work while the vehicle is resting on its wheels.

-- Place the vehicle on a hoist.

-- Remove the wheels.

CAUTION:

- Do not damage the paint on the stabilizer bar when removing and installing.

-- Remove the bolt -4-.

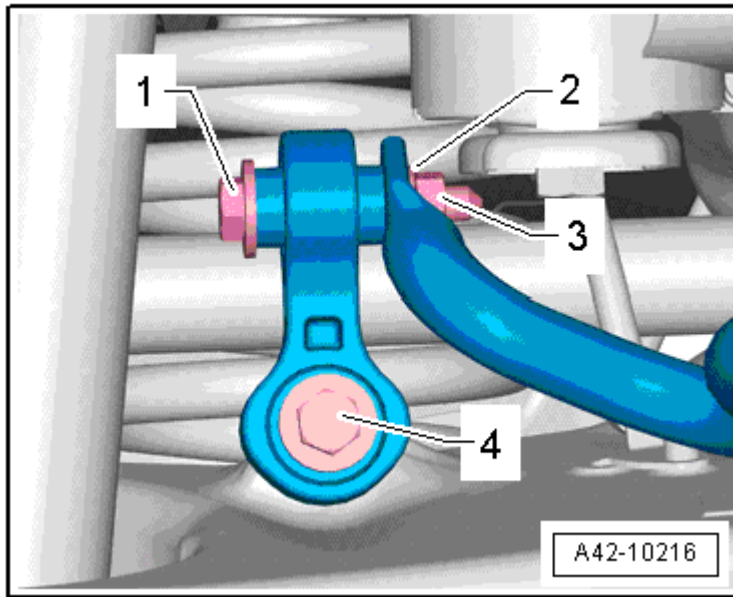


Fig. 142: Identifying Bolt

Courtesy of AUDI OF AMERICA, LLC

-- Remove the nut -3-, washer -2- and bolt -1-.

The stabilizer bar -4- is completely removed and installed with the rubber bushings -1- and clamps -3-. Do not remove the clamps and rubber bushings.

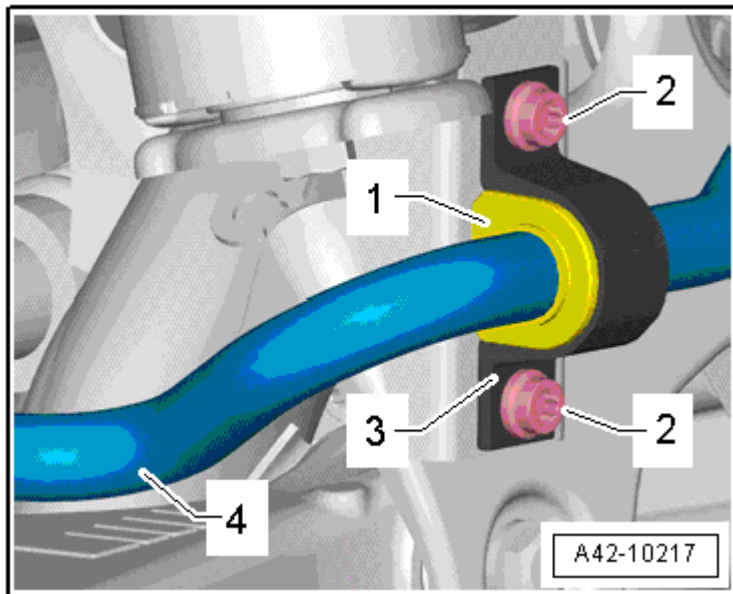


Fig. 143: Identifying Left And Right Bolts

Courtesy of AUDI OF AMERICA, LLC

-- Remove the left and right bolts -2- and the stabilizer bar -4-.

Installing

Install in reverse order of removal. Note the following:

Tightening specifications, refer to **SUBFRAME, STABILIZER BAR AND COUPLING ROD OVERVIEW**

NOTE: Bonded rubber bushings can only be turned to a limited extent. Only tighten suspension bolts when vehicle is in curb weight or control position.

Wheel bearing, lifting to curb weight position on vehicles with coil springs.
Refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**.

-- Insert the stabilizer bar and install the bolts loosely.

-- First install the left and right bolts -2- loosely.

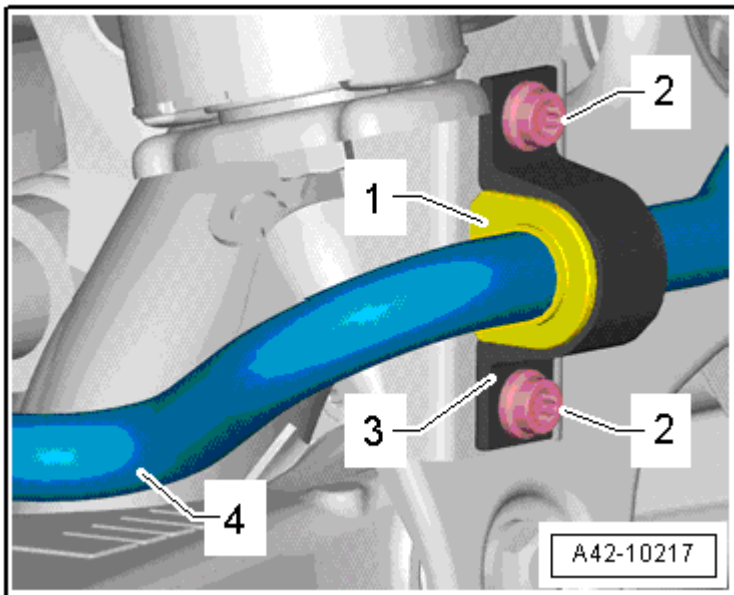


Fig. 144: Identifying Left And Right Bolts

Courtesy of AUDI OF AMERICA, LLC

-- Then tighten the left and right bolts -2- evenly.

-- Insert the bolt -1- with the washer -2- and tighten the left and right nuts -3-.

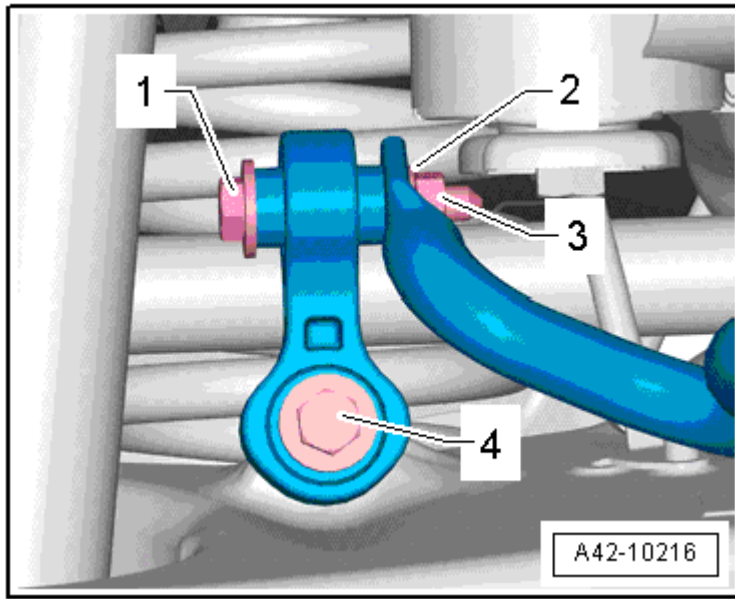


Fig. 145: Identifying Bolt

Courtesy of AUDI OF AMERICA, LLC

-- Tighten the left and right bolts -4-.

-- Axle alignment is required, see table, refer to **WHEN VEHICLE ALIGNMENT IS NECESSARY** .

-- Tighten the wheel. Refer to **Specifications** .

WHEEL BEARING HOUSING

For a short period of time, wheel bearing housings for AWD vehicles were installed on FWD vehicles -item 24- **WHEEL BEARING UNIT** Do not install both types together. Procedure for vehicles equipped with an AWD wheel bearing housing. Refer to **WHEEL BEARING HOUSING**.

For a short period, steel wheel bearing housings instead of aluminum wheel bearing housings were installed on FWD vehicles. Do not install both types together.

Special tools and workshop equipment required

- Grease Cap Puller VW 637/2
- Fitting Sleeve 3241/4
- Torque Wrench 50-200 Nm V.A.G 1332
- Torque Wrench V.A.G 1410
- Grease

Removing

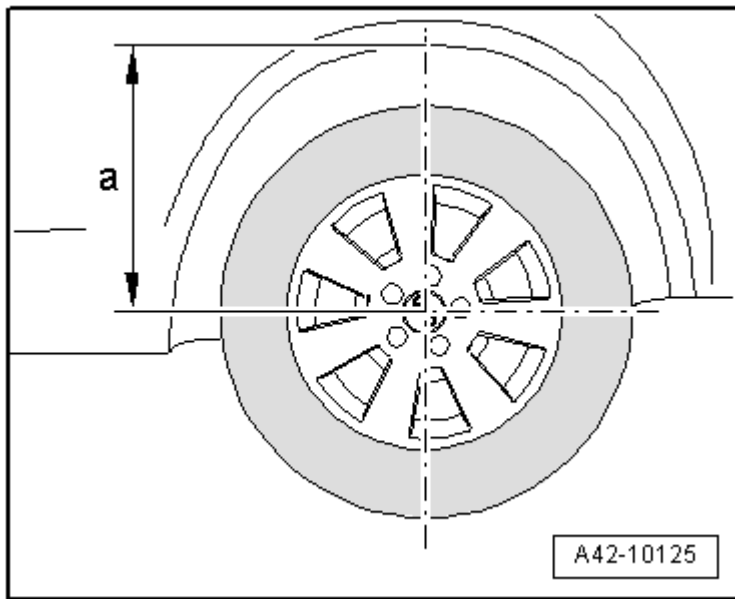


Fig. 146: Measuring Dimension From Center Of Wheel To Lower Edge Of Wheel Housing Using Tape Measure

Courtesy of AUDI OF AMERICA, LLC

-- Determine dimension -a- from the center of the wheel to the lower edge of the wheel housing before starting work while the vehicle is resting on its wheels.

Only on vehicles with a drive axle stub -item 26- **WHEEL BEARING UNIT**

-- Remove the bolt -arrow-. Refer to **THREADED CONNECTION BETWEEN DRIVE AXLE AND WHEEL HUB, LOOSENING AND TIGHTENING.**

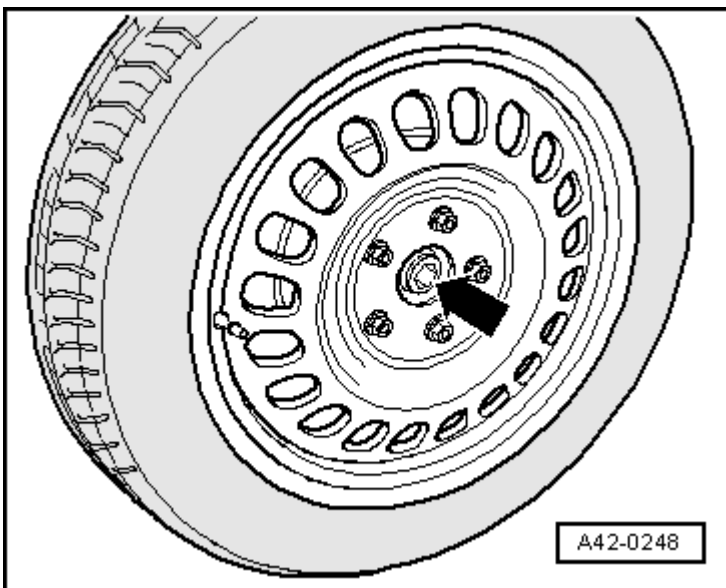


Fig. 147: Identifying Wheel Hex Bolt

Courtesy of AUDI OF AMERICA, LLC

Removing, Continued

-- Place the vehicle on a hoist.

Only perform the following steps if the wheel bearing housing will be replaced.

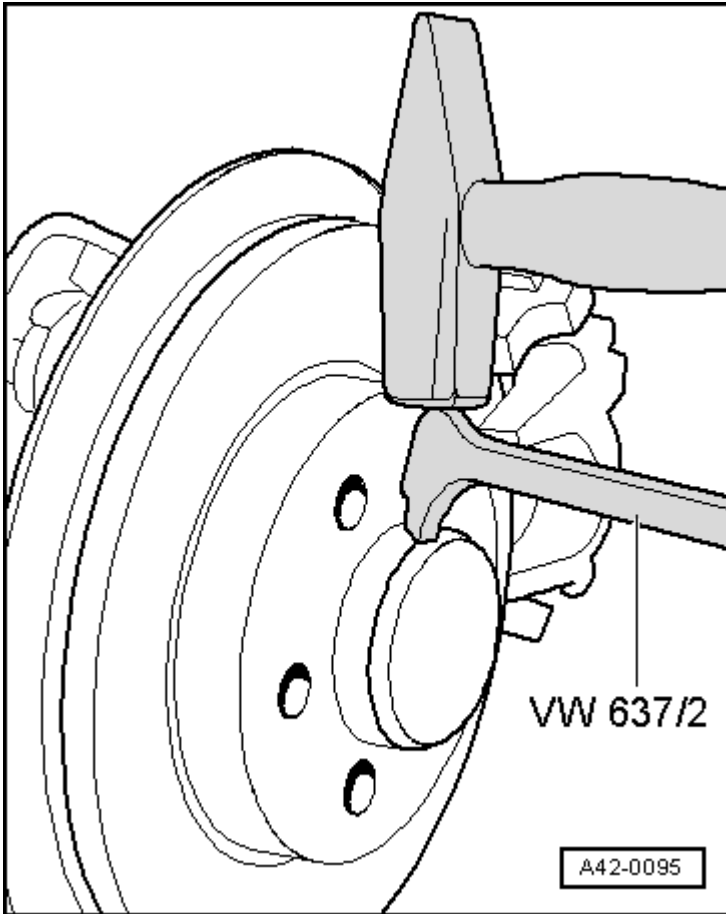


Fig. 148: Identifying Hammer And Grease Cap Puller VW 637/2
Courtesy of AUDI OF AMERICA, LLC

-- Loosen the dust cap by lightly tapping on the VW 637/2.

-- Pry the dust cap off using the VW 637/2.

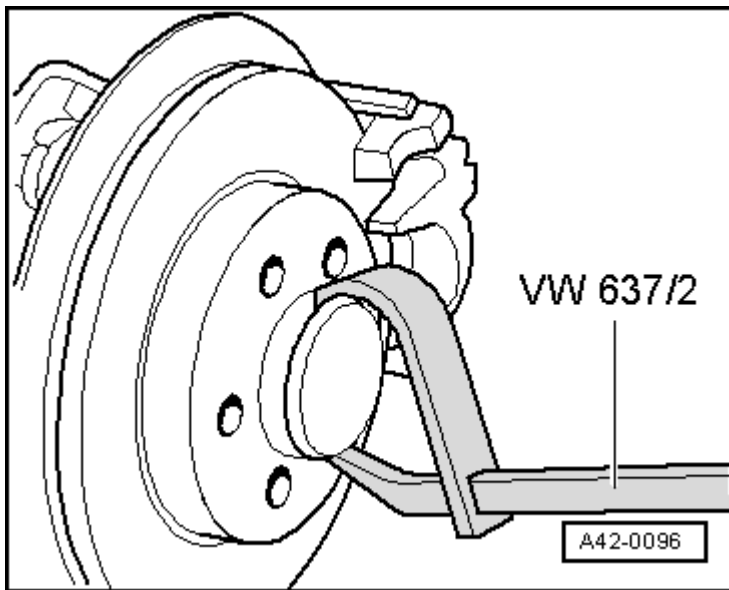


Fig. 149: Identifying Grease Cap Puller VW 637/2 To Pull Off Dust Cap
 Courtesy of AUDI OF AMERICA, LLC

-- Loosen the wheel bearing unit collar bolt, but only when the vehicle is resting on its wheels. Refer to **THREADED CONNECTION BETWEEN DRIVE AXLE AND WHEEL HUB, LOOSENING AND TIGHTENING.**

Removing, Continued

- Remove the wheel.
- Release the connector -1- from the rear speed sensor -- and remove it.

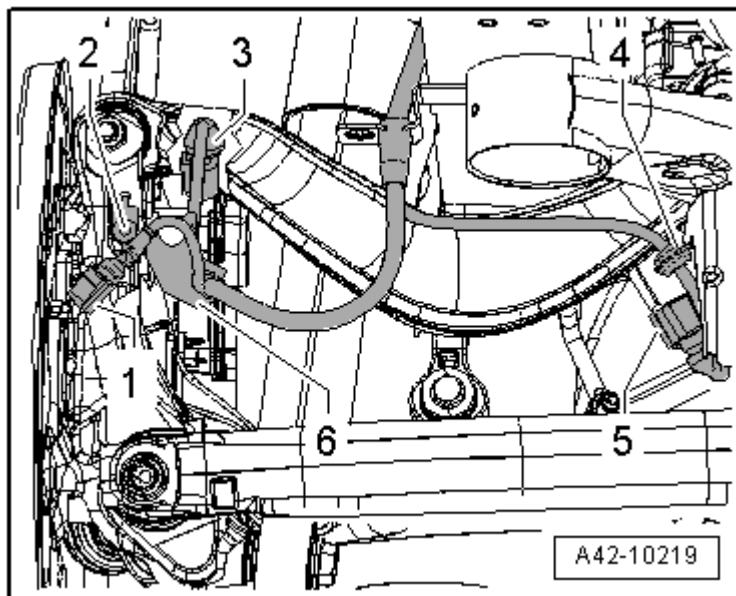


Fig. 150: Releasing Connector From Left Rear Level Control System Sensor

Courtesy of AUDI OF AMERICA, LLC

- Disconnect the electro-mechanical parking brake connector -3-.
- Remove the bolt -2- and the bracket with lines -6-.
- Remove brake caliper and brake disc. Refer to **Removal and Installation** .
- Secure the brake caliper to the body so that the weight of the caliper does not stress or damage the brake hose or brake line.

Only perform the following steps if the wheel bearing housing will be replaced.

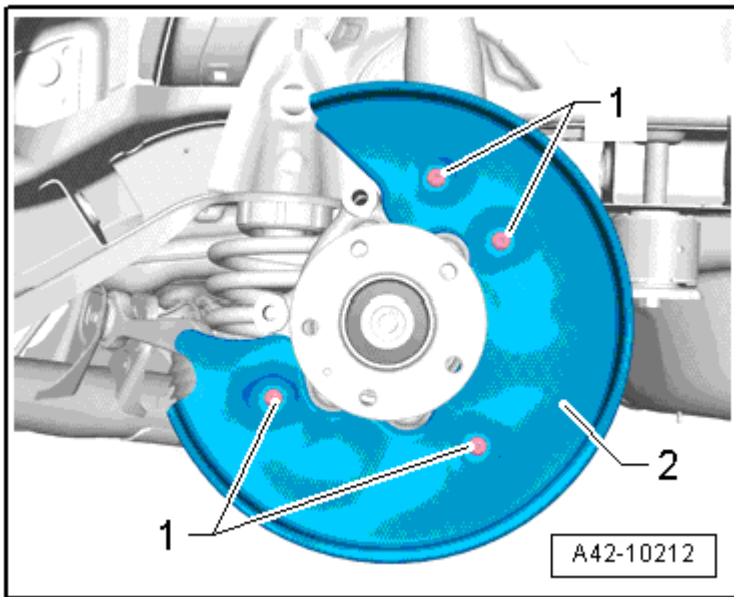


Fig. 151: Identifying Rear Speed Sensor
Courtesy of AUDI OF AMERICA, LLC

- Remove the bolts -1- from the brake shield -2-.

CAUTION: • Do not pull the wheel bearing off by the outer race (wheel hub).

- Remove the wheel bearing unit -2- over the brake shield -1- and from the stub axle -3-.

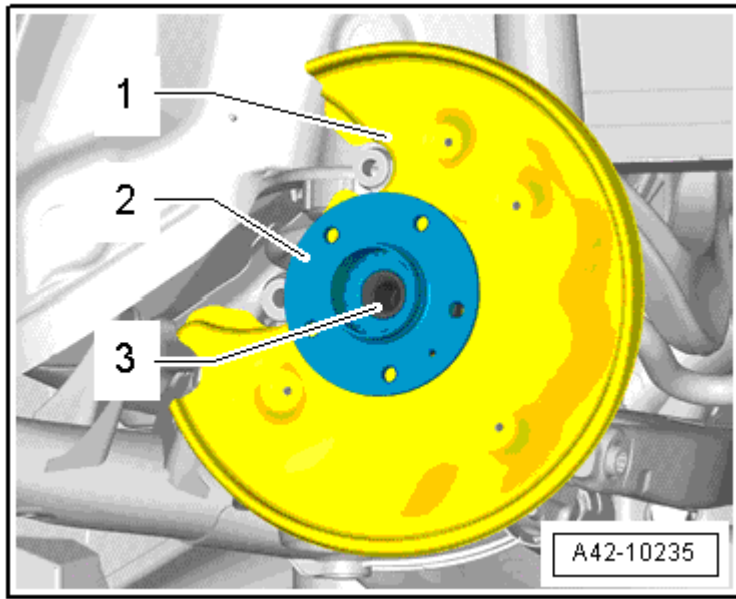


Fig. 152: Identifying Wheel Bearing Unit Over Brake Shield And From Stub Axle
Courtesy of AUDI OF AMERICA, LLC

NOTE: If the wheel bearing unit can be removed from the wheel bearing housing by hand, the wheel bearing unit is OK and can be reinstalled.

-- Reach behind the front seal -arrow- when the stub axle has been freed up enough. Remove the wheel bearing unit and the brake shield (both not shown in the illustration) over the front seal -arrow-.

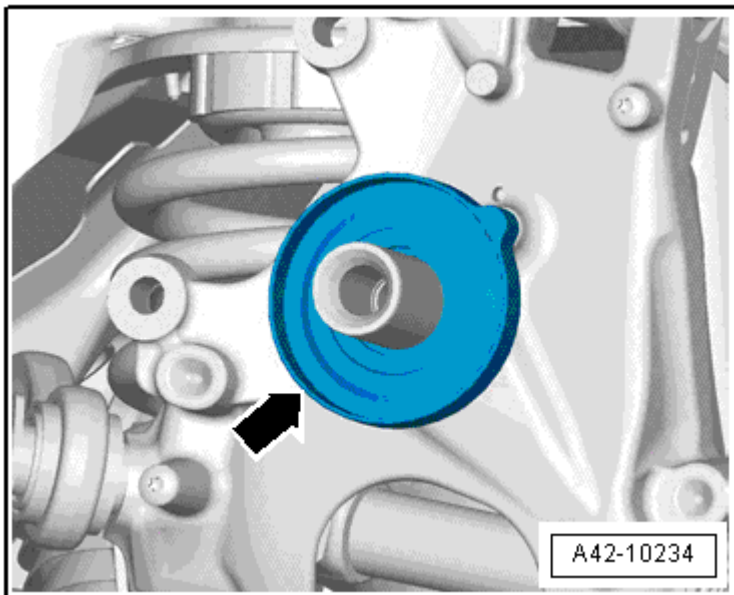


Fig. 153: Identifying Front Seal
Courtesy of AUDI OF AMERICA, LLC

- CAUTION:**
- Avoid contaminating with dirt and damaging the seal when setting down/storing.

The wheel bearing -1- must always face up.

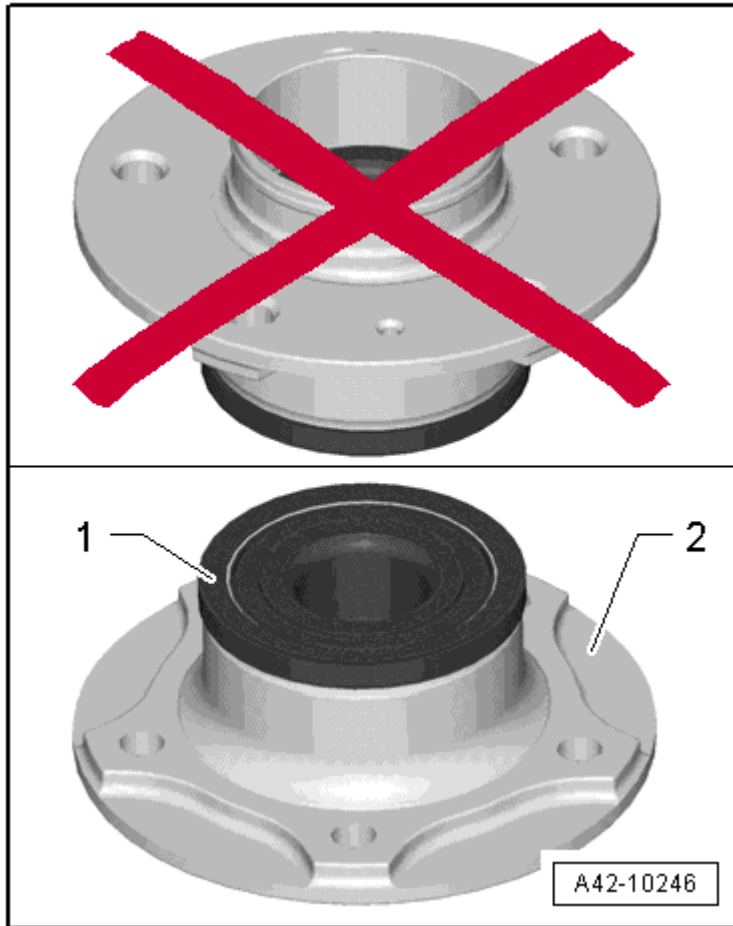


Fig. 154: Identifying Caution -- Avoid Dirt Contamination And Damage To Seal When Setting Down/Storing

Courtesy of AUDI OF AMERICA, LLC

-- Always set the wheel bearing unit down on the wheel hub -2-.

-- Clean the front seal.

-- Remove the rear speed sensor -- -2-. Remove bolt -1- to do so.

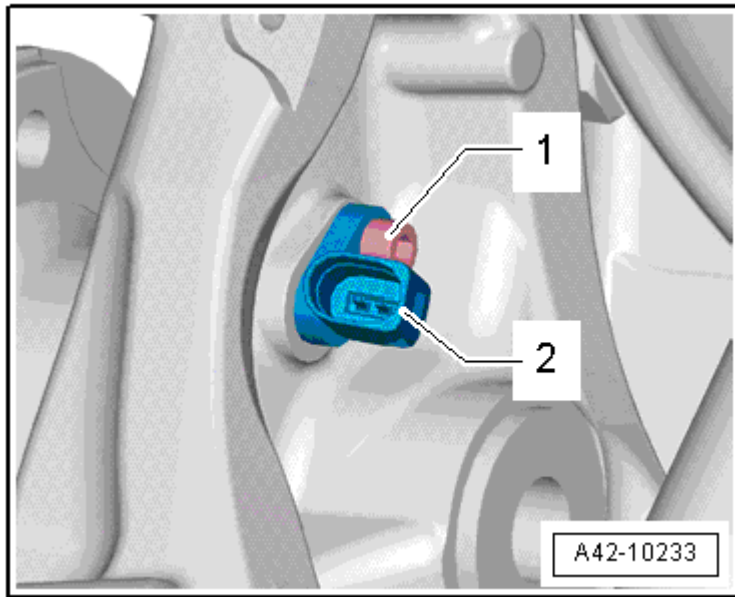


Fig. 155: Identifying Rear Speed Sensor
Courtesy of AUDI OF AMERICA, LLC

Removing, Continued

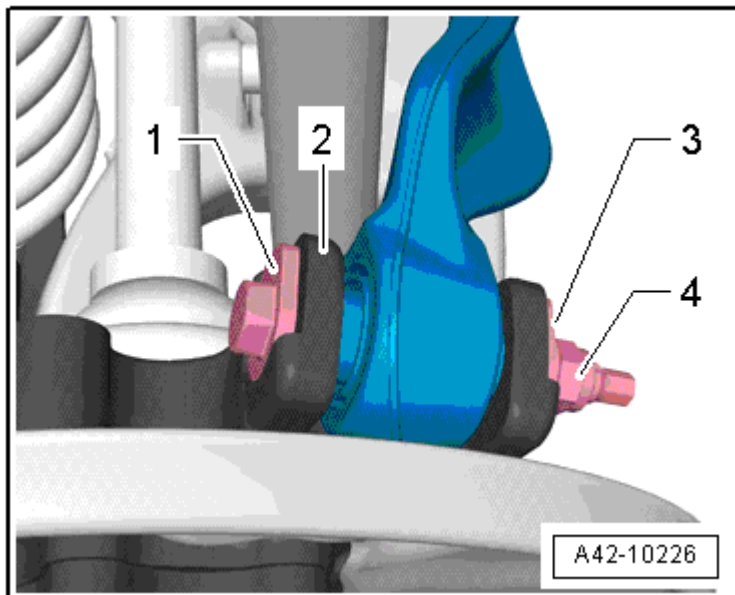


Fig. 156: Identifying Nut And Eccentric Washer
Courtesy of AUDI OF AMERICA, LLC

- Remove coil spring. Refer to **COIL SPRING**.
- Mark the position of the bolt -1- to the wheel bearing housing -2-.
- Remove the nut -4- and the eccentric washer -3-.

-- Remove the bolt -1-.

-- Remove bolt -4-.

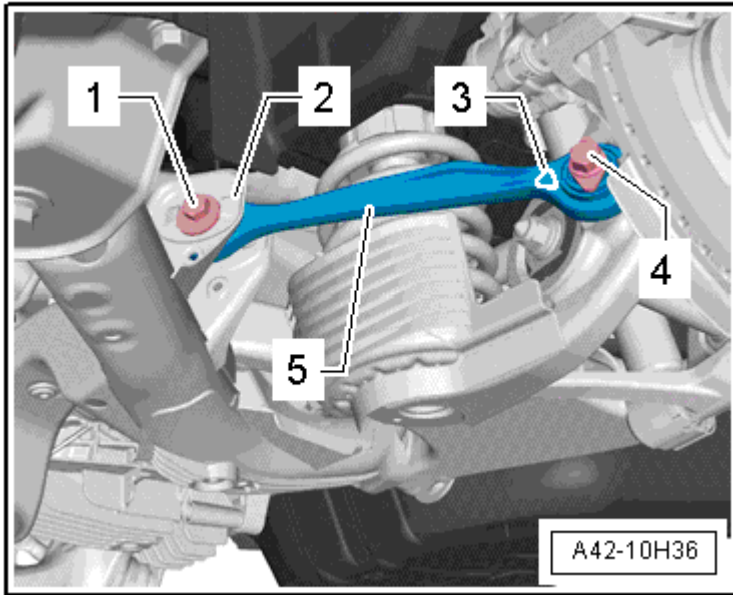


Fig. 157: Identifying Bolt

Courtesy of AUDI OF AMERICA, LLC

-- Release the retaining tabs -A- and remove the stone deflector -2-.

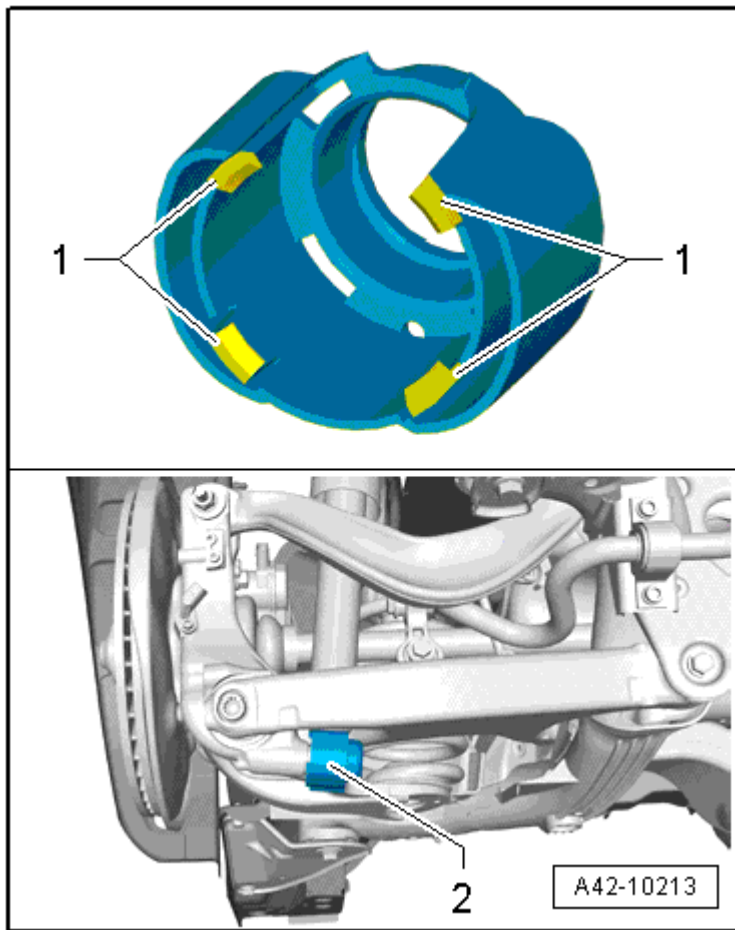


Fig. 158: Identifying Retaining Tabs And Stone Deflector
Courtesy of AUDI OF AMERICA, LLC

-- Remove the bolt -2- and washer -1-.

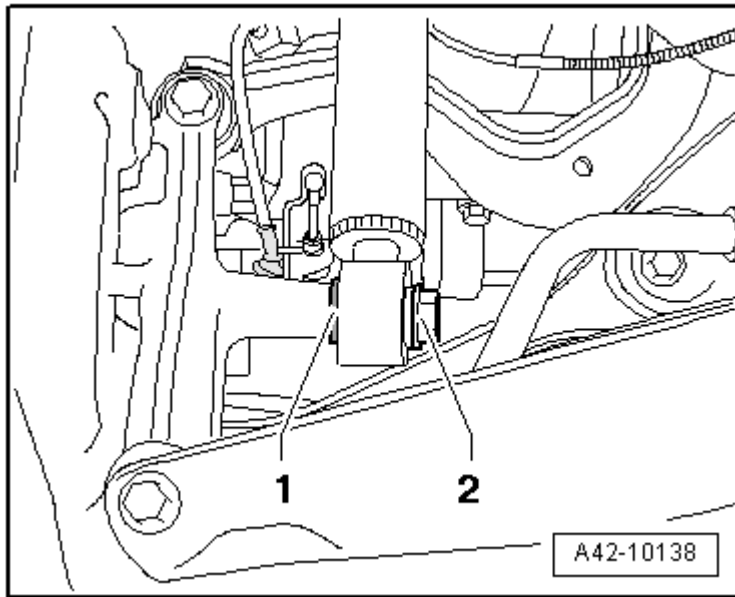


Fig. 159: Identifying Bolt And Washer
Courtesy of AUDI OF AMERICA, LLC

-- Remove nut -3-.

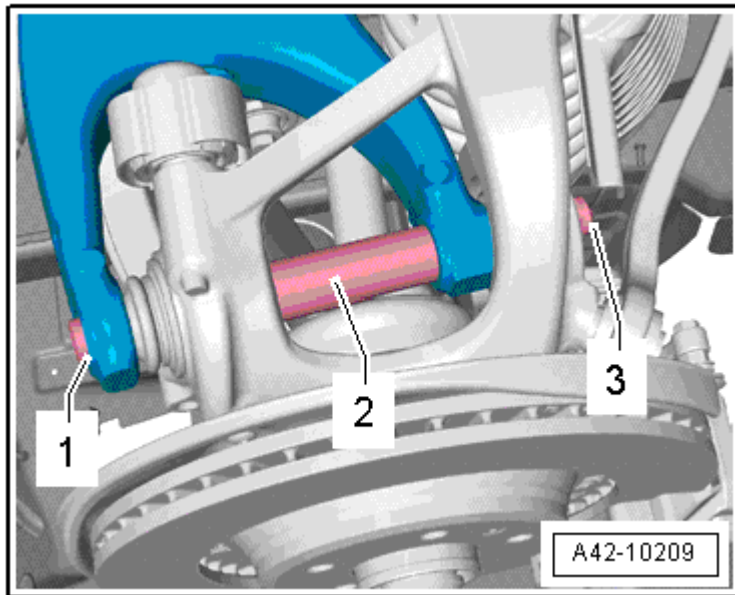


Fig. 160: Inserting Bolt With Spacer Tube To Install Nut Loosely
Courtesy of AUDI OF AMERICA, LLC

-- Remove the bolt -1- and the spacer tube -2-.

-- Remove wheel bearing housing.

Installing

Install in reverse order of removal. Note the following:

Tightening specifications, refer to **WHEEL BEARING HOUSING, WHEEL BEARING UNIT AND COIL SPRING SHOCK ABSORBER OVERVIEW**

NOTE: Bonded rubber bushings can only be turned to a limited extent. Only tighten suspension bolts when vehicle is in curb weight or control position.

Wheel bearing, lifting to curb weight position on vehicles with coil springs. Refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**.

-- Install wheel bearing housing.

-- Insert the bolt -1- with the spacer tube -2- and install the nut -3- loosely.

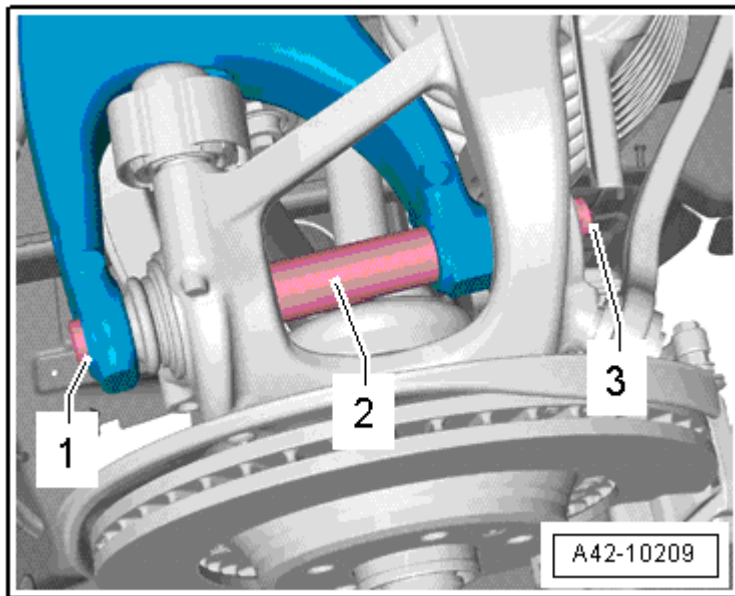


Fig. 161: Inserting Bolt With Spacer Tube To Install Nut Loosely
Courtesy of AUDI OF AMERICA, LLC

CAUTION: • Do not tighten the threaded connection using the nut -3-.

-- Tighten the bolt -1-.

-- Install coil spring. Refer to **COIL SPRING**.

-- Install the brake caliper and disc. Refer to **Removal and Installation** .

Only if the wheel bearing housing was replaced.

- Install the rear speed sensor --. Refer to **Removal and Installation** .
- Install the front seal and grease the stub axle -arrow- lightly with grease.

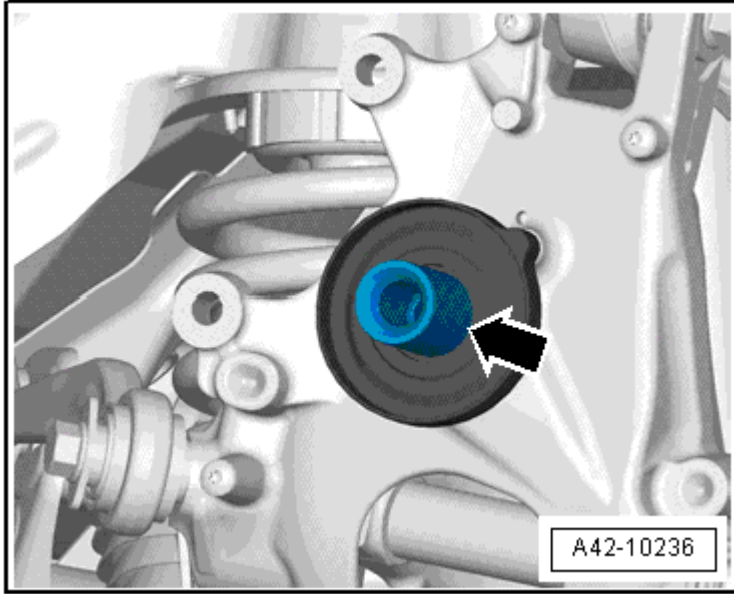


Fig. 162: Identifying Front Seal And Grease Stub Axle
Courtesy of AUDI OF AMERICA, LLC

NOTE: **Damaged (dented) protective caps must be replaced.**

Damaged (dented) protective caps allow moisture to enter. Therefore, always use the tool shown.

- Install the protective cap using the 3241/4.

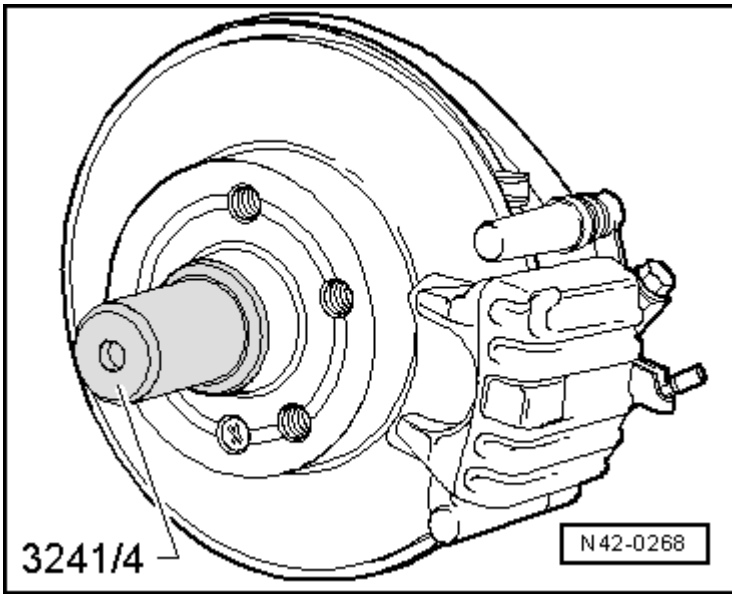


Fig. 163: Driving In Dust Cap

Courtesy of AUDI OF AMERICA, LLC

Installing, Continued

-- Install the wheel.

-- Tighten the wheel. Refer to **Specifications** .

Only if the wheel bearing housing was replaced.

-- Tighten the wheel bearing unit collar bolt, but only when the vehicle is resting on its wheels. Refer to **THREADED CONNECTION BETWEEN DRIVE AXLE AND WHEEL HUB, LOOSENING AND TIGHTENING**.

Installing, Continued

-- Axle alignment is required, see table, refer to **WHEN VEHICLE ALIGNMENT IS NECESSARY** .

The axle alignment on the front and rear axles must be performed on a VW/Audi approved alignment rack.

WHEEL BEARING UNIT

For a short period of time, wheel bearing housings for AWD vehicles were installed on FWD vehicles -item 24- **WHEEL BEARING HOUSING RUBBER BONDED BUSHING**. Do not install both types together.

Procedure for vehicles equipped with an AWD wheel bearing housing. Refer to **WHEEL BEARING UNIT**, **WHEEL BEARING UNIT**

Special tools and workshop equipment required

- Grease Cap Puller VW 637/2

- Fitting Sleeve 3241/4
- Torque Wrench 50-200 Nm V.A.G 1332
- Torque Wrench V.A.G 1410
- Grease

Removing

- Place the vehicle on a hoist.
- Loosen the dust cap by lightly tapping on the VW 637/2.

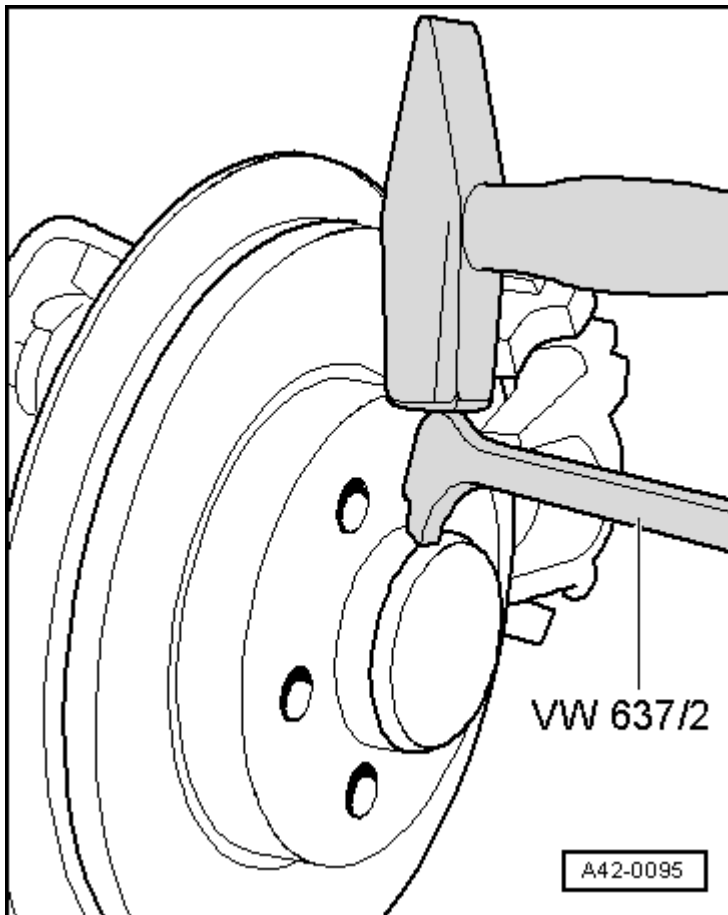


Fig. 164: Identifying Hammer And Grease Cap Puller VW 637/2
Courtesy of AUDI OF AMERICA, LLC

- Pry the dust cap off using the VW 637/2.

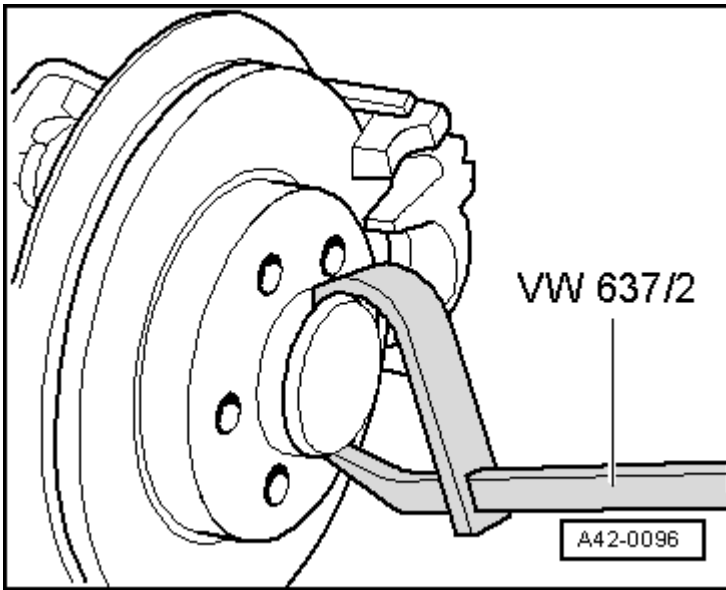


Fig. 165: Identifying Grease Cap Puller VW 637/2 To Pull Off Dust Cap
Courtesy of AUDI OF AMERICA, LLC

- Loosen the wheel bearing unit collar bolt, but only when the vehicle is resting on its wheels. Refer to **THREADED CONNECTION BETWEEN DRIVE AXLE AND WHEEL HUB, LOOSENING AND TIGHTENING**.
- Remove the wheel.
- Remove brake caliper and brake disc. Refer to **Removal and Installation** .
- Secure the brake caliper to the body so that the weight of the caliper does not stress or damage the brake hose or brake line.
- Remove the bolts -1- from the brake shield -2-.

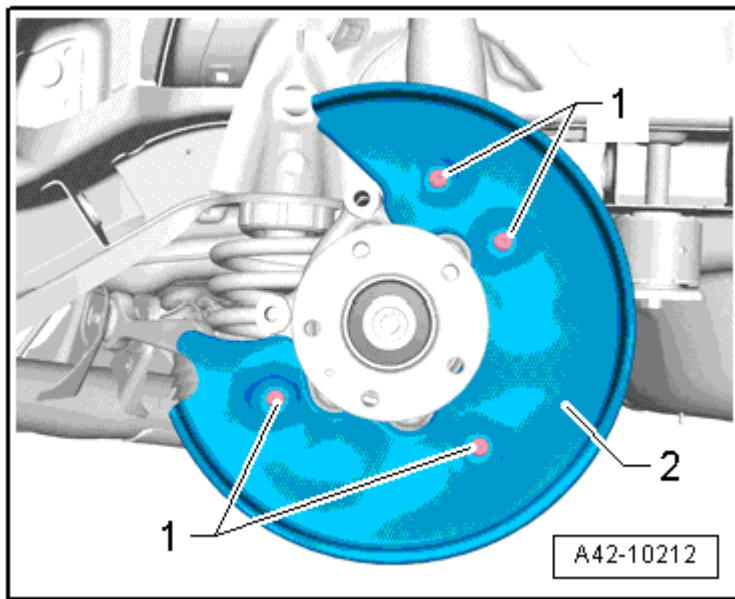


Fig. 166: Identifying Rear Speed Sensor
Courtesy of AUDI OF AMERICA, LLC

CAUTION: • Do not pull the wheel bearing off by the outer race (wheel hub).

-- Remove the wheel bearing unit -2- over the brake shield -1- and from the stub axle -3-.

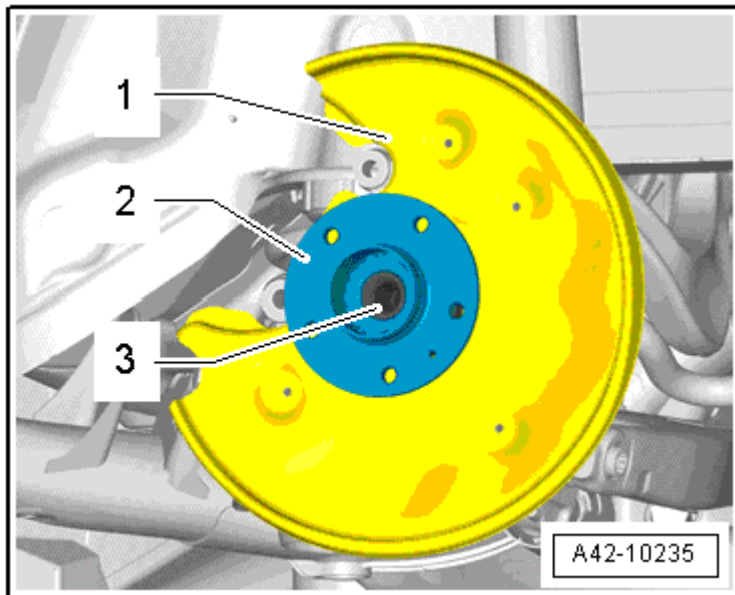


Fig. 167: Identifying Wheel Bearing Unit Over Brake Shield And From Stub Axle
Courtesy of AUDI OF AMERICA, LLC

NOTE: If the wheel bearing unit can be removed from the wheel bearing housing by hand, the wheel bearing unit is OK and can be reinstalled.

-- Reach behind the front seal -arrow- when the stub axle has been freed up enough. Remove the wheel bearing unit and the brake shield (both not shown in the illustration) over the front seal -arrow-.

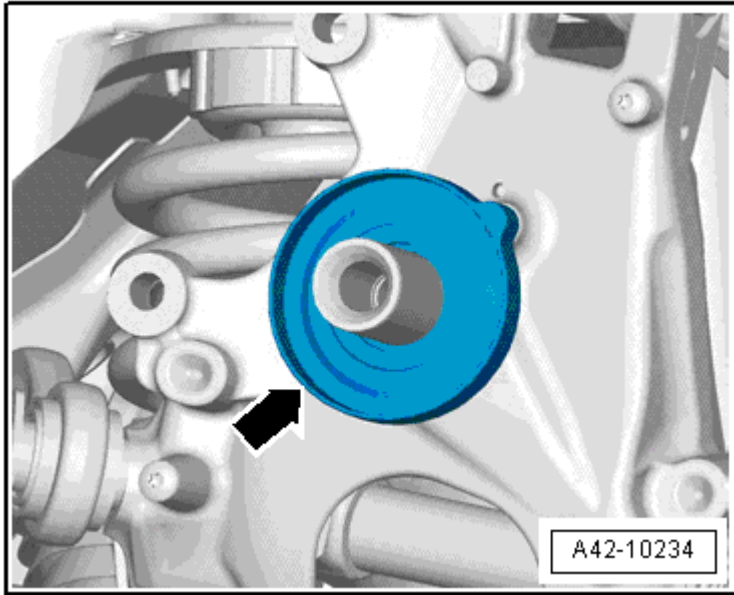


Fig. 168: Identifying Front Seal

Courtesy of AUDI OF AMERICA, LLC

- CAUTION:**
- Avoid contaminating with dirt and damaging the seal when setting down/storing.

The wheel bearing -1- must always face up.

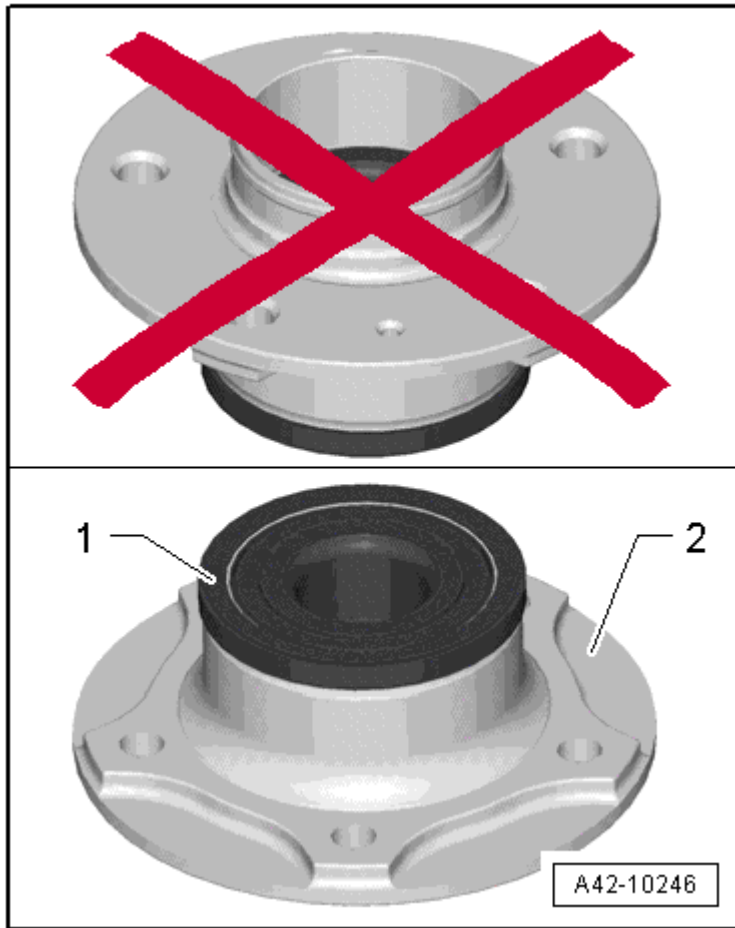


Fig. 169: Identifying Caution -- Avoid Dirt Contamination And Damage To Seal When Setting Down/Storing

Courtesy of AUDI OF AMERICA, LLC

-- Always set the wheel bearing unit down on the wheel hub -2-.

-- Clean the front seal.

Installing

Install in reverse order of removal. Note the following:

Tightening specifications, refer to **WHEEL BEARING HOUSING, WHEEL BEARING UNIT AND COIL SPRING SHOCK ABSORBER OVERVIEW**

-- Install the front seal and grease the stub axle -arrow- lightly with grease.

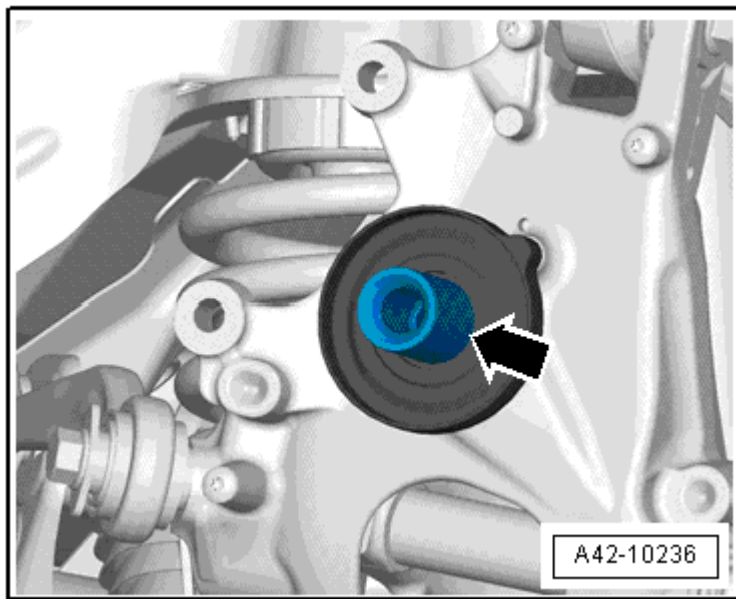


Fig. 170: Identifying Front Seal And Grease Stub Axle
Courtesy of AUDI OF AMERICA, LLC

-- Install the brake caliper and disc. Refer to **Removal and Installation** .

NOTE: **Damaged (dented) protective caps must be replaced.**

Damaged (dented) protective caps allow moisture to enter. Therefore, always use the tool shown.

-- Install the protective cap using the 3241/4.

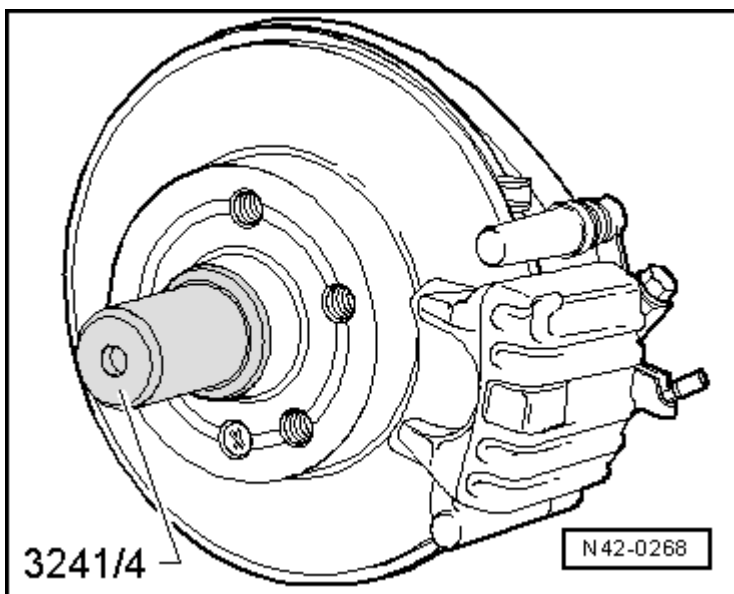


Fig. 171: Driving In Dust Cap

Courtesy of AUDI OF AMERICA, LLC

-- Install the wheel.

-- Tighten the wheel. Refer to Specifications .

-- Tighten the wheel bearing unit collar bolt, but only when the vehicle is resting on its wheels. Refer to THREADED CONNECTION BETWEEN DRIVE AXLE AND WHEEL HUB, LOOSENING AND TIGHTENING.

WHEEL BEARING HOUSING RUBBER BONDED BUSHING

Special tools and workshop equipment required

- Thrust Plate VW 401
- Thrust Plate VW 402
- Punch VW 408 A
- Punch VW 411
- Shop Press V.A.G 1290 A
- Assembly Tool T40184
- Pressure Plate T40184/2

REMOVE THE FRONT RUBBER BONDED BUSHING

-- Remove wheel bearing housing. Refer to WHEEL BEARING HOUSING.

In order to remove the front rubber bonded bushing, the T40184/2 -3- must be mounted on the front rubber bonded bushing in such a way so that the lugs -2- fit into the grooves -4-.

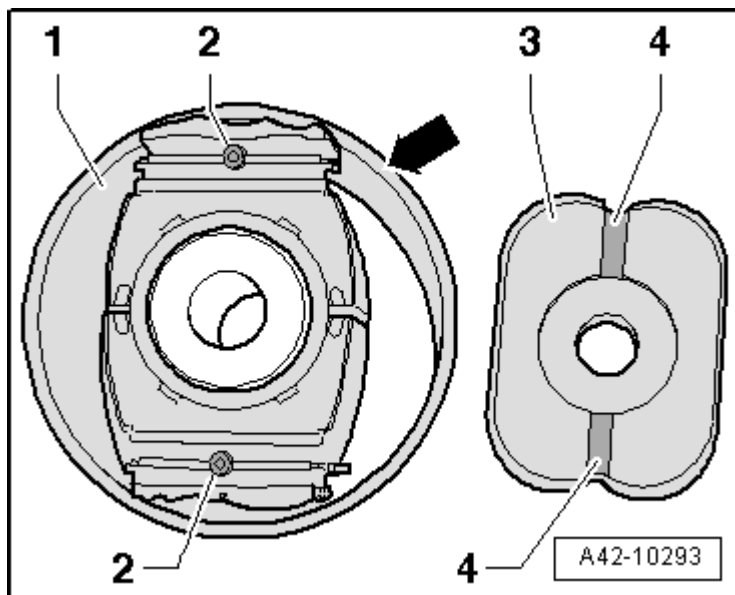
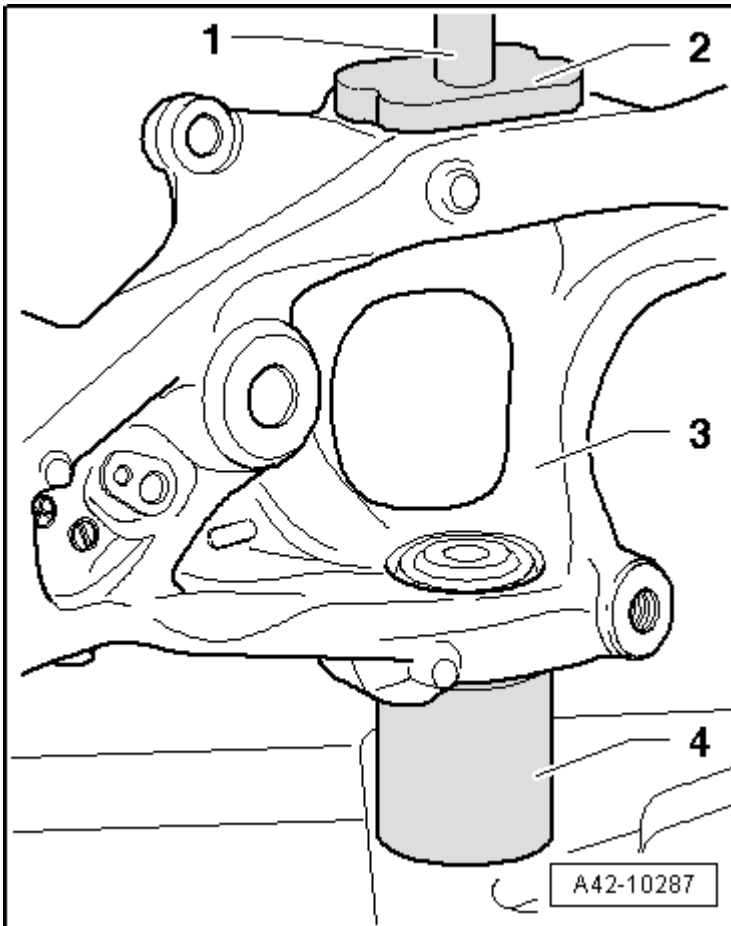


Fig. 172: Identifying Front Rubber Bonded Bushing

Courtesy of AUDI OF AMERICA, LLC

-- Place the tools on the front bonded rubber bushing and the wheel bearing housing as illustrated.

**Fig. 173: Placing Tools On Front Bonded Rubber Bushing And Wheel Bearing Housing**

Courtesy of AUDI OF AMERICA, LLC

NOTE: When mounting the wheel bearing housing onto the sleeve T40184/1 be careful not to damage or push the rubber grommet on the rear rubber bonded bushing.

1. Punch VW 411
2. Thrust plate T40184/2.
3. Wheel Bearing Housing
4. Sleeve T40184/1. The side with the groove must face the wheel bearing housing. On a bonded rubber bushing with a "positioning tab", this is in the groove on the sleeve T40184/1.

-- Press out the front rubber bonded bushing.

INSTALL THE FRONT RUBBER BONDED BUSHING

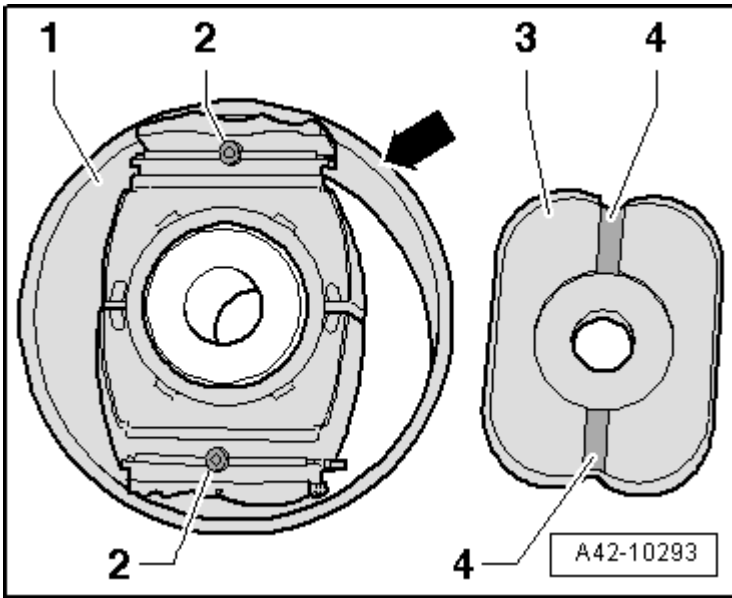


Fig. 174: Identifying Front Rubber Bonded Bushing
 Courtesy of AUDI OF AMERICA, LLC

-- Install the front rubber bonded bushing into the T40184/3. The "thin" collar -arrow- must face upward.

In order to install the front rubber bonded bushing, the T40184/2 -3- must be mounted on the front rubber bonded bushing in such a way so that the lugs -2- fit into the grooves -4-.

-- Press the front rubber bonded bushing all the way onto the thrust plates -1 and 6-.

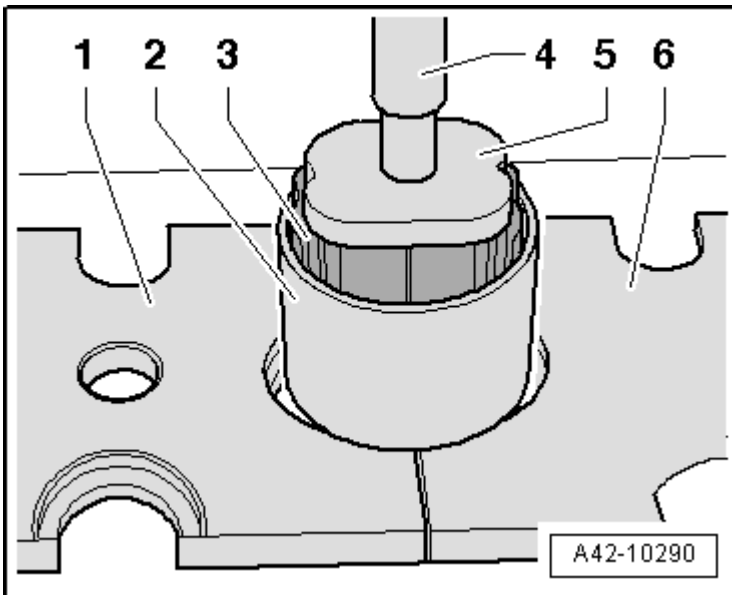


Fig. 175: Pressing Front Rubber Bonded Bushing All Way Onto Thrust Plates
 Courtesy of AUDI OF AMERICA, LLC

1. Thrust plate VW 401. Order as illustrated.

2. Sleeve T40184/3
3. Front Bonded Rubber Bushing
4. Punch VW 408 A
5. Thrust plate T40184/2
6. Thrust plate VW 402. Order as illustrated.

-- Then slightly pull apart the thrust plates -1 and 6-.

-- Press the front rubber bonded bushing approximately 2 mm out of the T40184/3.

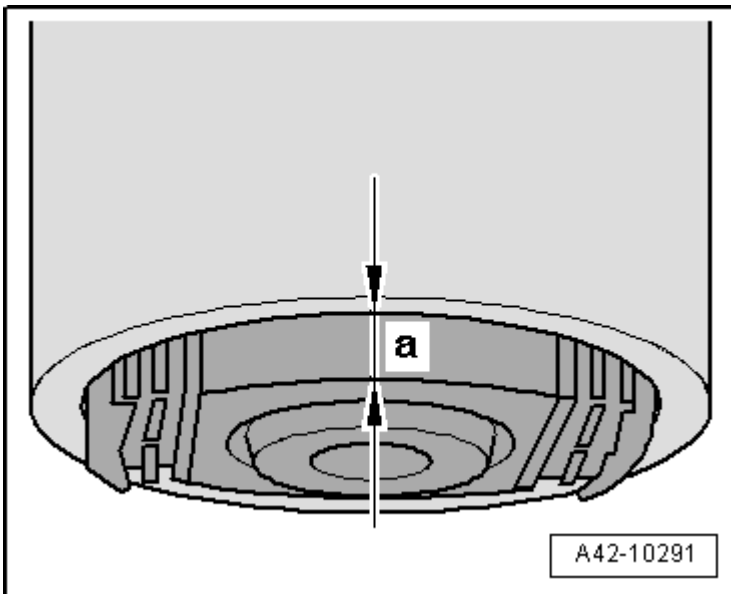


Fig. 176: Pressing Front Rubber Bonded Bushing Approximately 2 Mm Out Of T40184/3
Courtesy of AUDI OF AMERICA, LLC

a = 2 mm

-- Pull off the VW 408 A and install the VW 411.

-- Mount the wheel bearing housing onto the V.A.G 1290 A.

-- Mount the front rubber bonded bushing (not shown in the illustration), the pressure plate -3- and the sleeve -1- on the wheel housing bearing.

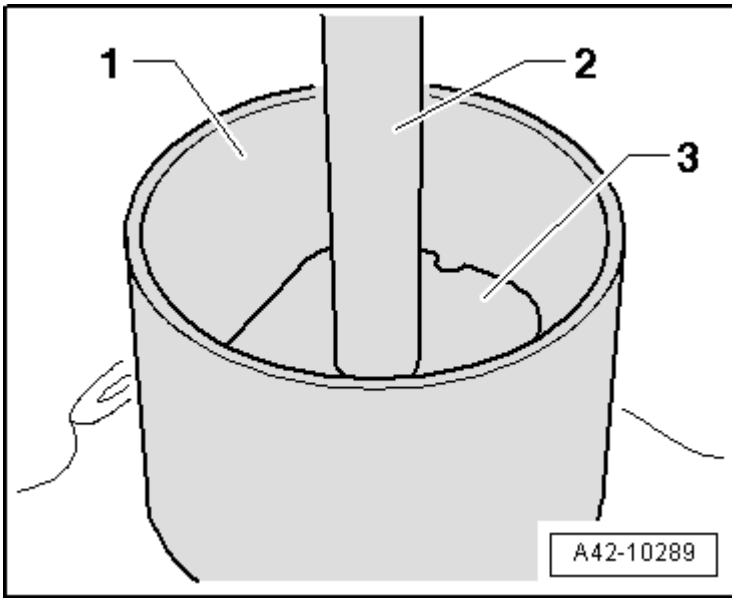


Fig. 177: Mounting Front Rubber Bonded Bushing
Courtesy of AUDI OF AMERICA, LLC

1. Sleeve T40184/3
2. Punch VW 411
3. Thrust plate T40184/2. Pay attention to the installation position of the front rubber bonded bushing.

-- Place the tools on the front bonded rubber bushing and the wheel bearing housing -3- as illustrated.

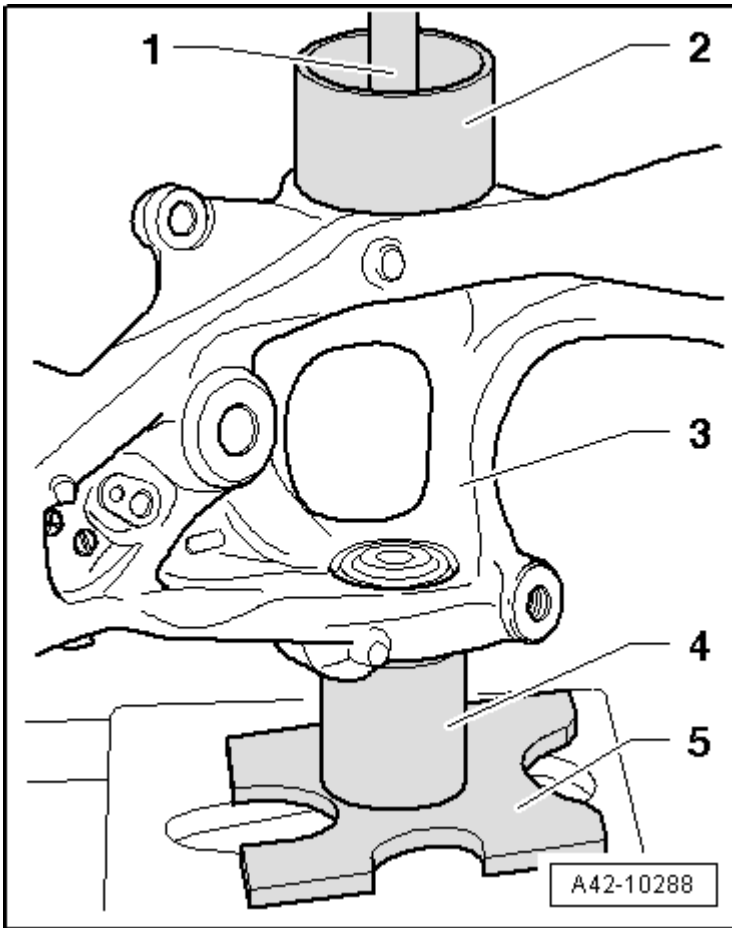


Fig. 178: Placing Tools On Front Bonded Rubber Bushing And Wheel Bearing Housing
Courtesy of AUDI OF AMERICA, LLC

NOTE: When mounting the wheel bearing housing onto the T40184/1 be careful not to damage or push the rubber grommet on the rear rubber bonded bushing.

-- Slowly press the front rubber bonded bushing in (not shown in the illustration) until the sleeve -2- can be pulled out at the top.

1. Punch VW 411
2. Sleeve T40184/3
3. Wheel bearing housing
4. Sleeve T40184/1. The side with the groove must face the wheel bearing housing. On a bonded rubber bushing with a "positioning tab", this is in the groove on the T40184/1.
5. Thrust plate VW 402

Ignore -3-.

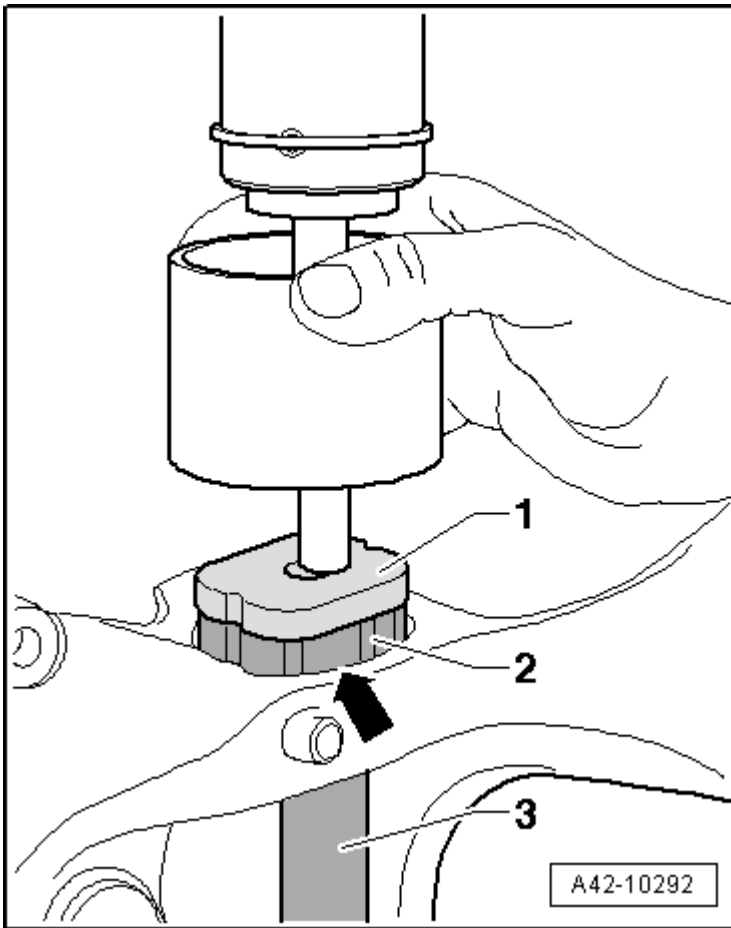


Fig. 179: Slowly Pressing Front Rubber Bonded Bushing
Courtesy of AUDI OF AMERICA, LLC

-- Slowly press the front rubber bonded bushing -2- so that it is even with the edge -arrow- of the wheel bearing housing.

-- Install wheel bearing housing. Refer to **WHEEL BEARING HOUSING**.

SHOCK ABSORBER

Special tools and workshop equipment required

- Torque Wrench 5-50 Nm V.A.G 1331
- Torque Wrench 50-200 Nm V.A.G 1332
- Engine-/Gearbox Jack V.A.G 1383 A
- Wheel Hub Support T10149

Removing

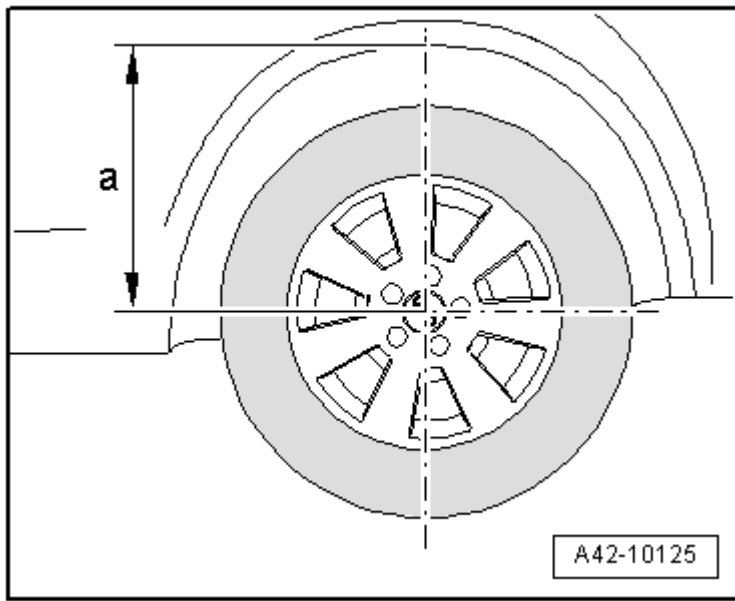


Fig. 180: Measuring Dimension From Center Of Wheel To Lower Edge Of Wheel Housing Using Tape Measure

Courtesy of AUDI OF AMERICA, LLC

- Determine dimension -a- from the center of the wheel to the lower edge of the wheel housing before starting work while the vehicle is resting on its wheels.
- Place the vehicle on a hoist.
- Remove the wheel.
- Remove wheel housing liner. Refer to **Removal and Installation** .
- Turn the wheel hub up until a wheel bold hole is on top.
- Install the T10149 with the wheel bolt -arrow-

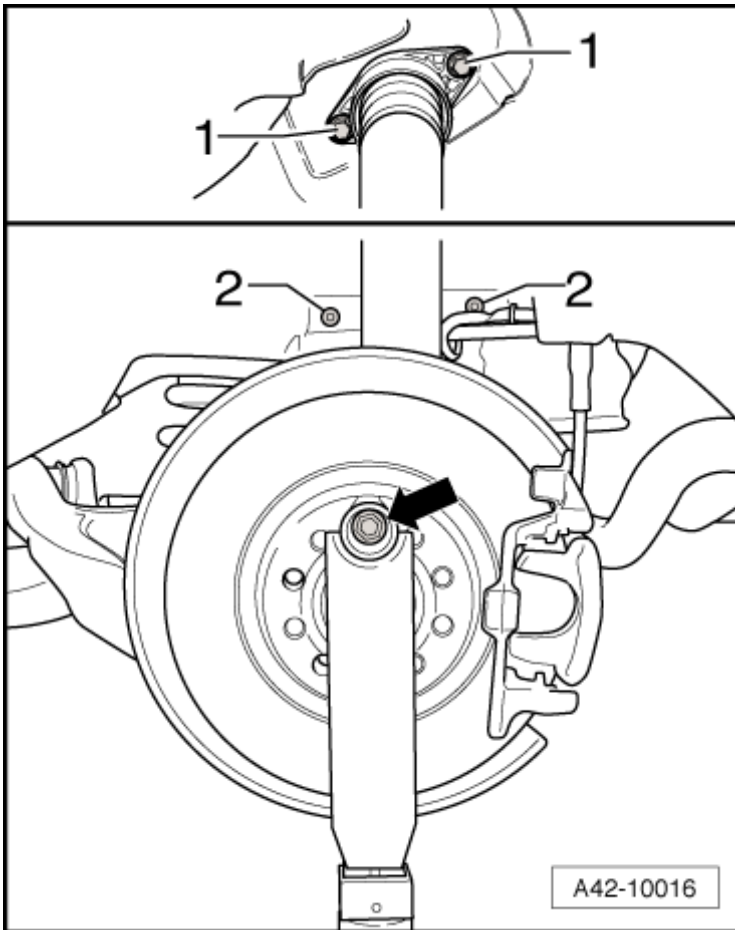


Fig. 181: Identifying Wheel Hub Support T10149 With Wheel Bolt
 Courtesy of AUDI OF AMERICA, LLC

- Insert the T10149 in the V.A.G 1383 A and lift the wheel bearing housing slightly.
- Remove bolts -1-.

Applies to a Vehicle with Electronically Controlled Damping

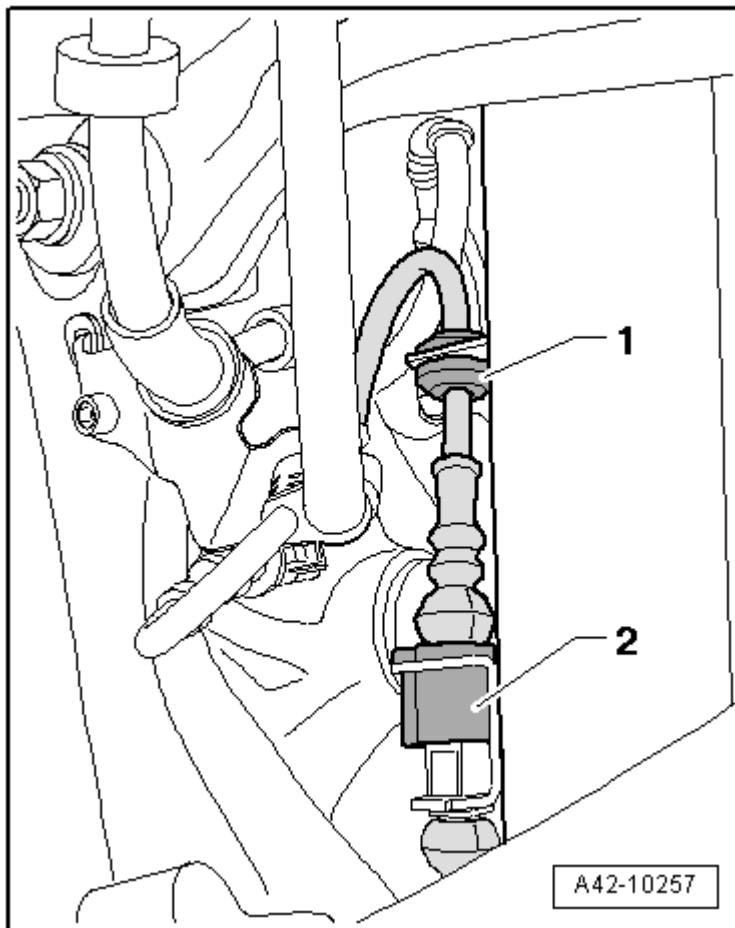


Fig. 182: Releasing Connector -2- & Fastener -1-
Courtesy of AUDI OF AMERICA, LLC

-- Release and remove the connector -2-.

-- Remove the fastener -1-.

Continuation for All Vehicles

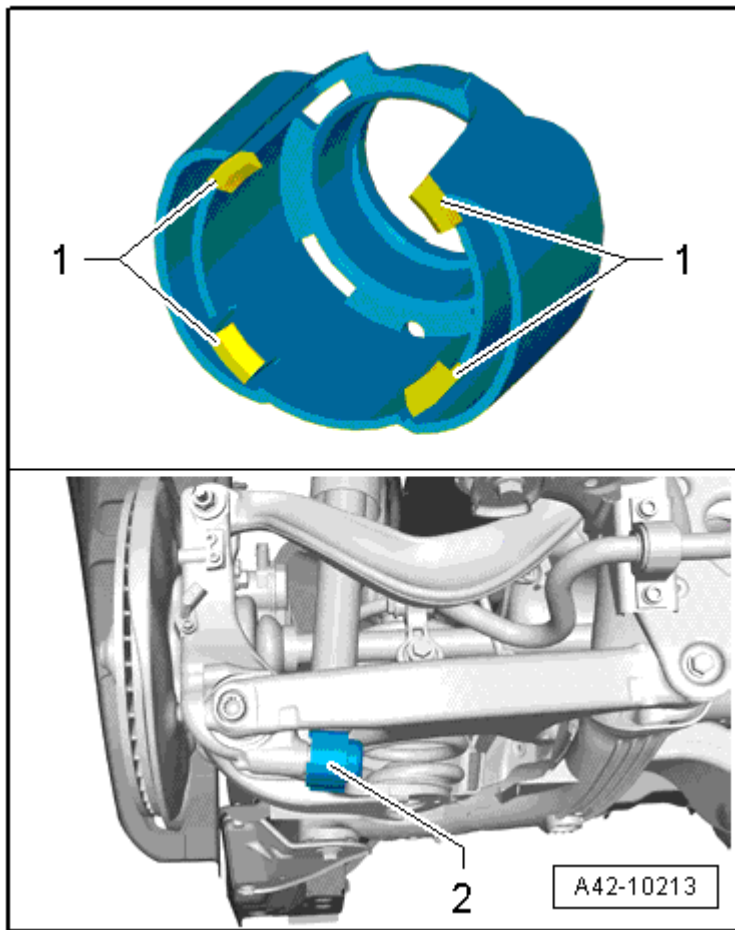


Fig. 183: Identifying Retaining Tabs And Stone Deflector
Courtesy of AUDI OF AMERICA, LLC

- Release the retaining tabs -A- and remove the stone deflector -2-.
- Remove the bolt -2- and washer -1-.

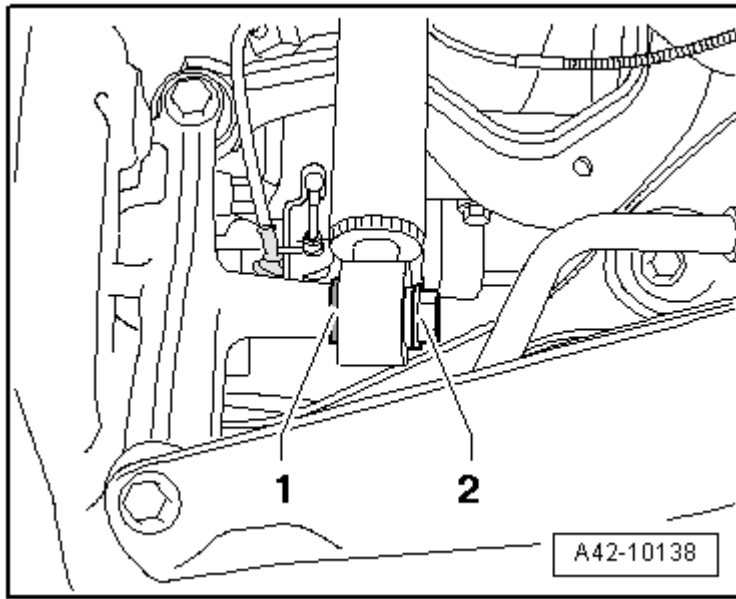


Fig. 184: Identifying Bolt And Washer
Courtesy of AUDI OF AMERICA, LLC

-- Remove the shock absorber downward.

Installing

Install in reverse order of removal. Note the following:

Tightening specifications, refer to **WHEEL BEARING HOUSING, WHEEL BEARING UNIT AND COIL SPRING SHOCK ABSORBER OVERVIEW**

NOTE: Bonded rubber bushings can only be turned to a limited extent. Only tighten suspension bolts when vehicle is in curb weight or control position.

Wheel bearing, lifting to curb weight position on vehicles with coil springs.
Refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING.**

-- Wheel housing liner, installing. Refer to **Removal and Installation** .

-- Tighten the wheel. Refer to **Specifications** .

ALL WHEEL DRIVE (AWD)

SUBFRAME WITH ATTACHMENTS

Special tools and workshop equipment required

- Torque Wrench 5-50 Nm V.A.G 1331

- Torque Wrench 50-200 Nm V.A.G 1332
- Engine-/Gearbox Jack V.A.G 1383 A with Universal Transmission Support V.A.G 1359/2
- Tensioning Strap T10038

Removing

NOTE: For later assembling work where the drive axle to the wheel hub threaded connection must be loosened, note that it must not be done while the vehicle is resting on its wheels. Loosen the connection between the drive axle and wheel hub. Refer to THREADED CONNECTION BETWEEN DRIVE AXLE AND WHEEL HUB, LOOSENING AND TIGHTENING.

-- Determine dimension -a- from the center of the wheel to the lower edge of the wheel housing before starting work while the vehicle is resting on its wheels.

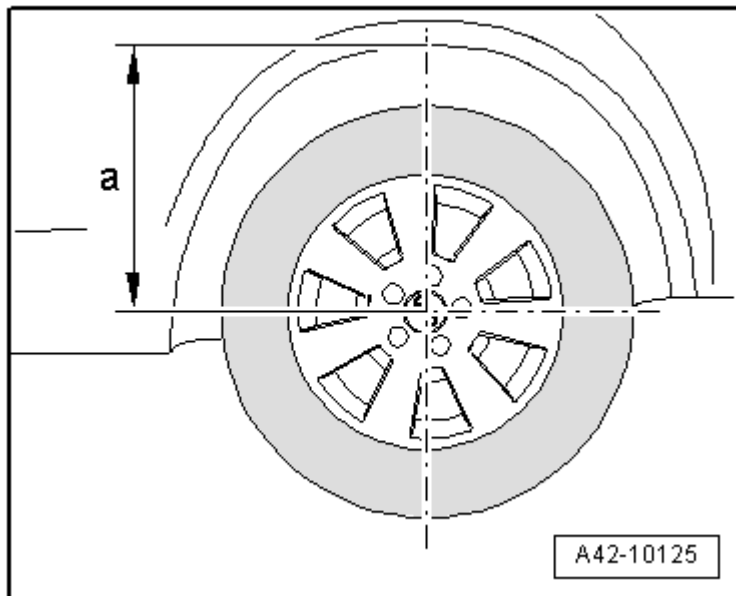


Fig. 185: Measuring Dimension From Center Of Wheel To Lower Edge Of Wheel Housing Using Tape Measure

Courtesy of AUDI OF AMERICA, LLC

- Place the vehicle on a hoist.
- Remove the wheels.
- Remove the coil springs. Refer to COIL SPRING.
- Remove the rear muffler. Refer to [For transmission(s) 0AW] [For engine(s) CALA] Description and Operation or refer to [For engine(s) CAEB] Description and Operation or refer to [For engine(s) CCBA] Description and Operation.

-- Remove the driveshaft from the rear final drive. Refer to **Removal and Installation** , **Removal and Installation** or **Removal and Installation** .

-- Secure the driveshaft -3- to the body -2- using a wire -1-.

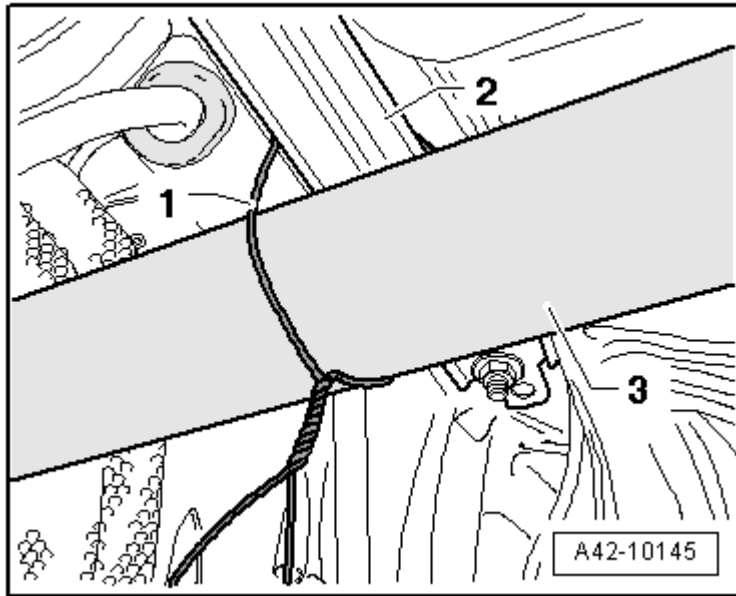


Fig. 186: Identifying Secured Driveshaft
Courtesy of AUDI OF AMERICA, LLC

-- Move the rear driveshaft tube as far as possible in direction of transmission.

-- If the vehicles has a sport differential, remove the bolts -arrows- and remove the bracket -1- from the rear final drive.

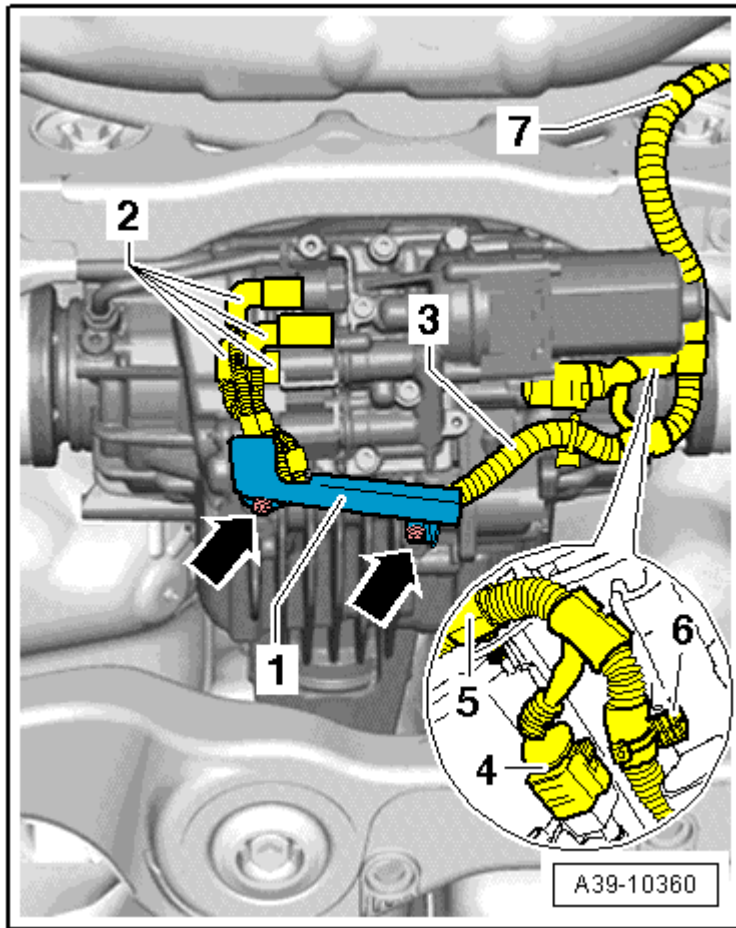


Fig. 187: Identifying Rear Final Drive Wiring Harness Bracket

Courtesy of AUDI OF AMERICA, LLC

NOTE: Mark the connectors -2- for the oil pressure/temperature sensor -- and on the clutch valves --.

- Mark the connectors -2- on the oil pressure/temperature sensors -- and on the clutch valves --.
- Disconnect the connector -4- from the all wheel drive pump -V415-.
- Unclip the wiring harness -3- from the final drive and the subframe -5 through 7- and tie it up.
- Remove the left and right bolt -2- and the bracket with wires -1-.

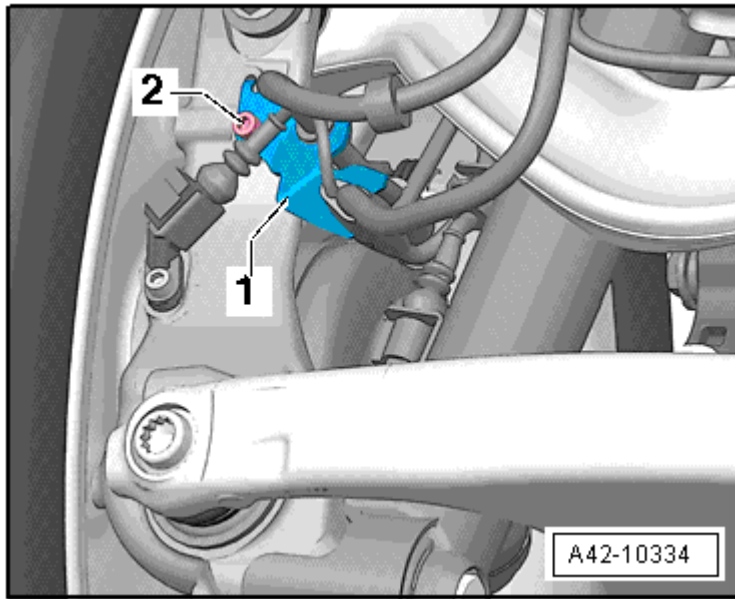


Fig. 188: Identifying Left, Right Bolt And Bracket With Wires
 Courtesy of AUDI OF AMERICA, LLC

-- Release the connector -1- from the -G46- and -G44- and remove it.

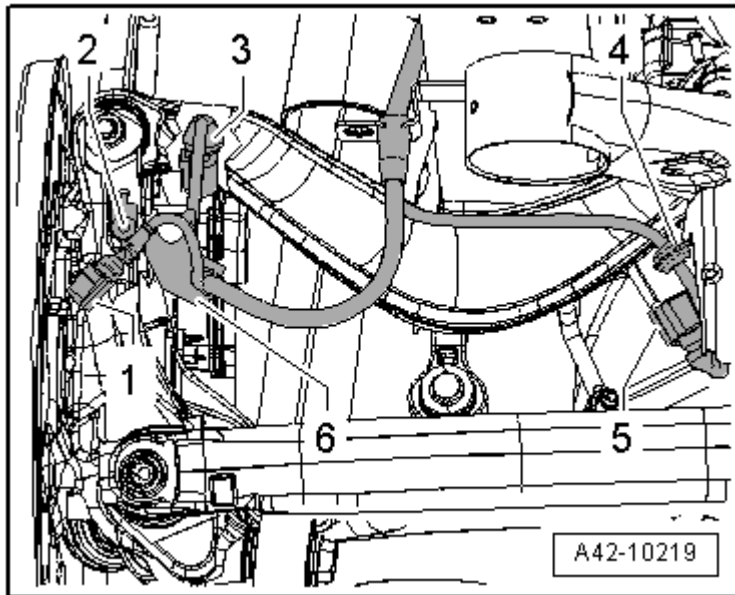


Fig. 189: Releasing Connector From Left Rear Level Control System Sensor
 Courtesy of AUDI OF AMERICA, LLC

- Disconnect the right and left electro-mechanical parking brake connectors -3-.
- Disconnect the connector -5- from the -G76- and, if equipped, from the -G77-.
- Remove the left wiring harness -4-, and if equipped, the right one as well.

-- If the vehicle has electronically controlled damping, disconnect the connector on the shock absorber and free up the wiring harness.

-- Release the retaining tabs -A- and remove the stone deflector -2-.

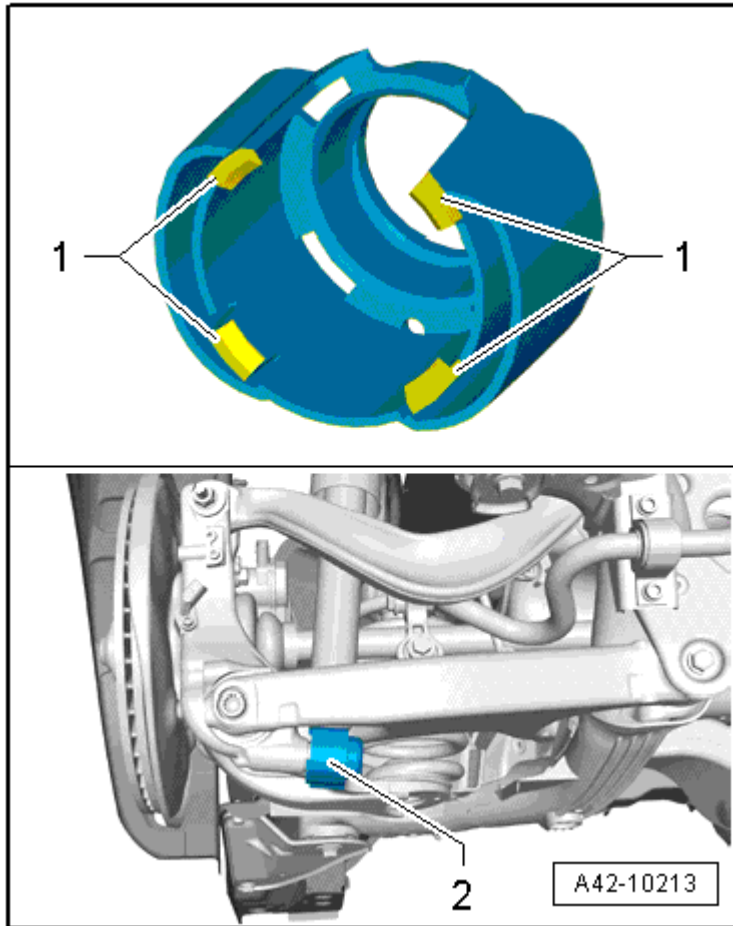


Fig. 190: Identifying Retaining Tabs And Stone Deflector
Courtesy of AUDI OF AMERICA, LLC

-- Remove the bolt -arrow- and washer.

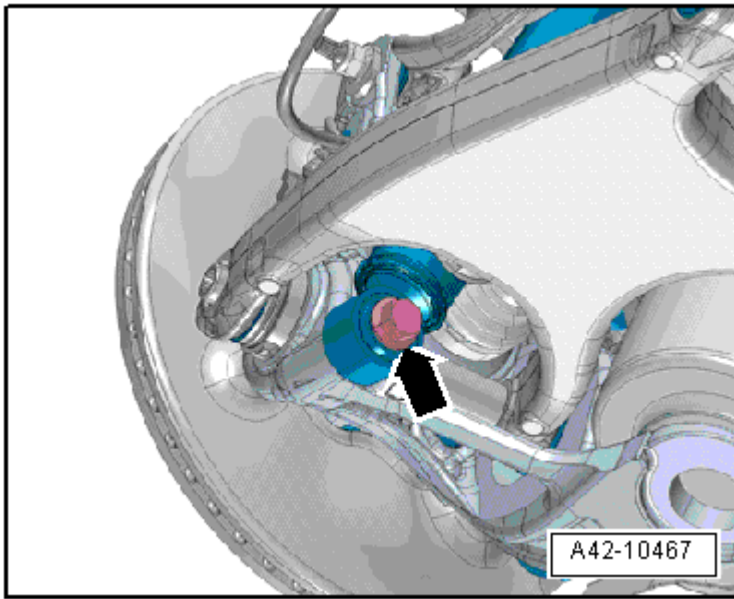


Fig. 191: Identifying Bolt And Washer
 Courtesy of AUDI OF AMERICA, LLC

-- Remove the bolt -1-.

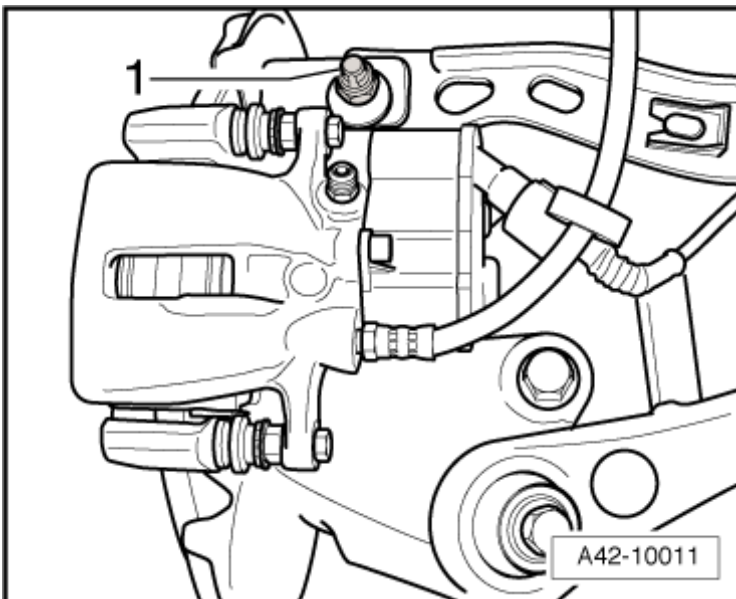


Fig. 192: Identifying Threaded Connection
 Courtesy of AUDI OF AMERICA, LLC

-- Remove the brake caliper. Refer to **Removal and Installation** .

-- Guide the brake caliper past the wheel suspension and secure it on the body so the weight of the caliper does not stress or damage the brake hose or line.

- Attach the upper transverse link to the wheel bearing housing by hand -1-.
- Remove the cover -1 and 2-. Refer to **Removal and Installation** .

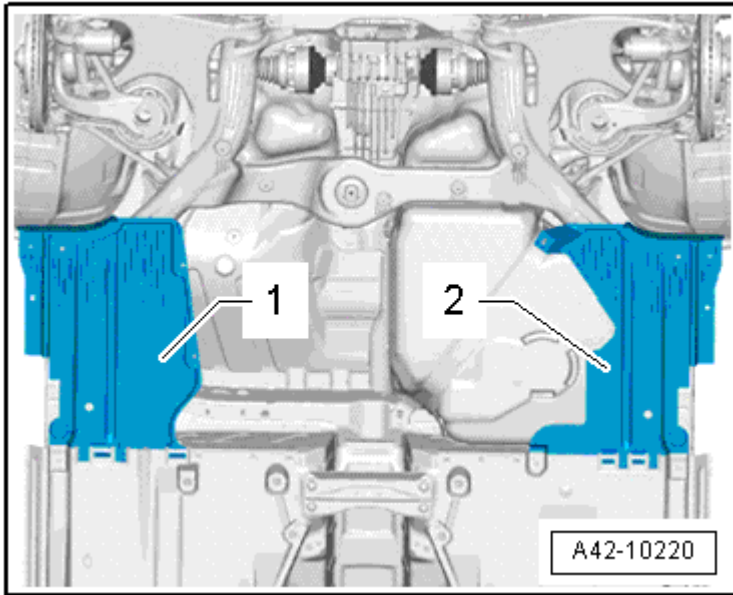


Fig. 193: Identifying Stone Deflectors
Courtesy of AUDI OF AMERICA, LLC

- Install the stone deflectors -1, 2 and 3-, if applicable.

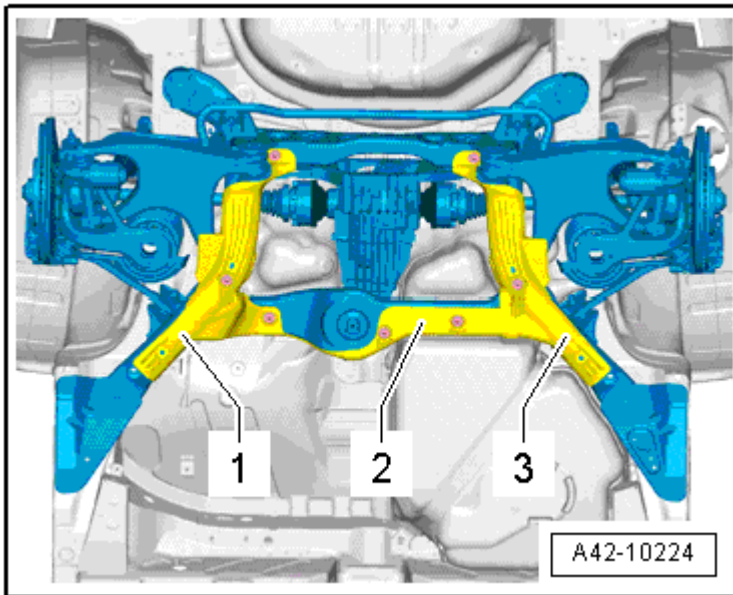


Fig. 194: Identifying Stone Deflectors
Courtesy of AUDI OF AMERICA, LLC

WARNING: Before **-LOOSENING-** subframe bolts, secure vehicle against tipping over (for example load luggage compartment with approximately 50 kg).

-- Place the V.A.G 1383 A with the V.A.G 1359/2 under the subframe and secure it using the T10038.

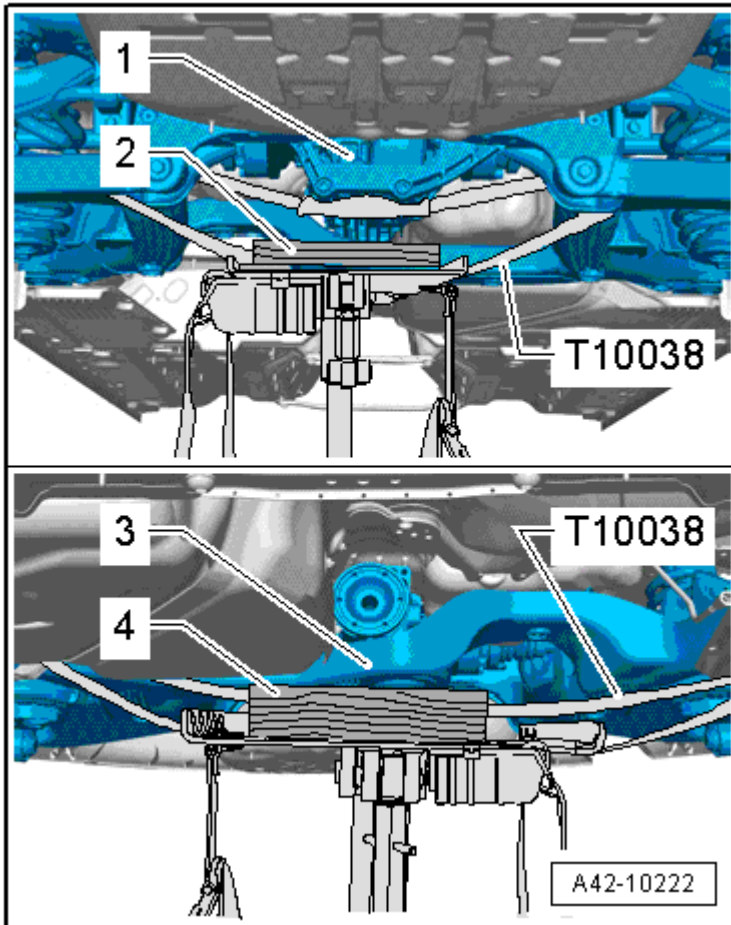


Fig. 195: Placing V.A.G 1383A With V.A.G 1359/2 Under Subframe
 Courtesy of AUDI OF AMERICA, LLC

- Support the rear final drive -1- using a suitable block of wood -2-.
- Support front of subframe with a suitable block of wood -4- under crossmember -3-.
- Secure the subframe to the V.A.G 1383 A using the T10038.
- Secure the T10038 under the drive axle and around the subframe and guide it behind the rear final drive.
- Route the T10038 under the V.A.G 1359/2 and tighten it.
- Remove the left and right bolts -1 and 2-.

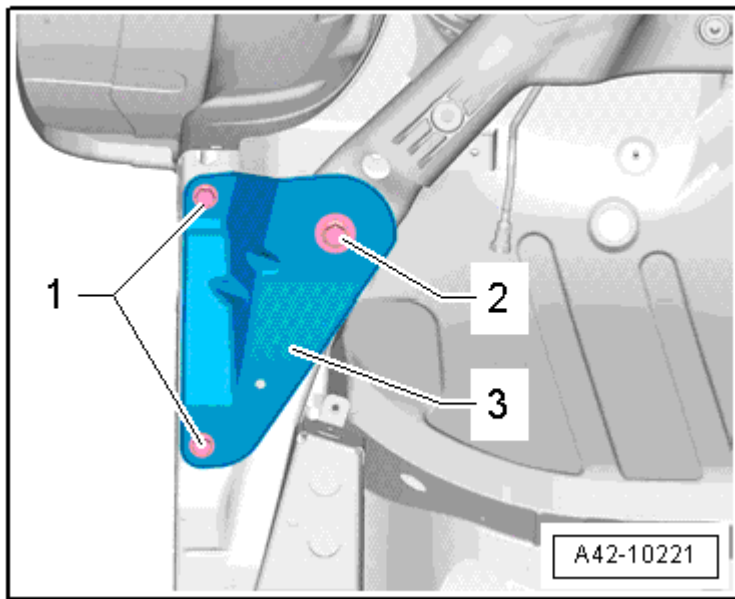


Fig. 196: Identifying Left And Right Bolts
Courtesy of AUDI OF AMERICA, LLC

-- Remove the left and right supports -3-.

-- Remove bolts -arrows-.

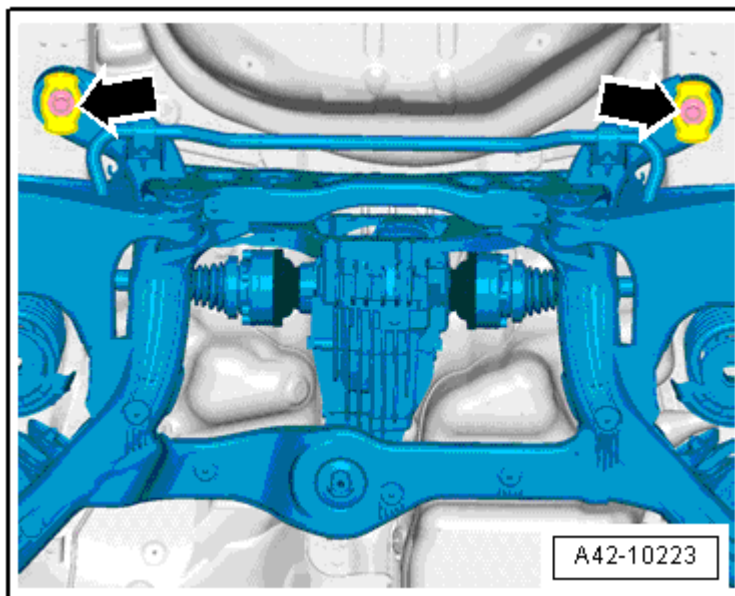


Fig. 197: Identifying Bolts
Courtesy of AUDI OF AMERICA, LLC

-- Carefully lower subframe with components. Be careful of the brake caliper and its lines.

Installing

Install in reverse order of removal. Note the following:

Tightening specifications, refer to **SUBFRAMES, STABILIZER BAR AND COUPLING ROD OVERVIEW**

WHEEL BEARING HOUSING, WHEEL BEARING UNIT AND COIL SPRING SHOCK ABSORBER OVERVIEW

NOTE: Bonded rubber bushings can only be turned to a limited extent. Only tighten suspension bolts when vehicle is in curb weight or control position.

Wheel bearing, lifting to curb weight position on vehicles with coil springs. Refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**.

Applies to the allroad

-- Position the right and left spacer -item 37- **SUBFRAMES, STABILIZER BAR AND COUPLING ROD OVERVIEW** and -item 42- on the subframe bonded rubber bushing with the ribbed side facing the body.

Applies to All

-- The center of the subframe mount holes must be aligned to the bolting points on the body.

-- Align the subframe so dimension -a- on vehicles without a stone deflector is 19 mm and dimension -b- on vehicles with a stone deflector is 14 mm.

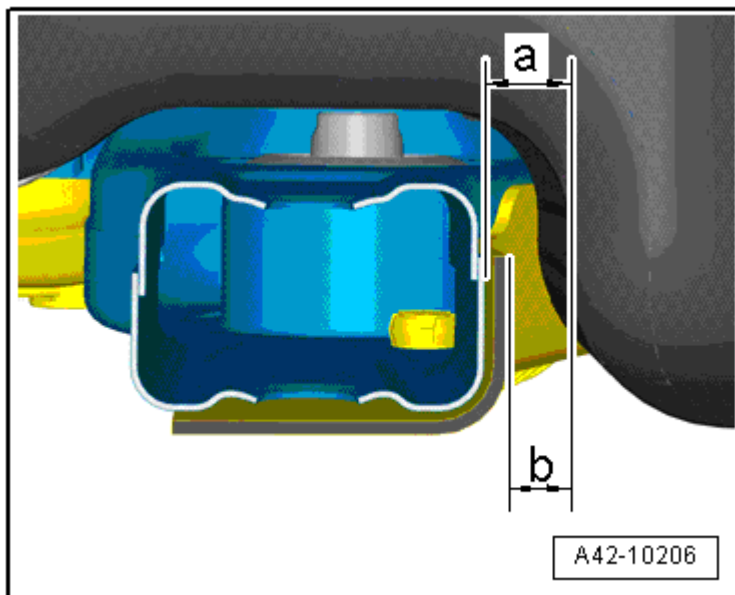


Fig. 198: Identifying Center Of Subframe Mount Holes, Aligned To Bolting Points On Body
Courtesy of AUDI OF AMERICA, LLC

NOTE: Only install the coil springs when the subframe bolts have been tightened to the specification.

-- Tighten the wheel. Refer to Specifications .

-- Axle alignment is required, see table, refer to WHEN VEHICLE ALIGNMENT IS NECESSARY .

The axle alignment on the front and rear axles must be performed on a VW/Audi approved alignment rack.

SUBFRAME BONDED RUBBER BUSHING AND HYDRAULIC BONDED RUBBER BUSHING

Special tools and workshop equipment required

- Torque Wrench 50-200 Nm V.A.G 1332
- Engine-/Gearbox Jack V.A.G 1383 A with Universal Transmission Support V.A.G 1359/2
- Hydraulic Press VAS 6178
- Pneumatic/Hydraulic Foot Pump VAS 6179
- Assembly Tool T10205
- Assembly Tool T10263
- Assembly Tool T40033
- Assembly Tool T40185
- Support Arm Bearing Inst. Tool 3346
- Support Arm Bearing Inst. Tool 3346/3
- Assembly Tool 3301
- Support T10205/13

NOTE: If a bonded rubber bushing is faulty, then the bonded rubber bushing on the opposite side must also be replaced. For the correct allocation.

Check the other bushings before replacing a faulty bonded rubber bushing.

If cracks, oil leaks or other damage is visible, this bonded rubber bushing must be replaced too.

There are different versions, depending on the model, either a conventional bonded rubber bushing or a hydraulic one FRONT BONDED RUBBER BUSHINGREAR BONDED RUBBER BUSHING. Allocation.

-- Place the vehicle on a hoist.

-- Remove the wheels.

-- Remove the coil springs. Refer to COIL SPRING.

NOTE: In order to replace the rubber bonded bushing, the subframe must be lowered either at the front or at the rear. It is not necessary to remove the subframe.

Lower the subframe alternating between the front and rear. This avoid having to perform an axle alignment.

Do not lower the subframe more then 4 cm.

Identify mounting location to subframe before removing the bonded rubber bushing.

Replace the front bonded rubber bushing or the front hydraulic bonded rubber bushing.

Applies to All

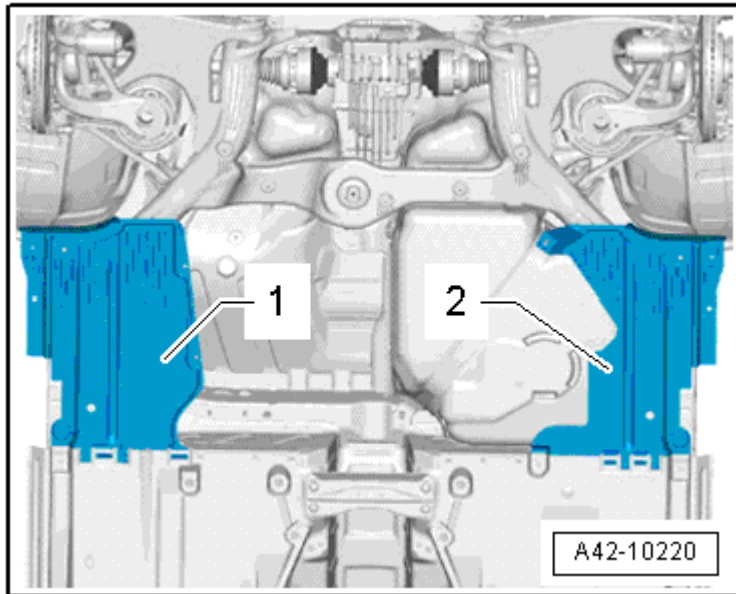


Fig. 199: Identifying Stone Deflectors
Courtesy of AUDI OF AMERICA, LLC

-- Remove the cover -1 and 2-. Refer to **Removal and Installation** .

-- Place V.A.G 1383 A with V.A.G 1359/2 -1- under the subframe.

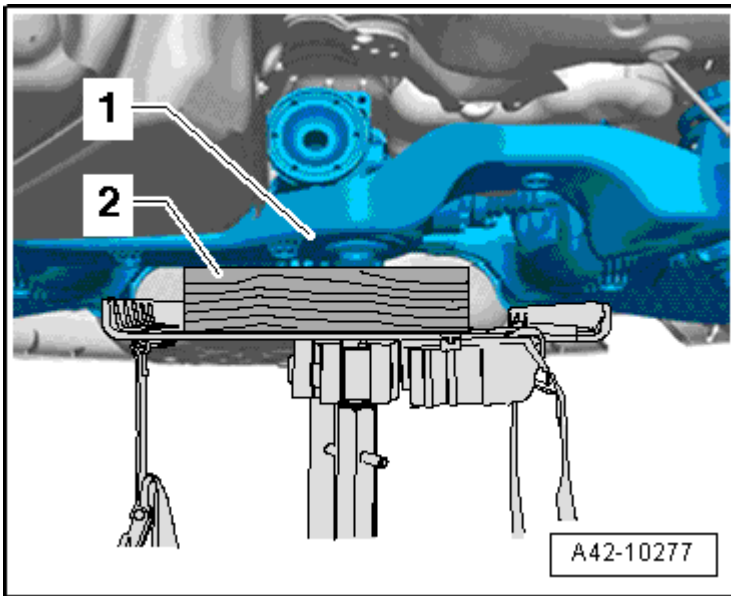


Fig. 200: Placing Block Of Wood Under Subframe
 Courtesy of AUDI OF AMERICA, LLC

- Place a block of wood -2- under the subframe -1-.
- Remove the left and right bolts -1 and 2-.

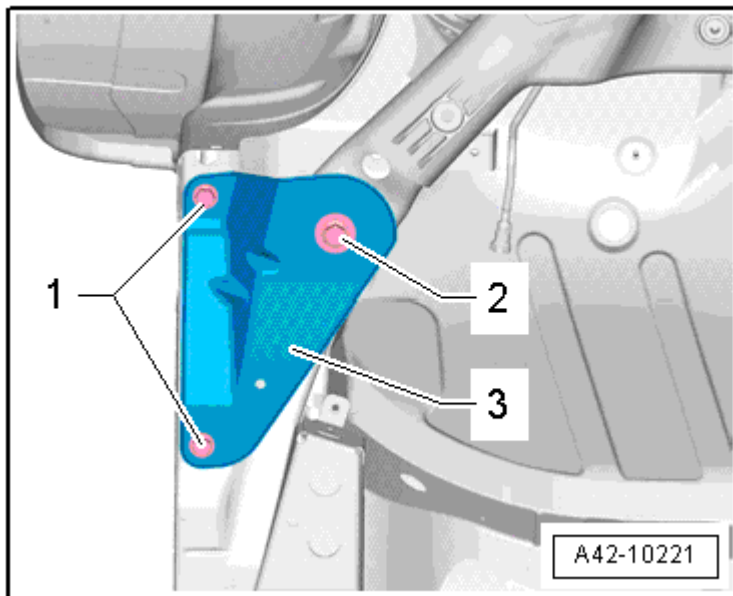


Fig. 201: Identifying Left And Right Bolts
 Courtesy of AUDI OF AMERICA, LLC

- Remove the left and right supports -3-.
- Install the spindle 3346/2 and 3301 and 3346/3 approximately 1.5 cm into the body on the opposite side of

the bonded rubber bushing to be replaced as illustrated.

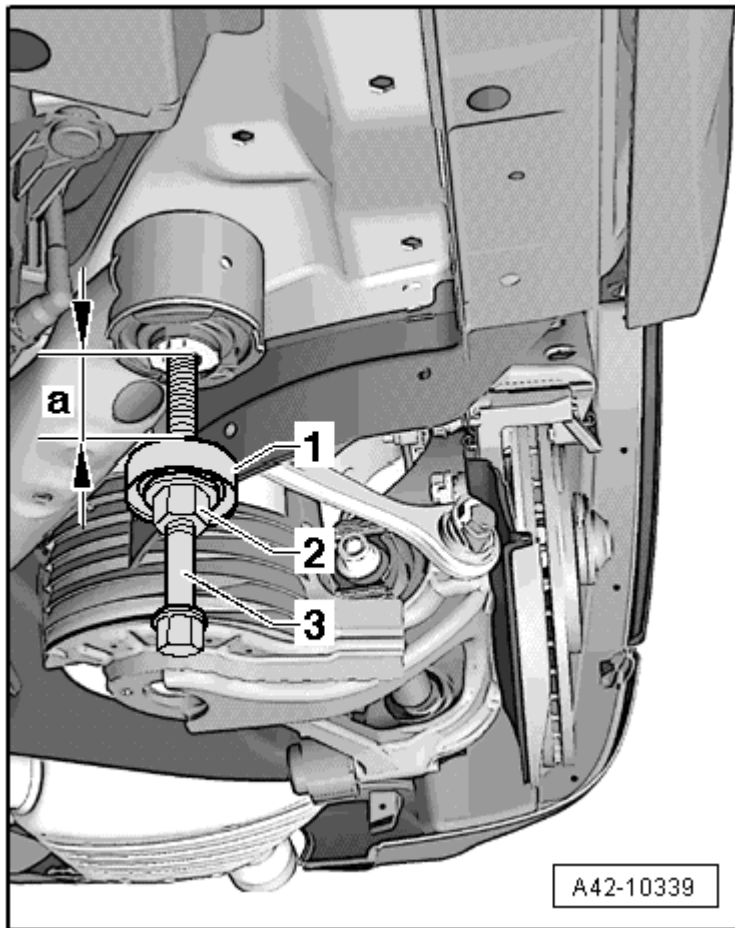


Fig. 202: Identifying Spindle 3346/2, 3301 And Nut 3346/3 (Approximately 1.5 cm)
Courtesy of AUDI OF AMERICA, LLC

1. Assembly tool 3301
2. Support Arm Bearing Inst. Tool 3346/3
3. Spindle 3346/2

NOTE: Turn 3346/3 on the spindle 3346/2 until dimension -a- 4 cm is reached.

-- Lower the subframe 4 cm only.

Applies to a Hydraulic Bonded Rubber Bushing

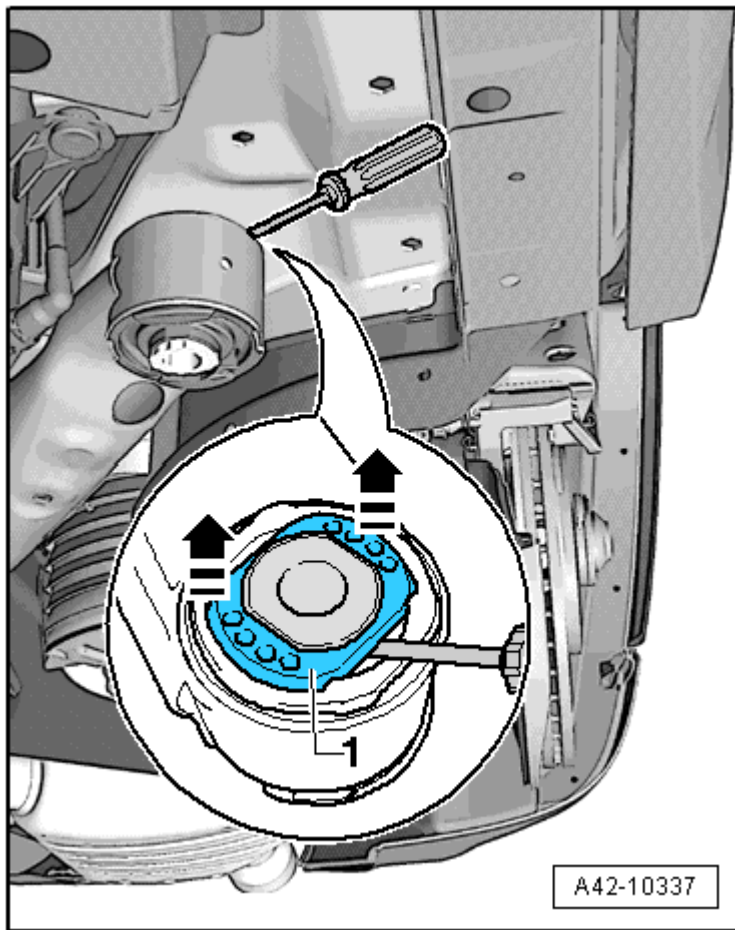


Fig. 203: Inserting Plastic Upward

Courtesy of AUDI OF AMERICA, LLC

-- Remove the plastic insert -1- upward as illustrated.

Applies to All

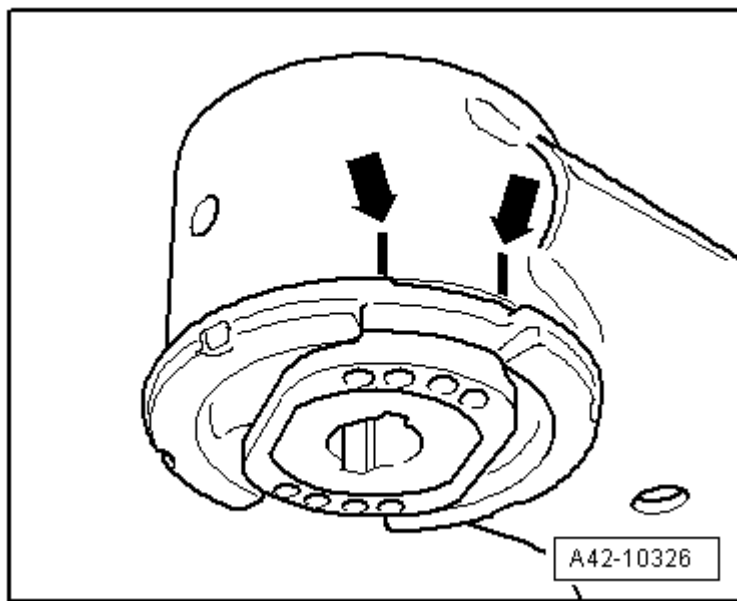


Fig. 204: Marking Installation Position Of Bonded Rubber Bushing Or Hydraulic Bonded Rubber Bushing On Subframe

Courtesy of AUDI OF AMERICA, LLC

-- Mark the installation position of the bonded rubber bushing or the hydraulic bonded rubber bushing on the subframe -arrows-.

The illustration shows a hydraulic bonded rubber bushing. On a conventional bonded rubber bushing, the recesses on the rubber shoulders are turned 90°.

-- If necessary, the support -arrow- with the >>small<< interior diameter must be removed from the VAS 6178 and the T10205/13 for that installed.

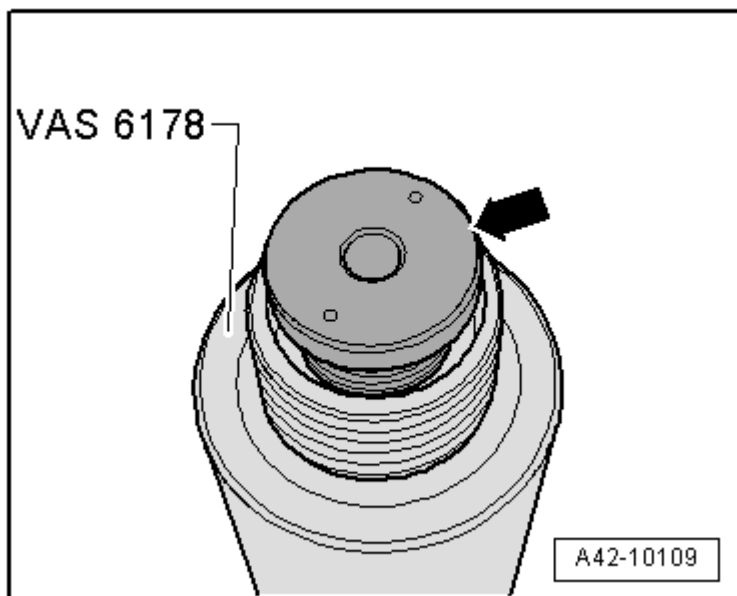
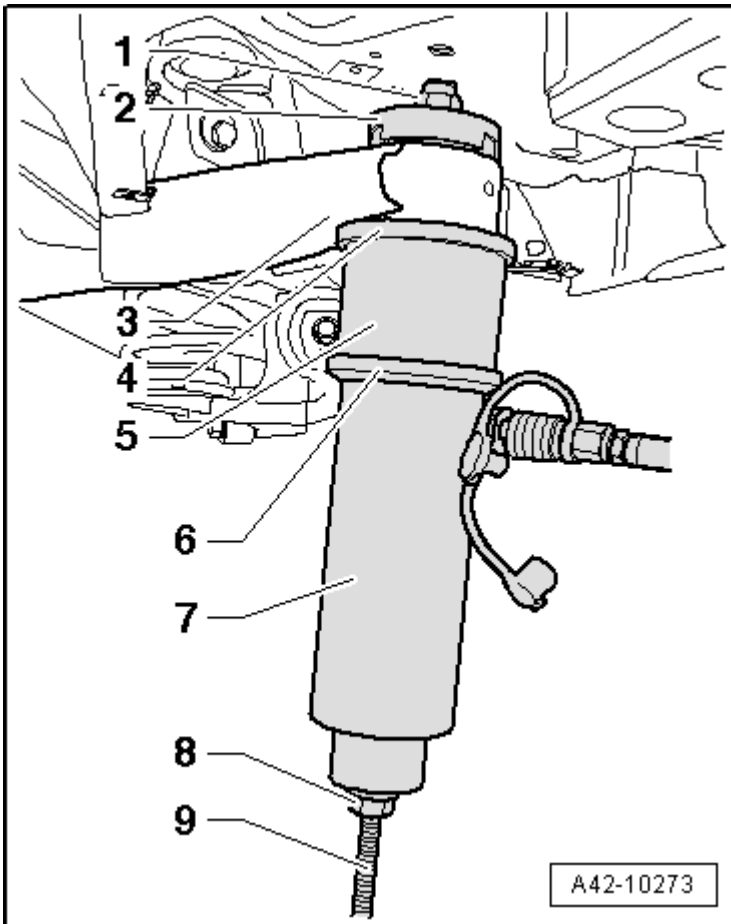


Fig. 205: Identifying Support -Arrow- And VAS 6178

Courtesy of AUDI OF AMERICA, LLC

-- Place the tools on the front bonded rubber bushing as shown in the illustration.

**Fig. 206: Placing Tools On Front Bonded Rubber Bushing**

Courtesy of AUDI OF AMERICA, LLC

1. Nut T10263/5
2. Thrust piece T40185/5. The opening faces the rubber bonded bushing.
3. Subframe
4. Support Ring T40185/6. The conical side must face upward and the ribs must fit into the openings in the rubber bonded bushing.
5. Tube T40033/3
6. Support ring T10205/4
7. Hydraulic cylinder VAS 6178
8. Nut T10263/5
9. Spindle T10263/4. The spindle pins face downward.

WARNING:

- Secure VAS 6178 while pressing out.
- Bonded rubber bushing loosens >>abruptly<<. There is the risk of injuries by tools and bonded rubber bushing coming off!

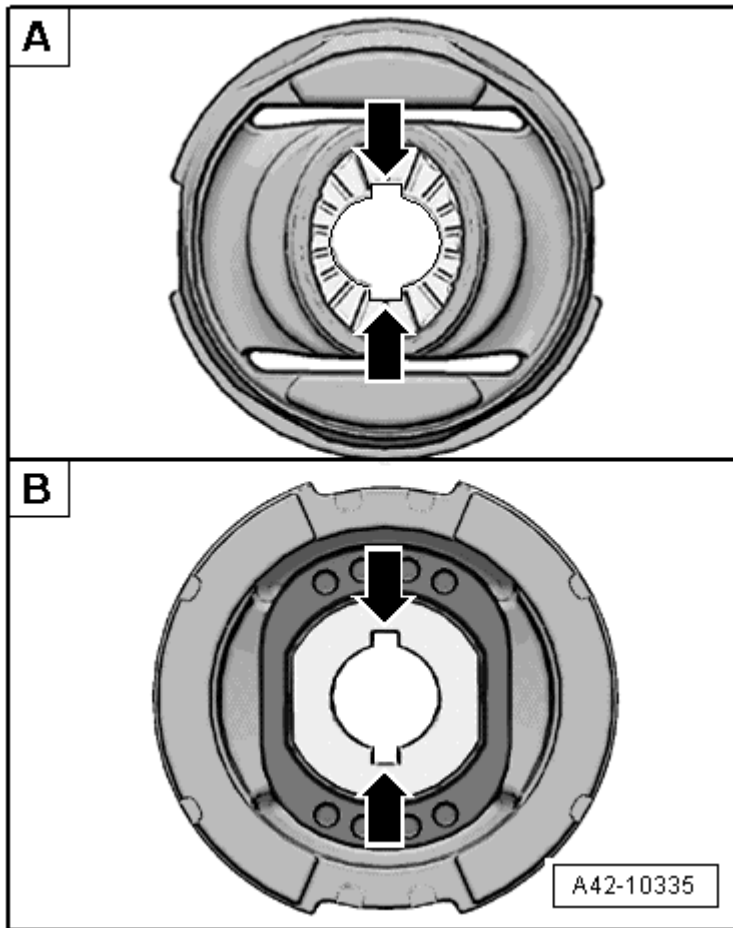


Fig. 207: Identifying Installation Location Of Front Bonded Rubber Bushing
 Courtesy of AUDI OF AMERICA, LLC

The grooves -arrows- point in direction of travel.

- -A- conventional bonded rubber bushing
- -B- hydraulic bonded rubber bushing

The grooves -arrows- point in direction of travel.

-- Place the tools on the front bonded rubber bushing as shown in the illustration.

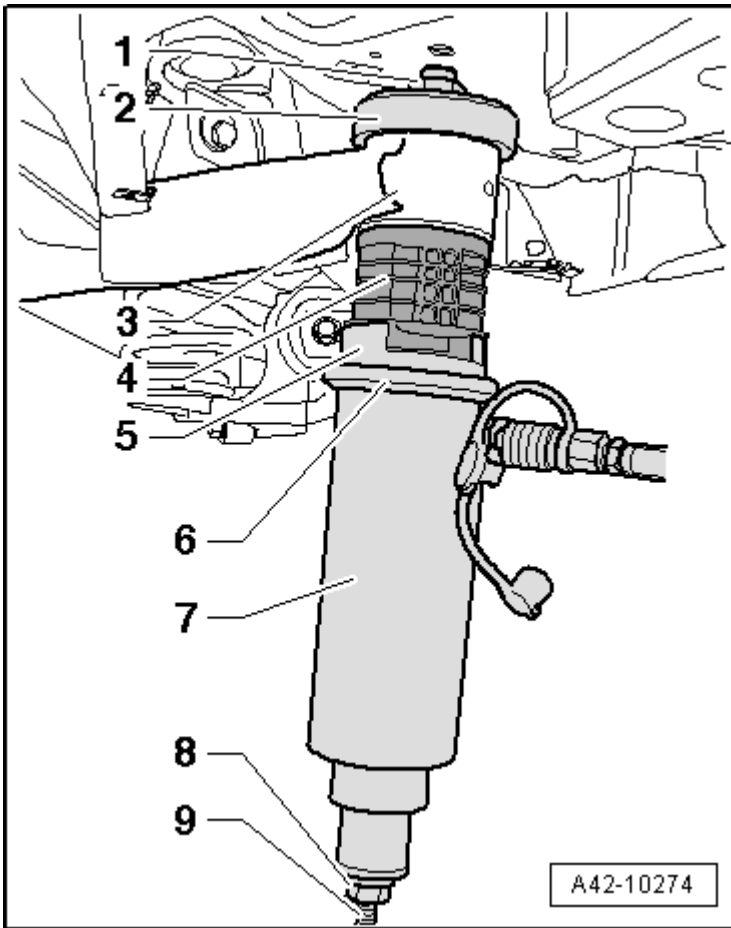


Fig. 208: Placing Tools On Front Bonded Rubber Bushing
 Courtesy of AUDI OF AMERICA, LLC

1. Nut T10263/5
2. Thrust Piece T40185/4
3. Subframe
4. Bonded rubber bushing or the hydraulic bonded rubber bushing
5. Thrust Piece T40185/3
6. Support ring T10205/4
7. Hydraulic cylinder VAS 6178
8. Nut T10263/5
9. Spindle T10263/4. The spindle pins face downward.

-- Align the bonded rubber bushing with the markings made previously and push it in until the collar comes in contact with the bushing in the subframe >>without any gaps<<. If necessary, tension and press over cylinder several times. While pulling in, make sure the bonded rubber bushing does not cant, otherwise outer ring could be damaged.

-- The ends of the rubber bead on the bonded rubber bushing must align with the markings -arrows- on the

subframe.

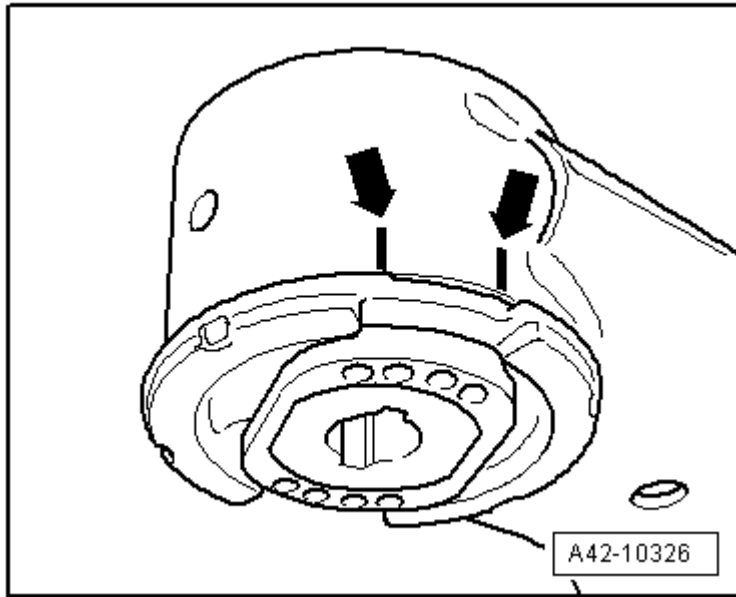


Fig. 209: Marking Installation Position Of Bonded Rubber Bushing Or Hydraulic Bonded Rubber Bushing On Subframe

Courtesy of AUDI OF AMERICA, LLC

The illustration shows a hydraulic bonded rubber bushing. On a conventional bonded rubber bushing, the recesses on the rubber shoulders are turned 90°.

NOTE: After replacing the bearing, fix any paint damage on the subframe with corrosion protection, primer and black top coat.

Install in reverse order of removal.

Replace the rear bonded rubber bushing or the rear hydraulic bonded rubber bushing.

Applies to All

-- Loosen the nuts on both rear muffler brackets but only as far as to where the thread begins.

-- Place V.A.G 1383 A with V.A.G 1359/2 -1- under the subframe.

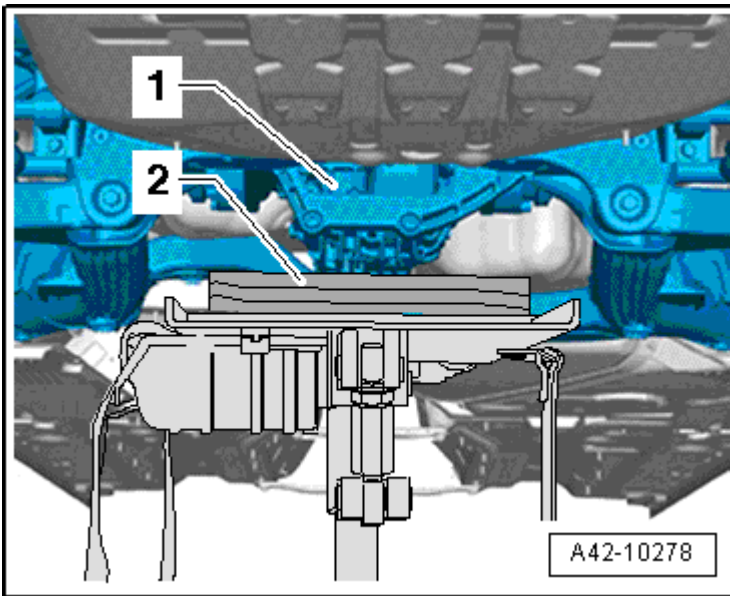


Fig. 210: Placing Block Of Wood Under Subframe
Courtesy of AUDI OF AMERICA, LLC

-- Place a block of wood -2- under the subframe -1-.

-- Remove the rear subframe bolts -item 13- **SUBFRAMES, STABILIZER BAR AND COUPLING ROD OVERVIEW**.

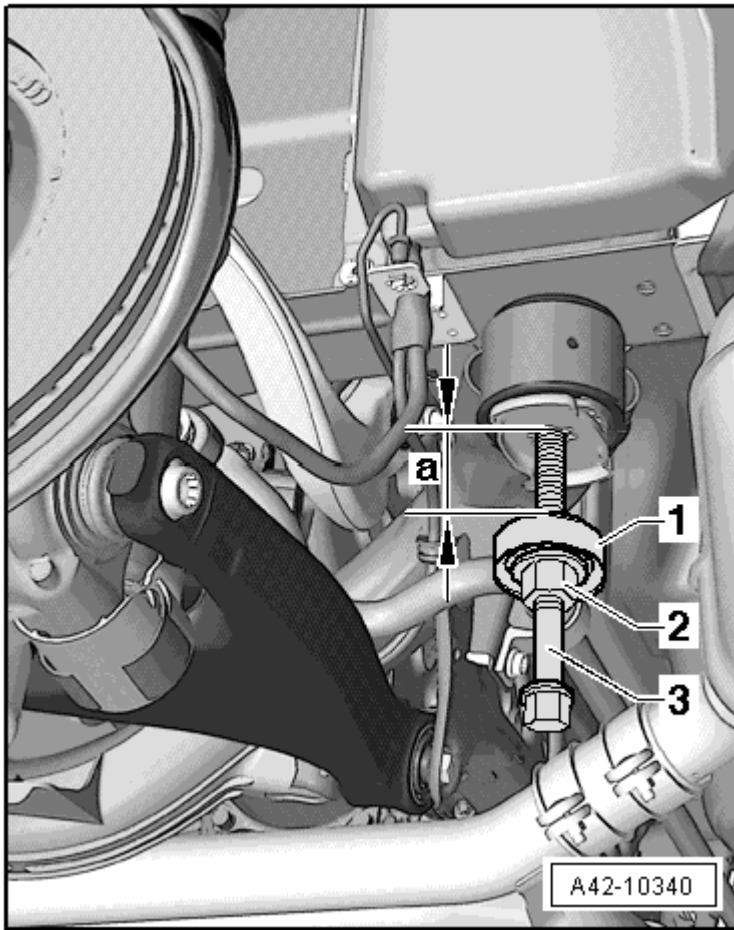


Fig. 211: Identifying Spindle 3346/2, 3301 And 3346/3 (Approximately 1.5 cm)

Courtesy of AUDI OF AMERICA, LLC

-- Install the spindle 3346/2 and 3301 and 3346/3 approximately 1.5 cm into the body on the opposite side of the bonded rubber bushing to be replaced as illustrated.

1. Assembly tool 3301
2. Support arm bearing installation tool 3346/3
3. Spindle 3346/2

NOTE: Turn 3346/3 on the spindle 3346/2 until dimension -a- 4 cm is reached.

-- Lower the subframe 4 cm only.

Applies to a Hydraulic Bonded Rubber Bushing

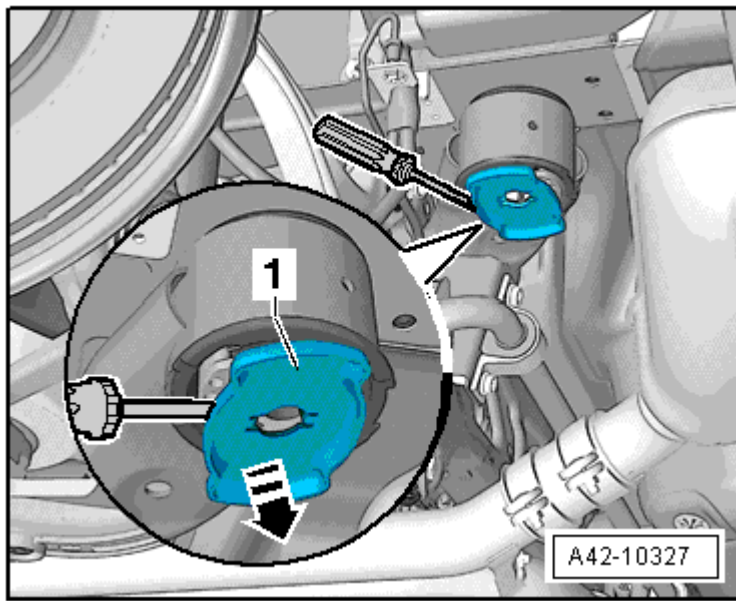


Fig. 212: Carefully Prying Anti-Twist Mechanism Off Hydraulic Bonded Rubber Bushing With Screwdriver Near Retaining Tab

Courtesy of AUDI OF AMERICA, LLC

-- Carefully pry the anti-twist mechanism -1- off the hydraulic bonded rubber bushing with a screwdriver near the retaining tab. Do this in several steps alternating from side to side.

-- Remove the plastic insert -1- upward as illustrated.

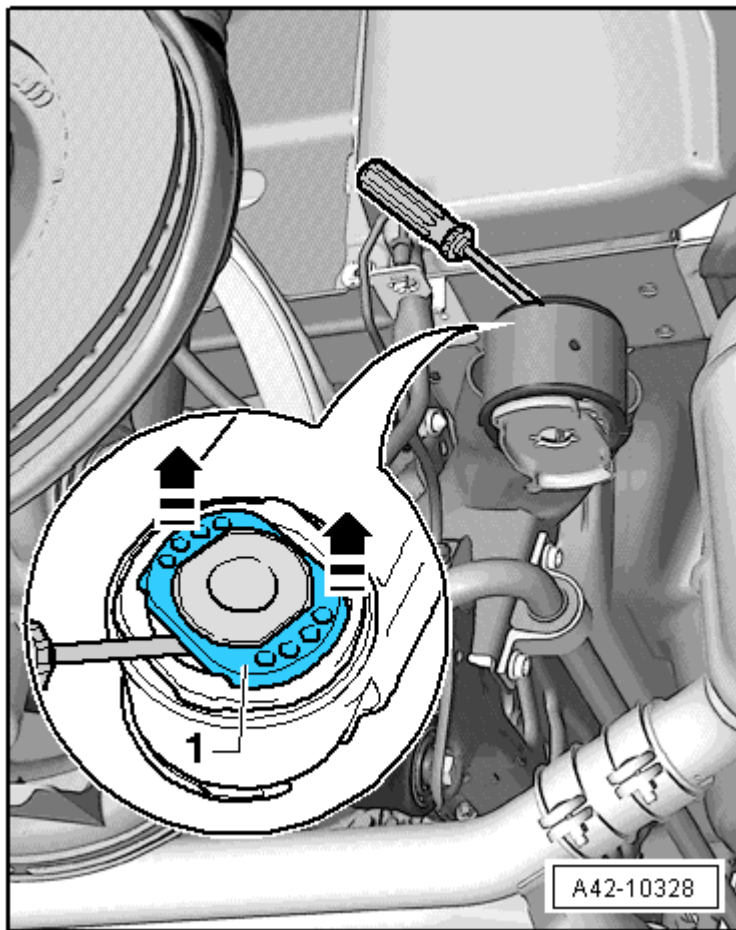


Fig. 213: Inserting Plastic Upward

Courtesy of AUDI OF AMERICA, LLC

Applies to All

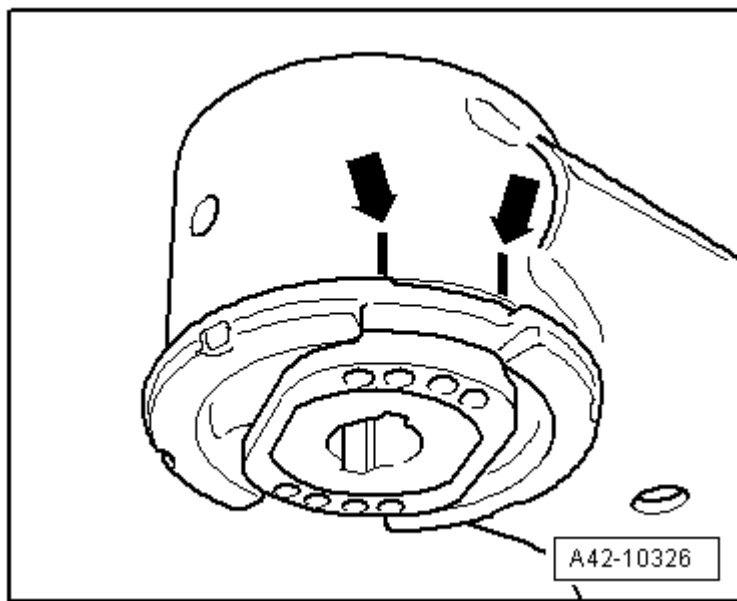


Fig. 214: Marking Installation Position Of Bonded Rubber Bushing Or Hydraulic Bonded Rubber Bushing On Subframe

Courtesy of AUDI OF AMERICA, LLC

-- Mark the installation position of the bonded rubber bushing or the hydraulic bonded rubber bushing on the subframe -arrows-.

The illustration shows a hydraulic bonded rubber bushing. On a conventional bonded rubber bushing, the recesses on the rubber shoulders are turned 90°.

-- If necessary, the support -arrow- with the >>small<< interior diameter must be removed from the VAS 6178 and the T10205/13 for that installed.

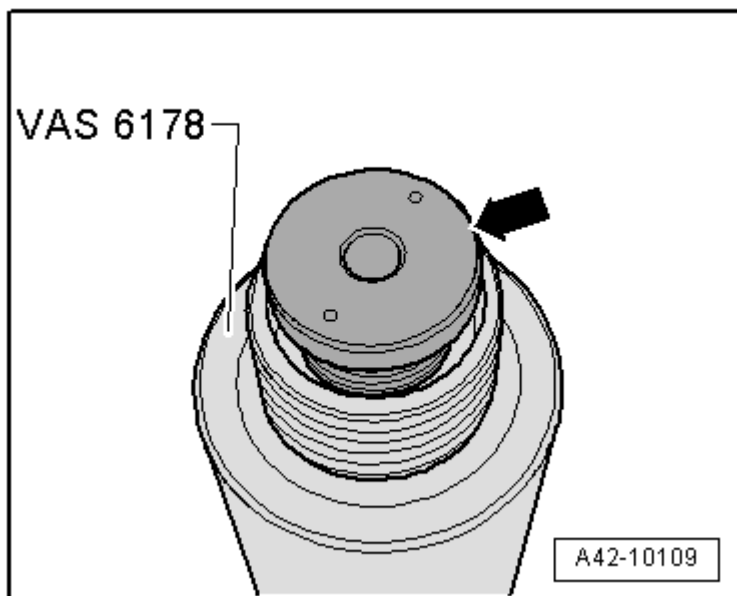
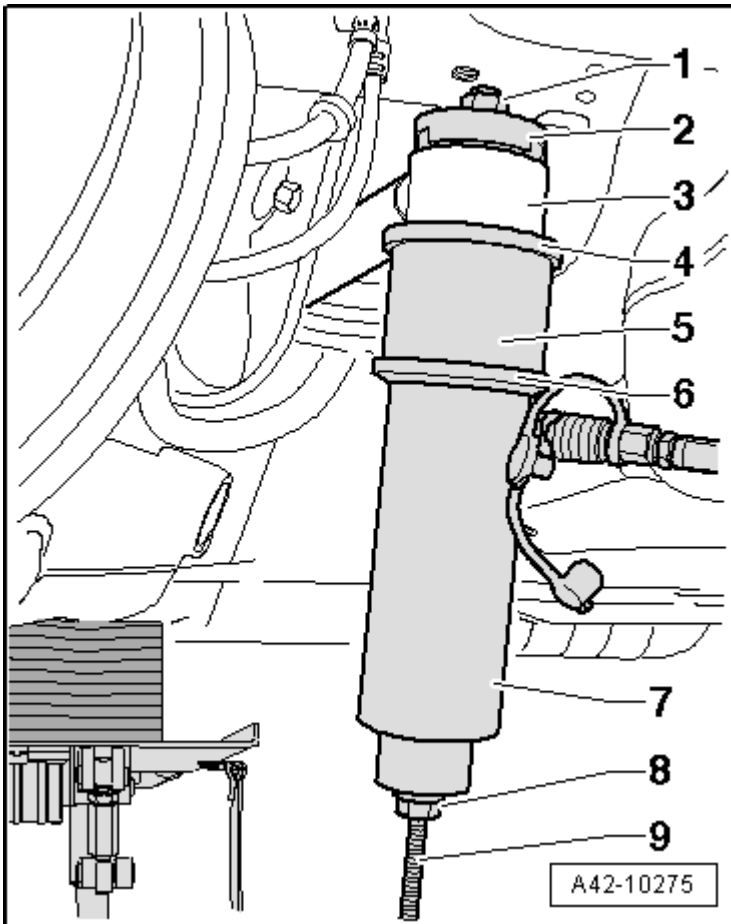


Fig. 215: Identifying Support -Arrow- And VAS 6178

Courtesy of AUDI OF AMERICA, LLC

-- Place the tools on the front bonded rubber bushing as shown in the illustration.

**Fig. 216: Placing Tools On Front Bonded Rubber Bushing**

Courtesy of AUDI OF AMERICA, LLC

1. Nut T10263/5
2. Thrust piece T40185/5. The opening faces the rubber bonded bushing.
3. Subframe
4. Support Ring T40185/6. The conical side must face upward and the ribs must fit into the openings in the rubber bonded bushing.
5. Tube T40033/3
6. Support ring T10205/4
7. Hydraulic cylinder VAS 6178
8. Nut T10263/5
9. Spindle T10263/4. The spindle pins face downward.

WARNING:

- Secure VAS 6178 while pressing out.
- Bonded rubber bushing loosens >>abruptly<<. There is the risk of injuries by tools and bonded rubber bushing coming off!

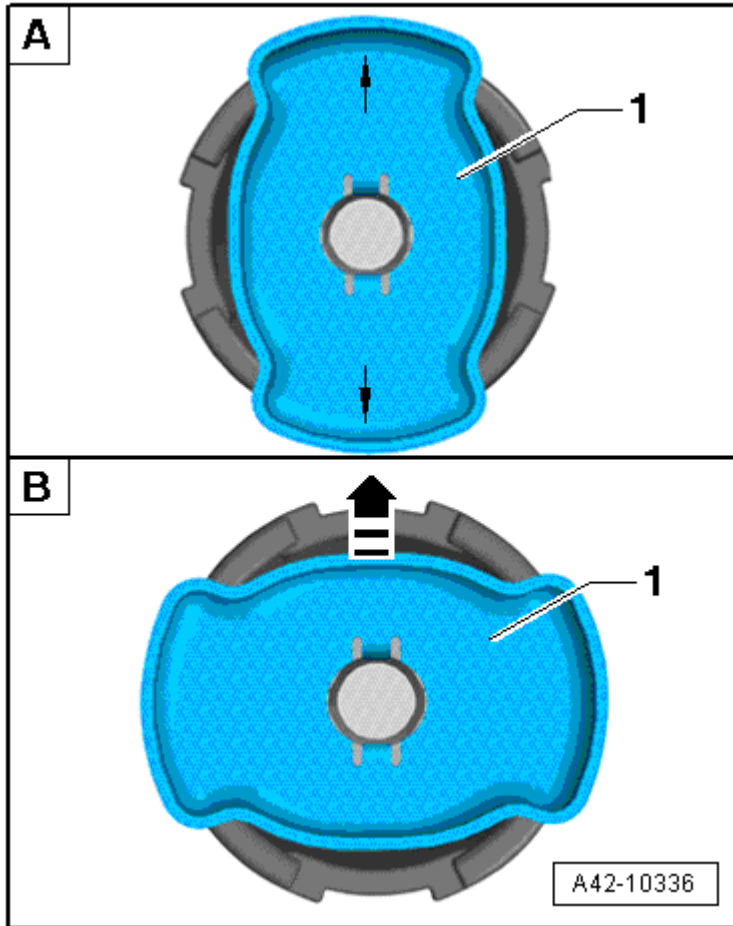


Fig. 217: Installation Location Of Rear Bonded Rubber Bushing
 Courtesy of AUDI OF AMERICA, LLC

- -A- conventional bonded rubber bushing, the arrow point in the drive direction
- -B- hydraulic bonded rubber bushing, the anti-twist element -1- is perpendicular to direction of travel, - arrow- points in direction of travel

Applies to a Hydraulic Bonded Rubber Bushing

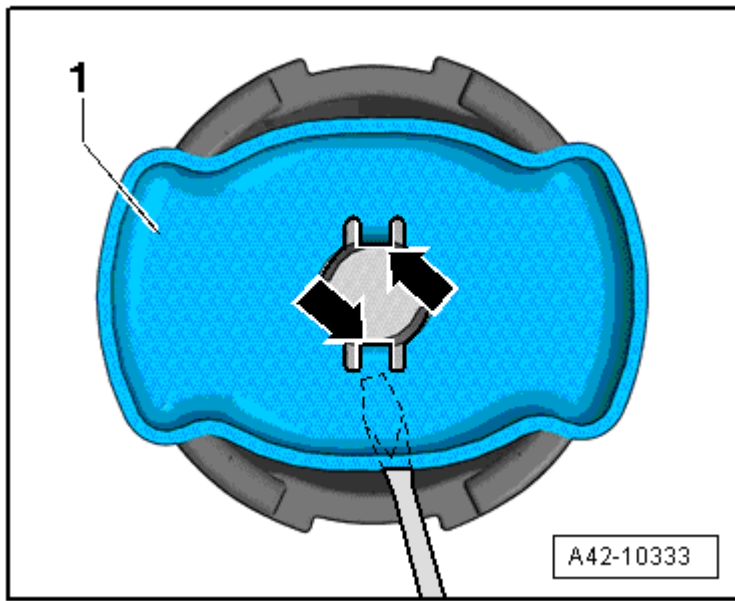


Fig. 218: Prying Off Anti-Twist Mechanism
Courtesy of AUDI OF AMERICA, LLC

Before installing the front hydraulic bonded rubber bushing, carefully pry the anti-twist mechanism -1- off the bushing with a screwdriver near the retaining tab -arrows-. Do this in several steps alternating from side to side.

Applies to All

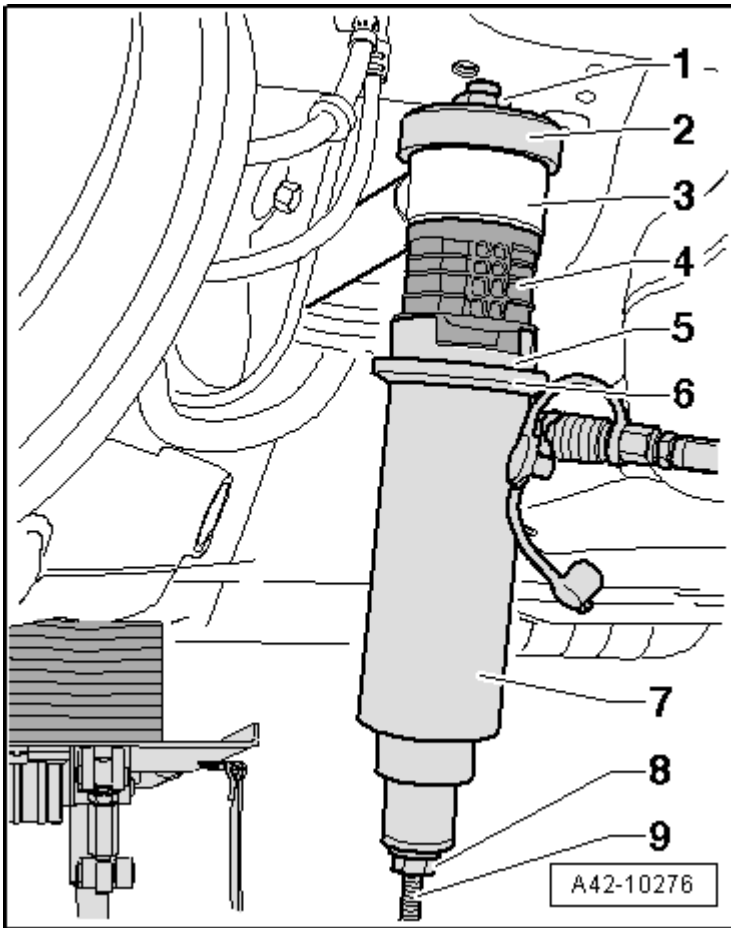


Fig. 219: Placing Tools On Rear Bonded Rubber Bushing
 Courtesy of AUDI OF AMERICA, LLC

-- Place the tools on the rear bonded rubber bushing as shown in the illustration.

1. Nut T10263/5
2. Thrust Piece T40185/4
3. Subframe
4. Bonded rubber bushing or the hydraulic bonded rubber bushing
5. Thrust Piece T40185/3
6. Support ring T10205/4
7. Hydraulic cylinder VAS 6178
8. Nut T10263/5
9. Spindle T10263/4. The spindle pins face downward.

-- Align the bonded rubber bushing with the markings made previously and push it in until the collar comes in contact with the bushing in the subframe >>without any gaps<<. If necessary, tension and press over cylinder several times. While pulling in, make sure the bonded rubber bushing does not cant, otherwise outer ring could be damaged.

-- The ends of the rubber bead on the bonded rubber bushing must align with the markings -arrows- on the subframe.

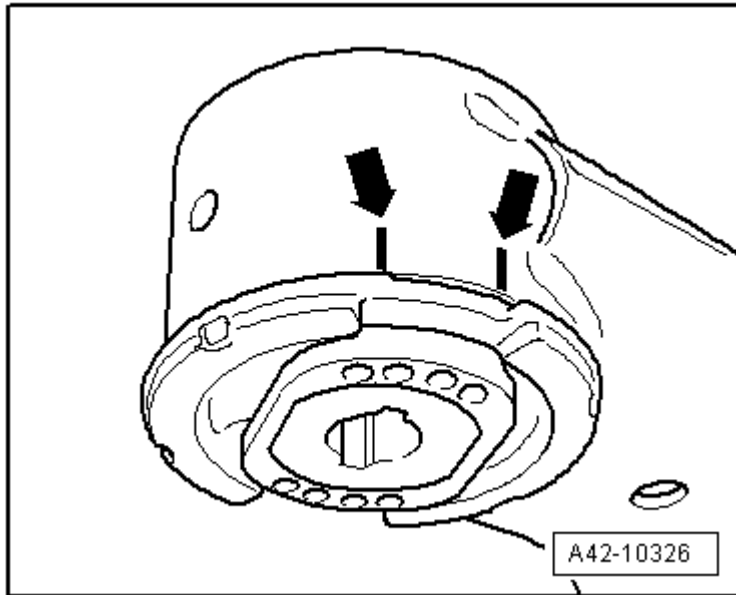


Fig. 220: Marking Installation Position Of Bonded Rubber Bushing Or Hydraulic Bonded Rubber Bushing On Subframe

Courtesy of AUDI OF AMERICA, LLC

The illustration shows a hydraulic bonded rubber bushing. On a conventional bonded rubber bushing, the recesses on the rubber shoulders are turned 90°.

NOTE: After replacing the bearing, fix any paint damage on the subframe with corrosion protection, primer and black top coat.

-- Attach the anti-twist mechanism to the hydraulic bonded rubber bushing.

Install in reverse order of removal.

FRONT RUBBER BONDED BUSHING FOR REAR FINAL DRIVE

Special tools and workshop equipment required

- Torque Wrench 50-200 Nm V.A.G 1332
- Hydraulic Press VAS 6178
- Pneumatic/Hydraulic Foot Pump VAS 6179
- Assembly Tool T10205
- Assembly Tool T10254
- Assembly Tool T40033
- Support Arm Bearing Inst. Tool 3346

- Assembly Tool 3301
- Assembly Tool T40186
- Engine-/Gearbox Jack V.A.G 1383 A with Universal Transmission Support V.A.G 1359/2

Removing

- Place the vehicle on a hoist.
- Remove the coil springs. Refer to **COIL SPRING**.

NOTE: To replace the rubber bonded bushing, lower the front of the subframe. It is not necessary to remove the subframe.

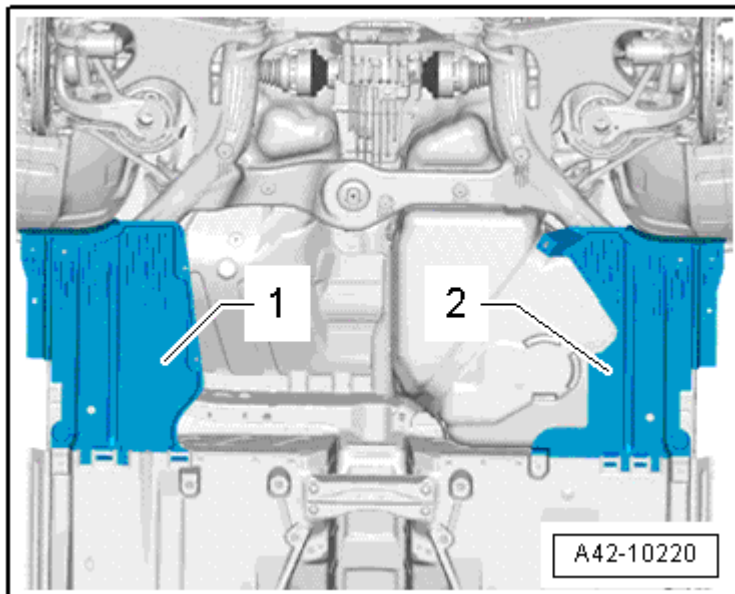
Replace the Front Rubber Bonded Bushing

Fig. 221: Identifying Stone Deflectors
Courtesy of AUDI OF AMERICA, LLC

- Remove the cover -1 and 2-. Refer to **Removal and Installation** .
- Remove the stone protection plate -2-, where applicable.

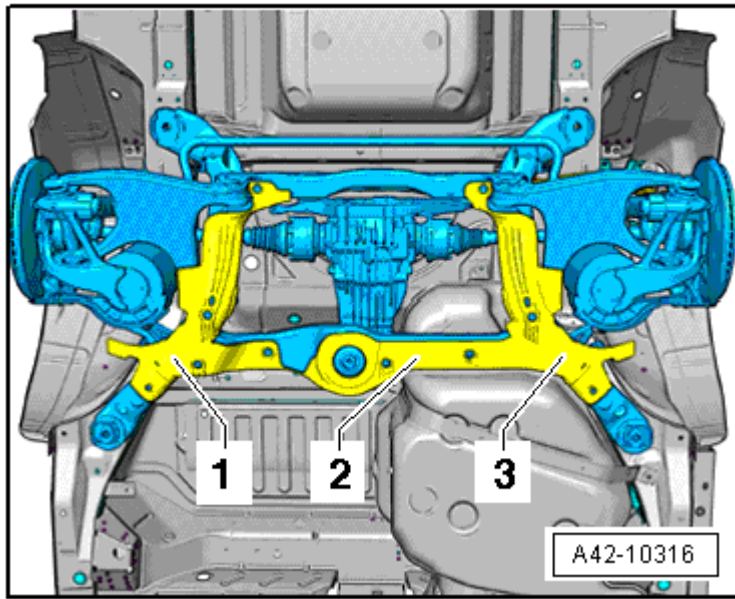


Fig. 222: Identifying Stone Protection Plate
Courtesy of AUDI OF AMERICA, LLC

-- Place V.A.G 1383 A with V.A.G 1359/2 -1- under the subframe.

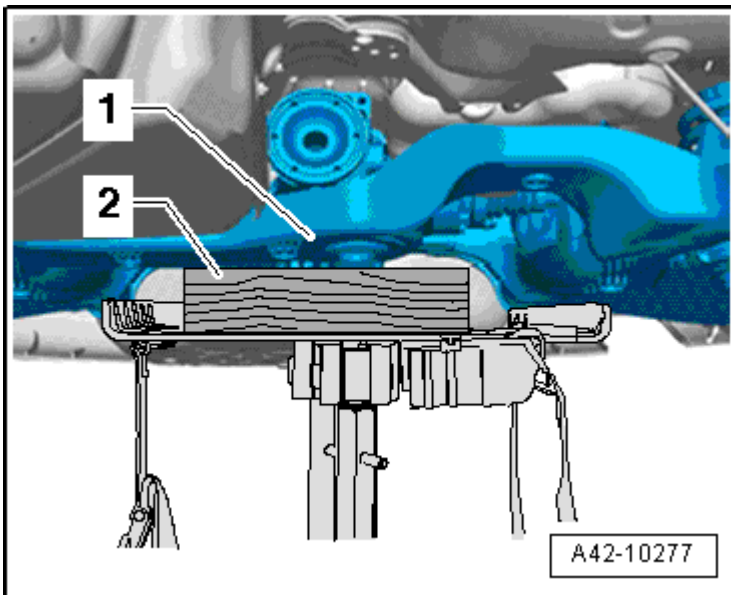


Fig. 223: Placing Block Of Wood Under Subframe
Courtesy of AUDI OF AMERICA, LLC

-- Place a block of wood -2- under the subframe -1-.

-- Remove the left and right bolts -1 and 2-.

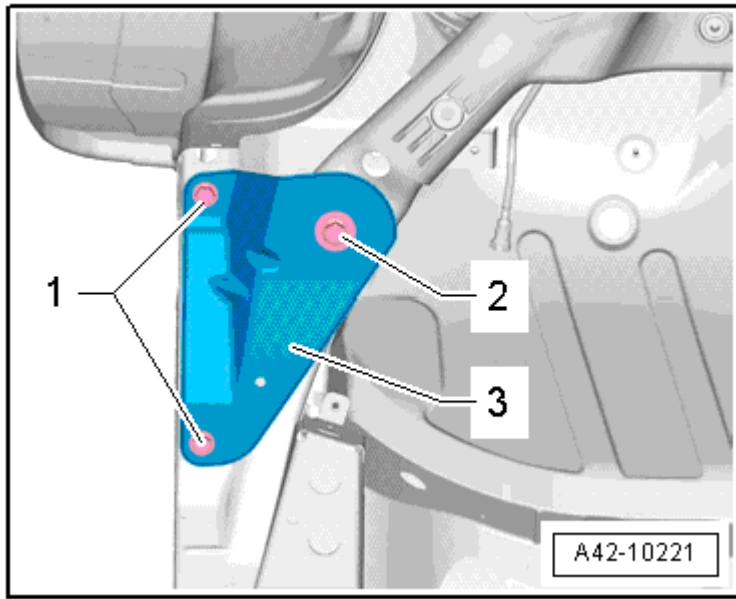


Fig. 224: Identifying Left And Right Bolts
Courtesy of AUDI OF AMERICA, LLC

- Remove the left and right supports -3-.
- Install the spindle 3346/2, the 3301 and the nut 3346/3 approximately 1.5 cm as illustrated.

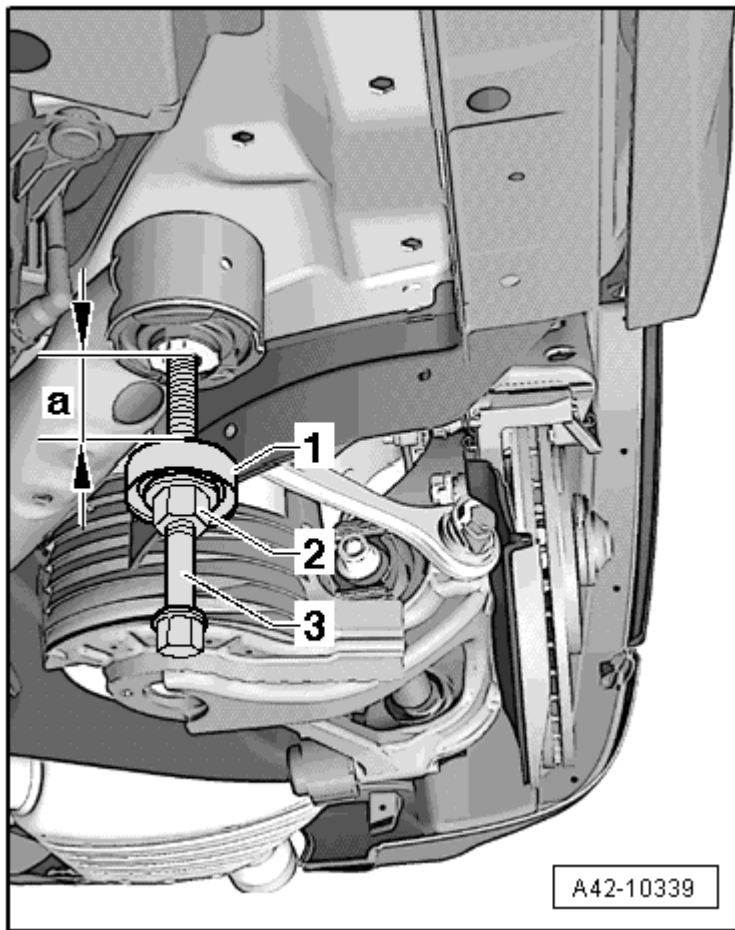


Fig. 225: Identifying Spindle 3346/2, 3301 And Nut 3346/3 (Approximately 1.5 cm)
Courtesy of AUDI OF AMERICA, LLC

1. Assembly tool 3301
2. Support arm bearing installation tool 3346/3
3. Spindle 3346/2

NOTE: Turn 3346/3 on the 3346/2 until dimension -a- 4 cm is reached.

-- Remove bolt -2-.

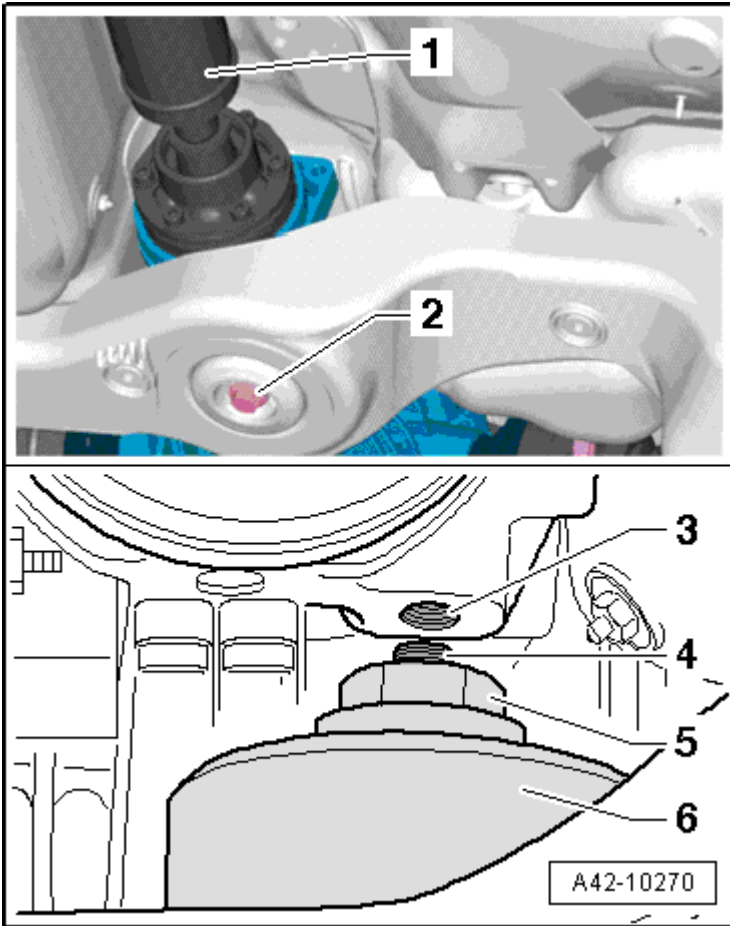


Fig. 226: Identifying Bolt

Courtesy of AUDI OF AMERICA, LLC

-- Lower the subframe 4 cm only.

-- Push the final drive upward over the driveshaft -1-. While doing this, install the press piece T40186/1 and the spindle T10254/5 and nut T10254/4 (a 2nd technician is necessary).

4 - Spindle T10254/5. The spindle pins face downward.

5 - Nut T10254/4

6 - Thrust Piece T40186/1

-- When removing or installing the rubber bonded bushing, make sure the spindle -4- does not contact the threaded hole -3- in the final drive.

When drilling through the inner core of the bonded rubber bushing, it is possible the T10254/5 may not be drilled all the way through, if so, it must be drilled again.

NOTE: **Drill several times in steps using a different drill bit diameter each time.**

While drilling, make sure drill does not damage the threaded hole -3- in the final drive; if necessary place a suitable object in between.

WARNING: Wear protective goggles while drilling.

-- Position the drill -1- on the bonded rubber bushing -2- as illustrated and drill the hole in several steps.

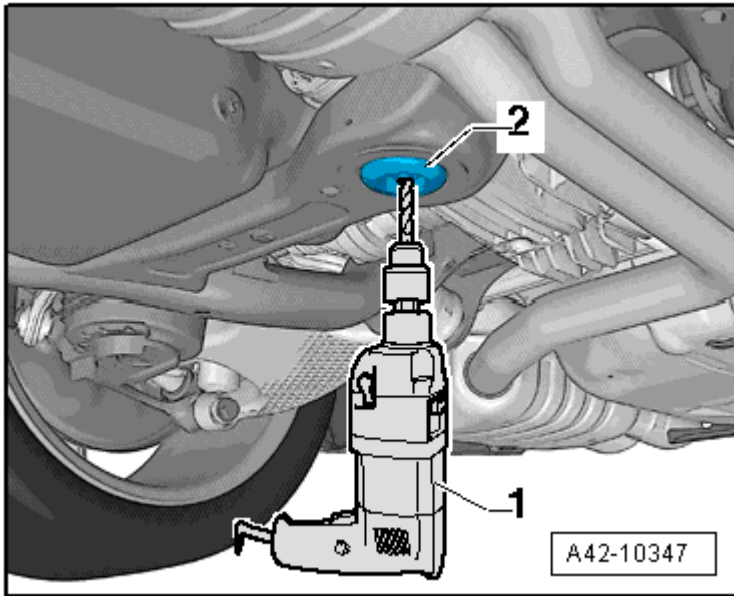


Fig. 227: Positioning Drill On Bonded Rubber Bushing To Drill Hole In Several Steps
Courtesy of AUDI OF AMERICA, LLC

1. Step, 11 mm drill bit
2. Step, 11.5 mm drill bit
3. Step, 12 mm drill bit

-- If necessary, remove the support T10205/13 and in its place install the support with the >>small<< inner diameter -arrow- from the VAS 6178.

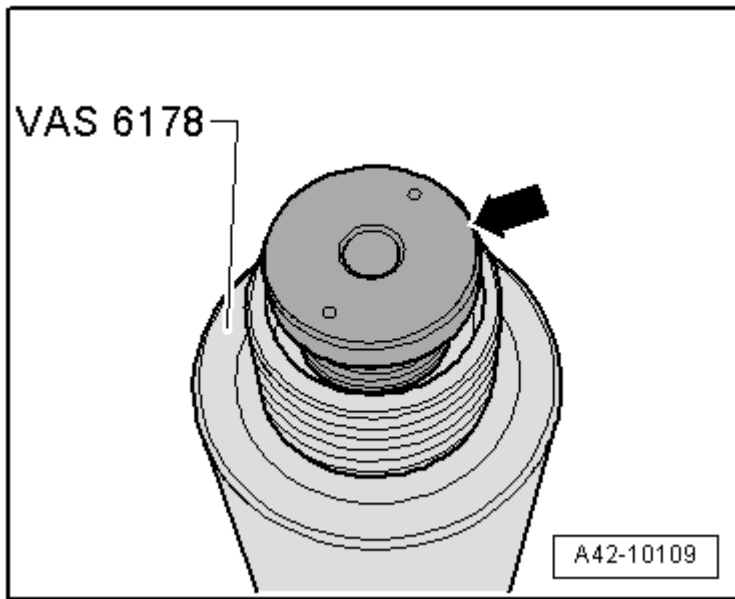


Fig. 228: Identifying Support -Arrow- And VAS 6178
Courtesy of AUDI OF AMERICA, LLC

-- Place the tools on the front bonded rubber bushing as shown in the illustration.

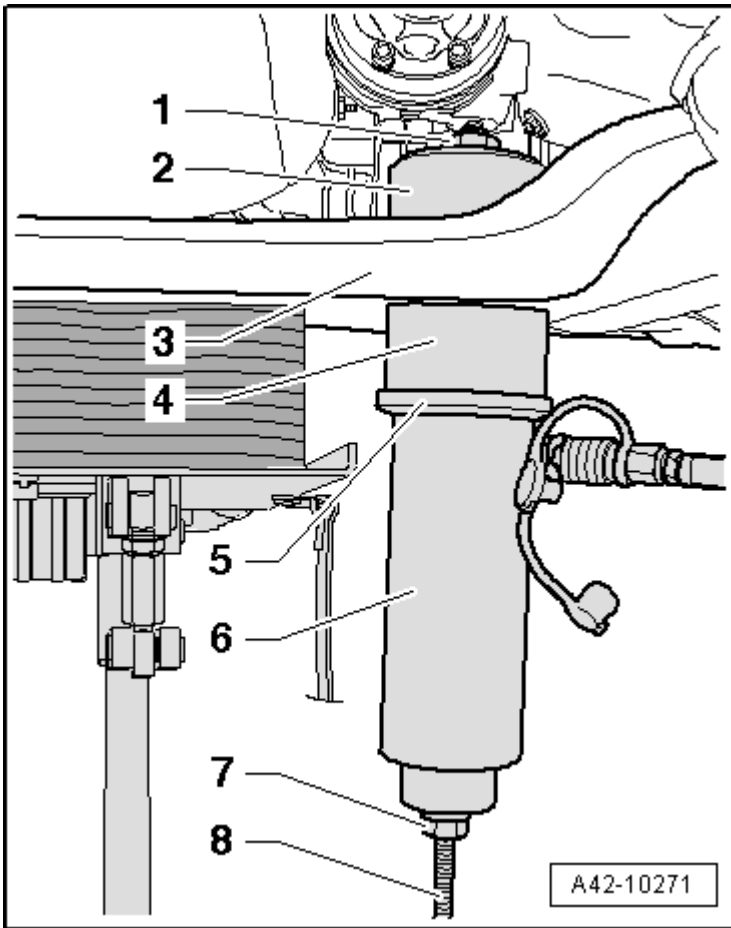


Fig. 229: Placing Tools On Front Bonded Rubber Bushing
 Courtesy of AUDI OF AMERICA, LLC

1. Nut T10254/4
2. Thrust Piece T40186/1
3. Subframe
4. Tube T40033/3
5. Support ring T10205/4
6. Hydraulic cylinder VAS 6178
7. Nut T10254/4
8. Spindle T10254/5. The spindle pins face downward.

WARNING:

- **Secure VAS 6178 while pressing out.**
- **Bonded rubber bushing loosens >>abruptly<<. There is the risk of injuries by tools and bonded rubber bushing coming off!**

Installing

Install in reverse order of removal. Note the following:

- Before installing the bonded rubber bushing, make sure the T10254/5 is able to fit through the hole in the inner core of the bushing. When drilling through the inner core of the bonded rubber bushing, it is possible the T10254/5 may not be drilled all the way through, if so, it must be drilled again.

WARNING: Wear protective goggles while drilling.

-- Gently pre-load the bonded rubber bushing -2- with cover horizontally in the vise clamp as illustrated -1-. Be sure not to damage the outer layer of the bonded rubber bushing.

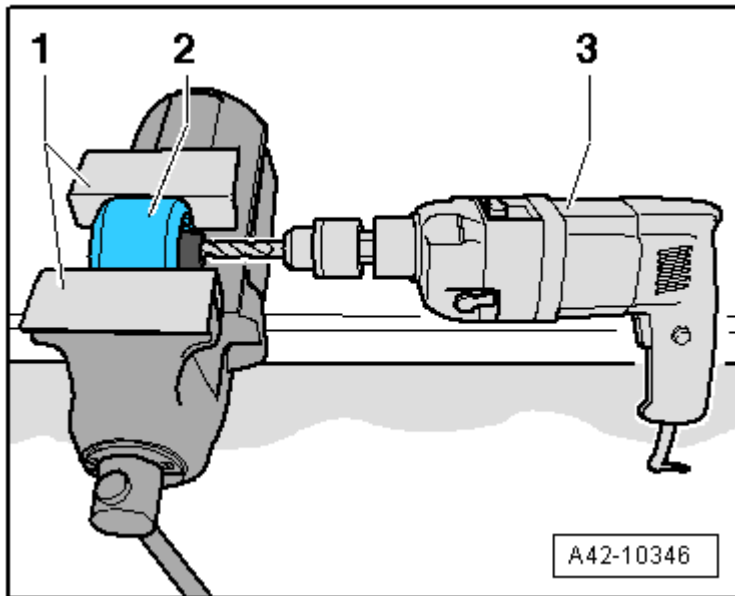


Fig. 230: Identifying Bonded Rubber Bushing -2- In Press And Drill
Courtesy of AUDI OF AMERICA, LLC

-- Position the drill -3- on the bonded rubber bushing -2- as illustrated and drill the hole in several steps.

1. Step, 11 mm drill bit
2. Step, 11.5 mm drill bit
3. Step, 12 mm drill bit

-- Make a continuous marking -arrow- straight to the grooves.

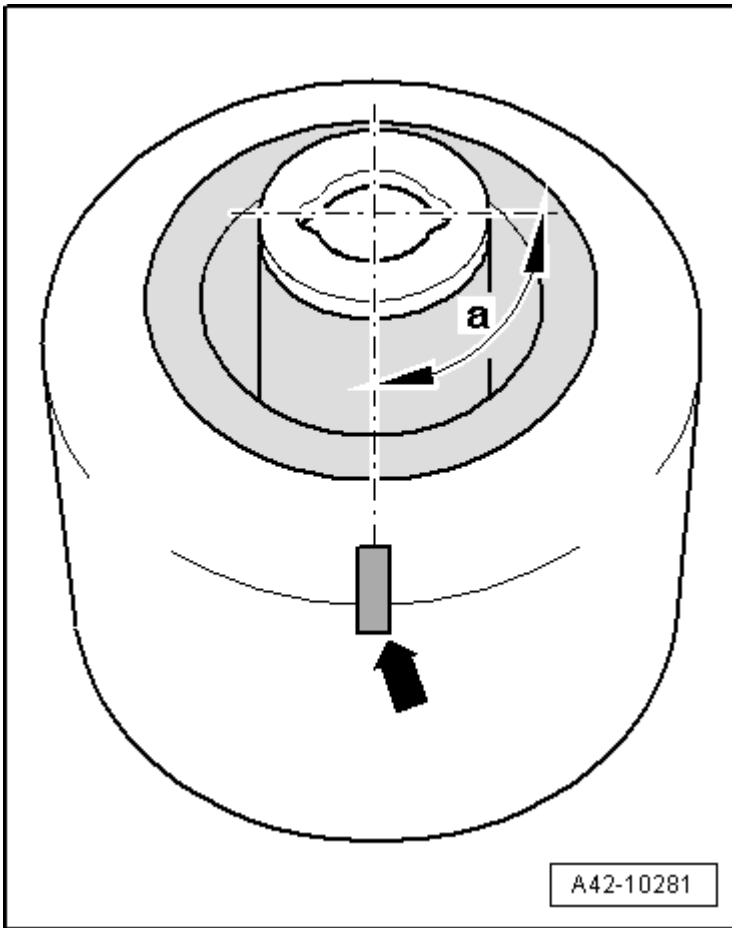


Fig. 231: Making Continuous Marking, Straight With Grooves
Courtesy of AUDI OF AMERICA, LLC

$a = 90^\circ$

NOTE: Marking is needed to align bearing with subframe.

When pulling in the bearing, the grooves are masked by the tool.

-- Coat the rubber bonded bushing with installation lubricant before pressing it onto the subframe contact surface.

-- Install the rubber bonded bushing with the marking -arrow- into the subframe so that the marking points exactly in the driving direction.

-- Place the tools on the front bonded rubber bushing as shown in the illustration.

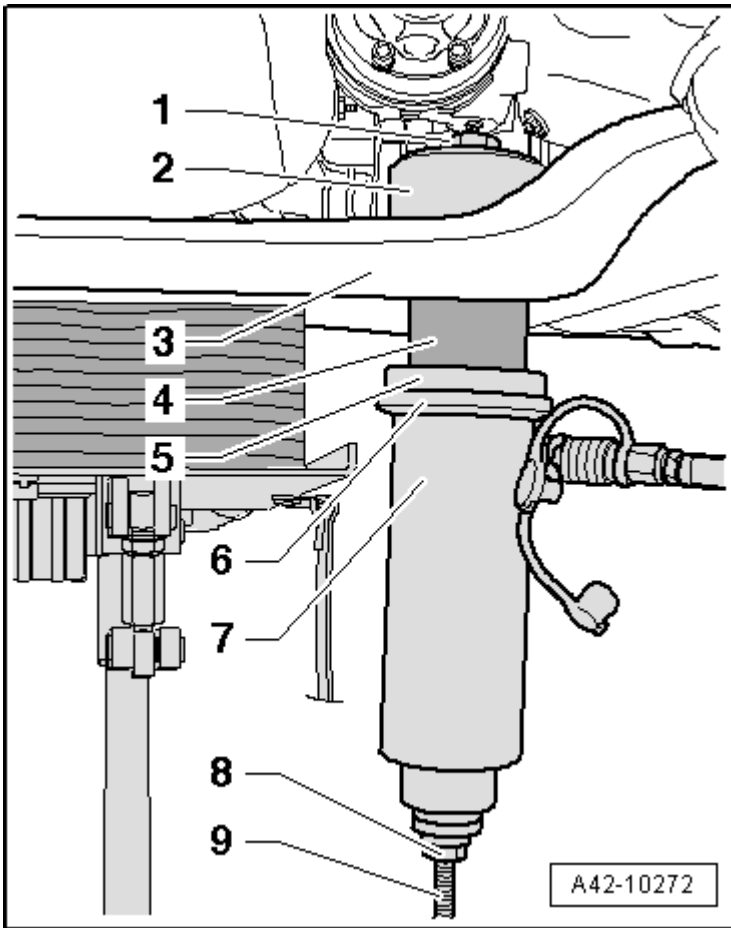


Fig. 232: Placing Tools On Front Bonded Rubber Bushing
 Courtesy of AUDI OF AMERICA, LLC

1. Nut T10254/4
2. Thrust Piece T40033/7
3. Subframe
4. Bonded Rubber Bushing
5. Thrust pad T40186/2
6. Support ring T10205/4
7. Hydraulic cylinder VAS 6178
8. Nut T10254/4
9. Spindle T10254/5. The spindle pins face downward.

-- Pull bearing into subframe until stop.

NOTE: If paint damage has occurred during bearing replacement, repair using corrosion protection, primer and black top coat.

Install in reverse order of removal.

REAR RUBBER BONDED BUSHING FOR REAR FINAL DRIVE**Special tools and workshop equipment required**

- Assembly tool 3301
- Support Arm Bearing Inst. Tool 3346
- Assembly Tool T40185
- Torque Wrench 50-200 Nm V.A.G 1332
- Engine-/Gearbox Jack V.A.G 1383 A

Removing

-- Remove the rear final drive. Refer to **Removal and Installation** , **Removal and Installation** or **Removal and Installation** .

-- Attach the tools to the sub frame as illustrated.

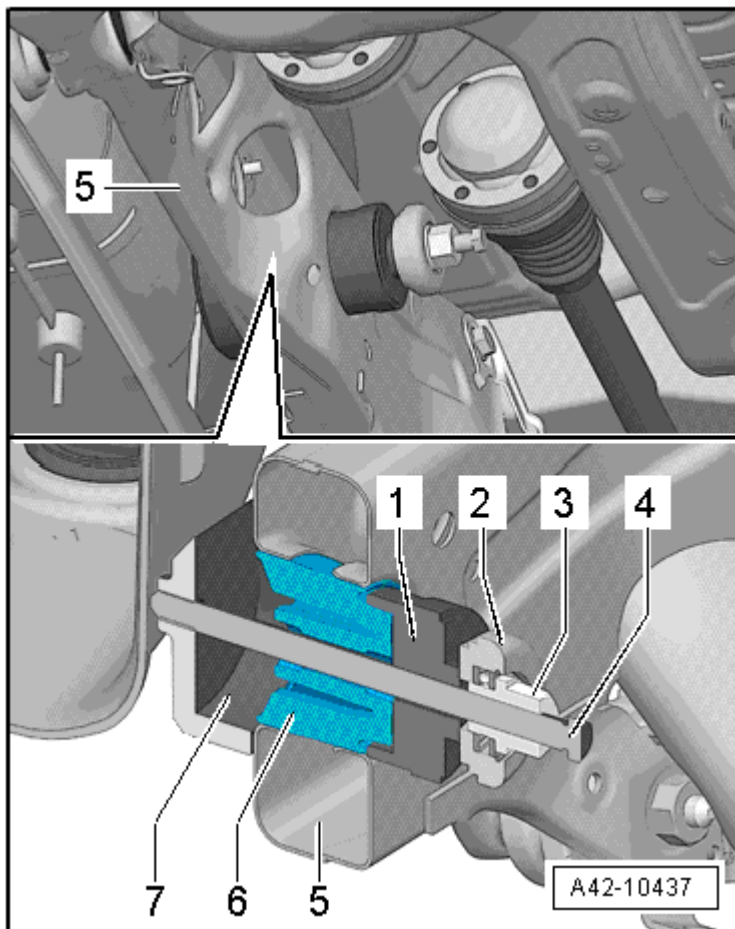


Fig. 233: Attaching Tools To Sub Frame
Courtesy of AUDI OF AMERICA, LLC

1. Tube T40185/1. Side "A" must face the subframe.
2. Thrust bearing 3301
3. Nut 3346/3
4. Spindle T40185/9
5. Subframe
6. Bonded Rubber Bushing
7. Tube T40185/7. The "open" side faces up.

-- Turn the nut 3346/3 and counter hold the T40185/9 and removed the bearing from the subframe.

Installing

Install in reverse order of removal. Note the following:

- Note the installation position for the rubber bonded bushing.
- The arrows on the back of the rubber bonded bushing must point up or down.

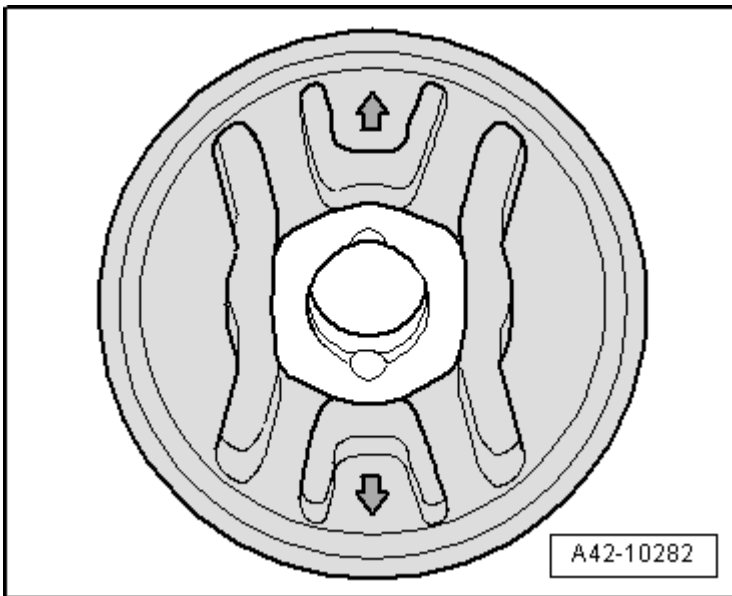


Fig. 234: Identifying Position Of Arrows On Back Of Rubber Bonded Bushing (Must Point Up Or Down)
Courtesy of AUDI OF AMERICA, LLC

- Attach the tools and the bonded rubber bushing to the subframe as illustrated.

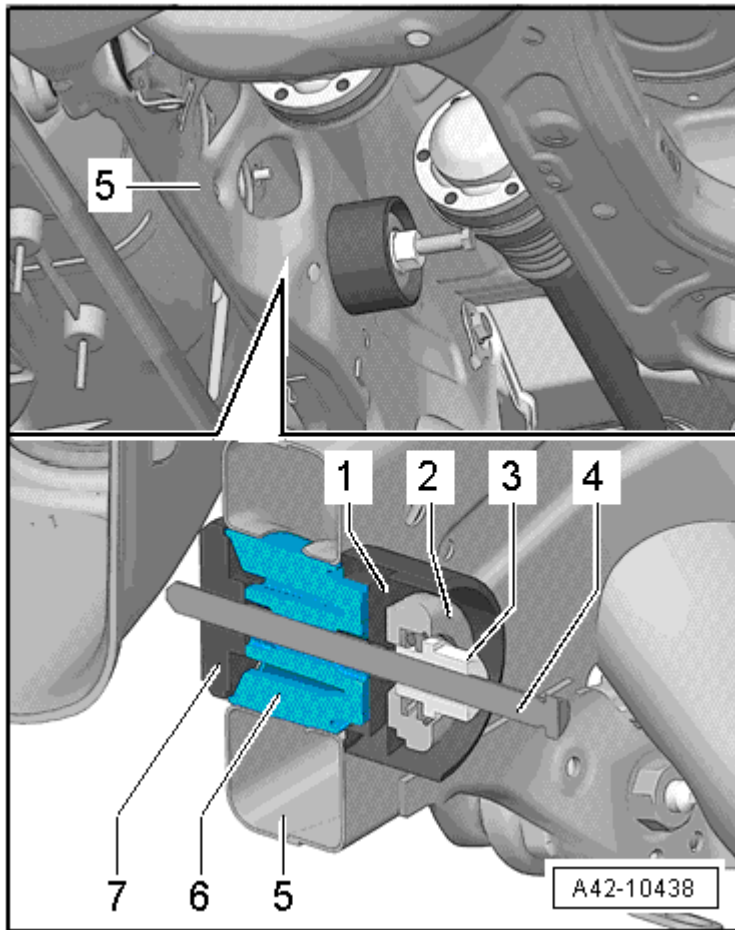


Fig. 235: Attaching Tools And Bonded Rubber Bushing To Subframe
 Courtesy of AUDI OF AMERICA, LLC

1. Tube T40185/2. Side "A" must face the subframe.
2. Thrust bearing 3301
3. Nut 3346/3
4. Spindle T40185/9
5. Subframe
6. Bonded Rubber Bushing
7. Thrust pad T40185/8

-- Turn the 3346/3 and counter hold the T40185/9 and install the bearing all the way into the subframe.

NOTE: If paint damage has occurred during bearing replacement, repair using corrosion protection, primer and black top coat.

COUPLING ROD WITH STABILIZER BAR

Special tools and workshop equipment required

- Torque Wrench 5-50 Nm V.A.G 1331
- Installation lubricant

Removing

-- Determine dimension -a- from the center of the wheel to the lower edge of the wheel housing before starting work while the vehicle is resting on its wheels.

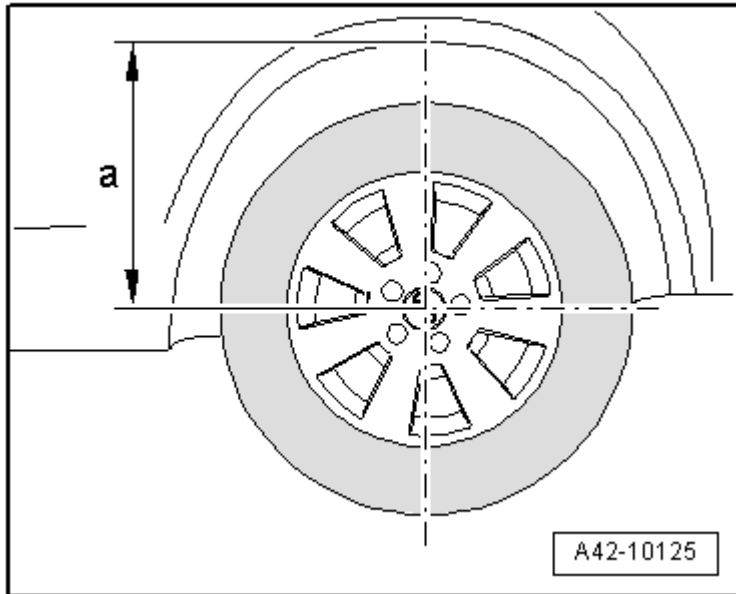


Fig. 236: Measuring Dimension From Center Of Wheel To Lower Edge Of Wheel Housing Using Tape Measure

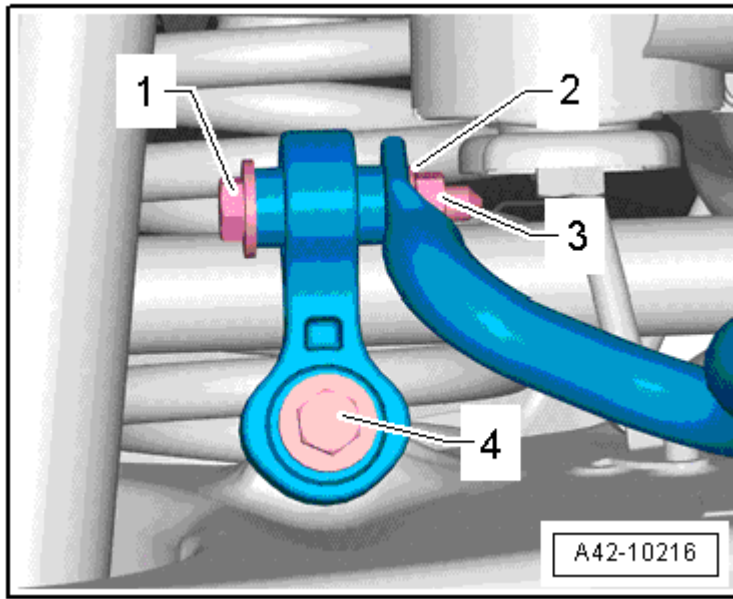
Courtesy of AUDI OF AMERICA, LLC

- Place the vehicle on a hoist.
- Remove the wheels.

CAUTION:

- Do not damage the paint on the stabilizer bar when removing and installing.

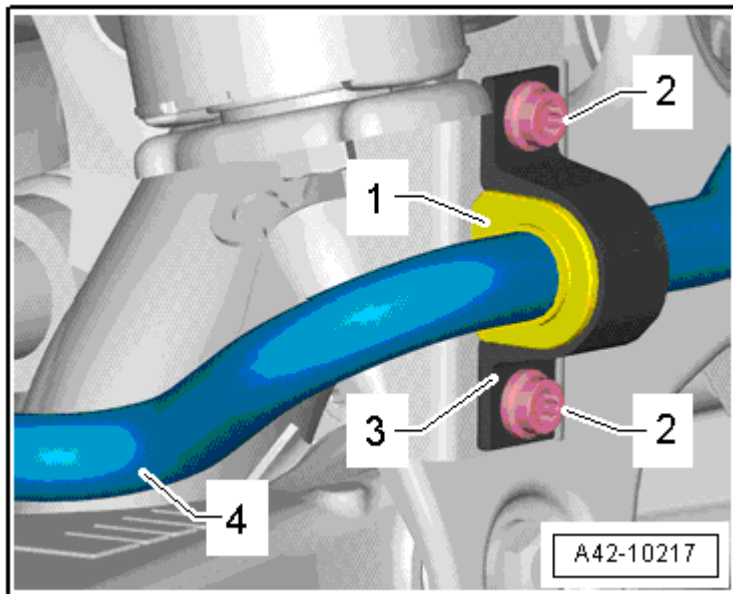
- Remove the bolt -4-.

**Fig. 237: Identifying Bolt**

Courtesy of AUDI OF AMERICA, LLC

-- Remove the nut -3-, washer -2- and bolt -1-.

The stabilizer bar -4- is completely removed and installed with the rubber bushings -1- and clamps -3-. Do not remove the clamps and rubber bushings.

**Fig. 238: Identifying Left And Right Bolts**

Courtesy of AUDI OF AMERICA, LLC

-- Remove the left and right bolts -2- and the stabilizer bar -4-.

Installing

Install in reverse order of removal. Note the following:

Tightening specifications, refer to **SUBFRAMES, STABILIZER BAR AND COUPLING ROD OVERVIEW**

NOTE: Bonded rubber bushings can only be turned to a limited extent. Only tighten suspension bolts when vehicle is in curb weight or control position.

Wheel bearing, lifting to curb weight position on vehicles with coil springs. Refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**.

-- Insert the stabilizer bar and install the right bolts loosely.

-- First install the left and right bolts -2- loosely.

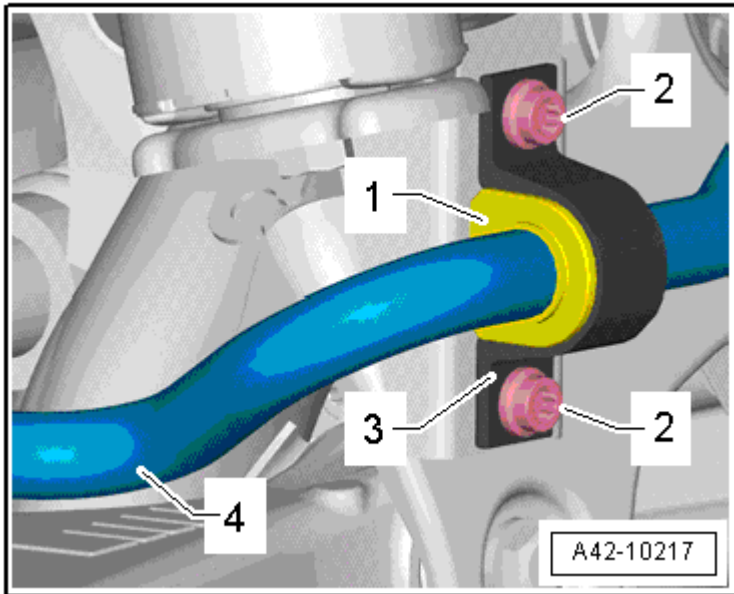


Fig. 239: Identifying Left And Right Bolts

Courtesy of AUDI OF AMERICA, LLC

-- Then tighten the left and right bolts -2- evenly.

-- Insert the bolt -1- with the washer -2- and tighten the left and right nuts -3-.



-- Axle alignment is required, see table, refer to **WHEN VEHICLE ALIGNMENT IS NECESSARY**.

WHEEL BEARING HOUSING

- Torque Wrench 50-200 Nm V.A.G 1332
- Torque Wrench V.A.G 1410

Removing

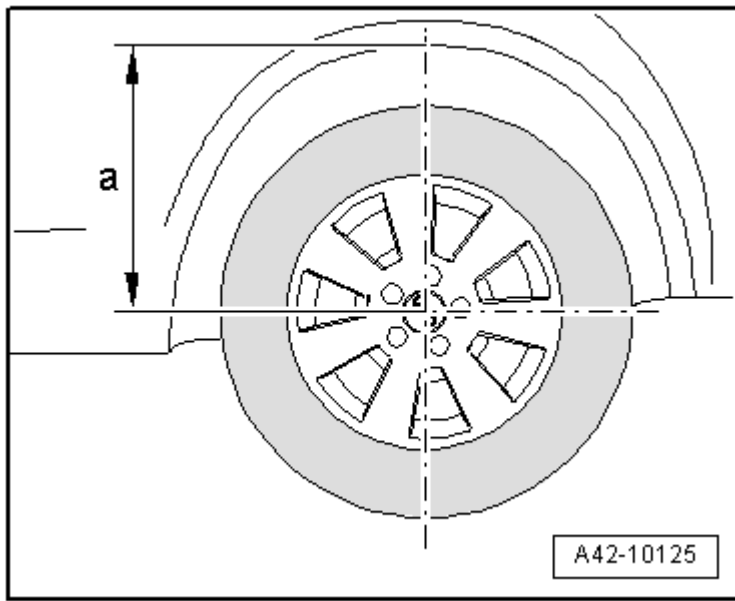


Fig. 241: Measuring Dimension From Center Of Wheel To Lower Edge Of Wheel Housing Using Tape Measure

Courtesy of AUDI OF AMERICA, LLC

-- Determine dimension -a- from the center of the wheel to the lower edge of the wheel housing before starting work while the vehicle is resting on its wheels.

-- Place the vehicle on a hoist.

Loosen the connection between the drive axle and wheel hub. Refer to **THREADED CONNECTION BETWEEN DRIVE AXLE AND WHEEL HUB, LOOSENING AND TIGHTENING.**

-- Remove the wheel.

-- Release the connector -1- from the rear speed sensor -- and remove it.

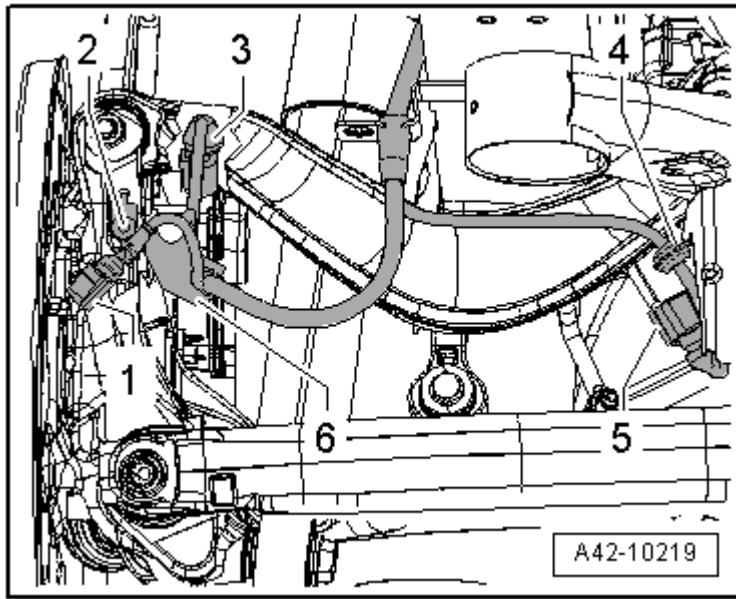


Fig. 242: Releasing Connector From Left Rear Level Control System Sensor
Courtesy of AUDI OF AMERICA, LLC

- Disconnect the electro-mechanical parking brake connector -3-.
- Remove the bolt -2- and the bracket with lines -6-.
- Remove brake caliper and brake disc. Refer to **Removal and Installation** .
- Secure the brake caliper to the body so that the weight of the caliper does not stress or damage the brake hose or brake line.
- Remove the bolts -1- and the brake shield -2-.

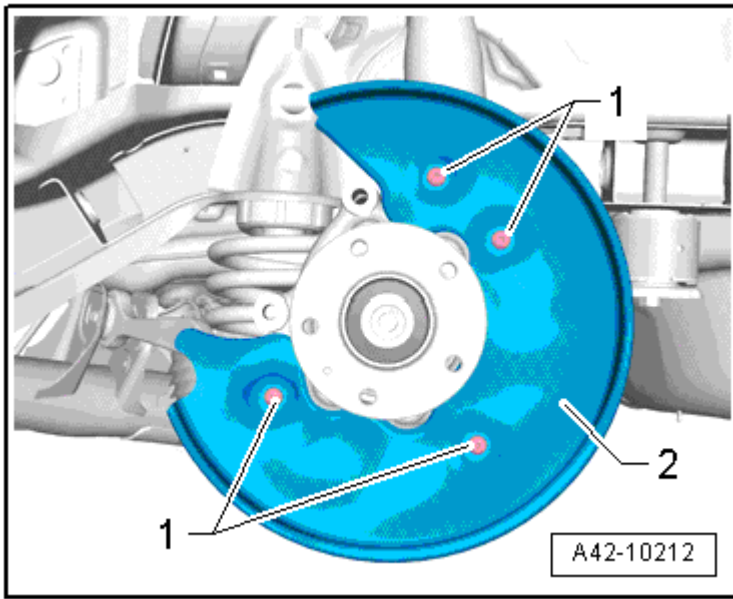


Fig. 243: Identifying Rear Speed Sensor
Courtesy of AUDI OF AMERICA, LLC

-- Remove the rear speed sensor -- -1-. Remove bolt -2- to do so.

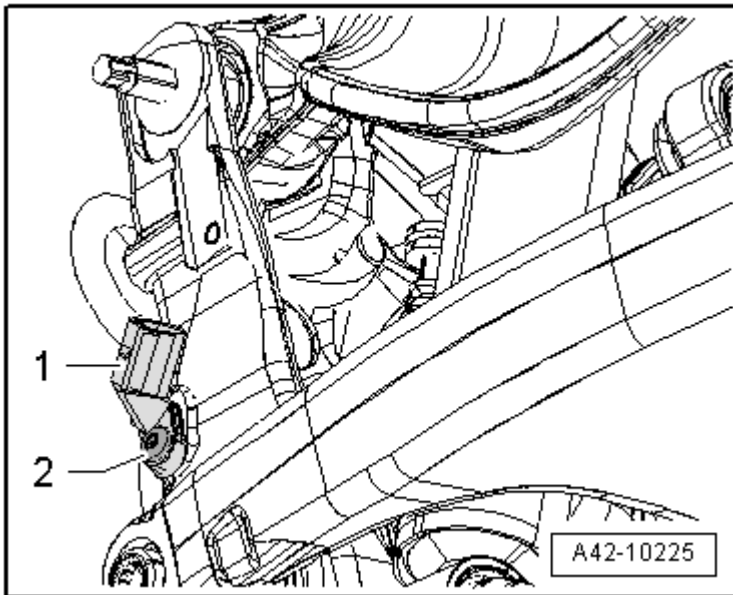


Fig. 244: Identifying Rear Speed Sensor & Bolt
Courtesy of AUDI OF AMERICA, LLC

-- Remove coil spring. Refer to **COIL SPRING**.

-- Mark the position of the bolt -1- to the wheel bearing housing -2-.

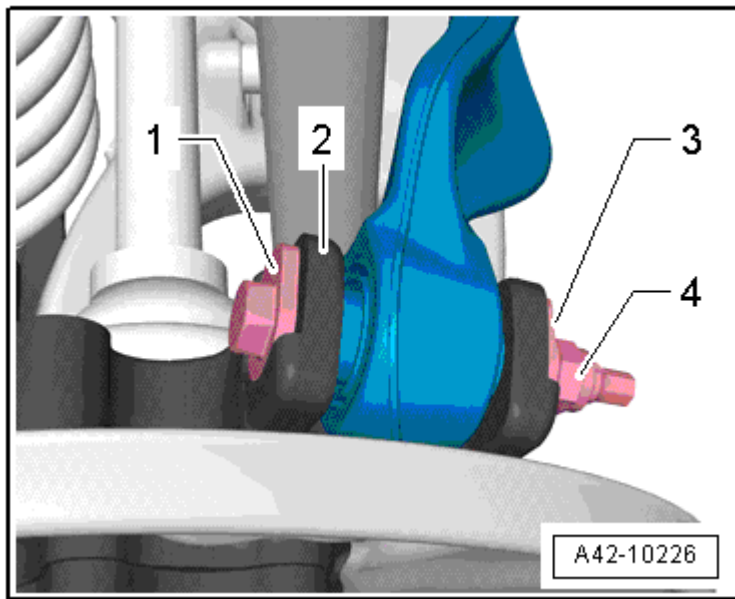


Fig. 245: Identifying Nut And Eccentric Washer
 Courtesy of AUDI OF AMERICA, LLC

- Remove the nut -4- and the eccentric washer -3-.
- Remove the bolt -1-.
- Remove bolt -4-.

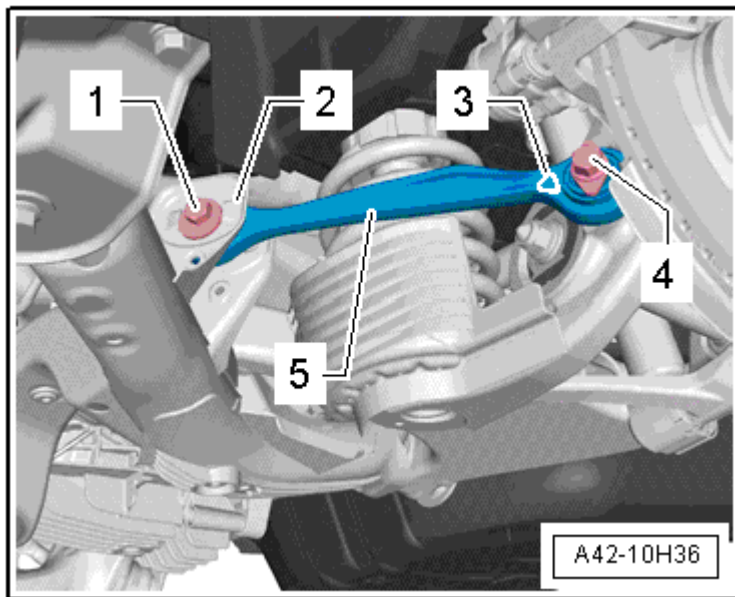


Fig. 246: Identifying Bolt
 Courtesy of AUDI OF AMERICA, LLC

- Release the retaining tabs -A- and remove the stone deflector -2-.

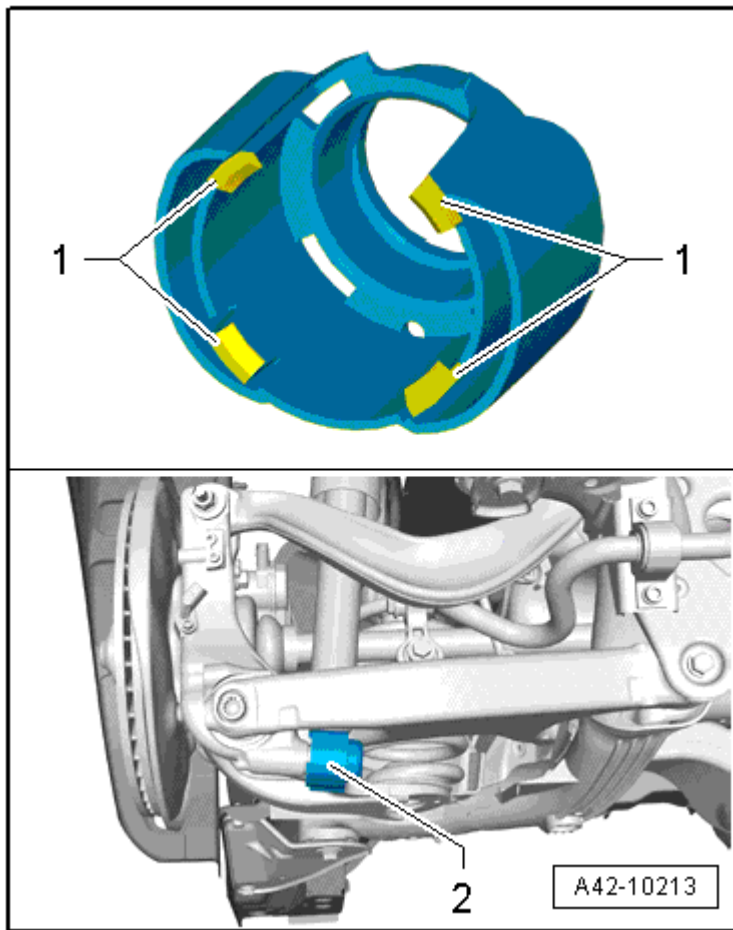


Fig. 247: Identifying Retaining Tabs And Stone Deflector
Courtesy of AUDI OF AMERICA, LLC

-- Remove the bolt -2- and washer -1-.

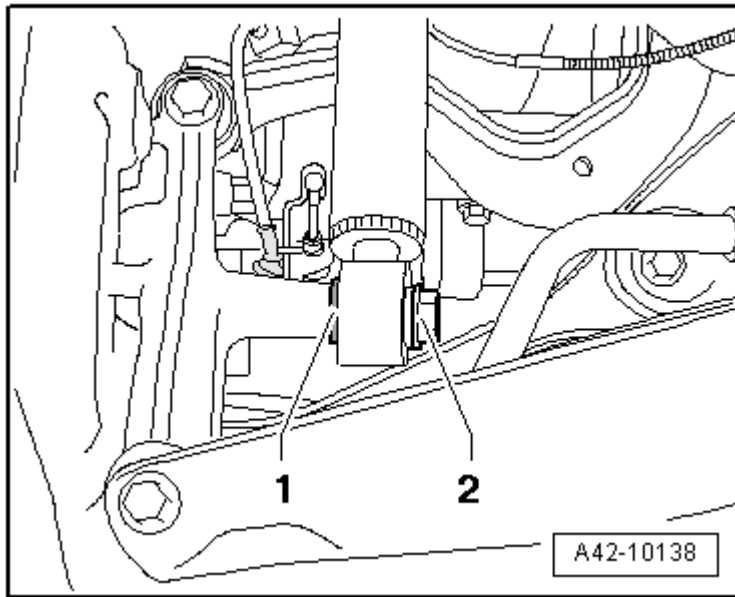


Fig. 248: Identifying Bolt And Washer
Courtesy of AUDI OF AMERICA, LLC

-- Remove nut -3-.

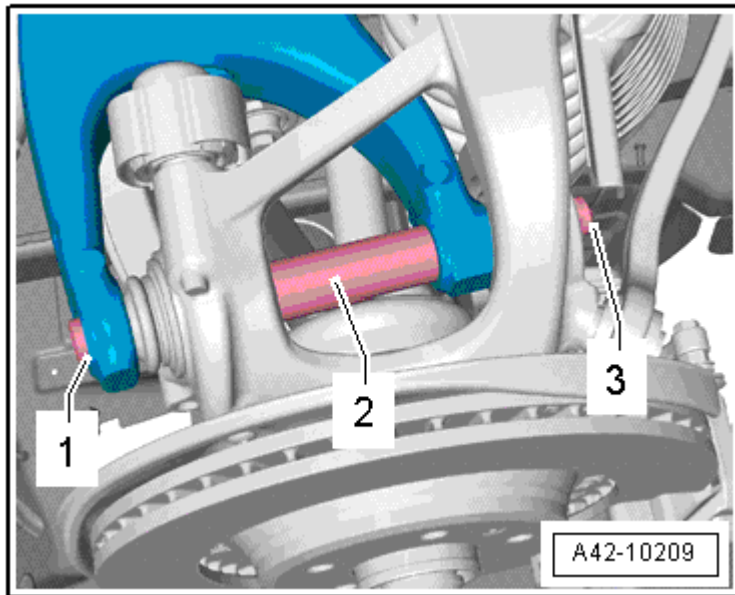


Fig. 249: Inserting Bolt With Spacer Tube To Install Nut Loosely
Courtesy of AUDI OF AMERICA, LLC

-- Remove the bolt -1- and the spacer tube -2-.

NOTE: Axle alignment is necessary if the nut -3- is loosened or the bolt -1- is removed.

-- Tip the wheel bearing housing to the side and remove the drive axle from it.

-- Remove wheel bearing housing.

Wheel bearing unit, removing, refer to **WHEEL BEARING UNIT**

Installing

Install in reverse order of removal. Note the following:

Tightening specifications, refer to **WHEEL BEARING HOUSING, WHEEL BEARING UNIT AND COIL SPRING SHOCK ABSORBER OVERVIEW**

NOTE: Bonded rubber bushings can only be turned to a limited extent. Only tighten suspension bolts when vehicle is in curb weight or control position.

Wheel bearing, lifting to curb weight position on vehicles with coil springs. Refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING**.

-- Install wheel bearing housing.

-- Insert the bolt -1- with the spacer tube -2- and install the nut -3- loosely.

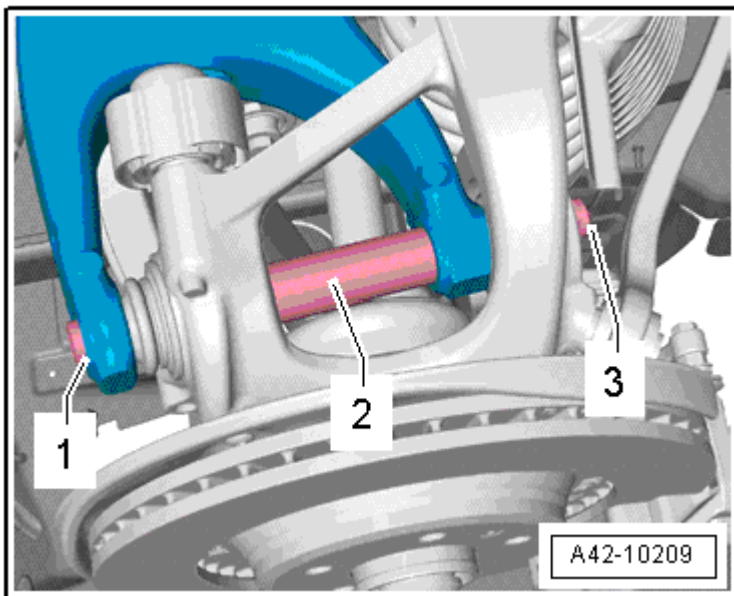


Fig. 250: Inserting Bolt With Spacer Tube To Install Nut Loosely
Courtesy of AUDI OF AMERICA, LLC

CAUTION: • Do not tighten the threaded connection using the nut -3-.

- Tighten the bolt -1-.
- Install coil spring. Refer to **COIL SPRING**.
- Install the brake caliper and disc. Refer to **Removal and Installation** .
- Install the rear speed sensor --. Refer to **Removal and Installation** .
- Install wheel.
- Tighten the wheel. Refer to **Specifications** .

Tighten the drive axle to wheel hub threaded connection. Refer to **THREADED CONNECTION BETWEEN DRIVE AXLE AND WHEEL HUB, LOOSENING AND TIGHTENING**.

- Axle alignment is required, see table, refer to **WHEN VEHICLE ALIGNMENT IS NECESSARY** .

The axle alignment on the front and rear axles must be performed on a VW/Audi approved alignment rack.

WHEEL BEARING UNIT

Removing

- Remove wheel bearing housing. Refer to **WHEEL BEARING HOUSING**.
- Clamp the wheel bearing housing in a vise with aluminum protective covers.
- Remove the bolts -1- and the wheel bearing unit -2-.

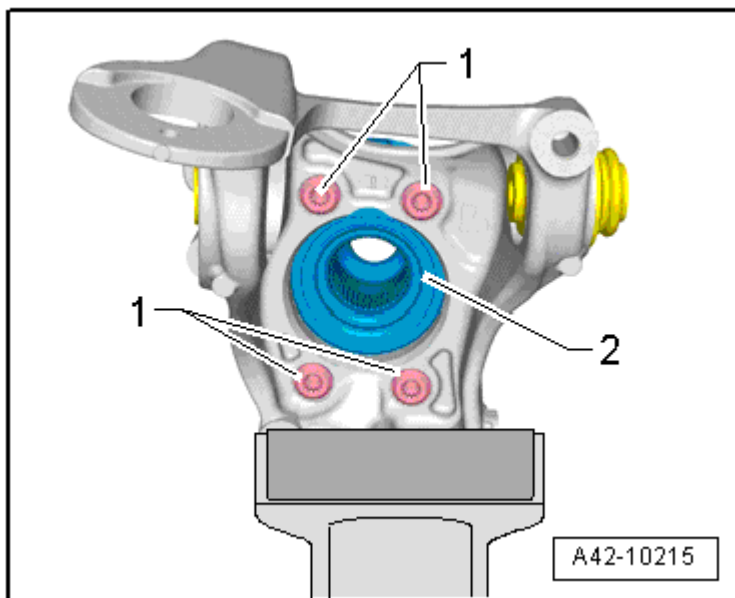


Fig. 251: Identifying Bolts And Wheel Bearing Unit

Courtesy of AUDI OF AMERICA, LLC

- CAUTION:**
- Avoid contaminating with dirt and damaging the seal when setting down/storing.

The wheel bearing -1- must always face up.

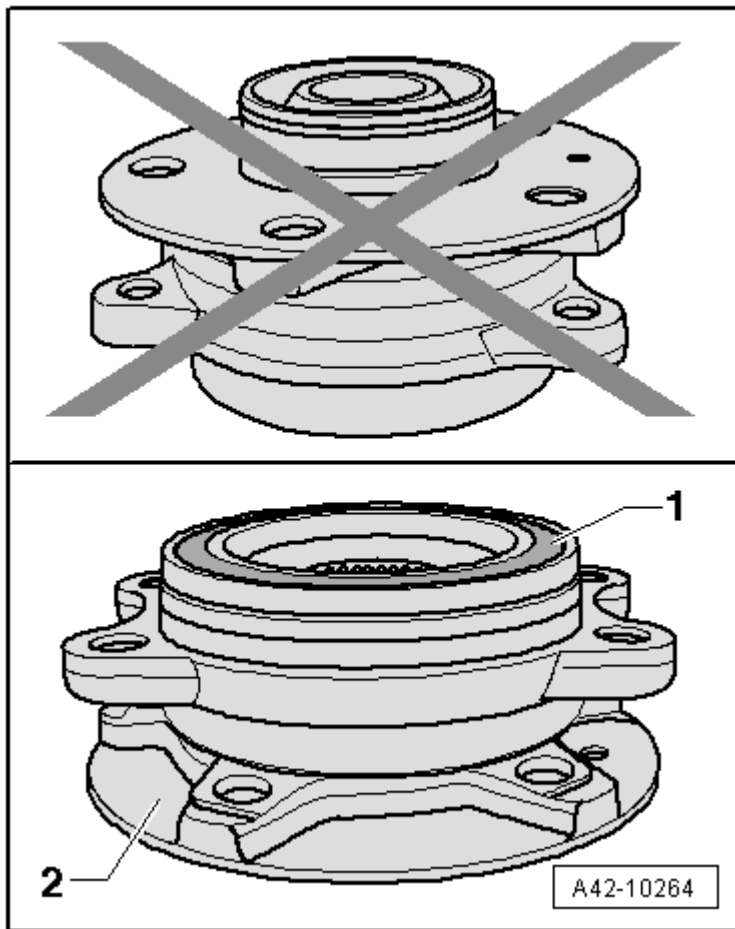


Fig. 252: Identifying Caution: Avoid Contaminating With Dirt And Damaging Seal When Setting Down/Storing

Courtesy of AUDI OF AMERICA, LLC

-- Always set the wheel bearing unit down on the wheel hub -2-.

The same procedure also applies to the wheel bearing without a wheel hub.

Installing

Install in reverse order of removal. Note the following:

Tightening specifications, refer to **WHEEL BEARING HOUSING, WHEEL BEARING UNIT AND COIL**

SPRING SHOCK ABSORBER OVERVIEW

WHEEL BEARING HOUSING RUBBER BONDED BUSHING

Special tools and workshop equipment required

- Thrust Plate VW 401
- Thrust Plate VW 402
- Punch VW 408 A
- Punch VW 411
- Shop Press V.A.G 1290 A
- Assembly tool T40184
- Pressure Plate T40184/2

REMOVING FRONT RUBBER BONDED BUSHING

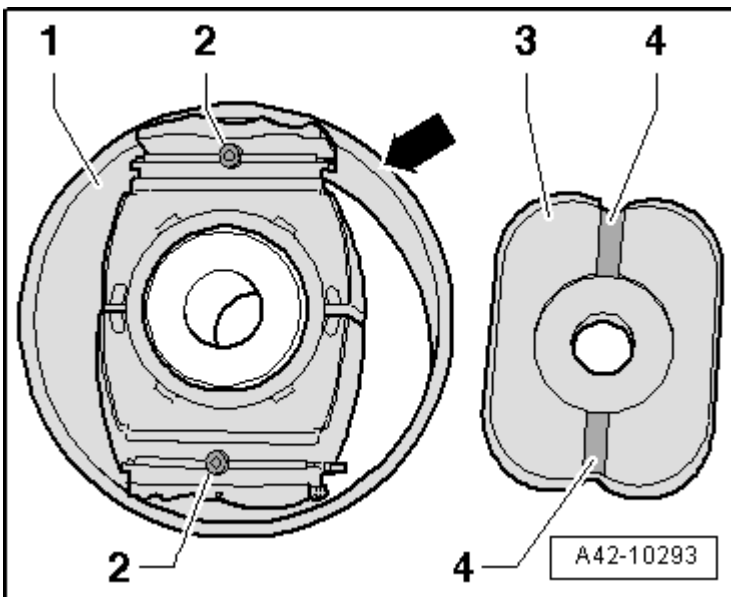


Fig. 253: Identifying Front Rubber Bonded Bushing
Courtesy of AUDI OF AMERICA, LLC

-- Remove wheel bearing housing. Refer to **WHEEL BEARING HOUSING**.

In order to remove the front rubber bonded bushing, the T40184/2 -3- must be mounted on the front rubber bonded bushing in such a way so that the lugs -2- fit into the grooves -4-.

-- Place the tools on the front bonded rubber bushing and the wheel bearing housing as illustrated.

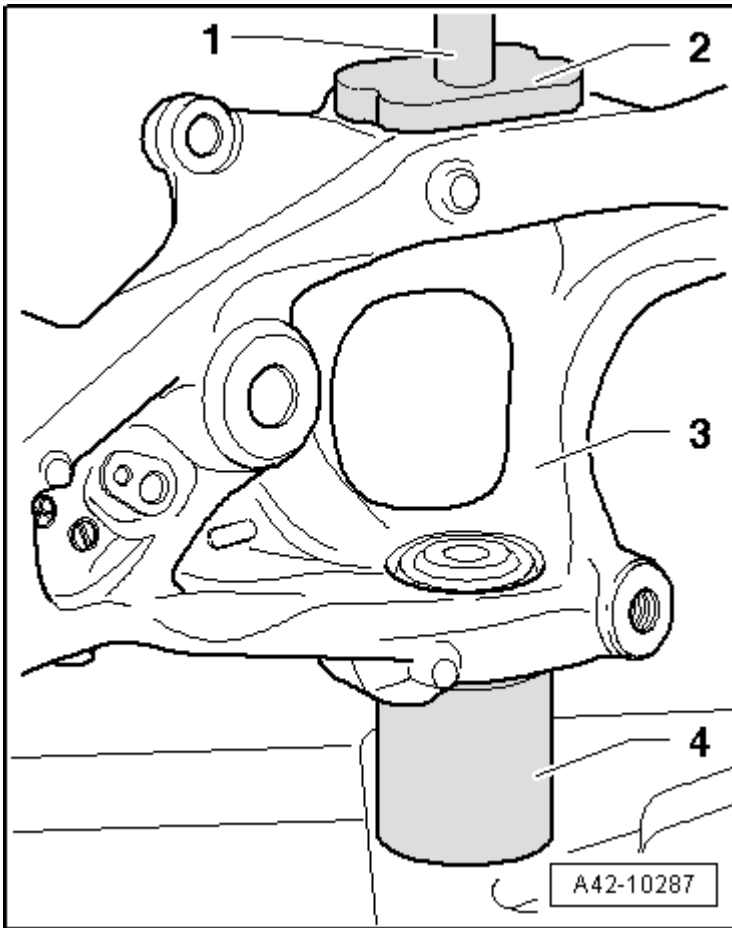


Fig. 254: Placing Tools On Front Bonded Rubber Bushing And Wheel Bearing Housing
Courtesy of AUDI OF AMERICA, LLC

NOTE: When mounting the wheel bearing housing onto the sleeve T40184/1 be careful not to damage or push the rubber grommet on the rear rubber bonded bushing.

1. Punch VW 411
2. Thrust Plate T40184/2
3. Wheel Bearing Housing
4. Sleeve T40184/1. The side with the groove must face the wheel bearing housing. On a bonded rubber bushing with a "positioning tab", this is in the groove on the T40184/1.

-- Press out the front rubber bonded bushing.

INSTALLING FRONT RUBBER BONDED BUSHING

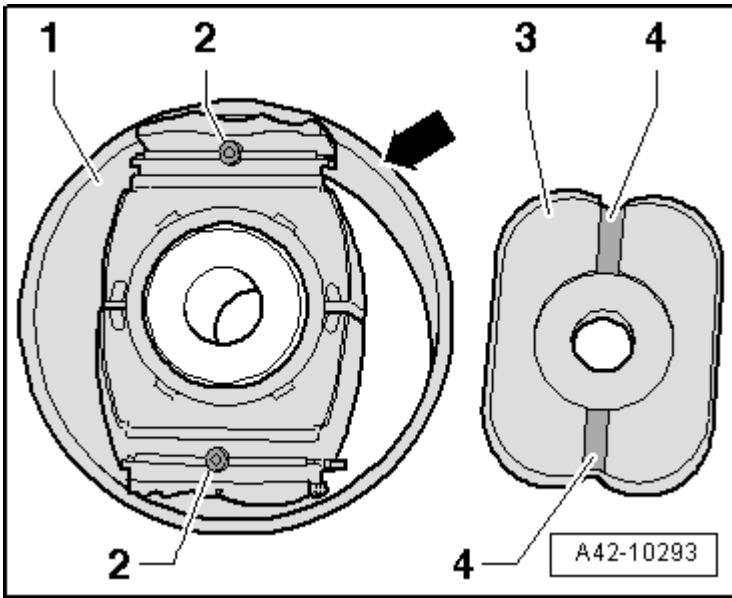


Fig. 255: Identifying Front Rubber Bonded Bushing
 Courtesy of AUDI OF AMERICA, LLC

-- Install the front rubber bonded bushing into the T40184/3. The "thin" collar -arrow- must face upward.

In order to install the front rubber bonded bushing, the T40184/2 -3- must be mounted on the front rubber bonded bushing in such a way so that the lugs -2- fit into the grooves -4-.

-- Press the front rubber bonded bushing all the way onto the thrust plates -1 and 6-.

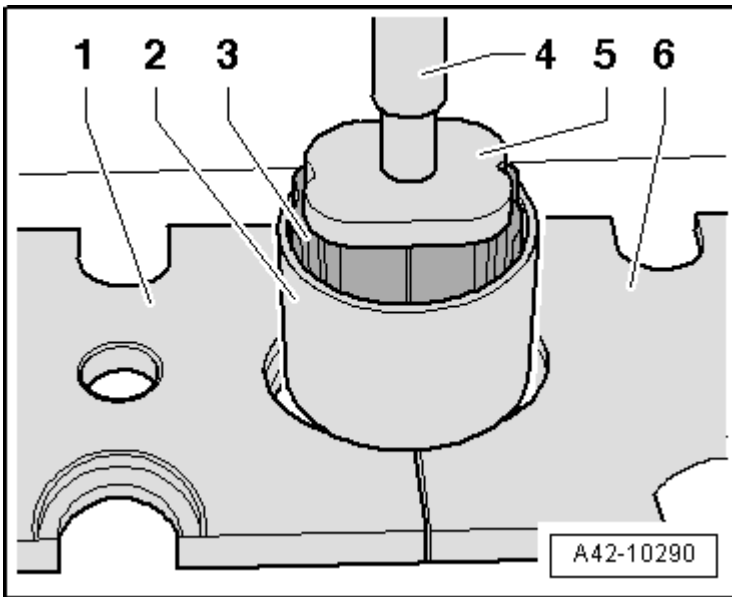


Fig. 256: Pressing Front Rubber Bonded Bushing All Way Onto Thrust Plates
 Courtesy of AUDI OF AMERICA, LLC

1. Thrust plate VW 401. Order as illustrated.

2. Sleeve T40184/3
3. Front Bonded Rubber Bushing
4. Punch VW 408 A
5. Thrust Plate T40184/2
6. Thrust plate VW 402. Order as illustrated.

-- Then slightly pull apart the thrust plates -1 and 6-.

-- Press the front rubber bonded bushing approximately 2 mm out of the T40184/3.

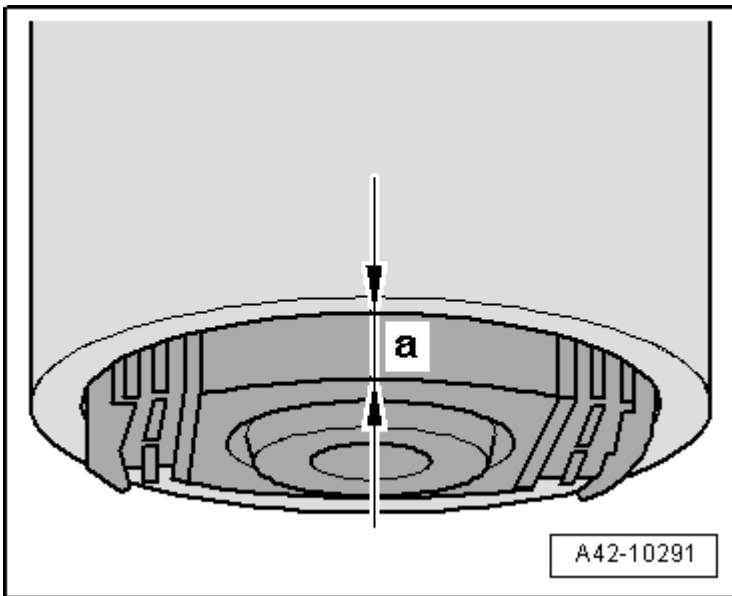


Fig. 257: Pressing Front Rubber Bonded Bushing Approximately 2 Mm Out Of T40184/3
Courtesy of AUDI OF AMERICA, LLC

a = 2 mm

-- Pull off the VW 408 A and install the VW 411.

-- Mount the wheel bearing housing onto the V.A.G 1290 A.

-- Mount the front rubber bonded bushing (not shown in the illustration), the pressure plate -3- and the sleeve -1- on the wheel housing bearing.

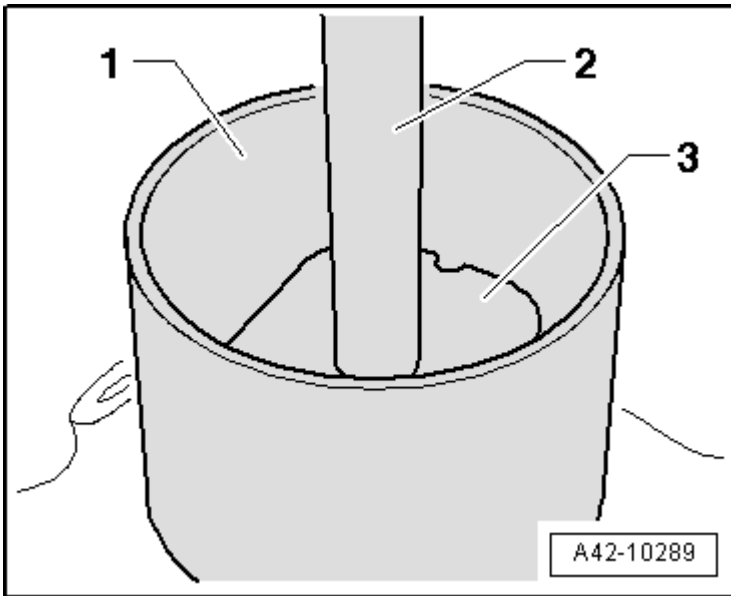


Fig. 258: Mounting Front Rubber Bonded Bushing
Courtesy of AUDI OF AMERICA, LLC

1. Sleeve T40184/3
2. Punch VW 411
3. Thrust plate T40184/2. Pay attention to the installation position of the front rubber bonded bushing.

-- Place the tools on the front bonded rubber bushing and the wheel bearing housing -3- as illustrated.

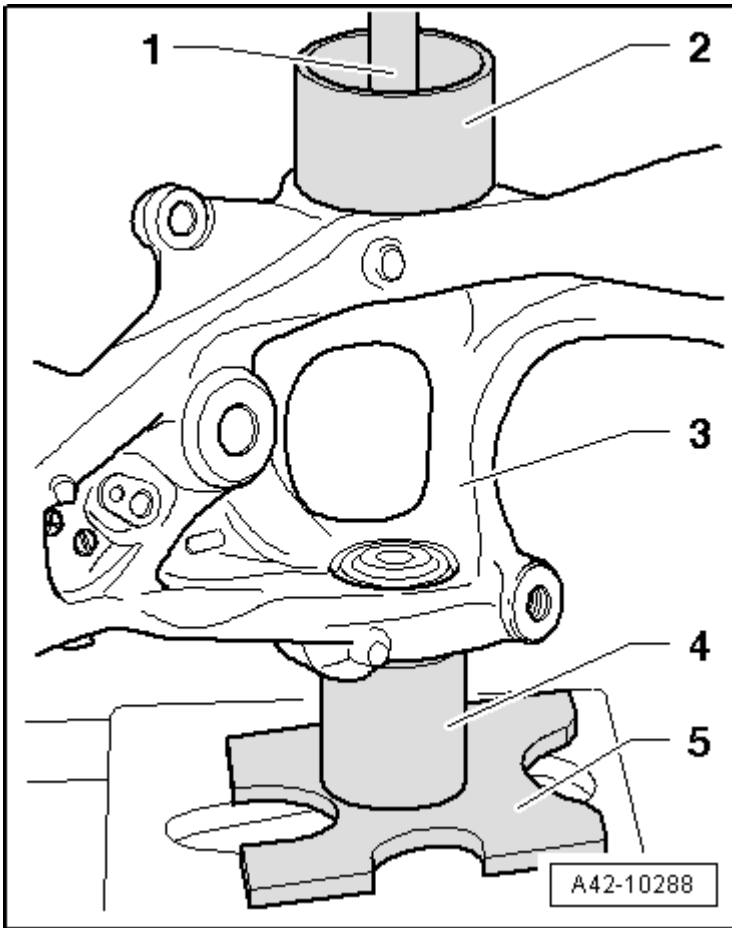


Fig. 259: Placing Tools On Front Bonded Rubber Bushing And Wheel Bearing Housing
Courtesy of AUDI OF AMERICA, LLC

NOTE: When mounting the wheel bearing housing onto the T40184/1 be careful not to damage or push the rubber grommet on the rear rubber bonded bushing.

-- Slowly press the front rubber bonded bushing in (not shown in the illustration) until the sleeve -2- can be pulled out at the top.

1. Punch VW 411
2. Sleeve T40184/3
3. Wheel Bearing Housing
4. Sleeve T40184/1. The side with the groove must face the wheel bearing housing. On a bonded rubber bushing with a "positioning tab", this is in the groove on the T40184/1.
5. Thrust Plate VW 402

Ignore -3-.

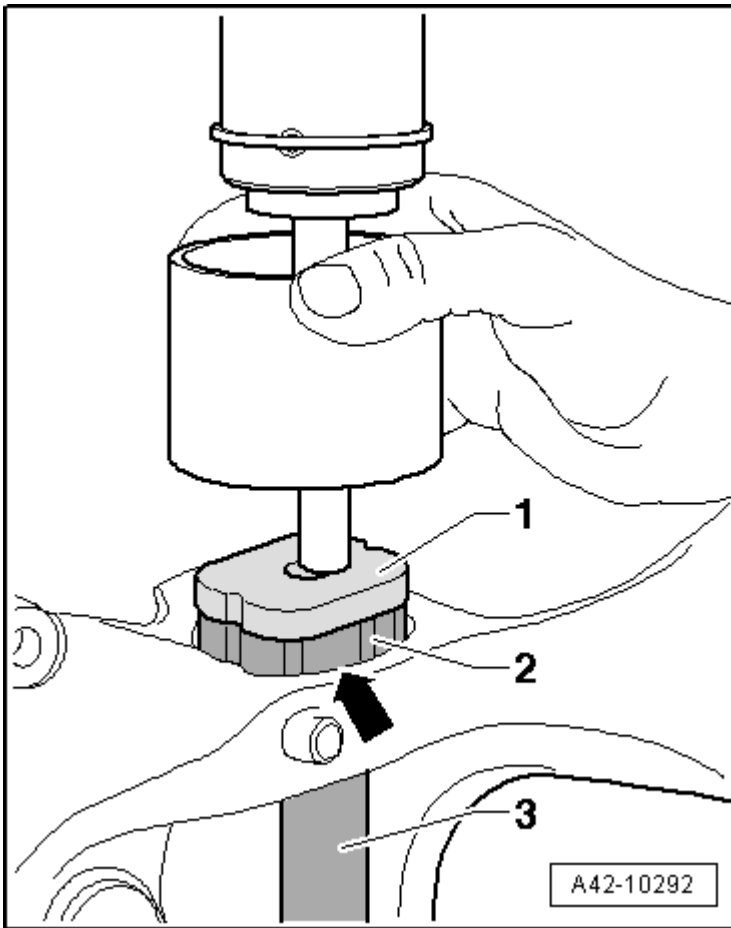


Fig. 260: Slowly Pressing Front Rubber Bonded Bushing
Courtesy of AUDI OF AMERICA, LLC

-- Slowly press the front rubber bonded bushing -2- so that it is even with the edge -arrow- of the wheel bearing housing.

-- Install wheel bearing housing. Refer to **WHEEL BEARING HOUSING**.

SHOCK ABSORBER

Special tools and workshop equipment required

- Torque Wrench 5-50 Nm V.A.G 1331
- Torque Wrench 50-200 Nm V.A.G 1332
- Engine-/Gearbox Jack V.A.G 1383 A
- Wheel Hub Support T10149

Removing

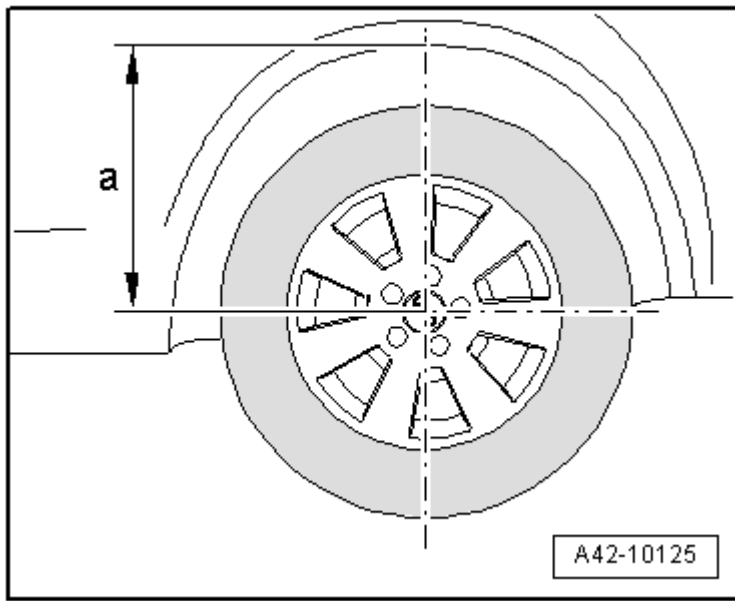


Fig. 261: Measuring Dimension From Center Of Wheel To Lower Edge Of Wheel Housing Using Tape Measure

Courtesy of AUDI OF AMERICA, LLC

- Determine dimension -a- from the center of the wheel to the lower edge of the wheel housing before starting work while the vehicle is resting on its wheels.
- Place the vehicle on a hoist.
- Remove the wheel.
- Remove wheel housing liner. Refer to **Removal and Installation** .
- Turn the wheel hub up until a wheel bold hole is on top.
- Install the T10149 with the wheel bolt -arrow-

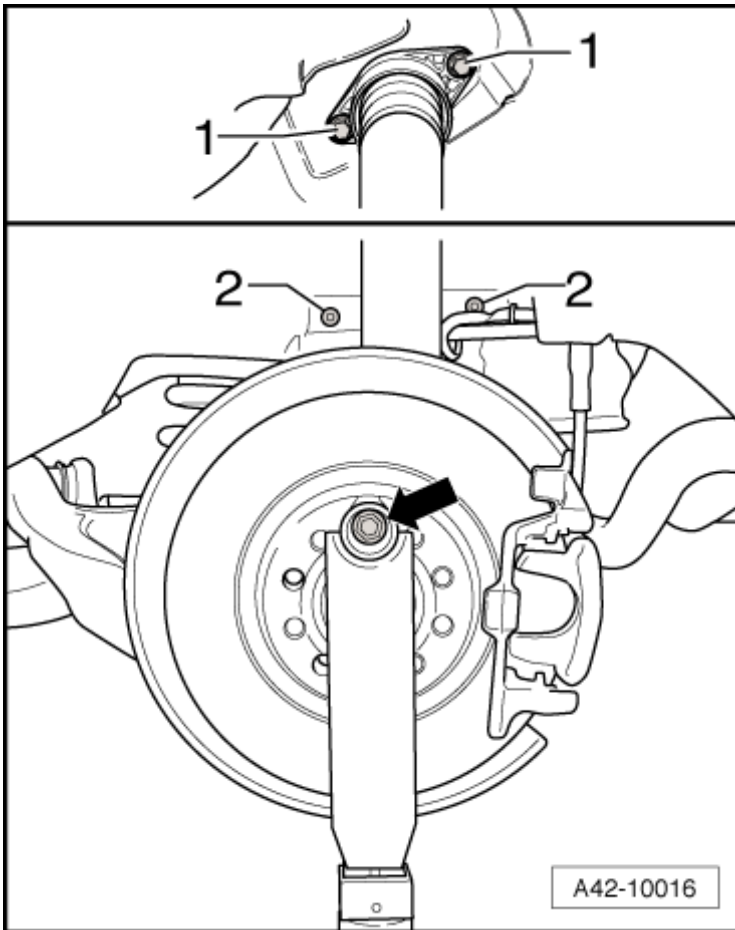


Fig. 262: Identifying Wheel Hub Support T10149 With Wheel Bolt
Courtesy of AUDI OF AMERICA, LLC

- Insert the T10149 in the V.A.G 1383 A and lift the wheel bearing housing slightly.
- Remove bolts -1-.

Applies to a Vehicle with Electronically Controlled Damping

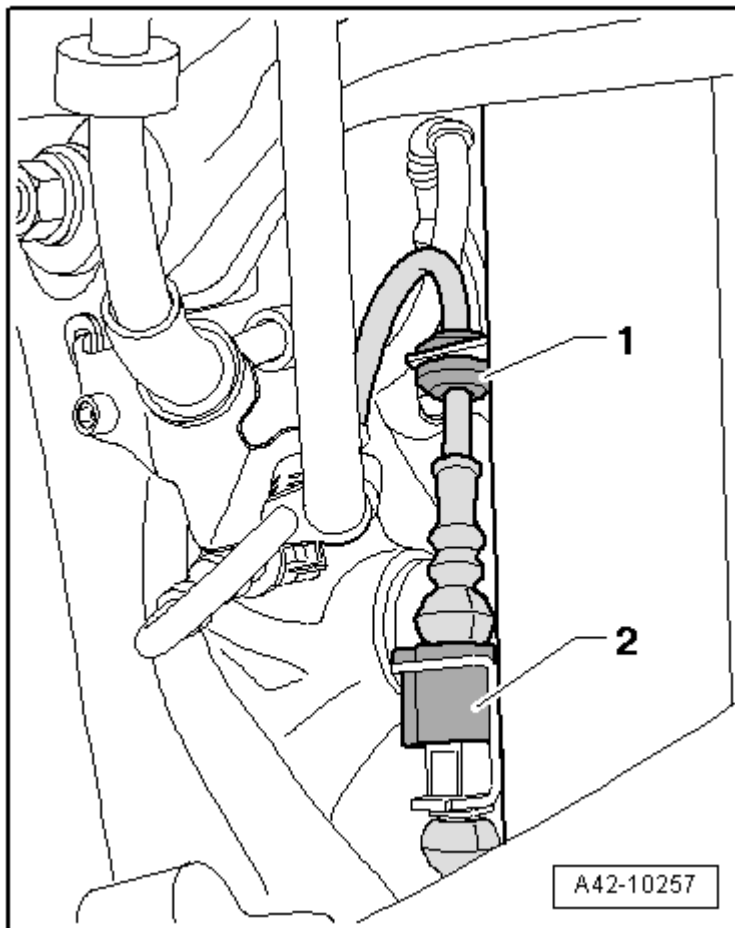


Fig. 263: Releasing Connector -2- & Fastener -1-
Courtesy of AUDI OF AMERICA, LLC

- Release and remove the connector -2-.
- Remove the fastener -1-.

Continuation for All Vehicles

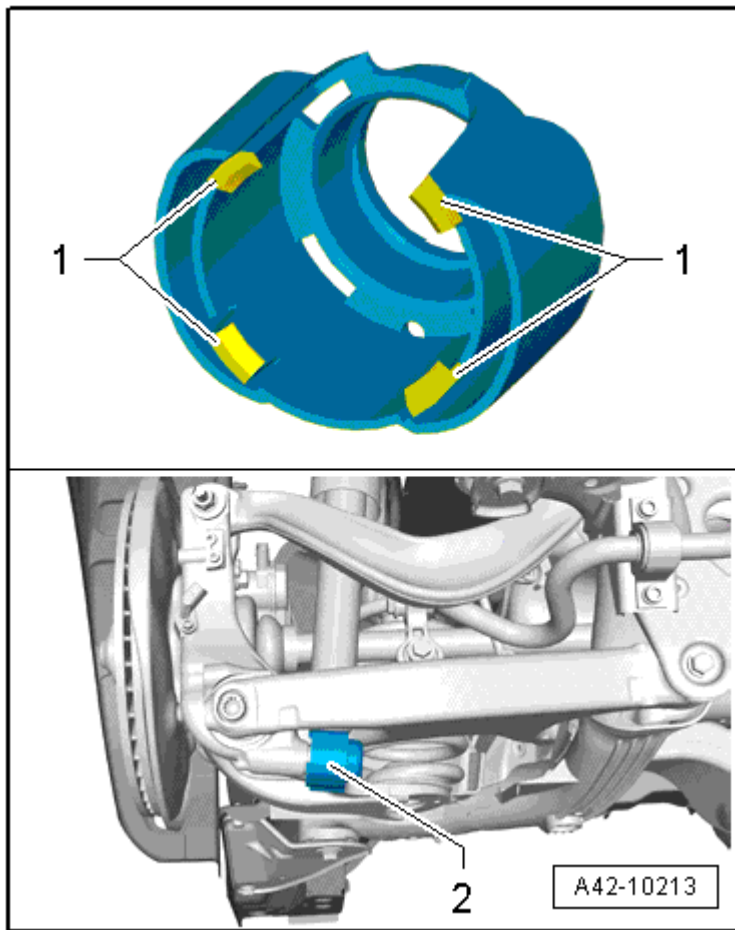


Fig. 264: Identifying Retaining Tabs And Stone Deflector
Courtesy of AUDI OF AMERICA, LLC

- Release the retaining tabs -A- and remove the stone deflector -2-.
- Remove the bolt -2- and washer -1-.

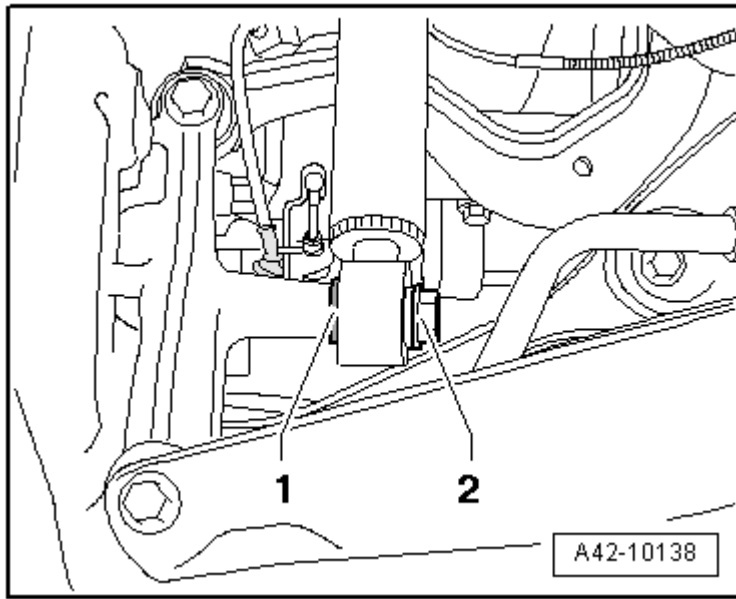


Fig. 265: Identifying Bolt And Washer
Courtesy of AUDI OF AMERICA, LLC

-- Remove the shock absorber downward.

Installing

Install in reverse order of removal. Note the following:

Tightening specifications, refer to **WHEEL BEARING HOUSING, WHEEL BEARING UNIT AND COIL SPRING SHOCK ABSORBER OVERVIEW**

NOTE: Bonded rubber bushings can only be turned to a limited extent. Only tighten suspension bolts when vehicle is in curb weight or control position.

Wheel bearing, lifting to curb weight position on vehicles with coil springs.
Refer to **WHEEL BEARING IN CURB WEIGHT, LIFTING VEHICLES WITH COIL SPRING.**

-- Wheel housing liner, installing. Refer to **Removal and Installation** .

-- Tighten the wheel. Refer to **Specifications** .

DISASSEMBLY AND ASSEMBLY

88 MM DIAMETER OR 98 MM DIAMETER OUTER CV JOINT

Special tools and workshop equipment required

- Circlip pliers (commercially-available)

- Copper or brass drift
- Sealant allocation.

Removing

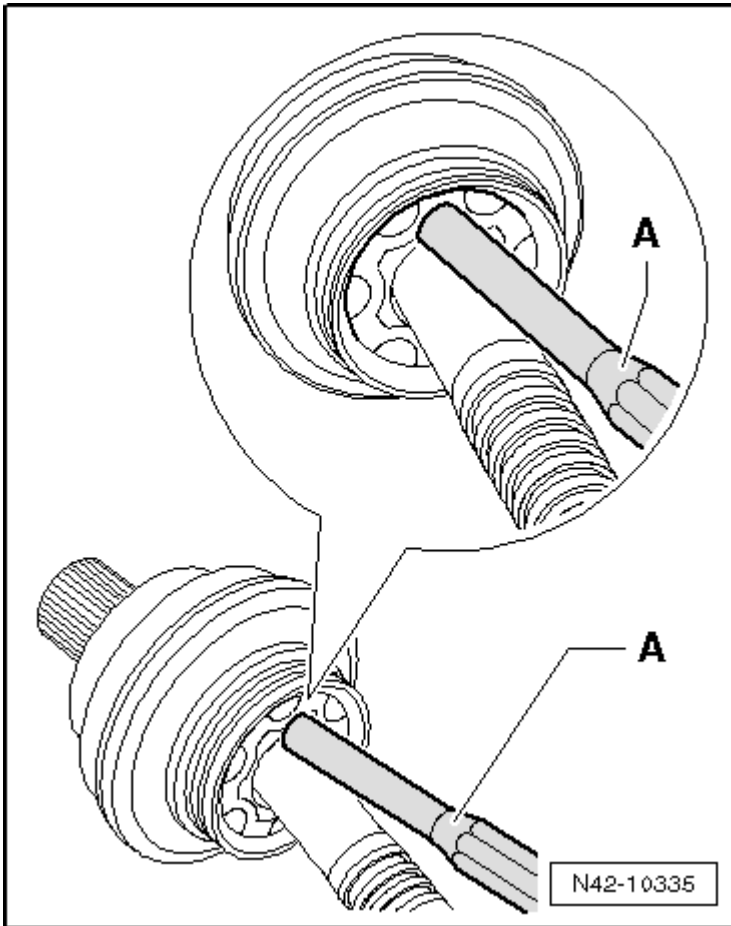


Fig. 266: Identifying Outer CV Joint, Pressing Off
Courtesy of AUDI OF AMERICA, LLC

- Secure the drive axle with protective covers in a vise clamp.
 - Open the clamps.
 - Slide back protective boot.
 - Remove the CV joint from the drive axle using a drift -A-.
- Drift -A- must be installed exactly on the triple roller star of the CV joint.
- Remove joint and protective joint boot.

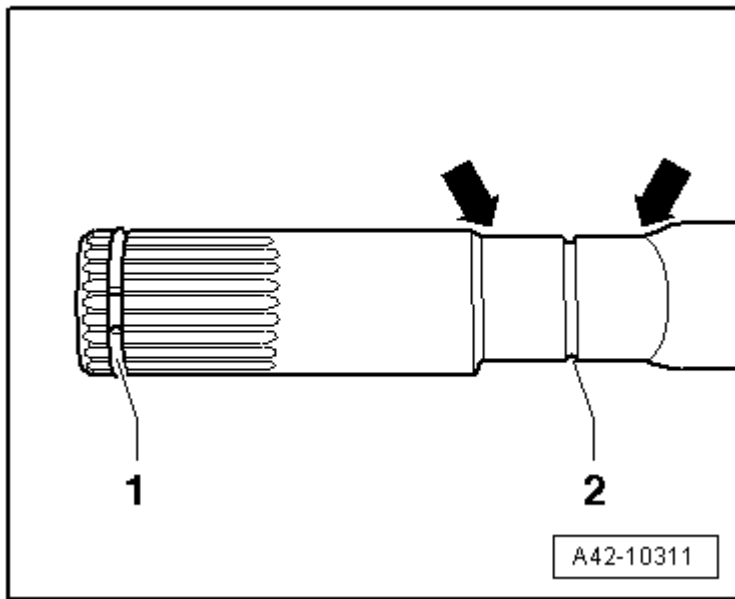


Fig. 267: Identifying Circlip

Courtesy of AUDI OF AMERICA, LLC

-- Remove the circlip -1-.

Installing

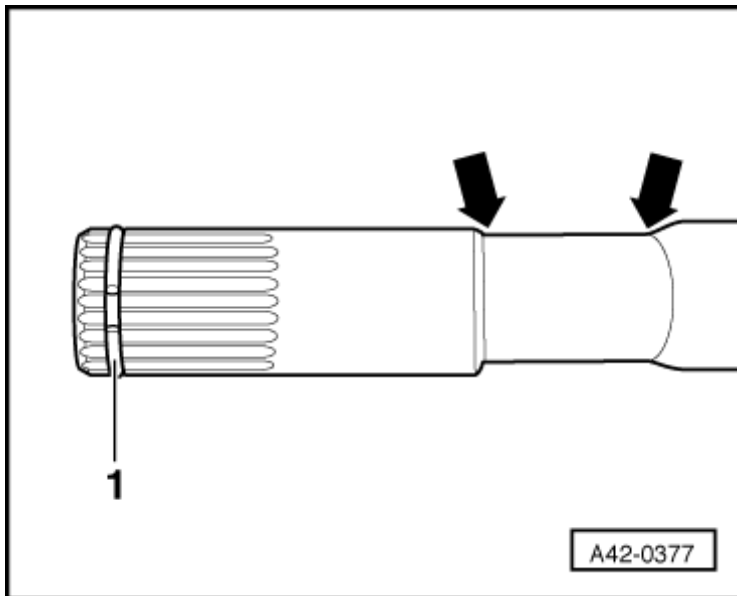


Fig. 268: Identifying Circlip (Snap Ring) & Positioning Protective Joint Boot

Courtesy of AUDI OF AMERICA, LLC

-- Slide joint protective boot onto drive axle.

- Joints and protective joint boots must be free of grease.

- Position the protective boot between the -arrows-.
- Place 60% of the drive axle grease distributed evenly into the inside of the CV joint.
- Before installing joint piece, splines -A- must be lightly coated with grease used in joint.

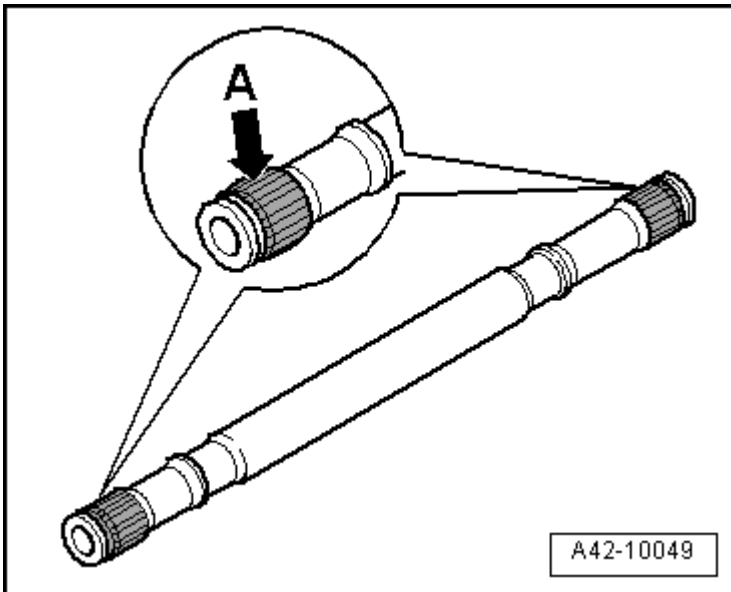


Fig. 269: Identifying Joint/Triple Roller Star Splines
Courtesy of AUDI OF AMERICA, LLC

- Insert sealing ring in groove on shaft.
- Slide on CV joint up to sealing ring.

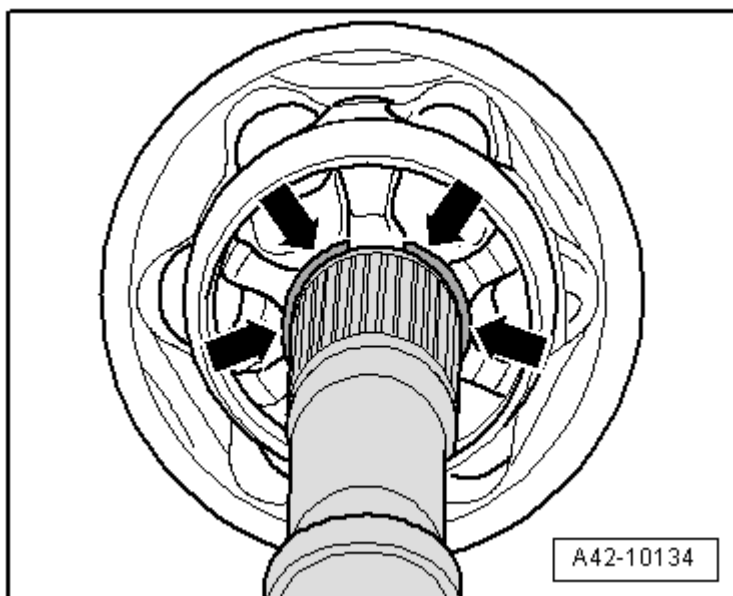


Fig. 270: Aligning Sealing Ring At Center With Opening Upward
Courtesy of AUDI OF AMERICA, LLC

- Align sealing ring at the center with opening upward -see arrows-.
- Install the old drive axle bolt in the joint as shown in the illustration.

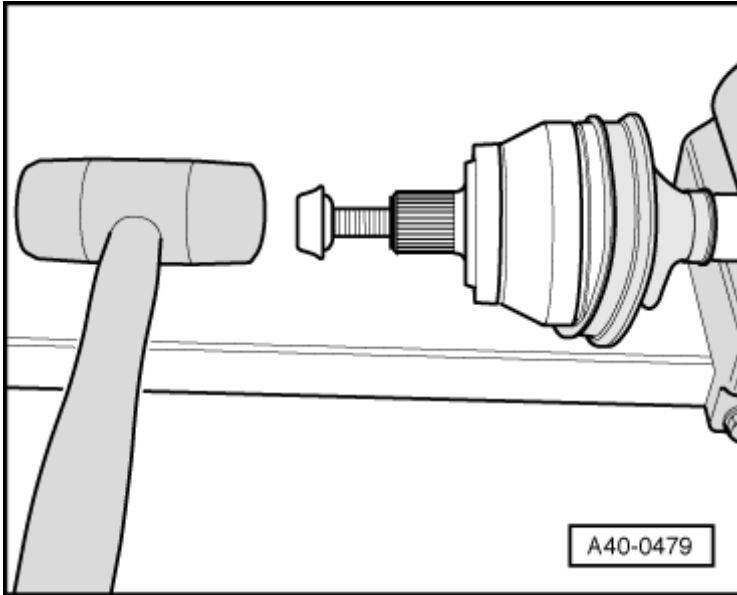


Fig. 271: Identifying Old Driveshaft Bolt Installed Into Joint
Courtesy of AUDI OF AMERICA, LLC

- Drive joint onto drive axle with plastic hammer until circlip engages.
- Install the joint protective boot onto the metal cap.
- Bleed protective joint boot.
- Tension clamps on outer joint.

Tightening Hose Clamp on Outer Joint

Applies to the small and large clamps.

Depending on the version of the clamp, use the following tools:

Special tools and workshop equipment required

- Pliers 3340
- CV Joint Boot Clamp Tool V.A.G 1682
- Torque Wrench 5-50 Nm V.A.G 1331

Mount and Tension Stainless Steel Clamps using V.A.G 1682 as illustrated.

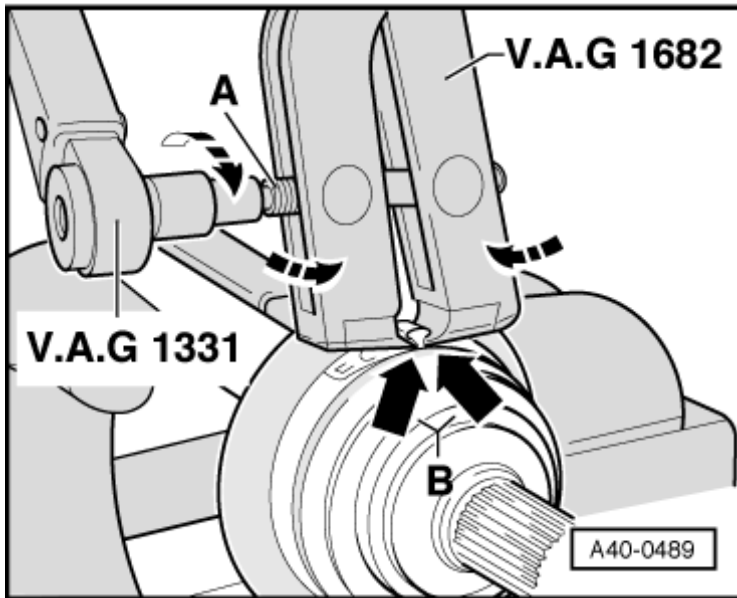


Fig. 272: Tightening Small And Large Clamps On Outer Joint
 Courtesy of AUDI OF AMERICA, LLC

-- When doing this, make sure that edges of clamping pliers are seated in the corners -arrows B- of clamp.

-- Tighten the clamp by turning the spindle using a torque wrench (do not tilt the pliers).

- A stainless steel clamp must be used due to the hardness of the CV boot material (compared to rubber). This clamp can only be tensioned using the V.A.G 1682.
- Tightening specifications: 20 Nm
- Use torque wrench with 5 to 50 Nm range (for example V.A.G 1331).
- Make sure the spindle threads on the pliers -A- move freely. Grease with MoS₂ grease if necessary.
- If the thread is tight for example dirty, the required tensioning force for the hose clamp will not be achieved in spite of correct torque specification settings.

Mount and Tension the Clamp with the Retaining Tabs using 3340 as illustrated.

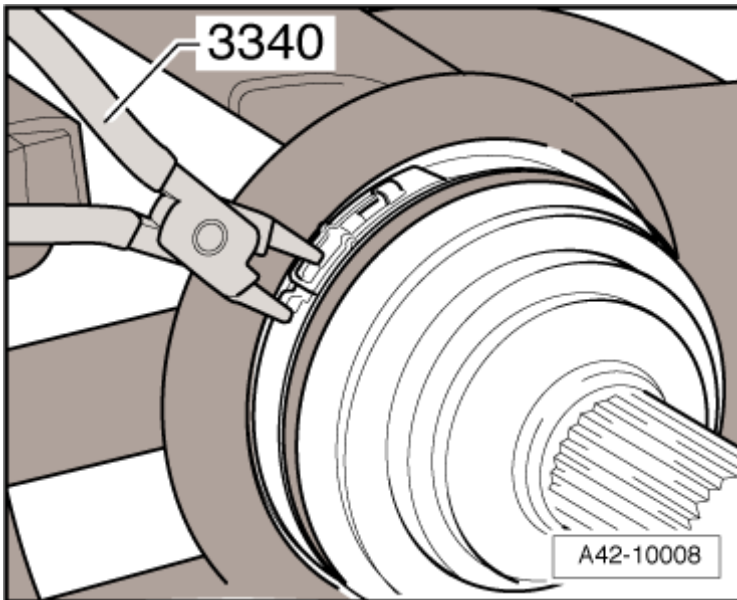


Fig. 273: Closing Clamp Using Pliers 3340
Courtesy of AUDI OF AMERICA, LLC

- Engage the clamp at the first catch by hand.
- Close the clamp using 3340.

100 MM DIAMETER OR 108 MM DIAMETER INNER CV JOINT

Special tools and workshop equipment required

- Thrust Plate VW 401
- Thrust Plate VW 402
- Punch VW 408 A
- Sleeve-Press Tool VW 522
- Circlip pliers (commercially-available)
- Copper or brass drift
- Sealant.

Removing a 100 mm Diameter or 108 mm Diameter Inner CV Joint

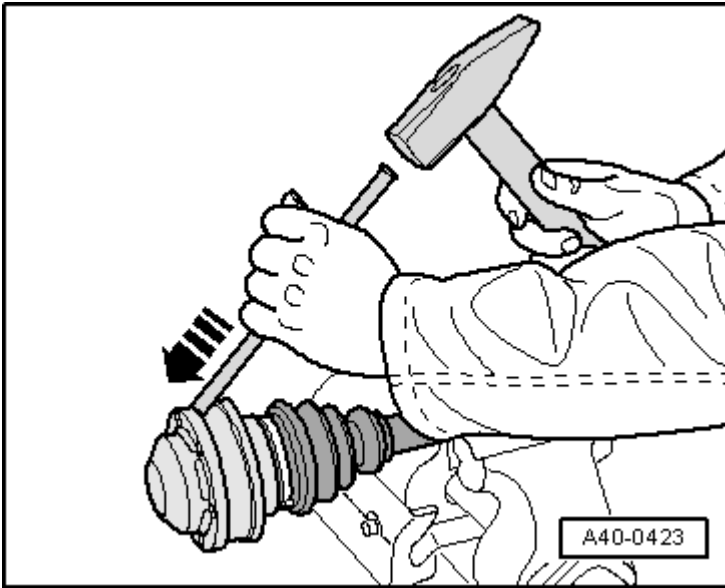


Fig. 274: Driving Cover Down With Copper Or Brass Drift
Courtesy of AUDI OF AMERICA, LLC

- Secure the drive axle with protective covers in a vise clamp.
- Drive cover down with copper or brass drift.
- Drive cap down with copper or brass drift.

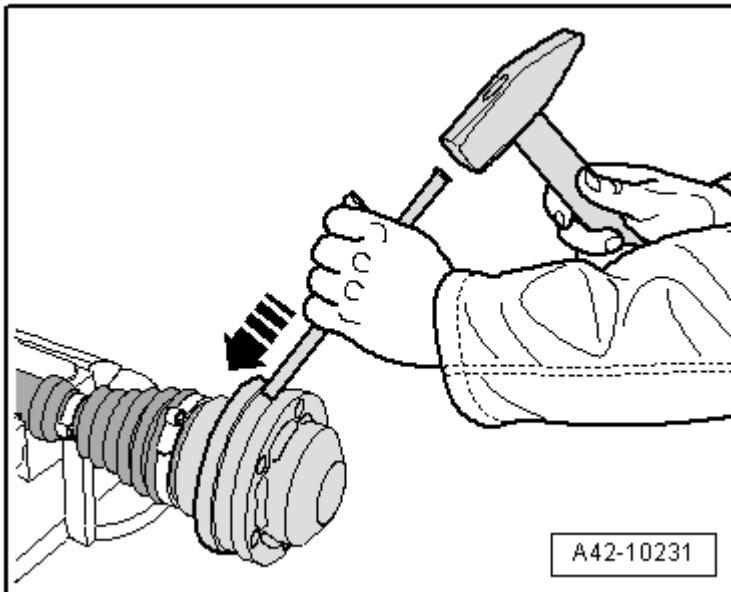


Fig. 275: Securing Drive Axle With Protective Covers In Vise Clamp
Courtesy of AUDI OF AMERICA, LLC

- Only open and remove the "small" protective boot clamp.

-- Remove circlip.

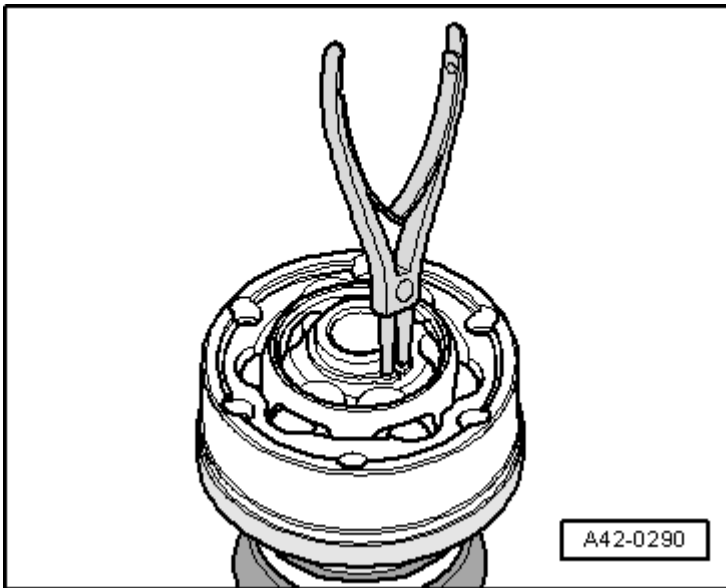


Fig. 276: Opening Clamps And Pulling Off CV Joint Boot From Inner Joint
Courtesy of AUDI OF AMERICA, LLC

-- Remove the inner CV joint from the drive axle using the tools illustrated.

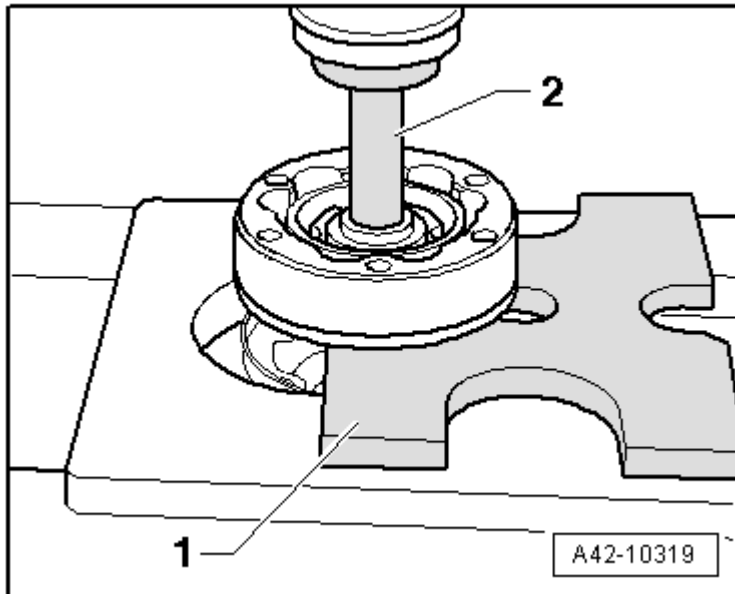


Fig. 277: Identifying Inner CV Joint From Drive Axle Using Tools
Courtesy of AUDI OF AMERICA, LLC

1. Pressure plate VW 401 or pressure plate VW 402
2. Punch VW 408 A

-- Remove the CV joint boot from the drive axle.

Removing a 100 mm diameter or 108 mm diameter inner CV joint

-- Slide the protective joint boot with the "small" clamp onto the drive axle.

-- Before installing joint piece, splines -A- must be lightly coated with grease used in joint.

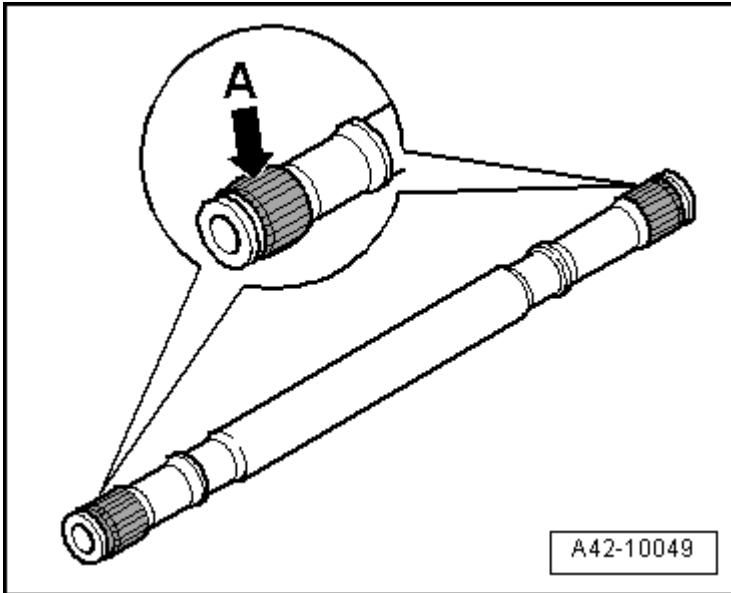


Fig. 278: Identifying Joint/Triple Roller Star Splines

Courtesy of AUDI OF AMERICA, LLC

-- Secure the drive axle with protective covers in a vise clamp.

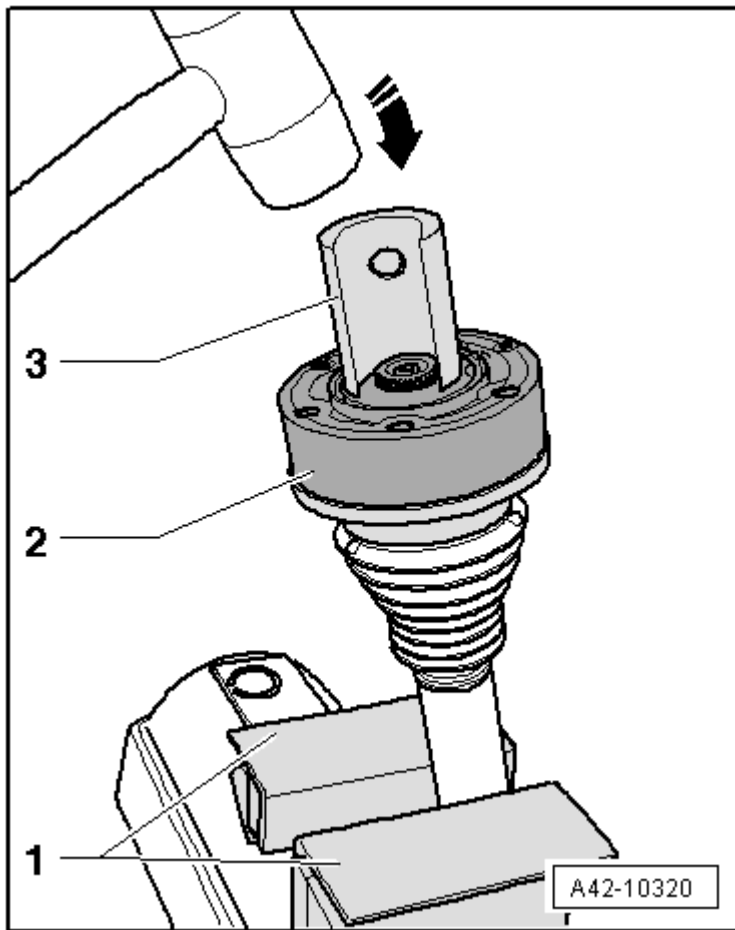


Fig. 279: Securing Drive Axle With Protective Covers In A Vise Clamp
Courtesy of AUDI OF AMERICA, LLC

-- Carefully position the joint on the profile shaft using the VW 522 and install it all the way using a hammer.

1. Protective covers
2. Inner CV joint
3. Support sleeve VW 522

The chamfer on inner diameter of ball hub (splines) must face and the contact collar on the drive axle.

-- Install a new circlip.

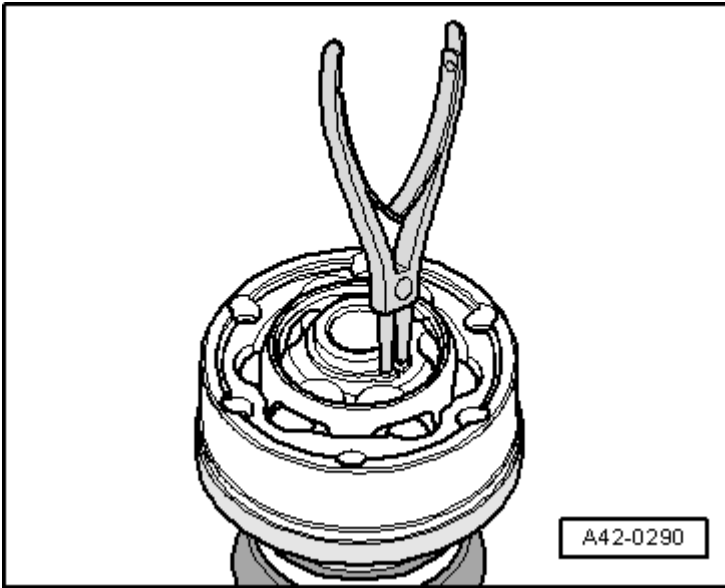


Fig. 280: Opening Clamps And Pulling Off CV Joint Boot From Inner Joint
Courtesy of AUDI OF AMERICA, LLC

- Check circlip for correct seating.
- Add half of the drive axle grease into the joint on the boot side before installing the joint protective boot.
- Lubricate the contact surface on the cover.
- Apply sealant -hatched surface- to clean surface on inner side of protective joint boot cap.

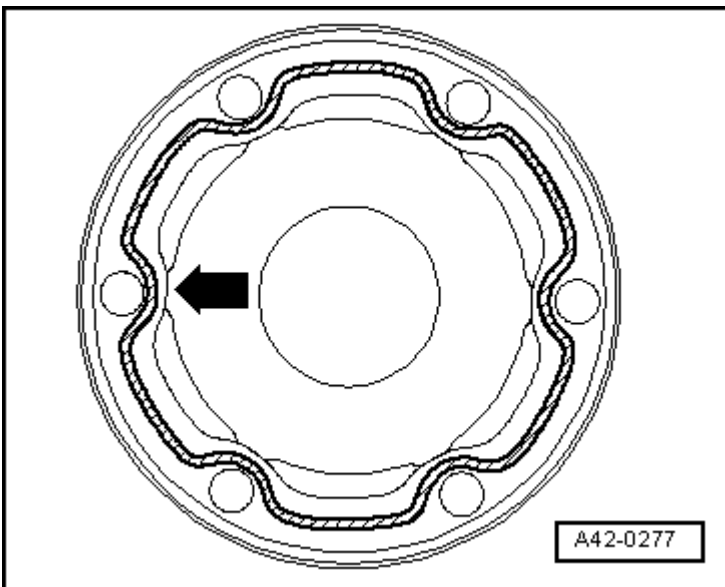


Fig. 281: Coating Sealing Surface Of Cover And Cap With D454300A2
Courtesy of AUDI OF AMERICA, LLC

- Apply 2 - 3 mm diameter of unbroken bead of sealant.
- The inner sealant bead runs near the holes -arrow-.
- Use sealant.

Protective boot and cap contact surfaces must be free of grease!

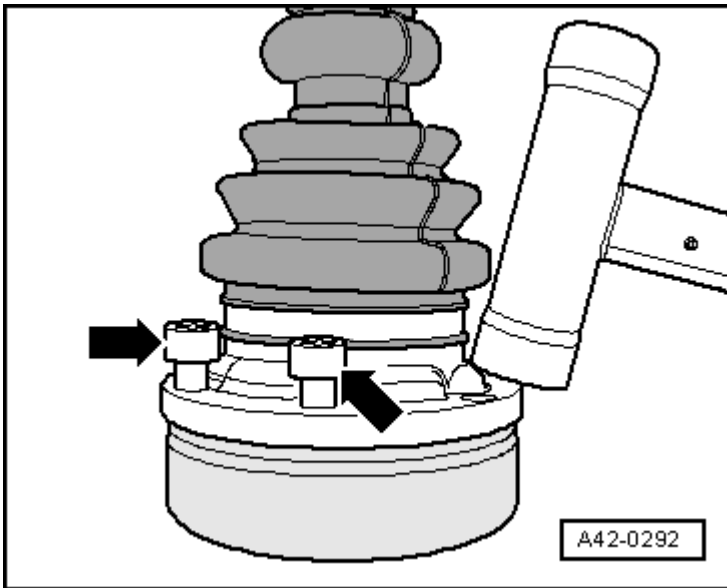


Fig. 282: Aligning Cap With Bolts With Bolt Holes
Courtesy of AUDI OF AMERICA, LLC

- Align cap with bolts -arrows- with bolt holes.

It must be aligned exactly because it cannot be aligned after driving on.

- Drive cover on with a plastic hammer.
- Clear away leaking sealing immediately.
- Apply the rest of the drive axle grease through the ball paths into the CV joint.
- Remove any grease on the cover contact surface and on the CV joint.

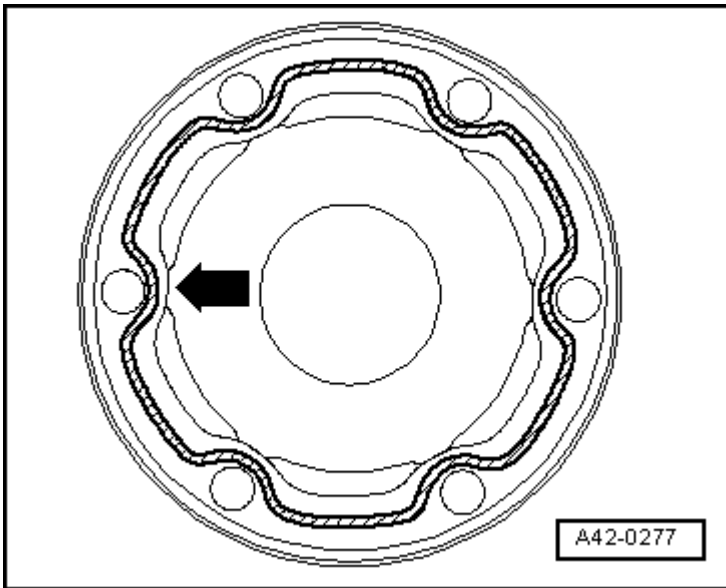


Fig. 283: Coating Sealing Surface Of Cover And Cap With D454300A2
Courtesy of AUDI OF AMERICA, LLC

- Remove any grease on the cover contact surface and on the CV joint.
- Apply sealant -hatched area- to the clean surface in the inside of the cover.
- Apply 2 - 3 mm diameter of unbroken bead of sealant.
- The inner sealant bead runs near the holes -arrow-.
- Use sealant.
- Align cap with bolts -arrows- with bolt holes.

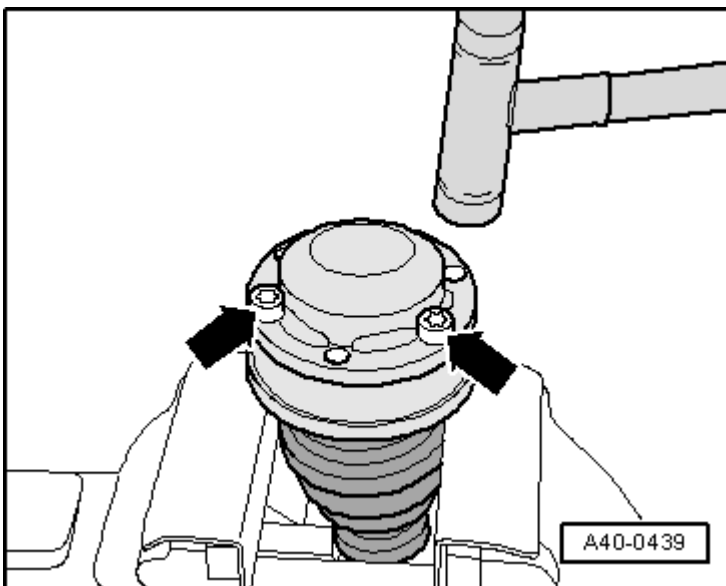


Fig. 284: Aligning New Cover With Bolts To Screw Holes

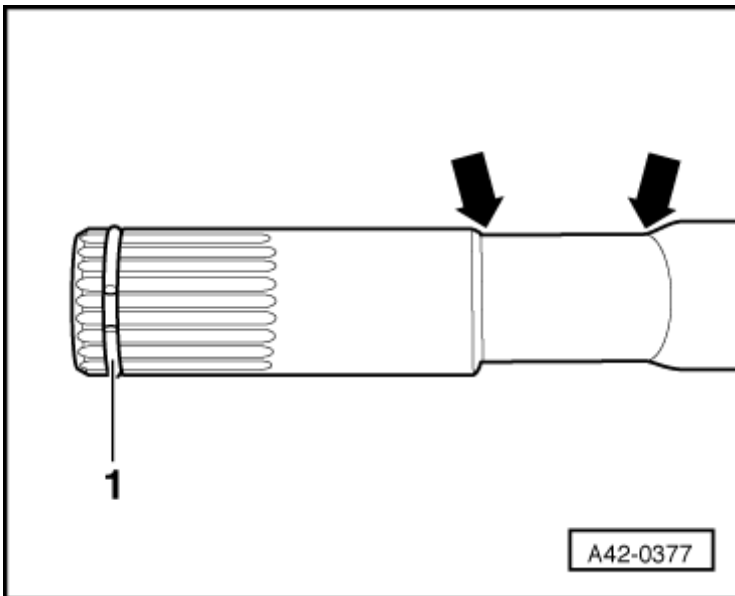
Courtesy of AUDI OF AMERICA, LLC

It must be aligned exactly because it cannot be aligned after driving on.

-- Drive cover on with a plastic hammer.

-- Clear away leaking sealing immediately.

Joints and protective joint boots must be free of grease.

**Fig. 285: Identifying Circlip (Snap Ring) & Positioning Protective Joint Boot**

Courtesy of AUDI OF AMERICA, LLC

-- Slide joint protective boot onto drive axle.

Joints and protective joint boots must be free of grease.

-- Position protective joint boot between -arrows-.

Ignore -1-.

-- Make sure the protective boot is seated on the drive axle correctly.

-- Tightening clamps on inner joint

TIGHTENING CLAMPS ON INNER JOINT

NOTE: When install the large clamps, make sure the seal is between the two holes.

Depending on the version of the clamp, use the following tools:

Special tools and workshop equipment required

- CV Joint Boot Clamp Tool 3340
- CV Joint Boot Clamp Tool V.A.G 1682
- Torque Wrench 5-50 Nm V.A.G 1331

Mount and Tension Stainless Steel Clamps using V.A.G 1682 as Illustrated.

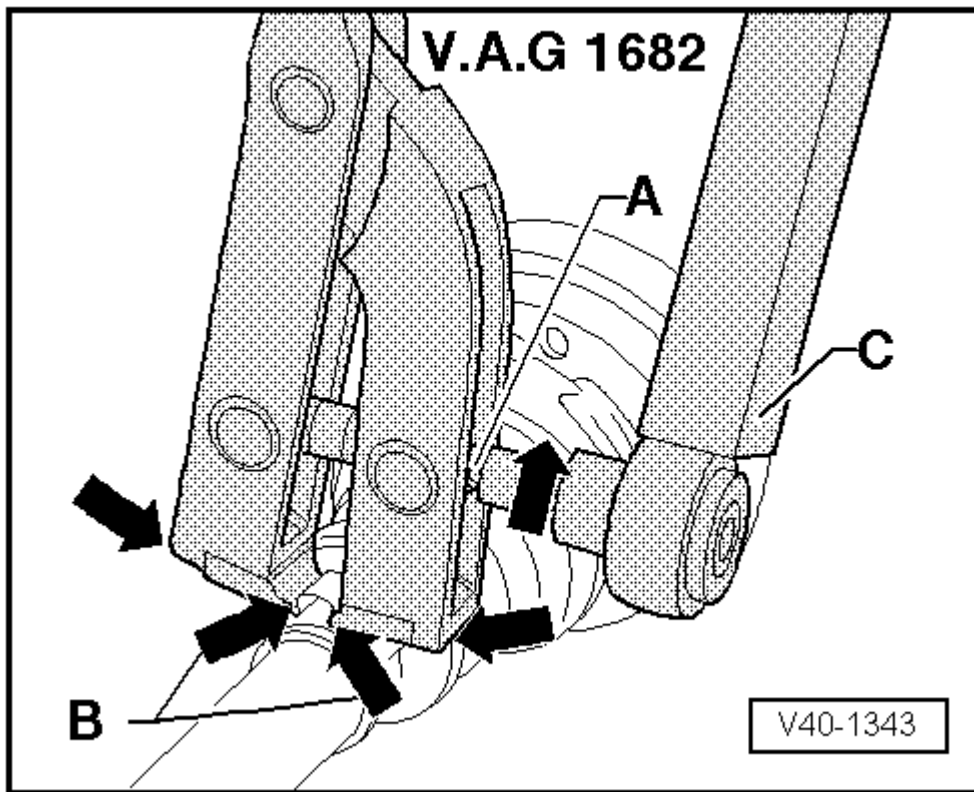


Fig. 286: Identifying Tool Assembly To Tighten Clamp For CV Joint Boot (Inner, Small Dia.)
Courtesy of AUDI OF AMERICA, LLC

-- Use V.A.G 1682 as shown in illustration. When doing this, make sure that edges of clamping pliers are seated in corners -arrows B- of clamp.

-- Tighten the clamp by turning the spindle using a torque wrench -C- (do not tilt the pliers).

- A stainless steel clamp must be used due to the hardness of the CV boot material (compared to rubber). This clamp can only be tensioned using the V.A.G 1682.
- Tightening specifications: 20 Nm
- Use torque wrench with 5 to 50 Nm range (for example V.A.G 1331).

- Make sure the spindle threads on the pliers -A- move freely. Grease with MoS₂ grease if necessary.
- If the thread is tight for example dirty, the required tensioning force for the hose clamp will not be achieved in spite of correct tightening specification settings.

Mount and Tension the Clamp with the Retaining Tabs using 3340 as Illustrated.

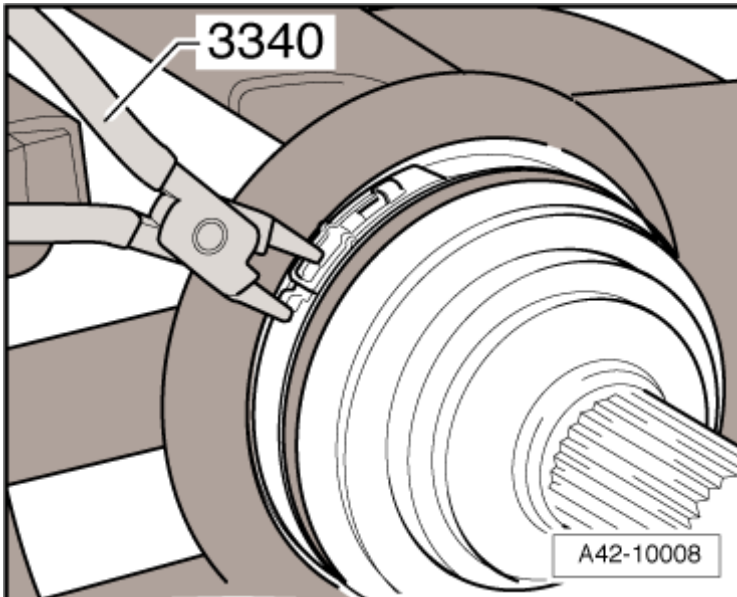


Fig. 287: Closing Clamp Using Pliers 3340
Courtesy of AUDI OF AMERICA, LLC

- Engage the clamp at the first catch by hand.
- Close the clamp using 3340.

FRONT WHEEL DRIVE (FWD)

SHOCK ABSORBER

Special tools and workshop equipment required

- Torque Wrench 50-200 Nm V.A.G 1332
- Shock Absorber Set T10001

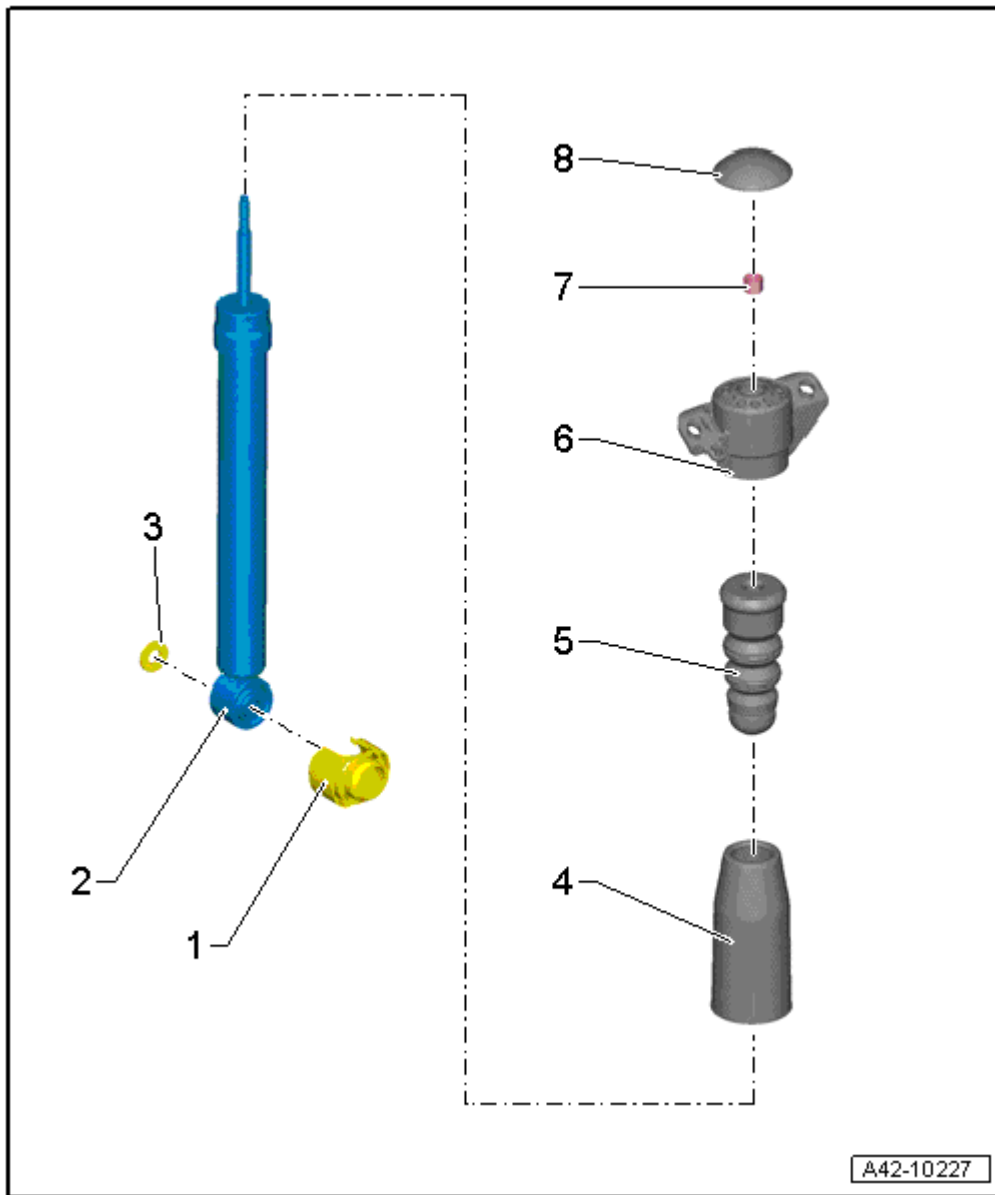


Fig. 288: Identifying Shock Absorber

Courtesy of AUDI OF AMERICA, LLC

1. Stone Chip Protection
2. Shock Absorbers
 - Only shock absorbers with the same part number may be installed on the left and right
 - Removing and installing, refer to **SHOCK ABSORBER**
 - There are different versions of the suspension. Refer to **EXPLANATIONS OF THE PRODUCTION CONTROL NUMBERS (PR NUMBER)** .
 - Faulty shock absorbers must be vented and emptied before disposal. Refer to **SHOCK ABSORBERS, CHECKING WHEN REMOVED**
 - Shock absorber, checking, refer to **SHOCK ABSORBERS, CHECKING WHEN REMOVED**

3. Washer
 - Always use
4. Protective Sleeve
5. Buffer Stop
6. Upper Shock Absorber Mount
 - Installed position, refer to **Fig. 290**
7. Nut
 - 35 Nm
 - Always replace if removed.
 - Loosening and tightening, refer to **Fig. 289**
8. Cover

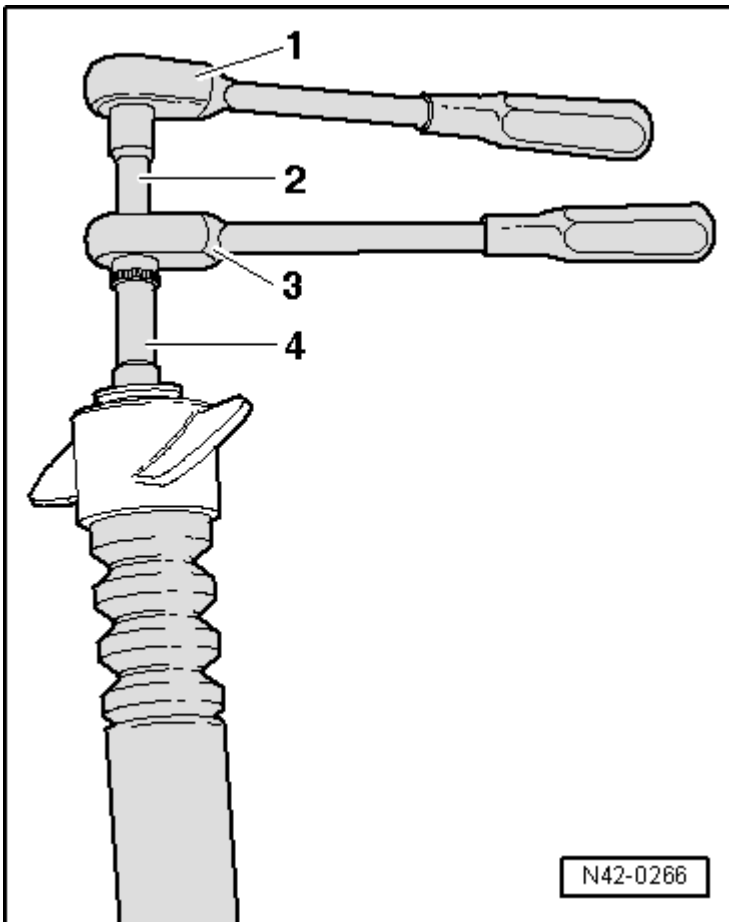


Fig. 289: Identifying Removal Of Hex Nut From Shock Absorber
Courtesy of AUDI OF AMERICA, LLC

1. Ratchet (commercially available)
2. Socket wrench 21 mm T10001/9
3. Ratchet T10001/11

4. Socket wrench 21 mm T10001/1

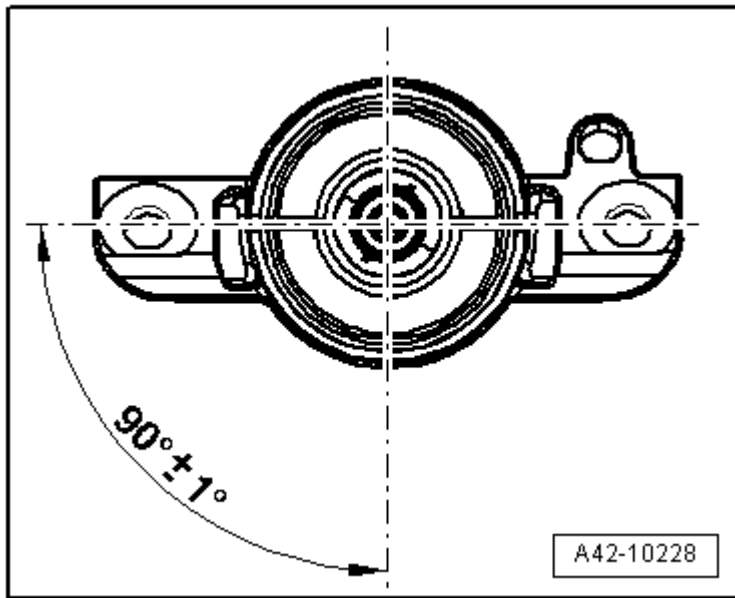


Fig. 290: Upper Shock Absorber Mount Installation Position
Courtesy of AUDI OF AMERICA, LLC

-- Install the upper shock absorber mount so it is rotated 90° to the lower shock absorber mount.

ALL WHEEL DRIVE (AWD)

WHEEL BEARING UNIT

Special tools and workshop equipment required

- Thrust Plate VW 401
- Thrust Plate VW 402
- Punch VW 412
- Assembly Tool T10230
- Kukko Puller 15/3 with 17/3
- Wheel bearing housing is removed. Refer to WHEEL BEARING UNIT.

Wheel Hub, Removing from Wheel Bearing

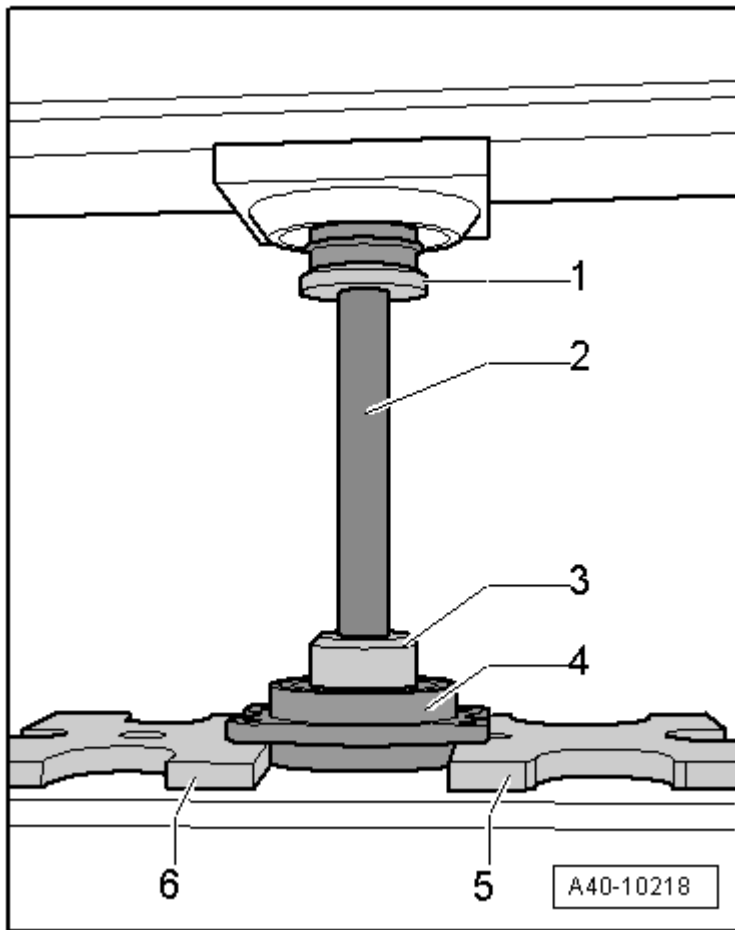


Fig. 291: Identifying Tool Set Up/Assembly
Courtesy of AUDI OF AMERICA, LLC

-- Install special tools as shown in illustration.

1. Punch VW 412
2. Sleeve T10230/3 from the T10230
3. Thrust piece T10230/8 from the T10230
4. Wheel bearing unit
5. Thrust plate VW 402
6. Thrust plate VW 401

-- Press the wheel hub out of the wheel bearing.

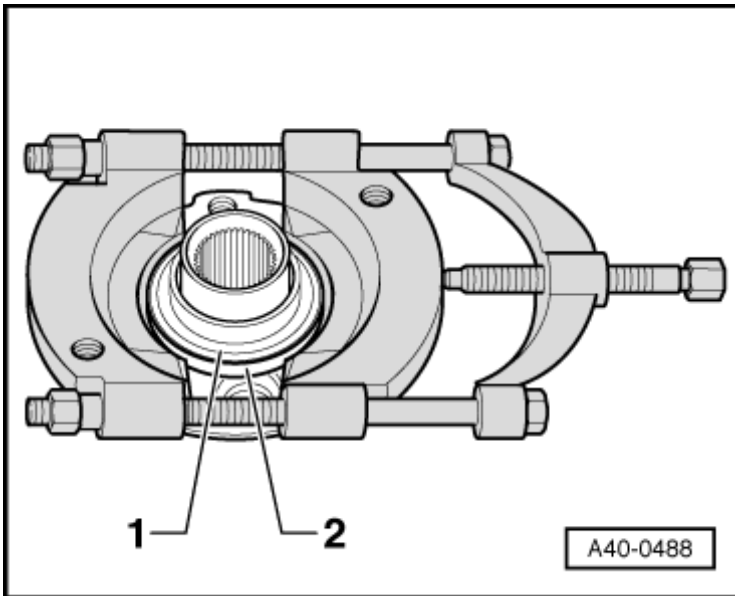


Fig. 292: Identifying Bearing Inner Race And Spinning Washer
Courtesy of AUDI OF AMERICA, LLC

-- Insert the separating tool between the bearing inner race -1- and the wheel hub -2- and pretension with the spindle.

NOTE: Use a commercially available separating tool such as the 15/3 with 17/3.

-- Install special tools as shown in illustration.

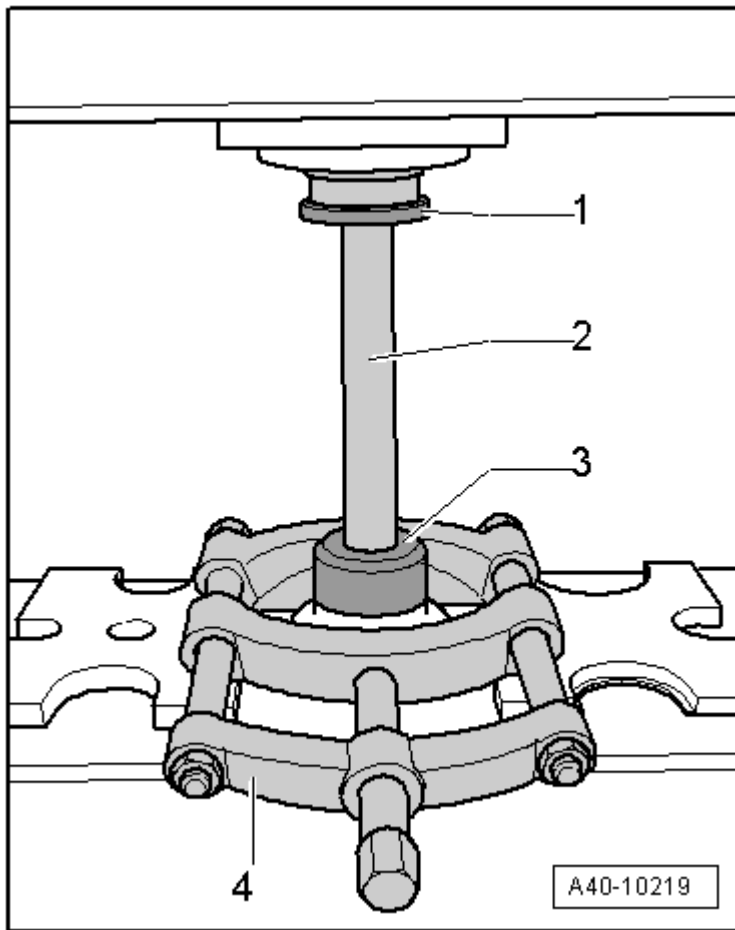


Fig. 293: Identifying Tool Set Up/Assembly
Courtesy of AUDI OF AMERICA, LLC

1. Punch VW 412
2. Sleeve T10230/8 from the T10230
3. Thrust piece T10230/3 from the T10230
4. Wheel hub
5. Bearing inner race
6. Kukko 15/3 with 17/3

-- Press the bearing inner race from the hub.

Pressing Wheel Hub into Wheel Bearing

CAUTION: • Avoid contaminating with dirt and damaging the seal when setting down/storing.

The wheel bearing -1- must always face up.

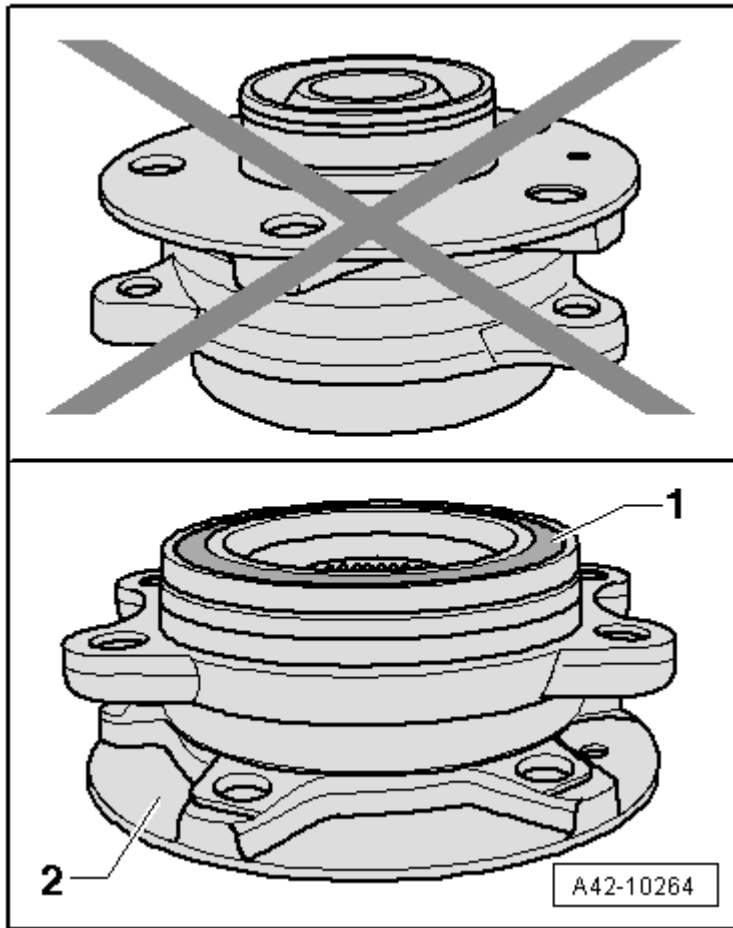


Fig. 294: Identifying Caution: Avoid Contaminating With Dirt And Damaging Seal When Setting Down/Storing

Courtesy of AUDI OF AMERICA, LLC

-- Always set the wheel bearing unit down on the wheel hub -2-.

-- Install special tools as shown in illustration.

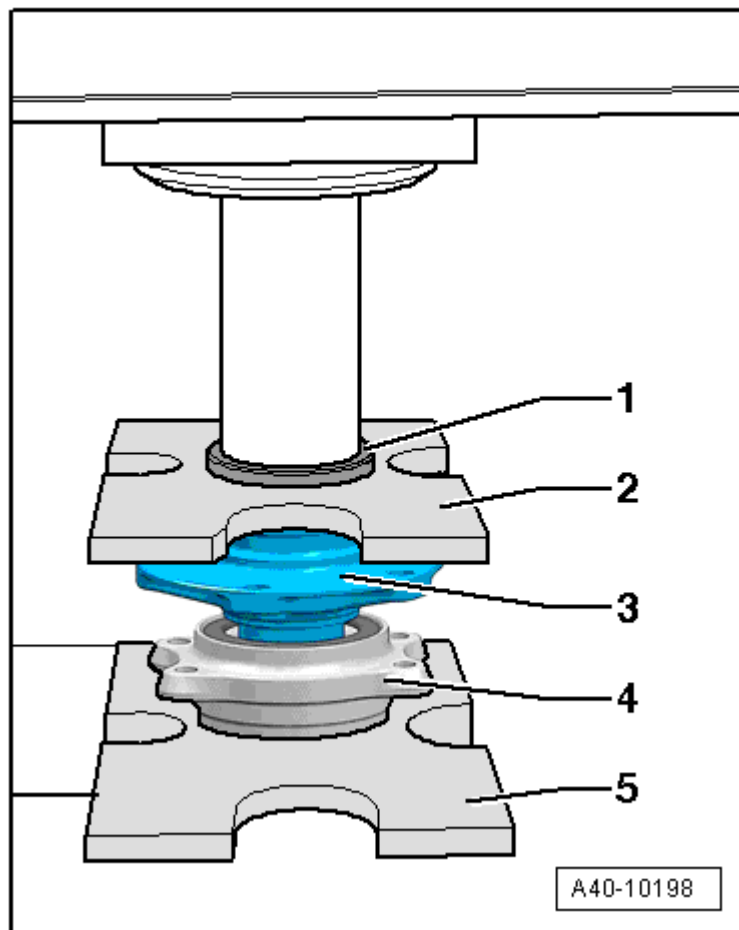


Fig. 295: Punch VW 412, Thrust Plate VW 402, Wheel Hub, Ball Bearing & Thrust Plate VW 401
Courtesy of AUDI OF AMERICA, LLC

1. Punch VW 412
2. Thrust plate VW 402
3. Wheel hub
4. Ball Bearing
5. Thrust Plate VW 401

NOTE: The reworked surface on the wheel bearing outer race faces down.

CAUTION: When installing or pressing in, make sure there is no dirt or contaminants between the VW 401 -5- and the ball bearing -4-.

-- Press the wheel hub into the wheel bearing.

-- Install wheel bearing unit. Refer to **WHEEL BEARING UNIT**.

SHOCK ABSORBER

Special tools and workshop equipment required

- Torque Wrench 50-200 Nm V.A.G 1332
- Shock Absorber Set T10001

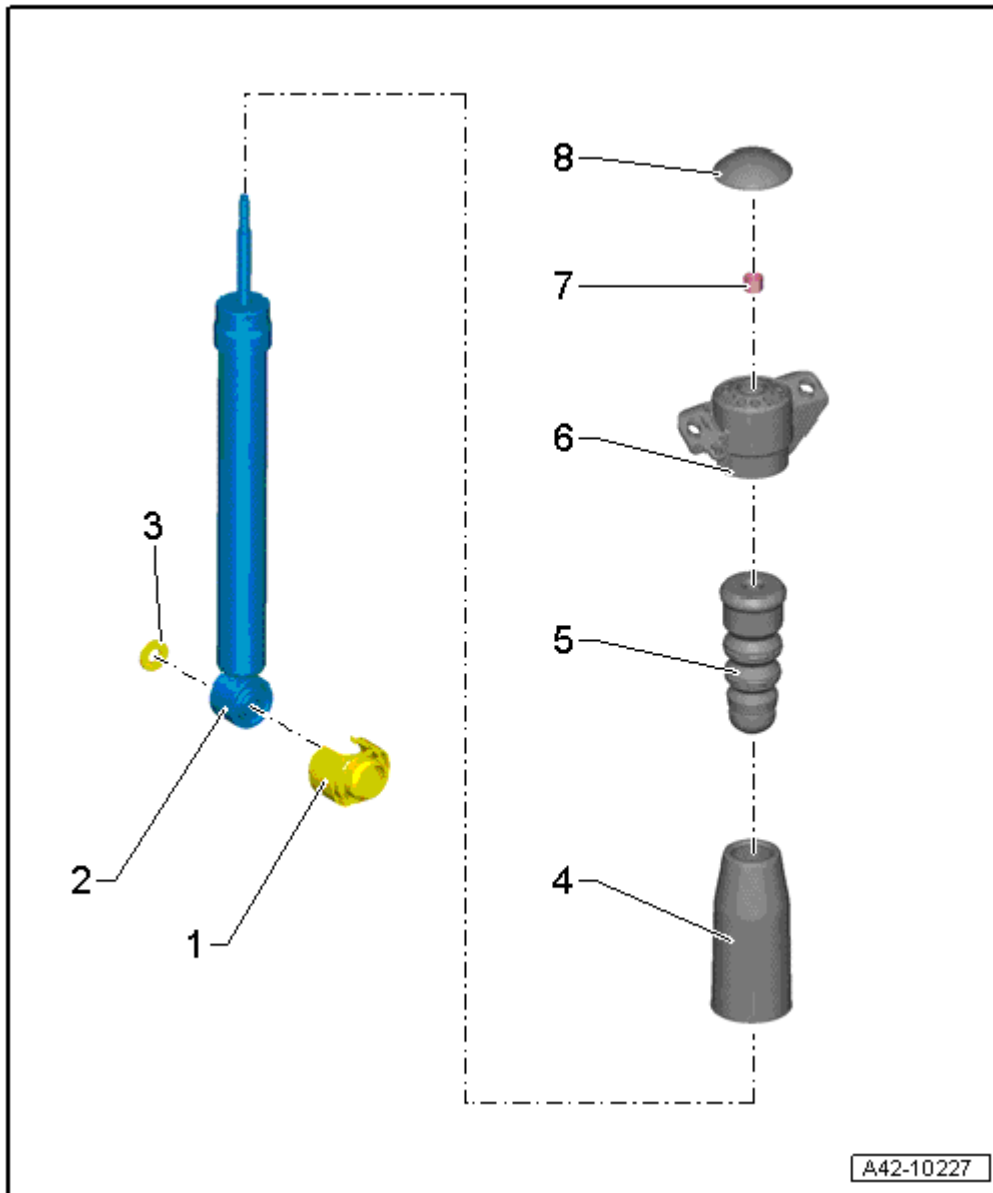


Fig. 296: Identifying Shock Absorber
Courtesy of AUDI OF AMERICA, LLC

1. Stone Chip Protection
2. Shock Absorbers
 - Only shock absorbers with the same part number may be installed on the left and right
 - Removing and installing, refer to **SHOCK ABSORBER**

- There are different versions of the suspension. Refer to **EXPLANATIONS OF THE PRODUCTION CONTROL NUMBERS (PR NUMBER)** .
- Faulty shock absorbers must be vented and emptied before disposal; Refer to **FRONT GAS-FILLED STRUT, VENTING AND EMPTYING** .
- Shock absorber, checking, refer to **SHOCK ABSORBERS, CHECKING WHEN REMOVED**

3. Washer

- Always use

4. Protective Tube

5. Stop Buffer

6. Upper Shock Absorber Mount

- Installed position, refer to **Fig. 298**

7. Nut

- 35 Nm
- Always replace if removed.
- Loosening and Tightening, refer to **Fig. 297**

8. Cover

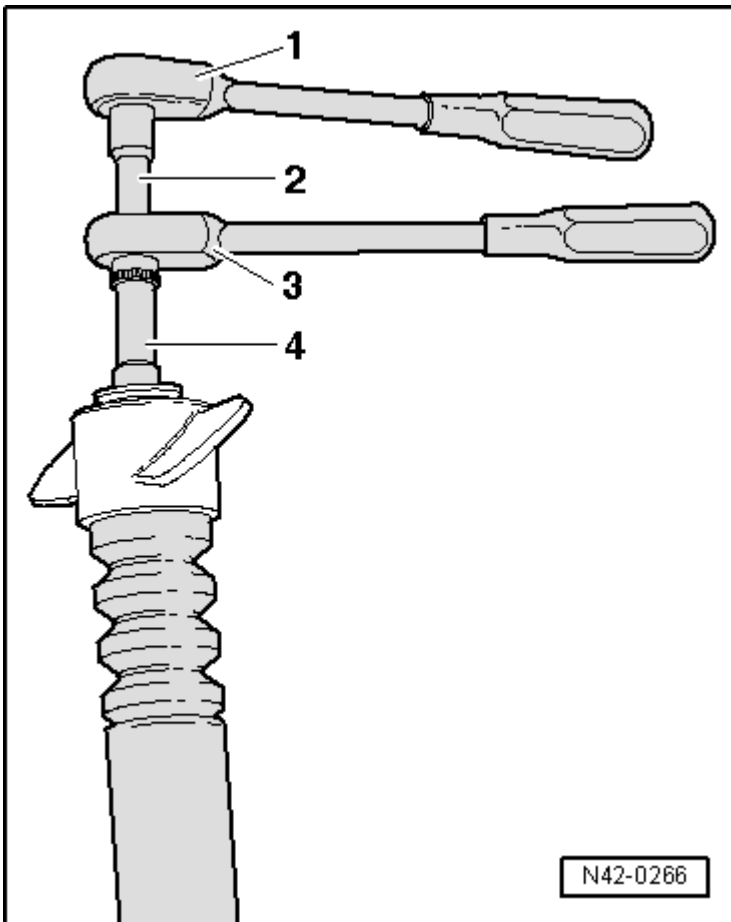


Fig. 297: Identifying Removal Of Hex Nut From Shock Absorber

Courtesy of AUDI OF AMERICA, LLC

1. Ratchet (commercially available)
2. Socket Wrench 21 mm T10001/9
3. Ratchet T10001/11
4. Socket Wrench 21 mm T10001/1

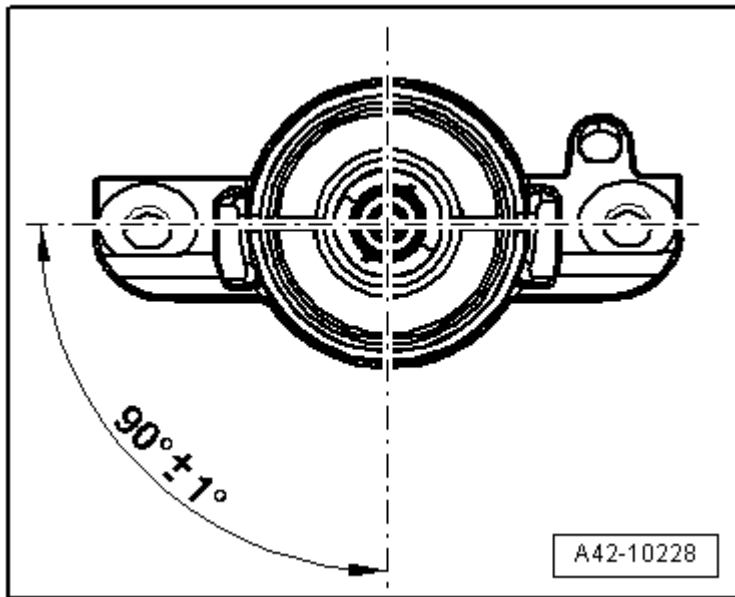


Fig. 298: Upper Shock Absorber Mount Installation Position

Courtesy of AUDI OF AMERICA, LLC

-- Install the upper shock absorber mount so it is rotated 90° to the lower shock absorber mount.

SPECIAL TOOLS

2012 Audi S4

SUSPENSION Rear Suspension (Sedan)

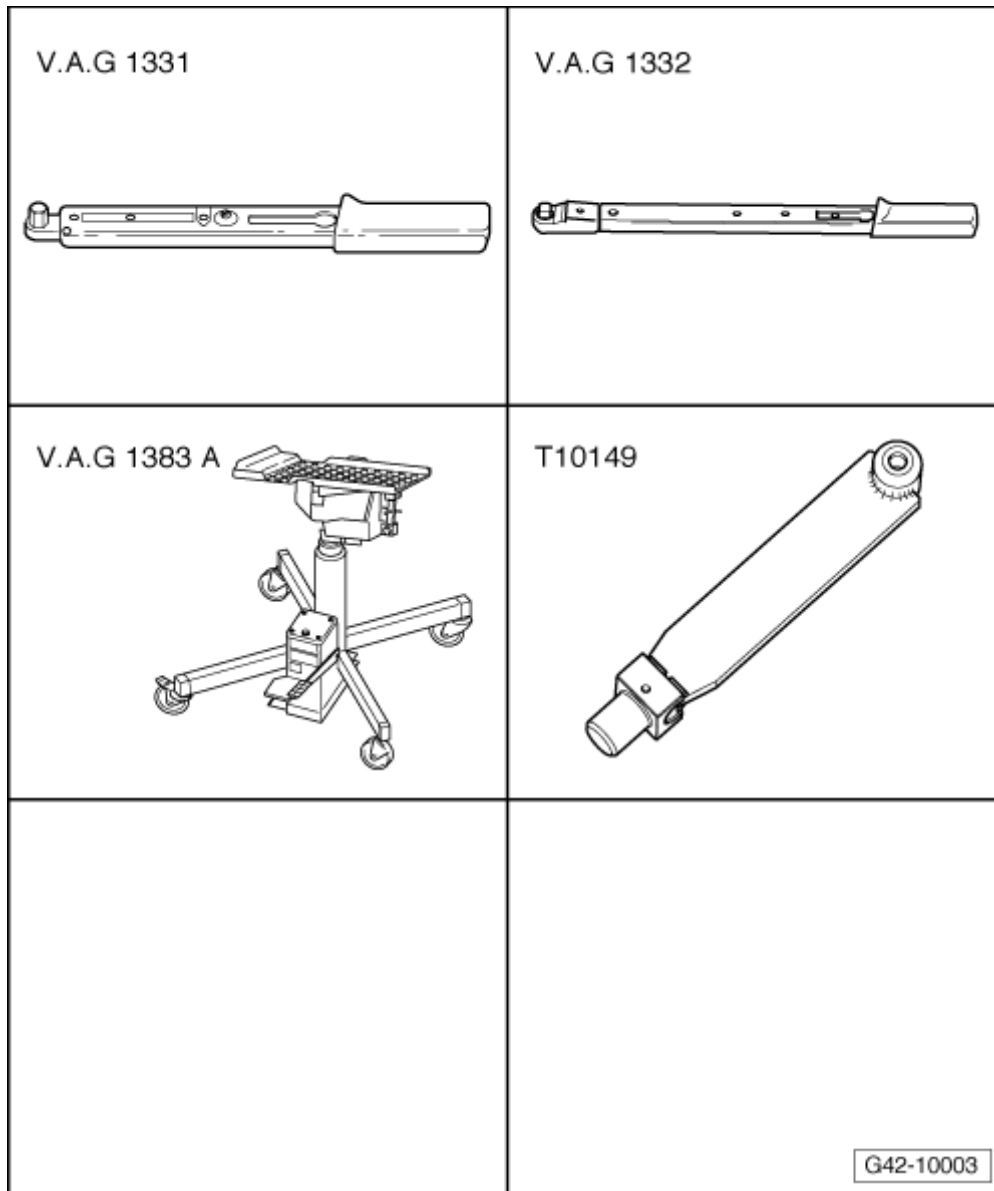


Fig. 299: Identifying Special Tools -- Coil Spring Shock Absorber
Courtesy of AUDI OF AMERICA, LLC

Special tools and workshop equipment required

- Torque Wrench 5-50 Nm V.A.G 1331
- Torque Wrench 50-200 Nm V.A.G 1332
- Engine-/Gearbox Jack V.A.G 1383 A
- Wheel Hub Support T10149

Special tools and workshop equipment required

- Fitting Sleeve 3241/4

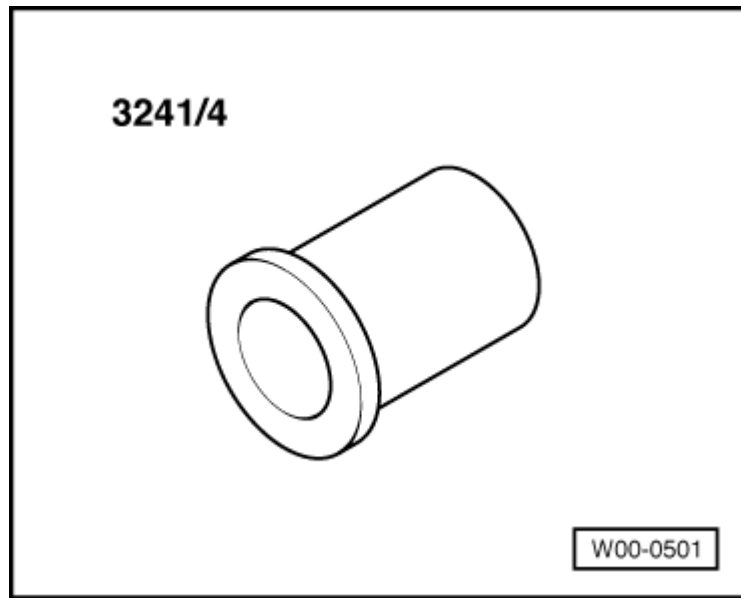


Fig. 300: Identifying Seal Installer 3241/4
Courtesy of AUDI OF AMERICA, LLC

- Assembly Tool 3301

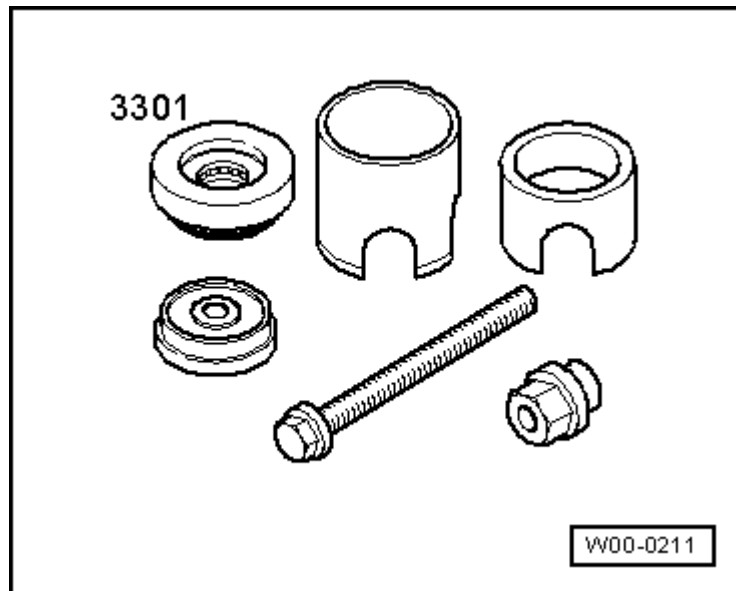


Fig. 301: Identifying Assembly Tool 3301
Courtesy of AUDI OF AMERICA, LLC

- Pliers 3340

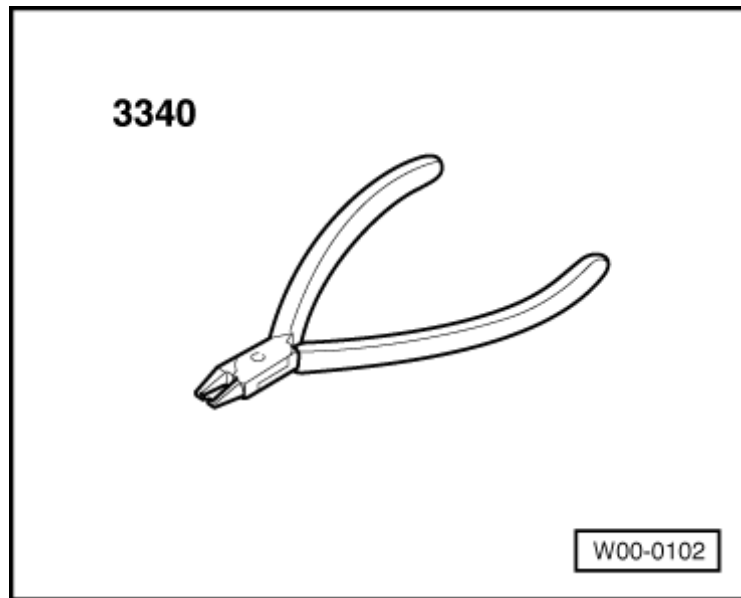


Fig. 302: Identifying CV Joint Boot Clamp Tool 3340
Courtesy of AUDI OF AMERICA, LLC

- Support Arm Bearing Inst. Tool 3346

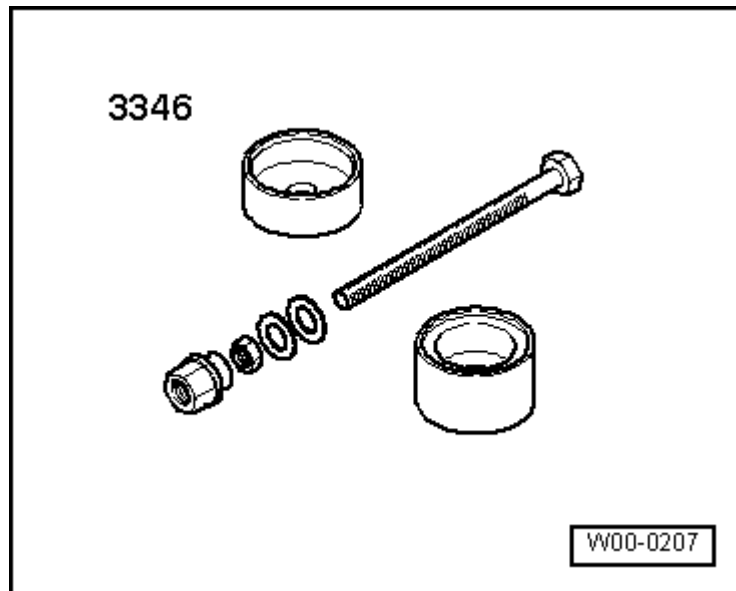


Fig. 303: Support Arm Bearing Inst. Tool 3346
Courtesy of AUDI OF AMERICA, LLC

- Press Block 40 - 204 A

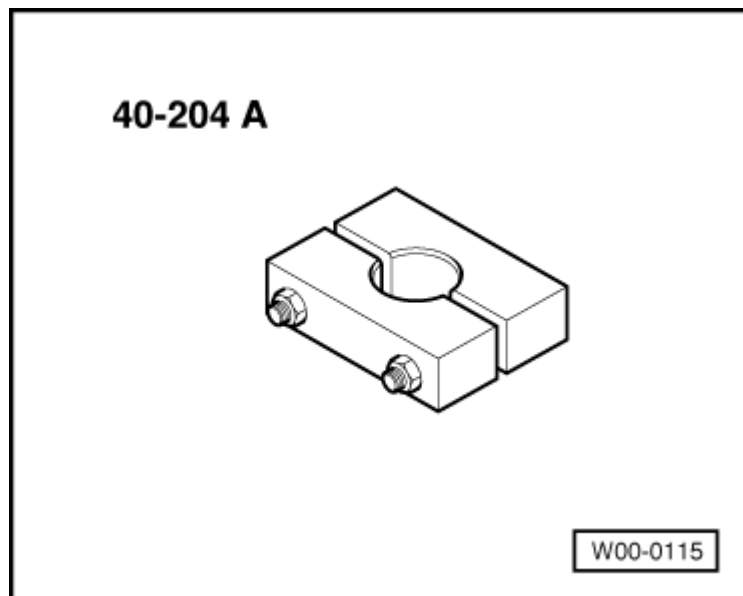


Fig. 304: Identifying Press Block 40 - 204 A
Courtesy of AUDI OF AMERICA, LLC

- -3- Kukko Puller15/3 with 17/3

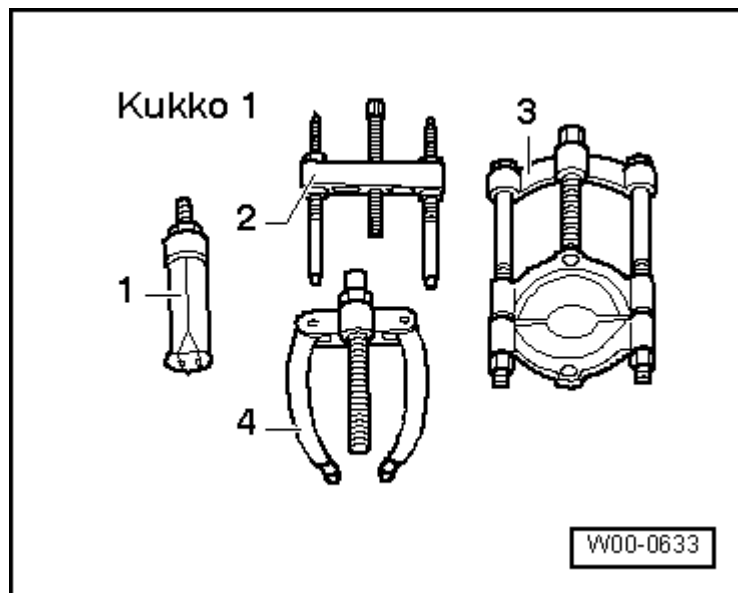


Fig. 305: Identifying Kukko Tools
Courtesy of AUDI OF AMERICA, LLC

- Shock Absorber Set T10001

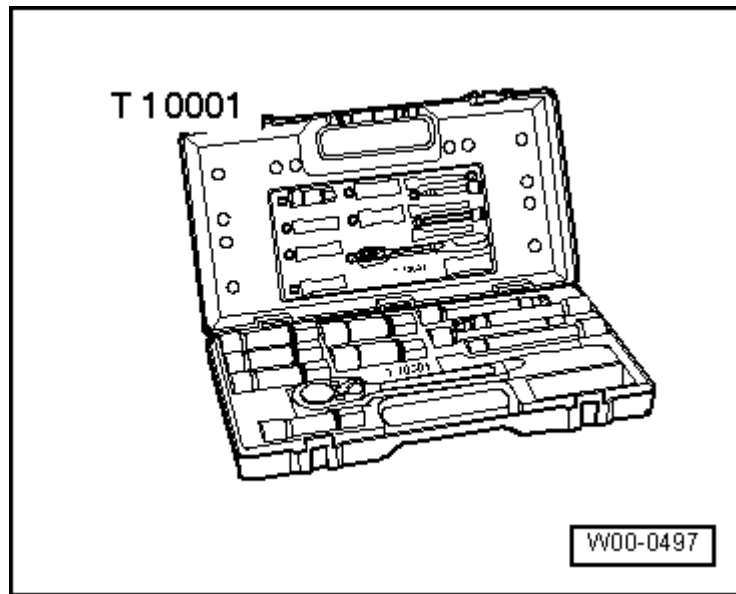


Fig. 306: Identifying Shock Absorber Set T10001
Courtesy of AUDI OF AMERICA, LLC

- Tensioning Strap T10038

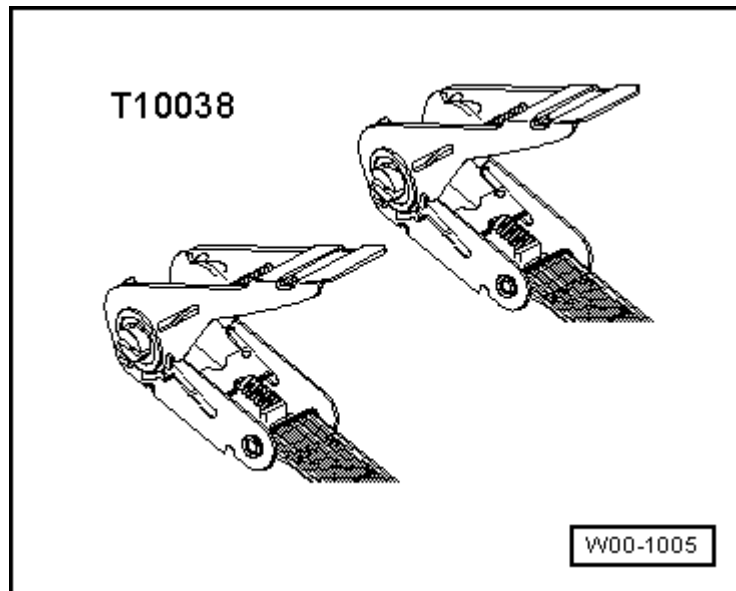


Fig. 307: Identifying Special Tools -- Tensioning Belt T10038
Courtesy of AUDI OF AMERICA, LLC

- Assembly Tool T10205

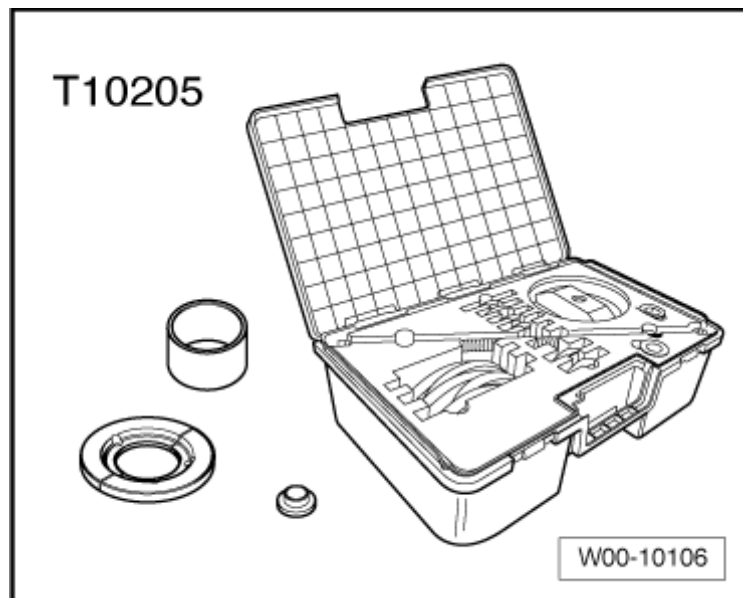


Fig. 308: Identifying Assembly Tool T10205

Courtesy of AUDI OF AMERICA, LLC

- Assembly Tool T10230

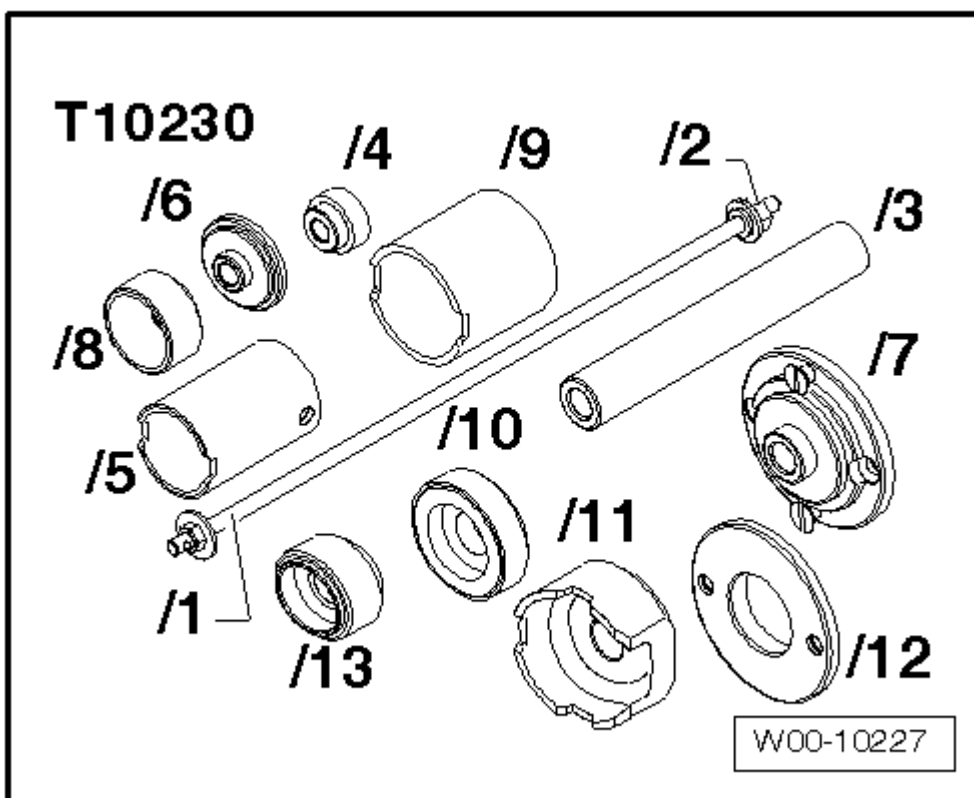


Fig. 309: Identifying Ball Joint Puller T40010 A

Courtesy of AUDI OF AMERICA, LLC

- Assembly Tool T10263

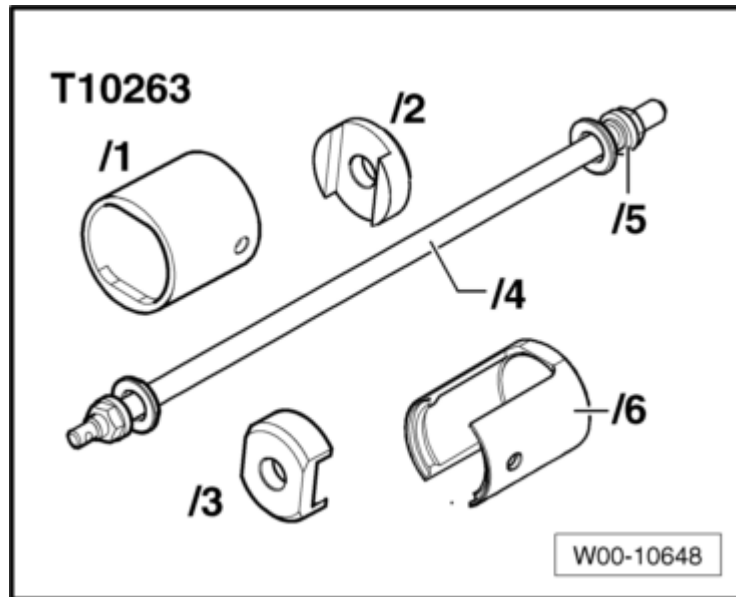


Fig. 310: Identifying Assembly Tool T10263

Courtesy of AUDI OF AMERICA, LLC

- Assembly Tool T40033

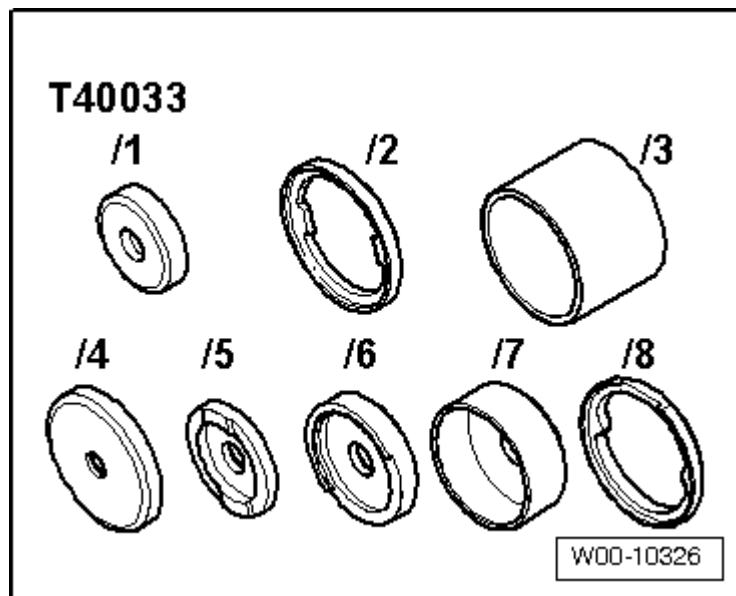


Fig. 311: Identifying Assembly Tool T40033

Courtesy of AUDI OF AMERICA, LLC

- Tool Insert T40183

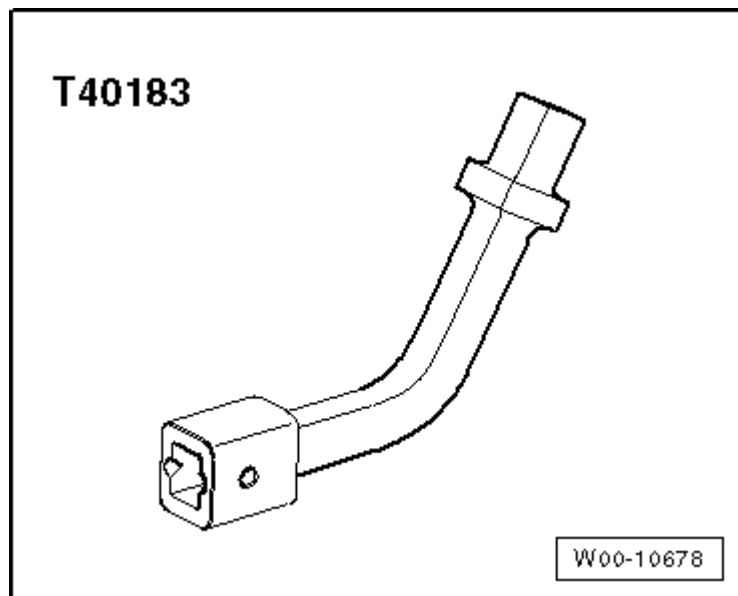


Fig. 312: Identifying Tool Insert T40183
 Courtesy of AUDI OF AMERICA, LLC

- Assembly Tool T40184

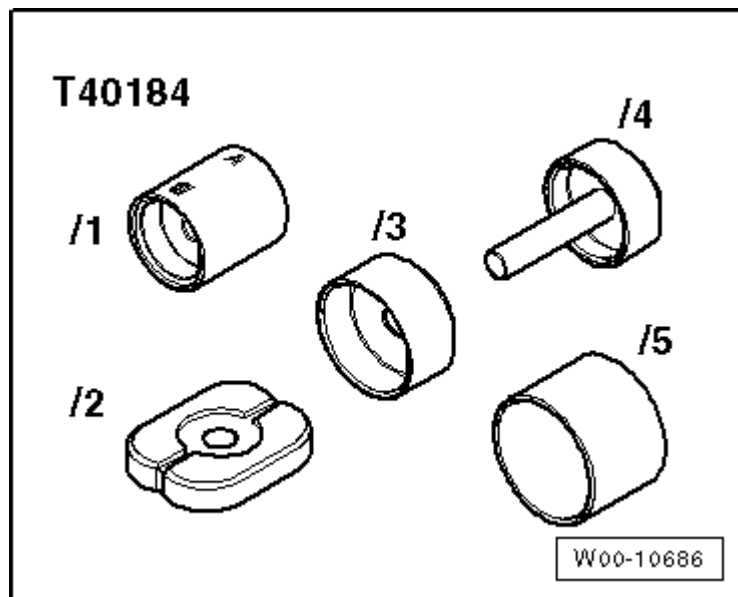


Fig. 313: Identifying Assembly Tool T40184
 Courtesy of AUDI OF AMERICA, LLC

- Assembly Tool T40185

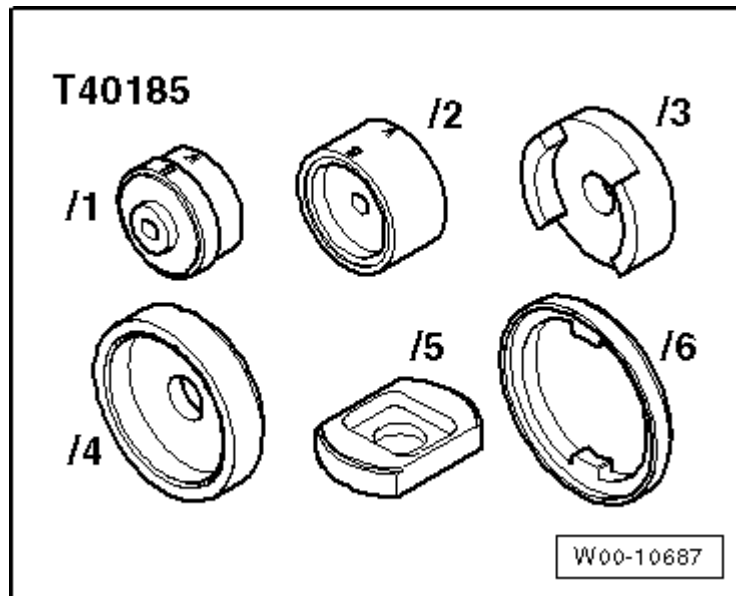


Fig. 314: Identifying Assembly Tool T40185
Courtesy of AUDI OF AMERICA, LLC

- Assembly Tool T40186

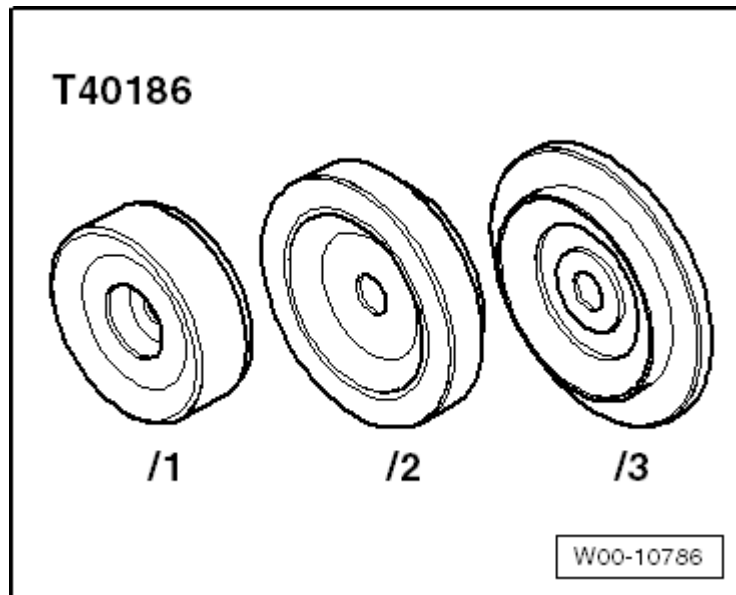


Fig. 315: Identifying Assembly Tool T40186
Courtesy of AUDI OF AMERICA, LLC

- Shop Press V.A.G 1290 A

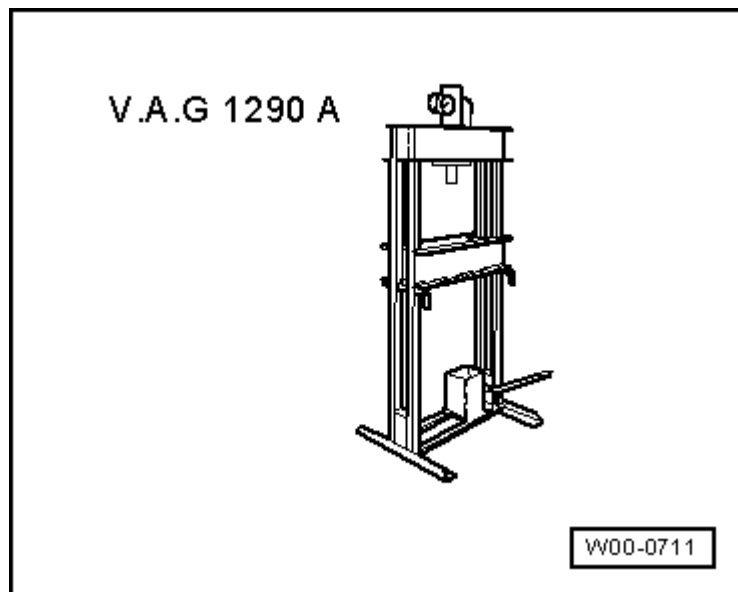


Fig. 316: Identifying Shop Press V.A.G 1290 A
Courtesy of AUDI OF AMERICA, LLC

- Torque Wrench 5-50 Nm V.A.G 1331

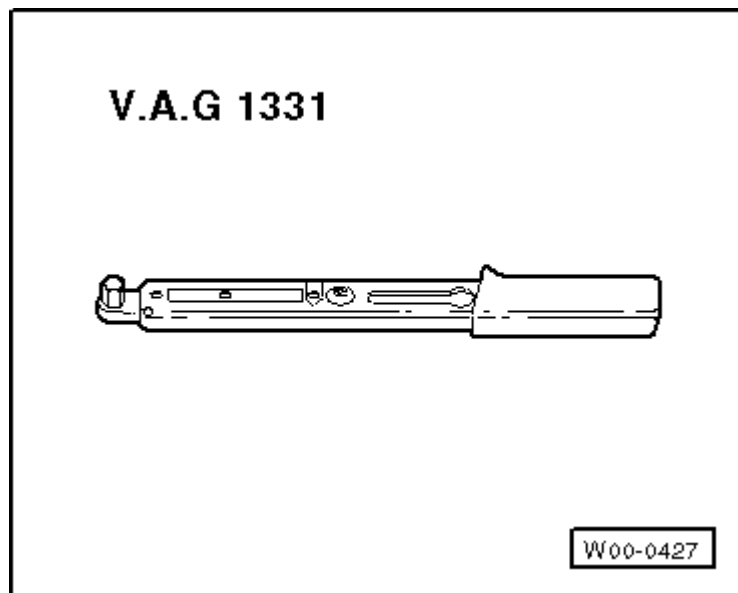


Fig. 317: Identifying Torque Wrench (5 To 50 Nm) V.A.G 1331
Courtesy of AUDI OF AMERICA, LLC

- Torque Wrench 50-200 Nm V.A.G 1332

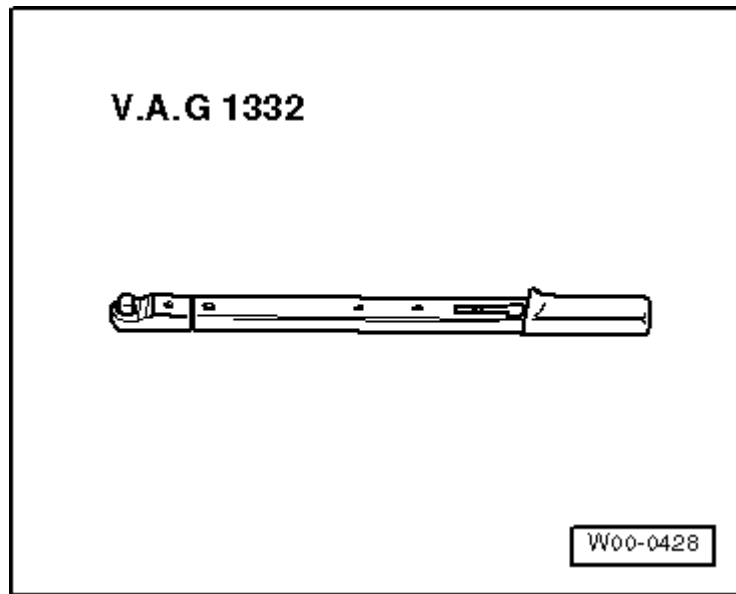


Fig. 318: Identifying Torque Wrench 40-200 Nm V.A.G 1332
Courtesy of AUDI OF AMERICA, LLC

- Engine-/Gearbox Jack V.A.G 1383 A with Universal Transmission Support V.A.G 1359/2

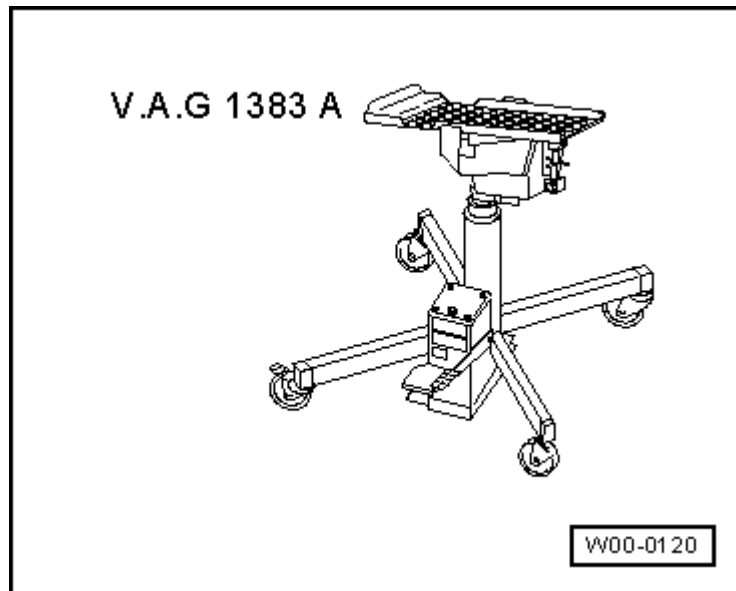


Fig. 319: Identifying Engine & Transmission Jack VAG 1383 A
Courtesy of AUDI OF AMERICA, LLC

- Torque Wrench V.A.G 1410

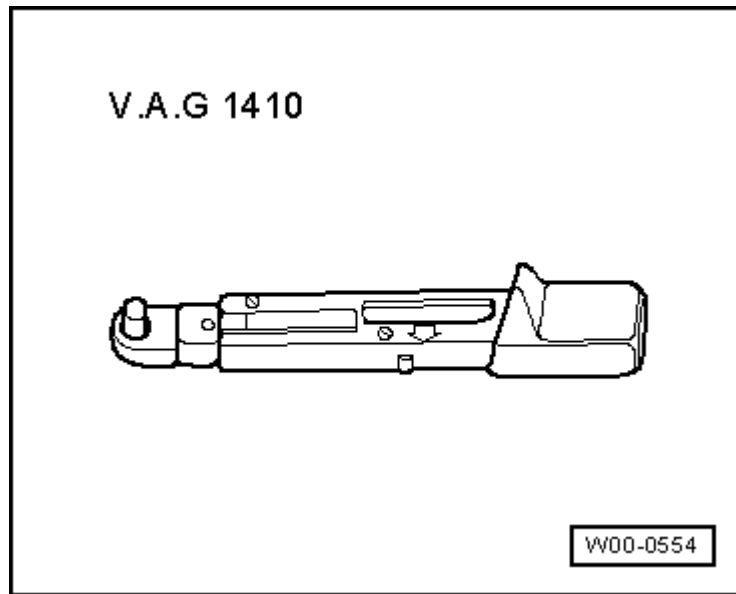


Fig. 320: Identifying Torque Wrench V.A.G 1410
Courtesy of AUDI OF AMERICA, LLC

- Torque Wrench V.A.G 1576

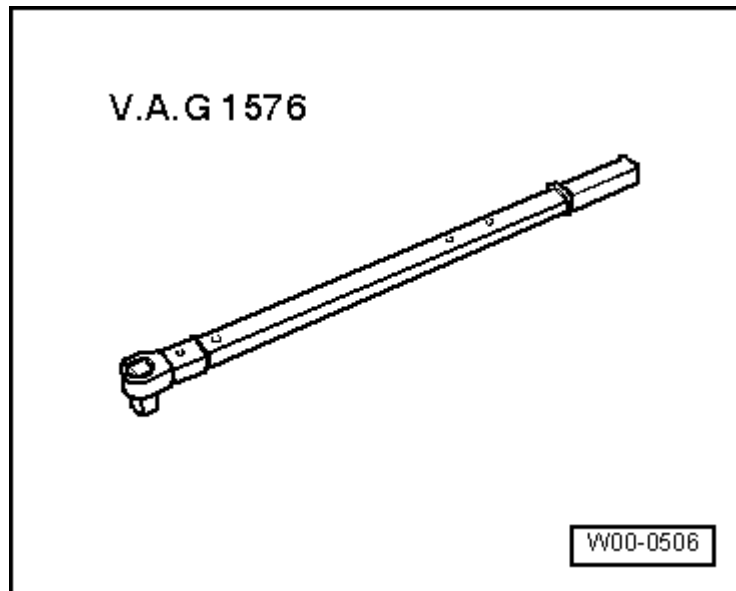


Fig. 321: Identifying Torque Wrench V.A.G 1576
Courtesy of AUDI OF AMERICA, LLC

- CV Joint Boot Clamp Tool V.A.G 1682

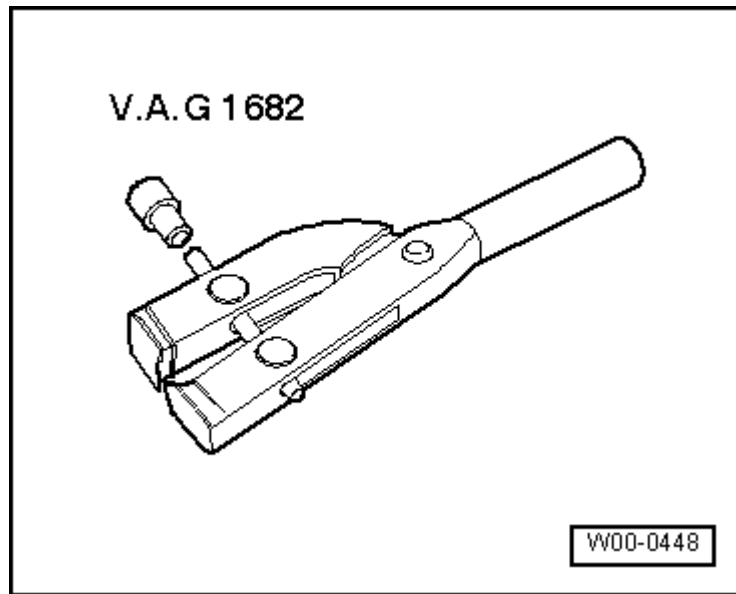


Fig. 322: Identifying CV Joint Boot Clamp Tool V.A.G 1682
Courtesy of AUDI OF AMERICA, LLC

- Hydraulic Press VAS 6178

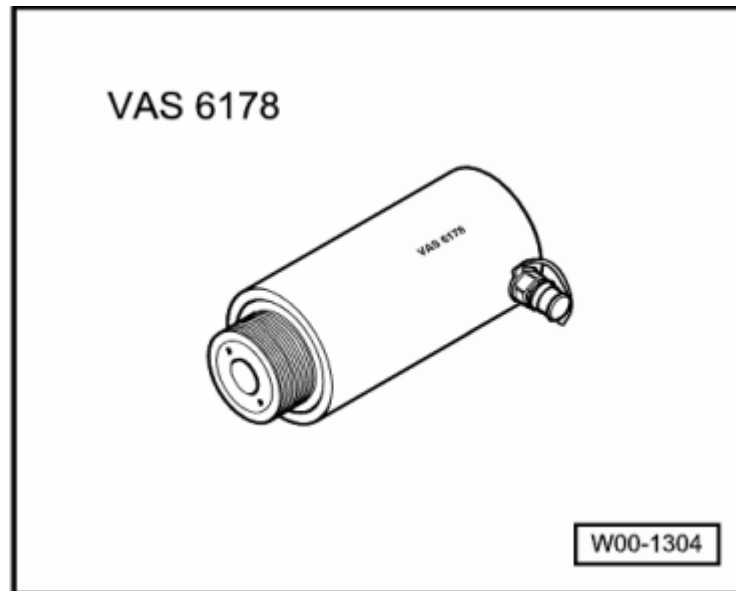


Fig. 323: Identifying Hydraulic Cylinder VAS 6178
Courtesy of AUDI OF AMERICA, LLC

- Pneumatic/Hydraulic Foot Pump VAS 6179

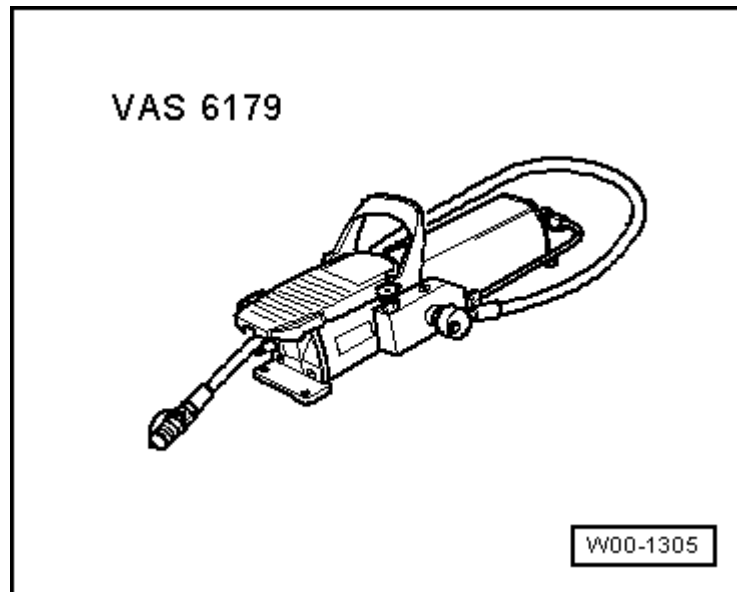


Fig. 324: Identifying Hollow Piston Cylinder VAS 6179
 Courtesy of AUDI OF AMERICA, LLC

- Spring Tensioning System VAS 6274

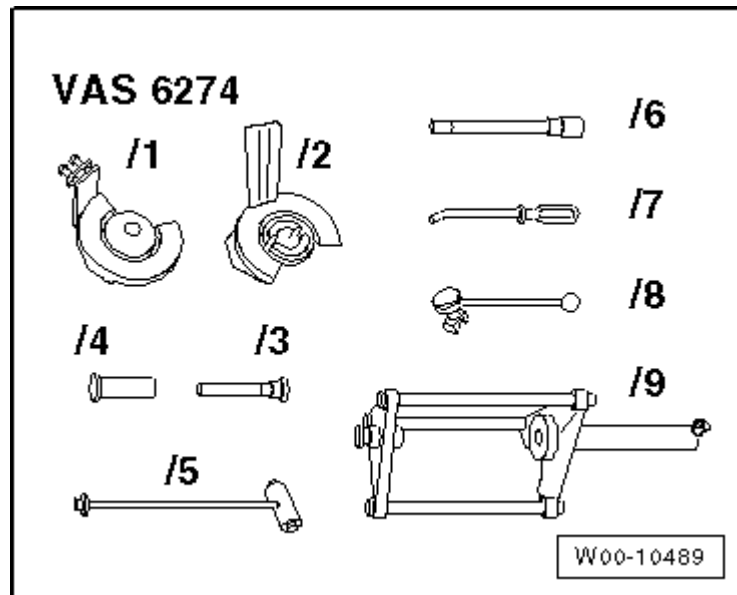


Fig. 325: Identifying Spring Tensioning System VAS 6274
 Courtesy of AUDI OF AMERICA, LLC

- Supplementary Set VAS 6274/10

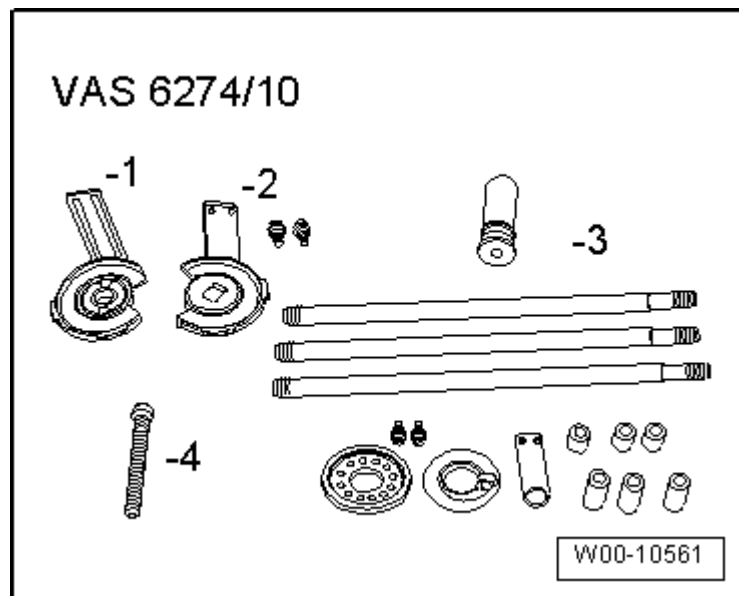


Fig. 326: Identifying Supplementary Set VAS 6274/10
 Courtesy of AUDI OF AMERICA, LLC

- Thrust Plate VW 401

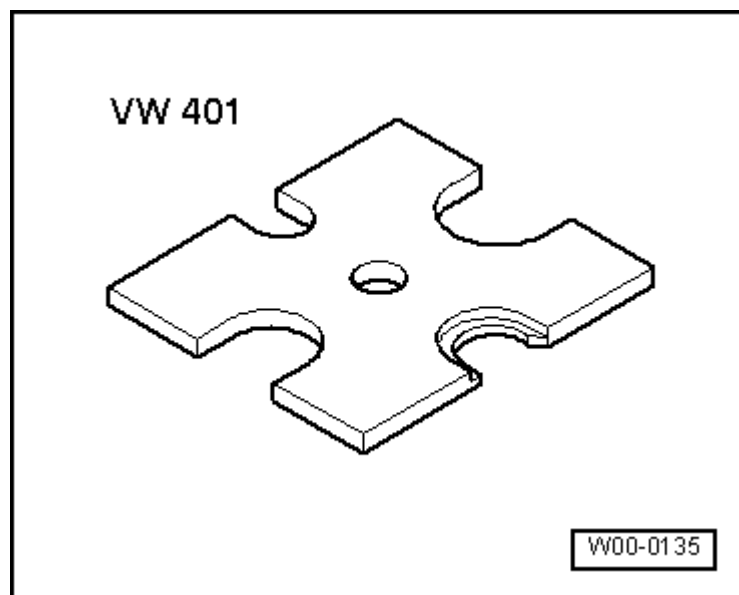


Fig. 327: Identifying Thrust Plate VW 401
 Courtesy of AUDI OF AMERICA, LLC

- Thrust Plate VW 402

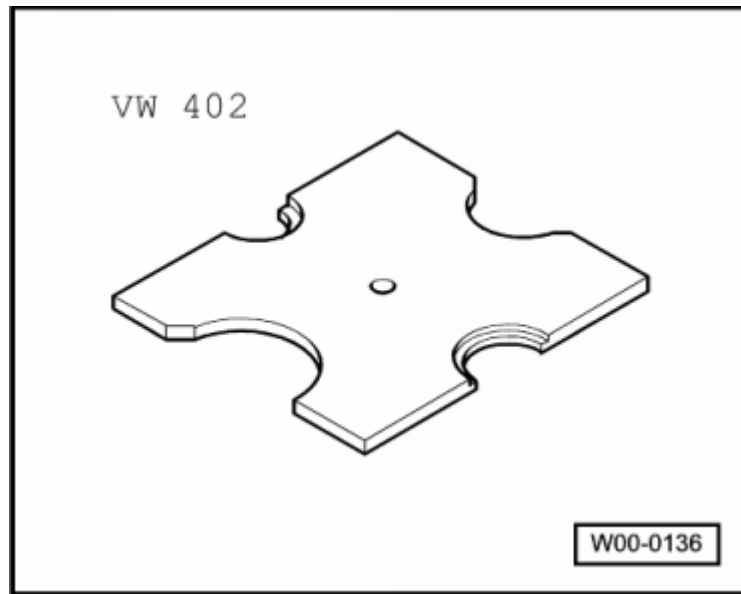


Fig. 328: Identifying Thrust Plate VW 402
Courtesy of AUDI OF AMERICA, LLC

- Punch VW 409

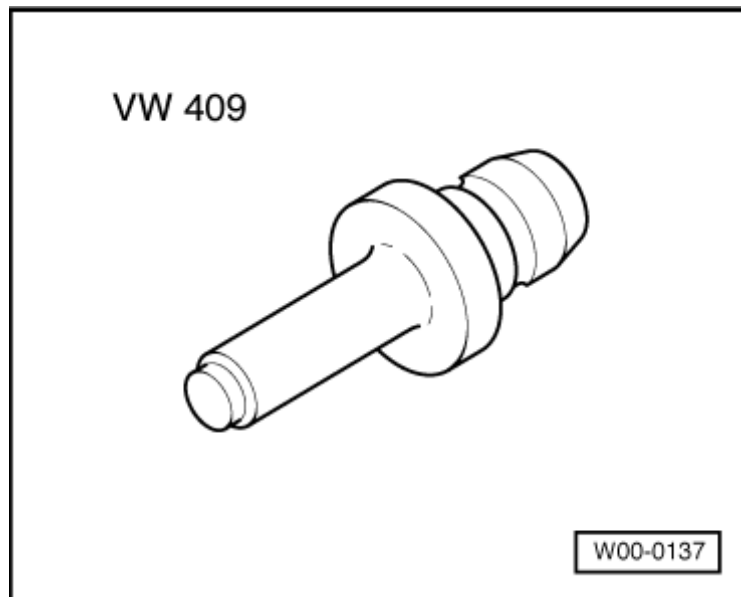


Fig. 329: Identifying Punch VW 409
Courtesy of AUDI OF AMERICA, LLC

- Punch VW 408 A

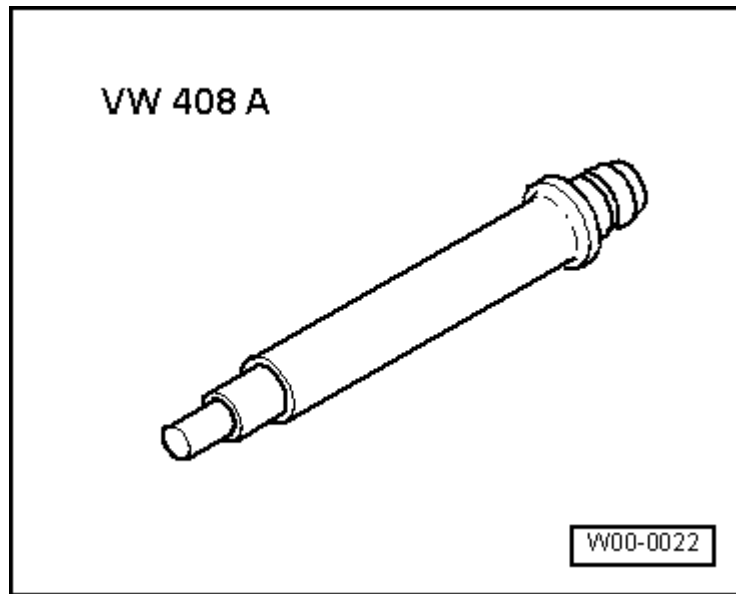


Fig. 330: Identifying VW 408 A
Courtesy of AUDI OF AMERICA, LLC

- Punch VW 411

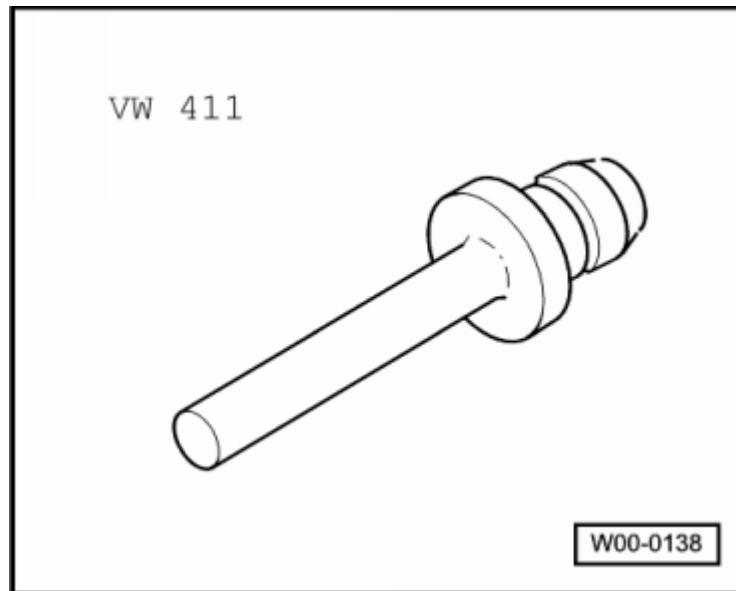


Fig. 331: Identifying Punch VW 411
Courtesy of AUDI OF AMERICA, LLC

- Thrust Disc VW 412

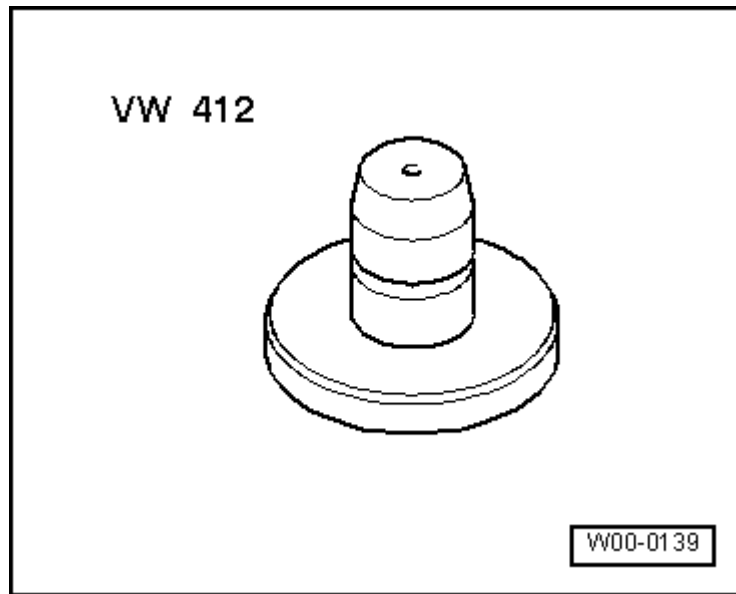


Fig. 332: Identifying Punch VW 412
Courtesy of AUDI OF AMERICA, LLC

- Sleeve-Press Tool VW 522

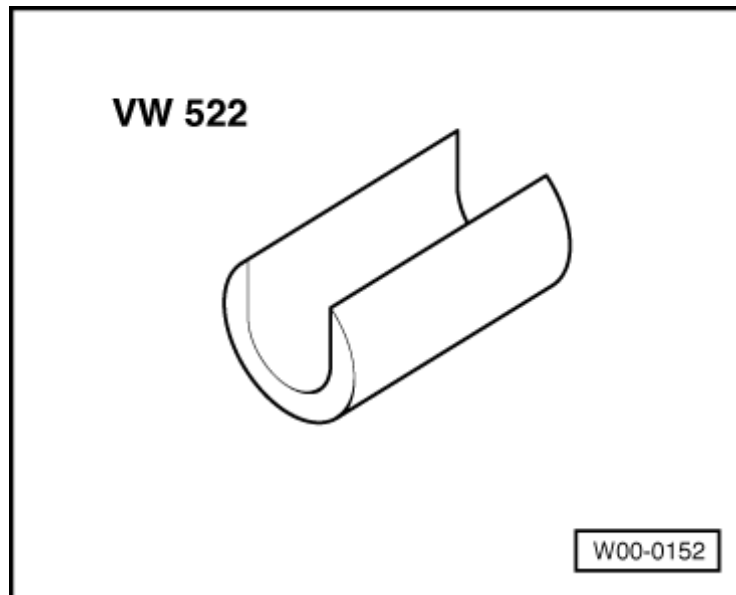


Fig. 333: Identifying Sleeve Press Tool VW 522
Courtesy of AUDI OF AMERICA, LLC

- Grease Cap Puller VW 637/2

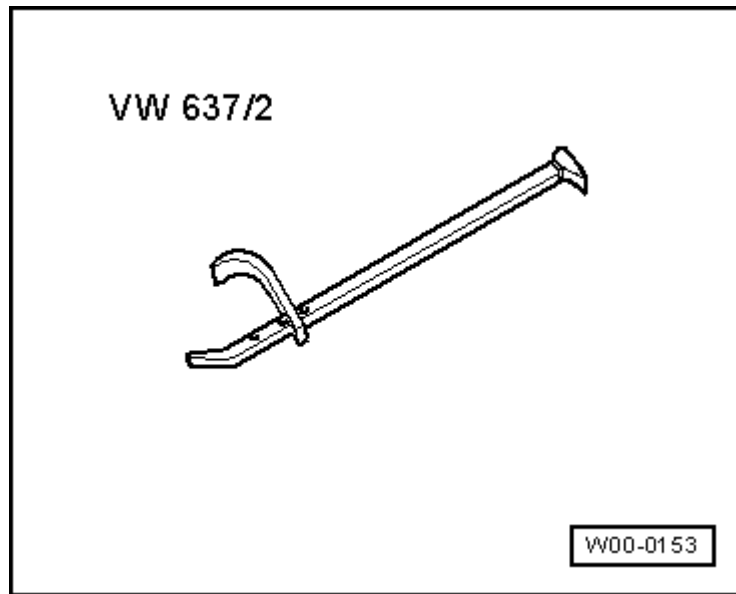


Fig. 334: Identifying Grease Cap Puller VW 637/2
Courtesy of AUDI OF AMERICA, LLC

- Not illustrated:
- Support Arm Bearing Inst.Tool 3346/3
- Support T10205/13
- Pressure Plate T40184/2