



Repair Manual **Golf 2013 ➤** **Golf Variant 2014 ➤** **e-Golf 2014 ➤**

Suspension, Wheels, Steering

Edition 06.2015



List of Workshop Manual Repair Groups

Repair Group

- 00 - General, Technical Data
- 40 - Front Suspension
- 42 - Rear Suspension
- 43 - Self-Leveling Suspension
- 44 - Wheels, Tires, Wheel Alignment
- 48 - Steering

Technical information should always be available to the foremen and mechanics, because their careful and constant adherence to the instructions is essential to ensure vehicle road-worthiness and safety. In addition, the normal basic safety precautions for working on motor vehicles must, as a matter of course, be observed.



Contents

00 - General, Technical Data	1
1 Safety Precautions	1
1.1 Safety Precautions when Working on Vehicles with Start/Stop System	1
1.2 Safety Precautions when Working on Subframe	1
2 Repair Information	2
2.1 Shock Absorber Leaks	2
2.2 Shock Absorber Noises	2
2.3 Shock Absorbers, Checking when Removed	3
2.4 Steering Gear	3
2.5 Seals and Gaskets	4
2.6 Bolts and Nuts	4
2.7 Electrical Components	4
2.8 Wheel Bearing in Curb Weight Position, Lifting Vehicles with Coil Spring	5
3 Vehicles Involved in Collisions, Evaluating	9
3.1 Collision Vehicle Evaluation Checklist	9
4 Disposal	11
4.1 Front Gas-Filled Shock Absorbers, Venting and Draining	11
4.2 Rear Gas-Filled Shock Absorbers, Venting and Draining	12
5 Special Tools	14
40 - Front Suspension	15
1 Front Axle	15
1.1 Component Location Overview - Front Axle	15
2 Subframe	16
2.1 Overview - Subframe	16
2.2 Subframe without Steering Gear, Removing and Installing	17
2.3 Subframe with Steering Gear, Removing and Installing	24
2.4 Subframe, Servicing	45
2.5 Stabilizer Bar, Removing and Installing	51
2.6 Coupling Rod, Removing and Installing	55
2.7 Thread in Longitudinal Member, Servicing	56
2.8 Subframe, Securing	56
2.9 Subframe, Lowering	59
3 Suspension Strut and Upper Control Arm	66
3.1 Overview - Suspension Strut and Upper Control Arm	66
3.2 Suspension Strut, Removing and Installing	67
3.3 Suspension Strut, Servicing	74
4 Lower Control Arm and Ball Joint	76
4.1 Overview - Lower Control Arm and Ball Joint	76
4.2 Lower Control Arm, Removing and Installing	77
4.3 Ball Joint, Checking	82
4.4 Ball Joint, Removing and Installing	83
4.5 Lower Control Arm Bonded Rubber Bushing, Replacing	86
5 Wheel Bearing	91
5.1 Overview - Wheel Bearing	91
5.2 Wheel Bearing Housing, Removing and Installing	91
5.3 Wheel Bearing Unit, Removing and Installing	96
6 Drive Axle	100
6.1 Overview - Drive Axle	100
6.2 Overview - Drive Axle	101
6.3 Drive Axle, Removing and Installing	106



6.4	Drive Axle Threaded Connection, Loosening and Tightening	127
6.5	Drive Axle Heat Shield, Removing and Installing	128
6.6	Drive Axle, Disassembling and Assembling	129
6.7	Outer CV Joint, Checking	138
6.8	Inner CV Joint, Checking	139
7	Special Tools	141
42	Rear Suspension	156
1	Rear Axle	156
1.1	Overview - Rear Axle	156
1.2	Rear Axle, Lowering	160
1.3	Rear Axle, Removing and Installing	168
2	Axle Beam	184
2.1	Overview - Axle Beam	184
2.2	Axle Beam Bonded Rubber Bushing, Replacing	184
3	Subframe	191
3.1	Overview - Subframe	191
3.2	Subframe, Securing	193
3.3	Subframe, Servicing	209
4	Stabilizer Bar	221
4.1	Overview - Stabilizer Bar	221
4.2	Stabilizer Bar, Removing and Installing	222
4.3	Coupling Rod, Removing and Installing	223
5	Control Arm, Tie Rod	226
5.1	Overview - Transverse Link	226
5.2	Overview - Tie Rod	230
5.3	Upper Transverse Link, Removing and Installing	231
5.4	Lower Transverse Link, Removing and Installing	233
5.5	Tie Rod, Removing and Installing	235
6	Suspension Strut/Shock Absorber, Spring	237
6.1	Overview - Suspension Strut, Shock Absorber and Spring	237
6.2	Shock Absorber, Removing and Installing	239
6.3	Shock Absorber, Servicing	246
6.4	Spring, Removing and Installing	248
7	Wheel Bearing and Trailing Arm	257
7.1	Overview - Wheel Bearing	257
7.2	Overview - Trailing Arm	261
7.3	Wheel Bearing Housing, Removing and Installing	262
7.4	Wheel Bearing Unit, Removing and Installing	271
7.5	Wheel Bearing Housing Bonded Rubber Bushing, Replacing	278
7.6	Trailing Arm with Mounting Bracket, Removing and Installing	283
7.7	Trailing Arm, Servicing	289
8	Drive Axle	292
8.1	Overview - Drive Axle	292
8.2	Drive Axle, Removing and Installing	293
8.3	Drive Axle, Disassembling and Assembling	297
8.4	Drive Axle Threaded Connection, Loosening and Tightening	300
8.5	Outer CV Joint, Checking	301
8.6	Inner CV Joint, Checking	303
9	Special Tools	305
43	Self-Leveling Suspension	317
1	Electronic Damping	317
1.1	Overview - Electronic Damping	317



1.2	Electronic Damping Control Module J250 , Removing and Installing	322
1.3	Left/Right Front Body Acceleration Sensor G341 / G342 , Removing and Installing	324
1.4	Rear Body Acceleration Sensor G343 , Removing and Installing	325
2	Level Control System Sensor	327
2.1	Overview - Front Level Control System Sensor	327
2.2	Overview - Rear Level Control System Sensor	328
2.3	Left/Right Front Level Control System Sensor G78 / G289 , Removing and Installing	330
2.4	Left/Right Rear Level Control System Sensor G76 / G77 , Removing and Installing	332
3	Special Tools	334
44 -	Wheels, Tires, Wheel Alignment	335
1	Wheels and Tires	335
1.1	Tires, Dismounting	335
1.2	Tires, Mounting	335
1.3	Wheel, Changing	336
1.4	Wheel Bolt Tightening Specifications	340
1.5	Tires, Dismounting	340
1.6	Tire Sealant, Disposing	341
1.7	Vehicles with Tire Mobility Kit	341
2	Tire Pressure Monitoring System	343
2.1	System Description - Tire Pressure Monitoring System	343
3	Vehicle Alignment	345
3.1	Axle Alignment Information	345
3.2	Test Requirements	345
3.3	Measure Preparations	346
3.4	Axle Alignment Specified Values	347
3.5	Vehicle, Preparing for Aligning	355
3.6	Axle Alignment Procedure	355
3.7	Need for Axle Alignment, Evaluating	357
3.8	Front Axle Camber, Adjusting	359
3.9	Rear Axle Camber, Adjusting	360
3.10	Rear Axle Toe, Adjusting	361
3.11	Front Axle Toe, Adjusting	362
3.12	Wheel Run-Out Compensation	363
3.13	Vehicle Data Label	363
3.14	Maximum Steering Angle, Checking	363
4	Wheel/Tire Vibration, Causes and Solution	365
4.1	Vibration Causes	365
4.2	Road Test, Performing Before Balancing	365
4.3	Wheel, Balancing	366
4.4	Vibration Control System	370
4.5	Tire and Wheel Radial and Lateral Run-Out, Checking	370
4.6	Rim Radial and Lateral Run-Out, Checking	371
4.7	Wheels and Tires, Matching	372
4.8	Flat Spots in Tires From Standing, Determining	373
5	Adaptive Cruise Control (ACC)	375
5.1	Adaptive Cruise Control (ACC), Calibrating	375
6	Driver Assistance Systems Front Camera	387
6.1	Driver Assistance Systems Front Camera, Calibrating	387
7	Special Tools	394
48 -	Steering	396
1	Steering Wheel	396
1.1	Overview - Steering Wheel	396



1.2	Steering Wheel, Removing and Installing	396
2	Steering Column	398
2.1	Overview - Steering Column	398
2.2	Steering Column, Checking for Damage	399
2.3	Steering Column, Handling and Transporting	399
2.4	Steering Column, Removing and Installing	400
2.5	Electronic Steering Column Lock Control Module J764, Removing and Installing	417
3	Steering Gear	419
3.1	Overview - Steering Gear	419
3.2	Steering Gear, Removing and Installing	422
3.3	Boot, Removing and Installing	448
3.4	Tie Rod, Removing and Installing	450
3.5	Tie Rod End, Removing and Installing	452
3.6	Steering Gear, Servicing	453
4	Sensors	456
4.1	Steering Angle Sensor G85, Removing and Installing	456
5	Special Tools	457
6	Revision History	460



00 – General, Technical Data

1 Safety Precautions

(Edition 06.2015)

⇒ [“1.1 Safety Precautions when Working on Vehicles with Start/Stop System”, page 1](#)

⇒ [“1.2 Safety Precautions when Working on Subframe”, page 1](#)

1.1 Safety Precautions when Working on Vehicles with Start/Stop System



WARNING

If vehicle will be driving on the streets, all screws and nuts must be tightened properly!



WARNING

Risk of injury due to the engine automatically starting on vehicles with a Start/Stop system.

- ◆ *For vehicles with an active Start/Stop system, the engine can automatically start if necessary.*
- ◆ *Make sure the Start/Stop System is off whenever working on the vehicle. Turn off the ignition and turn it back on only when necessary.*

1.2 Safety Precautions when Working on Subframe

- ◆ Welding and alignment work on supporting or wheel carrying suspension components is not permitted.
- ◆ Always replace corroded bolts/nuts.
- ◆ Bonded rubber bushings have a limited range of motion. Therefore, only tighten the threaded connections on the components with bonded rubber bushings when the wheel bearing housing is lifted (curb weight position). Refer to [⇒ “2.8 Wheel Bearing in Curb Weight Position, Lifting Vehicles with Coil Spring”, page 5](#).



2 Repair Information

⇒ [“2.1 Shock Absorber Leaks”, page 2](#)

⇒ [“2.2 Shock Absorber Noises”, page 2](#)

⇒ [“2.3 Shock Absorbers, Checking when Removed”, page 3](#)

⇒ [“2.4 Steering Gear”, page 3](#)

⇒ [“2.5 Seals and Gaskets”, page 4](#)

⇒ [“2.6 Bolts and Nuts”, page 4](#)

⇒ [“2.7 Electrical Components”, page 4](#)

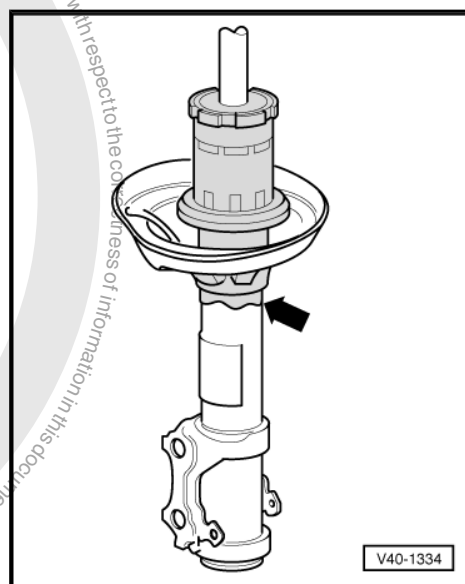
⇒ [“2.8 Wheel Bearing in Curb Weight Position, Lifting Vehicles with Coil Spring”, page 5](#)

2.1 Shock Absorber Leaks

Shock absorbers are frequently rejected and exchanged because of leaks. Examinations on the test stand and on the vehicle have shown that the replacement of a large number of rejected shock absorbers was not justified.

Slight leaking of oil (“sweating”) at piston rod seal is no reason to replace a shock absorber. A shock absorber damp with oil is OK under the following circumstances:

- ♦ Oil leakage (shaded in illustration) is visible, but dull, matte and possibly dry due to dust.
- ♦ Oil excretion extends from upper shock absorber connection (piston rod oil seal) no further than lower spring plate -arrow-



2.2 Shock Absorber Noises

Shock absorbers are frequently rejected and exchanged because of rumbling noises. Examinations on the test stand and vehicle have shown that there was not complaint with approximately 70% of the rejected shock absorbers. The replacement was not justified.

With complaints that are interpreted as rumbling or knocking sounds, proceed as follows.

- Determine where, when and how the sounds change during a road test on a dry stretch of road with irregularities.



Note

Shock absorbers are the cause of noises only in the rarest of cases.

2.3 Shock Absorbers, Checking when Removed

Defective shock absorbers are noticeable when driving due to loud rumbling noises - a result of wheel hopping - especially on poor stretches of road. Moreover, they can be recognized by a large loss of oil.



Note

Shock absorbers are maintenance-free, shock absorber oil cannot be filled.

A removed shock absorber can be checked by hand as follows:

- Push the shock absorber together by hand.
- Piston rod must move with even resistance throughout entire stroke and without jerking.
- Release piston rods.

For shock absorbers with sufficient gas pressure, the piston rod returns automatically to its starting position.



Note

- ♦ *If this is not the case, the shock absorber does not necessarily need to be replaced. As long as oil loss is not large, the effectiveness represents that of a standard shock absorber.*
- ♦ *The damping function is also completely available without gas pressure, as long as there is no large loss of oil. However, this can increase the noise level.*

2.4 Steering Gear

Extreme caution, cleanliness, and properly functioning tools are an essential requirement in performing a faultless and successful steering gear repair. The general safety precautions also always apply when servicing the vehicle.

A series of applicable general notes for individual repair procedures - otherwise listed several times at many points in the repair manual - has been collected here. They apply to this repair manual.

For a complete description of the structure and function of the electro-mechanical power steering system. Refer to the Self-Study Program ⇒ Self Study Program No. 317 ; The Electro-Mechanical Power Steering Design and Function .

- ♦ Thoroughly clean connecting points and their surrounding areas before loosening.
- ♦ When installing steering gear, make sure the alignment sleeves are correctly positioned between the bracket and steering gear.



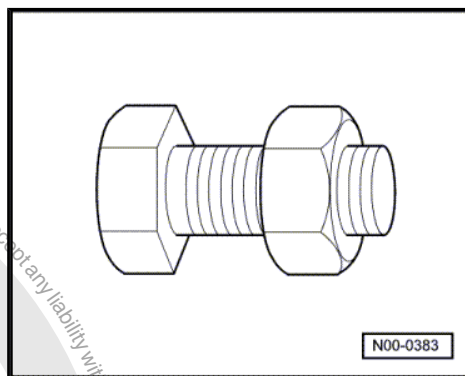
- ◆ Place removed parts on a clean surface and cover them so that they do not get dirty. Use foil and paper. Only use lint-free cloths.
- ◆ Only install clean parts: remove the replacement parts from their packaging just before installing them.
- ◆ Use greases and sealants that are identified by part numbers exclusively.
- ◆ Carefully cover or seal opened components if the repair is not performed immediately.

2.5 Seals and Gaskets

- ◆ Always replace the gaskets and seals.
- ◆ After removing seals, inspect contact surface on housings and shafts for burrs and damage and repair if necessary.
- ◆ Remove all sealant residue of fluid seals from sealing surfaces. Sealant residue must not enter the steering gear housing when doing this.

2.6 Bolts and Nuts

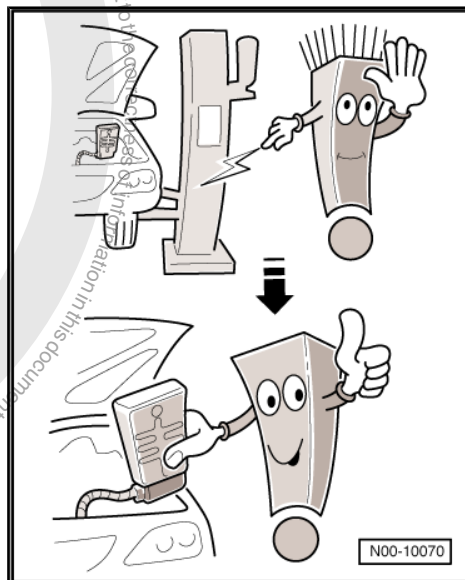
- ◆ Loosen and tighten the bolts and nuts from the covers and housings diagonally.
- ◆ Do not cant but loosen and tighten especially sensitive parts in diagonal manner in stages, for example servo motor with control module.
- ◆ Tightening specifications for non-lubricated bolts and nuts are given.
- ◆ Always replace self-locking nuts and bolts.



2.7 Electrical Components

Surely everyone has been shocked at one time or another when coming into contact with a metal object. The reason for this is the build-up of static electricity in the human body. This charging can lead to malfunctions by touching electrical components in the steering gear and the steering column.

- Touch a grounded object, for example, a water pipe or a vehicle hoist, before working on electrical components. Do not touch the connector terminals.





2.8 Wheel Bearing in Curb Weight Position, Lifting Vehicles with Coil Spring

⇒ ["2.8.1 Wheel Bearing in Curb Weight, Lifting Vehicles with Coil Spring, Front Axle", page 5](#)

⇒ ["2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring", page 6](#)

2.8.1 Wheel Bearing in Curb Weight, Lifting Vehicles with Coil Spring, Front Axle

Special tools and workshop equipment required

- ◆ Engine and Gearbox Jack - VAS6931-
- ◆ Tensioning Strap - T10038-
- ◆ Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149-



Caution

All bolts on suspension components with bonded rubber bushings must always be tightened in curb weight position (unloaded condition).

Bonded rubber bushings have a limited range of motion.

Axle components with bonded rubber bushings must be brought into the position they will be in when driving before they are tightened (curb weight position).

Otherwise, the bonded rubber bushing will have tension, which will reduce the service life.

By raising appropriate suspension using Engine and Gearbox Jack - VAS6931- and Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149- , this position can be simulated on the hoist.

Before the Applicable Suspension Is Raised, the Vehicle Must Be Secured to the Hoist Lifting Arms Using Tensioning Straps - T10038- .



WARNING

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

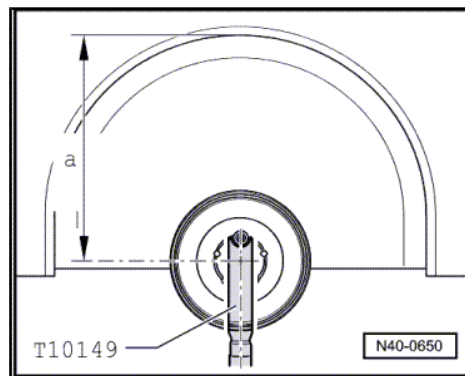
- Turn the wheel hub until one of the holes for the wheel bolts is on top.
- Install the Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149- with wheel bolt on wheel hub.



The Bolts/Nuts Must Only Be Tightened Once Dimension -a- between the Center of the Wheel Hub and the Lower Edge of the Wheel Housing Has Been Reached.

The dimension -a- is dependent on the height of the installed suspension:

Chassis ¹⁾	Standing Height -a- in mm
Basic (G01/G02/G07/G18/G22 +2UA)	383 ± 10 mm
Sport (G01/G02 +GM1/ G07 +2UC/ G21,G26)	368 ± 10 mm
Raised (G01/G02 +2UF)	398 ± 10 mm
DCC (G03+2UH/ G03+2UQ)	373 ± 10 mm
GTD (G06 + 2UC + GM03/ G05 + 2UJ + GM03)	368 ± 10 mm
GTI (G06+2UC/ G06 + 2UJ/ G04 + 2UM)	368 ± 10 mm
BlueMotion (G01G02 +2UP +GM1 G07+2UC/ G21/G26)	368 ± 10 mm
GTI heavy duty suspension (G06 + 2UN)	383 ± 10 mm
GTE (G20/G23)	383 ± 10 mm
Golf R (G04 + 2UK + QZ0/ G04 + 2UL + QZ0/ G04 +2UK + 1N7/ G04 + 2UL + 1N7)	363 ± 10 mm
Alltrack (G24/ G25)	397 ± 10 mm
Alltrack DCC (G27)	392 ± 10 mm



¹⁾ The type of vehicle suspension is indicated on the vehicle data label. The suspension is indicated by a PR number. Allocation of the PR number according to the suspension. Refer to
⇒ **"3.13 Vehicle Data Label", page 363** .

- Lift the wheel bearing housing using the Engine and Gearbox Jack - VAS6931- until dimension -a- is reached.



WARNING

- ◆ **Do not lift or lower the vehicle when the engine and gear-box jack is under the vehicle.**
- ◆ **Do not leave the Engine and Gearbox Jack - VAS6931- under the vehicle any longer than necessary.**

- Tighten the applicable bolts and nuts.
- Lower the wheel bearing housing.
- Remove the Engine and Gearbox Jack - VAS6931- from under the vehicle.
- Remove the Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149- .

2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring

Special tools and workshop equipment required

- ◆ Engine and Gearbox Jack - VAS6931-



- ◆ Tensioning Strap - T10038-
- ◆ Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149-



Caution

All bolts on suspension components with bonded rubber bushings must always be tightened in curb weight position (unloaded condition).

Bonded rubber bushings have a limited range of motion.

Axle components with bonded rubber bushings must be brought into the position they will be in when driving before they are tightened (curb weight position).

Otherwise, the bonded rubber bushing will have tension, which will reduce the service life.

By raising axle on one side using the Engine and Gearbox Jack - VAS6931- and Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149- , this position can be simulated on the hoist.

Before Lifting the Axle on One Side, the Vehicle Must Be Secured on Both Sides to the Hoist Lifting Arms Using Tensioning Strap - T10038- .

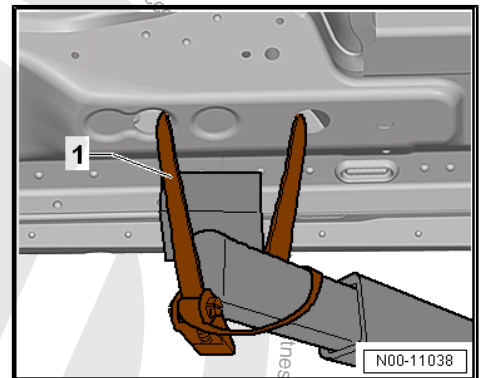
1 - Tensioning Strap - T10038-



WARNING

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

- Turn the wheel hub until one of the holes for the wheel bolts is on top.
- Install the Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149- with the wheel bolt.

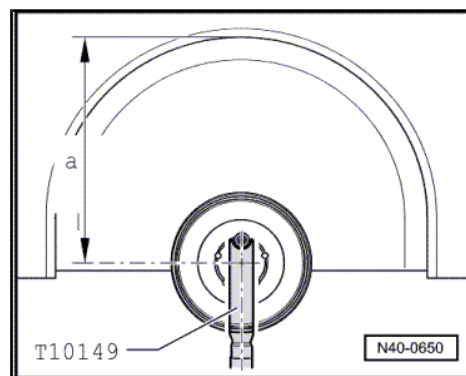




The Bolts/Nuts Must Only Be Tightened Once Dimension -a- between the Center of the Wheel Hub and the Lower Edge of the Wheel Housing Has Been Reached.

The dimension -a- is dependent on the height of the installed suspension:

Chassis ¹⁾	Standing Height -a- in mm
Basic (G01/G02/G07/G18/G22 +2UA)	385 ± 10 mm
Sport (G01/G02 +GM1/ G07 +2UC/ G21,G26)	370 ± 10 mm
Raised (G01/G02 +2UF)	400 ± 10 mm
DCC (G03+2UH/ G03+2UQ)	375 ± 10 mm
GTD (G02+2UC/ G06 + 2UC + GM03/ G05 + 2UJ + GM03)	370 ± 10 mm
GTI (G06+2UC/ G06 + 2UJ/ G04 + 2UM)	370 ± 10 mm
BlueMotion (G01G02 +2UP +GM1 G07+2UC/ G21/G26)	370 ± 10 mm
GTI heavy duty suspension (G06 + 2UN)	385 ± 10 mm
GTE (G20/G23)	395 ± 10 mm
Golf R (G04 + 2UK + QZ0/ G04 + 2UL + QZ0/ G04 +2UK + 1N7/ G04 + 2UL + 1N7)	365 ± 10 mm
Alltrack (G24/ G25)	398 ± 10 mm
Alltrack DCC (G27)	393 ± 10 mm



¹⁾ The type of vehicle suspension is indicated on the vehicle data label. The suspension is indicated by a PR number. Allocation of the PR number according to the suspension. Refer to [⇒ "3.13 Vehicle Data Label", page 363](#).

- Lift the wheel bearing housing using the engine/gearbox jack until dimension -a- is reached.



WARNING

- ◆ **Do not lift or lower the vehicle when the engine and gearbox jack is under the vehicle.**
- ◆ **Do not leave the engine and gearbox jack under the vehicle any longer than necessary.**

- Tighten the applicable bolts and nuts.
- Lower the wheel bearing housing.
- Remove the Engine and Gearbox Jack - VAS6931- from under the vehicle.
- Remove the Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149-



3 Vehicles Involved in Collisions, Evaluating

⇒ ["3.1 Collision Vehicle Evaluation Checklist", page 9](#)

3.1 Collision Vehicle Evaluation Checklist

When servicing load-bearing or wheel-supporting components on vehicles involved in a collision, damages on the suspension could remain undiscovered. These undiscovered damages may lead to severe damage in continued vehicle operation. Therefore, on accident vehicles, the listed components must be checked in the described manner and sequence, independent of performing an axle alignment. If no deviations from the specified values were determined during an axle alignment, then no deformations of the chassis are present.

Visual Inspection and Function Check of the Steering System

- ◆ Visual inspection for deformations and cracks
- ◆ Check for play in tie rod joints and steering gear
- ◆ Visual inspection for faulty bellows and grease boots
- ◆ Check electric and hydraulic lines and hoses for chafe marks, cuts and kinks.
- ◆ Check hydraulic lines, threaded connections and steering gear for leaks
- ◆ Make sure the steering gear and lines are securely fastened.
- ◆ Check for correct function over the entire steering angle by turning the steering wheel from stop to stop. Steering wheel must be able to rotate an even force without getting caught.

Visual and Function Test for the Suspension

- The sequence of the following test steps must be maintained.
- ◆ Check all components shown in the overviews for deformation, cracks and other damage.
- ◆ Replace the damaged components
- ◆ Perform a vehicle alignment on a Volkswagen AG approved alignment rack.

Visual and Function Test for Wheels, Tires

- ◆ Check for run-out and imbalance.
- ◆ Check tires for cuts and impact damage on tread and flanks. Refer to
⇒ ["4 Wheel/Tire Vibration, Causes and Solution", page 365](#) .
- ◆ Check the tire pressure; for the correct tire pressure, refer to the tire pressure label on the driver side B-pillar or on the fuel filler door.

Replace the tire if the rim and/or the tire are damaged. This also applies when the crash details and damage to the vehicle point to possible non-visible damages.

Another deciding factor is the age of the tires: the tires must not be older than 6 years.

If in Doubt:

- As soon as a safety risk cannot be ruled out, the tire(s) must be replaced.



Entire Vehicle

Check other vehicle systems, for example:

- ◆ Brake system including ABS
- ◆ Exhaust system and passenger protection by visual and function check

Test values, adjustment values and notes can be found in respective repair manuals/ELSA.

This test is for checking the chassis on a vehicle, that has been in a collision. The test does not cover the entire vehicle.

Electronic Vehicle Systems

Safety related systems, such as: ABS/EDS; Airbag; electronically controlled suspension systems; electro-mechanical; electro-hydraulic steering and other driver assist systems, must be checked for possible stored fault messages. Refer to Vehicle Diagnostic Tester. If faults were stored in the DTC memory for the system mentioned, then these systems must be serviced according to the specifications in the repair manual/ELSA. After performing repairs, check the fault stored in the DTC memory of the affected system again, to make sure that proper function can be ensured again.



4 Disposal

⇒ [“4.1 Front Gas-Filled Shock Absorbers, Venting and Draining”, page 11](#)

⇒ [“4.2 Rear Gas-Filled Shock Absorbers, Venting and Draining”, page 12](#)

4.1 Front Gas-Filled Shock Absorbers, Venting and Draining

⇒ [“4.1.1 Front Shock Absorbers, Venting and Emptying, Standard Shock Absorber”, page 11](#)

⇒ [“4.1.2 Front Shock Absorbers, Venting and Emptying, DCC Shock Absorber”, page 12](#)

4.1.1 Front Shock Absorbers, Venting and Emptying, Standard Shock Absorber

- Secure the gas-filled shock absorber vertically in vise, with piston rod facing down.



WARNING

Wear protective eyewear while drilling.

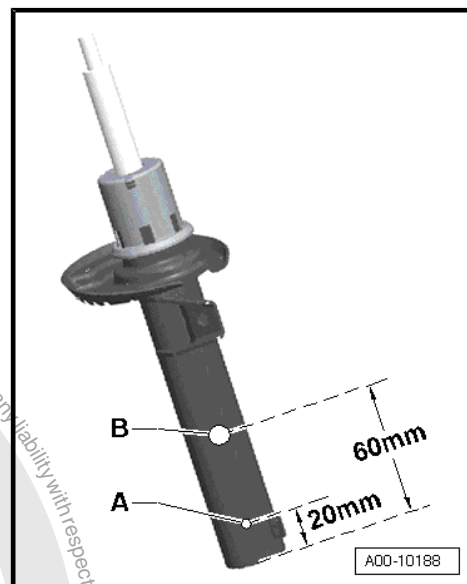
- Drill a 3 mm hole -A- through the shock absorber outer tube.



Note

Gas escapes when drilling.

- Continue drilling until the tube inside is drilled through (approximately 25 mm deep).
- Drill a second 6 mm hole -B- through the outer and inner shock absorber tubes.
- Hold the shock absorber over an appropriate container for catching oil. Move the piston rod repeatedly through the entire stroke until no more oil flows out.





4.1.2 Front Shock Absorbers, Venting and Emptying, DCC Shock Absorber

- Tension the gas-filled shock absorber vertically in the vise.



WARNING

Wear protective eyewear while drilling.

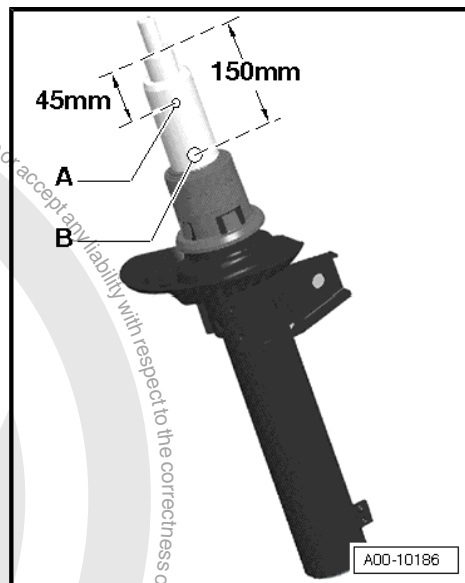
- Drill a 3 mm hole -A- through the shock absorber outer tube.



Note

Gas escapes when drilling.

- Continue drilling until the tube inside is drilled through (approximately 25 mm deep).
- Drill a second 6 mm hole -B- through the outer and inner shock absorber tubes.
- Hold the shock absorber over an appropriate container for catching oil. Move the piston rod repeatedly through the entire stroke until no more oil flows out.



4.2 Rear Gas-Filled Shock Absorbers, Venting and Draining

⇒ [“4.2.1 Rear Shock Absorbers, Venting and Emptying, Standard Shock Absorber”, page 12](#)

⇒ [“4.2.2 Rear Shock Absorbers, Venting and Emptying, DCC Shock Absorber”, page 13](#)

4.2.1 Rear Shock Absorbers, Venting and Emptying, Standard Shock Absorber

- Tension the gas-filled shock absorber vertically in the vise.



WARNING

Wear protective eyewear while drilling.

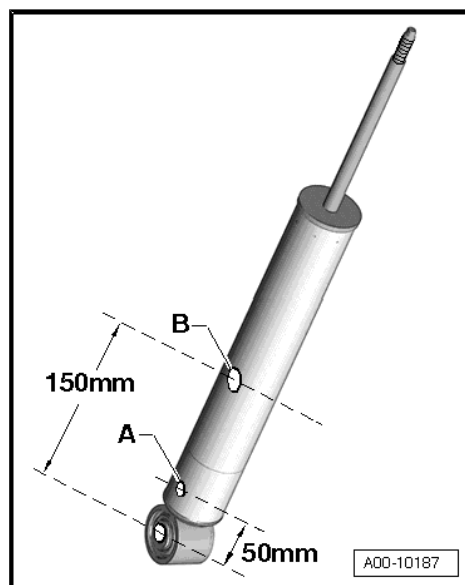
- Drill a 3 mm hole -A- through the shock absorber outer tube.



Note

Gas escapes when drilling.

- Continue drilling until the tube inside is drilled through (approximately 25 mm deep).
- Drill a second 6 mm hole -B- through the outer and inner shock absorber tubes.
- Hold the shock absorber over an appropriate container for catching oil. Move the piston rod repeatedly through the entire stroke until no more oil flows out.





4.2.2 Rear Shock Absorbers, Venting and Emptying, DCC Shock Absorber

- Tension the gas-filled shock absorber vertically in the vise.



WARNING

Wear protective eyewear while drilling.

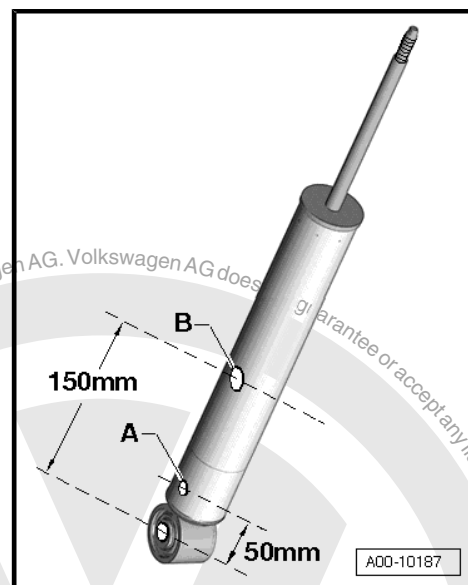
- Drill a 3 mm hole -A- through the shock absorber outer tube.



Note

Gas escapes when drilling.

- Continue drilling until the tube inside is drilled through (approximately 25 mm deep).
- Drill a second 6 mm hole -B- through the outer and inner shock absorber tubes.
- Hold the shock absorber over an appropriate container for catching oil. Move the piston rod repeatedly through the entire stroke until no more oil flows out.

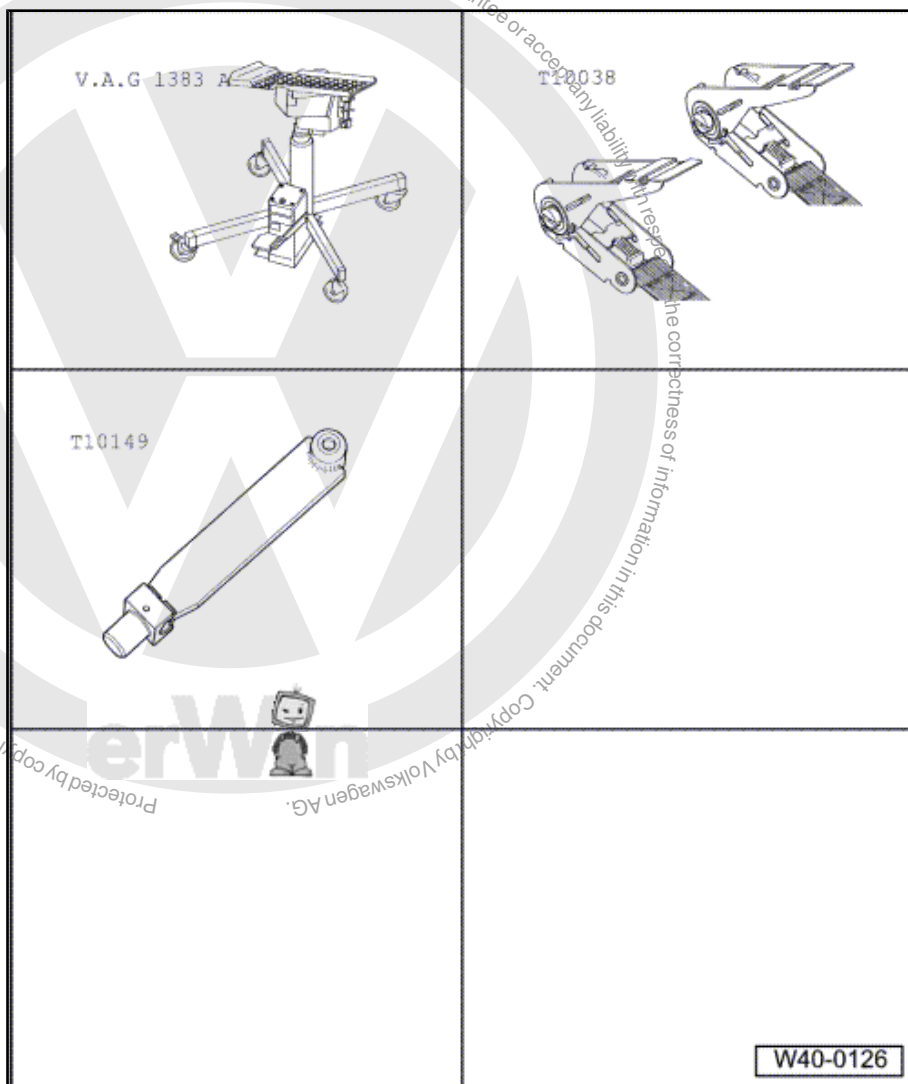




5 Special Tools

Special tools and workshop equipment required

- ◆ Engine and Gearbox Jack - VAS6931-
- ◆ Tensioning Strap - T10038-
- ◆ Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149-





40 – Front Suspension

1 Front Axle

⇒ [“1.1 Component Location Overview - Front Axle”, page 15](#)

1.1 Component Location Overview - Front Axle

I - Refer to

⇒ [“2 Subframe”, page 16](#)

II - Refer to

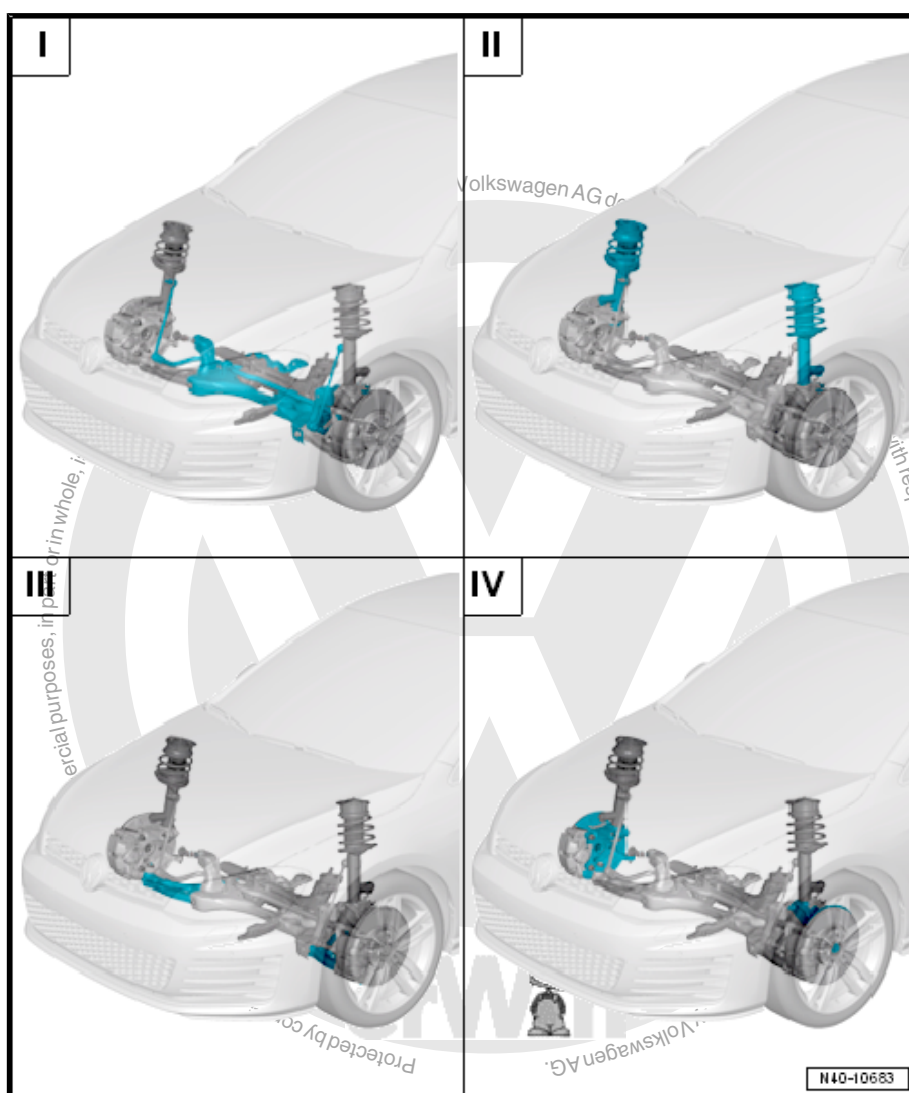
⇒ [“3 Suspension Strut and Upper Control Arm”, page 66](#)

III - Refer to

⇒ [“4 Lower Control Arm and Ball Joint”, page 76](#)

IV - Refer to

⇒ [“5 Wheel Bearing”, page 91](#)





2 Subframe

⇒ ["2.1 Overview - Subframe", page 16](#)

⇒ ["2.2 Subframe without Steering Gear, Removing and Installing", page 17](#)

⇒ ["2.3 Subframe with Steering Gear, Removing and Installing", page 24](#)

⇒ ["2.4 Subframe, Servicing", page 45](#)

⇒ ["2.5 Stabilizer Bar, Removing and Installing", page 51](#)

⇒ ["2.6 Coupling Rod, Removing and Installing", page 55](#)

⇒ ["2.7 Thread in Longitudinal Member, Servicing", page 56](#)

⇒ ["2.8 Subframe, Securing", page 56](#)

⇒ ["2.9 Subframe, Lowering", page 59](#)

2.1 Overview - Subframe

1 - Stabilizer Bar with Rubber Bushings

- ❑ Removing and installing. Refer to
⇒ ["2.5 Stabilizer Bar, Removing and Installing", page 51](#) .

2 - Nut

- ❑ 65 Nm
- ❑ Replace after removing
- ❑ Counterhold at socket head of joint bolt when tightening

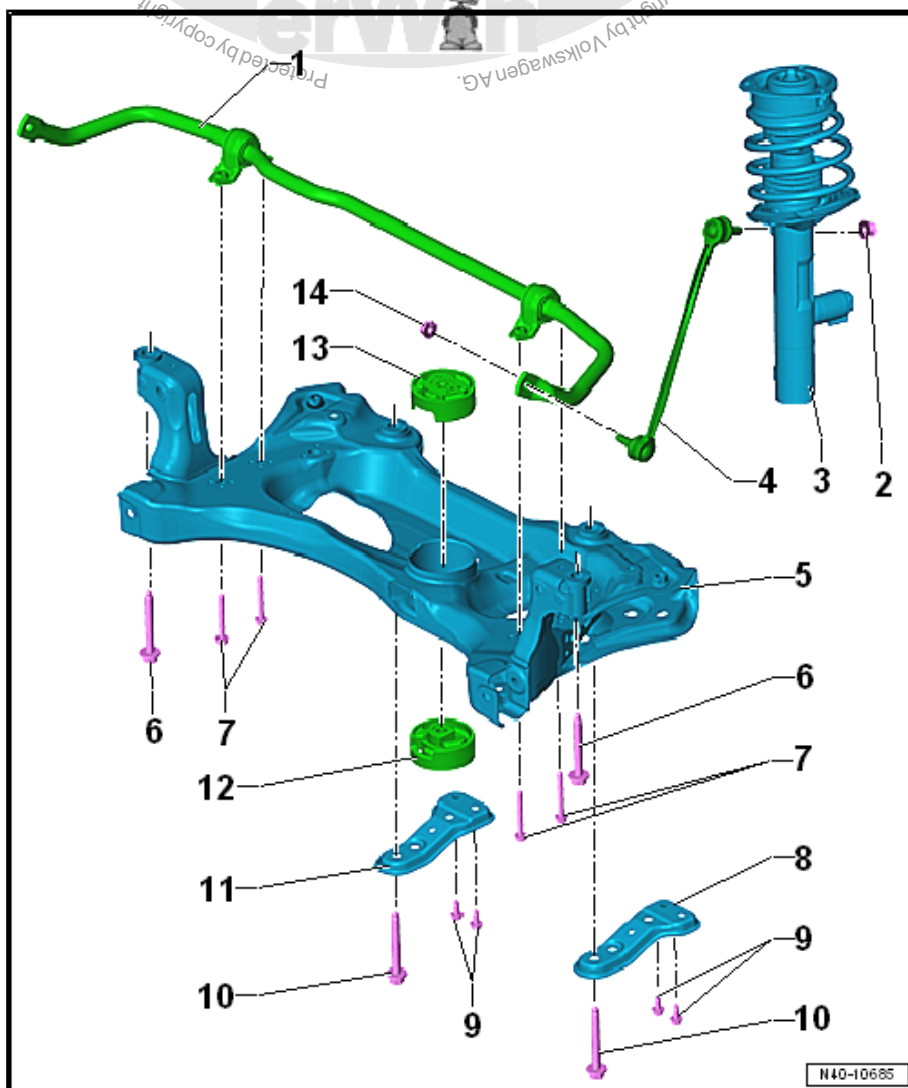
3 - Suspension Strut

4 - Coupling Rod

- ❑ Removing and installing. Refer to
⇒ ["2.6 Coupling Rod, Removing and Installing", page 55](#) .

5 - Subframe

- ❑ Securing. Refer to
⇒ ["2.8 Subframe, Securing", page 56](#) .
- ❑ Lowering. Refer to
⇒ ["2.9 Subframe, Lowering", page 59](#) .
- ❑ Removing and Installing, without Steering Gear. Refer to
⇒ ["2.2 Subframe without Steering Gear, Removing and Installing", page 17](#) .
- ❑ Removing and Installing, with Steering Gear. Refer to
⇒ ["2.3 Subframe with Steering Gear, Removing and Installing", page 24](#) .





6 - Bolt

- ☐ 70 Nm +180°
- ☐ Replace after removing

7 - Bolt

- ☐ 20 Nm +180°
- ☐ Replace after removing

8 - Left Support

9 - Bolt

- ☐ 50 Nm +90°
- ☐ Replace after removing

10 - Bolt

- ☐ 70 Nm +180°
- ☐ Replace after removing

11 - Right Support

12 - Lower Bonded Rubber Bushing for Pendulum Support

- ☐ Replacing. Refer to ⇒ ["2.4 Subframe, Servicing", page 45](#)

13 - Upper Bonded Rubber Bushing for Pendulum Support

- ☐ Replacing. Refer to ⇒ ["2.4 Subframe, Servicing", page 45](#)

14 - Nut

- ☐ 65 Nm
- ☐ Replace after removing
- ☐ Counterhold at socket head of joint bolt when tightening

2.2 Subframe without Steering Gear, Removing and Installing

⇒ ["2.2.1 Subframe without Steering Gear, Removing and Installing, Except e-Golf", page 17](#)

⇒ ["2.2.2 Subframe without Steering Gear, Removing and Installing, e-Golf", page 21](#)

2.2.1 Subframe without Steering Gear, Removing and Installing, Except e-Golf

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Engine and Gearbox Jack - VAS6931-



Removing



Note

Subframe is removed together with control arms.

Only Golf GTE

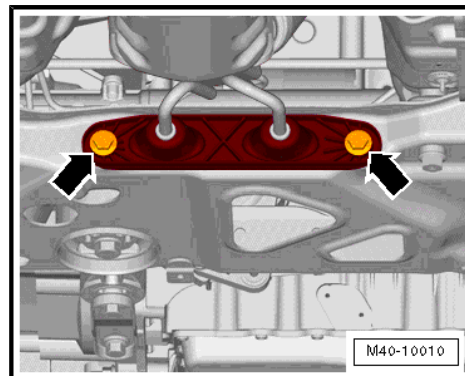
- De-energize the high-voltage system. Refer to ⇒ Rep. Gr. 93 ; High Voltage System, De-Energizing .

Continuation for All Vehicles

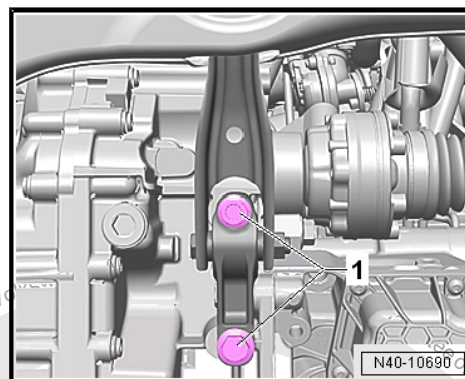
- Loosen the wheel bolts.



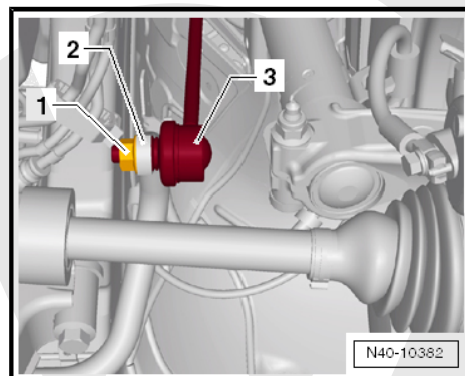
- Raise the vehicle.
- Remove the wheels.
- Remove the lower noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Remove the exhaust system bracket from the subframe -arrows-.



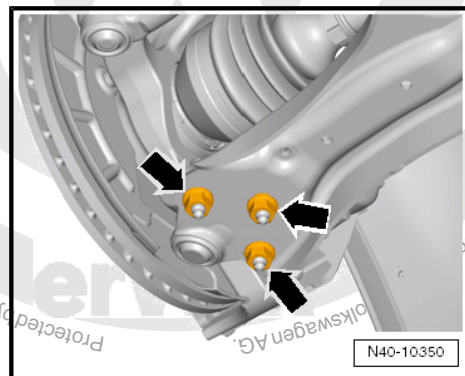
- Remove the bolts -1- for the pendulum support.



- Remove the left and right nut -1- from the coupling rod -3-.
- Remove the coupling rod -3- from the stabilizer bar -2- on the left and right sides.



- Remove the nuts -arrows- on the left and right side of the vehicle.

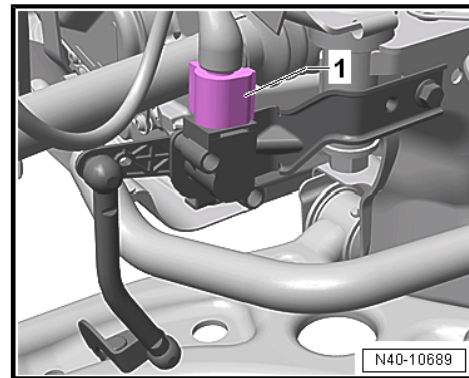




Vehicles with Level Control System Sensor

- Disconnect the connector -1- from the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289- .

Continuation for All Vehicles

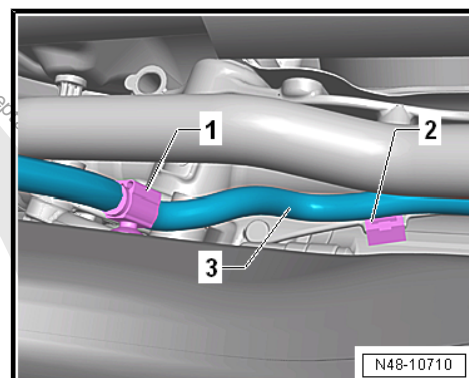


- Remove the clips -1 and 2- for the wiring harness -3- from the subframe and the steering gear.

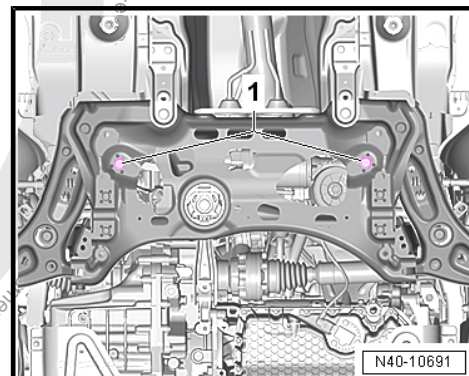
Only Golf GTE

Unclip the high-voltage cable from the subframe.

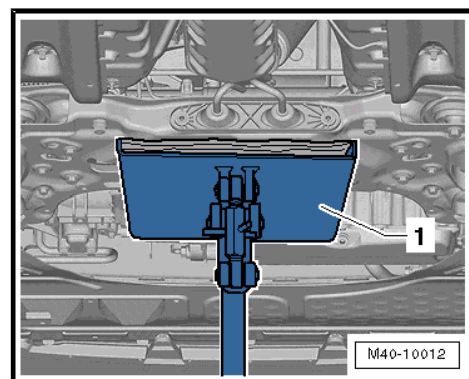
Continuation for All Vehicles



- Remove the steering gear bolts -1-.
- Pry the steering gear out of the subframe alignment sleeves.

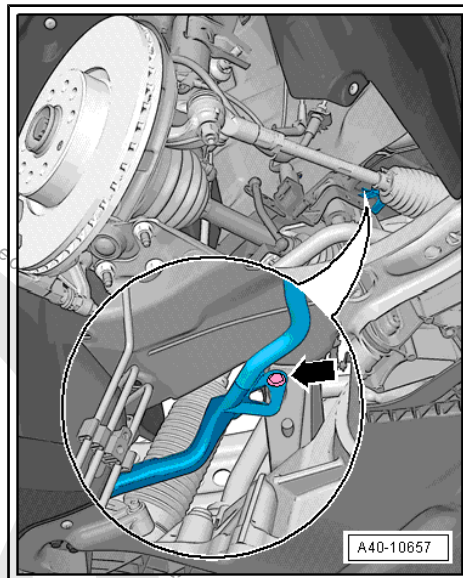


- Place the Engine and Gearbox Jack - VAS6931- -1- under the subframe.
- Secure the subframe (refer to ["2.8 Subframe, Securing", page 56](#)) and lower it approximately 10 cm.





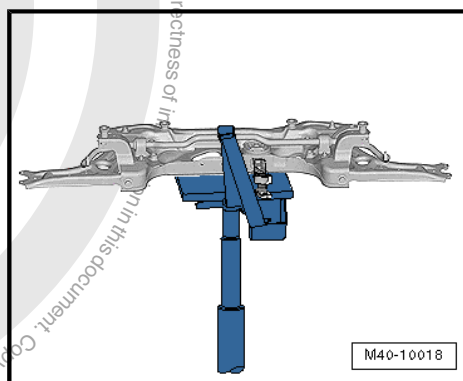
- Remove the expanding clip -arrow-.
- Lower the subframe using the Engine and Gearbox Jack - VAS6931- .



- Secure the subframe on the Engine and Gearbox Jack - VAS6931- .
- Secure the steering gear on the body.

Installing

Install in reverse order of removal and note the following:





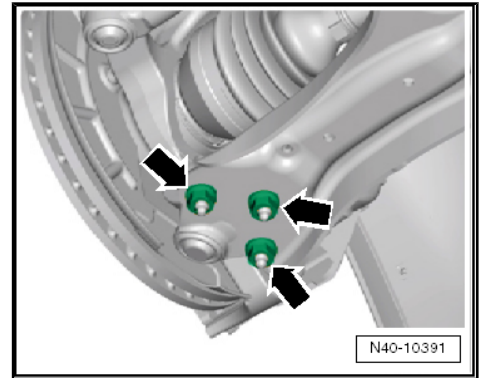
- Tighten nuts -arrows-.



Note

*Tighten the nuts -arrows- in curb weight position. Refer to
⇒ [“2.8.1 Wheel Bearing in Curb Weight, Lifting Vehicles with Coil Spring, Front Axle”, page 5](#).*

- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .



Tightening Specifications

- ◆ Refer to ⇒ [“2.1 Overview - Subframe”, page 16](#)
- ◆ Refer to ⇒ [“3.1 Overview - Steering Gear”, page 419](#)
- ◆ Pendulum support bolts. Refer to ⇒ Rep. Gr. 10 ; Subframe Mount; Overview - Subframe Mount .
- ◆ Noise insulation bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- ◆ Exhaust system to subframe. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .
- ◆ Refer to
⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)

If the steering wheel is still crooked after using the Subframe Alignment Assembly Tool Kit- Locating Pins - T10486/1- then an axle alignment is necessary. In this case the record it in the vehicles axle alignment log.

2.2.2 Subframe without Steering Gear, Removing and Installing, e-Golf

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Engine and Gearbox Jack - VAS6931-

Removing



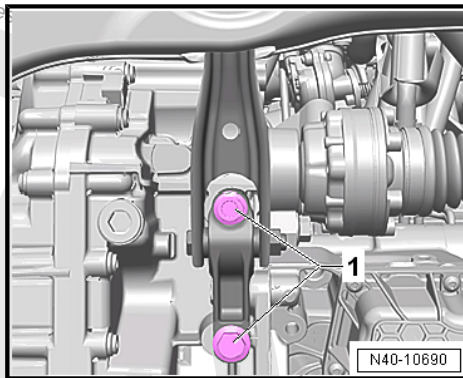
Note

Subframe is removed together with control arms.

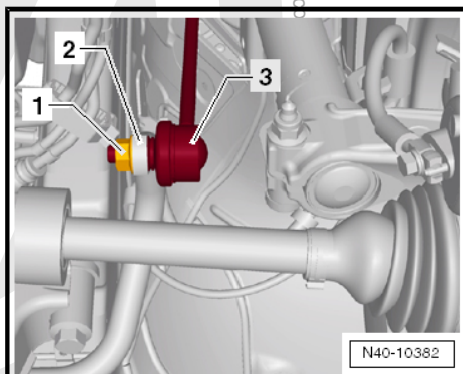
- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheels.
- Remove the lower noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Remove the battery impact guard. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Overview - Underbody Panels .



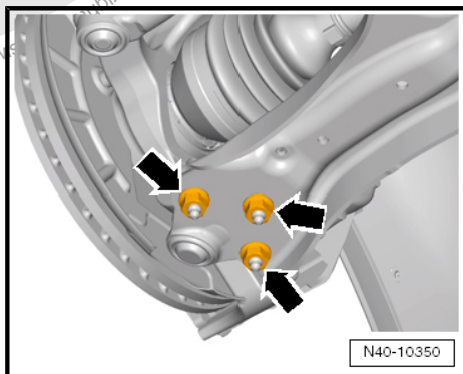
- Remove the bolts -1- for the pendulum support.



- Remove the left and right nut -1- from the coupling rod -3-.
- Remove the coupling rod -3- from the stabilizer bar -2- on the left and right sides.



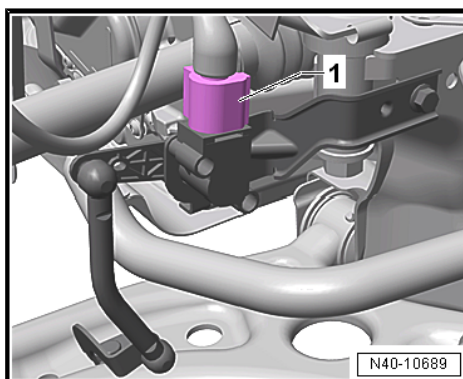
- Remove the nuts -arrows- on the left and right side of the vehicle.



Vehicles with Level Control System Sensor

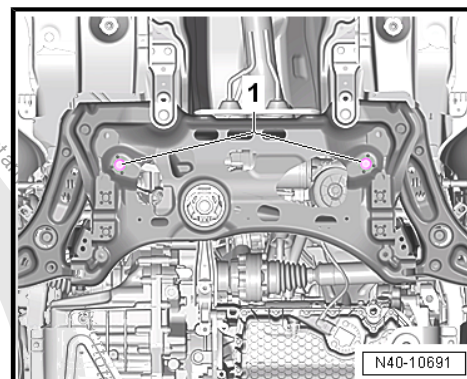
- Disconnect the connector -1- from the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289- .

Continuation for All Vehicles

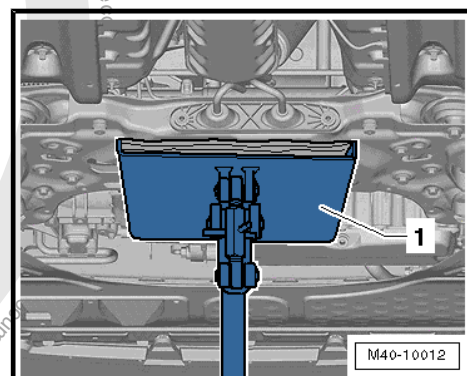




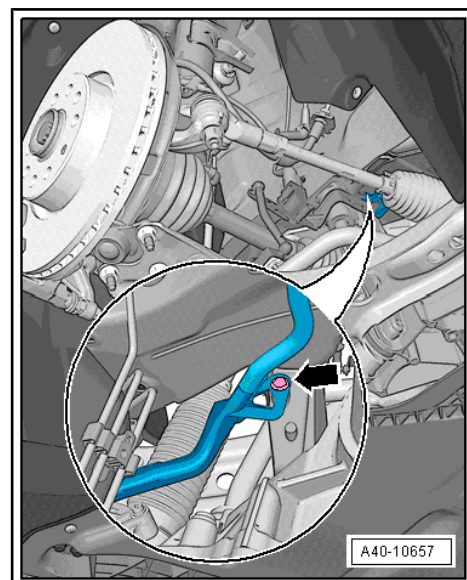
- Remove the bolts -1- for the steering gear.
- Pry the steering gear out of the subframe alignment sleeves.



- Place the Engine and Gearbox Jack - VAS6931- -1- under the subframe.
- Secure the subframe (refer to ["2.8 Subframe, Securing", page 56](#)) and lower it approximately 10 cm.



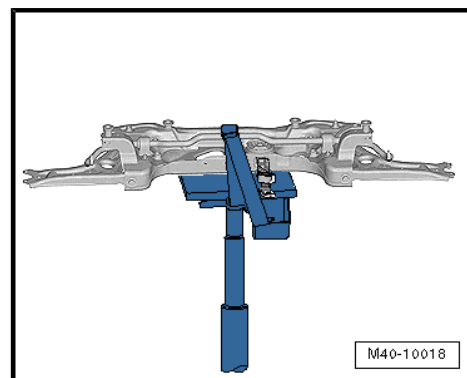
- Remove the expanding clip -arrow-.
- Lower the subframe using the Engine and Gearbox Jack - VAS6931- .



- Secure the subframe on the Engine and Gearbox Jack - VAS6931- .
- Secure the steering gear on the body.

Installing

Install in reverse order of removal and note the following:





- Tighten nuts -arrows-.



Note

*Tighten the nuts -arrows- in curb weight position. Refer to
⇒ [“2.8.1 Wheel Bearing in Curb Weight, Lifting Vehicles with Coil Spring, Front Axle”](#), page 5.*

- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .

Tightening Specifications

- ◆ Refer to ⇒ [“2.1 Overview - Subframe”](#), page 16
- ◆ Refer to ⇒ [“3.1 Overview - Steering Gear”](#), page 419
- ◆ Pendulum support bolts. Refer to ⇒ Rep. Gr. 10 ; Subframe Mount; Overview - Subframe Mount .
- ◆ Noise insulation bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- ◆ Battery impact guard bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Overview - Underbody Panels .
- ◆ Refer to
⇒ [“1.4 Wheel Bolt Tightening Specifications”](#), page 340

If the steering wheel is still crooked after using the Subframe Alignment Assembly Tool Kit- Locating Pins - T10486/1- then an axle alignment is necessary. In this case the record it in the vehicles axle alignment log.

2.3 Subframe with Steering Gear, Removing and Installing

⇒ [“2.3.1 Subframe with Steering Gear, Removing and Installing, except e-Golf”](#), page 24

⇒ [“2.3.2 Subframe with Steering Gear, Removing and Installing, e-Golf”](#), page 29

2.3.1 Subframe with Steering Gear, Removing and Installing, except e-Golf

Special tools and workshop equipment required

- ◆ Puller - Ball Joint - T10187-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

Removing

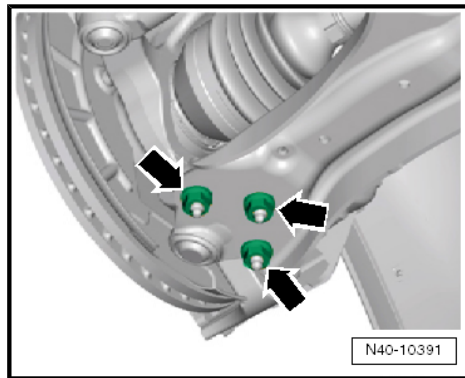
- Turn the steering wheel in the straight position and remove the ignition key so that the steering wheel lock engages.

Vehicles with “Keyless Access” Keyless Locking and Starting System

- Switch the ignition off and open the driver door so the steering wheel lock engages.

Only Golf GTE

- De-energize the high-voltage system. Refer to ⇒ Rep. Gr. 93 ; High Voltage System, De-Energizing .



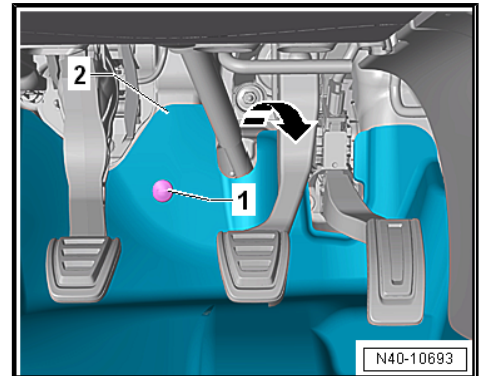


Continuation for All Vehicles

- Disconnect the battery. Refer to ➤ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .

Continuation for All Vehicles

- Remove the bolts -1- and fold the footwell trim panel -2- in the direction of -arrow- into the vehicle interior.



- Remove the bolt -1- from the universal joint -2-. Then remove the universal joint in direction of -arrow-.

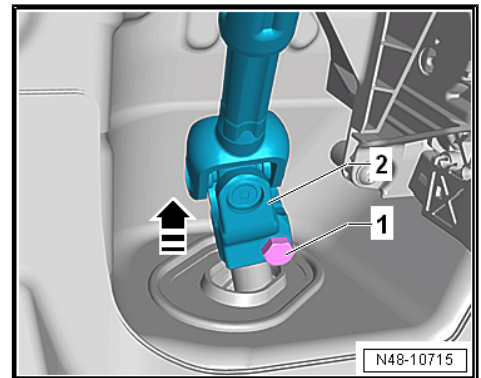


Caution

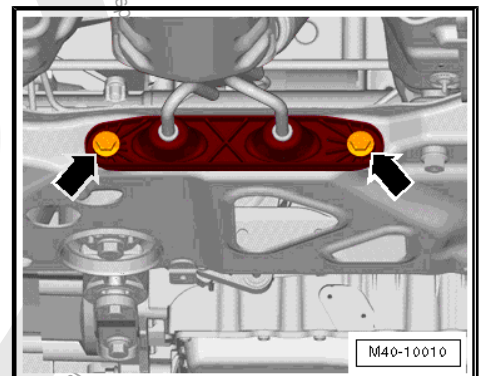
If the universal joint is separated from the steering gear, the following work cannot be performed:

- ◆ *Connect the battery.*
- ◆ *Switch the ignition on.*
- ◆ *Turn the steering gear.*
- ◆ *Turn the steering column.*

These points must be observed since performing these actions could cause irreparable damage.

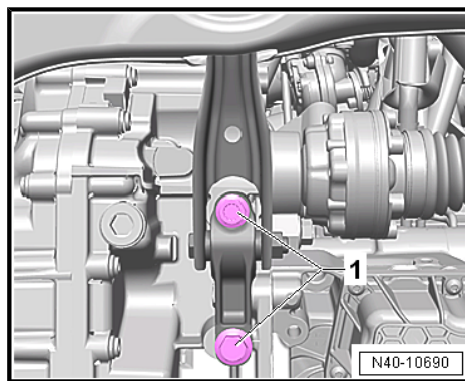


- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheels.
- Remove the lower noise insulation. Refer to ➤ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Remove the exhaust system bracket from the subframe -arrows-.

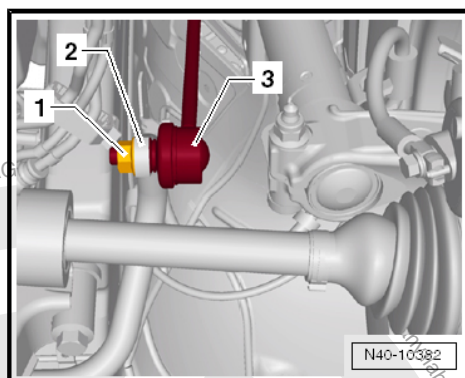




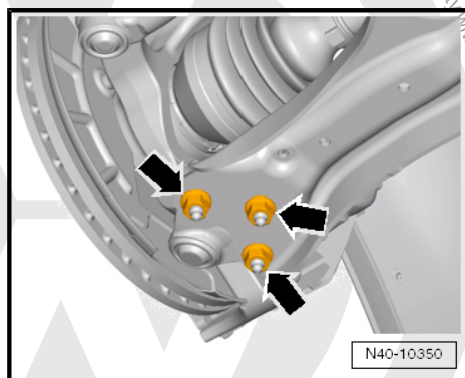
- Remove the bolts -1- for the pendulum support.



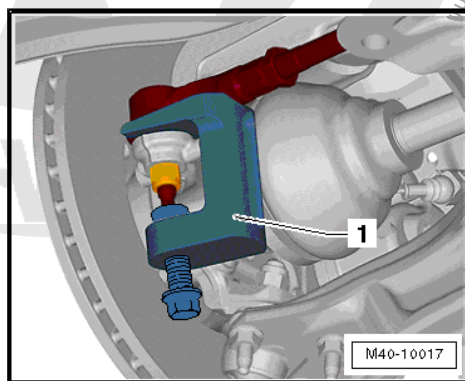
- Remove the left and right nut -1- from the coupling rod -3-.
- Remove the coupling rod -3- from the stabilizer bar -2- on the left and right sides.



- Remove the nuts -arrows- on the left and right side of the vehicle.
- Remove the control arm from the ball joint.
- Loosen the nut from the tie rod end, but do not unscrew yet.



- Using the Puller - Ball Joint - T10187- 1-, press the tie rod end off of the wheel bearing housing and remove the nut.



Caution

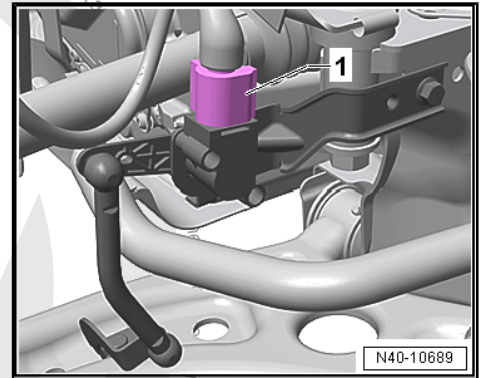
To protect the thread, screw the nut on the pin a few turns.

Vehicles with Level Control System Sensor

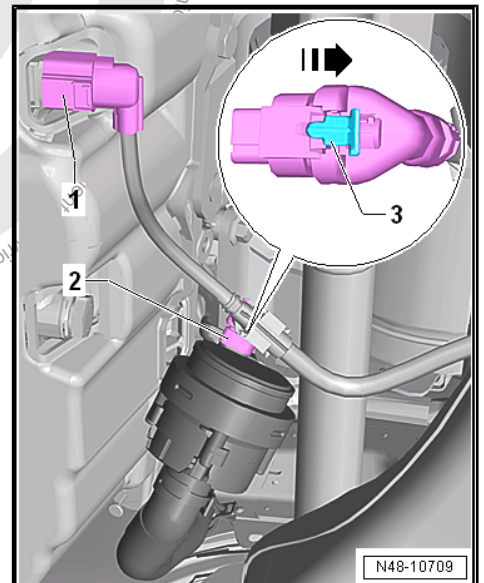


- Disconnect the connector -1- from the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289- .

Continuation for All Vehicles



- Disconnect the connector -1- for the Oil Level Thermal Sensor - G266- .
- If equipped, disconnect the connector -2- from the After-Run Coolant Pump - V51- . To do so, open the catch -3- in the direction of -arrow- and release the connector.

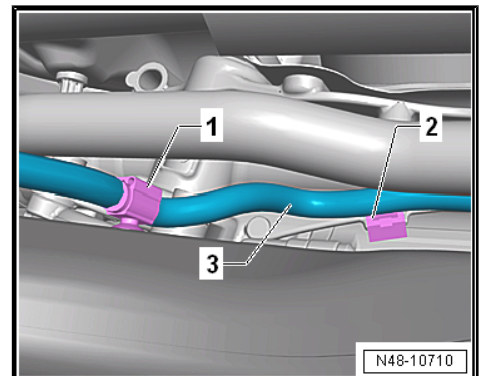


- Remove the clips -1 and 2- for the wiring harness -3- from the subframe and the steering gear.

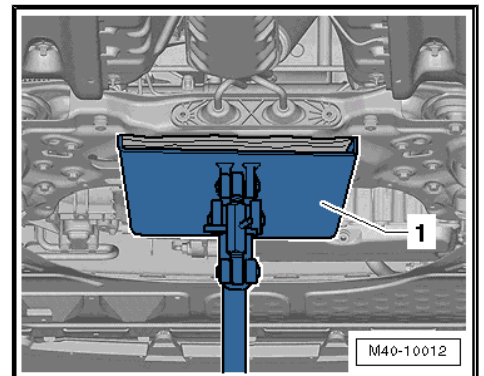
Only Golf GTE

Unclip the high-voltage cable from the subframe.

Continuation for All Vehicles



- Place the Engine and Gearbox Jack - VAS6931- -1- under the subframe.
- Secure the subframe (refer to ["2.8 Subframe, Securing", page 56](#)) and lower it approximately 10 cm.





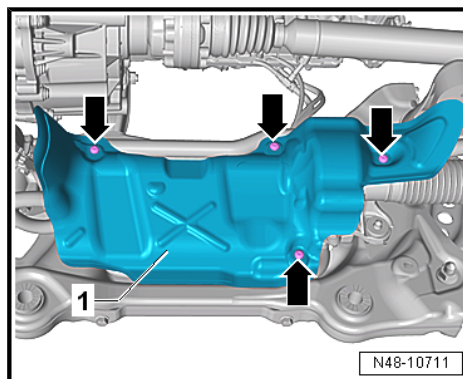
- Remove the bolts -arrows- and remove the heat shield -1- from the steering gear.



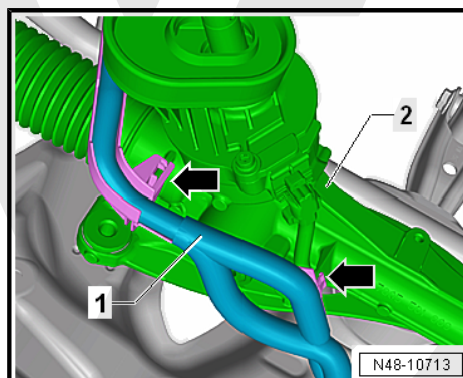
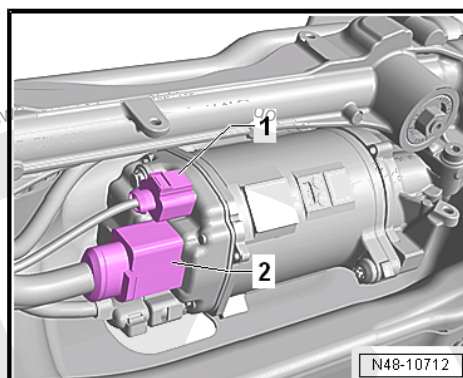
Note

Different heat shields -1- are installed depending on the engine. On some engine versions, the connectors for the steering gear are accessible without having to remove the heat shield.

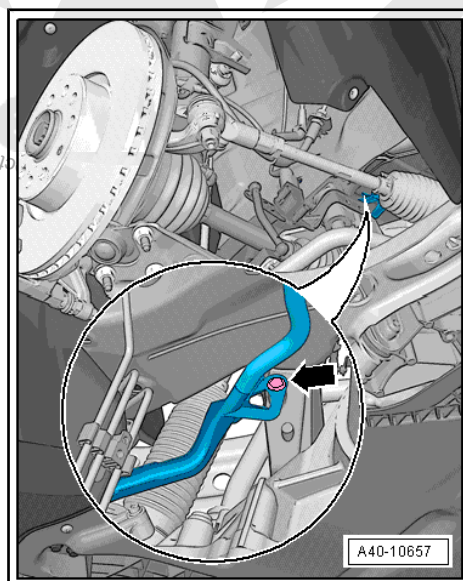
- Disconnect the connectors -1 and 2- from the steering gear.



- Unclip the wiring harness -1- from the steering gear -2- -arrows-.



- Remove the expanding clip -arrow-.
- Lower the subframe using the Engine and Gearbox Jack -VAS6931- .





- Secure the subframe to the Engine and Gearbox Jack - VAS6931- with the accompanying strap.

Installing

Install in reverse order of removal and note the following:



Note

- ◆ Coat the seal on the steering gear with lubricant such as soft soap before installing the steering gear.
- ◆ After attaching steering gear to the universal joint, make sure that seal on steering gear is positioned on the mounting plate without and kinks and is sealed correctly. The opening to the footwell must be sealed correctly. Ingress of water and/or noises may be the result.
- ◆ Make sure sealing surfaces are clean.

- Tighten nuts -arrows-.



Note

Tighten the nuts -arrows- in curb weight position. Refer to ⇒ [“2.8.1 Wheel Bearing in Curb Weight, Lifting Vehicles with Coil Spring, Front Axle”, page 5](#).

- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester.

Tightening Specifications

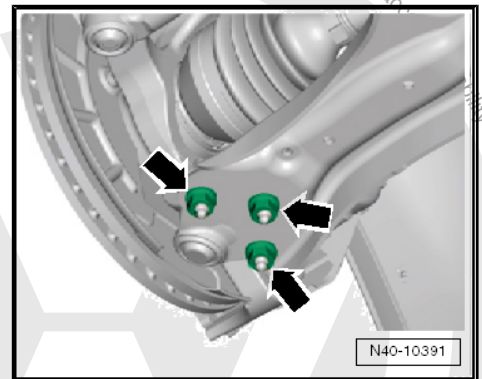
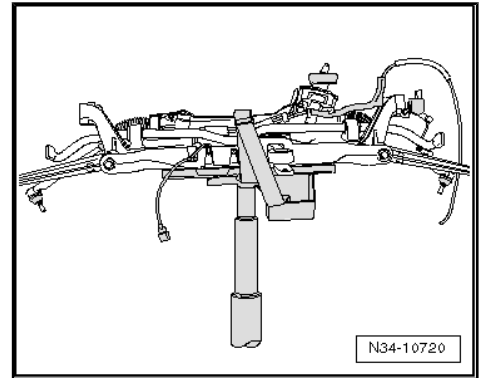
- ◆ Refer to ⇒ [“2.1 Overview - Subframe”, page 16](#)
- ◆ Refer to ⇒ [“5.1 Overview - Wheel Bearing”, page 91](#)
- ◆ Refer to ⇒ [“3.1 Overview - Steering Gear”, page 419](#)
- ◆ Refer to ⇒ [“2.1 Overview - Steering Column”, page 398](#)
- ◆ Pendulum support bolts. Refer to ⇒ Rep. Gr. 10 ; Subframe Mount; Overview - Subframe Mount.
- ◆ Noise insulation bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation.
- ◆ Double clamp for exhaust pipes. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler.
- ◆ Refer to ⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)

If the steering wheel is still crooked after using the Subframe Alignment Assembly Tool Kit- Locating Pins - T10486/1- then an axle alignment is necessary. In this case the record it in the vehicles axle alignment log.

2.3.2 Subframe with Steering Gear, Removing and Installing, e-Golf

Special tools and workshop equipment required

- ◆ Puller - Ball Joint - T10187-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-





Removing

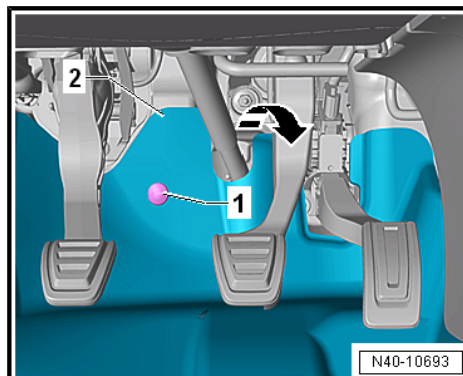
- Turn the steering wheel in the straight position and remove the ignition key so that the steering wheel lock engages.

Vehicles with “Keyless Access” Keyless Locking and Starting System

- Switch the ignition off and open the driver door so the steering wheel lock engages.
- Disconnect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .

Continuation for All Vehicles

- Remove the bolts -1- and fold the footwell trim panel -2- in the direction of -arrow- into the vehicle interior.



- Remove the bolt -1- from the universal joint -2-. Then remove the universal joint in direction of -arrow-.

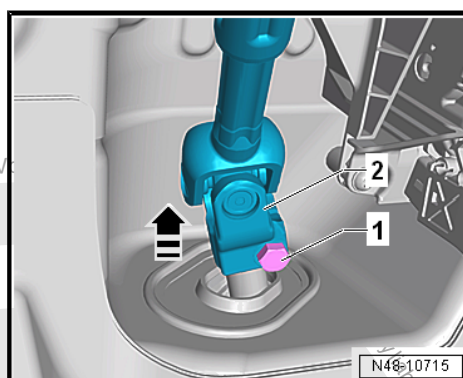


Caution

If the universal joint is separated from the steering gear, the following work cannot be performed:

- ◆ *Connect the battery.*
- ◆ *Switch the ignition on.*
- ◆ *Turn the steering gear.*
- ◆ *Turn the steering column.*

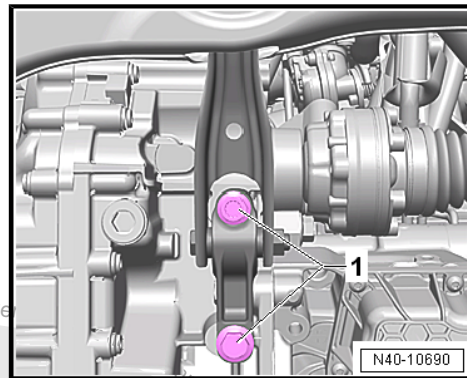
These points must be observed since performing these actions could cause irreparable damage.



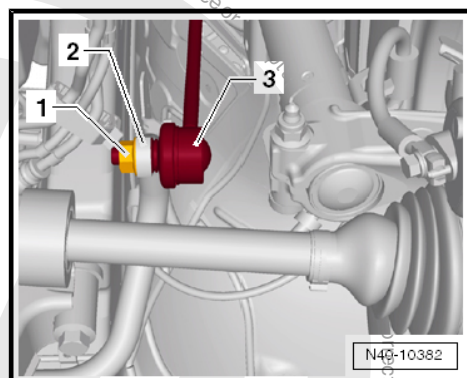
- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheels.
- Remove the lower noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Remove the battery impact guard. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Overview - Underbody Panels .



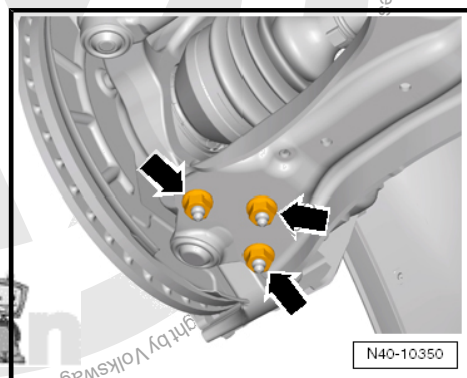
- Remove the bolts -1- for the pendulum support.



- Remove the left and right nut -1- from the coupling rod -3-.
- Remove the coupling rod -3- from the stabilizer bar -2- on the left and right sides.



- Remove the nuts -arrows- on the left and right side of the vehicle.
- Remove the control arm from the ball joint.
- Loosen the nut from the tie rod end, but do not unscrew yet.

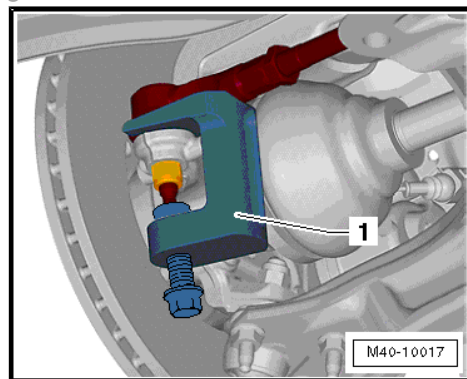


- Using the Puller - Ball Joint - T10187 - -1-, press the tie rod end off of the wheel bearing housing and remove the nut.



Caution

To protect the thread, screw the nut on the pin a few turns.





Vehicles with Level Control System Sensor

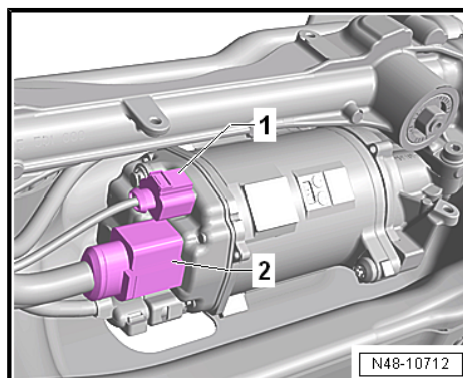
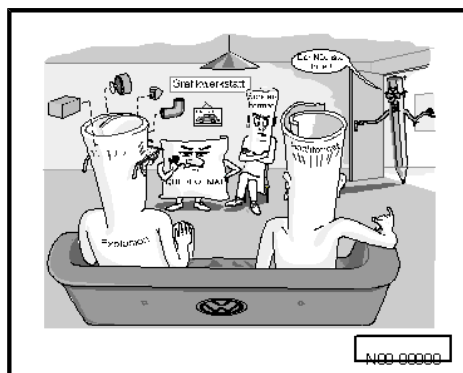
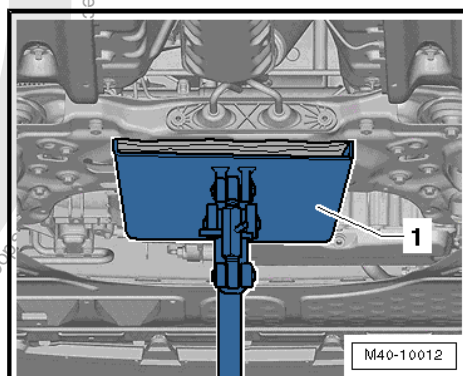
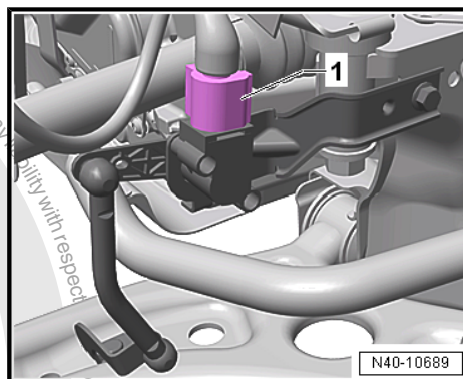
- Disconnect the connector -1- from the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289-.

Continuation for All Vehicles

- Place the Engine and Gearbox Jack - VAS6931- -1- under the subframe.
- Secure the subframe (refer to ["2.8 Subframe, Securing", page 56](#)) and lower it approximately 10 cm.

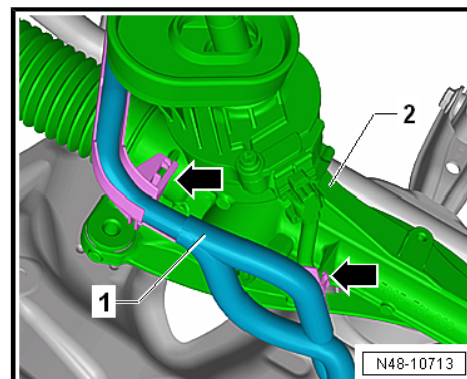
- Remove the bolts -arrows- and remove the bracket -1- from the steering gear.

- Disconnect the connectors -1 and 2- from the steering gear.

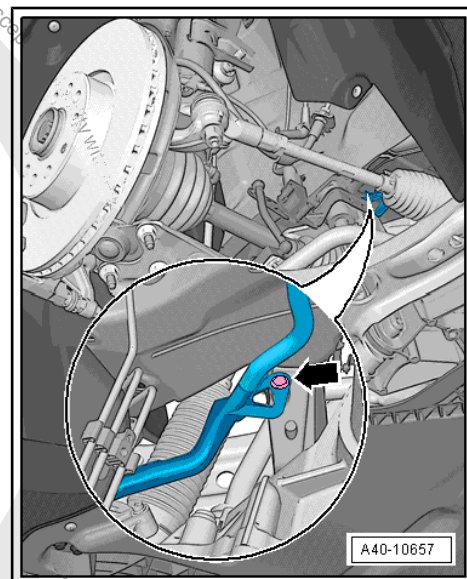




- Unclip the wiring harness -1- from the steering gear -2-
-arrows-.



- Remove the expanding clip -arrow-.
- Lower the subframe using the Engine and Gearbox Jack -
VAS6931- .



- Secure the subframe to the Engine and Gearbox Jack -
VAS6931- with the accompanying strap.

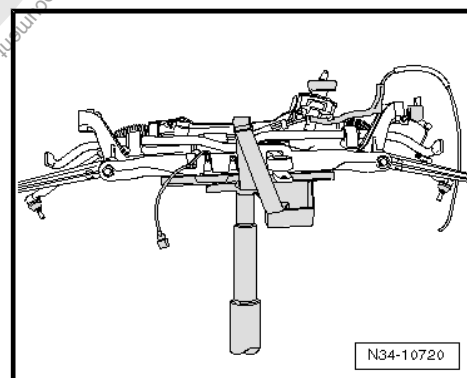
Installing

Install in reverse order of removal and note the following:



Note

- ◆ Coat the seal on the steering gear with lubricant such as soft soap before installing the steering gear.
- ◆ After attaching steering gear to the universal joint, make sure that seal on steering gear is positioned on the mounting plate without and kinks and is sealed correctly. The opening to the footwell must be sealed correctly. Ingress of water and/or noises may be the result.
- ◆ Make sure sealing surfaces are clean.





- Tighten nuts -arrows-.



Note

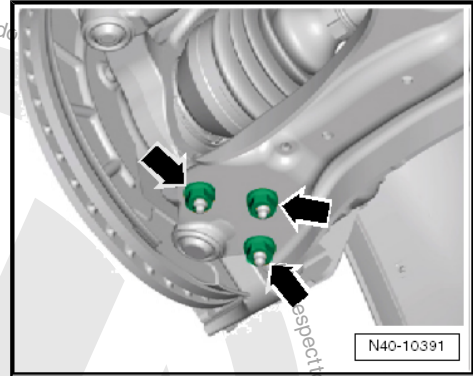
*Tighten the nuts -arrows- in curb weight position. Refer to
⇒ [“2.8.1 Wheel Bearing in Curb Weight, Lifting Vehicles with Coil Spring, Front Axle”](#), page 5.*

- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .

Tightening Specifications

- ◆ Refer to ⇒ [“2.1 Overview - Subframe”](#), page 16
- ◆ Refer to ⇒ [“5.1 Overview - Wheel Bearing”](#), page 91
- ◆ Refer to ⇒ [“3.1 Overview - Steering Gear”](#), page 419
- ◆ Refer to ⇒ [“2.1 Overview - Steering Column”](#), page 398
- ◆ Pendulum support bolts. Refer to ⇒ Rep. Gr. 10 ; Subframe Mount; Overview - Subframe Mount .
- ◆ Noise insulation bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- ◆ Battery impact guard bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Overview - Underbody Panels
- ◆ Refer to
⇒ [“1.4 Wheel Bolt Tightening Specifications”](#), page 340

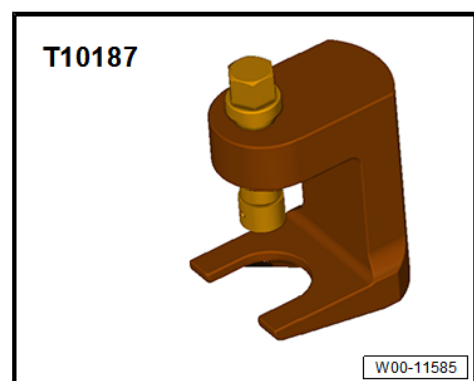
If the steering wheel is still crooked after using the Subframe Alignment Assembly Tool Kit- Locating Pins - T10486/1- then an axle alignment is necessary. In this case the record it in the vehicles axle alignment log.



2.3.3 Subframe with Steering Gear, Removing and Installing, RHD, except e-Golf

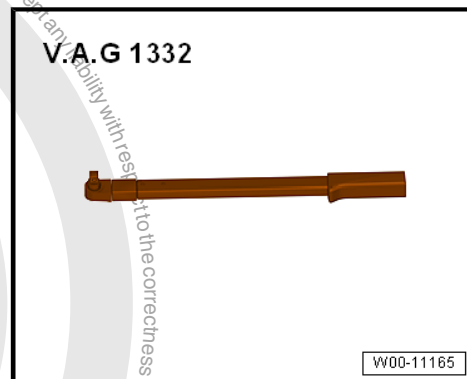
Special tools and workshop equipment required

- ◆ Puller - Ball Joint - T10187-





- ◆ Torque Wrench 1332 40-200Nm - VAG1332-



Removing

- Turn the steering wheel in the straight position and remove the ignition key so that the steering wheel lock engages.

Vehicles with "Keyless Access" keyless locking and starting system

- Switch the ignition off and open the driver door so the steering wheel lock engages.

Only Golf GTE

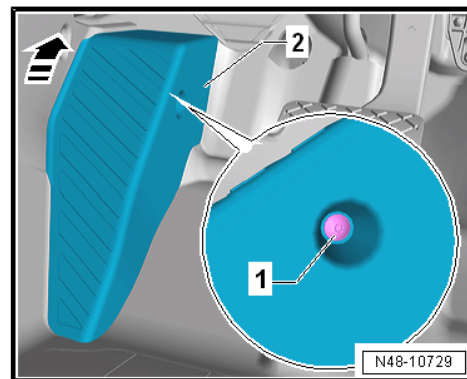
- De-energize the high-voltage system. Refer to ➤ Rep. Gr. 93 ; High Voltage System, De-Energizing .

Continuation for All Vehicles

- Disconnect the battery. Refer to ➤ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .

Continuation for All Vehicles

- Remove the bolt -1-.
- Slide the footrest -2- upward in the -direction of the arrow- and remove it.
- Fold back the carpet.





- Remove the bolt -1- from the universal joint -2-. Then remove the universal joint in -direction of arrow-.

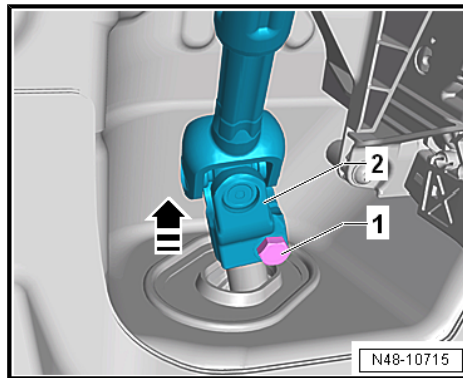


Caution

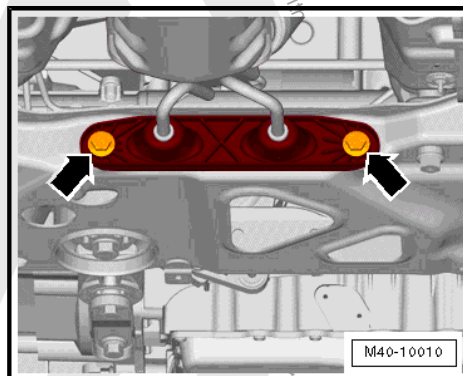
If the universal joint is separated from the steering gear, the following work cannot be performed:

- ◆ *Connect the battery.*
- ◆ *Switch the ignition on.*
- ◆ *Turn the steering gear.*
- ◆ *Turn the steering column.*

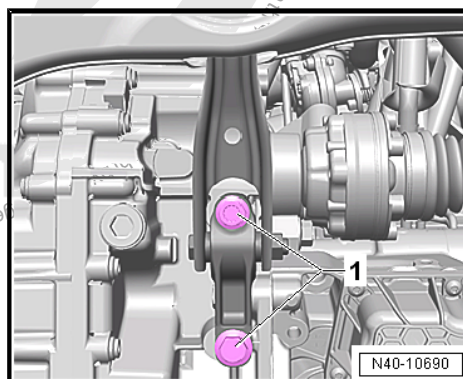
These points must be observed since performing these actions could cause irreparable damage.



- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheels.
- Remove the lower noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Remove the exhaust system bracket from the subframe -arrows-.

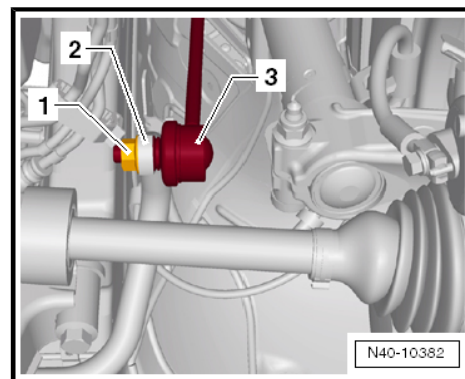


- Remove the bolts -1- for the pendulum support.

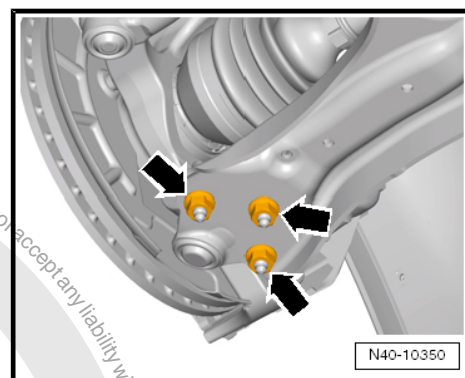




- Remove the left and right nut -1- from the coupling rod -3-.
- Remove the coupling rod -3- from the stabilizer bar -2- on the left and right sides.



- Remove the nuts -arrows- on the left and right side of the vehicle.
- Remove the control arm from the ball joint.
- Loosen the nut from the tie rod end, but do not unscrew yet.



- Using the Puller - Ball Joint - T10187- -1-, press the tie rod end off of the wheel bearing housing and remove the nut.



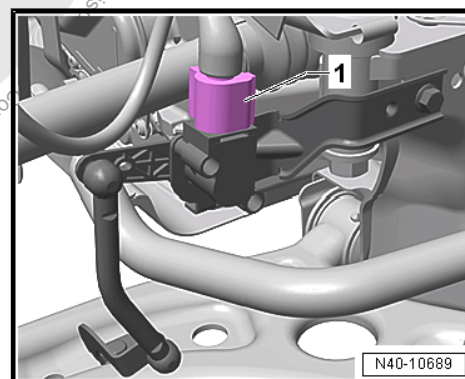
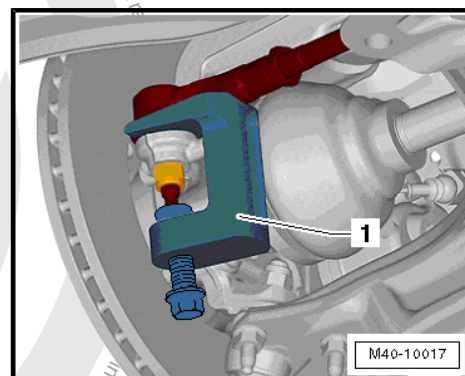
Caution

To protect the thread, screw the nut on the pin a few turns.

Vehicles with level control system sensor

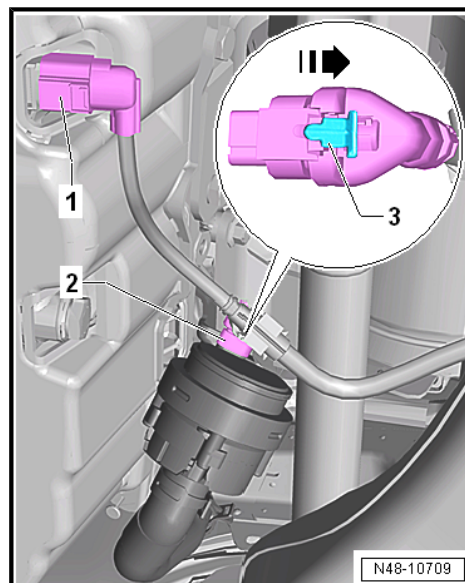
- Disconnect the connector -1- from the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289- .

Continuation for All Vehicles





- Disconnect the connector -1- for the Oil Level Thermal Sensor - G266- .
- If equipped, disconnect the connector -2- from the After-Run Coolant Pump - V51- . To do so, open the catch -3- in the -direction of the arrow- and release the connector.

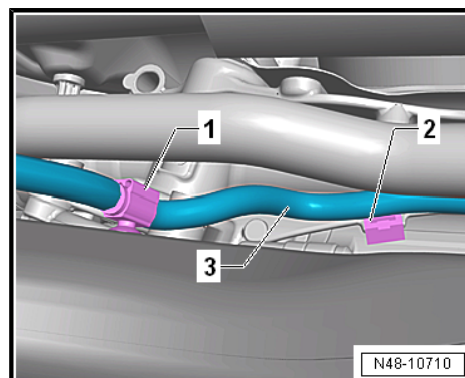


- Remove the clips -1- and -2- for the wiring harness -3- from the subframe and the steering gear.

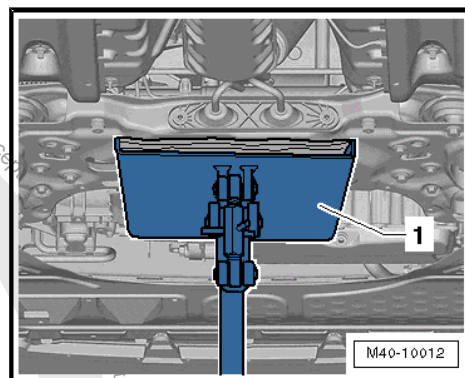
Only Golf GTE

Unclip the high-voltage cable from the subframe.

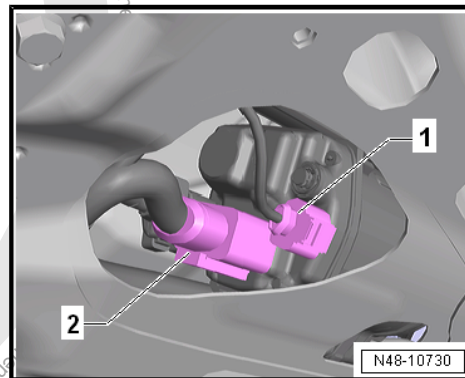
Continuation for All Vehicles



- Place the Engine and Gearbox Jack - VAS6931- -1- under the subframe.
- Secure the subframe (refer to [⇒ "2.8 Subframe, Securing", page 56](#)) and lower it approximately 10 cm.

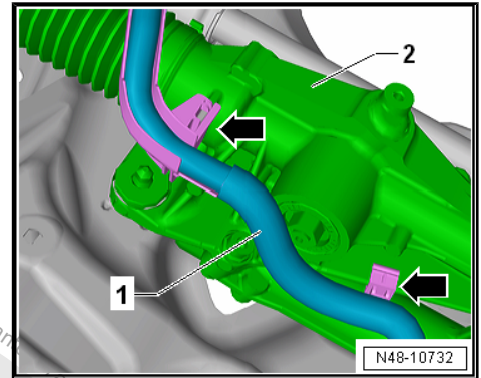


- Disconnect the connectors -1- and -2- from the steering gear.

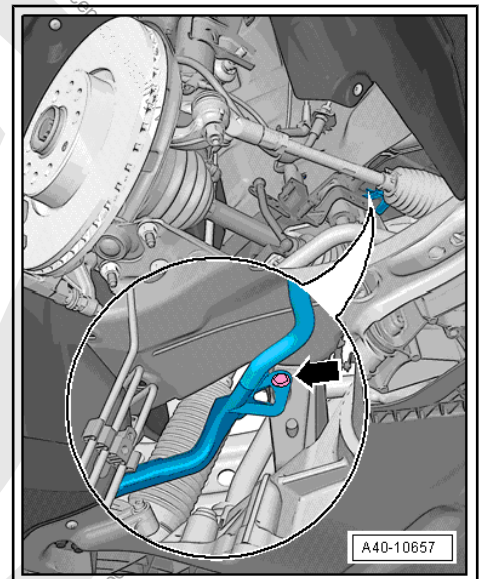




- Unclip the wiring harness -1- from the steering gear -2-
-arrows-.



- Remove the expanding clip -arrow-.
- Lower the subframe using the Engine and Gearbox Jack -
VAS6931-



- Secure the subframe to the Engine and Gearbox Jack -
VAS6931- with the accompanying strap.

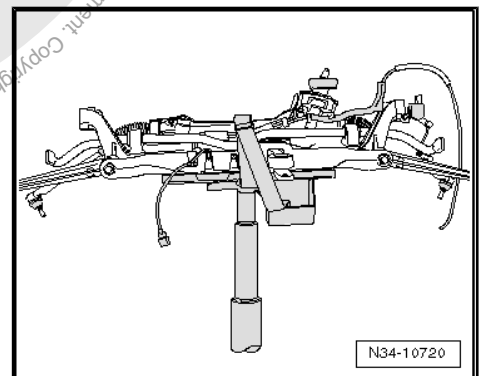
Installing

Install in reverse order of removal and note the following:



Note

- ◆ Coat the seal on the steering gear with lubricant such as soft soap before installing the steering gear.
- ◆ After attaching steering gear to the universal joint, make sure that seal on steering gear is positioned on the mounting plate without and kinks and is sealed correctly. The opening to the footwell must be sealed correctly. Ingress of water and/or noises may be the result.
- ◆ Make sure sealing surfaces are clean.





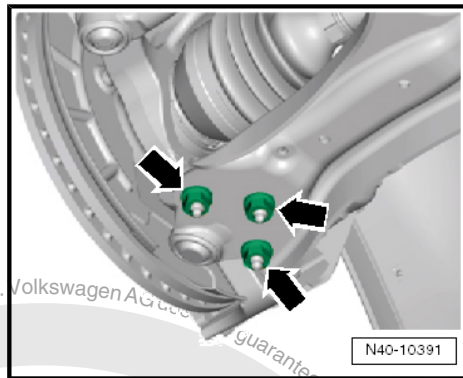
- Tighten nuts -arrows-.



Note

*Tighten the nuts -arrows- in curb weight position. Refer to
⇒ [“2.8.1 Wheel Bearing in Curb Weight, Lifting Vehicles with Coil Spring, Front Axle”](#), page 5.*

- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester.



Tightening Specifications

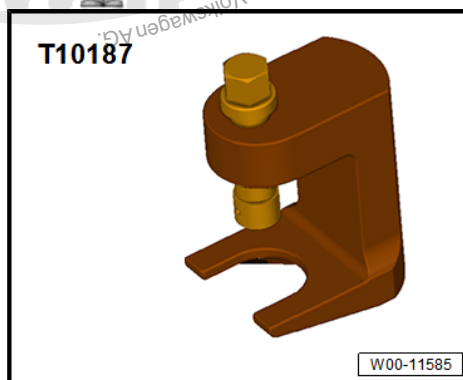
- ◆ Refer to ⇒ [“2.1 Overview - Subframe”](#), page 16
- ◆ Refer to ⇒ [“5.1 Overview - Wheel Bearing”](#), page 91
- ◆ Refer to ⇒ [“3.1 Overview - Steering Gear”](#), page 419
- ◆ Refer to ⇒ [“2.1 Overview - Steering Column”](#), page 398
- ◆ Pendulum support bolts. Refer to ⇒ Rep. Gr. 10 ; Subframe Mount; Overview - Subframe Mount .
- ◆ Noise insulation bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- ◆ Double clamp for exhaust pipes. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .
- ◆ Refer to
⇒ [“1.4 Wheel Bolt Tightening Specifications”](#), page 340

If the steering wheel is still crooked after using the Locating Pins - T10486/1- then an axle alignment is necessary. In this case the record it in the vehicles axle alignment log.

2.3.4 Subframe with Steering Gear, Removing and Installing, RHD, e-Golf

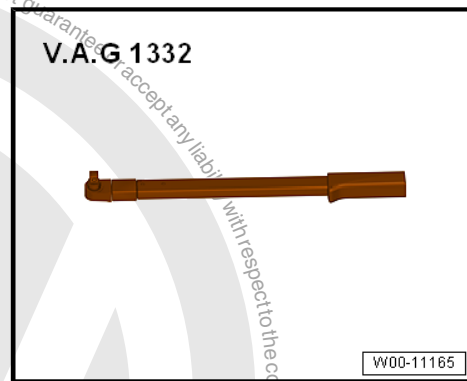
Special tools and workshop equipment required

- ◆ Puller - Ball Joint - T10187-





- ◆ Torque Wrench 1332 40-200Nm - VAG1332-



Removing

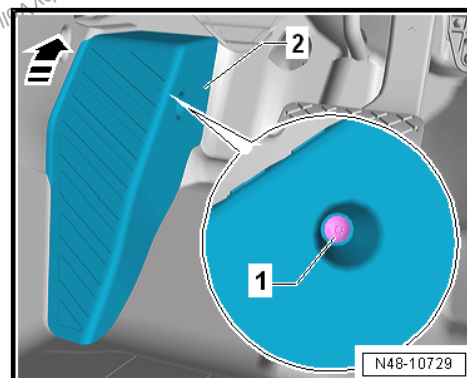
- Turn the steering wheel in the straight position and remove the ignition key so that the steering wheel lock engages.

Vehicles with "Keyless Access" keyless locking and starting system

- Switch the ignition off and open the driver door so the steering wheel lock engages.
- Disconnect the battery. Refer to ➤ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery; Disconnecting and Connecting

Continuation for All Vehicles

- Remove the bolt -1-.
- Slide the footrest -2- upward in the -direction of the arrow- and remove it.
- Fold back the carpet.





- Remove the bolt -1- from the universal joint -2-. Then remove the universal joint in -direction of arrow.

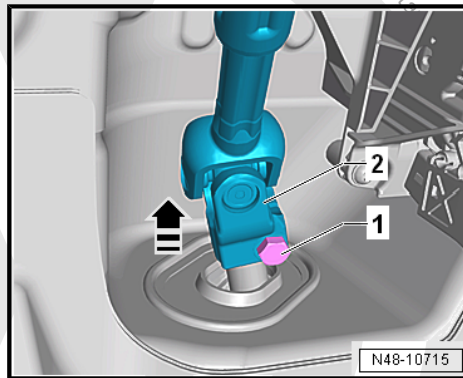


Caution

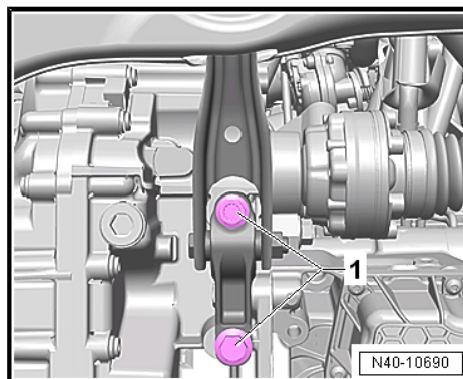
If the universal joint is separated from the steering gear, the following work cannot be performed:

- ◆ ***Connect the battery.***
- ◆ ***Switch the ignition on.***
- ◆ ***Turn the steering gear.***
- ◆ ***Turn the steering column.***

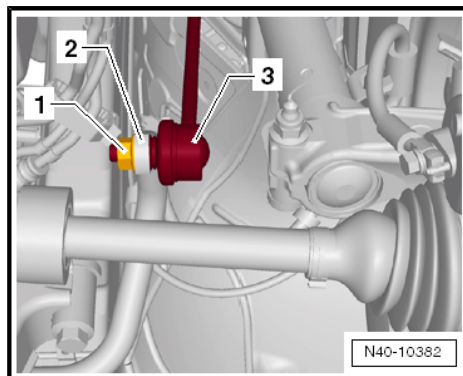
These points must be observed since performing these actions could cause irreparable damage.



- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheels.
- Remove the lower noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation.
- Remove the battery impact guard. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Overview - Underbody Panels .
- Remove the bolts -1- for the pendulum support.

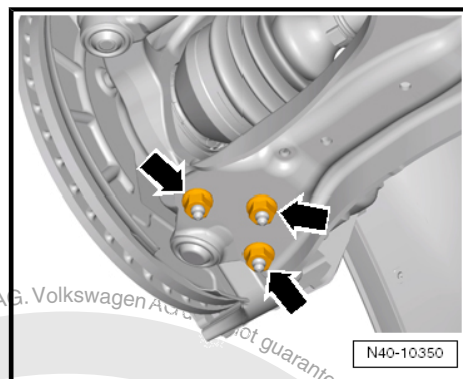


- Remove the left and right nut -1- from the coupling rod -3-.
- Remove the coupling rod -3- from the stabilizer bar -2- on the left and right sides.





- Remove the nuts -arrows- on the left and right side of the vehicle.
- Remove the control arm from the ball joint.
- Loosen the nut from the tie rod end, but do not unscrew yet.



- Using the Puller - Ball Joint - T10187- -1-, press the tie rod end off of the wheel bearing housing and remove the nut.

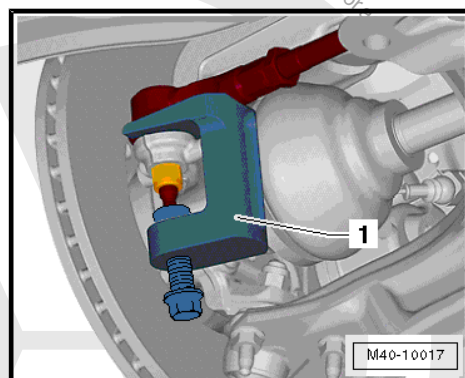


Caution

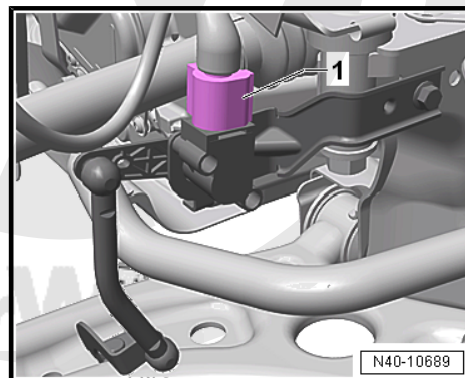
To protect the thread, screw the nut on the pin a few turns.

Vehicles with level control system sensor

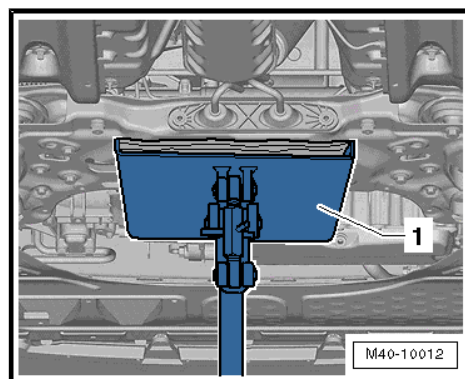
- Disconnect the connector -1- from the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289- .



Continuation for All Vehicles

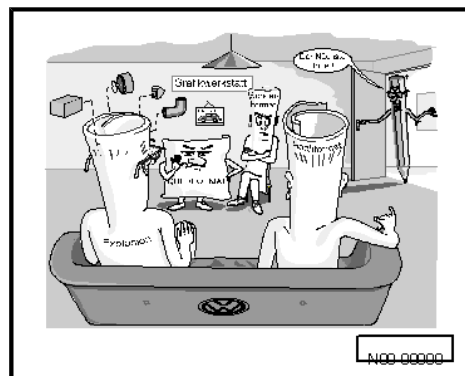


- Place the Engine and Gearbox Jack - VAS6931- -1- under the subframe.
- Secure the subframe (refer to ["2.8 Subframe, Securing", page 56](#)) and lower it approximately 10 cm.

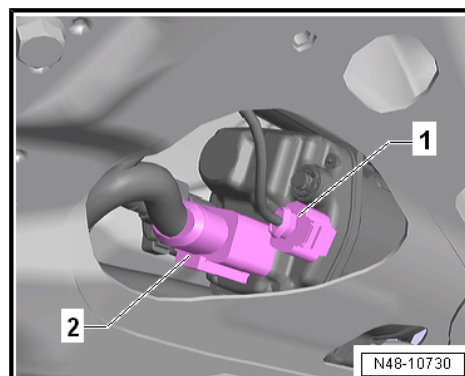




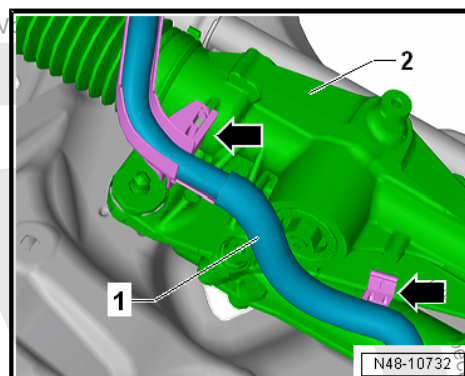
- Remove the bolts -arrows- and remove the bracket -1- from the steering gear.



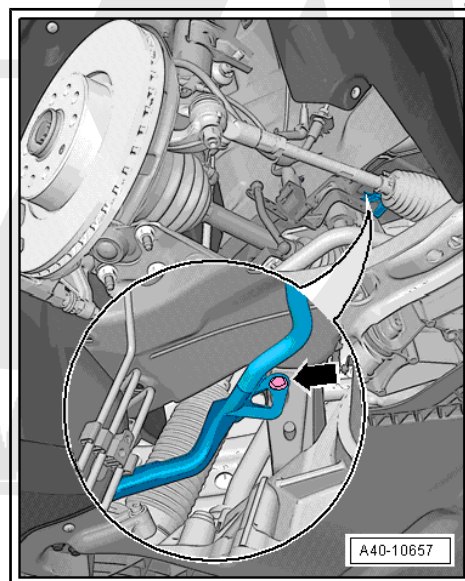
- Disconnect the connectors -1- and -2- from the steering gear.



- Unclip the wiring harness -1- from the steering gear -2- -arrows-.



- Remove the expanding clip -arrow-.
- Lower the subframe using the Engine and Gearbox Jack -VAS6931- .





- Secure the subframe to the Engine and Gearbox Jack - VAS6931- with the accompanying strap.

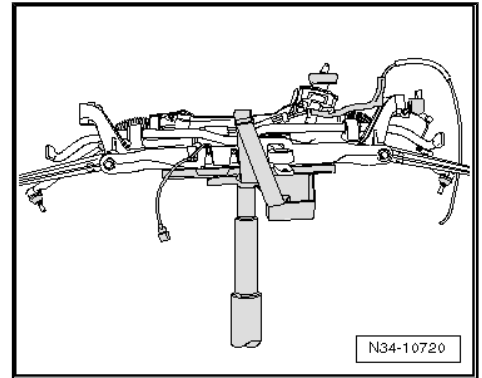
Installing

Install in reverse order of removal and note the following:



Note

- ◆ Coat the seal on the steering gear with lubricant such as soft soap before installing the steering gear.
- ◆ After attaching steering gear to the universal joint, make sure that seal on steering gear is positioned on the mounting plate without and kinks and is sealed correctly. The opening to the footwell must be sealed correctly. Ingress of water and/or noises may be the result.
- ◆ Make sure sealing surfaces are clean.



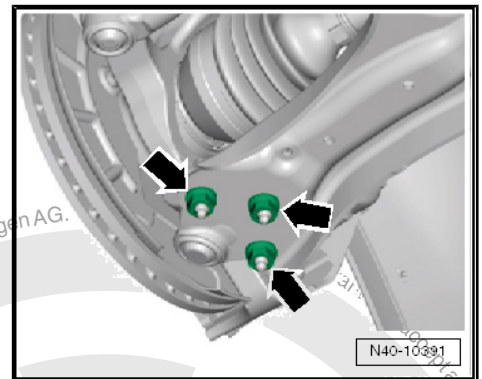
- Tighten nuts -arrows-.



Note

Tighten the nuts -arrows- in curb weight position. Refer to ⇒ [“2.8.1 Wheel Bearing in Curb Weight, Lifting Vehicles with Coil Spring, Front Axle”, page 5](#).

- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester.



Tightening Specifications

- ◆ Refer to ⇒ [“2.1 Overview - Subframe”, page 16](#)
- ◆ Refer to ⇒ [“5.1 Overview - Wheel Bearing”, page 91](#)
- ◆ Refer to ⇒ [“3.1 Overview - Steering Gear”, page 419](#)
- ◆ Refer to ⇒ [“2.1 Overview - Steering Column”, page 398](#)
- ◆ Pendulum support bolts. Refer to ⇒ Rep. Gr. 10 ; Subframe Mount; Overview - Subframe Mount
- ◆ Noise insulation bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- ◆ Battery impact guard bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Overview - Underbody Panels .
- ◆ Refer to ⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)

If the steering wheel is still crooked after using the Subframe Alignment Assembly Tool Kit- Locating Pins - T10486/1- then an axle alignment is necessary. In this case the record it in the vehicles axle alignment log.

2.4 Subframe, Servicing

Special tools and workshop equipment required

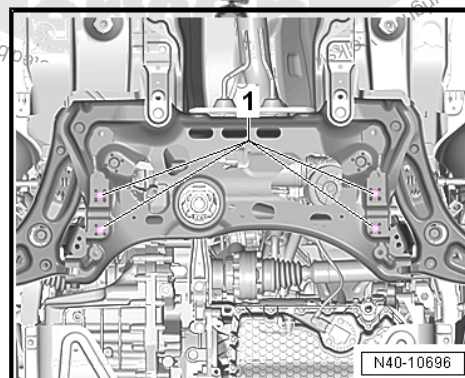
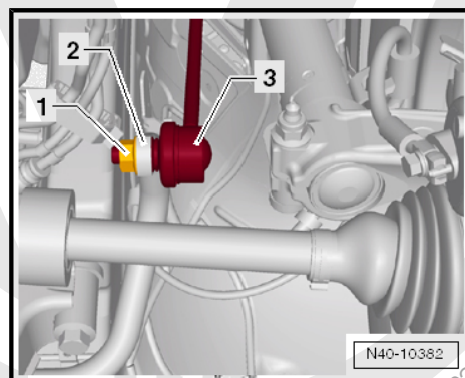
- ◆ Bearing Installer - Wheel Hub/Bearing Kit - T10205-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Hydraulic Press - VAS6178-
- ◆ Pneumatic/Hydraulic Foot Pump - VAS6179-



- ◆ Rubber Bushing Assembly Device Kit - VAS6779A-
- ◆ Press Plate - VW401-
- ◆ Press Piece - Multiple Use - VW412-

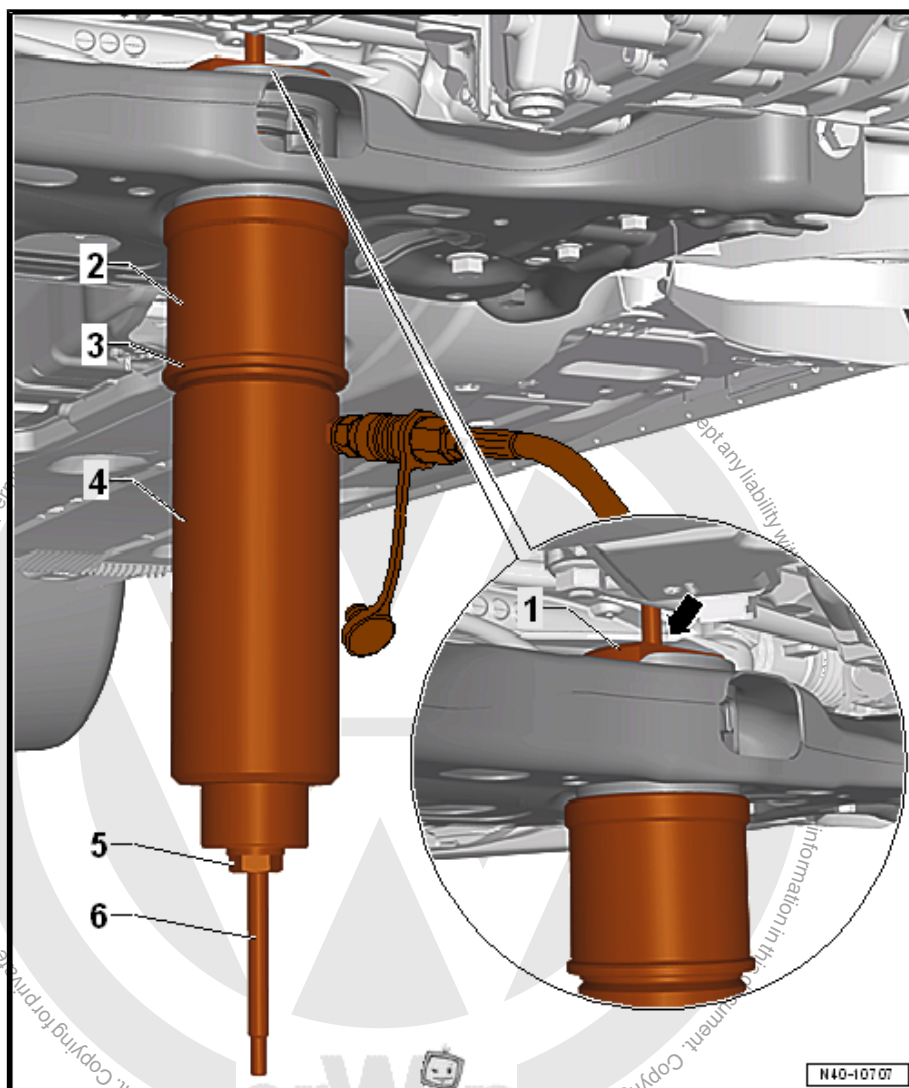
Replacing the Bonded Rubber Bushing for the Pendulum Support.

- If equipped, remove the front noise insulation. Refer to ➤ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Remove the left and right nut -1- from the coupling rod -3-.
- Remove the coupling rod -3- from the stabilizer bar -2- on the left and right sides.
- Remove the bolts -1- for the stabilizer bar.
- Leave the stabilizer bar in the installation position on the vehicle.
- Remove the pendulum support. Refer to ➤ Rep. Gr. 10 ; Subframe Mount; Pendulum Support, Removing and Installing .



Pressing out the Bonded Rubber Bushing

- Install the Rubber Bushing Assembly Device Kit - VAS6779A- on the subframe as shown.
- Position the Rubber Bushing Assembly Device Kit - Thrust Piece - VAS6779/1- -1- with the flat side -arrow- on the bonded rubber bushing in the direction of travel.



1 - Rubber Bushing Assembly Device Kit - Thrust Piece -
VAS6779/1-

2 - Rubber Bushing Assembly Device Kit - Tube - VAS6779/4-

3 - Rubber Bushing Assembly Device Kit -Thrust Piece -
VAS6779/5-

4 - Hydraulic Press - VAS6178- with Bearing Installer - Wheel
Hub/Bearing Kit - Pressure Head - T10205/13-

5 - Rubber Bushing Assembly Device Kit - Hexagon Nut -
VAS6779/3-

6 - Rubber Bushing Assembly Device Kit -Threaded Rod -
VAS6779/2-



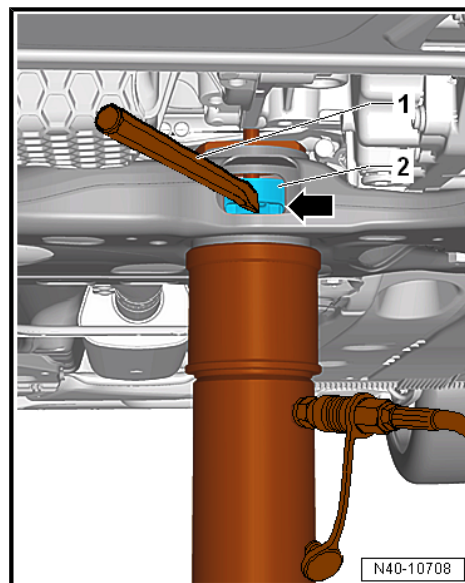
- Press out both bonded rubber bushings until the upper bonded rubber bushing -2- is visible in the pendulum support opening -arrow- in the subframe.
- Perform a visual inspection of the upper bonded rubber bushing outer race -2-.
- If the upper bonded rubber bushing outer race -2- is deformed, it must be destroyed through the opening for the pendulum support -arrow- in the subframe.
- Using a chisel or similar tool -1-, make a break in the upper bonded rubber bushing outer race -2-.



Note

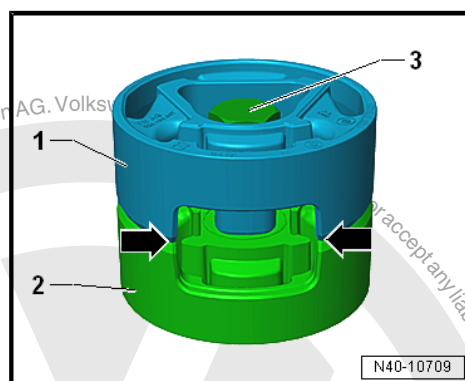
This work sequence is necessary to prevent tilting of the bonded rubber bushing outer race in the area of the pendulum support opening in the subframe.

- Completely press out both bonded rubber bushings at the same time.

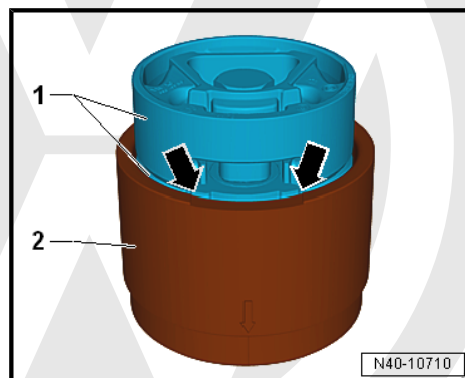


Preparing Bonded Rubber Bushings before Pressing In

- Place the bonded rubber bushings -1 and 2- on top of each other so the openings -arrows- lay directly over each other.
- Tighten the bonded rubber bushings -1 and 2- using the original bolt -3- hand tight.



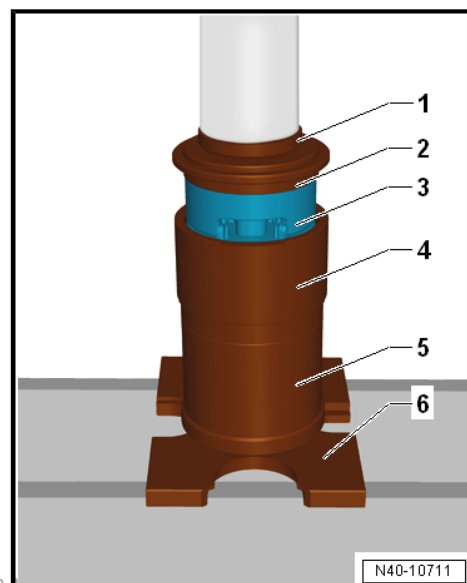
- Place the bonded rubber bushing -1- with the bolt head facing up in the larger diameter of the Rubber Bushing Assembly Device Kit - Funnel - VAS6779/6- -2-.
- Align the bonded rubber bushing -1- in the Rubber Bushing Assembly Device Kit - Funnel - VAS6779/6- -2-. The opening in the bonded rubber bushing must directly face the recess -arrows- in the Rubber Bushing Assembly Device Kit - Funnel - VAS6779/6- -2-.



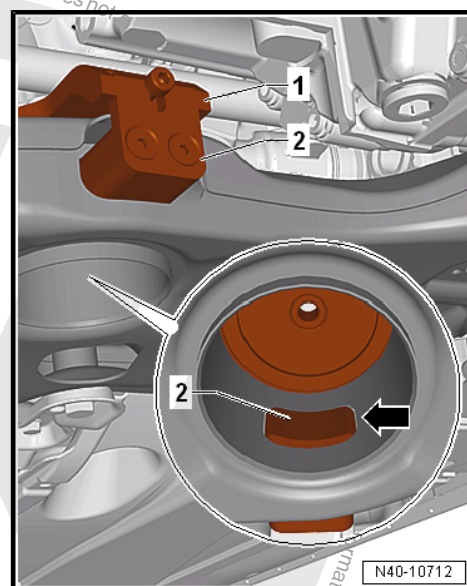


- Press the bonded rubber bushing -3- in the Rubber Bushing Assembly Device Kit - Funnel - VAS6779/6- until it stops as shown in the illustration.

- 1 - Press Piece - Multiple Use - VW412-
- 2 - Rubber Bushing Assembly Device Kit -Thrust Piece - VAS6779/5- , the side with the letter »A« points up
- 3 - Bonded Rubber Bushing
- 4 - Rubber Bushing Assembly Device Kit - Funnel - VAS6779/6-
- 5 - Rubber Bushing Assembly Device Kit - Tube - VAS6779/4-
- 6 - Press Plate - VW401-

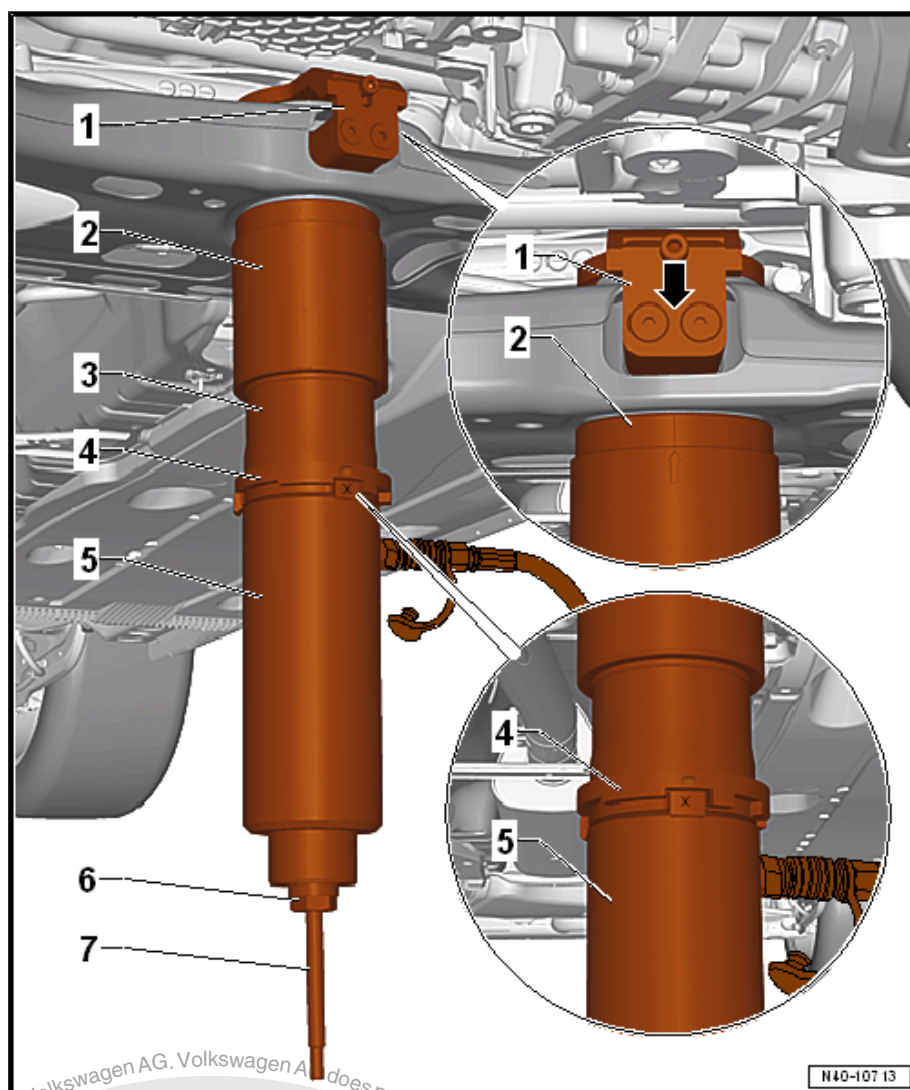


- Insert the Rubber Bushing Assembly Device Kit - Counterhold - VAS6779/7- -1- into the subframe
- Insert the Insert - VAS6779/7-1A- -2- into the pendulum support opening in the subframe.
- Fasten the Insert - VAS6779/7-1A- onto the Rubber Bushing Assembly Device Kit - Counterhold - VAS6779/7- -1-.
- Make sure that the Insert - VAS6779/7-1A- -2- is seated correctly in the subframe opening -arrow-.



Installing the Bonded Rubber Bushings

- Screw the Rubber Bushing Assembly Device Kit -Threaded Rod - VAS6779/2- -7- into the Rubber Bushing Assembly Device Kit - Counterhold - VAS6779/7- -1-.
- Attach the Rubber Bushing Assembly Device Kit - VAS6779A- to the subframe as shown.



1 - Rubber Bushing Assembly Device Kit - Counterhold - VAS6779/7-

2 - Rubber Bushing Assembly Device Kit - Funnel - VAS6779/6- ,
-arrow marking- on the Rubber Bushing Assembly Device Kit -
Funnel - VAS6779/6- must align in the center of both bolts
-arrow-.

3 - Rubber Bushing Assembly Device Kit - Thrust Piece - VAS6779/9-

4 - Hydraulic Press - Bushing Tool Kit - Incremental Ring - VAS6779/8- , the marking -I- on the Hydraulic Press - Bushing Tool Kit - Incremental Ring - VAS6779/8- must align with the marking -X- on the Hydraulic Press - Bushing Tool Kit - Thrust Piece - VAS6779/9-

5 - Hydraulic Press - VAS6178- with Bearing Installer - Wheel Hub/Bearing Kit - Pressure Head - T10205/13-

6 - Hydraulic Press - Bushing Tool Kit - Hexagon Nut - VAS6779/3-

7 - Hydraulic Press - Bushing Tool Kit - Threaded Rod - VAS6779/2-

- Press in both bonded rubber bushings at the same time.



- Remove the Rubber Bushing Assembly Device Kit - VAS6779- from the subframe and check the position of the pressed in bonded rubber bushing.
- Fasten the stabilizer bar with the subframe and the coupling rod.
- Install the pendulum support. Refer to ⇒ Rep. Gr. 10 ; Subframe Mount; Pendulum Support, Removing and Installing .
- Install the front noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .

Tightening Specifications

- ◆ Refer to ⇒ [“2.1 Overview - Subframe”, page 16](#)
- ◆ Pendulum support bolts except e-Golf. Refer to ⇒ Rep. Gr. 10 ; Subframe Mount; Overview - Subframe Mount .
- ◆ e-Golf pendulum support bolts. Refer to ⇒ Rep. Gr. 10 ; Subframe Mount; Overview - Subframe Mount .
- ◆ Noise insulation bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .

2.5 Stabilizer Bar, Removing and Installing

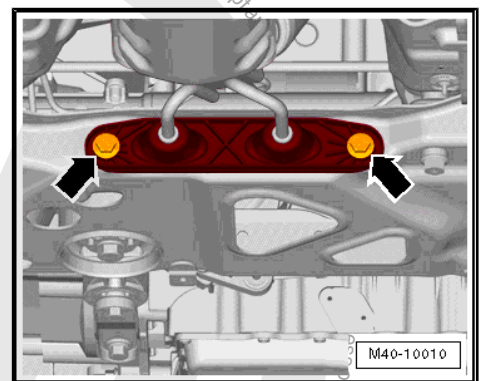
Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Engine and Gearbox Jack - VAS6931-

Removing

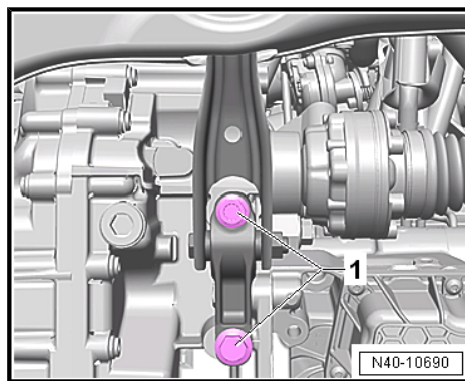
- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheels.
- If equipped, remove the lower noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Remove the exhaust system bracket from the subframe -arrows-.

Continuation for All Vehicles

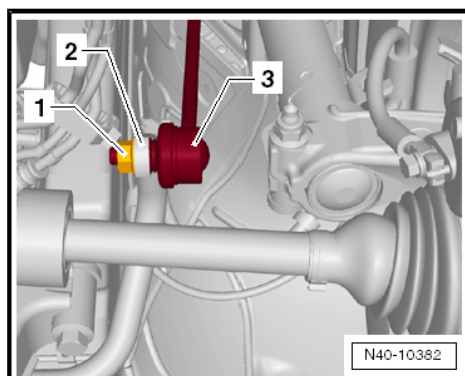




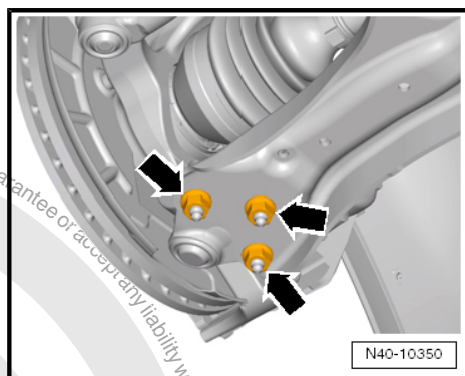
- Remove the bolts -1- for the pendulum support.



- Remove the left and right nut -1- from the coupling rod -3-.
- Remove the coupling rod -3- from the stabilizer bar -2- on the left and right sides.

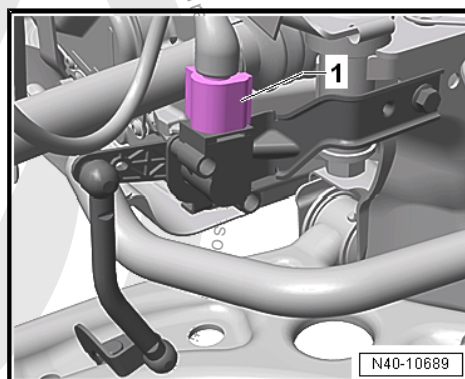


- Remove the nuts -arrows- on the left and right side of the vehicle.



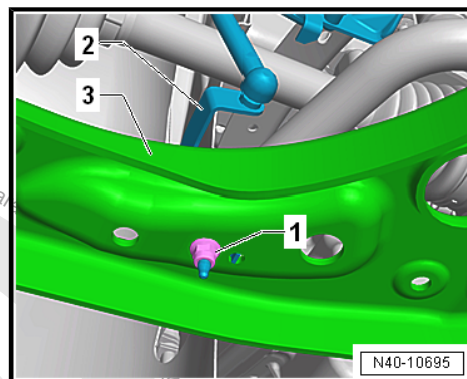
Vehicles with Level Control System Sensor

- Disconnect the connector -1- from the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289- .



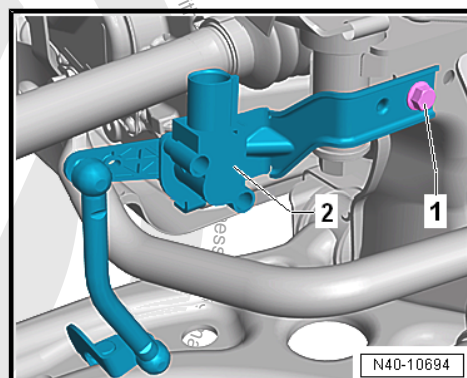


- Remove the nut -1-.
- Remove the bracket -2- for the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289- from the control arm -3-.

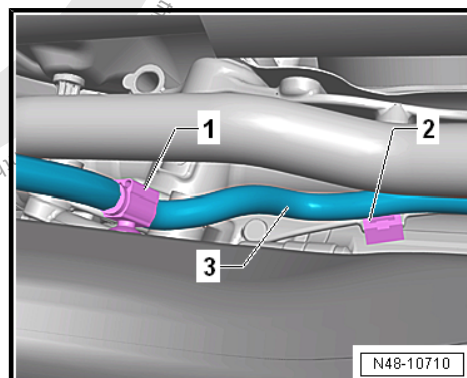


- Remove the bolt -1-.
- Remove the Left Front Level Control System Sensor - G78- -2- or Right Front Level Control Sensor - G289-

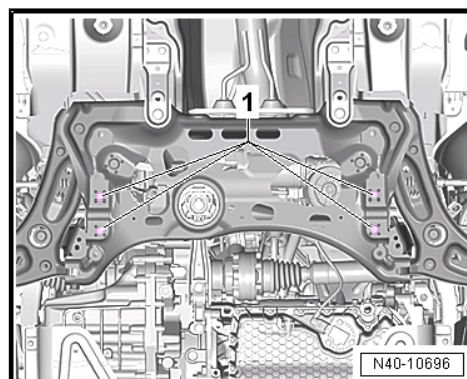
Continuation for All Vehicles



- Remove the clips -1 and 2- for the wiring harness -3- from the subframe and the steering gear.

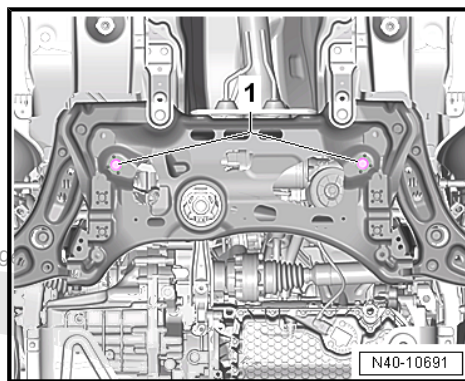


- Remove the bolts -1- for the stabilizer bar.

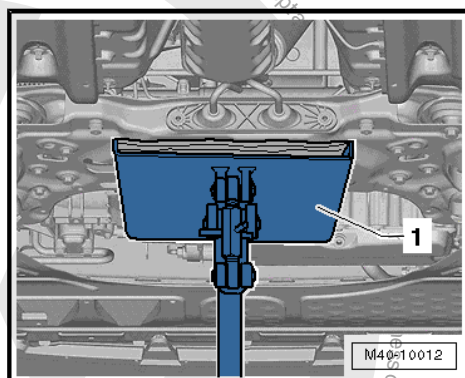




- Remove the bolts -1- for the steering gear.
- Pry the steering gear out of the subframe alignment sleeves.



- Place the Engine and Gearbox Jack - VAS6931- -1- under the subframe.
- Secure the subframe (refer to [⇒ "2.8 Subframe, Securing", page 56](#)) and lower it approximately 10 cm.



- Remove the expanding clip -arrow-.
- Lower the subframe with the Engine and Gearbox Jack - VAS6931- until the stabilizer bar can be removed toward the rear.

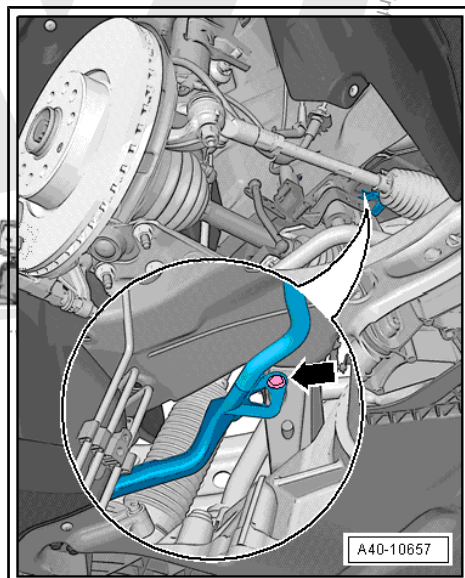
Installing

Install in reverse order of removal and note the following:



Note

- ◆ The level control system sensor lever must point toward vehicle exterior.
- ◆ The thread on the vehicle level sensor must be installed into the exterior hole in the control arm. The tab on the vehicle level sensor bracket must lock into the inner hole in order to assure a correct installation position.





- Tighten nuts -arrows-.



Note

*Tighten the nuts -arrows- in curb weight position. Refer to
⇒ [“2.8.1 Wheel Bearing in Curb Weight, Lifting Vehicles with Coil Spring, Front Axle”, page 5](#).*

- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .

Tightening Specifications

- ◆ Refer to ⇒ [“2.1 Overview - Subframe”, page 16](#)
- ◆ Refer to ⇒ [“2.1 Overview - Steering Column”, page 398](#)
- ◆ Refer to
⇒ [“2.1 Overview - Front Level Control System Sensor”, page 327](#)
- ◆ Pendulum support bolts except e-Golf. Refer to ⇒ Rep. Gr. 10 ; Subframe Mount; Overview - Subframe Mount .
- ◆ e-Golf pendulum support bolts. Refer to ⇒ Rep. Gr. 10 ; Subframe Mount; Overview - Subframe Mount .
- ◆ Noise insulation bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- ◆ Double clamp for exhaust pipes. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .
- ◆ Refer to
⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)

If the steering wheel is still crooked after using the Subframe Alignment Assembly Tool Kit Locating Pins - T10486/1- then an axle alignment is necessary. In this case the record it in the vehicles axle alignment log.

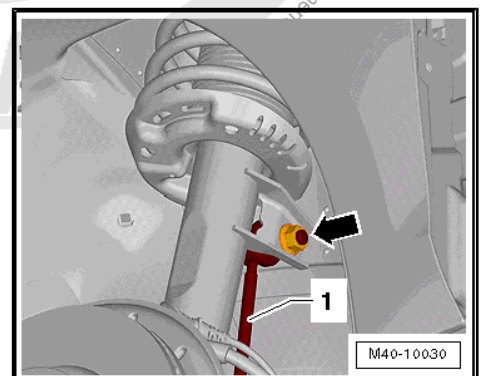
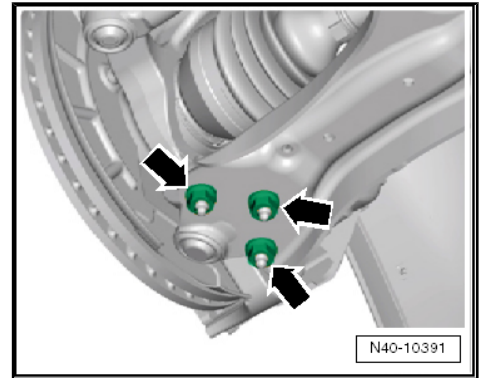
2.6 Coupling Rod, Removing and Installing

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

Removing

- Raise the vehicle.
- Remove the nut -arrow- and the coupling rod -1- from the suspension strut.





- Remove the nut -1- from the coupling rod -3-.
- Remove the coupling rod -3- from the stabilizer bar -2-.

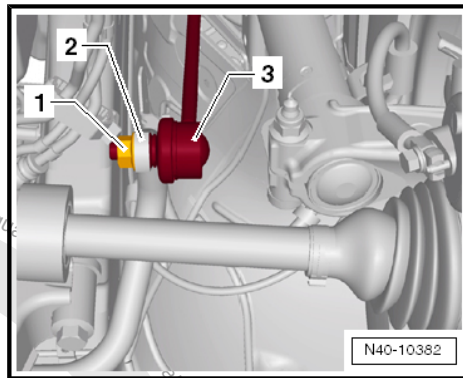
Installing

Install in reverse order of removal and note the following:

- Tighten the coupling rod nuts on the suspension strut or stabilizer bar, counterholding on the multi-point socket head if necessary.

Tightening Specifications

- ◆ Refer to ⇒ [“2.1 Overview - Subframe”, page 16](#)



2.7 Thread in Longitudinal Member, Servicing

It is possible to service the threads of the weld nuts in the longitudinal member depending on certain conditions. Refer to ⇒ Body Repair; Rep. Gr. 50 .

2.8 Subframe, Securing



Note

- ◆ *For certain assemblies on the vehicle, subframe or complete front axle must be removed.*
- ◆ *The original position of the subframe to the body is ensured by using four Subframe Alignment Assembly Tool Kit- Locating Pins - T10486/1-.*
- ◆ *Subframe Alignment Assembly Tool Kit- Locating Pins - T10486/1- (quantity 2) are part of the Assembly Tool, Sub-frame Alignment - T10486- . If the Assembly Tool, Sub-frame Alignment - T10486- is already in the service operation, then only the supplement from the Subframe Alignment Assembly Tool Kit- Locating Pins - T10486/1- (quantity 2) are required.*
- ◆ *If the Assembly Tool, Sub-frame Alignment - T10486- is not already in the service operation, then the Assembly Tool, Sub-frame Alignment - T10486A- is used. This has four Subframe Alignment Assembly Tool Kit- Locating Pins - T10486/1- and two Locating Pins - T10486/2- The Locating Pins - T10486/2- are not necessary for the following steps.*

Special tools and workshop equipment required

- ◆ Four Subframe Alignment Assembly Tool Kit- Locating Pins - T10486/1-
- ◆ Engine and Gearbox Jack - VAS6931- with Universal Support Plate - VAG1359/2-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

Only Golf GTE

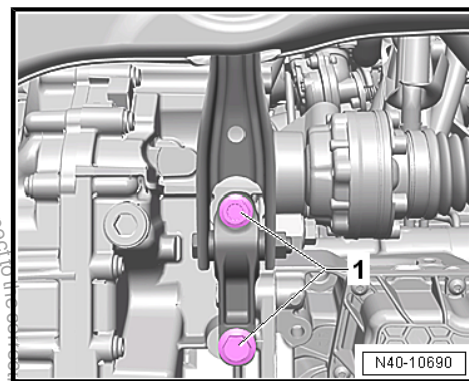
- De-energize the high-voltage system. Refer to ⇒ Rep. Gr. 93 ; High Voltage System, De-Energizing .

Continuation for All Vehicles

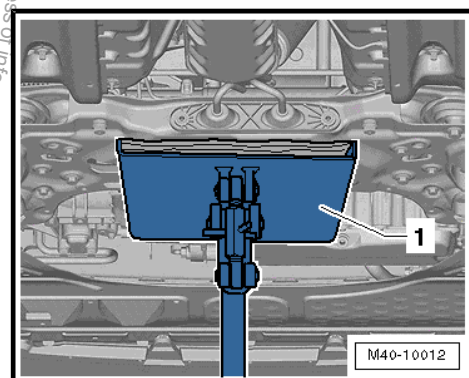
- If equipped, remove the front and rear noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .



- Remove the pendulum support bolts -1- from the transmission.



- Place the Engine and Gearbox Jack - VAS6931- -1- under the subframe.
- If necessary, clean the threads of the Locating Pins - T10486/1- .



- To secure the subframe, the Locating Pins - T10486/1- must be installed at the positions -3, 5, 7, and 8- one after the other.

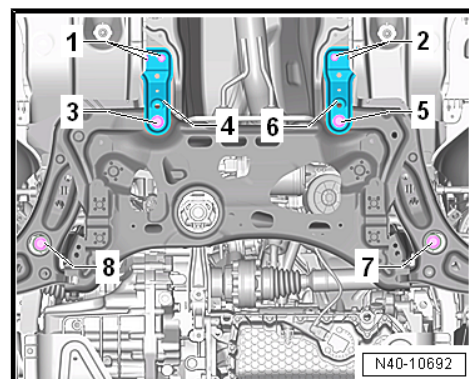
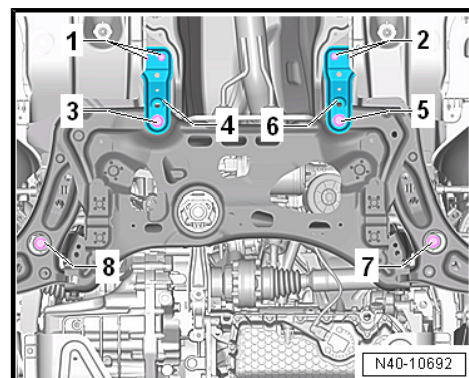


Note

The Subframe Alignment Assembly Tool Kit- Locating Pins - T10486/1- may only be tightened to a maximum of 20 Nm, since otherwise the locating pin threads will be damaged.

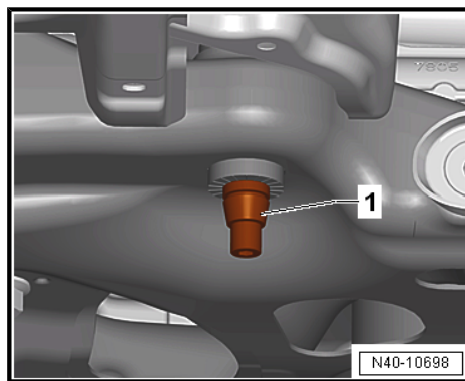
Rear Subframe, Securing

- Remove the bolts -1-.
- Remove the bolt -3- and the support -4-.



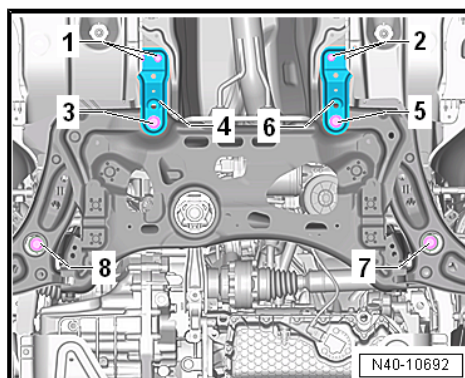


- Insert the Subframe Alignment Assembly Tool Kit- Locating Pins - T10486/1- -1- and tighten to 20 Nm.

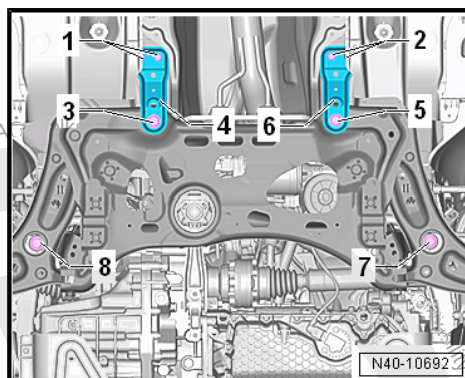


- Remove the bolts -2-.
- Remove the bolt -5- and the support -6-.
- Insert the Subframe Alignment Assembly Tool Kit- Locating Pins - T10486/1- and tighten to 20 Nm.

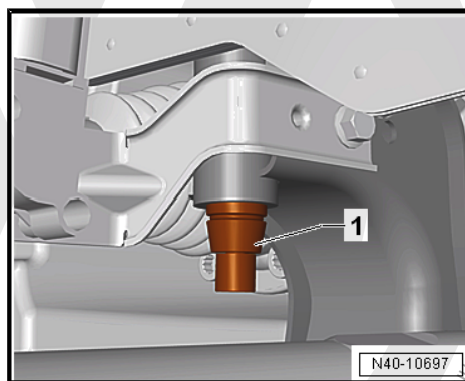
Front Subframe, Securing



- Remove the bolt -8-.



- Insert the Subframe Alignment Assembly Tool Kit- Locating Pins - T10486/1- -1- and tighten to 20 Nm.



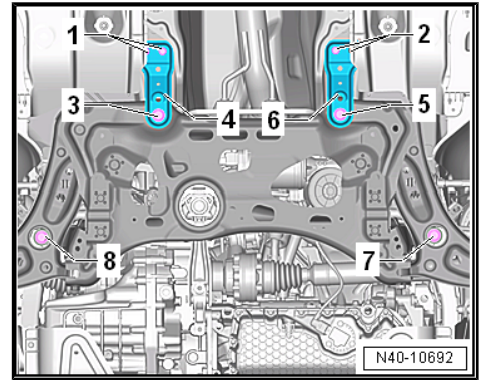


- Remove the bolt -7-.
- Insert the Subframe Alignment Assembly Tool Kit- Locating Pins - T10486/1- and tighten to 20 Nm.
- Securing the subframe is completed when all above mentioned bolts are replaced with Subframe Alignment Assembly Tool Kit- Locating Pins - T10486/1- one after the other.
- The subframe position is now secured.

Subframe Alignment Assembly Tool Kit- Locating Pins - T10486/1- , Removing

Removal is performed in the reverse order. Note the following:

- Always only remove one locating pin and replace it with a new bolt.
- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics using the. Refer to Vehicle Diagnostic Tester .



Tightening Specifications

- ◆ Refer to ➤ [“2.1 Overview - Subframe”, page 16](#)
- ◆ Pendulum support bolts except e-Golf. Refer to ➤ Rep. Gr. 10 ; Subframe Mount; Overview - Subframe Mount .
- ◆ e-Golf pendulum support bolts. Refer to ➤ Rep. Gr. 10 ; Subframe Mount; Overview - Subframe Mount .
- ◆ Noise insulation bolts. Refer to ➤ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .

If the steering wheel is still crooked after using the Subframe Alignment Assembly Tool Kit- Locating Pins - T10486/1- then an axle alignment is necessary. In this case the record it in the vehicles axle alignment log.

2.9 Subframe, Lowering

➤ [“2.9.1 Subframe, Lowering, Except e-Golf”, page 59](#)

➤ [“2.9.2 Subframe, Lowering, e-Golf”, page 62](#)

2.9.1 Subframe, Lowering, Except e-Golf

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Engine and Gearbox Jack - VAS6931-

Removing

- Turn the steering wheel in the straight position and remove the ignition key so that the steering wheel lock engages.

Vehicles with “Keyless Access” Keyless Locking and Starting System

- Switch the ignition off and open the driver door so the steering wheel lock engages.

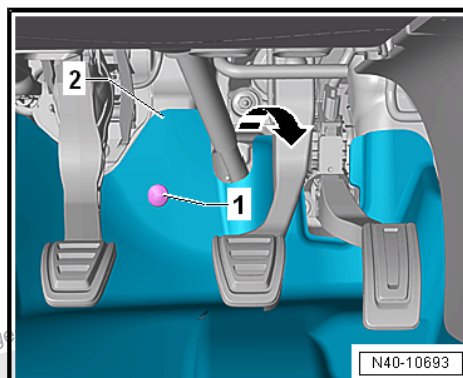
Only Golf GTE

- De-energize the high-voltage system. Refer to ➤ Rep. Gr. 93 ; High Voltage System, De-Energizing .



Continuation for All Vehicles

- Disconnect the battery. Refer to ➤ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .
- Remove the bolt -1- and fold the footwell trim panel -2- in the direction of the -arrow- into the vehicle interior.



- Remove the bolt -1- from the universal joint -2-. Then remove the universal joint in direction of -arrow-.

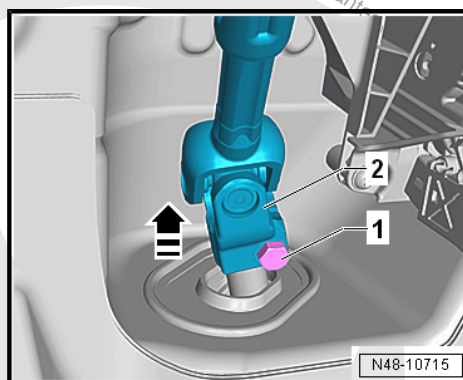


Caution

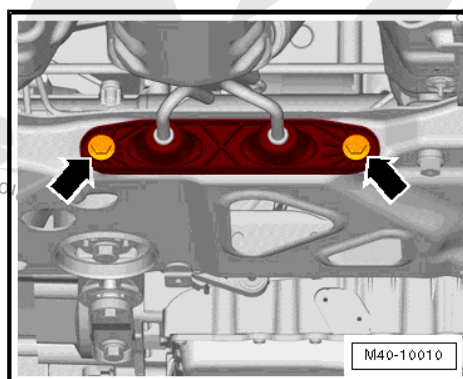
If the universal joint is separated from the steering gear, the following work cannot be performed:

- ◆ *Connect the battery.*
- ◆ *Switch the ignition on.*
- ◆ *Turn the steering gear.*
- ◆ *Turn the steering column.*

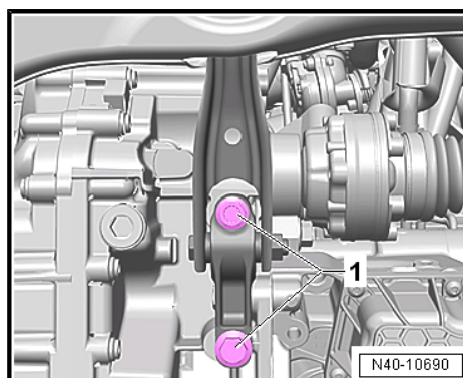
These points must be observed since performing these actions could cause irreparable damage.



- Remove the lower noise insulation. Refer to ➤ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Remove the exhaust system bracket from the subframe -arrows-.



- Remove the bolts -1- for the pendulum support.



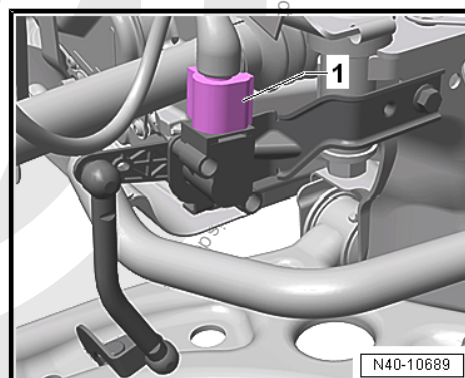
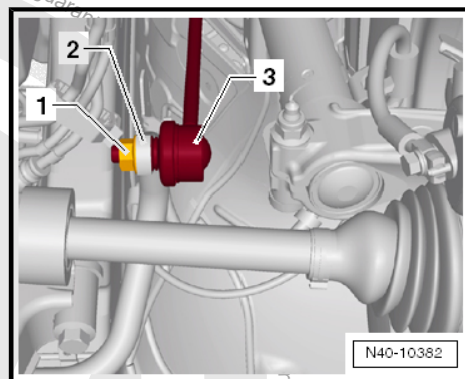


- Remove the left and right nut -1- from the coupling rod -3-.
- Remove the coupling rod -3- from the stabilizer bar -2- on the left and right sides.

Vehicles with Level Control System Sensor

- Disconnect the connector -1- from the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289- .

Continuation for All Vehicles



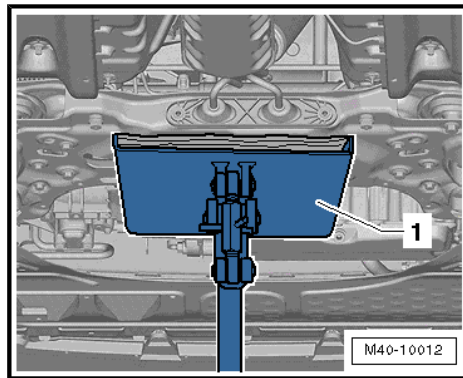


- Place the Engine and Gearbox Jack - VAS6931- -1- under the subframe.
- Secure the subframe (refer to [⇒ “2.8 Subframe, Securing”, page 56](#)) and lower it approximately 10 cm.



Note

Be careful not to overstretch the wire for the steering and the Oil Level Thermal Sensor - G266- .



Installing

Install in reverse order of removal and note the following:



Note

- ◆ *Coat the seal on the steering gear with lubricant such as soft soap before installing the steering gear.*
- ◆ *After attaching steering gear to the universal joint, make sure that seal on steering gear is positioned on the mounting plate without and kinks and is sealed correctly. The opening to the footwell must seal correctly. Ingress of water and/or noises may be the result.*
- ◆ *Make sure sealing surfaces are clean.*

Remove the Subframe Alignment Assembly Tool Kit- Locating Pins - T10486/1- .

For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .

Tightening Specifications

- ◆ Refer to [⇒ “2.1 Overview - Subframe”, page 16](#)
- ◆ Refer to [⇒ “3.1 Overview - Steering Gear”, page 419](#)
- ◆ Refer to [⇒ “2.1 Overview - Steering Column”, page 398](#)
- ◆ Pendulum support bolts. Refer to ⇒ Rep. Gr. 10 ; Subframe Mount; Overview - Subframe Mount .
- ◆ Noise insulation bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- ◆ Exhaust system to subframe. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .

If the steering wheel is still crooked after using the Subframe Alignment Assembly Tool Kit- Locating Pins - T10486/1- then an axle alignment is necessary. In this case the record it in the vehicles axle alignment log.

2.9.2 Subframe, Lowering, e-Golf

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Engine and Gearbox Jack - VAS6931-

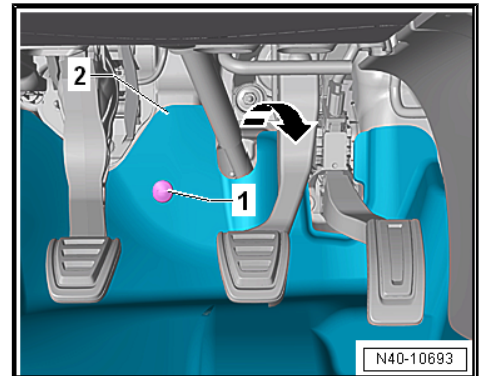
Removing

- Turn the steering wheel in the straight position and remove the ignition key so that the steering wheel lock engages.



Vehicles with "Keyless Access" Keyless Locking and Starting System

- Switch the ignition off and open the driver door so the steering wheel lock engages.
- Disconnect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .
- Remove the bolt -1- and fold the footwell trim panel -2- in the direction of the -arrow- into the vehicle interior.



- Remove the bolt -1- from the universal joint -2-. Then remove the universal joint in direction of -arrow-.

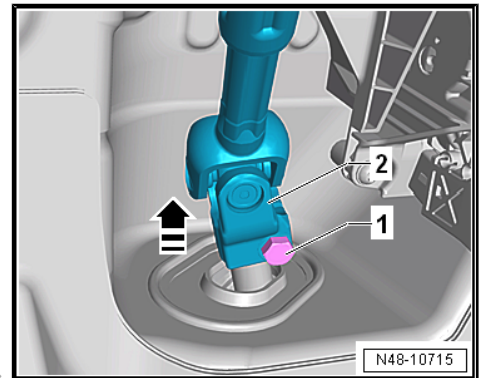


Caution

If the universal joint is separated from the steering gear, the following work cannot be performed:

- ◆ **Connect the battery.**
- ◆ **Switch the ignition on.**
- ◆ **Turn the steering gear.**
- ◆ **Turn the steering column.**

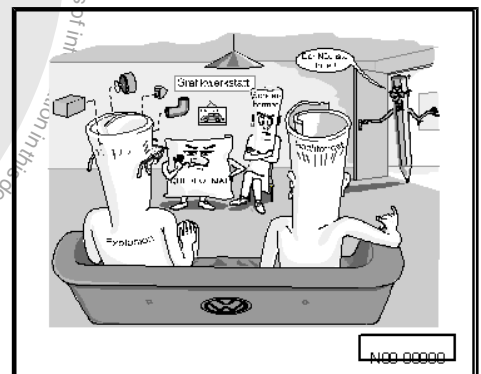
These points must be observed since performing these actions could cause irreparable damage.



Remove the lower noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .

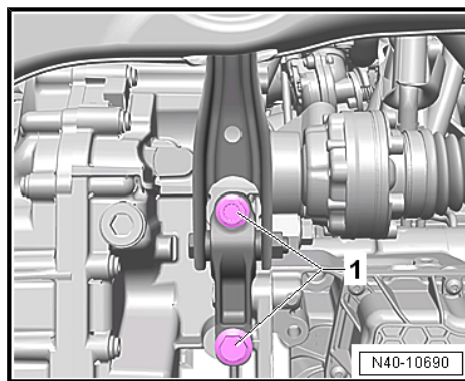
Remove the battery impact guard. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Overview - Underbody Panels .

Remove the bolts -arrows- and remove the bracket -1- from the steering gear.

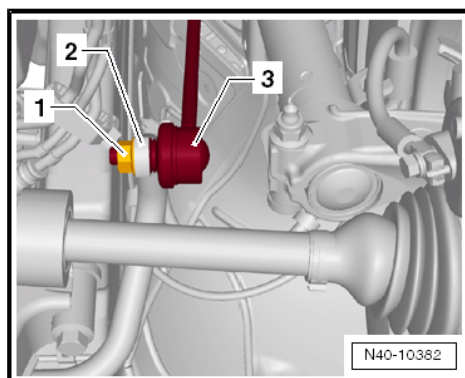




- Remove the bolts -1- for the pendulum support.



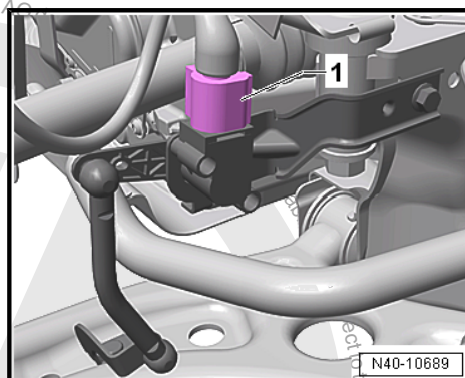
- Remove the left and right nut -1- from the coupling rod -3-.
- Remove the coupling rod -3- from the stabilizer bar -2- on the left and right sides.



Vehicles with Level Control System Sensor

- Disconnect the connector -1- from the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289- .

Continuation for All Vehicles





- Place the Engine and Gearbox Jack - VAS6931- -1- under the subframe.
- Secure the subframe (refer to [⇒ “2.8 Subframe, Securing”, page 56](#)) and lower it approximately 10 cm.



Note

Be careful not to overstretch the wire for the steering and the Oil Level Thermal Sensor - G266- .

Installing

Install in reverse order of removal and note the following:



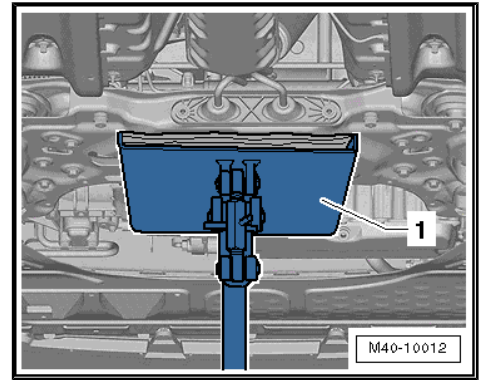
Note

- ◆ *Coat the seal on the steering gear with lubricant such as soft soap before installing the steering gear.*
- ◆ *After attaching steering gear to the universal joint, make sure that seal on steering gear is positioned on the mounting plate without and kinks and is sealed correctly. The opening to the footwell must seal correctly. Ingress of water and/or noises may be the result.*
- ◆ *Make sure sealing surfaces are clean.*
- Remove the Locating Pins - T10486/1- .
- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .

Tightening Specifications

- ◆ Refer to [⇒ “2.1 Overview - Subframe”, page 16](#)
- ◆ Refer to [⇒ “3.1 Overview - Steering Gear”, page 419](#)
- ◆ Refer to [⇒ “2.1 Overview - Steering Column”, page 398](#)
- ◆ Pendulum support bolts. Refer to ⇒ Rep. Gr. 10 ; Subframe Mount; Overview - Subframe Mount .
- ◆ Noise insulation bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- ◆ Battery impact guard bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66; Underbody Trim Panel; Overview - Underbody Panels .

If the steering wheel is still crooked after using the Locating Pins - T10486/1- then an axle alignment is necessary. In this case the record it in the vehicles axle alignment log.





3 Suspension Strut and Upper Control Arm

⇒ ["3.1 Overview - Suspension Strut and Upper Control Arm", page 66](#)

⇒ ["3.2 Suspension Strut, Removing and Installing", page 67](#)

⇒ ["3.3 Suspension Strut, Servicing", page 74](#)

3.1 Overview - Suspension Strut and Upper Control Arm

1 - Spring Support

- ❑ Note the installation position

2 - Shock Absorber

- ❑ Different versions. Refer to Parts Catalog.

3 - Bolt

- ❑ 70 Nm +180°
- ❑ Replace after removing
- ❑ The bolt tip must face in direction of travel.

4 - Wheel Bearing Housing

- ❑ Different versions. Refer to Parts Catalog.

5 - Nut

- ❑ Replace after removing

6 - Protective Cover

- ❑ Different versions. Refer to Parts Catalog.

7 - Coil Spring

- ❑ Removing and installing. Refer to [⇒ "3.3 Suspension Strut, Servicing", page 74](#).
- ❑ Surface of spring coil may not be damaged.
- ❑ Different versions. Refer to Parts Catalog.

8 - Deep-Groove Ball Bearing

9 - Stop Buffer

- ❑ Different versions. Refer to Parts Catalog.

10 - Strut Mount

- ❑ Note the installation position. Refer to [⇒ page 71](#).

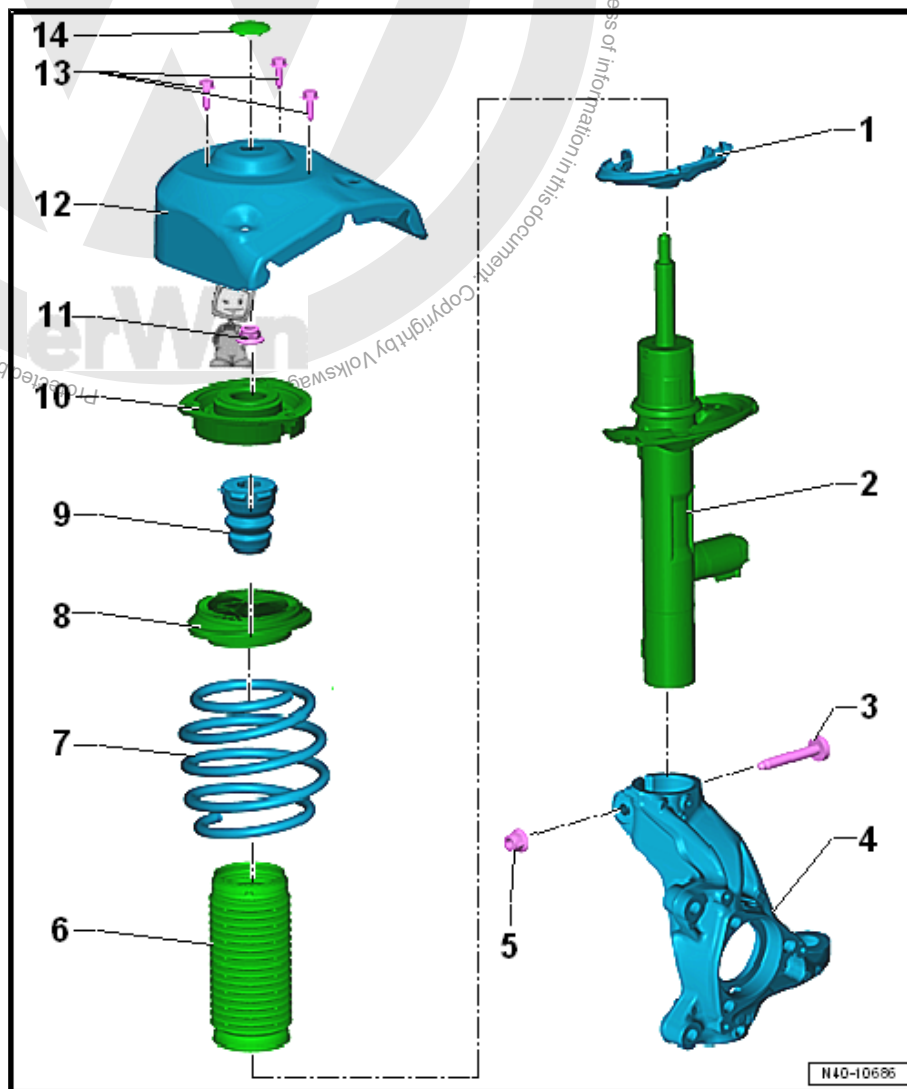
11 - Nut

- ❑ 60 Nm
- ❑ Replace after removing

12 - Body Front

13 - Bolt

- ❑ 15 Nm +90°





- ❑ Replace after removing

14 - Cover

3.2 Suspension Strut, Removing and Installing

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Spreader Tool - 3424-
- ◆ Engine and Gearbox Jack - VAS6931-
- ◆ Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149-
- ◆ Drive Shaft Remover - T10520-

Removing

- Loosen drive axle bolt on the wheel hub. Refer to
⇒ ["6.4 Drive Axle Threaded Connection, Loosening and Tightening", page 127](#) .



Caution

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

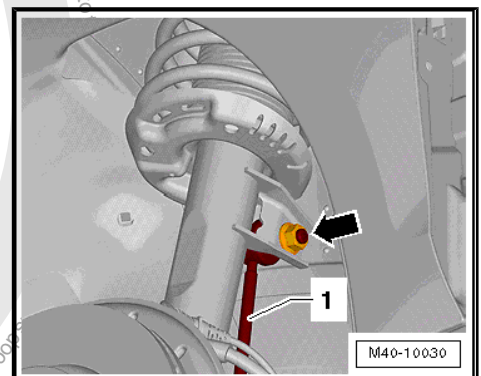
If the wheel bearings are under the load of the vehicle weight, the wheel bearing will be damaged. This reduces the service life of the wheel bearings.

The drive axle bolt may be loosened maximum 90° when the vehicle is standing on its wheels.

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

- ◆ *Install an outer joint in place of the drive axle.*
- ◆ *Tighten the outer joint to 120 Nm.*

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Remove the nut -arrow- and the coupling rod -1- from the suspension strut.
- Disengage the wire for the ABS speed sensor from the suspension strut.





Vehicles with Level Control System Sensor

- Remove the nut -1-.
- Remove the bracket -2- for the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289- from the control arm -3-.

Continuation for All Vehicles

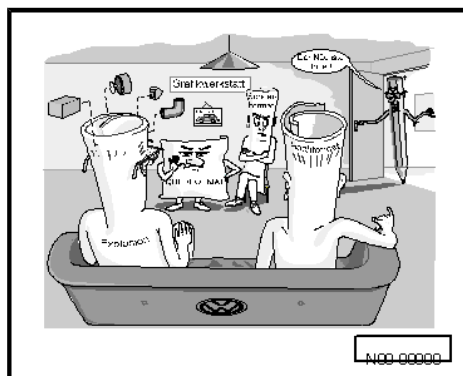
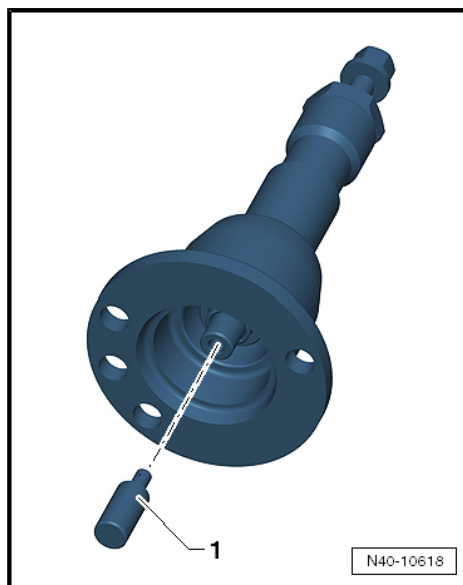
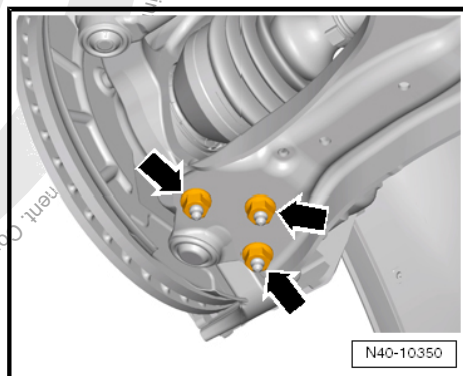
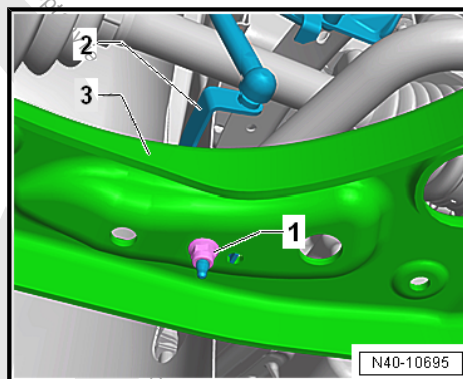
- Remove the nuts -arrows-.
- Remove the wheel bearing housing with the ball joint from the control arm.
- Remove the drive axle outer joint from the wheel hub.

If the Drive Axle Cannot Be Pulled out of the Wheel Bearing, Then the Drive Axle Can Be Pushed out of the Wheel Bearing Using the Drive Shaft Remover - T10520- .

Before using the Drive Shaft Remover - T10520- , make sure that the thrust piece -1- is installed.

Using the Drive Shaft Remover - T10520- :

- Secure the Drive Shaft Remover - T10520- -1- with three wheel bolts -2- on the wheel hub, so that the drive axle -3- can be pressed out.





- Follow the specified sequence exactly.

I - Tighten the knurled nut -1- hand-tight.

II - Only turn the bolt -2- using a wrench and press out the drive axle using the Drive Shaft Remover - T10520- .



Note

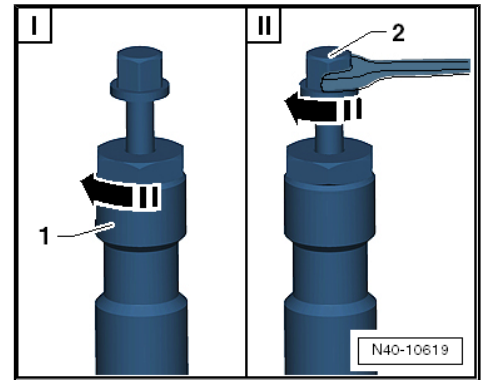
At the end of the tasks or to set back, the spindles must be brought back into the original position so that the hydraulic operation can be used.

- Secure the drive axle to the body using wire.



Caution

The drive axle must not hang down, otherwise the inner joint will be damaged by over bending.



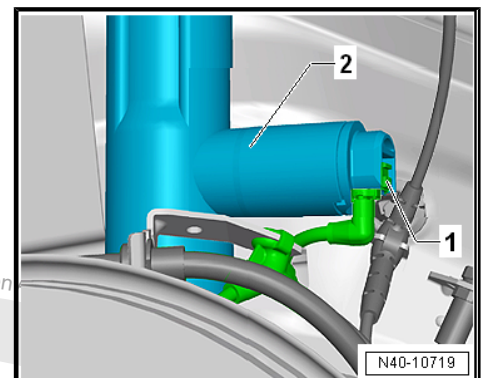
Vehicles with Adaptive Chassis DCC

- Disconnect the connector -1- from the shock absorber -2-.



Note

If there is moisture in the connector area, blow compressed air on the contacts on the shock absorber and the connectors.



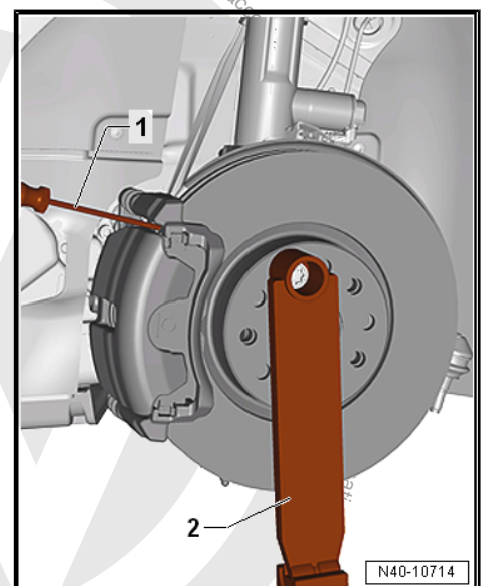
Continuation for All Vehicles

- Insert a screwdriver -1- in the brake rotor between the brake caliper and brake carrier.
- Secure the Engine and Gearbox Jack - VAS6931- using Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149- -2- to wheel hub with a wheel bolt.



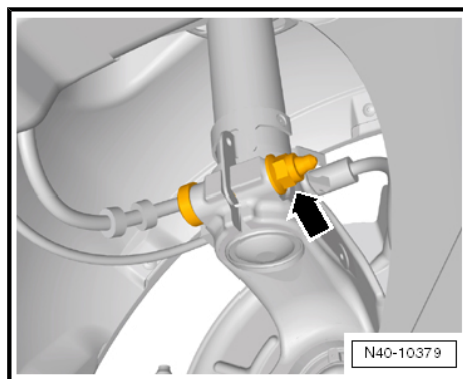
WARNING

- ◆ *Do not lift or lower the vehicle when the Engine and Gearbox Jack - VAS6931- is under the vehicle. The vehicle could slip off the hoist.*
- ◆ *Do not leave the Engine and Gearbox Jack - VAS6931- under the vehicle any longer than necessary.*





- Disconnect the threaded connection for the wheel bearing housing/suspension strut -arrow-.



- Insert Spreader Tool - 3424- into wheel bearing housing slot.



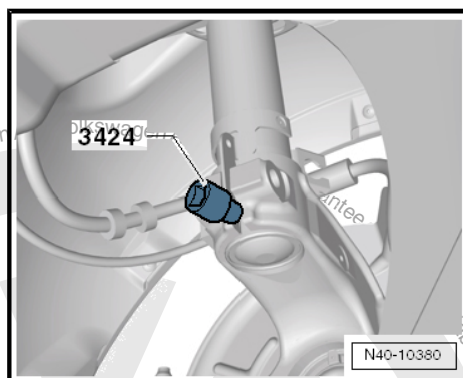
Note

Pay attention that the Spreader Tool - 3424- is only inserted in the wheel bearing housing. Only insert it far enough that the suspension strut metal retainer is not damaged.

- Turn the ratchet 90° and remove it from the Spreader Tool - 3424- .

- Press the brake rotor toward the suspension strut by hand.

Otherwise the shock absorber tube could tilt in the wheel bearing housing hole.



- Lower the wheel bearing housing -1- using the Engine and Gearbox Jack - VAS6931- in the direction of -arrow-.

- Lower the wheel bearing housing -1- so that the shock absorber tube hangs freely -arrow-.

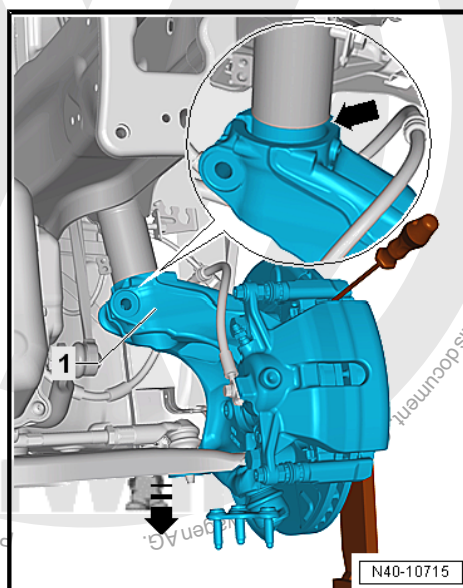
- Fasten the ball joint to the control arm again and secure the wheel bearing housing to the subframe.

- Remove the Engine and Gearbox Jack - VAS6931- from underneath the Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149- .



WARNING

- ◆ **Do not leave the Engine and Gearbox Jack - VAS6931- under the vehicle any longer than necessary.**

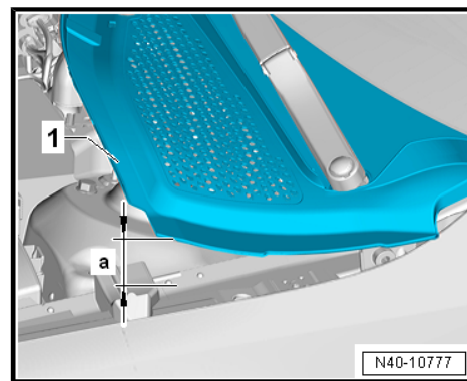


- Remove the seal from the entire length of the plenum chamber cover.

- Remove the clips.

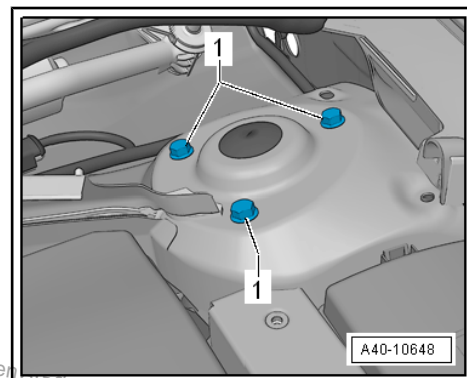


- Lift the plenum chamber cover -1- to maximum 60 mm.
a - 60 mm

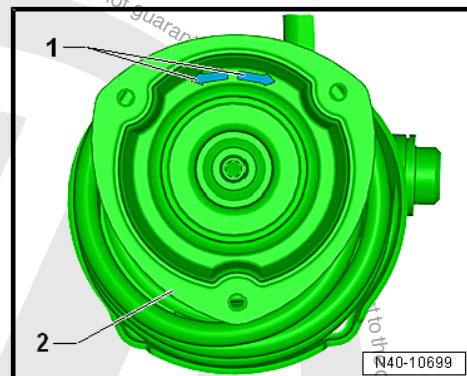


- Remove the bolts -1- for upper strut mount and remove shock absorber mount.

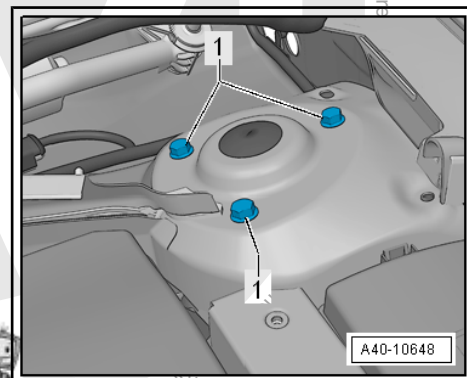
Installing



- Position the suspension strut so that the arrows -1- are always inside.
- One of the two arrows -1- on the spring plate -2- must point in the direction of travel.

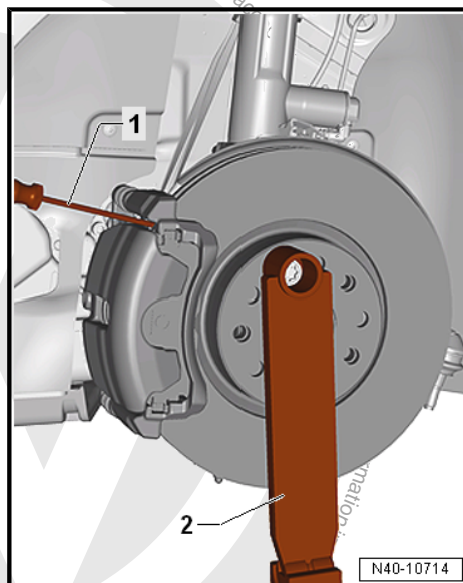


- Insert the suspension strut and fasten the bolts -1- to the body.

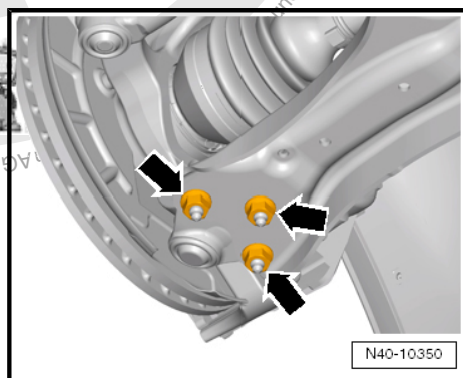




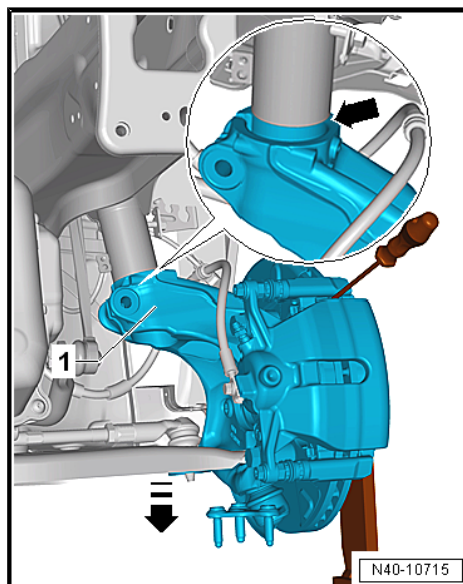
- Place the Engine and Gearbox Jack - VAS6931- under the Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149- and secure the wheel bearing housing.
- Untie the wheel bearing housing from the subframe.



- Remove the nuts -arrows-.
- Remove the wheel bearing housing with the ball joint from the control arm.

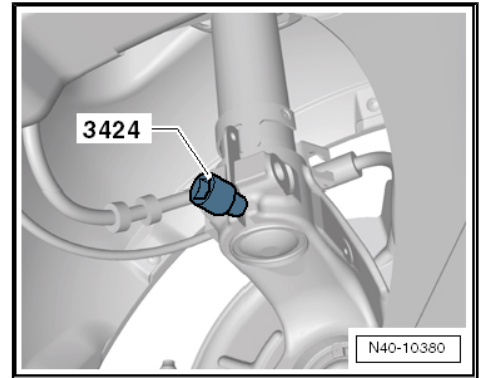


- Lower the wheel bearing housing -1- using the Engine and Gearbox Jack - VAS6931- in the direction of -arrow-.
- Push the wheel bearing housing with the Engine and Gearbox Jack - VAS6931- upward and install it on the suspension strut at the same time.
- Re-bolt the ball joint to the control arm and push the wheel bearing housing upward again until the end position on the suspension strut is reached.





- Remove the Spreader Tool - 3424- .



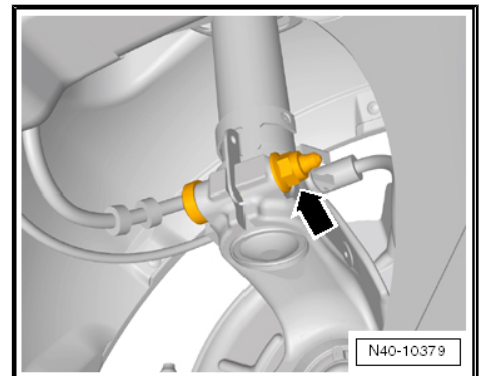
- Insert the new bolt with tip facing the direction of travel.
- Fasten the wheel bearing housing with the new nut -arrow- to the suspension strut.

Install in reverse order of removal and note the following:



Note

- ◆ The level control system sensor lever must point toward vehicle exterior.
- ◆ The thread on the vehicle level sensor must be installed into the exterior hole in the control arm. The tab on the vehicle level sensor bracket must lock into the inner hole in order to assure a correct installation position.



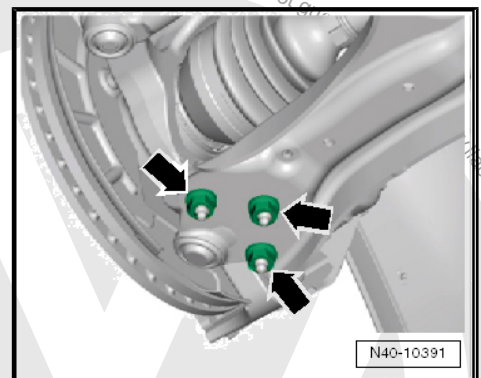
- Tighten nuts -arrows-.



Note

Tighten the nuts -arrows- in curb weight position. Refer to ["2.8.1 Wheel Bearing in Curb Weight, Lifting Vehicles with Coil Spring, Front Axle", page 5](#) .

- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .



Tightening Specifications

- ◆ Refer to ["3.1 Overview - Suspension Strut and Upper Control Arm", page 66](#)
- ◆ Refer to ["4.1 Overview - Lower Control Arm and Ball Joint", page 76](#)
- ◆ Refer to ["2.1 Overview - Subframe", page 16](#)
- ◆ Refer to ["2.1 Overview - Front Level Control System Sensor", page 327](#)
- ◆ Refer to ["6.2 Overview - Drive Axle", page 101](#)
- ◆ Refer to ["1.4 Wheel Bolt Tightening Specifications", page 340](#)



3.3 Suspension Strut, Servicing

Special tools and workshop equipment required

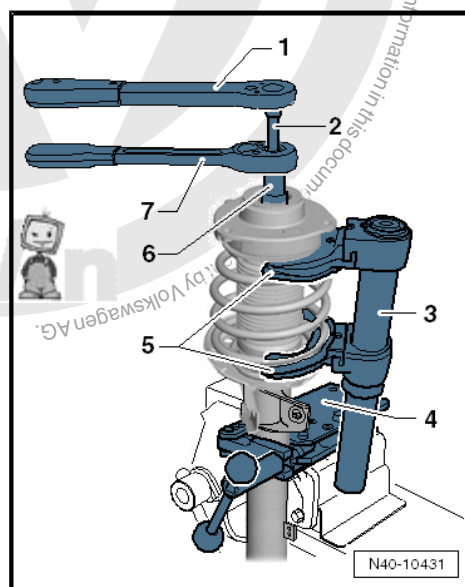
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Spring Compressor Kit - Spring Tensioner - VAG1752/1-
- ◆ Spring Compressor Kit - Spring Retainer w/Inserts - VAG1752/4-
- ◆ Shock Absorber Set - T10001-
- ◆ Ratchet (Commercially Available)
- ◆ Torque Wrench 1332 Insert - Ring Wrench - 21mm - VAG1332/7-

– Remove the suspension strut. Refer to ➔ [page 67](#) .

Removing Spring

- Clamp the Spring Compressor Kit - Strut Clamping Block - VAG1752/20- -4- in a vise.
- Tighten the suspension strut in the Spring Compressor Kit - Strut Clamping Block - VAG1752/20- -4-.
- Pretension the coil spring using the Spring Compressor Kit - Spring Tensioner - VAG1752/1- until the upper deep-groove ball bearing is free.

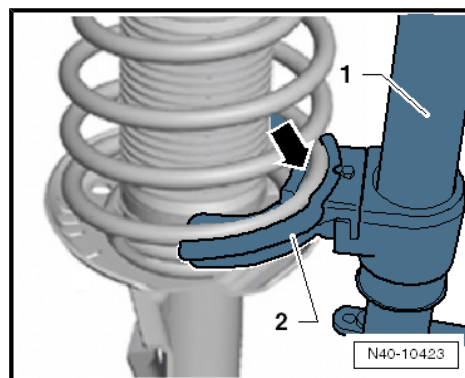
- 1 - Torque Wrench 1332 40-200Nm - VAG1332-
- 2 - Shock Absorber Set - Extension SW7 - T10001/8-
- 3 - Spring Compressor Kit - Spring Tensioner - VAG1752/1-
- 4 - Spring Compressor Kit - Strut Clamping Block - VAG1752/20-
- 5 - Spring Compressor Kit - Spring Retainer w/Inserts - VAG1752/4-
- 6 - Shock Absorber Set - Socket - T10001/5-
- 7 - Shock Absorber Set - Reversible Ratchet - T10001/11-



WARNING

First preload the spring enough so that tension is relieved on upper spring plate.

- Make sure the coil spring fits correctly inside the Spring Compressor Kit - Spring Retainer with Inserts - VAG1752/4- -arrow-.





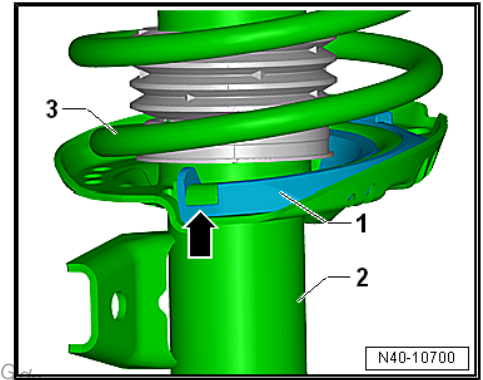
Spring, Installing

- Place the spring support -1- in the shock absorber -2-.
- Place the coil spring -3- with the Spring Compressor Kit - Spring Tensioner - VAG1752/1- on the lower spring support.

The end of the spring coil must rest against the stop -arrow-.

- Assemble all additional parts and tighten the new nut on the piston rod.
- Relieve the tension on the Spring Compressor Kit - Spring Tensioner - VAG1752/1- and remove it from the coil spring.
- Remove the suspension strut from the Spring Compressor Kit - Strut Clamping Block - VAG1752/20-

- Install the suspension strut. Refer to [⇒ "3.2 Suspension Strut, Removing and Installing", page 67](#).



Tightening Specifications

- ◆ Refer to [⇒ "3.1 Overview - Suspension Strut and Upper Control Arm", page 66](#)



4 Lower Control Arm and Ball Joint

⇒ [“4.1 Overview - Lower Control Arm and Ball Joint”, page 76](#)

⇒ [“4.2 Lower Control Arm, Removing and Installing”, page 77](#)

⇒ [“4.3 Ball Joint, Checking”, page 82](#)

⇒ [“4.4 Ball Joint, Removing and Installing”, page 83](#)

⇒ [“4.5 Lower Control Arm Bonded Rubber Bushing, Replacing”, page 86](#)

4.1 Overview - Lower Control Arm and Ball Joint

1 - Wheel Bearing Housing

- ☐ Different versions. Refer to Parts Catalog.
- ☐ Removing and installing. Refer to
⇒ [“5.2 Wheel Bearing Housing, Removing and Installing”, page 91](#).

2 - Nut

- ☐ 60 Nm
- ☐ Replace after removing

3 - Ball Joint

- ☐ Removing and installing. Refer to
⇒ [“4.4 Ball Joint, Removing and Installing”, page 83](#).

4 - Nut

- ☐ 40 Nm +45°
- ☐ Replace after removing
- ☐ Tighten in the curb weight position. Refer to
⇒ [“2.8.1 Wheel Bearing in Curb Weight, Lifting Vehicles with Coil Spring, Front Axle”, page 5](#).

5 - Lower Control Arm

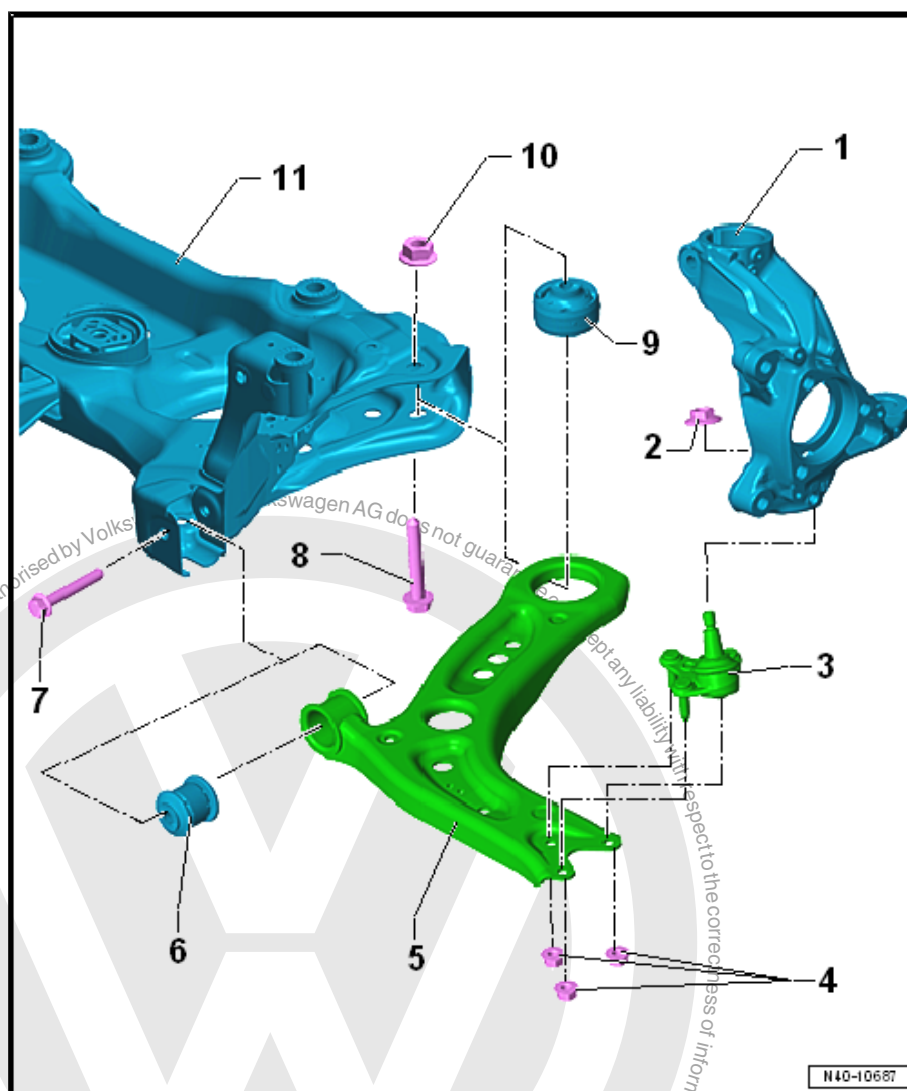
- ☐ Removing and installing. Refer to
⇒ [“4.2 Lower Control Arm, Removing and Installing”, page 77](#).

6 - Front Bonded Rubber Bushing

- ☐ Replacing. Refer to
⇒ [“4.5.1 Front Lower Control Arm Bonded Rubber Bushing, Replacing”, page 86](#).

7 - Bolt

- ☐ 70 Nm +180°
- ☐ Replace after removing
- ☐ Tighten in the curb weight position. Refer to
⇒ [“2.8.1 Wheel Bearing in Curb Weight, Lifting Vehicles with Coil Spring, Front Axle”, page 5](#).





8 - Bolt

- ☐ 70 Nm +180°
- ☐ Replace after removing

9 - Rear Bonded Rubber Bushing

- ☐ Replacing. Refer to ⇒ ["4.5.2 Lower Control Arm Rear Bonded Rubber Bushing, Replacing", page 88](#) .

10 - Nut

11 - Subframe

4.2 Lower Control Arm, Removing and Installing

⇒ ["4.2.1 Lower Control Arm, Removing and Installing, Vehicles with Manual Transmission, DSG® Transmission 0CW", page 77](#)

⇒ ["4.2.2 Lower Control Arm, Removing and Installing, Vehicles with DSG® Transmission 0D9", page 79](#)

4.2.1 Lower Control Arm, Removing and Installing, Vehicles with Manual Transmission, DSG® Transmission 0CW

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

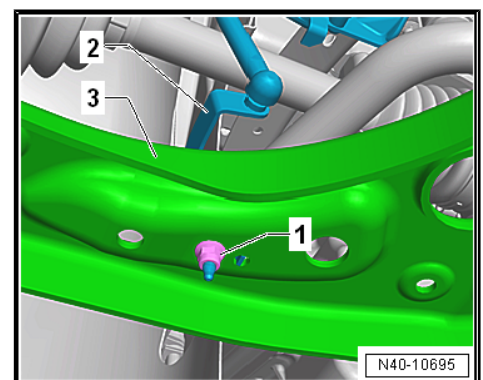
Removing

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- If equipped, remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation
- Loosen the wheel housing liner in the rear area and fold forward.

Vehicles with Level Control System Sensor

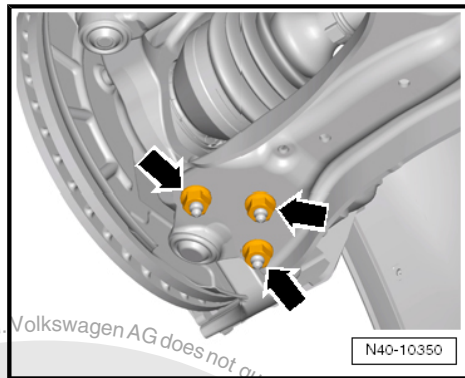
- Remove the nut -1-.
- Remove the bracket -2- for the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289- from the control arm -3-.

Continuation for All Vehicles

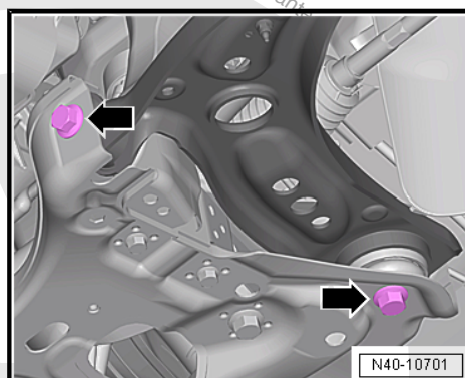




- Remove the nuts -arrows-.
- Remove the control arm from the ball joint and then turn the wheel bearing housing toward the outside to take the load off the control arm.



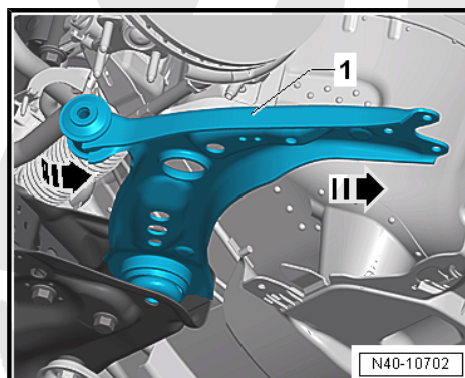
- Remove the bolts -arrows-. While doing so, counterhold at the rear bolt at the top of the nut.



- Swivel the control arm -1- toward the rear and then remove it from the subframe in direction of -arrow-.

Installing

Install in reverse order of removal and note the following:

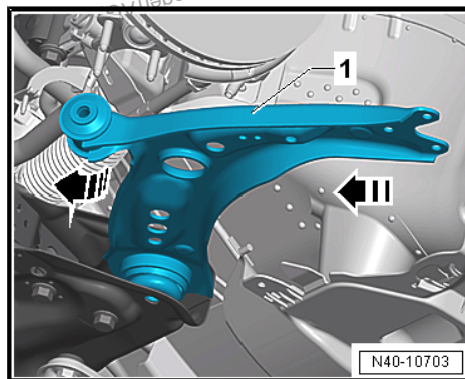


- Insert the rear control arm -1- into the subframe in direction of -arrow- and swivel it forward.



Note

The rear bolt must be attached with a new nut.





- Tighten the bolts -arrows- while doing so counterhold the rear top bolt at the nut.

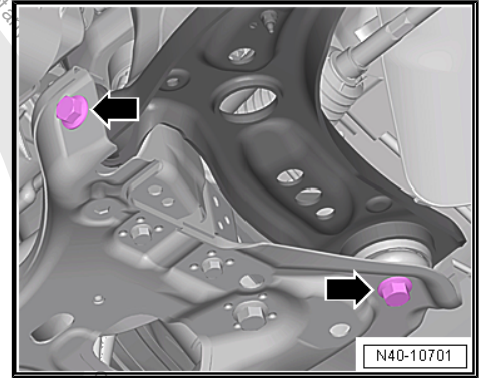
i Note

Tighten the bolts -arrows- and nuts in curb weight position. Refer to [⇒ "2.8.1 Wheel Bearing in Curb Weight, Lifting Vehicles with Coil Spring, Front Axle", page 5](#).

Further installation is the reverse order of removal. Note the following:

i Note

- ◆ *The level control system sensor lever must point toward vehicle exterior.*
- ◆ *The thread on the vehicle level sensor must be installed into the exterior hole in the control arm. The tab on the vehicle level sensor bracket must lock into the inner hole in order to assure a correct installation position.*
- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .



Tightening Specifications

- ◆ Refer to [⇒ "4.1 Overview - Lower Control Arm and Ball Joint", page 76](#)
- ◆ Refer to [⇒ "2.1 Overview - Front Level Control System Sensor", page 327](#)
- ◆ Refer to [⇒ "1.4 Wheel Bolt Tightening Specifications", page 340](#)
- ◆ Noise insulation bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .

4.2.2 Lower Control Arm, Removing and Installing, Vehicles with DSG® Transmission 0D9

Special tools and workshop equipment required

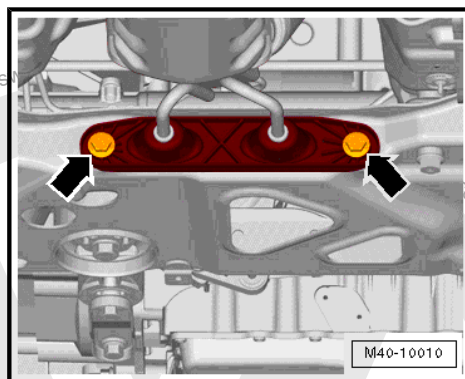
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

Removing

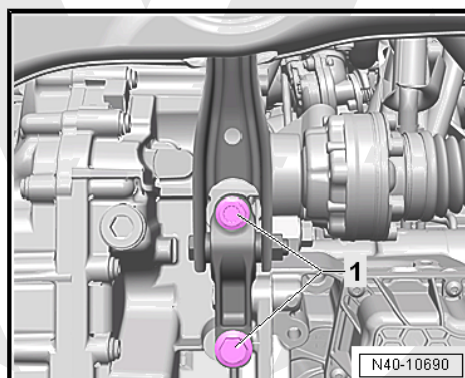
- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- If equipped, remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Loosen the exhaust system double clamp. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .



- Remove the exhaust system bracket from the subframe -arrows-.



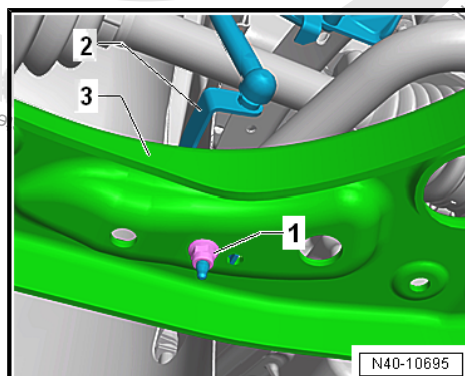
- Remove the pendulum support bolts -1-.
- Loosen the wheel housing liner in the rear area and fold forward.



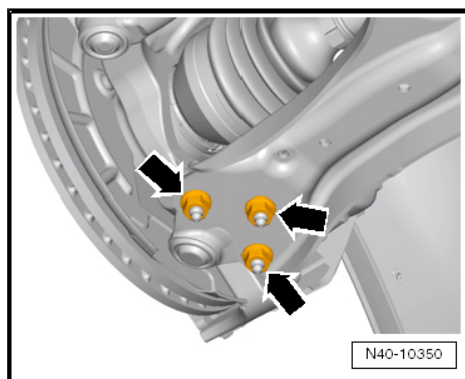
Vehicles with Level Control System Sensor

- Remove the nut -1-.
- Remove the bracket -2- for the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289- from the control arm -3-.

Continuation for All Vehicles

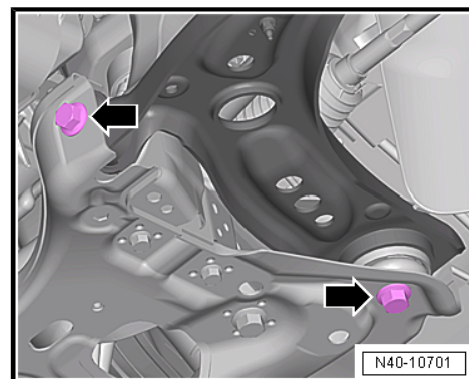


- Remove the nuts -arrows-.
- Remove the control arm from the ball joint and then turn the wheel bearing housing toward the outside to take the load off the control arm.





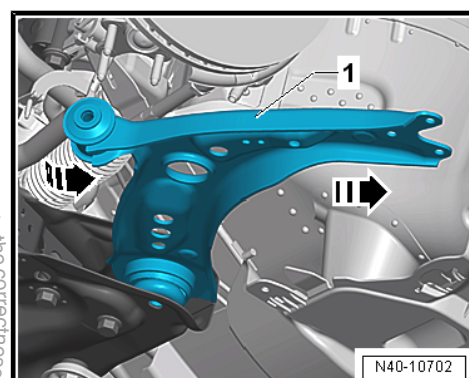
- Remove the bolts -arrows-. While doing so, counterhold at the rear bolt at the top of the nut.
- Push the transmission far enough forward until the front bolt can be removed. When pushing forward, make sure that the exhaust pipe on the subframe does not tilt.



- Swivel the control arm -1- toward the rear and then remove it from the subframe in direction of -arrow-.

Installing

Install in reverse order of removal and note the following:

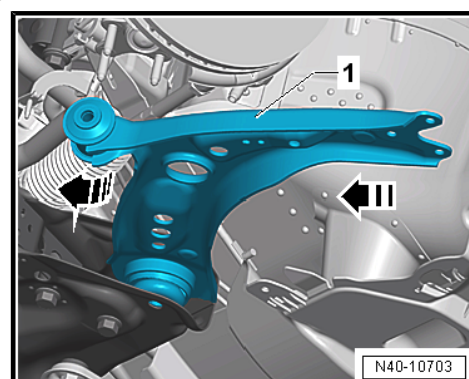


- Insert the rear control arm -1- into the subframe in direction of -arrow- and swivel it forward.



Note

The rear bolt must be attached with a new nut.





- Tighten the bolts -arrows- while doing so counterhold the rear top bolt at the nut.



Note

Tighten the bolts -arrows- and nuts in curb weight position. Refer to

⇒ ["2.8.1 Wheel Bearing in Curb Weight, Lifting Vehicles with Coil Spring, Front Axle", page 5](#).

Further installation is the reverse order of removal. Note the following:



Note

- ◆ The level control system sensor lever must point toward vehicle exterior.
- ◆ The thread on the vehicle level sensor must be installed into the exterior hole in the control arm. The tab on the vehicle level sensor bracket must lock into the inner hole in order to assure a correct installation position.
- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .

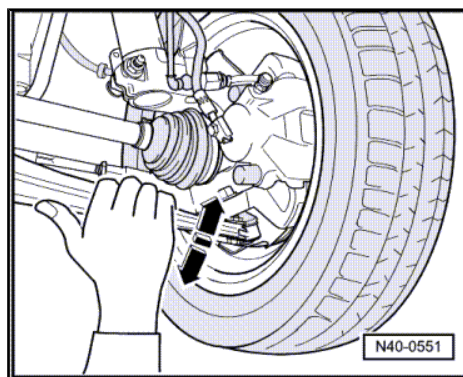
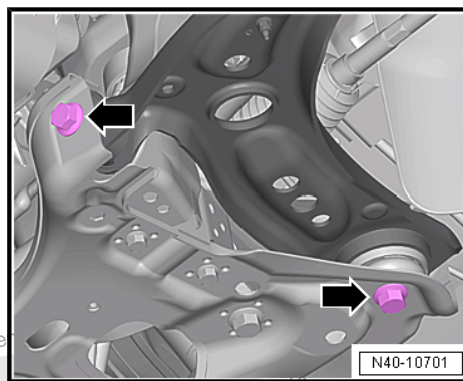
Tightening Specifications

- ◆ Refer to
⇒ ["4.1 Overview - Lower Control Arm and Ball Joint", page 76](#)
- ◆ Refer to
⇒ ["2.1 Overview - Front Level Control System Sensor", page 327](#)
- ◆ Refer to
⇒ ["1.4 Wheel Bolt Tightening Specifications", page 340](#)
- ◆ Pendulum support bolts. Refer to ⇒ Rep. Gr. 10 ; Subframe Mount; Overview - Subframe Mount .
- ◆ Noise insulation bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- ◆ Double clamp for exhaust pipes. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .
- ◆ Exhaust system to subframe. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .

4.3 Ball Joint, Checking

Axial Play, Checking

- Forcefully pull the control arm down in the direction of -arrow- and press it up again.





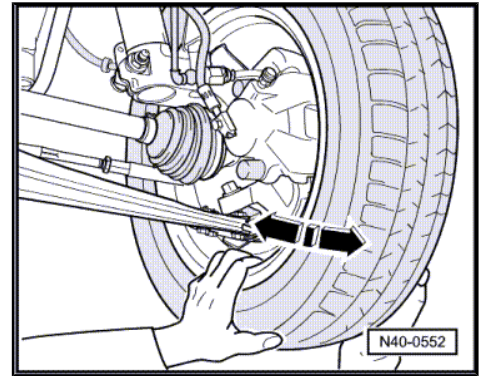
Radial Clearance, Checking

- Forcefully push the lower part of wheel inward and outward in the direction of -arrow-.



Note

- ◆ *There should not be any noticeable or visible “play” in either of the two checks.*
- ◆ *Pay attention to the ball joint while performing checks.*
- ◆ *Make allowance for any wheel bearing play or “play” in the upper strut mount*
- ◆ *Check the rubber boot for damage and replace the lower ball joint, if necessary.*



4.4 Ball Joint, Removing and Installing

Special tools and workshop equipment required

- ◆ Puller - Ball Joint - 3287A-
- ◆ Digital Torque Wrench - VAG1756A-
- ◆ Torque Wrench 1332 Insert - Ring Wrench - 18mm - VAG1332/10-
- ◆ Drive Shaft Remover - T10520-

Removing

- Loosen drive axle bolt on the wheel hub. Refer to [⇒ “6.4 Drive Axle Threaded Connection, Loosening and Tightening”, page 127](#).



Caution

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

If the wheel bearings are under the load of the vehicle weight, the wheel bearing will be damaged. This reduces the service life of the wheel bearings.

The drive axle bolt may be loosened maximum 90° when the vehicle is standing on its wheels.

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

- ◆ ***Install an outer joint in place of the drive axle.***
- ◆ ***Tighten the outer joint to 120 Nm.***

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.



Vehicles with Level Control System Sensor

- Remove the nut -1-.
- Remove the bracket -2- for the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289- from the control arm -3-.

Continuation for All Vehicles

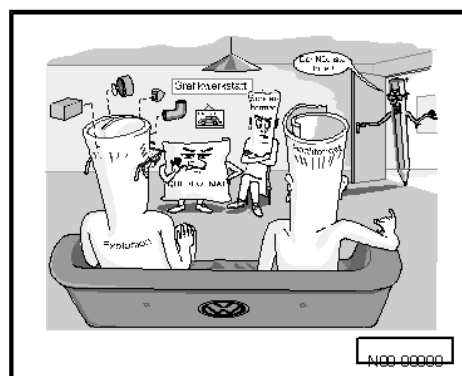
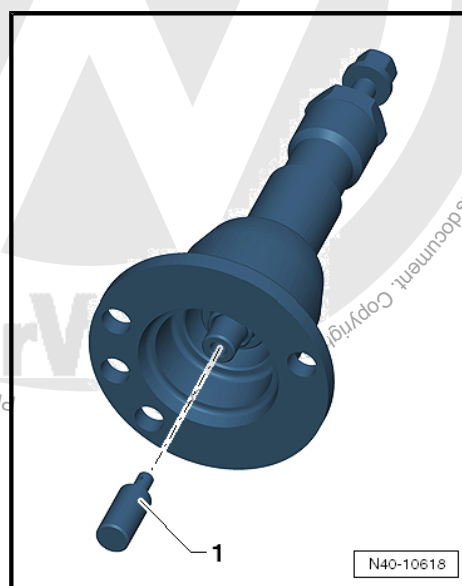
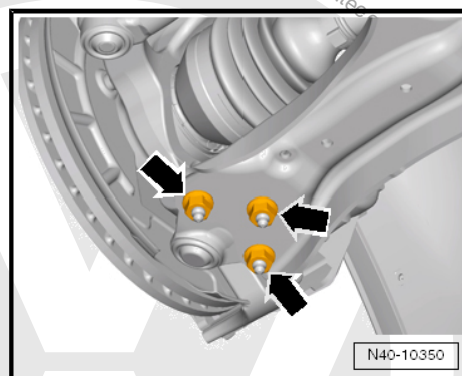
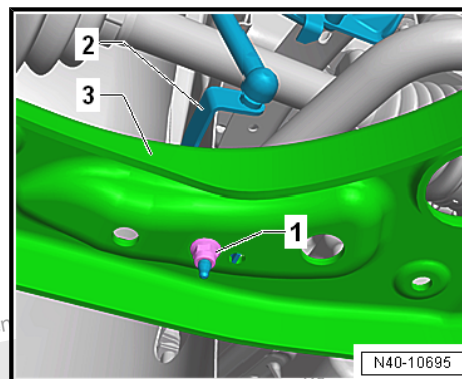
- Remove the nuts -arrows-.
- Pull the drive axle slightly off the wheel hub.

If the Drive Axle Cannot Be Pulled out of the Wheel Bearing, Then the Drive Axle Can Be Pushed out of the Wheel Bearing Using the Drive Shaft Remover - T10520- .

Before using the Drive Shaft Remover - T10520- , make sure that the thrust piece -1- is installed.

Using the Drive Shaft Remover - T10520- :

- Secure the Drive Shaft Remover - T10520- -1- with three wheel bolts -2- on the wheel hub, so that the drive axle -3- can be pressed out.





- Follow the specified sequence exactly.

I - Tighten the knurled nut -1- hand-tight.

II - Only turn the bolt -2- using a wrench and press out the drive axle using the Drive Shaft Remover - T10520- .



Note

At the end of the tasks or to set back, the spindles must be brought back into the original position so that the hydraulic operation can be used.

- Remove the control arm from the ball joint.
- Move the control arm downward as much as needed.
- Loosen the nut on the ball joint -2- but do not remove it.



Caution

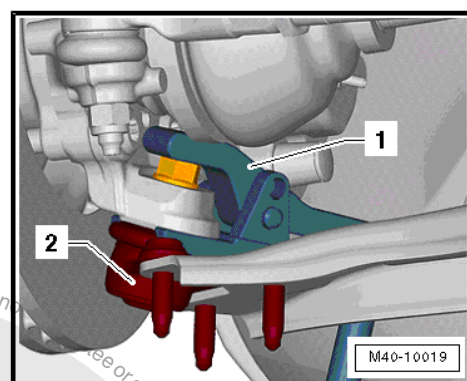
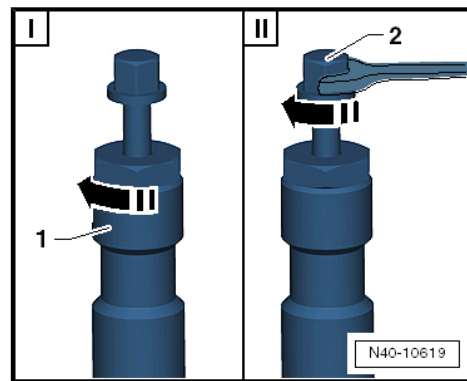
To protect the thread, screw the nut on the pin a few turns.

- Remove the ball joint from the wheel bearing housing using the Puller - Ball Joint - 3287A- -1-.
- Remove the nut and the ball joint -2-.

Installing

Install in reverse order of removal and note the following:

- Insert ball joint into wheel bearing housing.
- Install drive axle in wheel hub.
- Install the new self-locking nut while counterholding using Internal Torx Bit T40- from the Torx® Key Socket Set (VAG1603A).



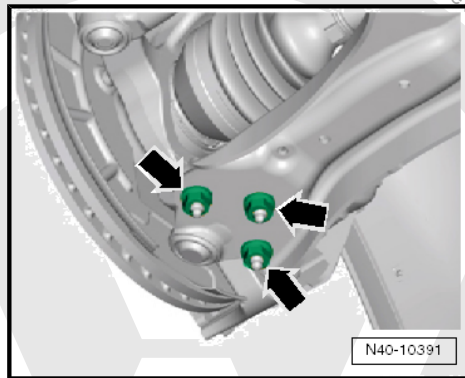


- Tighten nuts -arrows-.



Note

- ♦ Tighten the nuts -arrows- in curb weight position. Refer to [⇒ "2.8.1 Wheel Bearing in Curb Weight, Lifting Vehicles with Coil Spring, Front Axle", page 5](#).
- ♦ Make sure the ball joint boot is not damaged or twisted.



Note

- ♦ The level control system sensor lever must point toward vehicle exterior.
 - ♦ The thread on the vehicle level sensor must be installed into the exterior hole in the control arm. The tab on the vehicle level sensor bracket must lock into the inner hole in order to assure a correct installation position.
- Install the wheel and tighten.
 - Tighten drive axle bolt onto the wheel hub. Refer to [⇒ "6.4 Drive Axle Threaded Connection, Loosening and Tightening", page 127](#).



Note

Vehicle must not be standing on its wheels when doing this, otherwise wheel bearing will be damaged.

- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester.

Tightening Specifications

- ♦ Refer to [⇒ "4.1 Overview - Lower Control Arm and Ball Joint", page 76](#)
- ♦ Refer to [⇒ "2.1 Overview - Front Level Control System Sensor", page 327](#)
- ♦ Refer to [⇒ "6.2 Overview - Drive Axle", page 101](#)
- ♦ Refer to [⇒ "1.4 Wheel Bolt Tightening Specifications", page 340](#)

4.5 Lower Control Arm Bonded Rubber Bushing, Replacing

[⇒ "4.5.1 Front Lower Control Arm Bonded Rubber Bushing, Replacing", page 86](#)

[⇒ "4.5.2 Lower Control Arm Rear Bonded Rubber Bushing, Replacing", page 88](#)

4.5.1 Front Lower Control Arm Bonded Rubber Bushing, Replacing

Special tools and workshop equipment required

- ♦ Wishbone Rubber Mount Assembly Tool - T10219-



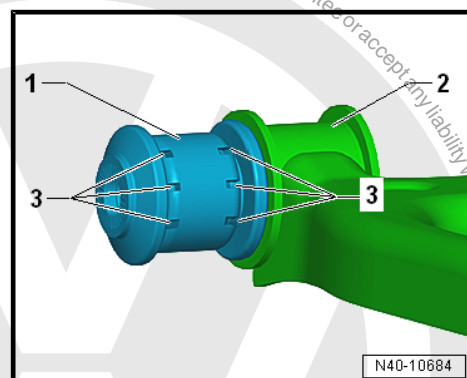
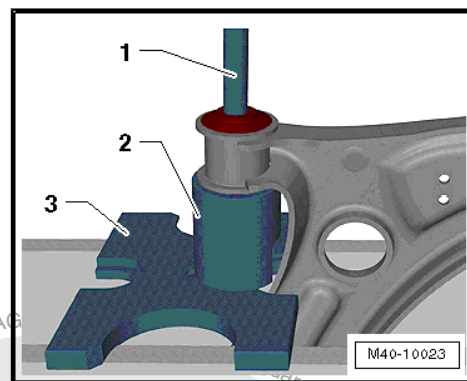
- ◆ Press Plate - VW402-
- ◆ Press Piece - Rod - VW411-
- ◆ Press Piece - Multiple Use - VW412-
- Remove the lower control arm. Refer to
⇒ ["4.2 Lower Control Arm, Removing and Installing",
page 77](#) .

Pressing out the Bonded Rubber Bushing

- Press out the bonded rubber bushings as shown.
- 1 - Press Piece - Rod - VW411-
- 2 - Wishbone Rubber Mount Assembly Tool - Tube - T10219/1-
(the opening must face the control arm)
- 3 - Press Plate - VW402-

Installing the Bonded Rubber Bushings

- Align the bonded rubber bushing -1- with the control arm -2-.
- The grooves -3- must point to the control arm -2- as shown.
- Apply Installation Lubricant - G 294 421 A1- onto the outside
of the bonded rubber bushing.

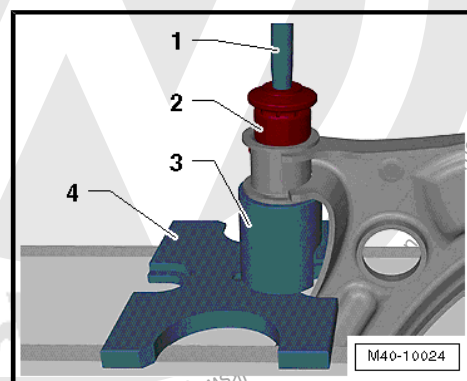


- Install the bonded rubber bushing as shown.
- 1 - Wishbone Rubber Mount Assembly Tool-Drift - T10219/2-
- 2 - Bonded Rubber Bushing
- 3 - Wishbone Rubber Mount Assembly Tool - Tube - T10219/1-
(the opening must face the control arm)
- 4 - Press Plate - VW402-



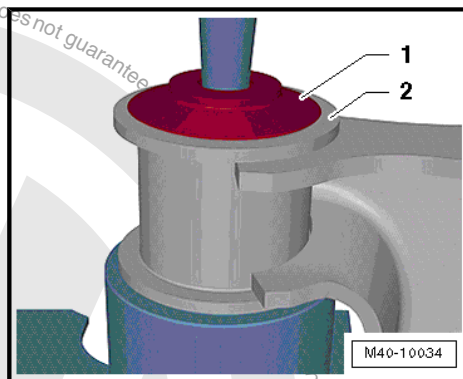
Note

The bonded rubber bushing will be crooked for a short time at the beginning of the installation. Later it will straighten out. It will not be necessary to guide it.

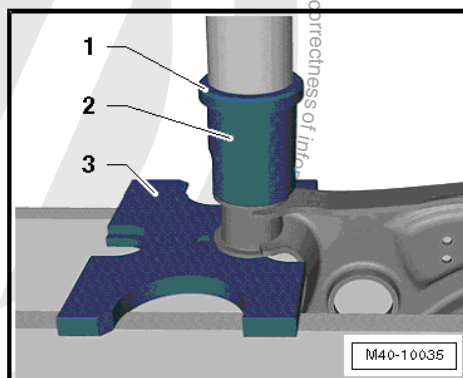




- Install the bonded rubber bushing until the core -1- and the control arm hole -2- are at the same height.

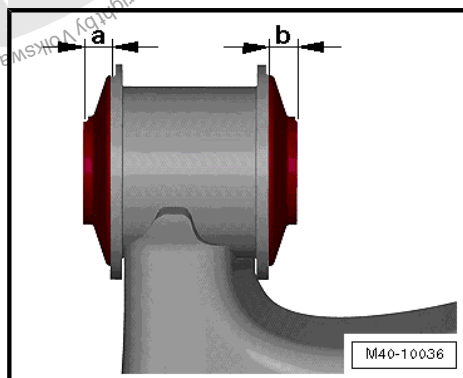


- Press the bushing back slightly in the control arm.
- 1 - Press Piece - Multiple Use - VW412-
 - 2 - Wishbone Rubber Mount Assembly Tool - Tube - T10219/1-
 - 3 - Press Plate - VW402-



Dimensions -a and b- must be identical

- Install the lower control arm. Refer to
⇒ [“4.2 Lower Control Arm, Removing and Installing”, page 77](#) .



4.5.2 Lower Control Arm Rear Bonded Rubber Bushing, Replacing

Special tools and workshop equipment required

- ♦ Bearing Installer - Wheel Bearing - 3345-
- ♦ Bearing Installer - Multiple Use - 3348-
- ♦ Press Plate - VW401-
- ♦ Press Piece - Rod - VW411-
- ♦ Press Piece - Multiple Use - VW412-
- ♦ Bearing Installer - Ball Joint/Bushing/Bearing - VW459-
- Remove the lower control arm.
- ♦ Vehicles with Manual Transmission, DSG® Transmission 0CW. Refer to
⇒ [“4.2.1 Lower Control Arm, Removing and Installing, Vehicles with Manual Transmission, DSG® Transmission 0CW”, page 77](#) .

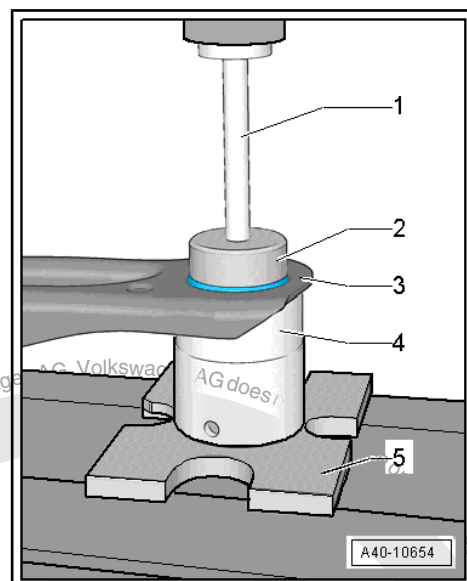


- ◆ Vehicles with DSG® Transmission 0D9. Refer to
⇒ ["4.2.2 Lower Control Arm, Removing and Installing, Vehicles with DSG® Transmission 0D9", page 79](#) .

Pressing out the Bonded Rubber Bushing

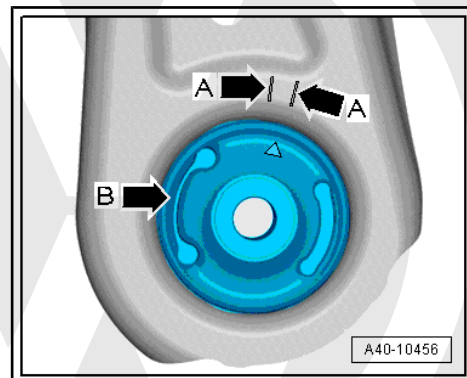
- Press out the bonded rubber bushings as shown.

- 1 - Press Piece - Rod - VW411-
- 2 - Bearing Installer - Multiple Use - 3348-
- 3 - Control Arm
- 4 - Bearing Installer - Wheel Bearing - 3345-
- 5 - Press Plate - VW401-



Bonded Rubber Bushing Installed Position

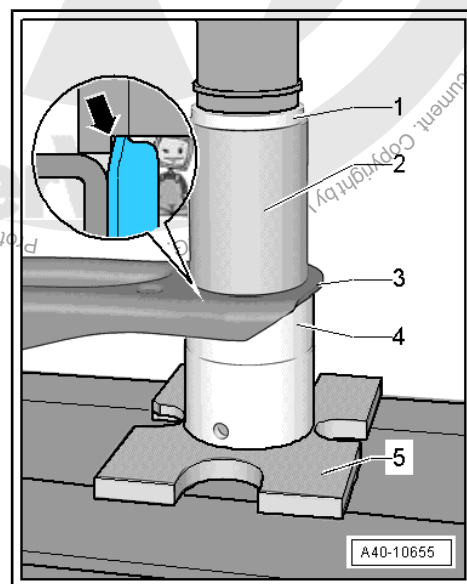
- The stamped arrow points between the markings -arrows A- in the control arm.
- The cam -arrow B- must always point to the outside of the vehicle. The open kidney-shape points to the vehicle center.



Installing the Bonded Rubber Bushings

- Install the bonded rubber bushing as shown.

- 1 - Press Piece - Multiple Use - VW412-
- 2 - Bearing Installer - Ball Joint/Bushing/Bearing - Sleeve - VW459/2- , the inner offset in the sleeve -arrow- points downward
- 3 - Control Arm
- 4 - Bearing Installer - Wheel Bearing - 3345-
- 5 - Press Plate - VW401-



Note

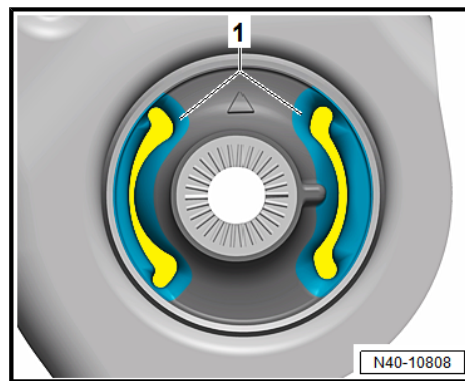
Install the bonded rubber bushing far enough until the Bearing Installer - Wheel Bearing - 3345- contacts the control arm.



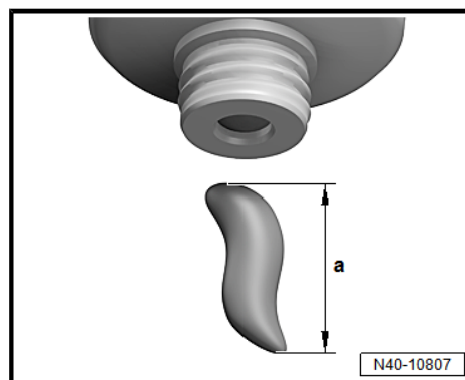
Bonded Rubber Bushing, Lubricating:

The kidney-shaped area -1- of the bonded rubber bushing must be lubricated.

- To do so, apply grease in the kidney-shaped area -1- starting from the top working outward.
- Use the grease -G 052 150 A2- .



- The required quantity of grease for both sides should be approximately 1 cm -dimension a- as shown.
- Half of the grease quantity (approximately 0.5 cm) must be applied per kidney-shaped area.
- The grease quantity must be applied on the top using a commercially available brush.
- The contact surfaces to the control arm must not come in contact with grease.
- Install the lower control arm. Refer to [⇒ "4.2 Lower Control Arm, Removing and Installing", page 77](#) .
- ♦ Vehicles with Manual Transmission, DSG® Transmission 0CW. Refer to [⇒ page 78](#) .
- ♦ Vehicles with DSG® Transmission 0D9. Refer to [⇒ page 81](#) .





5 Wheel Bearing

⇒ ["5.1 Overview - Wheel Bearing", page 91](#)

⇒ ["5.2 Wheel Bearing Housing, Removing and Installing", page 91](#)

⇒ ["5.3 Wheel Bearing Unit, Removing and Installing", page 96](#)

5.1 Overview - Wheel Bearing

1 - Cover Plate

2 - Bolt

- 12 Nm

3 - Wheel Bearing Unit

- Removing and installing. Refer to
⇒ ["5.3 Wheel Bearing Unit, Removing and Installing", page 96](#) .
- Cannot be serviced

4 - Bolt

- 200 Nm +180°
- Replace after removing
- Loosening and tightening. Refer to
⇒ ["6.4 Drive Axle Threaded Connection, Loosening and Tightening", page 127](#) .

5 - Wheel Bearing Housing

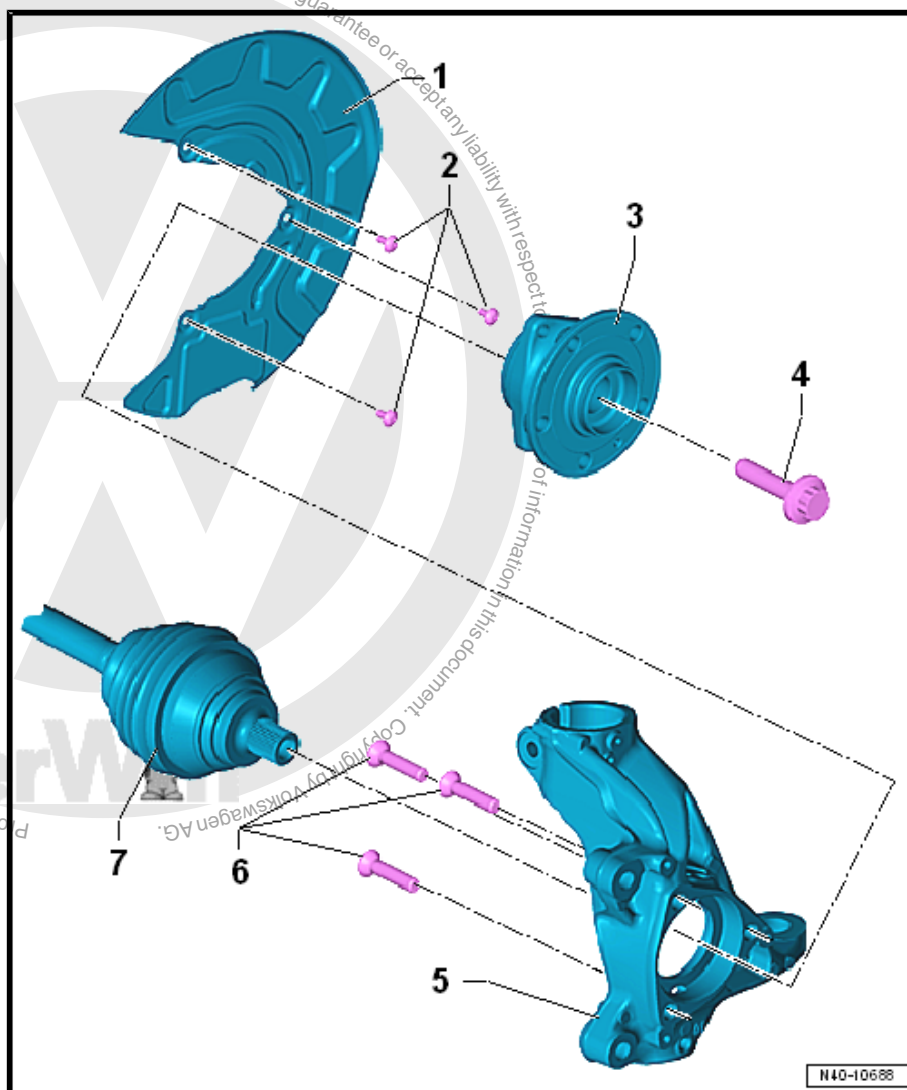
- There are different versions. Refer to the Parts Catalog.
- Removing and installing. Refer to
⇒ ["5.2 Wheel Bearing Housing, Removing and Installing", page 91](#) .

6 - Bolt

- 70 Nm +90°
- Replace after removing

7 - Drive Axle

- Do not let the drive axle hang down. The inner joint could be damaged if it is bent too far.
- Lightly coat the splines on the outer joint with assembly paste before installing the outer joint into the wheel hub. Refer to the Parts Catalog.



5.2 Wheel Bearing Housing, Removing and Installing

Special tools and workshop equipment required

- ◆ Puller - Ball Joint - 3287A-
- ◆ Spreader Tool - 3424-



- ◆ Puller - Ball Joint - T10187-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Engine and Gearbox Jack - VAS6931-
- ◆ Digital Torque Wrench - VAG1756A-
- ◆ Drive Shaft Remover - T10520-

Removing

- Remove the drive axle bolt. Refer to
⇒ ["6.4 Drive Axle Threaded Connection, Loosening and Tightening", page 127](#) .



Caution

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

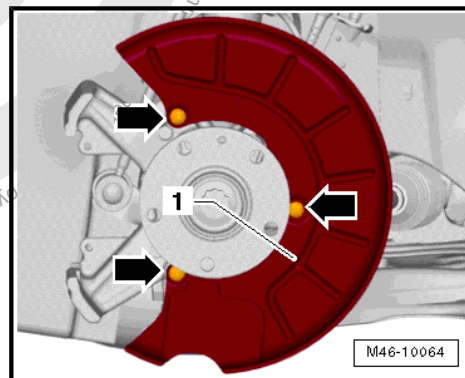
If the wheel bearings are under the load of the vehicle weight, the wheel bearing will be damaged. This reduces the service life of the wheel bearings.

The drive axle bolt may be loosened maximum 90° when the vehicle is standing on its wheels.

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

- ◆ *Install an outer joint in place of the drive axle.*
- ◆ *Tighten the outer joint to 120 Nm.*

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Remove the brake caliper and tie it to the vehicle body with wire. Refer to ⇒ Brake System; Rep. Gr. 46 ; Front Brakes; Overview - Front Brakes .
- Remove the ABS speed sensor. Refer to ⇒ Brake System; Rep. Gr. 45 ; Sensors; Right/Left Front ABS Wheel Speed Sensor -G45- / -G47- , Removing and Installing .
- Remove the brake rotor. Refer to ⇒ Brake System; Rep. Gr. 46 ; Front Brakes; Overview - Front Brakes .
- Remove and free up the brake line bracket and electrical wires from the wheel bearing housing.
- Remove the cover plate -1- from the wheel bearing housing -arrow-.
- Loosen the nut from the tie rod end, but do not unscrew yet.





- Remove the tie rod from the wheel bearing housing using the Puller - Ball Joint - T10187- -1-.



Caution

To protect the thread, screw the nut on the pin a few turns.

- Remove the nut and remove the tie rod upward from the wheel bearing housing.

Vehicles with Level Control System Sensor

- Remove the nut -1-.
- Remove the bracket -2- for the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289- from the control arm -3-.

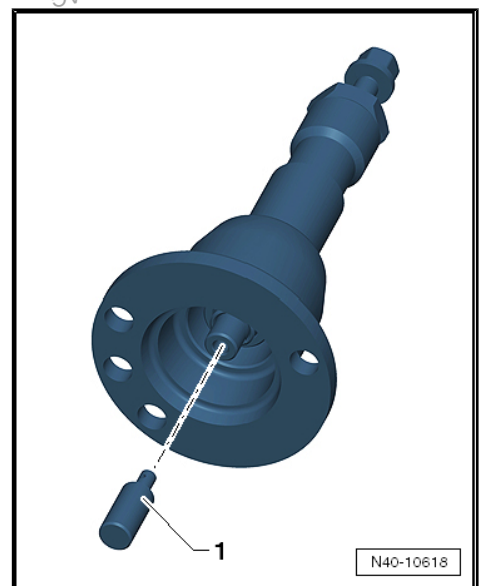
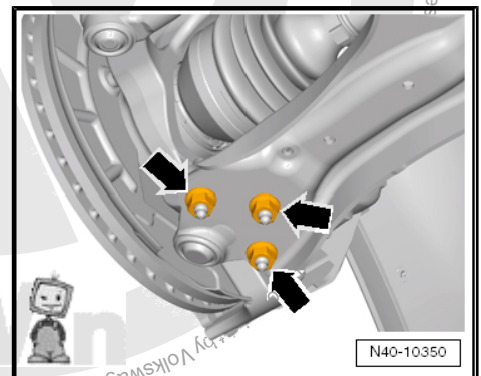
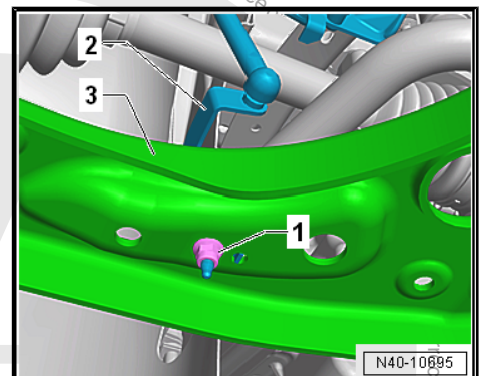
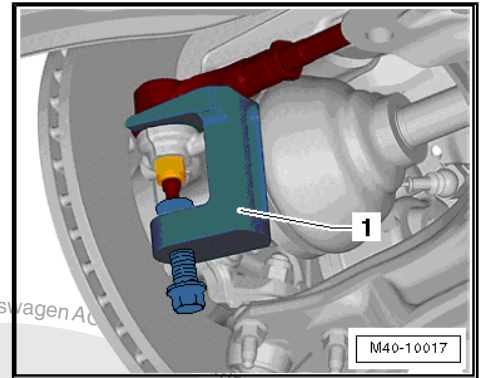
Continuation for All Vehicles

- Remove the nuts -arrows-.
- Remove the control arm from the ball joint.
- Remove the drive axle outer joint from the wheel hub.

If the Drive Axle Cannot Be Pulled out of the Wheel Bearing, Then the Drive Axle Can Be Pushed out of the Wheel Bearing Using the Drive Shaft Remover - T10520- .

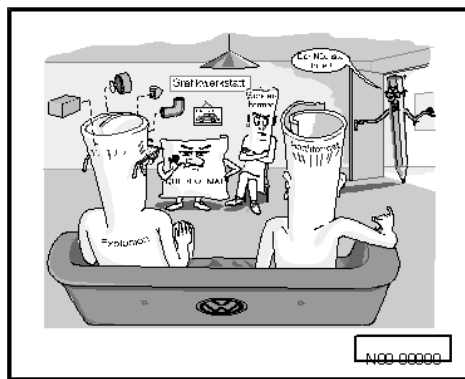
Before using the Drive Shaft Remover - T10520- , make sure that the thrust piece -1- is installed.

Using the Drive Shaft Remover - T10520- :





- Secure the Drive Shaft Remover - T10520- -1- with three wheel bolts -2- on the wheel hub, so that the drive axle -3- can be pressed out.



- Follow the specified sequence exactly.

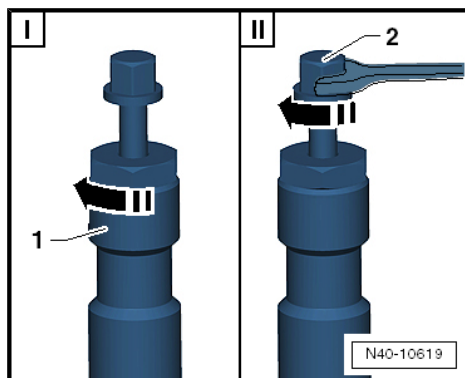
I - Tighten the knurled nut -1- hand-tight.

II - Only turn the bolt -2- using a wrench and press out the drive axle using the Drive Shaft Remover - T10520- .

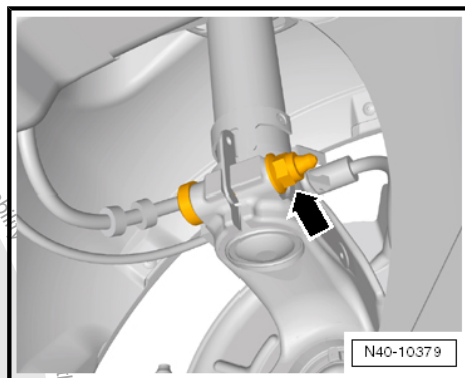


Note

At the end of the tasks or to set back, the spindles must be brought back into the original position so that the hydraulic operation can be used.



- Secure the drive axle to the body using wire.
- Place the Engine and Gearbox Jack - VAS6931- under the wheel bearing housing.
- Remove the threaded connection on the wheel bearing housing/suspension strut -arrow-.





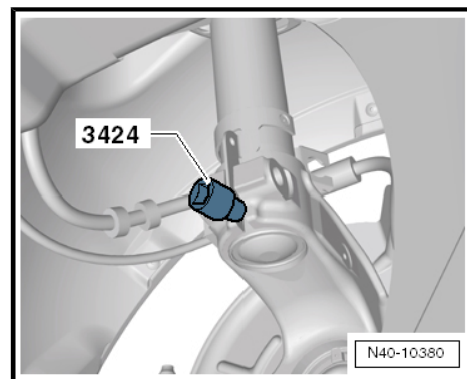
- Insert Spreader Tool - 3424- into wheel bearing housing slot.



Note

Pay attention that the Spreader Tool - 3424- is only inserted in the wheel bearing housing. Only insert it far enough that the suspension strut metal retainer is not damaged.

- Turn the ratchet 90° and remove it from the Spreader Tool - 3424- .
- Remove the wheel bearing housing from the suspension strut.



Note

If the wheel bearing housing is being replaced, then the ball joint must also be replaced. New nuts must be used.

Installing

Install in reverse order of removal and note the following:





- Tighten nuts -arrows-.



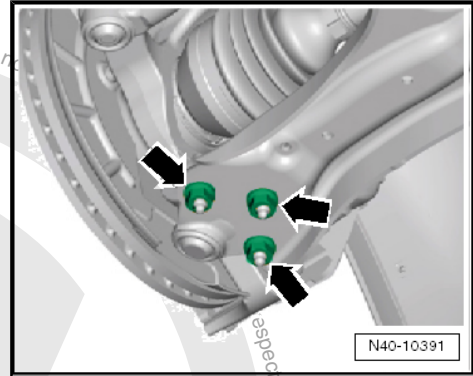
Note

*Tighten the nuts -arrows- in curb weight position. Refer to
⇒ [“2.8.1 Wheel Bearing in Curb Weight, Lifting Vehicles with Coil Spring, Front Axle”, page 5](#).*



Note

- ◆ *The level control system sensor lever must point toward vehicle exterior.*
- ◆ *The thread on the vehicle level sensor must be installed into the exterior hole in the control arm. The tab on the vehicle level sensor bracket must lock into the inner hole in order to assure a correct installation position.*
- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics using the .
Refer to Vehicle Diagnostic Tester .



Tightening Specifications

- ◆ Refer to ⇒ [“5.1 Overview - Wheel Bearing”, page 91](#)
- ◆ Refer to
⇒ [“4.1 Overview - Lower Control Arm and Ball Joint”, page 76](#)
- ◆ Refer to
⇒ [“3.1 Overview - Suspension Strut and Upper Control Arm”, page 66](#)
- ◆ Refer to ⇒ [“6.2 Overview - Drive Axle”, page 101](#)
- ◆ Refer to
⇒ [“2.1 Overview - Front Level Control System Sensor”, page 327](#)
- ◆ Refer to
⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)
- ◆ Speed sensor bolt. Refer to ⇒ Brake System; Rep. Gr. 45 ; Sensors; Overview - Front Axle Speed Sensor .
- ◆ Bolts for cover plate, brake caliper and brake rotor. Refer to ⇒ Brake System; Rep. Gr. 46 ; Front Brakes; Overview - Front Brakes .

5.3 Wheel Bearing Unit, Removing and Installing

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

Removing

- Remove the drive axle bolt. Refer to
⇒ [“6.4 Drive Axle Threaded Connection, Loosening and Tightening”, page 127](#) .



Caution

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

If the wheel bearings are under the load of the vehicle weight, the wheel bearing will be damaged. This reduces the service life of the wheel bearings.

The drive axle bolt may be loosened maximum 90° when the vehicle is standing on its wheels.

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

- ◆ *Install an outer joint in place of the drive axle.*
- ◆ *Tighten the outer joint to 120 Nm.*

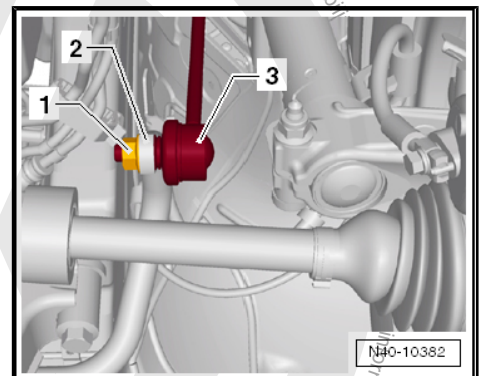
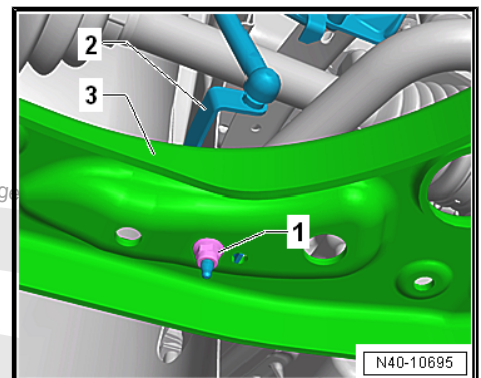
- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Remove the brake caliper and tie it to the vehicle body with wire. Refer to ⇒ Brake System; Rep. Gr. 46 ; Front Brakes; Overview - Front Brakes .
- Remove the brake rotor. Refer to ⇒ Brake System; Rep. Gr. 46 ; Front Brakes; Overview - Front Brakes .

Vehicles with Level Control System Sensor

- Remove the nut -1-.
- Remove the bracket -2- for the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289- from the control arm -3-.

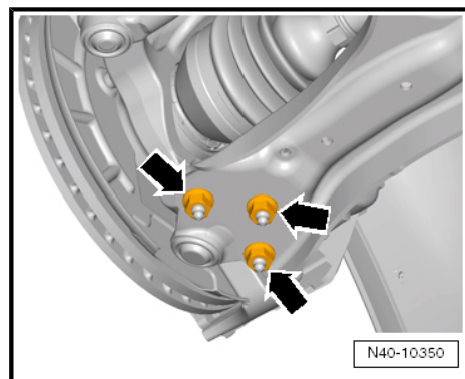
Continuation for All Vehicles

- Remove the nut -1- from the coupling rod -3-.
- Remove the coupling rod -3- from the stabilizer bar -2-.





- Remove the nuts -arrows-.
- Remove the control arm from the ball joint.
- Remove the drive axle outer joint from the wheel hub.
- Secure the drive axle to the body using wire.
- Attach the ball joint to the control arm again -arrows-.

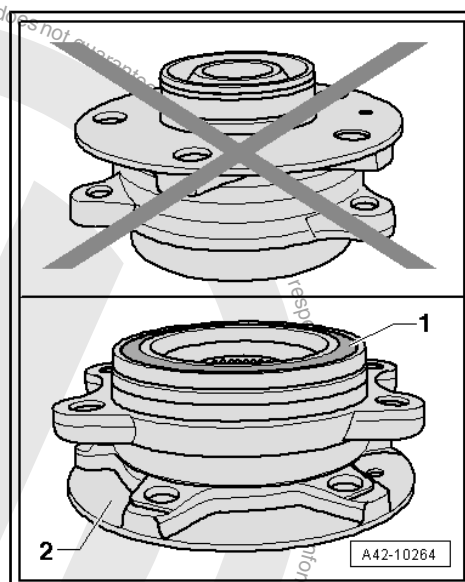
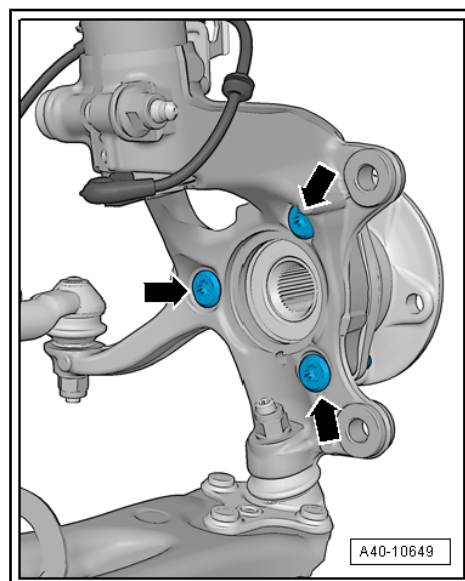


- Remove the bolts -arrows-.
- Remove wheel bearing unit from wheel bearing housing.



Caution

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

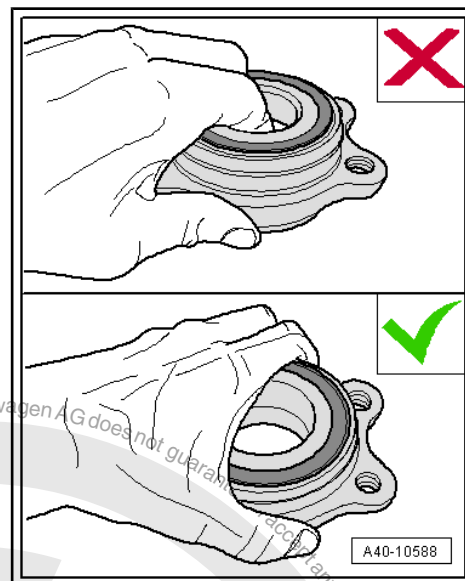




- The wheel bearing -1- must face up in order to remove the wheel bearing unit.
- Always set the wheel bearing unit down on the wheel hub -2-.
- Never reach inside when lifting the wheel bearing.
- Hold the wheel bearing only on the outside.

Installing

Install in reverse order of removal and note the following:



- Tighten nuts -arrows-.



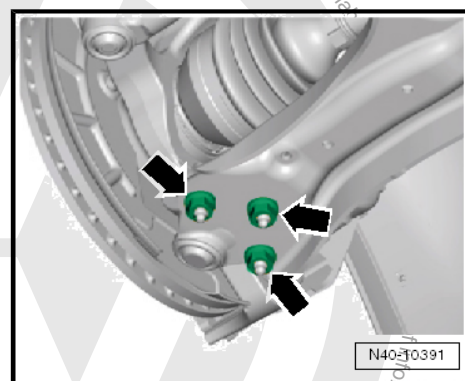
Note

Tighten the nuts -arrows- in curb weight position. Refer to ⇒ "2.8.1 Wheel Bearing in Curb Weight, Lifting Vehicles with Coil Spring, Front Axle", page 5.



Note

- ◆ *The level control system sensor lever must point toward vehicle exterior.*
- ◆ *The thread on the vehicle level sensor must be installed into the exterior hole in the control arm. The tab on the vehicle level sensor bracket must lock into the inner hole in order to assure a correct installation position.*



- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics using the. Refer to Vehicle Diagnostic Tester .

Tightening Specifications

- ◆ Refer to ⇒ ["5.1 Overview - Wheel Bearing", page 91](#)
- ◆ Refer to ⇒ ["6.2 Overview - Drive Axle", page 101](#)
- ◆ Refer to ⇒ ["2.1 Overview - Subframe", page 16](#)
- ◆ Refer to ⇒ ["4.1 Overview - Lower Control Arm and Ball Joint", page 76](#)
- ◆ Refer to ⇒ ["2.1 Overview - Front Level Control System Sensor", page 327](#)
- ◆ Refer to ⇒ ["1.4 Wheel Bolt Tightening Specifications", page 340](#)
- ◆ Brake rotor bolt. Refer to ⇒ Brake System; Rep. Gr. 46 ; Front Brakes; Overview - Front Brakes .



6 Drive Axle

⇒ [“6.1 Overview - Drive Axle”, page 100](#)

⇒ [“6.2 Overview - Drive Axle”, page 101](#)

⇒ [“6.3 Drive Axle, Removing and Installing”, page 106](#)

⇒ [“6.4 Drive Axle Threaded Connection, Loosening and Tightening”, page 127](#)

⇒ [“6.5 Drive Axle Heat Shield, Removing and Installing”, page 128](#)

⇒ [“6.6 Drive Axle, Disassembling and Assembling”, page 129](#)

⇒ [“6.7 Outer CV Joint, Checking”, page 138](#)

⇒ [“6.8 Inner CV Joint, Checking”, page 139](#)

6.1 Overview - Drive Axle

I - Refer to

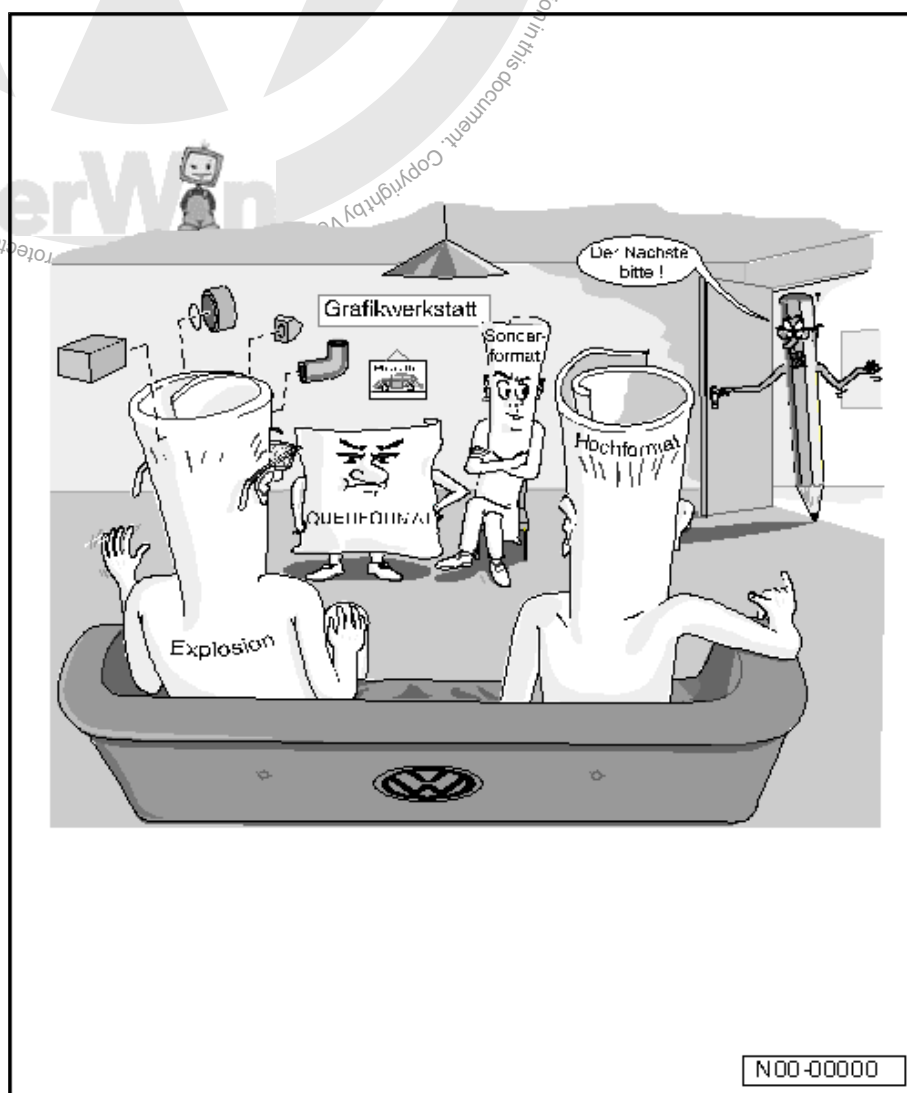
⇒ [“6.2.1 Overview - Drive Axle, CV Joint VL 100”, page 101](#)

II - Refer to

⇒ [“6.2.2 Overview - Drive Axle, CV Joint VL 107”, page 103](#)

III - Refer to

⇒ [“6.2.3 Overview - Drive Axle, Triple Roller Joint AAR3300i”, page 105](#)





Difference of Drive Axles in Installed Condition

	VL100	VL107	AAR3300i At- tached	AAR3300i Bol- ted
Diameter of inner joint in mm	100	107	-	-
Cover between inner joint and flange shaft	-	X	-	-
Inner joint inserted into transmis- sion (automatic transmission only)	-	-	X	-

6.2 Overview - Drive Axle

⇒ [“6.2.1 Overview - Drive Axle, CV Joint VL 100”, page 101](#)

⇒ [“6.2.2 Overview - Drive Axle, CV Joint VL 107”, page 103](#)

⇒ [“6.2.3 Overview - Drive Axle, Triple Roller Joint AAR3300i”, page 105](#)

6.2.1 Overview - Drive Axle, CV Joint VL 100

1 - Outer CV Joint

- ☐ Only replace completely
- ☐ Removing. Refer to
⇒ [page 129](#) .
- ☐ Installing: Using a plastic hammer, drive onto the shaft as far as the stop
- ☐ Checking. Refer to
⇒ [“6.7 Outer CV Joint, Checking”, page 138](#) .

2 - Bolt

- ☐ 200 Nm +180°
- ☐ Replace after removing
- ☐ Loosening and tightening. Refer to
⇒ [“6.4 Drive Axle Threaded Connection, Loosening and Tightening”, page 127](#)

3 - Right Drive Axle

4 - Clamp

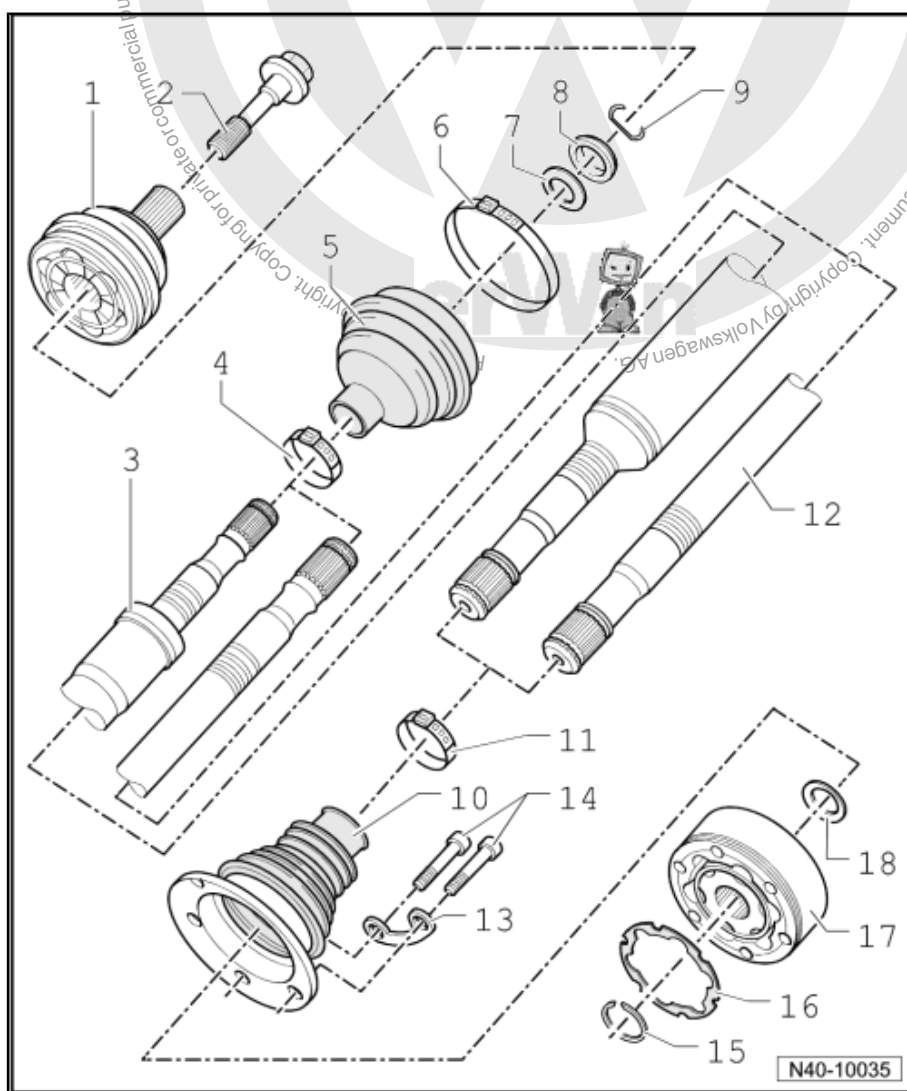
- ☐ Replace after removing
- ☐ Tensioning. Refer to
⇒ [Fig. ““Tensioning Clamp on Small Diameter””, page 132](#) .

5 - CV Boot

- ☐ Check for tears and scuffing
- ☐ Material: Hytrel polyether-
elastomer

6 - Clamp

- ☐ Replace after removing
- ☐ Tensioning. Refer to ⇒ [Fig. ““Tightening Clamp on Outer Joint””, page 131](#) .





7 - Plate Spring

- ☐ Installation position. Refer to
⇒ [Fig. "Installed Location of Spring Washer and Thrust Washer on Outer Joint"](#), page 130 .
- ☐ Allocation. Refer to the Parts Catalog.

8 - Thrust Ring

- ☐ Installation position. Refer to
⇒ [Fig. "Installed Location of Spring Washer and Thrust Washer on Outer Joint"](#), page 130 .
- ☐ Allocation. Refer to the Parts Catalog.

9 - Circlip

- ☐ Replace after removing
- ☐ Insert in shaft groove

10 - CV Boot for CV joint

- ☐ Material: Hytrel polyelastomer
- ☐ Without vent hole
- ☐ Check for tears and scuffing
- ☐ Drive off CV joint using drift
- ☐ Coat the sealing surface with -D 454 300 A2- before installing it on the CV joint

11 - Clamp

- ☐ Replace after removing
- ☐ Tensioning. Refer to ⇒ [Fig. "Tightening Clamp on Outer Joint"](#), page 131 .

12 - Left Drive Axle

13 - Backing Plate

14 - Internal Multi-Point Bolt

- ☐ First tighten diagonally to 10 Nm, then tighten diagonally again to the tightening specification
- ☐ 40 Nm
- ☐ Replace after removing
- ☐ M8 x 48

15 - Circlip

- ☐ Remove and install using Circlip Pliers - VW161A-

16 - Seal

- ☐ Bonding surface on CV joint must not have any grease or oil on it.

17 - Inner CV Joint

- ☐ Only replace completely
- ☐ Removing. Refer to ⇒ [Fig. "Inner CV Joint, Removing"](#), page 130 .
- ☐ Installing. Refer to ⇒ [Fig. "Inner CV Joint, Pressing On"](#), page 131 .
- ☐ Checking. Refer to ⇒ ["6.8 Inner CV Joint, Checking"](#), page 139 .

18 - Plate Spring

- ☐ Installation position. Refer to ⇒ [page 130](#) .

6.2.2 Overview - Drive Axle, CV Joint VL 107

1 - Bolt

- ☐ 200 Nm +180°
- ☐ Replace after removing
- ☐ Before installing, clean the threads in the CV joint with a thread tap.
- ☐ Loosening and tightening. Refer to
⇒ ["6.4 Drive Axle Threaded Connection, Loosening and Tightening"](#), page 127

2 - Outer CV Joint

- ☐ Only replace completely
- ☐ Removing. Refer to
⇒ [page 132](#) .
- ☐ Installing: Using a plastic hammer, drive onto the shaft as far as the stop
- ☐ Checking. Refer to
⇒ ["6.7 Outer CV Joint, Checking"](#) page 138 .

3 - Circlip

- ☐ Replace after removing
- ☐ Insert in shaft groove

4 - Clamp

- ☐ Replace after removing
- ☐ Tensioning. Refer to
⇒ [Fig. "Tightening Clamp on Outer Joint"](#), page 134 .

5 - CV Boot

- ☐ Check for tears and scuffing
- ☐ Material: Hytrel polyelastomer

6 - Clamp

- ☐ Replace after removing
- ☐ Tensioning. Refer to ⇒ [Fig. "Tensioning Clamp on Small Diameter"](#), page 134 .

7 - Drive Axle

8 - Clamp

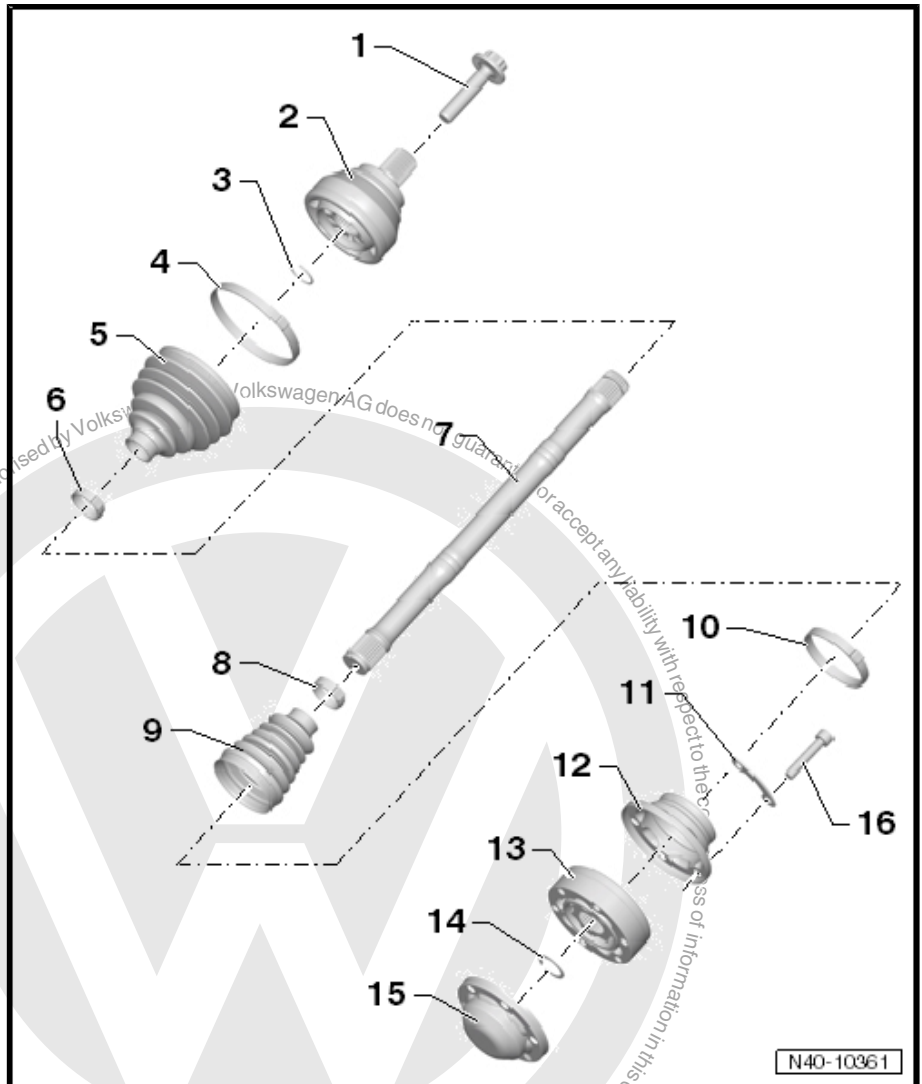
- ☐ Replace after removing
- ☐ Tensioning. Refer to ⇒ [Fig. "Tensioning Clamp on Small Diameter"](#), page 134 .

9 - CV Boot for CV joint

- ☐ Material: Hytrel polyelastomer
- ☐ Without vent hole
- ☐ Check for tears and scuffing
- ☐ Drive off CV joint using drift
- ☐ Coat the sealing surface with -D 454 300 A2- before installing it on the CV joint

10 - Clamp

- ☐ Replace after removing





- ☐ Tensioning. Refer to ➤ [Fig. “Tightening Clamp on Outer Joint”](#), page 134 .

11 - Backing Plate

12 - Cap

- ☐ Carefully drive off using a drift
- ☐ Coat the sealing surface with -D 454 300 A2- before installing it on the CV joint
- ☐ Adhesive surface must be free of oil and grease

13 - Inner CV Joint

- ☐ Only replace completely
- ☐ Removing. Refer to ➤ [Fig. “Inner CV Joint, Removing”](#), page 133 .
- ☐ Installing. Refer to ➤ [Fig. “Inner CV Joint, Pressing On”](#), page 133 .
- ☐ Checking. Refer to ➤ [“6.8 Inner CV Joint, Checking”](#), page 139 .

14 - Circlip

- ☐ Remove and install using Circlip Pliers - VW161A- .

15 - Cover

- ☐ Replace after removing
- ☐ Always replace
- ☐ Removing. Refer to ➤ [Fig. “Drive off Cover for Inner Joint”](#), page 133 .

16 - Internal Multi-Point Bolt

- ☐ 70 Nm
- ☐ Replace after removing
- ☐ First tighten diagonally to 10 Nm, then tighten diagonally again to the tightening specification
- ☐ M10 x 52





6.2.3 Overview - Drive Axle, Triple Roller Joint AAR3300i

1 - Bolt

- ☐ 200 Nm +180°
- ☐ Replace after removing
- ☐ Loosening and tightening. Refer to
⇒ ["6.4 Drive Axle Threaded Connection, Loosening and Tightening"](#),
[page 127](#)
- ☐ Before installing, clean the threads in the CV joint with a thread tap.

2 - Outer CV Joint

- ☐ Only replace completely
- ☐ Removing. Refer to
⇒ [page 135](#) .
- ☐ Installing: Drive onto shaft with plastic hammer until compressed circlip seats.
- ☐ Checking. Refer to
⇒ ["6.7 Outer CV Joint, Checking"](#), [page 138](#) .

3 - Circlip

- ☐ Replace after removing
- ☐ Insert in shaft groove

4 - Clamp

- ☐ Replace after removing
- ☐ Tensioning. Refer to
⇒ [Fig. "Tightening Clamp on Outer Joint"](#),
[page 137](#) .

5 - CV Boot for CV joint

- ☐ Check for tears and scuffing
- ☐ Material: Hytrel polyelastomer

6 - Clamp

- ☐ Replace after removing
- ☐ Tensioning. Refer to
⇒ [Fig. "Tightening the Tensioning Clamp on the Smaller Diameter on the Inner/Outer Joint"](#),
[page 138](#) .

7 - Drive Axle

8 - Triple Roller Star with Rollers

The chamfer -arrow- faces the drive axle splines.

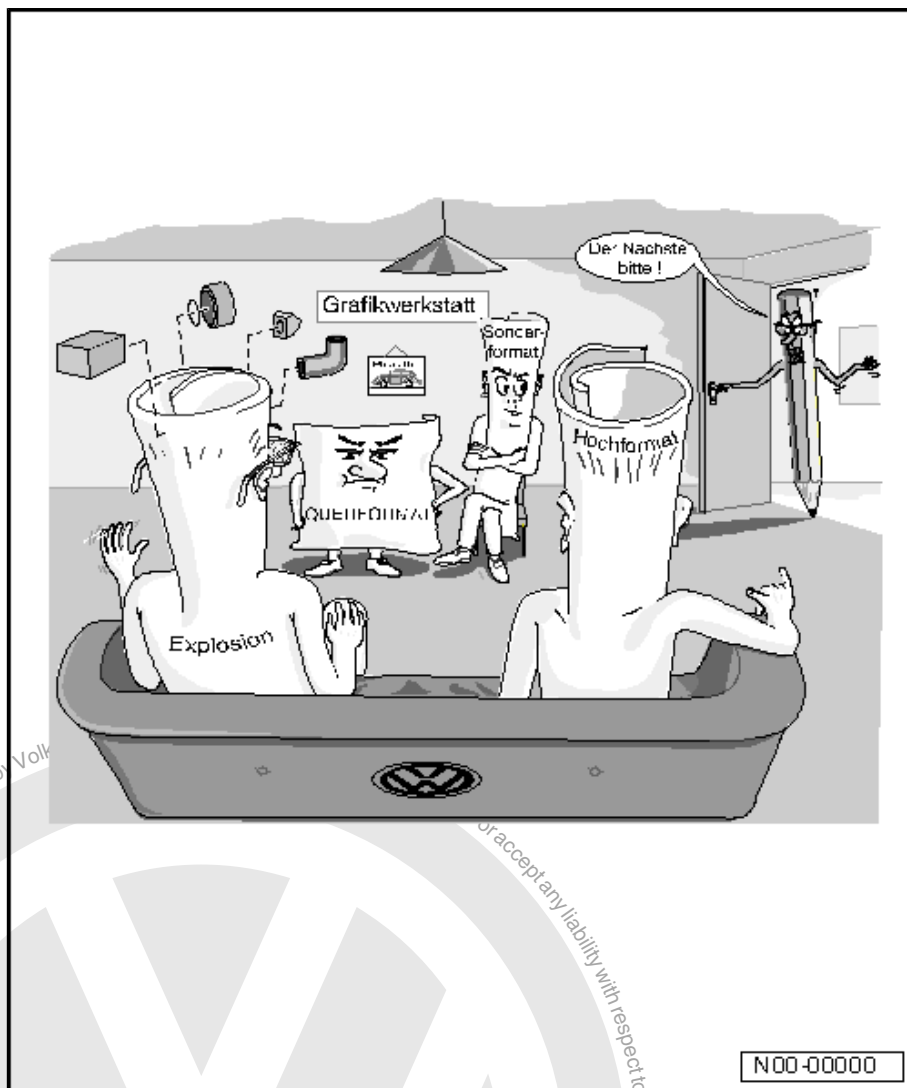
- ☐ Removing. Refer to ⇒ [page 135](#) .

9 - Circlip

- ☐ Replace after removing
- ☐ Insert in shaft groove

10 - Clamp

- ☐ Replace after removing





- ☐ Tensioning. Refer to
⇒ [Fig. "Tightening the Tensioning Clamp on the Smaller Diameter on the Inner/Outer Joint"](#),
[page 138](#)

11 - CV Boot for Triple Roller Joint

- ☐ Check for tears and scuffing

12 - Clamp

- ☐ Replace after removing
- ☐ Tensioning. Refer to
⇒ [Fig. "Tightening the Tensioning Clamps on the Larger Diameter on the Inner Joint."](#), [page 137](#) .

13 - Adapter

14 - Joint

- ☐ Removing. Refer to ⇒ [page 135](#) .

15 - Internal Multi-Point Bolt

- ☐ First tighten diagonally to 10 Nm, then tighten diagonally again to the tightening specification
- ☐ 70 Nm
- ☐ M10 x 23

16 - Joint

- ☐ Removing. Refer to ⇒ [page 135](#) .

17 - Circlip

- ☐ Replace after removing
- ☐ Insert in shaft groove

6.3 Drive Axle, Removing and Installing

⇒ ["6.3.1 Drive Axle, Removing and Installing, Left Drive Axle, CV Joint VL 100 and VL 107, Except e-Golf"](#), [page 106](#)

⇒ ["6.3.2 Drive Axle, Removing and Installing, Right Drive Axle, CV Joint VL 100 and VL 107, Except e-Golf"](#), [page 110](#)

⇒ ["6.3.3 Drive Axle, Removing and Installing, Left Drive Axle, CV Joint VL 100 and VL 107, e-Golf"](#), [page 114](#)

⇒ ["6.3.4 Drive Axle, Removing and Installing, Right Drive Axle, CV Joint VL 100 and VL 107, e-Golf"](#), [page 117](#)

⇒ ["6.3.5 Drive Axle, Removing and Installing, Triple Roller Joint AAR3300i Attached"](#), [page 119](#)

⇒ ["6.3.6 Drive Axle, Removing and Installing, Triple Roller Joint AAR3300i Bolted"](#), [page 123](#)

6.3.1 Drive Axle, Removing and Installing, Left Drive Axle, CV Joint VL 100 and VL 107, Except e-Golf

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Drive Shaft Remover - T10520-



Caution

When disassembling and performing repairs on a vehicle, the drive axles must not hang down loosely and contact the stops in the joint by over bending.



Removing

- Remove the drive axle bolt. Refer to
⇒ [“6.4 Drive Axle Threaded Connection, Loosening and Tightening”, page 127](#).



Caution

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

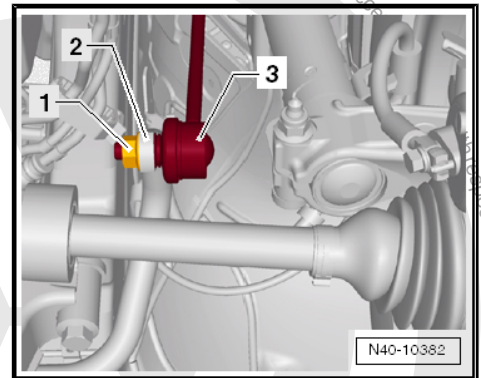
If the wheel bearings are under the load of the vehicle weight, the wheel bearing will be damaged. This reduces the service life of the wheel bearings.

The drive axle bolt may be loosened maximum 90° when the vehicle is standing on its wheels.

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

- ◆ *Install an outer joint in place of the drive axle.*
- ◆ *Tighten the outer joint to 120 Nm.*

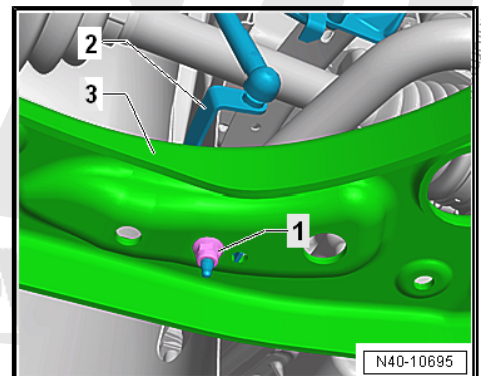
- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- If equipped, remove the noise insulation. Refer to ⇒ [Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview Noise Insulation](#).
- Remove the nut -1- from the coupling rod -3-.
- Remove the coupling rod -3- from the stabilizer bar -2-.



Vehicles with Level Control System Sensor

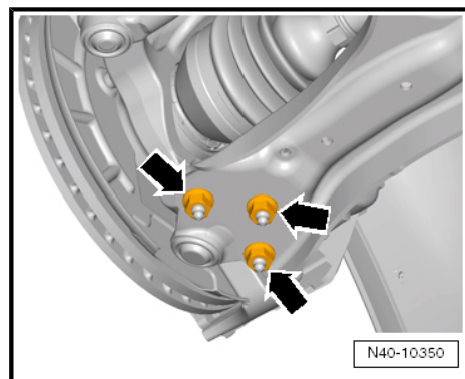
- Remove the nut -1-.
- Remove the bracket -2- for the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289- from the control arm -3-.

Continuation for All Vehicles



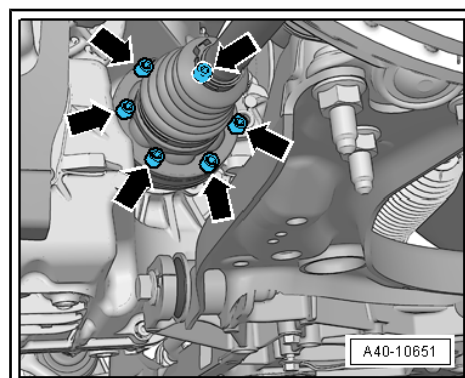


- Remove the nuts -arrows- from the ball joint.
- Disengage the control arm from the ball joint.



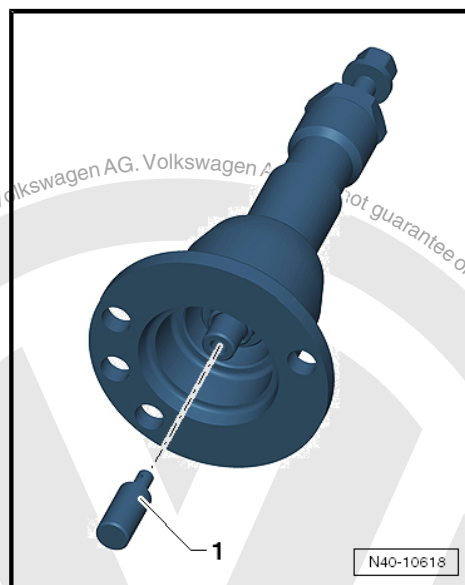
- Remove the drive axle from the flange shaft/transmission -arrows-.
- Push the wheel bearing housing to the left.
- Pull the drive axle out of the wheel hub.

If the Drive Axle Cannot Be Pulled out of the Wheel Bearing, Then the Drive Axle Can Be Pushed out of the Wheel Bearing Using the Drive Shaft Remover - T10520- .

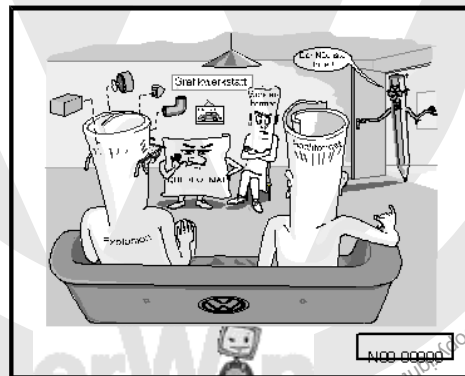


Before using the Drive Shaft Remover - T10520- , make sure that the thrust piece -1- is installed.

Using the Drive Shaft Remover - T10520- :



- Secure the Drive Shaft Remover - T10520- -1- with three wheel bolts -2- on the wheel hub, so that the drive axle -3- can be pressed out.





- Follow the specified sequence exactly.

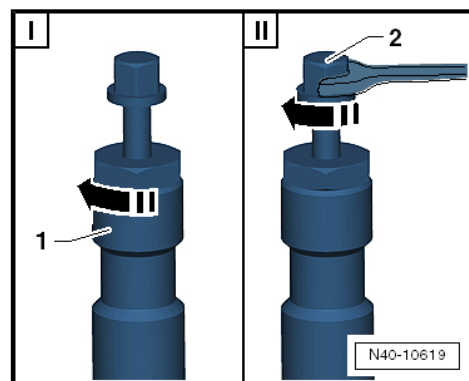
I - Tighten the knurled nut -1- hand-tight.

II - Only turn the bolt -2- using a wrench and press out the drive axle using the Drive Shaft Remover - T10520- .



Note

At the end of the tasks or to set back, the spindles must be brought back into the original position so that the hydraulic operation can be used.



- Remove the drive axle.

Installing

Install in reverse order of removal and note the following:

- Lightly coat the splines on the outer joint with assembly paste before installing the outer joint into the wheel hub. Refer to the Parts Catalog.



- Tighten nuts -arrows-.



Note

*Tighten the nuts -arrows- in curb weight position. Refer to
⇒ [“2.8.1 Wheel Bearing in Curb Weight, Lifting Vehicles with Coil Spring, Front Axle”](#), page 5.*



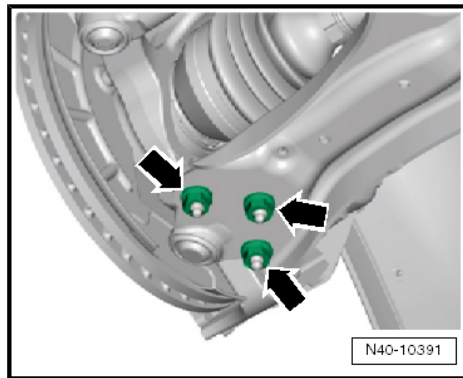
Note

- ◆ *The level control system sensor lever must point toward vehicle exterior.*
- ◆ *The thread on the vehicle level sensor must be installed into the exterior hole in the control arm. The tab on the vehicle level sensor bracket must lock into the inner hole in order to assure a correct installation position.*

- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .

Tightening Specifications

- ◆ Refer to ⇒ [“6.2 Overview - Drive Axle”](#), page 101
- ◆ Refer to
⇒ [“6.4 Drive Axle Threaded Connection, Loosening and Tightening”](#), page 127
- ◆ Refer to
⇒ [“2.1 Overview - Front Level Control System Sensor”](#), page 327
- ◆ Refer to ⇒ [“2.1 Overview - Subframe”](#), page 16
- ◆ Refer to
⇒ [“4.1 Overview - Lower Control Arm and Ball Joint”](#), page 76
- ◆ Refer to
⇒ [“1.4 Wheel Bolt Tightening Specifications”](#), page 340
- ◆ Noise insulation bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation
- For vehicles with a level control system sensor, perform a headlamp basic setting. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Headlamp; Headlamp, Adjusting .



6.3.2 Drive Axle, Removing and Installing, Right Drive Axle, CV Joint VL 100 and VL 107, Except e-Golf

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Drive Shaft Remover - T10520-



Caution

When disassembling and performing repairs on a vehicle, the drive axles must not hang down loosely and contact the stops in the joint by over bending.



Removing

- Remove the drive axle bolt. Refer to
⇒ ["6.4 Drive Axle Threaded Connection, Loosening and Tightening", page 127](#).



Caution

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

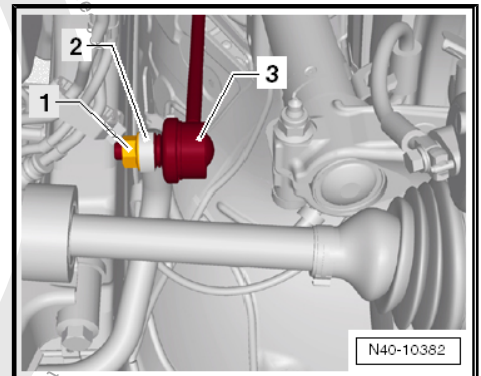
If the wheel bearings are under the load of the vehicle weight, the wheel bearing will be damaged. This reduces the service life of the wheel bearings.

The drive axle bolt may be loosened maximum 90° when the vehicle is standing on its wheels.

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

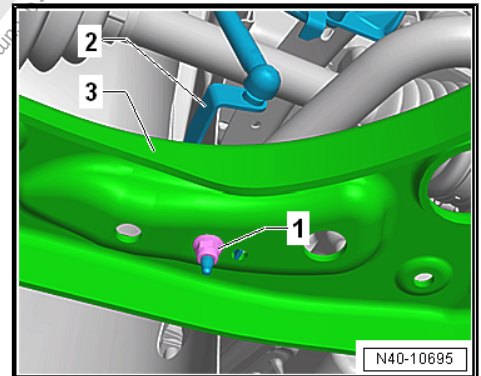
- ◆ *Install an outer joint in place of the drive axle.*
- ◆ *Tighten the outer joint to 120 Nm.*

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Remove the nut -1- from the coupling rod -3-.
- Remove the coupling rod -3- from the stabilizer bar -2-.



Vehicles with Level Control System Sensor

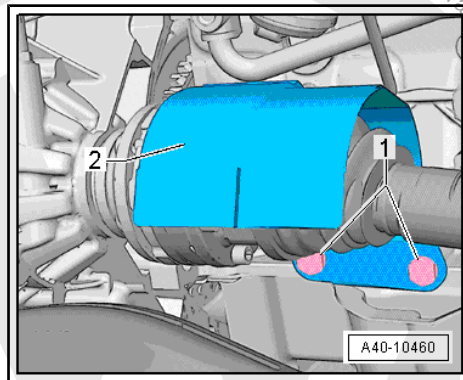
- Remove the nut -1-.
- Remove the bracket -2- for the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289- from the control arm -3-.



Continuation for All Vehicles

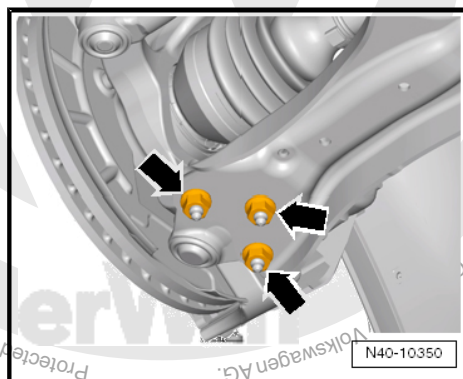


- If installed remove the bolts -1- and the heat shield -2-.
- Remove the drive axle from the transmission flange.



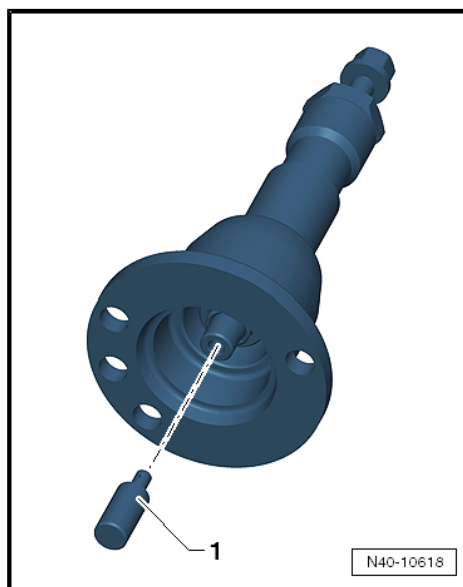
- Remove the nuts -arrows- from the ball joint.
- Disengage the control arm from the ball joint.
- Pivot the suspension strut outward, while doing so push the drive axle out of the wheel bearing unit.

If the Drive Axle Cannot Be Pulled out of the Wheel Bearing, Then the Drive Axle Can Be Pushed out of the Wheel Bearing Using the Drive Shaft Remover - T10520- .

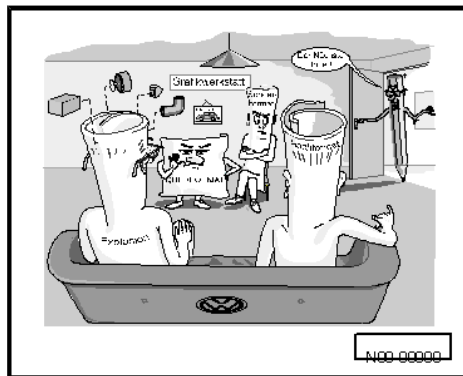


Before using the Drive Shaft Remover - T10520- , make sure that the thrust piece -1- is installed.

Using the Drive Shaft Remover - T10520- :



- Secure the Drive Shaft Remover - T10520- -1- with three wheel bolts -2- on the wheel hub, so that the drive axle -3- can be pressed out.





- Follow the specified sequence exactly.

I - Tighten the knurled nut -1- hand-tight.

II - Only turn the bolt -2- using a wrench and press out the drive axle using the Drive Shaft Remover T10520- .



Note

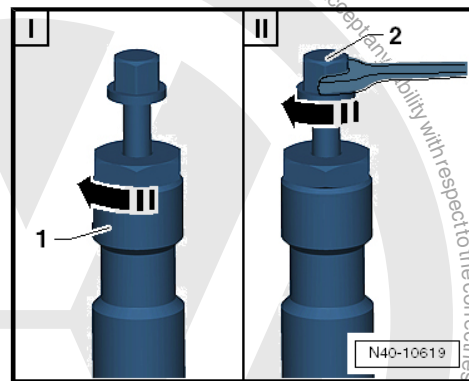
At the end of the tasks or to set back, the spindles must be brought back into the original position so that the hydraulic operation can be used.

- Remove the drive axle.

Installing

Install in reverse order of removal and note the following:

- Lightly coat the splines on the outer joint with assembly paste before installing the outer joint into the wheel hub. Refer to the Parts Catalog.





- Tighten nuts -arrows-.



Note

*Tighten the nuts -arrows- in curb weight position. Refer to
⇒ ["2.8.1 Wheel Bearing in Curb Weight, Lifting Vehicles with Coil Spring, Front Axle"](#), page 5.*



Note

- ♦ *The level control system sensor lever must point toward vehicle exterior.*
- ♦ *The thread on the vehicle level sensor must be installed into the exterior hole in the control arm. The tab on the vehicle level sensor bracket must lock into the inner hole in order to assure a correct installation position.*

- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .

Tightening Specifications

- ♦ Refer to ⇒ ["6.2 Overview - Drive Axle"](#), page 101
- ♦ Refer to ⇒ ["6.4 Drive Axle Threaded Connection, Loosening and Tightening"](#), page 127
- ♦ Refer to ⇒ ["2.1 Overview - Front Level Control System Sensor"](#), page 327
- ♦ Refer to ⇒ ["2.1 Overview - Subframe"](#), page 16
- ♦ Refer to ⇒ ["4.1 Overview - Lower Control Arm and Ball Joint"](#), page 76
- ♦ Refer to ⇒ ["1.4 Wheel Bolt Tightening Specifications"](#), page 340
- ♦ Noise insulation bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- For vehicles with a level control system sensor, perform a headlamp basic setting. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Headlamp; Headlamp, Adjusting .

6.3.3 Drive Axle, Removing and Installing, Left Drive Axle, CV Joint VL 100 and VL 107, e-Golf

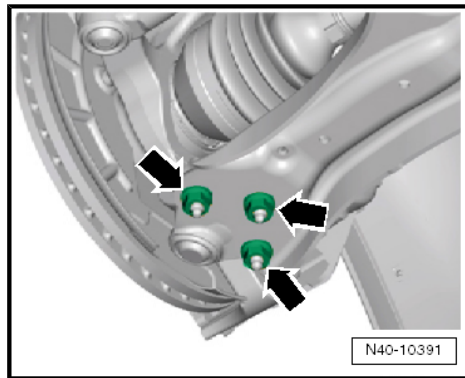
Special tools and workshop equipment required

- ♦ Torque Wrench 1332 40-200Nm - VAG1332-
- ♦ Drive Shaft Remover - T10520-



Caution

When disassembling and performing repairs on a vehicle, the drive axles must not hang down loosely and contact the stops in the joint by over bending.





Removing

- Remove the drive axle bolt. Refer to
⇒ [“6.4 Drive Axle Threaded Connection, Loosening and Tightening”, page 127](#) .



Caution

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

If the wheel bearings are under the load of the vehicle weight, the wheel bearing will be damaged. This reduces the service life of the wheel bearings.

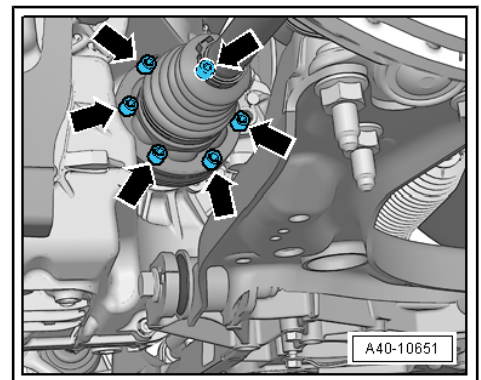
The drive axle bolt may be loosened maximum 90° when the vehicle is standing on its wheels.

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

- ◆ ***Install an outer joint in place of the drive axle.***
- ◆ ***Tighten the outer joint to 120 Nm.***

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- If equipped, remove the noise insulation. Refer to ⇒ Body Exterior, Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Remove the drive axle from the flange shaft/transmission -arrows-.
- Pull the drive axle out of the wheel hub.

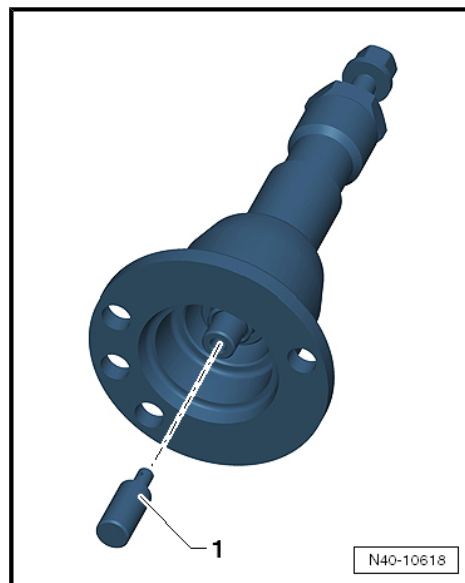
If the Drive Axle Cannot Be Pulled out of the Wheel Bearing, Then the Drive Axle Can Be Pushed out of the Wheel Bearing Using the Drive Shaft Remover - T10520- .



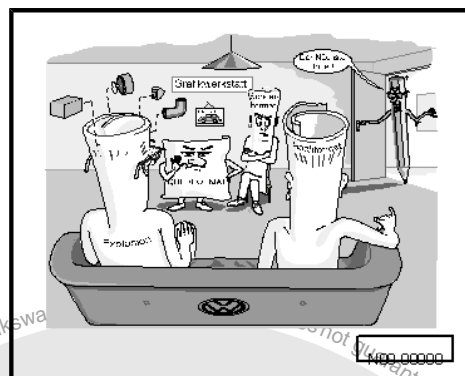


Before using the Drive Shaft Remover - T10520- , make sure that the thrust piece -1- is installed.

Using the Drive Shaft Remover - T10520- :



- Secure the Drive Shaft Remover - T10520- -1- with three wheel bolts -2- on the wheel hub, so that the drive axle -3- can be pressed out.



- Follow the specified sequence exactly.

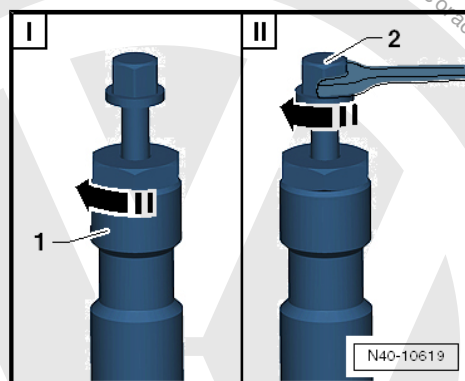
I - Tighten the knurled nut -1- hand-tight.

II - Only turn the bolt -2- using a wrench and press out the drive axle using the Drive Shaft Remover - T10520- .



Note

At the end of the tasks or to set back, the spindles must be brought back into the original position so that the hydraulic operation can be used.





- Remove the drive axle -1- from the wheel bearing and pivot upward in the direction of -arrow-.
- Remove the drive axle -1- downward.

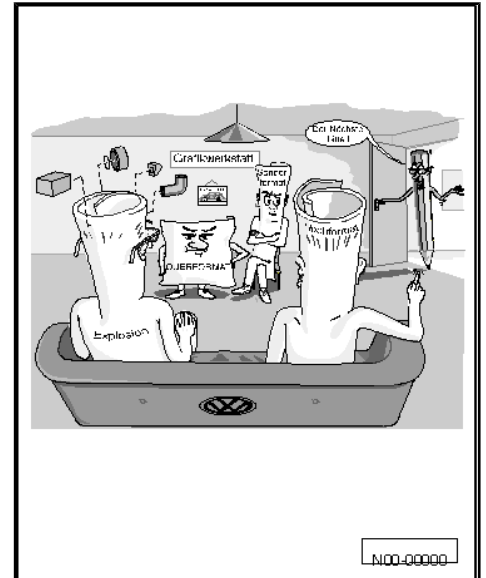
Installing

Install in reverse order of removal and note the following:

- Lightly coat the splines on the outer joint with assembly paste before installing the outer joint into the wheel hub. Refer to the Parts Catalog.

Tightening Specifications

- ◆ Refer to ⇒ [“6.2 Overview - Drive Axle”, page 101](#)
- ◆ Refer to ⇒ [“6.4 Drive Axle Threaded Connection, Loosening and Tightening”, page 127](#)
- ◆ Refer to ⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)
- ◆ Noise insulation bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 Noise Insulation; Overview - Noise Insulation .



6.3.4 Drive Axle, Removing and Installing, Right Drive Axle, CV Joint VL 100 and VL 107, e-Golf

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Drive Shaft Remover - T10520-



Caution

When disassembling and performing repairs on a vehicle, the drive axles must not hang down loosely and contact the stops in the joint by over bending.

Removing

- Remove the drive axle bolt. Refer to ⇒ [“6.4 Drive Axle Threaded Connection, Loosening and Tightening”, page 127](#) .



Caution

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

If the wheel bearings are under the load of the vehicle weight, the wheel bearing will be damaged. This reduces the service life of the wheel bearings.

The drive axle bolt may be loosened maximum 90° when the vehicle is standing on its wheels.

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

- ◆ *Install an outer joint in place of the drive axle.*
- ◆ *Tighten the outer joint to 120 Nm.*



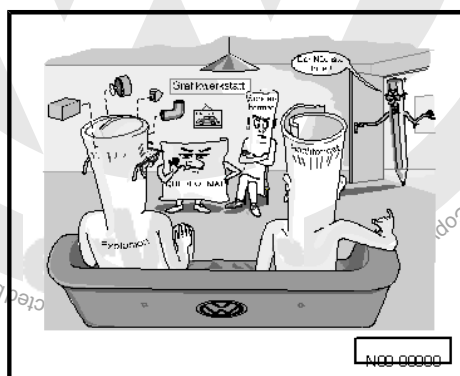
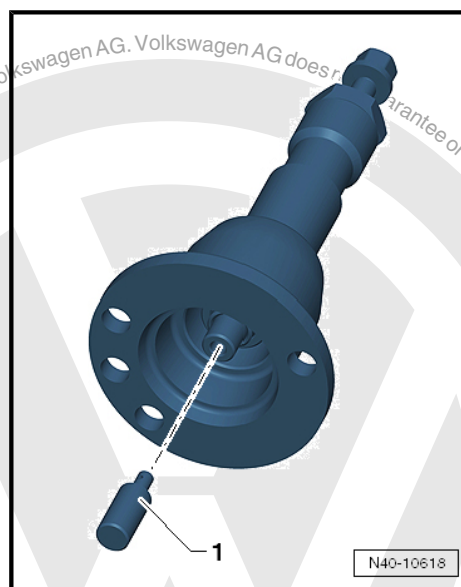
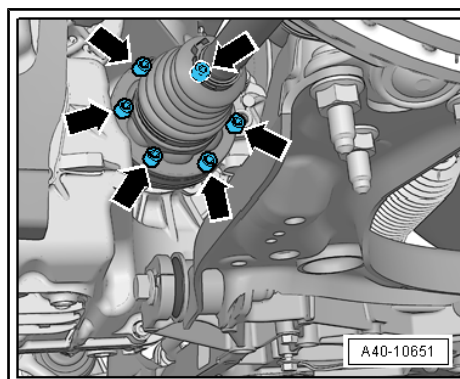
- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- If equipped, remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Remove the drive axle from the flange shaft/transmission -arrows-.
- Pull the drive axle out of the wheel hub.

If the Drive Axle Cannot Be Pulled out of the Wheel Bearing, Then the Drive Axle Can Be Pushed out of the Wheel Bearing Using the Drive Shaft Remover - T10520- .

Before using the Drive Shaft Remover - T10520- , make sure that the thrust piece -1- is installed.

Using the Drive Shaft Remover - T10520- :

- Secure the Drive Shaft Remover - T10520- -1- with three wheel bolts -2- on the wheel hub, so that the drive axle -3- can be pressed out.



- II - Only turn the bolt -2- using a wrench and press out the drive axle using the Drive Shaft Remover - T10520- .



I

II

1

2

N40-10619

- Remove the drive axle -1- downward.

Install in reverse order of removal and note the following:

-
- A cartoon illustration of a chemistry class. Two students, shaped like beakers, are in a bathtub. One is labeled 'Explosion' and the other 'Acidobromo'. They are surrounded by various chemical symbols and names like 'Gratichlorstein', 'Queerchlor', and 'Queerchlorin'. A teacher character is standing by a door labeled 'Ei H2O2'.

◆ Noise insulation bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .

Special tools and workshop equipment required

- ◆ Drive Axle Wedge Tool - T10161-
- ◆ Drive Shaft Remover - T10520-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-



When disassembling and performing repairs on a vehicle, the drive axles must not hang down loosely and contact the stops in the joint by over bending.

- Remove the drive axle bolt. Refer to ⇒ “6.4 Drive Axle Threaded Connection, Loosening and Tightening”, page 127.



Caution

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

If the wheel bearings are under the load of the vehicle weight, the wheel bearing will be damaged. This reduces the service life of the wheel bearings.

The drive axle bolt may be loosened maximum 90° when the vehicle is standing on its wheels.

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

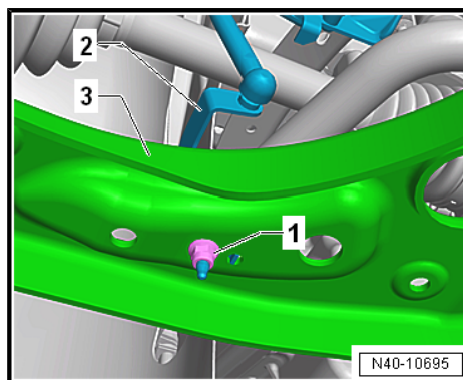
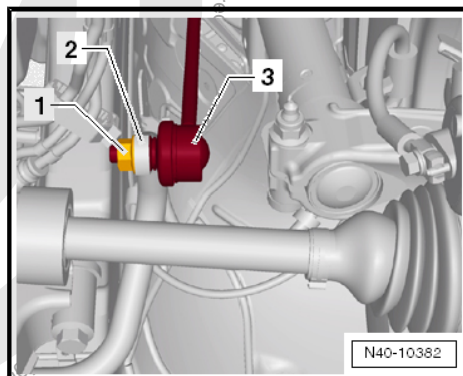
- ◆ *Install an outer joint in place of the drive axle.*
- ◆ *Tighten the outer joint to 120 Nm.*

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- If equipped, remove the noise insulation. Refer to ➤ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Remove the nut -1- from the coupling rod -3-.
- Remove the coupling rod -3- from the stabilizer bar -2-.

Vehicles with Level Control System Sensor

- Remove the nut -1-.
- Remove the bracket -2- for the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289- from the control arm -3-.

Continuation for All Vehicles



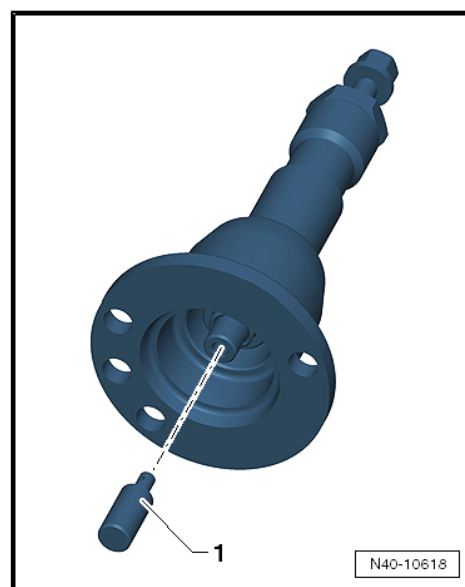
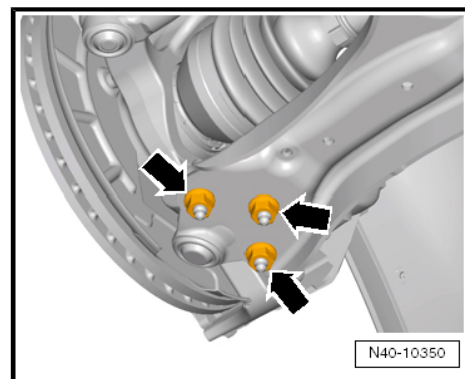


- Remove the nuts -arrows-.
- Remove the wheel bearing housing with the ball joint from the control arm.
- Pull the drive axle out of the wheel hub and tie it securely to the body.

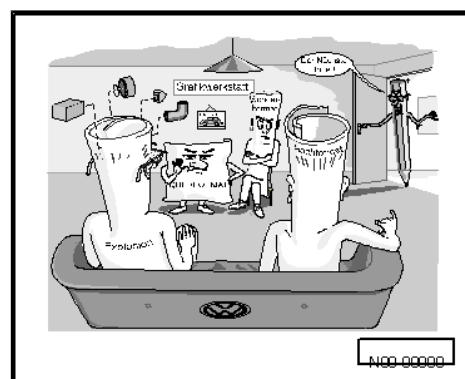
If the Drive Axle Cannot Be Pulled out of the Wheel Bearing, Then the Drive Axle Can Be Pushed out of the Wheel Bearing Using the Drive Shaft Remover - T10520- .

Before using the Drive Shaft Remover - T10520- , make sure that the thrust piece -1- is installed.

Using the Drive Shaft Remover - T10520- :



- Secure the Drive Shaft Remover - T10520- -1- with three wheel bolts -2- on the wheel hub, so that the drive axle -3- can be pressed out.

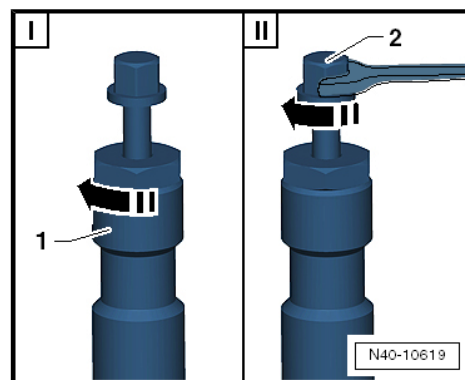


- Follow the specified sequence exactly.
- I - Tighten the knurled nut -1- hand-tight.
- II - Only turn the bolt -2- using a wrench and press out the drive axle using the Drive Shaft Remover - T10520- .



Note

At the end of the tasks or to set back, the spindles must be brought back into the original position so that the hydraulic operation can be used.





- Place the Drive Axle Wedge Tool - T10161- -1- between the transmission housing and the triple roller joint.
- Using a rubber hammer, hit the inner joint on the Drive Axle Wedge Tool - T10161- and remove it from the transmission.
- Remove the drive axle.

Installing

Install in reverse order of removal and note the following:

- Install new circlip into the groove on the joint pin.
- Engage the outer and inner splines of joint and transmission.
- Grab the drive axle by hand and push it into the joint up to the stop.
- Slide the joint into the transmission with a »tug«.

The sliding part inside the joint can be used for this »jerk«. When doing this, do not pull the drive axle too far out of the joint.



Caution

Never use a hammer or mallet!

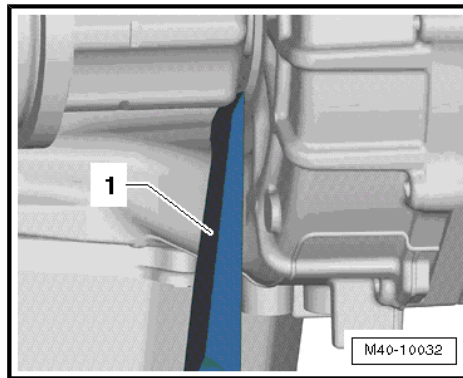
- Make sure the drive axle fits securely inside the transmission. The joint pulls against the resistance of the circlip.



Caution

When checking, only pull on the joint piece and not on the drive axle.

- Install the outer joint as far as possible into the wheel hub splines.
- Install the lower noise insulation. Refer to ➔ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .



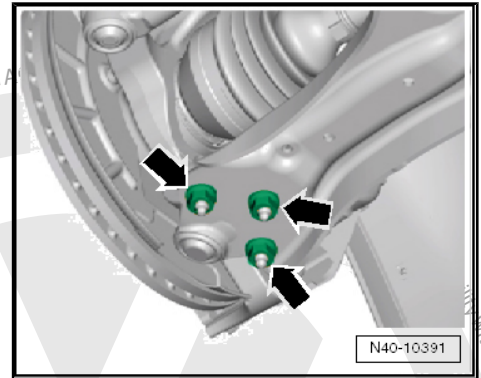


- Tighten nuts -arrows-.



Note

- ◆ Tighten the nuts -arrows- in curb weight position. Refer to ⇒ ["2.8.1 Wheel Bearing in Curb Weight, Lifting Vehicles with Coil Spring, Front Axle", page 5](#).
- ◆ Make sure the ball joint boot is not damaged or twisted.



Note

- ◆ The level control system sensor lever must point toward vehicle exterior.
 - ◆ The thread on the vehicle level sensor must be installed into the exterior hole in the control arm. The tab on the vehicle level sensor bracket must lock into the inner hole in order to assure a correct installation position.
- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .

Tightening Specifications

- ◆ Refer to ⇒ ["6.2 Overview - Drive Axle", page 101](#)
- ◆ Refer to ⇒ ["6.4 Drive Axle Threaded Connection, Loosening and Tightening", page 127](#)
- ◆ Refer to ⇒ ["2.1 Overview - Front Level Control System Sensor", page 327](#)
- ◆ Refer to ⇒ ["2.1 Overview - Subframe", page 16](#)
- ◆ Refer to ⇒ ["4.1 Overview - Lower Control Arm and Ball Joint", page 76](#)
- ◆ Refer to ⇒ ["1.4 Wheel Bolt Tightening Specifications", page 340](#)
- ◆ Noise insulation bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- For vehicles with a level control system sensor, perform a headlamp basic setting. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Headlamp; Headlamp, Adjusting .

6.3.6 Drive Axle, Removing and Installing, Triple Roller Joint AAR3300i Bolted

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Drive Shaft Remover - T10520-



Caution

When disassembling and performing repairs on a vehicle, the drive axles must not hang down loosely and contact the stops in the joint by over bending.



Removing

- Remove the drive axle bolt. Refer to
⇒ [“6.4 Drive Axle Threaded Connection, Loosening and Tightening”, page 127](#).



Caution

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

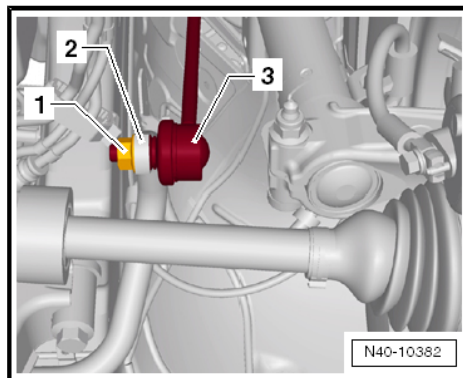
If the wheel bearings are under the load of the vehicle weight, the wheel bearing will be damaged. This reduces the service life of the wheel bearings.

The drive axle bolt may be loosened maximum 90° when the vehicle is standing on its wheels.

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

- ◆ **Install an outer joint in place of the drive axle.**
- ◆ **Tighten the outer joint to 120 Nm.**

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- If equipped, remove the lower noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Remove the nut -1- from the coupling rod -3-.
- Remove the coupling rod -3- from the stabilizer bar -2-.

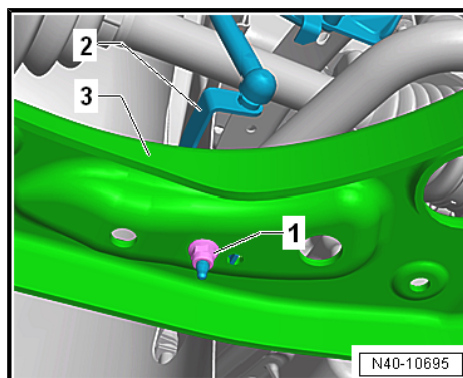


Vehicles with Level Control System Sensor

- Remove the nut -1-.
- Remove the bracket -2- for the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289- from the control arm -3-.

Continuation for All Vehicles

- Remove the drive axle from the flange shaft/transmission.





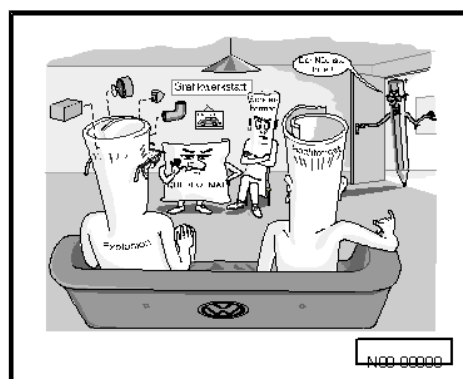
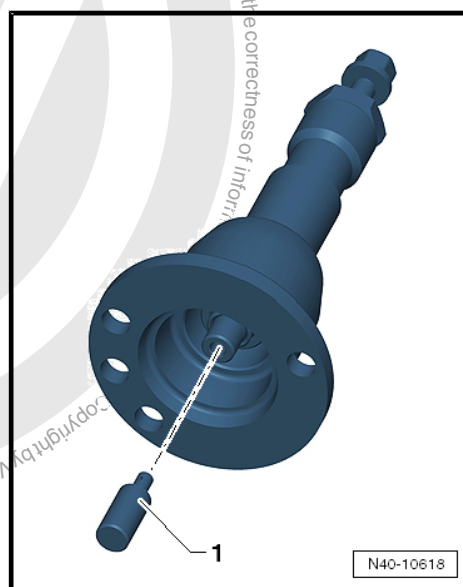
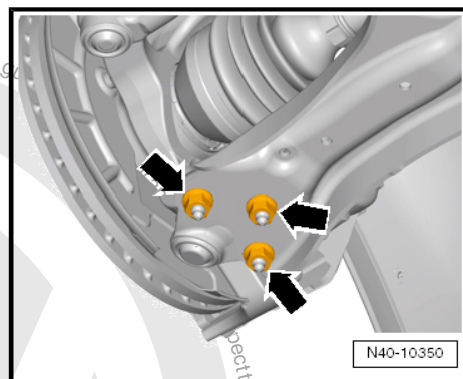
- Remove the nuts -arrows-.
- Remove the wheel bearing housing with the ball joint from the control arm.
- Remove the drive axle from the wheel hub.

If the Drive Axle Cannot Be Pulled out of the Wheel Bearing, Then the Drive Axle Can Be Pushed out of the Wheel Bearing Using the Drive Shaft Remover - T10520- .

Before using the Drive Shaft Remover - T10520- , make sure that the thrust piece -1- is installed.

Using the Drive Shaft Remover - T10520- :

- Secure the Drive Shaft Remover - T10520- -1- with three wheel bolts -2- on the wheel hub, so that the drive axle -3- can be pressed out.





- Follow the specified sequence exactly.

I - Tighten the knurled nut -1- hand-tight.

II - Only turn the bolt -2- using a wrench and press out the drive axle using the Drive Shaft Remover - T10520- .



Note

At the end of the tasks or to set back, the spindles must be brought back into the original position so that the hydraulic operation can be used.

Installing

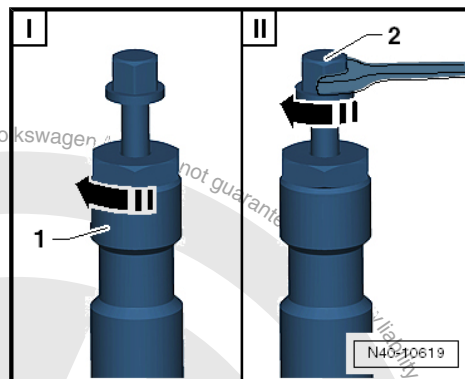
Install in reverse order of removal and note the following:



Note

Remove any paint residue and/or corrosion on the outer joint threads/splines.

- Insert the drive axle.
- Install the outer joint as far as possible into the wheel hub splines.



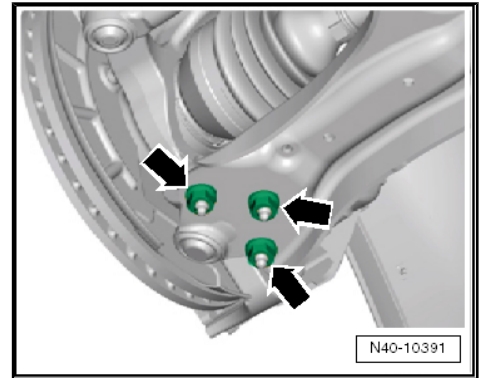


- Tighten nuts -arrows-.



Note

- ◆ *Tighten the nuts -arrows- in curb weight position. Refer to ⇒ ["2.8.1 Wheel Bearing in Curb Weight, Lifting Vehicles with Coil Spring, Front Axle", page 5](#) .*
- ◆ *Make sure the ball joint boot is not damaged or twisted.*
- Position the drive axle inner joint and tighten the bolts in a diagonal sequence to 10 Nm.
- Tighten the internal multi-point bolts diagonally to the tightening specification.



Note

- ◆ *The level control system sensor lever must point toward vehicle exterior.*
- ◆ *The thread on the vehicle level sensor must be installed into the exterior hole in the control arm. The tab on the vehicle level sensor bracket must lock into the inner hole in order to assure a correct installation position.*
- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .
- Install the lower noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Tighten drive axle bolt onto the wheel hub. Refer to ⇒ ["6.4 Drive Axle Threaded Connection, Loosening and Tightening", page 127](#) .

Tightening Specifications

- ◆ Refer to ⇒ ["6.2 Overview - Drive Axle", page 101](#)
- ◆ Refer to ⇒ ["6.4 Drive Axle Threaded Connection, Loosening and Tightening", page 127](#)
- ◆ Refer to ⇒ ["2.1 Overview - Front Level Control System Sensor", page 327](#)
- ◆ Refer to ⇒ ["2.1 Overview - Subframe", page 16](#)
- ◆ Refer to ⇒ ["4.1 Overview - Lower Control Arm and Ball Joint", page 76](#)
- ◆ Refer to ⇒ ["1.4 Wheel Bolt Tightening Specifications", page 340](#)
- ◆ Noise insulation bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .

6.4 Drive Axle Threaded Connection, Loosening and Tightening

Special tools and workshop equipment required

- ◆ Socket AF 24 mm - T10361A-
- ◆ Digital Torque Wrench - VAG1756A-



Caution

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

If the wheel bearings are under the load of the vehicle weight, the wheel bearing will be damaged. This reduces the service life of the wheel bearings.

The drive axle bolt may be loosened maximum 90° when the vehicle is standing on its wheels.

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

- ◆ *Install an outer joint in place of the drive axle.*
- ◆ *Tighten the outer joint to 120 Nm.*

Twelve-Point Bolt, Loosening

- With vehicle still resting on wheels, loosen the twelve-point bolt with Socket AF 24 - T10361A- maximum 90°, otherwise, wheel bearing will be damaged.
- Lift the vehicle just enough so that the wheels are hanging free.
- Press the brake pedal. A second technician will be needed.
- Remove the twelve-point bolt -arrow-.

Twelve-Point Bolt, Tightening

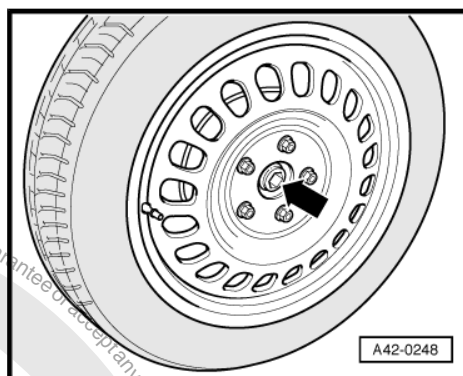
- Replace the twelve-point bolt for the outer drive axle.



Note

The wheels must not be touching the ground when tightening the drive axle. Otherwise, wheel bearing may be pre-damaged.

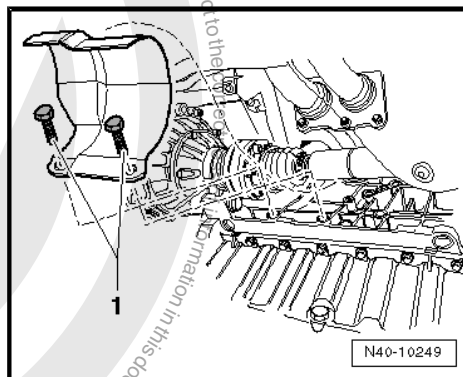
- Press the brake pedal. A second technician will be needed.
- Tighten the twelve-point bolt to 200 Nm.
- Lower the vehicle onto its wheels.
- Turn the twelve-point bolt an additional 180°.



6.5 Drive Axle Heat Shield, Removing and Installing

FWD:

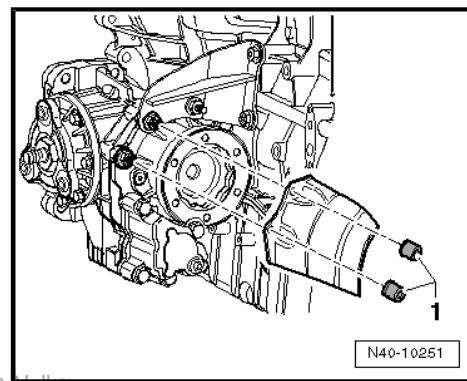
Component	Tightening Specification
Bolts -1-	25 Nm





AWD:

Component	Tightening Specification
Nuts -1-	20 Nm



6.6 Drive Axle, Disassembling and Assembling

⇒ ["6.6.1 Drive Axle, Disassembling and Assembling, CV Joint VL100", page 129](#)

⇒ ["6.6.2 Drive Axle, Disassembling and Assembling, CV Joint VL107", page 132](#)

⇒ ["6.6.3 Drive Axle, Disassembling and Assembling, Triple Roller Joint AAR3300i", page 134](#)

6.6.1 Drive Axle, Disassembling and Assembling, CV Joint VL 100

Special tools and workshop equipment required

- ◆ Press Plate - VW401-
- ◆ Press Plate - VW402-
- ◆ Press Piece - Rod - VW408A-
- ◆ Press Piece - Rod - VW411-
- ◆ Press Piece - 37mm - VW416B-
- ◆ Press Piece - Multiple Use - VW447H-
- ◆ Circlip Pliers - VW161A-
- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Clamping Pliers - VAG1682A-
- ◆ Tripod Joint Tool - T10065-
- ◆ Slide Hammer Set - VW771-
- ◆ Puller - Driveshaft - T10382-

Removing the outer CV joint

- Clamp the drive axle with protective jaws in a vise clamp.
- Fold back boot.
- Align the Puller - Driveshaft - T10382- so that the flat side of the Puller - Driveshaft - T10382/1- faces the Spindles - T10382/2- .
- Attach the Puller - Driveshaft - T10382- to the Slide Hammer Set - VW771- .

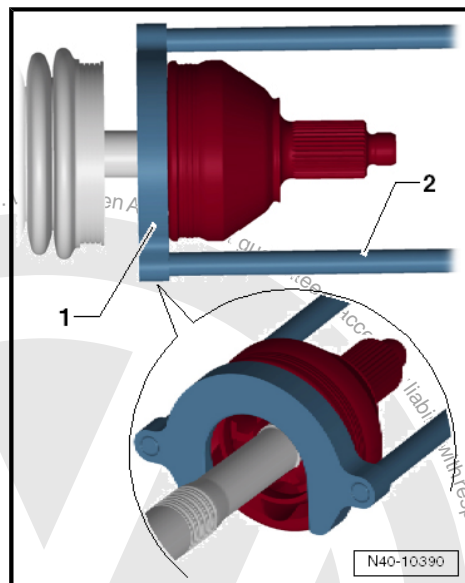


- Remove the CV joint from the drive axle using the Puller - Driveshaft - T10382- and Slide Hammer Set - VW771- .

1 - Puller - Drive Axle - Removing Plate - T10382/1-

2 - Puller - Drive Axle - Spindles - T10382/2-

Outer CV Joint, Installing

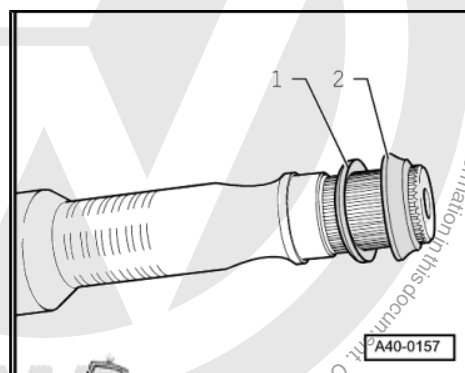


Installed Location of Spring Washer and Thrust Washer on Outer Joint

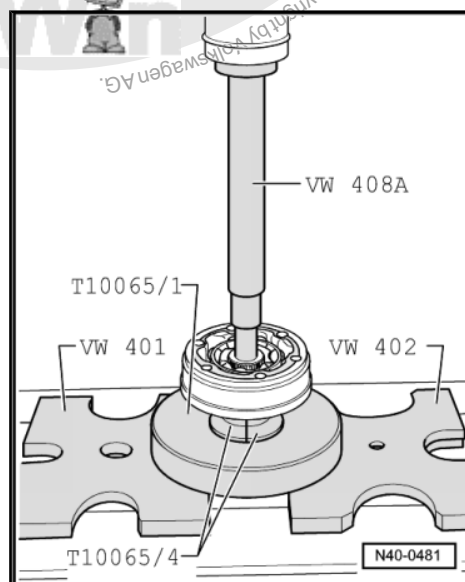
1 - Plate Spring

2 - Thrust Ring

- Install the new circlips.
- Slide the new CV boot onto the drive axle if necessary.
- Use a plastic hammer to install it on the shaft until the circlip engages.



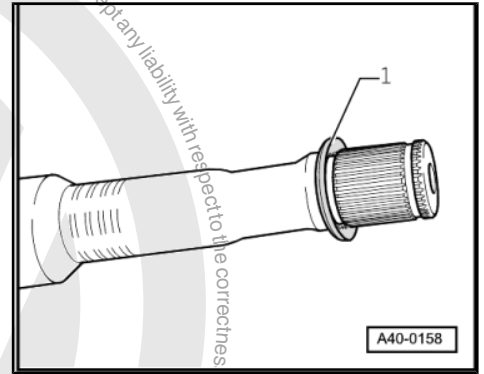
Inner CV Joint, Removing Assembling





Installed Location of the Plate Spring on Inner Joint

1 - Plate Spring

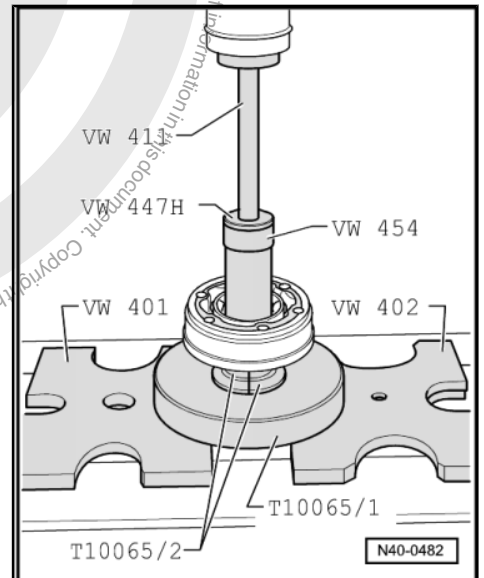


Inner CV Joint, Pressing On



Note

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



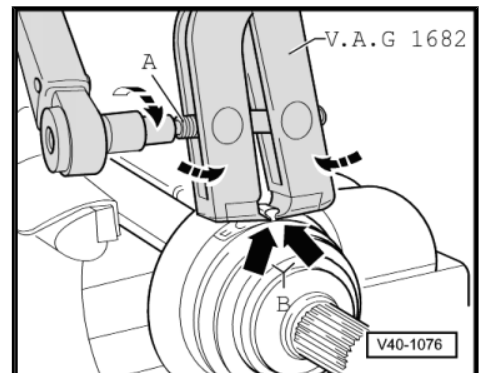
Tightening Clamp on Outer Joint

- Attach the Clamping Pliers - VAG1682A- as illustrated. When doing this, make sure that edges of the pliers are positioned in the corners -B arrows- of the clamp.
- Tension clamp by turning spindle with a torque wrench (do not tilt clamp tool).



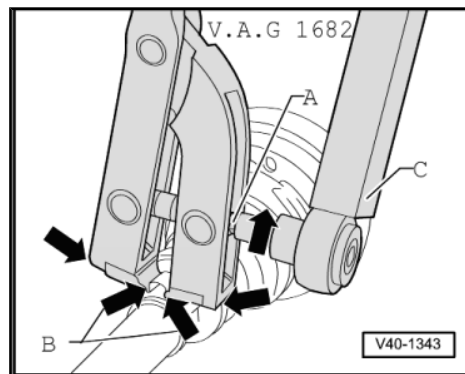
Note

- ◆ *The hard material of the CV boot (compared to rubber) makes it necessary to use a stainless steel hose clamp. It is only possible to tighten the hose clamp with Clamping Pliers - VAG1682A-.*
- ◆ *Tightening specification: 25 Nm.*
- ◆ *Use the torque wrench -C- with adjustment range 5 - 50 Nm (for example, Torque Wrench 1331 5-50Nm - VAG1331-).*
- ◆ *Make sure the spindle threads -A- on the pliers move easily. Lubricate with MOS 2 grease, if necessary.*
- ◆ *If difficult to tighten, for example because of dirty threads, the proper clamping force of the clamping sleeve will not be reached even when tightened to the specification.*





Tensioning Clamp on Small Diameter



6.6.2 Drive Axle, Disassembling and Assembling, CV Joint VL107

Special tools and workshop equipment required

- ◆ Press Plate - VW401-
- ◆ Press Plate - VW402-
- ◆ Press Piece - Rod - VW408A-
- ◆ CV Joint Press Sleeve - VW522-
- ◆ Press Block - 40-204A-
- ◆ Clamping Pliers VAG1682A-
- ◆ Slide Hammer Set - VW771-
- ◆ Puller - Driveshaft - T10382-
- ◆ Torque Wrench 1331 5-50Nm - VAG1331-

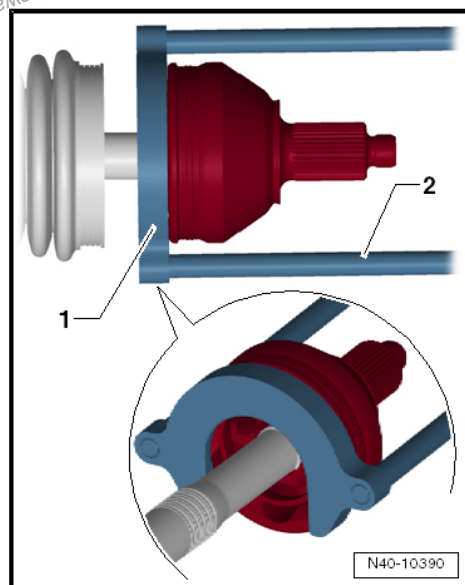
Removing the Outer CV Joint

- Clamp the drive axle with protective jaws in a vise clamp.
- Fold back boot.
- Align the Puller - Driveshaft - T10382- so that the flat side of the Puller - Driveshaft - T10382/1- faces the Spindles - T10382/2- .
- Attach the Puller - Driveshaft - T10382- to the Slide Hammer Set - VW771- .
- Remove the CV joint from the drive axle using the Puller - Driveshaft - T10382- and Slide Hammer Set - VW771- .

- 1 - Puller - Driveshaft - Removing Plate - T10382/1-
- 2 - Puller - Driveshaft - Spindles - T10382/2-

Outer CV Joint, Installing

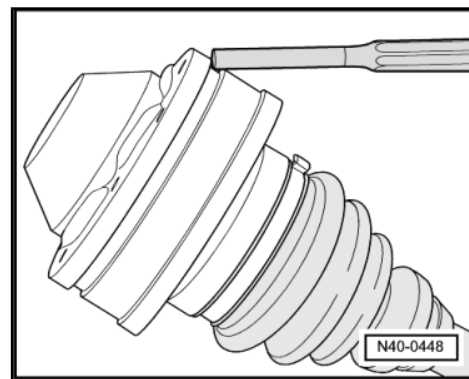
- Install the new circlips.
- Slide the new CV boot onto the drive axle if necessary.
- Use a plastic hammer to install it on the shaft until the circlip engages.



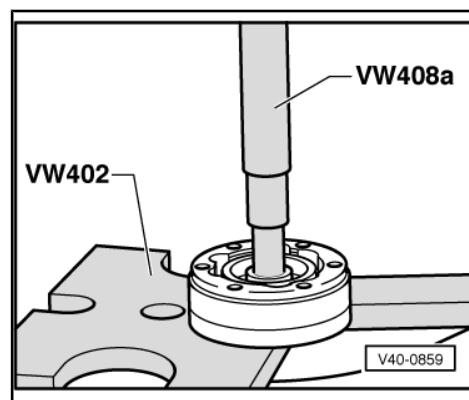


Drive off Cover for Inner Joint

- Remove the circlip.
- Remove both clamps, and push the CV boot toward outer joint.
- Drive off the CV boot with a drift.

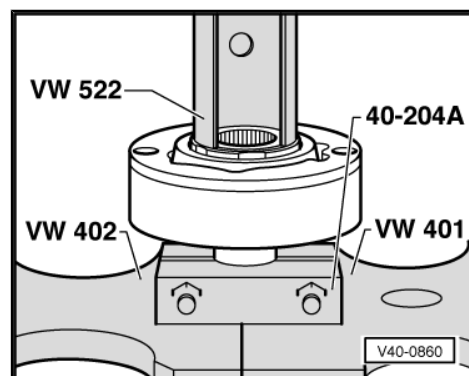


Inner CV Joint, Removing Assembling

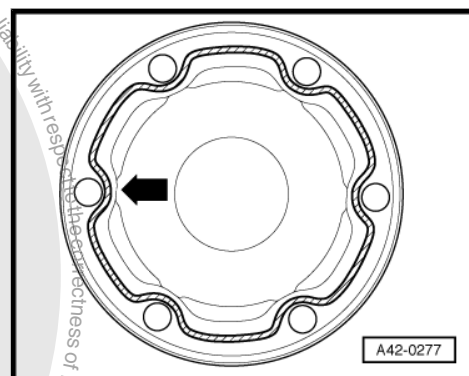


Inner CV Joint, Pressing On

- Press on joint until stop.
- Install the circlip.



- Coat the cover sealing surface with -D 454 300 A2- .
- Apply a continuous sealant bead with a 2 to 3 mm diameter in the area of the inner holes -arrow- on the clean surface of the cover.

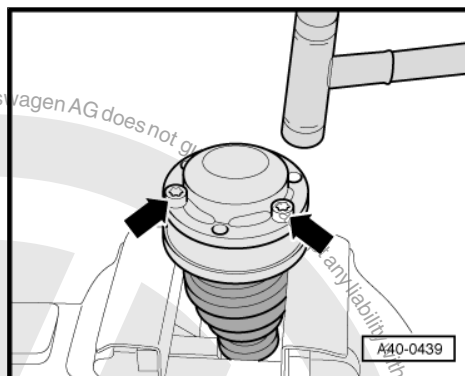




- Align new cover with screws -arrows- to screw holes.

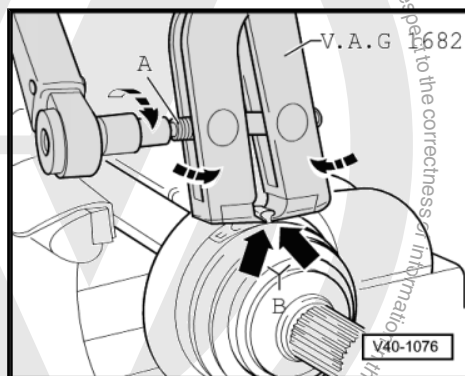
It Must Be Aligned Exactly Because It Cannot Be Aligned after Driving On.

- Drive cover on with a plastic hammer.
- Wipe away any sealant leaking out.



Tightening Clamp on Outer Joint

- Attach the Clamping Pliers VAG1682A- as illustrated. When doing this, make sure that edges of the pliers are positioned in the corners -B arrows- of the clamp.
- Tension clamp by turning spindle with a torque wrench (do not tilt clamp tool).



Note

- ♦ The hard material of the CV boot (compared to rubber) makes it necessary to use a stainless steel hose clamp. It is only possible to tighten the hose clamp with Clamping Pliers - VAG1682A-.
- ♦ Tightening specification: 25 Nm.
- ♦ Use the torque wrench -C- with adjustment range 5 - 50 Nm (for example, Torque Wrench 1331 5-50Nm - VAG1331-).
- ♦ Make sure the spindle threads -A- on the pliers move easily. Lubricate with MOS 2 grease, if necessary.
- ♦ If difficult to tighten, for example because of dirty threads, the proper clamping force of the clamping sleeve will not be reached even when tightened to the specification.

Tensioning Clamp on Small Diameter

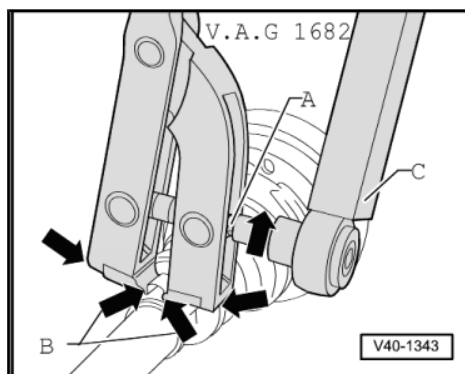
Outer CV Joint, Checking. Refer to

⇒ **"6.7 Outer CV Joint, Checking", page 138** .

Inner CV Joint, Checking. Refer to

⇒ **"6.8 Inner CV Joint, Checking", page 139** .

CV Joint, Checking Function. Refer to ⇒ **page 140** .



6.6.3 Drive Axle, Disassembling and Assembling, Triple Roller Joint AAR3300i

Special tools and workshop equipment required

- ♦ Press Plate - VW401-
- ♦ Press Plate - VW402-
- ♦ Press Piece - Rod - VW408A-
- ♦ Press Piece - Rod - VW411-



- ◆ Press Piece - 37mm - VW416B-
- ◆ Press Piece - Multiple Use - VW447H-
- ◆ Hose Clip Pliers - VAG1275A-
- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Clamping Pliers - VAG1682A-
- ◆ Tripod Joint Tool - T10065-
- ◆ Slide Hammer Set - VW771-
- ◆ Puller - Driveshaft - T10382-

Removing the Outer CV Joint

- Clamp the drive axle with protective jaws in a vise clamp.
- Fold back boot.
- Align the Puller - Driveshaft - T10382- so that the flat side of the Puller - Driveshaft - T10382/1- faces the Spindles - T10382/2- .
- Attach the Puller - Driveshaft - T10382- to the Slide Hammer Set - VW771- .
- Remove the CV joint from the drive axle using the Puller - Driveshaft - T10382- and Slide Hammer Set - VW771- .

1 - Puller - Driveshaft - Removing Plate - T10382/1-

2 - Puller - Driveshaft - Spindles - T10382/2-

Outer CV Joint, Installing

- Install the new circlips.
- Slide the new CV boot onto the drive axle if necessary.
- Use a plastic hammer to install it on the shaft until the circlip engages.

Triple Roller Joint, Disassembling

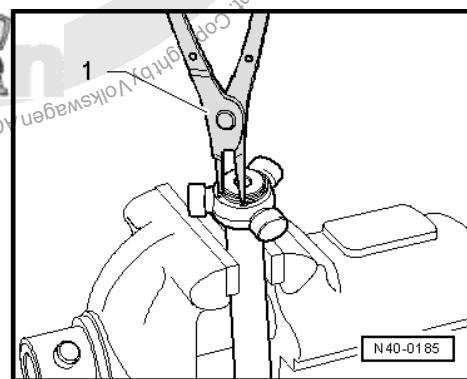
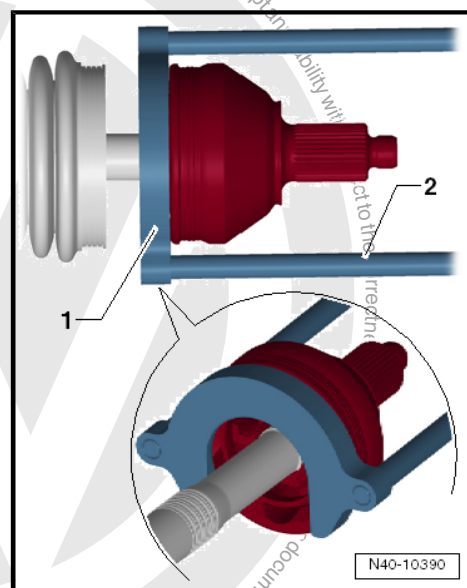
- Clamp the drive axle with protective jaws in a vise clamp.
- Open both clamps at inner joint and slide back CV boot.
- Remove joint from drive axle.

- Remove the circlip.

1 - Pliers (commercially available)

- or Circlip Pliers - VW161A-

- Insert the drive axle into the press.





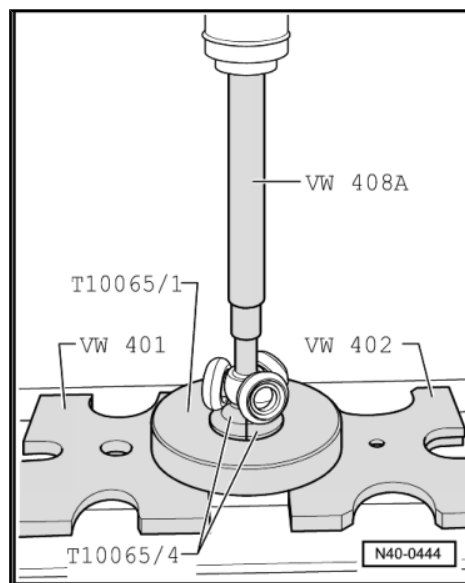
- Press the triple roller star off the drive shaft.
- Pull off CV boot from shaft.
- Clean the shaft, joint and groove for the seal.

Triple Roller Joint, Assembling

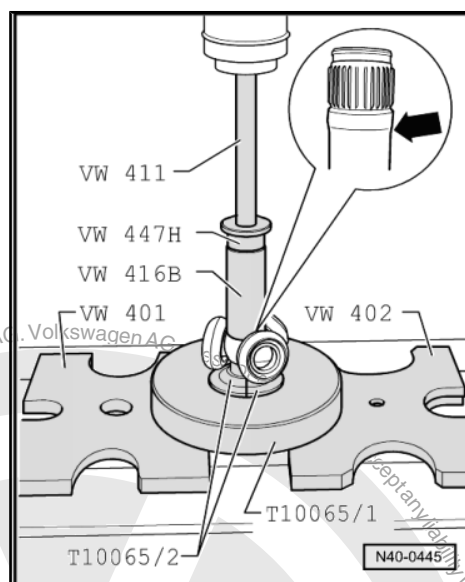
- Slide small clamp for joint protective boot onto shaft.
- Slide CV boot onto shaft.

Triple Roller Star, Installing

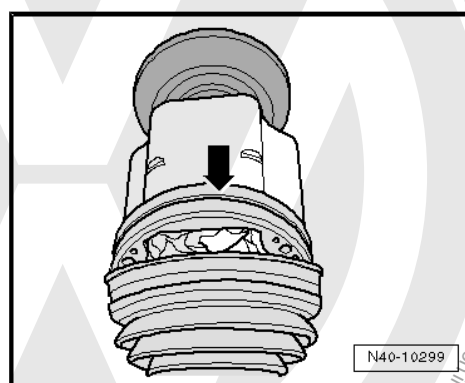
The chamfer on triple roller star -arrow- faces the shaft. This is used as an assembly aid.



- Install the triple roller star all the way onto the shaft.
- Make sure the pressure does not increase above 3.0 t.
- If necessary, coat the splines of the drive axle and triple roller star with Grease - G 052 142 A2- .
- Insert the circlip while making sure it sits properly.
- Press half of the total amount of grease from the repair kit into the triple roller joint.
- Position the boot adapter on the joint.
- Slide joint piece over rollers and secure.
- Press the remaining amount of grease from the repair kit into the rear side of the triple roller joint.



- Slide the CV boot onto the boot adapter and make sure the CV boot engages correctly in the groove on the adapter -arrow-.



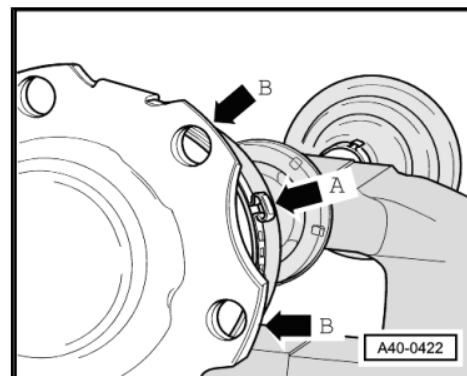


- Install the clamping sleeve.



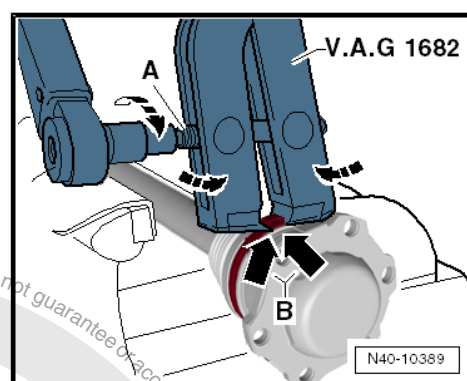
Note

The clamping tab of clamp -arrow A- must be between the securing flange of the joint -B arrows-. Only this way can it be ensured that the internal multi-point bolts can be correctly installed when installing the drive axle.



Tightening the Tensioning Clamps on the Larger Diameter on the Inner Joint.

- Attach the Clamping Pliers - VAG1682A- as illustrated. When doing this, make sure that edges of the pliers are positioned in the corners -B arrows- of the clamp.
- Tension clamp by turning spindle with a torque wrench (do not tilt clamp tool).

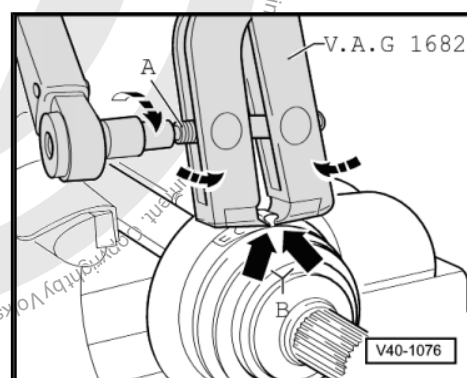


Note

- ◆ *The hard material of the CV boot (compared to rubber) makes it necessary to use a stainless steel hose clamp. It is only possible to tighten the hose clamp with Clamping Pliers - VAG1682A-.*
- ◆ *Tightening specification: 25 Nm.*
- ◆ *Use torque wrench -C- with adjustment range 5...50 Nm (for example Torque Wrench 5-50Nm - VAG1331-).*
- ◆ *Make sure the spindle threads -A- on the pliers move easily. Lubricate with MOS 2 grease, if necessary.*
- ◆ *If difficult to tighten, for example because of dirty threads, the proper clamping force of the clamping sleeve will not be reached even when tightened to the specification.*

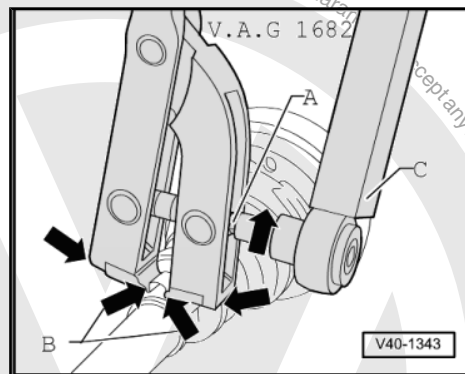
Tightening Clamp on Outer Joint

- Attach the Clamping Pliers - VAG1682A- as illustrated. When doing this, make sure that edges of the pliers are positioned in the corners -B arrows- of the clamp.
- Tension clamp by turning spindle with a torque wrench (do not tilt clamp tool).





Tightening the Tensioning Clamp on the Smaller Diameter on the Inner/Outer Joint

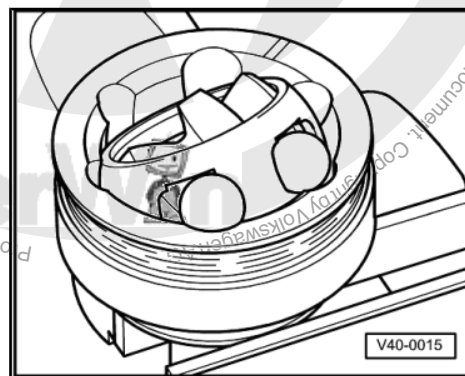


6.7 Outer CV Joint, Checking

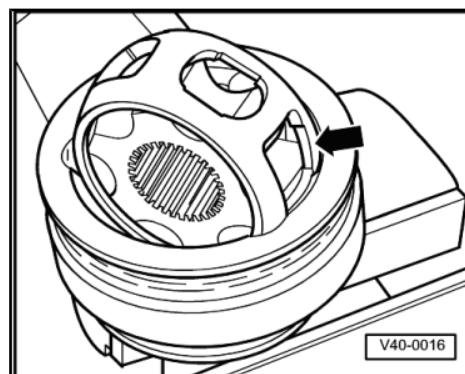
It is necessary to disassemble the joint whenever replacing the grease or if the ball surfaces show wear or damage.

Removing

- Mark position of ball hub to ball cage and to housing before disassembling, using an electric engraver or grindstone.
- Swivel the ball hub and ball cage.
- Remove the balls one after the other.



- Turn cage until the two rectangular windows -arrow- are aligned with the joint housing.
- Lift out cage with hub.





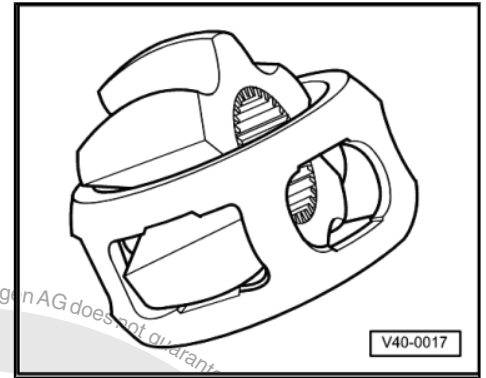
- Swing segment of hub into rectangular window of cage.
- Fold hub out from cage.

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. Joint must be replaced in such cases. Flattening and running marks on the balls are no reason to replace a joint.

Installing

Install in reverse order of removal and note the following:

- Press in half of the total grease amount (40 grams) into joint body.
- Insert cage with hub into joint body.
- Press in the opposite facing balls one after the other, and the old position of the ball hub bearing to the ball cage and to the joint housing must be replicated.
- Install new circlip into the hub.
- Distribute remaining grease in the joint boot.



6.8 Inner CV Joint, Checking

Removing

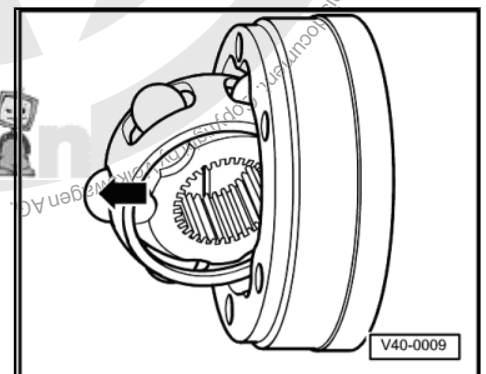
The joint must be disassembled for the following work:

- ◆ Replace the grease if it is very dirty
- ◆ For checking the contact surfaces for wear
- ◆ For checking the bearings for wear
- Swivel the ball hub and ball cage.
- Remove the joint in the direction of the arrow.
- Remove the balls from the cage.



Note

Ball hub and joint piece are paired. Do not interchange.

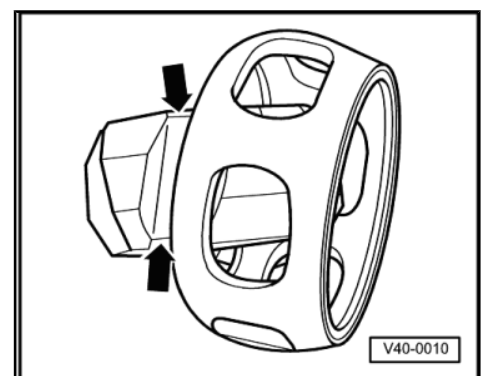


- Flip out ball hub from ball cage via running path of ball -arrows-.
- Check the joint, ball hub, ball cage and balls for small broken off depressions (pitting) and chafing.

Excessive circumferential backlash in joint makes itself noticed via tip-in shock. Joint must be replaced in such cases. Flattening and running marks of balls are no reason to replace joint.

Installing

Install in reverse order of removal and note the following:

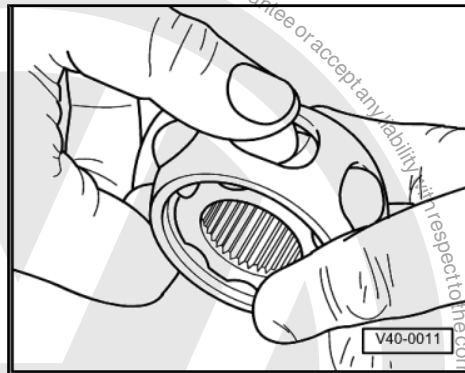




- Insert ball hub into ball cage via two chamfers. The installation position is arbitrary. Press balls into cage.

Ball hub has 2 different distances between ball tracks, a larger and a smaller.

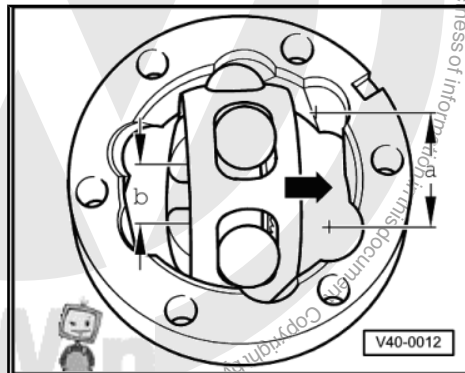
- Insert hub with cage and balls upright into joint piece.



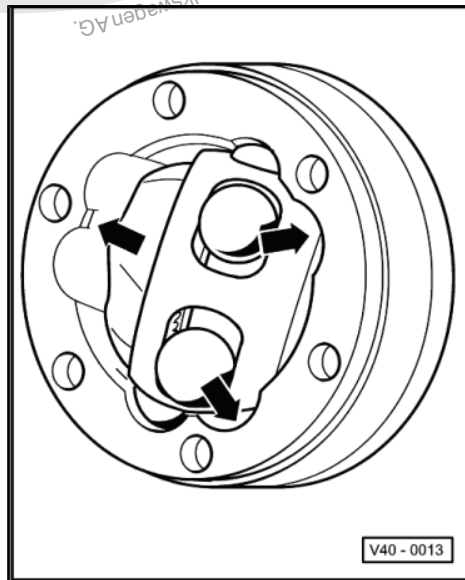
When inserting, make sure that in each case the wide gap -a- at joint piece contacts narrow gap -b- at hub after swinging in.

Chamfer on inner diameter of ball hub (splines) must face large diameter of joint piece.

- Pay attention to the bevel on the inner diameter of the ball hub. It must be visible.



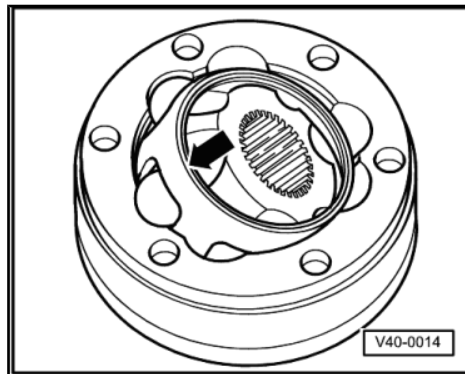
- Swing in ball hub, to do so swing out hub far enough from cage -arrows- so that the balls have the distance of the running paths.



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

CV Joint, Checking for Function

CV joint is properly assembled, if ball hub can be slid back and forth by hand over whole compensation length.

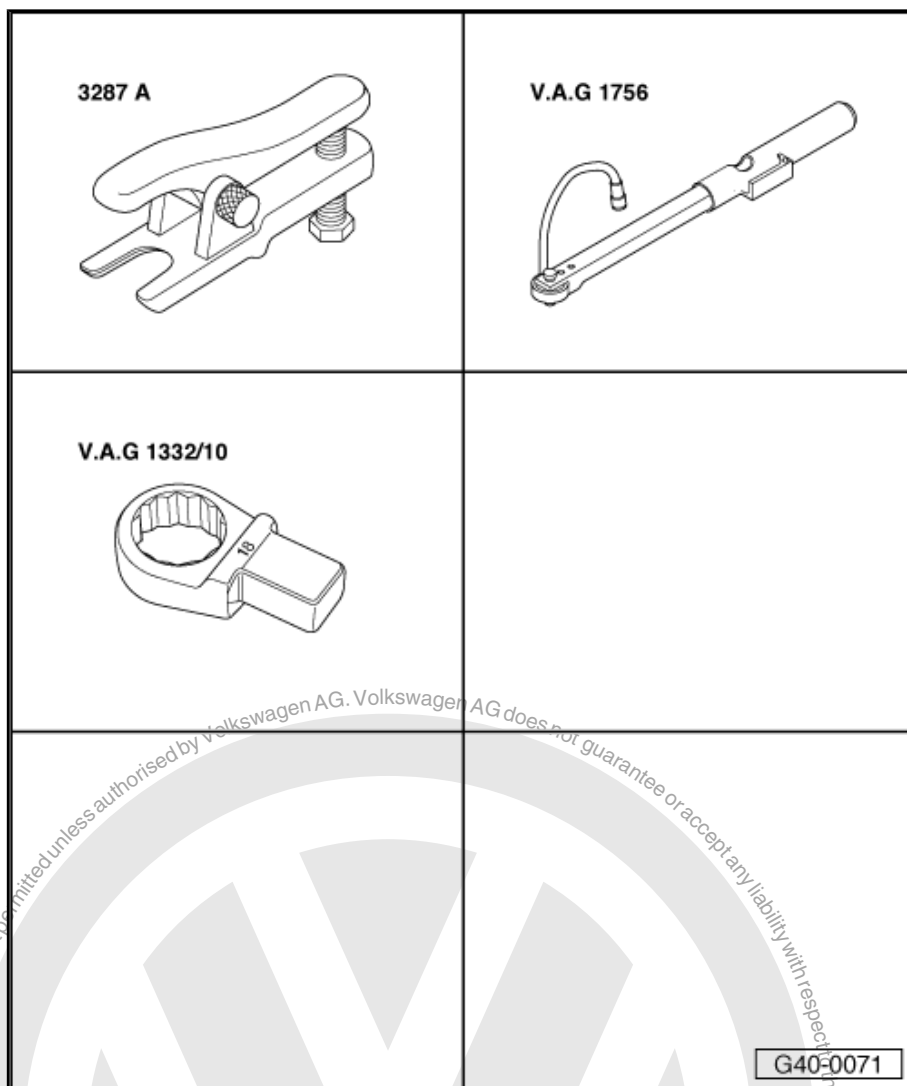




7 Special Tools


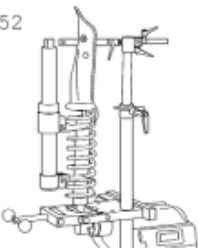

Special tools and workshop equipment required

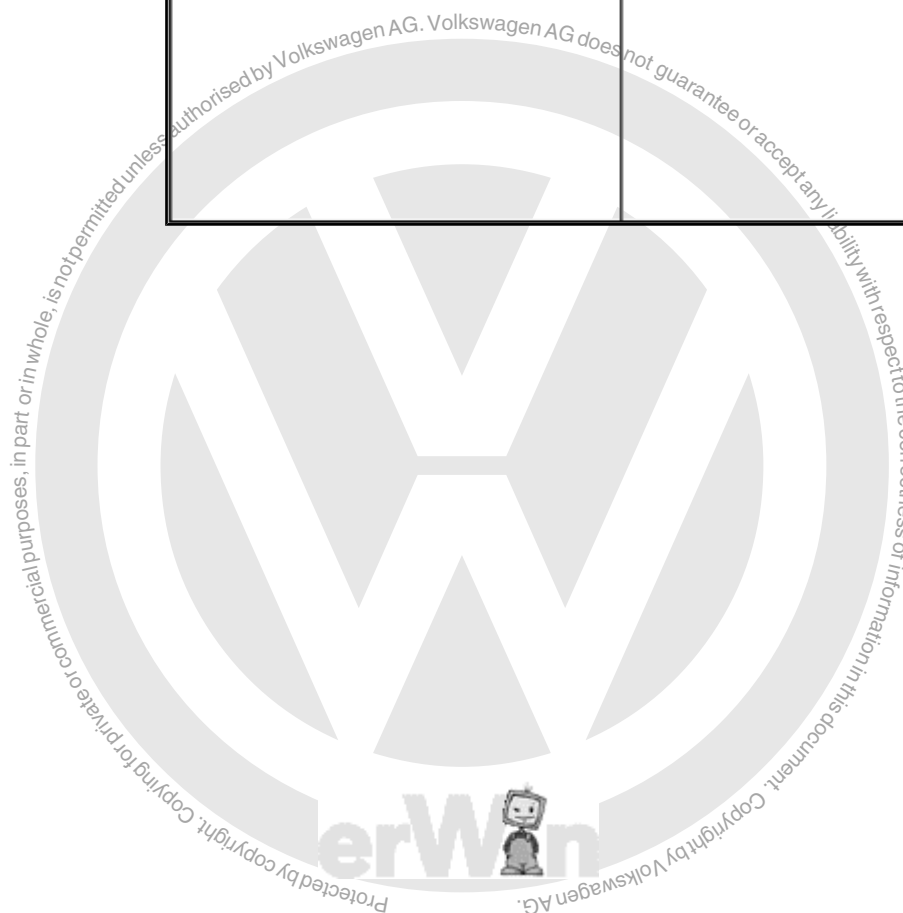
- ◆ Puller - Ball Joint - 3287A-
- ◆ Digital Torque Wrench - VAG1756A-
- ◆ Torque Wrench 1332 Insert - Ring Wrench - 18mm - VAG1332/10-





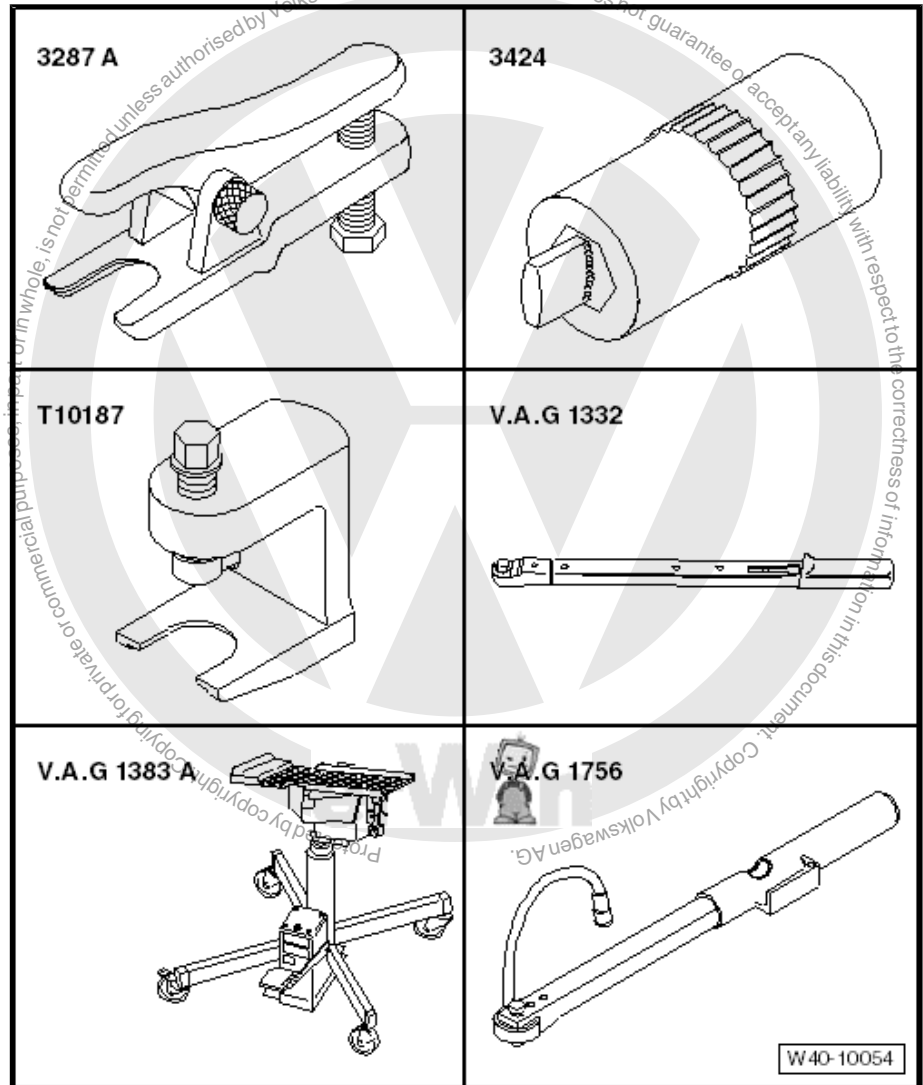
- ◆ Torque Wrench 1332
40-200Nm - VAG1332-
- ◆ Spring Compressor Kit -
Spring Tensioner -
VAG1752/1-
- ◆ Spring Compressor Kit -
Spring Retainer w/Inserts -
VAG1752/4-
- ◆ Shock Absorber Set -
T10001-
- ◆ Ratchet (Commercially
Available)

<p>V.A.G 1332</p> 	<p>V.A.G 1752</p> 
<p>T 10001</p> 	
	<p>W40-0119</p>



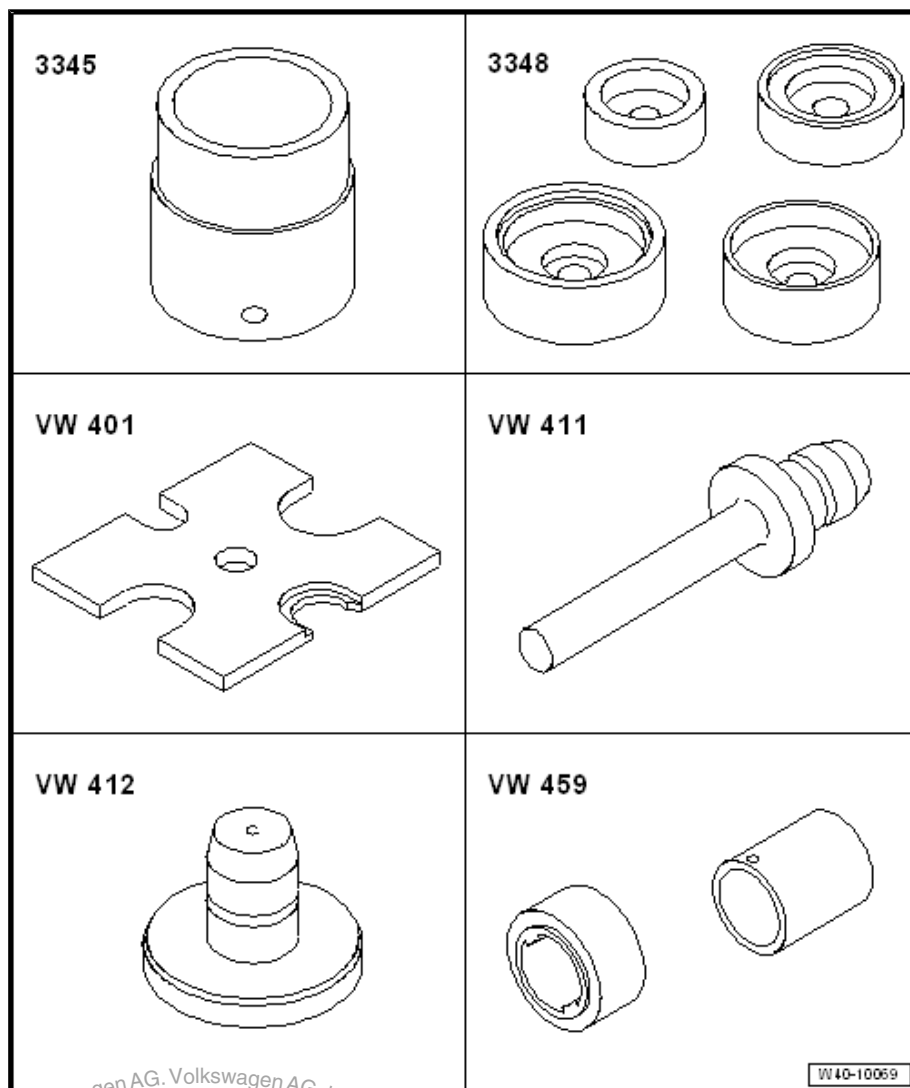


- ◆ Puller - Ball Joint - 3287A-
- ◆ Spreader Tool - 3424-
- ◆ Puller - Ball Joint - T10187-
- ◆ Torque Wrench 1332
40-200Nm - VAG1332-
- ◆ Engine and Gearbox Jack -
VAS6931-
- ◆ Digital Torque Wrench -
VAG1756A-



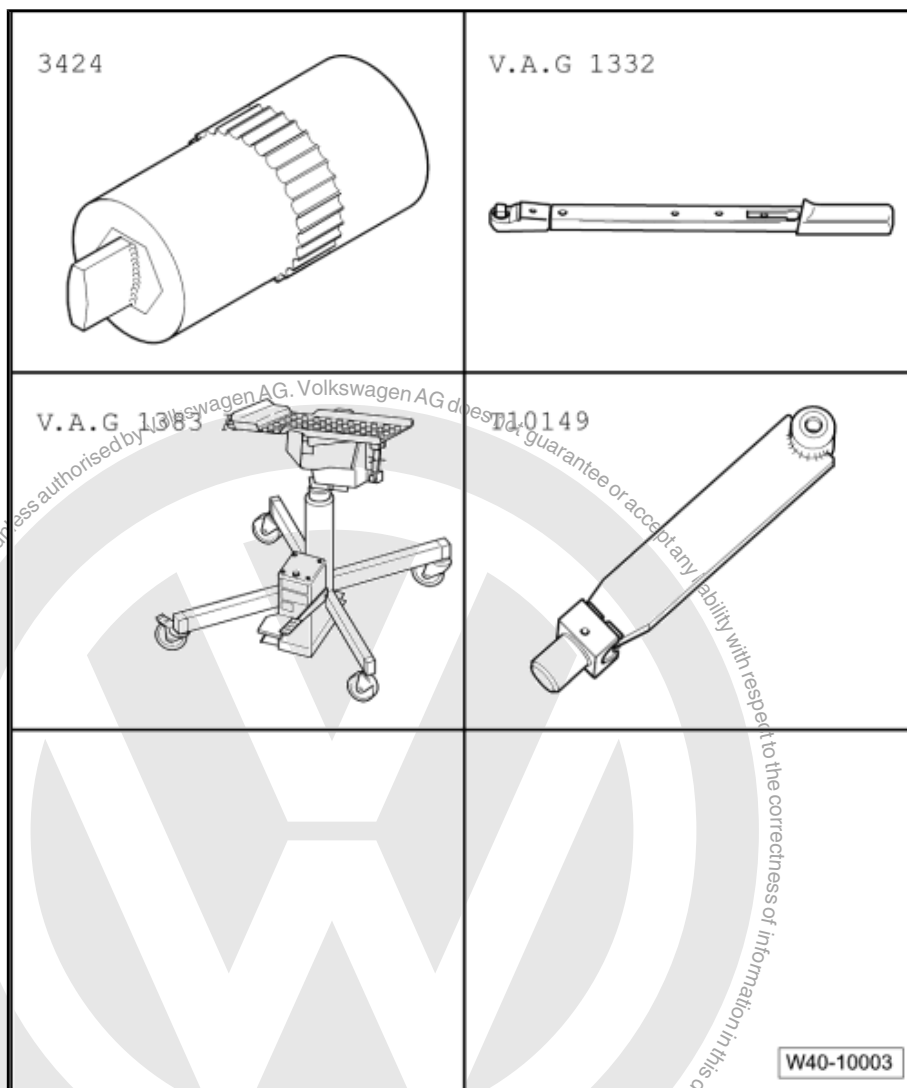


- ◆ Bearing Installer - Wheel Bearing - 3345-
- ◆ Bearing Installer - Multiple Use - 3348-
- ◆ Press Plate - VW401-
- ◆ Press Piece - Rod - VW411-
- ◆ Press Piece - Multiple Use - VW412-
- ◆ Bearing Installer - Ball Joint/Bushing/Bearing - VW459-



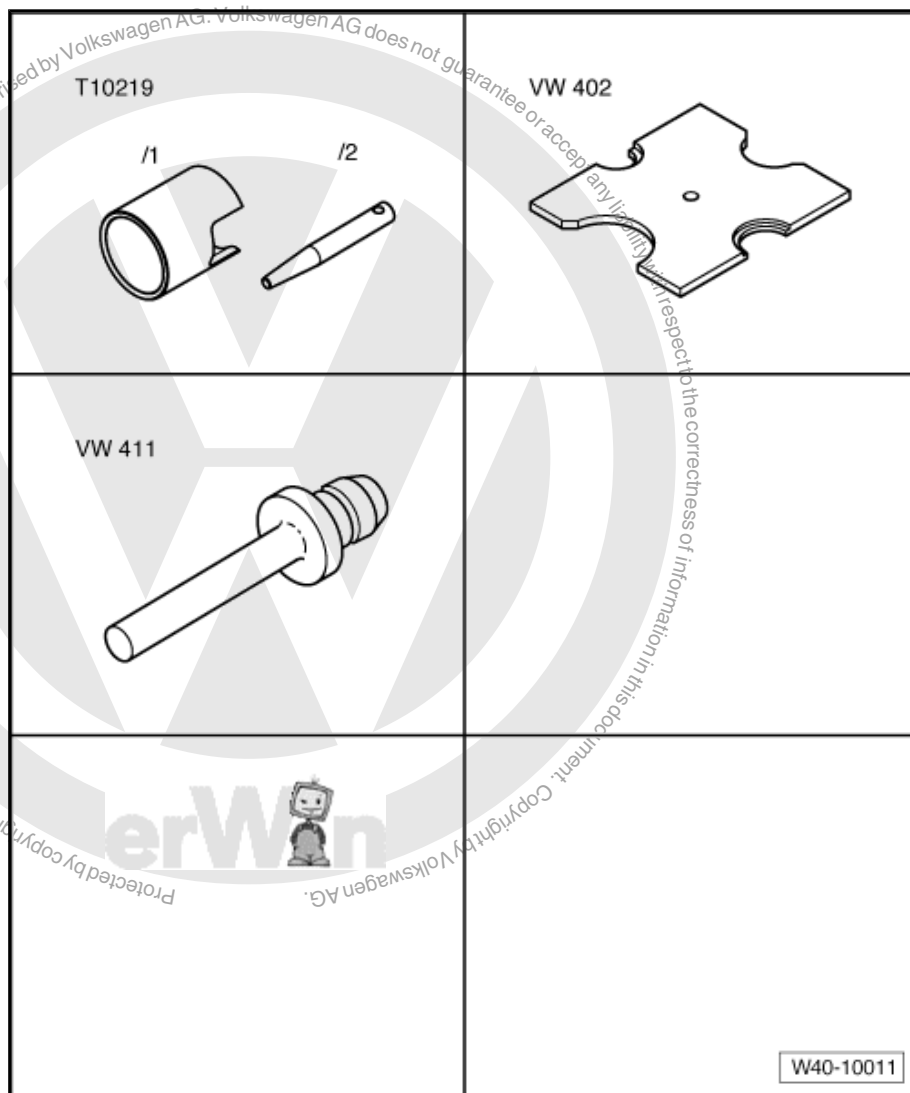


- ◆ Torque Wrench 1332
40-200Nm - VAG1332-
- ◆ Spreader Tool - 3424-
- ◆ Engine and Gearbox Jack -
VAS6931-
- ◆ Engine/Gearbox Jack
Adapter - Wheel Hub Sup-
port - T10149-



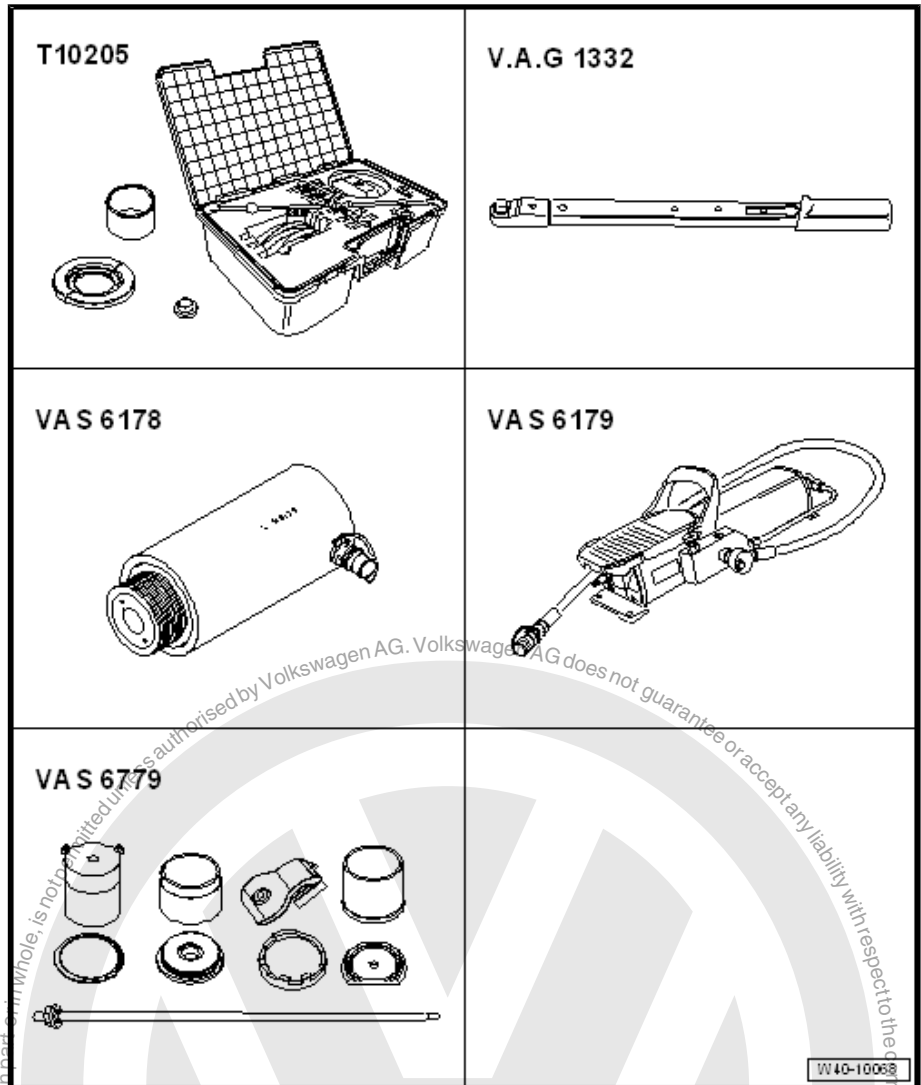


- ◆ Wishbone Rubber Mount Assembly Tool - T10219-
- ◆ Press Plate - VW402-
- ◆ Press Piece - Rod - VW411-





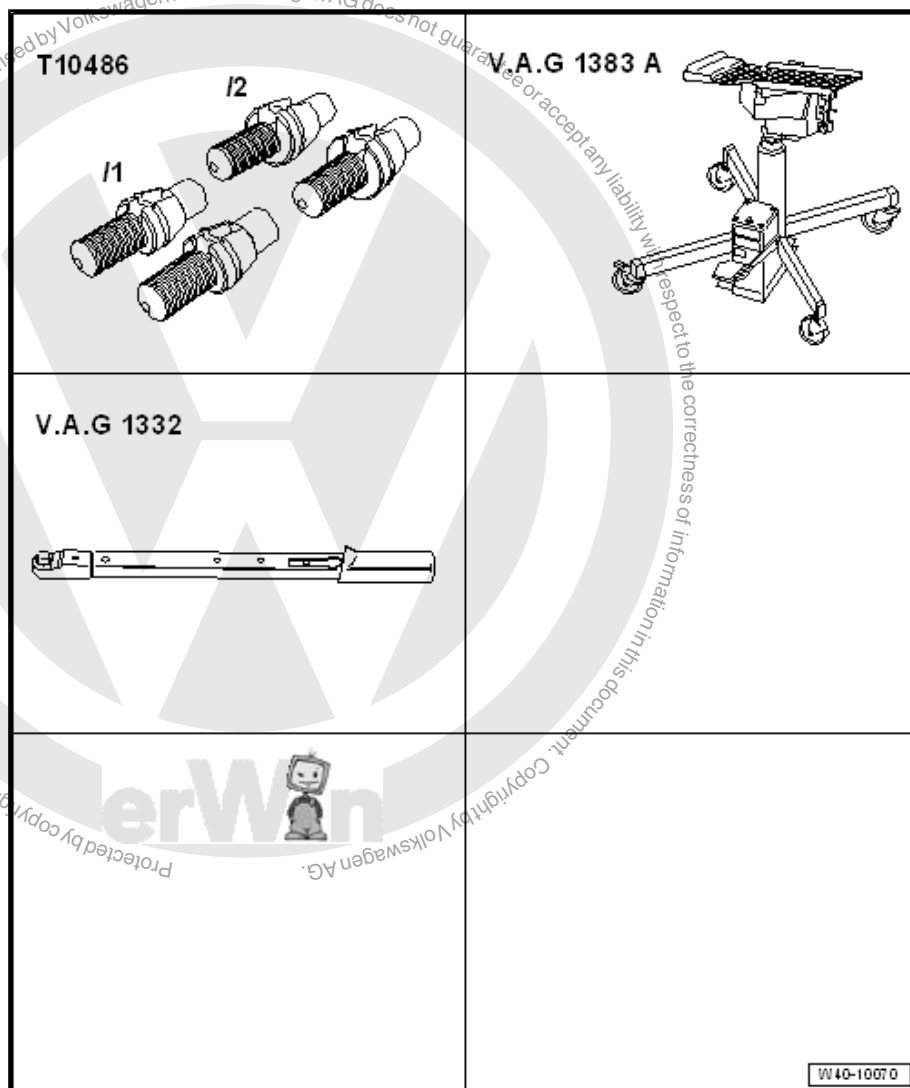
- ◆ Bearing Installer - Wheel Hub/Bearing Kit - T10205-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Hydraulic Press - VAS6178-
- ◆ Pneumatic/Hydraulic Foot Pump - VAS6179-
- ◆ Rubber Bushing Assembly Device Kit - VAS6779A-



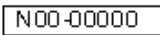
W40-10088



- ◆ Four Subframe Alignment Assembly Tool Kit- Locating Pins - T10486/1-
- ◆ Engine and Gearbox Jack - VAS6931- with Universal Support Plate - VAG1359/2-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

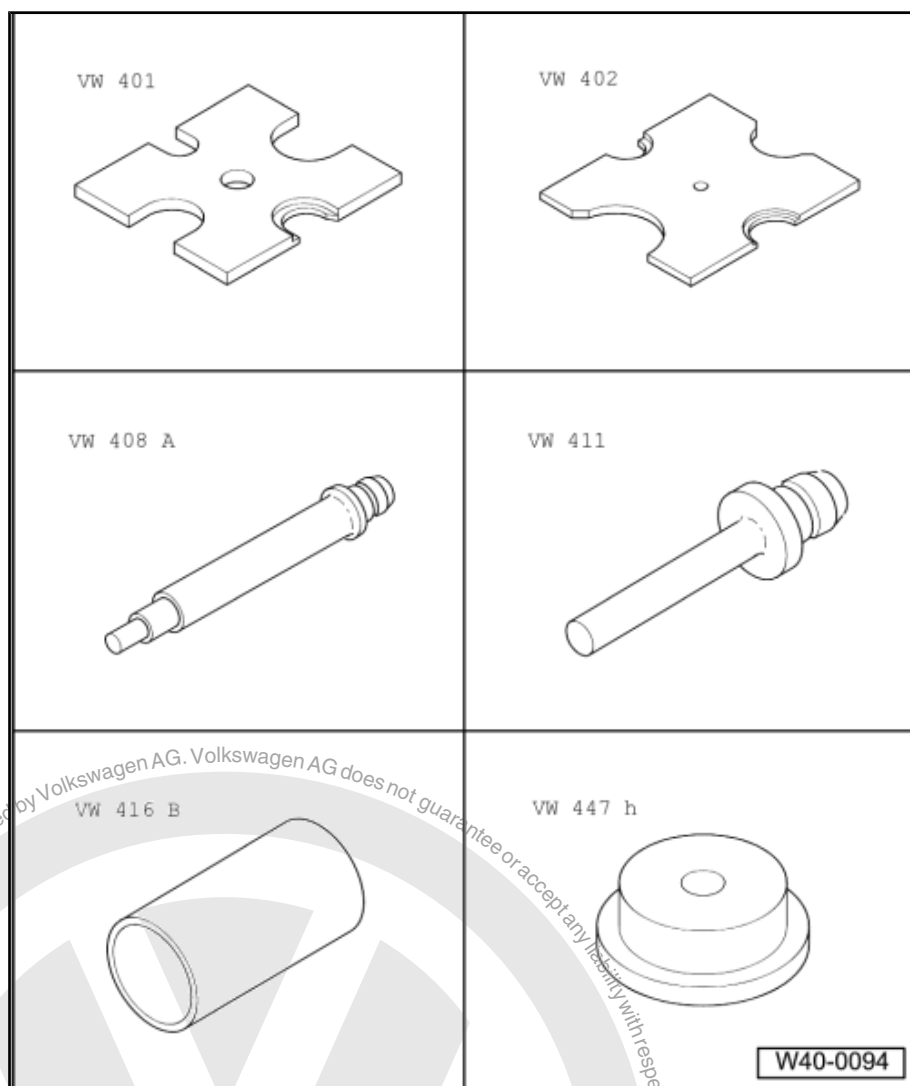


-



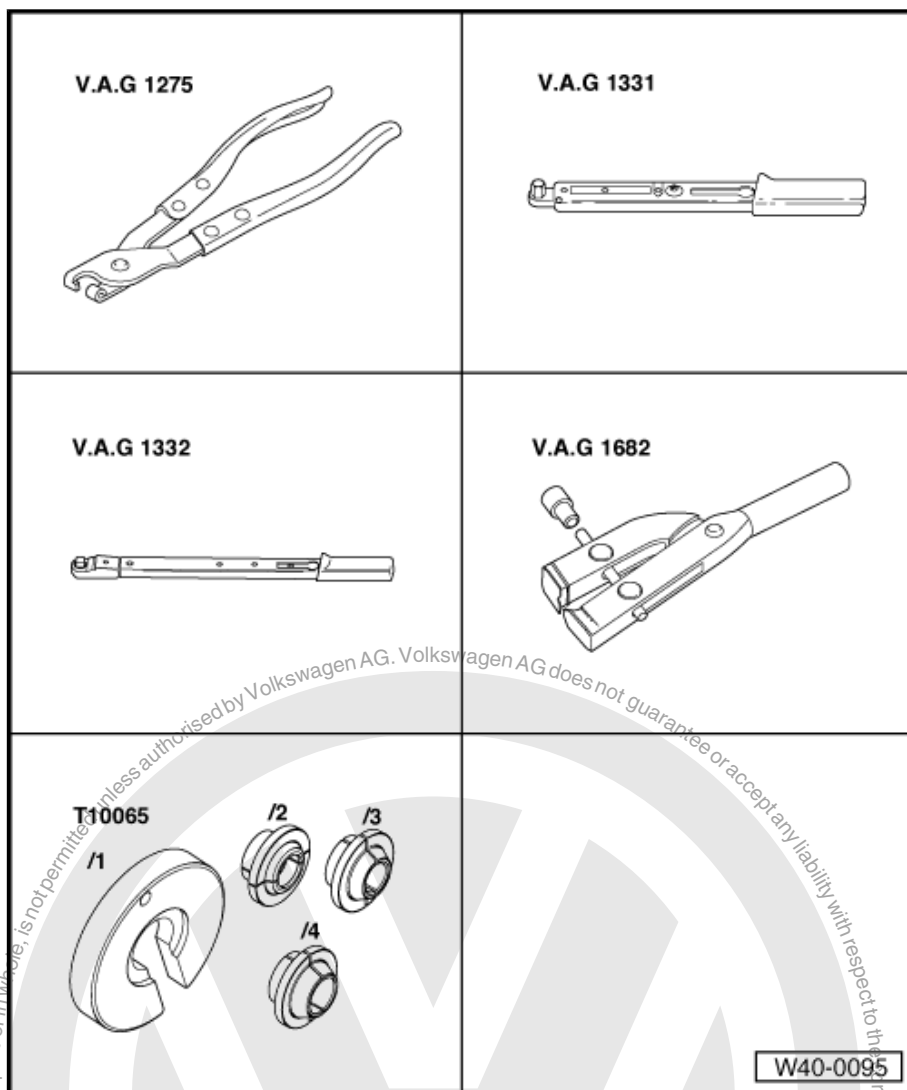


- ◆ Press Plate - VW401-
- ◆ Press Plate - VW402-
- ◆ Press Piece - Rod - VW408A-
- ◆ Press Piece - Rod - VW411-
- ◆ Press Piece - 37mm - VW416B-
- ◆ Press Piece - Multiple Use - VW447H-



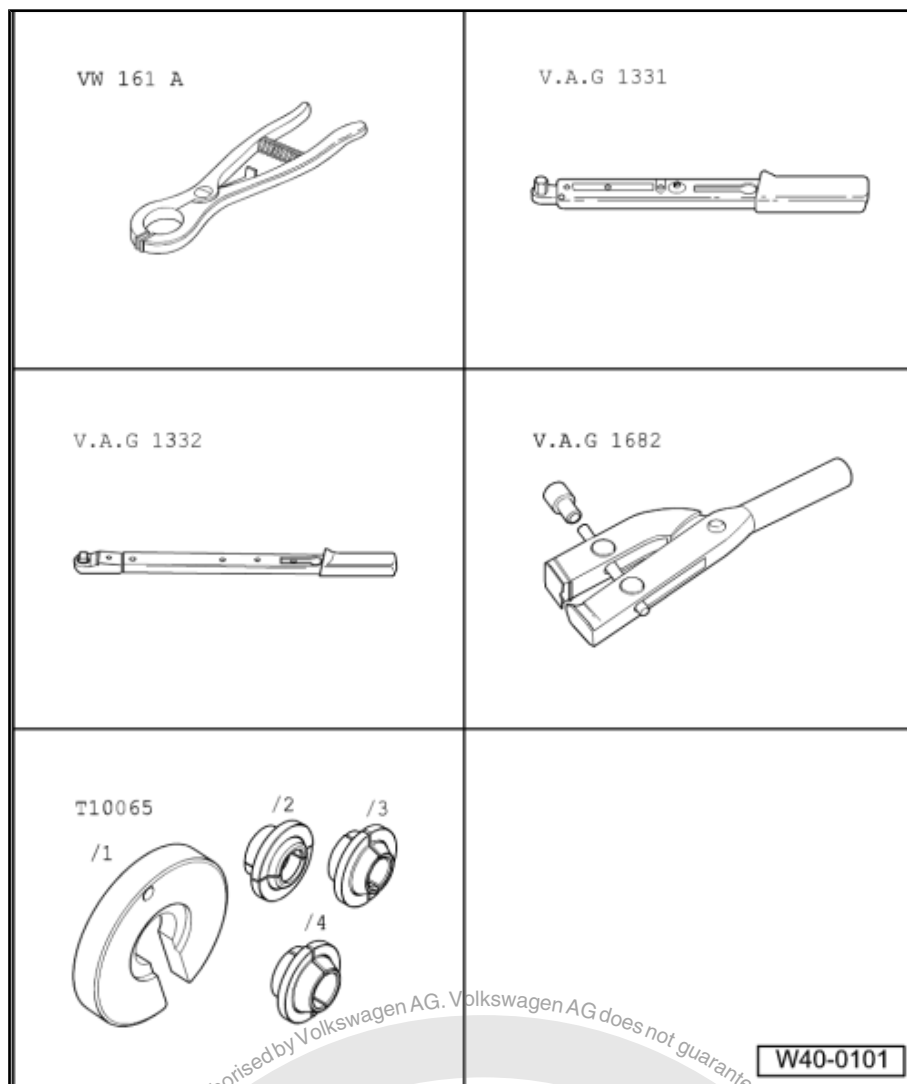


- ◆ Hose Clip Pliers - VAG1275A-
- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Clamping Pliers - VAG1682A-
- ◆ Tripod Joint Tool - T10065-



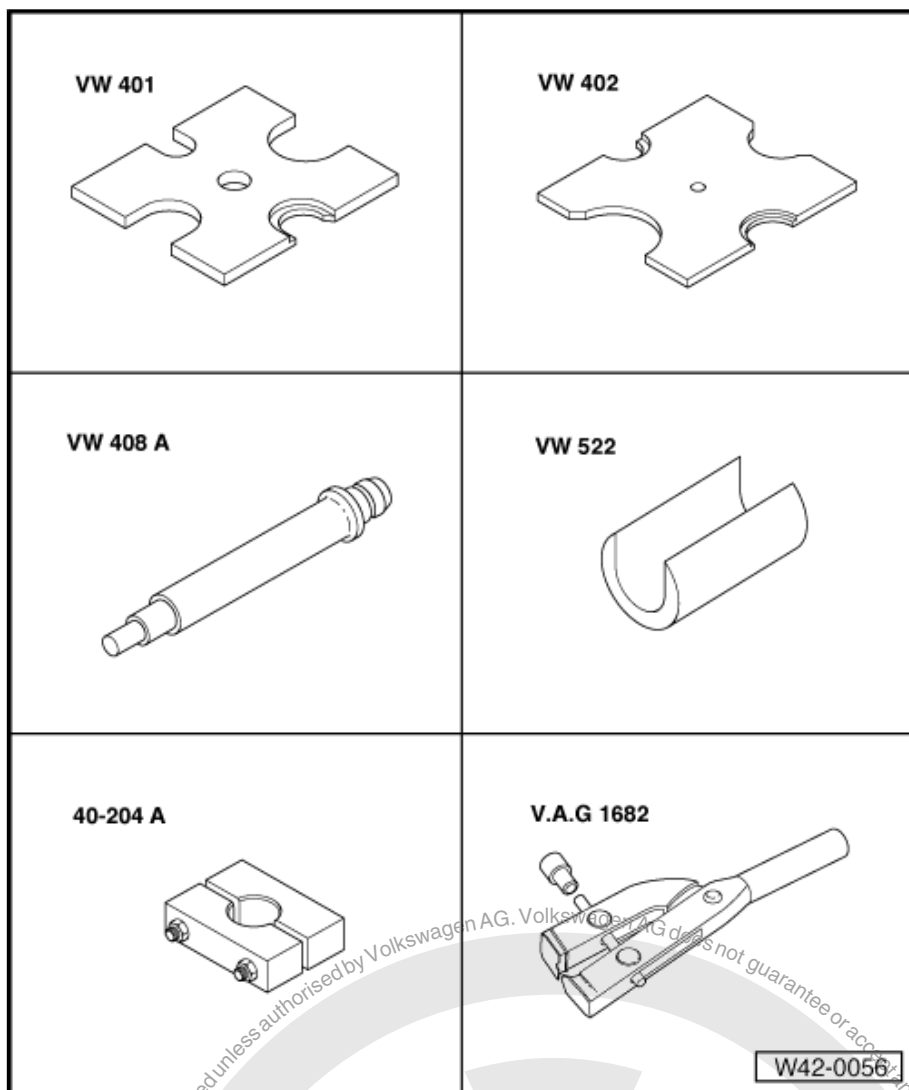


- ◆ Circlip Pliers - VW161A-
- ◆ Torque Wrench 1331
5-50Nm - VAG1331-
- ◆ Torque Wrench 1332
40-200Nm - VAG1332-
- ◆ Clamping Pliers -
VAG1682A-
- ◆ Tripod Joint Tool - T10065-





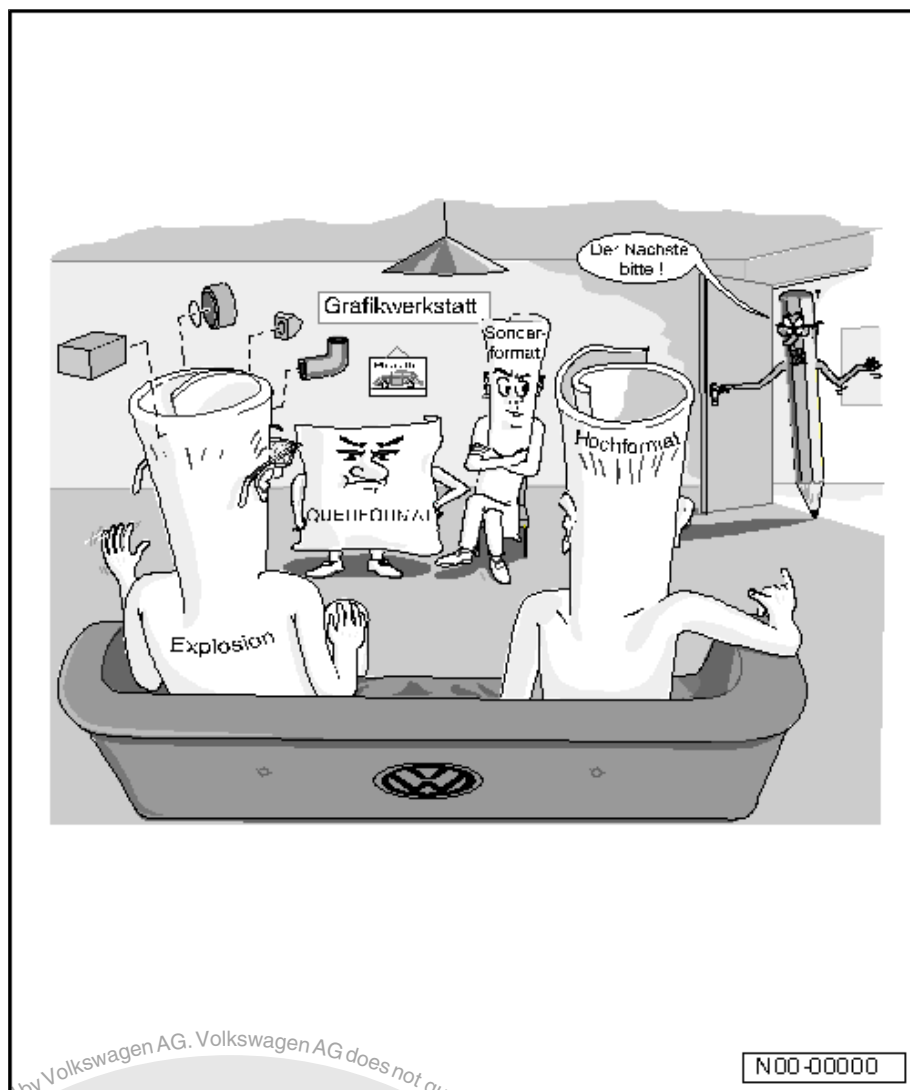
- ◆ Press Plate - VW401-
- ◆ Press Plate - VW402-
- ◆ Press Piece - Rod - VW408A-
- ◆ CV Joint Press Sleeve - VW522-
- ◆ Press Block - 40-204A-
- ◆ Clamping Pliers - VAG1682A-



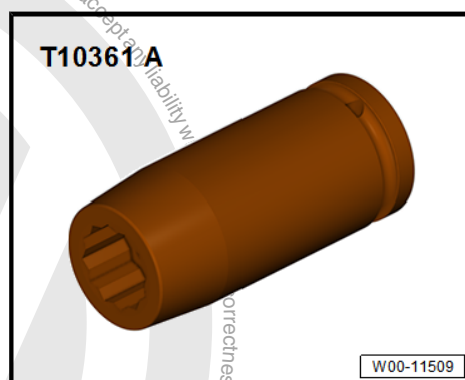
Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by Volkswagen AG. Volkswagen AG does not guarantee or accept liability with respect to the correctness of information in this document. Copyright by Volkswagen AG.



- ◆ Slide Hammer Set - VW771-
- ◆ Puller - Driveshaft - T10382-
- ◆ Torque Wrench 1331 5-50Nm - VAG1331-



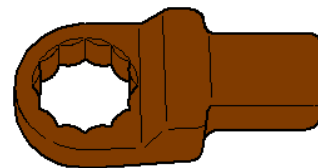
- ◆ Socket AF 24 mm T10361A-





- ◆ Torque Wrench 1332 Insert - Ring Wrench - 21mm - VAG1332/7-

V.A.G 1332/7



W00-11476





42 – Rear Suspension

1 Rear Axle

⇒ [“1.1 Overview - Rear Axle”, page 156](#)

⇒ [“1.2 Rear Axle, Lowering”, page 160](#)

⇒ [“1.3 Rear Axle, Removing and Installing”, page 168](#)

1.1 Overview - Rear Axle

⇒ [“1.1.1 Overview - Rear Axle, Torsion Beam Axle”, page 156](#)

⇒ [“1.1.2 Overview - Rear Axle, Multi-Link Suspension”, page 157](#)

⇒ [“1.1.3 Overview - Rear Axle, Multi-Link Suspension, AWD”, page 159](#)

1.1.1 Overview - Rear Axle, Torsion Beam Axle

I - Refer to

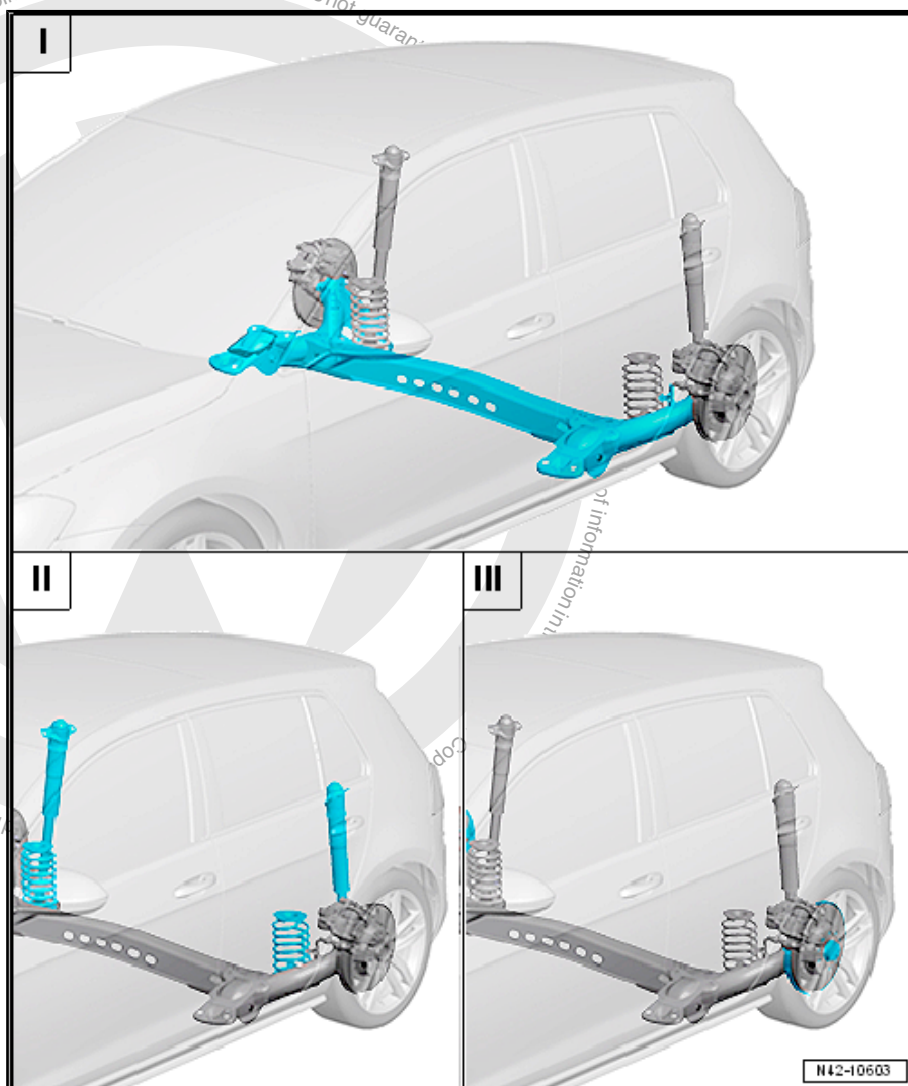
⇒ [“2 Axle Beam”, page 184](#)

II - Refer to

⇒ [“6 Suspension Strut/Shock Absorber, Spring”, page 237](#)

III - Refer to

⇒ [“7 Wheel Bearing and Trailing Arm”, page 257](#)



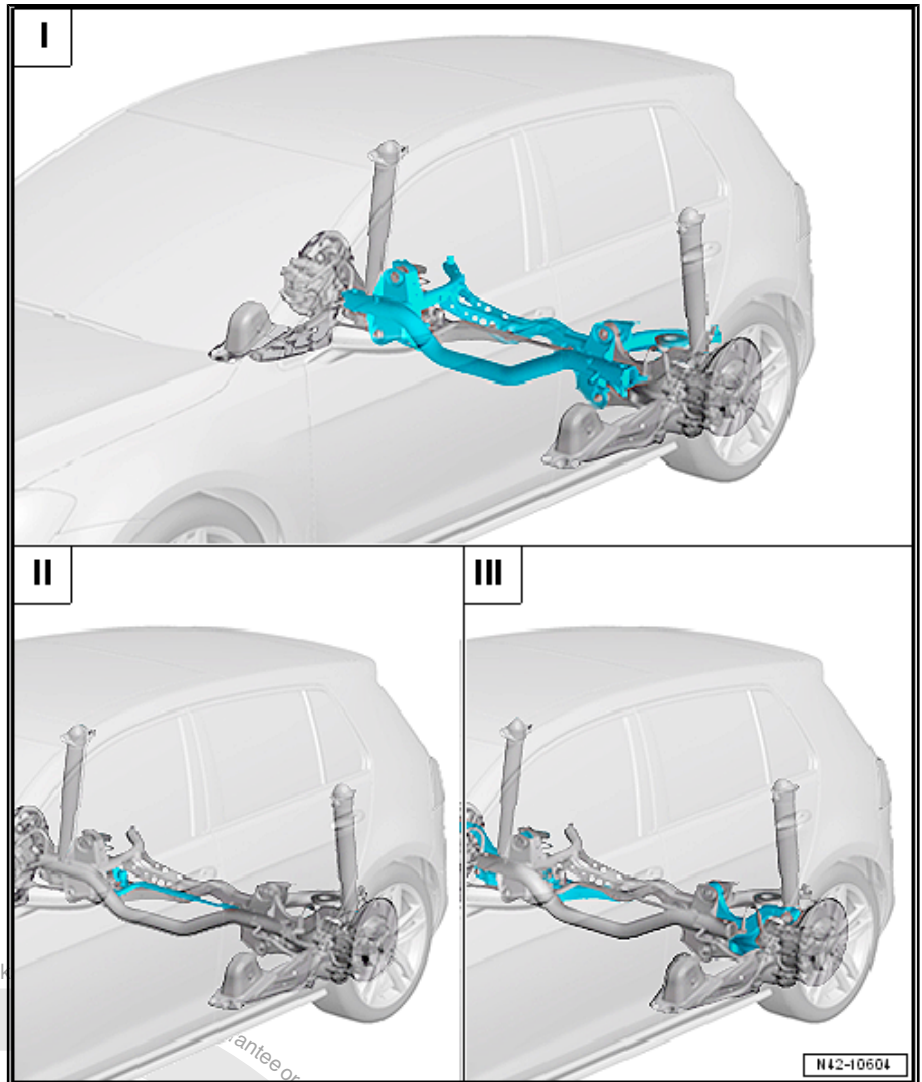


1.1.2 Overview - Rear Axle, Multi-Link Suspension

I - Refer to
⇒ "3 Subframe", page 191

II - Refer to
⇒ "4 Stabilizer Bar",
page 221

III - Refer to
⇒ "5 Control Arm, Tie Rod",
page 226



N42-10604

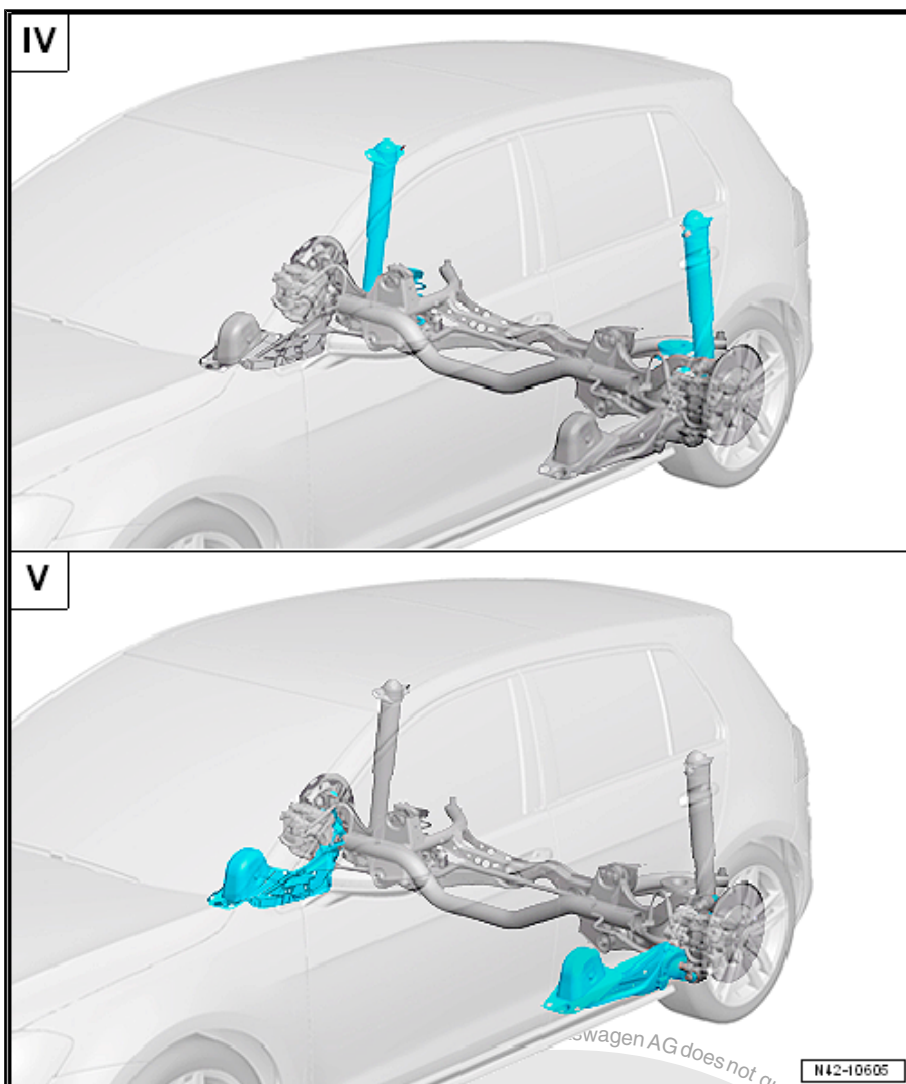


IV - Refer to

⇒ **“6 Suspension Strut/Shock Absorber, Spring”, page 237**

V - Refer to

⇒ **“7 Wheel Bearing and Trailing Arm”, page 257**



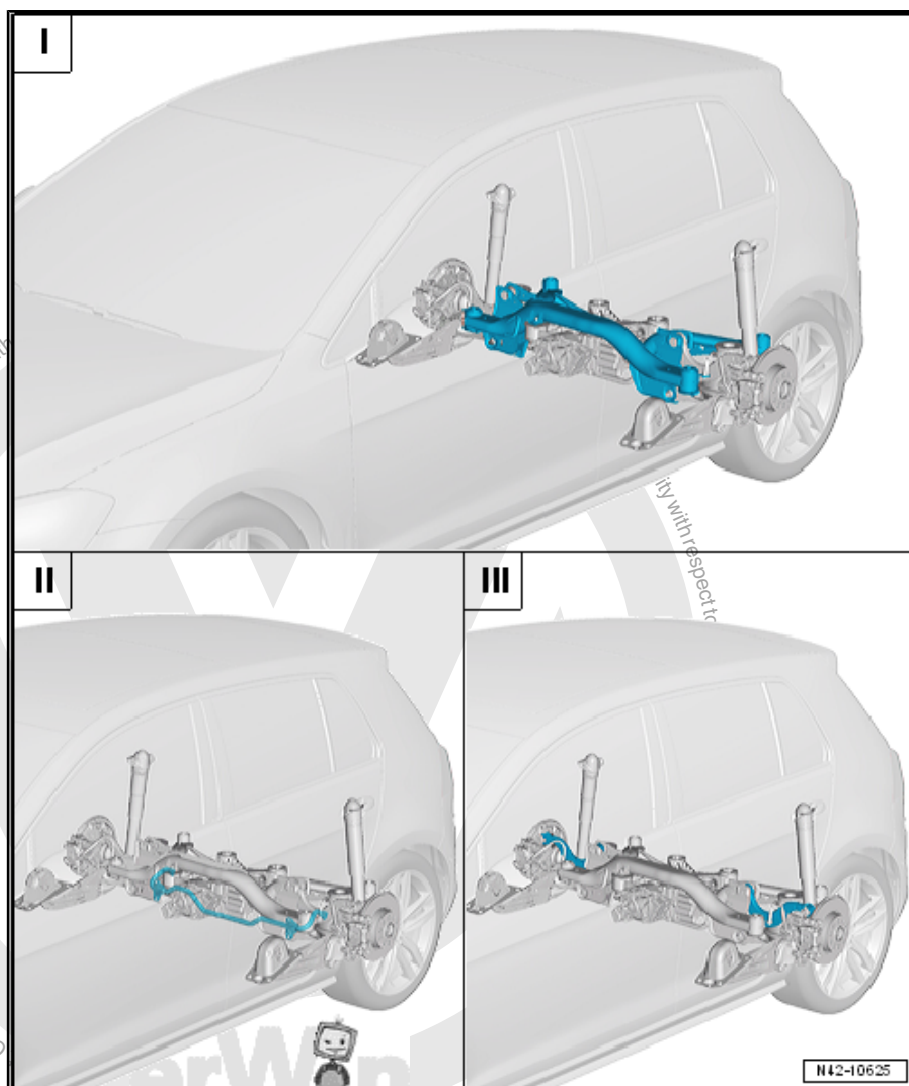


1.1.3 Overview - Rear Axle, Multi-Link Suspension, AWD

I - Refer to
⇒ ["3 Subframe", page 191](#)

II - Refer to
⇒ ["4 Stabilizer Bar", page 221](#)

III - Refer to
⇒ ["5 Control Arm, Tie Rod", page 226](#)





IV - Refer to

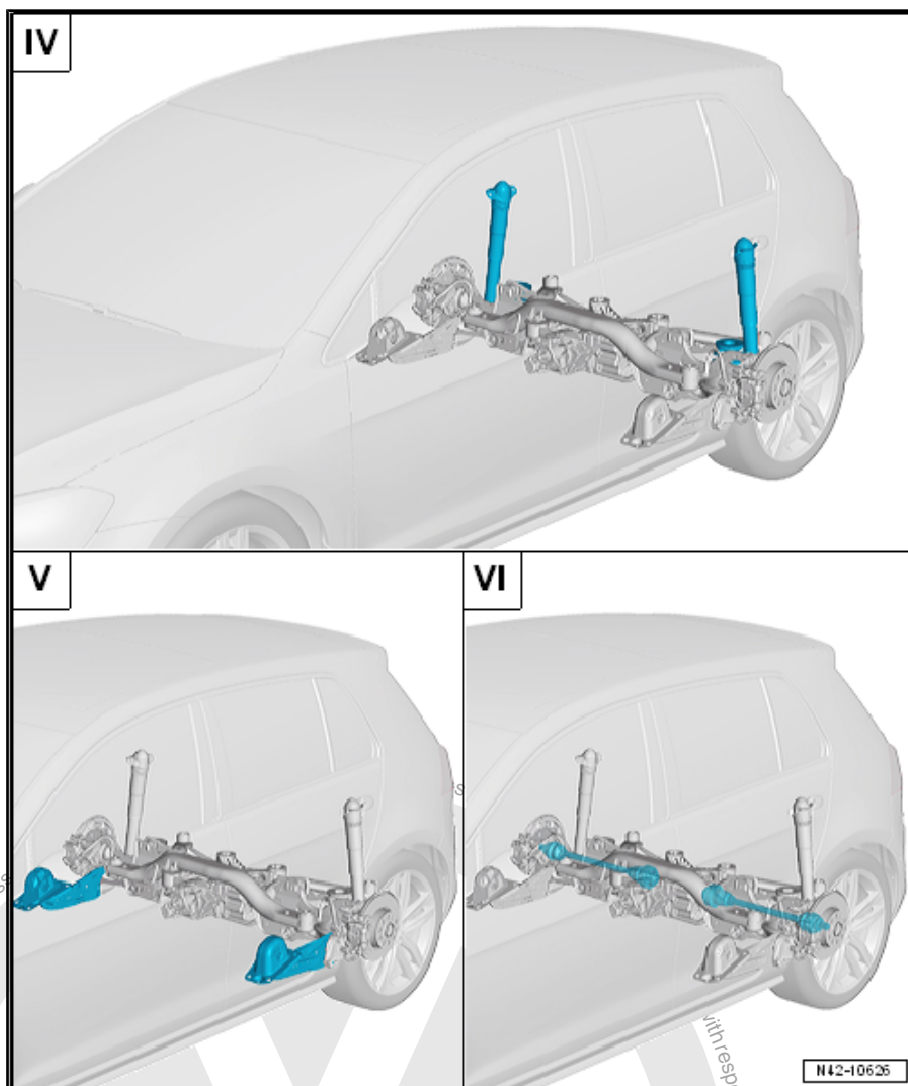
⇒ "6 Suspension Strut/Shock Absorber, Spring", page 237

V - Refer to

⇒ "7 Wheel Bearing and Trailing Arm", page 257

VI - Refer to

⇒ "8 Drive Axle", page 292



1.2 Rear Axle, Lowering

⇒ "1.2.1 Rear Axle, Lowering, Multi-link Suspension, FWD Except e-Golf", page 160

⇒ "1.2.2 Rear Axle, Lowering, Multi-link Suspension, FWD e-Golf", page 163

⇒ "1.2.3 Rear Axle, Lowering, Multi-Link Suspension, AWD", page 165

1.2.1 Rear Axle, Lowering, Multi-link Suspension, FWD Except e-Golf

Special tools and workshop equipment required

- ◆ Subframe Bushing Tool Kit - 3301-
- ◆ Bearing Installer - Control Arm - 3346-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Engine and Gearbox Jack - VAS6931-

Lower the Subframe with Attachments.

- Loosen the wheel bolts.
- Raise the vehicle.

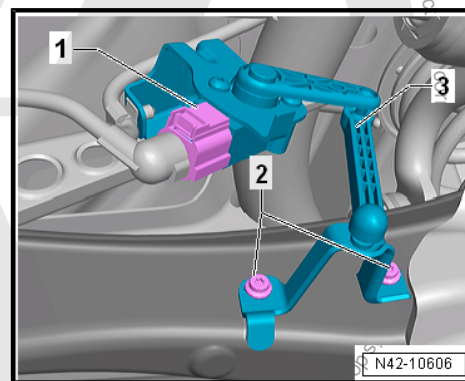


- Remove the rear wheels.
- Remove the brake calipers on both sides of the vehicle and hang on the body.
- Remove the springs. Refer to
⇒ ["6.4 Spring, Removing and Installing", page 248](#) .
- Remove the rear muffler. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .

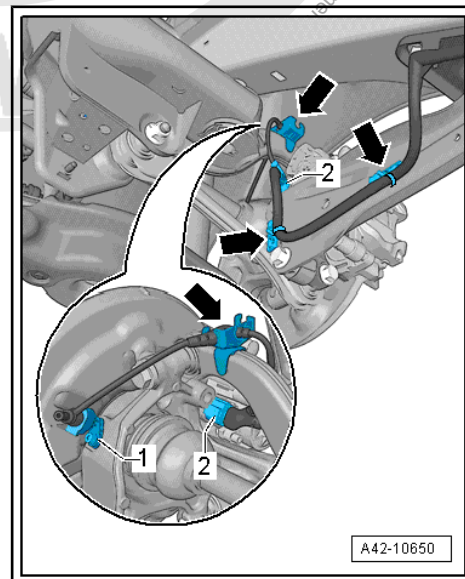
Vehicles with Level Control System Sensor

- Disconnect the connector -1-.

Continuation for All Vehicles



- Disconnect and free up the right and left connector -1- from the ABS speed sensor.
- Disconnect the right and left electromechanical parking brake connector -2- from the brake caliper.
- Remove and free up the wiring harness from the retainers -arrows-.

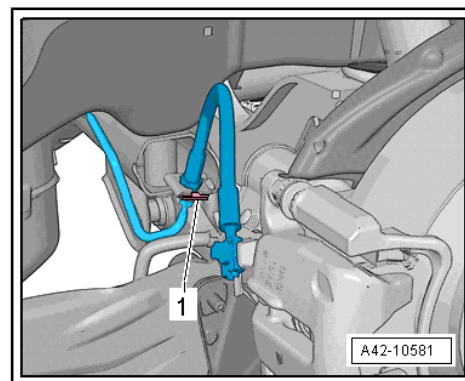


- Remove the clamps -1- on both sides of the vehicle.
- Free up the brake lines from the bracket.



Note

Do not disconnect the brake line.





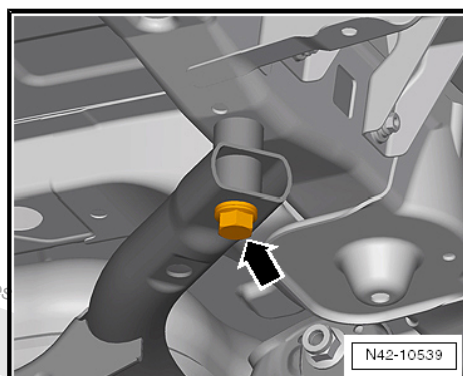
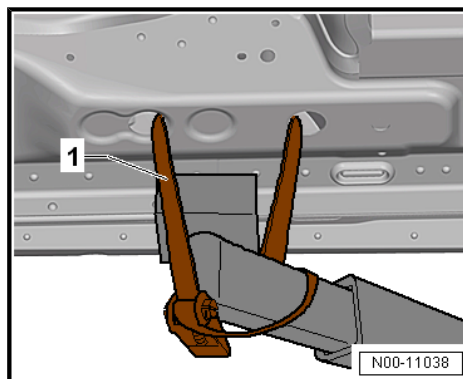
- Secure both sides of the vehicle on the hoist arms using Tensioning Straps - T10038- -1-.



WARNING

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

- Secure the subframe on the two front bolts. Refer to ➔ ["3.2 Subframe, Securing", page 193](#) .
- Remove the bolt from the back of the subframe on the right side -arrow-.



- Install the Bearing Installer - Component - 3346/2- with the Subframe Bushing Tool Kit - 3301- and Control Arm Bearing Installer - Nut - 3346/3- into the threaded hole in the longitudinal member.

- 1 - Bearing Installer - Component - 3346/2-
- 2 - Subframe
- 3 - Thrust bearing from Subframe Bushing Tool Kit - 3301-
- 4 - Control Arm Bearing Installer - Nut - 3346/3-

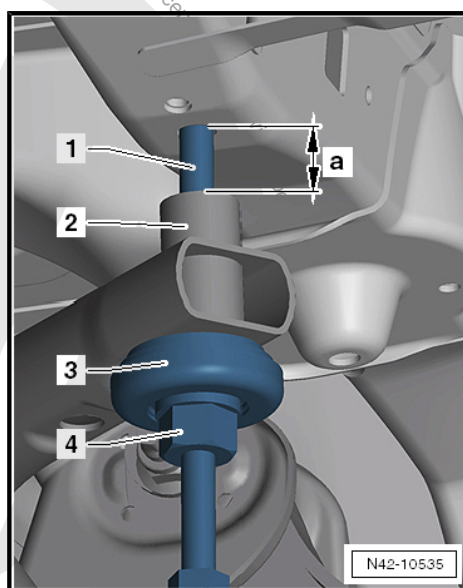
- Remove the left rear bolt from the subframe.
- Turn the Control Arm Bearing Installer - Nut - 3346/3- on the Bearing Installer - Component - 3346/2- until the subframe is lowered by dimension -a- = 40 mm.

Installing the Subframe with Attachments

Install in reverse order of removal and note the following:

Tightening Specifications

- ♦ Refer to ➔ ["3 Subframe", page 191](#)
- ♦ Refer to ➔ ["1.4 Wheel Bolt Tightening Specifications", page 340](#)
- ♦ Double clamp for exhaust pipes. Refer to ➔ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .
- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .
- For vehicles with a level control system sensor, perform a headlamp basic setting. Refer to ➔ Electrical Equipment; Rep. Gr. 94 ; Headlamp; Headlamp, Adjusting .
- Evaluate if an axle alignment is needed. Refer to ➔ ["3.7 Need for Axle Alignment, Evaluating", page 357](#) .





1.2.2 Rear Axle, Lowering, Multi-link Suspension, FWD e-Golf

Special tools and workshop equipment required

- ◆ Subframe Bushing Tool Kit - 3301-
- ◆ Bearing Installer - Control Arm - 3346-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Engine and Gearbox Jack - VAS6931-

Lower the Subframe with Attachments.

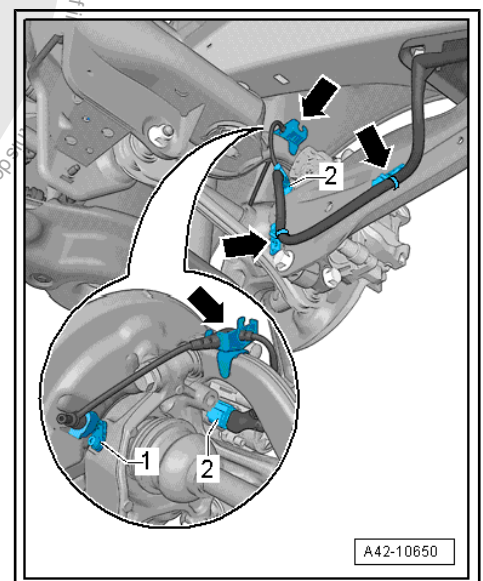
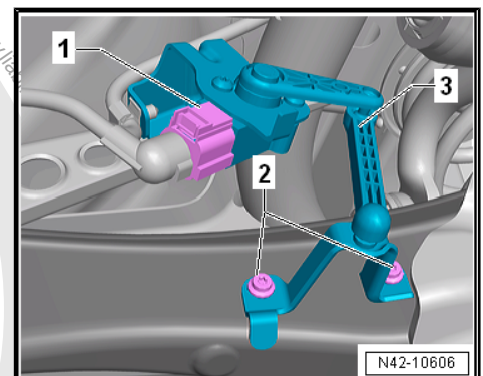
- De-energize the high-voltage system. Refer to ⇒ Rep. Gr. 93 ; High Voltage System, De-Energizing .
- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the rear wheels.
- Remove the brake calipers on both sides of the vehicle and hang on the body.
- Remove the springs. Refer to ⇒ ["6.4 Spring, Removing and Installing", page 248](#) .

Vehicles with Level Control System Sensor

- Disconnect the connector -1-.

Continuation for All Vehicles

- Disconnect and free up the right and left connector -1- from the ABS speed sensor.
- Disconnect the right and left electromechanical parking brake connector -2- from the brake caliper.
- Remove and free up the wiring harness from the retainers -arrows-.



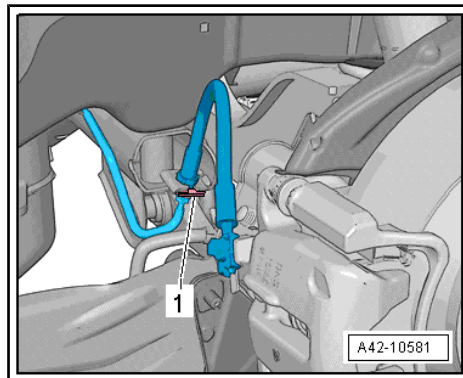


- Remove the clamps -1- on both sides of the vehicle.
- Free up the brake lines from the bracket.



Note

Do not disconnect the brake line.

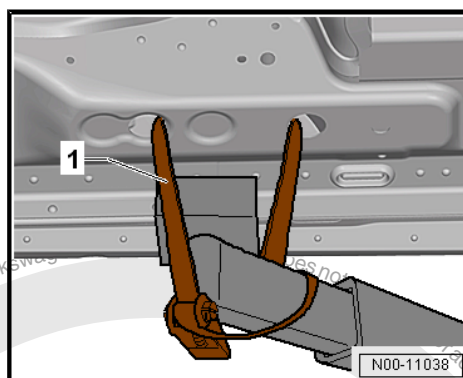


- Secure both sides of the vehicle on the hoist arms using Tensioning Straps - T10038- -1-.

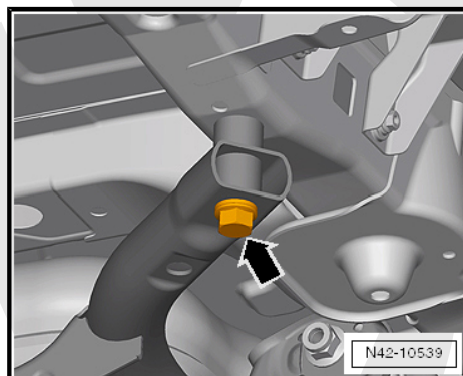


WARNING

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



- Secure the subframe on the two front bolts. Refer to [⇒ "3.2.2 Subframe, Securing, Multi-Link Suspension, FWD e-Golf", page 197](#).
- Remove the bolt from the back of the subframe on the right side -arrow-.





- Install the Bearing Installer - Component - 3346/2- with the Subframe Bushing Tool Kit - 3301- and Control Arm Bearing Installer - Nut - 3346/3- into the threaded hole in the longitudinal member.

- 1 - Bearing Installer - Component - 3346/2-
- 2 - Subframe
- 3 - Thrust bearing from Subframe Bushing Tool Kit - 3301-
- 4 - Control Arm Bearing Installer - Nut - 3346/3-

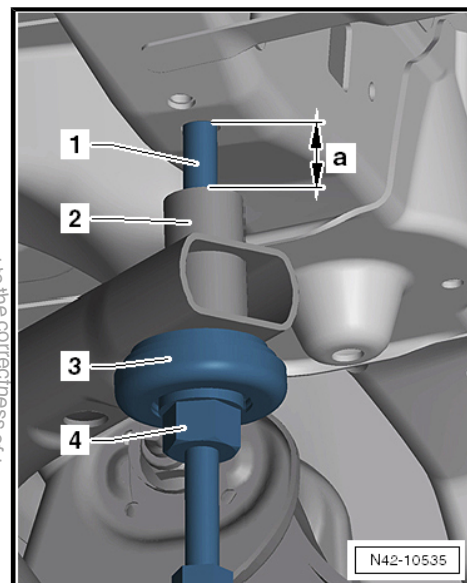
- Remove the left rear bolt from the subframe.
- Turn the Control Arm Bearing Installer - Nut - 3346/3- on the Bearing Installer - Component - 3346/2- until the subframe is lowered by dimension -a- = 40 mm.

Installing the Subframe with Attachments

Install in reverse order of removal and note the following:

Tightening Specifications

- ◆ Refer to ➤ [“3 Subframe”, page 191](#)
- ◆ Refer to ➤ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)
- ◆ High-voltage battery pack bolts. Refer to ➤ Electric Drive; Rep. Gr. 93 ; High Volt Battery.
- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .
- For vehicles with a level control system sensor, perform a headlamp basic setting. Refer to ➤ Electrical Equipment; Rep. Gr. 94 ; Headlamp; Headlamp, Adjusting .
- Evaluate if an axle alignment is needed. Refer to ➤ [“3.7 Need for Axle Alignment, Evaluating”, page 357](#) .



1.2.3 Rear Axle, Lowering, Multi-Link Suspension, AWD

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Engine and Gearbox Jack - VAS6931-

Lower the Subframe with Attachments.

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the rear wheels.
- Remove the brake calipers on both sides of the vehicle and hang on the body.
- Remove the springs. Refer to ➤ [“6.4 Spring, Removing and Installing”, page 248](#) .
- Remove the rear muffler. Refer to ➤ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .

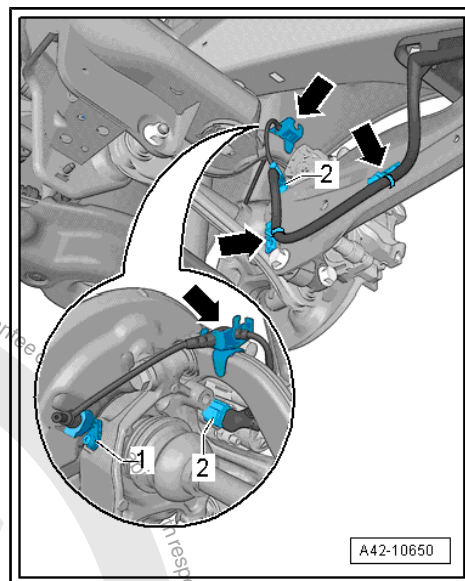
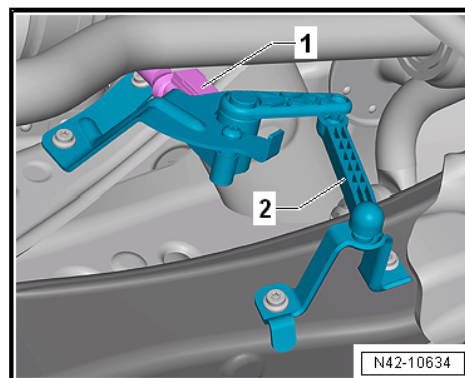


Vehicles with Level Control System Sensor

- Disconnect the connector -1- from the level control system sensor -2-.

Continuation for All Vehicles

- Disconnect and free up the right and left connector -1- from the ABS speed sensor.
- Disconnect the right and left electromechanical parking brake connector -2- from the brake caliper.
- Remove and free up the wiring harness from the retainers -arrows-.



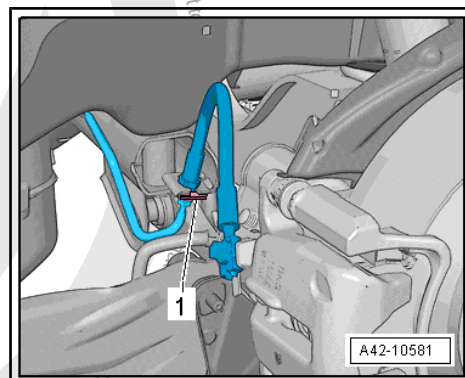
- Remove the clamps -1- on both sides of the vehicle.
- Free up the brake lines from the bracket.



Note

Do not disconnect the brake line.

- Remove the driveshaft from the rear final drive and secure it. Refer to ➤ Rep. Gr. 39 ; Driveshaft; Driveshaft, Removing and Installing.





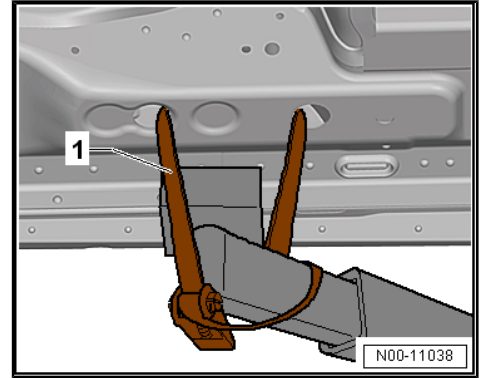
- Secure both sides of the vehicle on the hoist arms using Tensioning Straps - T10038- -1-.



WARNING

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

- Secure the subframe. Refer to
⇒ ["3.2 Subframe, Securing", page 193](#) .
- Carefully lower the subframe with its attachments approximately 20 mm.
- Disconnect the connector from the Haldex clutch above the final drive.
- Unclip the brake line -1- from the clip -arrow- on the left side.



Note

This will destroy the clip, so it will have to be replaced.

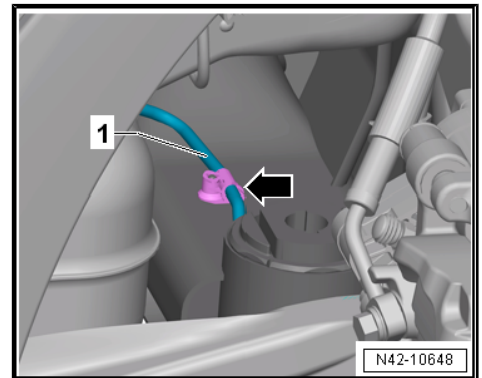
- Carefully lower the subframe with its components approximately 140 mm.

Installing the Subframe with Attachments

Install in reverse order of removal and note the following:

Tightening Specifications

- ◆ Refer to
⇒ ["3.1.3 Overview - Subframe, Multi-Link Suspension, AWD", page 193](#)
- ◆ Refer to
⇒ ["1.4 Wheel Bolt Tightening Specifications", page 340](#)
- ◆ Double clamp for exhaust pipes. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .
- ◆ Driveshaft. Refer to ⇒ Rep. Gr. 39 ; Driveshaft; Overview - Driveshaft
- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .
- For vehicles with a level control system sensor, perform a headlamp basic setting. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Headlamp; Headlamp, Adjusting .
- Evaluate if an axle alignment is needed. Refer to
⇒ ["3.7 Need for Axle Alignment, Evaluating", page 357](#) .





1.3 Rear Axle, Removing and Installing

⇒ ["1.3.1 Rear Axle, Removing and Installing, Torsion Beam Axle", page 168](#)

⇒ ["1.3.2 Rear Axle, Removing and Installing, Multi-Link Suspension, FWD, except e-Golf and Golf GTE", page 170](#)

⇒ ["1.3.3 Rear Axle, Removing and Installing, Multi-Link Suspension, FWD e-Golf", page 173](#)

⇒ ["1.3.5 Rear Axle, Removing and Installing, Multi-Link Suspension, AWD", page 181](#)

1.3.1 Rear Axle, Removing and Installing, Torsion Beam Axle

Special tools and workshop equipment required

- ◆ Tensioning Strap - T10038-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Engine and Gearbox Jack - VAS6931-

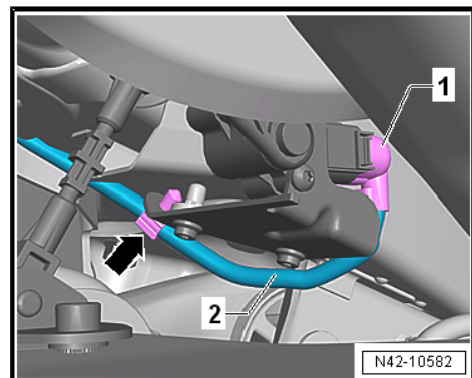
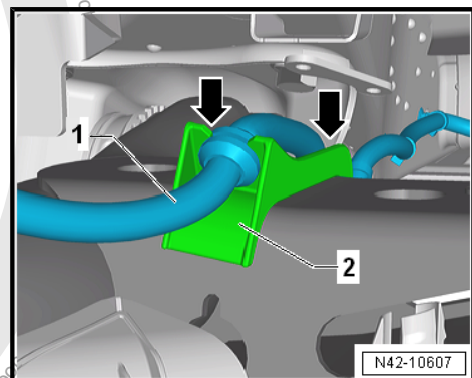
Removing

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the rear wheels.
- Release and disconnect the connector from the Left and Right Rear ABS Wheel Speed Sensors - G44 / G46- .
- Remove the right and left brake calipers and tie them to the body with wire. Refer to ⇒ Brake System; Rep. Gr. 46 ; Rear Brakes; Overview - Rear Brakes .
- Unclip the wire -1- from the bracket -2- on both sides of the axle beam -arrows-.

Vehicles with Level Control System Sensor

- Release and disconnect the connector -1- from the Left Rear Level Control System Sensor - G76- .
- Unclip the wire -2- from the clip -arrow-.

Continuation for All Vehicles





- Unclip the brake line -1- on the right mounting bracket from the clip -arrow-.



Note

This will destroy the clip, so it will have to be replaced.

- Remove the springs. Refer to
⇒ ["6.4 Spring, Removing and Installing", page 248](#) .

- Secure both sides of the vehicle on the hoist arms using Tensioning Straps - T10038- -1-.

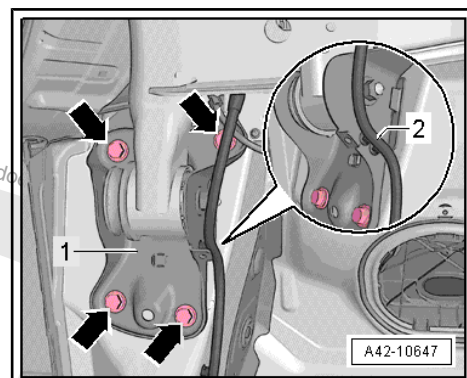
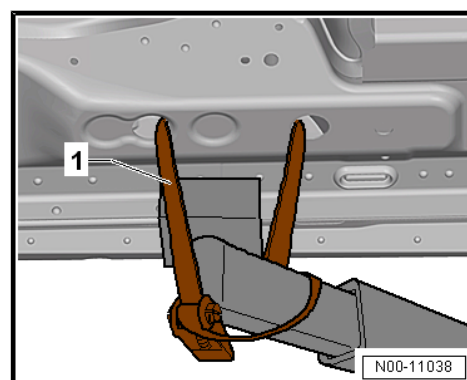
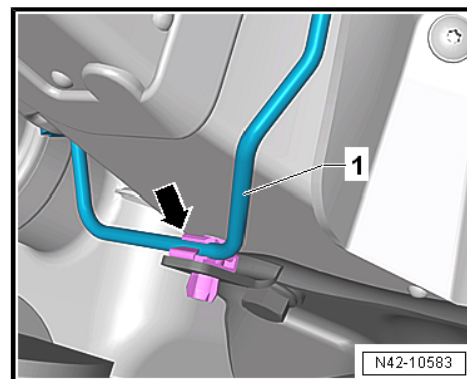


WARNING

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

- Place a Engine and Gearbox Jack - VAS6931- or Engine and Gearbox Jack - VAG1383A- underneath.

- Unclip and free up the wire -2- on the mounting bracket -1- and on the axle beam.
- Mark the position of the bolts -arrows- on the mounting bracket -1- on the right and left vehicle side and remove them.
- Lightly pretension the rear axle using the Engine/Gearbox Jack - VAG1383A- or Engine and Gearbox Jack - VAS6931- -1-.



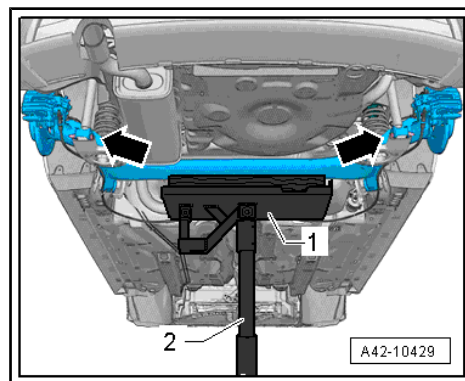


- Remove the rear axle from the shock absorbers -arrows-.
 - Lower the rear axle using the Engine/Gearbox Jack - VAG1383A- or Engine and Gearbox Jack - VAS6931- -1-.
- 1 - Engine and Gearbox Jack - VAS6931- or Engine and Gearbox Jack - VAG1383A-
 - 2 - Universal Support Plate - VAG1359/2- (only for Engine/Gearbox Jack - VAG1383A-)

Installing

Install in reverse order of removal and note the following:

- Tighten the shock absorber threaded connection on the axle beam in curb weight position. Refer to
⇒ [“2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring”, page 6](#) .



Tightening Specifications

- ◆ Refer to ⇒ [“2.1 Overview - Axle Beam”, page 184](#)
- ◆ Refer to
⇒ [“6.1.1 Overview - Suspension Strut, Shock Absorber and Spring, Torsion Beam Axle”, page 237](#)
- ◆ Refer to
⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)
- ◆ Bolts for brake caliper and brake rotor. Refer to ⇒ Brake System; Rep. Gr. 46 ; Rear Brakes; Overview - Rear Brakes .
- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .
- For vehicles with a level control system sensor, perform a headlamp basic setting. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Headlamp; Headlamp, Adjusting .

1.3.2 Rear Axle, Removing and Installing, Multi-Link Suspension, FWD, except e-Golf and Golf GTE

Special tools and workshop equipment required

- ◆ Tensioning Strap - T10038-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

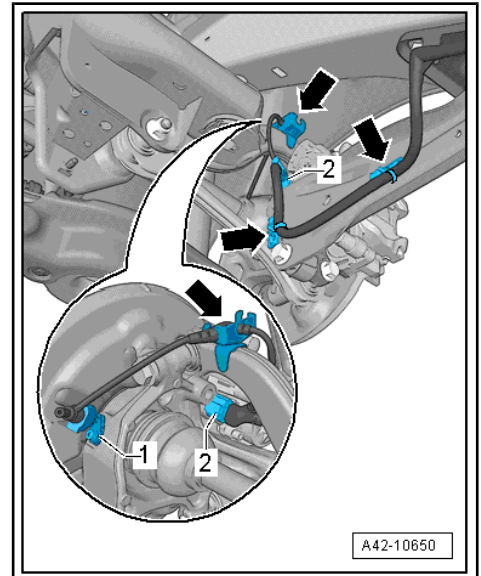
Removing the Subframe and Its Attachments

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the rear wheels.



- Disconnect and free up the right and left connector -1- from the ABS speed sensor.
- Disconnect the right and left electromechanical parking brake connector -2- from the brake caliper.
- Remove and free up the wiring harness from the retainers -arrows-.

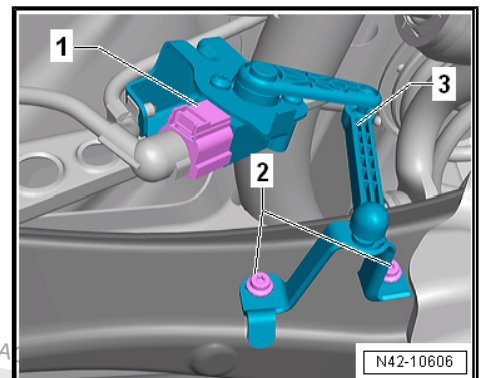
Vehicles with Level Control System Sensor



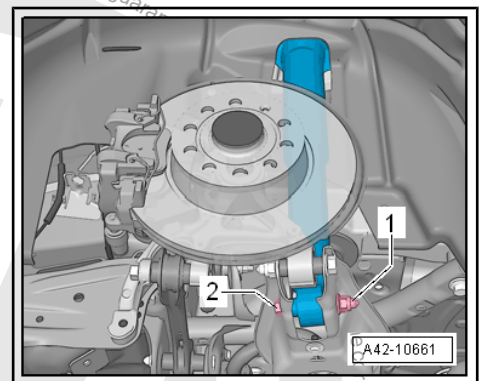
- Disconnect the connector -1-.
- Remove the bolts -2-.
- Remove the Left Rear Level Control System Sensor - G76- -3- from the transverse link.

Continuation for All Vehicles

- Remove the springs. Refer to [⇒ "6.4 Spring, Removing and Installing", page 248](#).



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



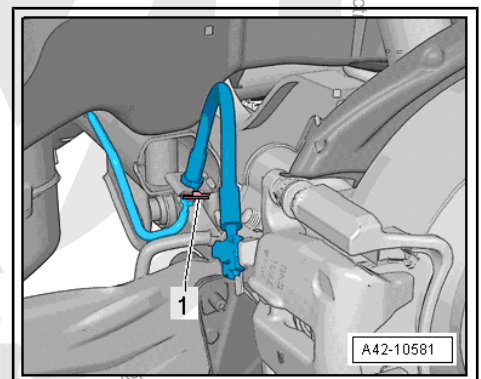
- Remove the clamps -1- on both sides of the vehicle.
- Free up the brake lines from the bracket.



Note

Do not disconnect the brake line.

- Remove the left and right brake caliper and with the brake lines attached secure to the body. Refer to ⇒ Brake System; Rep. Gr. 46 ; Rear Brakes; Overview - Rear Brakes .
- Remove the rear muffler. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .





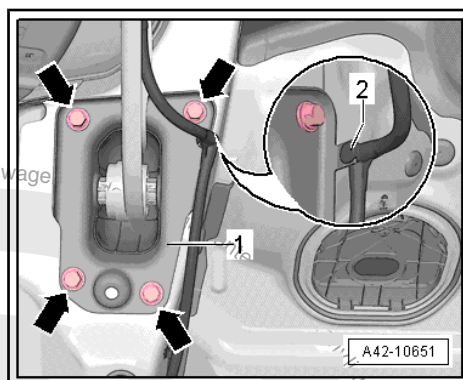
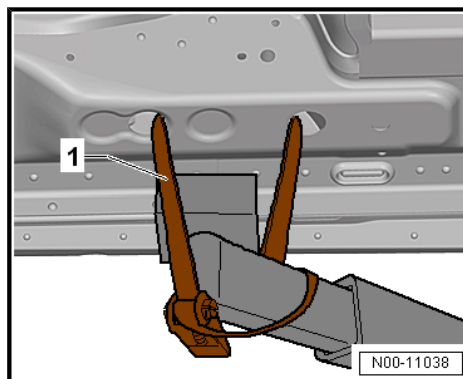
- Secure both sides of the vehicle on the hoist arms using Tensioning Straps - T10038- -1-.



WARNING

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

- Secure the subframe. Refer to
⇒ ["3.2 Subframe, Securing", page 193](#) .
- Unclip and free up the wire -2- on the mounting bracket -1-.
- Mark the mounting bracket -1- installation position on the body.
- Remove the bolts -arrows-.
- Carefully lower the subframe with its components 30 mm maximum.





- Remove the brake line from the clips -arrows-.



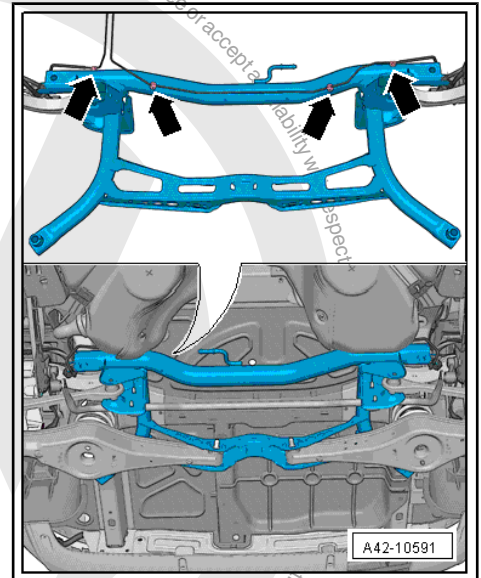
Note

- ◆ The clips will get damaged while doing this and will have to be replaced.
- ◆ For better illustration, the subframe is shown from above and is removed.
- ◆ The number of clips may vary.
- Lower subframe with attachments.



Note

When lowering, ensure the brake lines and wires have sufficient clearance.



Installing the Subframe with Attachments

Install in reverse order of removal and note the following:

Tightening Specifications

- ◆ Refer to ⇒ [“3 Subframe”, page 191](#)
- ◆ Refer to ⇒ [“7.2 Overview - Trailing Arm”, page 261](#)
- ◆ Refer to
⇒ [“6.1.2 Overview - Suspension Strut, Shock Absorber and Spring, Multi-Link Suspension”, page 238](#)
- ◆ Refer to
⇒ [“2.2.2 Overview - Rear Level Control System Sensor, Multi-Link Suspension, FWD”, page 329](#)
- ◆ Refer to
⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)
- ◆ Bolts for brake caliper and brake rotor. Refer to ⇒ Brake System; Rep. Gr. 46 ; Rear Brakes; Overview - Rear Brakes .
- ◆ Double clamp for exhaust pipes. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .
- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .
- For vehicles with a level control system sensor, perform a headlamp basic setting. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Headlamp; Headlamp, Adjusting .
- Evaluate if an axle alignment is needed. Refer to
⇒ [“3.7 Need for Axle Alignment, Evaluating”, page 357](#) .

1.3.3 Rear Axle, Removing and Installing, Multi-Link Suspension, FWD e-Golf

Special tools and workshop equipment required

- ◆ Tensioning Strap - T10038-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Engine and Gearbox Jack - VAS6931-



Removing the Subframe and Its Attachments

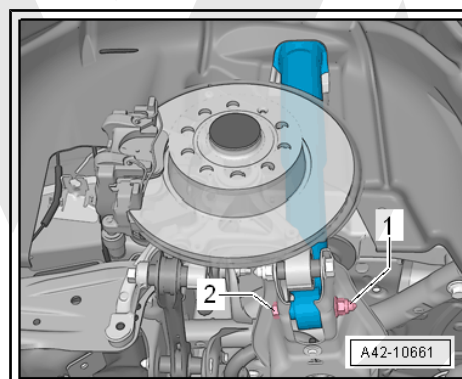
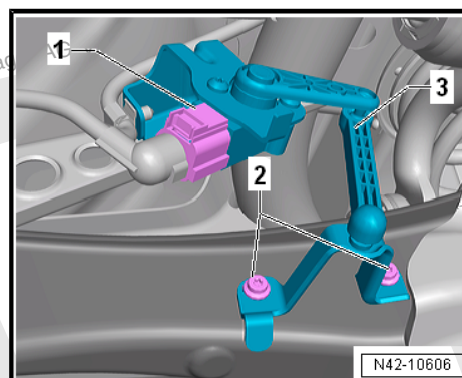
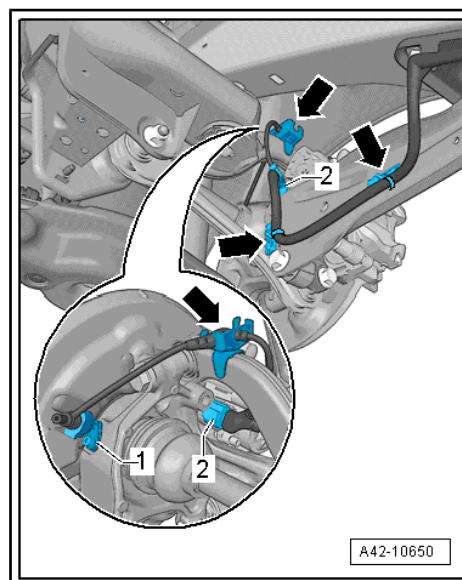
- De-energize the high-voltage system. Refer to ⇒ Rep. Gr. 93 ; High Voltage System, De-Energizing .
- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the rear wheels.
- Disconnect and free up the right and left connector -1- from the ABS speed sensor.
- Disconnect the right and left electromechanical parking brake connector -2- from the brake caliper.
- Remove and free up the wiring harness from the retainers -arrows-.

Vehicles with Level Control System Sensor

- Disconnect the connector -1-.
- Remove the bolts -2-.
- Remove the Left Rear Level Control System Sensor - G76-3- from the transverse link.

Continuation for All Vehicles

- Remove the springs. Refer to
⇒ ["6.4 Spring, Removing and Installing", page 248](#) .
- Remove the nut -1- and the bolt -2-.





- Remove the clamps -1- on both sides of the vehicle.
- Free up the brake lines from the bracket.



Note

Do not disconnect the brake line.

- Remove the left and right brake caliper and with the brake lines attached secure to the body. Refer to ⇒ Brake System; Rep. Gr. 46 ; Rear Brakes; Overview - Rear Brakes .

- Secure both sides of the vehicle on the hoist arms using Tensioning Straps - T10038- -1-.

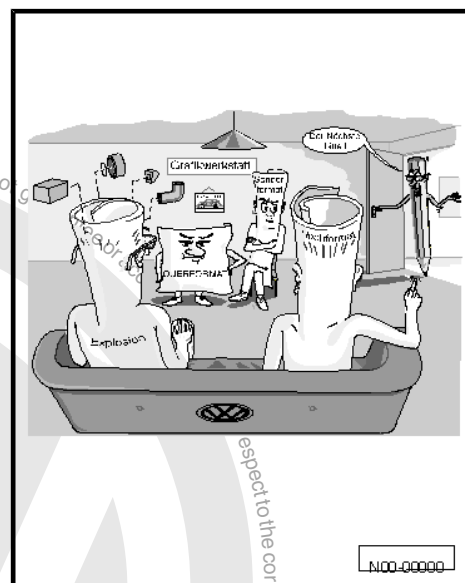
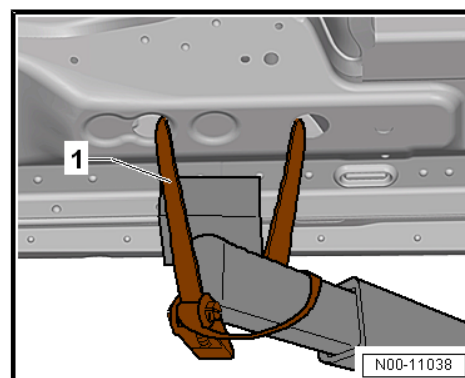
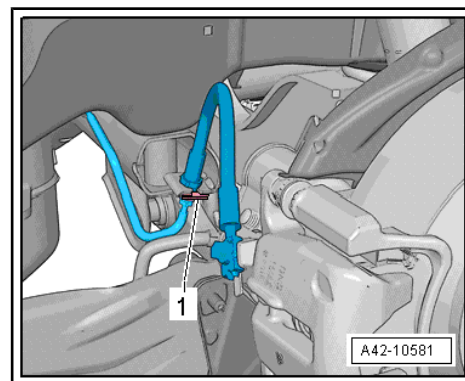


WARNING

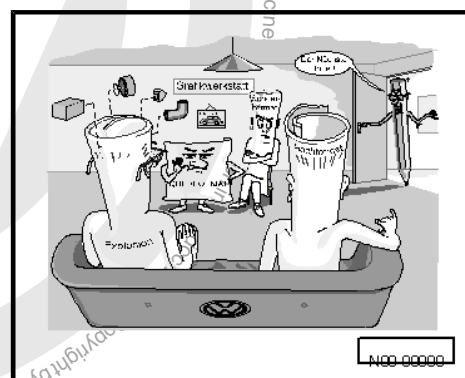
The vehicle could slide off the hoist if it is not secured.

- Secure the subframe. Refer to
⇒ ["3.2.2 Subframe, Securing, Multi-Link Suspension, FWD e-Golf", page 197](#) .

- Push down the tabs -1- on both sides of the cover -2-.
- Push the cover -2- in the direction of -arrow- outward and remove from the deformation element.

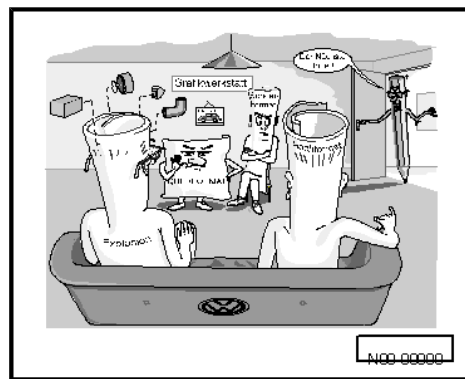


- Remove the line -1- from the deformation element -2- -arrows-.
- Remove the bolts -3- and the deformation element -2-.





- Disengage the line -1- from the mounting bracket -2-.
- Mark the installation position of the mounting bracket -2- on the body.
- Remove the bolts -arrows-.
- Carefully lower the subframe with its components 30 mm maximum.





- Remove the brake line from the clips -arrows-.



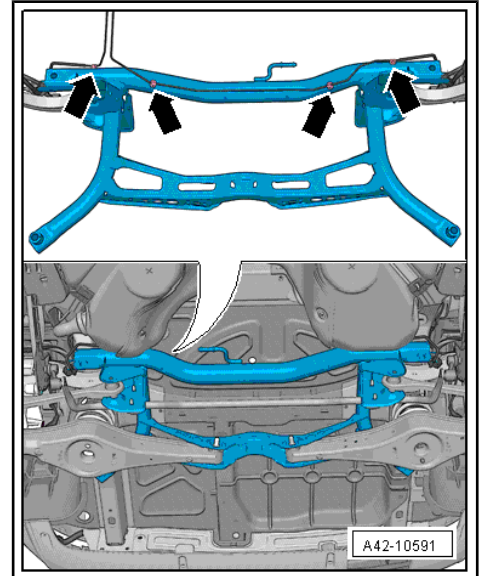
Note

- ◆ The clips will get damaged while doing this and will have to be replaced.
- ◆ For better illustration, the subframe is shown from above and is removed.
- ◆ The number of clips may vary.
- Lower subframe with attachments.



Note

When lowering, ensure the brake lines and wires have sufficient clearance.



Installing the Subframe with Attachments

Install in reverse order of removal and note the following:

Tightening Specifications

- ◆ Refer to ⇒ [“3 Subframe”, page 191](#)
- ◆ Refer to ⇒ [“7.2 Overview - Trailing Arm”, page 261](#)
- ◆ Refer to ⇒ [“6.1.2 Overview - Suspension Strut, Shock Absorber and Spring, Multi-Link Suspension”, page 238](#)
- ◆ Refer to ⇒ [“2.2.2 Overview - Rear Level Control System Sensor, Multi-Link Suspension, FWD”, page 329](#)
- ◆ Refer to ⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)
- ◆ Bolts for brake caliper and brake rotor. Refer to ⇒ Brake System; Rep. Gr. 46 ; Rear Brakes; Overview - Rear Brakes .
- ◆ High-voltage battery pack bolts. Refer to ⇒ Electric Drive; Rep. Gr. 93 ; High Volt Battery .

For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .

- For vehicles with a level control system sensor, perform a headlamp basic setting. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Headlamp; Headlamp, Adjusting .
- Evaluate if an axle alignment is needed. Refer to ⇒ [“3.7 Need for Axle Alignment, Evaluating”, page 357](#) .

1.3.4 Rear Axle, Removing and Installing, Multi-link Suspension, FWD, Golf GTE

Special tools and workshop equipment required

- ◆ Tensioning Strap - T10038-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

Removing the Subframe and Its Attachments

- Loosen the wheel bolts.



- Raise the vehicle.
- Remove the rear wheels.
- Disconnect and free up the right and left connector -1- from the ABS speed sensor.
- Disconnect the right and left electromechanical parking brake connector -2- from the brake caliper.
- Remove and free up the wiring harness from the retainers -arrows-.

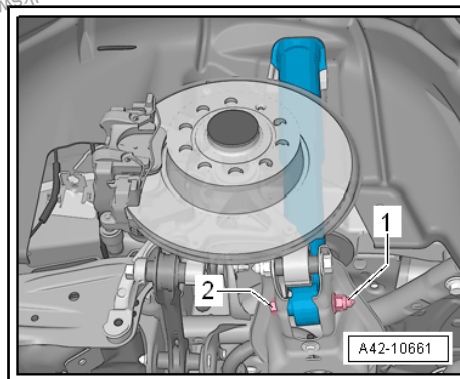
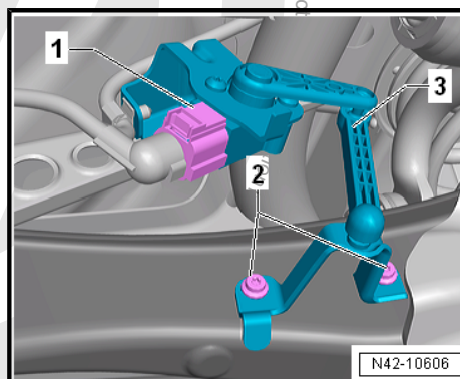
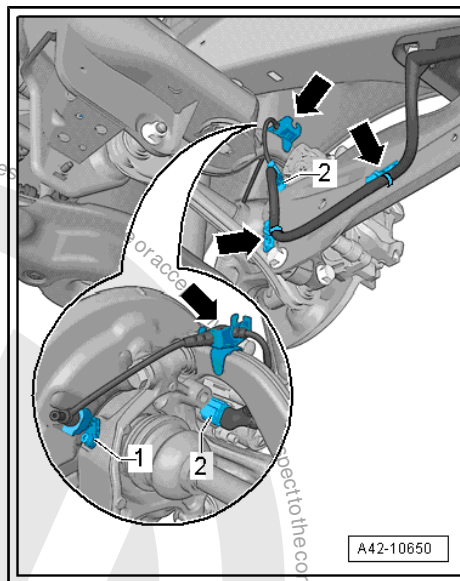
Vehicles with Level Control System Sensor

- Disconnect the connector -1-.
- Remove the bolts -2-.
- Remove the Left Rear Level Control System Sensor - G76-3- from the transverse link.

Continuation for All Vehicles

- Remove the springs. Refer to
[⇒ "6.4 Spring, Removing and Installing", page 248](#).

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



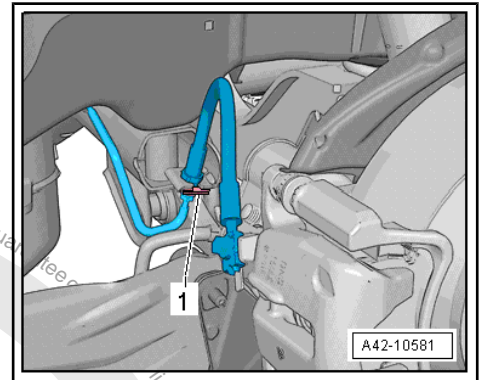


- Remove the clamps -1- on both sides of the vehicle.
- Free up the brake lines from the bracket.

i Note

Do not disconnect the brake line.

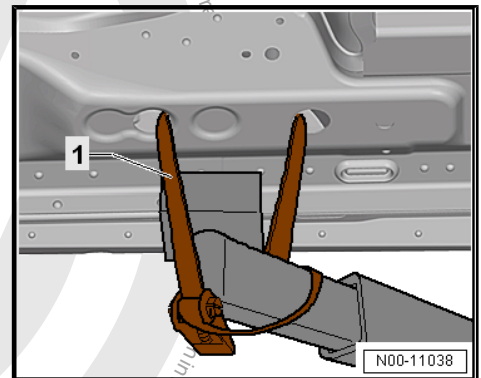
- Remove the left and right brake caliper and with the brake lines attached secure to the body. Refer to ⇒ Brake System; Rep. Gr. 46 ; Rear Brakes; Overview - Rear Brakes .
- Perform the preparation work for removing the fuel tank. Refer to ⇒ Fuel Supply - Gasoline Engines (Hybrid); Rep. Gr. 20 ; Fuel Tank; Fuel Tank, Removing and Installing .
- Secure both sides of the vehicle on the hoist arms using Tensioning Straps - T10038- -1-.



WARNING

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

- Secure the subframe. Refer to ⇒ ["3.2.3 Subframe, Securing, Multi-link Suspension, FWD, Golf GTE", page 202](#) .
- Unclip and free up the wire -2- on the mounting bracket -1-.
- Mark the mounting bracket -1- installation position on the body.



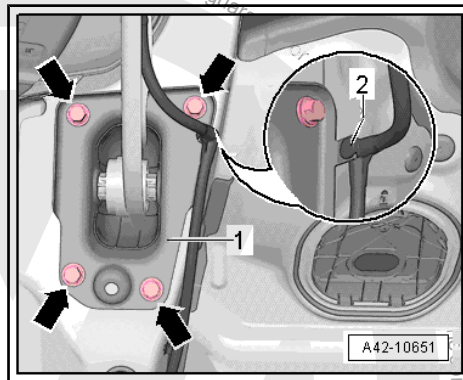


- Remove the bolts -arrows-.
- Carefully lower the subframe with its components 30 mm maximum.
- Slightly lift the fuel tank, unclip the brake lines from the subframe and guide them out.



Note

The clips will get damaged while doing this and will have to be replaced.



- On vehicles with a parking heater release and disconnect the connector from the Metering Pump - V54- .



Note

- ♦ *When lowering, ensure the brake lines and wires have sufficient clearance.*
- ♦ *A second technician is required to remove the fuel tank.*
- Carefully lower the subframe with the fuel tank to do this guide the brake lines under the fuel tank.
- Slightly pull the subframe toward the rear with the Engine and Gearbox Jack - VAS6931- .
- Pay attention to the lines to the EVAP canister, unclipping them if necessary.
- Guide the filler neck out between the rear axle and the body.

Installing the Subframe with Attachments

Install in reverse order of removal and note the following:

- Perform the additional procedures for installing the fuel tank.

Tightening Specifications

- ♦ Refer to ⇒ [“3 Subframe”, page 191](#)
- ♦ Refer to ⇒ [“7.2 Overview - Trailing Arm”, page 261](#)
- ♦ Refer to
⇒ [“6.1.2 Overview - Suspension Strut, Shock Absorber and Spring, Multi-Link Suspension”, page 238](#)
- ♦ Refer to
⇒ [“2.2.2 Overview - Rear Level Control System Sensor, Multi-Link Suspension, FWD”, page 329](#)
- ♦ Refer to
⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)
- ♦ Bolts for brake caliper and brake rotor. Refer to ⇒ Brake System; Rep. Gr. 46 ; Rear Brakes; Overview - Rear Brakes .
- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .
- For vehicles with a level control system sensor, perform a headlamp basic setting. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Headlamp; Headlamp, Adjusting .
- Evaluate if an axle alignment is needed. Refer to
⇒ [“3.7 Need for Axle Alignment, Evaluating”, page 357](#) .



1.3.5 Rear Axle, Removing and Installing, Multi-Link Suspension, AWD

Special tools and workshop equipment required

- ◆ Tensioning Strap - T10038-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

Removing the subframe and its attachments

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the rear wheels.
- Disconnect and free up the right and left connector -1- from the ABS speed sensor.
- Disconnect the right and left electromechanical parking brake connector -2- from the brake caliper.
- Remove and free up the wiring harness from the retainers -arrows-.

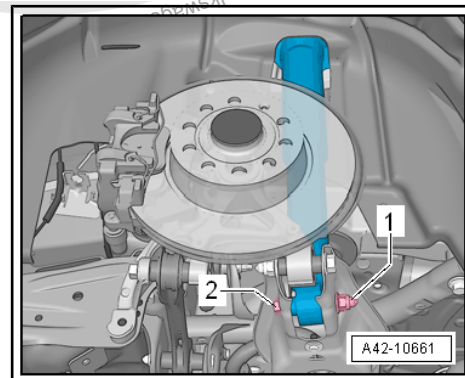
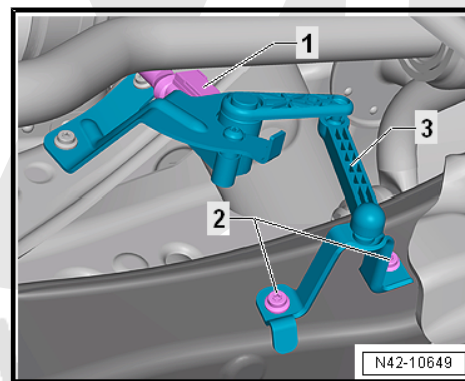
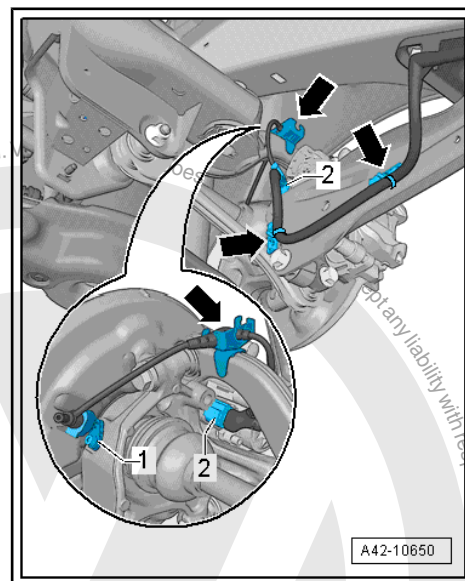
Vehicles with Level Control System Sensor

- Disconnect the connector -1-.
- Remove the bolts -2-.
- Remove the Left Rear Level Control System Sensor - G76-3- from the transverse link.

Continuation for All Vehicles

- Remove the springs. Refer to ["6.4 Spring, Removing and Installing", page 248](#).

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





- Remove the clamps -1- on both sides of the vehicle.
- Free up the brake lines from the bracket.



Note

Do not disconnect the brake line.

- Remove the driveshaft from the rear final drive and secure it. Refer to ➤ Rep. Gr. 39 ; Driveshaft; Driveshaft, Removing and Installing .
- Remove the left and right brake caliper and with the brake lines attached secure to the body. Refer to ➤ Brake System; Rep. Gr. 46 ; Rear Brakes; Overview - Rear Brakes .
- Remove the rear muffler. Refer to ➤ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .
- Secure both sides of the vehicle on the hoist arms using Tensioning Straps - T10038- -1-.



WARNING

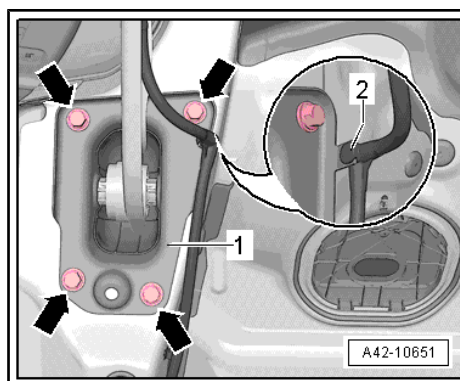
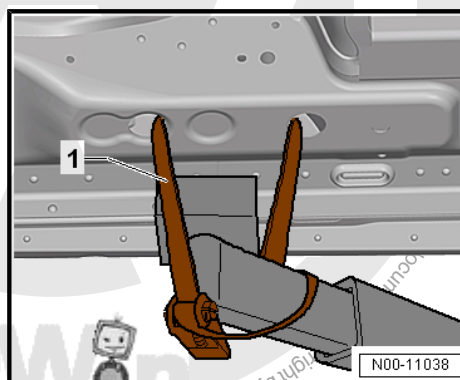
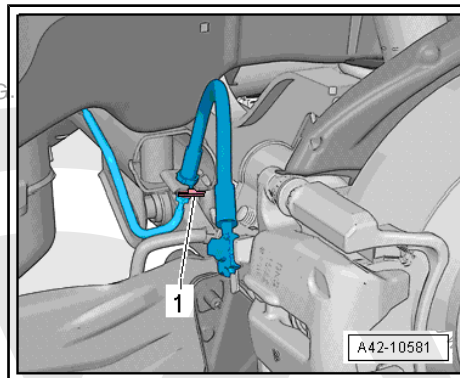
The vehicle could slide off the hoist if it is not secured.

- Secure the subframe. Refer to ➤ ["3.2 Subframe, Securing", page 193](#) .
- Unclip and free up the wire -2- on the mounting bracket -1-.
- Mark the mounting bracket -1- installation position on the body.
- Remove the bolts -arrows-.
- Carefully lower the subframe with its attachments approximately 20 mm.
- Disconnect the connector from the Haldex clutch above the final drive.
- Carefully lower the subframe with its attachments an additional 30 mm.



Note

When lowering, make sure there is enough clearance between the brake lines, electrical lines and centering pins to the driveshaft.





- Remove the brake line on both sides from the clips -arrows-.



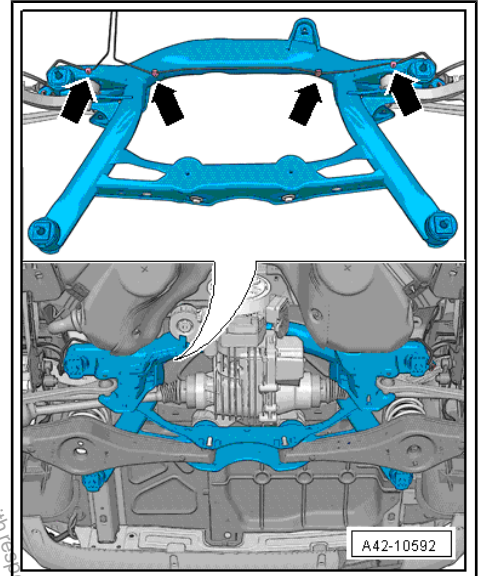
Note

- ◆ The clips will get damaged while doing this and will have to be replaced.
- ◆ For better illustration, the subframe is shown from above and is removed.
- ◆ The number of clips may vary.
- Carefully lower subframe with components.



Note

Make sure there is enough clearance for brake lines, electrical lines and driveshaft centering pin when lowering.



Installing the Subframe with Attachments

Install in reverse order of removal and note the following:

Tightening Specifications

- ◆ Refer to
⇒ [“3.1.3 Overview - Subframe, Multi-Link Suspension, AWD”, page 193](#)
- ◆ Refer to ⇒ [“7.2 Overview - Trailing Arm”, page 261](#)
- ◆ Refer to
⇒ [“6.1.2 Overview - Suspension Strut, Shock Absorber and Spring, Multi-Link Suspension”, page 238](#)
- ◆ Refer to
⇒ [“2.2.2 Overview - Rear Level Control System Sensor, Multi-Link Suspension, FWD”, page 329](#)
- ◆ Refer to
⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)
- ◆ Driveshaft. Refer to ⇒ Rep. Gr. 39 ; Driveshaft; Overview - Driveshaft .
- ◆ Bolts for brake caliper and brake rotor. Refer to ⇒ Brake System; Rep. Gr. 46 ; Rear Brakes; Overview - Rear Brakes .
- ◆ Double clamp for exhaust pipes. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .
- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .
- For vehicles with a level control system sensor, perform a headlamp basic setting. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Headlamp; Headlamp, Adjusting .
- Evaluate if an axle alignment is needed. Refer to
⇒ [“3.7 Need for Axle Alignment, Evaluating”, page 357](#) .



2 Axle Beam

⇒ [“2.1 Overview - Axle Beam”, page 184](#)

⇒ [“2.2 Axle Beam Bonded Rubber Bushing, Replacing”, page 184](#)

2.1 Overview - Axle Beam

1 - Cover

2 - Bolt

- ☐ 50 Nm +45°
- ☐ Replace after removing

3 - Bolt

- ☐ 70 Nm +360°
- ☐ Replace after removing
- ☐ Tighten in the curb weight position. Refer to [⇒ “2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring”, page 6](#)

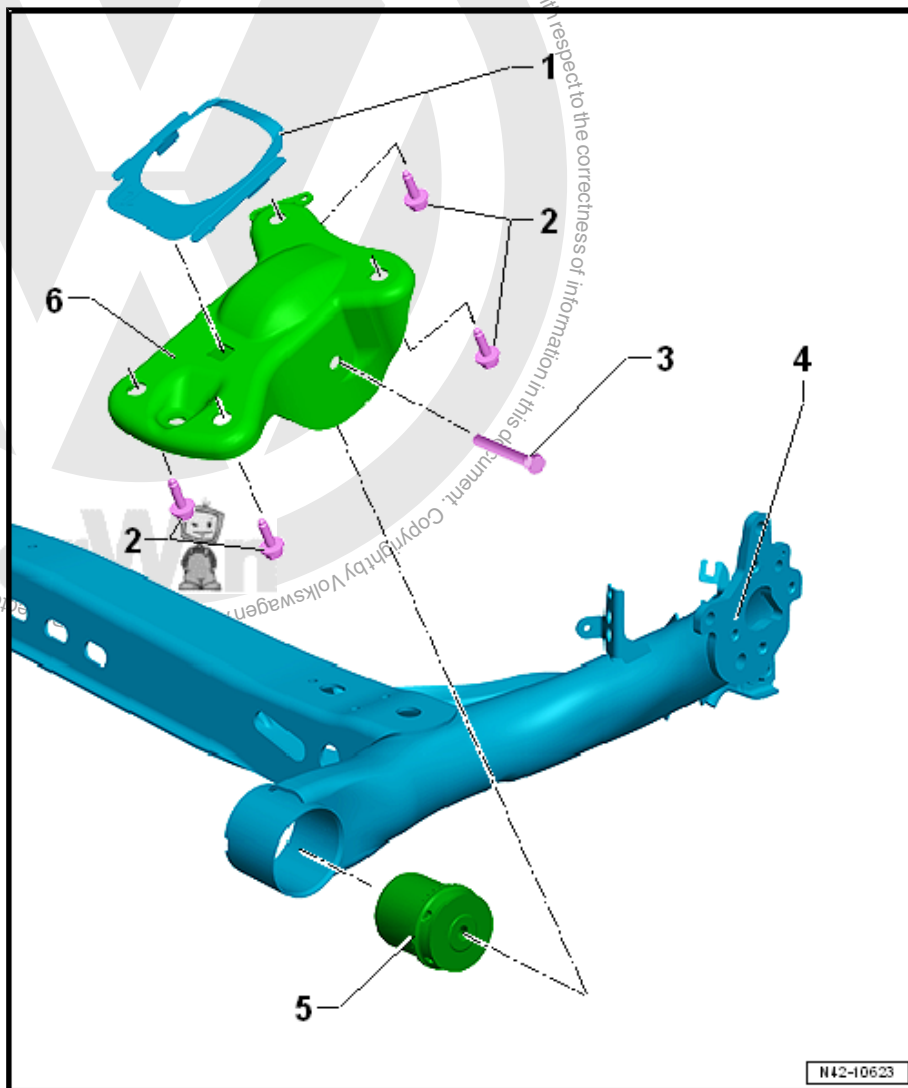
4 - Axle Beam

- ☐ Removing and installing. Refer to [⇒ “1.3.1 Rear Axle, Removing and Installing, Torsion Beam Axle”, page 168](#)

5 - Bonded Rubber Bushing

- ☐ Note the installation position
- ☐ Replacing. Refer to [⇒ “2.2 Axle Beam Bonded Rubber Bushing, Replacing”, page 184](#)

6 - Mounting Bracket



2.2 Axle Beam Bonded Rubber Bushing, Replacing

Special tools and workshop equipment required

- ◆ Tensioning Strap - T10038-
- ◆ Hydraulic Press - Ball Joint Assembly Tools - T10254-
- ◆ Pneumatic/Hydraulic Foot Pump - Press Kit - T10495-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Engine and Gearbox Jack - VAS6931- -2- with Universal Support Plate - VAG1359/2-



- ◆ Hydraulic Press - VAS6178- with Bearing Installer - Wheel Hub/Bearing Kit - Pressure Head - T10205/13-
- ◆ Pneumatic/Hydraulic Foot Pump - VAS6179-

**Pneumatic/Hydraulic Foot Pump - Press Kit - Tube - T10495/2- ,
Modifying**



Caution

To use the Pneumatic/Hydraulic Foot Pump - Press Kit - Tube - T10495/2- properly, it must be modified before using.

The Pneumatic/Hydraulic Foot Pump - Press Kit - Tube - T10495/2A- must not be modified.

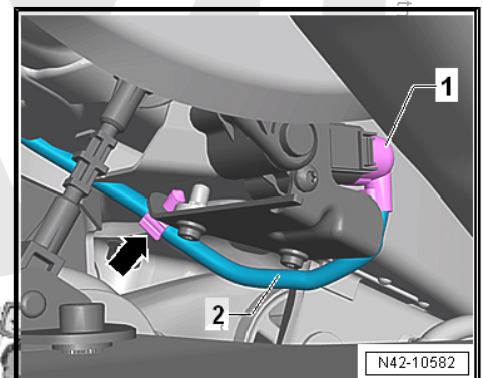
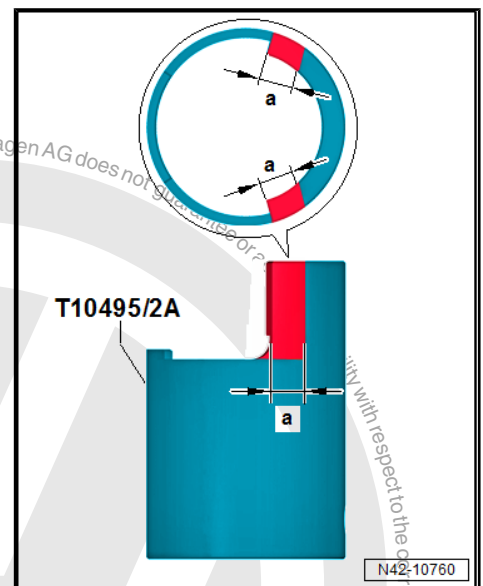
- Clamp the Pneumatic/Hydraulic Foot Pump - Press Kit - Tube - T10495/2- in a vise with jaw protectors.
- The red areas -a- must be cut out.
a = 18 mm
- Use a file to deburr the edges after cutting out the areas.
- An -A- must be added to the number identification on the tool.
The new tool number is now -T10495/2A-.
- Apply corrosion protection.

Removing

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the rear wheels.

Vehicles with Level Control System Sensor

- Release and disconnect the connector -1- from the Left Rear Level Control System Sensor - G76- .
- Unclip the wire -2- from the clip -arrow-.





- Remove the bolt -1-.
- Remove the lever of the Left Rear Level Control System Sensor - G76- -2- from the axle beam -3-.

Continuation for All Vehicles

- Unclip the brake line -1- on the right mounting bracket from the clip -arrow-.



Note

This will destroy the clip, so it will have to be replaced.

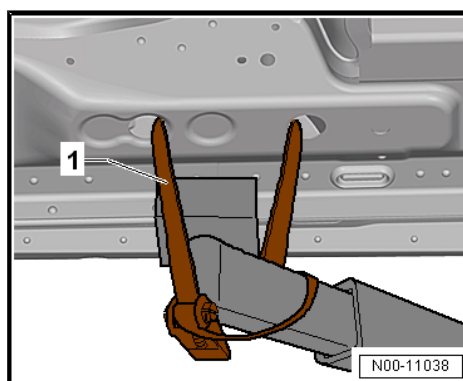
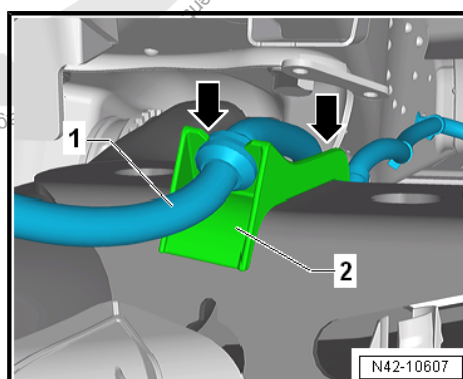
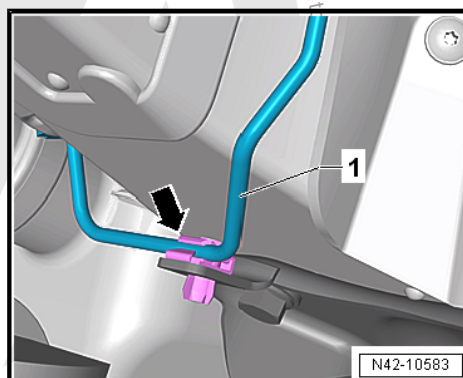
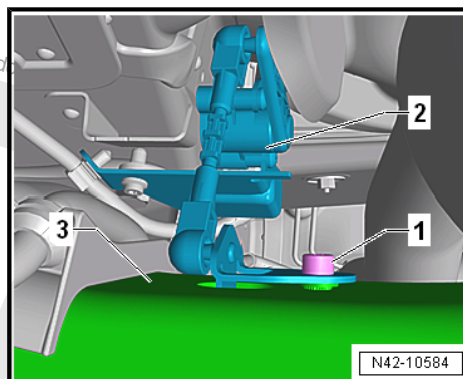
- Unclip the wire -1- from the bracket -2- on both sides of the axle beam -arrows-.

- Secure both sides of the vehicle on the hoist arms using Tensioning Straps - T10038- -1-.



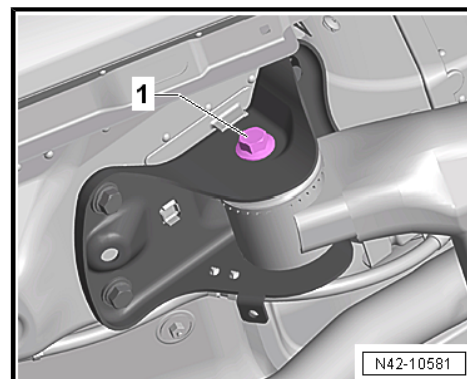
WARNING

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

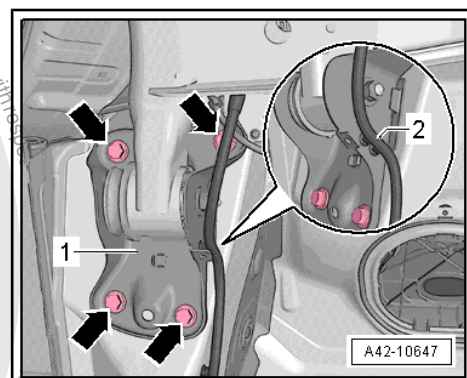




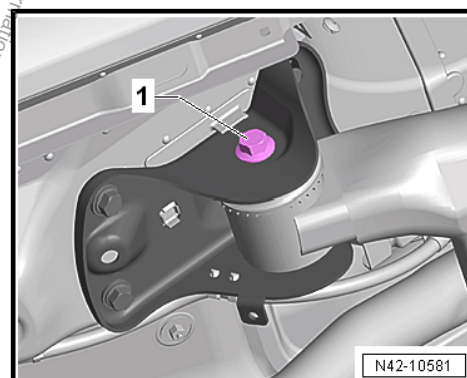
- Loosen the right and left bolt -1-.
- Place the Engine and Gearbox Jack - VAS6931- and Universal Support Plate - VAG1359/2- with suitable padding underneath.
- Unclip the wire -2- from the mounting bracket -1-.
- Mark the position of the bolts -arrows- on the mounting bracket -1- on the right and left vehicle side.



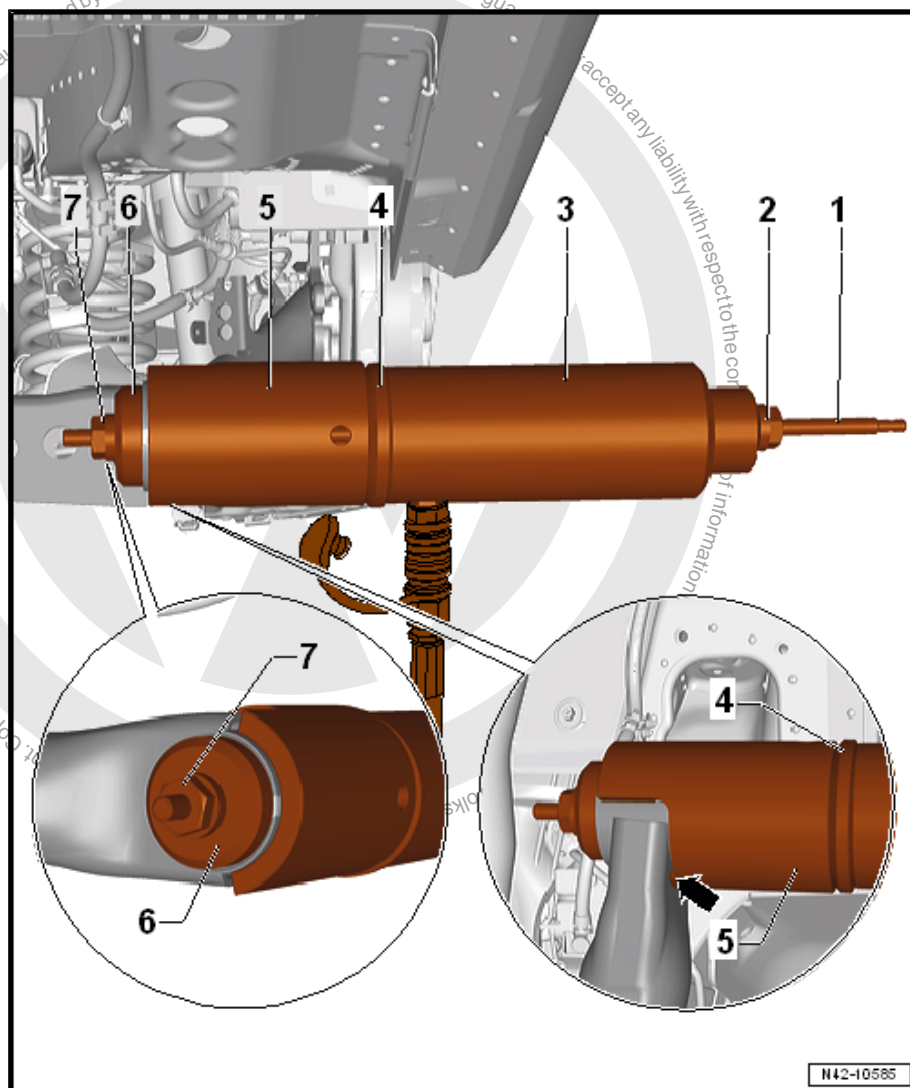
- Remove the bolts -1- for the right and left axle beam.



- Carefully lower the rear axle using the Engine and Gearbox Jack - VAS6931- until it is possible to remove the bolt -1-.
- Remove the bolt -1-.



- Mount the special tools as illustrated.



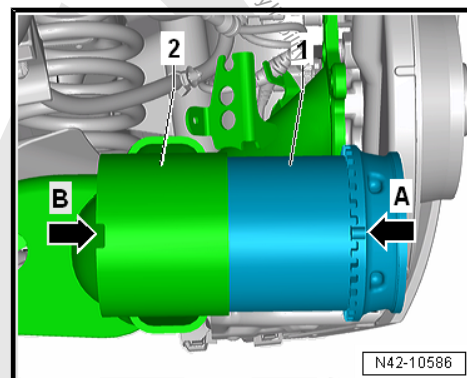
- 1 - Hydraulic Press - Ball Joint Assembly Tools - Spindle - T10254/5-
- 2 - Hydraulic Press - Ball Joint Assembly Tools - Nut - T10254/4-
- 3 - Hydraulic Press - VAS6178- with Bearing Installer - Wheel Hub/Bearing Kit - Pressure Head - T10205/13-
- 4 - Pneumatic/Hydraulic Foot Pump - Press Kit - Press Plate - T10495/3-
- 5 - Pneumatic/Hydraulic Foot Pump - Press Kit - Tube - T10495/2-
- 6 - Pneumatic/Hydraulic Foot Pump - Press Kit - Thrust Piece - T10495/1-
- 7 - Hydraulic Press - Ball Joint Assembly Tools - Nut - T10254/4-
- Activate the pump and remove the bonded rubber bushing.



Installing

- Pay attention to the installed location of the bonded rubber bushing -1- on the axle beam -2-.

The tab -arrow A- of the bonded rubber bushing -1- must point to the notch -arrow B- in the axle bearing -2-.



- Mount the special tools as illustrated.

1 - Hydraulic Press - Ball Joint Assembly Tools - Spindle - T10254/5-

2 - Hydraulic Press - Ball Joint Assembly Tools - Nut - T10254/4-

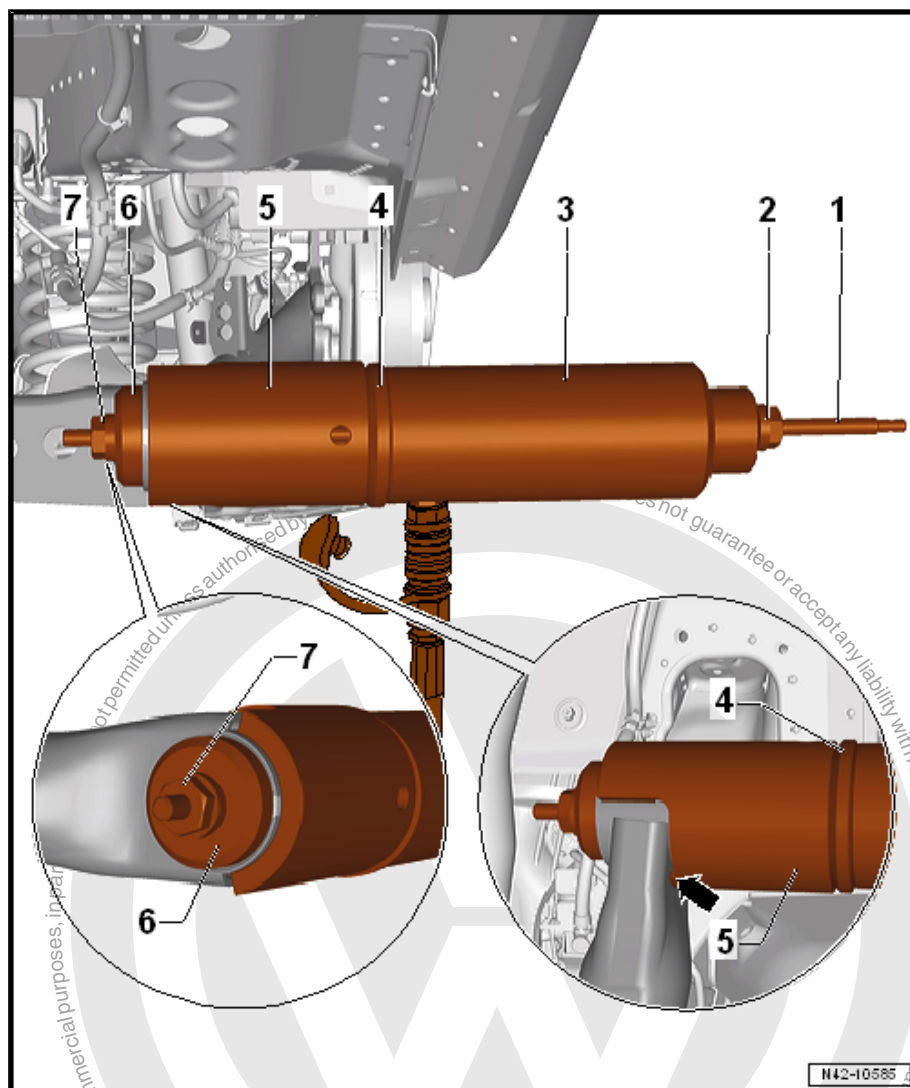
3 - Hydraulic Press - VAS6178- with Bearing Installer - Wheel Hub/Bearing Kit - Pressure Head - T10205/13-

4 - Pneumatic/Hydraulic Foot Pump - Press Kit - Thrust Piece - T10495/1-

5 - Bonded Rubber Bushing

6 - Pneumatic/Hydraulic Foot Pump - Press Kit - Press Plate - T10495/3-

7 - Hydraulic Press - Ball Joint Assembly Tools - Nut - T10254/4-



- Before installing bonded rubber bushing, make sure that the mark on the bonded rubber bushing aligns with the mark on the axle beam.
- Press in the bonded rubber mount to the stop.
- Check the installed position of the bonded rubber bushing.

Further installation is the reverse order of removal.

Tightening Specifications

- ◆ Refer to ⇒ [“2.1 Overview - Axle Beam”, page 184](#)
- ◆ Refer to
⇒ [“2.2.1 Overview - Rear Level Control System Sensor, Torsion Beam Axle”, page 328](#)
- ◆ Refer to
⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)
- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .
- For vehicles with a level control system sensor, perform a headlamp basic setting. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Headlamp; Headlamp, Adjusting .



3 Subframe

⇒ [“3.1 Overview - Subframe”, page 191](#)

⇒ [“3.2 Subframe, Securing”, page 193](#)

⇒ [“3.3 Subframe, Servicing”, page 209](#)

3.1 Overview - Subframe

⇒ [“3.1.1 Overview - Subframe, Multi-Link Suspension, FWD Except e-Golf”, page 191](#)

⇒ [“3.1.2 Overview - Subframe, Multi-Link Suspension, FWD e-Golf”, page 192](#)

⇒ [“3.1.3 Overview - Subframe, Multi-Link Suspension, AWD”, page 193](#)

3.1.1 Overview - Subframe, Multi-Link Suspension, FWD Except e-Golf

1 - Subframe

- ☐ Subframe with Attachments, Removing and installing. Refer to
⇒ [“1.3.2 Rear Axle, Removing and Installing, Multi-Link Suspension, FWD, except e-Golf and Golf GTE”, page 170](#).

2 - Bolt

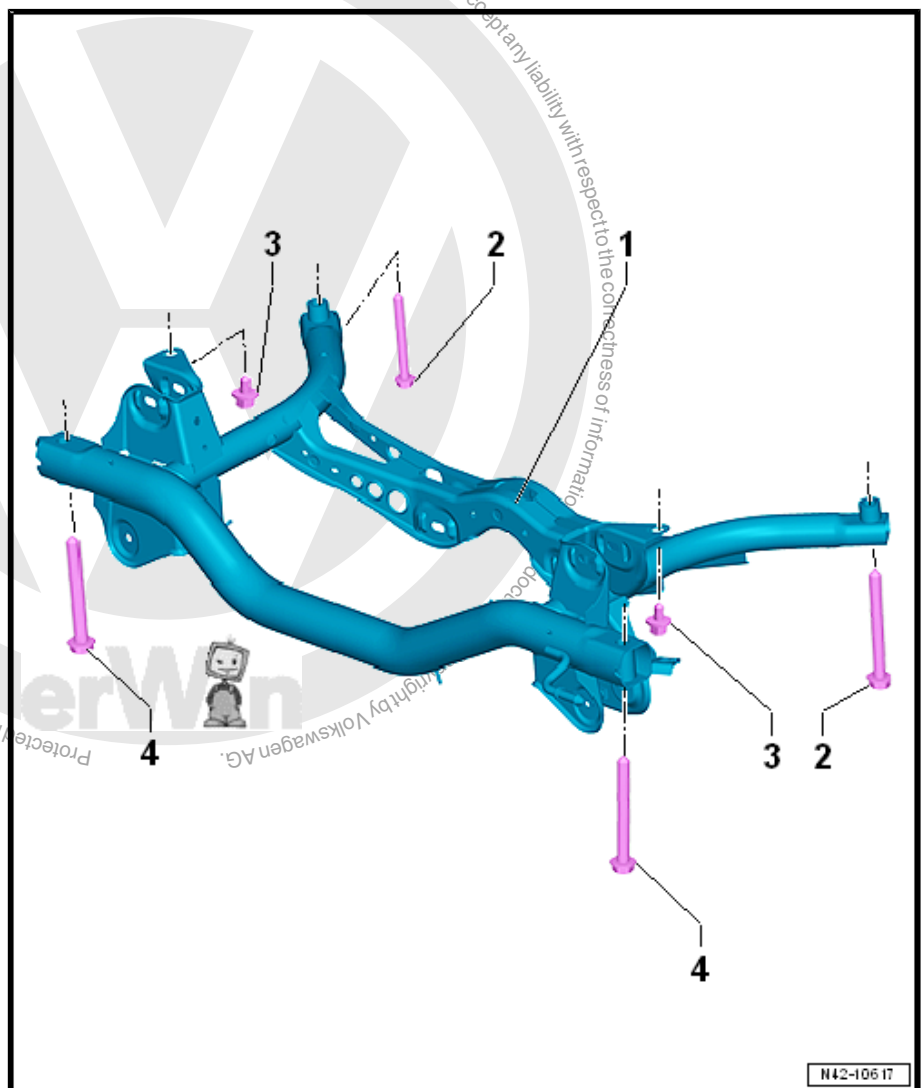
- ☐ 70 Nm +180°
- ☐ Replace after removing

3 - Bolt

- ☐ 50 Nm +45°
- ☐ Replace after removing

4 - Bolt

- ☐ 70 Nm +180°
- ☐ Replace after removing





3.1.2 Overview - Subframe, Multi-Link Suspension, FWD e-Golf

1 - Subframe

- ❑ Subframe with Attachments, Removing and installing. Refer to ➔ ["1.3.3 Rear Axle, Removing and Installing, Multi-Link Suspension, FWD e-Golf"](#), page 173 .

2 - Bolt

- ❑ 70 Nm +180°
- ❑ Replace after removing

3 - Bolt

- ❑ 50 Nm +45°
- ❑ Replace after removing

4 - Left Bracket

- ❑ For the High-Voltage Battery 1 - AX2- sub-frame

5 - Bolt

- ❑ 70 Nm +180°
- ❑ Replace after removing

6 - Right Bracket

- ❑ For the High-Voltage Battery 1 - AX2- sub-frame





3.1.3 Overview - Subframe, Multi-Link Suspension, AWD

1 - Subframe

- ❑ Subframe with Attachments, Removing and installing. Refer to
⇒ ["1.3.5 Rear Axle, Removing and Installing, Multi-Link Suspension, AWD", page 181](#).

2 - Rear Bonded Rubber Bushing

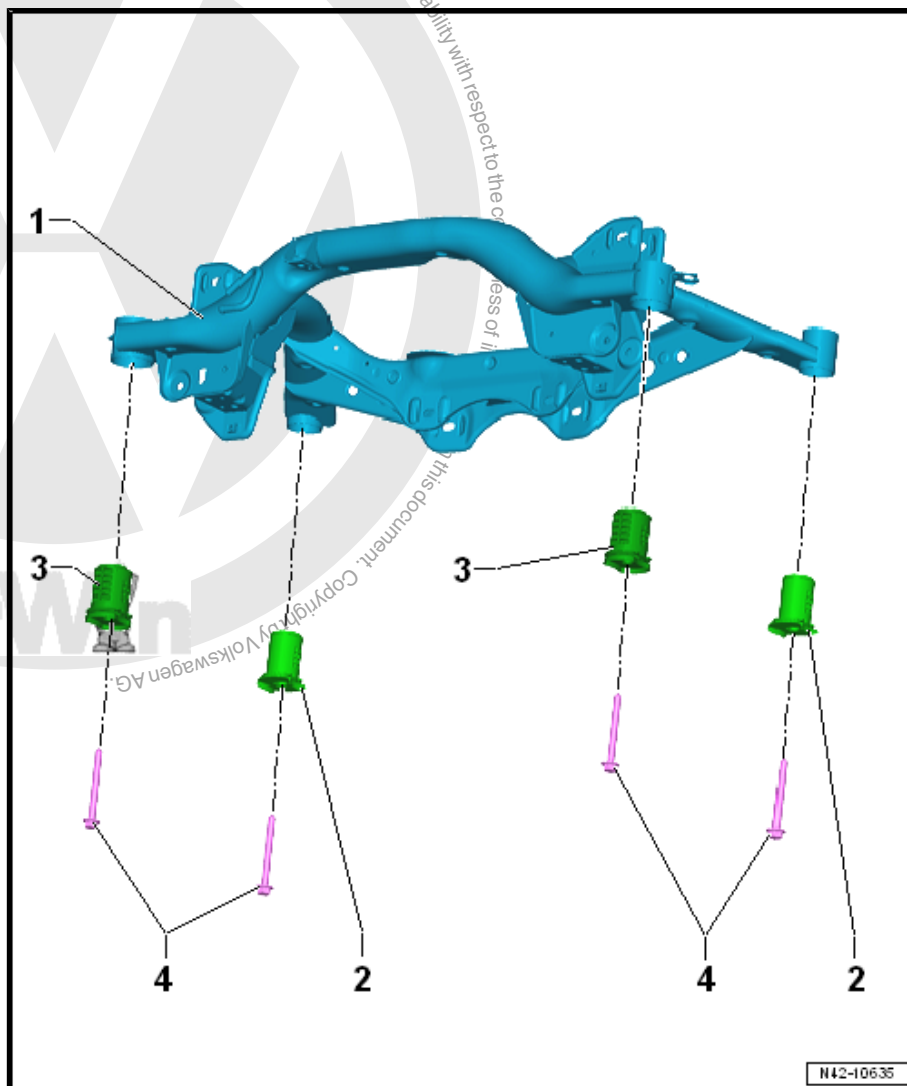
- ❑ Replacing. Refer to
⇒ ["3.3.2 Rear Bonded Rubber Bushing, Replacing", page 215](#).

3 - Front Bonded Rubber Bushing

- ❑ Replacing. Refer to
⇒ ["3.3.1 Front Bonded Rubber Bushing, Replacing", page 209](#).

4 - Bolt

- ❑ 70 Nm +180°
- ❑ Replace after removing



3.2 Subframe, Securing

⇒ ["3.2.1 Subframe, Securing, Multi-Link Suspension, FWD, except e-Golf and Golf GTE", page 193](#)

⇒ ["3.2.2 Subframe, Securing, Multi-Link Suspension, FWD e-Golf", page 197](#)

⇒ ["3.2.3 Subframe, Securing, Multi-link Suspension, FWD, Golf GTE", page 202](#)

⇒ ["3.2.4 Subframe, Securing, Multi-Link Suspension, AWD", page 206](#)

3.2.1 Subframe, Securing, Multi-Link Suspension, FWD, except e-Golf and Golf GTE

Special tools and workshop equipment required

- ◆ Locating Pins - T10096-
- ◆ Engine and Gearbox Jack - VAS6931-
- ◆ Rear Axle Support - T10552-

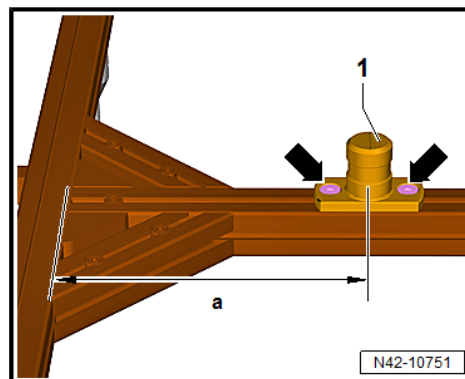


Rear Axle Support - T10552- , Preparing

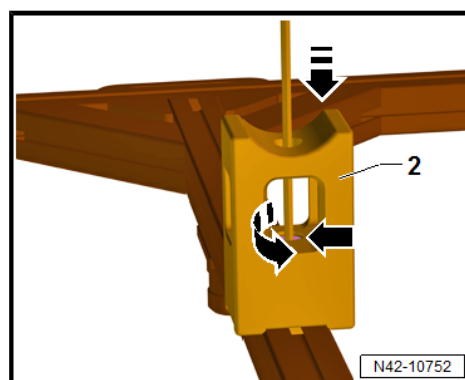
- Loosen the bolts -arrows- and adjust the dimension -a-.

a - 250 mm

Tighten the bolts -arrows-.



- Loosen the bolt -arrow- for the Rear Axle Support - Support - T10552/2- -2-.

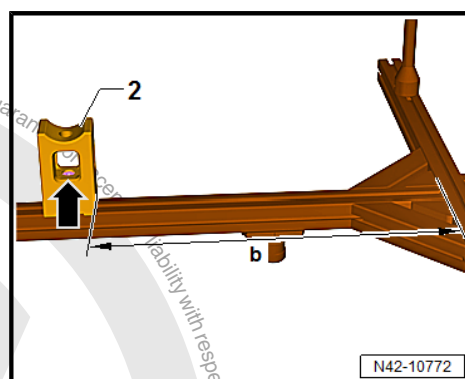


- Turn the Rear Axle Support - Support - T10552/2- -2- so that the profile is perpendicular to the direction of travel.

- Adjust the dimension -b-.

b - 330 mm

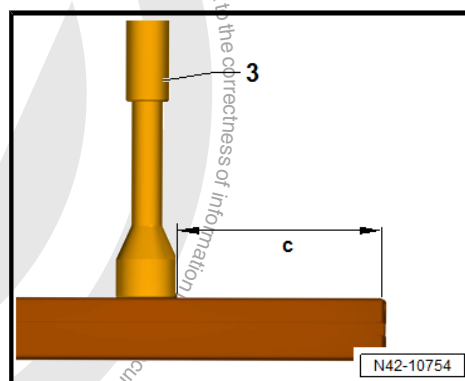
Tighten the bolt -arrow- to 30 Nm.



- Loosen the Rear Axle Support - Mounting Pin - T10552/1- -3- on both sides at the bottom.

- Adjust the dimension -c-.

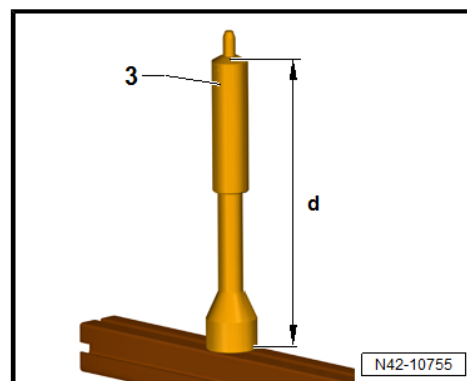
c - 47 mm



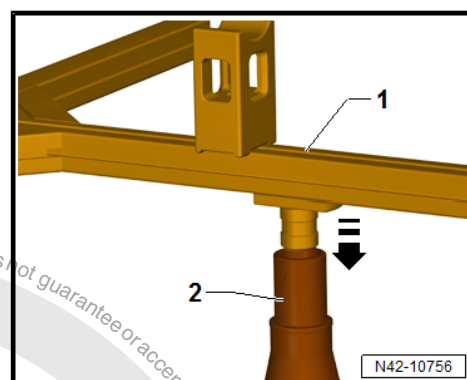


- Turn the Rear Axle Support - Mounting Pin Threaded Sleeve - T10552/1- -3- on both sides until the dimension -d- is set.

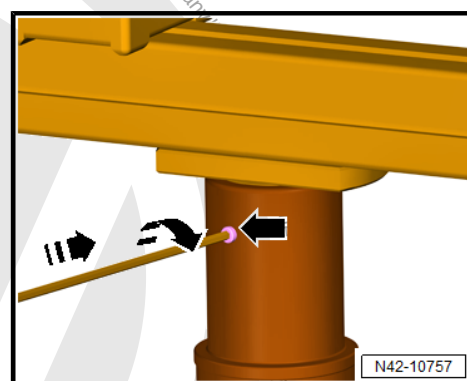
d - 230 mm



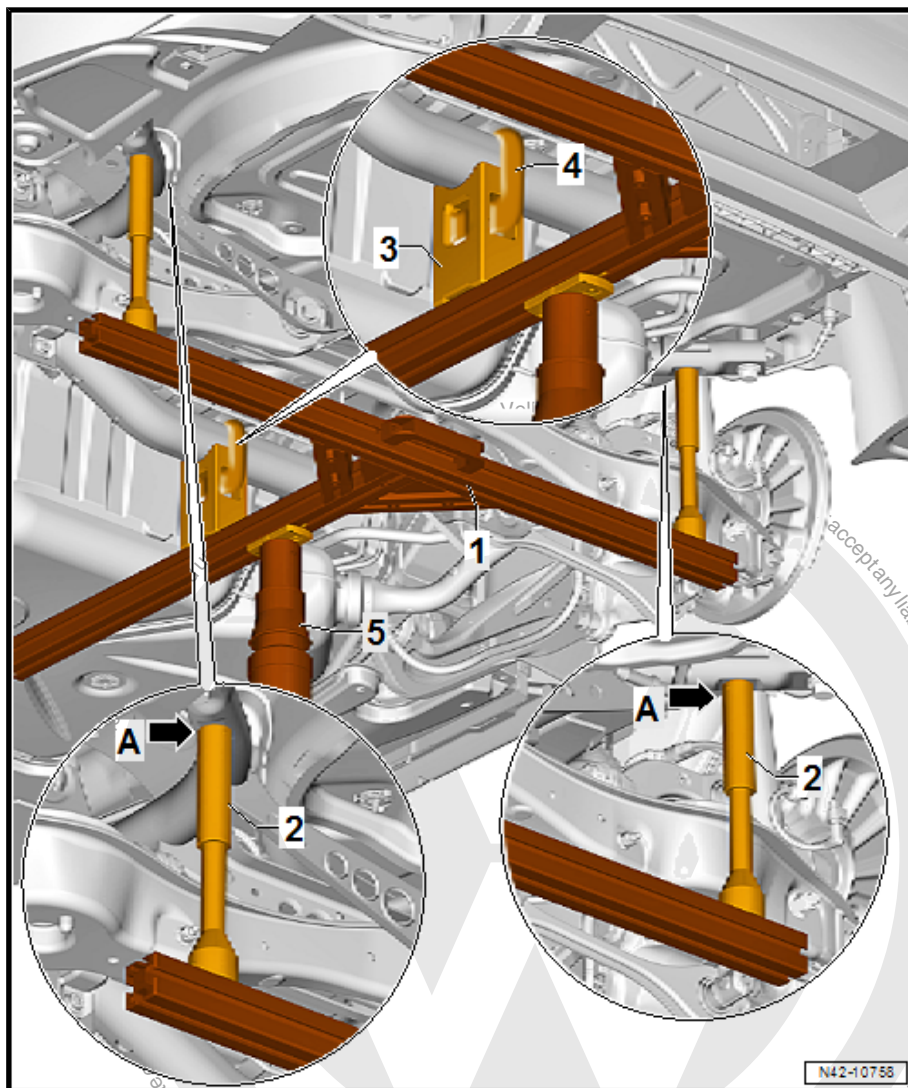
- Place the Rear Axle Support - T10552- -1- on the Engine/ Gearbox Jack - VAG1383A- or Engine and Gearbox Jack - VAS6931- .



- Tighten the bolt -arrow- to 30 Nm.



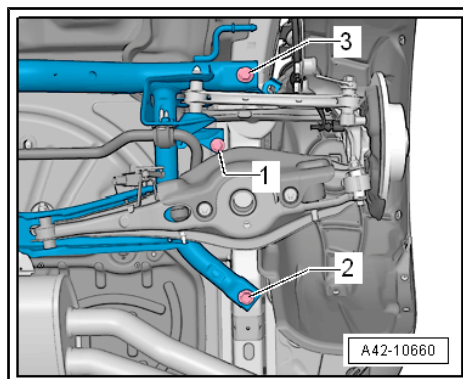
- Position the Rear Axle Support - T10552- -1- with the Engine/ Gearbox Jack - VAG1383A- or Engine and Gearbox Jack - VAS6931- -5- under the rear axle and move it upward.



- Insert the Rear Axle Support - Mounting Pins - T10552/1- -2- into the holes on the rear axle -A arrows-.
- Secure the Rear Axle Support - Support - T10552/2- -3- to the rear axle using a Tensioning Strap - T10038- -4-.

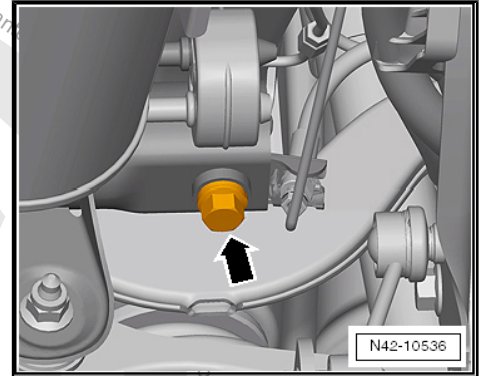
Locating Pins - T10096- , Installing

- Remove the left and right bolt -1-.
- To secure the subframe, the Locating Pins - T10096- must be installed at the positions -2- and -3- one after the other on both sides of the vehicle.





- Unscrew one of the front bolts of the subframe -arrow-.



- Install the Locating Pins - T10096- -1-.

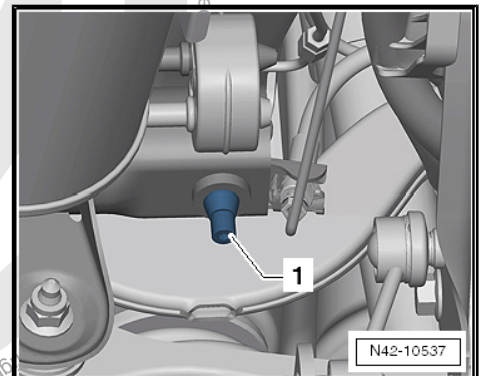


Note

The Locating Pins - T10096- may only be tightened to a maximum of 20 Nm, otherwise the threads of the locating pins will be damaged.

- The same procedure must be performed for the second front bolt and the rear bolts of the subframe.

The subframe position is now secured.



3.2.2 Subframe, Securing, Multi-Link Suspension, FWD e-Golf

Special tools and workshop equipment required

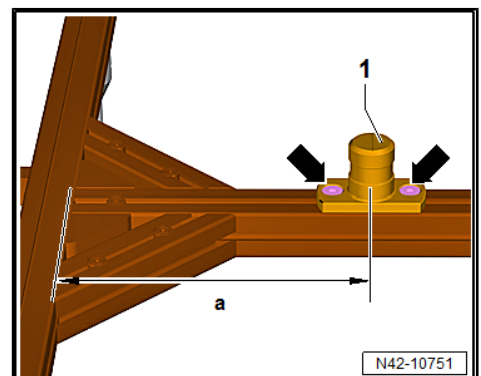
- ◆ Locating Pins - T10096-
- ◆ Engine and Gearbox Jack - VAS6931-
- ◆ Rear Axle Support - T10552-
- De-energize the high-voltage system. Refer to ⇒ Rep. Gr. 93 ; High Voltage System, De-Energizing .
- Support the High-Voltage Battery 1 - AX2- at the center on the Scissor Lift Table - VAS6131- but do not remove. Refer to ⇒ Electric Drive; Rep. Gr. 93 ; High Volt Battery .

Rear Axle Support - T10552- , Preparing

- Loosen the bolts -arrows- and adjust the dimension -a-.

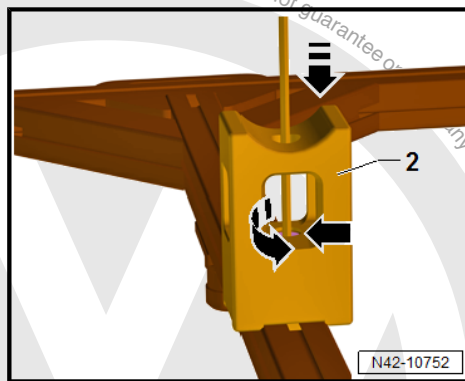
a - 250 mm

Tighten the bolts -arrows-.





- Loosen the bolt -arrow- for the Rear Axle Support - Support - T10552/2- -2-.

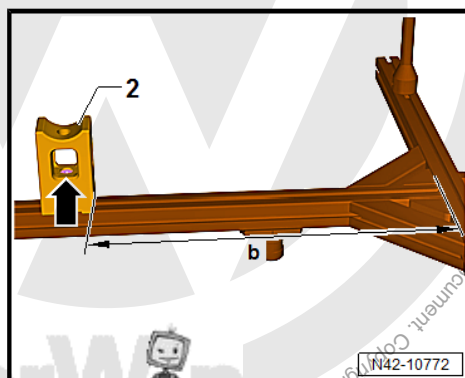


- Turn the Rear Axle Support - Support - T10552/2- -2- so that the profile is perpendicular to the direction of travel.

- Adjust the dimension -b-.

b - 330 mm

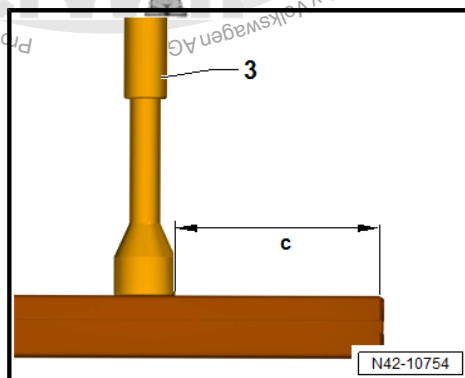
Tighten the bolt -arrow- to 30 Nm.



- Loosen the Rear Axle Support - Mounting Pin - T10552/1- -3- on both sides at the bottom.

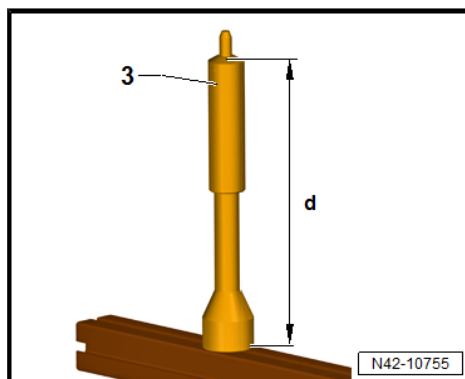
- Adjust the dimension -c-.

c - 47 mm



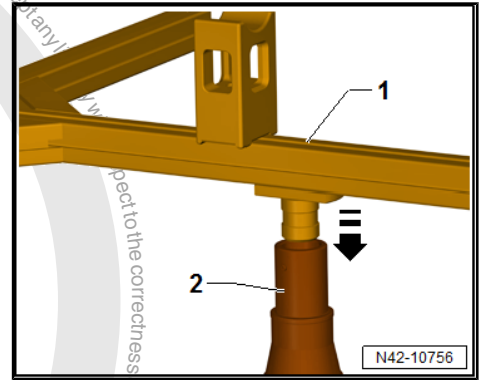
- Turn the Rear Axle Support - Mounting Pin Threaded Sleeve - T10552/1- -3- on both sides until the dimension -d- is set.

d - 230 mm

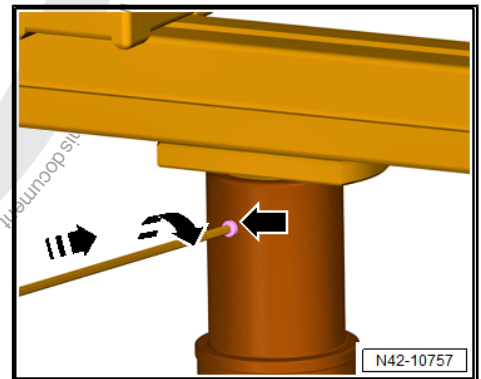




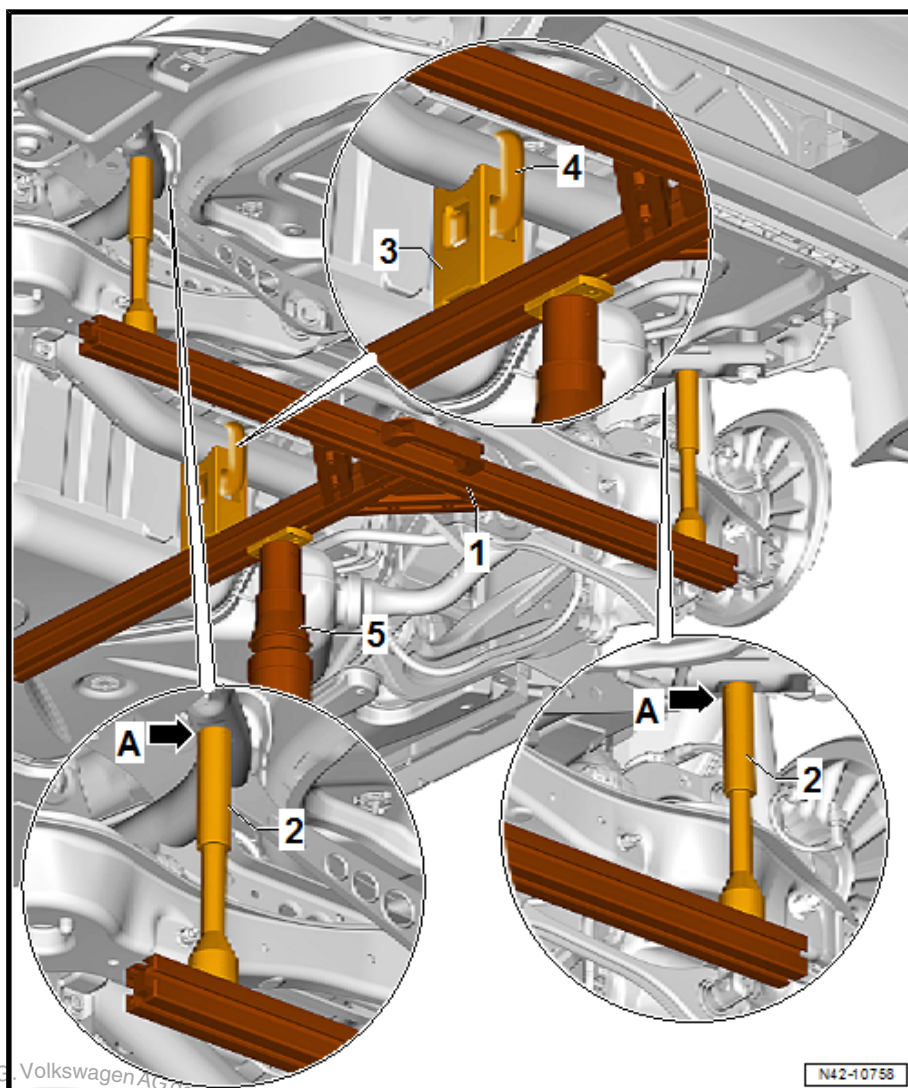
- Place the Rear Axle Support - T10552- -1- on the Engine/
Gearbox Jack - VAG1383A- or Engine and Gearbox Jack -
VAS6931- .



- Tighten the bolt -arrow- to 30 Nm.



- Position the Rear Axle Support - T10552- -1- with the Engine/
Gearbox Jack - VAG1383A- or Engine and Gearbox Jack -
VAS6931- -5- under the rear axle and move it upward.

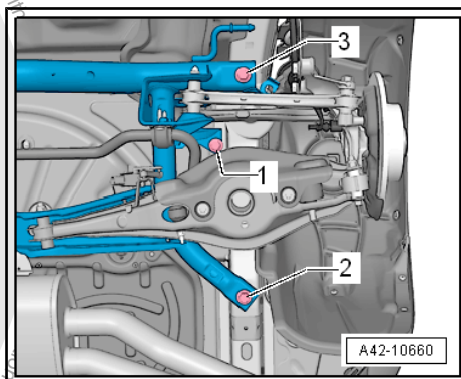


- Insert the Rear Axle Support - Mounting Pins - T10552/1- -2- into the holes on the rear axle -A arrows-.
- Secure the Rear Axle Support - Support - T10552/2- -3- to the rear axle using a Tensioning Strap - T10038- -4-.

Locating Pins - T10096- , Installing

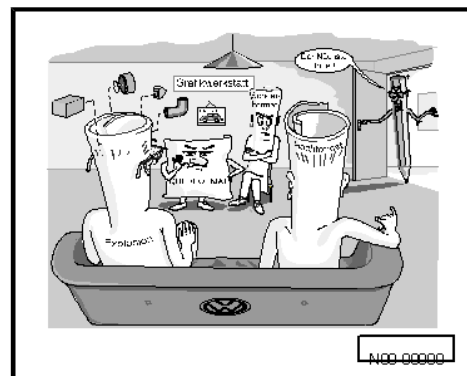
Remove the left and right bolt -1-.

To secure the subframe, the Locating Pins - T10096- must be installed at the positions -2- and -3- one after the other on both sides of the vehicle.

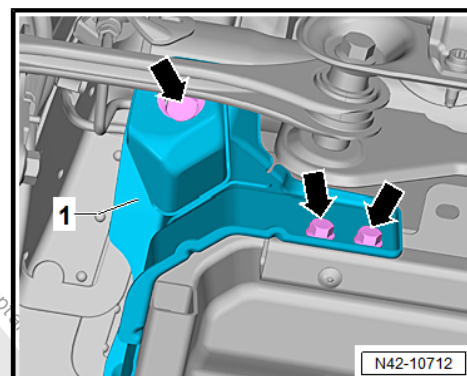




- Remove the bolts -arrows- for the left subframe bracket -1- of the High-Voltage Battery 1 - AX2- .



- Remove the bolts -arrows- and remove the left subframe bracket -1-.

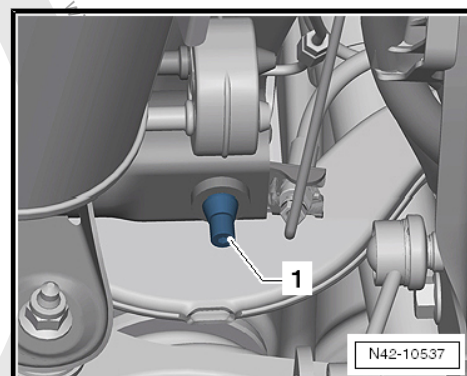


- Install the Locating Pins - T10096- -1-.

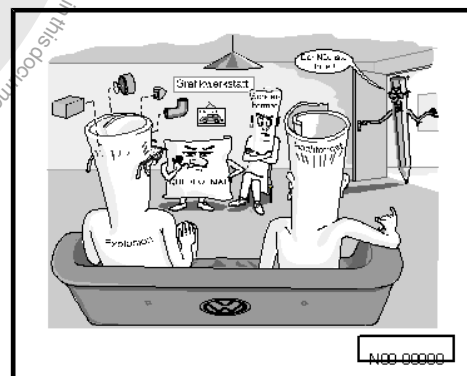


Note

The Locating Pins - T10096- may only be tightened to a maximum of 20 Nm, otherwise the threads of the locating pins will be damaged.

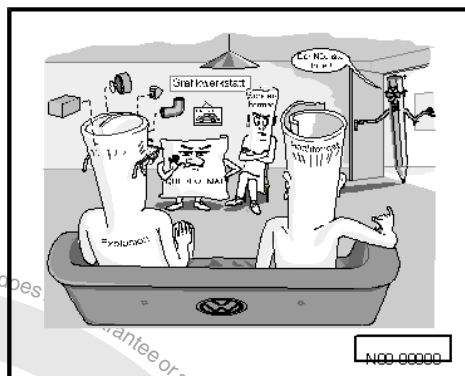


- Remove the bolts -arrows- for the right subframe bracket -1- of the High-Voltage Battery 1 - AX2- .





- Remove the bolts -arrows- and remove the left subframe bracket -1-.

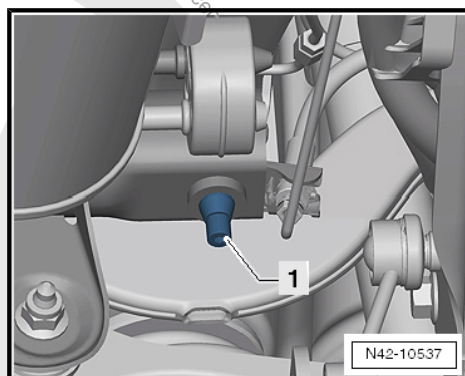


- Install the Locating Pins - T10096- -1-.



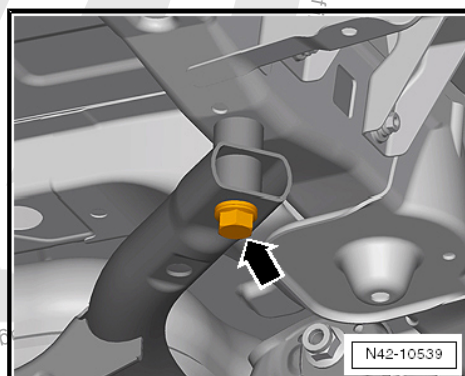
Note

The Locating Pins - T10096- may only be tightened to a maximum of 20 Nm, otherwise the threads of the locating pins will be damaged.



- Unscrew one of the rear bolts of the subframe -arrow-.
- The same procedure must be performed for the second rear bolt.

The subframe position is now secured.



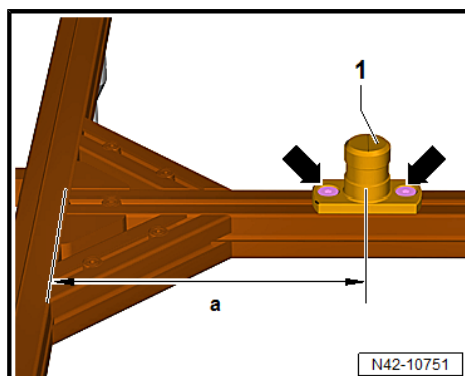
3.2.3 Subframe, Securing, Multi-link Suspension, FWD, Golf GTE

Special tools and workshop equipment required

- ◆ Locating Pins - T10096-
- ◆ Engine and Gearbox Jack - VAS6931-
- ◆ Rear Axle Support - T10552-

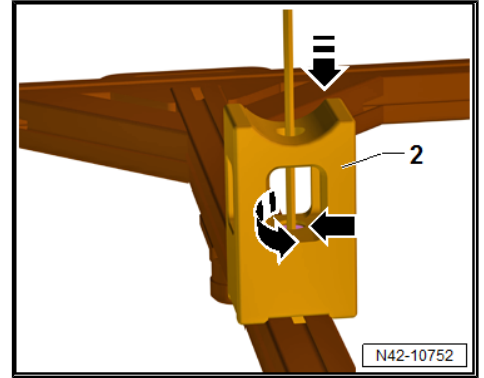
Rear Axle Support - T10552- , Preparing

- Loosen the bolts -arrows- and adjust the dimension -a-.
- a - 250 mm
- Tighten the bolts -arrows-.





- Loosen the bolt -arrow- for the Rear Axle Support - Support - T10552/2- -2-.

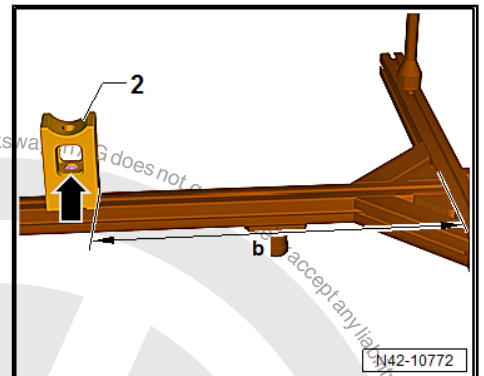


- Turn the Rear Axle Support - Support - T10552/2- -2- so that the profile is perpendicular to the direction of travel.

- Adjust the dimension -b-.

b - 330 mm

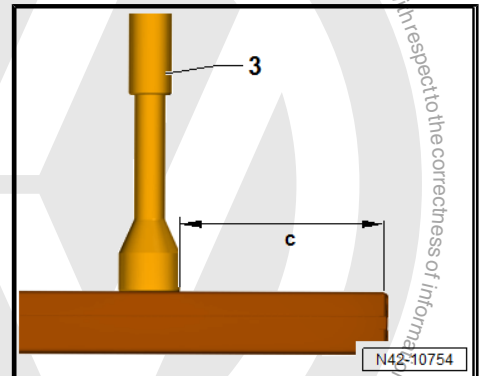
Tighten the bolt -arrow- to 30 Nm.



- Loosen the Rear Axle Support - Mounting Pin - T10552/1- -3- on both sides at the bottom.

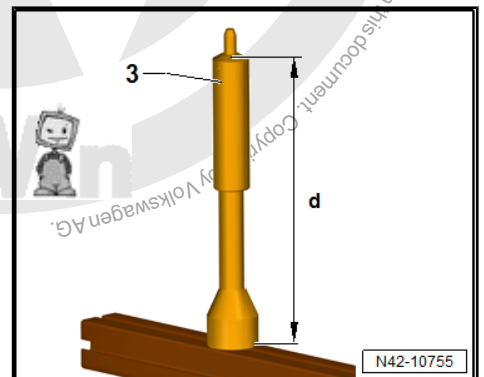
- Adjust the dimension -c-.

c - 47 mm



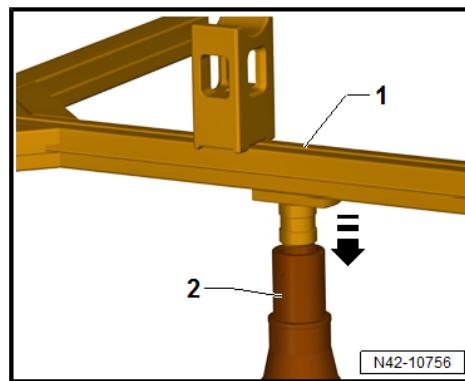
- Turn the Rear Axle Support - Mounting Pin Threaded Sleeve - T10552/1- -3- on both sides until the dimension -d- is set.

d - 230 mm

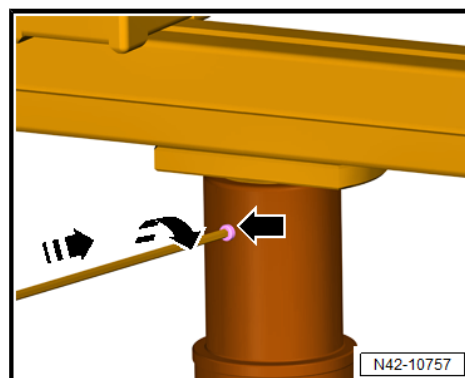




- Place the Rear Axle Support - T10552- -1- on the Engine/
Gearbox Jack - VAG1383A- or Engine and Gearbox Jack -
VAS6931- .

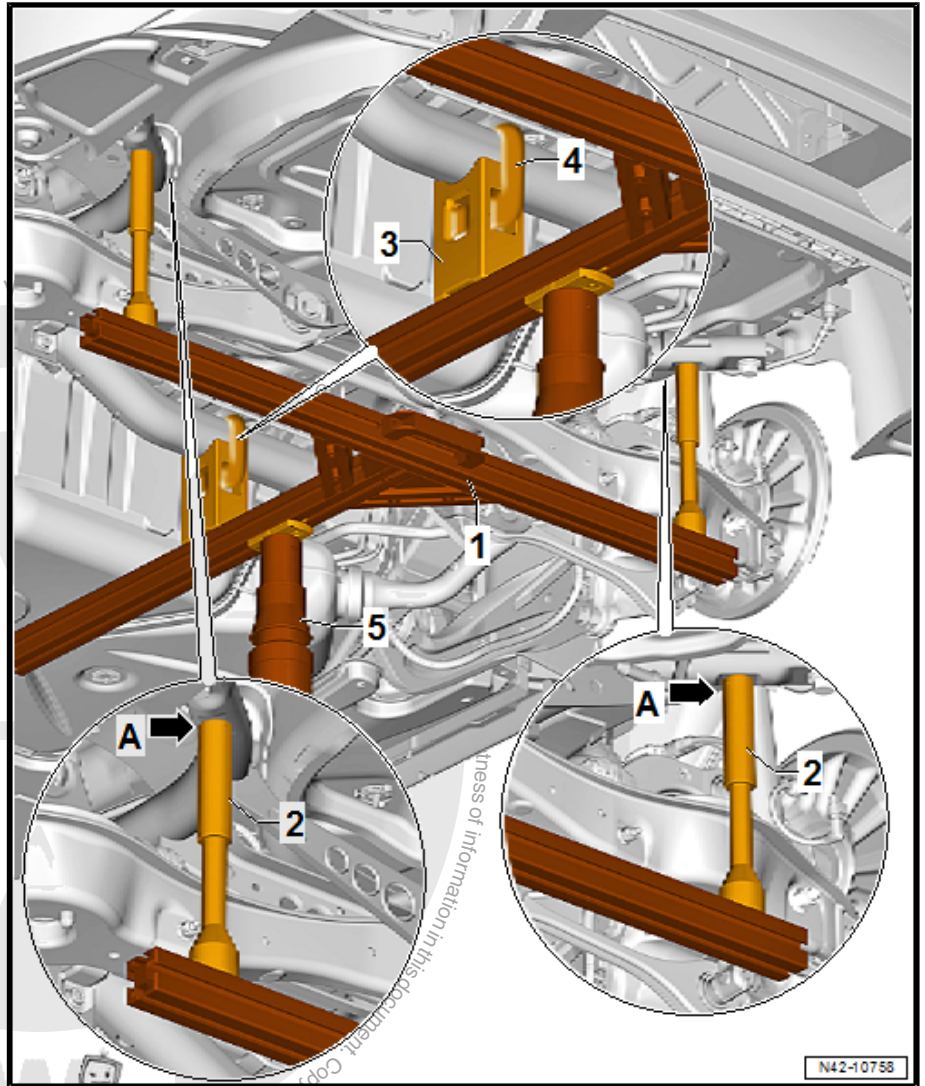


- Tighten the bolt -arrow- to 30 Nm.



- Position the Rear Axle Support - T10552- -1- with the Engine/
Gearbox Jack - VAG1383A- or Engine and Gearbox Jack -
VAS6931- -5- under the rear axle and move it upward.

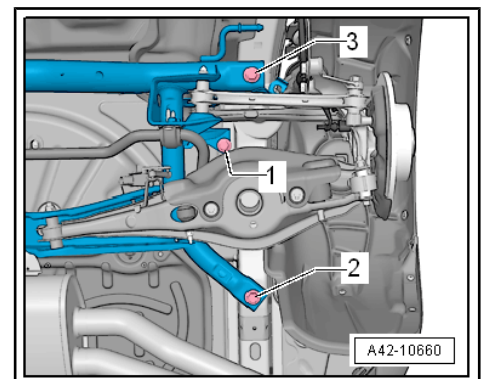




- Insert the Rear Axle Support - Mounting Pins - T10552/1- -2- into the holes on the rear axle -A arrows-.
- Secure the Rear Axle Support - Support - T10552/2- -3- to the rear axle using a Tensioning Strap - T10038- -4-.

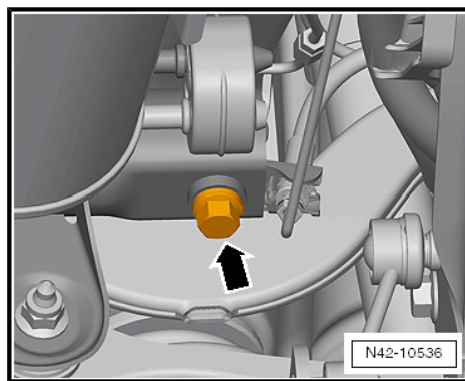
Locating Pins - T10096- , Installing

- Remove the left and right bolt -1-.
- To secure the subframe, the Locating Pins - T10096- must be installed at the positions -2- and -3- one after the other on both sides of the vehicle.





- Remove one of the front bolts of the subframe -arrow-.



- Install the Locating Pins - T10096- -1-.

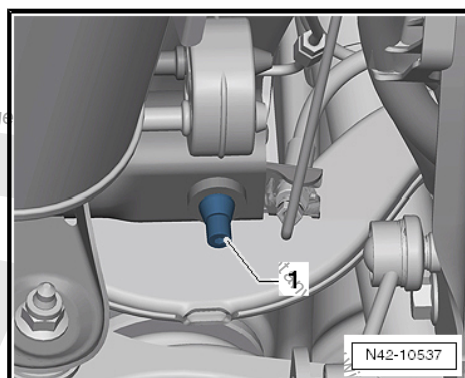


Note

The Locating Pins - T10096- may only be tightened to a maximum of 20 Nm, otherwise the threads of the locating pins will be damaged.

- The same procedure must be performed for the second front bolt and the rear bolts of the subframe.

The subframe position is now secured.



3.2.4 Subframe, Securing, Multi-Link Suspension, AWD

Special tools and workshop equipment required

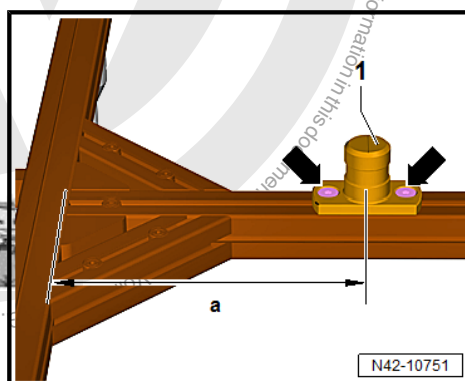
- ◆ Locating Pins - T10096-
- ◆ Engine and Gearbox Jack - VAS6931-
- ◆ Rear Axle Support - T10552-

Rear Axle Support - T10552-, Preparing

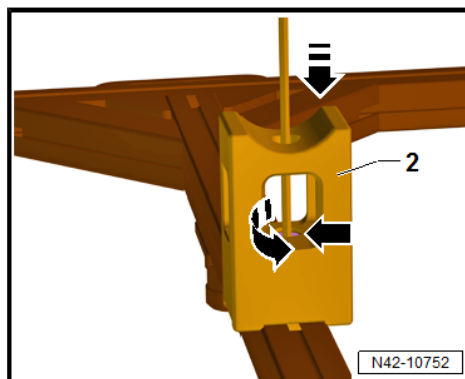
- Loosen the bolts -arrows- and adjust the dimension -a-.

a - 250 mm

Tighten the bolts -arrows-.

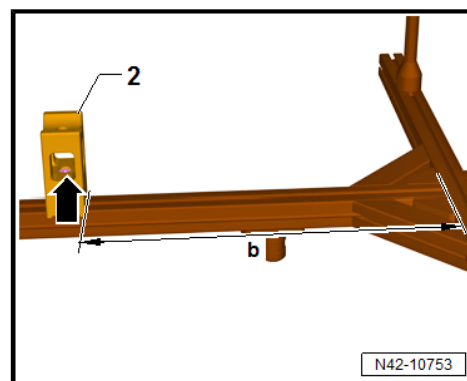


- Loosen the bolt -arrow- for the Rear Axle Support - Support - T10552/2- -2-.

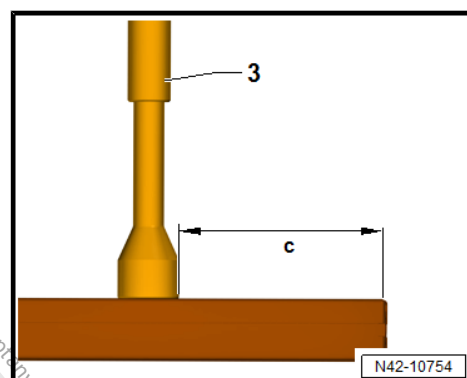




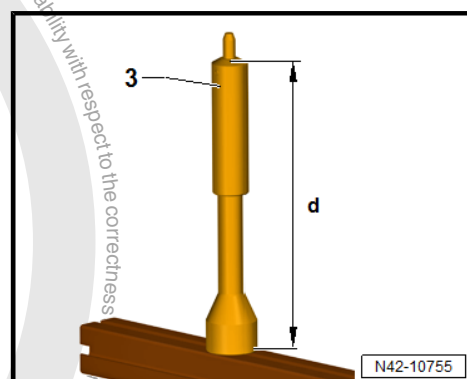
- Turn the Rear Axle Support - Support - T10552/2- -2- so that the profile is in the direction of travel.
 - Adjust the dimension -b-.
- b - 410 mm
- Tighten the bolt -arrow- to 30 Nm.



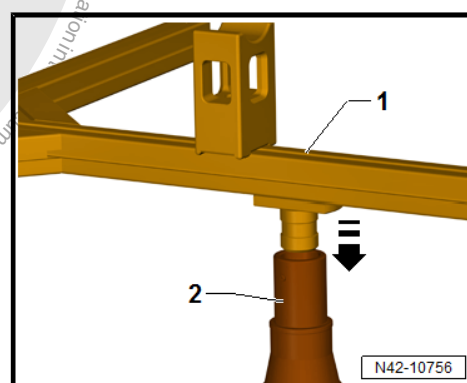
- Loosen the Rear Axle Support - Mounting Pin - T10552/1- -3- on both sides at the bottom.
 - Adjust the dimension -c-.
- c - 47 mm



- Turn the Rear Axle Support - Mounting Pin Threaded Sleeve - T10552/1- -3- on both sides until the dimension -d- is set.
- d - 215 mm

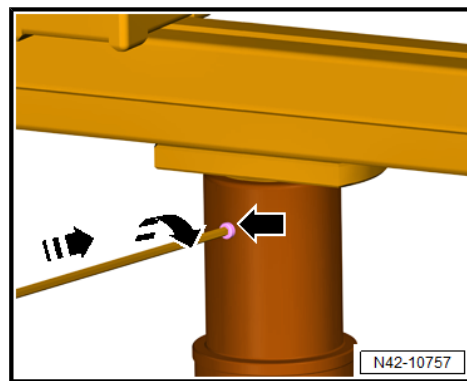


- Place the Rear Axle Support - T10552- -1- on the Engine/ Gearbox Jack - VAG1383A- or Engine and Gearbox Jack - VAS6931- .

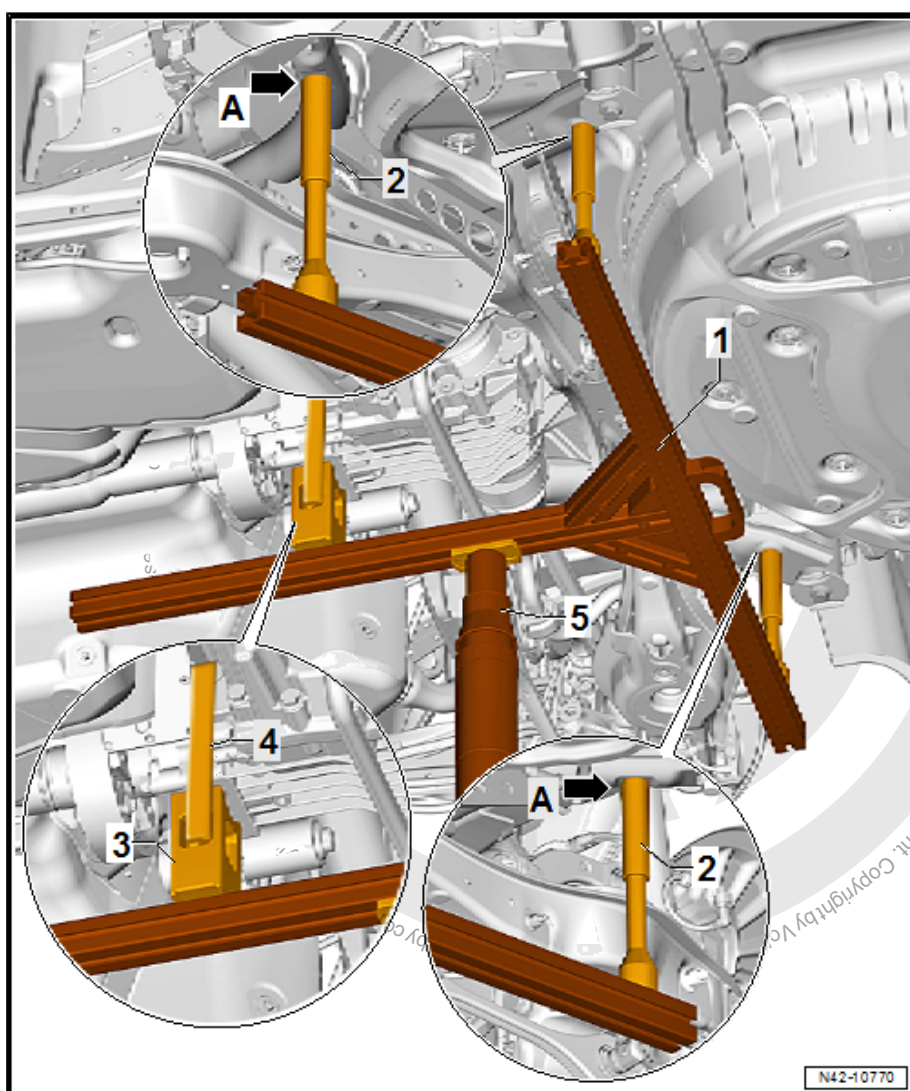




- Tighten the bolt -arrow- to 30 Nm.



- Position the Rear Axle Support - T10552- -1- with the Engine/ Gearbox Jack - VAG1383A- or Engine and Gearbox Jack - VAS6931- -1- under the rear axle and move it upward.



- Insert the Rear Axle Support - Mounting Pins - T10552/1- -2- into the holes on the rear axle -A arrows-.
- Secure the Rear Axle Support - Support - T10552/2- -3- to the rear axle using a Tensioning Strap - T10038- -4-.



Locating Pins - T10096- , Installing

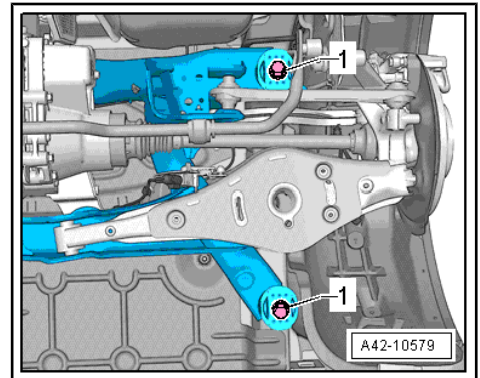
To secure the subframe, the Locating Pins - T10096- must be installed at the positions -1- one after the other on both sides of the vehicle.

- Remove a hex bolt -1- from both sides.



Note

Only the left side of the vehicle is shown in the illustration.



- Install the Locating Pins - T10096- -1-.

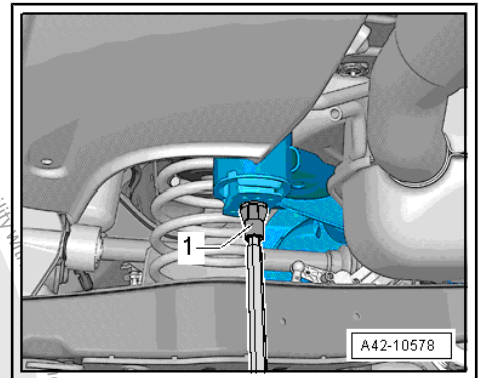


Note

The Locating Pins - T10096- may only be tightened to a maximum of 20 Nm, otherwise the threads of the locating pins will be damaged.

Replace the bolts on the subframe one after the other with the Locating Pins - T10096- -1- on both sides and tighten to 20 Nm.

The subframe position is now secured.



3.3 Subframe, Servicing

⇒ ["3.3.1 Front Bonded Rubber Bushing, Replacing", page 209](#)

⇒ ["3.3.2 Rear Bonded Rubber Bushing, Replacing", page 215](#)

3.3.1 Front Bonded Rubber Bushing, Replacing

Special tools and workshop equipment required

- ◆ Tensioning Strap - T10038-
- ◆ Hydraulic Press - Rear Subframe Bushing Tool Kit - T10263-
- ◆ Subframe Bushing Assembly Tool Kit - T10356-
- ◆ Engine and Gearbox Jack - VAS6931-
- ◆ Hydraulic Press - VAS6178- with Bearing Installer - Wheel Hub/Bearing Kit- Adapter 13 - T10205/13-
- ◆ Pneumatic/Hydraulic Foot Pump - VAS6179-
- ◆ Bearing Installer - Wheel Hub/Bearing Kit - T10205A-



Note

- ♦ If a bonded rubber bushing is faulty, then the bonded rubber bushing on the opposite side must also be replaced. Refer to the Parts Catalog for the allocation.
- ♦ Check the other bearing before switching out a defected bonded rubber bushing.
- ♦ If there are any tears or other visible damages, replace the bonded rubber bushing.
- ♦ To replace the bonded rubber bushing, the subframe must be lowered either at the front or at the rear. It is not necessary to remove the subframe.
- ♦ Identify installation position to the subframe before removing the bonded rubber bushing.

Pressing out Bonded Rubber Bushing, Front

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the rear wheels.
- Remove the spring. Refer to
⇒ ["6.4 Spring, Removing and Installing", page 248](#) .
- Remove the rear muffler. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .
- Remove the clamps -1- on both sides of the vehicle.



Note

Do not disconnect the brake line.

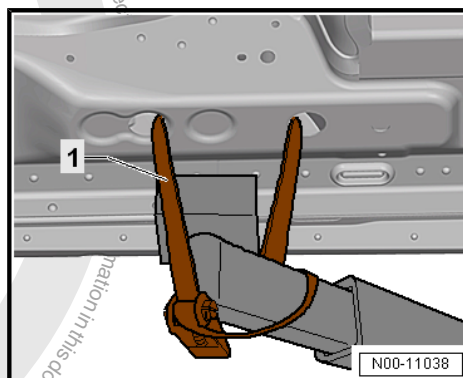
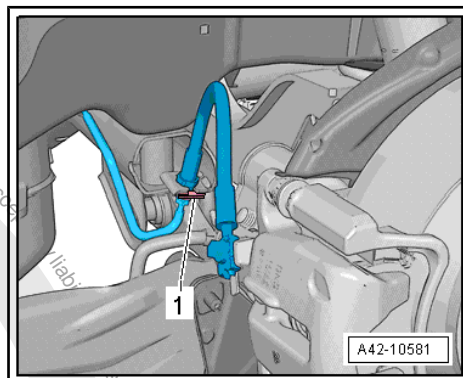
- Secure both sides of the vehicle on the hoist arms using Tensioning Straps - T10038- -1-.



WARNING

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

- Secure the subframe. Refer to
⇒ ["3.2 Subframe, Securing", page 193](#) .





- Mark the installation location of the bonded rubber bushing on the subframe with a felt-tip pen -1-.



Note

Apply the mark -1- on the subframe in the middle of the recess on the bonded rubber mounting -2-.

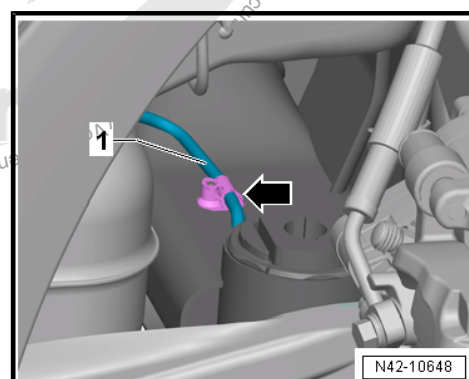
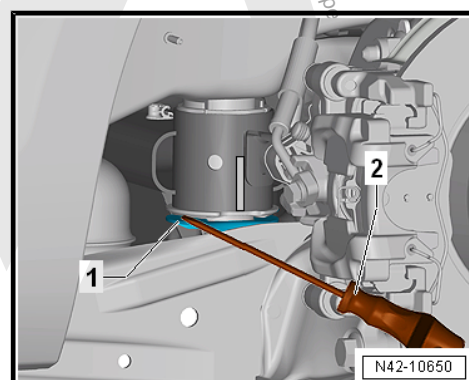
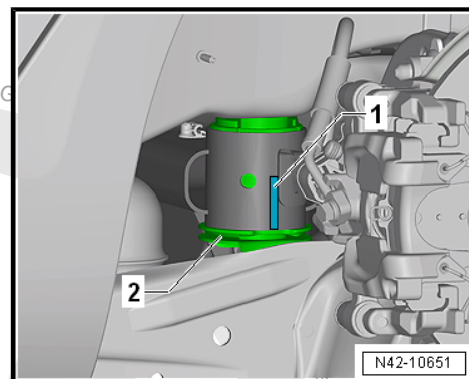
- Use a screwdriver -2- to pry off the anti-twist mechanism -1- near the bonded rubber bushing mounting retaining lugs.
- Lower the subframe approximately 100 mm using the Engine and Gearbox Jack VAS6931- .

- Unclip the brake line -1- from the clip -arrow- on the left side.

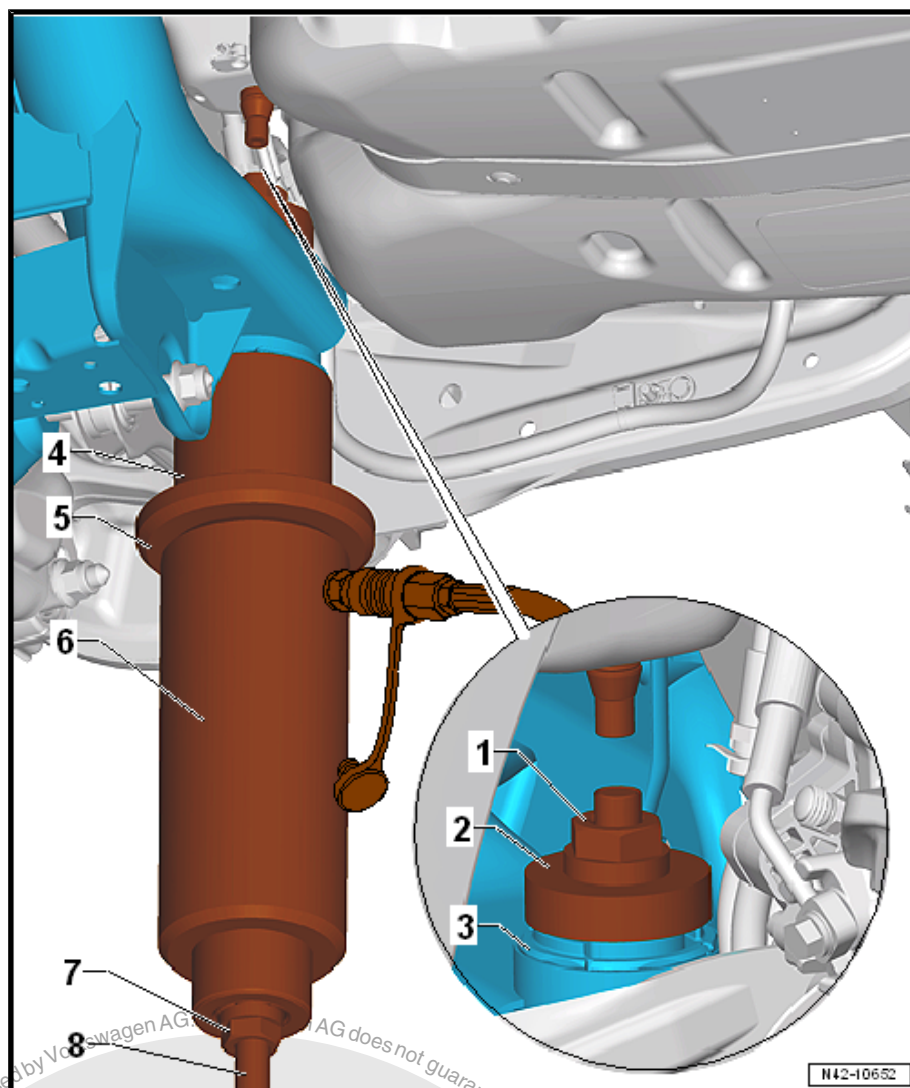


Note

This will destroy the clip, so it will have to be replaced.



- Use the special tools as shown.



- 1 - Hydraulic Press - Rear Subframe Bushing Tool Kit - Nut - T10263/5-
- 2 - Subframe Bushing Assembly Tool Kit-Press Piece - T10356/1-
- 3 - Subframe
- 4 - Subframe Bushing Assembly Tool Kit-Pipe - T10356/2- , side with shoulder points to subframe
- 5 - Bearing Installer - Wheel Hub/Bearing Kit - Gripping Device - T10205/1-
- 6 - Hydraulic Press - VAS6178- with Bearing Installer - Wheel Hub/Bearing Kit Pressure Head - T10205/13-
- 7 - Hydraulic Press - Rear Subframe Bushing Tool Kit - Nut - T10263/5-
- 8 - Hydraulic Press - Rear Subframe Bushing Tool Kit-Threaded Rod - T10263/4-

- Pretension special tools.
- Press out the bonded rubber bushing.

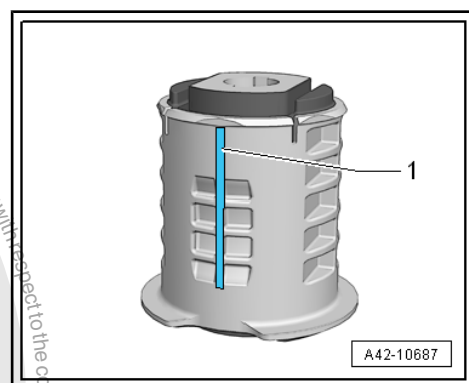


Note

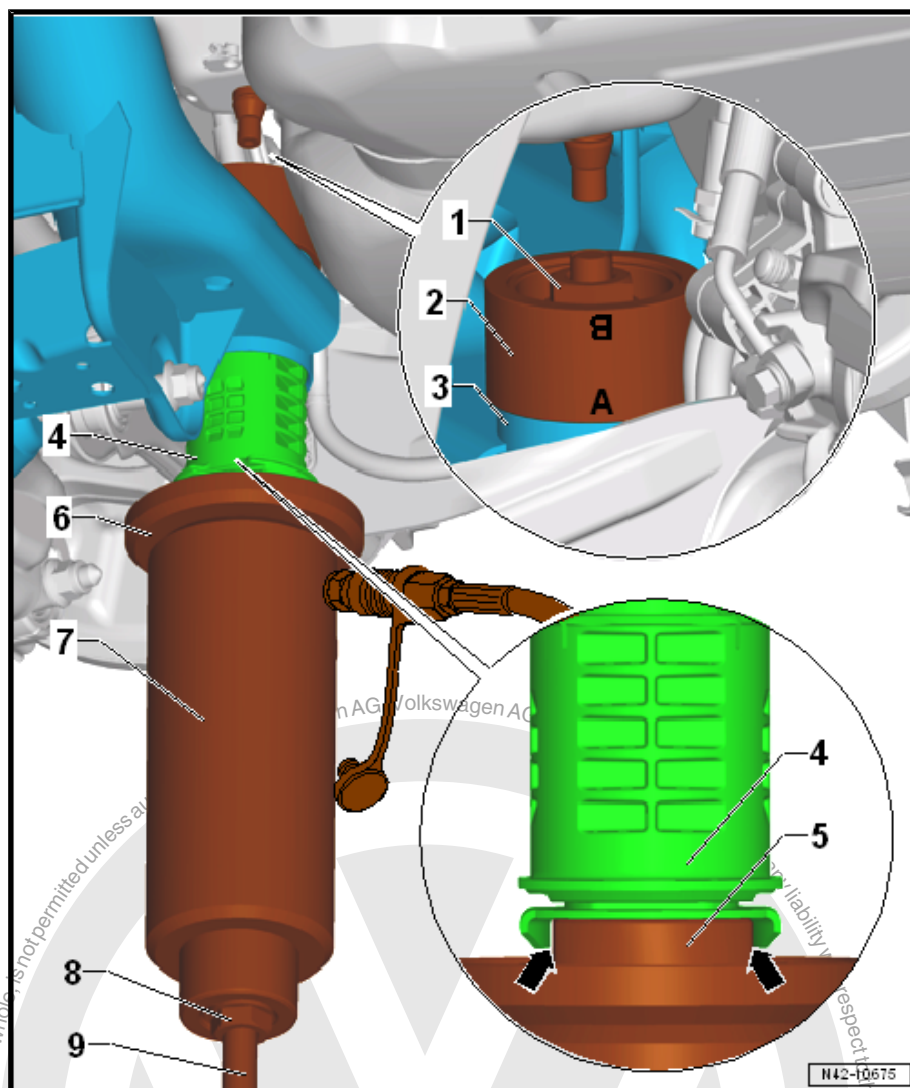
- ◆ When removing the bonded rubber bushing, the outer race collar on the bushing is sheared off. There is a loud crack when this happens.
- ◆ After removing the bonded rubber bushing, it must be removed from the Subframe Bushing Assembly Tool Kit - Tube - T10356/2- by tapping lightly with a hammer.

Press in on the Front Bonded Rubber Bushing

- Apply a line of 1- on the vertical rib of the bonded rubber bushing to help mount.



- Coat the outer edge of the bonded rubber bushing with Assembly Paste -G 294 421 A1-.
- Insert special tools with bonded rubber bushing into subframe as illustrated.



1 - Hydraulic Press - Rear Subframe Bushing Tool Kit - Nut - T10263/5-

2 - Subframe Bushing Assembly Tool Kit-Thrust piece - T10356/7-
- the mark -A- points to the subframe

3 - Subframe

4 - adjust the bonded rubber bushing to the marks (the marks need to align)

5 - Assembly Tool - Bushing - T10356/8- - the flattened sides need to fit into the cover of the bonded rubber bushing -arrows-.

6 - Bearing Installer - Wheel Hub/Bearing Kit - Gripping Device - T10205/1-

7 - Hydraulic Press - VAS6178- with Bearing Installer - Wheel Hub/Bearing Kit Pressure Head - T10205/13-

8 - Hydraulic Press - Rear Subframe Bushing Tool Kit - Nut - T10263/5-

9 - Hydraulic Press - Rear Subframe Bushing Tool Kit - Threaded Rod - T10263/4-

- Check the position of the bonded rubber bushing and, if necessary, align and pre-tighten special tools with bonded rubber bushing.



Note

- ◆ *Make sure that the hose from the Hydraulic Press - VAS6178- to the Pneumatic/Hydraulic Foot Pump - VAS6179- runs between the trailing arm and the fuel tank when installed.*
- ◆ *Make sure that the bonded rubber bushing is not bent when installing. Otherwise the outer ring could become damaged.*
- Operate the pump to press in the bonded rubber bushing until the collar is positioned on the subframe »without play«.

Installation is performed in reverse order of removal, while noting the following:

Tightening Specifications

- ◆ Refer to ["3.1.3 Overview - Subframe, Multi-Link Suspension, AWD", page 193](#)
- ◆ Refer to ["1.4 Wheel Bolt Tightening Specifications", page 340](#)
- ◆ Exhaust system. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/ Mufflers; Overview - Muffler .

3.3.2 Rear Bonded Rubber Bushing, Replacing

Special tools and workshop equipment required

- ◆ Tensioning Strap - T10038-
- ◆ Hydraulic Press - Rear Subframe Bushing Tool Kit - T10263-
- ◆ Subframe Bushing Assembly Tool Kit - T10356-
- ◆ Engine and Gearbox Jack - VAS6931-
- ◆ Hydraulic Press - VAS6178- with Bearing Installer - Wheel Hub/Bearing Kit- Adapter 13 - T10205/13-
- ◆ Pneumatic/Hydraulic Foot Pump - VAS6179-
- ◆ Bearing Installer - Wheel Hub/Bearing Kit - T10205A-



Note

- ◆ *If a bonded rubber bushing is faulty, then the bonded rubber bushing on the opposite side must also be replaced. Refer to the Parts Catalog for the allocation.*
- ◆ *Check the other bearing before switching out a defected bonded rubber bushing.*
- ◆ *If there are any tears or other visible damages, replace the bonded rubber bushing.*
- ◆ *To replace the bonded rubber bushing, the subframe must be lowered either at the front or at the rear. It is not necessary to remove the subframe.*
- ◆ *Identify installation position to the subframe before removing the bonded rubber bushing.*

Pressing out Rear Bonded Rubber Bushing

- Loosen the wheel bolts.
- Raise the vehicle.

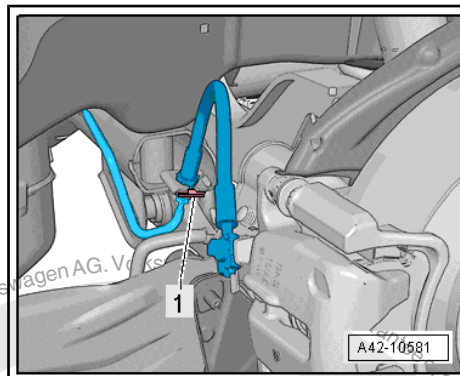


- Remove the rear wheels.
- Remove the spring. Refer to
⇒ [“6.4 Spring, Removing and Installing”, page 248](#) .
- Remove the rear muffler. Refer to ⇒ Rep. Gr. 26 ; Exhaust
Pipes/Mufflers; Overview - Muffler .
- Remove the clamps -1- on both sides of the vehicle.



Note

Do not disconnect the brake line.

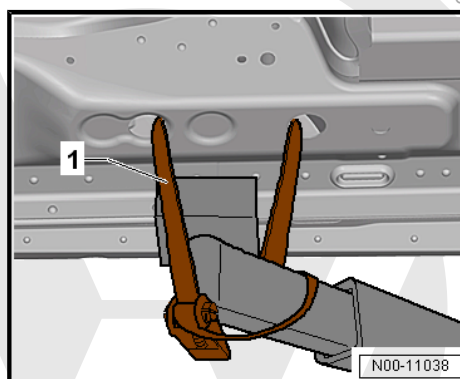


- Secure both sides of the vehicle on the hoist arms using Tensioning Straps - T10038- -1-.



WARNING

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



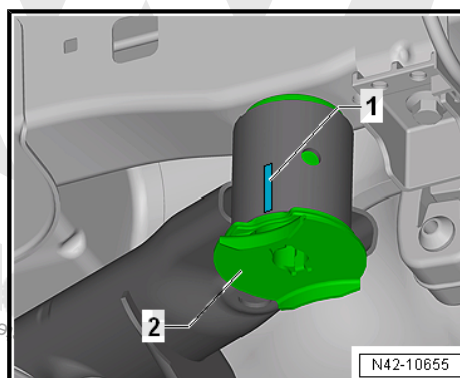
- Secure the subframe. Refer to
⇒ [“3.2 Subframe, Securing”, page 193](#) .

- Mark the installation location of the bonded rubber bushing on the subframe with a felt-tip pen -1-.

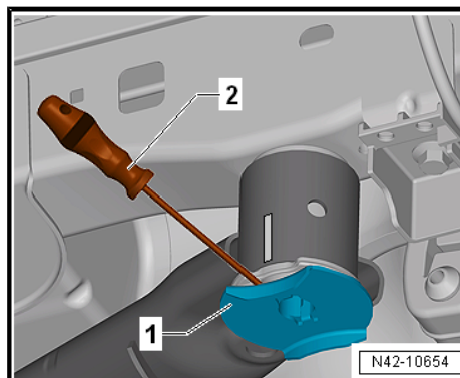


Note

Apply the mark -1- on the subframe in the middle of the recess on the bonded rubber mounting -2-.



- Use a screwdriver -2- to pry off the anti-twist mechanism -1- near the bonded rubber bushing mounting retaining lugs.
- Lower the subframe approximately 100 mm using the Engine and Gearbox Jack - VAS6931- .



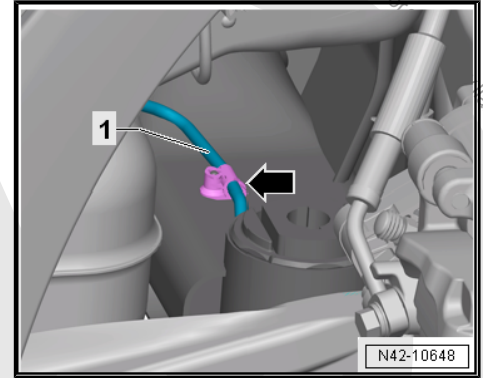


- Unclip the brake line -1- from the clip -arrow- on the left side.

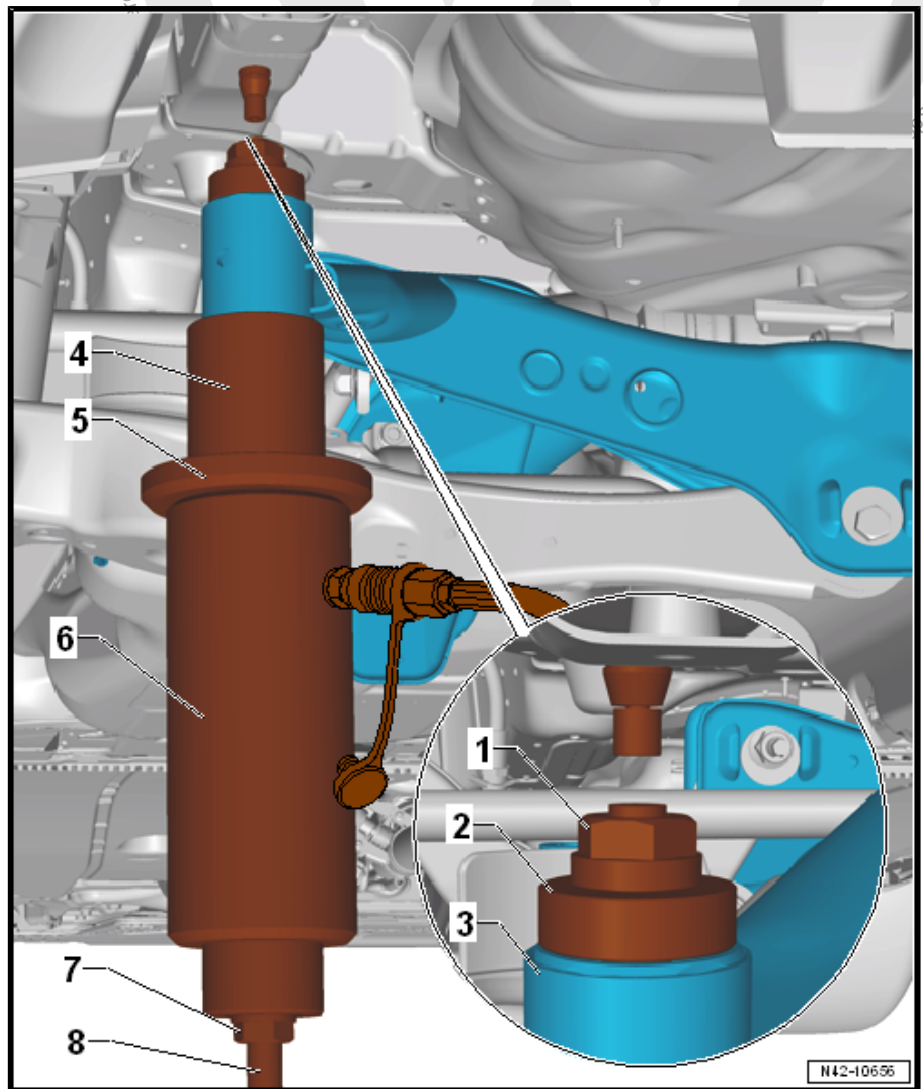


Note

This will destroy the clip, so it will have to be replaced.



- Use the special tools as shown.



1 - Hydraulic Press - Rear Subframe Bushing Tool Kit - Nut - T10263/5-

2 - Subframe Bushing Assembly Tool Kit - Thrust Piece - T10356/5-

3 - Subframe

4 - Subframe Bushing Assembly Tool Kit - Tube - T10356/6- , side with offset points to subframe



5 - Bearing Installer - Wheel Hub/Bearing Kit - Gripping Device - T10205/1-

6 - Hydraulic Press - VAS6178- with Bearing Installer - Wheel Hub/Bearing Kit Pressure Head - T10205/13-

7 - Hydraulic Press - Rear Subframe Bushing Tool Kit - Nut - T10263/5-

8 - Hydraulic Press - Rear Subframe Bushing Tool Kit-Threaded Rod - T10263/4-

- Pretension special tools.
- Press out the bonded rubber bushing.

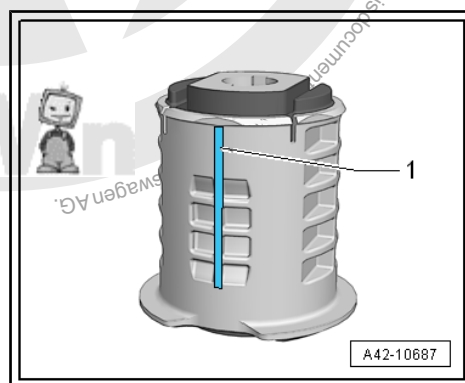


Note

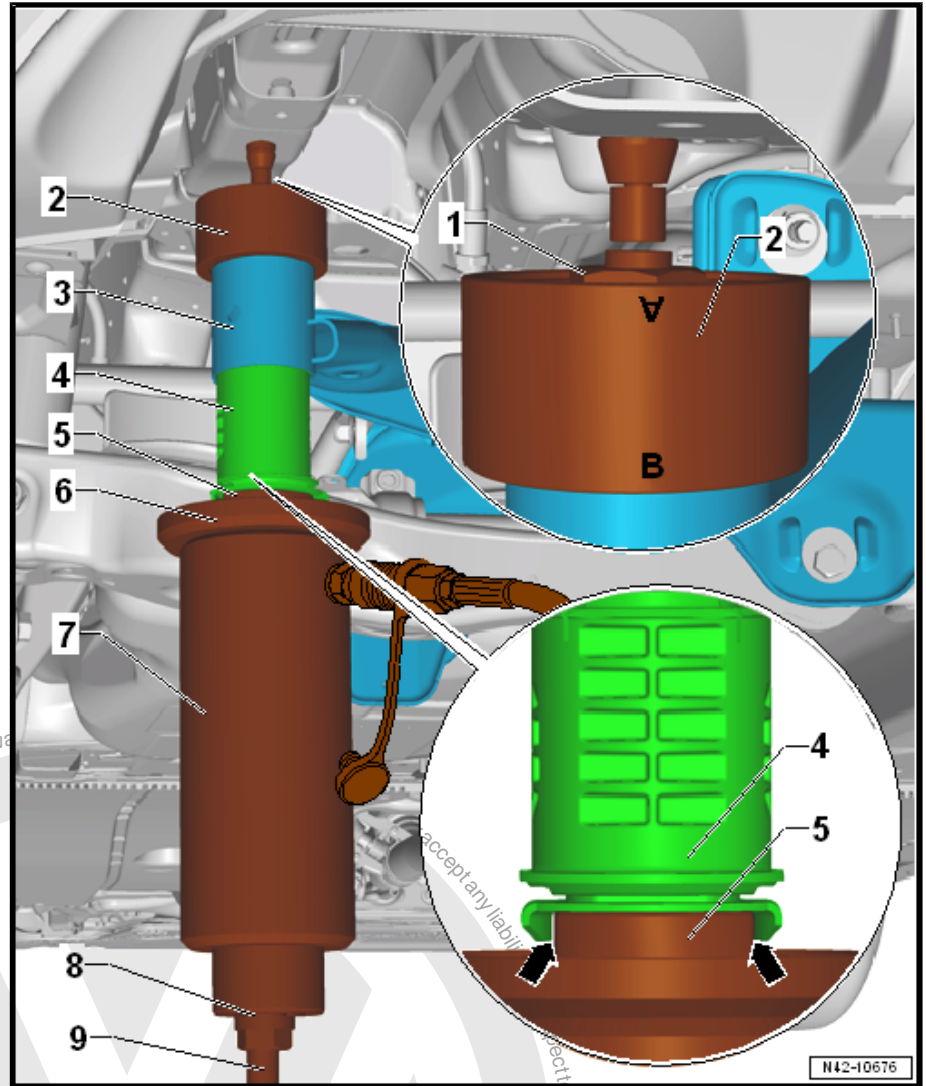
- ◆ *When removing the bonded rubber bushing, the outer race collar on the bushing is sheared off. There is a loud crack when this happens.*
- ◆ *After removing the bonded rubber bushing, it must be removed from the Subframe Bushing Assembly Tool Kit - Tube - T10356/6- by tapping lightly with a hammer.*

Press in the Rear Bonded Rubber Bushing

- Apply a line -1- on the vertical rib of the bonded rubber bushing to help mount.



- Apply mounting paste to the outer edge of the bonded rubber bushing.
- Insert special tools with bonded rubber bushing into subframe as illustrated.



1 - Hydraulic Press - Rear Subframe Bushing Tool Kit - Nut - T10263/5-

2 - Assembly Tool - Bushing - T10356/7- - the marking -B- points to the subframe

3 - Subframe

4 - adjust the bonded rubber bushing to the marks (the marks need to align)

5 - Assembly Tool - Bushing - T10356/8- - the flattened sides need to fit into the cover of the bonded rubber bushing -arrows-

6 - Bearing Installer - Wheel Hub/Bearing Kit - Gripping Device - T10205/1-

7 - Hydraulic Press - VAS6178- with Bearing Installer - Wheel Hub/Bearing Kit Pressure Head - T10205/13-

8 - Hydraulic Press - Rear Subframe Bushing Tool Kit - Nut - T10263/5-

9 - Hydraulic Press - Rear Subframe Bushing Tool Kit - Threaded Rod - T10263/4-

- Check the position of the bonded rubber bushing and, if necessary, align and pre-tighten special tools with bonded rubber bushing.



Note

Make sure that the bonded rubber bushing is not bent when installing. Otherwise the outer ring could become damaged.

- Operate the pump to press in the bonded rubber bushing until the collar is positioned on the subframe »without play«.

Installation is performed in reverse order of removal, while noting the following:

Tightening Specifications

- ◆ Refer to
⇒ [“3.1.3 Overview - Subframe, Multi-Link Suspension, AWD”, page 193](#)
- ◆ Refer to
⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)
- ◆ Exhaust system. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .



4 Stabilizer Bar

⇒ [“4.1 Overview - Stabilizer Bar”, page 221](#)

⇒ [“4.2 Stabilizer Bar, Removing and Installing”, page 222](#)

⇒ [“4.3 Coupling Rod, Removing and Installing”, page 223](#)

4.1 Overview - Stabilizer Bar

⇒ [“4.1.1 Overview - Stabilizer Bar, Multi-Link Suspension, FWD”, page 221](#)

⇒ [“4.1.2 Overview - Stabilizer Bar, Multi-Link Suspension, AWD”, page 222](#)

4.1.1 Overview - Stabilizer Bar, Multi-Link Suspension, FWD

1 - Lower Transverse Link

2 - Nut

❑ 20 Nm +180°

❑ Replace after removing

3 - Coupling Rod

❑ Removing and installing. Refer to

⇒ [“4.3 Coupling Rod, Removing and Installing”, page 223](#) .

4 - Bolt

❑ 20 Nm +90°

❑ Replace after removing

❑ Install evenly

5 - Bolt

❑ Replace after removing

6 - Nut

❑ 55 Nm

❑ Counterhold at connecting link socket head when tightening

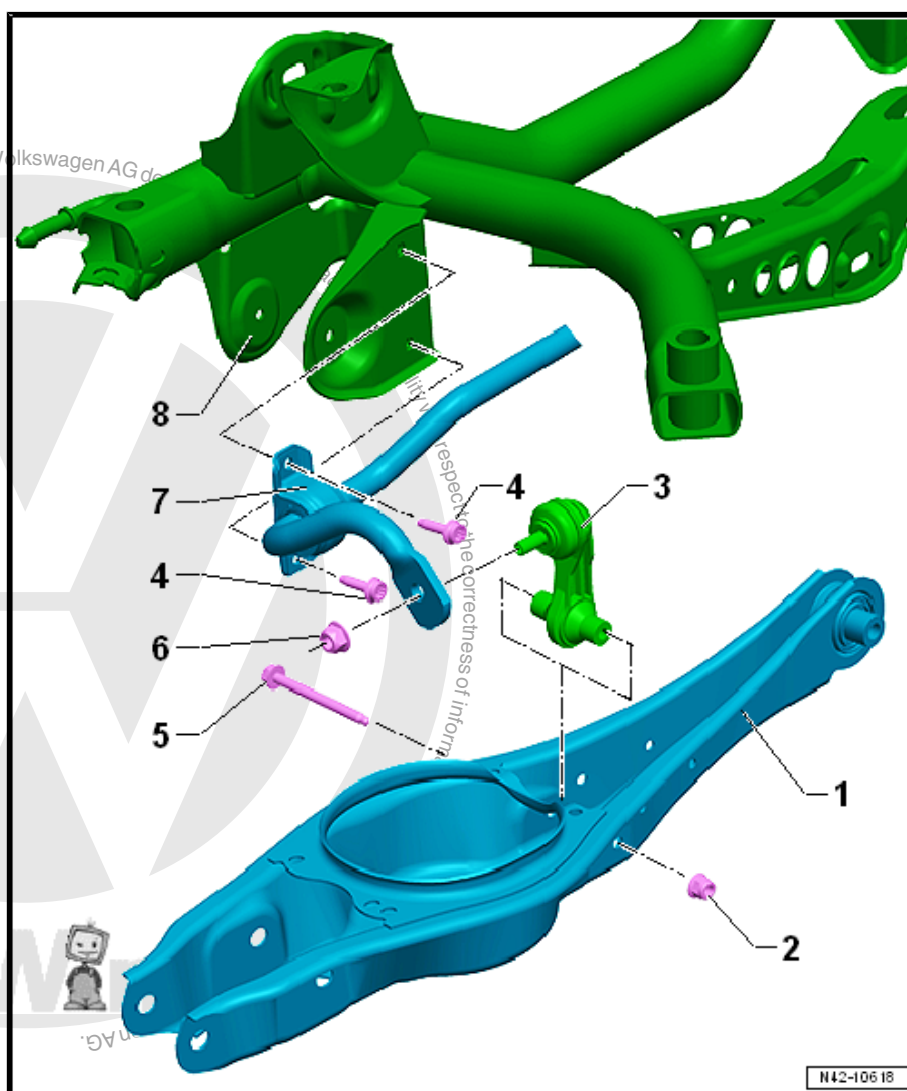
7 - Stabilizer Bar

❑ With rubber bushings

❑ Removing and installing. Refer to

⇒ [“4.2 Stabilizer Bar, Removing and Installing”, page 222](#) .

8 - Subframe





4.1.2 Overview - Stabilizer Bar, Multi-Link Suspension, AWD

1 - Lower Transverse Link

2 - Nut

- ❑ 20 Nm +180°
- ❑ Replace after removing

3 - Coupling Rod

- ❑ Removing and installing. Refer to
⇒ ["4.3 Coupling Rod, Removing and Installing", page 223](#) .

4 - Bolt

- ❑ 20 Nm +90°
- ❑ Replace after removing
- ❑ Install evenly

5 - Bolt

- ❑ Replace after removing

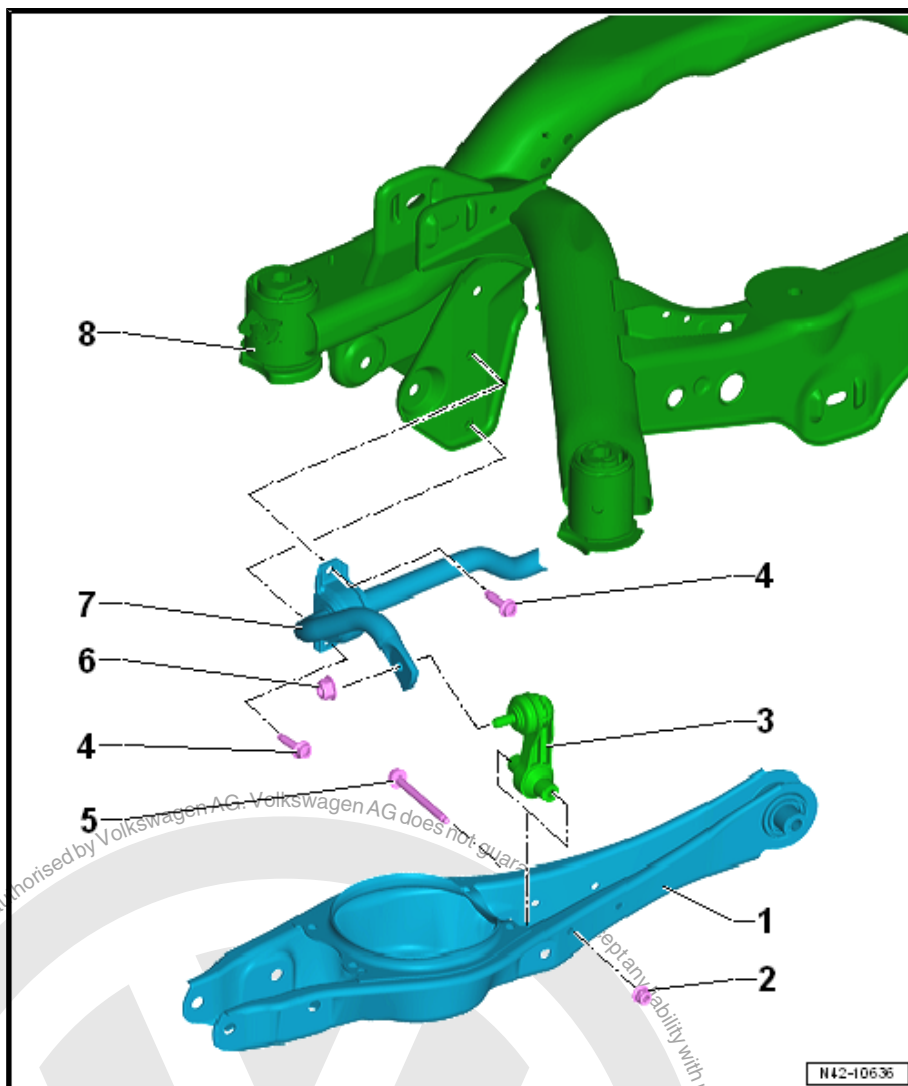
6 - Nut

- ❑ 55 Nm
- ❑ Counterhold at connecting link socket head when tightening

7 - Stabilizer Bar

- ❑ With rubber bushings
- ❑ Removing and installing. Refer to
⇒ ["4.2 Stabilizer Bar, Removing and Installing", page 222](#) .

8 - Subframe



4.2 Stabilizer Bar, Removing and Installing

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-

Removing

Only e-Golf

- De-energize the high-voltage system. Refer to ⇒ Rep. Gr. 93 ; High Voltage System, De-Energizing .

Continuation for All Vehicles

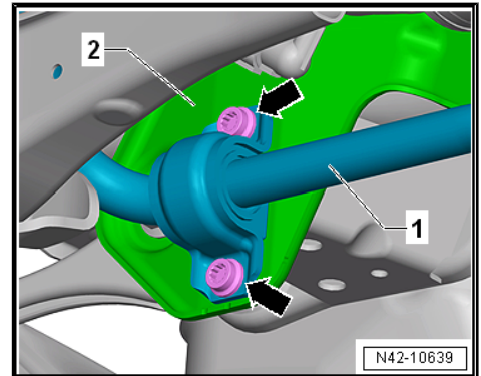
- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the rear wheels.



Note

The following work steps are described for the left side of the vehicle. These work steps also apply simultaneously for right side of vehicle.

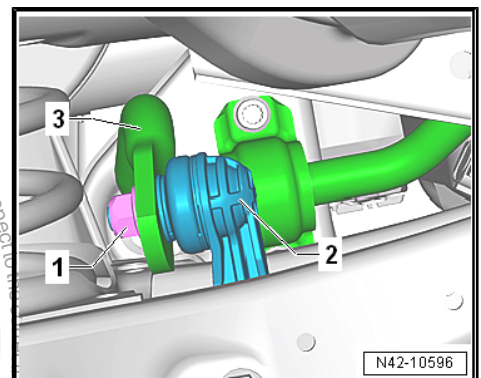
- Remove the bolts -arrows- for the stabilizer bar -1-



- Remove the nut -1- from the coupling rod -2-.
- Remove the coupling rod -2- from the stabilizer bar -3-.
- Remove the stabilizer bar -3- from the subframe.

Installing

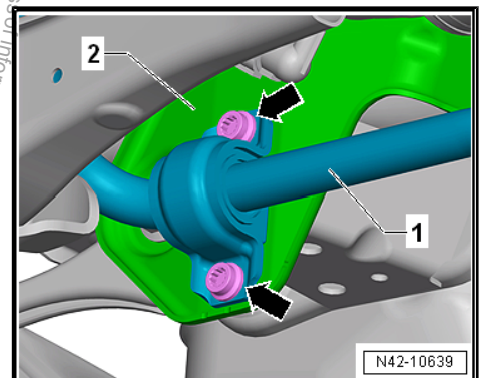
Install in reverse order of removal and note the following:



- Evenly tighten the bolts -arrows- for the stabilizer bar -1- to the subframe -2-.

Tightening Specifications

- ◆ Refer to ⇒ [“4.1 Overview - Stabilizer Bar”, page 221](#)
- ◆ Refer to ⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)



4.3 Coupling Rod, Removing and Installing

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-

Removing

Only E-Golf for Work Procedures on the Right Side of the Vehicle

- De-energize the high-voltage system. Refer to ⇒ Rep. Gr. 93 ; High Voltage System, De-Energizing .

Continuation for All Vehicles

- Loosen the wheel bolts.
- Raise the vehicle.

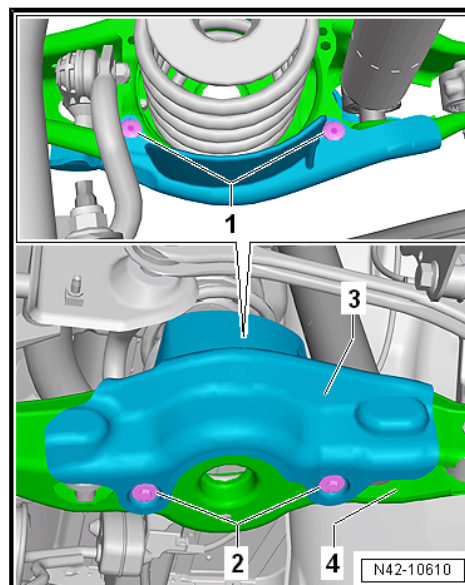


- Remove the wheels.
- Remove the spring. Refer to
⇒ [“6.4 Spring, Removing and Installing”, page 248](#) .

Vehicles with Stone Chip Protection

- Remove the expanding rivets -1-.
- Remove the bolts -2- for the stone chip protection -3-.

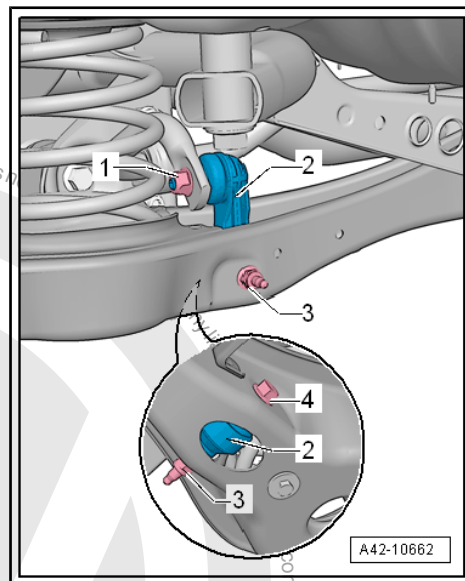
Continuation for All Vehicles



- Remove the nuts -1 and 3- and the bolt -4-.
- Remove the coupling rod -2- from the stabilizer bar and trailing arm.

Installing

Install in reverse order of removal and note the following:

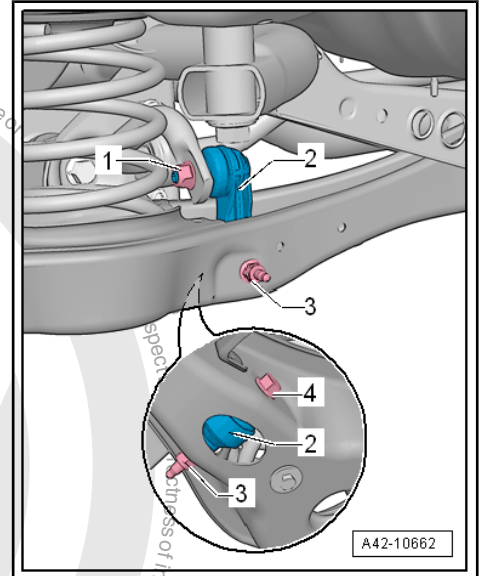




- Insert the coupling rod -2-, install the nuts -1 and 3- and tighten in curb weight position. Refer to
⇒ [“2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring”, page 6](#).
- When tightening the nut -1-, counterhold at the inner multi-point fitting of the bolt.

Tightening Specifications

- ◆ Refer to ⇒ [“4.1 Overview - Stabilizer Bar”, page 221](#)
- ◆ Refer to ⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)





5 Control Arm, Tie Rod

⇒ ["5.1 Overview - Transverse Link", page 226](#)

⇒ ["5.2 Overview - Tie Rod", page 230](#)

⇒ ["5.3 Upper Transverse Link, Removing and Installing", page 231](#)

⇒ ["5.4 Lower Transverse Link, Removing and Installing", page 233](#)

⇒ ["5.5 Tie Rod, Removing and Installing", page 235](#)

5.1 Overview - Transverse Link

⇒ ["5.1.1 Overview - Transverse Link, Multi-Link Suspension, FWD", page 226](#)

⇒ ["5.1.2 Overview - Transverse Link, Multi-Link Suspension, AWD", page 228](#)

5.1.1 Overview - Transverse Link, Multi-Link Suspension, FWD

1 - Nut

- ☐ Replace after removing

2 - Washer

3 - Upper Transverse Link

- ☐ Removing and installing. Refer to
⇒ ["5.3 Upper Transverse Link, Removing and Installing", page 231](#).

4 - Bolt

- ☐ 130 Nm +180°
- ☐ Replace after removing
- ☐ Always tighten the threaded connections in curb weight position. Refer to
⇒ ["2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring", page 6](#).

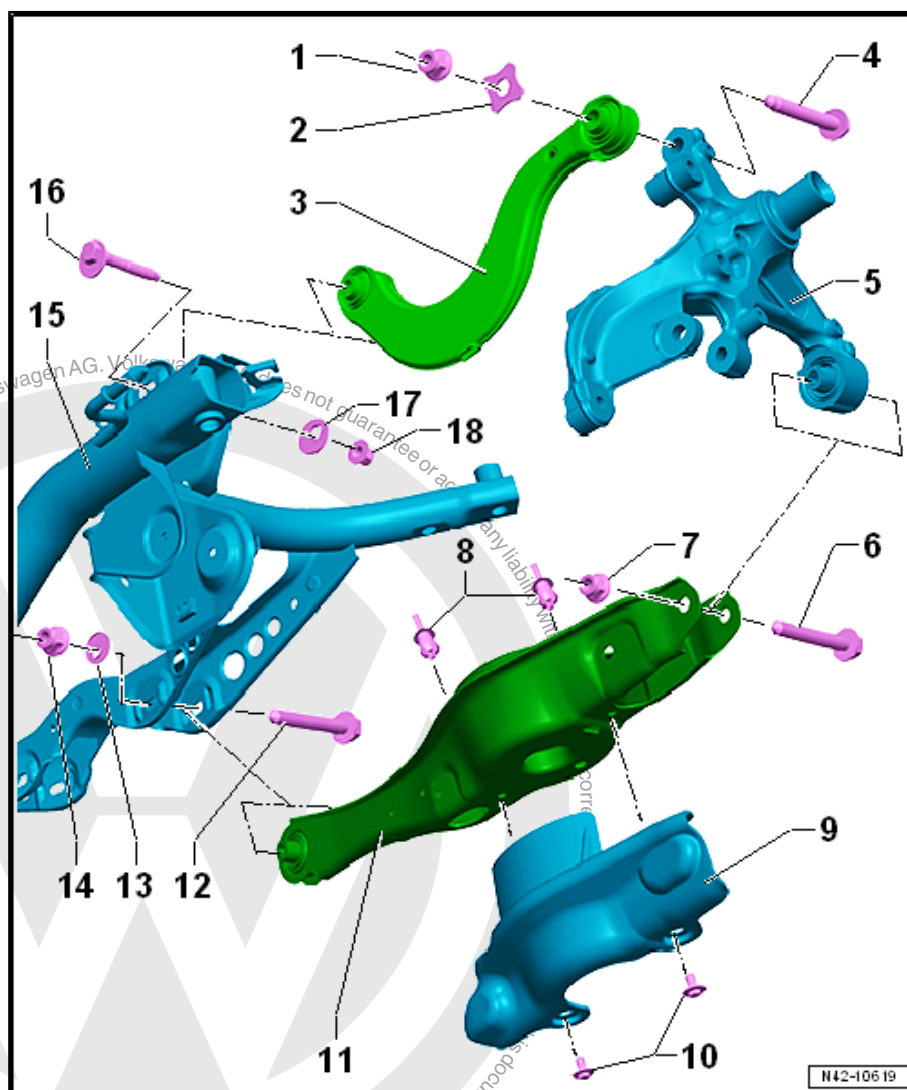
5 - Wheel Bearing Housing

6 - Bolt

- ☐ 70 Nm +180°
- ☐ Replace after removing
- ☐ Always tighten the threaded connections in curb weight position. Refer to
⇒ ["2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring", page 6](#).

7 - Nut

- ☐ Replace after removing



N42-10619



8 - Expanding Rivet

9 - Stone Chip Protection

10 - Bolt

- ☐ 8 Nm

11 - Lower Transverse Link

- ☐ Removing and installing. Refer to ⇒ [“5.4 Lower Transverse Link, Removing and Installing”, page 233](#) .

12 - Eccentric Bolt

- ☐ Perform a vehicle alignment after loosening. Refer to ⇒ [“3 Vehicle Alignment”, page 345](#) .
- ☐ Do not turn more than 90° right or left (that is smallest to largest possible adjustment)

13 - Eccentric Washer

- ☐ Inner bore with tab

14 - Nut

- ☐ 95 Nm
- ☐ Replace after removing
- ☐ Always tighten the threaded connections in curb weight position. Refer to ⇒ [“2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring”, page 6](#) .

15 - Subframe

16 - Eccentric Bolt

- ☐ Perform a vehicle alignment after loosening. Refer to ⇒ [“3 Vehicle Alignment”, page 345](#) .
- ☐ Do not turn more than 90° right or left (that is smallest to largest possible adjustment)

17 - Eccentric Washer

- ☐ Inner bore with tab

18 - Nut

- ☐ 95 Nm
- ☐ Replace after removing
- ☐ Always tighten the threaded connections in curb weight position. Refer to ⇒ [“2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring”, page 6](#) .



5.1.2 Overview - Transverse Link, Multi-Link Suspension, AWD

1 - Washer

2 - Nut

- ☐ Replace after removing

3 - Upper Transverse Link

- ☐ Removing and installing. Refer to
⇒ ["5.3 Upper Transverse Link, Removing and Installing"](#),
[page 231](#).

4 - Washer

5 - Bolt

- ☐ 130 Nm +180°
- ☐ Replace after removing
- ☐ Always tighten the threaded connections in curb weight position. Refer to
⇒ ["2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring"](#),
[page 6](#).

6 - Wheel Bearing Housing

7 - Nut

- ☐ Replace after removing

8 - Expanding Rivet

9 - Bolt

- ☐ 70 Nm +180°
- ☐ Replace after removing
- ☐ Always tighten the threaded connections in curb weight position. Refer to
⇒ ["2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring"](#), [page 6](#).

10 - Lower Transverse Link

- ☐ Removing and installing. Refer to ⇒ ["5.4 Lower Transverse Link, Removing and Installing"](#), [page 233](#).

11 - Stone Chip Protection

12 - Bolt

- ☐ 8 Nm

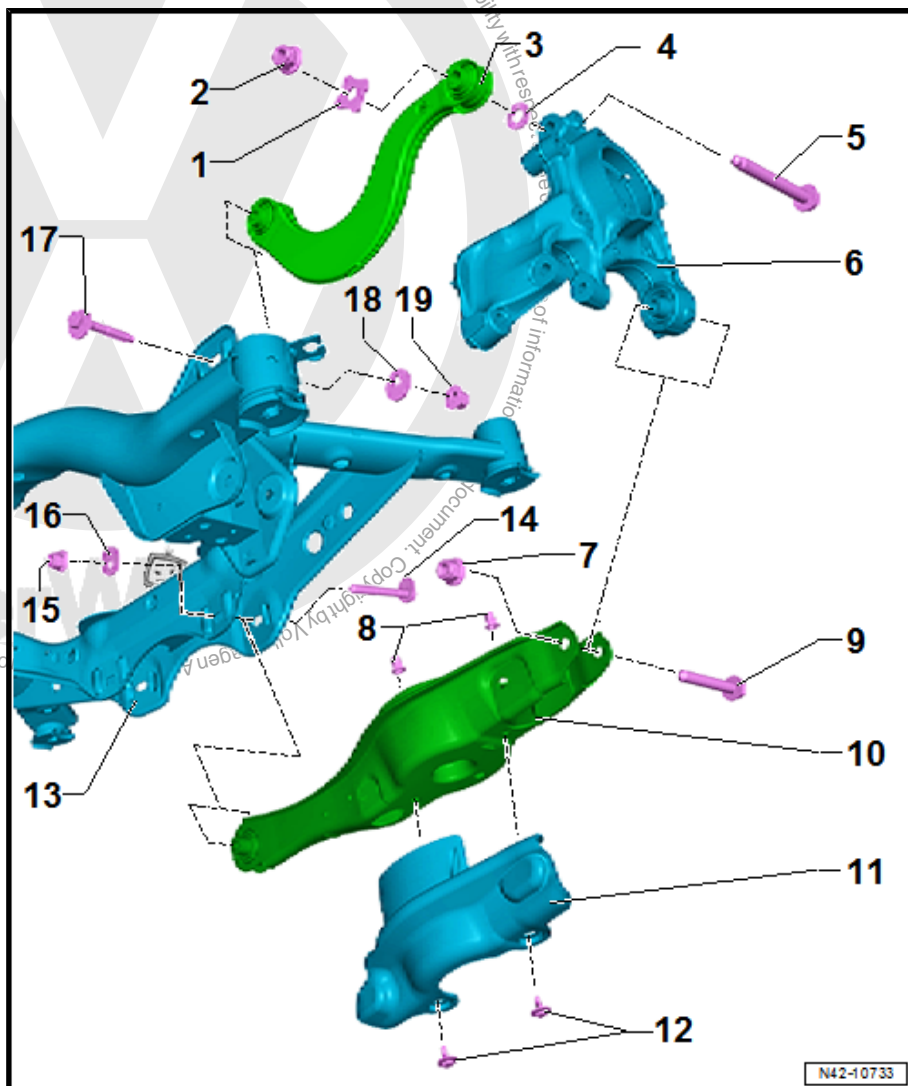
13 - Subframe

14 - Eccentric Bolt

- ☐ Perform a vehicle alignment after loosening. Refer to ⇒ ["3 Vehicle Alignment"](#), [page 345](#).
- ☐ Do not turn more than 90° right or left (that is smallest to largest possible adjustment)

15 - Nut

- ☐ 95 Nm
- ☐ Replace after removing
- ☐ Always tighten the threaded connections in curb weight position. Refer to
⇒ ["2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring"](#), [page 6](#).





16 - Eccentric Washer

- ☐ Inner bore with tab

17 - Eccentric Bolt

- ☐ Perform a vehicle alignment after loosening. Refer to ➔ [“3 Vehicle Alignment”, page 345](#) .
- ☐ Do not turn more than 90° right or left (that is smallest to largest possible adjustment)

18 - Eccentric Washer

- ☐ Inner bore with tab

19 - Nut

- ☐ 95 Nm
- ☐ Replace after removing
- ☐ Always tighten the threaded connections in curb weight position. Refer to
➔ [“2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring”, page 6](#) .





5.2 Overview - Tie Rod

⇒ ["5.2.1 Overview - Tie Rod, Multi-Link Suspension, FWD", page 230](#)

⇒ ["5.2.2 Overview - Tie Rod, Multi-Link Suspension, AWD", page 231](#)

5.2.1 Overview - Tie Rod, Multi-Link Suspension, FWD

1 - Subframe

2 - Bolt

- ☐ 70 Nm +180°
- ☐ Replace after removing

3 - Wheel Bearing Housing

4 - Tie Rod

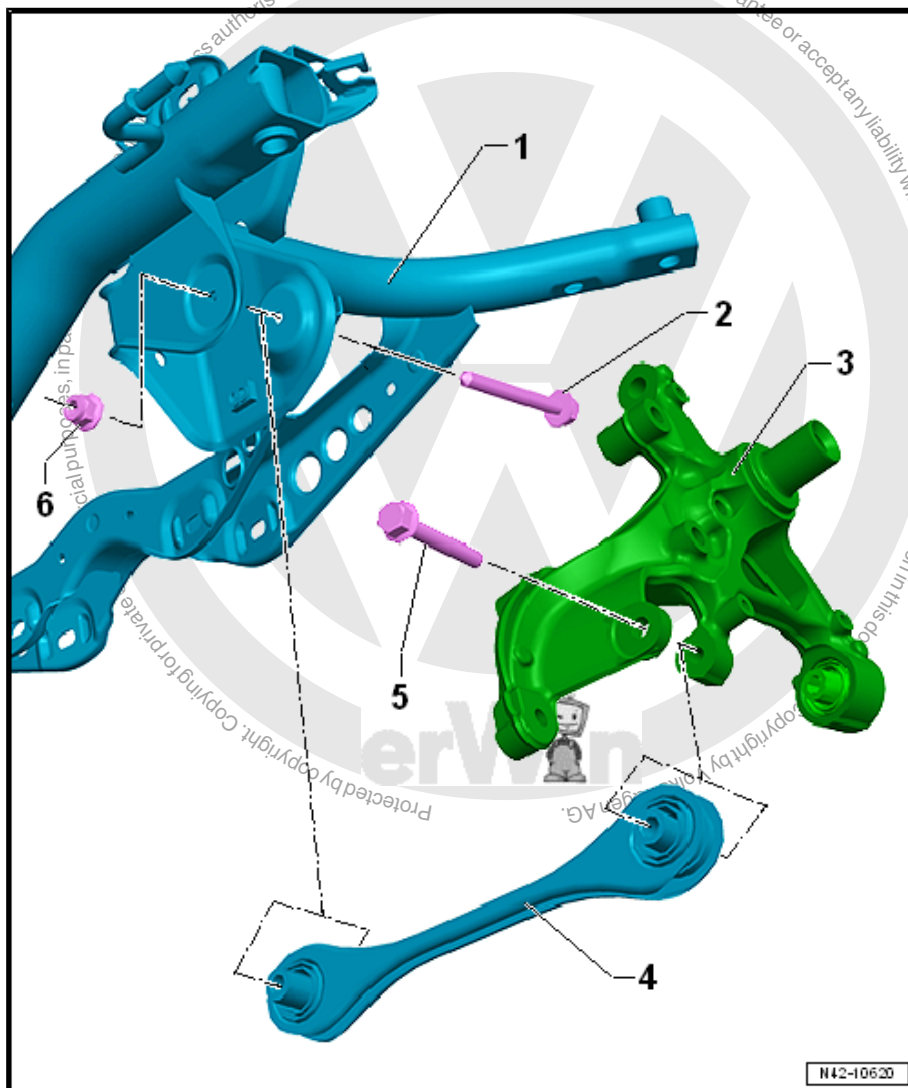
- ☐ Removing and installing. Refer to
⇒ ["5.5 Tie Rod, Removing and Installing", page 235](#).

5 - Bolt

- ☐ 70 Nm +180°
- ☐ Replace after removing
- ☐ Always tighten the threaded connections in curb weight position. Refer to
⇒ ["2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring", page 6](#).

6 - Nut

- ☐ Replace after removing





5.2.2 Overview - Tie Rod, Multi-Link Suspension, AWD

1 - Subframe

2 - Bolt

- ☐ 70 Nm +180°
- ☐ Replace after removing

3 - Wheel Bearing Housing

4 - Tie Rod

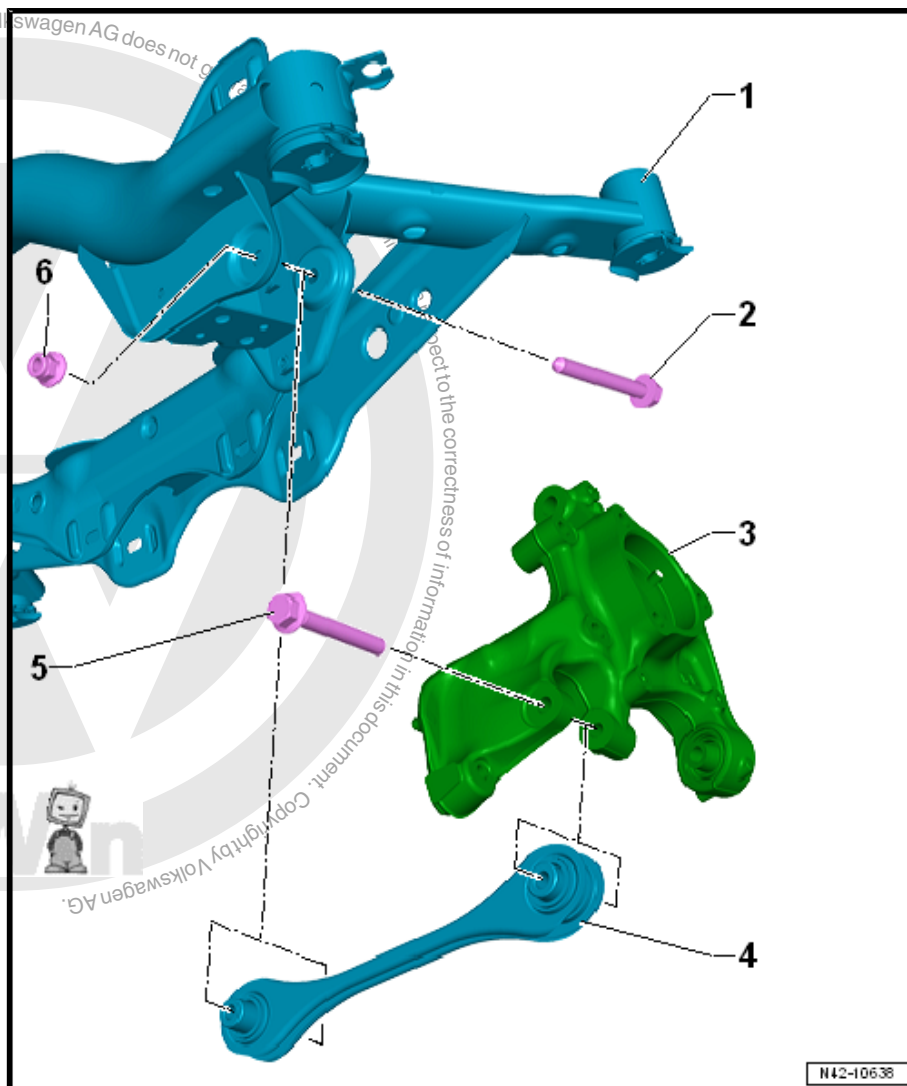
- ☐ Removing and installing. Refer to
⇒ ["5.5 Tie Rod, Removing and Installing", page 235](#).

5 - Bolt

- ☐ 70 Nm +180°
- ☐ Replace after removing
- ☐ Always tighten the threaded connections in curb weight position. Refer to
⇒ ["2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring", page 6](#).

6 - Nut

- ☐ 70 Nm +180°
- ☐ Replace after removing



5.3 Upper Transverse Link, Removing and Installing

⇒ ["5.3.1 Upper Transverse Link, Removing and Installing, FWD", page 231](#)

⇒ ["5.3.2 Upper Transverse Link, Removing and Installing, AWD", page 232](#)

5.3.1 Upper Transverse Link, Removing and Installing, FWD

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

Removing

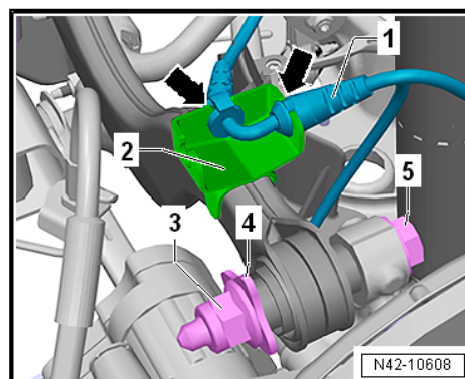
Only e-Golf for Work Procedures on the Right Side of the Vehicle

- De-energize the high-voltage system. Refer to ⇒ Rep. Gr. 93 ; High Voltage System, De-Energizing .



Continuation for All Vehicles

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Remove the spring. Refer to
⇒ ["6.4 Spring, Removing and Installing", page 248](#) .
- Disengage the line -1- from the bracket -2- -arrows-.
- Remove the nut -3- and the washer -4-.
- Remove the bolt -5-.
- Mark the position of eccentric bolt -3- to the subframe using, for example, a felt-tip marker.

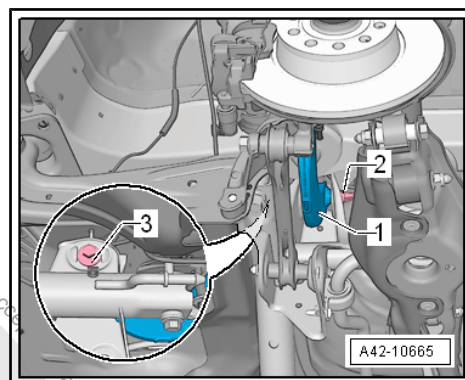


- Remove the nut -2- and the eccentric bolt -3-.
- Remove the upper control arm -1-.

Installing

Install in reverse order of removal and note the following:

- Only fasten the control arm in the curb weight position. Refer to
⇒ ["2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring", page 6](#) .
- Perform an axle alignment. Refer to
⇒ ["3.7 Need for Axle Alignment, Evaluating", page 357](#) .



Tightening Specifications

- ◆ Refer to ⇒ ["5.1 Overview - Transverse Link", page 226](#)
- ◆ Refer to
⇒ ["1.4 Wheel Bolt Tightening Specifications", page 340](#)

5.3.2 Upper Transverse Link, Removing and Installing, AWD

Special tools and workshop equipment required

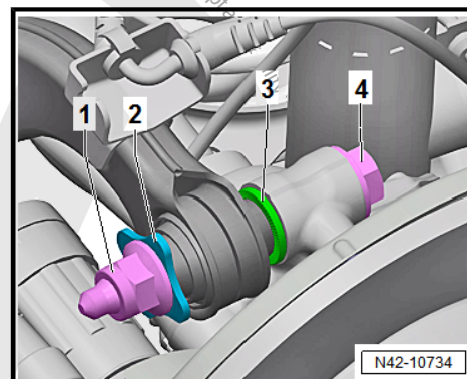
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

Removing

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Remove the spring. Refer to
⇒ ["6.4 Spring, Removing and Installing", page 248](#) .
- If equipped disengage the line from the bracket on the transverse link.



- Unscrew the nut -1- and remove the washer -2-.
- Remove the bolt -4-.
- Remove the washer -3-.

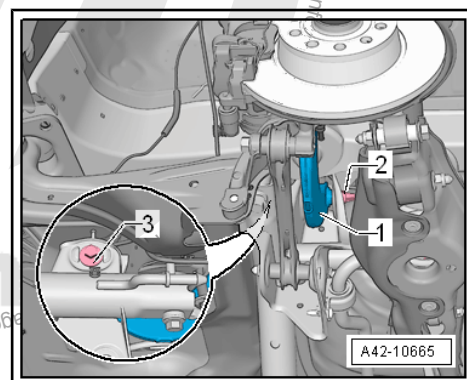


- Mark the position of eccentric screw -3- to the subframe using, for example, a felt-tip marker.
- Remove the nut -2- and the eccentric screw -3-.
- Remove the upper control arm -1-.

Installing

Install in reverse order of removal and note the following:

- Only fasten the control arm in the curb weight position. Refer to
⇒ [“2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring”, page 6](#) .
- Perform an axle alignment. Refer to
⇒ [“3.7 Need for Axle Alignment, Evaluating”, page 357](#) .



Tightening Specifications

- ◆ Refer to ⇒ [“5.1 Overview - Transverse Link”, page 226](#)
- ◆ Refer to
⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)

5.4 Lower Transverse Link, Removing and Installing

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

Removing

Only e-Golf for Work Procedures on the Right Side of the Vehicle

- De-energize the high-voltage system. Refer to ⇒ Rep. Gr. 93 ; High Voltage System, De-Energizing .

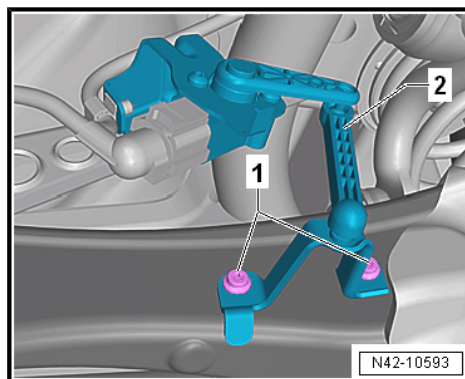
Continuation for All Vehicles

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.



Vehicles with Level Control System Sensor

- Remove the bolts -1-.
- Remove the Left Rear Level Control System Sensor - G76-2- bracket.

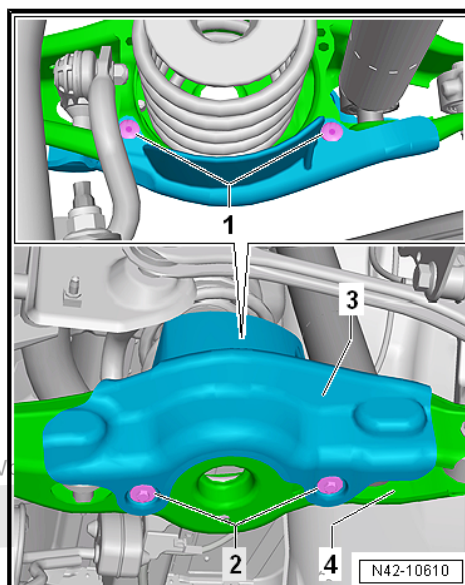


Vehicles with Stone Chip Protection

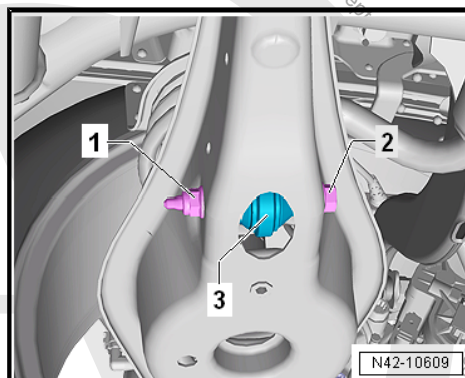
- Remove the expanding rivets -1-.
- Remove the bolts -2- for the stone chip protection -3-.

Continuation for All Vehicles

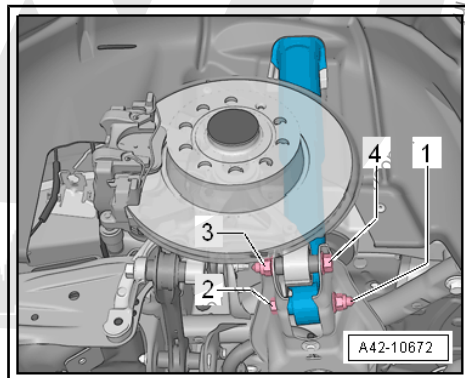
- Remove the spring. Refer to
⇒ [“6.4 Spring, Removing and Installing”, page 248](#) .



- Remove the nut -1- and then the bolt -2- for the coupling rod -3-.



- Remove the nut -1- and then the bolt -2- for the shock absorber threaded connection.
- Remove the nut -3- and then the bolt -4- for the wheel bearing housing threaded connection.
- Disengage the rear exhaust system and lower it. Refer to ⇒
Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .



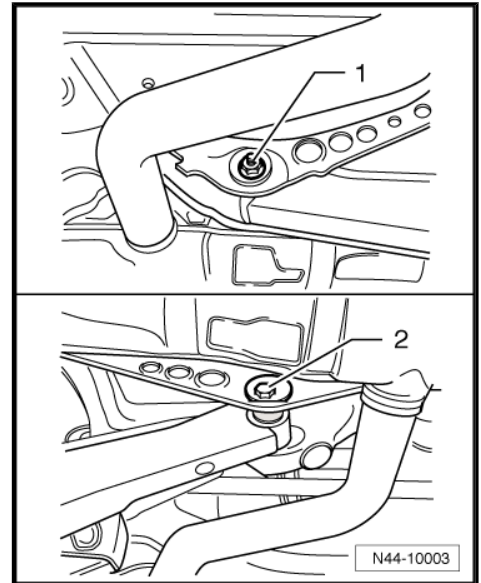


- Mark the position of the eccentric screw -2- in relation to the subframe, for example using a felt-tip pen.
- Unscrew the nut -1- and remove the bolt -2-.
- Remove lower transverse link.

Installing

Install in reverse order of removal and note the following:

- Observe the mark made for the eccentric screw -2- in relation to the subframe.
- Only fasten the transverse link in the curb weight position. Refer to
⇒ [“2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring”, page 6](#) .
- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .
- For vehicles with a level control system sensor, perform a headlamp basic setting. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Headlamp; Headlamp, Adjusting .
- Perform an axle alignment. Refer to
⇒ [“3.7 Need for Axle Alignment, Evaluating”, page 357](#) .



Tightening Specifications

- ◆ Refer to ⇒ [“5.1 Overview - Transverse Link”, page 226](#)
- ◆ Refer to
⇒ [“2.2.2 Overview - Rear Level Control System Sensor, Multi-Link Suspension, FWD”, page 329](#)
- ◆ Refer to
⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)
- ◆ Rear exhaust system. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/ Mufflers; Overview - Muffler .

5.5 Tie Rod, Removing and Installing

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

Removing

Only e-Golf for Work Procedures on the Right Side of the Vehicle

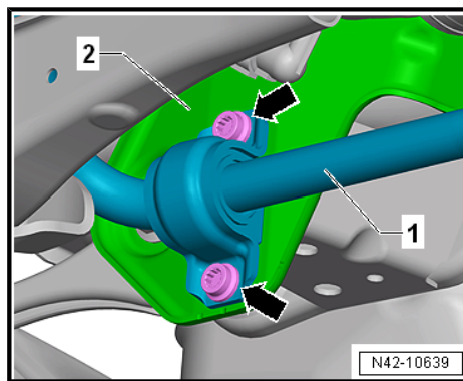
- De-energize the high-voltage system. Refer to ⇒ Rep. Gr. 93 ; High Voltage System, De-Energizing .

Continuation for All Vehicles

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.



- Remove the bolts -arrows- for the stabilizer bar -1-



- Loosen the nut -1- and the bolt -3- several turns.
- Remove the bolt -3-.
- Remove the nut -1- and remove the bolt -4- toward the rear while pressing the stabilizer bar upward.
- Remove the tie rod -2-.

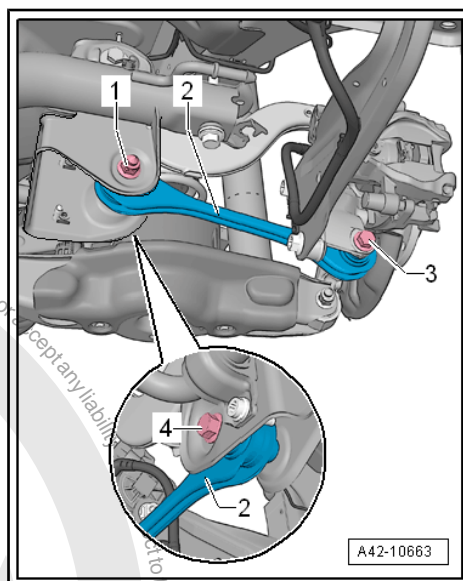
Installing

Install in reverse order of removal and note the following:

- The tie rod may only be fastened when the dimension measured before assembly between the center of the wheel hub and the wheel housing lower edge is achieved. Refer to [⇒ "2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring", page 6](#).
- Perform an axle alignment. Refer to [⇒ "3.7 Need for Axle Alignment, Evaluating", page 357](#).

Tightening Specifications

- ◆ Refer to [⇒ "5.2 Overview - Tie Rod", page 230](#)
- ◆ Refer to [⇒ "4.1 Overview - Stabilizer Bar", page 221](#)
- ◆ Refer to [⇒ "1.4 Wheel Bolt Tightening Specifications", page 340](#)





6 Suspension Strut/Shock Absorber, Spring

⇒ [“6.1 Overview - Suspension Strut, Shock Absorber and Spring”, page 237](#)

⇒ [“6.2 Shock Absorber, Removing and Installing”, page 239](#)

⇒ [“6.3 Shock Absorber, Servicing”, page 246](#)

⇒ [“6.4 Spring, Removing and Installing”, page 248](#)

6.1 Overview - Suspension Strut, Shock Absorber and Spring

⇒ [“6.1.1 Overview - Suspension Strut, Shock Absorber and Spring, Torsion Beam Axle”, page 237](#)

⇒ [“6.1.2 Overview - Suspension Strut, Shock Absorber and Spring, Multi-Link Suspension”, page 238](#)

6.1.1 Overview - Suspension Strut, Shock Absorber and Spring, Torsion Beam Axle

1 - Bolt

- ☐ 50 Nm +45°
- ☐ Replace after removing

2 - Shock Absorber

- ☐ Removing and installing. Refer to
⇒ [“6.2 Shock Absorber, Removing and Installing”, page 239](#).
- ☐ Always vent and drain faulty shock absorbers before disposal. Refer to
⇒ [“4.2 Rear Gas-Filled Shock Absorbers, Venting and Draining”, page 12](#)

3 - Upper Spring Support

- ☐ Place on body “tab”.

4 - Spring

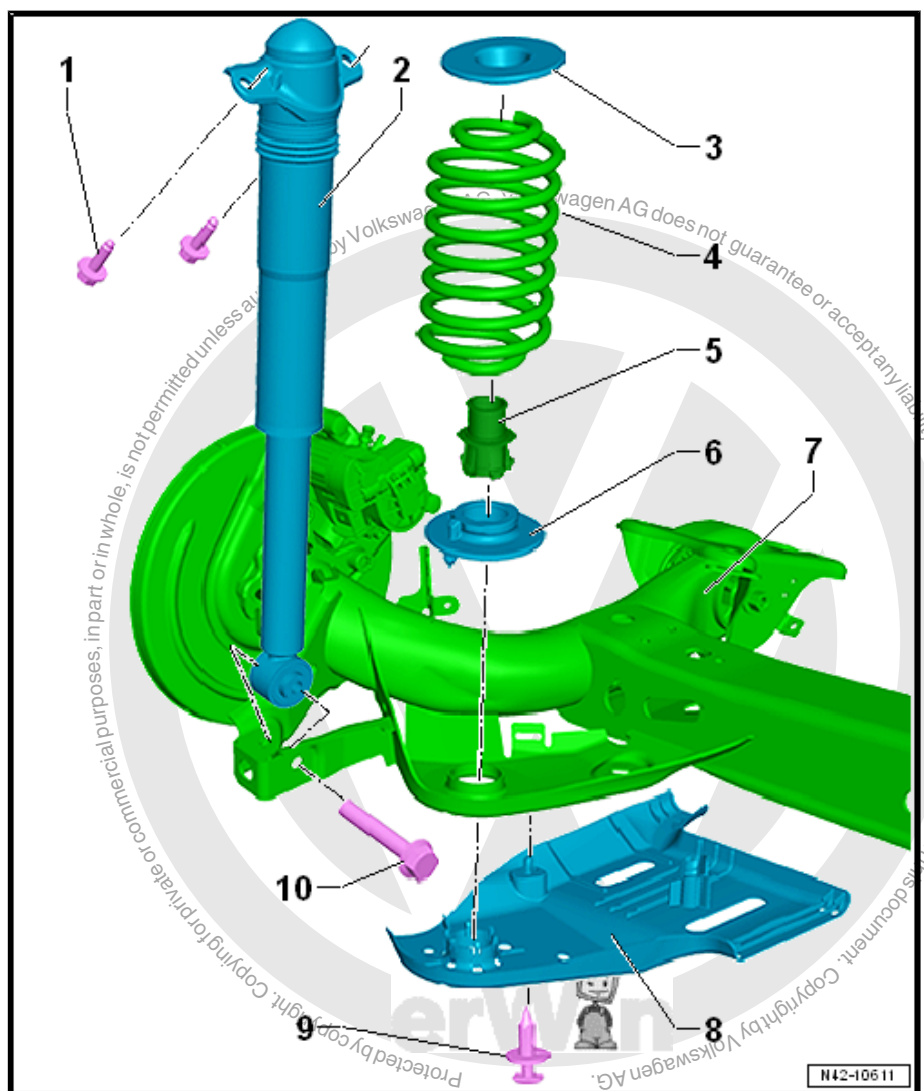
- ☐ Removing and installing. Refer to
⇒ [“6.4.1 Spring, Removing and Installing, Torsion Beam Axle”, page 248](#).

5 - Clamping Ring

- ☐ Press in the clamping ring until flush after installing the stone chip protection.

6 - Lower Spring Support

- ☐ Spring end rotated up to stop
- ☐ Insert the pin into the hole in the spring mount on the axle beam when installing.





7 - Axle Beam

8 - Stone Chip Protection

9 - Expanding Rivet

10 - Bolt

- ☐ 70 Nm +180°
- ☐ Replace after removing
- ☐ Always tighten threaded connection in curb weight position. Refer to
⇒ [“2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring”, page 6](#) .

6.1.2 Overview - Suspension Strut, Shock Absorber and Spring, Multi-Link Suspension

1 - Bolt

- ☐ Replace after removing
- ☐ 50 Nm +45°

2 - Shock Absorber

- ☐ Removing and installing. Refer to
⇒ [“6.2 Shock Absorber, Removing and Installing”, page 239](#) .
- ☐ Observe the installation position of the cable tie closure
- ☐ Always vent and drain faulty shock absorbers before disposal. Refer to
⇒ [“4.2 Rear Gas-Filled Shock Absorbers, Venting and Draining”, page 12](#)

3 - Upper Spring Support

- ☐ Place on body “tab”.

4 - Spring

- ☐ Removing and installing. Refer to
⇒ [“6.4 Spring, Removing and Installing”, page 248](#) .

5 - Clip

- ☐ Serves as an assembly aid

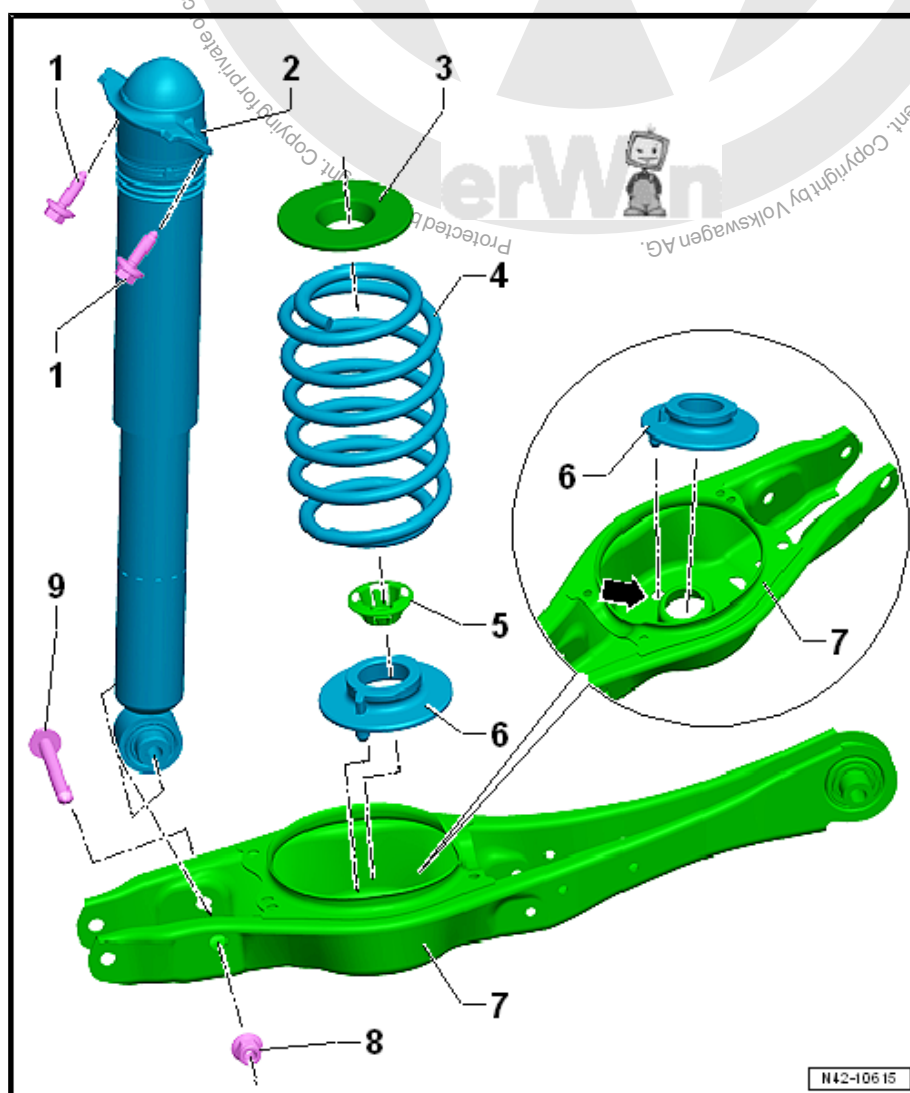
6 - Lower Spring Support

- ☐ Spring end rotated up to stop
- ☐ When assembling, insert the pin into the spring mount opening on the lower transverse link -arrow-.

7 - Lower Transverse Link

8 - Nut

- ☐ 70 Nm +180°
- ☐ Replace after removing





- ❑ Always tighten threaded connection in curb weight position. Refer to
⇒ ["2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring", page 6](#) .

9 - Bolt

- ❑ Replace after removing

6.2 Shock Absorber, Removing and Installing

⇒ ["6.2.1 Shock Absorber, Removing and Installing, Torsion Beam Axle", page 239](#)

⇒ ["6.2.2 Shock Absorber, Removing and Installing, Multi-Link Suspension, Left Shock Absorber", page 241](#)

⇒ ["6.2.3 Shock Absorber, Removing and Installing, Multi-Link Suspension, Right Shock Absorber", page 243](#)

6.2.1 Shock Absorber, Removing and Installing, Torsion Beam Axle

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Torque Wrench 1410 - VAG1410-
- ◆ Spring Compressor Kit - Spring Tensioner - VAG1752/1-
- ◆ Spring Compressor Kit - Spring Retainer with Inserts - VAG1752/3A-

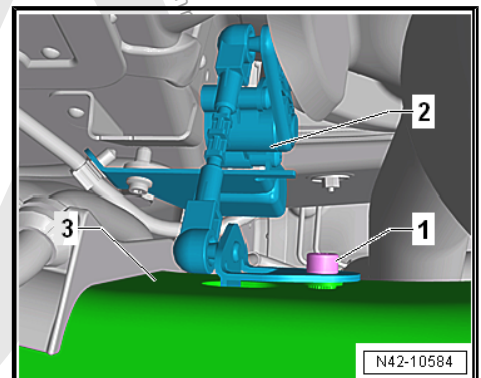
Removing

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Remove the rear wheel housing liner. Refer to ⇒ Body Exterior; Rep. Gr. 66; Wheel Housing Liner; Rear Wheel Housing Liner, Removing and Installing .

Vehicles with Level Control System Sensor

- Remove the bolt -1-.
- Remove the lever of the Left Rear Level Control System Sensor - G76- -2- from the axle beam -3-

Vehicles with Adaptive Chassis DCC





- Disconnect the connector -1- from the shock absorber -2-.
- Remove the wire -3- from the shock absorber -2- -arrow-.



Note

If there is moisture in the connector area, blow compressed air on the contacts on the shock absorber and the connectors.

Continuation for All Vehicles

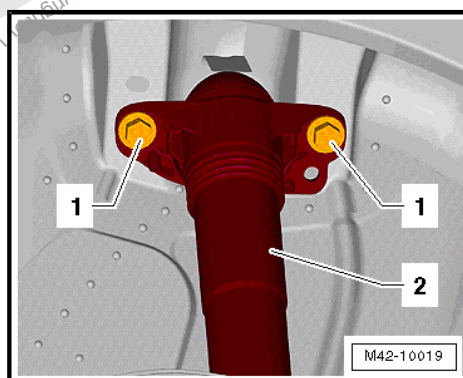
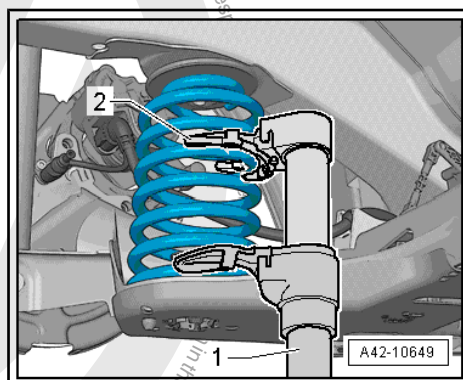
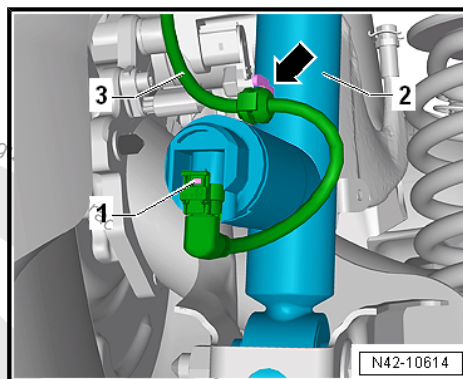
- Insert the Spring Compressor Kit - Spring Tensioner - VAG1752/1- -1-.
- 1 - Spring Compressor Kit - Spring Tensioner - VAG1752/1-
- 2 - Spring Compressor Kit - Spring Retainer with Inserts - VAG1752/3A-



WARNING

Make sure the coil spring is seated correctly in the Spring Compressor Kit - Spring Retainer with Inserts - VAG1752/3A-2- (danger of accident).

- Tension the coil spring until the shock absorber is not under tension.
- Remove the bolts -1- for the shock absorber -2-.





- Remove the bolt -1-.
- Remove the shock absorber.

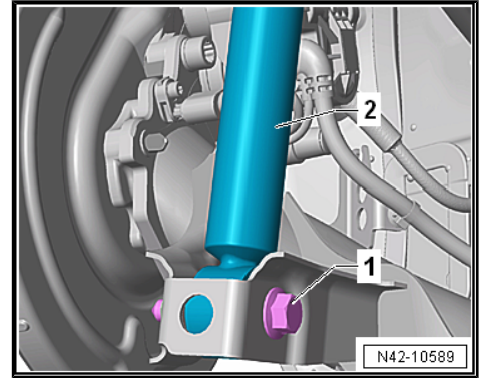
Installing

Install in reverse order of removal and note the following:

- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .

Tightening Specifications

- ◆ Refer to
⇒ ["6.1.1 Overview - Suspension Strut, Shock Absorber and Spring, Torsion Beam Axle", page 237](#)
- ◆ Refer to
⇒ ["1.4 Wheel Bolt Tightening Specifications", page 340](#)
- ◆ Wheel housing liner. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Wheel Housing Liner; Rear Wheel Housing Liner, Removing and Installing .



6.2.2 Shock Absorber, Removing and Installing, Multi-Link Suspension, Left Shock Absorber

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Torque Wrench 1410 - VAG1410-
- ◆ Spring Compressor Kit - Spring Tensioner - VAG1752/1-
- ◆ Spring Compressor Kit - Spring Retainer with Inserts - VAG1752/3A-
- ◆ Spring Compressor Kit - Adapter Blocks - VAG1752/9- , not illustrated

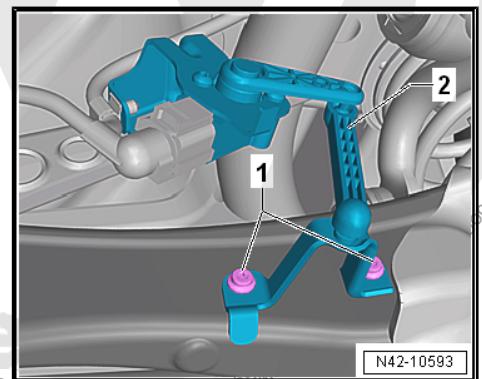
Removing

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Remove the rear wheel housing liner. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Wheel Housing Liner; Rear Wheel Housing Liner, Removing and Installing .

Vehicles with Level Control System Sensor

- Remove the bolts -1-.
- Remove the Left Rear Level Control System Sensor - G76-2- bracket.

Vehicles with Adaptive Chassis DCC





- Disconnect the connector -1- from the shock absorber -2-.
- Remove the wire -3- from the shock absorber -2- -arrow-.



Note

If there is moisture in the connector area, blow compressed air on the contacts on the shock absorber and the connectors.

Continuation for All Vehicles

- Insert the Spring Compressor Kit - Spring Tensioner - VAG1752/1- -3-.
- 1 - Spring Compressor Kit - Spring Retainer with Inserts - VAG1752/3A-
- 2 - Spring Compressor Kit - Adapter Blocks - VAG1752/9-
- 3 - Spring Compressor Kit - Spring Tensioner - VAG1752/1-

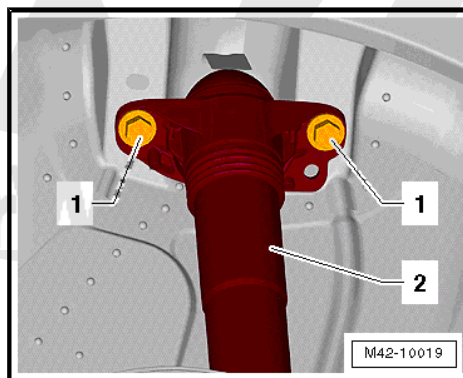
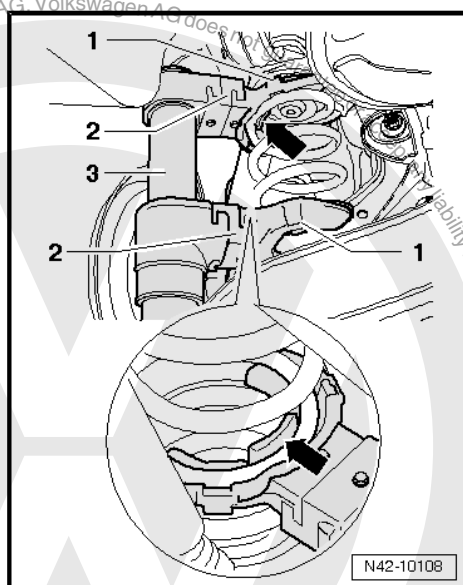
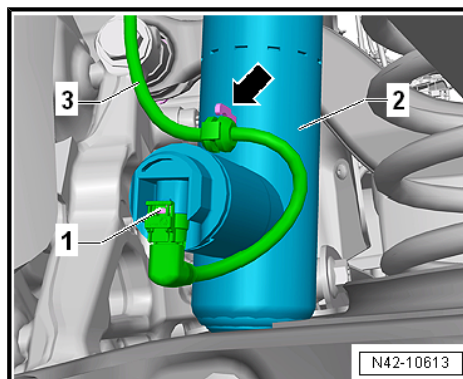


WARNING

Make sure the coil spring is seated correctly in the Spring Compressor Kit - Spring Retainer with Inserts - VAG1752/3A- -2- (danger of accident).

- Tension the coil spring until the shock absorber is not under tension.
- Remove the bolts -1- for the shock absorber -2-.

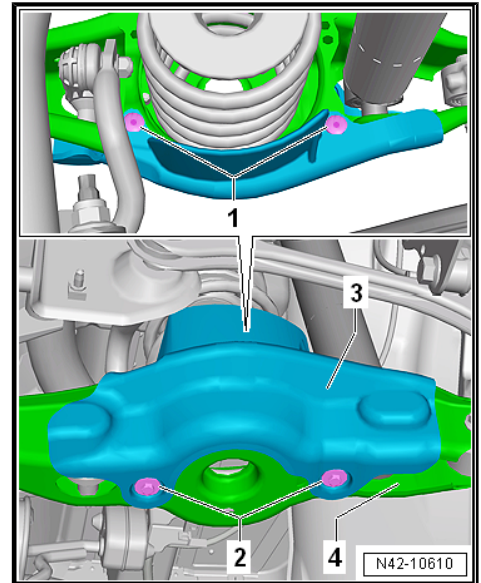
Vehicles with Stone Chip Protection





- Remove the expanding rivets -1-.
- Remove the bolts -2- for the stone chip protection -3-.
- Remove the stone chip protection -3- from the lower transverse link -4-.

Continuation for All Vehicles

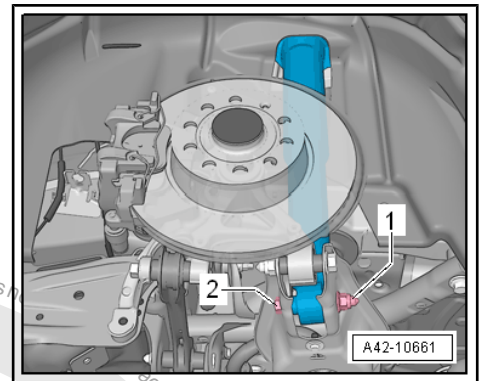


- Remove the nut -1- and the bolt -2-.
- Remove the shock absorber.

Installing

Install in reverse order of removal and note the following:

- Only fasten the shock absorber with the lower transverse link in the curb weight position. Refer to [⇒ "2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring", page 6](#).
- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester.



Tightening Specifications

- ◆ Refer to [⇒ "6.1.2 Overview, Suspension Strut, Shock Absorber and Spring, Multi-Link Suspension", page 238](#)
- ◆ Refer to [⇒ "5.1 Overview - Transverse Link", page 226](#)
- ◆ Refer to [⇒ "1.4 Wheel Bolt Tightening Specifications", page 340](#)
- ◆ Wheel housing liner. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Wheel Housing Liner; Rear Wheel Housing Liner, Removing and Installing

6.2.3 Shock Absorber, Removing and Installing, Multi-Link Suspension, Right Shock Absorber

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Torque Wrench 1410 - VAG1410-
- ◆ Spring Compressor Kit - Spring Tensioner - VAG1752/1-
- ◆ Spring Compressor Kit - Spring Retainer with Inserts - VAG1752/3A-
- ◆ Spring Compressor Kit - Adapter Blocks - VAG1752/9- , not illustrated



Removing

Only e-Golf

- De-energize the high-voltage system. Refer to ⇒ Rep. Gr. 93 ; High Voltage System, De-Energizing .

Continuation for All Vehicles

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Remove the rear wheel housing liner. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Wheel Housing Liner; Rear Wheel Housing Liner, Removing and Installing .

Vehicles with Level Control System Sensor

- Remove the bolts -1-.
- Remove the Left Rear Level Control System Sensor - G76-2- bracket.

Vehicles with Adaptive Chassis DCC

- Disconnect the connector -1- from the shock absorber -2-.
- Remove the wire -3- from the shock absorber -2- -arrow-.

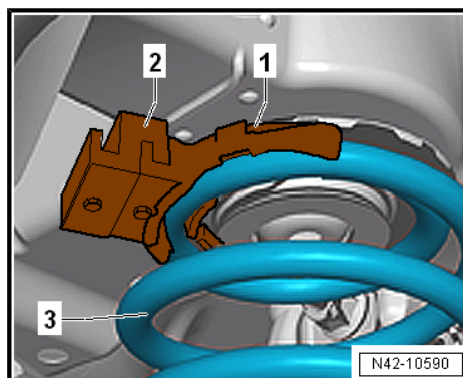
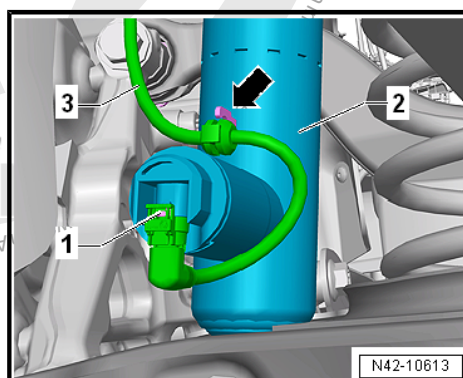
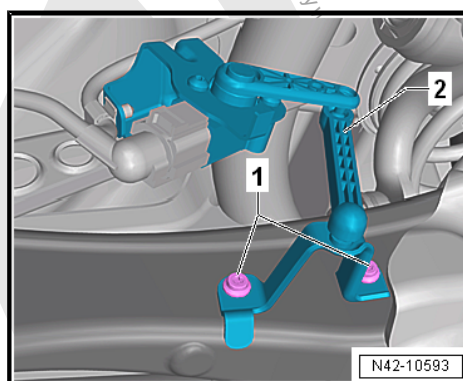


Note

If there is moisture in the connector area, blow compressed air on the contacts on the shock absorber and the connectors.

Continuation for All Vehicles

- Position the Spring Retainer with Inserts - VAG1752/3A- -1- with the Spring Compressor Kit - Adapter Blocks - VAG1752/9-2- on the uppermost spring coil -3-.





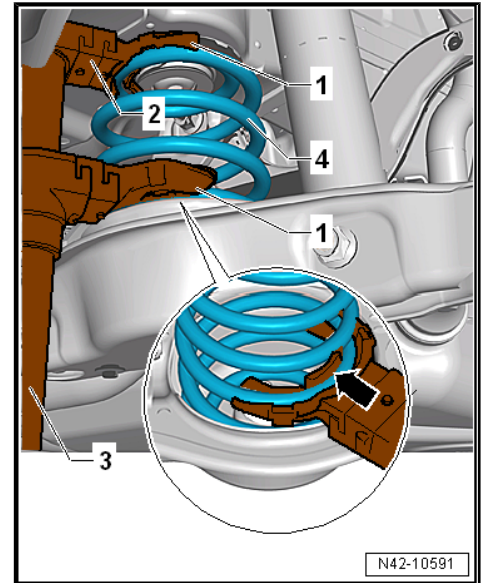
- Position the Spring Compressor Kit - VAG1752- -3- on the Spring Compressor Kit - Adapter Blocks - VAG1752/9- -2-.
- Insert the lower Spring Retainer with Inserts - VAG1752/3A- into the spring -4- at the same time.
- Fasten the Spring Compressor - VAG1752- -3- to the Spring Compressor Kit - Adapter Blocks - VAG1752/9- -2-.

- 1 - Spring Compressor Kit - Spring Retainer with Inserts - VAG1752/3A-
- 2 - Spring Compressor Kit - Adapter Blocks - VAG1752/9-
- 3 - Spring Compressor Kit - Spring Tensioner - VAG1752/1-
- 4 - Spring



WARNING

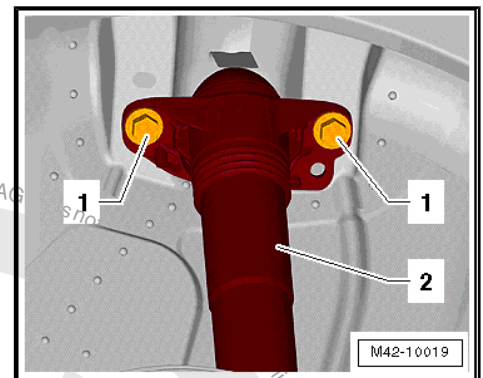
Make sure the coil spring is seated correctly in the Spring Compressor Kit - Spring Retainer with Inserts - VAG1752/3A- -arrow- (danger of accident).



- Tension the coil spring until the shock absorber is not under tension.

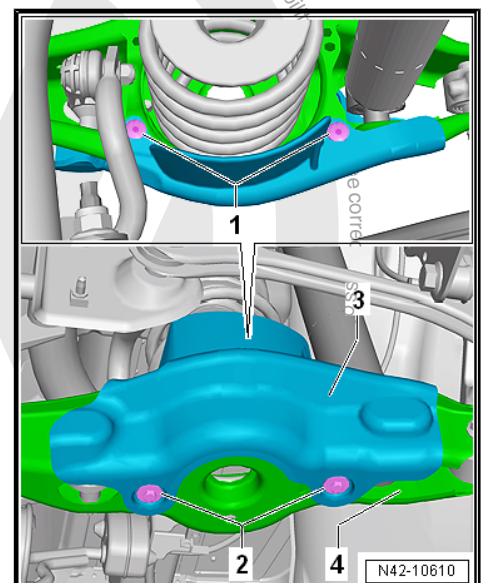
- Remove the bolts -1- for the shock absorber -2-.

Vehicles with Stone Chip Protection



- Remove the expanding rivets -1-.
- Remove the bolts -2- for the stone chip protection -3-.
- Remove the stone chip protection -3- from the lower transverse link -4-.

Continuation for All Vehicles



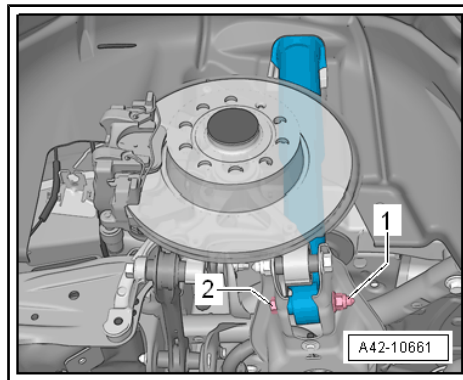


- Remove the nut -1- and the bolt -2-.
- Remove the shock absorber.

Installing

Install in reverse order of removal and note the following:

- Only fasten the shock absorber with the lower transverse link in the curb weight position. Refer to [⇒ "2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring", page 6](#).
- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester.



Tightening Specifications

- ◆ Refer to [⇒ "6.1.2 Overview - Suspension Strut, Shock Absorber and Spring, Multi-Link Suspension", page 238](#)
- ◆ Refer to [⇒ "5.1 Overview - Transverse Link", page 226](#)
- ◆ Refer to [⇒ "1.4 Wheel Bolt Tightening Specifications", page 340](#)
- ◆ Wheel housing liner. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Wheel Housing Liner; Rear Wheel Housing Liner, Removing and Installing

6.3 Shock Absorber, Servicing



1 - Shock Absorber

- ☐ Removing and installing. Refer to
⇒ ["6.2 Shock Absorber, Removing and Installing", page 239](#) .
- ☐ Always vent and drain faulty shock absorbers before disposal. Refer to
⇒ ["4 Disposal", page 11](#)
- ☐ Shock Absorber, Checking. Refer to
⇒ ["2.3 Shock Absorbers, Checking when Removed", page 3](#) .

2 - Protective Pipe

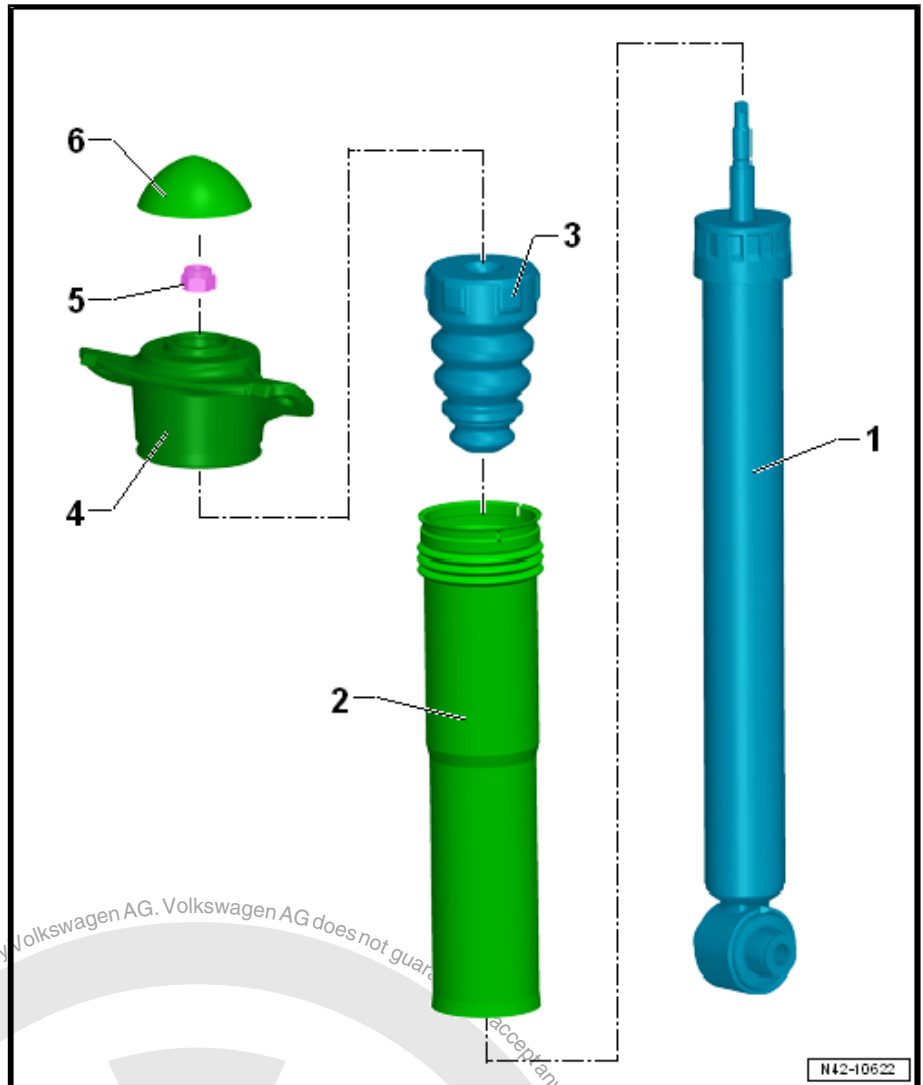
3 - Stop Buffer

4 - Shock Absorber Mount

5 - Nut

- ☐ 25 Nm
- ☐ Replace after removing
- ☐ Loosening and tightening. Refer to
⇒ [Fig. "Shock Absorber Mount Threaded Connection, Loosening and Tightening", page 247](#)

6 - Cover



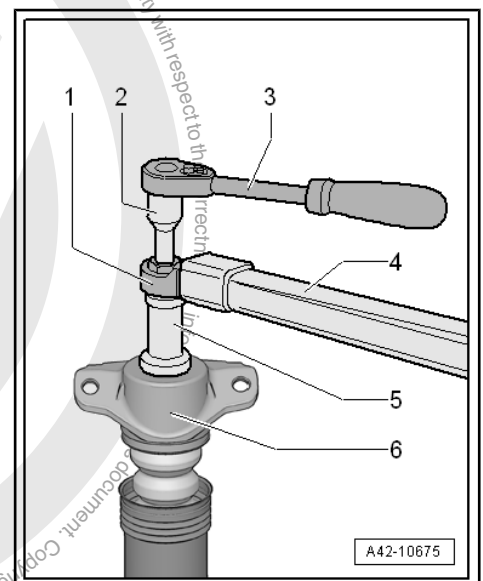
Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Shock Absorber Set - T10001-
- ◆ Commercially available ring spanner insert, such as »Hazet 6630c-21«

Shock Absorber Mount Threaded Connection, Loosening and Tightening

- 1 - Commercially available ring spanner insert, such as »Hazet 6630c-21«
- 2 - Shock Absorber Set - Extension with Counter Holder 1 - T10001/9-
- 3 - Ratchet (Commercially Available)
- 4 - Torque Wrench 1331 5-50Nm - VAG1331-
- 5 - Shock Absorber Set - Socket - T10001/1-
- 6 - Shock absorber mount

Install in reverse order of removal and note the following:





- Slide the protective pipe -1- onto the shock absorber mount -2-.
- Install and tighten the cable tie -3-.

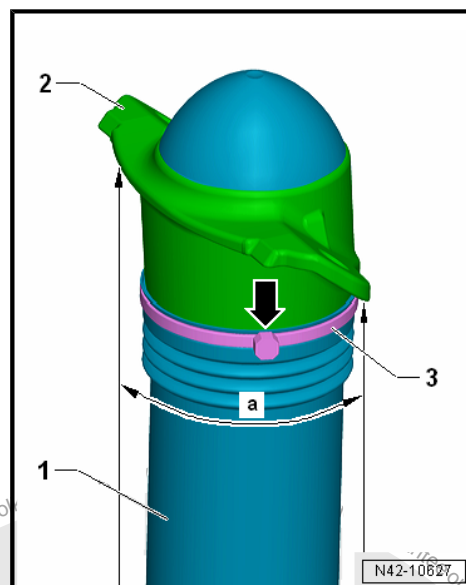


Note

The closure -arrow- of the cable tie -3- must be in area -a-.

Tightening Specifications

- ◆ Refer to ➔ [“6.3 Shock Absorber, Servicing”, page 246](#)



6.4 Spring, Removing and Installing

➔ [“6.4.1 Spring, Removing and Installing, Torsion Beam Axle”, page 248](#)

➔ [“6.4.2 Spring, Removing and Installing, Multi-Link Suspension, Left Spring FWD, Left and Right Spring AWD”, page 250](#)

➔ [“6.4.3 Spring, Removing and Installing, Multi-Link Suspension, Right Spring, FWD”, page 252](#)

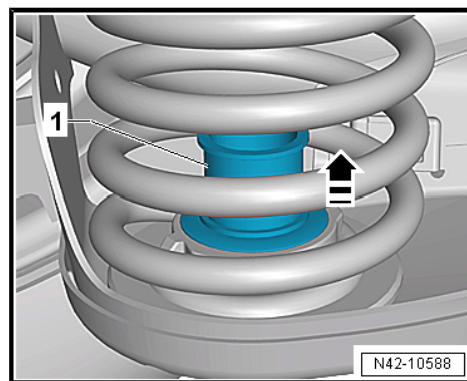
6.4.1 Spring, Removing and Installing, Torsion Beam Axle

Special tools and workshop equipment required

- ◆ Spring Compressor Kit - Spring Tensioner - VAG1752/1-
- ◆ Spring Compressor Kit - Spring Retainer with Inserts - VAG1752/3A-
- ◆ Spring Compressor Kit - Adapter Blocks - VAG1752/9- , not illustrated

Removing

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Remove the clip -1- in the direction of -arrow- until stop.



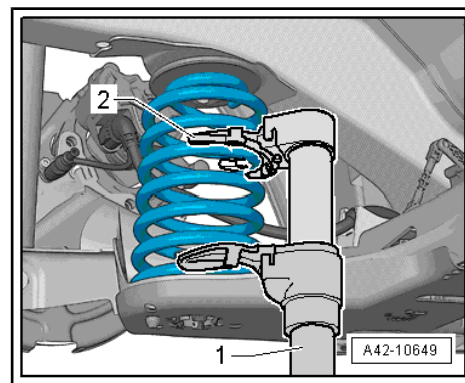


- Insert the Spring Compressor Kit - Spring Tensioner - VAG1752/1- -1-.
- 1 - Spring Compressor Kit - Spring Tensioner - VAG1752/1-
- 2 - Spring Compressor Kit - Spring Retainer with Inserts - VAG1752/3A-



WARNING

Make sure the coil spring is seated correctly in the Spring Compressor Kit - Spring Retainer with Inserts - VAG1752/3A-2- (danger of accident).



- Tension the coil spring and remove it.



Note

Use a wrench or a reversible ratchet to tighten the spring compressor.

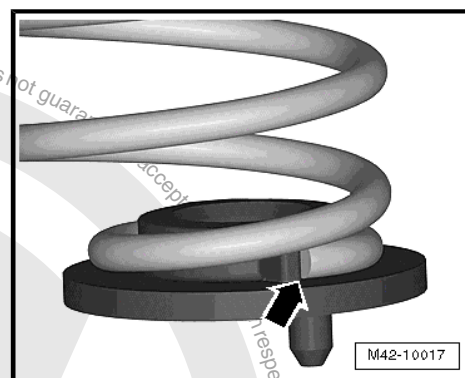
Installing

Install in reverse order of removal and note the following:

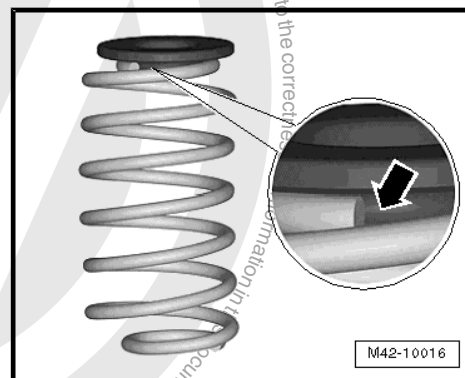
- Make sure the washer is not damaged.
- Replace the washer if necessary.
- Install the washer on the coil spring.

The spring start -arrow- must touch the stop of lower spring support.

- Install the spring and the spring support.
- Spring seat has a pin on bottom.
- Insert this pin into the torsion beam axle opening.
- Insert the top of the spring support into the upper spring end.



- The bead on the spring support -arrow- must fit into the coil spring correctly.
- Release the tension on the spring, guiding upper spring support onto tab of body.
- Remove the Spring Compressor Kit - Spring Tensioner - VAG1752/1- .

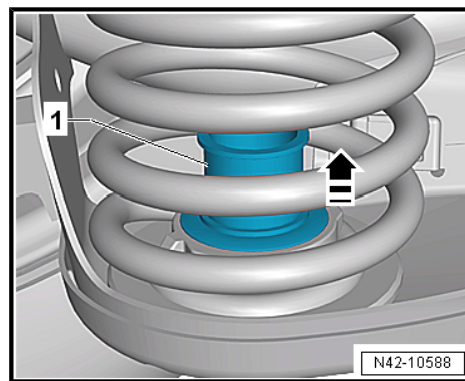




- Press in the clip -1- in the reverse direction of -arrow- until stop.

Tightening Specifications

- ◆ Refer to
⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)



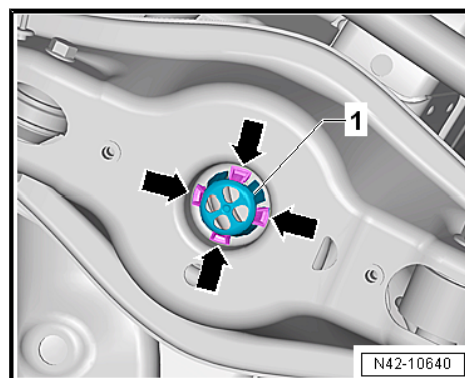
6.4.2 Spring, Removing and Installing, Multi-Link Suspension, Left Spring FWD, Left and Right Spring AWD

Special tools and workshop equipment required

- ◆ Spring Compressor Kit - Spring Tensioner - VAG1752/1-
- ◆ Spring Compressor Kit - Spring Retainer with Inserts - VAG1752/3A-
- ◆ Spring Compressor Kit - Adapter Blocks - VAG1752/9- , not illustrated

Removing

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Press the tabs -arrows- on the assembly aid -1- inward.
- Remove the assembly aid -1- upward.





- Insert the Spring Compressor Kit - Spring Tensioner - VAG1752/1- -3-.
- 1 - Spring Compressor Kit - Spring Retainer with Inserts - VAG1752/3A-
- 2 - Spring Compressor Kit - Adapter Blocks - VAG1752/9-
- 3 - Spring Compressor Kit - Spring Tensioner - VAG1752/1-



WARNING

Make sure the coil spring is seated correctly in the Spring Compressor Kit - Spring Retainer with Inserts - VAG1752/3A-2- (danger of accident).

- Tension the coil spring and remove it.



Note

Use a wrench or a reversible ratchet to tighten the spring compressor.

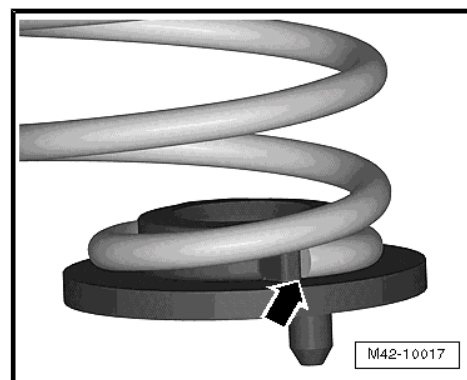
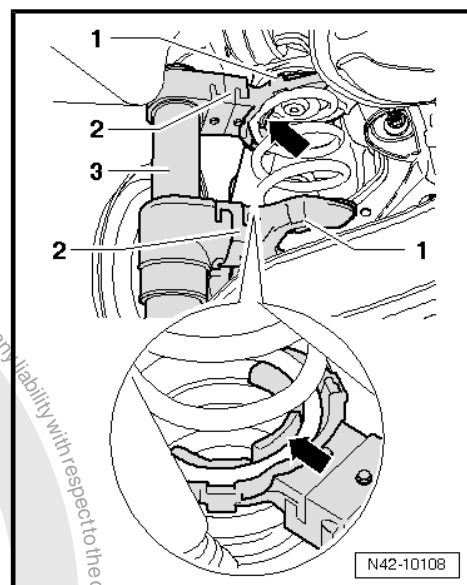
Installing

Install in reverse order of removal and note the following:

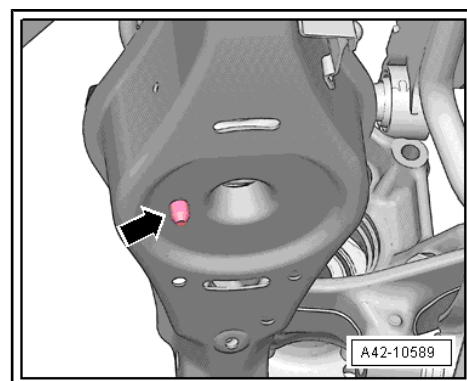
- Make sure the washer is not damaged.
- Replace the washer if necessary.
- Install the washer on the coil spring.

The spring start -arrow- must touch the stop of lower spring support.

- Install the spring and the spring support.
- Spring seat has a pin on bottom.

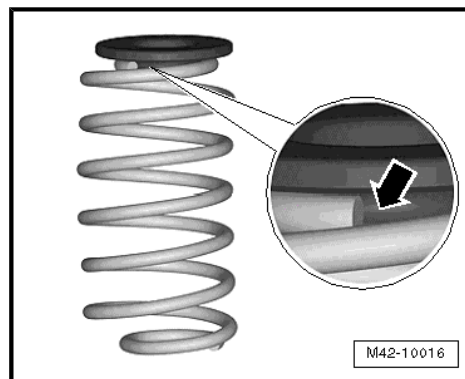


- Insert this pin into hole of lower transverse link -arrow-.
- Insert the top of the spring support into the upper spring end.





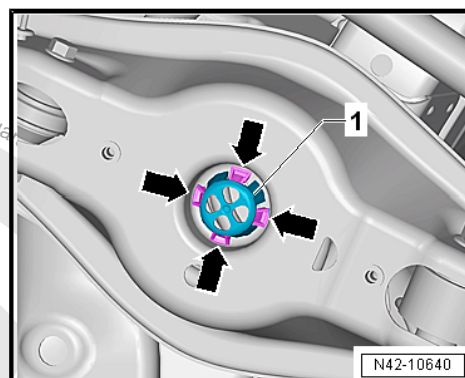
- The bead on the spring support -arrow- must fit into the coil spring correctly.
- Release the tension on the spring, guiding upper spring support onto tab of body.
- Remove the Spring Compressor Kit - Spring Tensioner - VAG1752/1- .



- Insert the assembly aid -1- and push downward.
- The tabs -arrows- must engage.

Tightening Specifications

- ◆ Refer to
⇒ ["1.4 Wheel Bolt Tightening Specifications", page 340](#)



6.4.3 Spring, Removing and Installing, Multi-Link Suspension, Right Spring, FWD

Special tools and workshop equipment required

- ◆ Spring Compressor Kit - Spring Tensioner - VAG1752/1-
- ◆ Spring Compressor Kit - Spring Retainer with Inserts - VAG1752/3A-
- ◆ Spring Compressor Kit - Adapter Blocks - VAG1752/9- , not illustrated

Removing

Only e-Golf

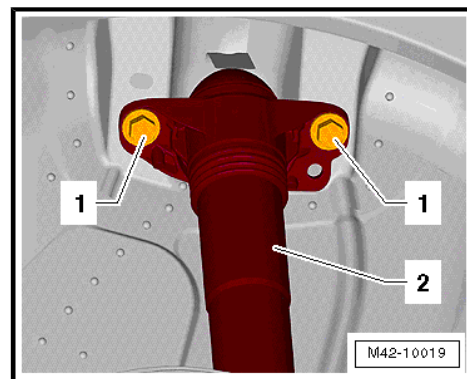
- De-energize the high-voltage system. Refer to ⇒ Rep. Gr. 93 ; High Voltage System, De-Energizing .

Continuation for All Vehicles

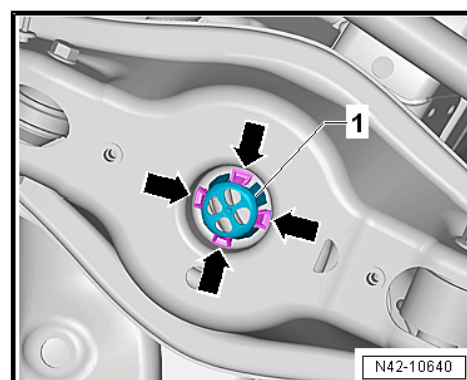
- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Remove the rear wheel housing liner. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Wheel Housing Liner; Rear Wheel Housing Liner, Removing and Installing .



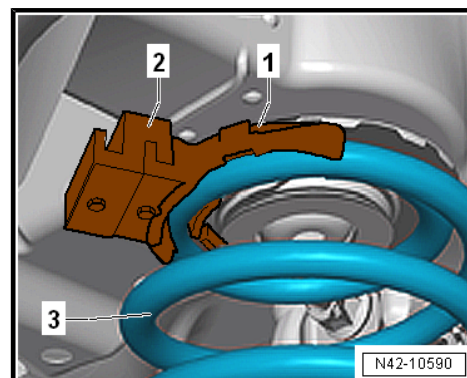
- Remove the bolts -1- for the shock absorber -2-.



- Press the tabs -arrows- on the assembly aid -1- inward.
- Remove the assembly aid -1- upward.



- Position the Spring Retainer with Inserts - VAG1752/3A- -1- with the Spring Compressor Kit - Adapter Blocks - VAG1752/9- -2- on the uppermost spring coil -3-.





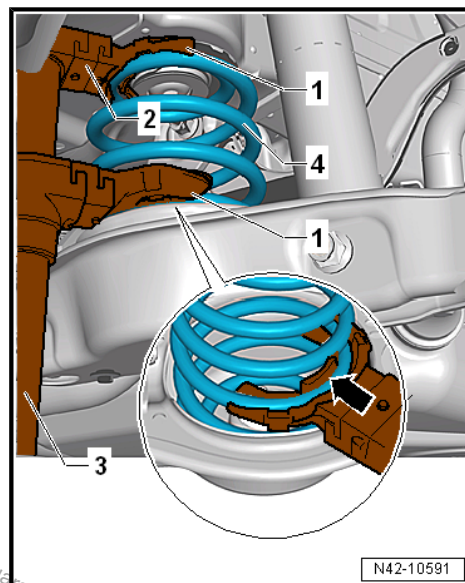
- Position the Spring Compressor Kit - Spring Tensioner - VAG1752/1- -3- on the Spring Compressor Kit - Adapter Blocks - VAG1752/9- -2-.
- Insert the lower Spring Retainer with Inserts - VAG1752/3A- into the spring -4- at the same time.
- Fasten the Spring Compressor Kit - Spring Tensioner - VAG1752/1- -3- to the Spring Compressor Kit - Adapter Blocks - VAG1752/9- -2-.

- 1 - Spring Compressor Kit - Spring Retainer with Inserts - VAG1752/3A-
- 2 - Spring Compressor Kit - Adapter Blocks - VAG1752/9-
- 3 - Spring Compressor Kit - Spring Tensioner - VAG1752/1-
- 4 - Spring



WARNING

Make sure the coil spring is seated correctly in the Spring Compressor Kit - Spring Retainer with Inserts - VAG1752/3A- -arrow- (danger of accident).



- Tension the coil spring and remove it.



Note

Use a wrench or a reversible ratchet to tighten the spring compressor.

Installing

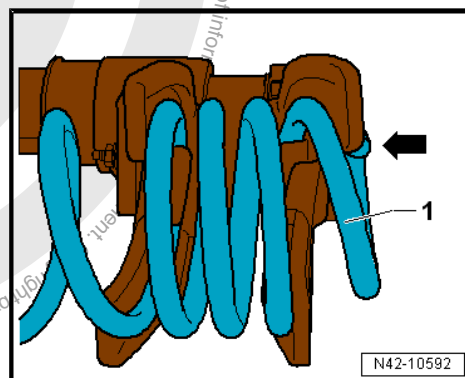
Install in reverse order of removal and note the following:



Note

If the spring was replaced, then it must be clamped in the Spring Compressor Kit - Spring Tensioner - VAG1752/1- as described in the following:

- Clamp the four topmost turns of the spring -1- all the way into the Spring Compressor Kit - Spring Tensioner - VAG1752/1- . The end of the spring coil must touch the Spring Compressor Kit - Spring Retainer w/Inserts - VAG1752/3A- -arrow-.



WARNING

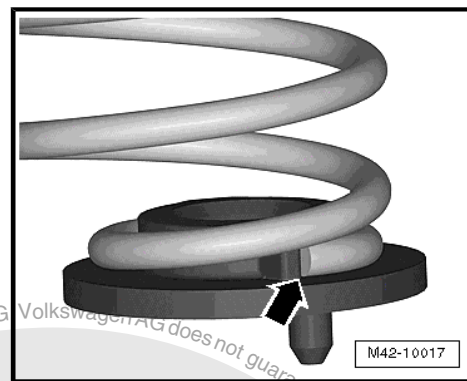
Make sure the coil spring is seated correctly in the Spring Compressor Kit - Spring Retainer with Inserts - VAG1752/3A- (danger of accident).

- Make sure the washer is not damaged.
- Replace the washer if necessary.
- Install the washer on the coil spring.

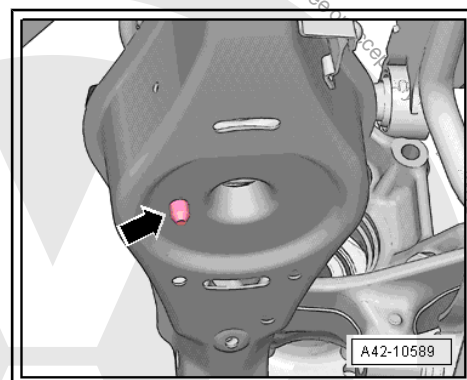


The spring start -arrow- must touch the stop of lower spring support.

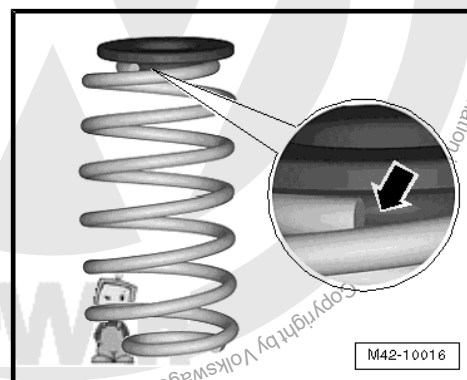
- Install the spring and the spring support.
- Spring seat has a pin on bottom.



- Insert this pin into hole of lower transverse link -arrow-.
- Insert the top of the spring support into the upper spring end.

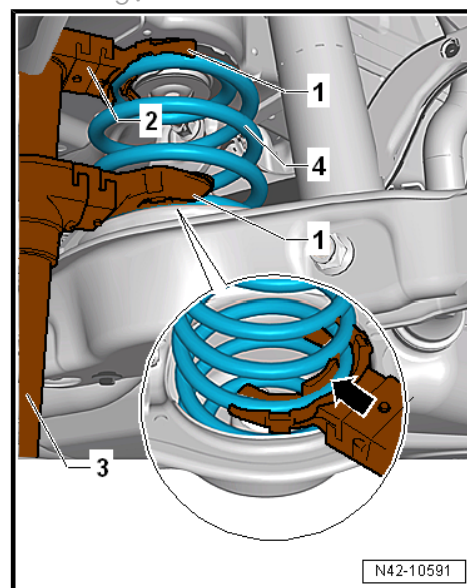


- The bead on the spring support -arrow- must fit into the coil spring correctly.



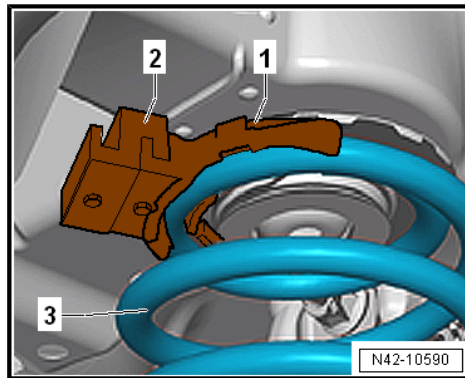
- Release the tension on the spring -4- while positioning the upper spring support onto tab of body.
- Remove the Spring Compressor Kit - Spring Tensioner - VAG1752/1- -3- from the Spring Compressor Kit - Adapter Blocks - VAG1752/9- -2-.

- 1 - Spring Compressor Kit - Spring Retainer with Inserts - VAG1752/3A-
- 2 - Spring Compressor Kit - Adapter Blocks - VAG1752/9-
- 3 - Spring Compressor Kit - Spring Tensioner - VAG1752/1-
- 4 - Spring





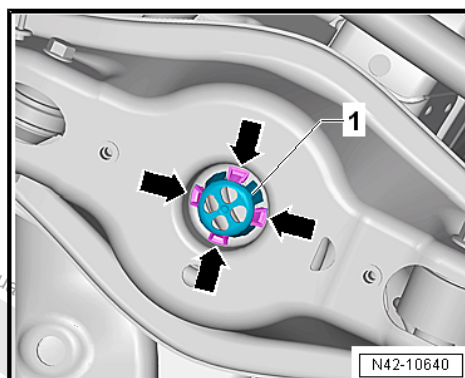
- Remove the Spring Compressor Kit - Spring Retainer with Inserts - VAG1752/3A- -1- with the Spring Compressor Kit - Adapter Blocks - VAG1752/9- -2-.



- Insert the assembly aid -1- and push downward.
- The tabs -arrows- must engage.

Tightening Specifications

- ◆ Refer to
⇒ ["1.4 Wheel Bolt Tightening Specifications", page 340](#)





7 Wheel Bearing and Trailing Arm

⇒ [“7.1 Overview - Wheel Bearing”, page 257](#)

⇒ [“7.2 Overview - Trailing Arm”, page 261](#)

⇒ [“7.3 Wheel Bearing Housing, Removing and Installing”, page 262](#)

⇒ [“7.4 Wheel Bearing Unit, Removing and Installing”, page 271](#)

⇒ [“7.5 Wheel Bearing Housing Bonded Rubber Bushing, Replacing”, page 278](#)

⇒ [“7.6 Trailing Arm with Mounting Bracket, Removing and Installing”, page 283](#)

⇒ [“7.7 Trailing Arm, Servicing”, page 289](#)

7.1 Overview - Wheel Bearing

⇒ [“7.1.1 Overview - Wheel Bearing, Torsion Beam Axle”, page 257](#)

⇒ [“7.1.2 Overview - Wheel Bearing, Multi-Link Suspension, FWD”, page 259](#)

⇒ [“7.1.3 Overview - Wheel Bearing, Multi-Link Suspension, AWD”, page 260](#)

7.1.1 Overview - Wheel Bearing, Torsion Beam Axle





1 - Dust Cap

- ☐ Replace after removing
- ☐ Removing and installing. Refer to
⇒ ["7.4 Wheel Bearing Unit, Removing and Installing", page 271](#) .
- ☐ A perfect seal is only achieved using a new dust cap.

2 - Bolt

- ☐ 200 Nm +90°
- ☐ Replace after removing

3 - Wheel Bearing Unit

- ☐ Removing and installing. Refer to
⇒ ["7.4 Wheel Bearing Unit, Removing and Installing", page 271](#) .
- ☐ The wheel bearing and wheel hub are installed together in a housing.
- ☐ The wheel bearing unit is maintenance free and has zero play. Adjusting or servicing is not possible!

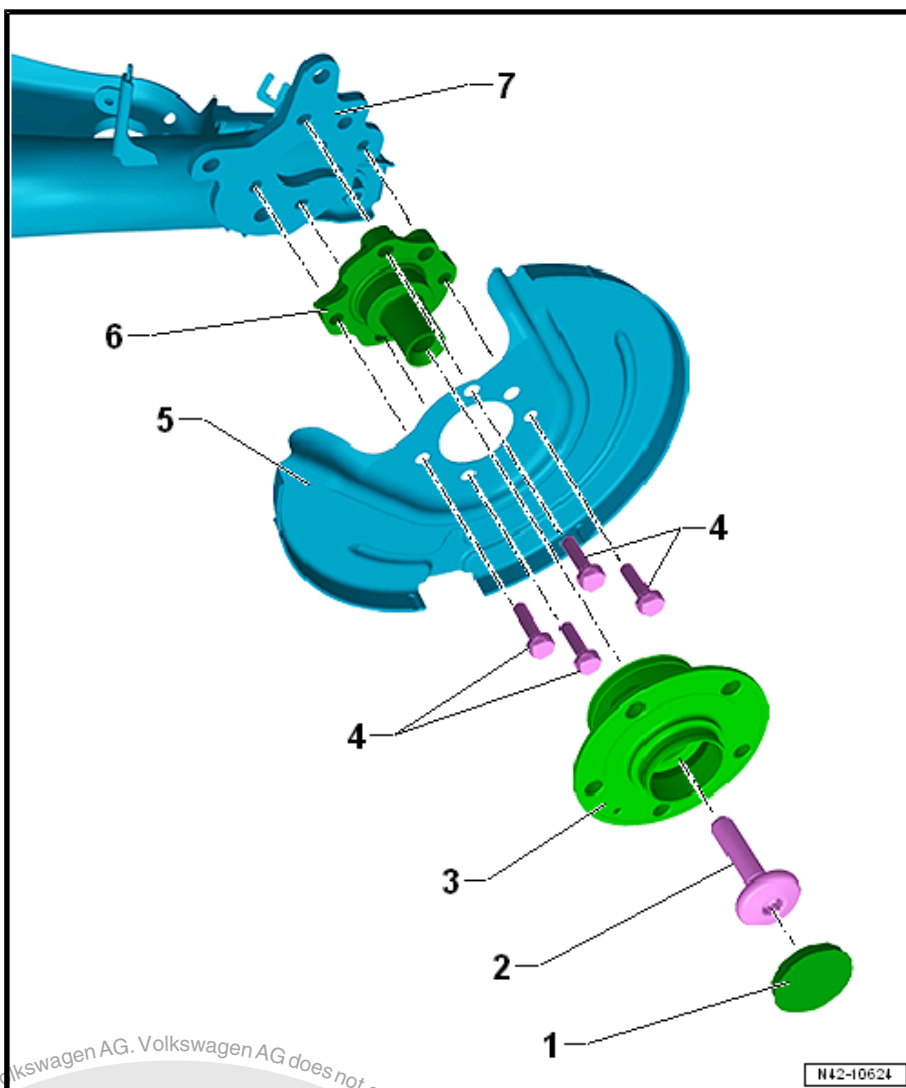
4 - Bolt

- ☐ 30 Nm +90°
- ☐ Replace after removing

5 - Heat Shield

6 - Axle Stub

7 - Axle Beam



7.1.2 Overview - Wheel Bearing, Multi-Link Suspension, FWD

1 - Wheel Bearing Housing

- ☐ Removing and installing. Refer to
⇒ [“7.3 Wheel Bearing Housing, Removing and Installing”, page 262](#) .

2 - Bonded Rubber Bushing

- ☐ Replacing. Refer to
⇒ [“7.5 Wheel Bearing Housing Bonded Rubber Bushing, Replacing”, page 278](#) .

3 - Bolt

- ☐ Tightening specification. Refer to ⇒ Brake System; Rep. Gr. 46 ; Rear Brakes; Overview - Rear Brakes .

4 - Brake Rotor

- ☐ Removing and installing. Refer to ⇒ Brake System; Rep. Gr. 46 ; Rear Brakes; Overview - Rear Brakes .

5 - Dust Cap

- ☐ Replace after removing
- ☐ Removing and installing. Refer to
⇒ [“7.4 Wheel Bearing Unit, Removing and Installing”, page 271](#) .
- ☐ A perfect seal is only achieved using a new dust cap.

6 - Bolt

- ☐ 200 Nm +90°
- ☐ Replace after removing
- ☐ Clean the threads in the stub axle with a thread tap first.

7 - Wheel Bearing Unit

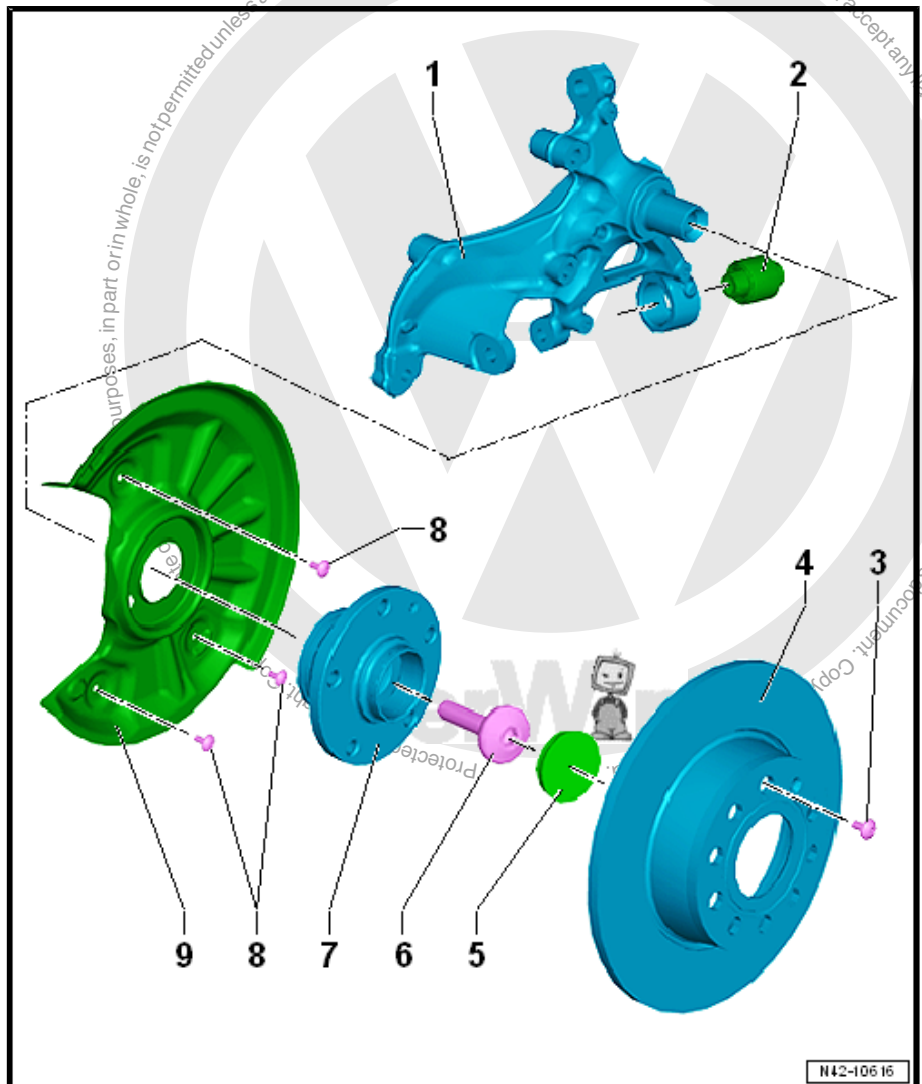
- ☐ Removing and installing. Refer to ⇒ [“7.4 Wheel Bearing Unit, Removing and Installing”, page 271](#) .
- ☐ The wheel bearing and wheel hub are installed together in a housing.
- ☐ The wheel bearing unit is maintenance free and has zero play. Adjusting or servicing is not possible!

8 - Bolt

- ☐ Tightening specification. Refer to ⇒ Brake System; Rep. Gr. 46 ; Rear Brakes; Overview - Rear Brakes .

9 - Heat Shield

- ☐ Removing and installing. Refer to ⇒ Brake System; Rep. Gr. 46 ; Rear Brakes; Overview - Rear Brakes .





7.1.3 Overview - Wheel Bearing, Multi-Link Suspension, AWD

1 - Drive Axle

2 - Bolt

- ☐ 70 Nm +90°
- ☐ Replace after removing

3 - Wheel Bearing Housing

- ☐ Removing and installing. Refer to
⇒ ["7.3.2 Wheel Bearing Housing, Removing and Installing, Multi-Link Suspension, AWD"](#), page 266 .

4 - Bonded Rubber Bushing

- ☐ Replacing. Refer to
⇒ ["7.5 Wheel Bearing Housing Bonded Rubber Bushing, Replacing"](#), page 278 .

5 - Brake Rotor

- ☐ Removing and installing. Refer to ⇒ Brake System; Rep. Gr. 46 ; Rear Brakes; Overview - Rear Brakes .

6 - Bolt

- ☐ Tightening specification. Refer to ⇒ Brake System; Rep. Gr. 46 ; Rear Brakes; Overview - Rear Brakes .

7 - Bolt

- ☐ 200 Nm +180°
- ☐ Replace after removing
- ☐ Loosening and tightening. Refer to ⇒ ["8.4 Drive Axle Threaded Connection, Loosening and Tightening"](#), page 300
- ☐ Clean the threads in the stub axle with a thread tap first.

8 - Wheel Bearing Unit

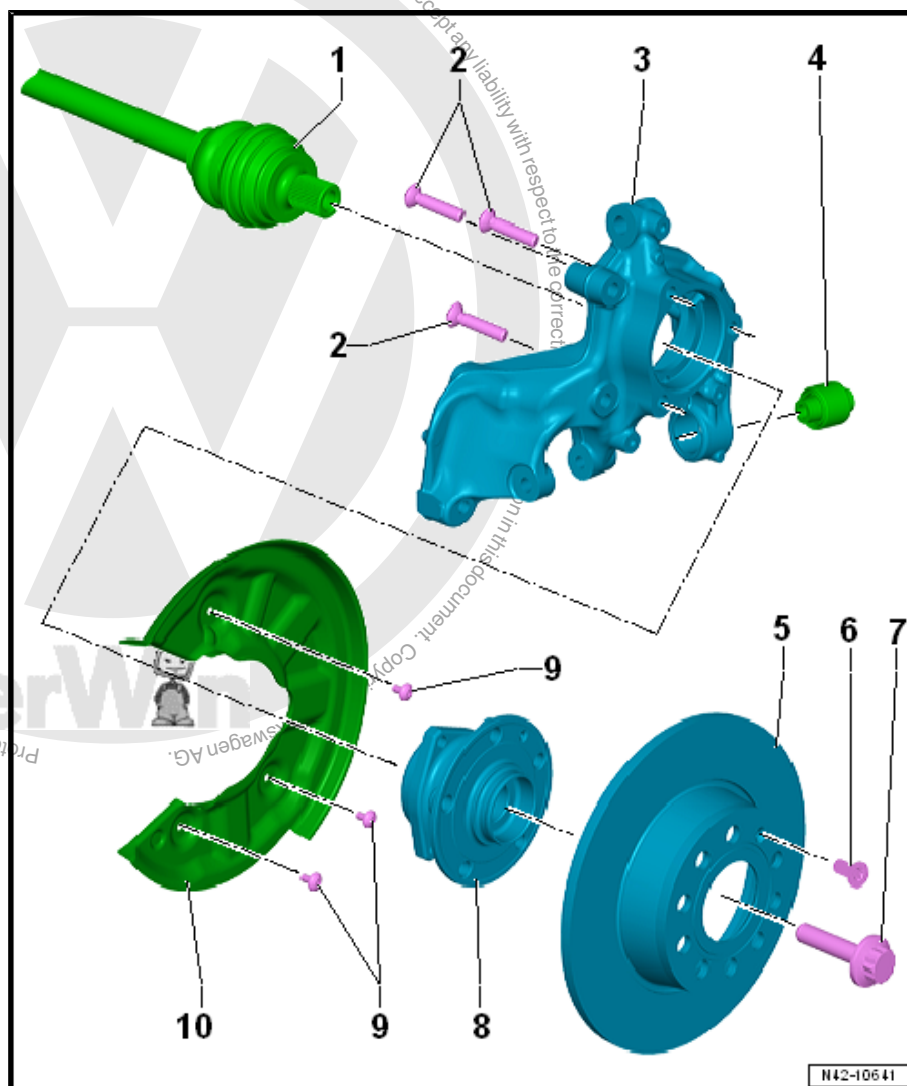
- ☐ Removing and installing. Refer to
⇒ ["7.4.3 Wheel Bearing Unit, Removing and Installing, Multi-Link Suspension, AWD"](#), page 276 .
- ☐ The wheel bearing and wheel hub are installed together in a housing.
- ☐ The wheel bearing unit is maintenance free and has zero play. Adjusting or servicing is not possible!

9 - Bolt

- ☐ Tightening specification. Refer to ⇒ Brake System; Rep. Gr. 46 ; Rear Brakes; Overview - Rear Brakes .

10 - Heat Shield

- ☐ Removing and installing. Refer to ⇒ Brake System; Rep. Gr. 46 ; Rear Brakes; Overview - Rear Brakes .





7.2 Overview - Trailing Arm

⇒ ["7.2.1 Overview - Trailing Arm, Except e-Golf", page 261](#)

⇒ ["7.2.2 Overview - Trailing Arm, e-Golf", page 262](#)

7.2.1 Overview - Trailing Arm, Except e-Golf

1 - Cover

2 - Bolt

- ☐ 50 Nm +45°
- ☐ Replace after removing

3 - Mounting Bracket

4 - Bolt

- ☐ 90 Nm +90°
- ☐ Replace after removing

5 - Wheel Bearing Housing

- ☐ There are different versions. Refer to the Parts Catalog.

6 - Trailing Arm

- ☐ Removing and installing. Refer to
⇒ ["7.6.1 Trailing Arm with Mounting Bracket, Removing and Installing, Except e-Golf", page 283](#).

7 - Bonded Rubber Bushing

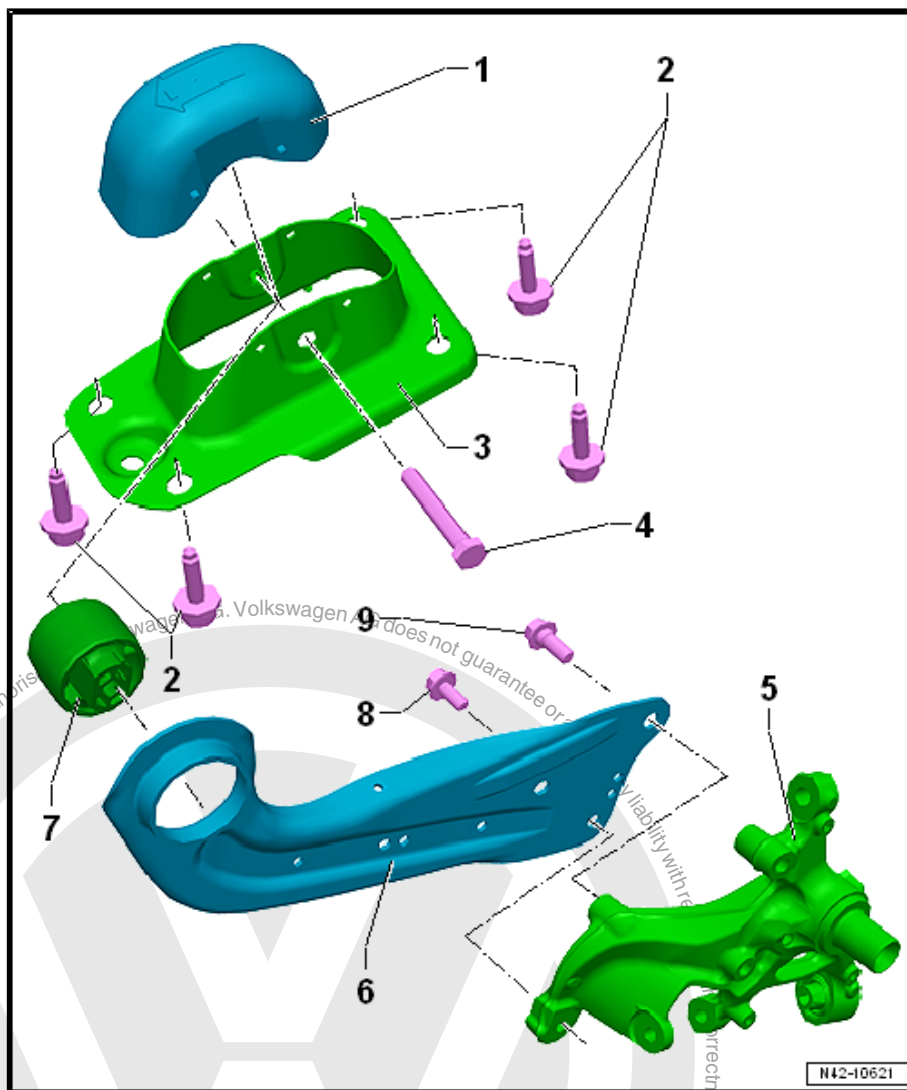
- ☐ Note the installation position
- ☐ Replacing. Refer to
⇒ ["7.7 Trailing Arm, Servicing", page 289](#).

8 - Bolt

- ☐ 70 Nm +90°
- ☐ Replace after removing
- ☐ M12 x 1.5

9 - Bolt

- ☐ 70 Nm +90°
- ☐ Replace after removing
- ☐ M14 x 1.5





7.2.2 Overview - Trailing Arm, e-Golf

1 - Cover

2 - Bolt

- ☐ 50 Nm +45°
- ☐ Replace after removing

3 - Mounting Bracket

4 - Bolt

- ☐ 90 Nm +90°
- ☐ Replace after removing

5 - Wheel Bearing Housing

- ☐ There are different versions. Refer to the Parts Catalog.

6 - Trailing Arm

- ☐ Removing and installing. Refer to
⇒ ["7.6.2 Trailing Arm with Mounting Bracket, Removing and Installing, e-Golf", page 286](#).

7 - Bonded Rubber Bushing

- ☐ Note the installation position
- ☐ Replacing. Refer to
⇒ ["7.7 Trailing Arm, Servicing", page 289](#).

8 - Bolt

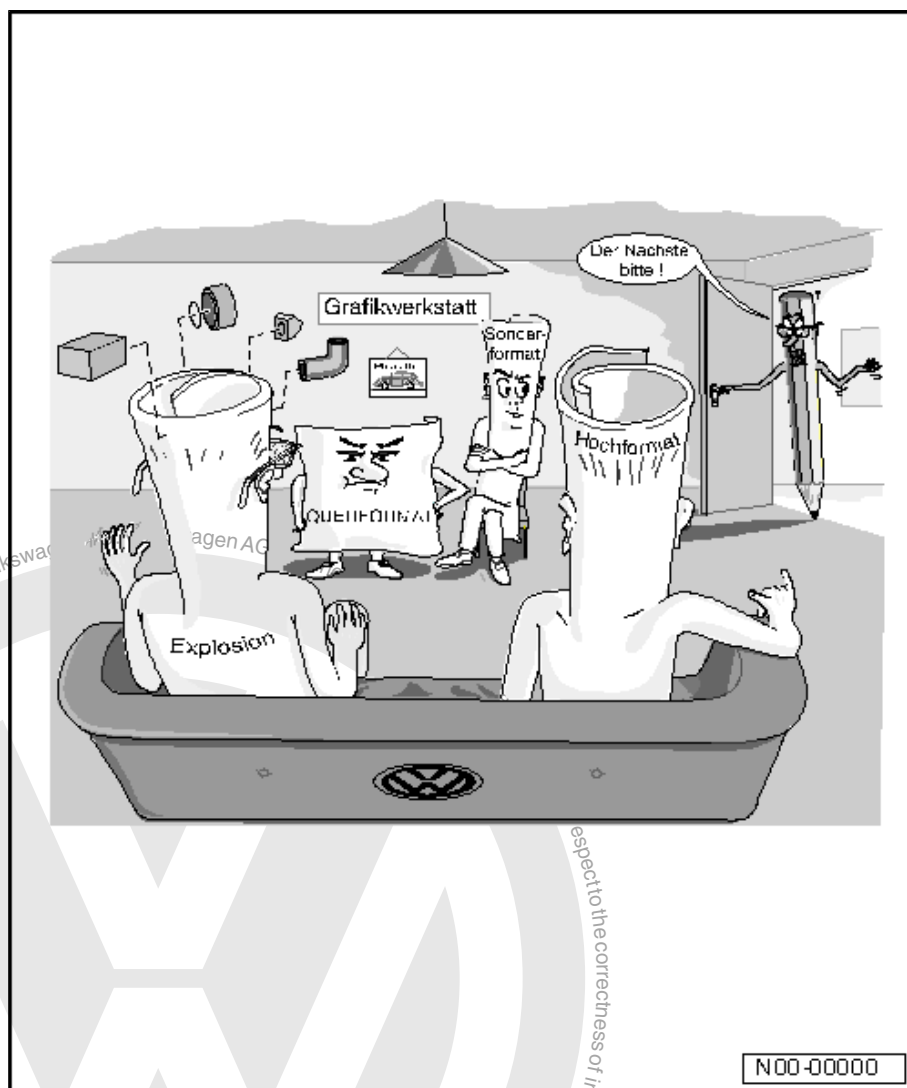
- ☐ 70 Nm +90°
- ☐ Replace after removing
- ☐ M12 x 1.5

9 - Bolt

- ☐ 70 Nm +90°
- ☐ Replace after removing
- ☐ M14 x 1.5

10 - Cover

11 - Deformation Element



7.3 Wheel Bearing Housing, Removing and Installing

⇒ ["7.3.1 Wheel Bearing Housing, Removing and Installing, Multi-Link Suspension, FWD", page 262](#)

⇒ ["7.3.2 Wheel Bearing Housing, Removing and Installing, Multi-Link Suspension, AWD", page 266](#)

7.3.1 Wheel Bearing Housing, Removing and Installing, Multi-Link Suspension, FWD

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-



◆ Engine and Gearbox Jack - VAS6931-

Removing

Only e-Golf for Work Procedures on the Right Side of the Vehicle

- De-energize the high-voltage system. Refer to ⇒ Rep. Gr. 93 ; High Voltage System, De-Energizing .

Continuation for All Vehicles

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Remove the wheel bearing unit. Refer to ⇒ ["7.4 Wheel Bearing Unit, Removing and Installing", page 271](#) .
- Remove the heat shield. Refer to ⇒ Brake System; Rep. Gr. 46 ; Overview - Rear Brakes .
- Remove the spring. Refer to ⇒ ["6.4 Spring, Removing and Installing", page 248](#) .

Vehicles with Level Control System Sensor

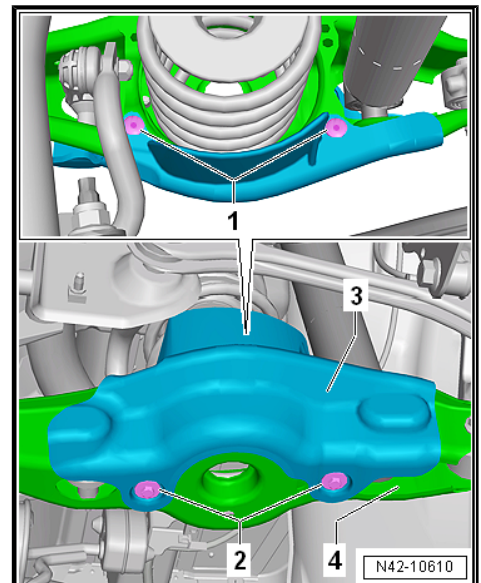
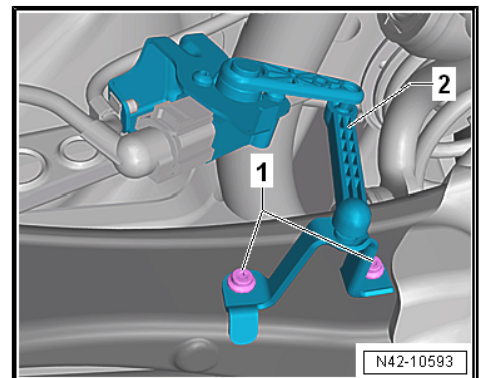
- Remove the bolts -1-.
- Remove the Left Rear Level Control System Sensor - G76-2- bracket.

Vehicles with Stone Chip Protection

- Remove the expanding rivets -1-.
- Remove the bolts -2- for the stone chip protection -3-.

Continuation for All Vehicles

- Disconnect the connector from the ABS speed sensor and the electro-mechanical parking brake parking brake motor.





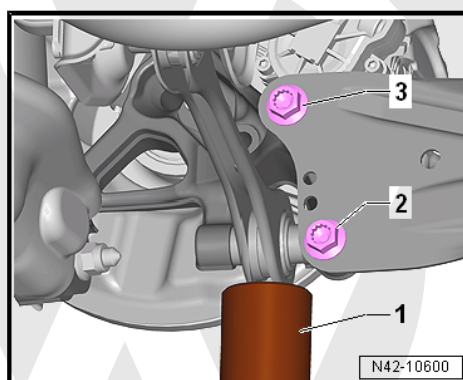
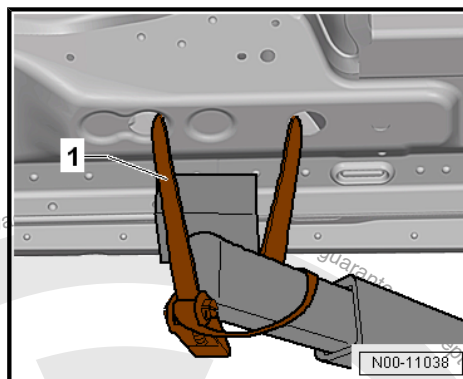
- Secure both sides of the vehicle on the hoist arms using Tensioning Straps - T10038- -1-.



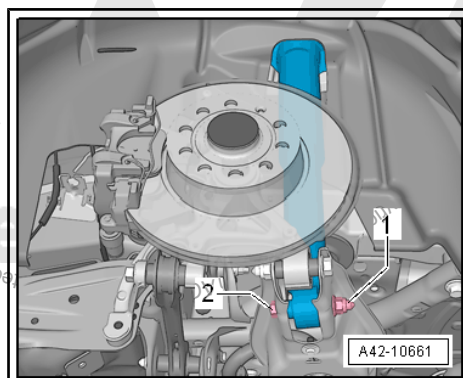
WARNING

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

- Place the Engine and Gearbox Jack - VAS6931- -1- under the tie rod and push lightly upward.
- Remove the bolts -2 and 3- one after the other.
- Remove the Engine and Gearbox Jack - VAS6931- -1- from under the tie rod.



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

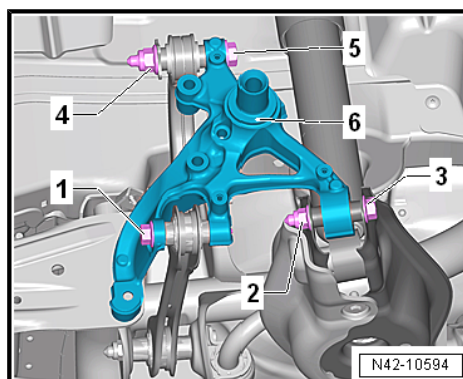


- Remove the bolt -1-.
- Unscrew the nut -2- and remove the bolt -3-.
- Unscrew the nut -4-, remove the washer and then remove the bolt -5-.
- Remove the wheel bearing housing -6-.

Installing

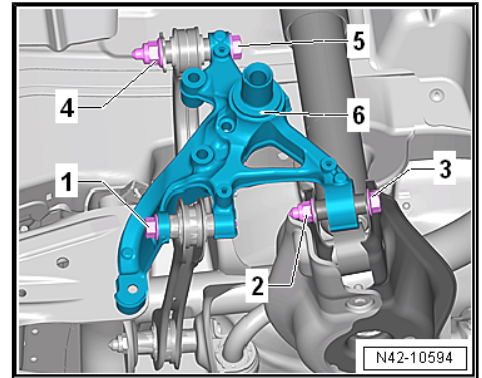
Install in reverse order of removal and note the following:

Complete the following Steps in the Exact Order Specified.

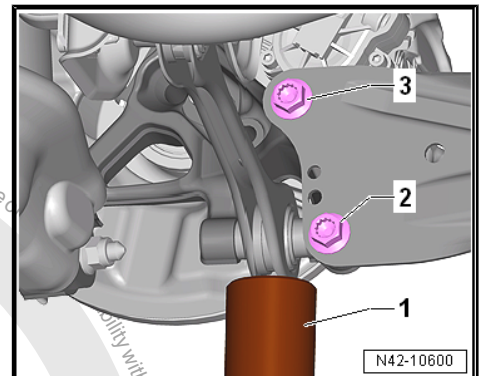




- Install the wheel bearing housing -6-.
- Insert the bolt -5-, slide on the washer and tighten the nut -4- hand-tight.
- Insert the bolt -3- and tighten the nut -2- hand-tight.
- Insert the bolt -1- and tighten hand-tight.
- Place the Engine and Gearbox Jack - VAS6931- -1- under the tie rod and push lightly upward.

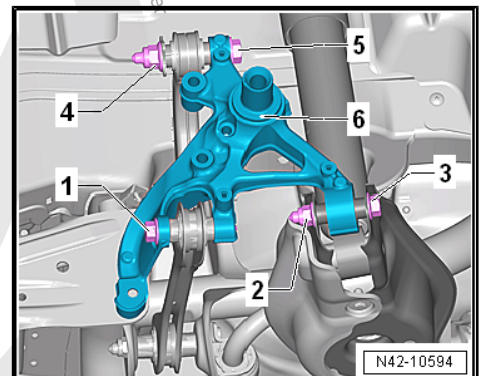


- Install the bolts -2 and 3- by hand.
- Remove the Engine and Gearbox Jack - VAS6931- -1- from under the tie rod.
- Install the heat shield. Refer to ➤ Brake System; Rep. Gr. 46 ; Overview - Rear Brakes .
- Install the wheel bearing unit. Refer to ➤ [“7.4 Wheel Bearing Unit, Removing and Installing”, page 271](#) .



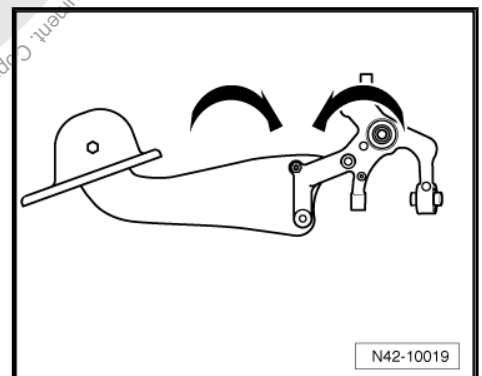
Only Fasten the Threaded Connections on the Wheel Bearing Housing in the Curb Weight Position. Refer to ➤ [“2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring”, page 6](#) .

- Tighten the bolts and nuts -1 through 5-.
- Remove the Engine and Gearbox Jack - VAS6931- with the Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149- from the wheel hub.



Threaded connection of trailing link/wheel bearing housing must only be tightened when all other components (spring and shock absorber always) of the respective wheel suspension have been already assembled. To tighten, suspension must be unloaded. Only now do the trailing arm and wheel bearing housing move into the position required -arrows-.

- Install the spring. Refer to ➤ [“6.4 Spring, Removing and Installing”, page 248](#) .

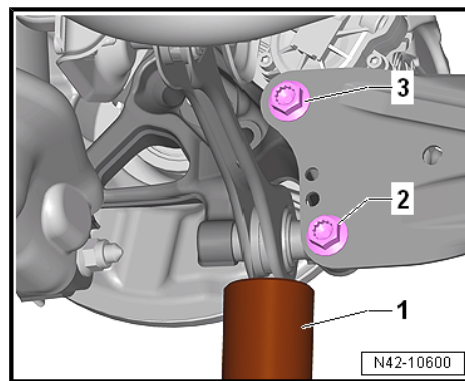




- Tighten the bolts -2 and 3-.

Tightening Specifications

- ◆ Refer to
⇒ [“7.1.2 Overview - Wheel Bearing, Multi-Link Suspension, FWD”, page 259](#)
- ◆ Refer to
⇒ [“6.1.2 Overview - Suspension Strut, Shock Absorber and Spring, Multi-Link Suspension”, page 238](#)
- ◆ Refer to ⇒ [“7.2 Overview - Trailing Arm”, page 261](#)
- ◆ Refer to ⇒ [“5.2 Overview - Tie Rod”, page 230](#)
- ◆ Refer to
⇒ [“2.2.2 Overview - Rear Level Control System Sensor, Multi-Link Suspension, FWD”, page 329](#)
- ◆ Refer to
⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)
- ◆ Bolts for heat shield, brake caliper and brake rotor. Refer to ⇒ Brake System; Rep. Gr. 46 ; Overview - Rear Brakes .
- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .
- For vehicles with a level control system sensor, perform a headlamp basic setting. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Headlamp; Headlamp, Adjusting .



7.3.2 Wheel Bearing Housing, Removing and Installing, Multi-Link Suspension, AWD

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Engine and Gearbox Jack - VAS6931

Removing

- Loosen the outer drive axle threaded connection. Refer to ⇒ [“8.4 Drive Axle Threaded Connection, Loosening and Tightening”, page 300](#) .



Caution

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

If the wheel bearings are under the load of the vehicle weight, the wheel bearing will be damaged. This reduces the service life of the wheel bearings.

The drive axle bolt may be loosened maximum 90° when the vehicle is standing on its wheels.

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

- ◆ ***Install an outer joint in place of the drive axle.***
- ◆ ***Tighten the outer joint to 120 Nm.***

- Loosen the wheel bolts.
- Raise the vehicle.



- Remove the wheel.
- Remove the wheel bearing unit. Refer to
⇒ [“7.4 Wheel Bearing Unit, Removing and Installing”](#),
[page 271](#) .
- Remove the heat shield. Refer to ⇒ Brake System; Rep. Gr.
46 ; Overview - Rear Brakes .
- Remove the spring. Refer to
⇒ [“6.4 Spring, Removing and Installing”](#) [page 248](#) .

Vehicles with Level Control System Sensor

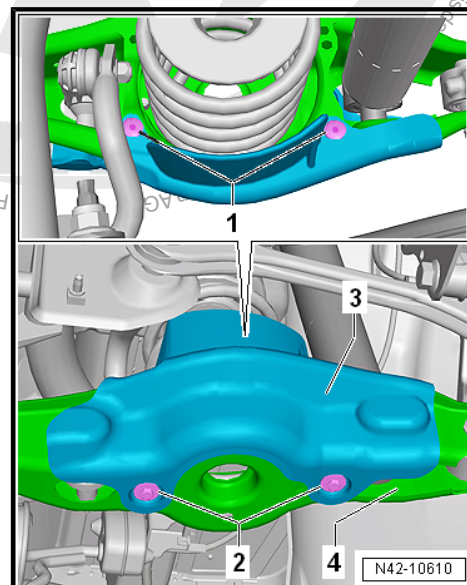
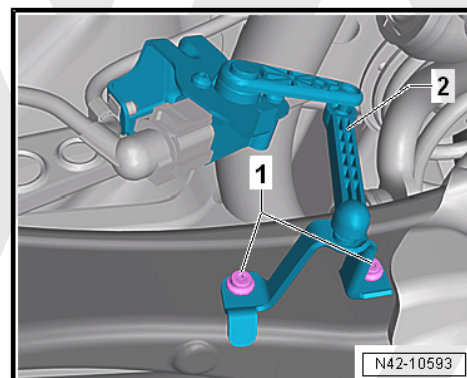
- Remove the bolts -1-.
- Remove the Left Rear Level Control System Sensor - G76-
-2- bracket.

Vehicles with Stone Chip Protection

- Remove the expanding rivets -1-.
- Remove the bolts -2- for the stone chip protection -3-.

Continuation for All Vehicles

- Disconnect the connector from the ABS speed sensor and the
electro-mechanical parking brake parking brake motor.



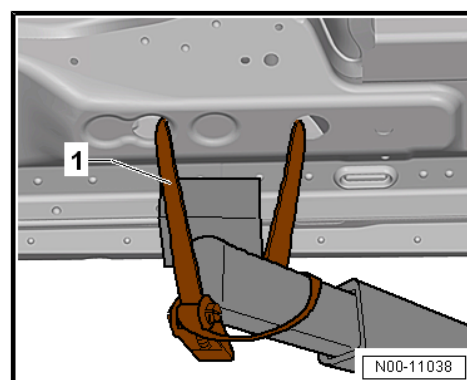
- Secure both sides of the vehicle on the hoist arms using Ten-
sioning Straps - T10038- -1-.



WARNING

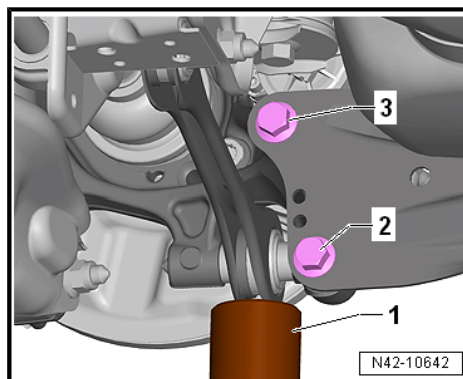
The vehicle could slide off the hoist if it is not secured.

- Place the Engine and Gearbox Jack - VAS6931- -1- under the
tie rod and push lightly upward.

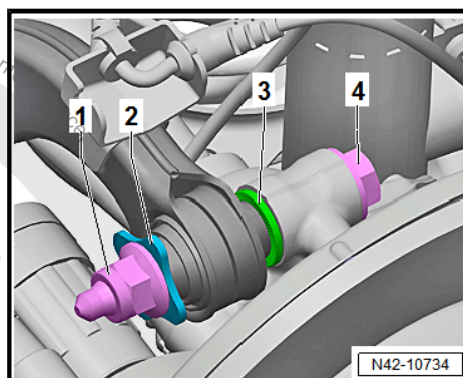




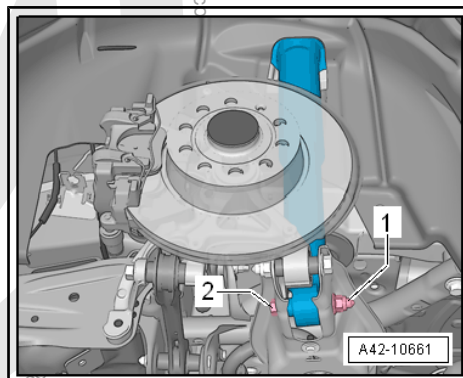
- Remove the bolts -2 and 3- one after the other.



- Remove the Engine and Gearbox Jack - VAS6931- -1- from under the tie rod.
- Remove the bolt -4-.
- Remove the washer -3-.



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



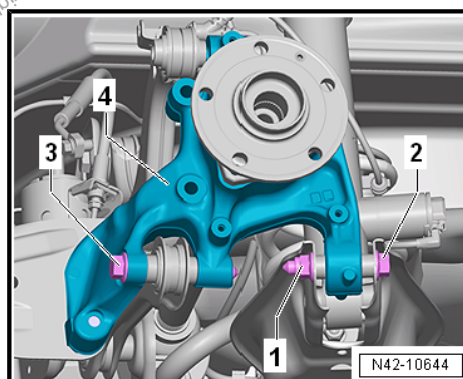
- Remove the nut -1- and the bolt -2-.
- Remove the bolt -3-.
- Remove the wheel bearing housing -4-.

Installing

Install in reverse order of removal and note the following:

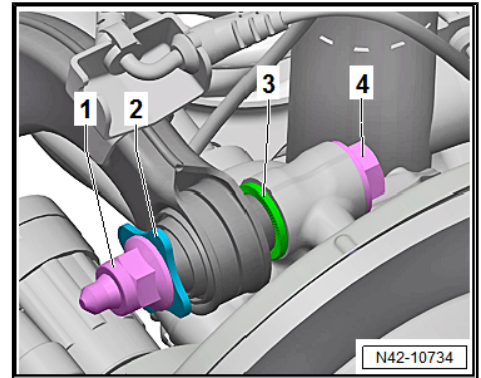
Complete the following Steps in the Exact Order Specified.

- Install wheel bearing housing.

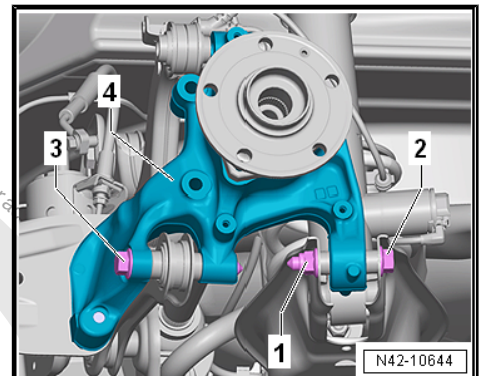




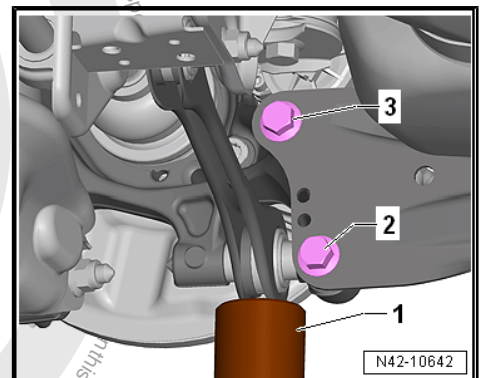
- Insert the bolt -4- with the washer -3-.
- Slide on the washer -2-.
- Tighten the nut -1- hand-tight.



- Insert the bolt -2- and tighten the nut -1- hand-tight.
- Insert the bolt -3- and tighten hand-tight.

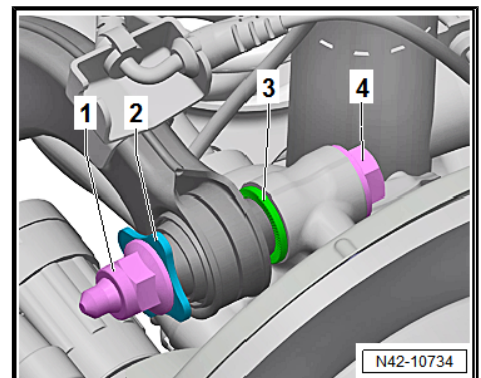


- Place the Engine and Gearbox Jack - VAS6931- -1- under the tie rod and push lightly upward.
- Install the bolts -2 and 3- by hand.
- Remove the Engine and Gearbox Jack - VAS6931- -1- from under the tie rod.
- Install the wheel bearing unit. Refer to [⇒ "7.4 Wheel Bearing Unit, Removing and Installing", page 271](#).
- Install the heat shield. Refer to ⇒ Brake System; Rep. Gr. 46 ; Overview - Rear Brakes .



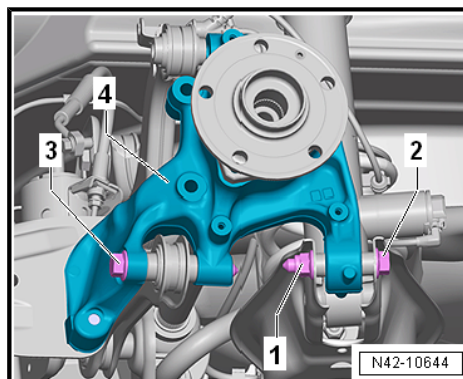
Only Fasten the Threaded Connections on the Wheel Bearing Housing in the Curb Weight Position. Refer to [⇒ "2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring", page 6](#) .

- Tighten the nut -1-.



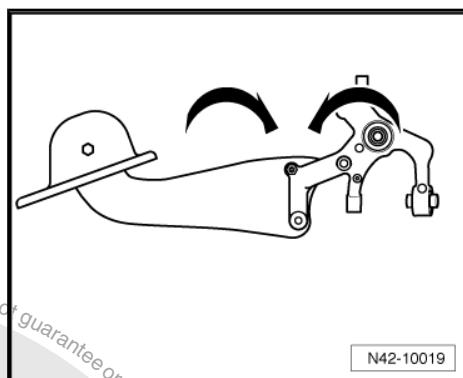


- Tighten the nut -1-.
- Tighten the bolt -3-.
- Remove the Engine and Gearbox Jack - VAS6931- with the Engine/Gearbox Jack Adapter - Wheel Hub Support - T10149- from the wheel hub.



Threaded connection of trailing link/wheel bearing housing must only be tightened when all other components (spring and shock absorber always) of the respective wheel suspension have been already assembled. To tighten, suspension must be unloaded. Only now do the trailing arm and wheel bearing housing move into the position required -arrows-.

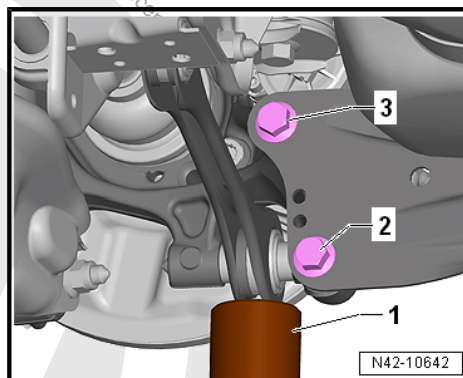
- Install the coil spring. Refer to
⇒ ["6.4 Spring, Removing and Installing", page 248](#) .



- Tighten the bolts -2 and 3-.

Tightening Specifications

- ◆ Refer to
⇒ ["7.1.3 Overview - Wheel Bearing, Multi-Link Suspension, AWD", page 260](#)
- ◆ Refer to
⇒ ["6.1.2 Overview - Suspension Strut, Shock Absorber and Spring, Multi-Link Suspension", page 238](#)
- ◆ Refer to ⇒ ["7.2 Overview - Trailing Arm", page 261](#)
- ◆ Refer to ⇒ ["5.2 Overview - Tie Rod", page 230](#)
- ◆ Refer to
⇒ ["2.2.2 Overview - Rear Level Control System Sensor, Multi-Link Suspension, FWD", page 329](#)
- ◆ Refer to
⇒ ["8.4 Drive Axle Threaded Connection, Loosening and Tightening", page 300](#)
- ◆ Refer to
⇒ ["1.4 Wheel Bolt Tightening Specifications", page 340](#)
- ◆ Bolts for heat shield, brake caliper and brake rotor. Refer to ⇒ Brake System; Rep. Gr. 46 ; Overview - Rear Brakes
- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .
- For vehicles with a level control system sensor, perform a headlamp basic setting. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Headlamp; Headlamp, Adjusting .





7.4 Wheel Bearing Unit, Removing and Installing

⇒ [“7.4.1 Wheel Bearing Unit, Removing and Installing, Torsion Beam Axle”, page 271](#)

⇒ [“7.4.2 Wheel Bearing Unit, Removing and Installing, Multi-Link Suspension, FWD”, page 273](#)

⇒ [“7.4.3 Wheel Bearing Unit, Removing and Installing, Multi-Link Suspension, AWD”, page 276](#)

7.4.1 Wheel Bearing Unit, Removing and Installing, Torsion Beam Axle

Special tools and workshop equipment required

- ◆ Seal Installer - Camshaft Installer Kit - Sleeve - 3241/4-
- ◆ Puller - Grease Cap - VW637/2-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Socket - XZN 18mm - T10162A-
- ◆ Torque Wrench 1410 - VAG1410-

Removing

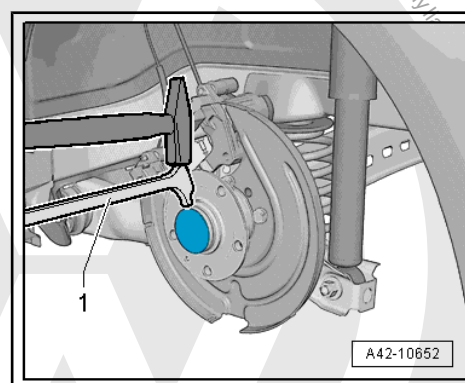
- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Remove the brake carrier with the brake caliper and tie them to the body with wire. Refer to ⇒ Brake System; Rep. Gr. 46 ; Rear Brakes; Overview - Rear Brakes .



Note

Suspend brake caliper from body.

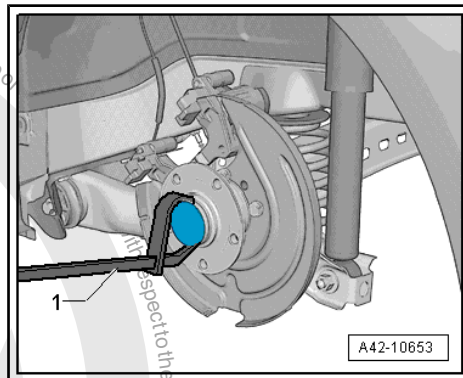
- Remove the brake rotor bolt and the brake rotor.
- Loosen dust cap from seat by tapping lightly on claw of Puller - Grease Cap - VW637/2- -1-.





- Press of dust cap.

1 - Puller - Grease Cap - VW637/2-



- Remove the bolt -1- using the Socket - XZN 18mm - T10162A- -2-.



Caution

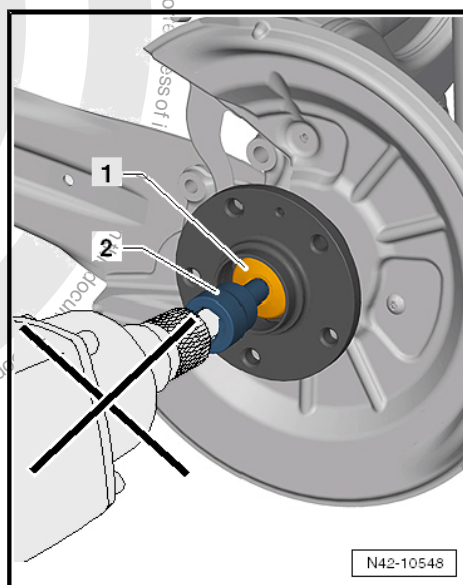
Never use an impact wrench when removing the bolt -1- using the Socket - XZN 18mm - T10162A- -2-.

- Remove the wheel bearing unit from the axle stub.



Caution

- **When setting down/storing avoid contaminating with dirt and damaging the seal.**



The wheel bearing -1- must always face up.

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

Installing

Install in reverse order of removal and note the following:

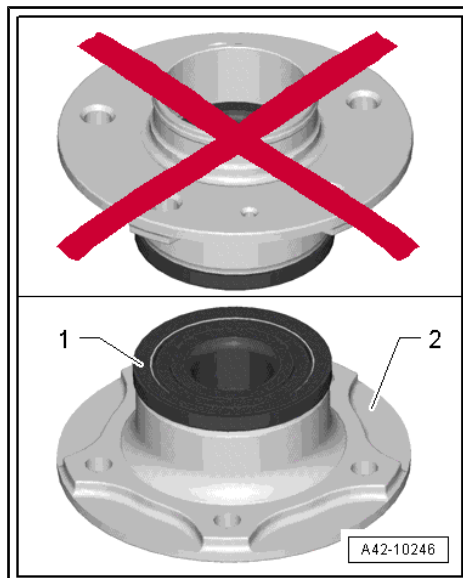
- Carefully slide the wheel hubs/wheel bearing unit onto the axle stub.



Caution

Make sure that the wheel hubs/wheel bearing unit does not tilt!

- Install the new bolt and tighten it to the tightening specification.





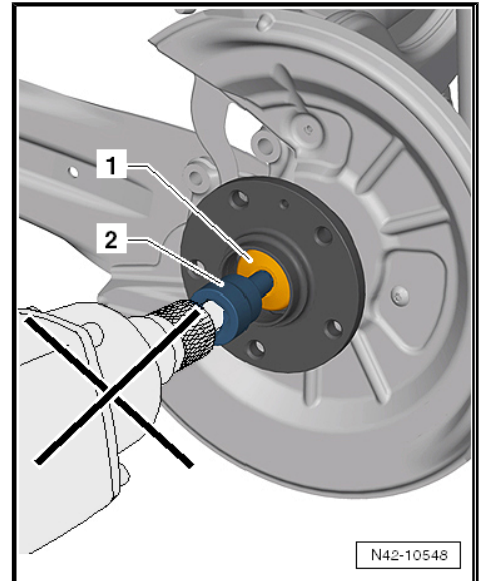
Note

- ◆ First tighten the bolt to the specification using the torque wrench.
- ◆ Using a rigid wrench when tightening additionally.



Caution

Never use an impact wrench when tightening the bolt -1- using the Socket - XZN 18mm - T10162A- -2-.



- Install a new dust cap.

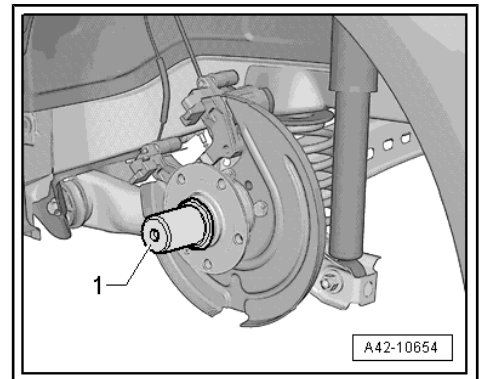
1 - Seal Installer - Camshaft Installer Kit - Sleeve - 3241/4-

Always Replace Dust Caps.

Damaged Dust Caps Allow Moisture to Enter. Therefore, Always Use the Tool Shown.

Tightening Specifications

- ◆ Refer to
⇒ [“7.1.1 Overview - Wheel Bearing, Torsion Beam Axle”, page 257](#)
- ◆ Refer to
⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)
- ◆ Bolts for heat shield, brake caliper and brake rotor. Refer to ⇒ Brake System; Rep. Gr. 46 ; Overview - Rear Brakes .



7.4.2 Wheel Bearing Unit, Removing and Installing, Multi-Link Suspension, FWD

Special tools and workshop equipment required

- ◆ Seal Installer - Camshaft Installer Kit - Sleeve - 3241/4-
- ◆ Puller - Grease Cap - VW637/2-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Socket - XZN 18mm - T10162A-
- ◆ Torque Wrench 1410 - VAG1410-

Removing

Only e-Golf for Work Procedures on the Right Side of the Vehicle

De-energize the high-voltage system. Refer to ⇒ Rep. Gr. 93 ; High Voltage System, De-Energizing .

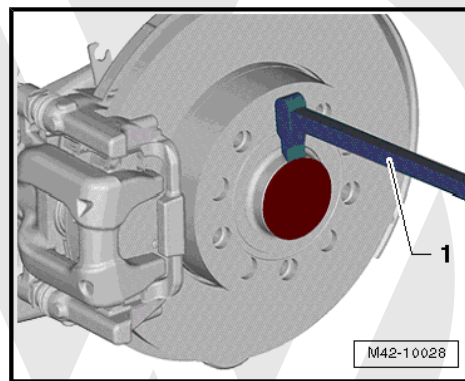
Continuation for All Vehicles

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.

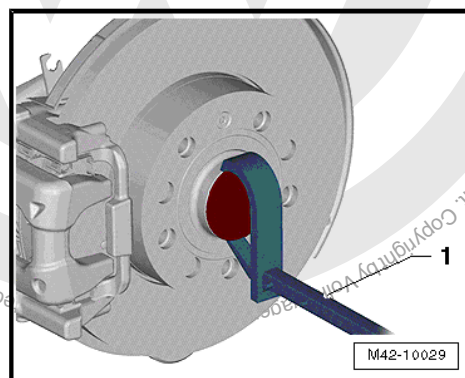




- Loosen dust cap from seat by tapping lightly on claw of Puller
– Grease Cap - VW637/2- -1-.



- Press of dust cap.
- 1 - Puller - Grease Cap - VW637/2-
- Remove the brake carrier with the brake caliper and tie them to the body with wire. Refer to ⇒ Brake System; Rep. Gr. 46 ; Rear Brakes; Overview - Rear Brakes .



Note

Suspend brake caliper from body.

- Remove the brake rotor bolt and the brake rotor.
- Remove the bolt -1- using the Socket - XZN 18mm - T10162A- -2-.



Caution

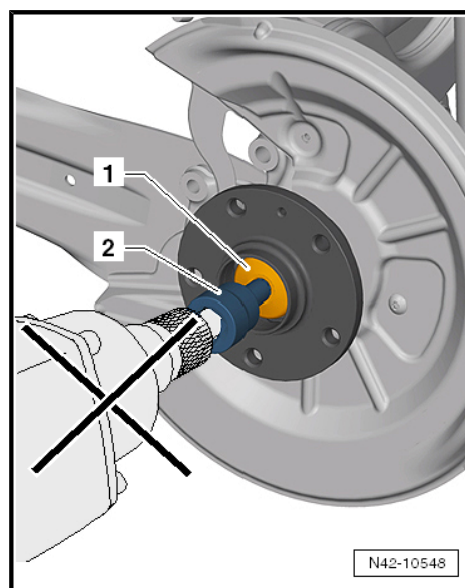
Never use an impact wrench when removing the bolt -1- using the Socket - XZN 18mm - T10162A- -2-.

- Remove the wheel bearing unit from the axle stub.



Caution

- ***When setting down/storing avoid contaminating with dirt and damaging the seal.***



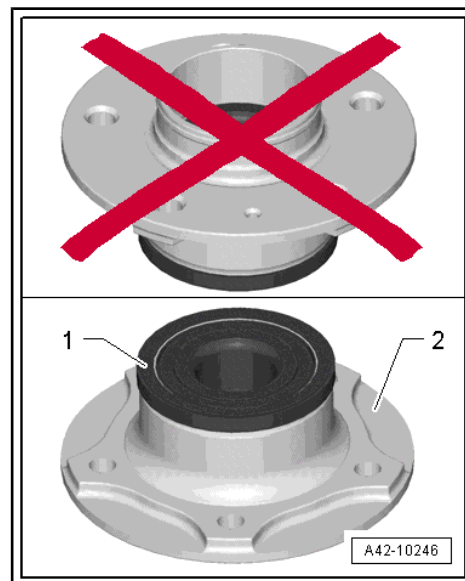


The wheel bearing -1- must always face up.

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

Installing

Install in reverse order of removal and note the following:



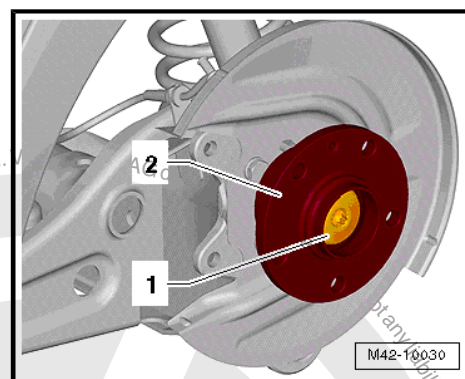
- Carefully install the wheel hub/wheel bearing unit -2- onto the stub axle.



Caution

Make sure that the wheel hubs/wheel bearing unit does not tilt!

- Install the new bolt -1- and tighten it to the tightening specification.



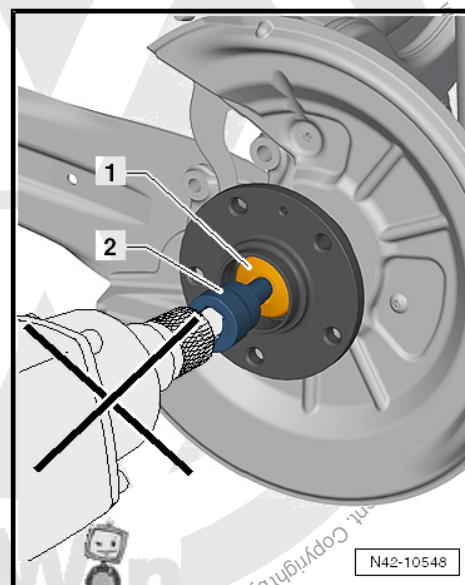
Note

- ◆ *First tighten the bolt to the specification using the torque wrench.*
- ◆ *Using a rigid wrench when tightening additionally.*



Caution

Never use an impact wrench when tightening the bolt -1- using the Socket - XZN 18mm - T10162A-2-.





- Install a new dust cap.

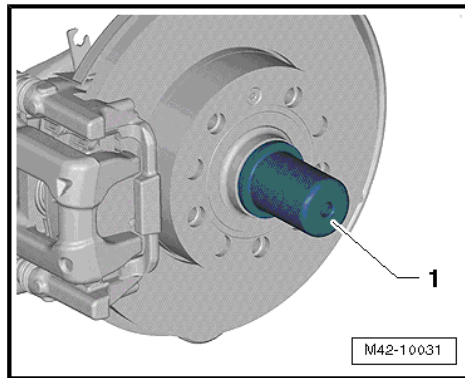
1 - Seal Installer - Camshaft Installer Kit - Sleeve - 3241/4-

Always Replace Dust Caps.

Damaged Dust Caps Allow Moisture to Enter. Therefore, Always Use the Tool Shown.

Tightening Specifications

- ◆ Refer to
⇒ [“7.1.2 Overview - Wheel Bearing, Multi-Link Suspension, FWD”, page 259](#)
- ◆ Refer to
⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)
- ◆ Bolts for heat shield, brake caliper and brake rotor. Refer to ⇒
Brake System; Rep. Gr. 46 ; Overview - Rear Brakes .



7.4.3 Wheel Bearing Unit, Removing and Installing, Multi-Link Suspension, AWD

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Torque Wrench 1410 - VAG1410-

Removing

- Loosen the outer drive axle threaded connection. Refer to
⇒ [“8.4 Drive Axle Threaded Connection, Loosening and Tightening”, page 300](#) .
- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Remove the coil spring. Refer to
⇒ [“6.4 Spring, Removing and Installing”, page 248](#) .
- Remove the drive axle. Refer to
⇒ [“8.2 Drive Axle, Removing and Installing”, page 293](#) .
- Remove the brake carrier with the brake caliper and tie them to the body with wire. Refer to ⇒ Brake System; Rep. Gr. 46 ; Rear Brakes; Overview - Rear Brakes .



Note

Do not let the brake caliper hang on the brake hose - risk of damage.

- Remove the brake rotor bolt and the brake rotor.

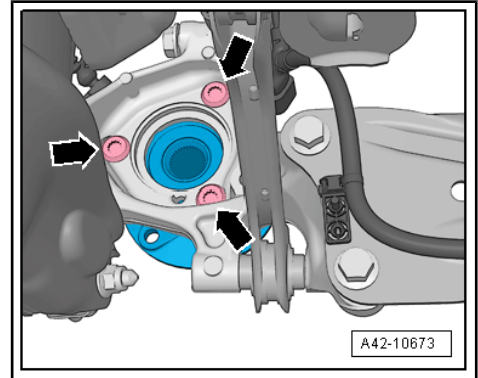


- Remove the bolts -arrows-.
- Remove the wheel bearing unit from the wheel bearing housing.

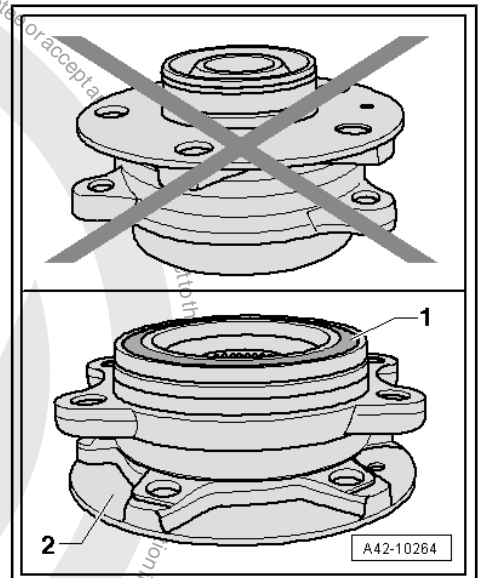


Caution

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



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



- Never reach inside when lifting the wheel bearing.
- Hold the wheel bearing only on the outside.

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

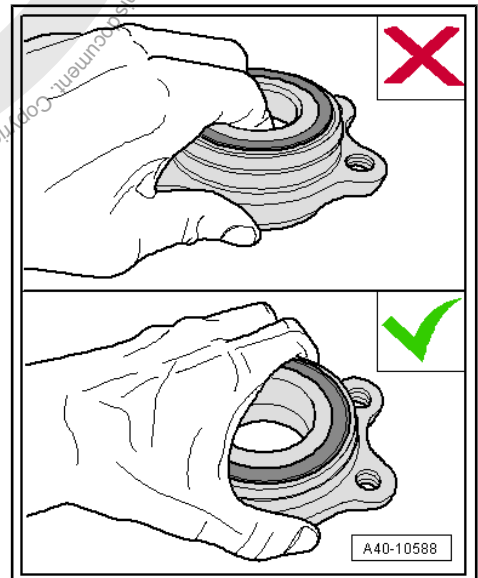
Installing

Install in reverse order of removal and note the following:

- Only fasten the threaded connections on the wheel bearing housing in the curb weight position. Refer to ["2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring", page 6](#).

Tightening Specifications

- ◆ Refer to ["7.1.3 Overview - Wheel Bearing, Multi-Link Suspension, AWD", page 260](#)
- ◆ Refer to ["8.4 Drive Axle Threaded Connection, Loosening and Tightening", page 300](#)
- ◆ Refer to ["1.4 Wheel Bolt Tightening Specifications", page 340](#)
- ◆ Bolts for heat shield, brake caliper and brake rotor. Refer to [Brake System; Rep. Gr. 46 ; Overview - Rear Brakes](#).
- Evaluate if an axle alignment is needed. Refer to ["3.7 Need for Axle Alignment, Evaluating", page 357](#).





7.5 Wheel Bearing Housing Bonded Rubber Bushing, Replacing

⇒ [“7.5.1 Wheel Bearing Housing Bonded Rubber Bushing, Replacing, FWD”, page 278](#)

⇒ [“7.5.2 Wheel Bearing Housing Bonded Rubber Bushing, Replacing, AWD”, page 280](#)

7.5.1 Wheel Bearing Housing Bonded Rubber Bushing, Replacing, FWD

Special tools and workshop equipment required

- ◆ Subframe Bushing Tool Kit - 3301-
- ◆ Bearing Installer - Control Arm - 3346-
- ◆ Bearing Installer - Carrier Bearing - 3350-
- ◆ Subframe Bushing Assembly Tool Kit - T10356-
- ◆ Torque Adapter - 3390-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

Removing

Only e-Golf for Work Procedures on the Right Side of the Vehicle

- De-energize the high-voltage system. Refer to ⇒ Rep. Gr. 93 ; High Voltage System, De-Energizing .

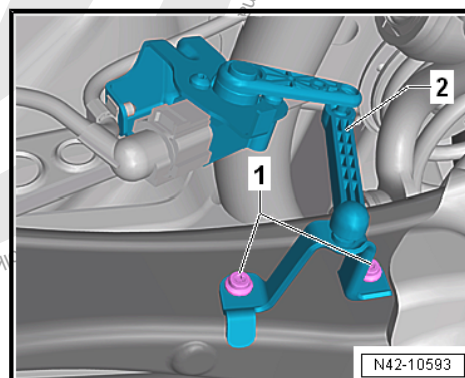
Continuation for All Vehicles

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.

Vehicles with Level Control System Sensor

- Remove the bolts -1-.
- Remove the Left Rear Level Control System Sensor - G76-2- bracket.

Vehicles with Stone Chip Protection

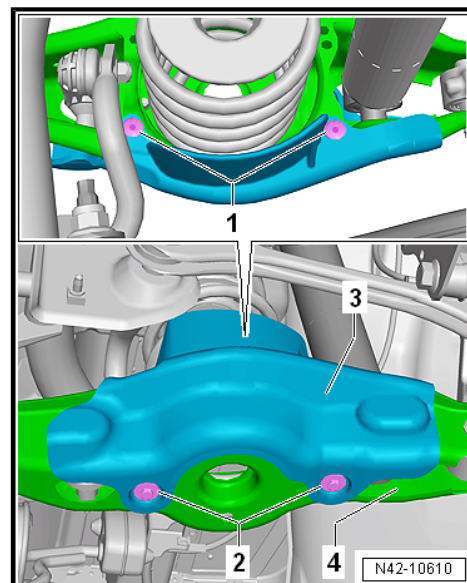




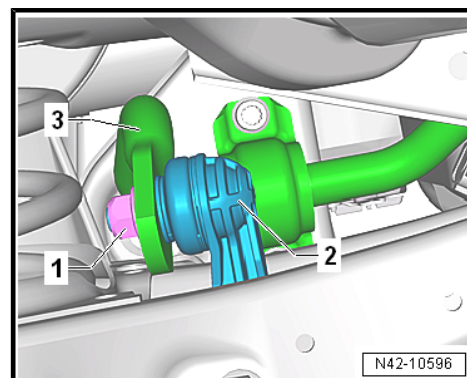
- Remove the expanding rivets -1-.
- Remove the bolts -2- for the stone chip protection -3-.

Continuation for All Vehicles

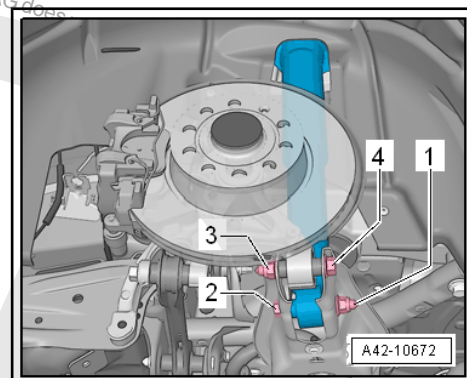
- Remove the spring. Refer to
⇒ ["6.4 Spring, Removing and Installing", page 248](#) .



- Remove the nut -1- from the coupling rod -2-.
- Remove the coupling rod -2- from the stabilizer bar -3-.

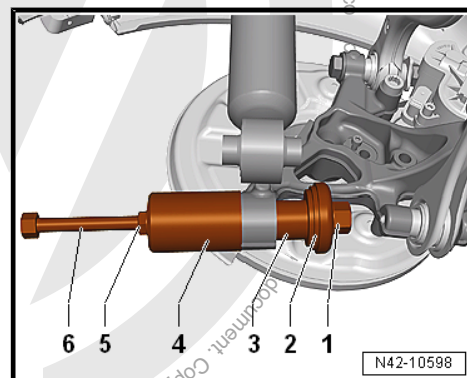


- Remove the nut -1- and then the bolt -2- for the shock absorber threaded connection.
- Remove the nut -3- and then the bolt -4- for the wheel bearing housing threaded connection.



Pressing out Bonded Rubber Bushing

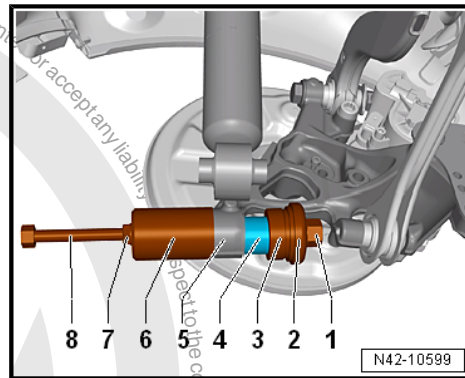
- 1 - Control Arm Bearing Installer - Nut - 3346/3-
 - 2 - Thrust piece from the Subframe Bushing Tool Kit - 3301-
 - 3 - Torque Adapter - 3390-
 - 4 - Sleeve from Bearing Installer - Carrier Bearing - 3350-
 - 5 - Nut
 - 6 - Bearing Installer - Component - 3346/2-
- Remove the bonded rubber bushing by turning the Control Arm Bearing Installer - Nut - 3346/3- -1-. While doing so counterhold on the Bearing Installer - Component - 3346/2- -6-.





Installing the Bonded Rubber Bushing

- 1 - Bearing Installer - Control Arm - Nut - 3346/3-
 - 2 - Thrust piece from the Subframe Bushing Tool Kit - 3301-
 - 3 - Subframe Bushing Assembly Tool Kit - Thrust Piece - T10356/5
 - 4 - Bonded Rubber Bushing
 - 5 - Wheel Bearing Housing
 - 6 - Sleeve from Bearing Installer - Carrier Bearing - 3350-
 - 7 - Nut
 - 8 - Bearing Installer - Component - 3346/2-
- Install the bonded rubber bushing until it stops by turning the Bearing Installer - Control Arm - Nut - 3346/3- -1-. While doing so counterhold on the Bearing Installer - Control Arm - Spindle - 3346/2- -8-.



Note

- ◆ *Do not use lubricant!*
- ◆ *Insert the bearing carefully so that it is not tilted.*

Installing

Install in reverse order of removal and note the following:

Tightening Specifications

- ◆ Refer to ⇒ [“7.1 Overview - Wheel Bearing”, page 257](#)
- ◆ Refer to
⇒ [“6.1.2 Overview - Suspension Strut, Shock Absorber and Spring, Multi-Link Suspension”, page 238](#)
- ◆ Refer to
⇒ [“4.1.1 Overview - Stabilizer Bar, Multi-Link Suspension, FWD”, page 221](#)
- ◆ Refer to
⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)
- Only fasten the threaded connections to the lower transverse link in the curb weight position. Refer to
⇒ [“2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring”, page 6](#) .
- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .
- For vehicles with a level control system sensor, perform a headlamp basic setting. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Headlamp; Headlamp, Adjusting .

7.5.2 Wheel Bearing Housing Bonded Rubber Bushing, Replacing, AWD

Special tools and workshop equipment required

- ◆ Subframe Bushing Tool Kit - 3301-
- ◆ Press Tool For Viscous Fan - 3367-
- ◆ Torque Adapter - 3390-



◆ Torque Wrench 1332 40-200Nm - VAG1332-

Removing

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.

Vehicles with Level Control System Sensor

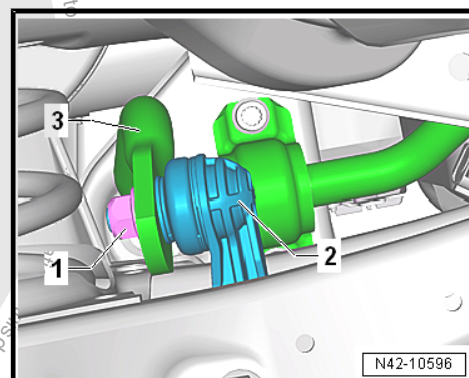
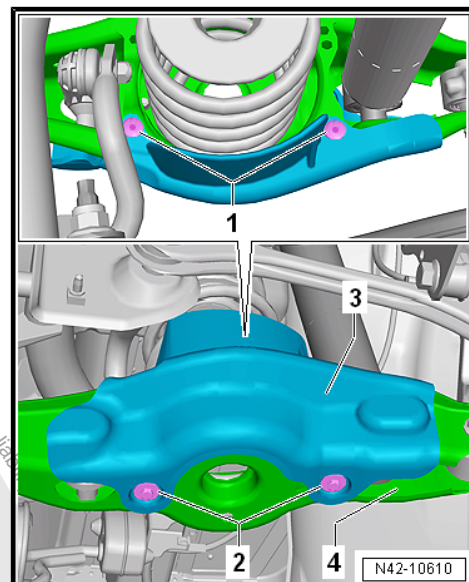
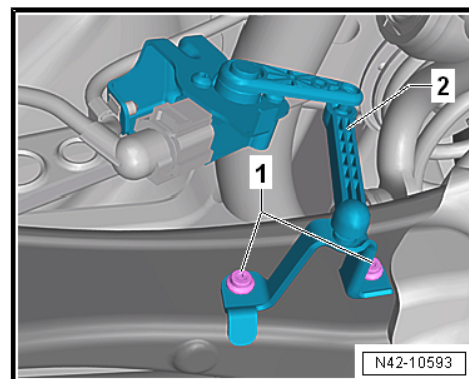
- Remove the bolts -1-.
- Remove the Left Rear Level Control System Sensor - G76-
-2- bracket.

Vehicles with Stone Chip Protection

- Remove the expanding rivets -1-.
- Remove the bolts -2- for the stone chip protection -3-.

Continuation for All Vehicles

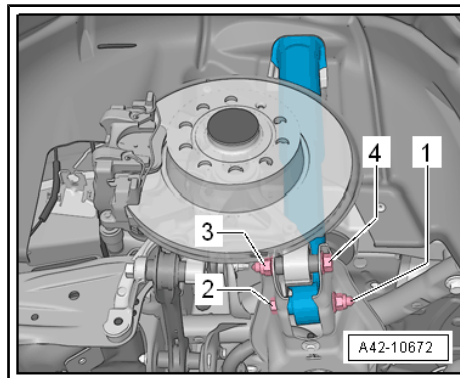
- Remove the spring. Refer to
⇒ ["6.4 Spring, Removing and Installing", page 248](#) .



Remove the nut -1- from the coupling rod -2-.
Remove the coupling rod -2- from the stabilizer bar -3-.

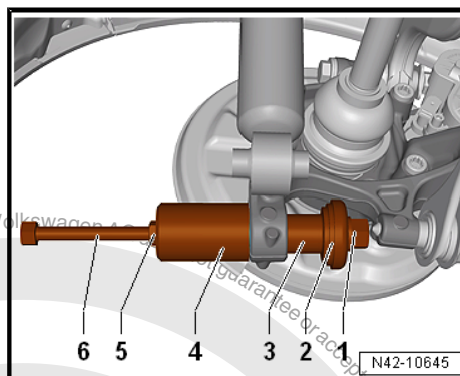


- Remove the nut -1- and then the bolt -2- for the shock absorber threaded connection.
- Remove the nut -3- and then the bolt -4- for the wheel bearing housing threaded connection.



Pressing out Bonded Rubber Bushing

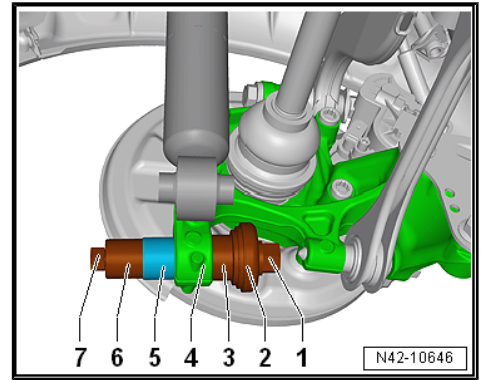
- 1 - Bearing Installer - Control Arm - Nut - 3346/3-
 - 2 - Thrust piece from the Subframe Bushing Tool Kit - 3301-
 - 3 - Torque Adapter - 3390-
 - 4 - Sleeve from Bearing Installer - Carrier Bearing - 3350-
 - 5 - Nut
 - 6 - Bearing Installer - Control Arm - Spindle - 3346/2-
- Remove the bonded rubber bushing by turning the Bearing Installer - Control Arm - Nut - 3346/3- -1-. While doing so counterhold on the Bearing Installer - Control Arm - Spindle - 3346/2- -6-.





Installing the Bonded Rubber Bushing

- 1 - Nut from Subframe Bushing Tool Kit - 3301-
 - 2 - Thrust piece from the Subframe Bushing Tool Kit - 3301-
 - 3 - Press Tool For Viscous Fan - Thrust Piece - 3367/2-
 - 4 - Wheel Bearing Housing
 - 5 - Bonded Rubber Bushing
 - 6 - Torque Adapter - 3390-
 - 7 - Spindle from Subframe Bushing Tool Kit - 3301-
- Install the bonded rubber bushing until it stops by turning the nut from the Subframe Bushing Tool Kit - 3301- -1-. Counterhold the spindle from the Subframe Bushing Tool Kit - 3301- -7- while doing so.



Note

- ◆ *Do not use lubricant!*
- ◆ *Always install the bushing carefully on the wheel bearing housing chamfer from behind so that it does not tilt.*

Installing

Install in reverse order of removal and note the following:

Tightening Specifications

- ◆ Refer to ⇒ [“7.1 Overview - Wheel Bearing”, page 257](#)
- ◆ Refer to ⇒ [“6.1.2 Overview - Suspension Strut, Shock Absorber and Spring, Multi-Link Suspension”, page 238](#)
- ◆ Refer to ⇒ [“4.1 Overview - Stabilizer Bar”, page 221](#)
- ◆ Refer to ⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)
- Only fasten the threaded connections to the lower transverse link in the curb weight position. Refer to ⇒ [“2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring”, page 6](#) .
- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics using. Refer to Vehicle Diagnostic Tester .
- For vehicles with a level control system sensor, perform a headlamp basic setting. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Headlamp; Headlamp, Adjusting .

7.6 Trailing Arm with Mounting Bracket, Removing and Installing

⇒ [“7.6.1 Trailing Arm with Mounting Bracket, Removing and Installing, Except e-Golf”, page 283](#)

⇒ [“7.6.2 Trailing Arm with Mounting Bracket, Removing and Installing, e-Golf”, page 286](#)

7.6.1 Trailing Arm with Mounting Bracket, Removing and Installing, Except e-Golf

Special tools and workshop equipment required

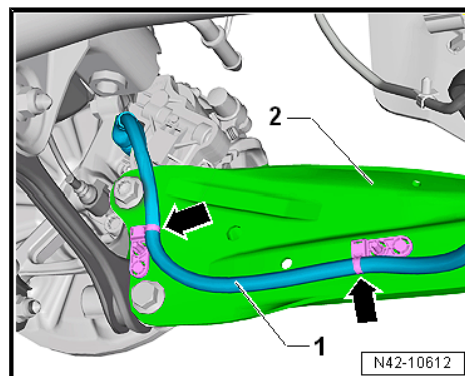


◆ Torque Wrench 1332 40-200Nm - VAG1332-

◆ Engine and Gearbox Jack - VAS6931-

Removing

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Remove the spring. Refer to
⇒ ["6.4 Spring, Removing and Installing", page 248](#) .
- Remove the line -1- from the trailing arm -2-. To do this push out the inner pins from the bracket -arrows-.



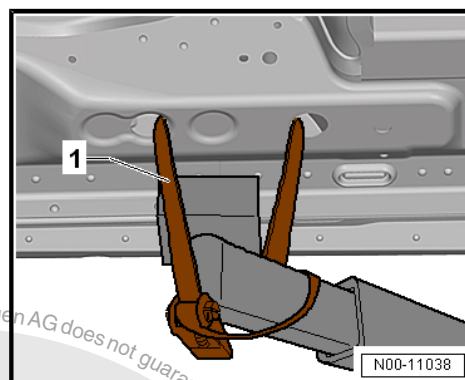
- Secure both sides of the vehicle on the hoist arms using Tensioning Straps - T10038- -1-.



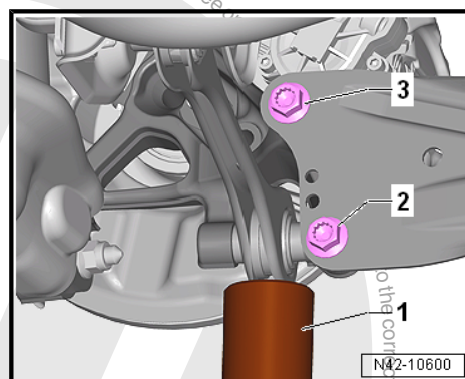
WARNING

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

- Place the Engine and Gearbox Jack - VAS6931- -1- under the tie rod and push lightly upward.



- Remove the bolts -2 and 3- one after the other.
- Remove the Engine and Gearbox Jack - VAS6931- -1- from under the tie rod.



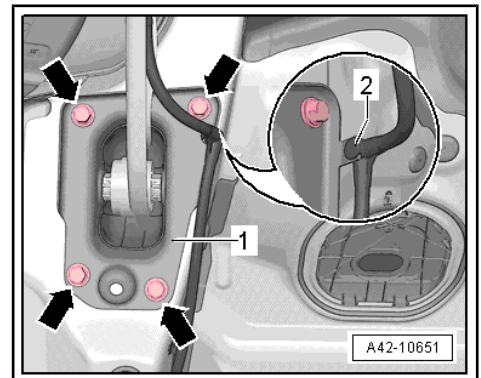
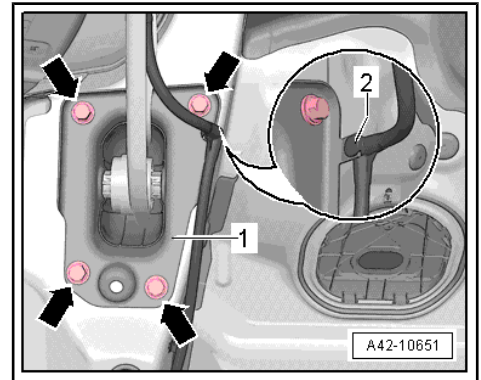


- Remove the line -2- from the mounting bracket -1-.
- Mark the mounting bracket -1- installation position on the body.
- Remove the bolts -arrows-.
- Remove the trailing arm with mounting bracket.

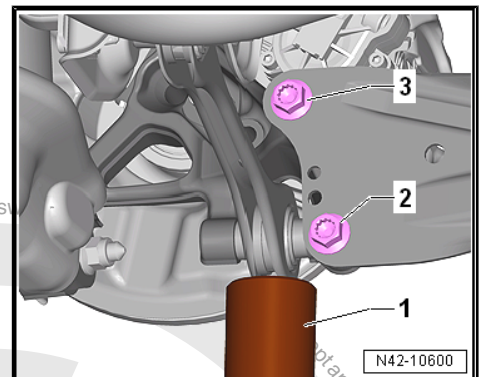
Installing

Install in reverse order of removal and note the following:

- Tighten the bolts -arrows- onto the old impression or the marking applied previously.
- Secure the line -2- to the mounting bracket -1-.

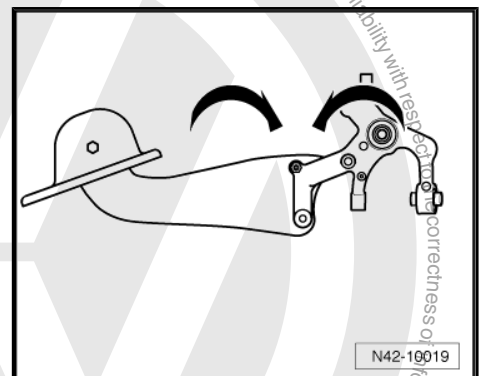


- Place the Engine and Gearbox Jack - VAS6931- -1- under the tie rod and push lightly upward.
- Install the bolts -2 and 3- by hand.
- Remove the Engine and Gearbox Jack - VAS6931- -1- from under the tie rod.



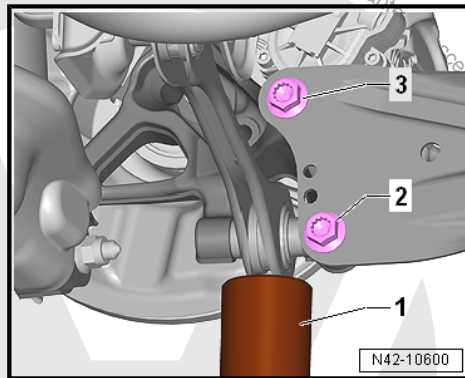
Threaded connection of trailing link/wheel bearing housing must only be tightened when all other components (spring and shock absorber always) of the respective wheel suspension have been already assembled. To tighten, suspension must be unloaded. Only now do the trailing arm and wheel bearing housing move into the position required -arrows-.

- Install the spring. Refer to ["6.4 Spring, Removing and Installing", page 248](#).





- Tighten the bolts -2 and 3-.

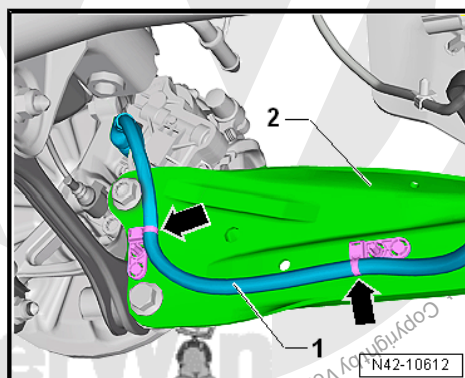


- Remove the brackets -arrows- and the line -1- from the trailing arm -2-. To do so push in the rivet inner pins.

After installation, the axle alignment must be checked on alignment stand. Refer to
⇒ [“3.7 Need for Axle Alignment, Evaluating”, page 357](#) .

Tightening Specifications

- ◆ Refer to ⇒ [“7.2 Overview - Trailing Arm”, page 261](#)
- ◆ Refer to
⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)



7.6.2 Trailing Arm with Mounting Bracket, Removing and Installing, e-Golf

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Engine and Gearbox Jack - VAS6931-

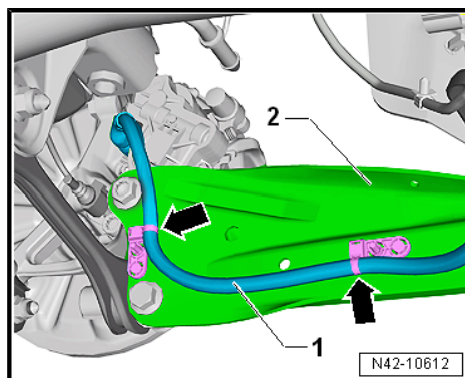
Removing

Only for Work Procedures on the Right Side of the Vehicle

- De-energize the high-voltage system. Refer to ⇒ Rep. Gr. 93 ; High Voltage System, De-Energizing .

Continuation for Both Sides

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Remove the spring. Refer to
⇒ [“6.4 Spring, Removing and Installing”, page 248](#) .
- Remove the line -1- from the trailing arm -2-. To do this push out the inner pins from the bracket -arrows-.



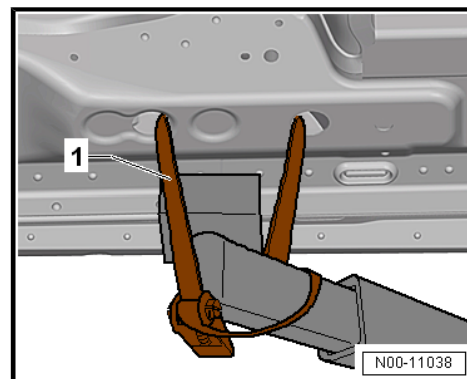


- Secure both sides of the vehicle on the hoist arms using Tensioning Straps - T10038- -1-.

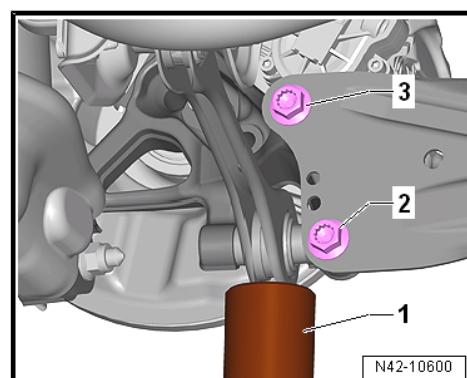


WARNING

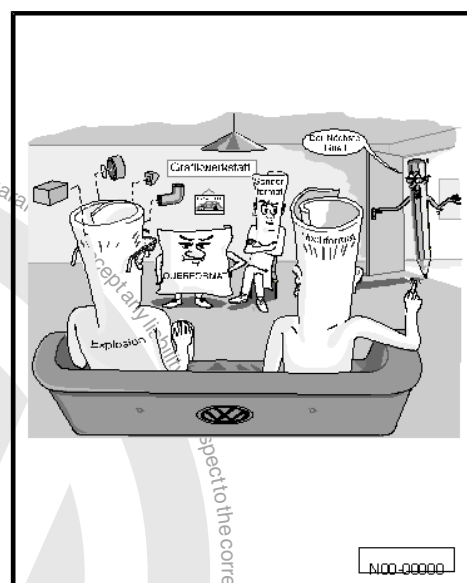
The vehicle could slide off the hoist if it is not secured.



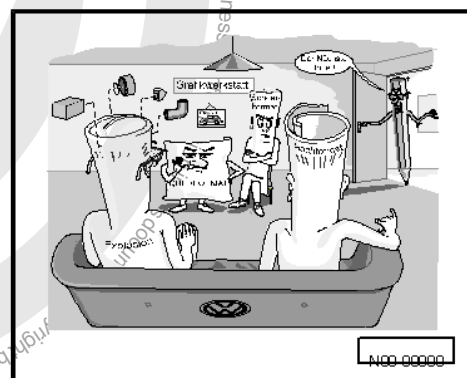
- Place the Engine and Gearbox Jack - VAS6931- -1- under the tie rod and push lightly upward.
- Remove the bolts -2 and 3- one after the other.
- Remove the Engine and Gearbox Jack - VAS6931- -1- from under the tie rod.



- Push down the tabs -1- on both sides of the cover -2-.
- Push the cover -2- in the direction of -arrow- outward and remove from the deformation element.



- Remove the line -1- from the deformation element -2- -arrows-.
- Remove the bolts -3- and the deformation element -2-.





- Disengage the line -1- from the mounting bracket -2-.
- Mark the installation position of the mounting bracket -2- on the body.
- Remove the bolts -arrows-.
- Remove the trailing arm with mounting bracket.

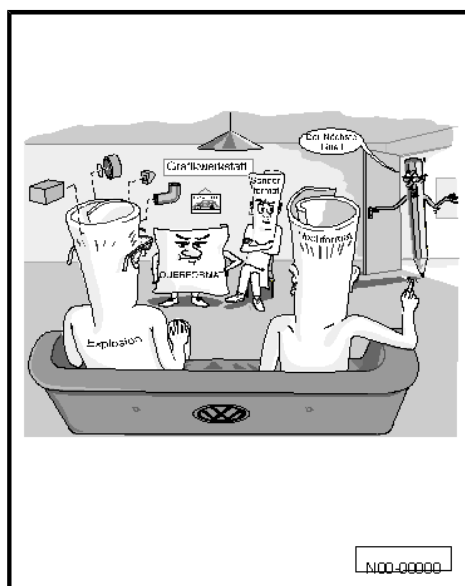
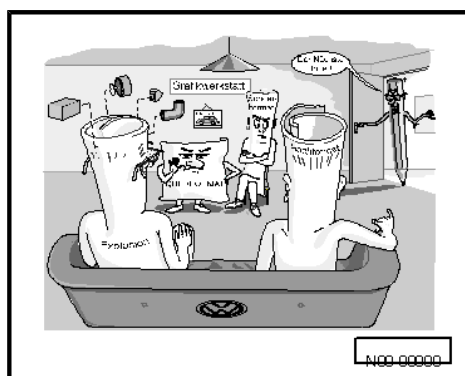
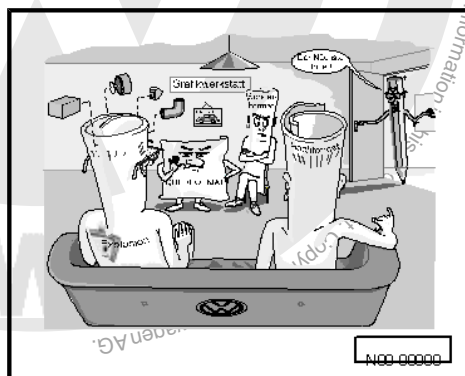
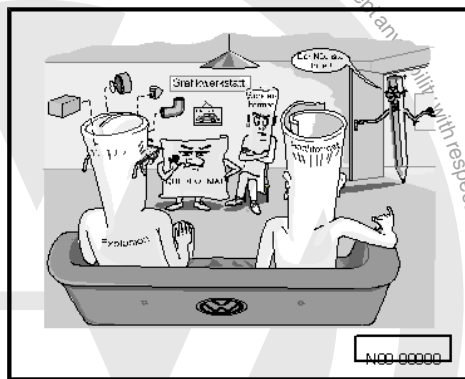
Installing

Install in reverse order of removal and note the following:

- Tighten the bolts -arrows- onto the old impression or the marking applied previously.
- Engage the line -1- in the mounting bracket -2-.

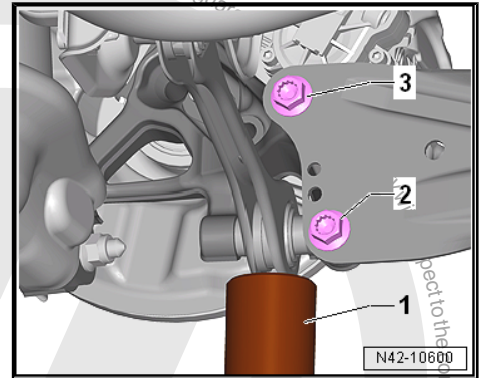
- Insert the deformation element -2- and tighten the bolts -3- onto the old impression.
- Insert the line -1- in the deformation element -2- -arrows-.

- Push the cover -2- opposite the direction of -arrow- on the deformation element.
- The tabs -1- from the cover -2- must engage in the deformation element.



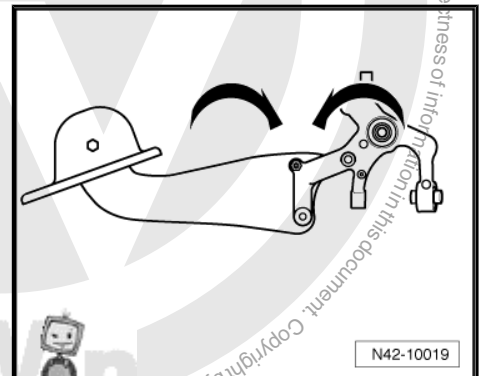


- Place the Engine and Gearbox Jack - VAS6931- -1- under the tie rod and push lightly upward.
- Install the bolts -2 and 3- by hand.
- Remove the Engine and Gearbox Jack - VAS6931- -1- from under the tie rod.

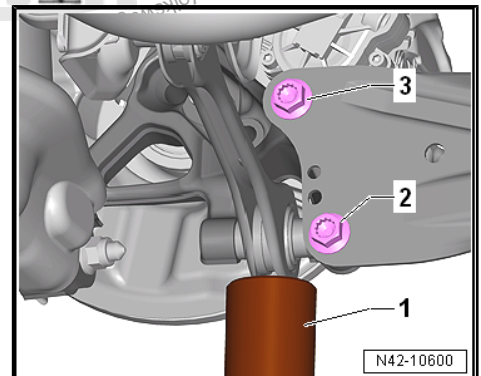


Threaded connection of trailing link/wheel bearing housing must only be tightened when all other components (spring and shock absorber always) of the respective wheel suspension have been already assembled. To tighten, suspension must be unloaded. Only now do the trailing arm and wheel bearing housing move into the position required -arrows-

- Install the spring. Refer to [⇒ “6.4 Spring, Removing and Installing”, page 248](#) .



- Tighten the bolts -2 and 3-.



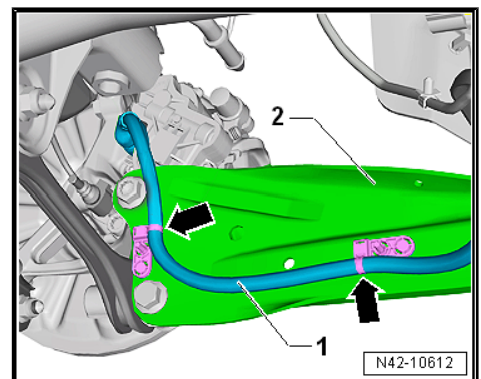
- Remove the brackets -arrows- and the line -1- from the trailing arm -2-. To do so push in the rivet inner pins.

After installation, the axle alignment must be checked on alignment stand. Refer to

[⇒ “3.7 Need for Axle Alignment, Evaluating”, page 357](#) .

Tightening Specifications

- ◆ Refer to [⇒ “7.2 Overview - Trailing Arm”, page 261](#)
- ◆ Refer to [⇒ “1.4 Wheel Bolt Tightening Specifications”, page 340](#)



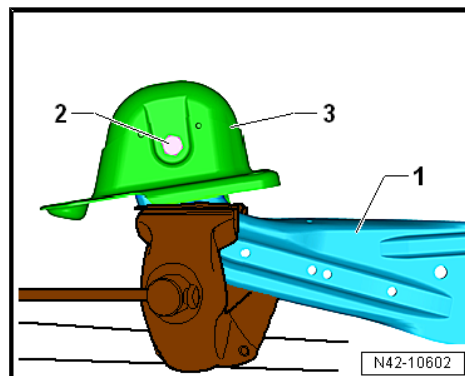
7.7 Trailing Arm, Servicing

Special tools and workshop equipment required

- ◆ Bearing Installer - Wheel Bearing - 3345-
- ◆ Bearing Installer - Control Arm - 3346-
- ◆ Press Plate - VW402-
- ◆ Press Piece - Multiple Use - VW412-

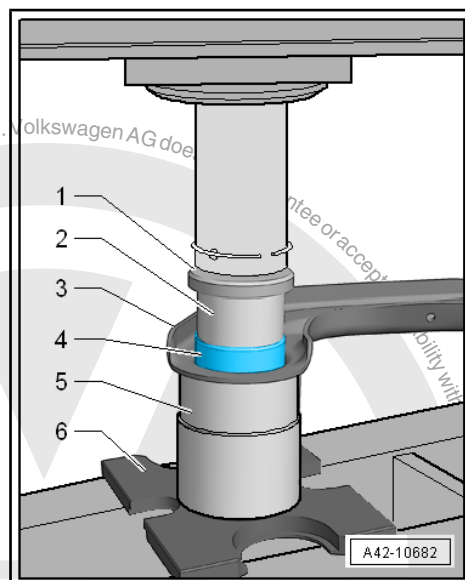


- ◆ Press Piece - Trailing Arm Bushing - T10496-
- Remove the trailing arm with the mounting bracket. Refer to
⇒ ["7.6 Trailing Arm with Mounting Bracket, Removing and Installing", page 283](#) .
- Clamp the trailing arm -1- in the vise with protective covers.
- Remove the bolt -2- and remove the mounting bracket -3- from the trailing arm.



Pressing out the Bonded Rubber Bushing

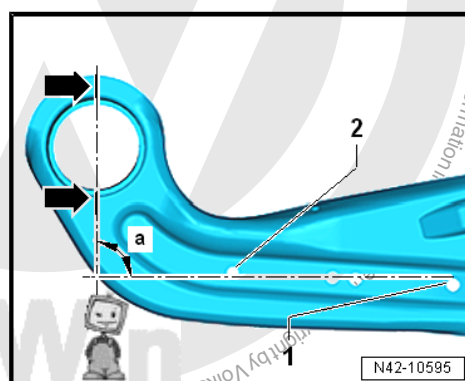
- Mount the tools as illustrated.
- 1 - Press Piece - Multiple Use - VW412-
- 2 - Bearing Installer - 3346/1- from the Bearing Installer - Control Arm - 3346- (the deep recess points to the bonded rubber bushing)
- 3 - Trailing Arm
- 4 - Bonded Rubber Bushing
- 5 - Bearing Installer - Wheel Bearing - 3345-
- 6 - Press Plate - VW402-
- Press out the bonded rubber bushing.



Installing the Bonded Rubber Bushings

- Mark the position of the bonded rubber bushing on the trailing arm with a right angle.
- Place the outer edge of the right angle on the upper -1- and lower radius -2- of the hole.
- Make a mark over and under the bushing on the trailing arm -arrows-.

a - 90°





Position the bonded rubber bushing on the trailing arm so that the marked line -arrows- runs along the ribs -1-.



Note

Make absolutely sure that the bonded rubber bushing is in the correct installation position in relation to the trailing arm socket.

– Mount the tools as illustrated.

1 - Press Piece - Multiple Use - VW412-

2 - Press Piece - Trailing Arm Bushing - T10496-

3 - Bonded Rubber Bushing

4 - Trailing Arm

5 - Bearing Installer - Wheel Bearing - 3345-

6 - Press Plate - VW402-

– Install the bonded rubber bushing.

Determining Installation Position of Mounting Bracket Relative to Trailing Arm

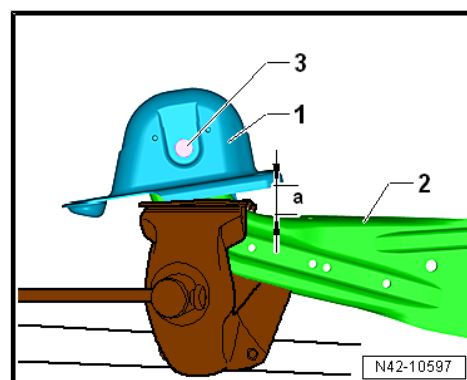
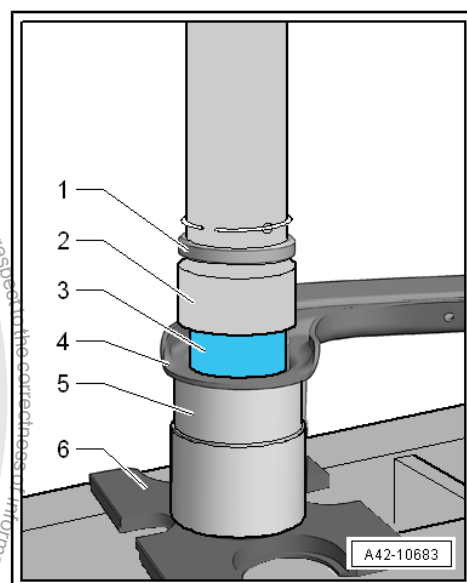
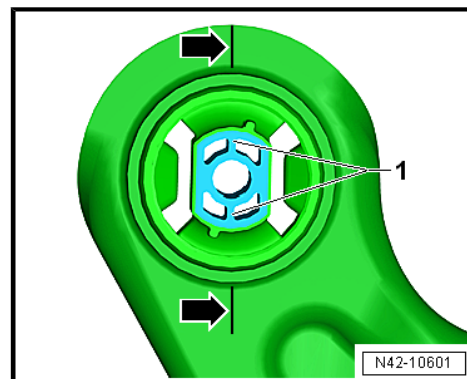
– Clamp the trailing arm -2- in the vise with jaw protectors.

– Position the mounting bracket -1- on the trailing arm -2-.

– Install the bolt -3-.

– Adjust the dimension -a- to 37 mm and tighten the bolt -3-.

– Install the trailing arm with mounting bracket. Refer to
⇒ "7.6 Trailing Arm with Mounting Bracket, Removing and Installing", page 283.



8 Drive Axle

⇒ ["8.1 Overview - Drive Axle", page 292](#)

⇒ ["8.2 Drive Axle, Removing and Installing", page 293](#)

⇒ ["8.3 Drive Axle, Disassembling and Assembling", page 297](#)

⇒ ["8.4 Drive Axle Threaded Connection, Loosening and Tightening", page 300](#)

⇒ ["8.5 Outer CV Joint, Checking", page 301](#)

⇒ ["8.6 Inner CV Joint, Checking", page 303](#)

8.1 Overview - Drive Axle

1 - Outer CV Joint

- ☐ Only replace completely
- ☐ Removing. Refer to
⇒ [Fig. "Outer CV Joint, Pressing Off", page 298](#).
- ☐ Installing: Using a plastic hammer, drive onto the shaft as far as the stop
- ☐ Divide the grease evenly in the joint
- ☐ Checking. Refer to
⇒ ["8.5 Outer CV Joint, Checking", page 301](#).

2 - Bolt

- ☐ 200 Nm +180°. Refer to
⇒ ["8.4 Drive Axle Threaded Connection, Loosening and Tightening", page 300](#).
- ☐ Replace after removing
- ☐ Before installing, clean the threads in the CV joint with a thread tap.

3 - Drive Axle

- ☐ Allocation. Refer to the Parts Catalog.

4 - Clamp

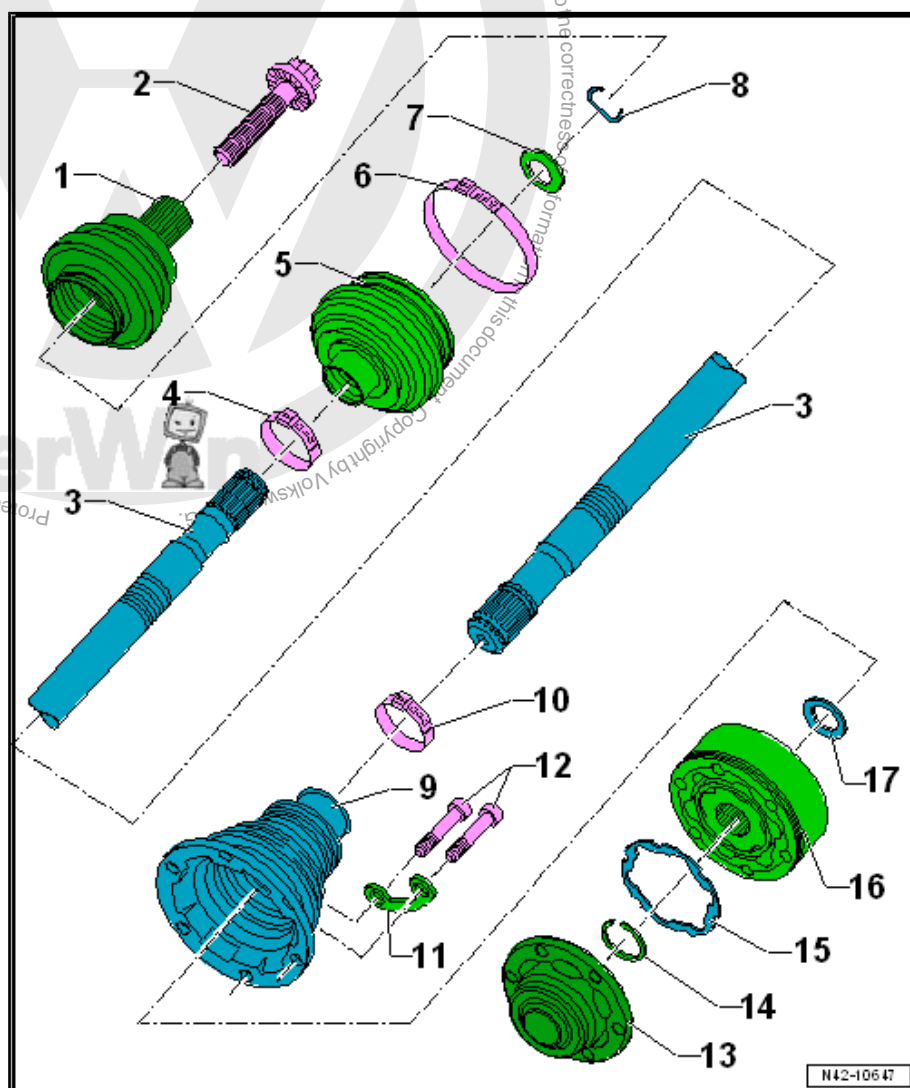
- ☐ Replace after removing
- ☐ Tensioning. Refer to
⇒ [Fig. "Tensioning Clamp on Small Diameter", page 300](#).

5 - CV Boot

- ☐ Check for tears and scuffing
- ☐ Material: Hytrel polyelastomer

6 - Clamp

- ☐ Replace after removing
- ☐ Tensioning. Refer to ⇒ [Fig. "Tightening Clamp on Outer Joint", page 300](#).





7 - Plate Spring

- ☐ With inner spline
- ☐ Installation position. Refer to ➤ [Fig. "Installed Position, Plate Spring on the Outer Joint"](#), page 298 .

8 - Circlip

- ☐ Replace after removing
- ☐ Insert in shaft groove

9 - CV Boot for CV joint

- ☐ Material: Hytrel polyelastomer
- ☐ Without vent hole
- ☐ Check for tears and scuffing
- ☐ Drive off CV joint using drift
- ☐ Coat the sealing surface with -D 454 300 A2- before installing it on the CV joint

10 - Clamp

- ☐ Replace after removing
- ☐ Tensioning. Refer to ➤ [Fig. "Tensioning Clamp on Small Diameter"](#), page 300 .

11 - Backing Plate

12 - Internal Multi-Point Bolt

- ☐ First tighten diagonally to 10 Nm, then tighten diagonally again to the tightening specification
- ☐ 40 Nm
- ☐ Replace after removing

13 - Cover

- ☐ Replace after removing
- ☐ Removing. Refer to ➤ [Fig. "Drive off Cover for Inner Joint"](#), page 298 .

14 - Circlip

- ☐ Replace after removing
- ☐ Remove and install using Circlip Pliers - VW161A- .

15 - Seal

- ☐ Replace after removing
- ☐ Bonding surface on CV joint must not have any grease or oil on it.

16 - Inner CV Joint

- ☐ Only replace completely
- ☐ Divide the grease evenly in the joint
- ☐ Removing. Refer to ➤ [Fig. "Inner CV Joint, Removing"](#), page 299 .
- ☐ Installing. Refer to ➤ [Fig. "Inner CV Joint, Pressing On"](#), page 299 .
- ☐ Checking. Refer to ➤ ["8.6 Inner CV Joint, Checking"](#), page 303 .

17 - Plate Spring

- ☐ with inner spline
- ☐ Installation position. Refer to ➤ [Fig. "Installed Location of the Plate Spring on Inner Joint"](#), page 299 .

8.2 Drive Axle, Removing and Installing

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Driveshaft Remover - T10520-



Caution

When disassembling and performing repairs on a vehicle, the drive axles must not hang down loosely and contact the stops in the joint by over bending.

Removing

- Loosen the outer drive axle threaded connection. Refer to [⇒ "8.4 Drive Axle Threaded Connection, Loosening and Tightening", page 300](#).



Caution

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

If the wheel bearings are under the load of the vehicle weight, the wheel bearing will be damaged. This reduces the service life of the wheel bearings.

The drive axle bolt may be loosened maximum 90° when the vehicle is standing on its wheels.

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

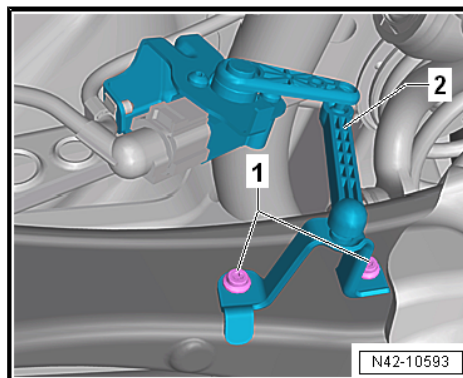
- ◆ *Install an outer joint in place of the drive axle.*
- ◆ *Tighten the outer joint to 120 Nm.*

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Remove the coil spring. Refer to [⇒ "6.4 Spring, Removing and Installing", page 248](#).

Vehicles with Level Control System Sensor

- Remove the bolts -1-.
- Remove the Left Rear Level Control System Sensor - G76-2- bracket.

Vehicles with Adaptive Chassis DCC





- Disconnect the connector -1- from the shock absorber -2-.
- Remove the wire -3- from the shock absorber -2- -arrow-.



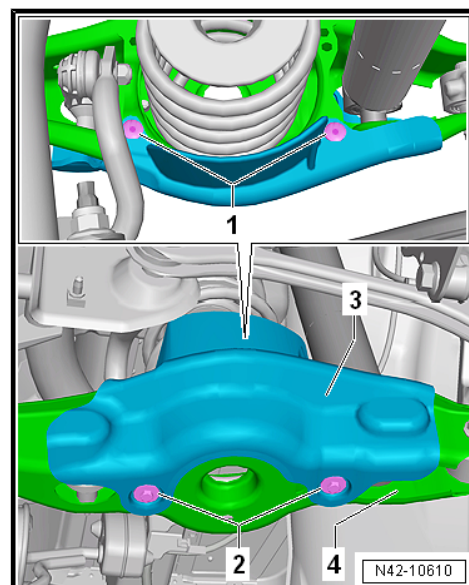
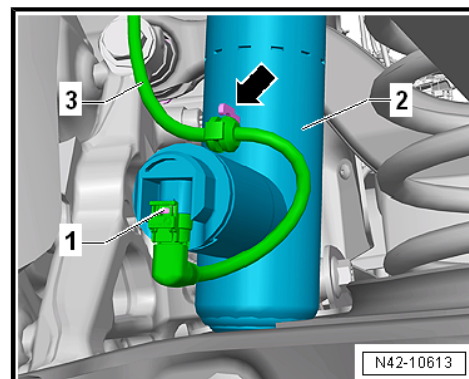
Note

If there is moisture in the connector area, blow compressed air on the contacts on the shock absorber and the connectors.

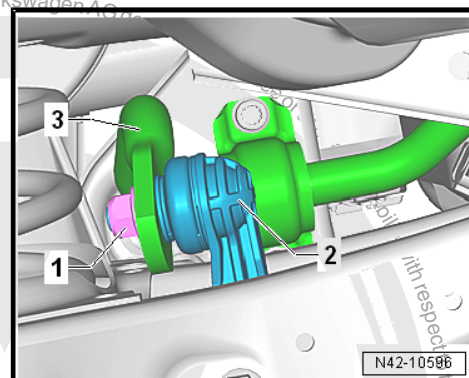
Vehicles with Stone Chip Protection

- Remove the expanding rivets -1-.
- Remove the bolts -2- for the stone chip protection -3-.

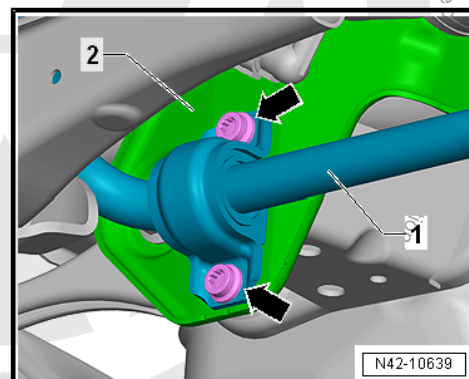
Continuation for All Vehicles



- Remove the nut -1- from the coupling rod -2-.
- Remove the coupling rod -2- from the stabilizer bar -3-.

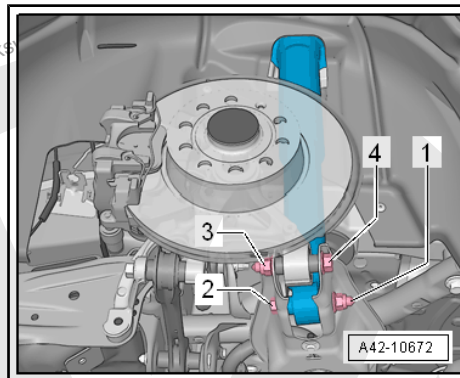


- Remove the bolts -arrows- for the stabilizer bar -1-.
- Remove the stabilizer bar -1- from the subframe -2- and pivot downward.

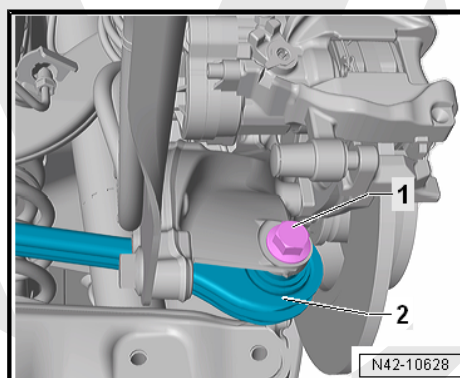




- Remove the nut -1- and then the bolt -2- for the shock absorber threaded connection.
- Remove the nut -3- and then the bolt -4- for the wheel bearing housing threaded connection.



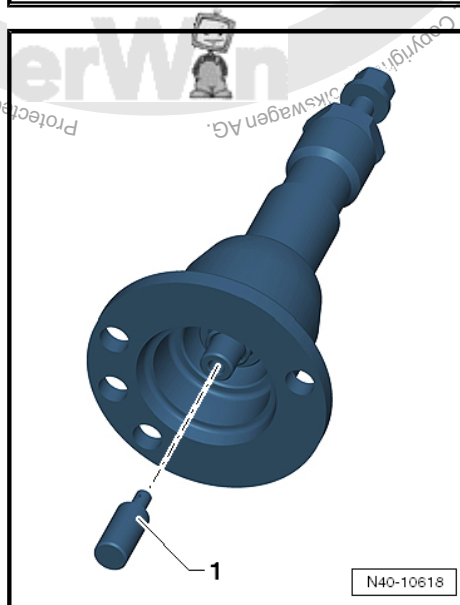
- Remove the bolt -1- for the tie rod -2-.
- Remove the drive axle from the transmission flange.
- Tilt the wheel bearing housing outward and remove the drive axle from the transmission flange.
- Pivot the drive axle downward and remove it from the wheel bearing.



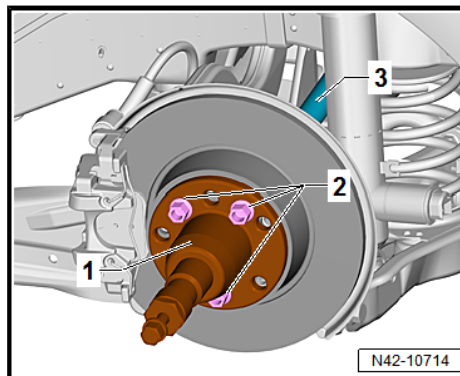
If the Drive Axle Cannot Be Pulled out of the Wheel Bearing, Then the Drive Axle Can Be Pushed out of the Wheel Bearing Using the Drive Shaft Remover - T10520- .

Before using the Drive Shaft Remover - T10520- , make sure that the thrust piece -1- is installed.

Using the Drive Shaft Remover - T10520- :



- Secure the Drive Shaft Remover - T10520- -1- with three wheel bolts -2- on the wheel hub, so that the drive axle -3- can be pressed out.





- Follow the specified sequence exactly.

I - Tighten the knurled nut -1- hand-tight.

II - Only turn the bolt -2- using a wrench and press out the drive axle using the Drive Shaft Remover - T10520- .



Note

At the end of the tasks or to set back, the spindles must be brought back into the original position so that the hydraulic operation can be used.

- Remove the drive axle.

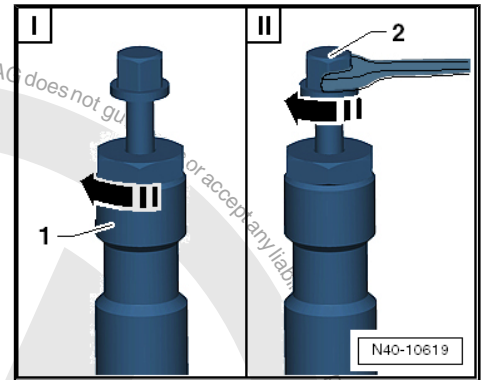
Installing

Install in reverse order of removal and note the following:

- Only fasten the threaded connections on the wheel bearing housing in the curb weight position. Refer to [⇒ "2.8.2 Wheel Bearing in Curb Weight, Rear Axle, Lifting Vehicles with Coil Spring", page 6](#) .
- For vehicles with a level control system sensor, perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .
- Lightly coat the splines on the outer joint with assembly paste before installing the outer joint into the wheel hub. Refer to the Parts Catalog.

Tightening Specifications

- ◆ Refer to [⇒ "8.1 Overview - Drive Axle", page 292](#)
- ◆ Refer to [⇒ "5.1.2 Overview - Transverse Link, Multi-Link Suspension, AWD", page 228](#)
- ◆ Refer to [⇒ "5.2.2 Overview - Tie Rod, Multi-Link Suspension, AWD", page 231](#)
- ◆ Refer to [⇒ "6.1.2 Overview - Suspension Strut, Shock Absorber and Spring, Multi-Link Suspension", page 238](#)
- ◆ Refer to [⇒ "2.4.2 Left Rear Level Control System Sensors G76 , Removing and Installing, Multi-Link Suspension, FWD", page 332](#)
- ◆ Refer to [⇒ "8.4 Drive Axle Threaded Connection, Loosening and Tightening", page 300](#)
- ◆ Refer to [⇒ "1.4 Wheel Bolt Tightening Specifications", page 340](#)
- ◆
- For vehicles with a level control system sensor, perform a headlamp basic setting. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Headlamp; Headlamp, Adjusting .



8.3 Drive Axle, Disassembling and Assembling

Special tools and workshop equipment required

- ◆ Press Plate - VW401-



- ◆ Press Plate - VW402-
- ◆ Press Piece - Rod - VW408A-
- ◆ Press Piece - Rod - VW411-
- ◆ Press Piece - 37mm - VW416B-
- ◆ Press Piece - Multiple Use - VW447H-
- ◆ Circlip Pliers - VW161A-
- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Clamping Pliers - VAG1682A-
- ◆ Tripod Joint Tool - T10065-

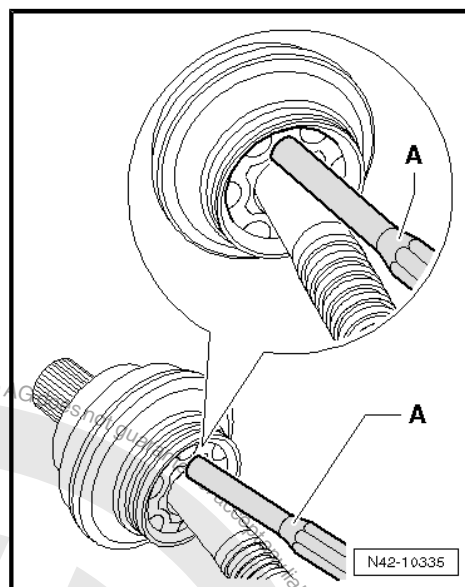
Disassembling

Outer CV Joint, Pressing Off

- Clamp the drive axle with protective jaws in a vise clamp.
- Remove the clamp.
- Fold back boot.
- Drive CV joint from drive axle using a drift -A-.

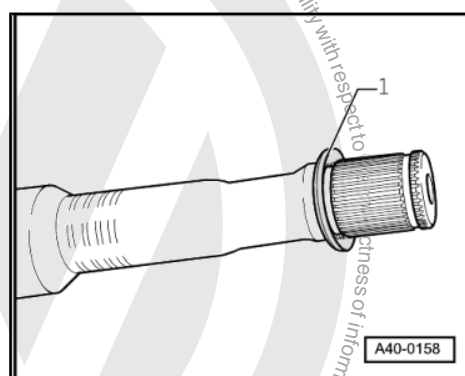
The drift must be precisely positioned on the CV joint ball hub.

Driving Joint On

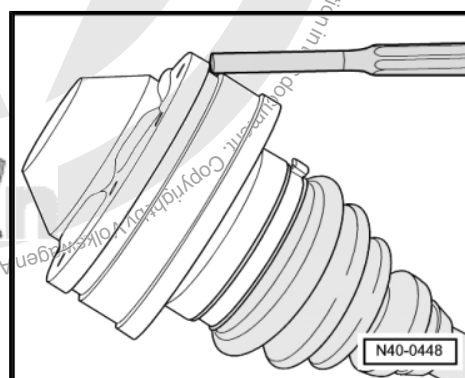


Installed Position, Plate Spring on the Outer Joint

- 1 - Plate Spring
- Insert a new circlip.
 - Drive the joint onto the shaft using a plastic hammer until the circlip locks into place.



Drive off Cover for Inner Joint

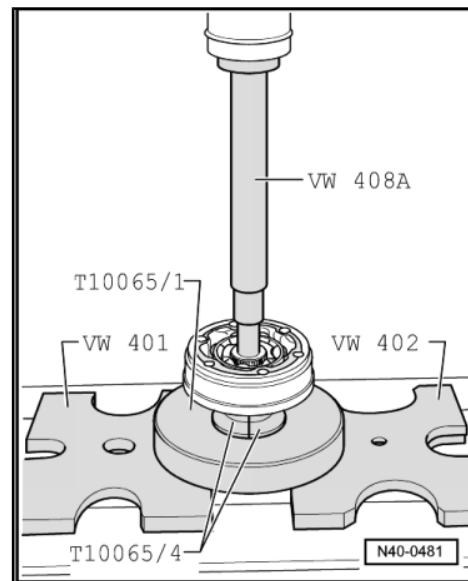




Inner CV Joint, Removing

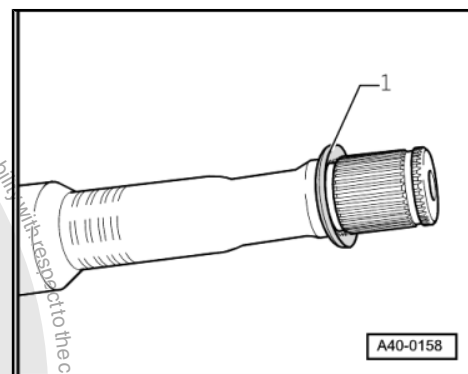
- Press off the CV boot from joint using drift.
- Remove the circlip.
- Remove both clamps, and push the CV boot toward outer joint.

Assembling



Installed Location of the Plate Spring on Inner Joint

1 - Plate Spring



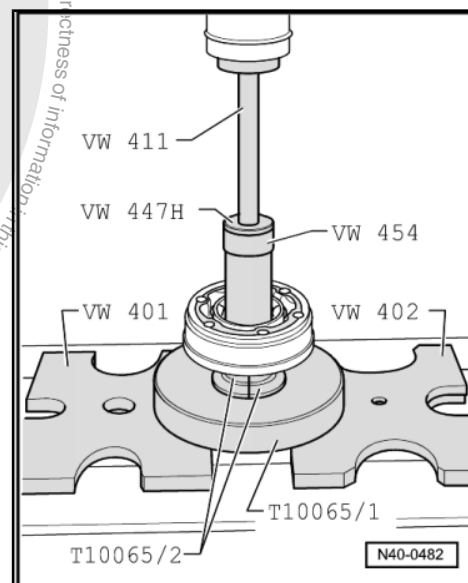
Inner CV Joint, Pressing On



Note

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

- Press on joint until stop.
- Install the circlip.

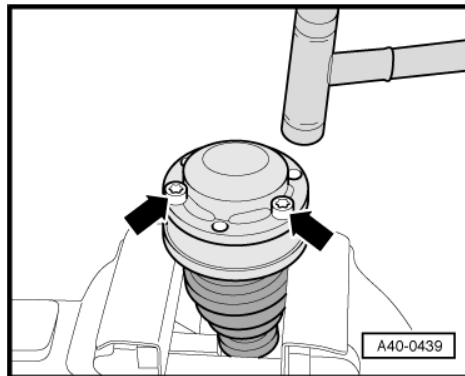




- Align new cover with screws -arrows- to screw holes.

It Must Be Aligned Exactly Because It Cannot Be Aligned after Driving On.

- Drive cover on with a plastic hammer.



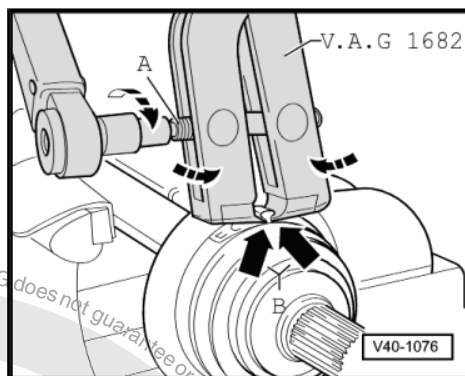
Tightening Clamp on Outer Joint

- Attach the Clamping Pliers - VAG1682A- as illustrated. When doing this, make sure that edges of the pliers are positioned in the corners -B arrows- of the clamp.
- Tension clamp by turning spindle with a torque wrench (do not tilt clamp tool).

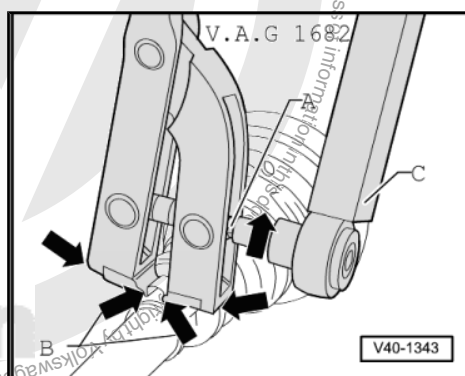


Note

- ♦ *The hard material of the CV boot (compared to rubber) makes it necessary to use a stainless steel hose clamp. It is only possible to tighten the hose clamp with Clamping Pliers - VAG1682A- .*
- ♦ *Tightening specification: 25 Nm.*
- ♦ *Use the torque wrench -C- with adjustment range 5 - 50 Nm (for example, Torque Wrench 1331 5-50Nm - VAG1331-).*
- ♦ *Make sure the spindle threads -A- on the pliers move easily. Lubricate with MOS 2 grease, if necessary.*
- ♦ *If difficult to tighten, for example because of dirty threads, the proper clamping force of the clamping sleeve will not be reached even when tightened to the specification.*



Tensioning Clamp on Small Diameter



8.4 Drive Axle Threaded Connection, Loosening and Tightening

Special tools and workshop equipment required

- ♦ Socket AF 24 mm - T10361A-
- ♦ Digital Torque Wrench - VAG1756A-



Caution

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

If the wheel bearings are under the load of the vehicle weight, the wheel bearing will be damaged. This reduces the service life of the wheel bearings.

The drive axle bolt may be loosened maximum 90° when the vehicle is standing on its wheels.

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

- ◆ *Install an outer joint in place of the drive axle.*
- ◆ *Tighten the outer joint to 120 Nm.*

Outer Drive Axle Bolt, Loosening

- With vehicle still resting on its wheels, loosen the bolt a maximum of 90° using Socket AF 24 mm - T10361A- , otherwise the wheel bearing will be damaged.
- Lift the vehicle just enough so that the wheels are hanging free.
- Press the brake pedal. A second technician will be needed.
- Remove the bolt -arrow-.

Outer Drive Axle Bolt, Tightening

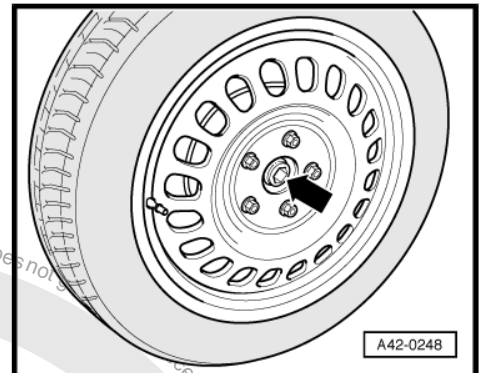
- Replace the bolt for the outer drive axle.



Note

The wheels must not be touching the ground when tightening the drive axle. Otherwise, wheel bearing may be pre-damaged.

- Press the brake pedal. A second technician will be needed.
- Tighten bolt to 200 Nm.
- Lower the vehicle onto its wheels.
- Tighten bolt an additional 180°.



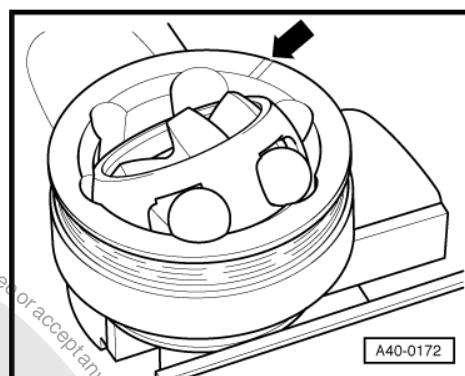
8.5 Outer CV Joint, Checking

The joint is to be disassembled if badly contaminated to replace the grease, or when the ball contact surfaces show wear or damage.

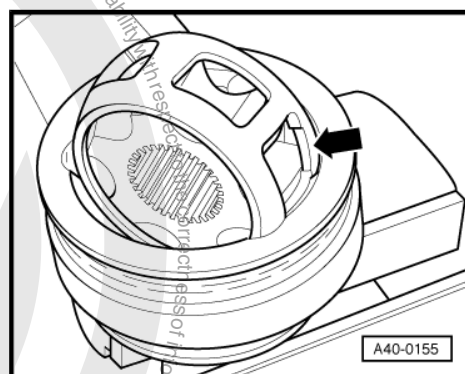


Removing

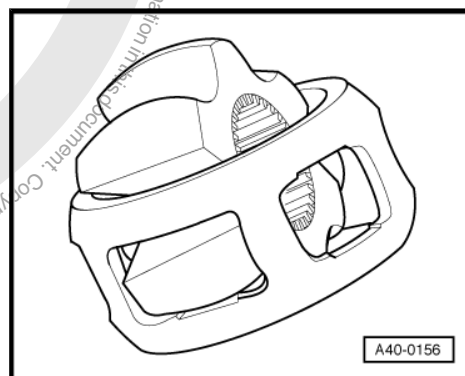
- Before disassembling, mark the ball hub position in relation to the ball cage and housing with an electric engraver or sharpening stone -arrow-.
- Tilt ball hub and ball cage and remove balls one after another.



- Turn cage until the two rectangular windows -arrow- are aligned with the joint housing.
- Lift out cage with hub.



- Swing a hub segment in a cage window.
- Fold hub out from cage.



Note

- ◆ 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 backlash in the joint is noticeable by a thump during load alternations. The joint should be replaced in these cases.
- ◆ Flattening and running marks on the balls are no reason to replace a joint.

Installing

Install in reverse order of removal and note the following:

- Press half of the grease amount from the repair kit into the joint housing.
- Insert cage with hub into joint body.



Note

Cage must be installed laterally correct.

- Press in the opposite facing balls one after the other, and the old position of the ball hub bearing to the ball cage and to the joint housing must be replicated.
- Install new circlip in shaft.
- Distribute remaining grease in the joint boot.



8.6 Inner CV Joint, Checking

The joint is to be disassembled if badly contaminated to replace the grease, or when the ball contact surfaces show wear or damage.

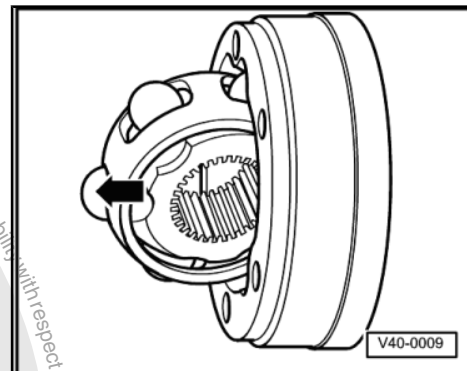


Note

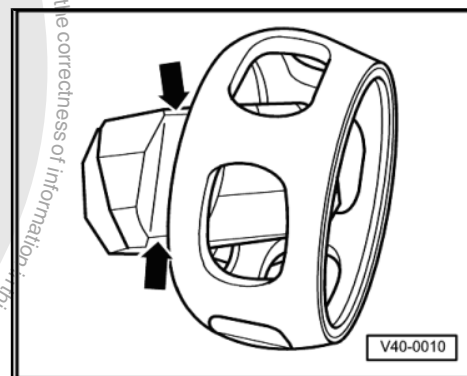
Ball hub and joint piece are paired. Before removing, mark in relation to each other using a waterproof felt-tip pen.

Removing

- Swivel the ball hub and ball cage.
- Remove the joint in the direction of the arrow.
- Remove the balls from the cage.



- Flip out ball hub from ball cage via running path of ball -arrows-.
- Check the joint, ball hub, ball cage and balls for small broken off depressions (pitting) and chafing.



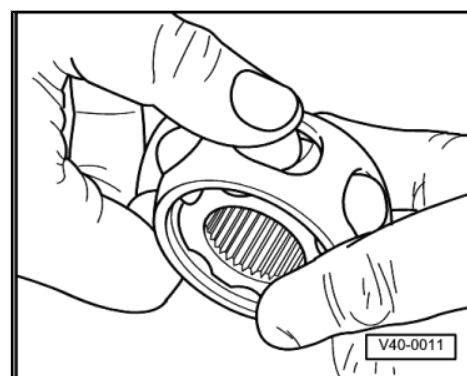
Note

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.

Installing

Install in reverse order of removal and note the following:

- Insert ball hub into ball cage via two chamfers. The installation position is arbitrary. Press balls into cage.
- Insert hub with cage and balls upright into joint piece.

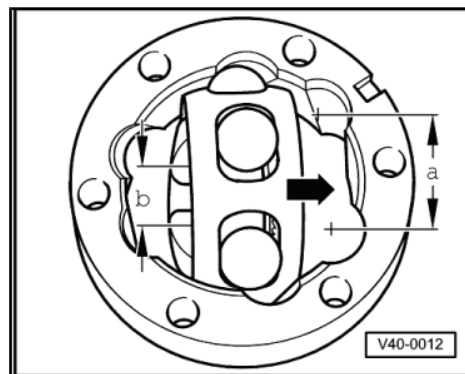




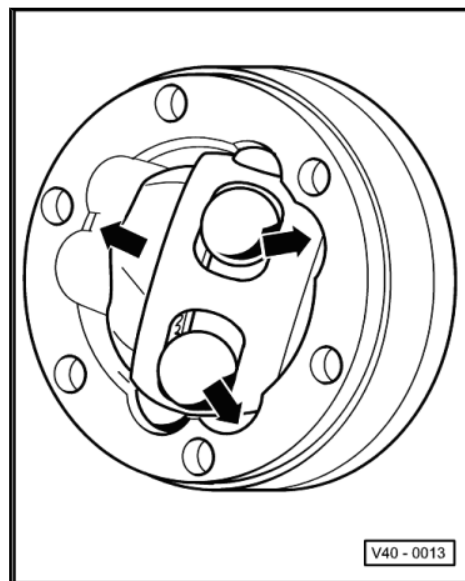
When inserting, make sure that in each case the wide gap -a- at joint piece contacts narrow gap -b- at hub after swinging in.

Chamfer on inner diameter of ball hub (splines) must face large diameter of joint piece.

- Pay attention to the bevel on the inner diameter of the ball hub. It must be visible.



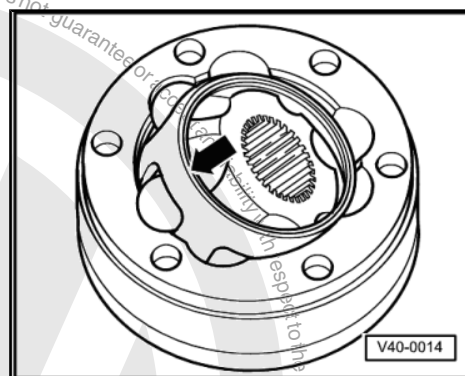
- Swing in ball hub, to do so swing out hub far enough from cage -arrows- so that the balls have the distance of the running paths.



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

CV joint, checking for function.

CV joint is properly assembled, if ball hub can be slid back and forth by hand over whole compensation length.

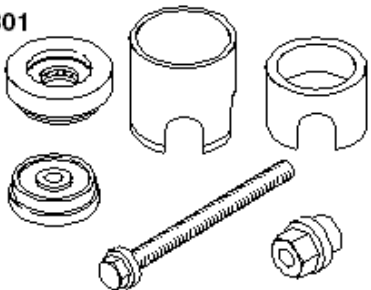
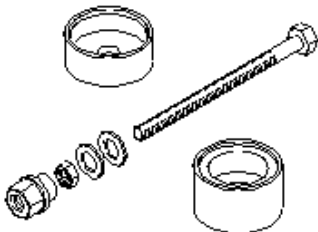
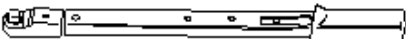
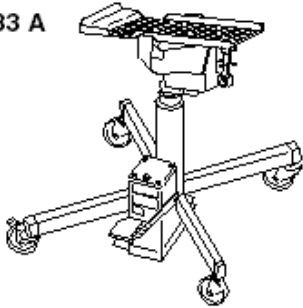




9 Special Tools

Special tools and workshop equipment required

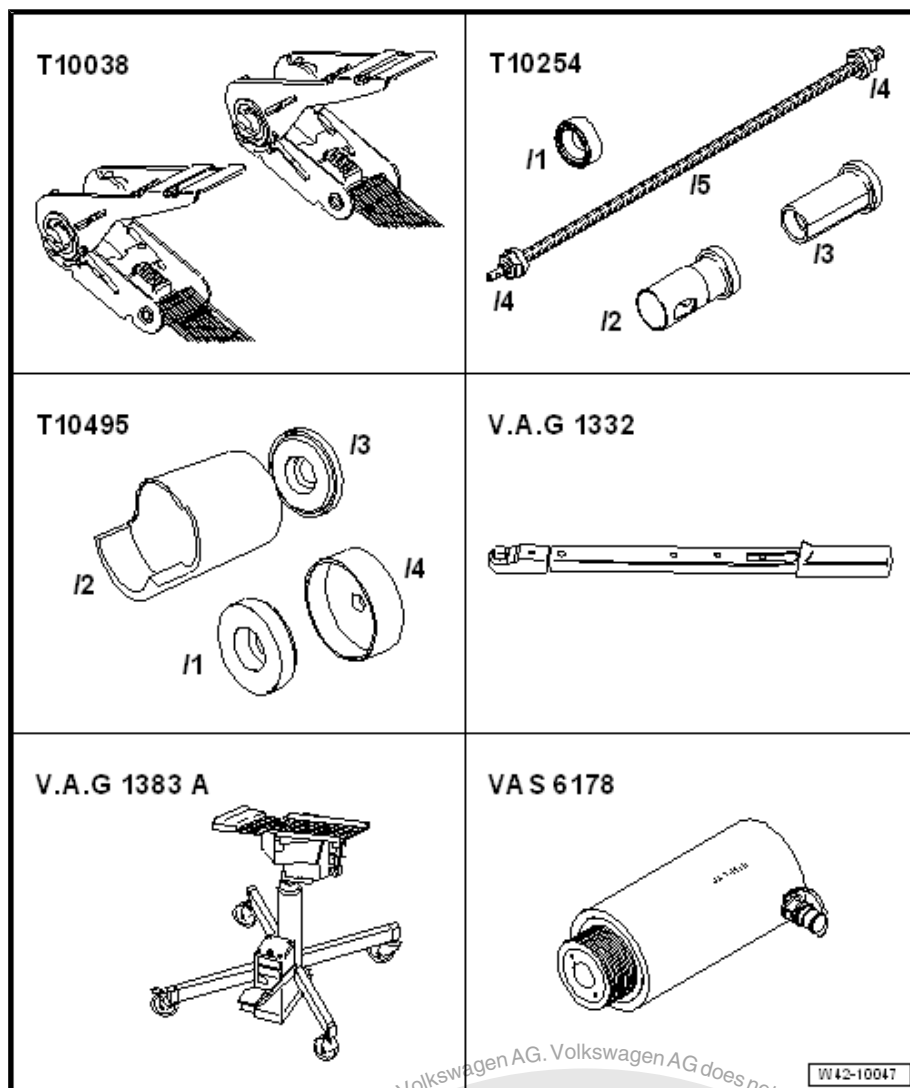
- ◆ Subframe Bushing Tool Kit - 3301-
- ◆ Bearing Installer - Control Arm - 3346-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Engine and Gearbox Jack - VAS6931-

<p>3301</p> 	<p>3346</p> 
<p>V.A.G 1332</p> 	<p>V.A.G 1383 A</p> 
<p>Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by Volkswagen AG. Volkswagen AG does not guarantee or accept any liability with respect to the correctness of information in this document. Copyright by Volkswagen AG.</p>	

W42-10042

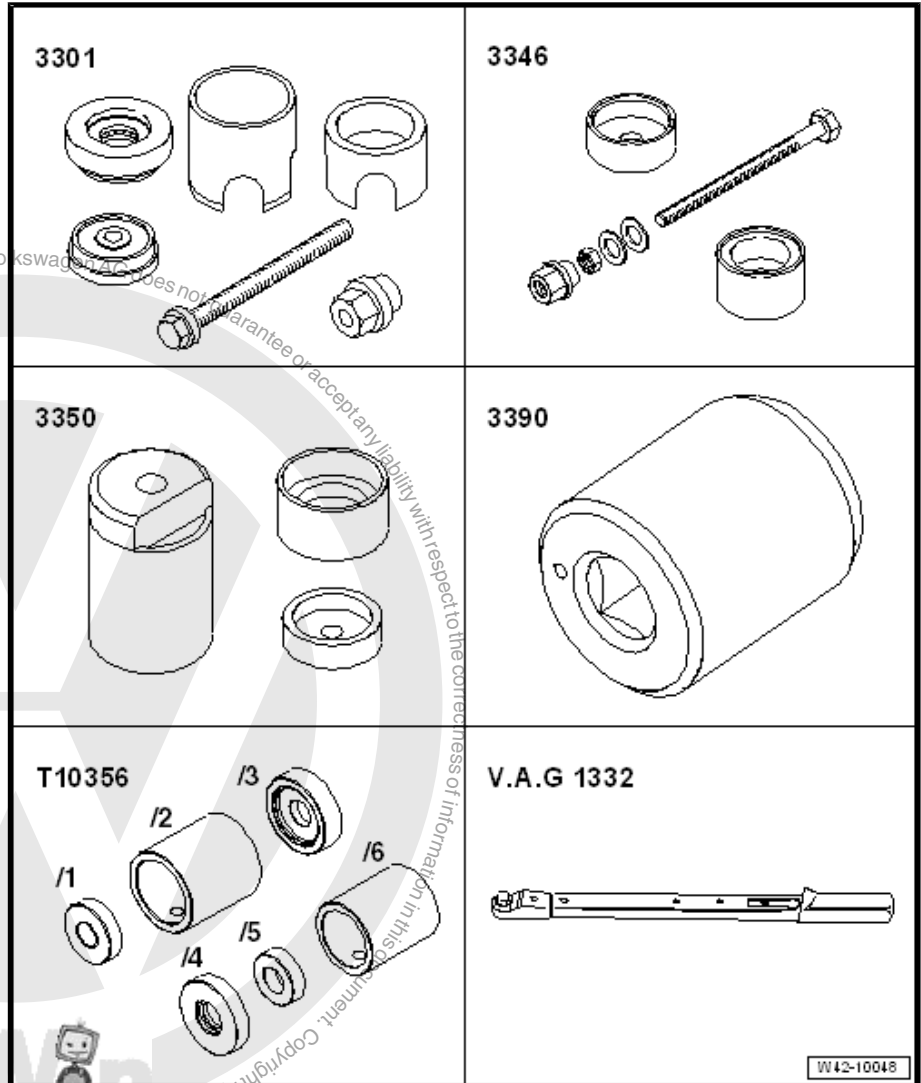


- ◆ Tensioning Strap - T10038-
- ◆ Hydraulic Press - Ball Joint Assembly Tools - T10254-
- ◆ Pneumatic/Hydraulic Foot Pump - Press Kit - T10495-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Engine and Gearbox Jack - VAS6931- -2- with Universal Support Plate - VAG1359/2-
- ◆ Hydraulic Press - VAS6178- with Bearing Installer - Wheel Hub/Bearing Kit - Pressure Head - T10205/13-



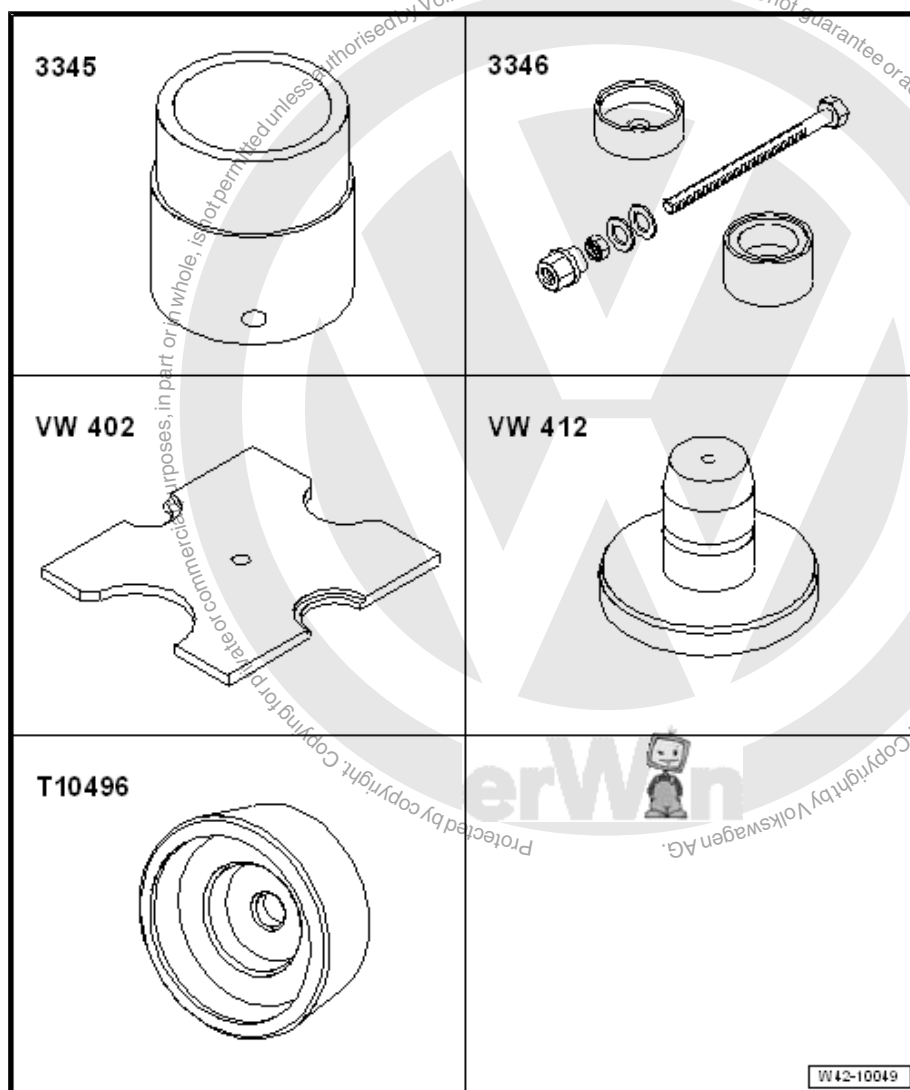


- ◆ Subframe Bushing Tool Kit - 3301-
- ◆ Bearing Installer - Control Arm - 3346-
- ◆ Bearing Installer - Carrier Bearing - 3350-
- ◆ Subframe Bushing Assembly Tool Kit - T10356-
- ◆ Torque Adapter - 3390-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-



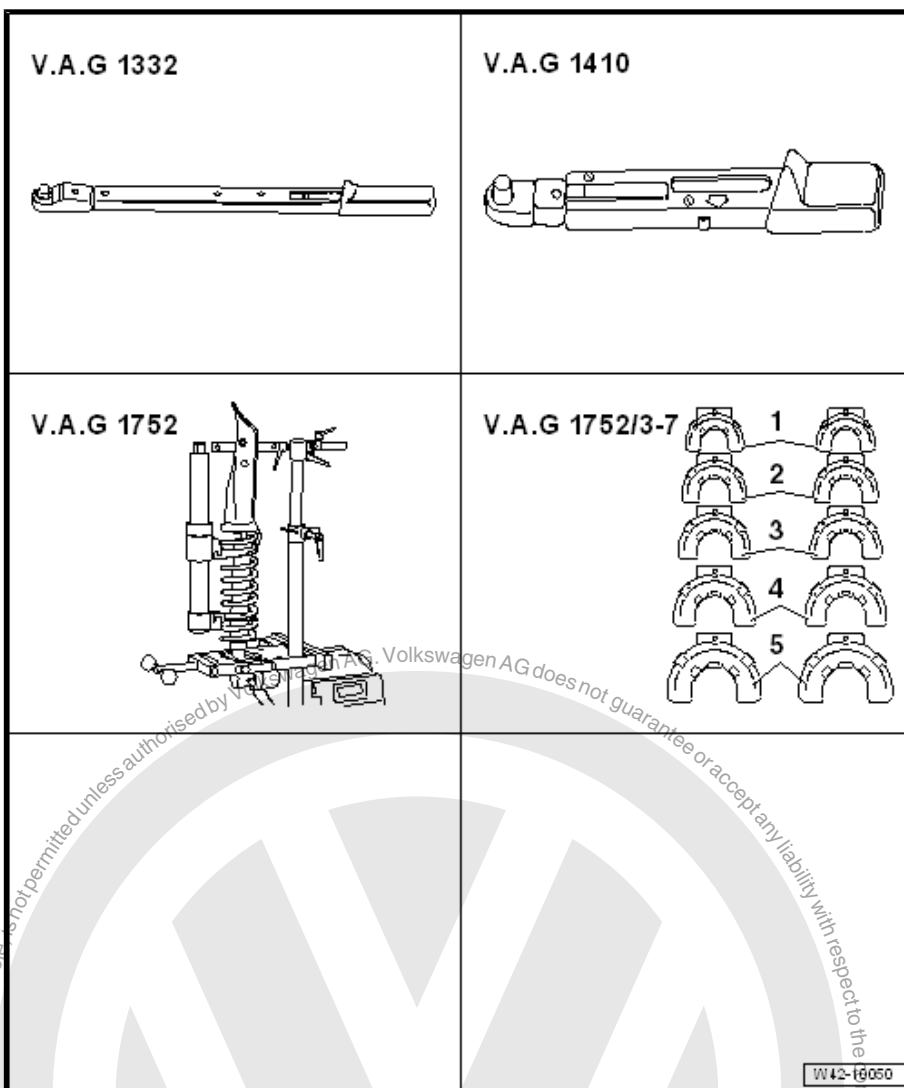


- ◆ Bearing Installer - Wheel Bearing - 3345-
- ◆ Bearing Installer - Control Arm - 3346-
- ◆ Press Plate - VW402-
- ◆ Press Piece - Multiple Use - VW412-
- ◆ Press Piece - Trailing Arm Bushing - T10496-



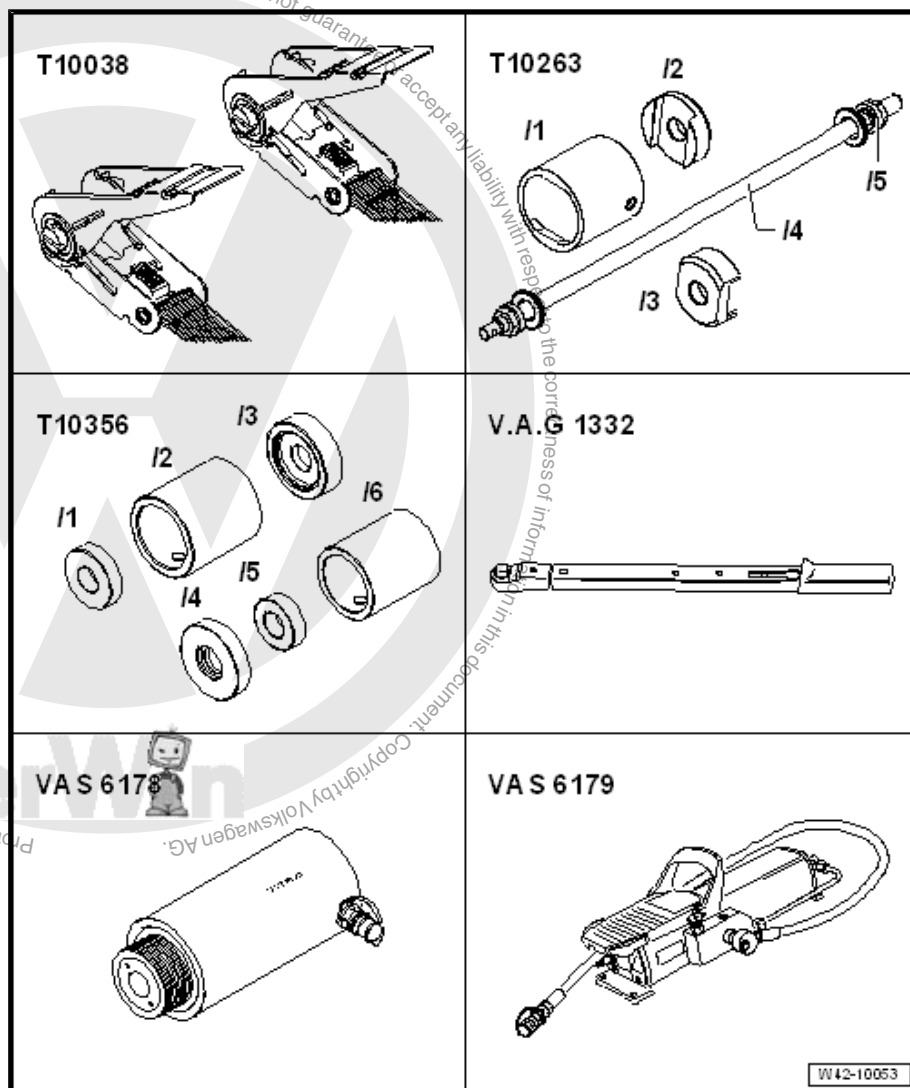


- ◆ Torque Wrench 1332
40-200Nm - VAG1332-
- ◆ Torque Wrench 1410 -
VAG1410-
- ◆ Spring Compressor Kit -
Spring Tensioner -
VAG1752/1-
- ◆ Spring Compressor Kit -
Spring Retainer with Inserts
- VAG1752/3A-



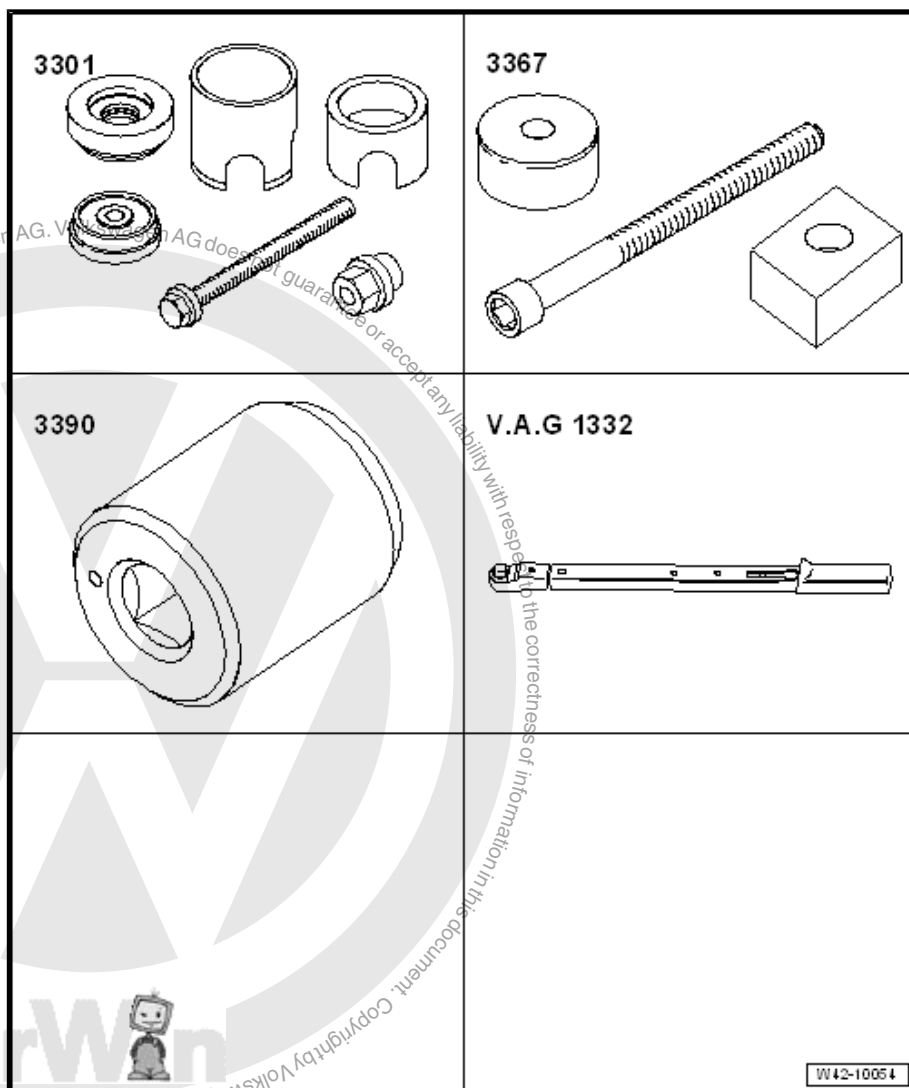


- ◆ Tensioning Strap - T10038-
- ◆ Hydraulic Press - Rear Subframe Bushing Tool Kit - T10263-
- ◆ Subframe Bushing Assembly Tool Kit - T10356-
- ◆ Engine and Gearbox Jack - VAS6931-
- ◆ Hydraulic Press - VAS6178- with Bearing Installer - Wheel Hub/Bearing Kit- Adapter 13 - T10205/13-
- ◆ Pneumatic/Hydraulic Foot Pump - VAS6179-





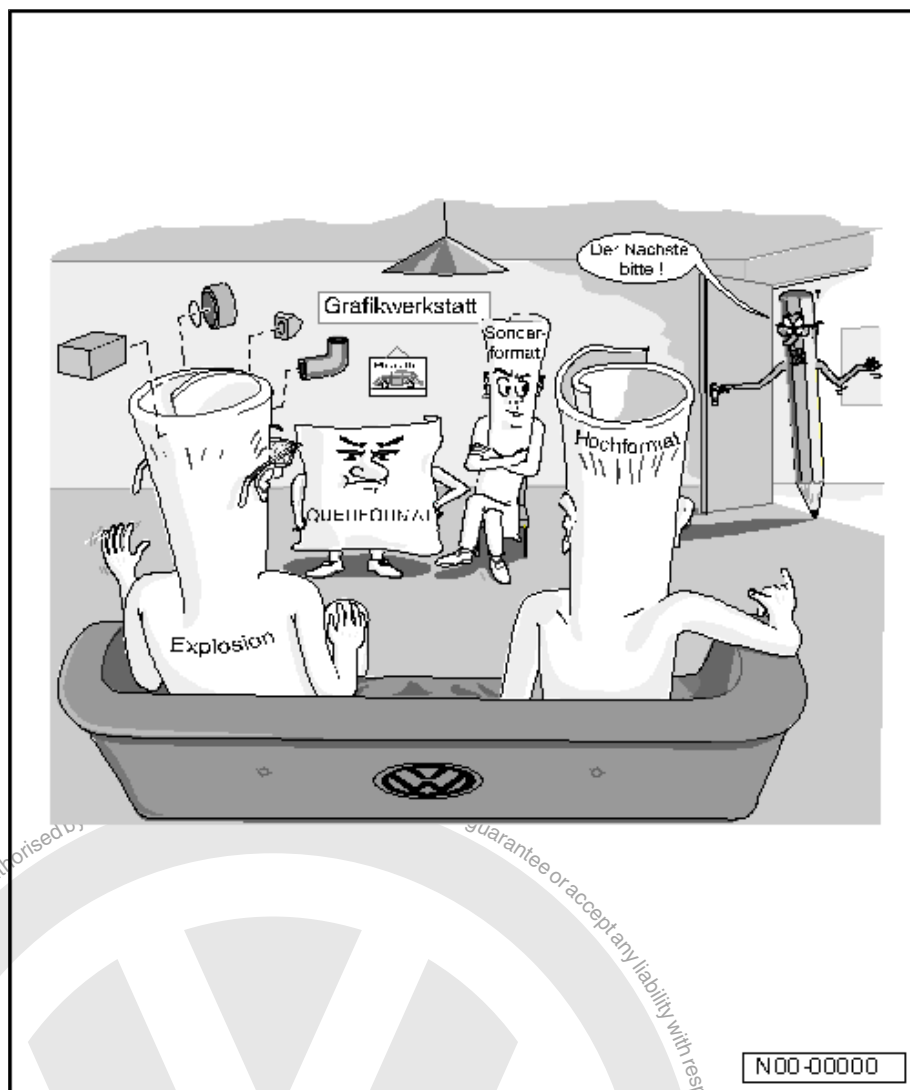
- ◆ Subframe Bushing Tool Kit - 3301-
- ◆ Press Tool For Viscous Fan - 3367-
- ◆ Torque Adapter - 3390-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-



W42-10054

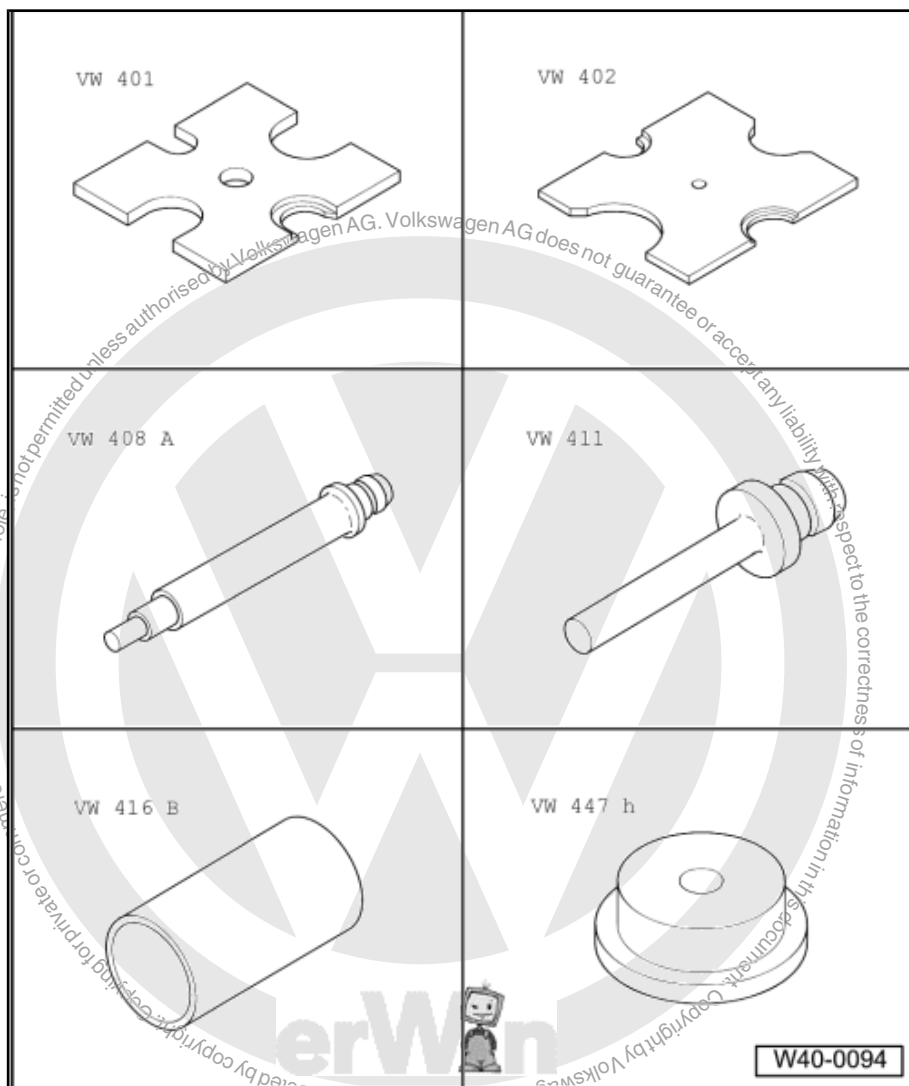


- ◆ Seal Installer - Camshaft
Installer Kit - Sleeve -
3241/4-
- ◆ Puller - Grease Cap -
VW637/2-
- ◆ Torque Wrench 1332
40-200Nm - VAG1332-
- ◆ Socket - XZN 18mm -
T10162A-
- ◆ Torque Wrench 1410 -
VAG1410-



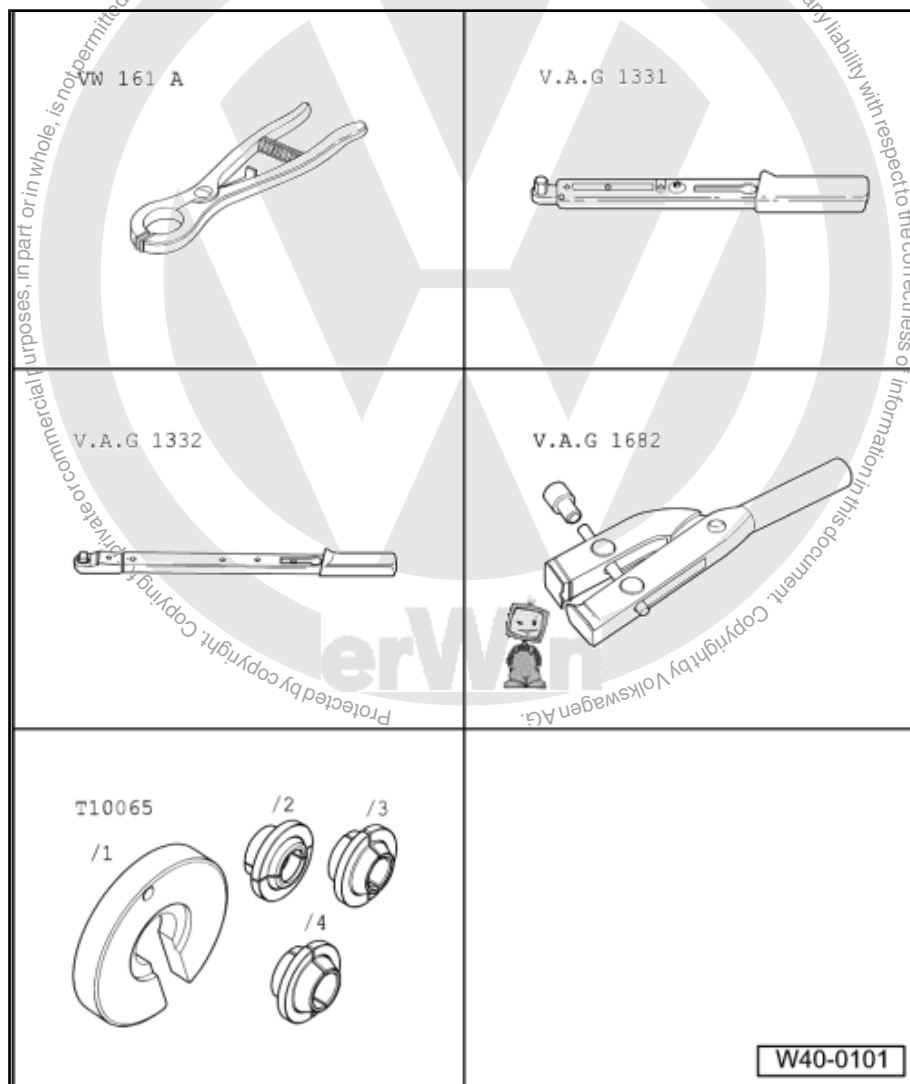


- ◆ Press Plate - VW401-
- ◆ Press Plate - VW402-
- ◆ Press Piece - Rod - VW408A-
- ◆ Press Piece - Rod - VW411-
- ◆ Press Piece - 37mm - VW416B-
- ◆ Press Piece - Multiple Use - VW447H-

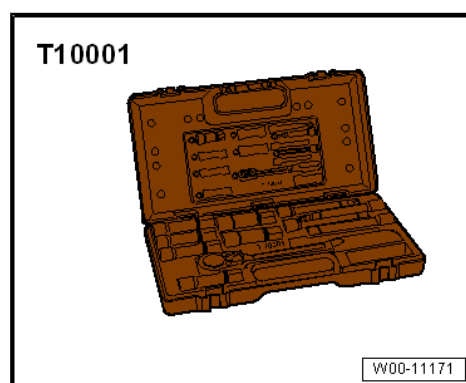




- ◆ Circlip Pliers - VW161A-
- ◆ Torque Wrench 1331
5-50Nm - VAG1331-
- ◆ Torque Wrench 1332
40-200Nm - VAG1332-
- ◆ Clamping Pliers -
VAG1682A-
- ◆ Tripod Joint Tool - T10065-

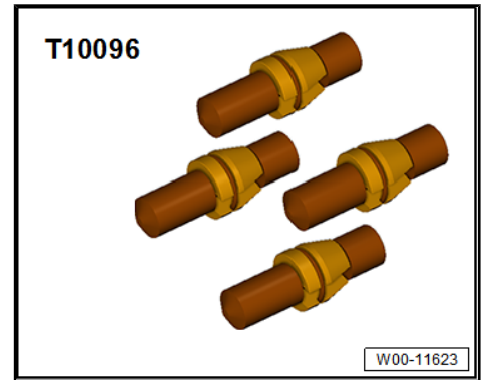


- ◆ Shock Absorber Set - T10001-

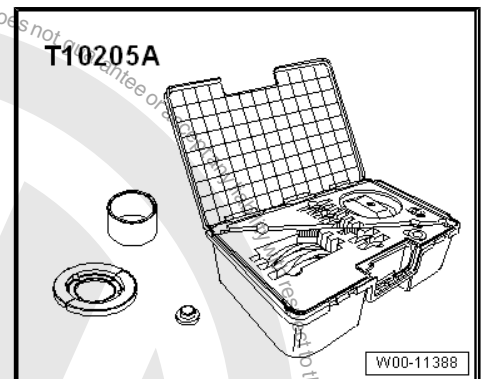




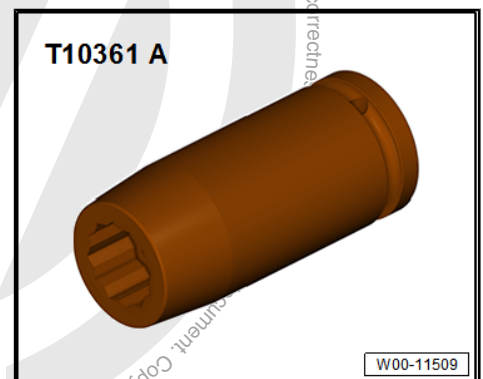
◆ Locating Pins - T10096-



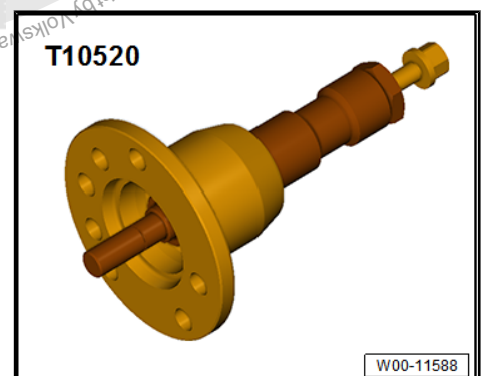
◆ Bearing Installer - Wheel Hub/Bearing Kit - T10205A-



◆ Socket AF 24 mm - T10361A-

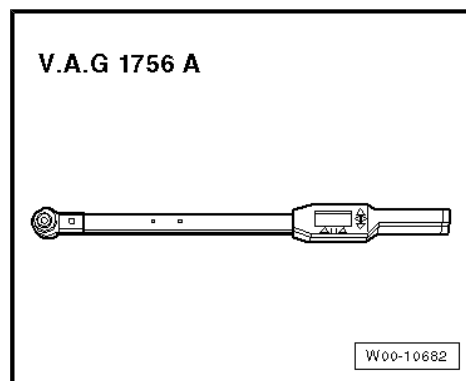


◆ Driveshaft Remover - T10520-





- ◆ Digital Torque Wrench - VAG1756A-



- ◆ Not Illustrated:
- ◆ Rear Axle Support - T10552-
- ◆ Spring Compressor Kit - Spring Retainer with Inserts - VAG1752/3A-
- ◆ Spring Compressor Kit - Adapter Blocks - VAG1752/9-





43 – Self-Leveling Suspension

1 Electronic Damping

⇒ [“1.1 Overview - Electronic Damping”, page 317](#)

⇒ [“1.2.1 Electronic Damping Control Module J250 , Removing and Installing, Sedan”, page 322](#)

⇒ [“1.3 Left/Right Front Body Acceleration Sensor G341 / G342 , Removing and Installing”, page 324](#)

⇒ [“1.4 Rear Body Acceleration Sensor G343 , Removing and Installing”, page 325](#)

1.1 Overview - Electronic Damping

⇒ [“1.1.1 Overview - Electronic Damping, Torsion Beam Axle, Sedan”, page 317](#)

⇒ [“1.1.2 Overview - Electronic Damping, Multi-Link Suspension, Sedan”, page 319](#)

⇒ [“1.1.3 Overview - Electronic Damping, Multi-Link Suspension, Wagon”, page 321](#)

1.1.1 Overview - Electronic Damping, Torsion Beam Axle, Sedan



1 - Right Front Level Control Sensor - G289-

- ❑ Removing and installing. Refer to
⇒ [“2.3 Left/Right Front Level Control System Sensor G78 / G289 , Removing and Installing”, page 330](#) .

2 - Right Front Body Acceleration Sensor - G342-

- ❑ Removing and installing. Refer to
⇒ [“1.3 Left/Right Front Body Acceleration Sensor G341 / G342 , Removing and Installing”, page 324](#) .

3 - Left Rear Body Acceleration Sensor - G699-

- ❑ Component location: in the luggage compartment on the left shock absorber tower behind the left side trim panel
- ❑ Removing and installing. Refer to
⇒ [“1.4 Rear Body Acceleration Sensor G343 , Removing and Installing”, page 325](#) .

4 - Electronic Damping Control Module - J250-

- ❑ Removing and installing. Refer to
⇒ [“1.2.1 Electronic Damping Control Module J250 , Removing and Installing, Sedan”, page 322](#) .
- ❑ Component location: the Electronic Damping Control Module - J250- is installed in the luggage compartment behind the left side trim panel.
- ❑ If the Electronic Damping Control Module - J250- is being replaced, the Replace control module function must be performed. Refer to Vehicle Diagnostic Tester .
- ❑ If the control position was reprogrammed and if the vehicle has lane assist, then it will then be necessary to calibrate the driver assistance systems front camera. Refer to
⇒ [“6.1 Driver Assistance Systems Front Camera, Calibrating”, page 387](#) .

5 - Left Rear Level Control System Sensor - G76-

- ❑ Removing and installing. Refer to
⇒ [“2.4.1 Left Rear Level Control System Sensor G76 , Removing and Installing, Torsion Beam Axle”, page 332](#) .

6 - Left Front Body Acceleration Sensor - G341-

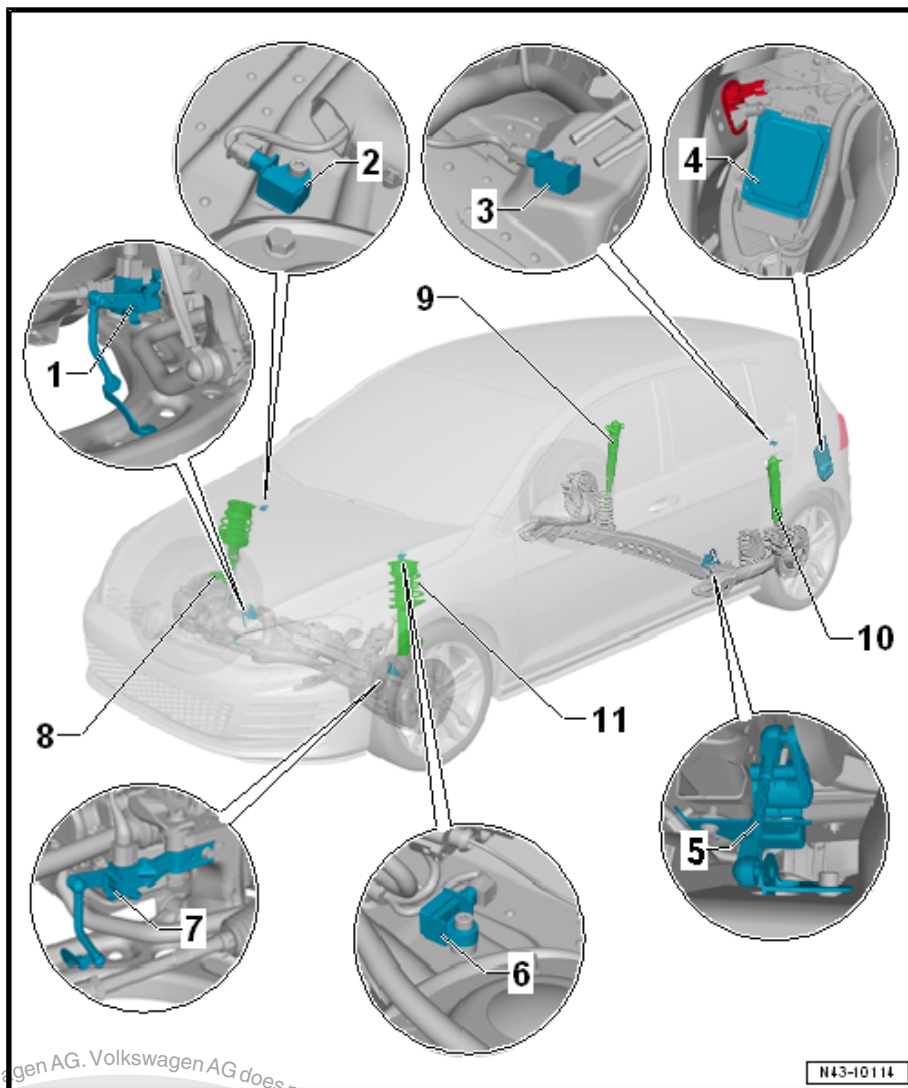
- ❑ Removing and installing. Refer to
⇒ [“1.3 Left/Right Front Body Acceleration Sensor G341 / G342 , Removing and Installing”, page 324](#) .

7 - Left Front Level Control System Sensor - G78-

- ❑ Removing and installing. Refer to
⇒ [“2.3 Left/Right Front Level Control System Sensor G78 / G289 , Removing and Installing”, page 330](#) .

8 - Shock Absorber with Right Front Damping Adjustment Valve - N337-

- ❑ Suspension strut, removing and installing. Refer to
⇒ [“3.2 Suspension Strut, Removing and Installing”, page 67](#) .





- ❑ Service the suspension strut. Refer to ➤ [“3.3 Suspension Strut, Servicing”, page 74](#) .

9 - Shock Absorber with Right Rear Damping Adjustment Valve - N339-

- ❑ Shock absorber, removing and installing. Refer to ➤ [“6.2 Shock Absorber, Removing and Installing”, page 239](#) .
- ❑ Shock absorber, servicing. Refer to ➤ [“6.3 Shock Absorber, Servicing”, page 246](#) .

10 - Shock Absorber with Left Rear Damping Adjustment Valve - N338-

- ❑ Shock absorber, removing and installing. Refer to ➤ [“6.2 Shock Absorber, Removing and Installing”, page 239](#) .
- ❑ Shock absorber, servicing. Refer to ➤ [“6.3 Shock Absorber, Servicing”, page 246](#) .

11 - Shock Absorber with Left Front Damping Adjustment Valve - N336-

- ❑ Suspension strut, removing and installing. Refer to ➤ [“3.2 Suspension Strut, Removing and Installing”, page 67](#) .
- ❑ Service the suspension strut. Refer to ➤ [“3.3 Suspension Strut, Servicing”, page 74](#) .

1.1.2 Overview - Electronic Damping, Multi-Link Suspension, Sedan

1 - Right Front Level Control Sensor - G289-

- ❑ Removing and installing. Refer to ➤ [“2.3 Left/Right Front Level Control System Sensor G78 / G289, Removing and Installing”, page 330](#) .

2 - Right Front Body Acceleration Sensor - G342-

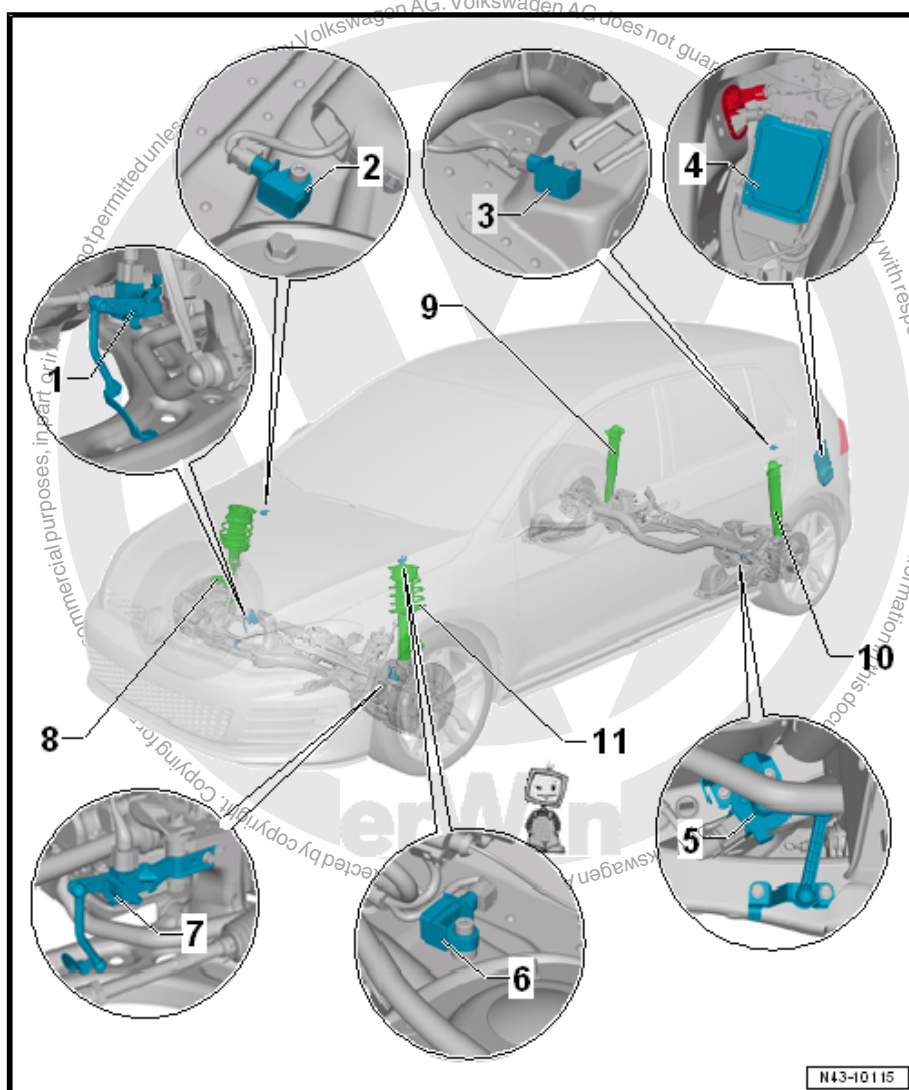
- ❑ Removing and installing. Refer to ➤ [“1.3 Left/Right Front Body Acceleration Sensor G341 / G342, Removing and Installing”, page 324](#) .

3 - Left Rear Body Acceleration Sensor - G699-

- ❑ Component location: in the luggage compartment on the left shock absorber tower behind the left side trim panel
- ❑ Removing and installing. Refer to ➤ [“1.4 Rear Body Acceleration Sensor G343, Removing and Installing”, page 325](#) .

4 - Electronic Damping Control Module - J250-

- ❑ Removing and installing. Refer to ➤ [“1.2.1 Electronic Damping Control Module J250, Removing and Installing, Sedan”, page 322](#) .
- ❑ Component location: the Electronic Damping Control Module - J250- is installed in the luggage compartment behind the left side trim panel.





- ❑ If the Electronic Damping Control Module - J250- is being replaced, the Replace control module function must be performed. Refer to Vehicle Diagnostic Tester .
- ❑ If the control position was reprogrammed and if the vehicle has lane assist, then it will then be necessary to calibrate the driver assistance systems front camera. Refer to
⇒ [“6.1 Driver Assistance Systems Front Camera, Calibrating”, page 387](#) .

5 - Left Rear Level Control System Sensor - G76-

- ❑ Removing and installing, FWD. Refer to
⇒ [“2.4.2 Left Rear Level Control System Sensors G76 , Removing and Installing, Multi-Link Suspension, FWD”, page 332](#) .
- ❑ Removing and installing, AWD. Refer to
⇒ [“2.4.3 Left Rear Level Control System Sensors G76 , Removing and Installing, Multi-Link Suspension, AWD”, page 333](#) .

6 - Left Front Body Acceleration Sensor - G341-

- ❑ Removing and installing. Refer to
⇒ [“1.3 Left/Right Front Body Acceleration Sensor G341 / G342 , Removing and Installing”, page 324](#) .

7 - Left Front Level Control System Sensor - G78-

- ❑ Removing and installing. Refer to
⇒ [“2.3 Left/Right Front Level Control System Sensor G78 / G289 , Removing and Installing”, page 330](#) .

8 - Shock Absorber with Right Front Damping Adjustment Valve - N337-

- ❑ Suspension strut, removing and installing. Refer to
⇒ [“3.2 Suspension Strut, Removing and Installing”, page 67](#) .
- ❑ Service the suspension strut. Refer to ⇒ [“3.3 Suspension Strut, Servicing”, page 74](#) .

9 - Shock Absorber with Right Rear Damping Adjustment Valve - N339-

- ❑ Shock absorber, removing and installing. Refer to
⇒ [“6.2 Shock Absorber, Removing and Installing”, page 239](#) .
- ❑ Shock absorber, servicing. Refer to ⇒ [“6.3 Shock Absorber, Servicing”, page 246](#) .

10 - Shock Absorber with Left Rear Damping Adjustment Valve - N338-

- ❑ Shock absorber, removing and installing. Refer to
⇒ [“6.2 Shock Absorber, Removing and Installing”, page 239](#) .
- ❑ Shock absorber, servicing. Refer to ⇒ [“6.3 Shock Absorber, Servicing”, page 246](#) .

11 - Shock Absorber with Left Front Damping Adjustment Valve - N336-

- ❑ Suspension strut, removing and installing. Refer to
⇒ [“3.2 Suspension Strut, Removing and Installing”, page 67](#) .
- ❑ Service the suspension strut. Refer to ⇒ [“3.3 Suspension Strut, Servicing”, page 74](#) .

1.1.3 Overview - Electronic Damping, Multi-Link Suspension, Wagon

1 - Right Front Level Control Sensor - G289-

- ❑ Removing and installing. Refer to
⇒ ["2.3 Left/Right Front Level Control System Sensor G78 / G289, Removing and Installing", page 330](#) .

2 - Right Front Body Acceleration Sensor - G342-

- ❑ Removing and installing. Refer to
⇒ ["1.3 Left/Right Front Body Acceleration Sensor G341 / G342, Removing and Installing", page 324](#) .

3 - Left Rear Body Acceleration Sensor - G699-

- ❑ Component location: in the luggage compartment on the left shock absorber tower behind the left side trim panel
- ❑ Removing and installing. Refer to
⇒ ["1.4 Rear Body Acceleration Sensor G343, Removing and Installing", page 325](#) .

4 - Electronic Damping Control Module - J250-

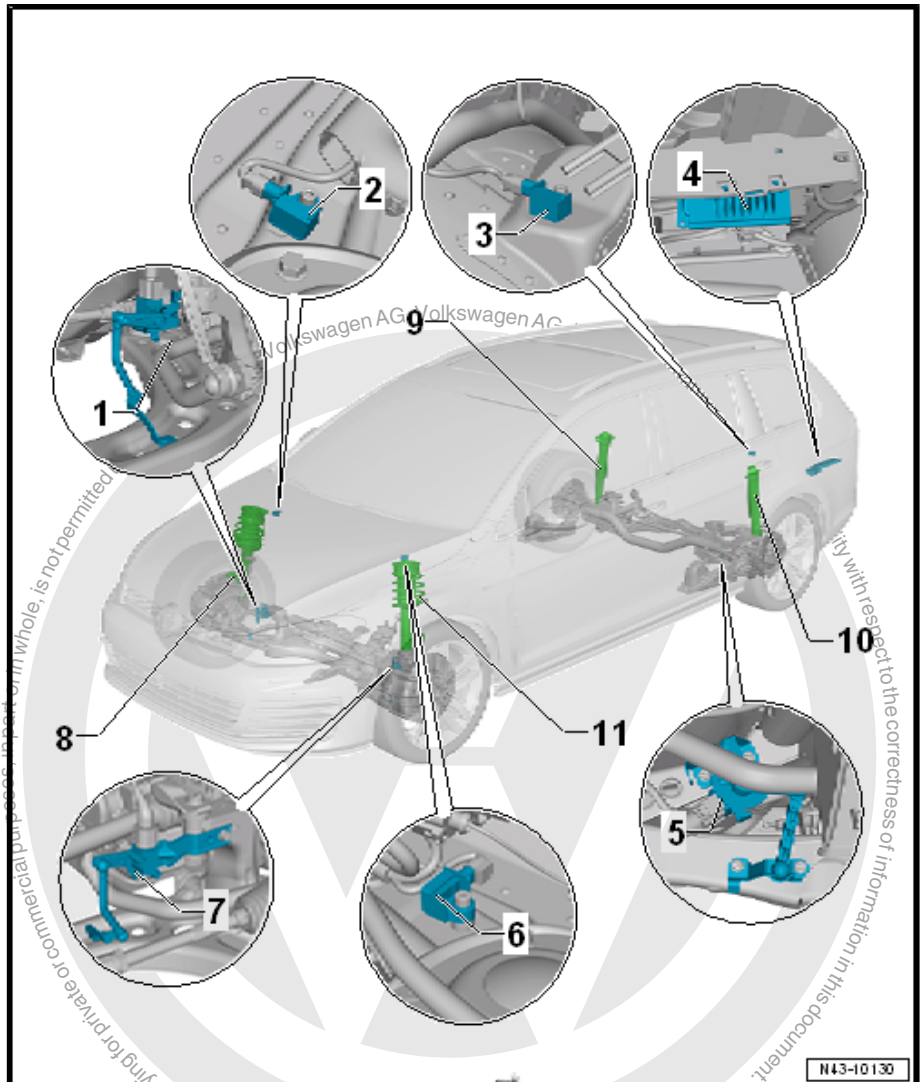
- ❑ Removing and installing. Refer to
⇒ ["1.2.2 Electronic Damping Control Module J250, Removing and Installing, Wagon", page 323](#) .
- ❑ Component location: the Electronic Damping Control Module - J250- is installed in the luggage compartment behind the left side trim panel.
- ❑ If the Electronic Damping Control Module - J250- is being replaced, the Replace control module function must be performed. Refer to Vehicle Diagnostic Tester .
- ❑ If the control position was reprogrammed and if the vehicle has lane assist, then it will then be necessary to calibrate the driver assistance systems front camera. Refer to
⇒ ["6.1 Driver Assistance Systems Front Camera, Calibrating", page 387](#) .

5 - Left Rear Level Control System Sensor - G76-

- ❑ Removing and installing, FWD. Refer to
⇒ ["2.4.2 Left Rear Level Control System Sensors G76, Removing and Installing, Multi-Link Suspension, FWD", page 332](#) .
- ❑ Removing and installing, AWD. Refer to
⇒ ["2.4.3 Left Rear Level Control System Sensors G76, Removing and Installing, Multi-Link Suspension, AWD", page 333](#) .

6 - Left Front Body Acceleration Sensor - G341-

- ❑ Removing and installing. Refer to
⇒ ["1.3 Left/Right Front Body Acceleration Sensor G341 / G342, Removing and Installing", page 324](#) .





7 - Left Front Level Control System Sensor - G78-

- ❑ Removing and installing. Refer to
⇒ [“2.3 Left/Right Front Level Control System Sensor G78 / G289 , Removing and Installing”, page 330](#) .

8 - Shock Absorber with Right Front Damping Adjustment Valve - N337-

- ❑ Suspension strut, removing and installing. Refer to
⇒ [“3.2 Suspension Strut, Removing and Installing”, page 67](#) .
- ❑ Service the suspension strut. Refer to ⇒ [“3.3 Suspension Strut, Servicing”, page 74](#) .

9 - Shock Absorber with Right Rear Damping Adjustment Valve - N339-

- ❑ Shock absorber, removing and installing. Refer to
⇒ [“6.2 Shock Absorber, Removing and Installing”, page 239](#) .
- ❑ Shock absorber, servicing. Refer to ⇒ [“6.3 Shock Absorber, Servicing”, page 246](#) .

10 - Shock Absorber with Left Rear Damping Adjustment Valve - N338-

- ❑ Shock absorber, removing and installing. Refer to
⇒ [“6.2 Shock Absorber, Removing and Installing”, page 239](#) .
- ❑ Shock absorber, servicing. Refer to ⇒ [“6.3 Shock Absorber, Servicing”, page 246](#) .

11 - Shock Absorber with Left Front Damping Adjustment Valve - N336-

- ❑ Suspension strut, removing and installing. Refer to
⇒ [“3.2 Suspension Strut, Removing and Installing”, page 67](#) .
- ❑ Service the suspension strut. Refer to ⇒ [“3.3 Suspension Strut, Servicing”, page 74](#) .

1.2 Electronic Damping Control Module - J250- , Removing and Installing

⇒ [“1.2.1 Electronic Damping Control Module J250 , Removing and Installing, Sedan”, page 322](#)

⇒ [“1.2.2 Electronic Damping Control Module J250 , Removing and Installing, Wagon”, page 323](#)

1.2.1 Electronic Damping Control Module - J250- , Removing and Installing, Sedan

Special tools and workshop equipment required

- ◆ Vehicle Diagnostic Tester

Removing

Component location: the Electronic Damping Control Module - J250- is installed in the luggage compartment behind the left side trim panel.

- Disconnect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .
- Remove the ignition key.

Vehicles with “Keyless Access” Keyless Locking and Starting System

- Switch the ignition off and open the driver door so the steering wheel lock engages.

Continuation for All Vehicles

- Remove the left luggage compartment side trim panel. Refer to ⇒ Body Interior; Rep. Gr. 70 ; Luggage Compartment Trim Panels; Luggage Compartment Side Trim Panel, Removing and Installing .

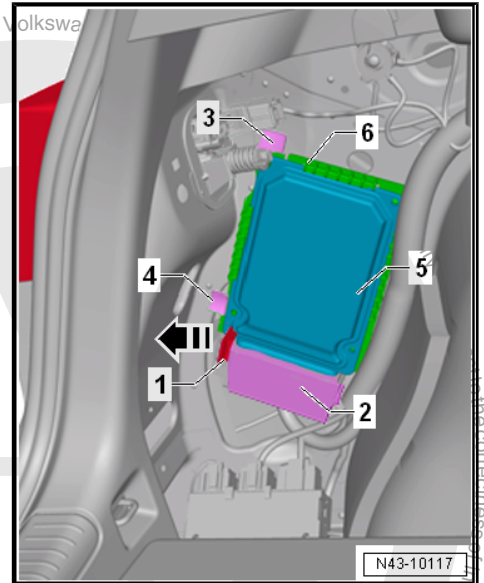


- Release the release lever -1- in direction of -arrow-.
- Disconnect the connector -2-.
- Push the tabs -3 and 4- to the rear.
- Slide the Electronic Damping Control Module - J250- -5- downward from the bracket -6-.

Installing

Install in reverse order of removal and note the following:

- If the Electronic Damping Control Module - J250- was replaced, the Replace control module function must be performed. Refer to Vehicle Diagnostic Tester .
- If the control position was reprogrammed and if the vehicle has lane assist, then it will then be necessary to calibrate the driver assistance systems front camera. Refer to [⇒ "6.1 Driver Assistance Systems Front Camera, Calibrating", page 387](#) .



1.2.2 Electronic Damping Control Module - J250- , Removing and Installing, Wagon

Special tools and workshop equipment required

- ◆ Vehicle Diagnostic Tester

Removing

Component location: the Electronic Damping Control Module - J250- is installed in the luggage compartment behind the left side trim panel.

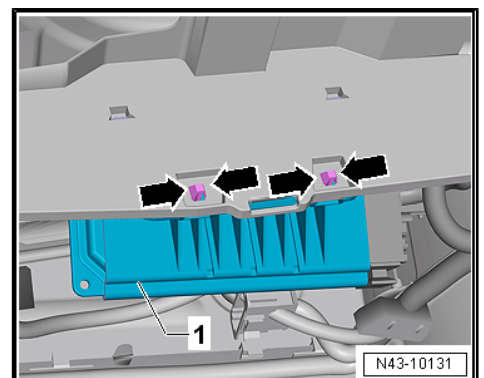
- Disconnect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .
- Remove the ignition key.

Vehicles with "Keyless Access" Keyless Locking and Starting System

- Switch the ignition off and open the driver door so the steering wheel lock engages.

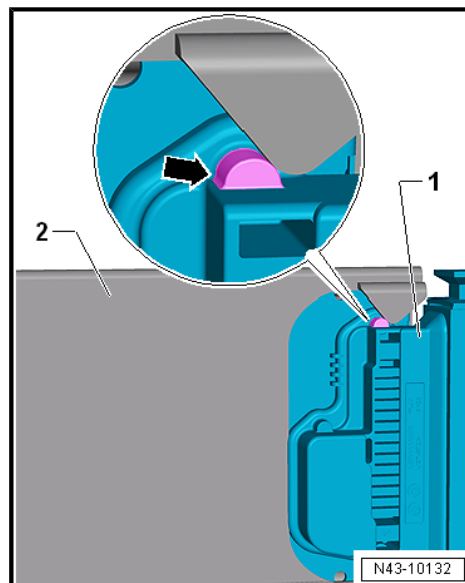
Continuation for All Vehicles

- Remove the left luggage compartment side trim panel. Refer to ⇒ Body Interior; Rep. Gr. 70 ; Luggage Compartment Trim Panels; Luggage Compartment Side Trim Panel, Removing and Installing .
- Remove the tool bag.
- Release the tabs -arrows-.
- Remove the bracket -1-.





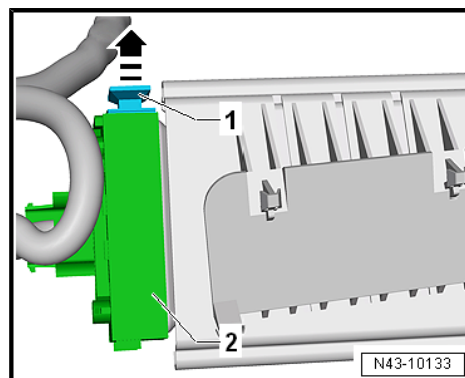
- Remove the control module -1- from the bracket -2-.



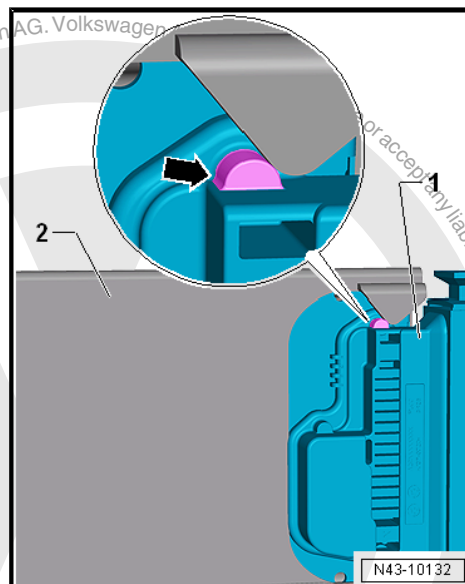
- Remove the release -1- in the direction of -arrow-.
- Disconnect the connector -2-.

Installing

Install in reverse order of removal and note the following:



- Push the control module -1- as far as possible in the bracket -2- until the tab -arrow- engages in the bracket.
- If the Electronic Damping Control Module - J250- was replaced, the Replace control module function must be performed. Refer to Vehicle Diagnostic Tester .
- If the control position was reprogrammed and if the vehicle has lane assist, then it will then be necessary to calibrate the driver assistance systems front camera. Refer to [⇒ "6.1 Driver Assistance Systems Front Camera, Calibrating", page 387](#) .



1.3 Left/Right Front Body Acceleration Sensor - G341- / -G342- , Removing and Installing

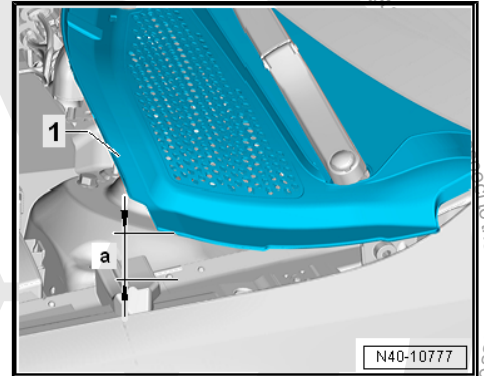
Special tools and workshop equipment required

- ♦ Torque Wrench - VAG1410-

Removing

- Remove the seal from the entire length of the plenum chamber cover.
- Remove the clips.
- Lift the plenum chamber cover -1- to maximum 60 mm.

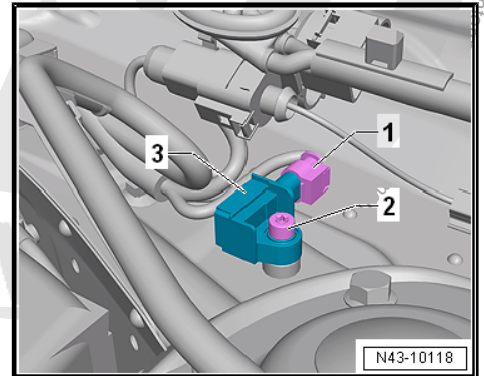
a - 60 mm



- Disconnect the connector -1-.
- Remove the bolt -2-.
- Remove the Front Body Acceleration Sensors - G341- / - G342- .

Installing

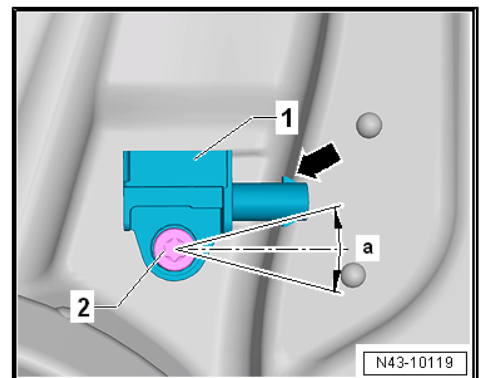
Install in reverse order of removal and note the following:



- Insert the Front Body Acceleration Sensor - G341- / -G342- -1- so that the connector connection -arrow- faces opposite the direction of travel.
- Secure the Front Body Acceleration Sensor -1- with the bolt -2-.

Installation position: Angle tolerance -a- is $\pm 10^\circ$. The installation position of the Front Body Acceleration Sensor may deviate around this angle from the vehicle longitudinal axis.

- Perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .



Tightening Specifications

Component	Tightening Specification
Front Body Acceleration Sensor to body	8 Nm

1.4 Rear Body Acceleration Sensor - G343- , Removing and Installing

Special tools and workshop equipment required

- ◆ Torque Wrench - VAG1410-

Removing

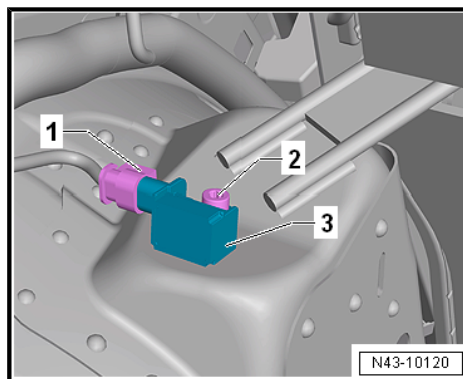
- Remove the left luggage compartment side trim panel. Refer to ➤ Body Interior; Rep. Gr. 70 ; Luggage Compartment Trim Panels; Luggage Compartment Side Trim Panel, Removing and Installing .



- Disconnect the connector -1-.
- Remove the bolt -2- and then remove the Rear Body Acceleration Sensor - G343- -3-.

Installing

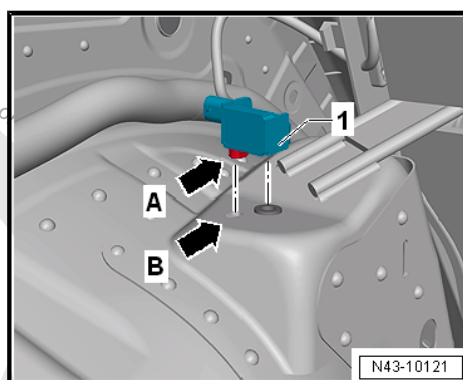
Install in reverse order of removal and note the following:



- Insert the Rear Body Acceleration Sensor - G343- -1- so that the tab -arrow A- engages in the hole -arrow B-.
- Perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .

Tightening Specifications

Component	Tightening Specification
Rear Body Acceleration Sensor - G343- to body	8 Nm





2 Level Control System Sensor

⇒ [“2.1 Overview - Front Level Control System Sensor”, page 327](#)

⇒ [“2.2 Overview - Rear Level Control System Sensor”, page 328](#)

⇒ [“2.3 Left/Right Front Level Control System Sensor G78 / G289, Removing and Installing”, page 330](#)

⇒ [“2.4 Left/Right Rear Level Control System Sensor G76 / G77, Removing and Installing”, page 332](#)

2.1 Overview - Front Level Control System Sensor



Note

A replacement Front Left/Right Level Control System Sensor - G78/G289- only comes complete with the coupling rod and the upper and lower retaining plate.

1 - Control Arm

2 - Subframe

3 - Connector

4 - Left Front Level Control System Sensor - G78- and Right Front Level Control Sensor - G289-

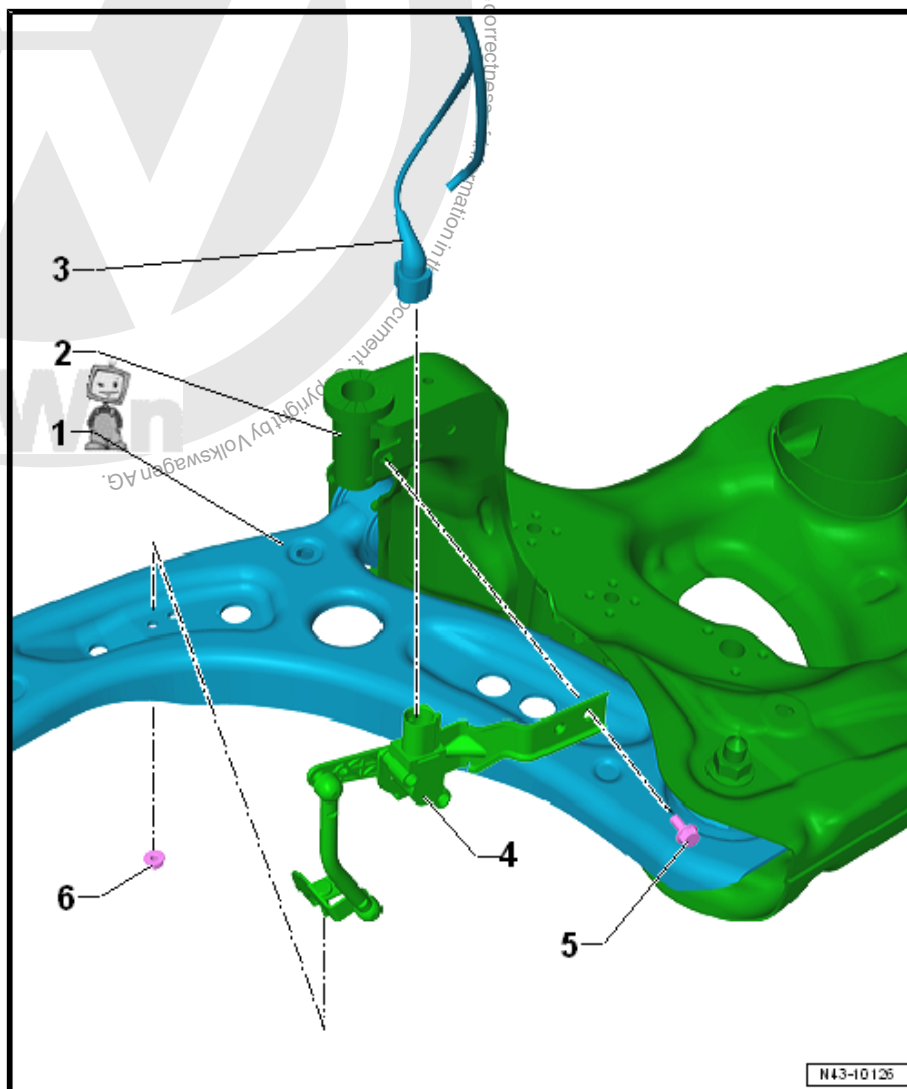
- ☒ Complete with attachments
- ☐ The lever must face toward outside of vehicle
- ☐ Removing and installing. Refer to ⇒ [“2.3 Left/Right Front Level Control System Sensor G78 / G289, Removing and Installing”, page 330](#) .
- ☐ Perform the basic setting of the headlamps. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Headlamp; Headlamp, Adjusting .

5 - Bolt

- ☐ 8 Nm

6 - Nut

- ☐ 8 Nm
- ☐ Replace after removing



N43-10125



2.2 Overview - Rear Level Control System Sensor

⇒ [“2.2.1 Overview - Rear Level Control System Sensor, Torsion Beam Axle”, page 328](#)

⇒ [“2.2.2 Overview - Rear Level Control System Sensor, Multi-Link Suspension, FWD”, page 329](#)

⇒ [“2.2.3 Overview - Rear Level Control System Sensor, Multi-Link Suspension, AWD”, page 330](#)

2.2.1 Overview - Rear Level Control System Sensor, Torsion Beam Axle



Note

A replacement Left Rear Level Control System Sensor - G76- only comes complete with the coupling rod and the upper and lower retaining plate.

1 - Connector

2 - Bolt

□ 5 Nm

3 - Left Rear Level Control System Sensor - G76-

- Removing and installing. Refer to ⇒ [“2.4.1 Left Rear Level Control System Sensor G76, Removing and Installing, Torsion Beam Axle”, page 332](#) .

- Perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .

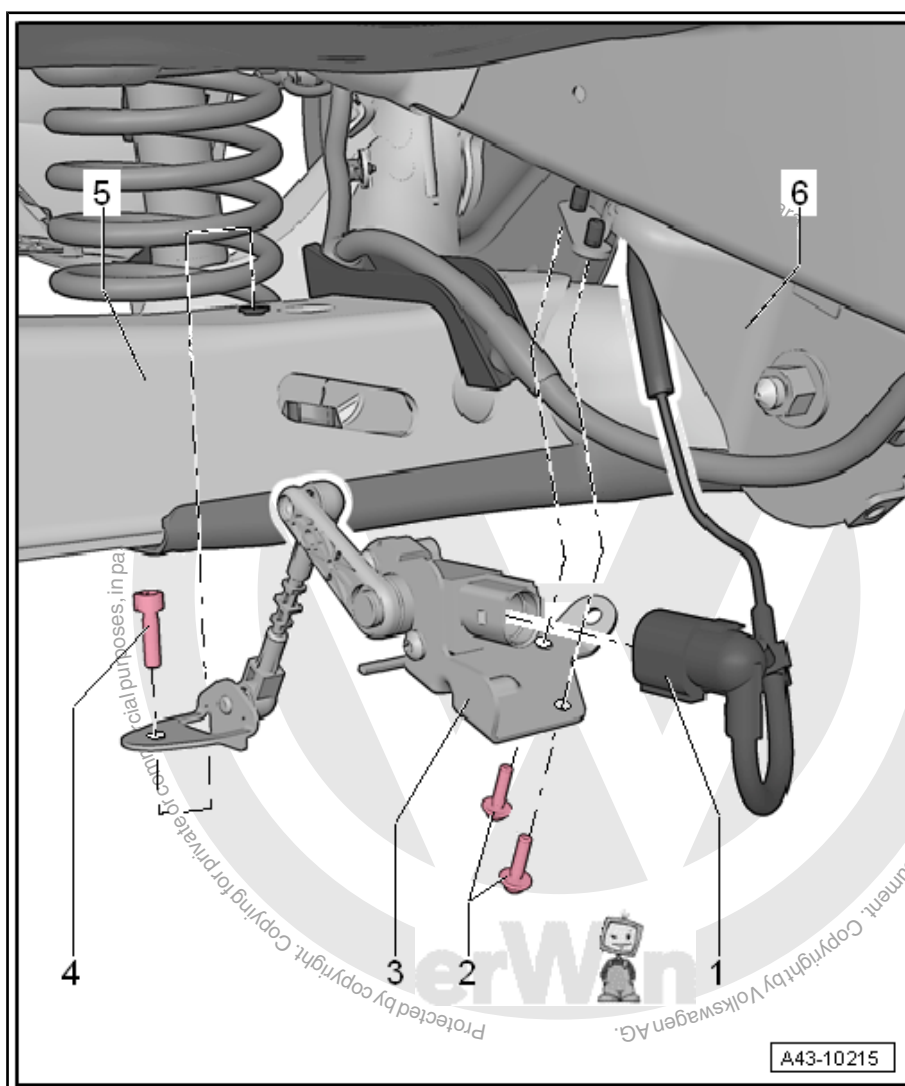
- Perform the basic setting of the headlamps. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Headlamp; Headlamp, Adjusting .

4 - Bolt

□ 8 Nm

5 - Axle Beam

6 - Mounting Bracket



A43-10215



2.2.2 Overview - Rear Level Control System Sensor, Multi-Link Suspension, FWD



Note

The level control system sensor is only available as a replacement part together with the coupling rod and upper and lower retaining plates.

1 - Bolt

- ☐ 5 Nm

2 - Rear Level Control System Sensor - G76 / G77-

- ☐ Complete with attachments
- ☐ The lever must face toward outside of vehicle
- ☐ Removing and installing. Refer to ➤ ["2.4 Left/Right Rear Level Control System Sensor G76 / G77 , Removing and Installing", page 332](#) .
- ☐ Perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .
- ☐ Perform the basic setting of the headlamps. Refer to ➤ Electrical Equipment; Rep. Gr. 94 ; Headlamp; Headlamp, Adjusting .

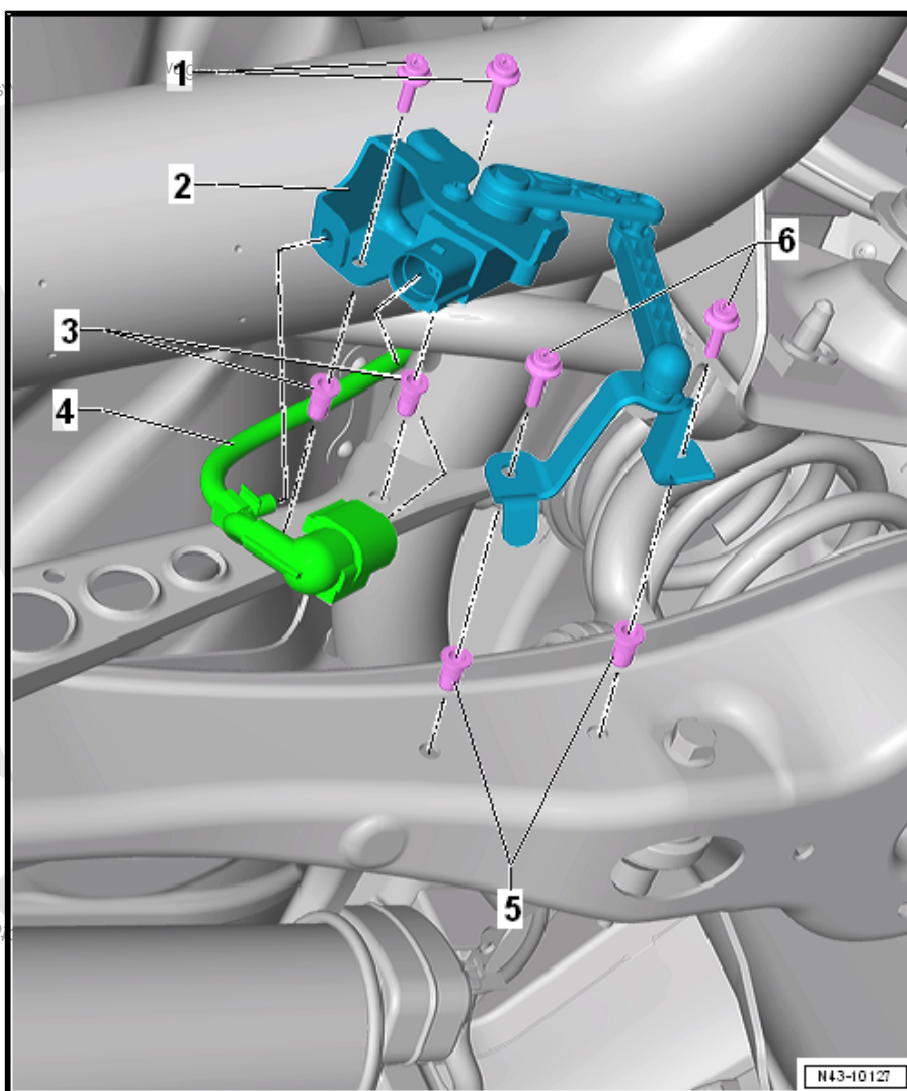
3 - Pop Rivet Nut

4 - Connector

5 - Pop Rivet Nut

6 - Bolt

- ☐ 5 Nm





2.2.3 Overview - Rear Level Control System Sensor, Multi-Link Suspension, AWD



Note

The level control system sensor is only available as a replacement part together with the coupling rod and upper and lower retaining plates.

1 - Pop Rivet Nut

2 - Connector

3 - Pop Rivet Nut

4 - Bolt

□ 5 Nm

5 - Rear Level Control System Sensor - G76 / G77-

□ Complete with attachments

□ The lever must face toward outside of vehicle

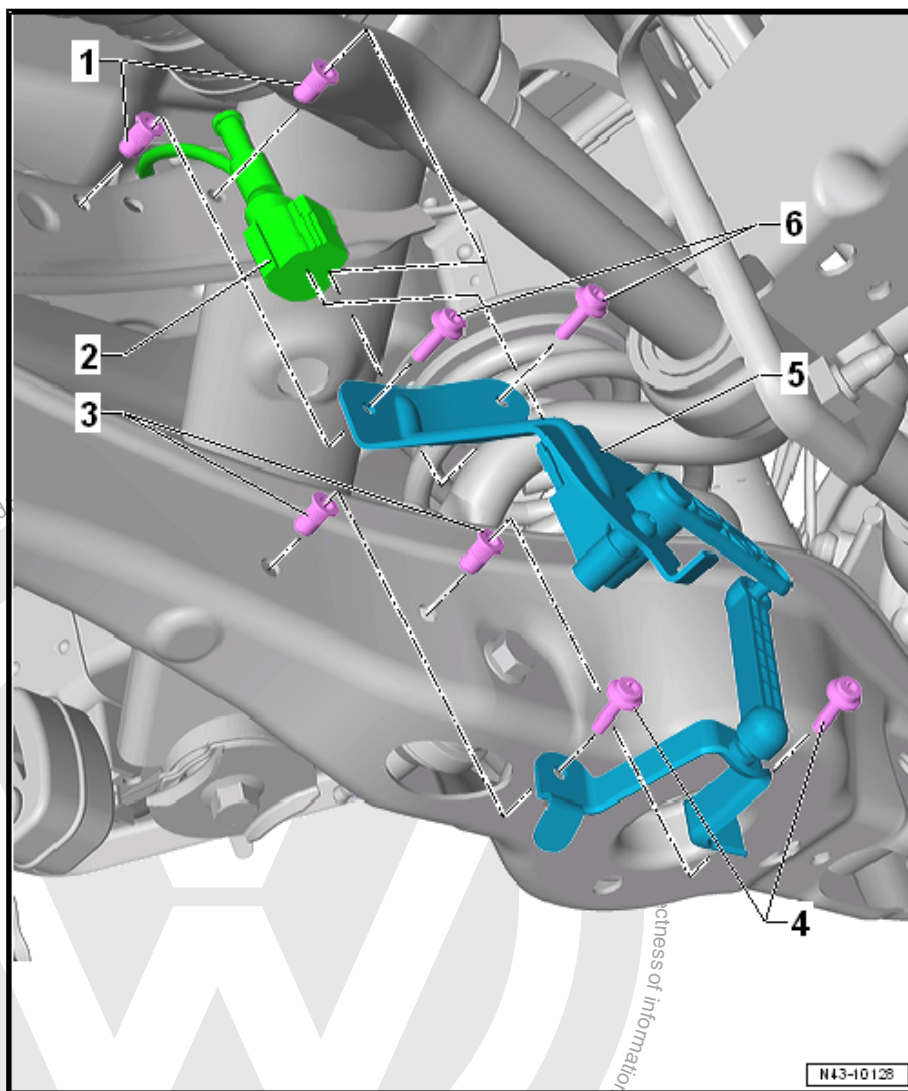
□ Removing and installing. Refer to
⇒ ["2.4 Left/Right Rear Level Control System Sensor G76 / G77 - Removing and Installing", page 332](#).

□ Perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester

□ Perform the basic setting of the headlamps. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Headlamp; Headlamp Adjusting .

6 - Bolt

□ 5 Nm



2.3 Left/Right Front Level Control System Sensor -G78- / -G289- , Removing and Installing

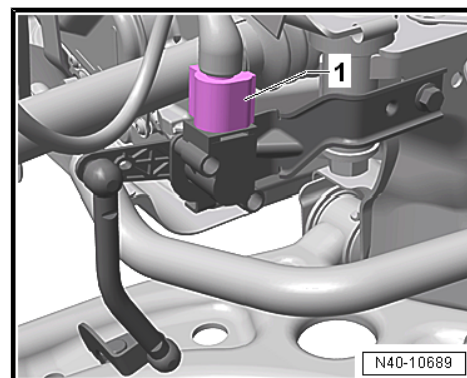
Special tools and workshop equipment required

◆ Torque Wrench 1410 - VAG1410-

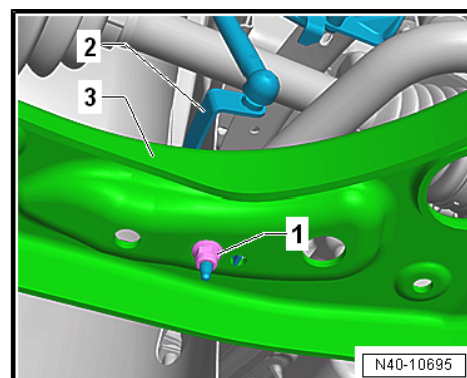


Removing

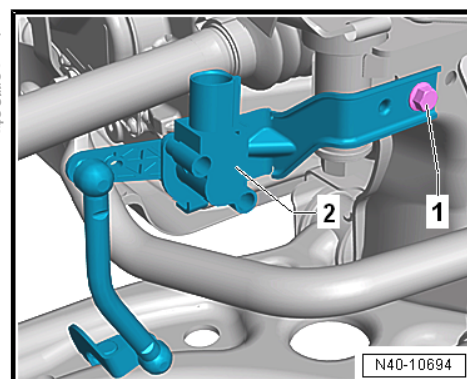
- Disconnect the connector -1- from the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289- .



- Remove the nut -1-.
- Remove the bracket -2- for the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289- from the control arm -3-.



- Remove the bolt -1-.
- Remove the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289- .



Installing

Install in reverse order of removal and note the following:



Note

- ◆ The level control system sensor lever must point toward vehicle exterior.
- ◆ The thread on the vehicle level sensor must be installed into the exterior hole in the control arm. The tab on the vehicle level sensor bracket must lock into the inner hole in order to assure a correct installation position.

- Perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .
- If the control position was reprogrammed and if the vehicle has lane assist, then it will then be necessary to calibrate the driver assistance systems front camera. Refer to ["6.1 Driver Assistance Systems Front Camera, Calibrating", page 387](#) .
- Adjust the headlamps to the basic setting. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Headlamp; Headlamp, Adjusting .

Tightening Specifications

- ◆ Refer to ["2.1 Overview - Front Level Control System Sensor", page 327](#)



2.4 Left/Right Rear Level Control System Sensor - G76- / -G77- , Removing and Installing

⇒ [“2.4.1 Left Rear Level Control System Sensor G76 , Removing and Installing, Torsion Beam Axle”](#), page 332

⇒ [“2.4.2 Left Rear Level Control System Sensors G76 , Removing and Installing, Multi-Link Suspension, FWD”](#), page 332

⇒ [“2.4.3 Left Rear Level Control System Sensors G76 , Removing and Installing, Multi-Link Suspension, AWD”](#), page 333

2.4.1 Left Rear Level Control System Sensor - G76- , Removing and Installing, Torsion Beam Axle

Special tools and workshop equipment required

- ◆ Torque Wrench 1410 - VAG1410-

Removing

- Disconnect the connector -1-.
- Remove the bolts -2 and 4-.
- Remove the Left Rear Level Control System Sensor - G76- -3-.

Installing

Install in reverse order of removal and note the following:



Note

The Left Rear Level Control System Sensor - G76- lever must face opposite the direction of travel.

- Perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .
- Adjust the headlamps to the basic setting. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Headlamp; Headlamp, Adjusting .

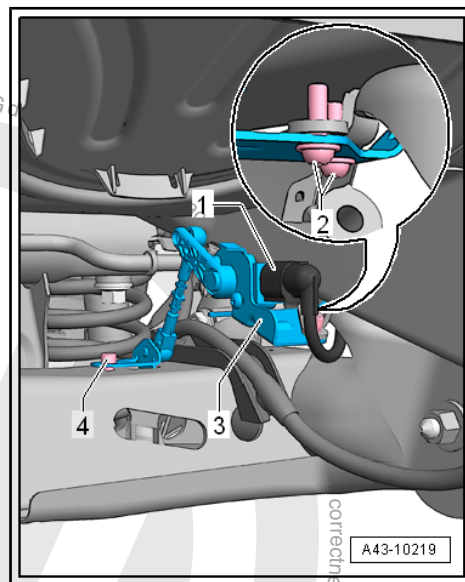
Tightening Specifications

- ◆ Refer to
⇒ [“2.2.1 Overview - Rear Level Control System Sensor, Torsion Beam Axle”](#), page 328

2.4.2 Left Rear Level Control System Sensors - G76- , Removing and Installing, Multi-Link Suspension, FWD

Special tools and workshop equipment required

- ◆ Torque Wrench 1410 - VAG1410-





Removing

- Disconnect the connector -1-.
- Remove the bolts -2 and 3-.
- Remove the Left Rear Level Control System Sensor - G76-4-.

Installing

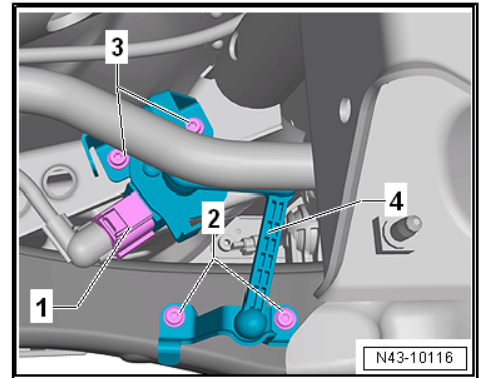
Install in reverse order of removal and note the following:

The level control system sensor lever must point toward vehicle exterior.

- Perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .
- Adjust the headlamps to the basic setting. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Headlamp; Headlamp, Adjusting .

Tightening Specifications

- ◆ Refer to
⇒ ["2.2.2 Overview - Rear Level Control System Sensor, Multi-Link Suspension, FWD", page 329](#)



2.4.3 Left Rear Level Control System Sensors - G76- , Removing and Installing, Multi-Link Suspension, AWD

Special tools and workshop equipment required

- ◆ Torque Wrench 1410 - VAG1410-

Removing

- Disconnect the connector -1-.
- Remove the bolts -2 and 3-.
- Remove the Left Rear Level Control System Sensor - G76-4-.

Installing

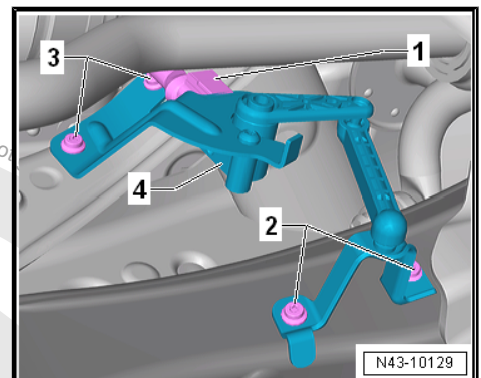
Install in reverse order of removal and note the following:

The level control system sensor lever must point toward vehicle exterior.

- Perform the basic setting for the wheel damping electronics. Refer to Vehicle Diagnostic Tester .
- Adjust the headlamps to the basic setting. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Headlamp; Headlamp, Adjusting .

Tightening Specifications

- ◆ Refer to
⇒ ["2.2.2 Overview - Rear Level Control System Sensor, Multi-Link Suspension, FWD", page 329](#)

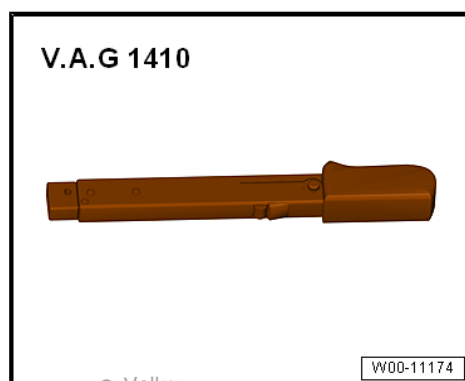




3 Special Tools

Special tools and workshop equipment required

- ◆ Torque Wrench - VAG1410-





44 – Wheels, Tires, Wheel Alignment

1 Wheels and Tires

- ⇒ [“1.1 Tires, Dismounting”, page 335](#)
- ⇒ [“1.2 Tires, Mounting”, page 335](#)
- ⇒ [“1.3 Wheel, Changing”, page 336](#)
- ⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)
- ⇒ [“1.5 Tires, Dismounting”, page 340](#)
- ⇒ [“1.6 Tire Sealant, Disposing”, page 341](#)
- ⇒ [“1.7 Vehicles with Tire Mobility Kit”, page 341](#)

1.1 Tires, Dismounting

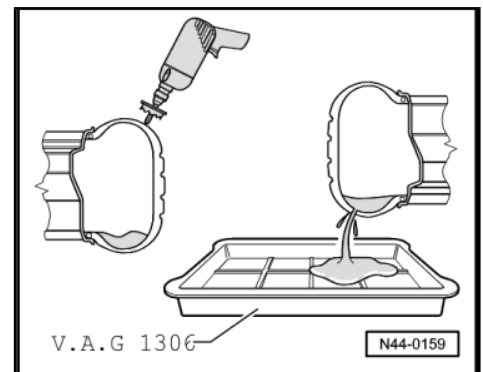
Tires which have been filled or sealed with tire sealant, must be drained before removing from wheel.



Caution

- ◆ *Do not let tire sealant come in contact with eyes or skin.*
- ◆ *It is harmful to health, can cause eye irritation and allergies.*
- ◆ *Wear safety gloves and protective eyewear.*

- Place the wheel on a flat surface.
- Remove the valve insert.
- Using a suitable drill bit or cutting bit, carefully drill a hole in the bead seat area of tire.
- Hold the wheel over a catch tray and let the sealant flow out.
- Remove the tire from the rim.
- Clean the rim with a damp cloth.

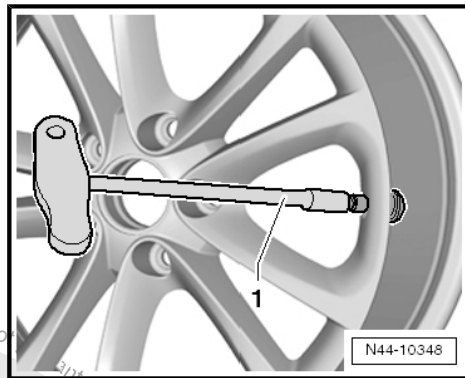


1.2 Tires, Mounting

- Make sure wheel rim is clean.



- Using the Valve Fitting Tool - VAS6459- -1-, insert a new tire valve.
- Remove the valve insert.
- Inflate tire to approximately 3 to 4 bar (43.51 to 58.01 psi), tire bead must slip audibly over rim hump when doing this.
- Install the valve insert.
- Check the tire pressure for specified pressure.
- Balance the tire.



1.3 Wheel, Changing

⇒ ["1.3.1 Wheel Changing, Protecting Wheel Centering Seat Against Corrosion", page 336](#)

⇒ ["1.3.2 Wheel, Changing", page 337](#)

⇒ ["1.3.3 Wheel Changing Instructions", page 338](#)

⇒ ["1.3.4 Wheel Changing and Wheel Installation", page 339](#)

⇒ ["1.3.5 Wheel Changing, Position of Anti-Theft Wheel Bolts on Steel Wheels", page 339](#)

1.3.1 Wheel Changing, Protecting Wheel Centering Seat Against Corrosion

Applies to Light-Alloy and Steel Wheels

When a wheel is changed, the centering seat should be sprayed with Wax Spray to prevent corrosion between the centering seat and the wheel rim. Refer to the Parts Catalog.

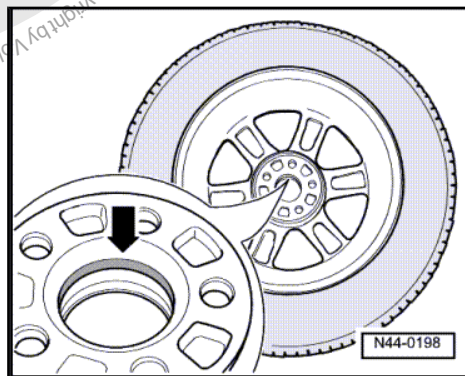
- Remove the wheel.
- Thoroughly clean the centering seat on the wheel hub and the centering surface on the rim.
- Apply wax in area of centering -arrow- using a brush.

Always Make Sure That Only Centering -arrow- Is Waxed and Not Rim Contact Surfaces. As a Consequence, the Brakes Would Become Contaminated While Driving and Thereby Result in Poor Braking.



WARNING

Wheel bolts, contact surfaces of wheel/wheel hub and the threads in the wheel hubs must not have wax applied to them. Never apply lubricants or anti-corrosion treatment to threads in wheel hubs.



- Install the wheel and tighten. Refer to
⇒ ["1.4 Wheel Bolt Tightening Specifications", page 340](#) .



1.3.2 Wheel, Changing

Warm up Cold Tires to the Minimum Mounting Temperature



Note

This applies also to ultra high performance tires (height- / width ratio smaller/same 45% and speed rating symbol larger than/ same as V).



WARNING

The minimum mounting temperature for a tire should be between 15 and 30 °C (59 and 86 °F) in the center of the tire.

- For injury-free mounting, the upper sidewall and the upper bead inside must be minimum 15 °C (59 °F).
- The internal temperature is called the core temperature.
- Rubber is a poor heat conductor. For this reason, a cold tire must be exposed to a temperature controlled environment until the inner rubber layers have warmed up to at least 15 °C (59 °F).
- The temperature of the tire surface during the warm-up phase should not be considered as the temperature on the inside of the tire.
- Do not stack tires one on top of the other so that cold tires can absorb the warmth from the outside air quickly. They should be stored separately so that the warm air can “flow” around them.
- Never use a room heater or a hot air gun to warm up tires because the surface temperature will heat up very quickly to a critical temperature.
- Using warm water or warm air (maximum 50 °C (122 °F)) is the only way to warm a tire safely.
- If cold tires (below 0 °C (32 °F)) are brought into a warm room (above 0 °C (32 °F)), a layer of ice will start to form on the tires. This layer of ice means that humidity in the warm air is condensing on the tire.
- Once the layer of ice starts to melt, water will start to build. Wipe up the water with a cloth so that the warming process does not slow down.

Warm-Up Time:

- ◆ Tires warmer than 0 °C (32 °F) must be stored at minimum 19 °C (66.2 °F) for at least 2 hours.
- ◆ Tires colder than 0 °C (32 °F) must be stored at minimum 19 °C (66.2 °F) for at least 2.5 hours.

Recommendations:

- ◆ if possible, let the tires stand in the workshop for 1 day before mounting them
- ◆ Store them on an insulated surface, a wood pallet or something similar.
- ◆ Position the tires so that they can be “surrounded” by the warm air.
- ◆ Wipe off the sweat



- ◆ never heat the tires with a room heater or a hot air gun!

◆

1.3.3 Wheel Changing Instructions



WARNING

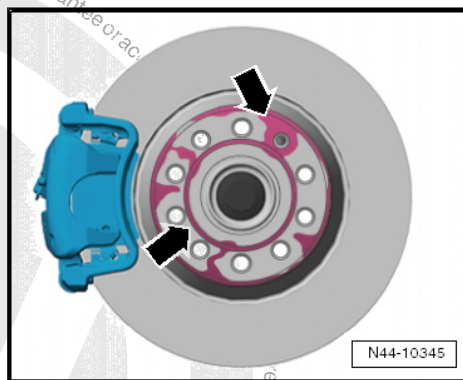
The secure seating of the wheel bolts and the wheels is only ensured if the instructions and checks below are followed.



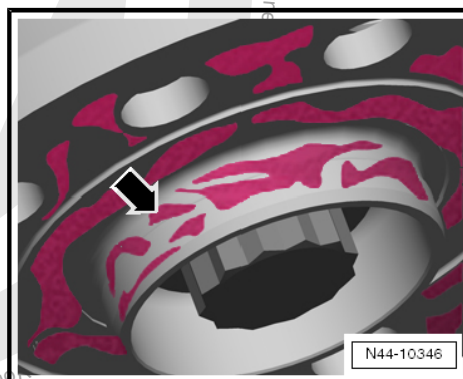
Note

After removing or installing one or multiple tires, the tire pressure monitoring system must be recalibrated for vehicles with tire pressure monitoring system. Refer to [page 344](#).

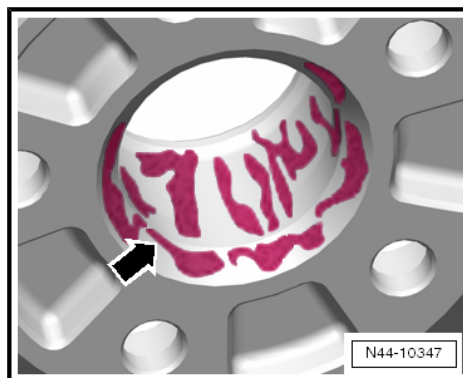
- Make sure the contact surfaces -arrows- on the brake rotor are free of corrosion and dirt.



- Make sure the contact surfaces -arrow- on the brake rotor center seat are free of corrosion and dirt.



- Make sure the contact surface -arrow- on the wheel inner side (rim) as well as the central seat in the rim is free of corrosion and dirt.
- The spherical caps * in the wheel bolt openings and the wheel bolt threads must likewise be free of corrosion, dirt, oil or grease.



* The spherical cap is the curved surface of a section of a sphere.



- Check whether the wheel bolts can be easily screwed in by hand. The threads of the wheel bolts must not touch the holes in the brake rotor -arrow-.

If the thread of the wheel bolt touches the hole -arrow-, turn the brake rotor accordingly.

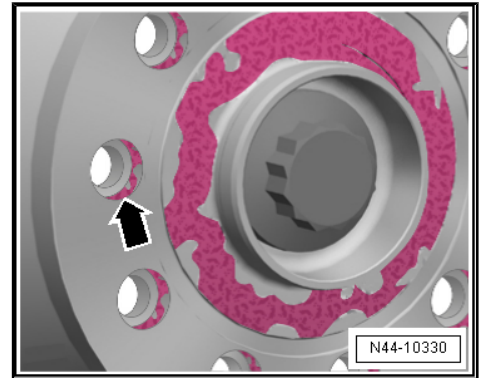
Remove Any Dirt or Corrosion If Necessary:

- ◆ Oil or grease from the contact surfaces
- ◆ Oil or grease from the threads on the wheel hub
- ◆ Oil or grease from the threads on the wheel bolts



WARNING

Heavily corroded, difficult to turn or damaged wheel bolts must be replaced.



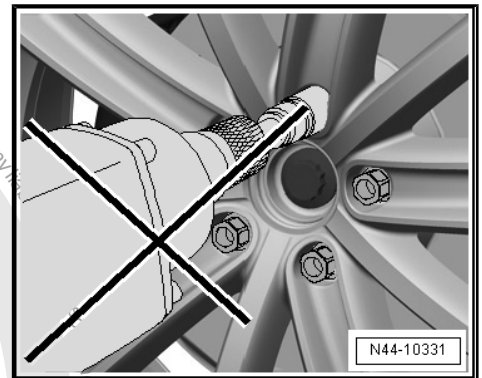
1.3.4 Wheel Changing and Wheel Installation

- Coat the wheel centering seat with protective material. Refer to
⇒ [“1.3.1 Wheel Changing, Protecting Wheel Centering Seat Against Corrosion”, page 336](#).
- 1 - When mounting a wheel, tighten all wheel bolts uniformly by hand.
- 2 - Tighten the wheel bolts diagonally to approximately 30 Nm.
- 3 - Lower the vehicles onto the floor. Tighten all the wheel bolts diagonally to the tightening specification using a torque wrench. Refer to
⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#).



WARNING

Do not use an impact wrench to install the wheel bolts.



1.3.5 Wheel Changing, Position of Anti-Theft Wheel Bolts on Steel Wheels



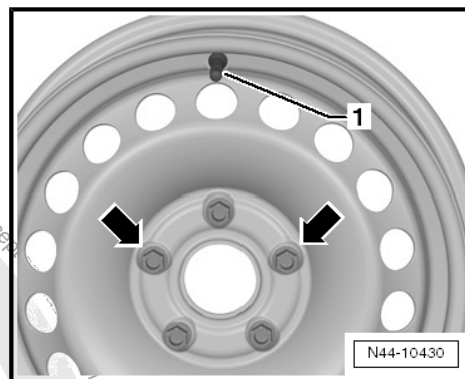
Caution

It is absolutely necessary to maintain the position of the anti-theft wheels bolts to the tire valve on steel wheels.



The anti-theft wheel bolt must be installed either to the right or to the left -arrows- of the valve -1- on steel wheels.

The decorative wheel hubcap can be installed on the steel wheel securely only when the anti-theft wheel bolt is installed in this position.



1.4 Wheel Bolt Tightening Specifications

Wheel bolt to wheel hub for all vehicles:

Tightening Specification: 120 Nm

- Apply corrosion protection to the wheel centering seat before mounting the wheel. Refer to ["1.3.1 Wheel Changing, Protecting Wheel Centering Seat Against Corrosion", page 336](#).
- ◆ Positioning the Anti-Theft Wheel Bolts on Steel Wheels. Refer to ["1.3.5 Wheel Changing, Position of Anti-Theft Wheel Bolts on Steel Wheels", page 339](#).
- ◆ Install the anti-theft wheel bolts using the Wheel Bolt Master Set.

1.5 Tires, Dismounting

Since MY 2005, All Vehicles Have a New Rims with Revised Contour.

When Mounting Tires, Tire Dismounting/Mounting Machine Must Be Equipped with Tire Mounting Fixture Intended for These Rims.



WARNING

Otherwise the rim could get damaged.

If the tire mounting unit has not been modified, contact the equipment manufacturer.

Safety Precautions for Removing and Installing Tires

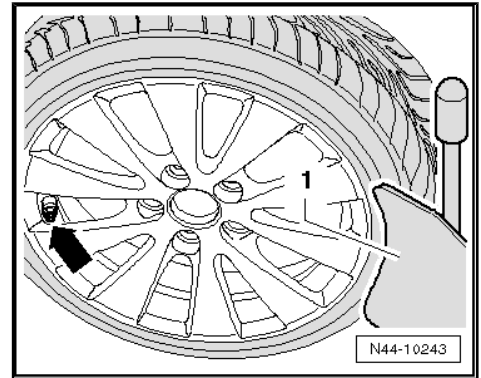
- Always note the instructions and danger warnings identified in the following description!
- Remove the nickel plated valve insert and let the air out of the tire.



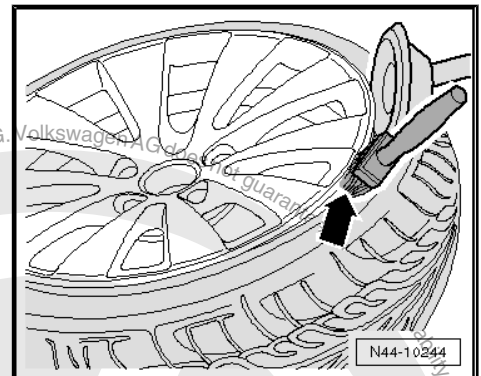
- Make sure the tire valve -arrow- is on the opposite side of the press-off blade -1- when dismounting a tire using a tire dismounting/mounting machine.

The press-off blade must be applied at maximum 2 cm away from rim flange.

- Remove the balance weight and any dirt from the rim.



- Press off both tire beads all the way around while thoroughly applying tire mounting paste between the tire and rim flange -arrow-.



1.6 Tire Sealant, Disposing

- ◆ Tire sealant or residue from it must not be mixed with other wastes/fluids
- ◆ Accumulating fluid residue from tire sealant must be collected and placed in a plastic container. The plastic containers can be sent for recycling together with the tire sets (if the expiration date has passed).
- ◆ The return or recycling can take place using the existing workshop disposal systems
- ◆ Check with the company responsible for trash pickup for the dealership.

1.7 Vehicles with Tire Mobility Kit

⇒ [“1.7.1 Vehicles with Break-Down Kit, Sedan”, page 341](#)

⇒ [“1.7.2 Vehicles with Break-Down Kit, Wagon”, page 342](#)

1.7.1 Vehicles with Break-Down Kit, Sedan

Depending on the vehicle equipment, the vehicles are equipped with a tire mobility kit.



The tire mobility kit is located in the tool compartment -3- in the luggage compartment on the right side.

The tire mobility kit contains a bottle of tire sealant -1- and a compressor -2-.

Tire sealant in the bottle has a limited storage life.

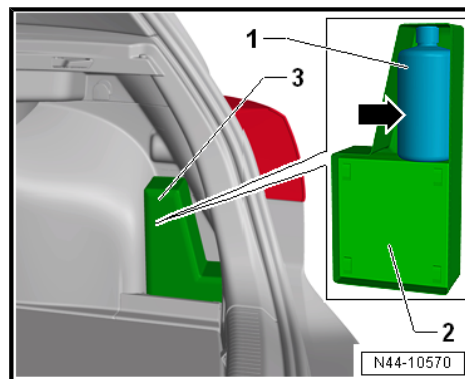
Therefore the minimum shelf life date -arrow- is marked on the bottle -1-.

Replace tire sealant when minimum shelf life date has been reached (tire sealant must not be older than 4 years).

If the bottle was opened, for example, for a punctured tire, it must also be replaced.

Observe the disposal regulations. Refer to

⇒ ["1.6 Tire Sealant, Disposing", page 341](#) .



1.7.2 Vehicles with Break-Down Kit, Wagon

Depending on the vehicle equipment, the vehicles are equipped with a tire mobility kit.

The tire mobility kit is located in the tool compartment -3- in the luggage compartment on the left side.

The tire mobility kit contains a bottle of tire sealant -1- and a compressor -2-.

Tire sealant in the bottle has a limited storage life.

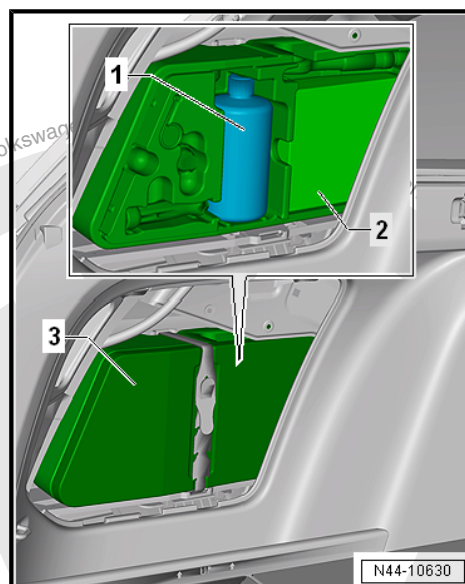
Therefore the minimum shelf life date is marked on the bottle -1-.

Replace tire sealant when minimum shelf life date has been reached (tire sealant must not be older than 4 years).

If the bottle was opened, for example, for a punctured tire, it must also be replaced.

Observe the disposal regulations. Refer to

⇒ ["1.6 Tire Sealant, Disposing", page 341](#) .





2 Tire Pressure Monitoring System

⇒ **"2.1 System Description - Tire Pressure Monitoring System",
page 343**

2.1 System Description - Tire Pressure Monitoring System

General Information

The tire pressure monitoring system is included in the software in the ABS Control Module - J104- . The system will recognize a slow and gradual decrease in tire pressure on a wheel. The DTC memory entries for tire pressure monitoring system are stored in the ABS Control Module - J104- . With the help of the ABS speed sensor, the TPMS compares the speed and rolling circumference of the individual tires.

After the following work and/or changes and with the ignition switched on, the Tire Pressure Monitoring Display Button - E492- must be pressed until the confirmation chime sounds:

- ◆ Change in the tire pressures
- ◆ A change in one or more tires
- ◆ Changing a tire, for example, from front to rear
- ◆ Removing or installing one or multiple tires

If a tire has changed in circumference, the Tire Pressure Monitoring Display Indicator Lamp - K220- in the instrument cluster will come on. Rolling circumference of a tire may change due to:

- ◆ insufficient tire pressure
- ◆ Structural damage on tires
- ◆ Vehicle is loaded heavily on one side
- ◆ high load on one axle, when towing trailer for example
- ◆ when snow chains are used
- ◆ Spare wheel is mounted
- ◆ one wheel is replaced



System Malfunction in the ABS

If the ASR/ESP Indicator Lamp - K155- indicates a malfunction in the ABS system, then the Tire Pressure Monitoring Display Indicator Lamp - K220- will also illuminate. A malfunction in the tire pressure monitoring system has not been stored.

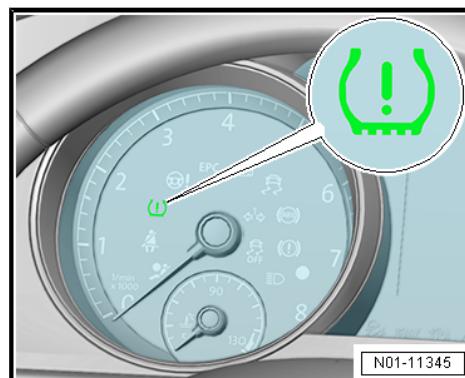
The indicator lamp cannot be erased. In this case, perform the following:

- Connect the Vehicle Diagnostic Tester and select “Guided Fault Finding”.

Follow the instructions on the screen to perform the basic setting.

Basic Setting with the Infotainment System, Performing

- Switch the ignition on.
- Switch on the Infotainment system.
- Press the Infotainment button **CAR**.
- Press **Setup**.
- Press **Tires**.
- Press **Set**.
- Press **Confirm**.





3 Vehicle Alignment

- ⇒ [“3.1 Axle Alignment Information”, page 345](#)
- ⇒ [“3.2 Test Requirements”, page 345](#)
- ⇒ [“3.3 Measure Preparations”, page 346](#)
- ⇒ [“3.4 Axle Alignment Specified Values”, page 347](#)
- ⇒ [“3.6 Axle Alignment Procedure”, page 355](#)
- ⇒ [“3.7 Need for Axle Alignment, Evaluating”, page 357](#)
- ⇒ [“3.8 Front Axle Camber, Adjusting”, page 359](#)
- ⇒ [“3.9 Rear Axle Camber, Adjusting”, page 360](#)
- ⇒ [“3.10 Rear Axle Toe, Adjusting”, page 361](#)
- ⇒ [“3.11 Front Axle Toe, Adjusting”, page 362](#)
- ⇒ [“3.12 Wheel Run-Out Compensation”, page 363](#)
- ⇒ [“3.13 Vehicle Data Label”, page 363](#)
- ⇒ [“3.14 Maximum Steering Angle, Checking”, page 363](#)

3.1 Axle Alignment Information

Wheel alignment must only be performed using VW/Audi-approved wheel alignment equipment.

Wheel alignment checks must always include both the front and rear axles.

- Perform the alignment using the wheel alignment computer.

The wheel alignment computer has all the information for the vehicle alignment.



Note

- ◆ *An alignment should not be done until the vehicle has been driven 1,000 to 2,000 km, since it takes this long for the coil springs to settle.*
- ◆ *The individual specifications should be followed as exactly as possible when making adjustments.*
- ◆ *If adjustments were performed on the suspension, check if the driver assistance systems must be calibrated.*

Vehicles Pulling to One Side and Vehicles Involved in an Accident

The cause for this could be that steering rack in steering gear does not stand exactly in the center when steering straight ahead.

The steering support may pull slightly to the left or to the right. The result is a vehicle which pulls to the side.

If a Vehicle Is Aligned Due to a Complaint “Vehicle Pulls to One Side or Pulls Askew”, Center Position of Steering Rack Must Always Be Checked.

Note. Refer to

- ⇒ [“1.2 Safety Precautions when Working on Subframe”, page 1](#).

3.2 Test Requirements

- Check suspension, wheel bearing and steering for excessive play and damage.



- Tread depth difference may be no more than 2 mm on an axle.
- Tires inflated to prescribed pressure
- Vehicle curb weight
- Fuel tank must be full.
- Spare tire and vehicle tools are installed in appropriate position in vehicle.
- The windshield washer fluid reservoir must be full.
- Make sure that the sliding plate and turntable are not touching the end stop during the measurement.

Note

- The test equipment must be properly adjusted and attached to the vehicle; observe device manufacturer operating instructions.

If necessary, contact the manufacturer of the alignment equipment for familiarization with the proper use of the equipment.

The vehicle alignment platforms and wheel alignment computer can lose their calibration over a period of time.

Wheel Alignment Platforms and Wheel Alignment Computers Should Be Serviced and Calibrated at Least Once a Year.

- Handle highly sensitive units with care.

3.3 Measure Preparations

⇒ **“3.3.1 Measurement Preparations, Axle Alignment without Driver Assistance Systems”, page 346**

⇒ **“3.3.2 Measurement Preparations, Axle Alignment with Driver Assistance Systems”, page 347**

3.3.1 Measurement Preparations, Axle Alignment without Driver Assistance Systems

Special tools and workshop equipment required

- ◆ Wheel Alignment Computer - VAG1813F- or VW/Audi approved wheel alignment devices
- ◆ Brake Pedal Actuator - VAG1869/2- .
- ◆ Insert Tool - 18mm - T10179-
- ◆ Shock Absorber Set - T10001-

The Lateral Run-out of the Wheel Must Be Compensated For. Otherwise, Measurement Will Result in False Readings.

A Correct Toe-In Adjustment Will Not Be Possible without Performing Lateral Run-Out Compensation!

Follow the operating instructions provided by the manufacturer of the alignment equipment.

- Carry out wheel run-out compensation.
- Install the Brake Pedal Actuator - VAG1869/2- .
- Actuate the brake pedal using brake pedal actuator.



Preparation Work for Calibrating Driver Assistance Systems

3.3.2 Measurement Preparations, Axle Alignment with Driver Assistance Systems

Perform the following Steps Using "Quick Access" If One or More Driver Assistance Systems on the Vehicle Will Be Calibrated (without a Previous Axle Alignment):

- Before driving the vehicle onto the alignment stand, make sure there is enough space between the vehicle and the calibration device. The distance between the calibration device and the vehicle must be: 120 cm ± 2.5 cm.
- If there is not enough space, back the vehicle onto the wheel alignment platform. A corresponding surface can also be used.
- Check the DTC memory and correct any malfunctions before beginning the calibration.
- Vehicle accurately aligned, suspension bounced and rocked several times
- Make sure that the sliding plate and turntable are not touching the end stop during the measurement.
- Connect the battery charger. Refer to ⇒ Electrical Equipment, Rep. Gr. 27 ; Battery; Battery, Charging .
- Position the front wheels so they are straight.
- Connect Vehicle Diagnostic Tester to the vehicle and guide the diagnostic cable through the open window.
- The vehicle exterior lamps are off.
- All the vehicle doors are closed.
- Using the screen, turn on the calibration on the wheel alignment computer.

3.4 Axle Alignment Specified Values

⇒ ["3.4.1 Axle Alignment Specified Values, Torsion Beam Axle, Golf", page 347](#)

⇒ ["3.4.2 Axle Alignment Specified Values, Torsion Beam Axle, Golf Wagon", page 349](#)

⇒ ["3.4.3 Axle Alignment Specified Values, Multi-Link Suspension, Golf", page 350](#)

⇒ ["3.4.4 Axle Alignment Specified Values, Multi-Link Suspension, Golf Wagon, Golf Wagon R, Golf Alltrack", page 353](#)

⇒ ["3.4.5 Axle Alignment Specified Values, Multi-Link Suspension, e-Golf", page 354](#)

3.4.1 Axle Alignment Specified Values, Torsion Beam Axle, Golf

Specified values valid for all engine versions:



PR number explanations. Refer to
⇒ **"3.13 Vehicle Data Label", page 363** .

Front Axle	Basic Suspension	Sport Suspension	Raised Suspension	Dcc Suspension
PR Numbers	G01+2UA G02+2UA G07+2UA G18/G22	G01+2UC+GM1 G01+2UP G02+2UC+GM1 G07+2UC G21/G26	G01+2UF G02+2UF G24/G25/G27	G03+2UQ G03+2UH
Total toe (wheels not pressed)	10' ± 10'	10' ± 10'	10' ± 10'	10' ± 10'
Camber (wheels in straight-ahead position). Refer to ¹⁾ .	-30' ± 30'	-41' ± 30'	16' ± 30'	-36' ± 30'
Maximum permissible difference between both sides	maximum 30'	maximum 30'	maximum 30'	maximum 30'
Toe differential angle at 20° steering angle. Refer to ²⁾ .	1° 19' ± 20'	1° 30' ± 20'	1° 09' ± 20'	1° 26' ± 20'
Caster	7° 23' ± 30'	7° 38' ± 30'	7° 09' ± 30'	7° 33' ± 30'
Maximum permissible difference between both sides	maximum 30'	maximum 30'	maximum 30'	maximum 30'
Standing height	383 ± 10 mm	368 ± 10 mm	398 ± 10 mm	373 ± 10 mm

1) Camber corrections are not possible. It can only be slightly corrected by pushing the subframe.

2) The toe angle difference can also be indicated negatively in alignment computer, depending on manufacturer.

Specified values valid for all engine versions.

PR Number Explanations. Refer to
⇒ **"3.13 Vehicle Data Label", page 363** .

Front Axle	Blue Motion
PR Numbers	G01+2UC+GM1 G01+2UP G02+2UC+GM1 G07+2UC G21/G26
Total toe (wheels not pressed)	10' ± 10'
Camber (wheels in straight-ahead position). Refer to ³⁾ .	-41' ± 30'
Maximum permissible difference between both sides	maximum 30'
Toe differential angle at 20° steering angle. Refer to ⁴⁾ .	1° 30' ± 20'
Caster	7° 38' ± 30'
Maximum permissible difference between both sides	maximum 30'
Standing height	368 ± 10 mm

3) Camber corrections are not possible. It can only be slightly corrected by pushing the subframe.

4) The toe angle difference can also be indicated negatively in alignment computer, depending on manufacturer.

Rear Axle	Basic Suspension	Sport Suspension	Raised Suspension	DCC Suspension
Camber	-1° ± 10'	-1° ± 10'	-1° ± 10'	-1° ± 10'
Maximum permissible difference between both sides	maximum 30'	maximum 30'	maximum 30'	maximum 30'



Rear Axle	Basic Suspension	Sport Suspension	Raised Suspension	DCC Suspension
Total toe (at specified camber)	20' ± 12'	24' ± 12'	26' ± 12'	23' ± 12'
Maximum permissible deviation from direction of rotation	maximum 20'	maximum 20'	maximum 20'	maximum 20'
Standing height	385 ± 10 mm	370 ± 10 mm	400 ± 10 mm	375 ± 10 mm

Rear Axle	Blue Motion
Camber	-1° ± 10'
Maximum permissible difference between both sides	maximum 30'
Total toe (at specified camber)	24' ± 12'
Maximum permissible deviation from direction of rotation	maximum 20'
Standing height	370 ± 10 mm

3.4.2 Axle Alignment Specified Values, Torsion Beam Axle, Golf Wagon

Specified values valid for all engine versions.

PR Number Explanations. Refer to
⇒ "3.13 Vehicle Data Label", page 363 .

Front Axle	Basic Suspension/ Suspension with DCC	Sport Suspension	Raised Suspension	DCC Suspension
PR Numbers	G01+2UA G02+2UA G07+2UA G18/G22	G01+2UC+GM1 G01+2UP G02+2UC+GM1 G07+2UC G21/G26	G01+2UF G02+2UF G24/G25/G27	G03+2UQ G03+2UH
Total toe (wheels not pressed)	10' ± 10'	10' ± 10'	10' ± 10'	10' ± 10'
Camber (wheels in straight-ahead position). Refer to ⁵⁾	-30' ± 30'	-41' ± 30'	-16' ± 30'	-36' ± 30'
Maximum permissible difference between both sides	maximum 30'	maximum 30'	maximum 30'	maximum 30'
Toe differential angle at 20° steering angle. Refer to ⁶⁾	1° 19' ± 20'	1° 30' ± 20'	1° 09' ± 20'	1° 26' ± 20'
Caster	7° 23' ± 30'	7° 38' ± 30'	7° 09' ± 30'	7° 33' ± 30'
Maximum permissible difference between both sides	maximum 30'	maximum 30'	maximum 30'	maximum 30'
Standing height	383 ± 10 mm	368 ± 10 mm	398 ± 10 mm	373 ± 10 mm

Specified values valid for all engine versions.



PR Number Explanations. Refer to
⇒ **"3.13 Vehicle Data Label", page 363** .

Front Axle	Blue Motion
PR Numbers	G01+2UC+GM1 G01+2UP G02+2UC+GM1 G07+2UC G21/G26
Total toe (wheels not pressed)	10' ± 10'
Camber (wheels in straight-ahead position). Refer to ⁵⁾ .	-41' ± 30'
Maximum permissible difference between both sides	maximum 30'
Toe differential angle at 20° steering angle. Refer to ⁶⁾ .	1° 30' ± 20'
Caster	7° 38' ± 30'
Maximum permissible difference between both sides	maximum 30'
Standing height	368 ± 10 mm

5) Camber corrections are not possible. It can only be slightly corrected by pushing the subframe.

6) The toe angle difference can also be indicated negatively in alignment computer, depending on manufacturer.

Rear Axle	Basic Suspension	Sport Suspension	Raised Suspension	DCC Suspension
Camber	-1° ± 10'	-1° ± 10'	-1° ± 10'	-1° ± 10'
Maximum permissible difference between both sides	maximum 30'	maximum 30'	maximum 30'	maximum 30'
Total toe (at specified camber)	20' ± 12'	24' ± 12'	26' ± 12'	23' ± 12'
Maximum permissible deviation from direction of rotation	maximum 20'	maximum 20'	maximum 20'	maximum 20'
Standing height	385 ± 10 mm	370 ± 10 mm	400 ± 10 mm	375 ± 10 mm

Rear Axle	Blue Motion
Camber	-1° ± 10'
Maximum permissible difference between both sides	maximum 30'
Total toe (at specified camber)	24' ± 12'
Maximum permissible deviation from direction of rotation	maximum 20'
Standing height	370 ± 10 mm

3.4.3 Axle Alignment Specified Values, Multi-Link Suspension, Golf

Specified values valid for all engine versions.



PR Number Explanations. Refer to
⇒ **"3.13 Vehicle Data Label", page 363** .

Front Axle	Basic Suspension	Sport Suspension	Raised Suspension	DCC Suspension
PR numbers	G01+2UA G02+2UA G07+2UA G18/G22	G01+2UC+GM1 G01+2UP G02+2UC+GM1 G07+2UC G21/G26	G01+2UF G02+2UF G24/G25/G27	G03+2UQ/G03 +2UH
Total toe (wheels not pressed)	10' ± 10'	10' ± 10'	10' ± 10'	10' ± 10'
Camber (wheels in straight-ahead position). Refer to ⁷⁾ .	-30' ± 30'	-41' ± 30'	-16' ± 30'	-36' ± 30'
Maximum permissible difference between both sides	maximum 30'	maximum 30'	maximum 30'	maximum 30'
Toe differential angle at 20° steering angle. Refer to ⁸⁾ .	1° 19' ± 20'	1° 30' ± 20'	1° 09' ± 20'	1° 26' ± 20'
Caster	7° 23' ± 30'	7° 38' ± 30'	7° 09' ± 30'	7° 33' ± 30'
Maximum permissible difference between both sides	maximum 30'	maximum 30'	maximum 30'	maximum 30'
Standing height	383 ± 10 mm	368 ± 10 mm	398 ± 10 mm	373 ± 10 mm

7) Camber corrections are not possible. It can only be slightly corrected by pushing the subframe.

8) The toe angle difference can also be indicated negatively in alignment computer, depending on manufacturer.

Specified values valid for all engine versions.

PR Number Explanations. Refer to
⇒ **"3.13 Vehicle Data Label", page 363** .

Front Axle	GTE	GTD	Golf R 18"	Golf R 19"
PR Numbers	G06+2UC G06+2UC+GM1 +A8H G06+2UC+GM3 +A8G G06+2UJ G04+2UM G29	G05+2UJ+GM03 G06+2UC +GM03 G02+2UC+GM1 +A8G G06+2UC+GM1 +A8G G05+2UJ G32	G04+2UK+1N7 G04+2UL+1N7	G04+2UK+QZ0 G04+2UL+QZ0
Total toe (wheels not pressed)	10' ± 10'	10' ± 10'	10' ± 10'	10' ± 10'
Camber (wheels in straight-ahead position). Refer to ⁹⁾ .	-41' ± 30'	-41' ± 30'	-44' ± 30'	-44' ± 30'
Maximum permissible difference between both sides	maximum 30'	maximum 30'	maximum 30'	maximum 30'
Toe differential angle at 20° steering angle. Refer to ¹⁰⁾ .	1° 30' ± 20'	1° 30' ± 20'	1° 38' ± 20'	1° 38' ± 20'
Caster	7° 38' ± 30'	7° 38' ± 30'	7° 45' ± 30'	7° 45' ± 30'
Maximum permissible difference between both sides	maximum 30'	maximum 30'	maximum 30'	maximum 30'
Standing height	368 ± 10 mm	368 ± 10 mm	363 ± 10 mm	363 ± 10 mm

9) Camber corrections are not possible. It can only be slightly corrected by pushing the subframe.

10) The toe angle difference can also be indicated negatively in alignment computer, depending on manufacturer.

Specified values valid for all engine versions.



PR Number Explanations. Refer to
⇒ **"3.13 Vehicle Data Label", page 363** .

Front Axle	GTI Heavy Duty Suspension	GTE
PR Numbers	G06 +2UN	G20/G23
Total toe (wheels not pressed)	10' ± 10'	10' ± 10'
Camber (wheels in straight-ahead position). Refer to ¹¹⁾ .	-30' ± 30'	-30' ± 30'
Maximum permissible difference between both sides	maximum 30'	maximum 30'
Toe differential angle at 20° steering angle. Refer to ¹²⁾ .	1° 19' ± 20'	1° 19' ± 20'
Caster	7° 23' ± 30'	7° 23' ± 30'
Maximum permissible difference between both sides	maximum 30'	maximum 30'
Standing height	383 ± 10 mm	383 ± 10 mm

11) Camber corrections are not possible. It can only be slightly corrected by pushing the subframe.

12) The toe angle difference can also be indicated negatively in alignment computer, depending on manufacturer.

Rear Axle	Basic Suspension	Sport Suspension	Raised Suspension	DCC Suspension
Camber	-1° 20' ± 30'	-1° 20' ± 30'	-1° 20' ± 30'	-1° 20' ± 30'
Maximum permissible difference between both sides	maximum 30'	maximum 30'	maximum 30'	maximum 30'
Total toe (at specified camber)	10' ± 10'	10' ± 10'	10' ± 10'	10' ± 10'
Maximum permissible deviation from direction of rotation	maximum 20'	maximum 20'	maximum 20'	maximum 20'
Standing height	385 ± 10 mm	370 ± 10 mm	400 ± 10 mm	375 ± 10 mm

Rear Axle	GTI	GTD	Golf R 18"	Golf R 19"
Camber	-1° 45' ± 30'	-1° 35' ± 30'	-1° 45' ± 30'	-1° 45' ± 30'
Maximum permissible difference between both sides	maximum 30'	maximum 30'	maximum 30'	maximum 30'
Total toe (at specified camber)	16' ± 10'	10' ± 10'	16' ± 10'	16' ± 10'
Maximum permissible deviation from direction of rotation	maximum 20'	maximum 20'	maximum 20'	maximum 20'
Standing height	370 ± 10 mm	370 ± 10 mm	365 ± 10 mm	365 ± 10 mm

Rear Axle	GTI Heavy Duty Suspension	GTE
Camber	-1° 20' ± 30'	-1° 45' ± 30'
Maximum permissible difference between both sides	maximum 30'	maximum 30'
Total toe (at specified camber)	10' ± 10'	16' ± 10'
Maximum permissible deviation from direction of rotation	maximum 20'	maximum 20'
Standing height	385 ± 10 mm	395 ± 10 mm



3.4.4 Axle Alignment Specified Values, Multi-Link Suspension, Golf Wagon, Golf Wagon R, Golf Alltrack

Specified values valid for all engine versions.

PR Number Explanations. Refer to
⇒ ["3.13 Vehicle Data Label", page 363](#).

Front Axle	Basic Suspension	Sport Suspension	Raised Suspension	DCC Suspension	Alltrack	Alltrack DCC	GTD
PR numbers	G01+2UA G02+2UA G07+2UA G18/G22	G01+2UC +GM1 G01+2UP G02+2UC +GM1 G07+2UC G21+G26 +G29	G01+2UF G02+2UF	G03+2UQ/ G03+2UH	G24/ G25	G27	05+2UJ +GM03 G06+2UC +GM03 G02+2UC +GM1 +A8G G06+2UC +GM1 +A8G G05+2UJ
Total toe (wheels not pressed)	10' ± 10'	10' ± 10'	10' ± 10'	10' ± 10'	10' ± 10'	10' ± 10'	10' ± 10'
Camber (wheels in straight-ahead position). Refer to ¹³⁾ .	-30' ± 30'	-41' ± 30'	-16' ± 30'	-36' ± 30'	-16' ± 30'	-16' ± 30'	-41' ± 30'
Maximum permissible difference between both sides	maximum 30'	maximum 30'	maximum 30'	maximum 30'	maximum 30'	maximum 30'	maximum 30'
Toe differential angle at 20° steering angle. Refer to ¹⁴⁾ .	1° 19' ± 20'	1° 30' ± 20'	1° 09' ± 20'	1° 26' ± 20'	1° 09' ± 20'	1° 09' ± 20'	1° 30' ± 20'
Caster	7° 23' ± 30'	7° 38' ± 30'	7° 09' ± 30'	7° 33' ± 30'	7° 09' ± 30'	7° 09' ± 30'	7° 38' ± 30'
Maximum permissible difference between both sides	maximum 30'	maximum 30'	maximum 30'	maximum 30'	maximum 30'	maximum 30'	maximum 30'
Standing height	383 ± 10 mm	368 ± 10 mm	398 ± 10 mm	373 ± 10 mm	397 ± 10 mm	392 ± 10 mm	368 ± 10 mm

13) Camber corrections are not possible. It can only be slightly corrected by pushing the subframe.

14) The toe angle difference can also be indicated negatively in alignment computer, depending on manufacturer.

Rear Axle	Basic Suspension	Sport Suspension	Golf Wagon R Sport Suspension	Raised Suspension	DCC Suspension	Alltrack	Alltrack DCC	GTD
Camber	-1° 20' ± 30'	-1° 20' ± 30'	-1° 45' ± 30'	-1° 20' ± 30'	-1° 20' ± 30'	-1° 20' ± 30'	-1° 20' ± 30'	-1° 35' ± 30'
Maximum permissible difference between both sides	maximum 30'	maximum 30'	maximum 30'	maximum 30'	maximum 30'	maximum 30'	maximum 30'	maximum 30'
Total toe (at specified camber)	10' ± 10'	10' ± 10'	16' ± 10'	10' ± 10'	10' ± 10'	10' ± 10'	10' ± 10'	10' ± 10'
Maximum permissible deviation from direction of rotation	maximum 20'	maximum 20'	maximum 20'	maximum 20'	maximum 20'	maximum 20'	maximum 20'	maximum 20'
Standing height	385 ± 10 mm	370 ± 10 mm	370 ± 10 mm	400 ± 10 mm	375 ± 10 mm	398 ± 10 mm	393 ± 10 mm	370 ± 10 mm



3.4.5 Axle Alignment Specified Values, Multi-Link Suspension, e-Golf

Specified values valid for all engine versions.

PR Number Explanations. Refer to
⇒ **"3.13 Vehicle Data Label", page 363** .

Front Axle	Basic Suspension			
PR numbers	G01/G02/G07/ G18/G22+2UA			
Total toe (wheels not pressed)	10' ± 10'			
Camber (wheels in straight-ahead position). Refer to ¹⁵⁾ .	-30' ± 30'			
Maximum permissible difference between both sides	maximum 30'			
Toe differential angle at 20° steering angle. Refer to ¹⁶⁾ .	1° 19' ± 20'			
Caster	7° 23' ± 30'			
Maximum permissible difference between both sides	maximum 30'			
Standing height	383 ± 10 mm			

15) Camber corrections are not possible. It can only be slightly corrected by pushing the subframe.

16) The toe angle difference can also be indicated negatively in alignment computer, depending on manufacturer.

Rear Axle	Basic Suspension			
Camber	-1° 20' ± 30'			
Maximum permissible difference between both sides	maximum 30'			
Total toe (at specified camber)	10' ± 10'			
Maximum permissible deviation from direction of rotation	maximum 20'			
Standing height	385 ± 10 mm			



3.5 Vehicle, Preparing for Aligning

If the Measured Values Are outside the Allowed Tolerances, the Cause May Be an Incorrect Vehicle Attitude.

RHD vehicles or for example vehicles with automatic transmission can lean to one side slightly.

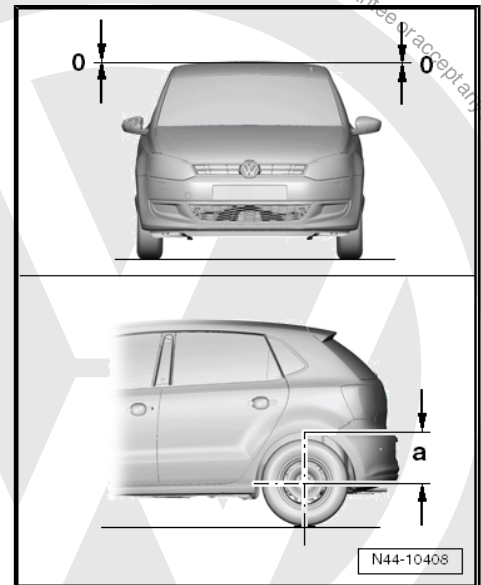
This is due to the installation position of the assemblies and the corresponding weight transfer and is normal.

- It is absolutely necessary to measure the dimension -a- on left and right sides at the rear.
- If necessary, correct the existing difference.

At the front axle, it can be compensated by applying weights onto corresponding suspension strut dome in the engine compartment.

At the rear axle, it can be compensated by applying weights in the luggage compartment on the corresponding vehicle side.

For example, sand bags of approximately 10 kg are suitable as weights.



3.6 Axle Alignment Procedure

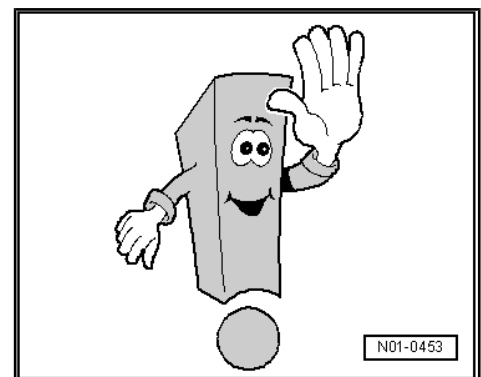
Observe the following Work Sequence!



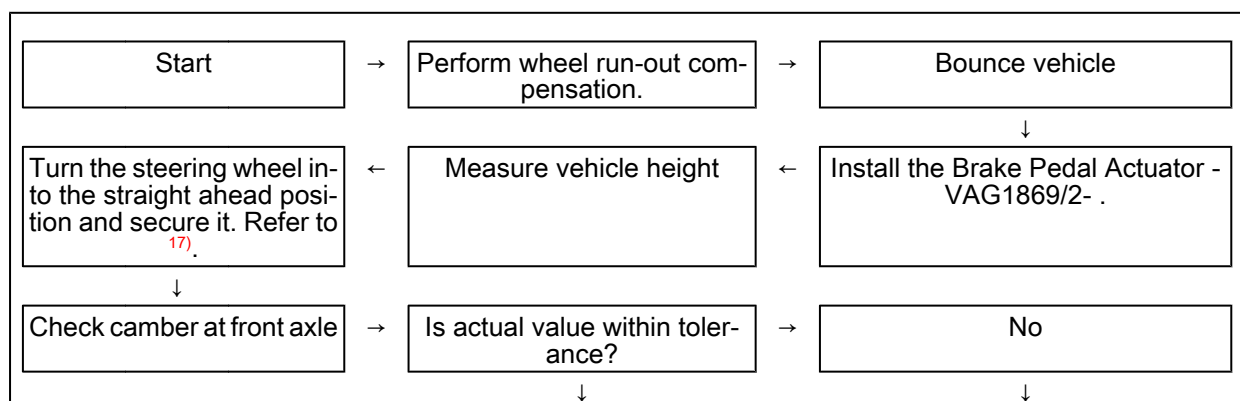
Note

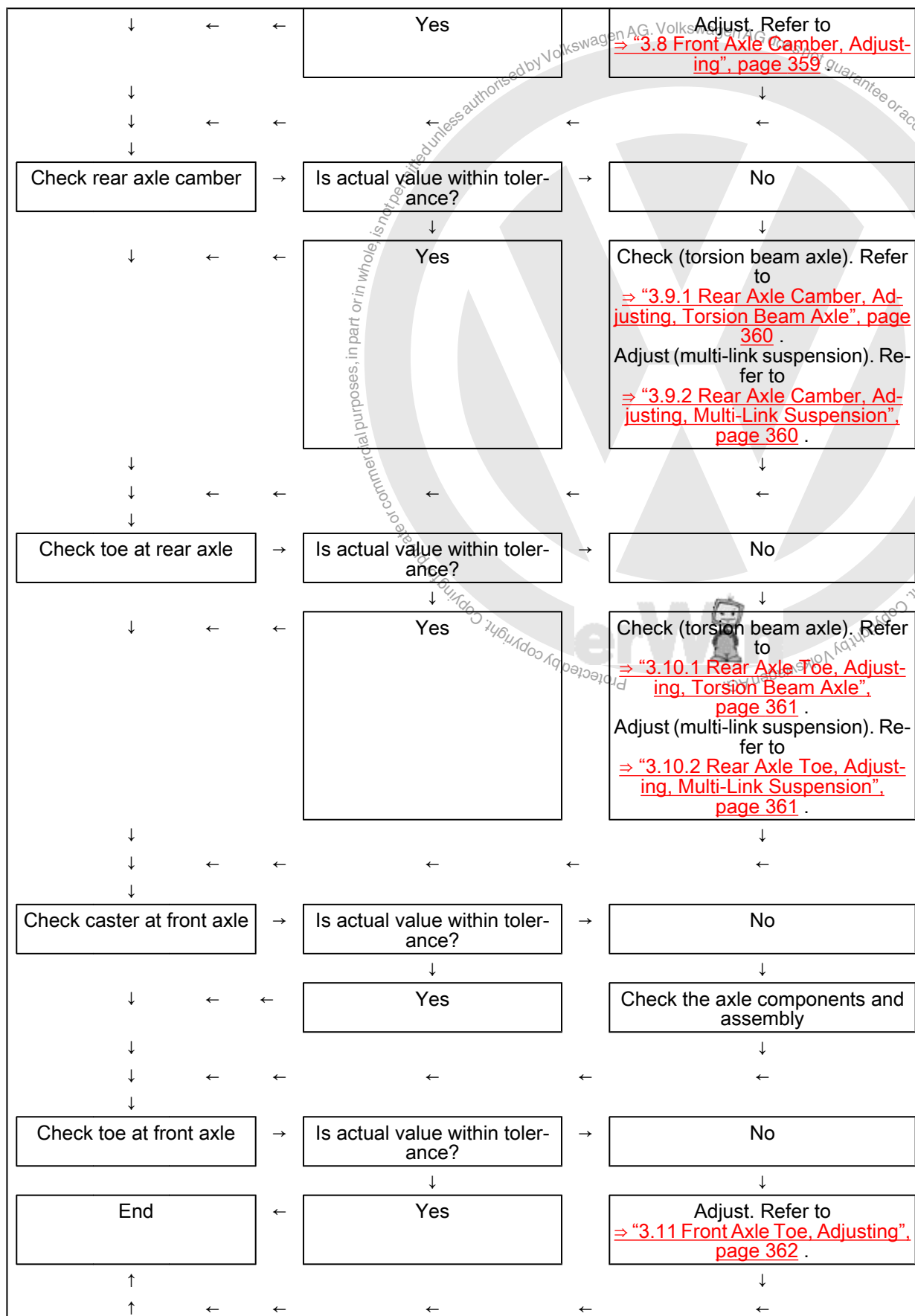
*Vehicle must only be measured at curb weight. Refer to
⇒ "2.8 Wheel Bearing in Curb Weight Position, Lifting Vehicles
with Coil Spring", page 5.*

- Note the information in the alignment equipment.



Measuring Procedure





17) If steering wheel is crooked at end of alignment procedure, it must be straightened. Perform a basic setting on the Steering Angle Sensor - G85- . Refer to Vehicle Diagnostic Tester .



Note

- ◆ If adjustments were made to the suspension during the axle alignment on vehicles with ESP or ABS, the Steering Angle Sensor - G85- must be calibrated. Refer to Vehicle Diagnostic Tester .
- ◆ If the rear axle setting was changed, the following driver assistance systems must be calibrated:
- ◆ Lane Assist. Refer to
⇒ ["6.1 Driver Assistance Systems Front Camera, Calibrating", page 387](#) ,
- ◆ Adaptive cruise control (ACC). Refer to
⇒ ["5.1.1 Adaptive Cruise Control \(ACC\), Calibrating, Except e-Golf", page 375](#) .

3.7 Need for Axle Alignment, Evaluating

⇒ ["3.7.1 Evaluating Need for Axle Alignment, Torsion Beam Axle", page 357](#)

⇒ ["3.7.2 Evaluating Need for Axle Alignment, Multi-Link Suspension", page 358](#)

3.7.1 Evaluating Need for Axle Alignment, Torsion Beam Axle

When Vehicle Alignment is Necessary

- ◆ Vehicle shows handling problems.
- ◆ There is an accident damage and components were replaced.
- ◆ Axle components have been removed or replaced.
- ◆ Tire wear patterns are uneven.

Components Replaced

Front Axle Component Replaced	Wheel Alignment Check Required		Rear Axle Component Replaced	Wheel Alignment Check Required	
	Yes	No		Yes	No
Lower Control Arm		X	Shock Absorber		X
Bonded rubber bushings for control arm		X	Coil Spring		X
Wheel Bearing Housing	X		Axle Beam		X
Tie rod/tie rod end	X				
Steering Gear	X				
Subframe		X			
Suspension Strut		X			
Stabilizer Bar		X (refer to 18)			

18) Requirement: Subframe and brackets were secured before removal. Refer to ⇒ ["2.8 Subframe, Securing", page 56](#) .



Components Removed and Installed

Components of Front Axle Removed and Installed	Wheel Alignment Check Required		Components of Rear Axle Removed and Installed	Wheel Alignment Check Required	
	Yes	No		Yes	No
Lower Control Arm		X (refer to ¹⁹⁾)	Shock Absorber		X
Wheel Bearing Housing		X	Coil Spring		X
Tie rod/tie rod end	X		Axle Beam		X
Steering Gear		X			
Subframe		X (refer to ¹⁹⁾)			
Suspension Strut		X			
Stabilizer Bar		X (refer to ¹⁹⁾)			

19) Requirement: Subframe and brackets were secured before removal. Refer to ➔ ["2.8 Subframe, Securing", page 56](#)

3.7.2 Evaluating Need for Axle Alignment, Multi-Link Suspension

When Vehicle Alignment is Necessary

- ◆ Vehicle shows handling problems.
- ◆ There is an accident damage and components were replaced.
- ◆ Axle components have been removed or replaced.
- ◆ Tire wear patterns are uneven.

Components Replaced

Front Axle Component Re- placed	Wheel Alignment Check Required		Rear Axle Component Re- placed	Wheel Alignment Check Required	
	Yes	No		Yes	No
Lower Control Arm		X	Lower Transverse Link	X	
Bonded rubber bushings for control arm		X	Upper Transverse Link	X	
Wheel Bearing Housing	X		Tie Rod	X	
Tie rod/tie rod end	X		Wheel Bearing Housing	X	
Steering Gear	X		Subframe	X	
Subframe		X	Coil Spring		X
Suspension Strut		X	Shock Absorber		X
Stabilizer Bar		X (refer to ²⁰⁾)	Stabilizer Bar		X
			Trailing Arm	X	

20) Requirement: Subframe and brackets were secured before removal. Refer to ➔ ["2.8 Subframe, Securing", page 56](#)

Components removed and installed

Components of Front Axle Removed and Installed	Wheel Alignment Check Required		Components of Rear Axle Removed and Installed	Wheel Alignment Check Required	
	Yes	No		Yes	No
Lower Control Arm		X (refer to ²¹⁾)	Lower Transverse Link	X	



Components of Front Axle Removed and Installed	Wheel Alignment Check Required		Components of Rear Axle Removed and Installed	Wheel Alignment Check Required	
	Yes	No		Yes	No
Wheel Bearing Housing		X	Upper Transverse Link	X	
Tie rod/tie rod end	X		Tie Rod	X	
Steering Gear	X		Wheel Bearing Housing	X	
Subframe		X (refer to 21))	Subframe	X	
Suspension Strut		X	Coil Spring		X
Stabilizer Bar		X (refer to 21))	Shock Absorber		X
			Stabilizer Bar		X
			Trailing Arm	X	

21) Requirement: Subframe and brackets were secured before removal. Refer to ⇒ ["2.8 Subframe, Securing", page 56](#)

3.8 Front Axle Camber, Adjusting

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-



Note

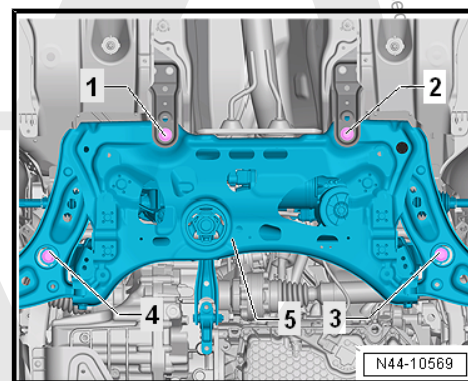
- ◆ *Correct the camber according to Body Collision only. Camber corrections are not possible. Moving the subframe can also adjust it.*
- ◆ *Slide subframe only toward left or right, under no circumstances in or against direction of travel!*

- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Remove the bolt -1- and loosely install a new bolt.
- Remove the bolt -2- and loosely install a new bolt.
- Remove the bolt -3- and loosely install a new bolt.
- Remove the bolt -4- and loosely install a new bolt.

Adjusting the camber is limited by the subframe hole tolerances. If the specified value is not reached by moving the subframe, the subframe and the assembly must be checked. Refer to ⇒ ["3.1 Collision Vehicle Evaluation Checklist", page 9](#) .

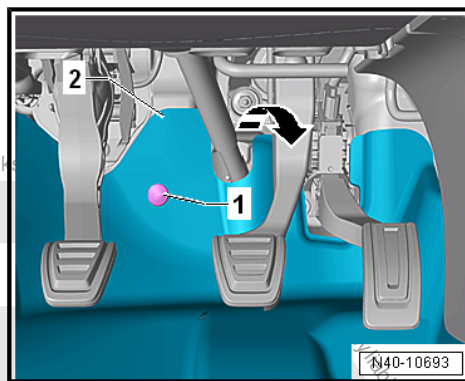
- By moving the subframe, only the specified value of the camber can be adjusted.
- Slide the subframe -5- to the side until the camber is even on both sides. Refer to ⇒ ["3.4 Axle Alignment Specified Values", page 347](#) .
- Tighten the subframe bolts -1 through 4-.

After moving the subframe, check the clearance between the steering column universal joint and the cutout in the plenum chamber bulkhead.





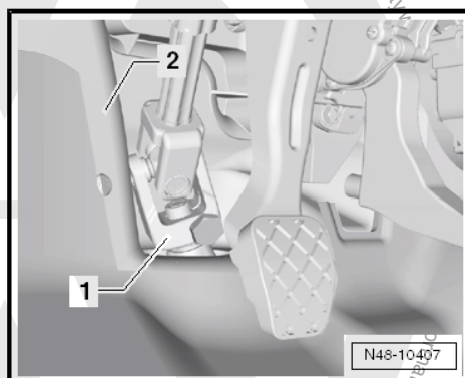
- Remove the bolt -1- and fold the footwell trim panel -2- in the direction of the arrow into the vehicle interior.



There must be at least 5 mm of free space all around between universal joint -1- and cutout of bulkhead -2-.

Tightening Specifications

- ◆ Refer to ⇒ [“2.1 Overview - Subframe”, page 16](#)
- ◆ Noise insulation bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .



3.9 Rear Axle Camber, Adjusting

⇒ [“3.9.1 Rear Axle Camber, Adjusting, Torsion Beam Axle”, page 360](#)

⇒ [“3.9.2 Rear Axle Camber, Adjusting, Multi-Link Suspension”, page 360](#)

3.9.1 Rear Axle Camber, Adjusting, Torsion Beam Axle

Camber cannot be adjusted.

If measured values are not within the specified range, check the axle beam for damage and replace if necessary.

3.9.2 Rear Axle Camber, Adjusting, Multi-Link Suspension

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Insert Tool - 18mm - T10179-

Only e-Golf for Work Procedures on the Right Side of the Vehicle

- De-energize the high-voltage system. Refer to ⇒ Rep. Gr. 93 ; High Voltage System, De-Energizing .



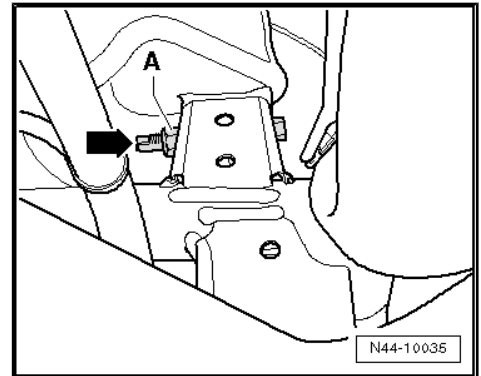
Continuation for All Vehicles

- Loosen nut -A- of threaded connection of upper transverse link at subframe.
- Adjust camber by turning hex of eccentric bolt -arrow-.

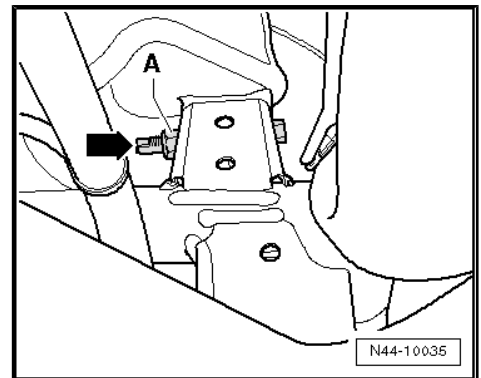


Note

The maximum adjustment range is 90° to left or right of center position.



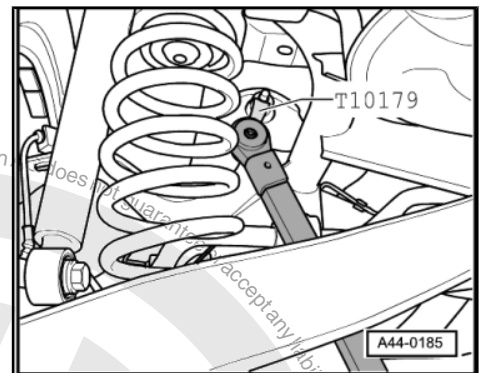
- Tighten the nut -A-.



- Use the Insert Tool - 18mm - T10179- for this.

Tighten the Nut to 80 Nm Using the Insert Tool - 18mm - T10179- .

- Check the camber value again after tightening the nut -A-.
- After the nut -A- is tightened, check the camber value once more. Refer to
⇒ [“3.4 Axle Alignment Specified Values”, page 347](#) .



Tightening Specifications

- ◆ Refer to ⇒ [“5.1 Overview - Transverse Link”, page 226](#)

3.10 Rear Axle Toe, Adjusting

⇒ [“3.10.1 Rear Axle Toe, Adjusting, Torsion Beam Axle”, page 361](#)

⇒ [“3.10.2 Rear Axle Toe, Adjusting, Multi-Link Suspension”, page 361](#)

3.10.1 Rear Axle Toe, Adjusting, Torsion Beam Axle

The toe cannot be adjusted.

If measured values are not within the specified range, check the axle beam for damage and replace if necessary.

3.10.2 Rear Axle Toe, Adjusting, Multi-Link Suspension

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-



Only e-Golf for Work Procedures on the Right Side of the Vehicle

- De-energize the high-voltage system. Refer to ➔ Rep. Gr. 93 ; High Voltage System, De-Energizing .

Continuation for All Vehicles

- Loosen the nut -1-.
- Turn the eccentric screw -2- until the specified value is reached.



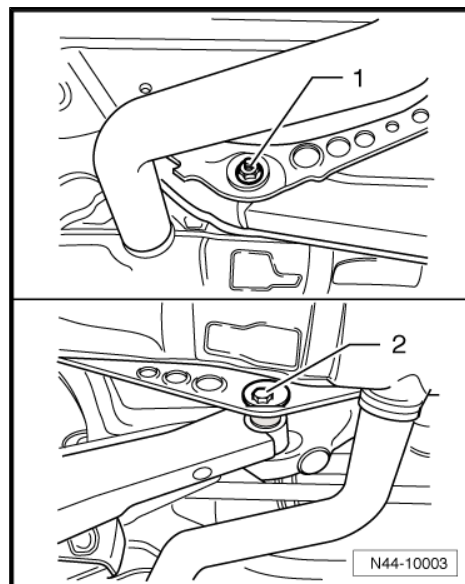
Note

The maximum adjustment range is 90° to left or right of center position.

- Tighten the nut -1-.
- After the nut -A- is tightened, check the toe value once more. Refer to ➔ ["3.4 Axle Alignment Specified Values", page 347](#) .

Tightening Specifications

- ◆ Refer to ➔ ["5.1 Overview - Transverse Link", page 226](#)



3.11 Front Axle Toe, Adjusting

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Torque Wrench 1332 Insert - Open Ring Wrench - 24mm - VAG1332/9-
- To loosen or tighten the lock nut -2-, counterhold at the tie rod end -1- with a suitable tool.
- Loosen the lock nut -2-.
- Adjust toe on left and right-hand wheels at hex -arrow-.



Note

- ◆ *Make sure that boot on steering gear is not damaged or twisted. Twisted boots wear out quickly.*
- ◆ *Only tighten the lock nuts when the vehicle is resting on the ground - the tie rod end must be parallel to the suspension strut steering lever.*

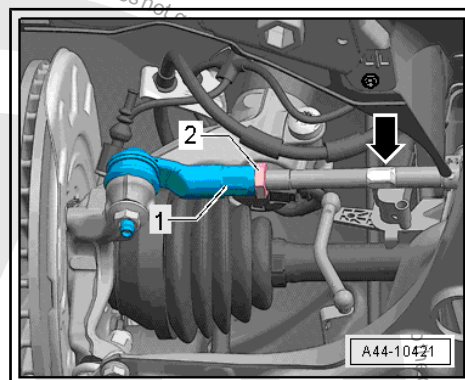
- Tighten the lock nut -2- and check the toe-in value again.

After tightening the lock nut -2-, it is possible that the value deviates slightly.

If the measured toe nevertheless lies within the tolerance, the adjustment is correct. Refer to ➔ ["3.4 Axle Alignment Specified Values", page 347](#) .

Tightening Specifications

- ◆ Refer to ➔ ["3.6 Steering Gear, Servicing", page 453](#)





3.12 Wheel Run-Out Compensation

A correct toe-in adjustment will not be possible without performing lateral run-out compensation!

The lateral run-out of the wheel must be compensated for. Otherwise, measurement will result in false readings.

Permissible axial run-out of the wheel rims can exceed the specified toe setting tolerance. If compensation for wheel run-out is not performed, it will not be possible to obtain a correct toe-in adjustment.

Follow the operating instructions provided by the manufacturer of the alignment equipment.

3.13 Vehicle Data Label

Explanation of "PR numbers" on the Vehicle Data Label

Depending on engine and equipment, various suspensions are installed. They are identified by the PR numbers.

The PR numbers are needed for the allocation of vehicle specified values.

Suspension version installed in vehicle is indicated on vehicle data plate by corresponding PR number for the front axle.

There is a vehicle data label in the spare wheel well and the maintenance schedule.

Sample Vehicle Data Label

In this example, the vehicle is equipped with the sport chassis G03 -arrow-.

WWWZZZAUZDP00086										CLHA					
5G1 34Z															
5G134Z Golf 1,6												CLBMT		77 KW	
NAR LB7W TW												fTDI D7F		CLHA	
X0A	B0A	C7Q	G1C	H6L	J2D	D38	Q4H								
-	1AT	1G8	1XX	1NL	5RQ	5SL	TJ1								
-	3S0	3U1	QG1		18G	8GU	8ZH								
	1KE	1ZA	3FB		G03	7MJ									
	0Y1	4UP	4X4	4R4	4R3	N5L	5MB								
8RM	2JB	E0A	0AE	0BA	2H		2G5								
1JP	L06	0YD													
												N44-10568			

3.14 Maximum Steering Angle, Checking

The wheel alignment computer determines the maximum steering angle.

- If the value for the maximum steering angle is outside of the tolerance, then observe the following parameters:
- ◆ Is there damage to or distortion of steering- and suspension components?
- ◆ Are the tie rods visually OK?
- ◆ Is the tie rod symmetry correct?

Damaged components are to be replaced.

- If the steering wheel is crooked, then observe the following parameters:
- ◆ Check the steering components for damage and distortion. If necessary, the damaged parts are to be replaced.
- ◆ Check the suspension components for damage and distortion. If necessary, the damaged parts are to be replaced.
- ◆ Check the tie rod symmetry as well.

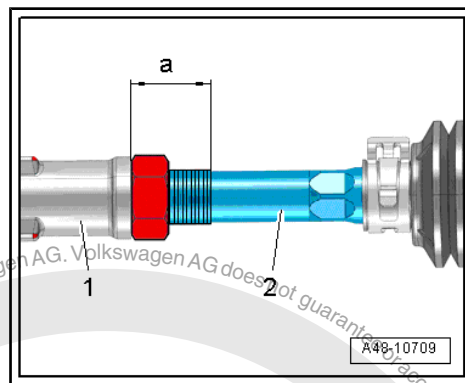


- Measure dimension -a- on the “shorter” tie rod head. Shorten the “longer” tie rod head to the same dimension. To do this, install the tie rod head -1- deeper on the tie rod -2-.

The dimension -a- must be the same on the right and left tie rod end.

The maximum permitted difference between the right and left must be < 2.5 mm.

- When the steering wheel returns to its center position, let the steering wheel “come to its center” using even movements.





4 Wheel/Tire Vibration, Causes and Solution

⇒ [“4.1 Vibration Causes”, page 365](#)

⇒ [“4.2 Road Test, Performing Before Balancing”, page 365](#) .

⇒ [“4.3 Wheel, Balancing”, page 366](#)

⇒ [“4.4 Vibration Control System”, page 370](#)

⇒ [“4.5 Tire and Wheel Radial and Lateral Run-Out, Checking”, page 370](#)

⇒ [“4.6 Rim Radial and Lateral Run-Out, Checking”, page 371](#)

⇒ [“4.7 Wheels and Tires, Matching”, page 372](#)

⇒ [“4.8 Flat Spots in Tires From Standing, Determining”, page 373](#)

4.1 Vibration Causes

There are many causes for vibration. Vibration can also be caused by tire wear, among other things. Tire wear caused by driving does not always develop evenly over the entire tread. Due to this, a slight imbalance develops which disturbs the smoothness of the formerly accurately balanced wheel.

This slight imbalance cannot yet be felt in the steering wheel, but it is present. It increases the tire wear and consequently reduces the service life of the tire.

Recommendation

In order to guarantee over the entire service life of a tire a

- optimal safety,
- optimal smoothness and
- uniform wear

it is recommended that wheels/tires be balanced at least two times within the tire's service life.

4.2 Road Test, Performing Before Balancing

If a vehicle comes to the workshop with the complaint “vibration”, a road test must be performed before balancing the wheels.

- ◆ That way, information about the type of vibration can be obtained.
- ◆ Observe at which speed range the disturbance takes place.
- Raise the vehicle on the platform immediately after the road test.
- Mark the component location on the tire.

Component Location of Tire	Identification with ...
Left front tire	LF
Right front tire	RF
Left rear tire	LR
Right rear tire	RR

- Remove the wheels from the vehicle.
- Balance the wheels.



4.3 Wheel, Balancing

⇒ [“4.3.1 Wheel, Balancing”, page 366](#)

⇒ [“4.3.2 Wheel, Balancing on Stationary Balancing Machine”, page 366](#)

⇒ [“4.3.3 Wheel, Balancing with Fine Balancing Machine \(Finish Balancer\)”, page 369](#)

4.3.1 Wheel, Balancing

Before beginning balancing, the following requirements must be fulfilled.

- The tire pressure must be OK.
- The tire profile must not be worn on one side. The tire profile must be at least 4 mm.
- The tires must not have any damage such as cuts, holes, foreign bodies, etc.
- The suspension and steering, including the shock absorber, must be in perfect condition.
- A road test has been performed.

4.3.2 Wheel, Balancing on Stationary Balancing Machine

- Test drive performed. Refer to
⇒ [“4.2 Road Test, Performing Before Balancing”, page 365](#).

Tension Wheel on Balancing Machine



Note

Please keep in mind that cleanliness is extremely important when balancing, as it is when performing any other repair work. Only then can a proper result be obtained!

Dirt and rust in the area of the contact surfaces and centering of the wheel distort the result.

- Clean contact surfaces, centering seat and wheel disc using the Pneumatic Brush Grinder Set - VAS6446- before tensioning wheel on balancing machine! Refer to Workshop Equipment, Catalog.

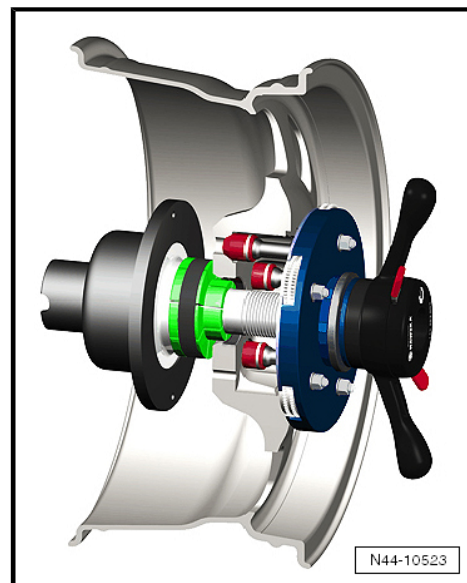


Note

It is very important that the wheel balancing machine uses the correct system for centering and tensioning the tires when replacing them. Reference the information for the Wheel Balancing Machine Centering System before beginning any work. Refer to Workshop Equipment, Catalog.



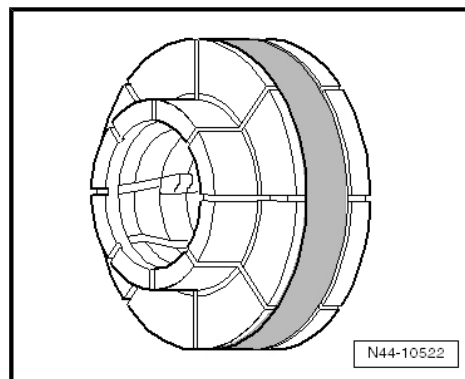
- Tension the wheel with the tire on the balancing machine.





Note

- ◆ To mount wheel on wheel balancer, use for example Wheel Centering System Adapter - VAS5271-.
- ◆ This way a 100% centering of the wheel and gentle mounting is possible!
- ◆ It is not possible to center it 100% on balancing machine with conical tensioners.
- ◆ With a deviation of 0.1 mm outside the center, there is an imbalance of 10 grams on the wheel/tire.



Wheel/Tire Balancing Procedure

- Let the wheel/tire turn on the balancing machine.
- Check the run of the characteristic lines on the sidewall of the tire in the area of the rim flange.
- Check the tire wear pattern while the wheel/tire is turning.



Note

In the event of one-sided wear, flat spots from braking or severe wear spots, smooth running cannot be achieved by balancing. In this case, the tire must be replaced.

- Check the run-out on the wheel/tire. If the wheel with tire runs untrue although there are no flat spots, a radial or lateral run-out may be the cause.
- Check wheel with tire for radial- and lateral run-out. Refer to [⇒ "4.5.2 Wheels and Tires, Radial and Lateral Run Out, Checking with Tire Dial Gauge", page 371](#).
- If the radial and lateral run-out are within the specified tolerance, balance the wheel and tire.



Note

- ◆ Do not use more than 60 grams of weight per wheel.
- ◆ If more weight is necessary, a smoother running can be achieved by matched mounting of the tire. Matched mounting of tire. Refer to [⇒ "4.7 Wheels and Tires, Matching", page 372](#).
- ◆ The display in the balancing machine should show 0 grams.
- ◆ Hunter RFT33VAG Road Force Touch™ Wheel Balancer - VAS6230B4- can be inserted as an alternative to matching. Refer to [⇒ "4.4 Vibration Control System", page 370](#).
- Install the wheel on the vehicle.
- First, tighten the lowest wheel bolt hand-tight to approximately 30 Nm.
- Tighten the remaining wheel bolts diagonally to approximately 30 Nm. This process centers the wheel on the wheel hub.
- Lower vehicle onto its wheels.
- Now use a torque wrench to tighten the wheel bolts diagonally to the specified tightening specification.



Road Test, Performing

- Perform a road test after balancing the wheel/tires.

If a vibration is still detected during the road test, the cause may be due to tolerance in the wheel centering.

The component tolerances of wheels and wheel hubs can be additive in unfavorable cases. Vibration can result from this. This can be eliminated using a finish balancer. Refer to

⇒ [“4.3.3 Wheel, Balancing with Fine Balancing Machine \(Finish Balancer\)”, page 369](#) .

4.3.3 Wheel, Balancing with Fine Balancing Machine (Finish Balancer)



Note

- ◆ *Working with a Finish Balancer requires instruction from the manufacturer of the balancer.*
- ◆ *When balancing, place the wheels of the driven axle on the turntable sensors. On a FWD vehicle, the front wheels must be on the sensors. On AWD vehicles, all four wheels must be on the sensors.*

If it is determined when balancing on the vehicle the remaining imbalance is more than 20 grams, the wheel should be rotated on the wheel hub.

- Mark the point at which the imbalance is indicated.
- Afterwards, unbolt the wheel and rotate its position on the wheel hub so that the marking points downward.



Note

The wheel hub must not turn during this procedure.

- First, tighten the lowest wheel bolt hand-tight to approximately 30 Nm.
- Tighten the remaining wheel bolts diagonally to approximately 30 Nm. This process centers the wheel properly on the wheel hub.
- - Check again whether the imbalance is less than 20 grams using the finish balancer.



Note

The imbalance should not be smaller than 20 grams under any circumstances before changing balance weight.

- Loosen the wheel bolts again, if necessary.
- Rotate the wheel relative to the wheel hub once more by one or two wheel bolt holes.
- Tighten the wheels according to the method described above.



Note

Only if the imbalance is less than 20 grams should the imbalance be reduced by changing the balance weight.

- Balance the wheels until the imbalance is below 5 grams.
- Tighten the wheel bolts to the specified tightening specification if not already done.



WARNING

Always tighten the wheel bolt to the tightening specification and using the torque wrench.

4.4 Vibration Control System

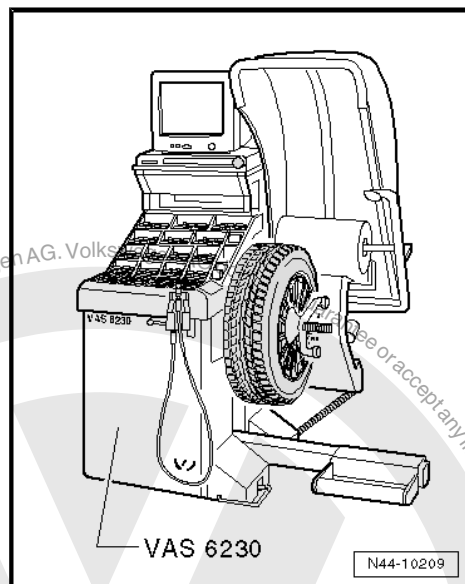
Expanded functions can be performed using Hunter RFT33VAG Road Force Touch™ Wheel Balancer - VAS6230B4- in addition to the previously known balancers.

A special characteristic of this system is testing the radial force of wheel/tire during rolling.

For this purpose, a roller presses a force of approximately 635 kg against the wheel. This simulates the tire contact force against the street surface while driving.

Tire contact forces fluctuate due to radial- and lateral run-out and differing rigidity in the tires.

The Hunter RFT33VAG Road Force Touch™ Wheel Balancer - VAS6230B4- detects and stores the position of the maximum measured radial force in the tires. After that, the position of smallest dimension between rim flange and disc wheel center is measured.



4.5 Tire and Wheel Radial and Lateral Run-Out, Checking

⇒ [“4.5.1 Tire and Wheel Radial and Lateral Run-Out, Checking, Tolerances”, page 370](#)

⇒ [“4.5.2 Wheels and Tires, Radial and Lateral Run Out, Checking with Tire Dial Gauge”, page 371](#)

4.5.1 Tire and Wheel Radial and Lateral Run-Out, Checking, Tolerances

Radial and lateral run-out occur when the wheel and tire are not running precisely true.

For technical reasons, 100% true running is not possible.

Therefore the manufacturers of these components allow a precisely specified tolerance.

Mounting the tire in a unfavorable position on the wheel can be the cause for exceeding the maximum allowed tolerance for wheel with tire.

The table shows the maximum permissible tolerance values for the wheel with mounted tire.



Tolerances for Radial and Lateral Run-Out of Rim with Tire

Rim with Tire	Radial Run-Out (mm)	Lateral Run-Out (mm)
Passenger Vehicle	0.9	1.1 (1.3 near the lettering)

4.5.2 Wheels and Tires, Radial and Lateral Run Out, Checking with Tire Dial Gauge

Checking Lateral Run-Out

- Preload the Tire Dial Gauge approximately 2 mm.
- Position the Tire Dial Gauge on the side wall of the tire.
- Rotate the wheel slowly.
- Note the smallest and the largest dial readings.



Note

If the difference is greater than 1.3 mm, the lateral run-out is too great.

In this case, lateral run-out can be reduced by matched mounting of the tire. Refer to

⇒ [“4.7 Wheels and Tires, Matching”, page 372](#) .

Peak values on the Tire Dial Gauge due to small irregularities in the rubber may be disregarded.

Checking Radial Run-Out

- Preload the Tire Dial Gauge approximately 2 mm.
- Position the Tire Dial Gauge on the tread of the tire.
- Rotate the wheel slowly.
- Note the smallest and the largest dial readings.

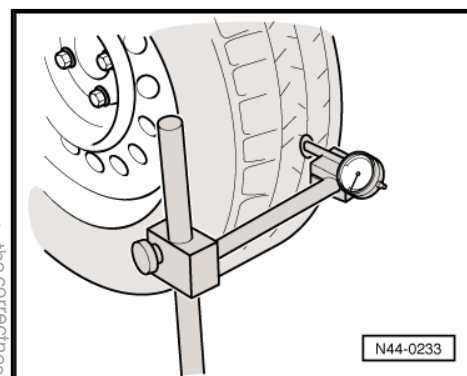
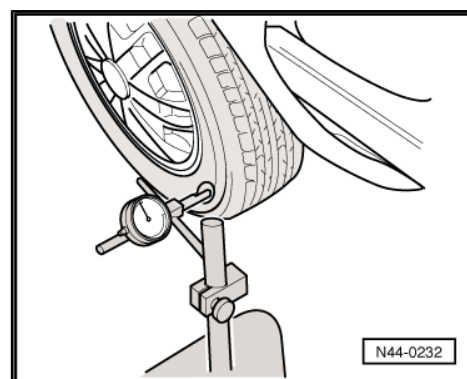


Note

If the difference is greater than 1 mm, the radial run-out is too great.

In this case, radial run-out can be reduced by matched mounting of the tire. Refer to

⇒ [“4.7 Wheels and Tires, Matching”, page 372](#) .



4.6 Rim Radial and Lateral Run-Out, Checking

Mount the rim on the Hunter RFT33VAG Road Force Touch™ Wheel Balancer - VAS6230B4- .

- Use the Wheel Centering System Adapter - VAS5271- .
- Preload the Tire Dial Gauge approximately 2 mm.
- Turn the rim slowly.



- Note the smallest and the largest dial readings.

S - Lateral Run-Out

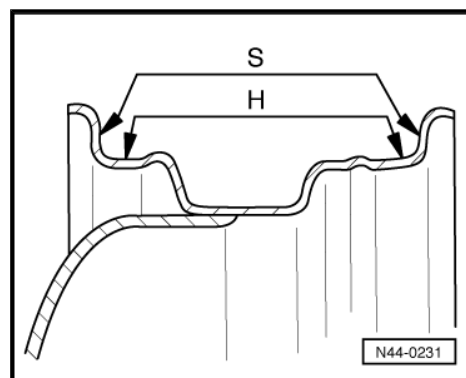
H - Radial Run-Out

- Compare determined value with specifications in the table.
Refer to ➤ [page 372](#) .



Note

Peak values on the Tire Dial Gauge due to small irregularities may be disregarded.



Specified Values for Radial and Lateral Run-Out on the Rim

Rim	Radial Run-Out (mm)	Lateral Run-Out (mm)
Steel wheel	0.5	0.5
Light alloy wheel	0.5	0.8



Note

If the measured value exceeds the specified value, no acceptable smooth running can be attained.

4.7 Wheels and Tires, Matching

General Information

If radial or lateral run-out from rim or tire meet each other, the untrue running of the wheel and tire is increased.

For technical reasons, 100% true running is not possible. Refer to

➤ [“4.5.1 Tire and Wheel Radial and Lateral Run-Out, Checking, Tolerances”, page 370](#) .

Drive the tires until they are warm before matching them to the tires already on the vehicle. This eliminates flat spots from standing which may exist. Refer to

➤ [“4.8 Flat Spots in Tires From Standing, Determining”, page 373](#) .

Work Procedure for Match-Mounting

- Let the air out of the tire.
- Remove the tire bead from the wheel rim flange.
- Coat the tire bead all the way around with Tire Mounting Paste .
- Turn the tire 180° against the rim.
- Inflate the tire to approximately 4 bar (58.01 psi).
- Tension the wheel with the tire on the balancing machine.
- Check the run-out or the radial and lateral run-out, as necessary.



Note

- ◆ *If the radial and lateral run-out value is not exceeded, the wheel can be balanced to 0 grams. Specifications are found on. Refer to ➔ [page 371](#) .*
- ◆ *If the radial and lateral run-out lies outside the specified values, the tire must be turned again.*
- Let the air out and remove the tire beads from the wheel rim flanges.
- Rotate the tire 90° (one quarter of a turn) relative to the rim.
- Inflate the tire to 4 bar (58.01 psi) again and check the run-out.



Note

- ◆ *If the radial and lateral run-out value is not exceeded, the wheel can be balanced to 0 grams.*
- ◆ *If the radial and lateral run-out is still outside the specified values, the wheel must be turned again.*
- Press the tire beads off the rim flanges.
- Rotate the tire 180° (half a turn) relative to the rim.

If the values for radial or lateral run-out are still outside the specified values, check the rim for radial and lateral run-out. Refer to ➔ [“4.6 Rim Radial and Lateral Run-Out, Checking”, page 371](#) .

If the measured values for radial and lateral run-out of the rim are within the specified values, then the tire has excessive radial or lateral run-out. In this case, the tire must be replaced.



Note

- ◆ *Assembly paste from mounting tires is located between tires and rim flanges.*
- ◆ *Avoid strong braking or acceleration maneuvers during the first 100 to 200 km. Otherwise the tires can distort on the rim. Then the work would have been in vain.*

4.8 Flat Spots in Tires From Standing, Determining

What Is a Flat Spot from Standing?

Terms like flat portion, flattening, are also used as a term for flat spots from standing.

Flat spots from standing cause vibration, like an incorrectly balanced wheel. It is important to recognize a flat spot in the tire tread from standing as such!

Flat spots from standing cannot be corrected by balancing, and can occur again at any time under various circumstances. Flat spots from standing can be corrected without complicated special tools. Providing that the flat spot was not caused by wheel lock during hard braking.



Note

Wear spots due to wheel lock are irreparable! Tires with such damage must be replaced.

Causes of Flat Spots from Standing:

- ◆ The vehicle stands for several weeks in a location without being moved.
- ◆ Tire pressure is too low.
- ◆ The vehicle was placed in a paint system drying cabinet after painting.
- ◆ The vehicle was parked with warm tires in a cold garage or similar for a long time. In this case, a flat spot can develop overnight.

Flat Spots, Correcting

- ◆ Flat spots cannot be removed from tires with workshop equipment.
- ◆ Such flat spots can be "driven out" only by driving the car until the tires are warm.
- ◆ We do not recommend the following method during cold or winter weather.

Requirements/Conditions

- Check the tire pressure and correct, if necessary.
- If possible, drive the vehicle on an expressway.
- If the traffic and road conditions permit, drive at a speed of 120 km/h to 150 km/h for a distance of 20 to 30 km.



WARNING

- ◆ ***Do not endanger anyone during this road test.***
- ◆ ***Follow all traffic regulations and speed limits when performing the road test.***

- Lift the vehicle immediately after the performing the road test.
- Remove the wheels from the vehicle.
- Balance the wheels on the stationary balancing machine. Refer to
⇒ ["4.3.2 Wheel, Balancing on Stationary Balancing Machine", page 366](#).



5 Adaptive Cruise Control (ACC)

⇒ ["5.1 Adaptive Cruise Control \(ACC\), Calibrating", page 375](#)

5.1 Adaptive Cruise Control (ACC), Calibrating

⇒ ["5.1.1 Adaptive Cruise Control \(ACC\), Calibrating, Except e-Golf", page 375](#)

⇒ ["5.1.2 Adaptive Cruise Control \(ACC\), Calibrating, e-Golf", page 381](#)

5.1.1 Adaptive Cruise Control (ACC), Calibrating, Except e-Golf

Before Adjusting the Adaptive Cruise Control (ACC), Check the Sensor, the Mounts, and Attachments for Damage, External Influences and Secure Fit. Repair Any Damaged Components.

Prior to Adjusting the Adaptive Cruise Control (ACC), Check the Event Memory and Correct Any Malfunctions.

The ACC Control Module "Adjustment Angle Measured Value" Shows Whether the Sensor Is Misaligned.

The ACC Adjustment May Only Be Set Using a vw/Audi-Approved Wheel Alignment Device and Adjustment Equipment!

Proper ACC Operation Requires Correct Alignment.



Note

- ◆ A new adjustment is necessary if:
- ◆ The rear axle toe was adjusted.
- ◆ The Distance Regulation Control Module - J428- was removed and installed.
- ◆ The front bumper carrier was removed and installed.
- ◆ The front bumper carrier was loosened or moved.
- ◆ The adjustment angle is greater than -0.8° to $+0.8^{\circ}$.
- ◆ The vehicle was moved to the service position.

Special tools and workshop equipment required

- ◆ Setting Device - Basic Set - VAS6430/1- or Setting Device - Basic Set - VAS6430/1A-
- ◆ ACC Reflector Mirror - Audi - VAS6430/3-
- ◆ Wheel Alignment Computer



The New Generation of Distance Regulation Control Module Is Installed. The Calibration for These Is Only Different Externally. Otherwise the Procedure Is the Same.

I. - Old Control Module

II. - New Control Module



Note

- ◆ *Before driving the vehicle onto the alignment stand, make sure there is enough space between the vehicle and the ACC Adjustment Device - VAS6430-. The distance between the ACC Reflector Mirror - Audi - VAS6430/3- and the sensor must be 120 cm \pm 2.5 cm.*
- ◆ *If there is not sufficient space, drive the vehicle backward onto the alignment stand in order to use the corresponding space.*
- ◆ *If the ACC Reflector Mirror - Audi - VAS6430/3- is repositioned on the calibration beam during the adjustment, the Setting Device Basic Set - VAS6430/1- setting must always be checked (for example, bubble levels, individual toe settings at the calibration beam, etc.).*
- Before beginning the adjustment, check the DTC memory and correct any malfunctions present.

The adjustment procedure is described here using the Setting Device Basic Set - VAS6430/1-.

Follow the Sequence for Adjusting:

- 1 - Establish a Distance of 120 cm \pm 2.5 cm Between the Centrally Positioned ACC Reflector Mirror - Audi - VAS6430/3- and the Sensor in the Air Grille.
- 2 - Attach the ACC Reflector Mirror - Audi - VAS6430/3- in the Center of the Calibration Beam,
- 3 - Adjust the Distance Regulation Control Module - J428-

Do not perform the steps under "Calibration procedure without a previous axle alignment" if an axle alignment has already been performed.

Calibration Procedure without Previous Axle Alignment

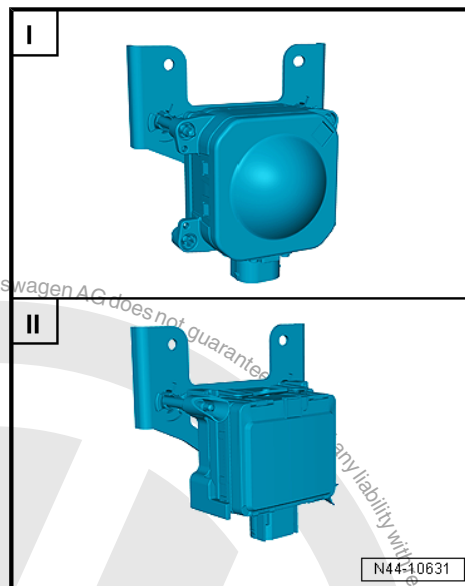
- Select the ACC calibration button on the alignment computer.
- Follow the test requirements for an axle alignment. Refer to [⇒ "3.2 Test Requirements", page 345](#).
- Drive the vehicle onto the vehicle alignment platform.
- Connect the battery charger. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Charging .
- Connect the Vehicle Diagnostic Tester . (Guide the diagnostic cable through the open window.)



Note

During the adjustment procedure, make sure all the vehicle doors remain closed and the vehicle exterior lamps are switched off.

- Position the front wheels so they are straight.
- Install the quick-action clamps on the rear wheels.
- Install the measurement sensor on the rear wheels.





- Perform a wheel run-out compensation and the rear wheels.

Calibration Procedure with or without Previous Axle Alignment

Old Control Module

- Remove the trim -1-.

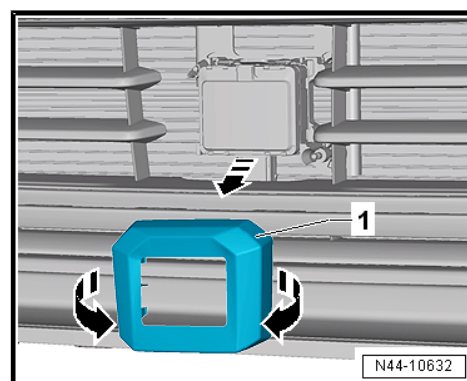
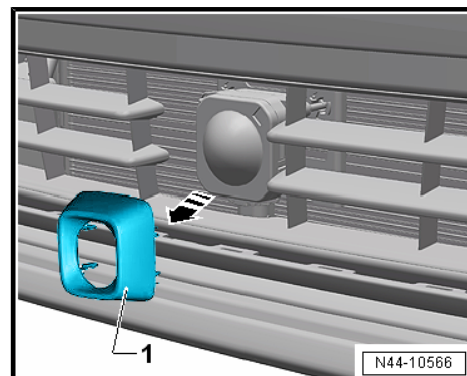
New Control Module

- Remove the trim -1-.

- Remove the trim -1-.

Continuation for Both Control Modules

- Remove any dirt that may be on the sensor lens.



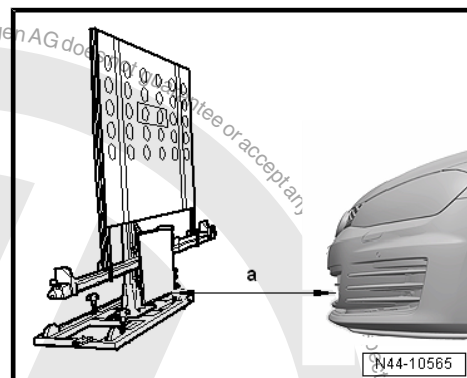
- Position the Setting Device Basic Set - VAS6430/1- at a distance -a- from the centrally positioned ACC Reflector Mirror - VAS6430/3- in the center and parallel with respect to the Distance Regulation Control Module - J428- .

a - 120 cm \pm 2.5 cm



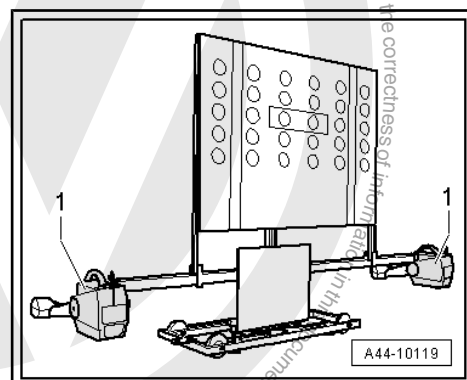
Note

The Setting Device Basic Set - VAS6430/1- must not be moved on the calibration beam.



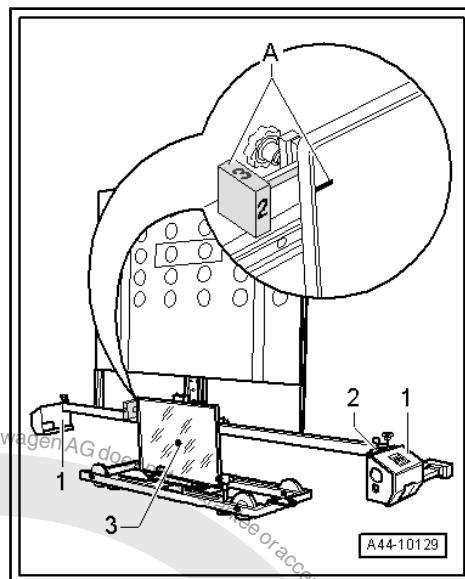
Procedure for All

- Position the front wheel measuring sensors -1- on the calibration beam.



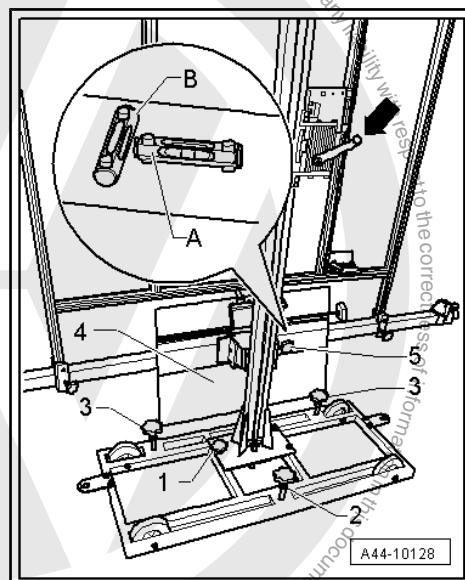


- In area -A-, bring -2- on the rotary knob into alignment with the marking on the mirror (number 2 on the rotary knob must face the vehicle).



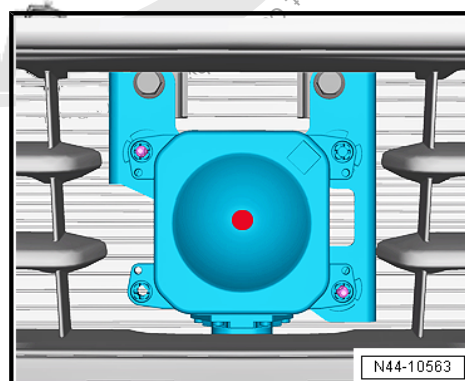
- Level the bubble levels -A and B- on the ACC Reflector Mirror
- Audi - VAS6430/3- using the adjusting screws
-1 through 3-.
- Adjust the mirror -4- via the crank -arrow- so that the laser beam is in the center of the sensor lens.

Old Control Module



- Position the mirror on the side of the calibration beam so that the laser beam is in the center of the sensor lens.

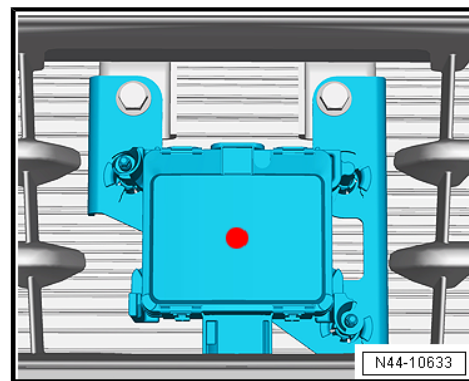
New Control Module



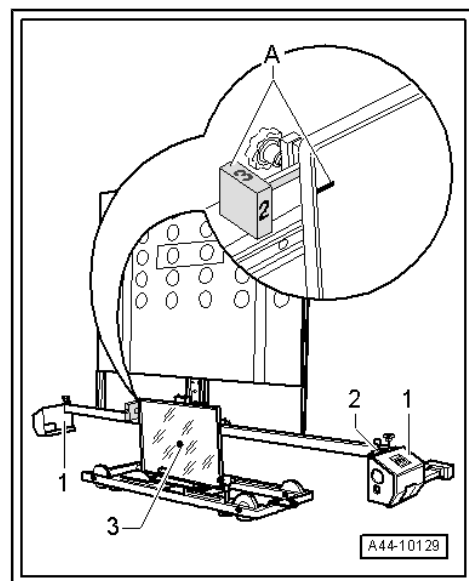


- Position the mirror on the side of the calibration beam so that the laser beam is in the center of the sensor lens.

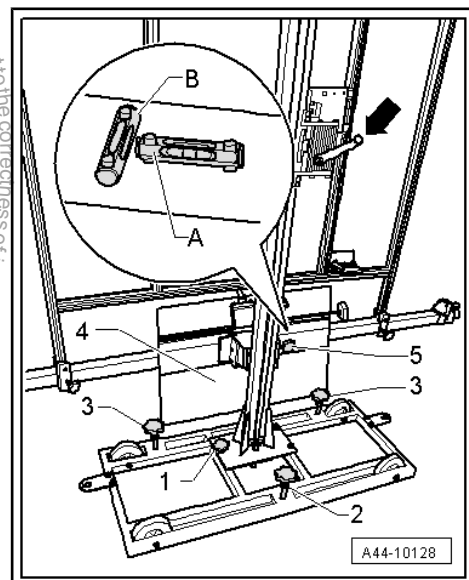
Continuation for Both Control Modules



- Level the bubble levels -2- of the measurement sensor -1-.



- Turn the precision adjustment screw -5- until the display on the wheel alignment computer is located within the tolerance range.





- Level the bubble levels -2- of the measurement sensor -1-.
- Using the laser beam -3- on the ACC Reflector Mirror - Audi - VAS6430/3- , check whether the bubble level is level and the laser beam is in the center of the sensor lens.



Note

If the laser beam does not meet the sensor lens, the ACC Reflector Mirror - Audi - VAS6430/3- must be aligned again.

- On the Vehicle Diagnostic Tester , press **GO TO** and select the function **Function/component selection**.

Selection on the Vehicle Diagnostic Tester for the Adjustment of the Distance Regulation Control Module - J428- :

- Press the following buttons one after another on the screen:

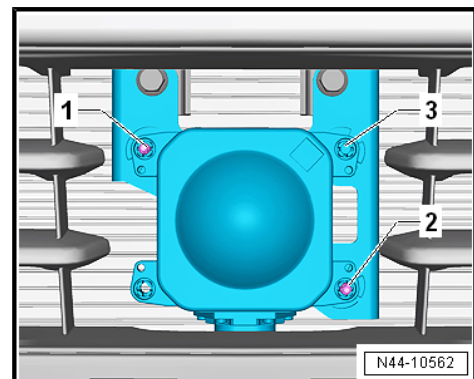
- ◆ Chassis (Repair group 01; 40 - 49)
- ◆ 13 - Distance control
- ◆ 01 - OBD-capable system
- ◆ 13 - Distance control
- ◆ 13 - Distance control, functions
- ◆ 13 - Calibrate

Follow the instructions on the screen to perform the adjustment.

Designation of the Distance Regulation Control Module - J428- Adjusting screws

Old Control Module

- 1 - Adjusting screw 1
- 2 - Adjusting screw 2
- 3 - Must not be turned - functions only as a pivot point



New Control Module

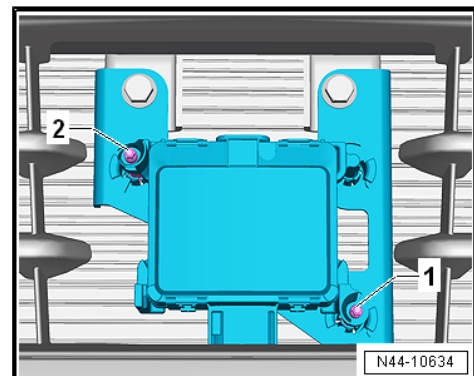
- 1 - Adjusting screw 1
- 2 - Adjusting screw 2
- 3 - Must not be turned - functions only as a pivot point

Continuation for Both Control Modules



WARNING

The ACC adjustment is only applied when "Output diagnostic test mode complete" is displayed. Refer to Vehicle Diagnostic Tester .





5.1.2 Adaptive Cruise Control (ACC), Calibrating, e-Golf

Before Adjusting the Adaptive Cruise Control (ACC), Check the Sensor and Its Mounts and Attachments for Damage, External Influences and Secure Fit. Repair Any Damaged Components.

Prior to Adjusting the Adaptive Cruise Control (ACC), Check the Event Memory and Correct Any Malfunctions.

The ACC Control Module "Adjustment Angle Measured Value" Shows Whether the Sensor Is Misaligned.

The ACC Adjustment May Only Be Set Using a vw/Audi-Approved Wheel Alignment Device and Adjustment Equipment!

Proper ACC Operation Requires Correct Alignment.



Note

- ◆ A new adjustment is necessary if:
- ◆ The rear axle toe was adjusted.
- ◆ The Distance Regulation Control Module - J428- was removed and installed.
- ◆ The front bumper carrier was removed and installed.
- ◆ The front bumper carrier was loosened or moved.
- ◆ The adjustment angle is greater than -0.8° to $+0.8^\circ$.
- ◆ The vehicle was moved to the service position.

Special tools and workshop equipment required

- ◆ ACC Adjuster - VAS6190/2-
- ◆ Setting Device - Basic Set - VAS6430/1- or Setting Device - Basic Set - VAS6430/1A-
- ◆ ACC Reflector Mirror - Audi - VAS6430/3-
- ◆ Wheel Alignment Computer



Note

- ◆ Before driving the vehicle onto the alignment stand, make sure there is enough space between the vehicle and the ACC Adjustment Device - VAS6430- . The distance between the ACC Reflector Mirror - Audi - VAS6430/3- and the sensor must be $120 \text{ cm} \pm 2.5 \text{ cm}$.
- ◆ If there is not sufficient space, drive the vehicle backward onto the alignment stand in order to use the corresponding space.
- ◆ If the ACC Reflector Mirror - Audi - VAS6430/3- is repositioned on the calibration beam during the adjustment, the Setting Device Basic Set - VAS6430/1- setting must always be checked (for example, bubble levels, individual toe settings at the calibration beam, etc.).
- Before beginning the adjustment, check the DTC memory and correct any malfunctions present.

The adjustment procedure is described here using the Setting Device Basic Set - VAS6430/1- .



Follow the Sequence for Adjusting:

- 1 - Establish a Distance of 120 cm \pm 2.5 cm between the Centrally Positioned ACC Reflector Mirror - Audi - VAS6430/3- and the Sensor in the Air Grille,
- 2 - Attach the ACC Reflector Mirror - Audi - VAS6430/3- in the Center of the Calibration Beam,
- 3 - Adjust the Distance Regulation Control Module - J428-

Do not perform the steps under "Calibration procedure without a previous axle alignment" if an axle alignment has already been performed.

Calibration Procedure without Previous Axle Alignment

- Select the ACC calibration button on the alignment computer.
- Follow the test requirements for an axle alignment. Refer to [⇒ "3.2 Test Requirements", page 345](#) .
- Drive the vehicle onto the vehicle alignment platform.
- Connect the battery charger. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Charging .
- Connect the Vehicle Diagnostic Tester . (Guide the diagnostic cable through the open window.)



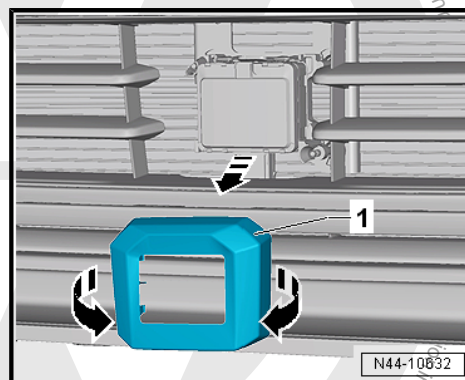
Note

During the adjustment procedure, make sure all the vehicle doors remain closed and the vehicle exterior lamps are switched off.

- Position the front wheels so they are straight.
- Install the quick-action clamps on the rear wheels.
- Install the measurement sensor on the rear wheels.
- Perform a wheel run-out compensation and the rear wheels.

Calibration Procedure with or without Previous Axle Alignment

- Remove the trim -1-.
- Remove the trim -1-.
- Remove any dirt that may be on the sensor lens.





- Position the Setting Device Basic Set - VAS6430/1- at a distance -a- from the centrally positioned ACC Reflector Mirror - VAS6430/3- in the center and parallel with respect to the Distance Regulation Control Module - J428- .

a - 120 cm \pm 2.5 cm

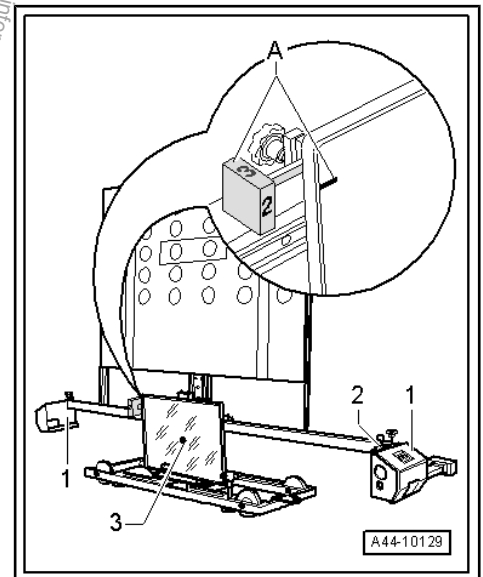
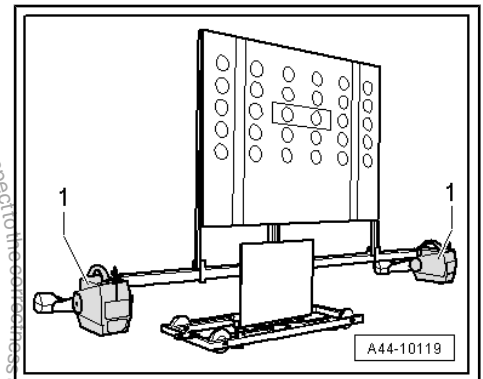
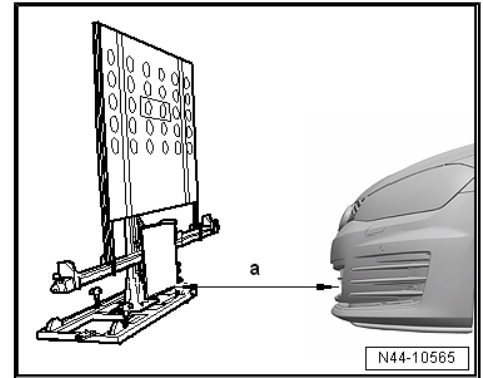


Note

The Setting Device Basic Set - VAS6430/1- must not be moved on the calibration beam.

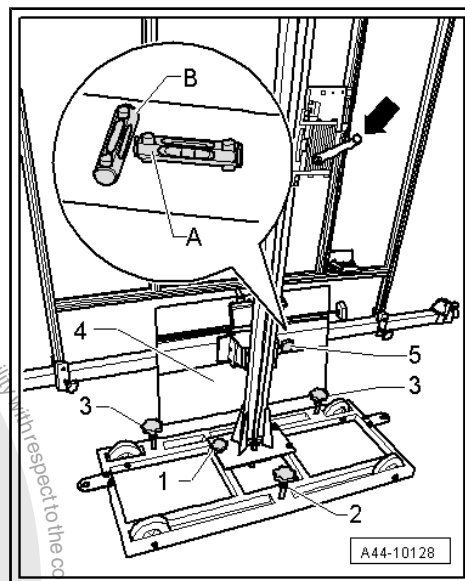
- Position the front wheel measuring sensors -1- on the calibration beam.

- In area -A-, bring -2- on the rotary knob into alignment with the marking on the mirror (number 2 on the rotary knob must face the vehicle).

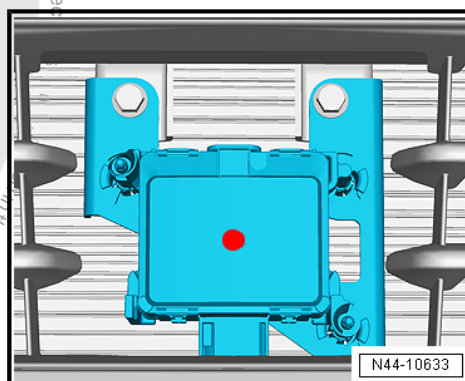




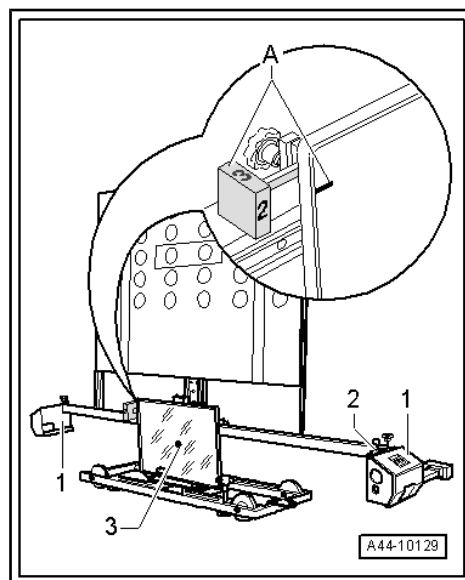
- Level the bubble levels -A and B- on the ACC Reflector Mirror
- Audi - VAS6430/3- using the adjusting screws
- 1 through 3-.
- Adjust the mirror -4- via the crank -arrow- so that the laser beam is in the center of the sensor lens.



- Position the mirror on the side of the calibration beam so that the laser beam is in the center of the sensor lens.

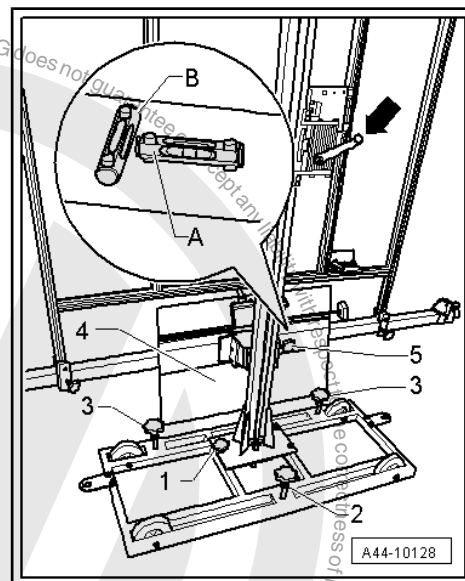


- Level the bubble levels -2- of the measurement sensor -1-.





- Turn the precision adjustment screw -5- until the display on the wheel alignment computer is located within the tolerance range.



- Level the bubble levels -2- of the measurement sensor -1-.
- Using the laser beam -3- on the ACC Reflector Mirror - Audi - VAS6430/3- , check whether the bubble level is level and the laser beam is in the center of the sensor lens.



Note

If the laser beam does not meet the sensor lens, the ACC Reflector Mirror - Audi - VAS6430/3- must be aligned again.

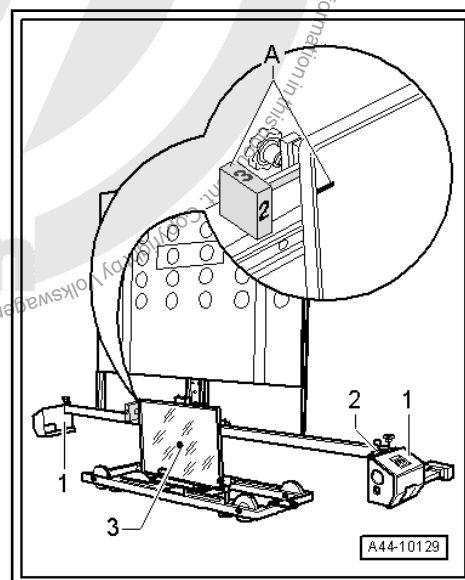
- On the Vehicle Diagnostic Tester , press **GO TO** and select the function **Function/component selection**.

Selection on the Vehicle Diagnostic Tester for the Adjustment of the Distance Regulation Control Module - J428- :

- Press the following buttons one after another on the screen:

- ◆ **Chassis (Repair group 01; 40 - 49)**
- ◆ **13 - Distance control**
- ◆ **01 - OBD-capable system**
- ◆ **13 - Distance control**
- ◆ **13 - Distance control, functions**
- ◆ **13 - Calibrate**

Follow the instructions on the screen to perform the adjustment.





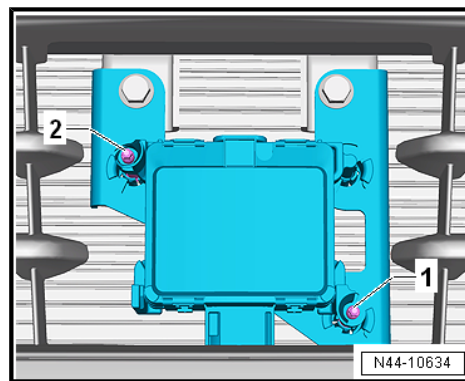
Designation of the Distance Regulation Control Module - J428- Adjusting screws

- 1 - Adjusting screw 1
- 2 - Adjusting screw 2
- 3 - Must not be turned - functions only as a pivot point



WARNING

The ACC adjustment is only applied when "Output diagnostic test mode complete" is displayed. Refer to Vehicle Diagnostic Tester .





6 Driver Assistance Systems Front Camera

⇒ **"6.1 Driver Assistance Systems Front Camera, Calibrating", page 387**

6.1 Driver Assistance Systems Front Camera, Calibrating



Note

If the camera can no longer recognize the lane markings due to poor visibility, this could be caused by:

- ◆ The camera field of view is dirty or icy. If that is the problem, it should be corrected.
- ◆ The camera view field is fogged over.

If the Camera Lens Is Obstructed by a Lot of Dirt on the inside, Then Lens Must Be Cleaned by Hand. To Do This, Remove the Control Module and the Lens, and Clean the Windshield Using Cleaning Solution. Remove the Control Module and the Lens. Refer to ⇒ Electrical Equipment; Rep. Gr. 96 ; Driver Assistance Systems Front Camera .

The Calibration Must Be Correct for the Driver Assistance Systems Front Camera - R242- to Function Correctly.

The Driver Assistance Systems Front Camera - R242- Must Be Calibrated Again for the following Reasons:

- ◆ "No or incorrect basic setting/adaptation" is stored in the event memory.
- ◆ The Driver Assistance Systems Front Camera - R242- was replaced.
- ◆ The windshield was replaced or removed.
- ◆ The rear axle toe was adjusted.
- ◆ Work was performed on the chassis which influences the body height.
- ◆ The level control system sensor was readapted on vehicles with damping regulation.



Note

- ◆ *Before calibrating the driver assistance systems front camera, check the DTC memory and correct any faults.*
- ◆ *The driver assistance systems front camera may only be calibrated using alignment equipment approved by VW/Audi.*
- ◆ *Only the Setting Device Basic Set - VAS6430/1- may be used to calibrate the driver assistance systems front camera.*

Special tools and workshop equipment required

- ◆ Setting Device Basic Set - VAS6430/1-
- ◆ Wheel Alignment Computer
- ◆ Vehicle Diagnostic Tester



Note

- ◆ *The Driver Assistance Systems Front Camera - R242- must fit correctly in the bracket.*
- ◆ *The camera viewing range must be clean and unobstructed.*
- ◆ *Before driving the vehicle onto the vehicle alignment platform, make sure there is sufficient space between the center of the wheel hub on the front wheels and the Setting Device Basic Set - VAS6430/1- .*
- ◆ *The distance between the Setting Device Basic Set - VAS6430/1- and the center of the wheel hub on the front wheels must be 1,500 mm \pm 25 mm.*
- ◆ *If there is not sufficient space, drive the vehicle backward onto the alignment stand in order to use the corresponding space.*
- ◆ *The calibration board must be positioned in the center of the setting device.*
- ◆ *Check the DTC memory before calibrating. Erase any entries if necessary.*
- Follow the test requirements for an axle alignment. Refer to [⇒ "3.2 Test Requirements", page 345](#) .
- Drive the vehicle onto the vehicle alignment platform.
- Connect the battery charger. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Charging .
- Connect the Vehicle Diagnostic Tester. (Guide the diagnostic cable through the open window.)



Note

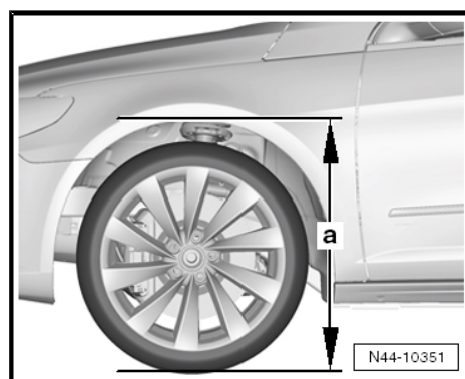
During the calibration procedure, make sure all the vehicle doors remain closed and the vehicle exterior lamps are switched off.

- Position the front wheels so they are straight.
- Select calibrating the driver assistance systems front camera in the wheel alignment computer.
- Install the quick-action clamps on all four wheels.
- Install the measuring sensors on the wheels.
- Perform a wheel run-out compensation and the rear wheels.
- Bounce the vehicle.
- Measure and record the height at all four wheels.



Note

- ◆ *The Setting Device Basic Set - VAS6430/1- must not be moved on the calibration beam.*
- ◆ *The alignment stand must be in the lowest level position for the next step.*



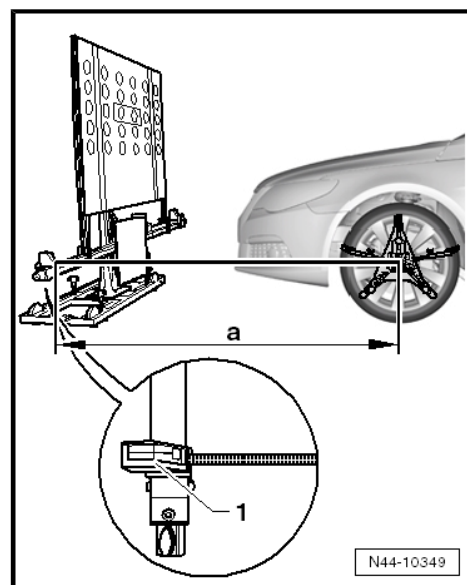


- Rotate the Setting Device Basic Set - VAS6430/1- upward just enough so that the calibration beam is parallel to the center of the measuring sensors on the front wheels, so that it is possible to correctly measure the distance measuring unit -1-.
- 1 - Distance measuring unit with spring tape measure and mounting pin
- Position the Setting Device Basic Set - VAS6430/1- at a distance -a- of 1500 mm \pm 25 mm from the center of the wheel hub on the front wheels to the beam on the Setting Device Basic Set - VAS6430/1- .

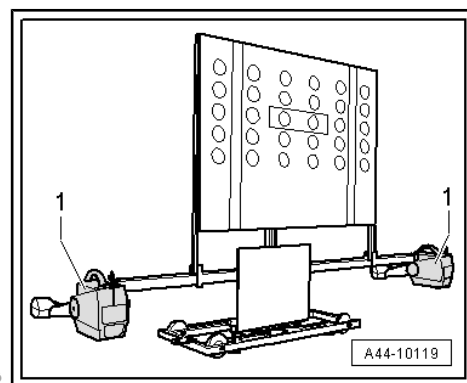


Caution

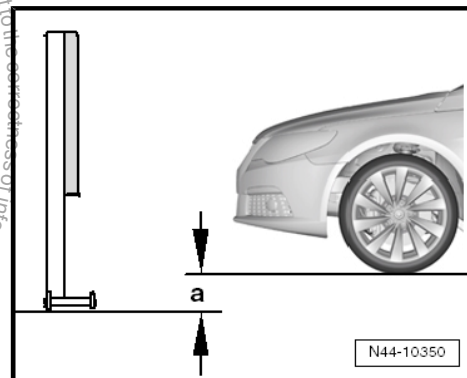
- ◆ *Distance -a- 1,500 mm \pm 25 mm must be measured on both side of the vehicle and then the Setting Device Basic Set - VAS6430/1- must be aligned.*
- ◆ *Distance -a- must be the same on both sides of the vehicle.*



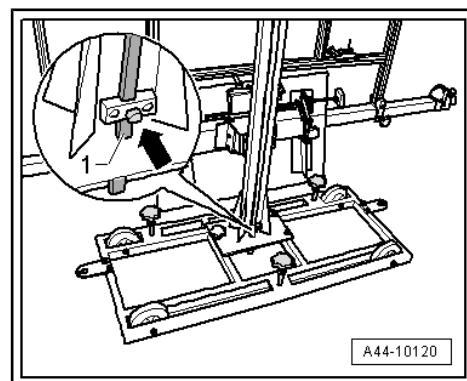
- Mount the front wheel measuring sensors -1- to the Setting Device Basic Set - VAS6430/1-



- Determine the height value -a- between the Setting Device Basic Set - VAS6430/1- contact patch and the wheel contact surface on the vehicle alignment platform. Enter the determined value in the wheel alignment computer.

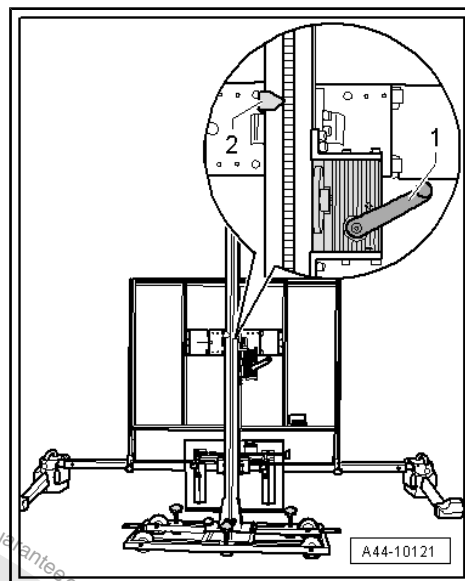


- Loosen the clamping bolt -arrow- and place the measuring bar -1- on the floor.

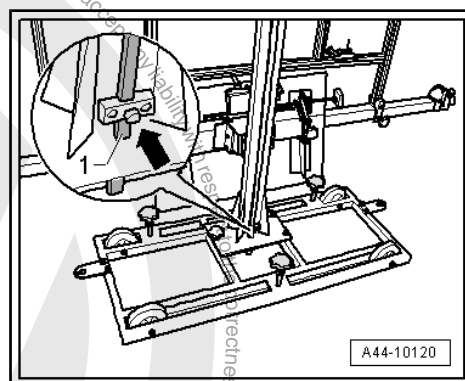




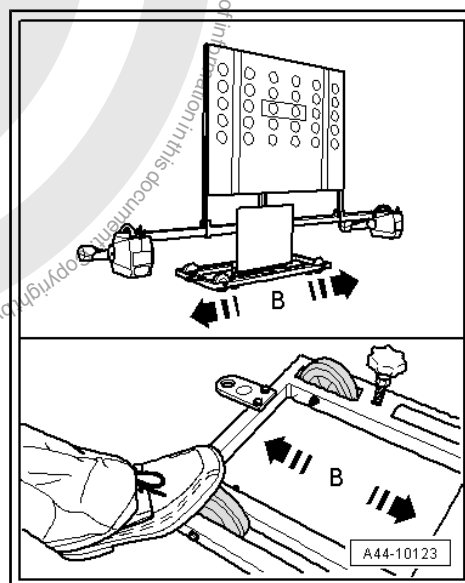
- Turn the crank -1- to adjust the Calibration Board For Lane Guard System - VAS6430/4- to the height specification -2- and then make a note of it.



If the Specified Height Was Reached, Then the Measuring Bar -1- Must Be Pushed Slightly Forward and Secured with the Locking Bolt -arrow-.

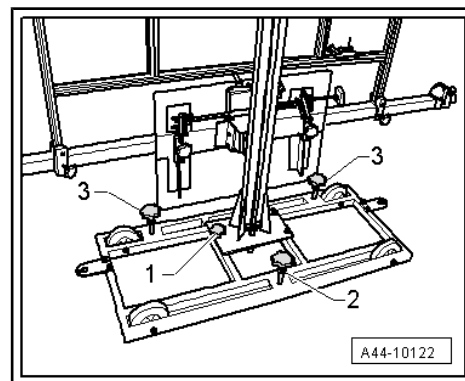


- Slide the Setting Device Basic Set - VAS6430/1- to the side in direction of arrows B-, until the display in the wheel alignment computer is in the tolerance range.

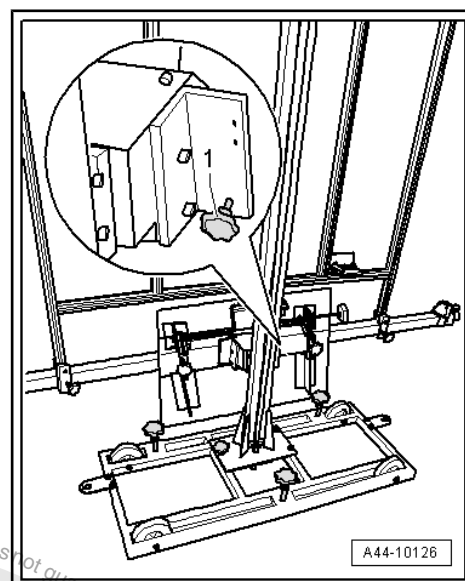




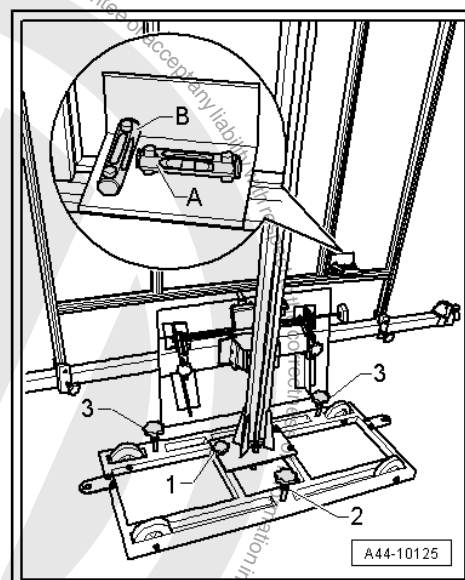
- By gently turning the adjustment screws -2 and 3-, the Setting Device Basic Set - VAS6430/1- is secured from rolling away.



- Turn the precision adjustment screw -1- until the display on the wheel alignment computer is located within the tolerance range.

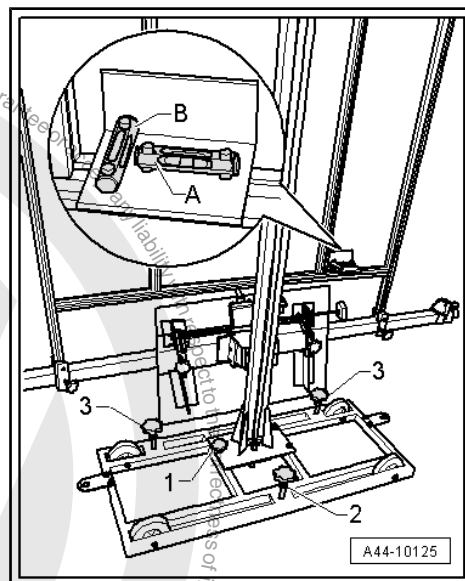


- Level the bubble level -A- using the adjusting screw -1-.

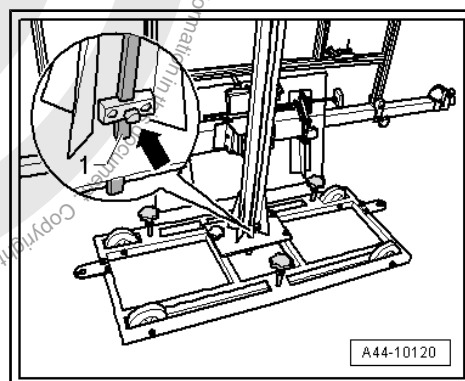




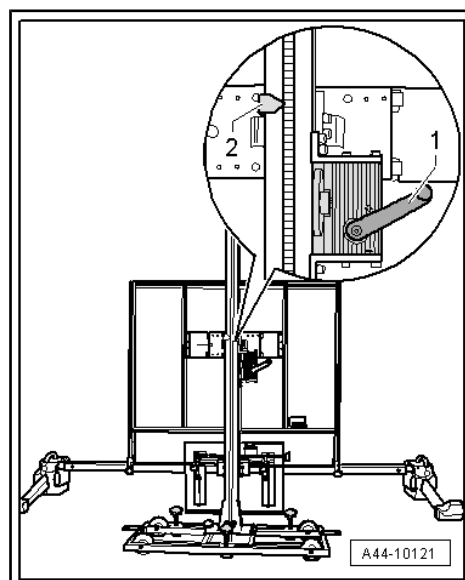
- Level the bubble level -B- using the adjusting screws -2 and 3-.



- Loosen the clamping bolt -arrow- and place the measuring bar -1- on the floor.



- Check specified height -2- one more time and adjust if necessary.





If the Specified Height Was Reached, Then the Measuring Bar -1- Must Be Pushed Slightly Forward and Secured with the Locking Bolt -arrow-.

Perform Any Subsequent Work Using the Vehicle Diagnostic Tester .

- Switch the ignition on.
- Select “Guided Fault Finding” Vehicle Diagnostic Tester .

Body (Repair Groups 01, 27 and 50 through 97)

Electrical System (Repair Groups 01, 27 and 90 through 97)

01_OBD-capable systems

Driver Assistance Systems Front Camera -R242-

Driver assistance system camera, functions

A5 - Calibrate the control module (Repair Group 44)

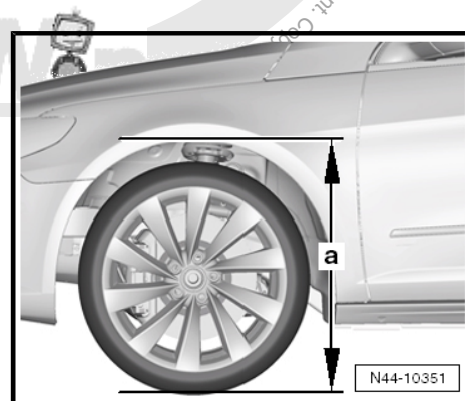
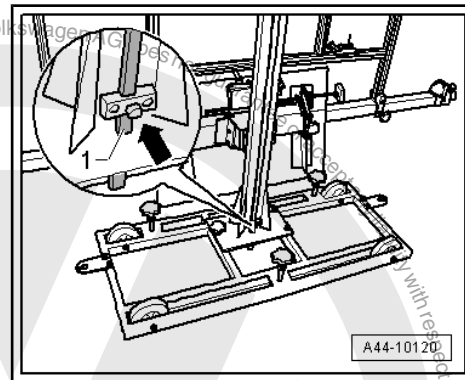
Follow the instructions on the screen to perform the calibration.



Note

Next, in guided fault finding, determine the height of the body.

- Enter the recorded ride heights.

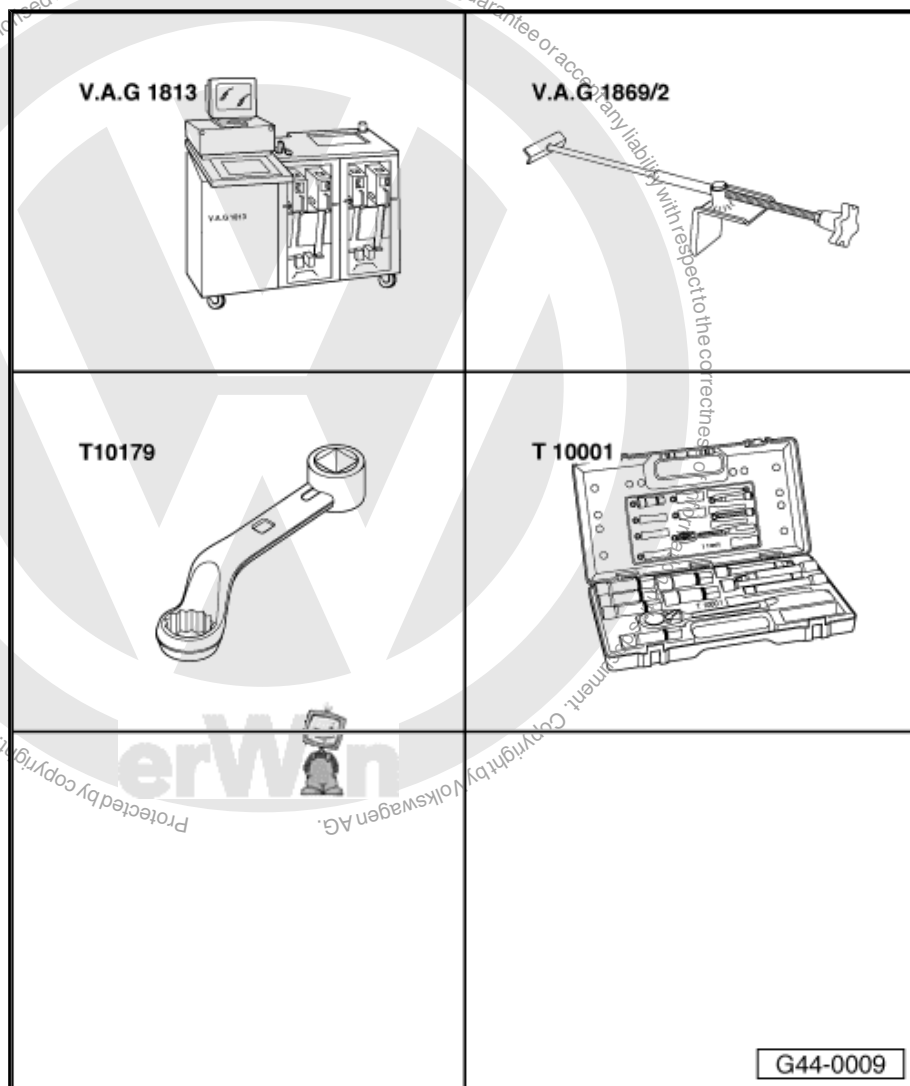




7 Special Tools

Special tools and workshop equipment required

- ◆ Wheel Alignment Computer - VAG1813F- or VW/Audi approved wheel alignment devices
- ◆ Brake Pedal Actuator - VAG1869/2-
- ◆ Insert Tool - 18mm - T10179-
- ◆ Shock Absorber Set - T10001-

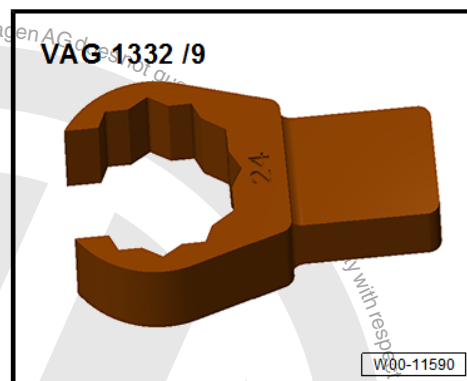


- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

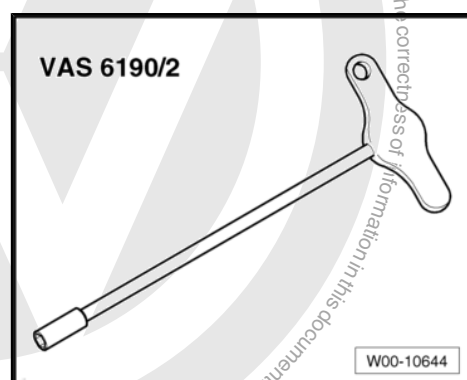




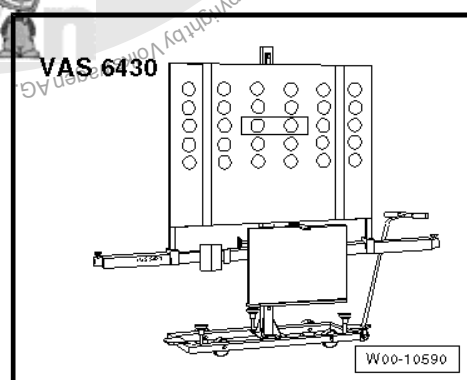
- ◆ Torque Wrench 1332 Insert - Open Ring Wrench - 24mm - VAG1332/9-



- ◆ ACC Adjuster - VAS6190/2-



- ◆ Setting Device Basic Set - VAS6430/1-



- ◆ Wheel Alignment Computer
- ◆ Vehicle Diagnostic Tester



48 – Steering

1 Steering Wheel

⇒ [“1.1 Overview - Steering Wheel”, page 396](#)

⇒ [“1.2 Steering Wheel, Removing and Installing”, page 396](#)

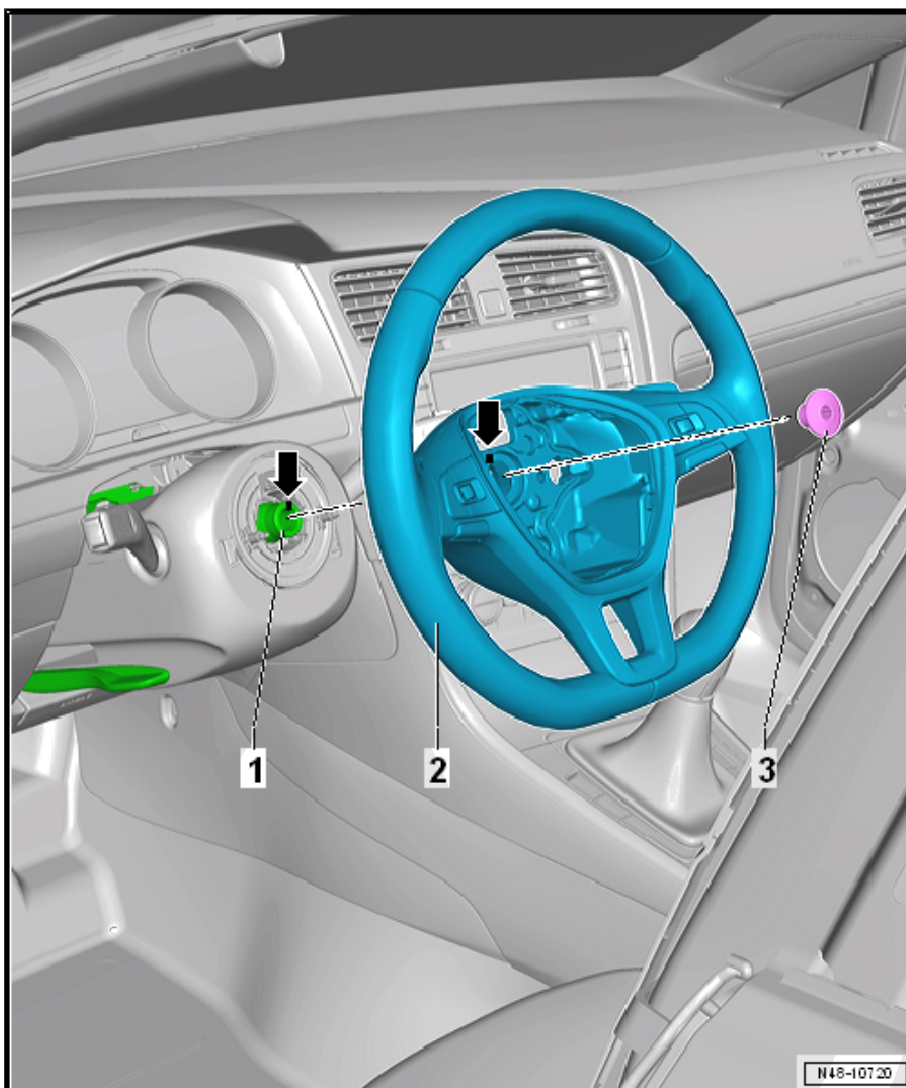
1.1 Overview - Steering Wheel

1 - Steering Column

- ❑ Removing and installing. Refer to
⇒ [“2.4 Steering Column, Removing and Installing”, page 400](#) .
- ❑ The punch points -arrows- on the steering wheel and steering column must be aligned with each other when positioning. Several steering columns are not equipped with a punch point at the factory. For these steering columns, an appropriate punch point must be set before removing the steering wheel. Refer to
⇒ [“1.2 Steering Wheel, Removing and Installing”, page 396](#) .

2 - Steering Wheel

- ❑ Removing and installing. Refer to
⇒ [“1.2 Steering Wheel, Removing and Installing”, page 396](#) .
- ❑ There are different versions. Refer to the Parts Catalog for the allocation.
- ❑ The punch points -arrows- on the steering wheel and steering column must be aligned with each other when positioning. Several steering columns are not equipped with a punch point at the factory. For these steering columns, an appropriate punch point must be set before removing the steering wheel. Refer to
⇒ [“1.2 Steering Wheel, Removing and Installing”, page 396](#) .



3 - Bolt

- ❑ 30 Nm +90°
- ❑ Replace after removing

1.2 Steering Wheel, Removing and Installing

Special tools and workshop equipment required



◆ Torque Wrench 1331 5-50Nm - VAG1331-

Removing



WARNING

Before performing work on the electrical system and removing the steering wheel, the following conditions must be met:

- ◆ *Disconnect the battery. Refer to ➔ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .*
- ◆ *The wheels must be in the straight position.*

The airbag system may fail during future operation if these warnings are not followed!

- Move the steering column to the center height position.
- Remove the airbag unit. Refer to ➔ Body Interior; Rep. Gr. 69 ; Driver Side Airbag; Overview - Driver Side Airbag .
- Bring wheels in the straight position.



Note

Removal and installation of steering wheel must take place in center position (wheels in straight-ahead position).

- Remove the bolt -1-.
- Check if the steering column is equipped with a punch point on the steering column height marking.
- If that is not the case, then the steering wheel/steering column position must be marked with a punch point on the steering column.
- Remove the steering wheel -2- from the steering column.

Installing

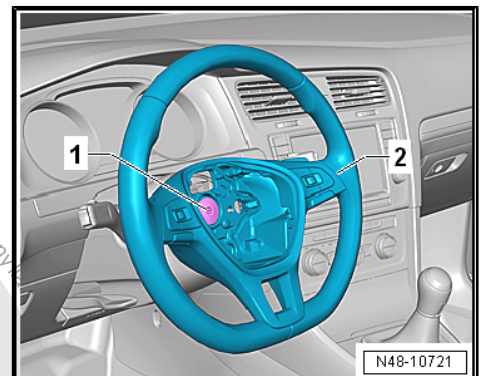
Install in reverse order of removal and note the following:

Make sure the wheels are in the straight-ahead position before installing the steering wheel.

- When installing a removed steering wheel, ensure that the markings on the steering column/steering wheel are aligned.
- When installing a new steering wheel (without a marking): mount the steering wheel in its center position (the steering wheel spokes must be horizontal and the wheels must be in the straight-ahead position).
- Install steering wheel.
- Install the airbag unit. Refer to ➔ Body Interior; Rep. Gr. 69 ; Driver Side Airbag; Overview - Driver Side Airbag .
- Perform a road test.
- If steering wheel is crooked, remove it again and rotate it on steering column splines.

Tightening Specifications

- ◆ Refer to ➔ ["1.1 Overview - Steering Wheel", page 396](#)





2 Steering Column

⇒ [“2.1 Overview - Steering Column”, page 398](#)

⇒ [“2.2 Steering Column, Checking for Damage”, page 399](#)

⇒ [“2.3 Steering Column, Handling and Transporting”, page 399](#)

⇒ [“2.4 Steering Column, Removing and Installing”, page 400](#)

⇒ [“2.5 Electronic Steering Column Lock Control Module J764 , Removing and Installing”, page 417](#)

2.1 Overview - Steering Column



Note

- ◆ Always replace self-locking nuts.
- ◆ Always replace corroded bolts/nuts.
- ◆ Always replace the bolts and nuts, which are tightened with an additional turn.

1 - Instrument Panel Central Tube

2 - Shear bolt

- ☐ Loosening and tightening. Refer to
⇒ [“2.5 Electronic Steering Column Lock Control Module J764 , Removing and Installing”, page 417](#)

3 - Right Bracket

- ☐ for the knee airbag

4 - Electronic Steering Column Lock Control Module - J764-

- ☐ For vehicles with “Keyless Access” keyless locking and starting system
- ☐ Removing and installing. Refer to
⇒ [“2.5 Electronic Steering Column Lock Control Module J764 , Removing and Installing”, page 417](#)

5 - Bolt

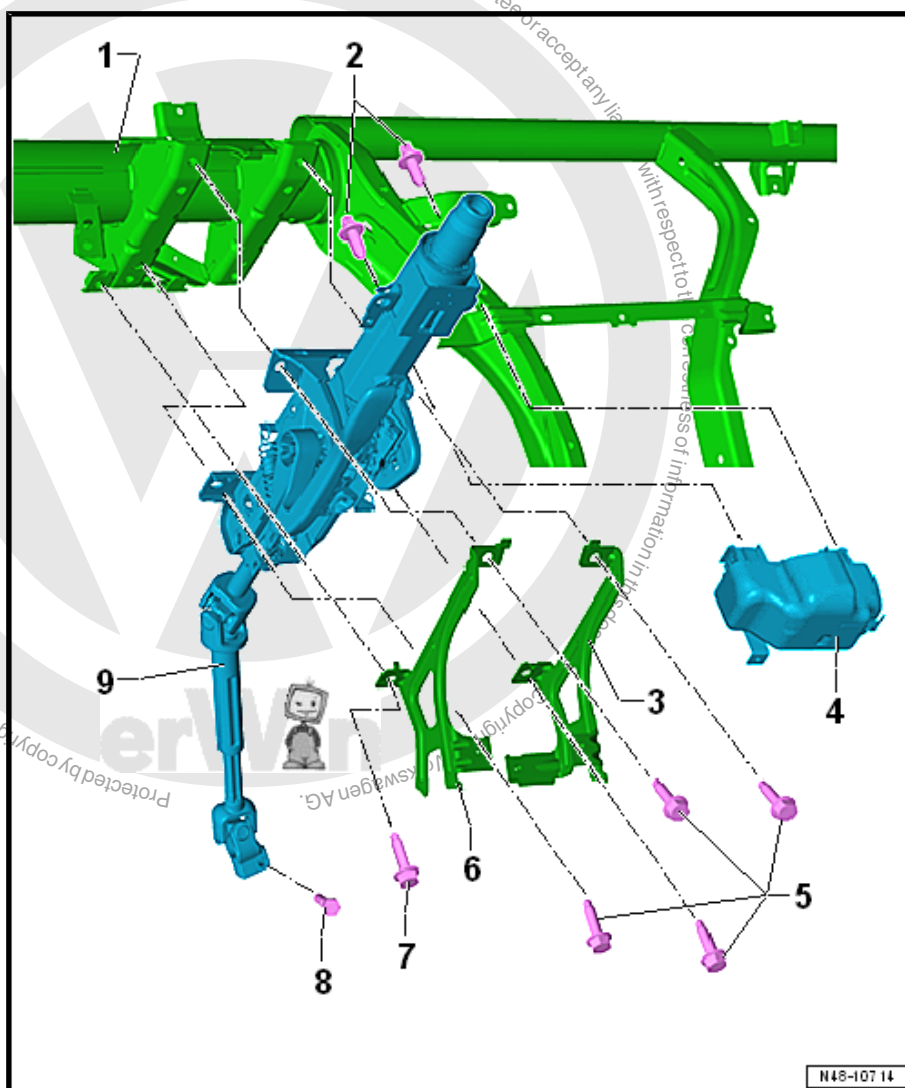
- ☐ 20 Nm
- ☐ Replace after removing
- ☐ Pay attention to the tightening sequence. Refer to ⇒ [page 406](#)

6 - Left Bracket

- ☐ For the knee airbag

7 - Bolt

- ☐ 20 Nm
- ☐ Replace after removing





8 - Bolt

- ☐ 20 Nm +90°
- ☐ Replace after removing

9 - Steering Column

- ☐ Removing and installing. Refer to ➤ [“2.4 Steering Column, Removing and Installing”, page 400](#) .
- ☐ The steering column must be engaged on the instrument panel central tube mounting bracket when installing (assembly aid).
- ☐ There are different versions. Refer to the Parts Catalog.

2.2 Steering Column, Checking for Damage

Visual Check

- Check whether steering column parts show signs of damage.

Function Test

- Check that the steering column turns easily without jerking.
- Check whether steering column can be easily adjusted laterally and vertically.

2.3 Steering Column, Handling and Transporting

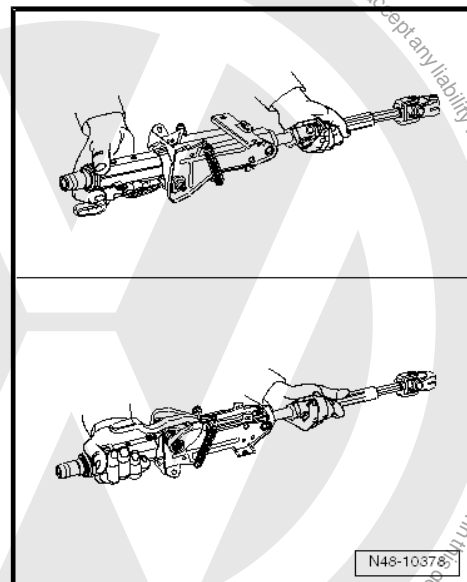


WARNING

- ◆ *The correct handling of the steering column must always be observed.*
- ◆ *Incorrect handling of steering column may cause damage to steering column and therefore lead to a safety risk.*

Correct Handling and Transport of Steering Column

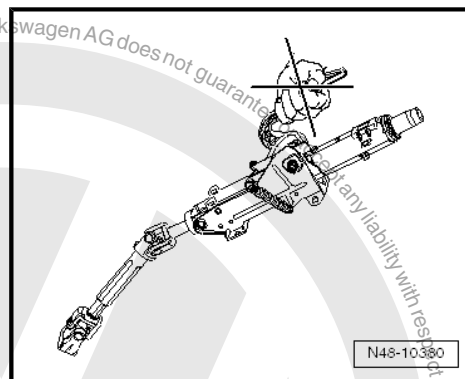
- ◆ Transport the steering column with two hands.
- ◆ Hold the steering column by the upper outer steering column tube and in the area of the upper universal joint.





Incorrect Handling of Steering Column

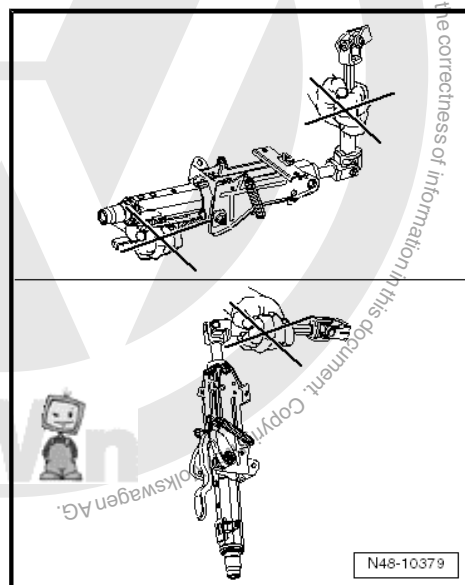
Transporting at the clamping lever leads to pre-damage to the steering column.



Incorrect Handling of Steering Column with Safety Risk

The following handling techniques can lead to damage of the universal joint bushings, the lower steering column bearing and the steering column:

- ◆ Transporting steering column with one hand on joint shaft.
- ◆ Bending joints more than 90°



2.4 Steering Column, Removing and Installing

⇒ [“2.4.1 Steering Column, Removing and Installing”, page 400](#)

2.4.1 Steering Column, Removing and Installing

Special tools and workshop equipment required

- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

Removing



Note

The steering column is delivered only as a complete replacement part. Servicing is not possible.

Vehicles with Ignition Switch

The steering lock housing can be replaced. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Steering Column Switch Module; Steering Column Switch Module, Removing and Installing .



Vehicles with "Keyless Access" Keyless Locking and Starting System

The Electronic Steering Column Lock Control Module - J764- can be removed and installed. Refer to

⇒ ["2.5 Electronic Steering Column Lock Control Module J764 , Removing and Installing", page 417](#) .

Continuation for All Vehicles



WARNING

Before starting work on electrical equipment and removing steering wheel, the following conditions must be fulfilled:

- ◆ *The technician must discharge themselves of static electricity. This is done by touching grounded metal parts, for example, water lines, heater pipes, metal supports or a workshop hoist.*

If this not done, the Electronic Steering Column Lock Control Module - J764- could fail later.

- ◆ *Disconnect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .*
- ◆ *The wheels must be in the straight position.*

The airbag system may fail during future operation if these warnings are not followed!

- Bring wheels in the straight position.
- Pull the lever on the side of the steering column downward.
- Push the steering column as far down as possible and remove it.
- Push the lever on the side of the steering column upward again.
- Remove the airbag unit. Refer to ⇒ Body Interior; Rep. Gr. 69 ; Driver Side Airbag; Overview - Driver Side Airbag .
- Steering Wheel, Removing. Refer to ⇒ ["1.2 Steering Wheel, Removing and Installing", page 396](#) .
- Remove the upper steering column trim panel. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Upper Steering Column Trim Panel, Removing and Installing .
- Remove the lower steering column trim panel. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Lower Steering Column Trim Panel, Removing and Installing .
- Remove the steering column switch module. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Steering Column Switch Module; Steering Column Switch Module, Removing and Installing .
- Remove the knee airbag. Refer to ⇒ Body Interior; Rep. Gr. 69 ; Knee Airbags; Overview - Knee Airbag .



Vehicles with Ignition Switch

- Remove the connector -1- from the Anti-Theft Immobilizer Reader Coil - D2- .

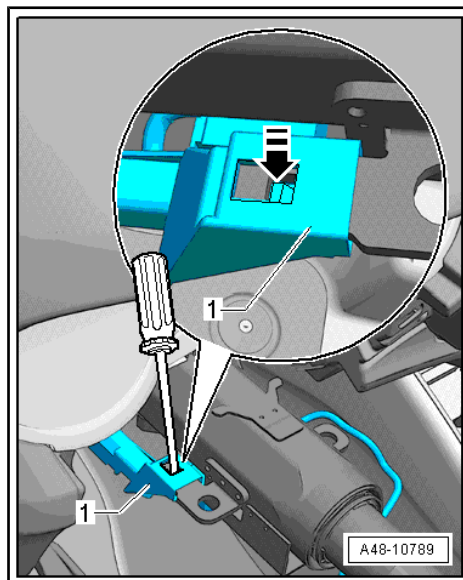
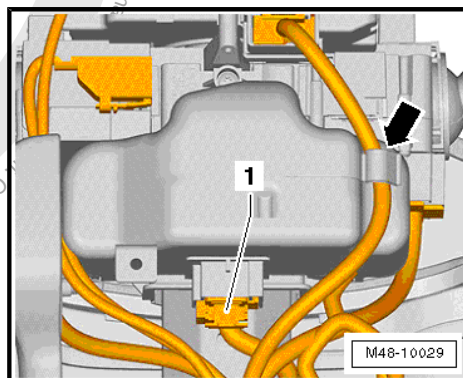
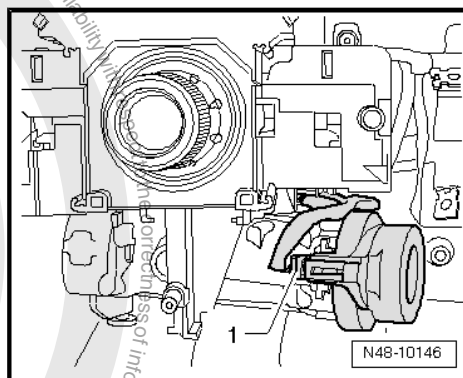
Vehicles with "Keyless Access" keyless locking and starting system

- Disconnect the connector -1-.
- Unclip the wire from the retainer on the Electronic Steering Column Lock Control Module - J764- -arrow-.

Continuation for All Vehicles

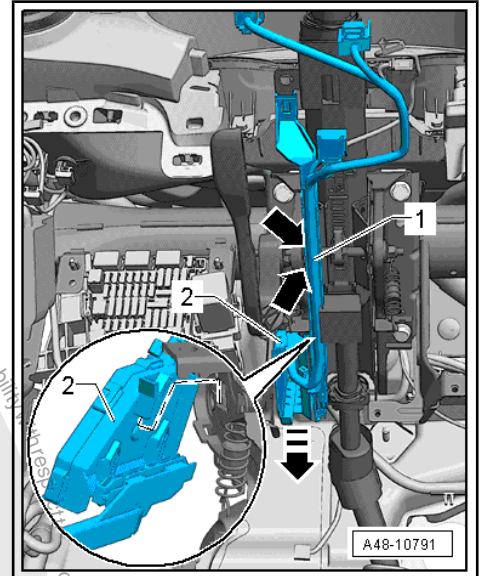
- Remove the footwell vent under the steering column. Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 87 ; Air Guide; Overview - Air Routing and Air Distribution in Passenger Compartment .

- Release the tab in direction of -arrow- using a small screwdriver.
- Remove the cable guide -1- forward from the metal tab.

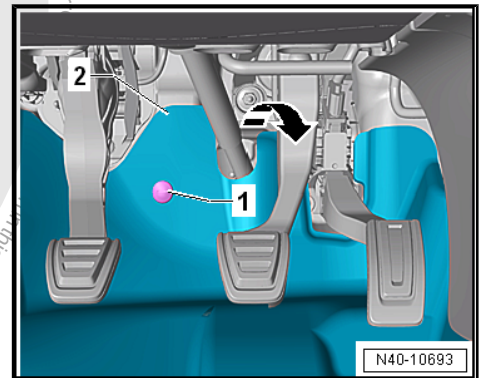




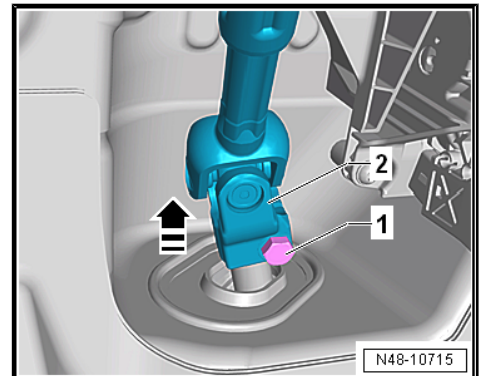
- Release the tabs -arrows- on the cable guide -1- with a small screwdriver.
- Remove the cable guide -1- downward from the steering column.
- Release the lower cable bracket -2- and remove it downward.
- Set the wire for the steering column aside.



- Remove the bolt -1- and fold the footwell trim panel -2- in the direction of the arrow into the vehicle interior.



- Remove the bolt -1- from the universal joint -2-. Then remove the universal joint in direction of -arrow-.



Caution

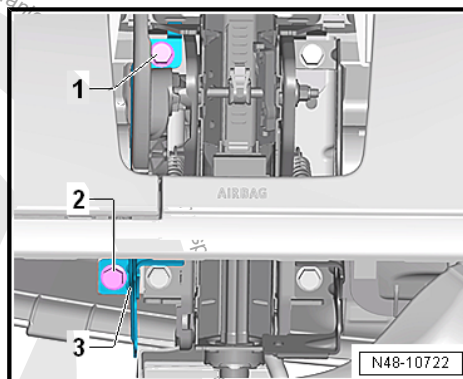
If the universal joint is separated from the steering gear, the following work cannot be performed:

- ◆ ***Connect the battery.***
- ◆ ***Switch the ignition on.***
- ◆ ***Turn the steering gear.***
- ◆ ***Turn the steering column.***

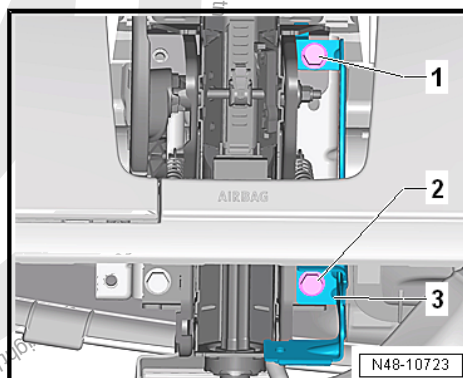
These points must be observed since performing these actions could cause irreparable damage.



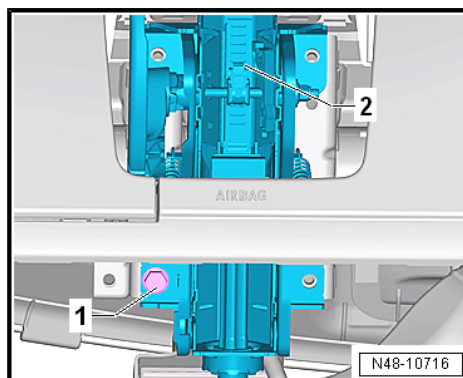
- Remove the bolts -1- and -2-.
- Remove the left bracket for the knee airbag -3-.



- Remove the bolts -1- and -2-.
- Remove the right bracket for the knee airbag -3-.



- Remove the bolt -1- and hold the steering column -2-.



- Disengage the steering column -1- upward from the tabs -2 and 3- on the mounting bracket and remove it.

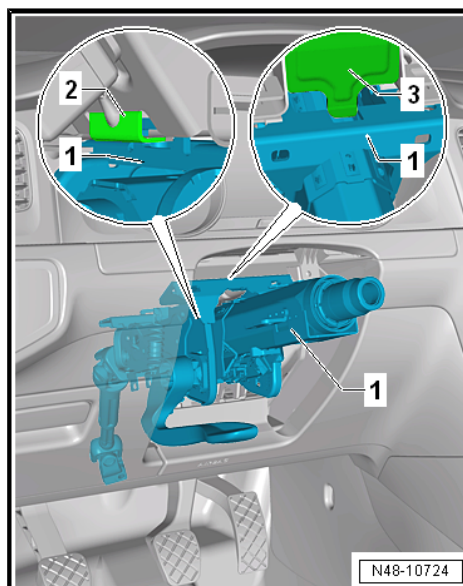


Caution

Refer
⇒ **"2.3 Steering Column, Handling and Transporting"**,
page 399 or correct handling and transport of steering column. to

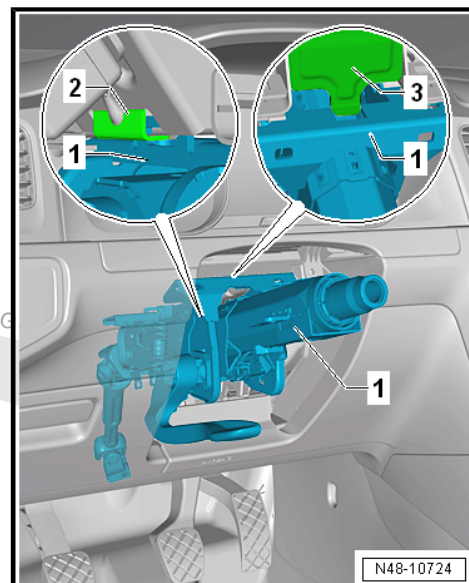
Installing

Install in reverse order of removal and note the following:

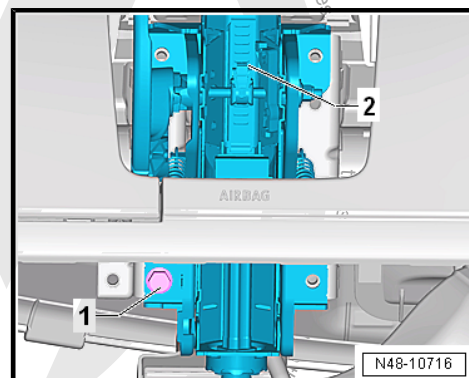




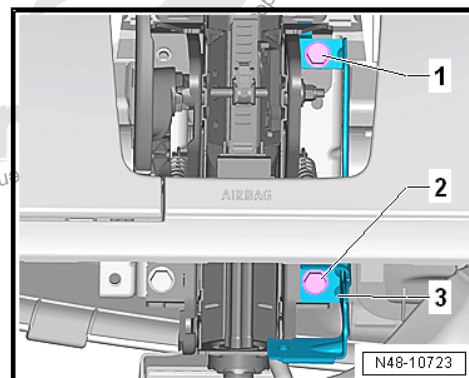
- Engage the steering column -1- in the assembly aids on the mounting bracket at the bottom -2- and at the top -3-.



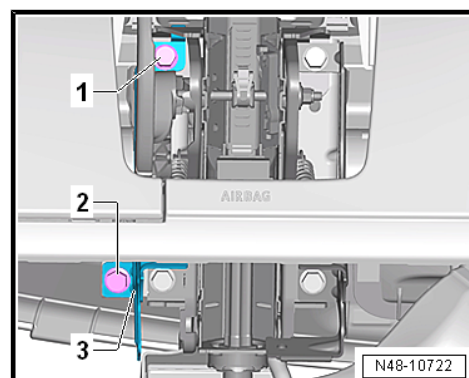
- Align the steering column -2- to the mounting bracket. Install the bolt -1- hand-tight.



- Install the right bracket for the knee airbag -3-.
- Install the bolts -1 and 2- hand-tight.

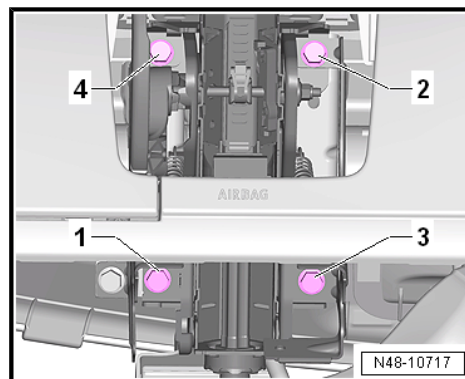


- Install the left bracket for the knee airbag -3-.
- Install the bolts -1 and 2- hand-tight.

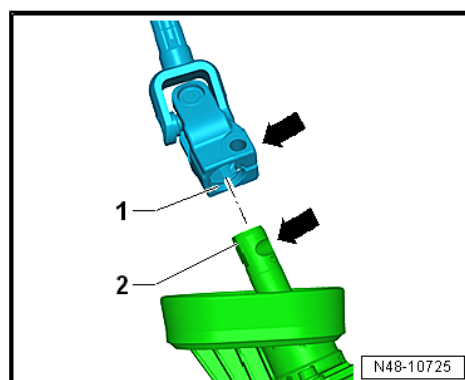




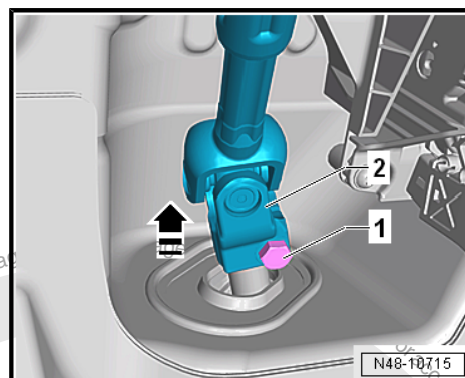
- Tighten the bolts -1- through 4- one after the other to the tightening specification.



- The flat side of the steering column -1- must be positioned on the flat side of the steering gear -2-. At the same time, the opening on the steering gear must align precisely with the hole for the bolt -arrows-.

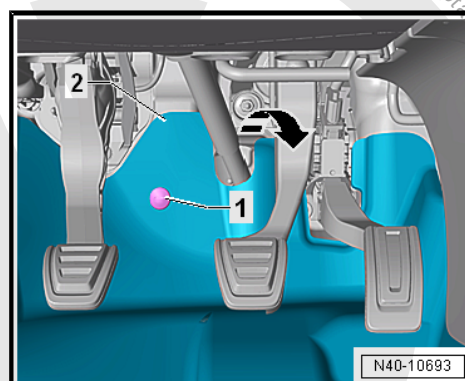


- Install the universal joint -2- on the steering pinion in the opposite in direction of -arrow-.
- Install and tighten the new hex bolt -1-.



- Fold the footwell trim panel -2- forward and secure it with the bolt -1-.

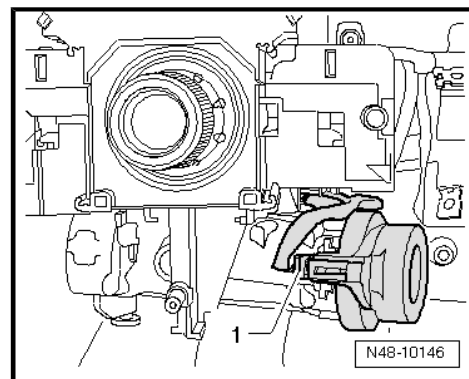
Vehicles with Ignition Switch





- Connect the connector -1- to the Anti-Theft Immobilizer Reader Coil - D2- .

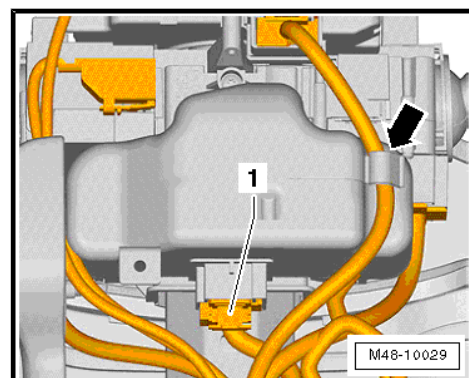
Vehicles with "Keyless Access" Keyless Locking and Starting System



- Connect the connector -1-.
- Clip the wire into the retainer on the Electronic Steering Column Lock Control Module - J764- -arrow-.

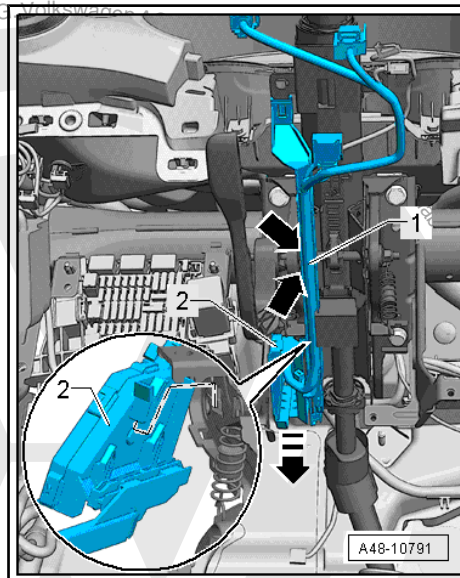
Continuation for All Vehicles

- Install the steering column switch module. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Steering Column Switch Module; Steering Column Switch Module, Removing and Installing .





- Insert the lower wiring bracket -2- so that the tabs in the guide engage on the steering column.
- Insert the cable guide -1-. The tabs in direction of -arrows- must engage in the steering column.
- Install the footwell vent under the steering column. Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 87 ; Air Guide; Overview - Air Routing and Air Distribution in Passenger Compartment .
- Install the knee airbag. Refer to ⇒ Body Interior; Rep. Gr. 69 ; Knee Airbags; Overview - Knee Airbag .
- Install the lower steering column trim panel. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Lower Steering Column Trim Panel, Removing and Installing .
- Install the upper steering column trim panel. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Upper Steering Column Trim Panel, Removing and Installing .
- Install the steering wheel. Refer to ⇒ ["1.2 Steering Wheel, Removing and Installing", page 396](#) .
- Install the driver side airbag unit. Refer to ⇒ Body Interior; Rep. Gr. 69 ; Driver Side Airbag; Overview - Driver Side Airbag .
- Perform a basic setting on the Steering Angle Sensor - G85- . Refer to Vehicle Diagnostic Tester .



Tightening Specifications

- ◆ Refer to ⇒ ["2.1 Overview - Steering Column", page 398](#)
- ◆ Footwell vent under the steering column. Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 87 ; Air Guide; Overview - Air Routing and Air Distribution in Passenger Compartment .
- ◆ Steering column switch module. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Steering Column Switch Module; Steering Column Switch Module, Removing and Installing .
- ◆ Knee Airbag. Refer to ⇒ Body Interior; Rep. Gr. 69 ; Knee Airbags; Overview - Knee Airbag
- ◆ Driver side airbag. Refer to ⇒ Body Interior; Rep. Gr. 69 ; Driver Side Airbag; Overview - Driver Side Airbag .
- ◆ Lower steering column trim panel. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Lower Steering Column Trim Panel, Removing and Installing .
- ◆ Upper steering column trim panel. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Upper Steering Column Trim Panel, Removing and Installing .

2.4.2 Steering Column, Removing and Installing, RHD

Special tools and workshop equipment required



- ◆ Torque Wrench 1331 5-50Nm - VAG1331-

V.A.G 1331



W00-11166

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

V.A.G 1332



W00-11165

Removing



Note

The steering column is delivered only as a complete replacement part. Servicing is not possible.

Vehicles with ignition switch

The steering lock housing can be replaced. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Steering Column Switch Module; Steering Column Switch Module, Removing and Installing .

Vehicles with "Keyless Access" keyless locking and starting system

The Electronic Steering Column Lock Control Module - J764- can be removed and installed. Refer to

⇒ ["2.5 Electronic Steering Column Lock Control Module J764 , Removing and Installing", page 417 .](#)



Continuation for All Vehicles



WARNING

Before starting work on electrical equipment and removing steering wheel, the following conditions must be fulfilled:

- ◆ **The technician must discharge themselves of static electricity. This is done by touching grounded metal parts, for example, water lines, heater pipes, metal supports or a workshop hoist. Refer to ⇒ "2.7 Electrical Components", page 4 .**

If this not done, the Electronic Steering Column Lock Control Module - J764- could fail later.

- ◆ **Disconnect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .**
- ◆ **The wheels must be in the straight position.**

The airbag system may fail during future operation if these warnings are not followed!

- Bring wheels in the straight position.
- Pull the lever on the side of the steering column downward.
- Push the steering column as far down as possible and remove it.
- Push the lever on the side of the steering column upward again.
- Remove the airbag unit. Refer to ⇒ Body Interior; Rep. Gr. 69 ; Driver Side Airbag; Overview - Driver Side Airbag .
- Steering Wheel, Removing. Refer to ⇒ "1.2 Steering Wheel, Removing and Installing", page 396 .
- Remove the upper steering column trim panel. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Upper Steering Column Trim Panel, Removing and Installing .
- Remove the lower steering column trim panel. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Lower Steering Column Trim Panel, Removing and Installing .
- Remove the steering column switch module. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Steering Column Switch Module; Steering Column Switch Module, Removing and Installing .
- Remove the knee airbag. Refer to ⇒ Body Interior; Rep. Gr. 69 ; Knee Airbags; Overview - Knee Airbag .



Vehicles with ignition switch

- Remove the connector -1- from the Anti-Theft Immobilizer Reader Coil - D2- .

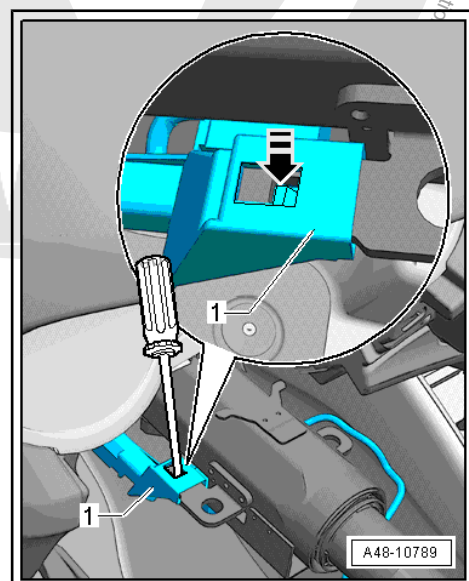
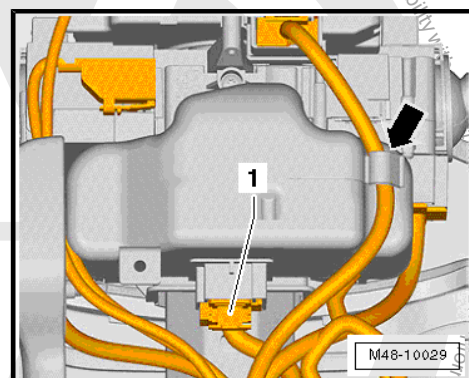
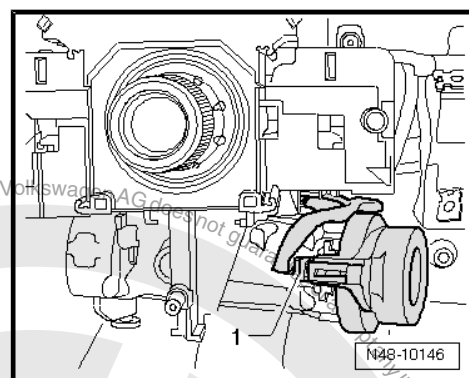
Vehicles with "Keyless Access" keyless locking and starting system

- Disconnect the connector -1-.
- Unclip the wire from the retainer on the Electronic Steering Column Lock Control Module - J764- -arrow-.

Continuation for All Vehicles

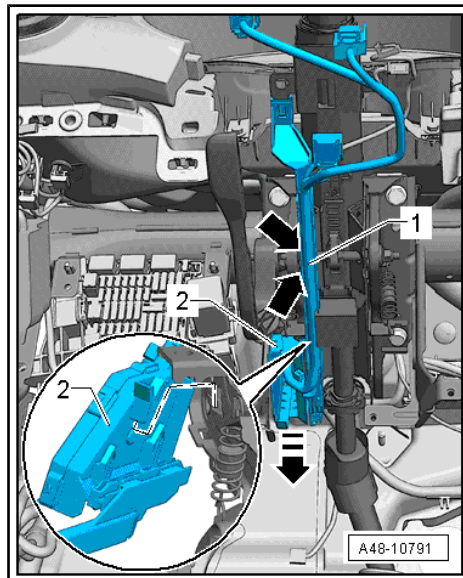
- Remove the footwell vent under the steering column. Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 87 ; Air Guide; Overview - Air Routing and Air Distribution in Passenger Compartment .

- Release the tab -arrow- using a small screwdriver.
- Remove the cable guide -1- forward from the metal tab.

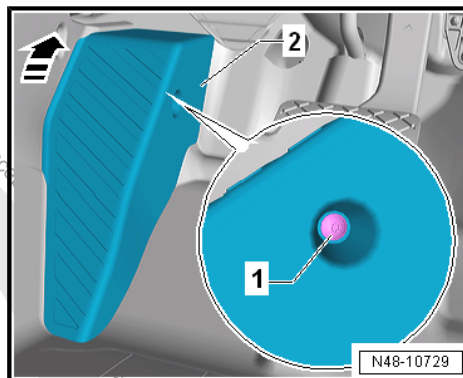




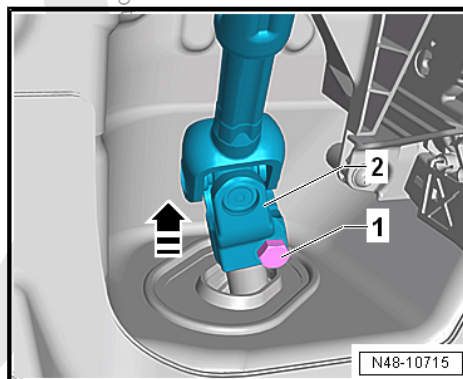
- Release the tabs -arrows- on the cable guide -1- with a small screwdriver.
- Remove the cable guide -1- downward from the steering column.
- Release the lower cable bracket -2- and remove it downward.
- Set the wire for the steering column aside.



- Remove the bolt -1-.
- Slide the footrest -2- upward in the -direction of the arrow- and remove it.
- Fold back the carpet.



- Remove the bolt -1- from the universal joint -2-. Then remove the universal joint in -direction of arrow-.



Caution

If the universal joint is separated from the steering gear, the following work cannot be performed:

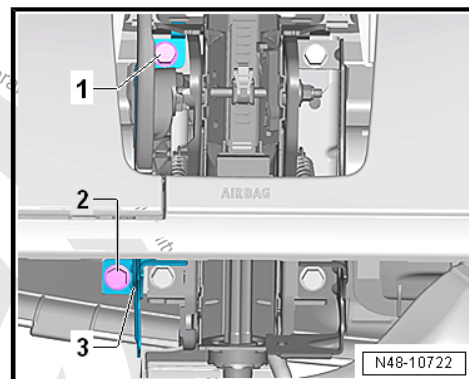
- ◆ Connect the battery.
- ◆ Switch the ignition on.
- ◆ Turn the steering gear.
- ◆ Turn the steering column.

These points must be observed since performing these actions could cause irreparable damage.

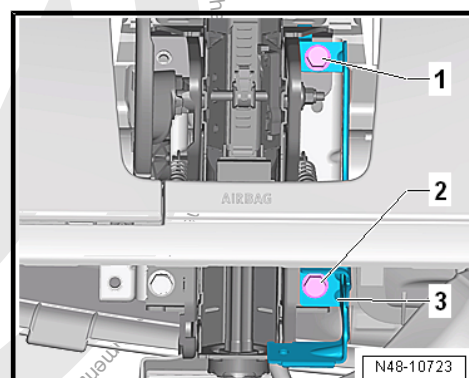




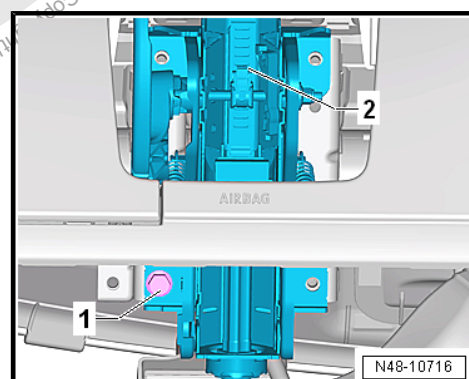
- Remove the bolts -1- and -2-.
- Remove the left bracket for the knee airbag -3-.



- Remove the bolts -1- and -2-.
- Remove the right bracket for the knee airbag -3-.



- Remove the bolt -1- and hold the steering column -2-.



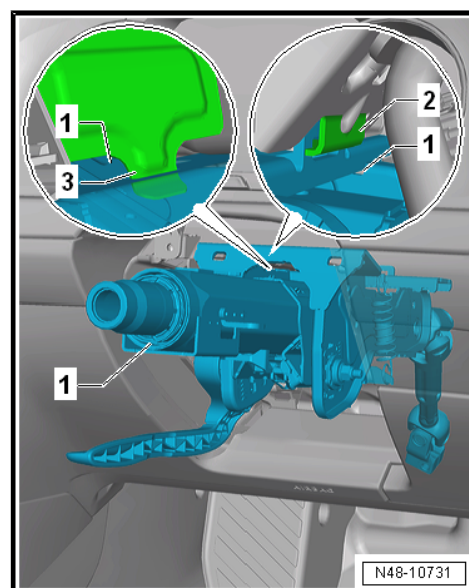
- Disengage the steering column -1- upward from the tabs -2- and -3- on the mounting bracket and remove it.

Caution

Refer *to*
 ⇒ **"2.3 Steering Column, Handling and Transporting"**,
page 399 or correct handling and transport of steering column.

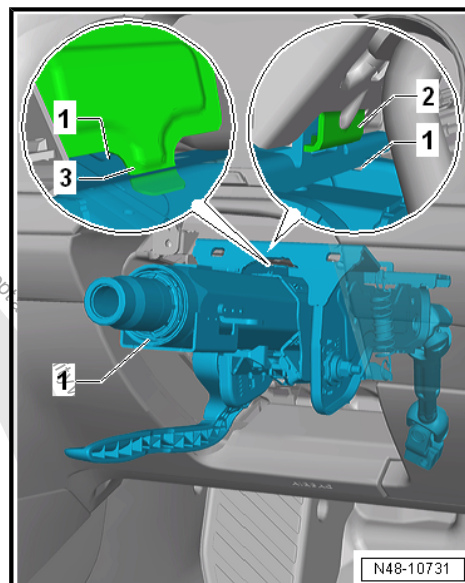
Installing

Install in reverse order of removal and note the following:

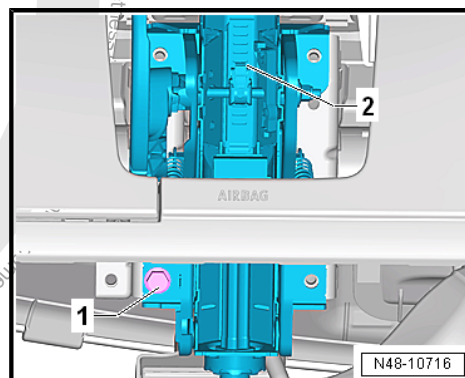




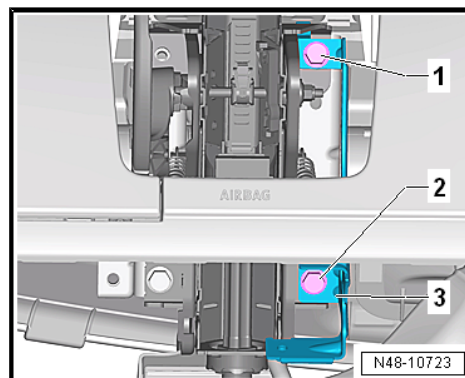
- Engage the steering column -1- in the assembly aids on the mounting bracket at the bottom -2- and at the top -3-.



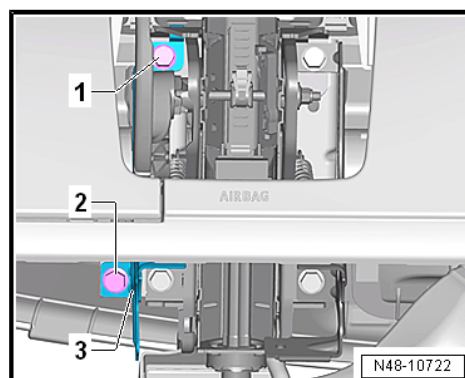
- Align the steering column -2- to the mounting bracket. Install the bolt -1- hand-tight.



- Install the right bracket for the knee airbag -3-.
- Install the bolts -1- and -2- hand-tight.

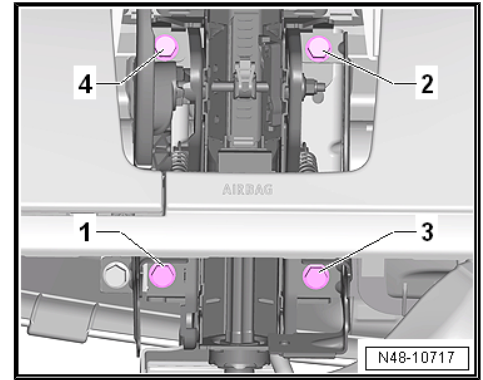


- Install the left bracket for the knee airbag -3-.
- Install the bolts -1- and -2- hand-tight.

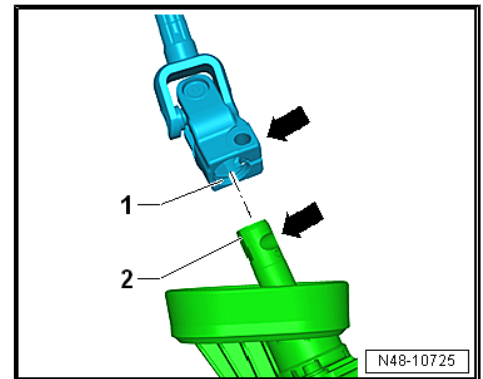




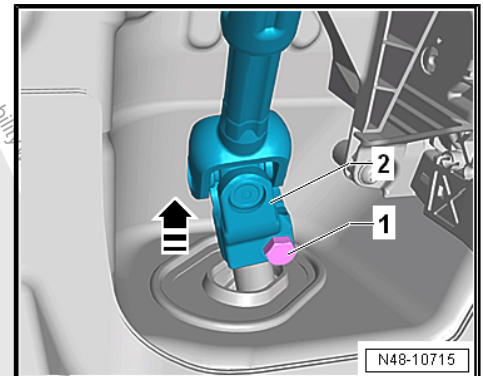
- Tighten the bolts -1-, -2-, -3- and -4- one after the other to the tightening specification.



- The flat side of the steering column -1- must be positioned on the flat side of the steering gear -2-. At the same time, the opening on the steering gear must align precisely with the hole for the bolt -arrows-.

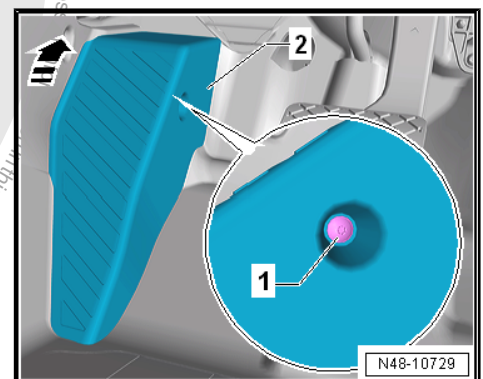


- Install the universal joint -2- on the steering pinion in the opposite -direction of the arrow-.
- Install and tighten the new hex bolt -1-.
- Fold the carpet forward.



- Insert the foot rest -2- opposite the -direction of the arrow-.
- Tighten the bolt -1-.

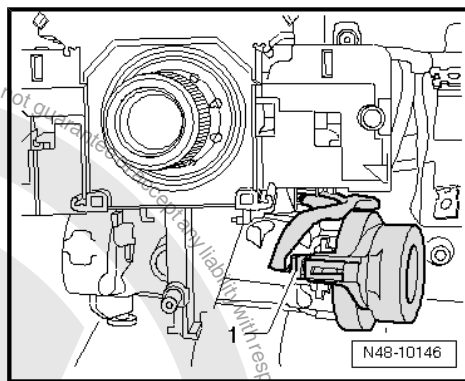
Vehicles with ignition switch





- Connect the connector -1- to the Anti-Theft Immobilizer Reader Coil - D2- .

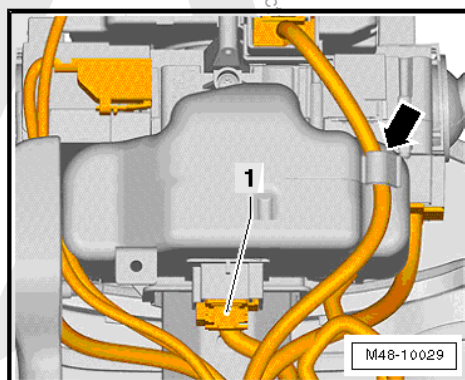
Vehicles with "Keyless Access" keyless locking and starting system



- Connect the connector -1-.
- Clip the wire into the retainer on the Electronic Steering Column Lock Control Module - J764- -arrow-.

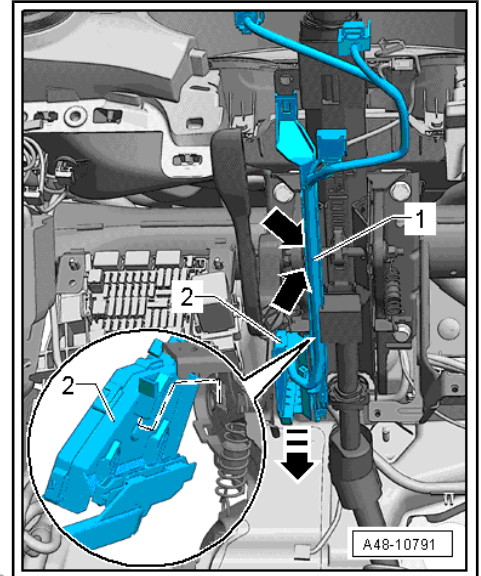
Continuation for All Vehicles

- Install the steering column switch module. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Steering Column Switch Module; Steering Column Switch Module, Removing and Installing .





- Insert the lower wiring bracket -2- so that the tabs in the guide engage on the steering column.
- Insert the cable guide -1-. The tabs -arrows- must engage in the steering column.
- Install the footwell vent under the steering column. Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 87 ; Air Guide; Overview - Air Routing and Air Distribution in Passenger Compartment .
- Install the knee airbag. Refer to ⇒ Body Interior; Rep. Gr. 69 ; Knee Airbags; Overview - Knee Airbag .
- Install the lower steering column trim panel. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Lower Steering Column Trim Panel, Removing and Installing .
- Install the upper steering column trim panel. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Upper Steering Column Trim Panel, Removing and Installing .
- Install the steering wheel. Refer to
⇒ ["1.2 Steering Wheel, Removing and Installing", page 396](#) .
- Install the driver side airbag unit. Refer to ⇒ Body Interior; Rep. Gr. 69 ; Driver Side Airbag; Overview - Driver Side Airbag .
- Perform a basic setting on the Steering Angle Sensor - G85- . Refer to Vehicle Diagnostic Tester .



Tightening Specifications

- ◆ Refer to ⇒ ["2.1 Overview - Steering Column", page 398](#)
- ◆ Footwell vent under the steering column. Refer to ⇒ Heating, Ventilation and Air Conditioning; Rep. Gr. 87 ; Air Guide; Overview - Air Routing and Air Distribution in Passenger Compartment .
- ◆ Steering column switch module. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Steering Column Switch Module; Steering Column Switch Module, Removing and Installing .
- ◆ Knee Airbag. Refer to ⇒ Body Interior; Rep. Gr. 69 ; Knee Airbags; Overview - Knee Airbag
- ◆ Driver side airbag. Refer to ⇒ Body Interior; Rep. Gr. 69 ; Driver Side Airbag; Overview - Driver Side Airbag .
- ◆ Lower steering column trim panel. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Lower Steering Column Trim Panel, Removing and Installing .
- ◆ Upper steering column trim panel. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Storage Compartments and Covers; Upper Steering Column Trim Panel, Removing and Installing .

2.5 Electronic Steering Column Lock Control Module - J764- , Removing and Installing



Note

If the control module is being replaced, select the function Re-place for the respective control module in the mode "Guided Fault Finding" or "Guided Functions". Refer to Vehicle Diagnostic Tester .

Special tools and workshop equipment required



◆ 7/16 Inch Extractor - T10424US-

Removing

- Remove the steering column switch module. Refer to ⇒ Electrical Equipment; Rep. Gr. 94 ; Steering Column Switch Module; Steering Column Switch Module, Removing and Installing .
- Disconnect the connector -2-. To do so push the retainer -1- toward the rear and push down the release.
- Remove the shear bolt -3- using the 7/16 Inch Extractor - T10424US-
- Remove the Electronic Steering Column Lock Control Module - J764- -4-



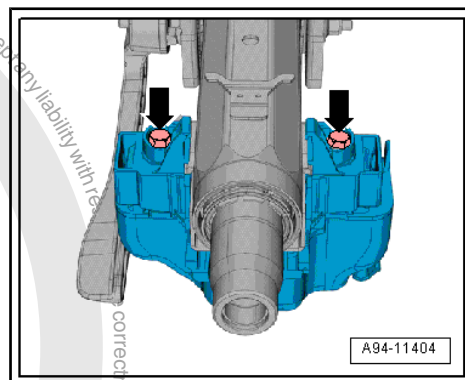
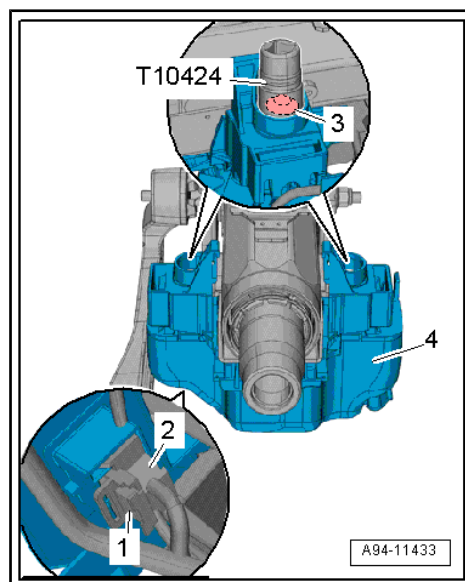
Note

If the shear bolt cannot be removed using the 7/16 Inch Extractor - T10424US- , it must be drilled out using an angle drill and an 8.5 mm diameter drill bit.

Installing

Install in reverse order of removal and note the following:

- Tighten the new bolts -arrows- until the head break off.





3 Steering Gear

⇒ [“3.1 Overview - Steering Gear”, page 419](#)

⇒ [“3.2 Steering Gear, Removing and Installing”, page 422](#)

⇒ [“3.3 Boot, Removing and Installing”, page 448](#)

⇒ [“3.4 Tie Rod, Removing and Installing”, page 450](#)

⇒ [“3.5 Tie Rod End, Removing and Installing”, page 452](#)

⇒ [“3.6 Steering Gear, Servicing”, page 453](#)

3.1 Overview - Steering Gear

⇒ [“3.1.1 Overview - Steering Gear”, page 419](#)

3.1.1 Overview - Steering Gear



Caution

If the universal joint is separated from the steering gear, the following work cannot be performed:

These points must be observed since performing these actions could cause irreparable damage.





1 - Expanding Clip

2 - Steering Column

3 - Bolt

- ☐ Tightening specification. Refer to
⇒ [“2.1 Overview - Steering Column”, page 398](#)

4 - Steering Gear

- ☐ Removing and installing. Refer to
⇒ [“3.2 Steering Gear, Removing and Installing”, page 422](#) .
- ☐ There are different versions. Refer to the Parts Catalog.
- ☐ with Power Steering Control Module - J500-
- ☐ Can be checked in “Guided Fault Finding”. Refer to Vehicle Diagnostic Tester .

5 - Nut

- ☐ 20 Nm +90°
- ☐ Replace after removing

6 - Left Wheel Bearing Housing

7 - Bolt

- ☐ 70 Nm +90°
- ☐ Replace after removing

8 - Subframe

9 - Right Wheel Bearing Housing

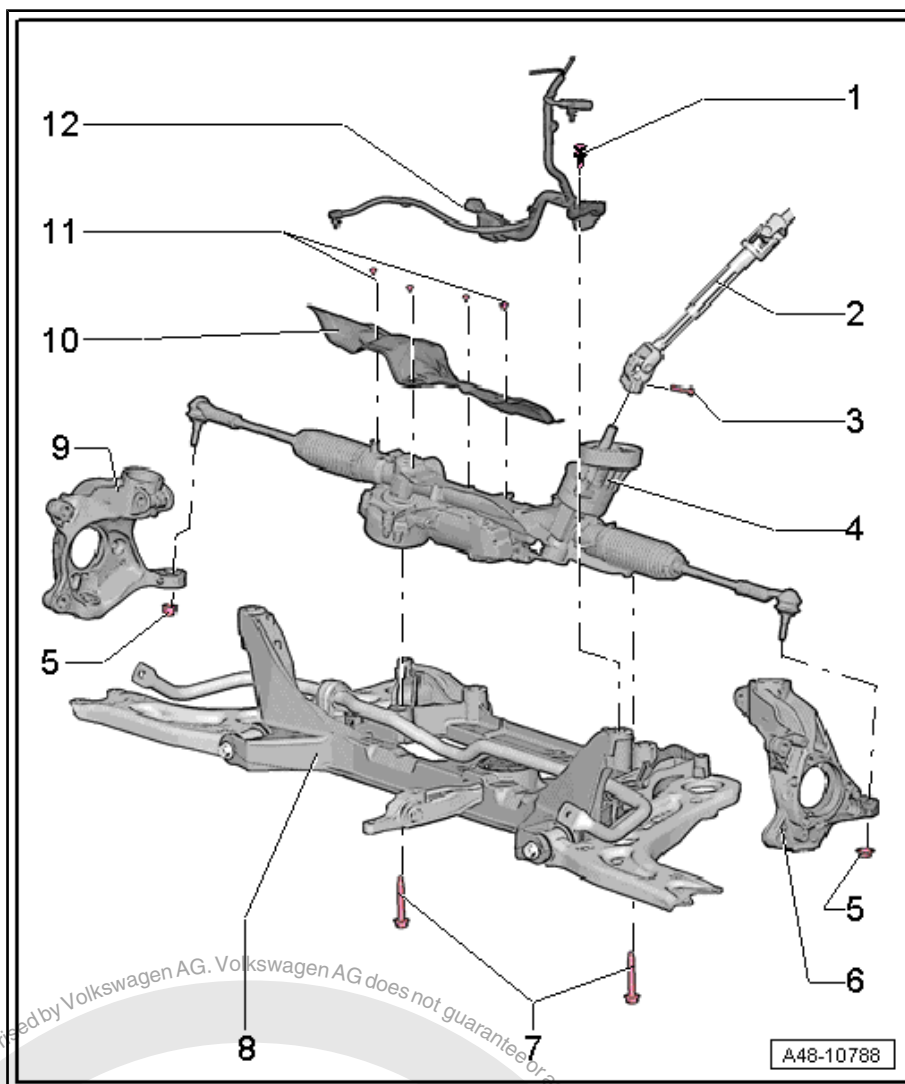
10 - Heat Shield

- ☐ Depending on the engine installed, there are different versions. Refer to the Parts Catalog.

11 - Bolt

- ☐ 8 Nm
- ☐ Depending on the engine installed, three or four are installed. Refer to the Parts Catalog.

12 - Wire





3.1.2 Overview - Steering Gear, RHD



Caution

If the universal joint is separated from the steering gear, the following work cannot be performed:

These points must be observed since performing these actions could cause irreparable damage.

1 - Wire

2 - Expanding Clip

3 - Steering Gear

- ☐ Removing and installing. Refer to ➔ ["3.2 Steering Gear, Removing and Installing", page 422](#).
- ☐ There are different versions. Refer to the Parts Catalog.
- ☐ with Power Steering Control Module - J500-
- ☐ Can be checked in "Guided Fault Finding". Refer to Vehicle Diagnostic Tester.

4 - Left Wheel Bearing Housing

5 - Nut

- ☐ Replace after removing
- ☐ 20 Nm +90°

6 - Subframe

7 - Bolt

- ☐ Replace after removing
- ☐ 70 Nm +90°

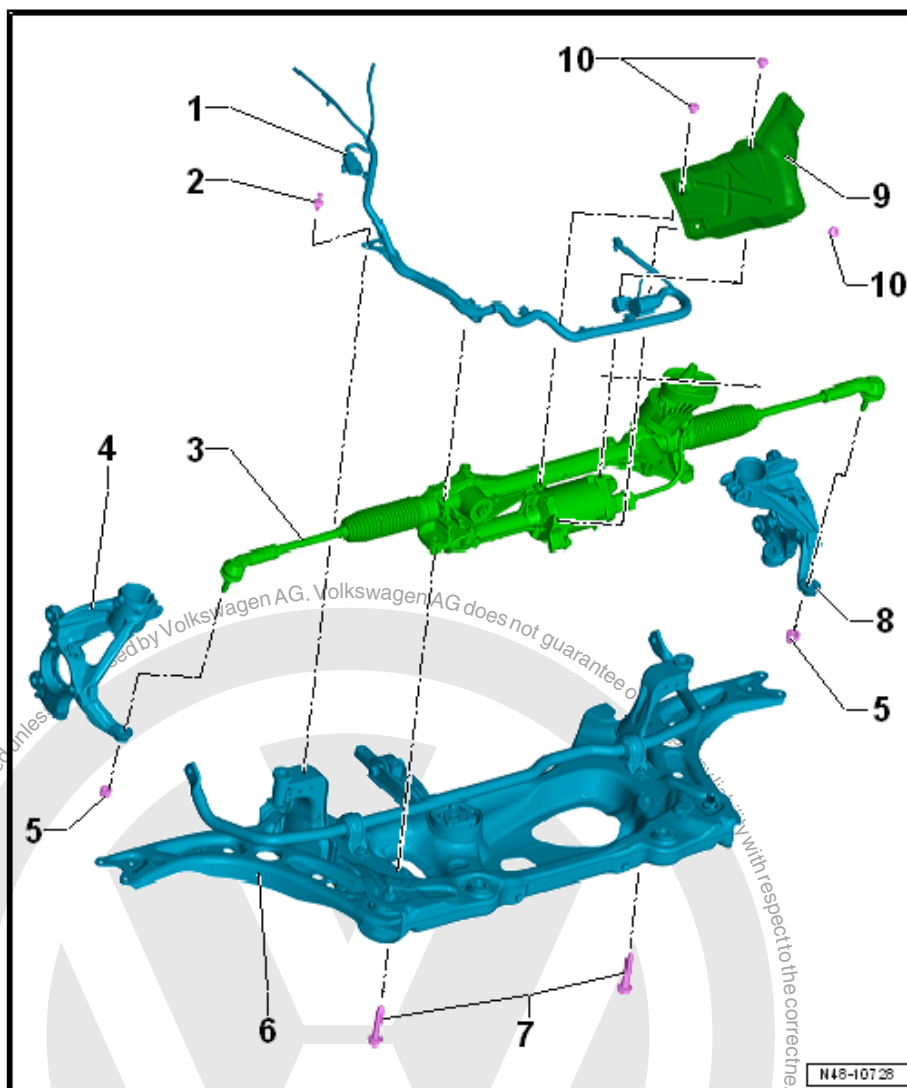
8 - Right Wheel Bearing Housing

9 - Heat Shield

- ☐ Depending on the engine installed, there are different versions. Refer to the Parts Catalog.

10 - Bolt

- ☐ Depending on the engine installed, three or four are installed. Refer to the Parts Catalog.
- ☐ 8 Nm



N46-10738



3.2 Steering Gear, Removing and Installing

⇒ **"3.2.1 Steering Gear, Removing and Installing, except e-Golf",
page 422**

⇒ **"3.2.2 Steering Gear, Removing and Installing, e-Golf",
page 428**

3.2.1 Steering Gear, Removing and Installing, except e-Golf

Special tools and workshop equipment required

- ◆ Puller - Ball Joint - T10187-
- ◆ Torque Wrench 1331 5-50Nm - VAG1331-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Engine and Gearbox Jack - VAS6931-

Removing

- Turn the steering wheel in the straight position and remove the ignition key so that the steering wheel lock engages.

Vehicles with "Keyless Access" Keyless Locking and Starting System

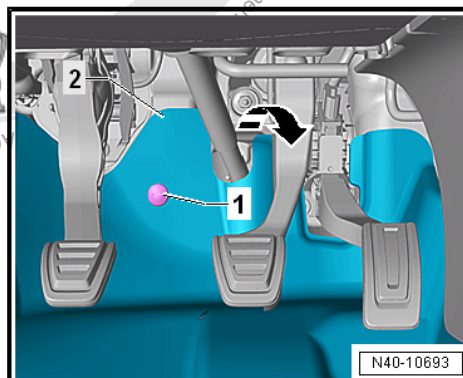
- Switch the ignition off and open the driver door so the steering wheel lock engages.

Only Golf GTE

- De-energize the high-voltage system. Refer to ⇒ Rep. Gr. 93 ; High Voltage System, De-Energizing .

Continuation for All Vehicles

- Disconnect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .
- Remove the bolt -1- and fold the footwell trim panel -2- in the direction of the -arrow- into the vehicle interior.





- Remove the bolt -arrow- from the universal joint -1-, and then remove the universal joint in the direction of -arrow-.

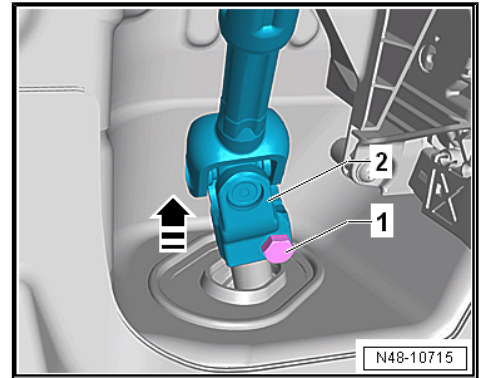


Caution

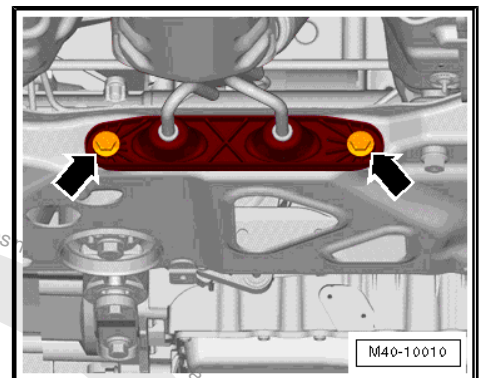
If the universal joint is separated from the steering gear, the following work cannot be performed:

- ◆ *Connect the battery.*
- ◆ *Switch the ignition on.*
- ◆ *Turn the steering gear.*
- ◆ *Turn the steering column.*

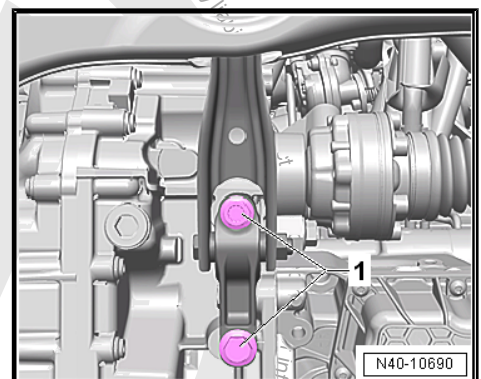
These points must be observed since performing these actions could cause irreparable damage.



- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheels.
- Remove the lower noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Remove the exhaust system bracket from the subframe -arrows-.

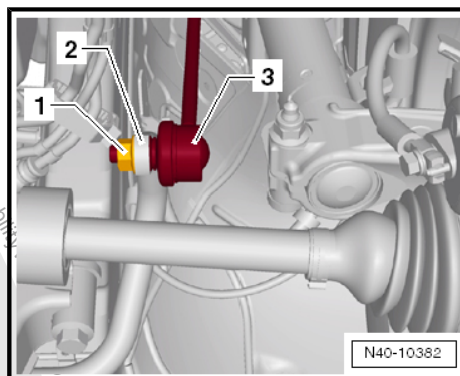


- Remove the bolts -1- for the pendulum support.

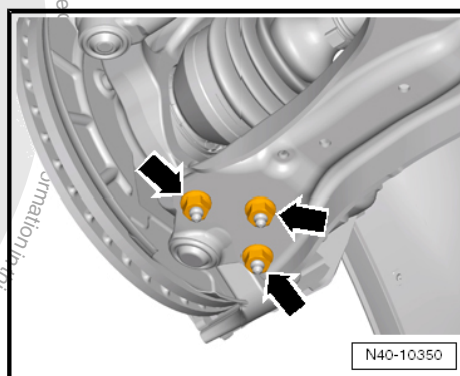




- Remove the left and right nut -1- from the coupling rod -3-.
- Remove the coupling rod -3- from the stabilizer bar -2- on the left and right sides.



- Remove the nuts -arrows- on the left and right side of the vehicle.
- Remove the control arm from the ball joint.
- Loosen the nut from the tie rod end, but do not unscrew yet.

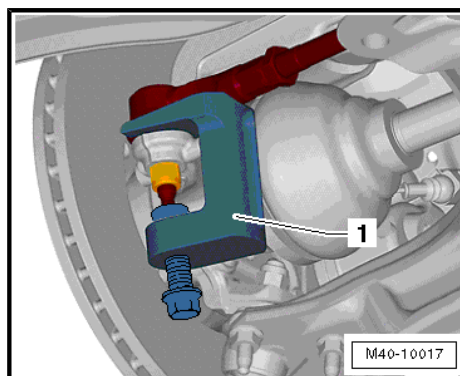


- Using the Puller - Ball Joint - T10187-01, press the tie rod end off of the wheel bearing housing and remove the nut.



Caution

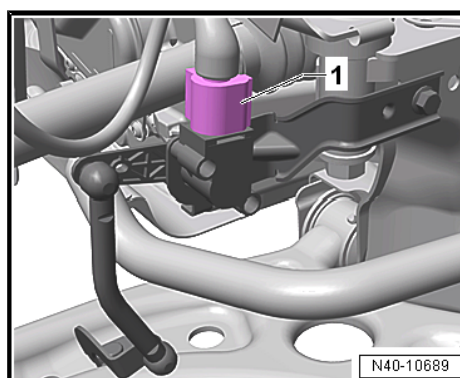
To protect the thread, screw the nut on the pin a few turns.



Vehicles with Level Control System Sensor

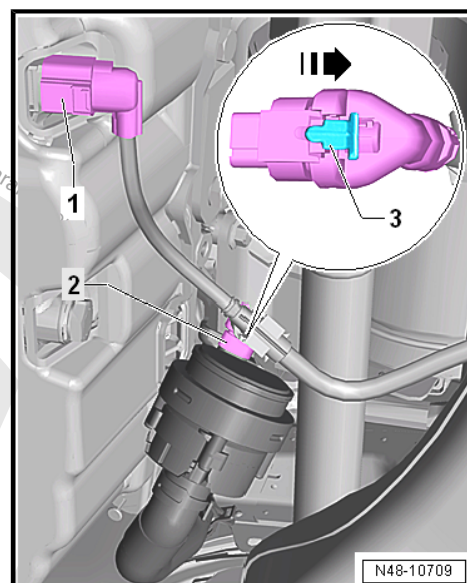
- Disconnect the connector -1- from the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289- .

Continuation for All Vehicles

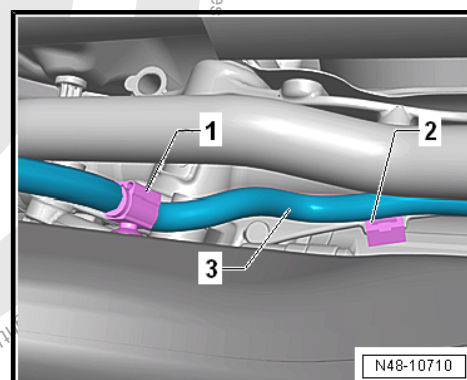




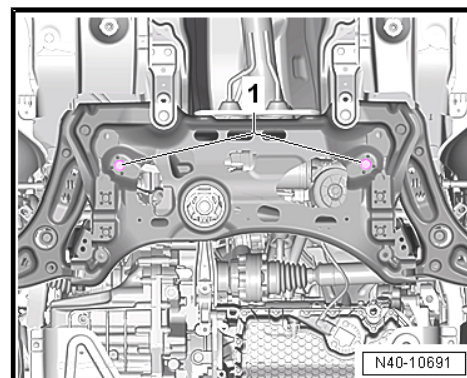
- Disconnect the connector -1- for the Oil Level Thermal Sensor - G266- .
- If equipped, disconnect the connector -2- from the After-Run Coolant Pump - V51- . To do so, open the catch -3- in the direction of -arrow- and release the connector.



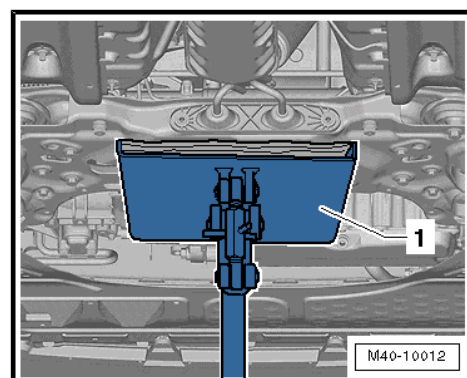
- Remove the clips -1 and 2- for the wiring harness -3- from the subframe and the steering gear.



- Remove the steering gear bolts -1-.



- Place the Engine and Gearbox Jack - VAS6931- -1- under the subframe.
- Secure the subframe (refer to ["2.8 Subframe, Securing", page 56](#)) and lower it approximately 10 cm.





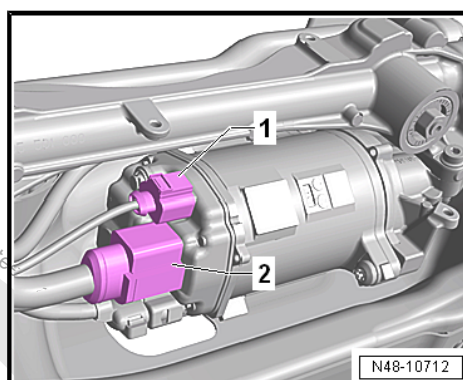
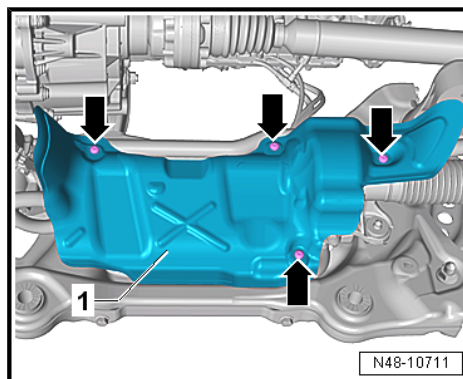
- Remove the bolts -arrows- and remove the heat shield -1- from the steering gear.



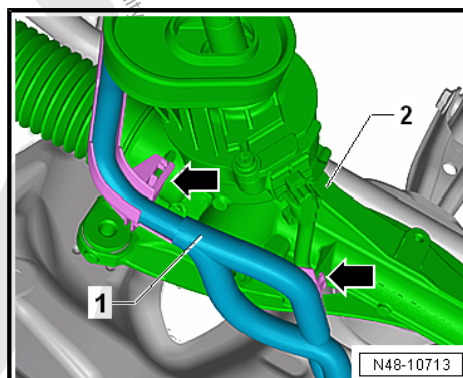
Note

Different heat shields -1- are installed depending on the engine. On some engine versions, the connectors for the steering gear are accessible without having to remove the heat shield.

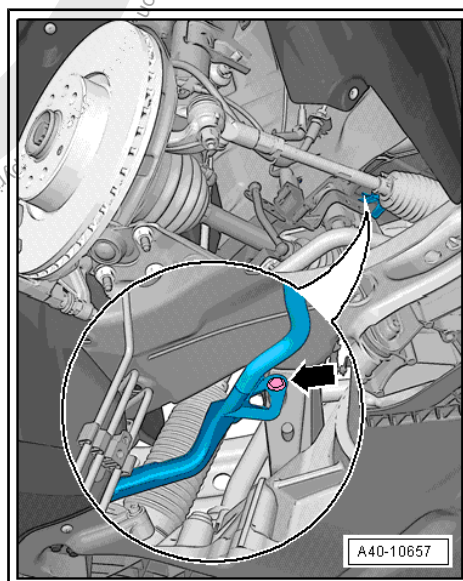
- Disconnect the connectors -1 and 2- from the steering gear.



- Unclip the wiring harness -1- from the steering gear -2- -arrows-.



- Remove the expanding clip -arrow-.
- Lower the subframe using the Engine and Gearbox Jack -VAS6931-.
- Pry the steering gear off of the subframe, for example, using a large screwdriver and remove it toward the rear.





- Set the steering gear down as illustrated.

Avoid damage to the control module -1-.

Installing

Install in reverse order of removal and note the following:

The steering gear threaded sleeves must be seated in the sub-frame holes.

- Connect the connectors -1 and 2- so that they audibly click into place.

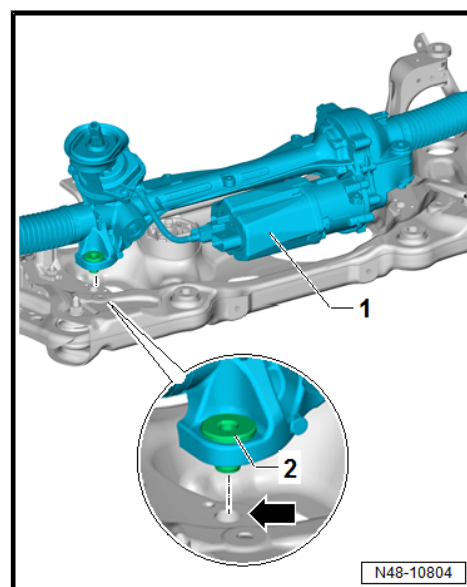
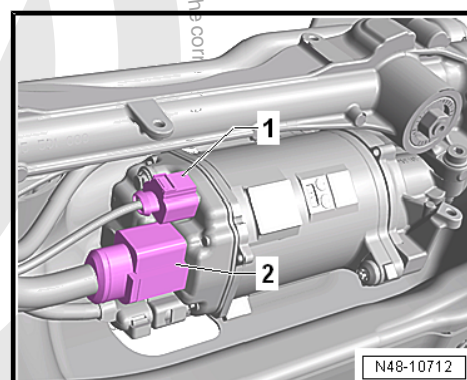
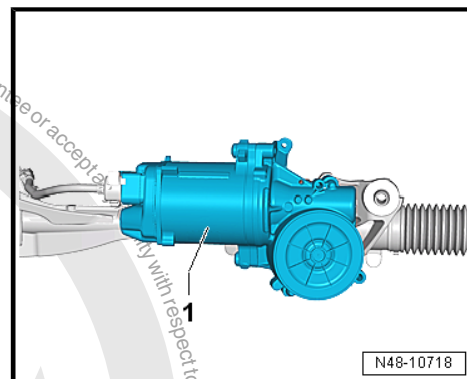


Note

- ◆ Coat the seal on the steering gear with lubricant such as soft soap before installing the steering gear.
- ◆ After attaching steering gear to drive axle, make sure that seal on steering gear is positioned on the mounting plate without and kinks and is sealed correctly. The opening to the foot well must be sealed correctly. Ingress of water and/or noises may be the result.
- ◆ Make sure sealing surfaces are clean.



- Position the steering gear -1- on the subframe.
- The steering gear threaded sleeves -2- must be inserted into the subframe holes -arrow-.



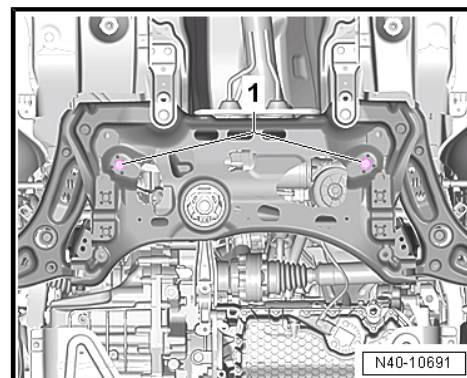
- Insert the steering gear bolt -1- and tighten.



Note

Make sure the ball joint boot is not damaged or twisted.

- Install the lower noise insulation. Refer to ➤ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .





- Tighten nuts -arrows-.



Note

- ♦ *Tighten the nuts -arrows- in curb weight position. Refer to ⇒ ["2.8.1 Wheel Bearing in Curb Weight, Lifting Vehicles with Coil Spring, Front Axle", page 5](#).*
- ♦ *Make sure the ball joint boot is not damaged or twisted.*
- Bolt the universal joint to the steering gear.
- Connect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .
- Perform the Steering Angle Sensor - G85- basic setting. Refer to Vehicle Diagnostic Tester .

It is necessary to adapt the electro-mechanical power steering. Refer to Vehicle Diagnostic Tester if new steering gear was installed.

Tightening Specifications

- ♦ Refer to ⇒ ["4.1 Overview - Lower Control Arm and Ball Joint", page 76](#)
- ♦ Refer to ⇒ ["2.1 Overview - Subframe", page 16](#)
- ♦ Refer to ⇒ ["3.1 Overview - Steering Gear", page 419](#)
- ♦ Refer to ⇒ ["3.6 Steering Gear, Servicing", page 453](#)
- ♦ Refer to ⇒ ["1.4 Wheel Bolt Tightening Specifications", page 340](#)
- ♦ Pendulum support bolts. Refer to ⇒ Rep. Gr. 10 ; Subframe Mount; Overview - Subframe Mount .
- ♦ Exhaust system to subframe. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .
- ♦ Noise insulation bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .

If the steering wheel is still crooked after using the Subframe Alignment Assembly Tool Kit - Locating Pins - T10486/1- then an axle alignment is necessary. In this case the record it in the vehicles axle alignment log.

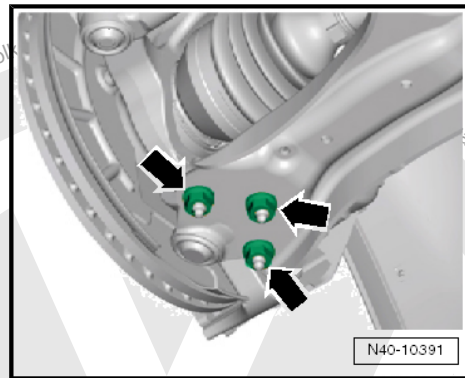
3.2.2 Steering Gear, Removing and Installing, e-Golf

Special tools and workshop equipment required

- ♦ Puller - Ball Joint - T10187-
- ♦ Torque Wrench 1331 5-50Nm - VAG1331-
- ♦ Torque Wrench 1332 40-200Nm - VAG1332-
- ♦ Engine and Gearbox Jack - VAS6931-

Removing

- Turn the steering wheel in the straight position and remove the ignition key so that the steering wheel lock engages.



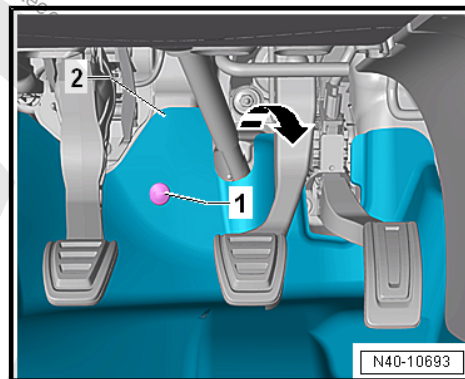


Vehicles with "Keyless Access" Keyless Locking and Starting System

- Switch the ignition off and open the driver door so the steering wheel lock engages.

Continuation for All Vehicles

- Disconnect the battery. Refer to ➤ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .
- Remove the bolts -1- and fold the footwell trim panel -2- in the direction of the -arrow- into the vehicle interior.



- Remove the bolt -arrow- from the universal joint -1-, and then remove the universal joint in the direction of -arrow-.

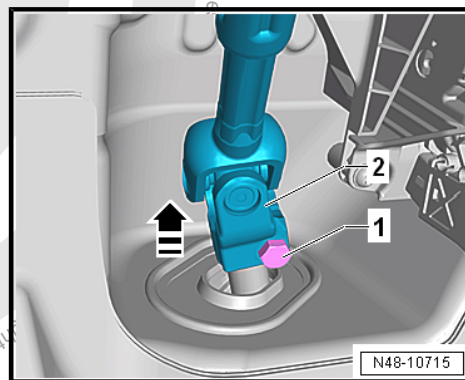


Caution

If the universal joint is separated from the steering gear, the following work cannot be performed:

- ◆ **Connect the battery.**
- ◆ **Switch the ignition on.**
- ◆ **Turn the steering gear.**
- ◆ **Turn the steering column.**

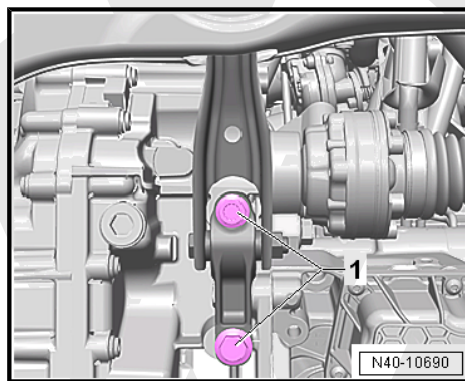
These points must be observed since performing these actions could cause irreparable damage.



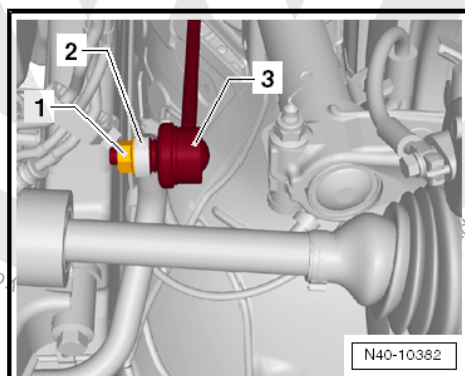
- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheels.
- Remove the lower noise insulation. Refer to ➤ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Remove the battery impact guard. Refer to ➤ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Overview - Underbody Panels .



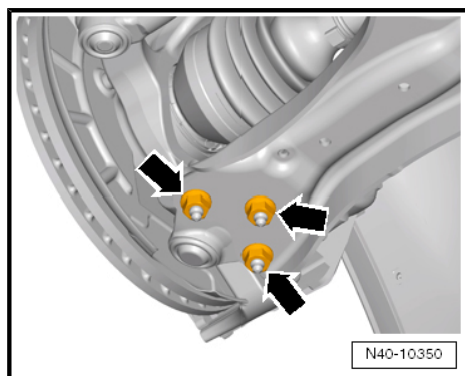
- Remove the bolts -1- for the pendulum support.



- Remove the left and right nut -1- from the coupling rod -3-.
- Remove the coupling rod -3- from the stabilizer bar -2- on the left and right sides.



- Remove the nuts -arrows- on the left and right side of the vehicle.
- Remove the control arm from the ball joint.



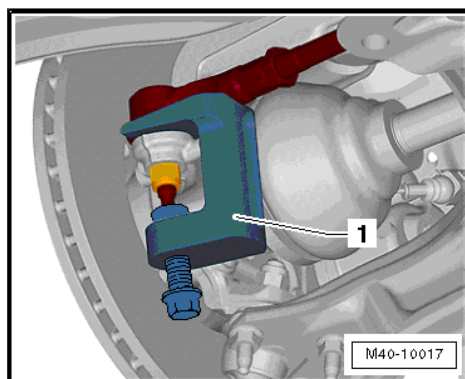
- Using the Puller - Ball Joint - T10187- -1-, press the tie rod end off of the wheel bearing housing and remove the nut.



Caution

To protect the thread, screw the nut on the pin a few turns.

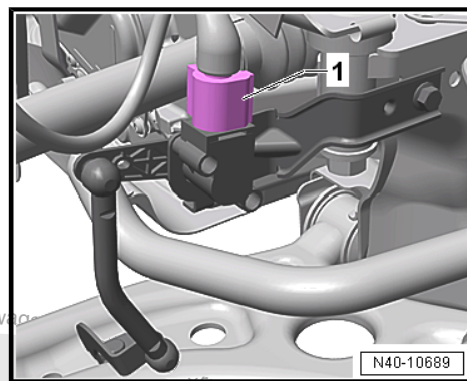
Vehicles with Level Control System Sensor



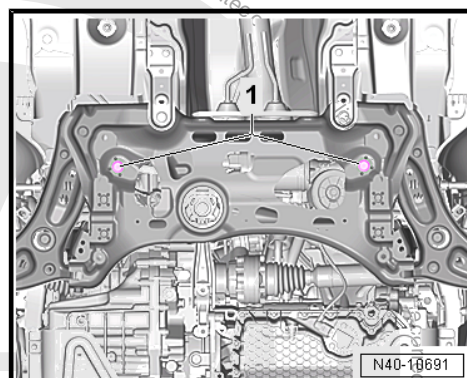


- Disconnect the connector -1- from the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289- .

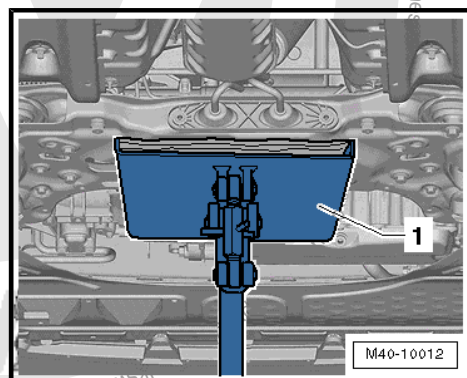
Continuation for All Vehicles



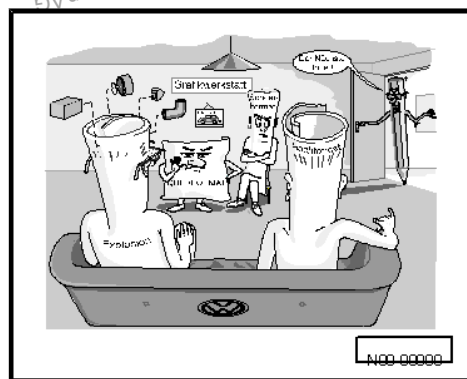
- Remove the steering gear bolts -1-.



- Place the Engine and Gearbox Jack - VAS6931- -1- under the subframe.
- Secure the subframe (refer to ["2.8 Subframe, Securing", page 56](#)) and lower it approximately 10 cm.

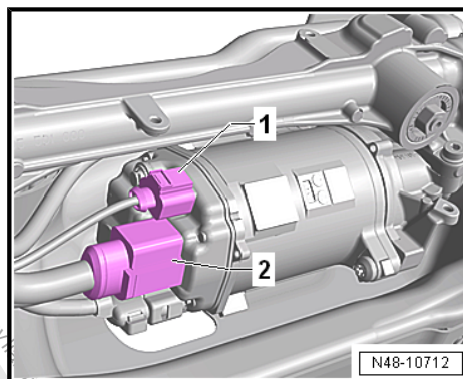


- Remove the bolts -arrows- and remove the bracket -1- from the steering gear.

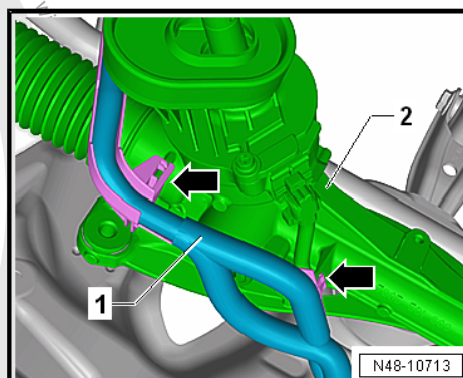




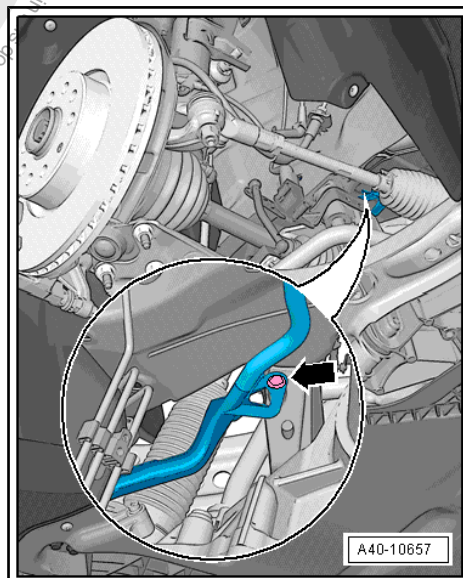
- Disconnect the connectors -1 and 2- from the steering gear.



- Unclip the wiring harness -1- from the steering gear -2- -arrows-.



- Remove the expanding clip -arrow-.
- Lower the subframe using the Engine and Gearbox Jack -VAS6931- .
- Pry the steering gear off of the subframe, for example, using a large screwdriver and remove it toward the rear.



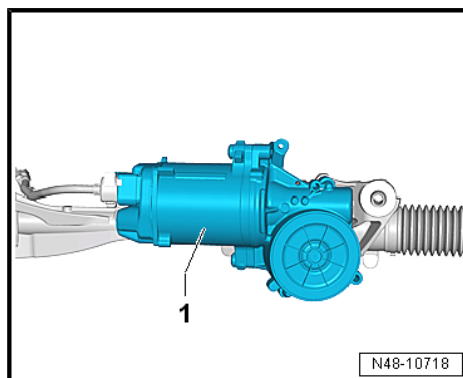
- Set the steering gear down as illustrated.

Avoid damage to the control module -1-.

Installing

Install in reverse order of removal and note the following:

The steering gear threaded sleeves must be seated in the sub-frame holes.

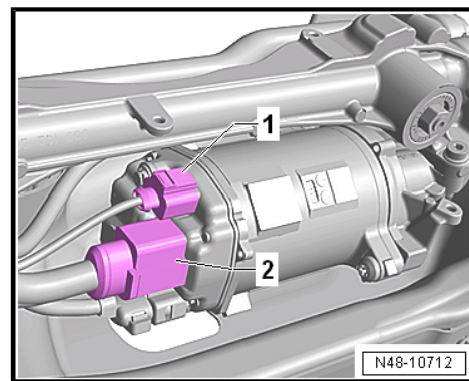




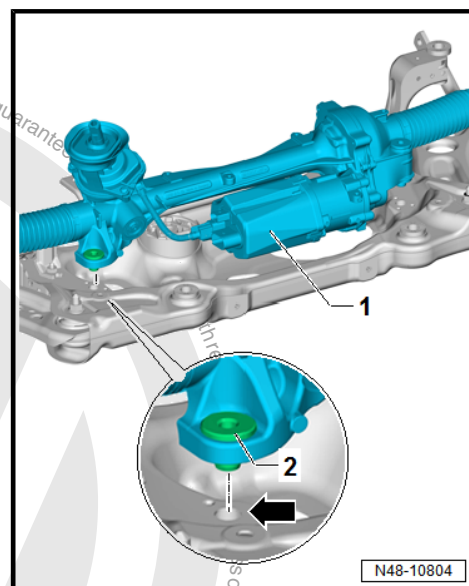
- Connect the connectors -1 and 2- so that they audibly click into place.

i Note

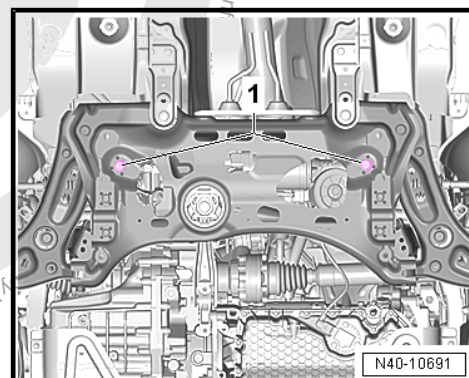
- ◆ Coat the seal on the steering gear with lubricant such as soft soap before installing the steering gear.
- ◆ After attaching steering gear to drive axle, make sure that seal on steering gear is positioned on the mounting plate without and kinks and is sealed correctly. The opening to the foot well must sealed correctly. Ingress of water and/or noises may be the result.
- ◆ Make sure sealing surfaces are clean.



- Position the steering gear -1- on the subframe.
- The steering gear threaded sleeves -2- must be inserted into the subframe holes -arrow-.



- Insert the steering gear bolt -1- and tighten.



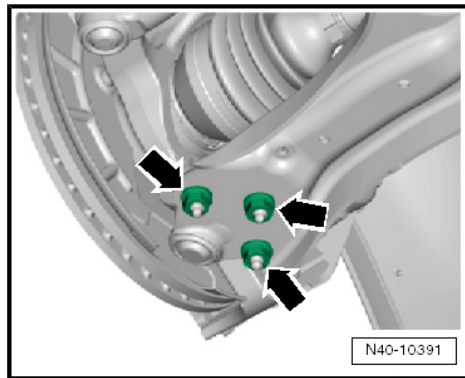


- Tighten nuts -arrows-.



Note

- ♦ *Tighten the nuts -arrows- in curb weight position. Refer to ⇒ ["2.8.1 Wheel Bearing in Curb Weight, Lifting Vehicles with Coil Spring, Front Axle", page 5](#).*
- ♦ *Make sure the ball joint boot is not damaged or twisted.*
- Install the battery impact guard. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Overview - Underbody Panels .
- Install the lower noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .



Note

Make sure the ball joint boot is not damaged or twisted.

- Bolt the universal joint to the steering gear.
- Connect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .
- Perform the Steering Angle Sensor - G85- basic setting. Refer to Vehicle Diagnostic Tester .

It is necessary to adapt the electro-mechanical power steering. Refer to Vehicle Diagnostic Tester if new steering gear was installed.

Tightening Specifications

- ♦ Refer to ⇒ ["4.1 Overview - Lower Control Arm and Ball Joint", page 76](#)
- ♦ Refer to ⇒ ["2.1 Overview - Subframe", page 16](#)
- ♦ Refer to ⇒ ["3.1 Overview - Steering Gear", page 419](#)
- ♦ Refer to ⇒ ["3.6 Steering Gear, Servicing", page 453](#)
- ♦ Refer to ⇒ ["4.4 Wheel Bolt Tightening Specifications", page 340](#)
- ♦ Pendulum support bolts. Refer to ⇒ Rep. Gr. 10 ; Subframe Mount; Overview - Subframe Mount .
- ♦ Noise insulation bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- ♦ Battery impact guard bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Overview - Underbody Panels .

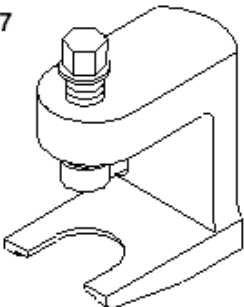
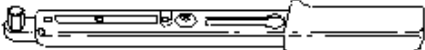

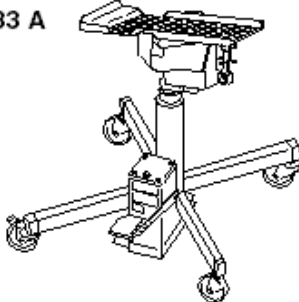
If the steering wheel is still crooked after using the Subframe Alignment Assembly Tool Kit - Locating Pins - T10486/1- then an axle alignment is necessary. In this case the record it in the vehicles axle alignment log.

3.2.3 Steering Gear, Removing and Installing, RHD, except e-Golf



Special tools and workshop equipment required

- ◆ Puller - Ball Joint - T10187-
- ◆ Torque Wrench 1331
5-50Nm - VAG1331-
- ◆ Torque Wrench 1332
40-200Nm - VAG1332-
- ◆ Engine and Gearbox Jack -
VAS6931-

<p>T10187</p> 	<p>V.A.G 1331</p> 
<p>V.A.G 1332</p> 	<p>V.A.G 1383 A</p> 
	<p>W48-10022</p>

Removing

- Turn the steering wheel in the straight position and remove the ignition key so that the steering wheel lock engages.

Vehicles with "Keyless Access" keyless locking and starting system

- Switch the ignition off and open the driver door so the steering wheel lock engages.

Only Golf GTE

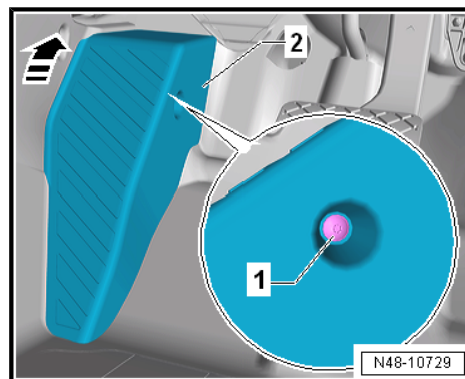
- De-energize the high-voltage system. Refer to ⇒ Rep. Gr. 93 ; High Voltage System, De-Energizing .

Continuation for All Vehicles

- Disconnect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .



- Remove the bolt -1-.
- Slide the footrest -2- upward in the -direction of the arrow- and remove it.
- Fold back the carpet.



- Remove the bolt -arrow- from the universal joint -1-, and then remove the universal joint in the -direction of the arrow-.

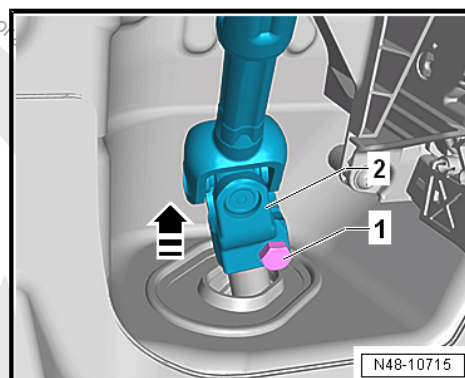


Caution

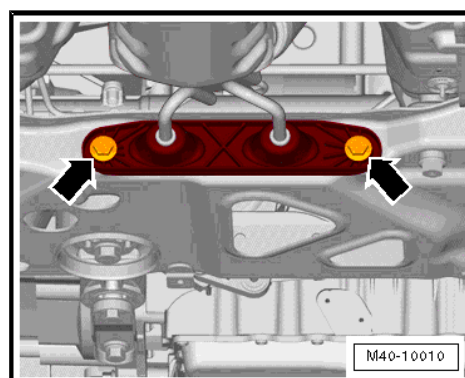
If the universal joint is separated from the steering gear, the following work cannot be performed:

- ◆ *Connect the battery.*
- ◆ *Switch the ignition on.*
- ◆ *Turn the steering gear.*
- ◆ *Turn the steering column.*

These points must be observed since performing these actions could cause irreparable damage.

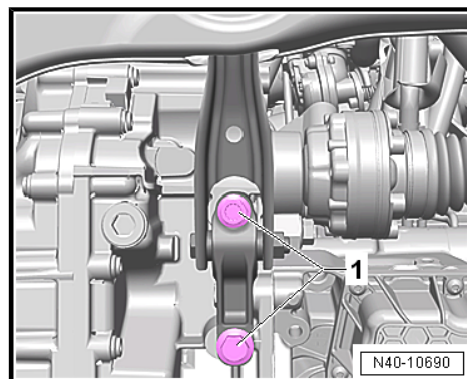


- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheels.
- Remove the lower noise insulation. Refer to ➤ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Remove the exhaust system bracket from the subframe -arrows-.

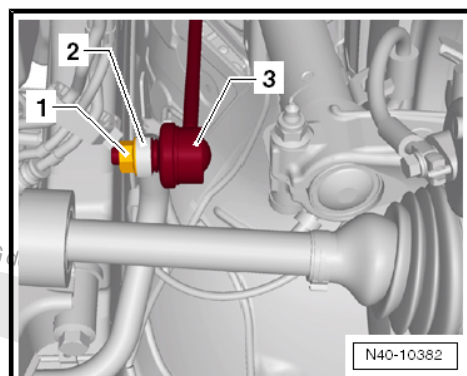




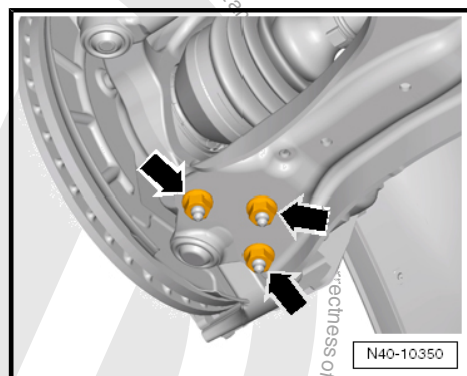
- Remove the bolts -1- for the pendulum support.



- Remove the left and right nut -1- from the coupling rod -3-.
- Remove the coupling rod -3- from the stabilizer bar -2- on the left and right sides.



- Remove the nuts -arrows- on the left and right side of the vehicle.
- Remove the control arm from the ball joint.



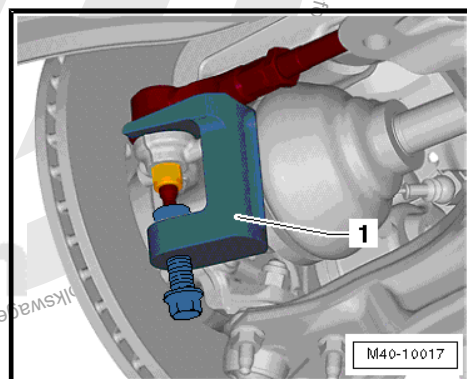
- Using the Puller - Ball Joint - T10187 - -1-, press the tie rod end off of the wheel bearing housing and remove the nut.



Caution

To protect the thread, screw the nut on the pin a few turns.

Vehicles with level control system sensor

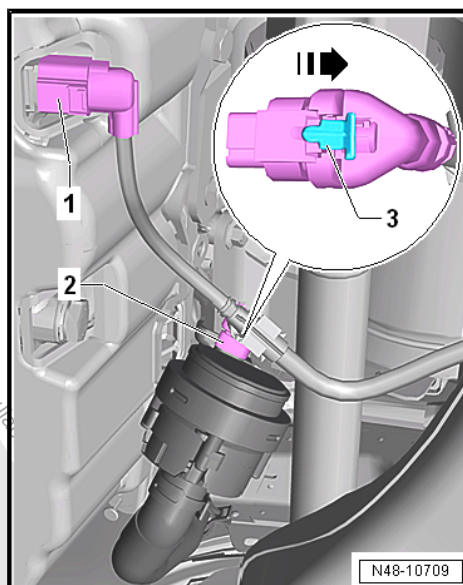
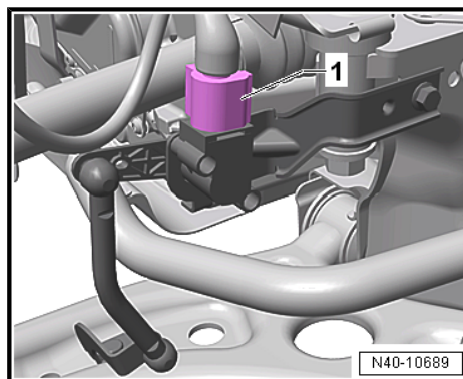




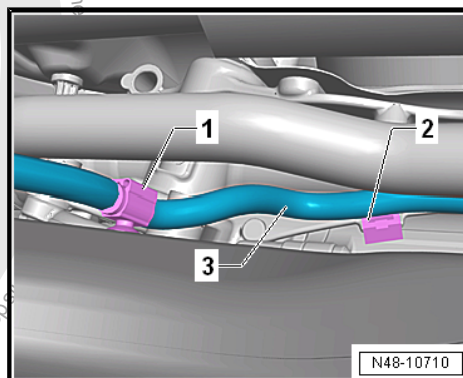
- Disconnect the connector -1- from the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289- .

Continuation for All Vehicles

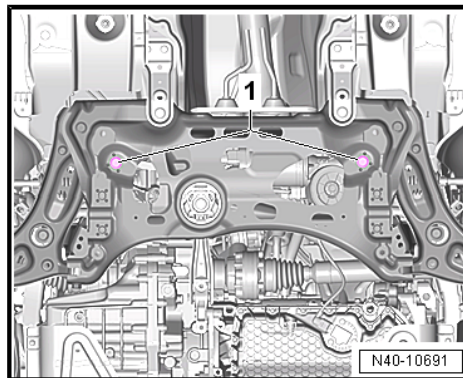
- Disconnect the connector -1- for the Oil Level Thermal Sensor - G266- .
- If equipped, disconnect the connector -2- from the After-Run Coolant Pump - V51- . To do so, open the catch -3- in the -direction of the arrow- and release the connector.



Remove the clips -1- and -2- for the wiring harness -3- from the subframe and the steering gear.

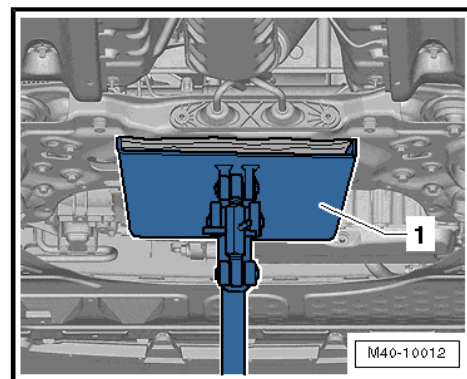


- Remove the steering gear bolts -1-.

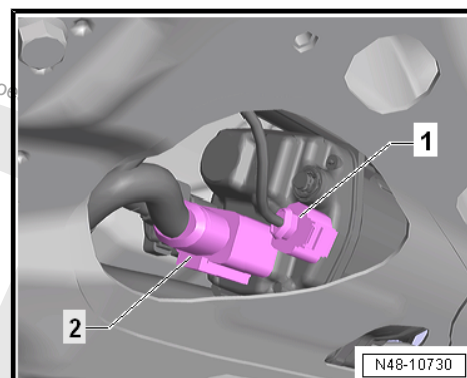




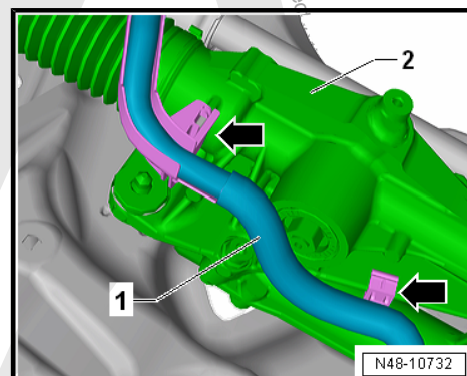
- Place the Engine and Gearbox Jack - VAS6931- -1- under the subframe.
- Secure the subframe (refer to [⇒ "2.8 Subframe, Securing", page 56](#)) and lower it approximately 10 cm.



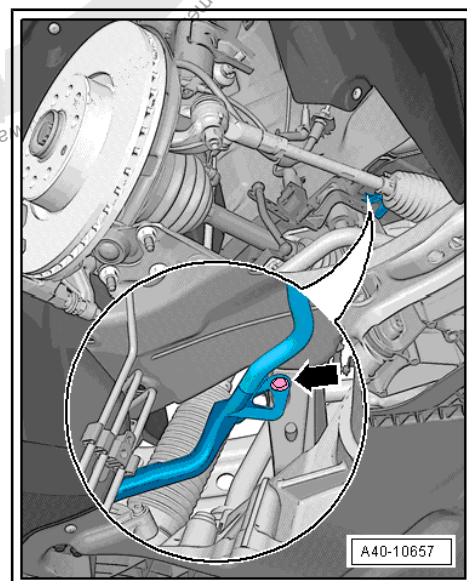
- Disconnect the connectors -1- and -2- from the steering gear.



- Unclip the wiring harness -1- from the steering gear -2- -arrows-.



- Remove the expanding clip -arrow-.
- Lower the subframe using the Engine and Gearbox Jack - VAS6931- .
- Pry the steering gear off of the subframe, for example, using a large screwdriver and remove it toward the rear.





- Set the steering gear down as illustrated.

Avoid damage to the control module -1-.

Installing

Install in reverse order of removal and note the following:

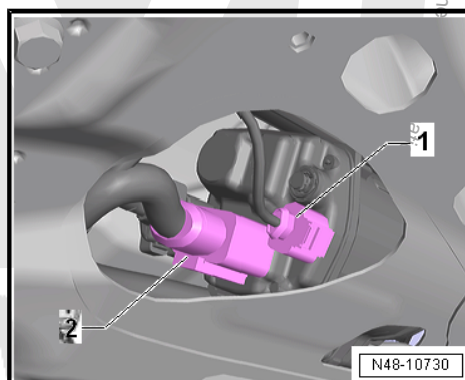
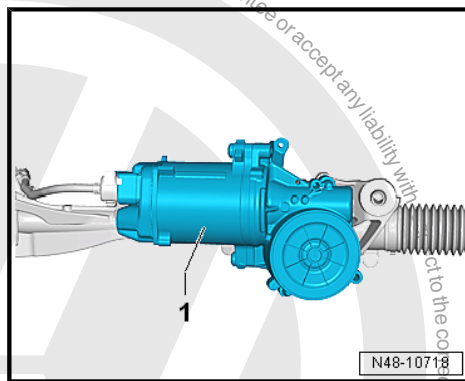
The steering gear threaded sleeves must be seated in the sub-frame holes.

- Connect the connectors -1- and -2- so that they audibly click into place.

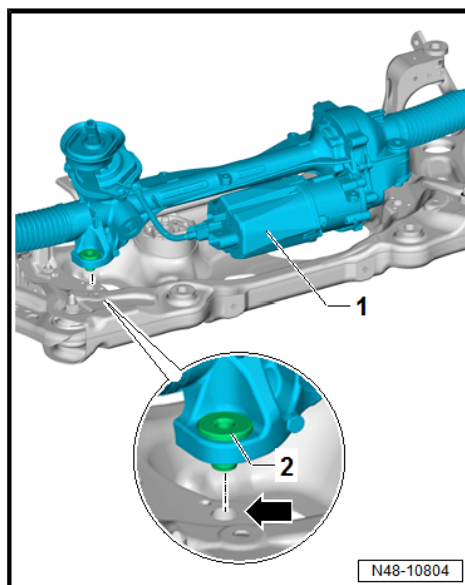


Note

- ◆ Coat the seal on the steering gear with lubricant such as soft soap before installing the steering gear.
- ◆ After attaching steering gear to drive axle, make sure that seal on steering gear is positioned on the mounting plate without and kinks and is sealed correctly. The opening to the foot well must sealed correctly. Ingress of water and/or noises may be the result.
- ◆ Make sure sealing surfaces are clean.



- Position the steering gear -1- on the subframe.
- The steering gear threaded sleeves -2- must be inserted into the subframe holes -arrow-.



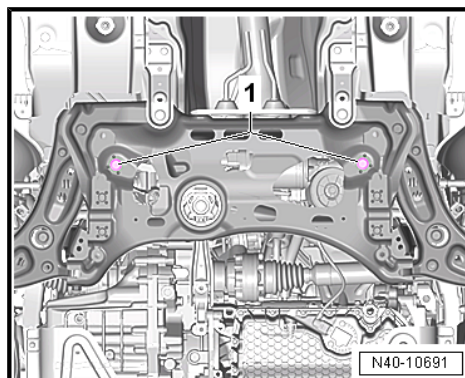
- Insert the steering gear bolt -1- and tighten.



Note

Make sure the ball joint boot is not damaged or twisted.

- Install the lower noise insulation. Refer to ➔ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .



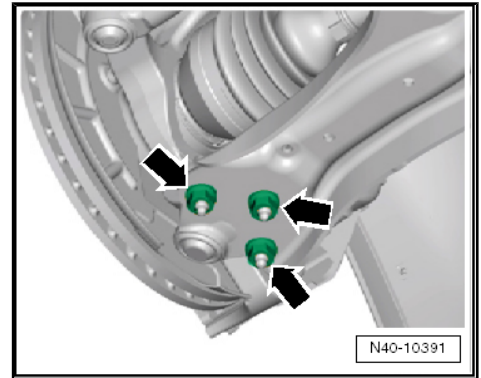


- Tighten nuts -arrows-.



Note

- ◆ *Tighten the nuts -arrows- in curb weight position. Refer to ⇒ [“2.8.1 Wheel Bearing in Curb Weight, Lifting Vehicles with Coil Spring, Front Axle”, page 5](#) .*
- ◆ *Make sure the ball joint boot is not damaged or twisted.*
- Bolt the universal joint to the steering gear.
- Connect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .
- Perform the Steering Angle Sensor - G85- basic setting. Refer to Vehicle Diagnostic Tester .



It is necessary to adapt the electro-mechanical power steering. Refer to Vehicle Diagnostic Tester if new steering gear was installed.

Tightening Specifications

- ◆ Refer to ⇒ [“4.1 Overview - Lower Control Arm and Ball Joint”, page 76](#)
- ◆ Refer to ⇒ [“2.1 Overview - Subframe”, page 16](#)
- ◆ Refer to ⇒ [“3.1 Overview - Steering Gear”, page 419](#)
- ◆ Refer to ⇒ [“3.6 Steering Gear, Servicing”, page 453](#)
- ◆ Refer to ⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)
- ◆ Pendulum support bolts. Refer to ⇒ Rep. Gr. 10 ; Subframe Mount; Overview - Subframe Mount .
- ◆ Exhaust system to subframe. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler
- ◆ Noise insulation bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .

If the steering wheel is still crooked after using the Subframe Alignment Assembly Tool Kit - Locating Pins - T10486/1- then an axle alignment is necessary. In this case the record it in the vehicles axle alignment log.

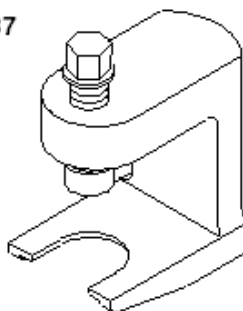
3.2.4 Steering Gear, Removing and Installing, RHD e-Golf



Special tools and workshop equipment required

- ◆ Puller - Ball Joint - T10187-
- ◆ Torque Wrench 1331
5-50Nm - VAG1331-
- ◆ Torque Wrench 1332
40-200Nm - VAG1332-
- ◆ Engine and Gearbox Jack -
VAS6931-

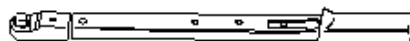
T10187



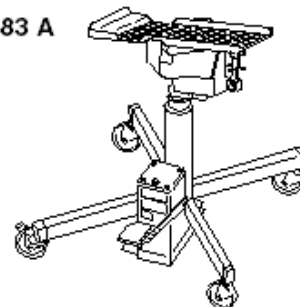
V.A.G 1331



V.A.G 1332



V.A.G 1383 A



W48-10022

Removing

- Turn the steering wheel in the straight position and remove the ignition key so that the steering wheel lock engages.

Vehicles with "Keyless Access" keyless locking and starting system

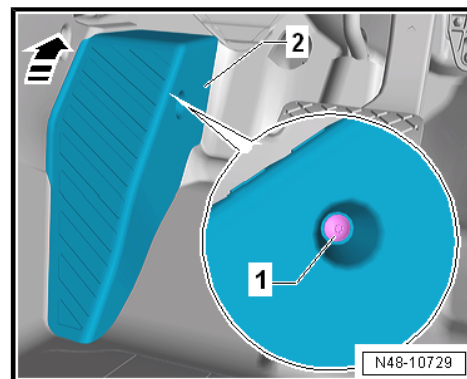
- Switch the ignition off and open the driver door so the steering wheel lock engages.

Continuation for All Vehicles

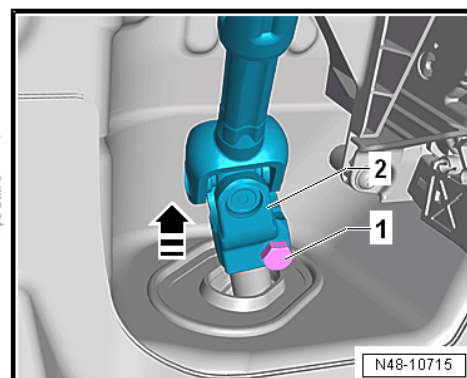
- Disconnect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .



- Remove the bolt -1-.
- Slide the footrest -2- upward in the -direction of the arrow- and remove it.
- Fold back the carpet.



- Remove the bolt -arrow- from the universal joint -1-, and then remove the universal joint in the -direction of the arrow-.



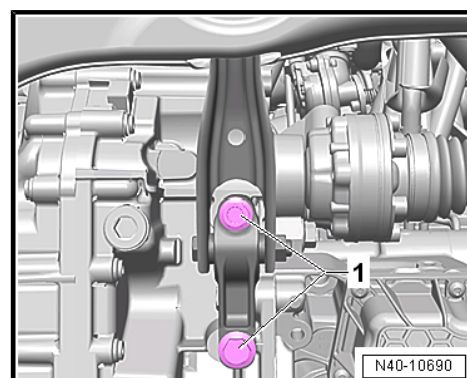
Caution

If the universal joint is separated from the steering gear, the following work cannot be performed:

- ◆ ***Connect the battery.***
- ◆ ***Switch the ignition on.***
- ◆ ***Turn the steering gear.***
- ◆ ***Turn the steering column.***

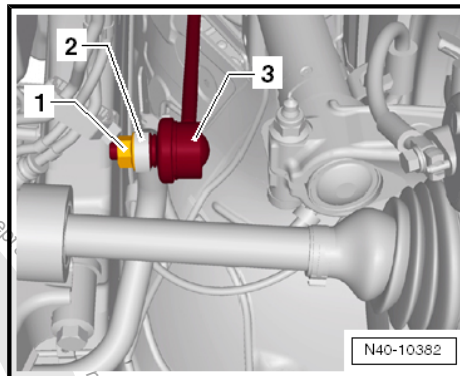
These points must be observed since performing these actions could cause irreparable damage.

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheels.
- Remove the lower noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .
- Remove the battery impact guard. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Overview - Underbody Panels .
- Remove the pendulum support bolts -1-.

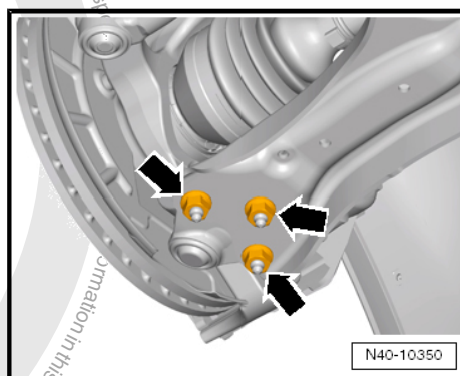




- Remove the left and right nut -1- from the coupling rod -3-.
- Remove the coupling rod -3- from the stabilizer bar -2- on the left and right sides.



- Remove the nuts -arrows- on the left and right side of the vehicle.
- Remove the control arm from the ball joint.

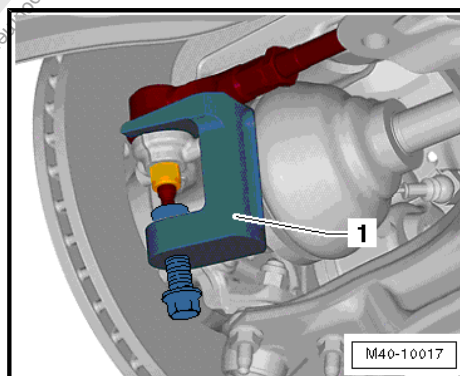


- Using the Puller - Ball Joint - T10187- -1-, press the tie rod end off of the wheel bearing housing and remove the nut.



Caution

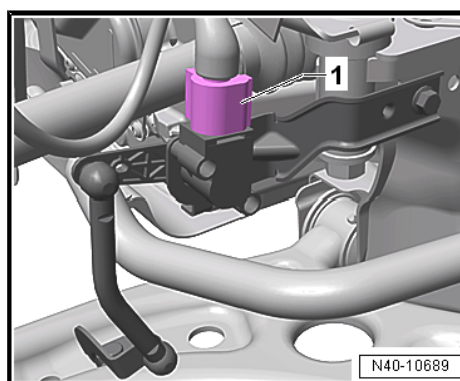
To protect the thread, screw the nut on the pin a few turns.



Vehicles with level control system sensor

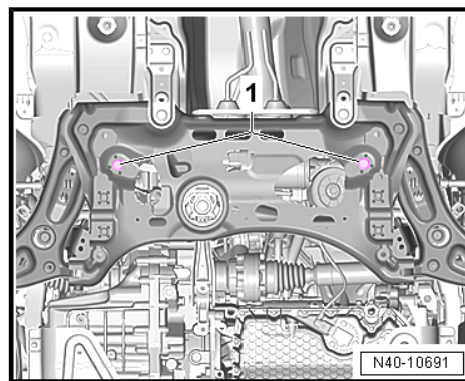
- Disconnect the connector -1- from the Left Front Level Control System Sensor - G78- or Right Front Level Control Sensor - G289- .

Continuation for All Vehicles

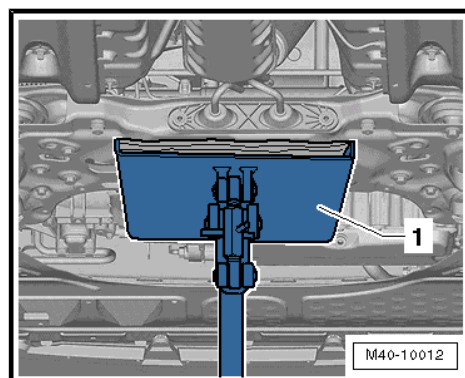




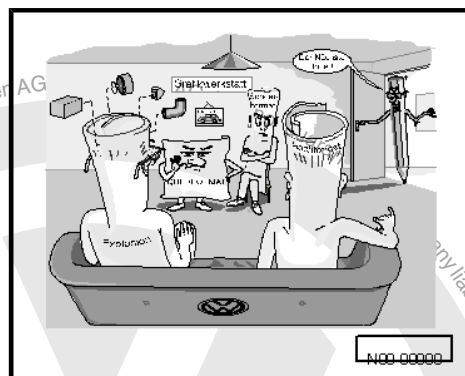
- Remove the steering gear bolts -1-.



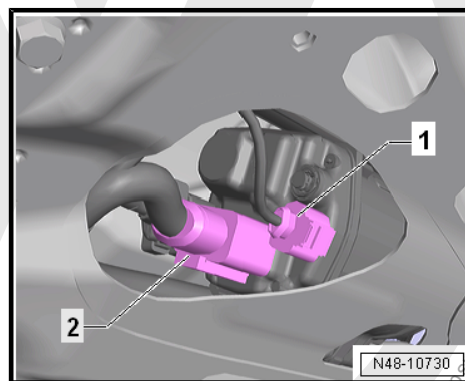
- Place the Engine and Gearbox Jack - VAS6931- -1- under the subframe.
- Secure the subframe (refer to [⇒ "2.8 Subframe, Securing", page 56](#)) and lower it approximately 10 cm.



- Remove the bolts -arrows- and remove the bracket -1- from the steering gear.

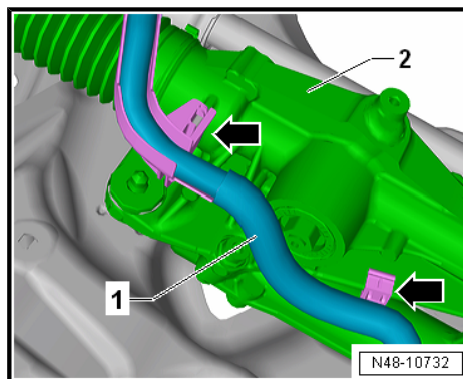


- Disconnect the connectors -1- and -2- from the steering gear.

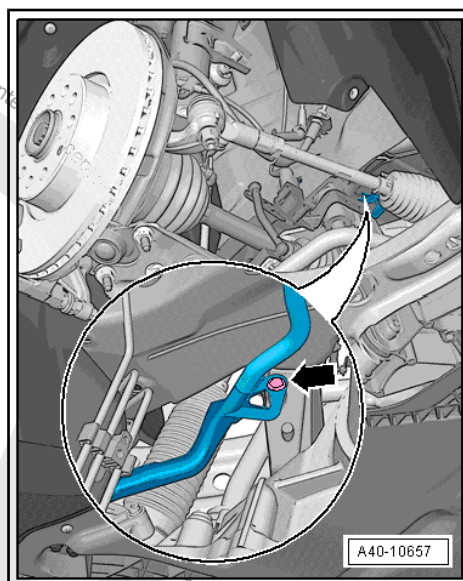




- Unclip the wiring harness -1- from the steering gear -2- -arrows-.



- Remove the expanding clip -arrow-.
- Lower the subframe using the Engine and Gearbox Jack -VAS6931-.
- Pry the steering gear off of the subframe, for example, using a large screwdriver and remove it toward the rear.

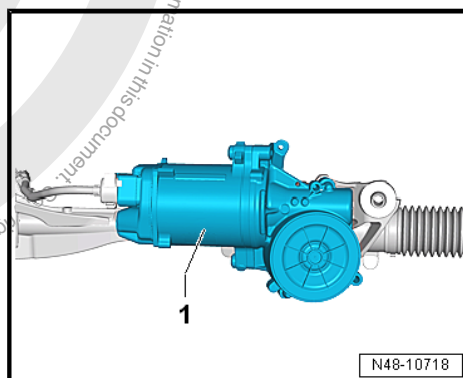


- Set the steering gear down as illustrated.
- Avoid damage to the control module -1-.

Installing

Install in reverse order of removal and note the following:

The steering gear threaded sleeves must be seated in the sub-frame holes.

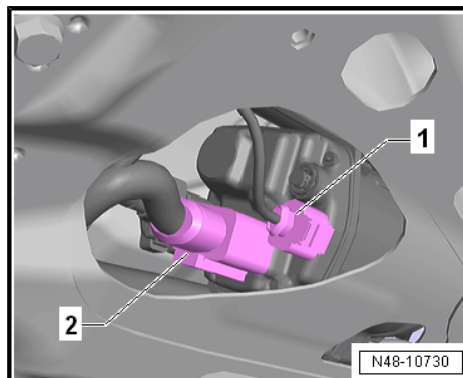


- Connect the connectors -1- and -2- so that they audibly click into place.



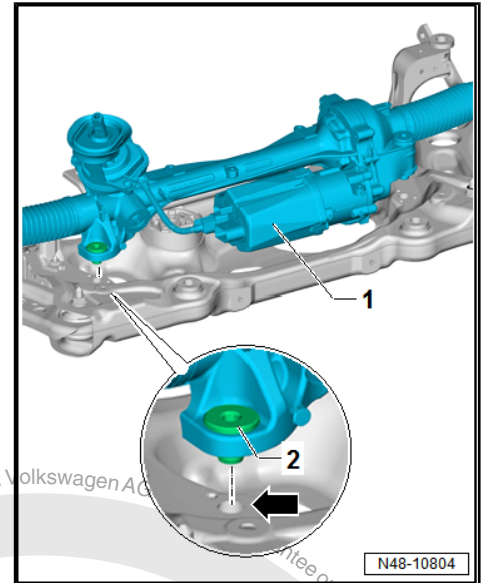
Note

- ◆ Coat the seal on the steering gear with lubricant such as soft soap before installing the steering gear.
- ◆ After attaching steering gear to drive axle, make sure that seal on steering gear is positioned on the mounting plate without and kinks and is sealed correctly. The opening to the foot well must sealed correctly. Ingress of water and/or noises may be the result.
- ◆ Make sure sealing surfaces are clean.

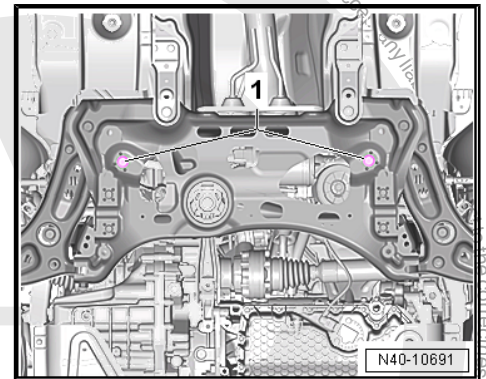




- Position the steering gear -1- on the subframe.
- The steering gear threaded sleeves -2- must be inserted into the subframe holes -arrow-.



- Insert the steering gear bolt -1- and tighten.



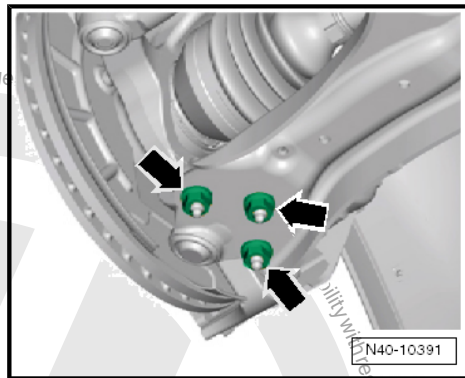


- Tighten nuts -arrows-.



Note

- ♦ *Tighten the nuts -arrows- in curb weight position. Refer to ⇒ ["2.8.1 Wheel Bearing in Curb Weight, Lifting Vehicles with Coil Spring, Front Axle"](#), page 5*
- ♦ *Make sure the ball joint boot is not damaged or twisted.*
- Install the battery impact guard. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Overview - Underbody Panels .
- Install the lower noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .



Note

Make sure the ball joint boot is not damaged or twisted.

- Bolt the universal joint to the steering gear.
- Connect the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .
- Perform the Steering Angle Sensor - G85- basic setting. Refer to Vehicle Diagnostic Tester .

It is necessary to adapt the electro-mechanical power steering. Refer to Vehicle Diagnostic Tester if new steering gear was installed.

Tightening Specifications

- ♦ Refer to ⇒ ["4.1 Overview - Lower Control Arm and Ball Joint"](#), page 76
- ♦ Refer to ⇒ ["2.1 Overview - Subframe"](#), page 16
- ♦ Refer to ⇒ ["3.1 Overview - Steering Gear"](#), page 419
- ♦ Refer to ⇒ ["3.6 Steering Gear, Servicing"](#), page 453
- ♦ Refer to ⇒ ["1.4 Wheel Bolt Tightening Specifications"](#), page 340
- ♦ Pendulum support bolts. Refer to ⇒ Rep. Gr. 10 ; Subframe Mount; Overview - Subframe Mount .
- ♦ Battery impact guard bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Overview - Underbody Panels .
- ♦ Noise insulation bolts. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Overview - Noise Insulation .

If the steering wheel is still crooked after using the Subframe Alignment Assembly Tool Kit - Locating Pins - T10486/1- then an axle alignment is necessary. In this case the record it in the vehicles axle alignment log.

3.3 Boot, Removing and Installing

Special tools and workshop equipment required

- ♦ Hose Clip Pliers - VAG1275A-
- ♦ Torque Wrench 1332 40-200Nm - VAG1332-
- ♦ Open Ring Wrench - 24mm - VAG1332/11-



- ◆ Locking Pliers - VAS6199-

Removing



Note

- ◆ *If the Boot is faulty, moisture and dirt will penetrate into steering gear. There must be a noticeable grease film present on steering rack in area of splines. If grease film is not present, steering gear must be replaced.*
- ◆ *Replace the steering gear:*
- ◆ *If there is corrosion.*
- ◆ *If it is damaged.*
- ◆ *If it is worn out.*
- ◆ *If there is dirt on the steering rack.*

- Turn steering wheel into straight ahead position.
- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Mark the location of the nut on the tie rod.
- Remove the tie rod end. Refer to
⇒ ["3.5 Tie Rod End, Removing and Installing", page 452](#) .
- Clean outside of steering gear in area of the boot.

While Doing This, No Dirt Must Enter the Steering Gear through the Faulty Boot.

- Open the clamps.
- Remove the boot from the steering gear and the tie rod.



Note

- ◆ *If corrosion, damage, wear-out or first signs of soiling on steering rack can be seen, complete steering gear must be replaced.*
- ◆ *If no grease film is visible on steering rack, steering gear must also be replaced completely.*

Installing

Install in reverse order of removal and note the following:



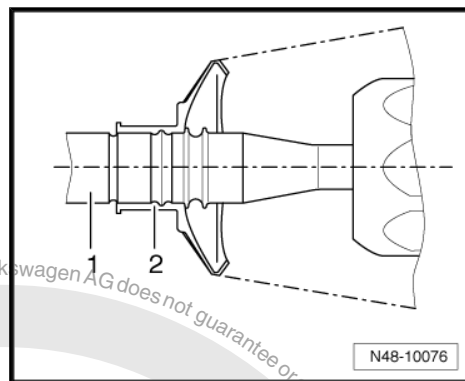
Caution

Do not lubricate the steering rack.

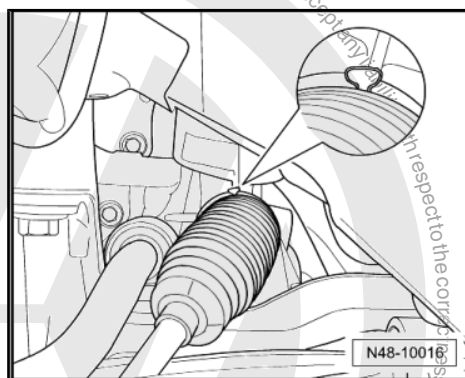
- Turn steering wheel into straight ahead position.
- Guide new clamp and boot onto tie rod.
- Lightly grease the sealing surface of the boot to the tie rod with Grease - G 052 168 A1- from the repair kit.



- Slide the boot -2- onto the tie rod -1- as illustrated.
- Secure spring clamp on boot using Hose Clip Pliers - VAG1275A- .
- Lightly grease the sealing surface of the boot to the steering gear housing with Grease - G 052 168 A1- from the repair kit.
- Push the boot all the way onto the steering gear housing.



- Tighten the new clamp using the Locking Pliers - VAS6199- to the extent depicted in the illustration.
- Install the tie rod end up to the marking made earlier during the removal. Refer to
⇒ [“3.5 Tie Rod End, Removing and Installing”, page 452](#) .
- Install the front wheel and tighten.
- Perform a vehicle alignment. Refer to
⇒ [“3.6 Axle Alignment Procedure”, page 355](#) .
- If both tie rods were replaced, then the basic setting for the Steering Angle Sensor - G85- must be performed using the. Refer to Vehicle Diagnostic Tester .
- Then perform the basic setting on the steering. Refer to Vehicle Diagnostic Tester .



Tightening Specifications

- ◆ Refer to ⇒ [“3.1 Overview - Steering Gear”, page 419](#)
- ◆ Refer to ⇒ [“3.6 Steering Gear, Servicing”, page 453](#)
- ◆ Refer to
⇒ [“1.4 Wheel Bolt Tightening Specifications”, page 340](#)

3.4 Tie Rod, Removing and Installing

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Torque Wrench Insert - Open Jaw - VAG1923-
- ◆ Puller - Ball Joint - T10187-
- ◆ Locking Pliers - VAS6199-

Perform the Following:

Removing

- Turn steering wheel into straight ahead position.
- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Clean outside of steering gear in area of the boot.
- Loosen the nut from the tie rod end, but do not unscrew yet.



- Using the Puller - Ball Joint - T10187 - 1-, press the tie rod end off of the wheel bearing housing and remove the nut.



Caution

To protect the thread, screw the nut on the pin a few turns.

- Open the clamps and push back boot.
 - Turn the steering as follows:
 - for the left tie rod, turn the steering to the right until stop
 - for the right tie rod, turn the steering to the left until stop
 - Remove tie rod.
- 1 - Torque Wrench Insert - Open Jaw - VAG1923-
 - 2 - Torque Wrench 1332 40-200Nm - VAG1332-



Note

- ◆ If corrosion, damage, wear-out or first signs of soiling on steering rack can be seen, complete steering gear must be replaced.
- ◆ If no grease film is visible on steering rack, steering gear must also be replaced completely.

Installing

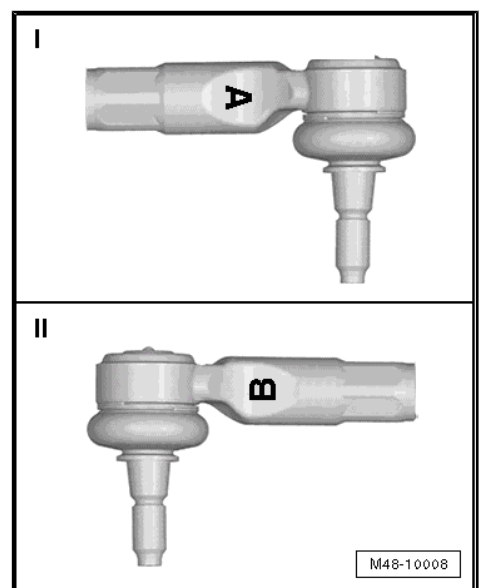
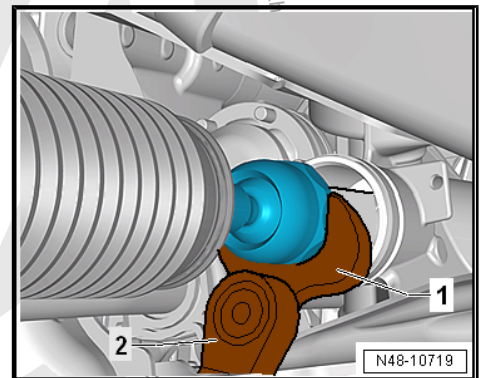
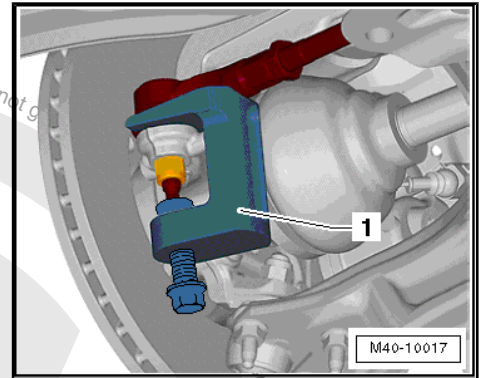
Install in reverse order of removal and note the following:



Caution

Do not lubricate the steering rack.

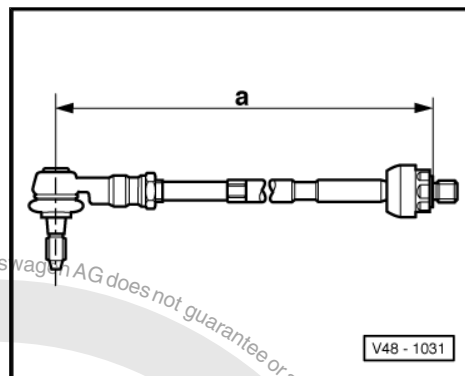
- Make sure the correct tie rod end is installed on each side.
- I - Right tie rod end identified with an "A"
 - II - Left tie rod end identified with a "B"
- Turn steering wheel into straight ahead position.
 - Guide new clamp and boot onto tie rod.



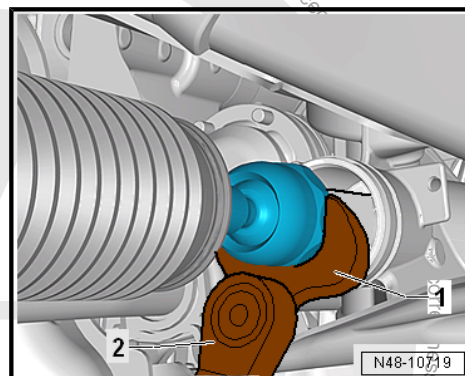


- Twist tie rod far enough into tie rod end until dimension -a- is obtained.

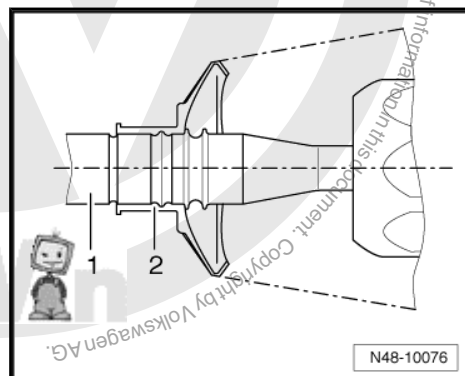
Dimension -a- = 373 ± 1 mm



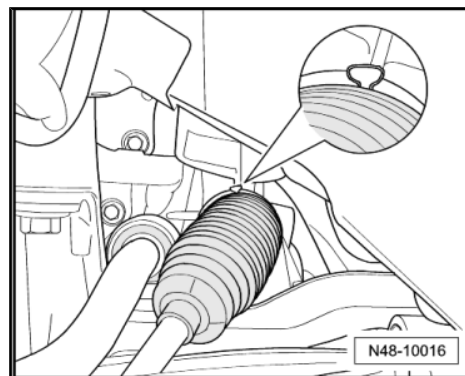
- Tighten the tie rod.
 - 1 - Torque Wrench Insert - Open Jaw - VAG1923-
 - 2 - Torque Wrench 1332 40-200Nm - VAG1332-
- Lightly grease the sealing surface of the boot to the tie rod with Grease - G 052 168 A1- from the repair kit.



- Slide boot -2- onto tie rod -1-, pay attention to correct position when doing this.
- Secure spring clamp on boot using Hose Clip Pliers - VAG1275A- .
- Lightly grease the sealing surface of the boot to the steering gear housing with Grease - G 052 168 A1- from the repair kit.
- Push the boot all the way onto the steering gear housing.



- Tighten new clamp using Locking Pliers - VAS6199- to the extent depicted in the illustration.
- Perform a vehicle alignment. Refer to [⇒ "3.6 Axle Alignment Procedure", page 355](#) .
- If both tie rods were replaced, then the basic setting for the Steering Angle Sensor - G85- must be performed using. Refer to Vehicle Diagnostic Tester .
- Then perform the basic setting on the steering. Refer to Vehicle Diagnostic Tester .



Tightening Specifications

- ◆ Refer to [⇒ "3.1 Overview - Steering Gear", page 419](#)
- ◆ Refer to [⇒ "3.6 Steering Gear, Servicing", page 453](#)
- ◆ Refer to [⇒ "1.4 Wheel Bolt Tightening Specifications", page 340](#)

3.5 Tie Rod End, Removing and Installing

Special tools and workshop equipment required



- ◆ Puller - Ball Joint - T10187-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-

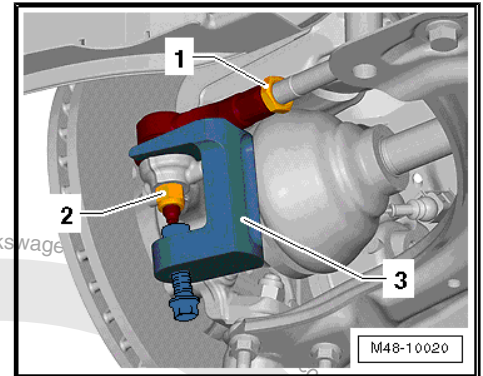
Removing

- Loosen the wheel bolts.
- Raise the vehicle.
- Remove the wheel.
- Loosen the nut -1-.
- Mark the position of the tie rod end on the tie rod.
- Loosen the nut -2- from the tie rod end, but do not remove it.



Caution

To protect the thread, screw the nut on the pin a few turns.



- Remove the tie rod from the wheel bearing housing and remove the nut.

1 - Puller - Ball Joint - T10187-

- Remove the tie rod end from the tie rod.

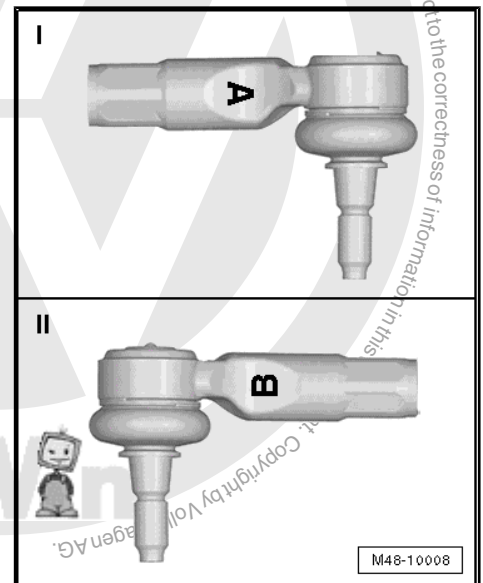
Installing

Install in reverse order of removal and note the following:

- Make sure the correct tie rod end is installed on each side.
- I - Right tie rod end identified with an "A"
- II - Left tie rod end identified with a "B"
- Turn the tie rod end to marking made earlier on the tie rod and secure it with a locking nut.
- Install the tie rod end into the wheel bearing housing.
- Install the tie rod end with a new nut.
- Perform a vehicle alignment. Refer to ["3.6 Axle Alignment Procedure", page 355](#).

Tightening Specifications

- ◆ Refer to ["3.1 Overview - Steering Gear", page 419](#)
- ◆ Refer to ["3.6 Steering Gear, Servicing", page 453](#)
- ◆ Refer to ["1.4 Wheel Bolt Tightening Specifications", page 340](#)



3.6 Steering Gear, Servicing



1 - Right Tie Rod End

- ☐ Identified with "A". Refer to [⇒ page 451](#)
- ☐ Removing and installing. Refer to [⇒ "3.5 Tie Rod End, Removing and Installing", page 452](#).
- ☐ Installation position. Refer to [⇒ page 451](#).
- ☐ Allocation. Refer to the Parts Catalog.

2 - Nut

- ☐ 70 Nm
- ☐ Nut must be counter-held on tie rod end using a wrench when loosening and tightening.

3 - Clamp

4 - Boot

- ☐ Must not be twisted after toe is adjusted
- ☐ Removing and installing. Refer to [⇒ "3.3 Boot, Removing and Installing", page 448](#).

5 - Clamp

- ☐ Replacing
- ☐ Tensioning. Refer to [⇒ page 450](#).

6 - Tie Rod

- ☐ 100 Nm
- ☐ Removing and installing. Refer to [⇒ "3.4 Tie Rod, Removing and Installing", page 450](#).

7 - Steering Gear

- ☐ Allocation. Refer to the Parts Catalog.
- ☐ Removing and installing. Refer to [⇒ "3.2 Steering Gear, Removing and Installing", page 422](#).

8 - Left Tie Rod End

- ☐ Identified with "B". Refer to [⇒ page 451](#)
- ☐ Removing and installing. Refer to [⇒ "3.5 Tie Rod End, Removing and Installing", page 452](#).
- ☐ Installation position. Refer to [⇒ page 451](#).
- ☐ Allocation. Refer to the Parts Catalog.

9 - Nut

- ☐ 70 Nm
- ☐ Nut must be counterheld on tie rod end using a wrench when loosening and tightening.

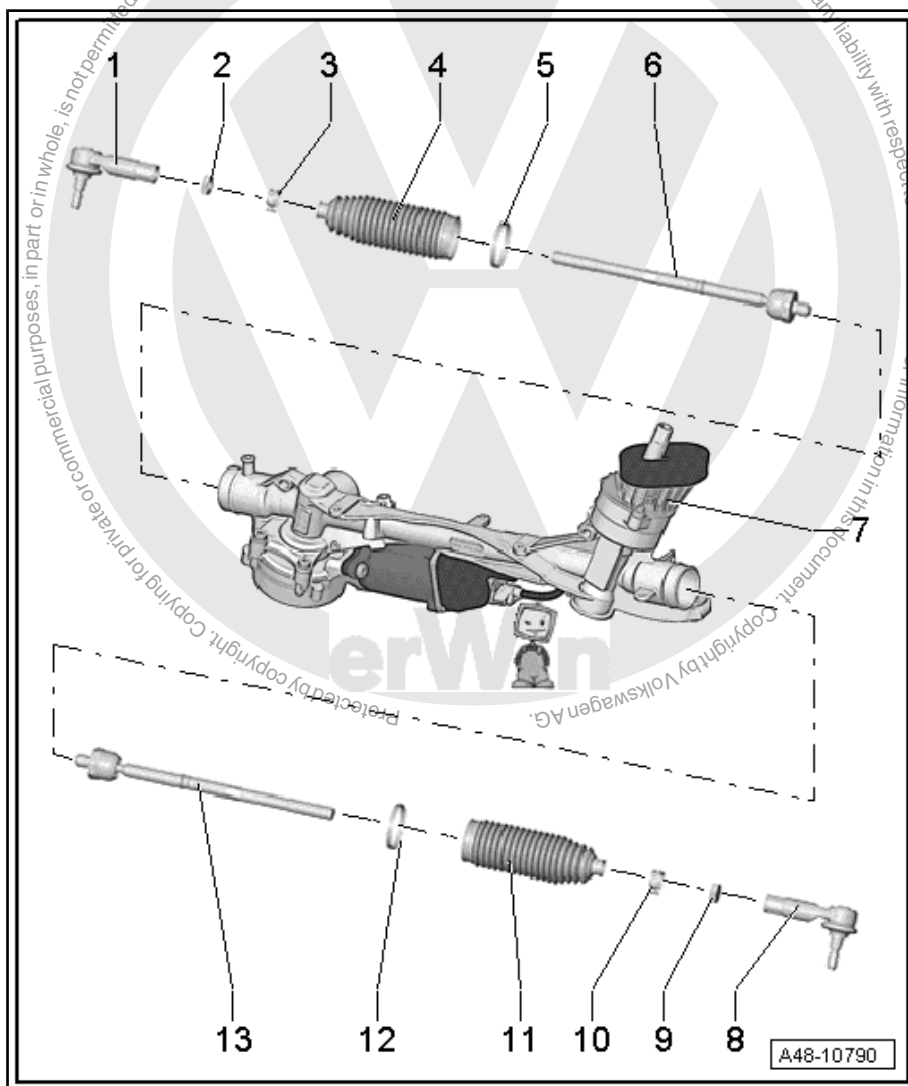
10 - Spring Clamp

11 - Boot

- ☐ Removing and installing. Refer to [⇒ "3.3 Boot, Removing and Installing", page 448](#).
- ☐ Check for damage
- ☐ Must not be twisted after toe is adjusted

12 - Clamp

- ☐ Replace after removing





- ☐ Install new clamp using Locking Pliers - VAS6199- .

13 - Tie Rod

- ☐ 100 Nm
- ☐ If faulty, replace with tie rod end
- ☐ Removing and installing. Refer to ➔ [“3.4 Tie Rod, Removing and Installing”, page 450](#) .





4 Sensors

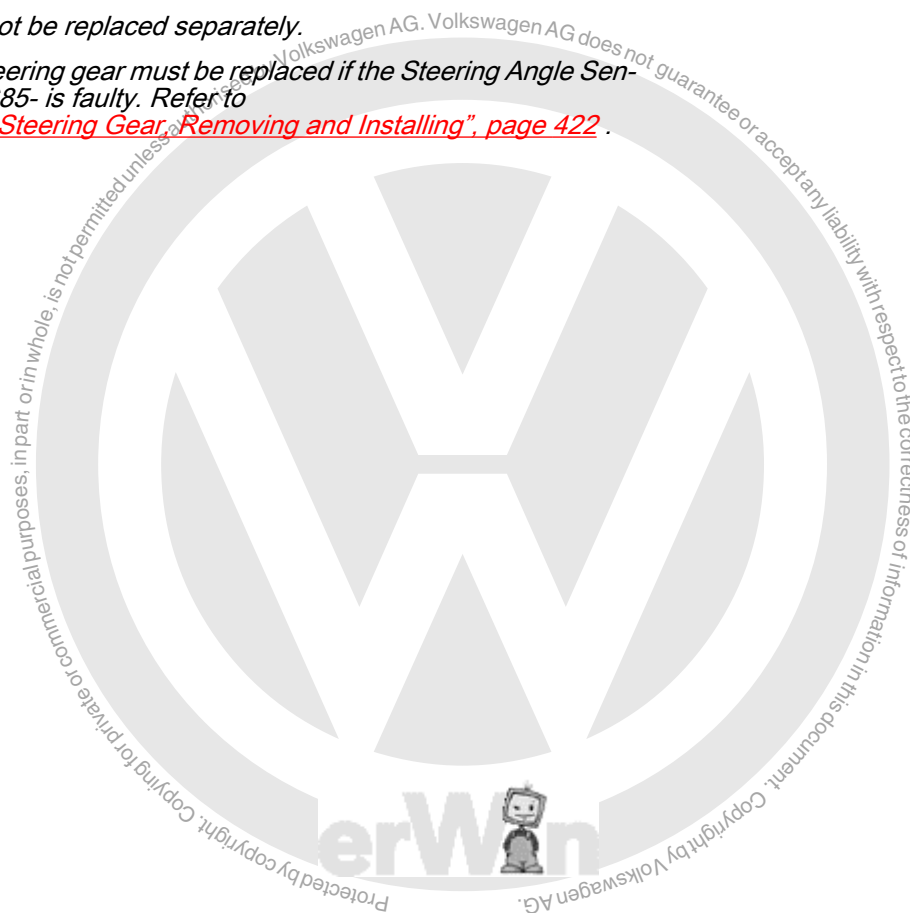
⇒ ["4.1 Steering Angle Sensor G85 , Removing and Installing", page 456](#)

4.1 Steering Angle Sensor - G85- , Removing and Installing



Note

- ◆ *The Steering Angle Sensor - G85- is a component of the steering gear.*
- ◆ *It cannot be replaced separately.*
- ◆ *The steering gear must be replaced if the Steering Angle Sensor - G85- is faulty. Refer to ["3.2 Steering Gear, Removing and Installing", page 422](#) .*

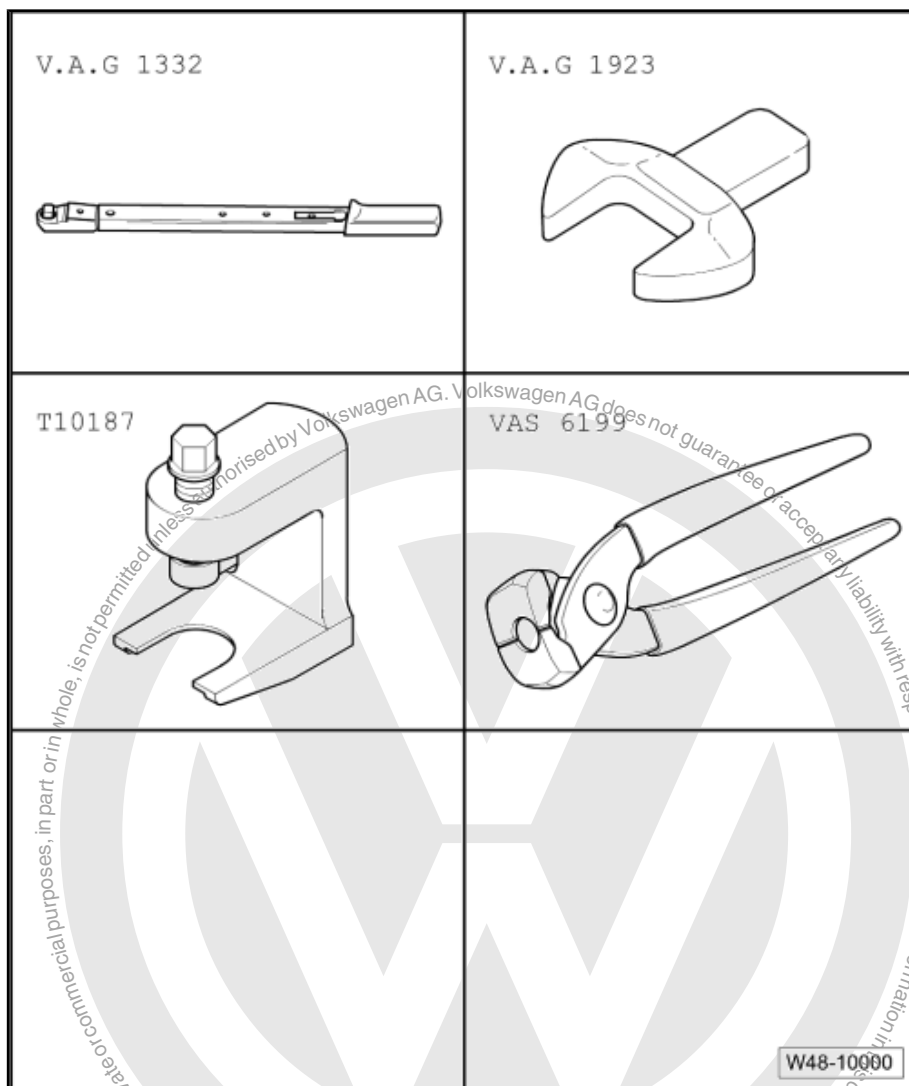




5 Special Tools

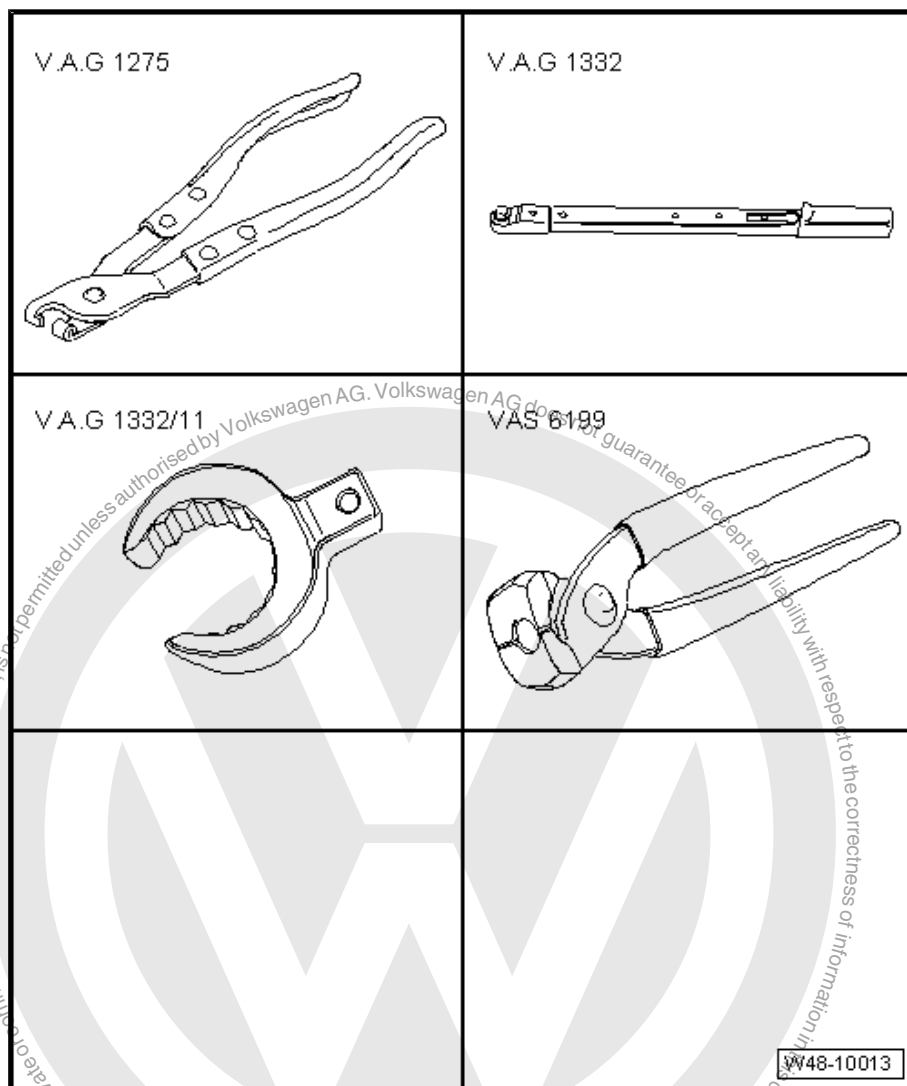
Special tools and workshop equipment required

- ◆ Torque Wrench 1332
40-200Nm - VAG1332-
- ◆ Torque Wrench Insert -
Open Jaw - VAG1923-
- ◆ Puller - Ball Joint - T10187-
- ◆ Locking Pliers - VAS6199-



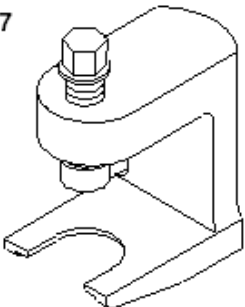


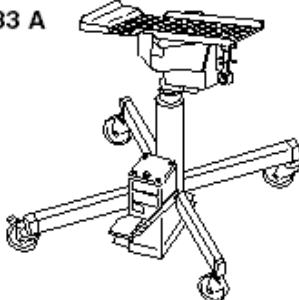


- ◆ Hose Clip Pliers - VAG1275A-
- ◆ Torque Wrench 1332 40-200Nm - VAG1332-
- ◆ Open Ring Wrench - 24mm - VAG1332/11-
- ◆ Locking Pliers - VAS6199-



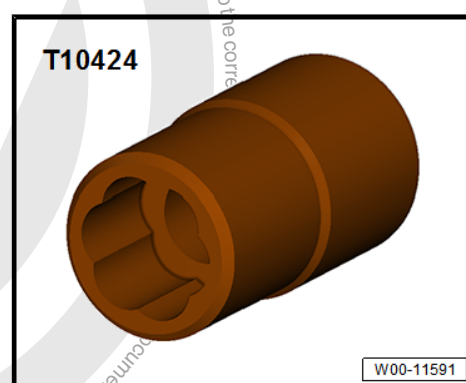


- ◆ Puller - Ball Joint - T10187-
- ◆ Torque Wrench 1331
5-50Nm - VAG1331-
- ◆ Torque Wrench 1332
40-200Nm - VAG1332-
- ◆ Engine and Gearbox Jack -
VAS6931-

<p>T10187</p> 	<p>V.A.G 1331</p> 
<p>V.A.G 1332</p> 	<p>V.A.G 1383 A</p> 
<p>Protected by copyright. Copying for private or commercial purposes, in part or in whole, is not permitted unless authorised by Volkswagen AG. Volkswagen AG does not guarantee or accept any liability with respect to the correctness of the information in this document.</p>	

W48-10022

- ◆ 7/16 Inch Extractor - T10424US-





6 Revision History

DRUCK NUMBER: K0059212121

Fac- tory Edi- tion	Edit Edi- tion	Job Type	Fe ed- ba ck	Notes	Quality Checke d By
06.2 015	07/1 7/20 15	Cor- rec- tion		Change obergup to Chassis	Eric P.
06.2 015	07/1 5/20 15	Fac- tory Up- date	N/ A		Eric P.
03.2 015	3/19/ 2015	Fac- tory Up- date	N/ A	Do a complete edit on new file.	Jim H.
	01/1 3/20 15	Fac- tory Up- date	N/ A		Tom P.
	11/1 9/20 14	Link Chec king	N/ A		Tom P.
	10/2 3/20 14	New Laun ch	N/ A		Eric P.
	7/30/ 2014	Fac- tory New	N/ A		Eric P.

Cautions & Warnings

Please read these WARNINGS and CAUTIONS before proceeding with maintenance and repair work. You must answer that you have read and you understand these WARNINGS and CAUTIONS before you will be allowed to view this information.

- If you lack the skills, tools and equipment, or a suitable workshop for any procedure described in this manual, we suggest you leave such repairs to an authorized Volkswagen retailer or other qualified shop. We especially urge you to consult an authorized Volkswagen retailer before beginning repairs on any vehicle that may still be covered wholly or in part by any of the extensive warranties issued by Volkswagen.
- Disconnect the battery negative terminal (ground strap) whenever you work on the fuel system or the electrical system. Do not smoke or work near heaters or other fire hazards. Keep an approved fire extinguisher handy.
- Volkswagen is constantly improving its vehicles and sometimes these changes, both in parts and specifications, are made applicable to earlier models. Therefore, part numbers listed in this manual are for reference only. Always check with your authorized Volkswagen retailer parts department for the latest information.
- Any time the battery has been disconnected on an automatic transmission vehicle, it will be necessary to reestablish Transmission Control Module (TCM) basic settings using the VAG 1551 Scan Tool (ST).
- Never work under a lifted vehicle unless it is solidly supported on stands designed for the purpose. Do not support a vehicle on cinder blocks, hollow tiles or other props that may crumble under continuous load. Never work under a vehicle that is supported solely by a jack. Never work under the vehicle while the engine is running.
- For vehicles equipped with an anti-theft radio, be sure of the correct radio activation code before disconnecting the battery or removing the radio. If the wrong code is entered when the power is restored, the radio may lock up and become inoperable, even if the correct code is used in a later attempt.
- If you are going to work under a vehicle on the ground, make sure that the ground is level. Block the wheels to keep the vehicle from rolling. Disconnect the battery negative terminal (ground strap) to prevent others from starting the vehicle while you are under it.
- Do not attempt to work on your vehicle if you do not feel well. You increase the danger of injury to yourself and others if you are tired, upset or have taken medicine or any other substances that may impair you or keep you from being fully alert.
- Never run the engine unless the work area is well ventilated. Carbon monoxide (CO) kills.
- Always observe good workshop practices. Wear goggles when you operate machine tools or work with acid. Wear goggles, gloves and other protective clothing whenever the job requires working with harmful substances.
- Tie long hair behind your head. Do not wear a necktie, a scarf, loose clothing, or a necklace when you work near machine tools or running engines. If your hair, clothing, or jewelry were to get caught in the machinery, severe injury could result.
- Do not re-use any fasteners that are worn or deformed in normal use. Some fasteners are designed to be used only once and are unreliable and may fail if used a second time. This includes, but is not limited to, nuts, bolts, washers, circlips and cotter pins. Always follow the recommendations in this manual - replace these fasteners with new parts where indicated, and any other time it is deemed necessary by inspection.

Cautions & Warnings

- Illuminate the work area adequately but safely. Use a portable safety light for working inside or under the vehicle. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.
- Friction materials such as brake pads and clutch discs may contain asbestos fibers. Do not create dust by grinding, sanding, or by cleaning with compressed air. Avoid breathing asbestos fibers and asbestos dust. Breathing asbestos can cause serious diseases such as asbestosis or cancer, and may result in death.
- Finger rings should be removed so that they cannot cause electrical shorts, get caught in running machinery, or be crushed by heavy parts.
- Before starting a job, make certain that you have all the necessary tools and parts on hand. Read all the instructions thoroughly; do not attempt shortcuts. Use tools that are appropriate to the work and use only replacement parts meeting Volkswagen specifications. Makeshift tools, parts and procedures will not make good repairs.
- Catch draining fuel, oil or brake fluid in suitable containers. Do not use empty food or beverage containers that might mislead someone into drinking from them. Store flammable fluids away from fire hazards. Wipe up spills at once, but do not store the oily rags, which can ignite and burn spontaneously.
- Use pneumatic and electric tools only to loosen threaded parts and fasteners. Never use these tools to tighten fasteners, especially on light alloy parts. Always use a torque wrench to tighten fasteners to the tightening torque listed.
- Keep sparks, lighted matches, and open flame away from the top of the battery. If escaping hydrogen gas is ignited, it will ignite gas trapped in the cells and cause the battery to explode.
- Be mindful of the environment and ecology. Before you drain the crankcase, find out the proper way to dispose of the oil. Do not pour oil onto the ground, down a drain, or into a stream, pond, or lake. Consult local ordinances that govern the disposal of wastes.
- The air-conditioning (A/C) system is filled with a chemical refrigerant that is hazardous. The A/C system should be serviced only by trained automotive service technicians using approved refrigerant recovery/recycling equipment, trained in related safety precautions, and familiar with regulations governing the discharging and disposal of automotive chemical refrigerants.
- Before doing any electrical welding on vehicles equipped with anti-lock brakes (ABS), disconnect the battery negative terminal (ground strap) and the ABS control module connector.
- Do not expose any part of the A/C system to high temperatures such as open flame. Excessive heat will increase system pressure and may cause the system to burst.
- When boost-charging the battery, first remove the fuses for the Engine Control Module (ECM), the Transmission Control Module (TCM), the ABS control module, and the trip computer. In cases where one or more of these components is not separately fused, disconnect the control module connector(s).
- Some of the vehicles covered by this manual are equipped with a supplemental restraint system (SRS), that automatically deploys an airbag in the event of a frontal impact. The airbag is operated by an explosive device. Handled improperly or without adequate safeguards, it can be accidentally activated and cause serious personal injury. To guard against personal injury or airbag system failure, only trained Volkswagen Service technicians should test, disassemble or service the airbag system.

Cautions & Warnings

- Do not quick-charge the battery (for boost starting) for longer than one minute, and do not exceed 16.5 volts at the battery with the boosting cables attached. Wait at least one minute before boosting the battery a second time.
- Never use a test light to conduct electrical tests of the airbag system. The system must only be tested by trained Volkswagen Service technicians using the VAG 1551 Scan Tool (ST) or an approved equivalent. The airbag unit must never be electrically tested while it is not installed in the vehicle.
- Some aerosol tire inflators are highly flammable. Be extremely cautious when repairing a tire that may have been inflated using an aerosol tire inflator. Keep sparks, open flame or other sources of ignition away from the tire repair area. Inflate and deflate the tire at least four times before breaking the bead from the rim. Completely remove the tire from the rim before attempting any repair.
- When driving or riding in an airbag-equipped vehicle, never hold test equipment in your hands or lap while the vehicle is in motion. Objects between you and the airbag can increase the risk of injury in an accident.

I have read and I understand these Cautions and Warnings.

