Workshop Manual

Karoq 2018 ➤ , Karoq 2020 ➤ , Kodiaq 2017 ➤ , Kodiaq 2019 ➤ , Octavia IV 2020 ➤ , Superb III 2015 ➤

7-speed dual-clutch gearbox 0GC

Edition 04.2020

List of Workshop Manual Repair Groups

Repair Group

00 - Technical data

30 - Clutch

34 - Controls, housing

35 - Gears, shafts

39 - Final drive - differential

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 – Technical data

1 Safety instructions

(SRL001569; Edition 04.2020)

⇒ “1.1 Safety precautions when working on vehicles with start-stop system”, page 1

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⇒ “1.3 Safety measures during towing/tow-starting”, page 1

⇒ “1.4 General safety instructions”, page 1

1.1 Safety precautions when working on vehicles with start-stop system

Injury hazard as a result of automatic engine start in vehicles with start-stop system.

In vehicles with the start-stop system activated (identifiable by an indication in the dash panel insert) the engine can start automatically if required.

– It is necessary to ensure that the start-stop system is deactivated when carrying out work on the vehicle (switch ignition off and if required switch ignition on again).

1.2 Safety precautions during road tests in which testing and measuring equipment is used

There is an increased risk of injury or accident from unintended motion and insufficient securing of testers and measuring instruments.

There is a risk of injury from the release of the passenger airbag in the event of an accident.

Operation of test and measuring instruments by the driver while driving may result in deviating from the direction of travel.

– Fasten test and measurement equipment with a strap on the rear seat and secure their operation by another person sitting on the rear seat.

1.3 Safety measures during towing/tow-starting

Risk of damage to gearbox.

- When towing the vehicle, the selector lever must be in position “N” and it must not be towed further than 50 km and faster than 50 km/h, otherwise the gearbox will be destroyed.
- It is not possible to tow start an engine, e.g. if the battery is weak or the starter does not operate.

1.4 General safety instructions

Risk of accident and injuries when unintentionally engaging a driving position while the engine is running.

- Before working on the engine when the engine is running, push the selector lever in position “P” and apply handbrake.

Risk of damage to the electronic components when disconnecting the battery.

- Observe actions for disconnecting the battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting the battery .
- Disconnect and connect the measurement and test equipment with the ignition off.

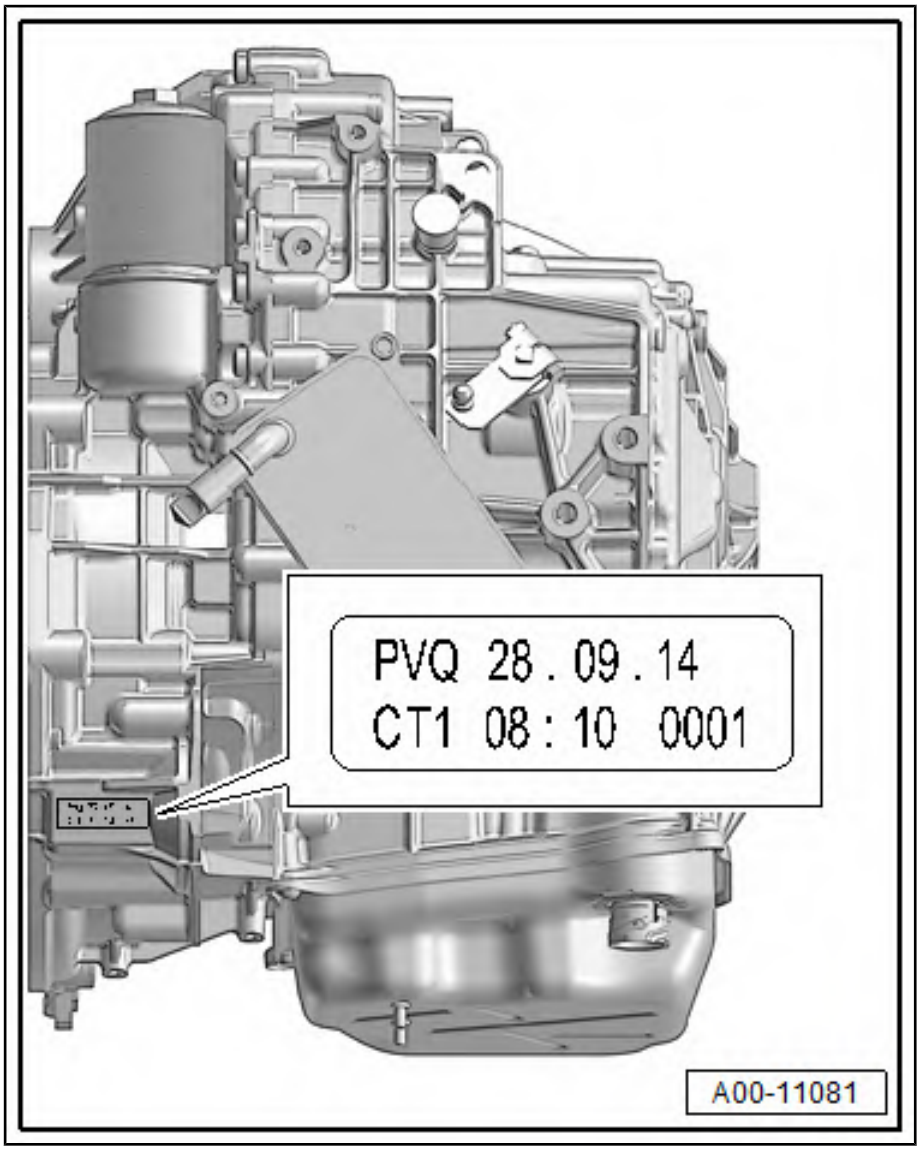
2 Identification

⇒ “2.1 Gearbox identification”, page 3

⇒ “2.2 Marking angle gearbox”, page 4

2.1 Gearbox identification

The identification characters of the gearbox are on the top of the gearbox near to the starter.



The gearbox identification characters are also printed on the gearbox.

Example:

- PVQ = gearbox identification characters
- 28.09.14 = Production date
- Other production data

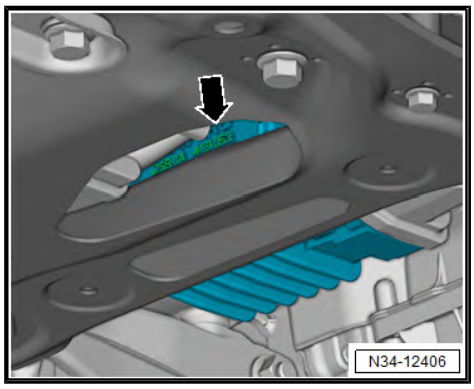
The gearbox identification characters also appear on the vehicle data stickers.

2.2 Marking angle gearbox

Various types of the angle gearbox can be used on the vehicle.

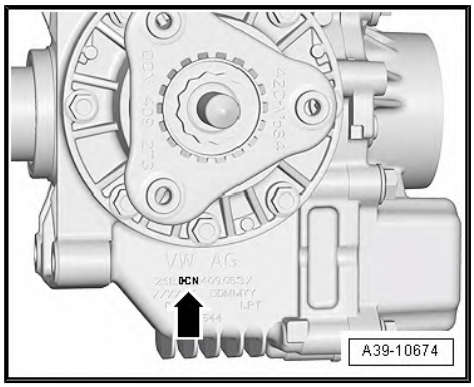
Angle gearboxes can be distinguished as follows:

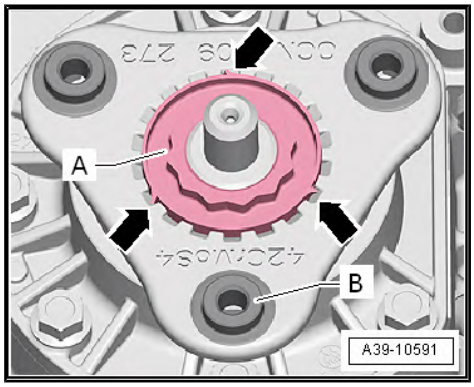
When the angle gearbox is installed, the identification can be made by reading the recess in the area of the aggregate carrier -arrow-.

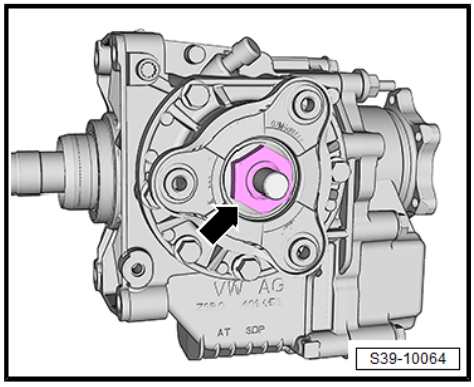


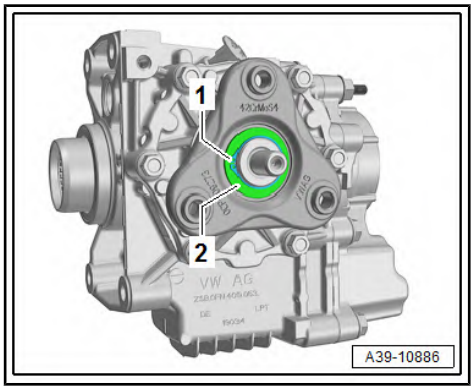
The identification is located in the lower part of the angle gearbox housing -arrow-.

If the gearbox is removed, it can be differentiated according to the type of mounting of the output flange:









- The output flange of the “0CN” angle gear is fixed with a twelve-point nut -A-, which is caulked -arrows-.
- The output flange of the angle “gear 0AV” is attached with a hexagon nut -arrow-.
- The output flange of the angle gearbox “0FN” is fixed with a lock washer -1-.

Overview of the angle gear, removing and installing
⇒ “2 Angle gearbox”, page 35 .

The angle gearboxes have a different oil filling quantity
⇒ “4.1 Filling capacity”, page 11

Bevel gear components
⇒ “4 Bevel gear components”, page 247

3 Repair instructions

3.1 Rules of cleanliness

- Thoroughly clean the connection points and their surroundings before releasing.
- Seal the open lines and connections immediately with a clean plug, e.g. from the plug set such as -VAS 6122- .
- Only install clean parts: remove spare parts from their wrapping immediately before fitting.
- Make sure no dirt gets into the gearbox when the gearbox is open.
- Always replace paper gaskets after disassembly. Completely remove old gaskets and thoroughly clean sealing surfaces.
- Place removed parts on a clean surface and cover them to prevent them from getting dirty. Use sheeting and paper for this purpose. Use lint-free cloths!
- Carefully cover or close opened components if the repair is not completed immediately.
- Protect electrical plug connections from dirt and moisture and only connect them when dry.

3.2 General points

Gearbox

The engine torque is transferred to the dual clutch via the flywheel.

The flywheel and the double clutch are interconnected via a serration. Both together have the function of the two-mass flywheel.

The gearbox is installed as a manual gearbox. It is operated as an automatic gearbox by means of alternate hydraulic actuation of the dual clutches. This means that the gears are engaged automatically or manually in Tiptronic mode. There is not clutch pedal.

Shift mechanism

The selector lever position (setting the gearshift mechanism, if required) is no longer transmitted mechanically to the transmission via the selector cable.

The selector lever positions or change gear are transferred via a separate control unit in the shift mechanism via the CAN databus to the gearbox control unit.

Shifting is therefore performed without control cable. It is only in selector lever position “P” that the parking lock engaged mechanically with the selector lever cable.

Changes of gear-change point on upward and downward gradients

On upward or downward gradients, gear-changes are performed automatically by additional shift characteristics depending on accelerator position and driving speed.

- On steep gradients, gear-change mapping is adapted to engine power output.
- On steep gradients, gear-change mapping is adapted to the braking effect of the engine.
- By directly selecting a gear via the Tiptronic, it is also possible to use engine braking by selecting a specific gear, e.g. when driving on a slope during trailer operation.

3.3 General repair instructions

A number of general notes on the individual repair procedures, which are valid for this particular workshop manual, are summarised here.

To ensure flawless and successful gearbox repairs, the greatest care and cleanliness as well as the use of good and proper tools are essential.

Also note the basic rules on safety when performing repair procedures.

Targeted fault finding, Vehicle self-diagnosis and Measuring method

- Before repairing the drive, try to determine the origin of the damage as accurately as possible using the ⇒ Vehicle diagnostic tester in the functions `Targeted fault finding`, `Vehicle self-diagnosis` and `Measuring method`.

Special tools

For a complete list of special tools used in this workshop manual, see ⇒ Workshop equipment and special tools .

Gearbox

- Make sure no dirt gets into the gearbox when the gearbox is open. This applies in particular if the dual clutch gearbox mechatronics - J743- or oil pump for gearbox has been removed or laid open, because any dirt entering can cause the gearbox to fail.
- If the cover is unscrewed from the dual clutch gearbox mechatronics - J743- or there is no oil in the gearbox, do not let the engine run and do not tow the vehicle.
- Thoroughly clean the connection points and their surroundings and then release.
- When installing the gearbox, ensure the dowel sleeves are correctly located between the engine and gearbox.

Retaining elements

- Do not over-tension the circlips.
- Renew retaining rings which have been damaged or overstretched.
- Circlips must be positioned in the base of the groove.

Oil for dual clutch gearbox

The dual clutch gearbox “0GC” only has 1 oil circuit.

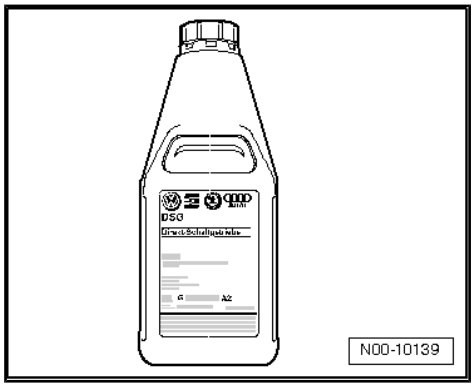
This oil circuit is used for wheels and shafts, final drive, couplings and the dual clutch gearbox mechatronics - J743- .

The oil quality influences in a decisive way the function of the gearbox.

NOTICE

Risk of damage to gearbox

- **Only spare part gear oil should be used for the dual clutch gearbox "0GC" ⇒ Electronic Catalogue of Original Parts . Other gear oils lead to malfunctions and/or gearbox failure.**
- **An insufficient quantity and overfilling the oil also negatively affects the function of the individual parts of the gear.**



- For draining and filling or checking the gear oil level, which is described in chapter ⇒ "9.2 Tools needed for changing the gear oil", page 226 , use the special tools indicated.
- Shake gearbox oil bottles well before opening to mix any sediments at the bottom of the bottle with the oil.
- Do not mix any additives in the oil, also do not fill in other oil.
- Dispose of used oils properly.
- Drained oil must not be refilled.

Oil filter

The oil filter on the 0GC gearbox is not replaced as part of normal maintenance.

The gear oil filter must only be replaced under the following conditions:

- Metallic swarf was found in the oil.
- The clutch is blown or mechanically damaged.
- Coolant has got into the oil.

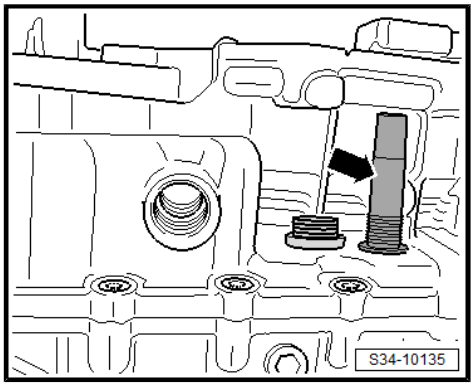
After the following maintenance, the gearbox oil filter does not need to be replaced.

- After replacing the gearbox oil cooler or sealing rings, provided that no coolant has got into the oil.
- After replacing the sealing rings for gearboxes.
- After replacing the oil pan or mechatronics for dual clutch transmissions - J743- .

Oil drain plugs and check screws

Summary of components
⇒ "9.1 Summary of components - oil drain plugs and check screws", page 226

Overflow pipe



The overflow tube -arrow- is behind the drain plug and check screw for gear oil.

The overflow tube determines the oil level in the gearbox.

The overflow tube is made of plastic and has a 8 mm hex socket for tightening.

Tightening torque
⇒ “9.1 Summary of components - oil drain plugs and check screws”, page 226 Pos. 1.

- You must observe the correct tightening torque for the overflow tube, because you may break apart the thread and collar if tightened excessively.

NOTICE

There are different versions of overflow pipe.

– **Check which overflow pipe is installed and carry out the oil level check right after the workshop process**
⇒ “9.3 Checking the gear oil level”, page 227 .

- If the overflow tube has to be replaced, you must install an overflow tube that is assigned to the gearbox ⇒ Electronic Catalogue of Original Parts .
- Never install an overflow tube from another gearbox, because this could cause the oil level in the gearbox to be incorrect!

Oil for angle gearbox

The angle gearbox has an automatic oil filling for final drives.

- Only spare part gear oil for final drives should be used for the angle gearbox ⇒ Electronic Catalogue of Original Parts .

Other oils can lead to functional problems or to failure of the angle gearbox.

Inspecting oil level in the angle gearbox
⇒ “9.3 Checking the gear oil level”, page 227 .

Draining and filling gear oil in the angle gearbox
⇒ “9.4 Draining and filling gearbox oil”, page 231 .

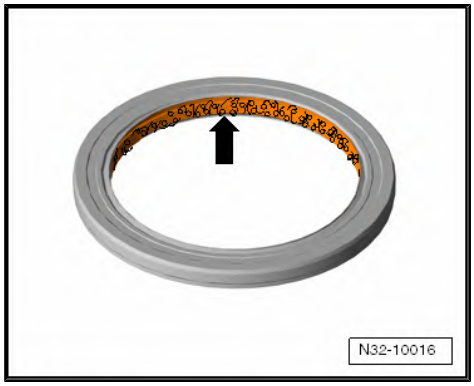
Electrical components

If you touch metallic objects, you will experience an electric shock because of the electrostatic discharge from the body.

Static discharge from contact with electronic components of the gearbox may cause the system to malfunction or fail.

- Do not touch plug contacts, connectors or »open« electric components with your bare hands under any circumstances.
- Before working on the electrical/electronic components, touch an earthed object, e.g. water pipe or lifting platform.

3.4 Seals and sealing rings



- Always replace O-rings, sealing rings and gaskets after disassembly ⇒ Electronic Catalogue of Original Parts .
- After removing all seals, inspect the contact faces on housings and shafts for burrs and damage and remove all which are found.
- Radial shaft seals - before mounting lightly oil at outside diameter and fill half the space between the sealing lips -arrow- with sealing grease - G 052 128 A1- .
- Install gasket rings with the open side towards the fluid to be sealed.
- Before inserting the O-rings, coat with oil for the dual clutch gearbox to prevent the rings being damaged during installation.
- Inspect the gear oil after replacing the gaskets and gasket rings, top up if necessary
⇒ “9.3 Checking the gear oil level”, page 227 .

3.5 Screws, nuts

- Slacken and tighten screws or fixing nuts of covers and housings diagonally across in stages.
- Tightening torques are for unlubricated nuts, bolts and screws.
- Clean the thread of the screws that are inserted with a locking agent with a wire brush. Insert bolts with locking agent - AMV 185 101 A1- .
- Clean all threaded holes into which bolts are screwed in with locking agent, using a thread tap to remove old locking agent residues. Otherwise there is a risk that the bolts will shear at the next disassembling.
- Always replace self-locking screws and nuts after disassembly.

3.6 Contact corrosion

The gearbox housing and the clutch housing are made out of magnesium alloy.

Bolts and other components that come into direct contact with the gearbox have a surface with varying finishes in relation to it.

The use of substitute components causes contact corrosion (screws. nuts. washers ...). The gearbox housing and clutch housing are damaged.

Generally install parts which are indicated in the ⇒ Electronic Catalogue of Original Parts .

4 Technical data

4.1 Filling capacity

Filling quantity for the 0GC dual clutch gearbox

Filling capacity	Dual clutch gearbox 0GC
Factory fill	7.2 l
Change in customer service	approx. 6 - 6.5 l
Change interval	⇒ Maintenance ; Booklet Superb III Chapter “Inspection” ⇒ Maintenance ; Booklet Karoq Chapter “Inspection” ⇒ Maintenance ; Booklet Kodiaq Chapter “Inspection” ⇒ Maintenance ; Booklet Octavia IV Chapter “Inspection”
Gearbox oil specification	Oil for dual clutch gearbox ⇒ Electronic Catalogue of Original Parts

Check transmission oil level and top up with transmission oil if necessary ⇒ “9.3 Checking the gear oil level”, page 227 .

Draining and filling gearbox oil
⇒ “9.4 Draining and filling gearbox oil”, page 231 .

Capacity angle gearbox

Filling capacity	Angle gearboxes 0CN	Angle gearboxes 0FN	Angle gearboxes 0AV
New filling	860 ml	750 ml	890 ml
change volume	approx. 720 ml	approx. 600 ml	approx. 750 ml
Top-up	Filled for life, no top-up	Filled for life, no top-up	Filled for life, no top-up
Oil specification	Oil for final drives ⇒ Electronic Catalogue of Original Parts	Oil for final drives ⇒ Electronic Catalogue of Original Parts	Oil for final drives ⇒ Electronic Catalogue of Original Parts

Checking the oil level
⇒ “1.1 Checking the gear oil level”, page 236 .

Drain and fill oil
⇒ “1.2 Draining and filling gearbox oil”, page 237 .

4.2 Allocation gearbox - engine

4.2.1 Assignment gearbox - engine, Superb III

Vehicles with petrol engines, front-wheel drive

7-speed dual-clutch gearbox 0GC	
Front-wheel-drive	
Vehicles with petrol engines	**Engine identification characters**
2.0 TFSI 140 KW	TDL

7-speed dual-clutch gearbox 0GC	
Front-wheel-drive	
Vehicles with petrol engines	**Engine identification characters**
	UBA

Vehicles with petrol engines, four-wheel drive

7-speed dual-clutch gearbox 0GC	
All-wheel drive	
Vehicles with petrol engines	**Engine identification characters**
2.0 TFSI 200 KW	TDF UAN

Vehicles with diesel engines, front-wheel drive

7-speed dual-clutch gearbox 0GC		
Front-wheel-drive		
Vehicles with diesel engine	**Engine identification characters**	
2.0 l/110, 140 kW TDI CR	SQM SWV	TDJ UAX
2.0 l/ 110 kW TDI CR (EA 288 evo)	TTC UEM	

Vehicles with diesel engines, four-wheel drive

7-speed dual-clutch gearbox 0GC		
All-wheel drive		
Vehicles with diesel engines	**Engine identification characters**	
2.0 l/140 kW TDI CR	SQJ SWP	TCX UAH

4.2.2 Gearbox - engine assignment, Karoq

Vehicles with petrol engines, four-wheel drive

7-speed dual-clutch gearbox 0GC		
All-wheel drive		
Vehicles with petrol engines	**Engine identification characters**	
1.5 TSI 110 KW	SUH TDC	UAR
2.0 TFSI 140 KW	TDD UAL	

Vehicles with diesel engines, four-wheel drive

7-speed dual-clutch gearbox 0GC		
All-wheel drive		
Vehicles with diesel engines	**Engine identification characters**	
2.0 l/110 kW TDI CR	SWT TNT	TDB UAU
2.0 l/140 kW TDI CR	SWP TNU	TCX UAH

4.2.3 Assignment gearbox - engine, Kodiaq

Vehicles with petrol engines, front-wheel drive

7-speed dual-clutch gearbox 0GC	
Front-wheel-drive	
Vehicles with petrol engines	**Engine identification characters**
1.5 TSI 110 KW	SWL UBC

Vehicles with diesel engines, front-wheel drive

7-speed dual-clutch gearbox 0GC	
Front-wheel-drive	
Vehicles with diesel engine	**Engine identification characters**
2.0 l/110 kW TDI CR	SUL UAY

Vehicles with petrol engines, four-wheel drive

7-speed dual-clutch gearbox 0GC	
All-wheel drive	
Vehicles with petrol engines	**Engine identification characters**
1.5 TSI 110 KW	SWK UAS
2.0 TFSI 140 KW	TDE UAM

Vehicles with diesel engines, four-wheel drive

7-speed dual-clutch gearbox 0GC	
All-wheel drive	
Vehicles with diesel engines	**Engine identification characters**
2.0 l/110 kW TDI CR	SUK UAJ

4.2.4 Gearbox assignment - Engine, Octavia II

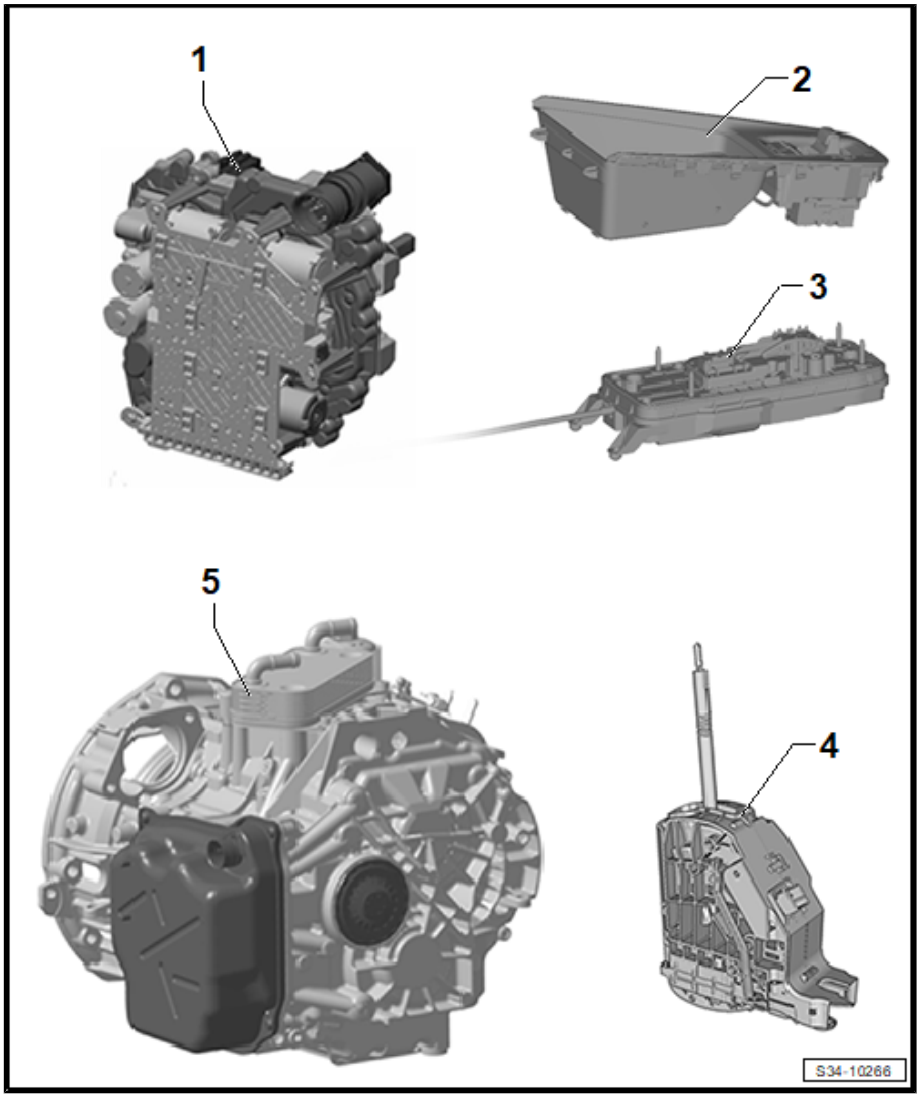
Vehicles with diesel engines, front-wheel drive

7-speed dual-clutch gearbox 0GC	
Front-wheel-drive	
Vehicles with diesel engines	**Engine identification characters**
2.0 l/ 110 kW TDI CR (EA 288 evo)	TEZ

5 Electrical components

⇒ “5.1 Fitting location summary - electrical components”, page 15

5.1 Fitting location summary - electrical components



1 - Mechatronics for double clutch gearbox - J743-

- ❑ Summary of components ⇒ “1.1 Summary of components - mechatronics”, page 28
- ❑ Removing and installing ⇒ “1.3 Removing and installing mechatronics”, page 30

2 - Switch cover with gearshift mechanism - EX2-

- ❑ For Octavia IV vehicles
- ❑ Overview ⇒ “3.2.3 Summary of components - Gearshift mechanism, Octavia IV”, page 53
- ❑ Removing and installing ⇒ “3.4.4 Removing and installing the cover with operating element for the gearshift mechanism - Octavia IV”, page 64

3 - Parking lock actuator - V682-

- ❑ for Octavia IV vehicles
- ❑ with transmitter for parking lock - G474-
- ❑ Overview ⇒ “3.2.3 Summary of components - Gearshift mechanism, Octavia IV”, page 53
- ❑ ⇒ “3.5.4 Removing and installing the gearshift mechanism with selector lever control cable, Octavia IV”, page 76

4 - Selector lever - E313-

- ❑ with selector lever sensor control unit - J587- , selector lever lock solenoid - N110- and switch for selector lever locked in P - F319-
- ❑ Components are permanently integrated in the shift mechanism and cannot be replaced separately
- ❑ check with ⇒ vehicle diagnosis tester
- ❑ Summary of components ⇒ “3.2 Summary of components - Gearshift mechanism”, page 49
- ❑ Removing and installing shift mechanism ⇒ “3.5 Removing and installing selector mechanism”, page 65

5 - 7-speed dual-clutch gearbox 0GC

30 – Clutch

1 Clutch

1.1 Summary of components - Dual clutch

Spare parts

1 - Circlip of dual clutch end cover

- ❑ Replace after removal

2 - Circlip of dual clutch

- ❑ Replace after removal

3 - Circlip of driver disc

4 - Double clutch

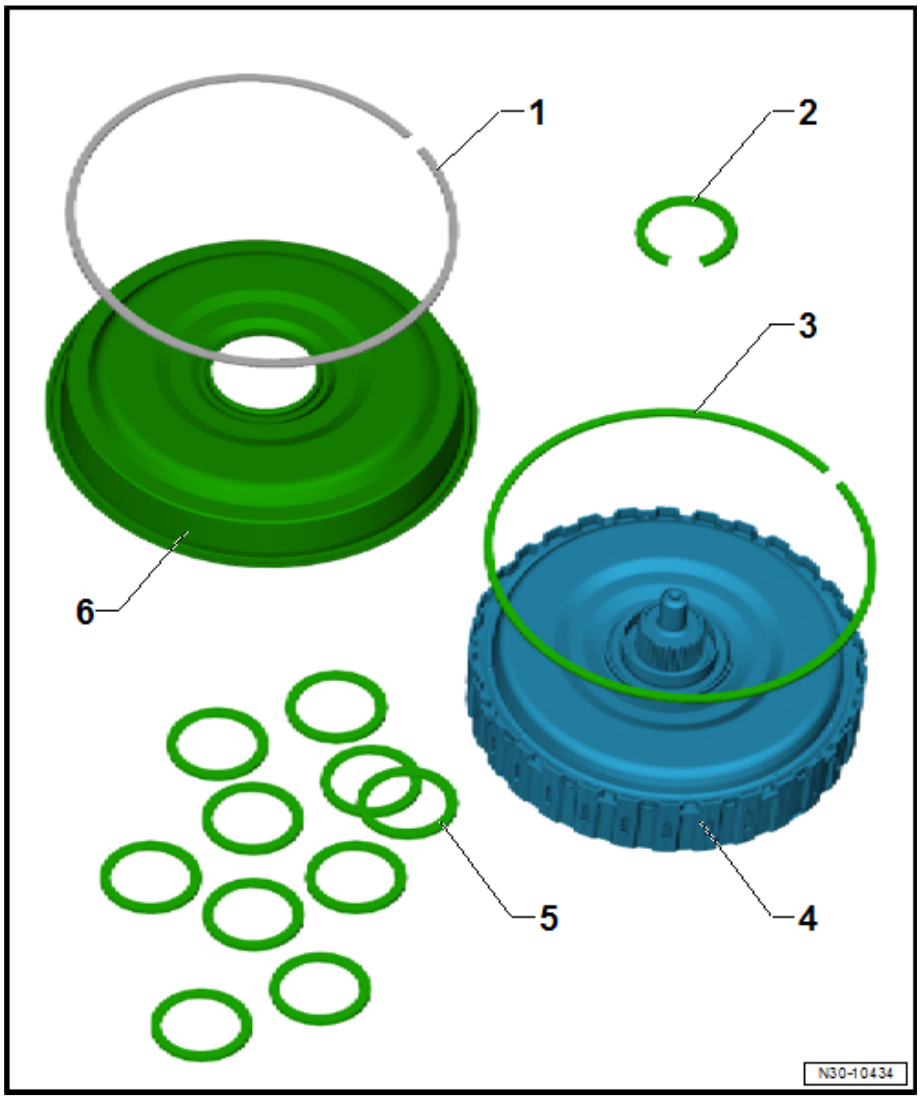
- ❑ do not disassemble
- ❑ removing ⇒ “1.3 Remove double clutch”, page 19
- ❑ installing ⇒ “1.4 Install double clutch”, page 21

5 - Shims

- ❑ 10 adjusting washers of various thicknesses are graded by 0.05 mm
- ❑ Determine the thickness of the adjusting washer when installing the dual clutch ⇒ “1.4 Install double clutch”, page 21

6 - Clutch end cover

- ❑ Replace after removal
- ❑ Removing and installing ⇒ “1.2 Removing and installing the clutch end cover”, page 16



1.2 Removing and installing the clutch end cover

Special tools and workshop equipment required

- ♦ Assembly sleeve - T10459-

Removing

– Drain out gear oil
⇒ “9.4 Draining and filling gearbox oil”, page 231 .

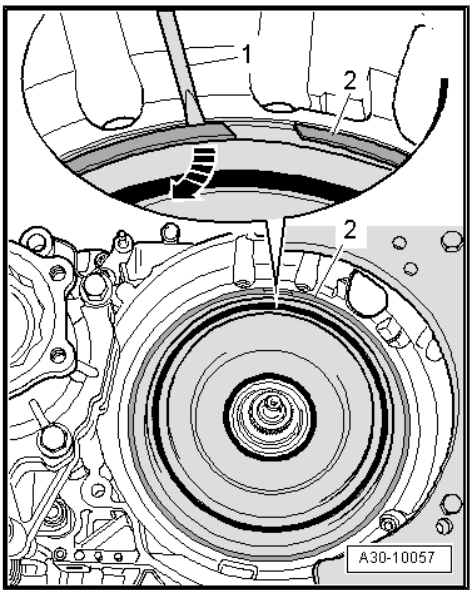
– Removing the gearbox
⇒ “4.2 Removing the gearbox”, page 108 .

– Fasten the gearbox to the engine and gearbox holder
⇒ “7 Attachment at engine and gearbox mount”, page 218 and turn it into the vertical position (coupling points upwards).

• Replace gearbox oil filter if necessary according to the following instructions ⇒ page 8 .

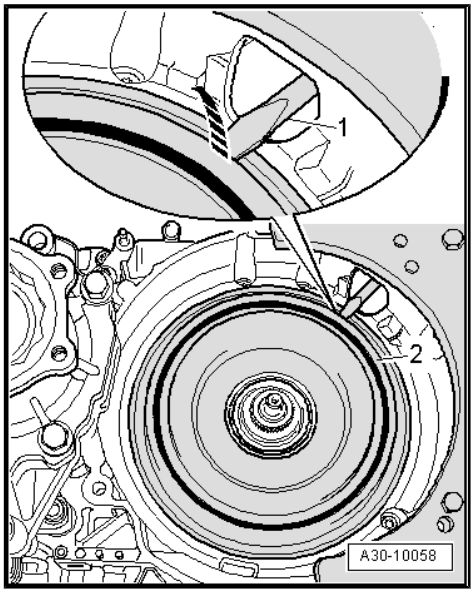
– Replace gearbox oil filter
⇒ “8.4 Remove and install the gear oil filter”, page 224 .

– Pry out and remove circlip of the clutch end cover -2- with the screwdriver -1- in -direction of arrow-.

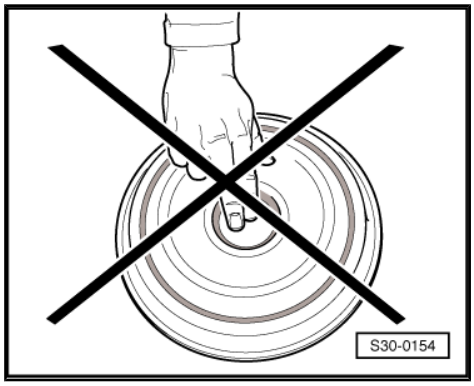


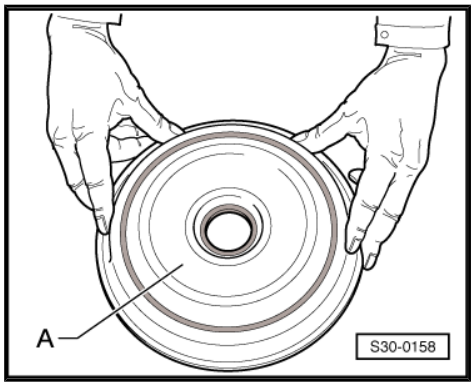
– Pry out and remove the clutch end cover -2- through the opening for the starter with screwdriver -1-.

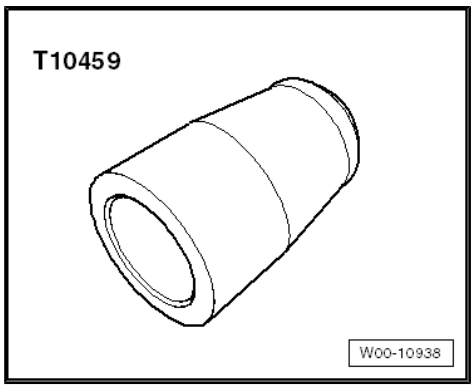
• The dismantled clutch cover and circlip must not be reinstalled; always use new components for the installation.



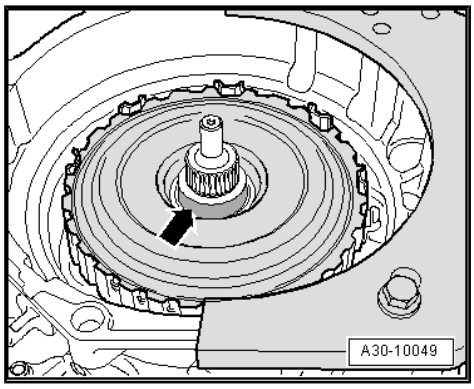
Installing







- The clutch cover and circlip must always be replaced after disassembly ⇒ Electronic Catalogue of Original Parts .
- Never install a new clutch cover with a hammer.
- Never touch the centre seal by hand or oil the seal! Seal is only guaranteed if the thrust surface of the seal is completely free of oil and dry.
- The clutch cover -A- can only be handled as shown in the illustration!
- If there are any stickers on the inside of the clutch cover, they must be removed before installation.
- Clean and degrease assembly sleeve - T10459- before use.
- Do no use scratched or otherwise damaged sleeves.
- The contact surface on the end of the shaft -arrow- must be free of oil and dry; if necessary, clean the contact surface.



Before installing a new cover, the middle seal must first be shaped to the correct shape.

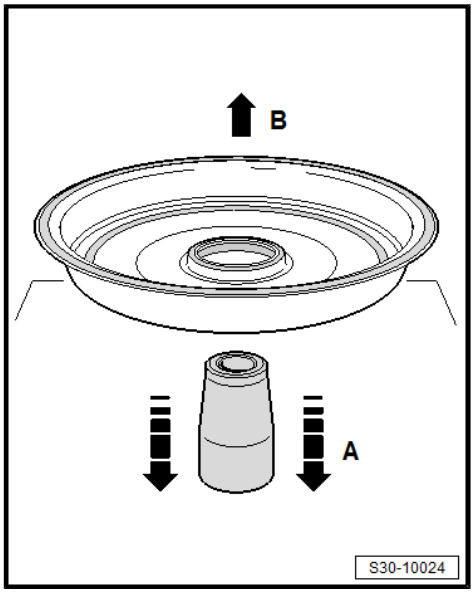
– Position the assembly sleeve - T10459- on an even surface.

– Slide on the clutch cover in -direction of arrow A-, as shown in the figure.

• Slide the cover evenly to horizontal position.

– Pull the assembly sleeve - T10459- through the clutch cover in direction of arrow -B- to bring the sealing lip to installation position.

– Moisten outside cover seal with oil.



NOTICE

The clutch cover is not leak-tight.

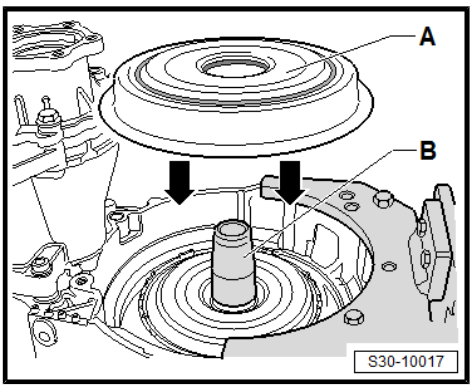
If there are leaks in the area of the clutch cover, the gearbox may be damaged as a result of loss of oil.

– Do not touch the seal in the inner opening of the clutch cover.

– Work with care when installing the clutch cover. Impact of any kind will cause leaks.

– Fit the assembly sleeve - T10459- -B- to the shaft of the dual clutch.

– Fit the clutch cover -A- in -direction of arrow- over the assembly sleeve - T10459- -B- and press evenly into installation position.



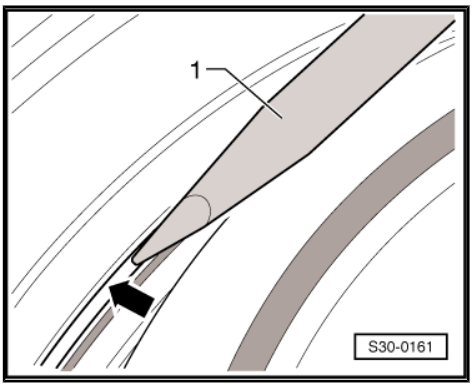
It is possible to carefully lever the cover with a screwdriver -1- in its position -arrow-, until the new circlip can be installed.

– Install new circlip.

• Only remove the assembly sleeve - T10459- after installing the circlip.

– Installing the gearbox
⇒ “4.3 Installing the gearbox”, page 207 .

– Pour in gear oil
⇒ “9.4 Draining and filling gearbox oil”, page 231 .



1.3 Remove double clutch

Special tools and workshop equipment required

♦ Hook - 3438- 2 units

♦ Extractor tool - T10055-

♦ Retractor - T10525-

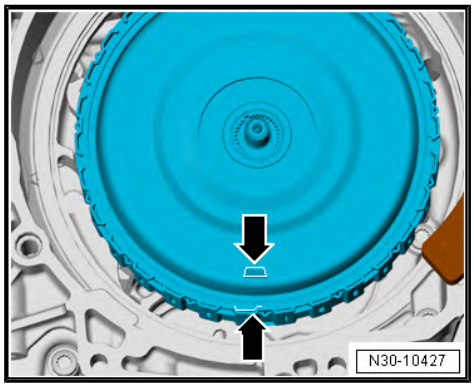
When installing the double clutch, its axial play is set. Therefore, when removing and installing the clutch, the gearbox must be fixed in a vertical position in the assembly stand (clutch pointing upwards)
⇒ “7 Attachment at engine and gearbox mount”, page 218 . This is the only way to correctly set the axial play of the clutch.

Removing

– Remove the clutch end cover
⇒ “1.2 Removing and installing the clutch end cover”, page 16 .

Important! Installation position of driver disc

– Check that the marking on the driver disc -arrow- closes flush with the marking on the outer plate support.

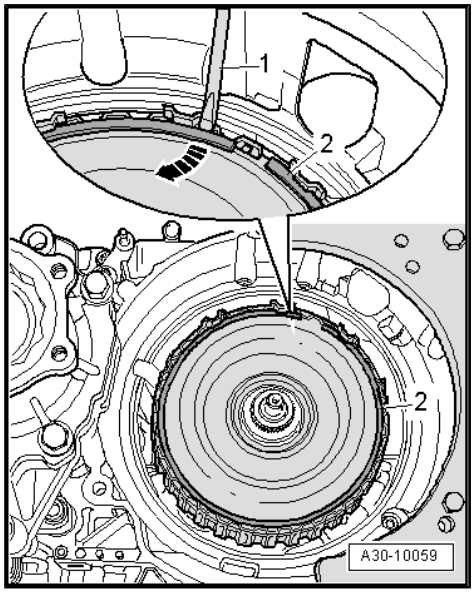


If there is no marking:

– Mark the installation position of driver disc on the circumference of the outer plate support with waterproof felt-tip pen, as shown.

• For installation, the driver disc must be returned to this position.

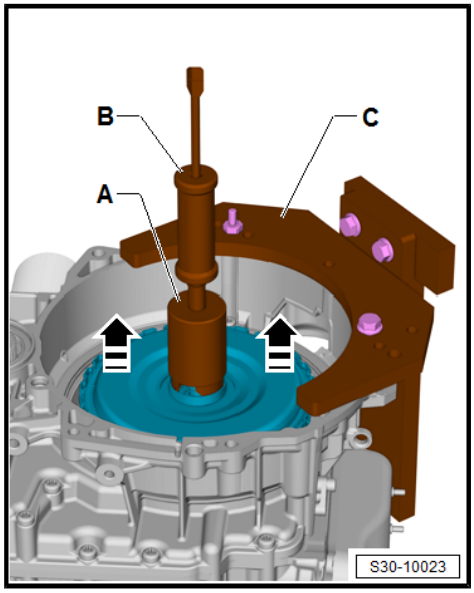
– Pry out the clutch cover circlip -2- with a screwdriver -1-.



Note

The circlip is replaced together with the clutch. If the removed coupling is reinstalled, the circlip will also be reused.

– Fit the extractor to the serration, as shown, and carefully drive the driver disc out of its seating in -direction of arrow-.



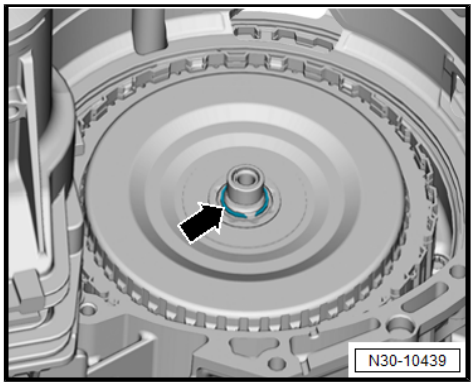
A - Extractor - T10525-

B - Extractor - T10055-

C - The gearbox is fixed in the assembly stand
⇒ “7 Attachment at engine and gearbox mount”, page 218 with gearbox holder - T30109 (VW353)-

– Remove circlip -arrow- and keep it for later installation.

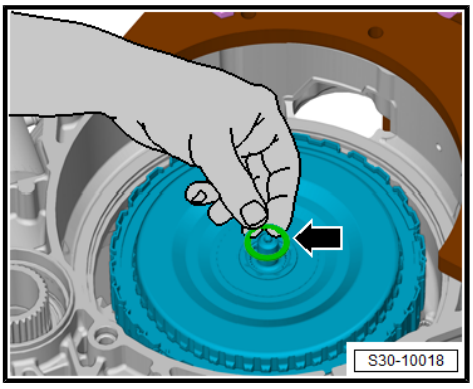
• Do not dispose of the circlip, as it is required to measure the axial play.



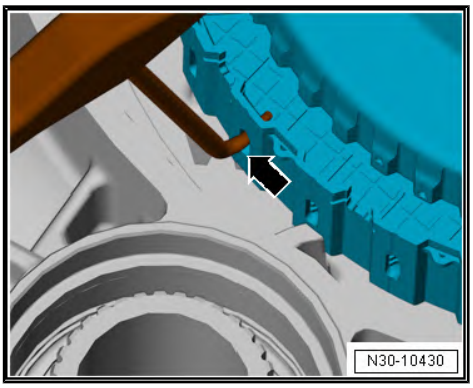
– Remove adjusting washer -arrow-.

• Carefully remove the dual clutch.

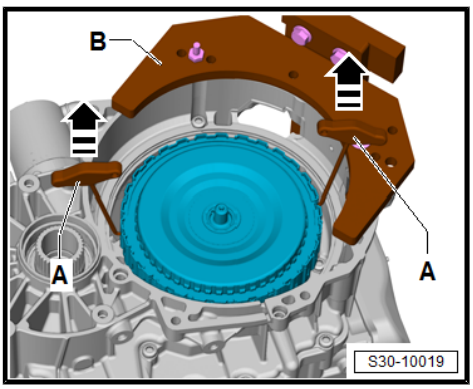
• Make sure that the no part falls down, so never turn the clutch!



– Attach the hooks - 3438- to the 2 opposite points, as shown -arrow-.



– Remove the dual clutch with hooks - 3438- -A-.



1.4 Install double clutch

Special tools and workshop equipment required

♦ Universal dial gauge bracket - MP3-447 (VW 387)-

♦ Dial gauge

♦ Retaining bolt - T10524-

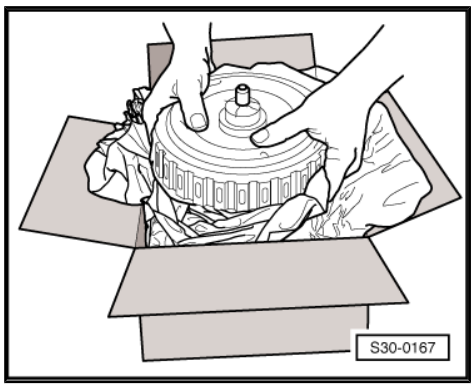
♦ Thrust piece - MP3-427 (40-21)-

- ♦ Hook - 3438- 2 units
- ♦ Extractor tool - T10055-
- ♦ Retractor - T10525-

- The driver disc must stay locked between the serrations of the outer plate support.
- If the driver disc is loosened, the plate clutches of the dual clutch may slip out. The dual clutch might then be set up incorrectly when assembled, under certain circumstances.
- Do not remove the plate supports or even raise them slightly, as the plates may be skewed.

– Already when taking the clutch out of the package press on the clutch cover.

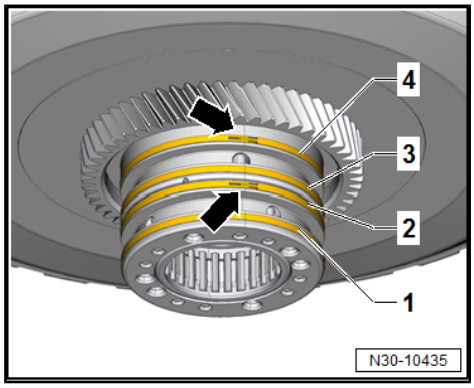
This should prevent that the clutch cover and the plate support located underneath slip out of the inner plates.



Installing

– Turn the piston rings through one revolution by hand. They must run freely and must not stick.

– Check that piston rings -1-, -2-, -3- and -4- are seated correctly.

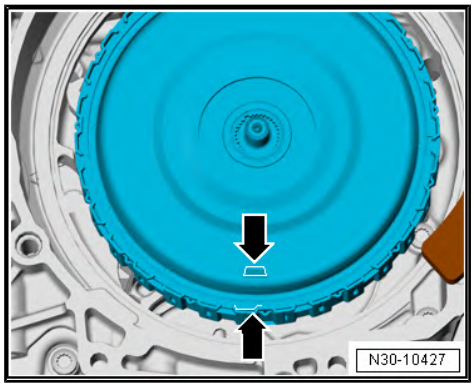


- The joints -arrows- of rings -1- and -3- should line up over each other.
- The joints -arrows- of rings -2- and -4- should be at an offset of 180° to the joints of rings -1- and -3-.

Important! Installation position of driver disc

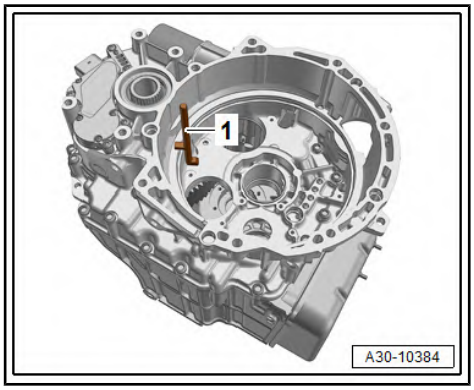
– Before installing, check that there is a marking on the dual clutch -arrow-.

- If there is no marking, use a water-proof felt-tip pen to mark in colour on the driver disc and outer plate support yourself.



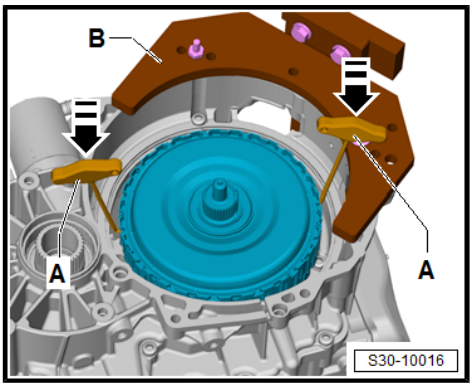
– Fit the retaining bolt - T10524- -1-.

• A second mechanic should hold the retaining bolt - T10524- -1- in place when the dual clutch is fitted.



– Carefully inset the dual clutch with the hooks - 3438- -A-.

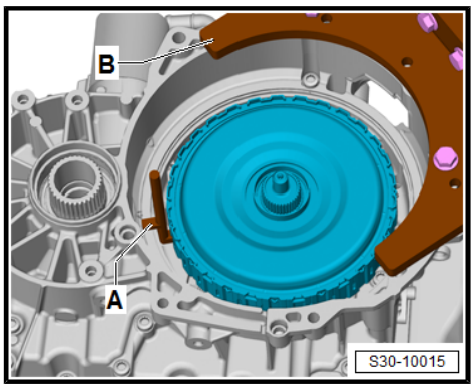
• The dual clutch must not be allowed to fall. If necessary, it can be fitted by rotating it slightly.



The dual clutch is in the correct installed position if the retaining bolt - T10524- -A- has some slight play.

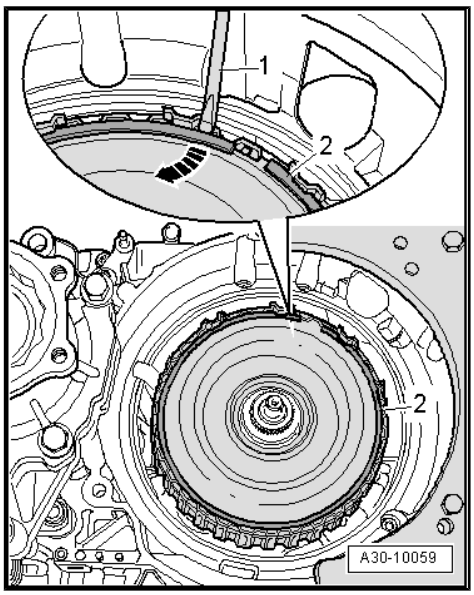
• The retaining bolt - T10524- -A- is kept in place until the clutch end cover is installed.

• The dual clutch must not now be turned any further, as otherwise the retaining bolt - T10524- can be twisted out of its position.

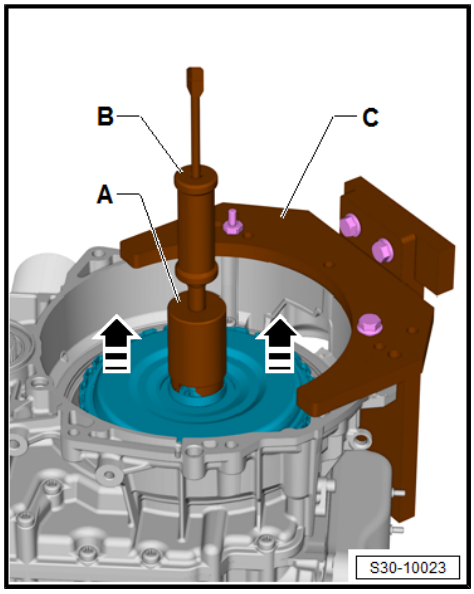


– Pry out the clutch cover circlip -2- with a screwdriver -1-.

• This circlip is reused.



– Fit the extractor to the serration, as shown, and carefully drive the driver disc out of its seating in -direction of arrow-.



A - Extractor - T10525-

B - Extractor - T10055-

C - The gearbox is fixed in the assembly stand ⇒ “7 Attachment at engine and gearbox mount”, page 218 with gearbox holder - T30109 (VW353)-

- A second mechanic must hold the retaining bolt - T10524- while driving out the disc.

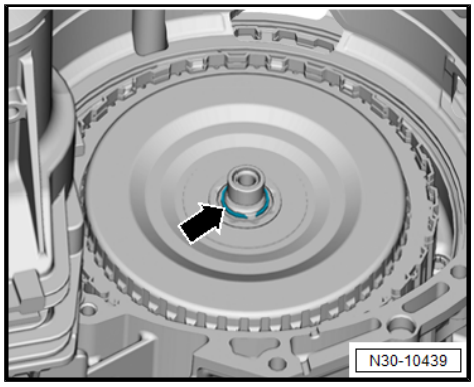
– Carefully remove the driver disc from the dual clutch -arrows- and place to one side.

- Do not remove the plate supports or even raise them slightly, as the plates may be skewed.

Identifying adjusting washer for dual clutch

- The retaining bolt - T10524- is inserted at all times.

– Install the original circlip -arrow- temporarily (only for three measurements).

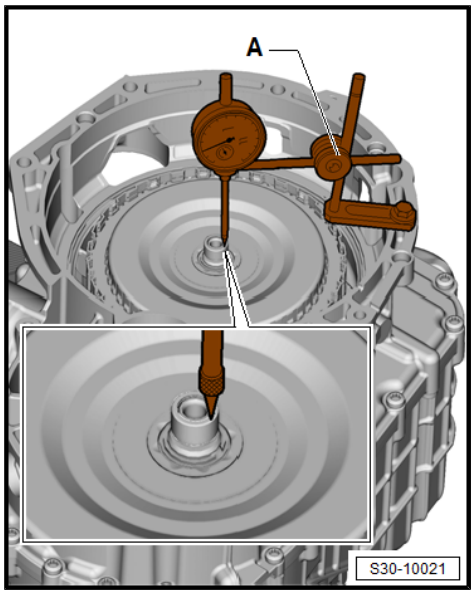


First measurement (axial play of shaft)

– Screw the universal dial gauge holder - MP3-447 (VW 387)- to the gearbox flange.

– Position the measuring tip of the dial gauge -A- on the input shaft.

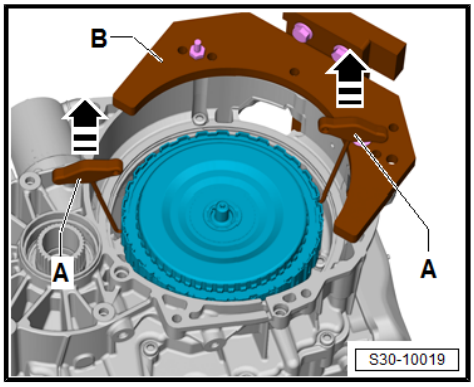
– Set the dial gauge to 0 with bias.



– Raise the dual clutch upwards to the stop with the hooks - 3438- -A- by pulling forcefully in -direction of arrow- and record the result.

– Record this value as “A”.

• This value is used later for control measurement, so keep value “A” until the last measurement.



Second measurement

• The retaining bolt - T10524- is inserted at all times.

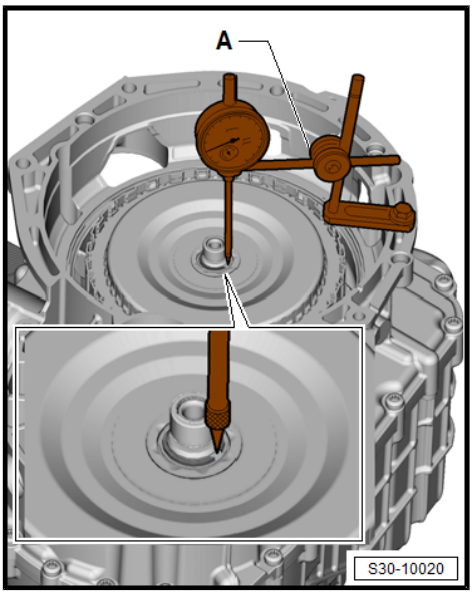
– Position the measuring tip of the dial gauge -A- on the hub of the large plate support.

• The measuring tip must not touch the circlip.

– Set the dial gauge to 0 with bias.

– Lift the dual clutch upwards up to the stop by pulling it forcefully and record the result of measurement.

– Record this value as “B”.



Calculating and identifying the adjusting washer

The following formula is used for this calculation:

Measured value “B”

–

Measured value “A”

–

0.11

=

Thickness of the circlip to be installed

– Record result of measurement.

Shims are graded by 0.05 mm.

– Find the adjusting washer that is nearest the result.

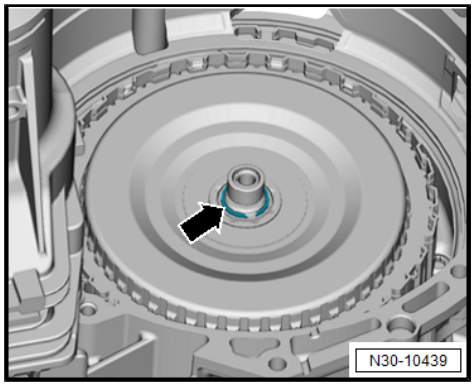
• Always use the next larger adjusting washer – never install a smaller adjusting washer.

Example:

Calculated size of the adjusting washer	New adjusting washer
1.28 mm	1.3 mm
1.26 mm	1.3 mm

– Remove the old circlip -arrow-.

• Do not dispose of the circlip, as it will be used once more.

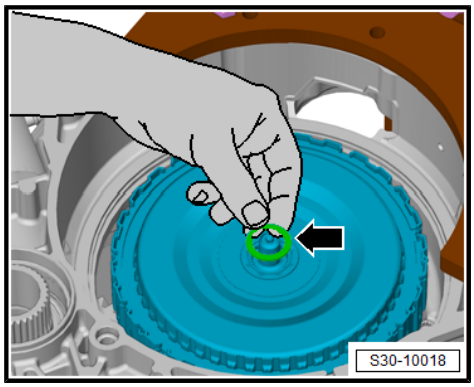


– Install the adjusting washer as applicable from calculation.

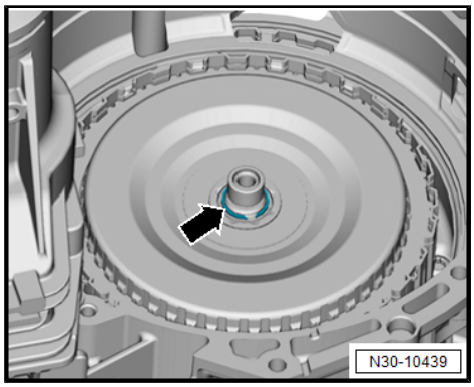
Control measurement

This is used to check the calculation and select the correct adjusting washer.

• The retaining bolt - T10524- is inserted at all times.



– Install the original circlip -arrow-.



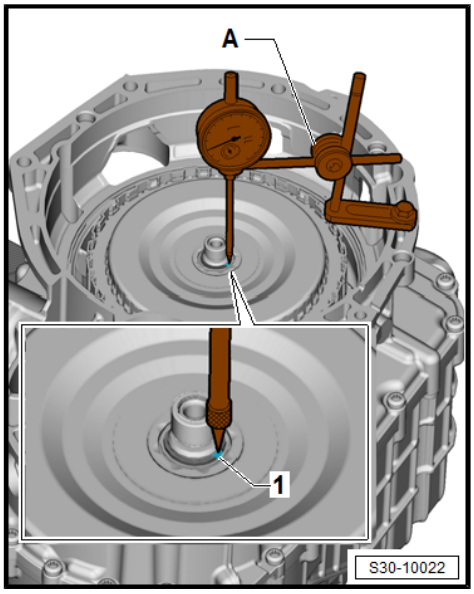
– Position the measuring tip of the dial gauge -A- on the hub of the large plate support.

• The measuring tip must be in contact with the adjusting washer -1-.

– Set the dial gauge to 0 with bias.

– Lift the dual clutch upwards up to the stop by pulling it forcefully and record the result of measurement.

– Record this value as “C”.



Final calculation and deciding on which of the adjusting washers will be installed

The following formula is used for this calculation:

Measured value “C”

–

Measured value “A”

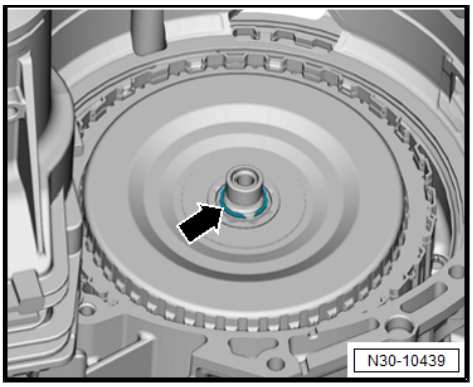
=

Specified value

This specified value must be in the range of 0.05-0.12 mm.

If the specified value has not been reached, it must be achieved by installing a thicker or thinner adjusting washer.

– Install the new circlip -arrow-.



– Insert the driver disc into the dual clutch.

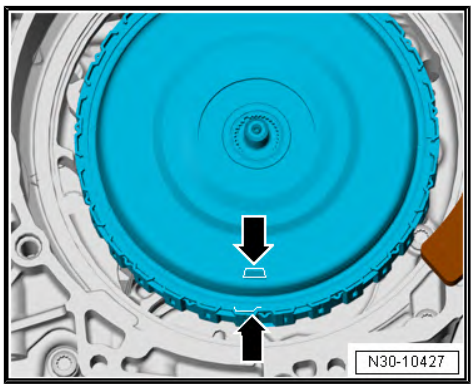
• During installation, check that the marking on the driver disc closes flush with the marking on the outer plate support -arrows-.

• The second mechanic holds the retaining bolt - T10524- firmly in position and presses it outwards slightly.

– Carefully drive the driver disc into its bearing with the drive bushing - MP3-427 (40-21)- and plastic hammer.

– Install the circlip of the driver disc.

– Press the circlip at the break point clockwise into its final position.



• The circlip must be completely locked in place.

– Use a screws to check that the circlip is seated correctly and locked.

– Remove retaining bolt - T10524- .

– Install the clutch end cover
⇒ “1.2 Removing and installing the clutch end cover”, page 16 .

34 – Controls, housing

1 Mechatronics

1.1 Summary of components - mechatronics

1 - Dual clutch gearbox 0GC

2 - Mechatronics for double clutch gearbox - J743-

- ❑ Removing and installing ⇒ “1.3 Removing and installing mechatronics”, page 30
- ❑ Pack and transport correctly ⇒ page 31
- ❑ Correct routing ⇒ page 32

3 - Screw

- ❑ 9 pieces
- ❑ Mechatronics for double clutch gearbox - J743- on gearbox
- ❑ Replace after removal
- ❑ Tightening torque and tightening order ⇒ page 33

4 - Sealing ring

- ❑ for plug of mechatronics

5 - Screw

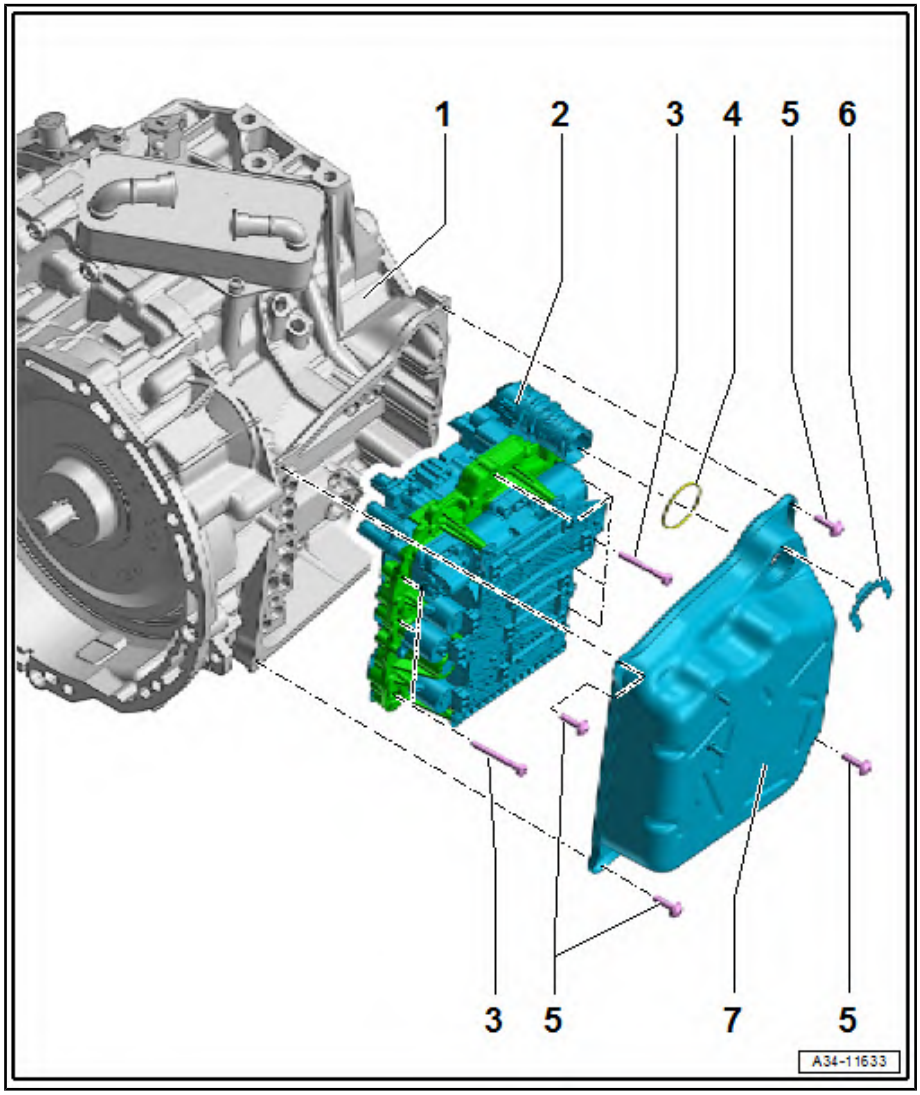
- ❑ 4 pieces
- ❑ Cover of mechatronics to gearbox
- ❑ Replace after removal
- ❑ 8 Nm + 60°

6 - Locking clip

- ❑ for plug of mechatronics
- ❑ Replace after removal

7 - Oil pan

- ❑ with gasket
- ❑ Replace after removal
- ❑ Removing and installing ⇒ “1.2 Removing and installing oil pan”, page 28



1.2 Removing and installing oil pan

- Make sure no dirt gets into the gearbox when the gearbox is open.
- Follow regulations for cleanliness when working on the gearbox; dirt when the dual clutch gearbox mechatronics - J743-

is open in particular can lead to the failure of the gearbox
⇒ “3.1 Rules of cleanliness”, page 6 .

- Observe the general repair instructions
⇒ “3.3 General repair instructions”, page 7 .

NOTICE

Risk of damage to gearbox.

– Do not run the engine or tow the vehicle when the oil pan has been removed or without filling with gearbox oil.

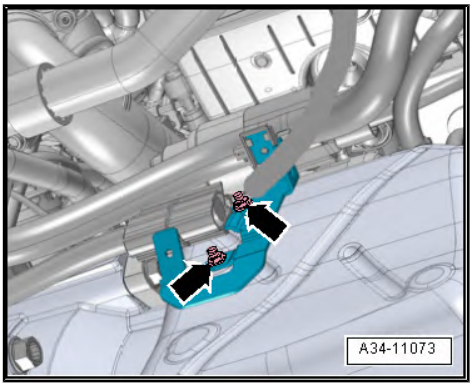
Removing

– Shift selector lever into position “P”.

– With ignition switched off, disconnect battery earth strap ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .

– Remove the sound dampening system ⇒ General body repairs, exterior ; Rep. gr. 66 ; Noise insulation .

– Unscrew the nuts -arrows- and remove the bracket for electric cables from the threaded bolts on the oil pan.



– Connect electric cables at the side in area of oil sump.

– Drain out gear oil
⇒ “9.4 Draining and filling gearbox oil”, page 231 .

NOTICE

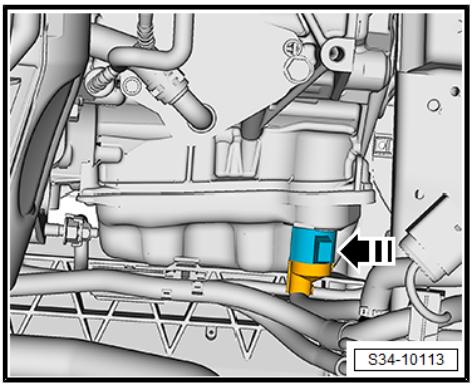
There is a risk of destruction of the dual clutch gearbox mechatronics - J743- .

Static discharges may destroy the control unit and the mechatronics.

– Do not in any circumstances allow the gearbox plug contacts to come into contact with your hands.

– Grab with the hand (without gloves) at the mass, in order to discharge yourself electrostatically.

– Unlock the cap of the connector by turning to the left in -direction of arrow- and disconnect the connector from the mechatronics.



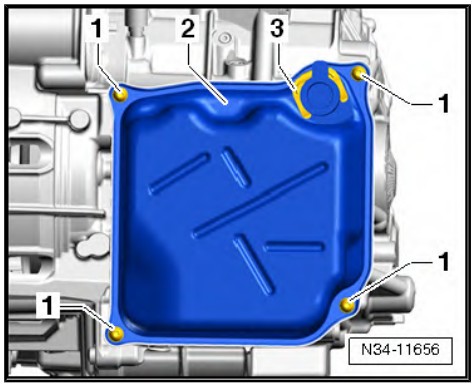
– Position catch pan , e.g. -VAS 6208- , under the gearbox.

– Remove locking clip -3-.

– Loosen screws -1- crosswise and remove.

– Remove oil sump -2- with the oil sump seal.

If necessary, release oil sump by applying light blows with a rubber-headed hammer.



Installing

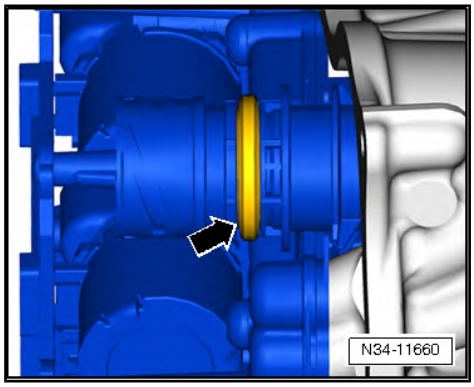
Installation is carried out in the reverse order. When installing, observe the following:

- Replace the oil sump, sump screws and securing clip after removal.

– Wet the gasket ring with gear oil.

When a new Mechatronics for dual-clutch transmissions - J743- is fitted, it is fitted with a new O-ring.

– Remove oil and grease from sealing surface of gearbox housing.



– Fit new oil sump for mechatronics with seal -2- and tighten the new screws -1- crosswise in stages.

- Make sure that the electric cable is not pinched when fitting the oil sump.

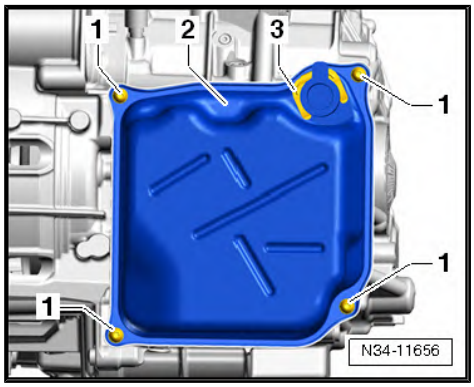
– Insert new locking clip -3-.

- The angled side of the locking clip points to the gearbox.

– Connect the plug of the dual clutch gearbox mechatronics - J743- and lock the cap by turning it.

– Pour in gear oil
⇒ “9.4 Draining and filling gearbox oil”, page 231 .

– Install the noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation .



Tightening torques and summaries of components

Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

♦ Oil sump dual clutch gearbox mechatronics - J743- to gearbox
⇒ “1.1 Summary of components - mechatronics”, page 28

1.3 Removing and installing mechatronics

- Make sure no dirt gets into the gearbox when the gearbox is open.
- Follow regulations for cleanliness when working on the gearbox; dirt when the dual clutch gearbox mechatronics - J743- is open in particular can lead to the failure of the gearbox
⇒ “3.1 Rules of cleanliness”, page 6 .

- Observe the general repair instructions
  ⇒ “3 Repair instructions”, page 6 .
- If the gearbox is hot, the mechatronics may catch on the fitted pins. In this case, you must leave the gearbox to cool.

NOTICE

Risk of damage to gearbox.

– Do not run the engine or tow the vehicle when the oil pan has been removed or without filling with gearbox oil.

Removing

– Removing the oil pan
  ⇒ “1.2 Removing and installing oil pan”, page 28 .

NOTICE

There is a risk of destruction of the dual clutch gearbox mechatronics - J743- .

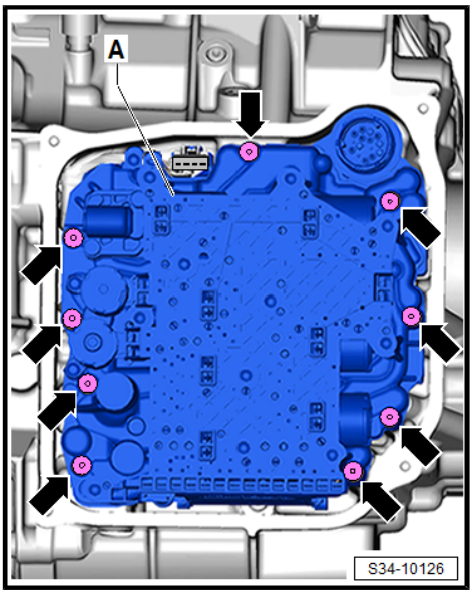
Static discharges may destroy the control unit and the mechatronics.

– Only then touch or remove them after you have discharged yourself electrostatically at an earthed object beforehand, e.g. skin contact with earth.

– Touch an earthed object with your bare hand (without gloves) to discharge any electrostatic.

– Unscrew screws of the mechatronics -arrows- crosswise and remove.

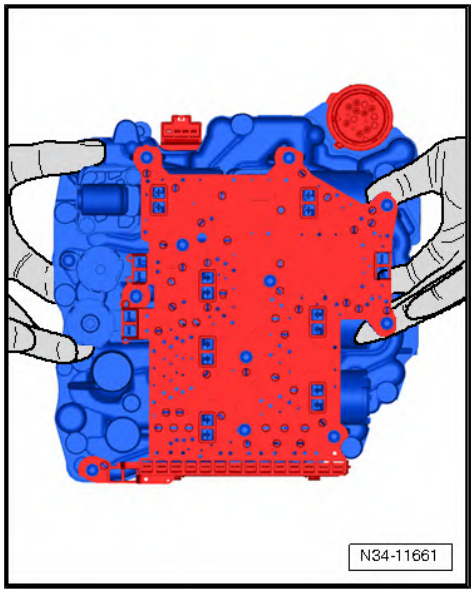
There is a risk of damage to the dual clutch gearbox mechatronics - J743- .



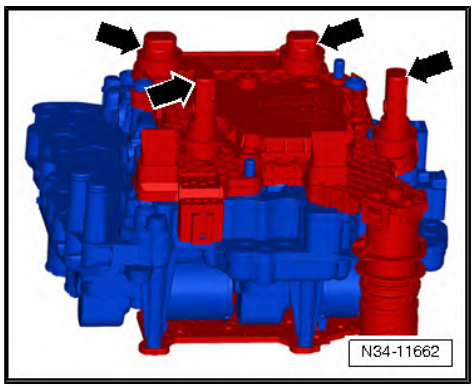
- Pack the mechatronics and only transport as follows.

– Carefully remove the mechatronics from the gearbox housing.

Correctly routing the dual clutch gearbox mechatronics - J743-



- The sensors -arrows- must point upwards when the mechatronics is transported.



Installing

Installation is carried out in the reverse order. When installing, observe the following:

- Remove oil and grease from sealing surface of gearbox housing.
- Make sure no dirt gets into the inside.
- Pack the mechatronics and transport correctly ⇒ page 31 .

NOTICE

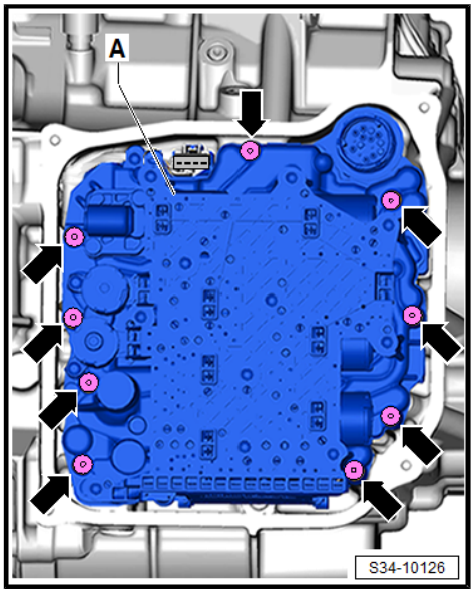
There is a risk of destruction of the dual clutch gearbox mechatronics - J743- .

Static discharges may destroy the control unit and the mechatronics.

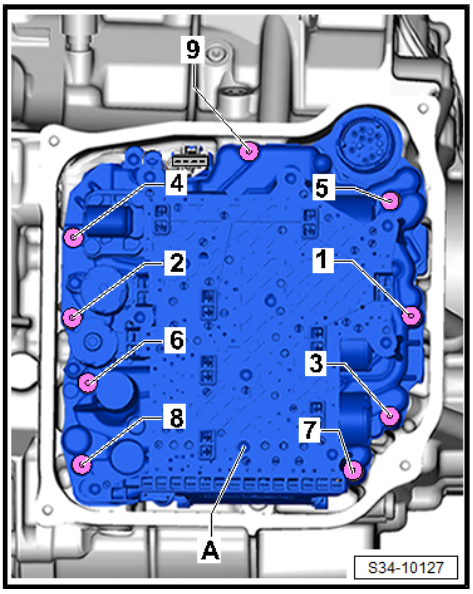
– **Only then touch or remove them after you have discharged yourself electrostatically at an earthed object beforehand, e.g. skin contact with earth.**

– **Touch an earthed object with your bare hand (without gloves) to discharge any electrostatic.**

– Carefully insert the dual clutch gearbox mechatronics - J743- -A- into the gearbox.
– Tighten new screws -arrows- hand-tight.



Tightening torque and tightening order



Step	Screws	Tightening torque
1.	-1- to -9-	8 Nm
2.	-1- to -9-	Turn another 45°

– Installing the oil pan
⇒ “1.2 Removing and installing oil pan”, page 28 .
– Pour in gear oil
⇒ “9.4 Draining and filling gearbox oil”, page 231 .
– Install the noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation .
– After the installation of the new mechatronics, the basic setting has to be done and the immobilizer has to be ⇒ Vehicle diagnostic tester adapted.

Tightening torques and summaries of components

Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ⇒ “1.1 Summary of components - mechatronics”, page 28

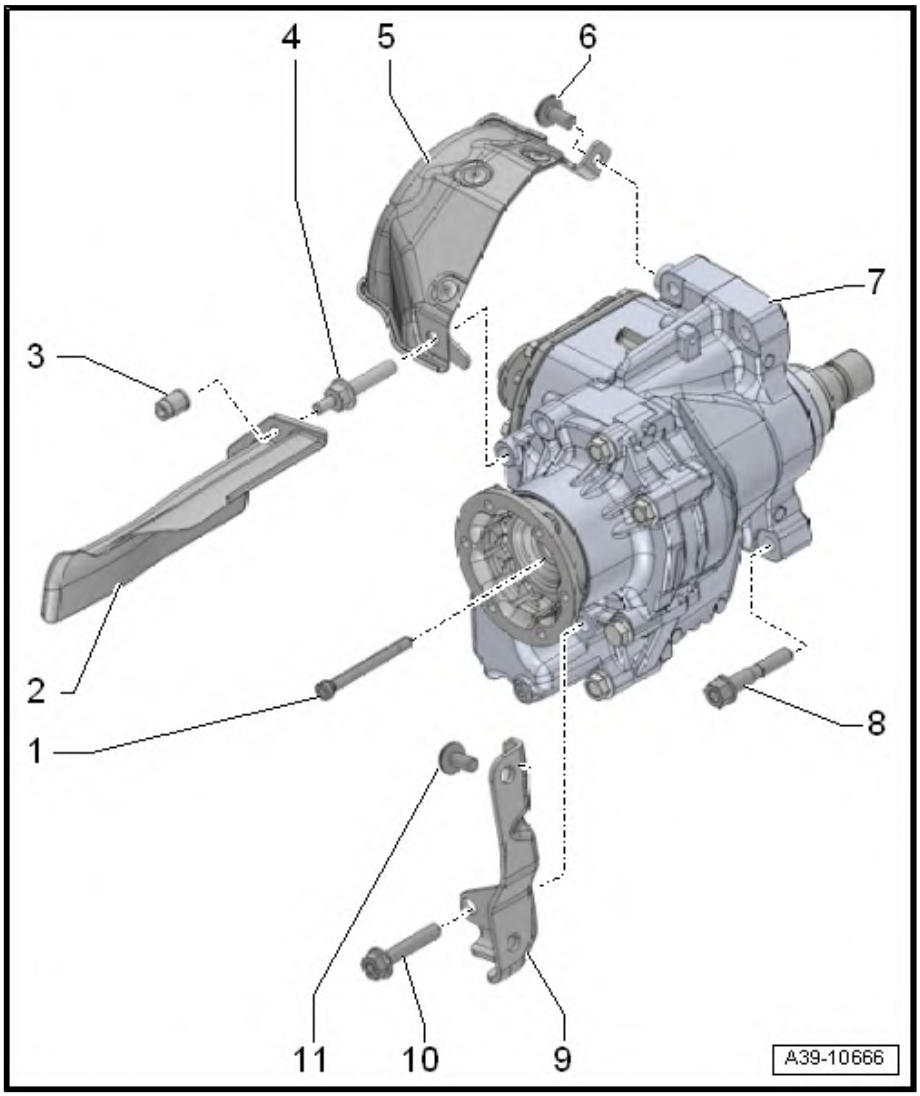
2 Angle gearbox

⇒ “2.1 Summary of components - angle gearbox”, page 35

⇒ “2.2 Remove angle gearbox”, page 36

⇒ “2.3 Install angle gearbox”, page 43

2.1 Summary of components - angle gearbox



1 - Screw
- ❑ 25 Nm

2 - Protection plate
- ❑ for right drive shaft

3 - Screw
- ❑ Tightening torque ⇒ Chassis, axles, steering; Rep. gr. 40 ; Drive shaft; installing and removing the heat shield for drive shaft

4 - Double screw
- ❑ 40 Nm

5 - Protection plate
- ❑ for propshaft

6 - Screw
- ❑ 20 Nm

7 - Angle gearbox
- ❑ Distinction and description ⇒ “2.2 Marking angle gearbox”, page 4
- ❑ removing ⇒ “2.2 Remove angle gearbox”, page 36
- ❑ installing ⇒ “2.3 Install angle gearbox”, page 43
- ❑ Mounting overview of angle gear ⇒ “4.1 Assembly overview - angle gearbox parts”, page 247

8 - Screw
- ❑ Replace after removal
- ❑ 4 pieces
- ❑ Tightening sequence ⇒ page 44
- ❑ 40 Nm + 90°

9 - Mounting bracket
- ❑ for angle gearbox
- ❑ Various designs, assignment ⇒ Electronic Catalogue of Original Parts

10 - Screw
- ❑ Tightening sequence ⇒ page 44
- ❑ 40 Nm

11 - Screw

- ❑ Tightening sequence ⇒ page 44
- ❑ 40 Nm

2.2 Remove angle gearbox

⇒ “2.2.1 Removing bevel gear, vehicles with 1.5 TSI petrol engine”, page 36

⇒ “2.2.2 Removing bevel gear, vehicles with 2.0 TFSI petrol engine”, page 38

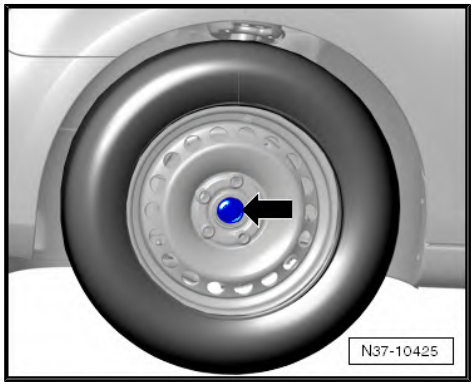
⇒ “2.2.3 Removing the angle gearbox - vehicles with diesel engine”, page 40

2.2.1 Removing bevel gear, vehicles with 1.5 TSI petrol engine

Special tools and workshop equipment required

- ♦ Insertion tool 8 mm - T40276-
- ♦ Socket - T10107A-
- ♦ Engine support bracket - T10533-

To remove the right-angle gear unit, the right-hand drive shaft must be removed. With the vehicle still standing on its wheels, therefore, the propeller shaft screw must be loosened -arrow-.



- If the vehicle is standing on the wheels, the cardan shaft bolt can be released by a maximum of 90°, otherwise the wheel bearing can be damaged.

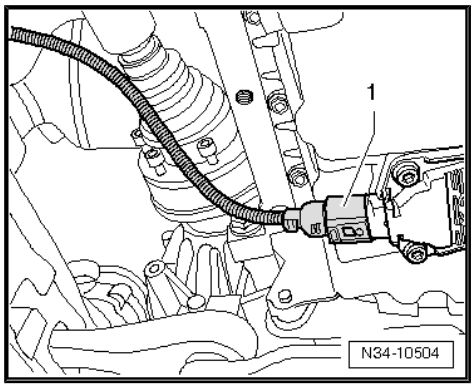
– Loosen the right-hand cardan shaft -arrow- , ⇒ chassis, axles, steering; Rep. gr. 40 ; Cardan shaft; Loosen the cardan shaft screw connection and tighten .

– Shift selector lever to position “N”.

So that it is then possible to turn using the propshaft when loosening.

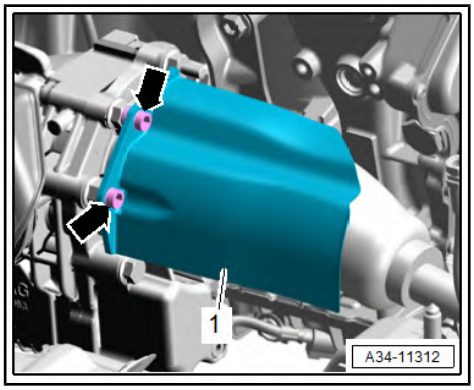
– Remove the sound dampening system ⇒ General body repairs, exterior ; Rep. gr. 66 ; Noise insulation .

– Pull of the plug -arrow- from the oil level and oil temperature sender - G266- .



– Unscrew screws -arrows- and remove heat shield for right drive shaft ⇒ Chassis, axles, steering; Rep. gr. 40 ; Drive shaft; Installing and removing heat shield for drive shaft (if present).

– Remove right drive shaft ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .



NOTICE

Risk of damage to the decoupling element of the exhaust system.

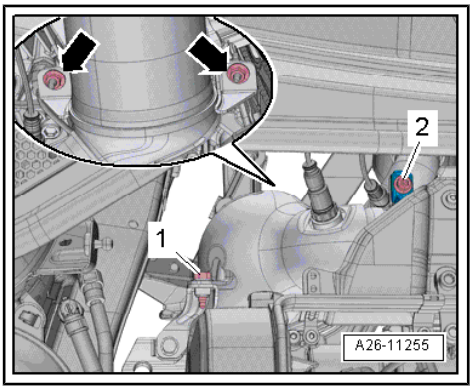
– The decoupling element in the pre-exhaust pipe should not be stretched or bent by more than 10°.

– Loosen screw -2- and loosen clamping sleeve at connection point of exhaust pre-venting pipe / turbocharger.

– Unscrew screw -1- and both nuts -arrows- and detach pre-exhaust pipe with catalytic converter.

– Tie up the exhaust pipe.

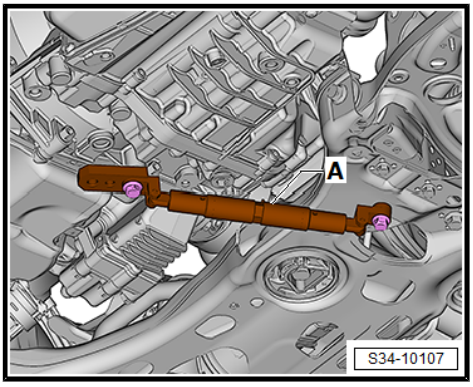
– Remove propshaft from angle gearbox ⇒ Propeller shaft and rear final drive; Rep. gr. 39 ; Propeller shaft; remove and install propeller shaft .



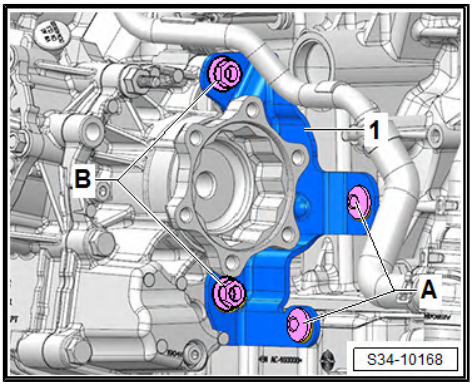
– Screw engine support bracket - T10533- -A- to the screw hole for front pendulum support and on the axle to the screw hole for noise insulation.

– Rotate using the spindle of the engine support - T10533- -A- in order to the engine/gearbox assembly forwards as far as possible.

• When swivelling the engine/gearbox assembly, ensure that it does not collide with the assemblies in the front part of the engine compartment, in particular the fan shroud.



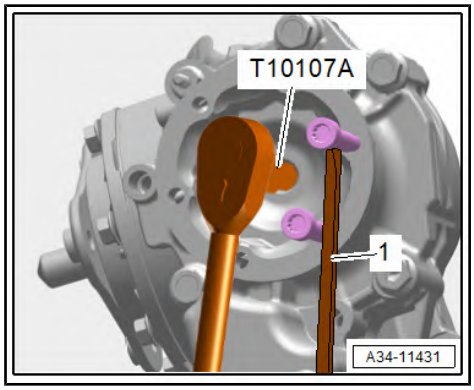
– Unscrew screws -A- and -B- and remove bracket for angle gearbox.



– Tighten the screw on the right flange shaft with a socket insert - T10107A- .

• To loosen the bolt, insert 2 bolts into the flange and counter-hold the flange shaft with am assembly lever.

Access to the top fixing screws between gearbox and angle gearbox is limited in some variants.



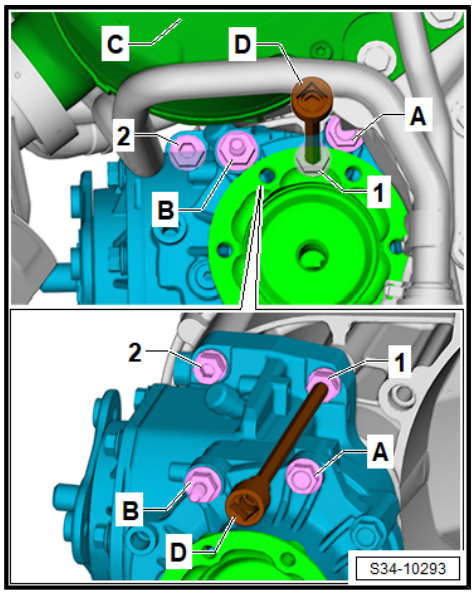
Layout of top fixing screws for angle gearbox -1- and -2- (screws are partially covered by the angle gearbox).

♦ Screw -1- is located near to screw -A-.

♦ Screw -2- is located near to screw -B-.

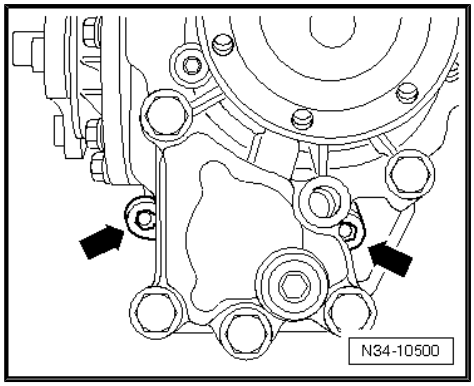
♦ The pre-exhaust pipe with catalytic converter or particle filter -C- is located above the screws.

– Unscrew the top fixing screws -1- and -2- for angle gearbox with socket insert 8 mm - T40276- -D-.



– Unscrew the lower fixing screws -arrows- for angle gearbox.

– Carefully push off and remove the angle gearbox from the clutch.



2.2.2 Removing bevel gear, vehicles with 2.0 TFSI petrol engine

Special tools and workshop equipment required

♦ Insertion tool 8 mm - T40276-

♦ Socket - T10107A-

♦ Engine support bracket - T10533-

♦ Tensioning strap - T10038-

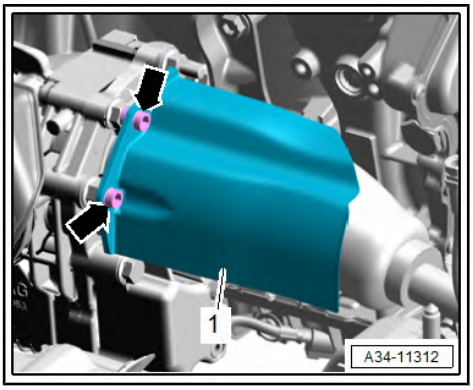
– Shift selector lever to position “N”.

So that it is then possible to turn using the propshaft when loosening.

– Lower assembly carrier into service position ⇒ Chassis, axles, steering; Rep. gr. 40 ; Assembly carrier; Lowering the assembly carrier .

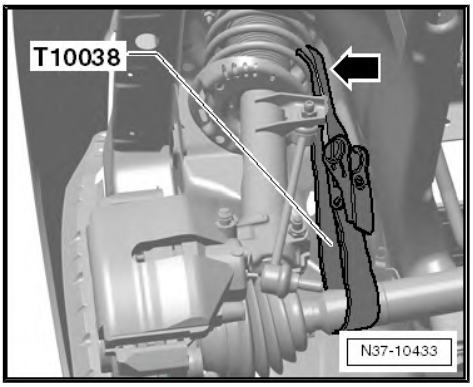
– Unscrew screws -arrows- and remove heat shield for right drive shaft ⇒ Chassis, axles, steering; Rep. gr. 40 ; Drive shaft; Installing and removing heat shield for drive shaft (if present).

– Removing drive shaft right and left on the angle gearbox ⇒ Chassis, axles, steering; Rep. gr. 40 ; Cardan shaft; removing and installing cardan shaft .

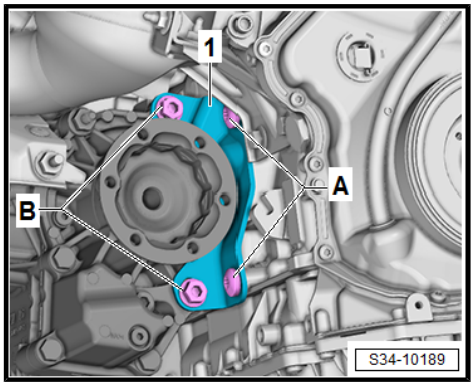


– Secure the drive shaft e.g. to the suspension struts with tensioning strap - T10038- .

– Remove propshaft from angle gearbox ⇒ Propeller shaft and rear final drive; Rep. gr. 39 ; Propeller shaft; remove and install propeller shaft .



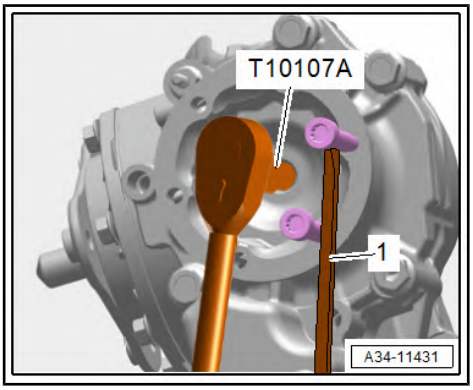
– Unscrew screws -A- and -B- and remove bracket for angle gearbox -1-.



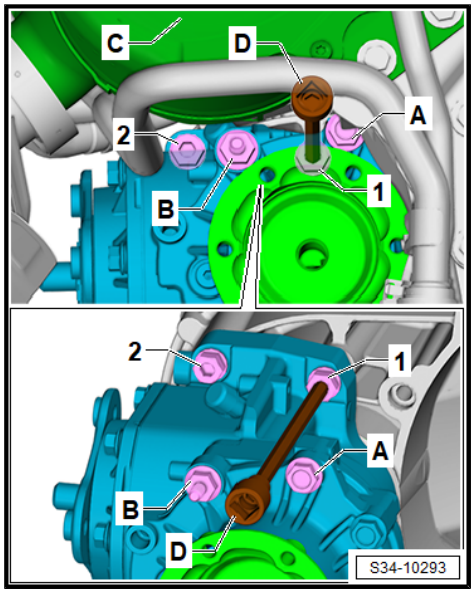
– Tighten the screw on the right flange shaft with a socket insert - T10107A- .

• To loosen the bolt, insert 2 bolts into the flange and counterhold the flange shaft with am assembly lever.

Access to the top fixing screws between gearbox and angle gearbox is limited in some variants.



Layout of top fixing screws for angle gearbox -1- and -2- (screws are partially covered by the angle gearbox).

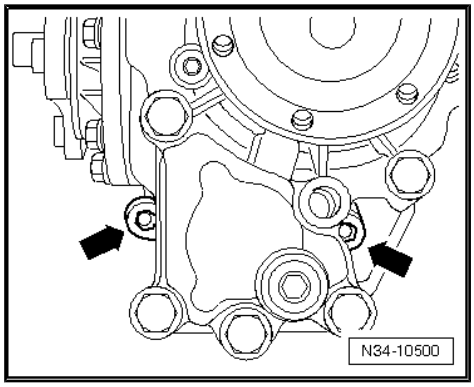


- ♦ Screw -1- is located near to screw -A-.
- ♦ Screw -2- is located near to screw -B-.
- ♦ The pre-exhaust pipe with catalytic converter or particle filter -C- is located above the screws.

– Unscrew the top fixing screws -1- and -2- for angle gearbox with socket insert 8 mm - T40276- -D-.

– Unscrew the lower fixing screws -arrows- for angle gearbox.

– Carefully push off and remove the angle gearbox from the clutch.



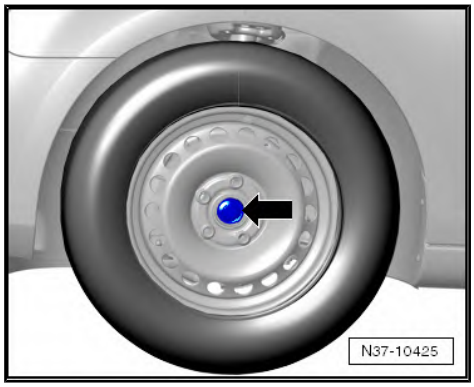
2.2.3 Removing the angle gearbox - vehicles with diesel engine

Special tools and workshop equipment required

- ♦ Insertion tool 8 mm - T40276-
- ♦ Socket - T10107A-
- ♦ Engine support bracket - T10533-

To remove the right-angle gear unit, the right-hand drive shaft must be removed. With the vehicle still standing on its wheels, therefore, the propeller shaft screw must be loosened -arrow-.

7



- If the vehicle is standing on the wheels, the cardan shaft bolt can be released by a maximum of 90°, otherwise the wheel bearing can be damaged.

– Loosen the right-hand cardan shaft -arrow- , ⇒ chassis, axles, steering; Rep. gr. 40 ; Cardan shaft; Loosen the cardan shaft screw connection and tighten .

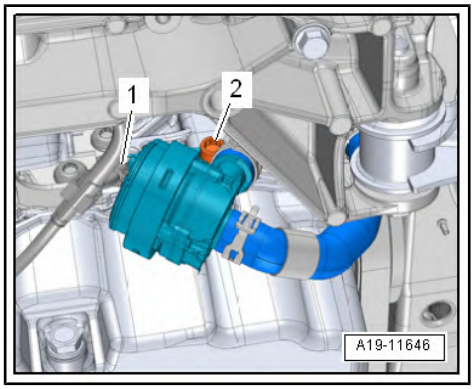
– Shift selector lever to position “N”.

So that it is then possible to turn using the propshaft when loosening.

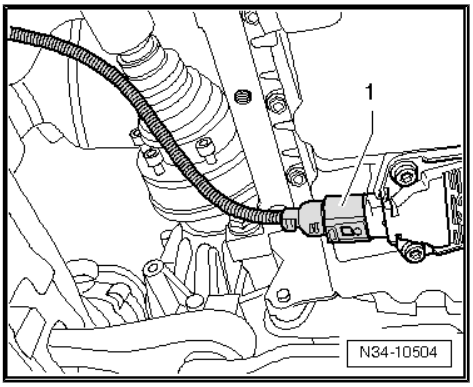
– Remove the sound dampening system ⇒ General body repairs, exterior ; Rep. gr. 66 ; Noise insulation .

– Separate electrical plug connection -1-.
– Unscrew screw -2-, detach heating backup pump - V488- and push to side.

• Do not remove coolant hoses.



– Pull of the plug -arrow- from the oil level and oil temperature sender - G266- .

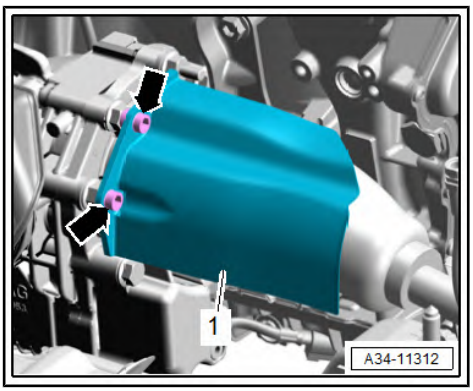


– Unscrew nuts -arrows- and remove heat shield for right drive shaft ⇒ Chassis, axles, steering; Rep. gr. 40 ; Drive shaft; installing and removing heat shield for drive shaft (if present).
– Remove right drive shaft ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .

NOTICE

Risk of damage to the decoupling element of the exhaust system.

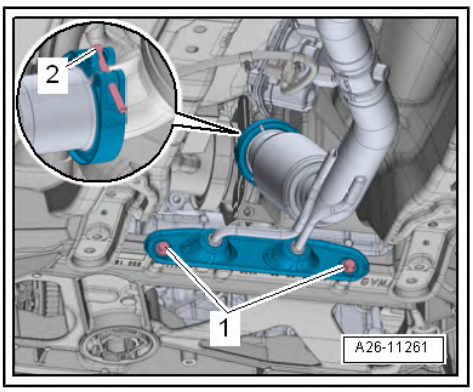
– The decoupling element in the pre-exhaust pipe should not be stretched or bent by more than 10°.



– Unscrew screw -2- and remove clamping sleeve on pre-exhaust pipe.

Do not unscrew screw -1-.

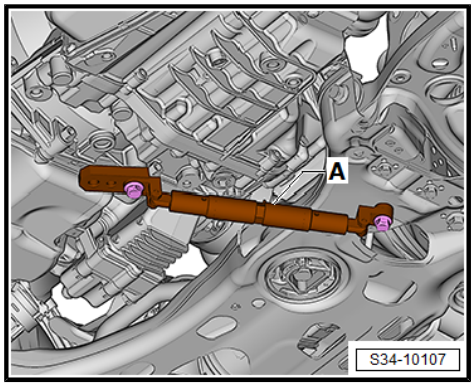
– Remove propshaft from angle gearbox ⇒ Propeller shaft and rear final drive; Rep. gr. 39 ; Propeller shaft; remove and install propeller shaft .



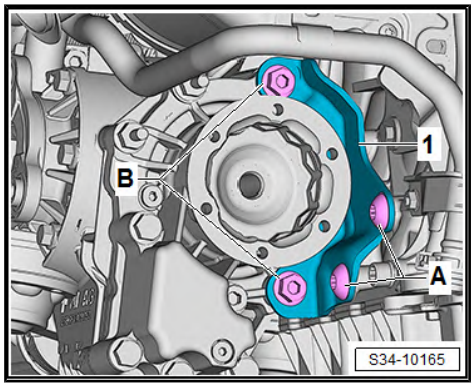
– Screw engine support bracket - T10533- -A- to the screw hole for front pendulum support and on the axle to the screw hole for noise insulation.

– Rotate using the spindle of the engine support - T10533- -A- in order to the engine/gearbox assembly forwards as far as possible.

• When swivelling the engine/gearbox assembly, ensure that it does not collide with the assemblies in the front part of the engine compartment, in particular the fan shroud.



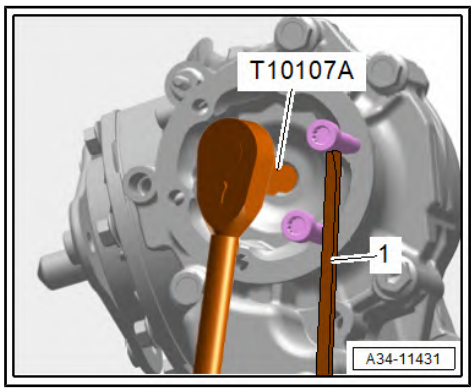
– Unscrew screws -A- and -B- and remove bracket for angle gearbox.



– Tighten the screw on the right flange shaft with a socket insert - T10107A- .

• To loosen the bolt, insert 2 bolts into the flange and counter-hold the flange shaft with am assembly lever.

Access to the top fixing screws between gearbox and angle gearbox is limited in some variants.



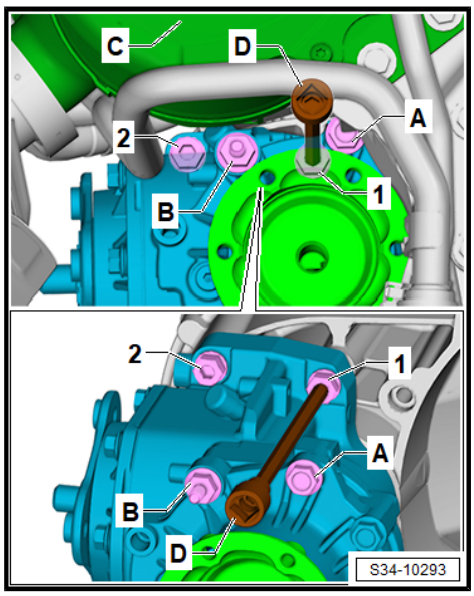
Layout of top fixing screws for angle gearbox -1- and -2- (screws are partially covered by the angle gearbox).

♦ Screw -1- is located near to screw -A-.

♦ Screw -2- is located near to screw -B-.

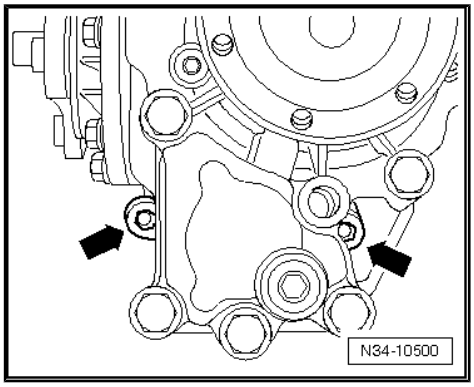
♦ The pre-exhaust pipe with catalytic converter or particle filter -C- is located above the screws.

– Unscrew the top fixing screws -1- and -2- for angle gearbox with socket insert 8mm - T40276- -D-.



– Unscrew the lower fixing screws -arrows- for angle gearbox.

– Carefully push off and remove the angle gearbox from the clutch.



2.3 Install angle gearbox

- Replace self-locking nuts and bolts each time they are removed.
- Lightly grease the teeth of the flanged shaft with spline grease.

– Insert new screws into the top fixing holes of the angle gearbox before is it placed on the gearbox.

– Slide the angle gearbox onto the gearbox.

- Guide the teeth of the drive shaft for the angle gearbox in the differential axis.
- If the grooves are set correctly, the angle gearbox engages on the gearbox up to the stop.

NOTICE

Risk of damage to angle gearbox.

– Do not screw the angle gearbox to the gearbox with fixing screws. If the angle gearbox is tilted, the fixing eyes may break off.

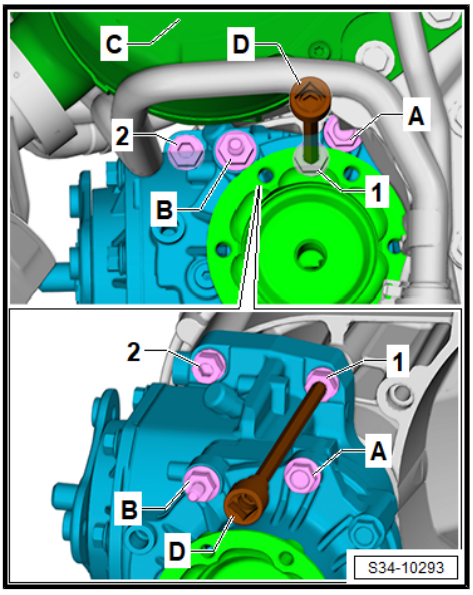
Access to the top fixing screws between gearbox and angle gearbox is limited in some variants.

Layout of top fixing screws for angle gearbox -1- and -2- (screws are partially covered by the angle gearbox).

- ♦ Screw -1- is located near to screw -A-.
- ♦ Screw -2- is located near to screw -B-.
- ♦ The pre-exhaust pipe with catalytic converter or particle filter -C- is located above the screws.

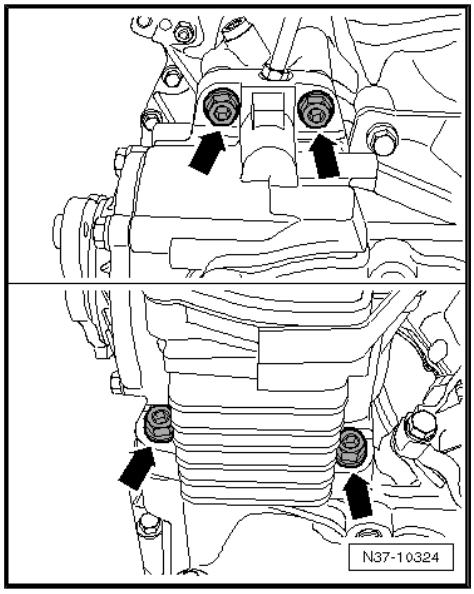
– Tighten the fixing screws for top and bottom of angle gearbox.

- To tighten the upper screws -1- and -2- use the 8 mm insertion tool - T40276- .



Tightening torques and tightening order of the angle gearbox

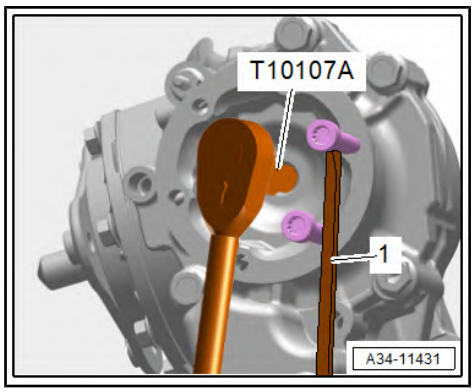
Step	Screws	Tightening torque / torquing angle
1.	-Arrows-	Tighten by hand as far as the stop
2.	-Arrows-	40 Nm
3.	-Arrows-	Turn 90° further



– Insert right flange shaft screw and tighten with plug insert - T10107A- .

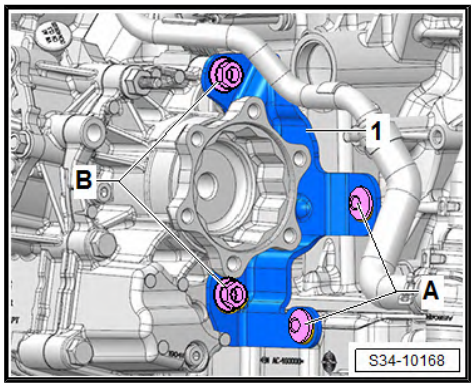
• To tighten the bolt, insert 2 bolts into the flange and counter-hold the flange shaft on the assembly lever.

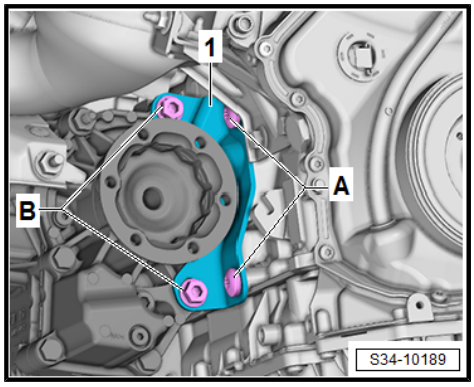
– Position bracket for angle gearbox and tighten.



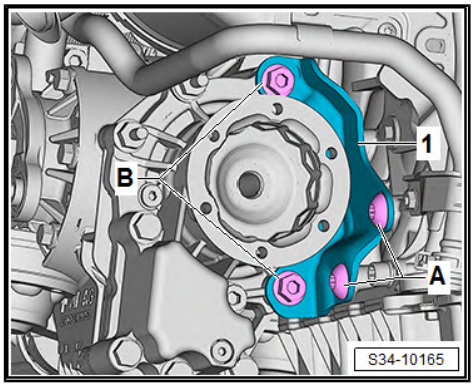
Tightening torque and tightening order of the mounting bracket for angle gearbox

The type of bracket may different, depending on engine - assignment ⇒ Electronic Catalogue of Original Parts





- Vehicles with 1.5 l TSI petrol engines
- Vehicles with 2.0 TFSI petrol engines
- Vehicles with 2.0 l TDI diesel engine



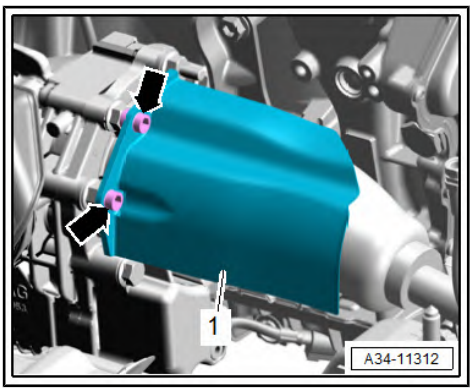
Step	Screws	Tightening torque
1.	-A-, -B-	Tighten by hand as far as the stop
2.	-A-	40 Nm
3.	-B-	40 Nm

Further installation occurs in reverse order to the removal.

– Fit propshaft to angle gearbox ⇒ Propshaft and rear final drive; Rep. gr. 39 ; Propshaft; remove and install propshaft .

– Summary of components - installing right cardan shaft ⇒ Cardan and rear final drive; Rep. gr. 39 ; Propshaft; Summary of components - cardan shaft .

– Install heat shield for right drive shaft ⇒ Chassis, axles, steering; Rep. gr. 40 ; Drive shaft; removing and installing heat shield for drive shaft (if present).



Vehicles with 2.0 TFSI petrol engines

– Reinstalling subframe from service position ⇒ Suspension, axles, steering; Rep. gr. 40 ; Unit carrier; Lowering subframe .

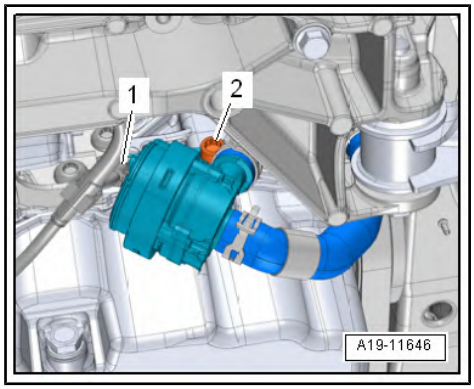
Continued for all vehicles

– Install the pendulum support ⇒ Rep. gr. 10 ; Assembly mountings; removing and installing the pendulum support .

– Fit the exhaust system to the engine (if removed) ⇒ Engine; Rep. gr. 26 ; exhaust cleaning system; summary of components - exhaust cleaning .

Vehicles with diesel engine

– Install heating backup pump - V488- with a bolt -2- to engine ⇒ Rep. gr. 19 ; Coolant pump/regulation of cooling system; Summary of components - electric coolant pump .



Continued for all vehicles

– Inspecting oil level in the angle gearbox ⇒ “1.1 Checking the gear oil level”, page 236 .

– Install the noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation .

Tightening torques and summaries of components

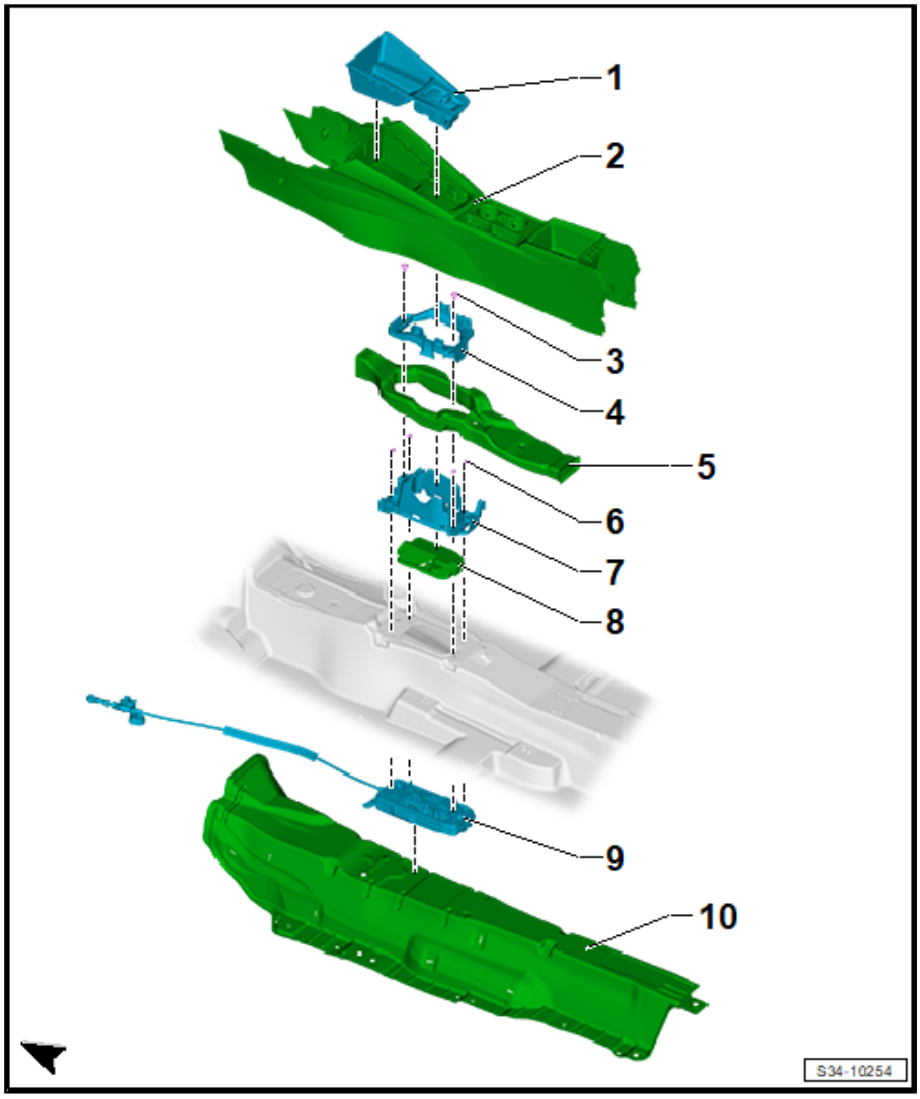
Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- Summary of components - Angle gearbox ⇒ “2.1 Summary of components - angle gearbox”, page 35 .
- Summary of components - propshaft ⇒ Propshaft and rear final drive; Rep. gr. 39 ; Propshaft; Summary of components - propshaft .
- Summary of components - bottom track control arm, steering joint ⇒ Chassis, axles, steering; Rep. gr. 40 ; Assembly carrier; Summary of components - assembly carrier .

3 Shift mechanism

3.1 Overview - shift mechanism



1 - Shift cover with control element for shift mechanism

- ❑ Removing and installing ⇒ “3.4.4 Removing and installing the cover with operating element for the gearshift mechanism - Octavia IV”, page 64
- ❑ Perform emergency release of gearshift ⇒ “3.3.3 Emergency release out of P position, Octavia IV”, page 55

2 - Centre console

- ❑ Removing and installing ⇒ general body repairs, interior; Rep. gr. 68 ; Centre console .

3 - Screw

- ❑ for attaching the upper bracket for the centre console to the lower part
- ❑ 8 Nm

4 - Upper bracket for the centre console

5 - Air guide for the heater and air conditioning system control unit

- ❑ in centre console

6 - Nut

- ❑ 4 pieces
- ❑ for shift mechanism to body
- ❑ 8 Nm

7 - Bracket for centre console

- ❑ with lock for emergency release cable

8 - Damping

- ❑ on the gearshift mechanism
- ❑ A cord for the emergency release cable is guided through the opening in the sound damper

9 - Shift housing

- ❑ Perform emergency release of gearshift ⇒ “3.3.3 Emergency release out of P position, Octavia IV”, page 55
- ❑ Removing and installing ⇒ “3.5.4 Removing and installing the gearshift mechanism with selector lever control cable, Octavia IV”, page 76

10 - Heat shield

- ❑ Removing and installing ⇒ General body repairs, exterior; Rep. gr. 66 ; Sound damping .

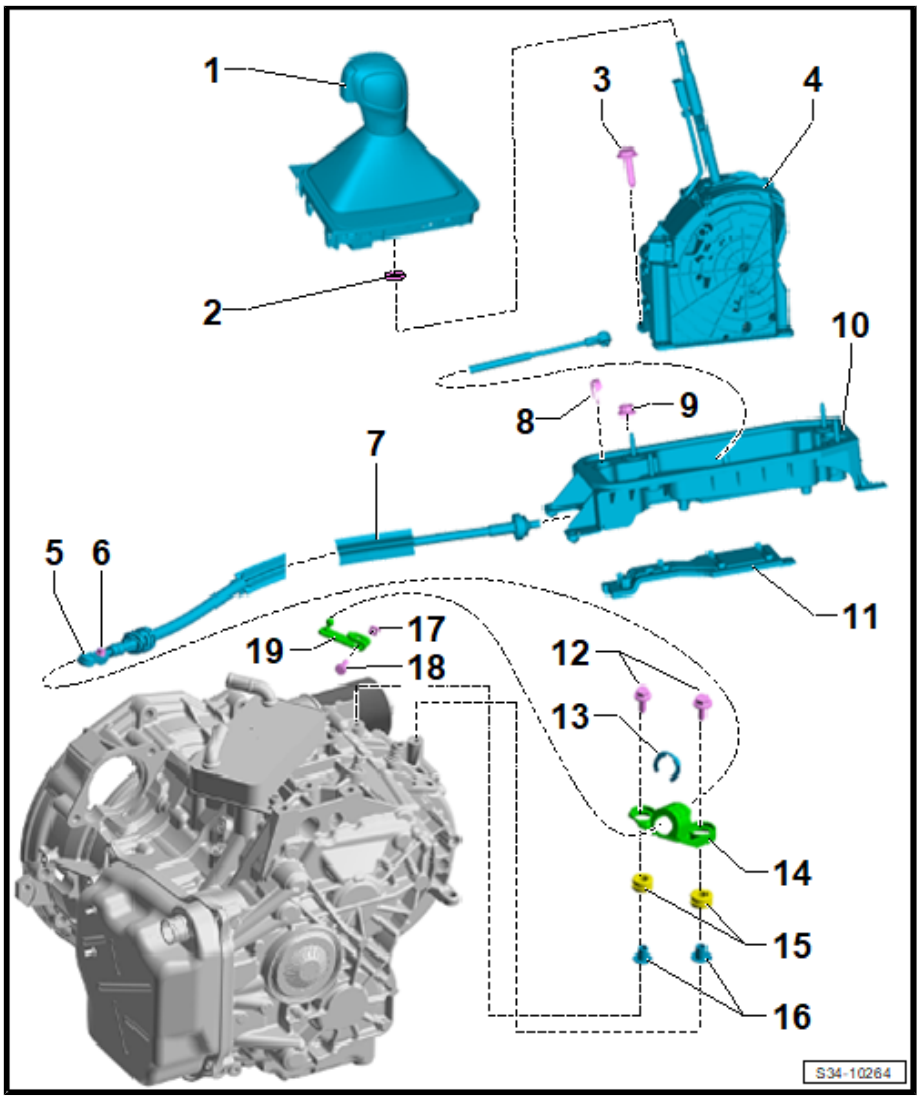
3.2 Summary of components - Gearshift mechanism

⇒ “3.2.1 Summary of components - Gearshift mechanism, Karoq, Superb III”, page 49

⇒ “3.2.2 Summary of components - shift mechanism, Kodiaq”, page 51

⇒ “3.2.3 Summary of components - Gearshift mechanism, Octavia IV”, page 53

3.2.1 Summary of components - Gearshift mechanism, Karoq, Superb III



1 - Transmission cover with selector lever handle

- ❑ Removing and installing ⇒ “3.4 Removing and installing selector lever handle”, page 58
- ❑ Emergency release out of P position ⇒ “3.3 Emergency release out of P position”, page 54
- ❑ Bring the lock button on the selector lever handle into installation position ⇒ “3.9 Installing the lock button at the selector lever handle”, page 97

2 - Clamp

- ❑ Replace after removal

3 - Screw

- ❑ 4 pieces
- ❑ 4 Nm

4 - Shift mechanism

- ❑ with integrated selector lever sensor control unit - J587- with selector lever - E313- , with Tiptronic switch - F189- , with selector lever switch locked in P - F319- and selector lever lock solenoid - N110-
- ❑ Perform emergency release ⇒ “3.3 Emergency release out of P position”, page 54
- ❑ Removing and installing complete shift mechanism with selector lever control cable ⇒ “3.5.1 Removing and installing shift mechanism with selector lever control cable - Karoq, Kodiaq, Superb III”, page 65
- ❑ Removing and installing shift mechanism without selector lever cable ⇒ “3.5.2 Removing and installing shift mechanism without selector lever control cable - Karoq, Superb III”, page 69
- ❑ Check ⇒ “3.6 Inspecting the gearshift mechanism”, page 81

5 - Adjustment element for selector lever control cable

- ❑ Removing and installing ⇒ “3.10 Replacing cable adjusting element”, page 99

6 - Screw

- ❑ Adjusting screw for selector lever control cable
- ❑ 12 Nm

7 - Selector lever control cable

- ❑ Removing and installing ⇒ “3.7 Removing and installing the selector lever control cable”, page 87
- ❑ testing and adjusting ⇒ “3.8 Inspecting and adjusting the selector lever control cable”, page 95

8 - Lock washer

- ❑ To secure the selector lever cable
- ❑ Replace after removal

9 - Nut

- ❑ 4 pieces
- ❑ for shift mechanism to body
- ❑ 8 Nm

10 - Bearing bracket for gearshift mechanism

- ❑ Removing and installing
  ⇒ “3.5.1 Removing and installing shift mechanism with selector lever control cable - Karoq, Kodiaq, Superb III”, page 65

11 - Cover

- ❑ Replace after removal

12 - Screw

- ❑ Cable support bracket for selector lever control cable
- ❑ 20 Nm

13 - Retaining clip

- ❑ Replace after removal
- ❑ When removing, do not damage the selector lever control cable
- ❑ Fitting position: with the recessed side of the locking clip towards gearbox

14 - Cable support bracket for selector lever cable

15 - Grommet

- ❑ Attach into cable support

16 - Spacer

- ❑ Fitting position: the large ∅ points to the gearbox.

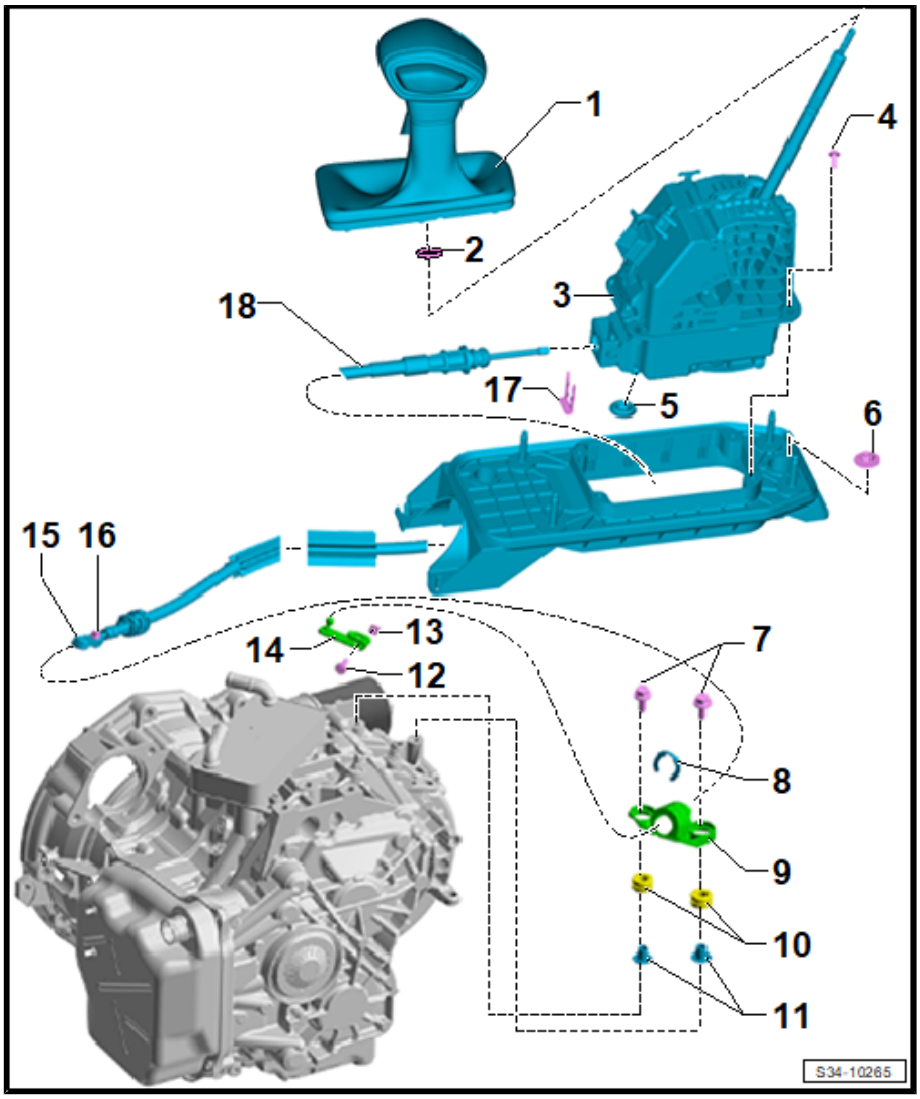
17 - Nut

18 - Screw

- ❑ Replace after removal
- ❑ 10 Nm + 90°

19 - Gearshift lever

3.2.2 Summary of components - shift mechanism, Kodiaq



1 - Transmission cover with selector lever handle

- ❑ Removing and installing ⇒ “3.4 Removing and installing selector lever handle”, page 58
- ❑ Emergency release out of P position ⇒ “3.3 Emergency release out of P position”, page 54
- ❑ Bring the lock button on the selector lever handle into installation position ⇒ “3.9 Installing the lock button at the selector lever handle”, page 97

2 - Clamp

- ❑ Replace after removal

3 - Shift mechanism

- ❑ with integrated selector lever sensor control unit - J587- with selector lever - E313- , with Tiptronic switch - F189- , with selector lever switch locked in P - F319- and selector lever lock solenoid - N110-
- ❑ Perform emergency release ⇒ “3.3 Emergency release out of P position”, page 54
- ❑ Removing and installing complete shift mechanism with selector lever control cable ⇒ “3.5.1 Removing and installing shift mechanism with selector lever control cable - Karoq, Kodiaq, Superb III”, page 65
- ❑ Removing and installing shift mechanism without selector lever cable ⇒ “3.5.3 Removing and installing shift mechanism without selector lever cable, Kodiaq”, page 73
- ❑ Check ⇒ “3.6 Inspecting the gearshift mechanism”, page 81 .

4 - Screw

- ❑ 4 pieces
- ❑ 4 Nm

5 - Plug

6 - Nut

- ❑ 4 pieces
- ❑ for shift mechanism to body
- ❑ 8 Nm

7 - Screw

- ❑ Cable support bracket for selector lever control cable
- ❑ 20 Nm

8 - Retaining clip

- ❑ Replace after removal
- ❑ When removing, do not damage the selector lever control cable
- ❑ Fitting position: with the recessed side of the locking clip towards gearbox

9 - Cable support bracket for selector lever cable

10 - Grommet

- ❑ Attach into cable support

11 - Spacer

- ❑ Fitting position: the large ∅ points to the gearbox.

12 - Screw

- ❑ Replace after removal
- ❑ 10 Nm + 90°

13 - Nut

14 - Gearshift lever

15 - Adjustment element for selector lever control cable

- ❑ Removing and installing ⇒ “3.10 Replacing cable adjusting element”, page 99

16 - Screw

- ❑ Adjusting screw for selector lever control cable
- ❑ Inspecting and adjusting the selector lever control cable ⇒ “3.8 Inspecting and adjusting the selector lever control cable”, page 95
- ❑ 12 Nm

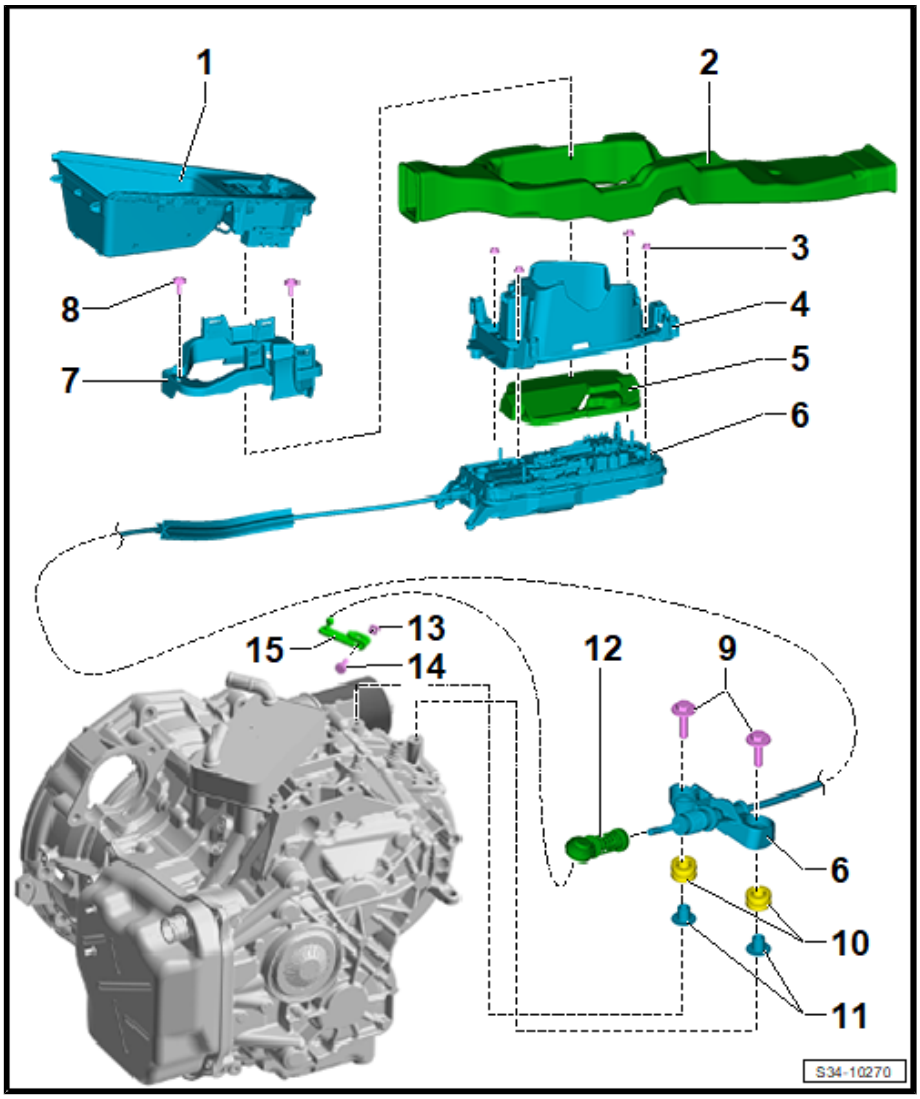
17 - Retaining clip

- ❑ Replace after disassembly

18 - Selector lever control cable

- ❑ Removing and installing ⇒ “3.7 Removing and installing the selector lever control cable”, page 87
- ❑ testing and adjusting ⇒ “3.8 Inspecting and adjusting the selector lever control cable”, page 95
- ❑ Check ⇒ “3.6 Inspecting the gearshift mechanism”, page 81 .

3.2.3 Summary of components - Gearshift mechanism, Octavia IV



1 - Shift cover with control element for shift mechanism

- ❑ Removing and installing ⇒ “3.4.4 Removing and installing the cover with operating element for the gearshift mechanism - Octavia IV”, page 64
- ❑ Perform emergency release of gearshift ⇒ “3.3.3 Emergency release out of P position, Octavia IV”, page 55

2 - Air guide for the heater and air conditioning system control unit

- ❑ in centre console

3 - Nut

- ❑ 4 pieces
- ❑ for shift mechanism to body
- ❑ 8 Nm

4 - Bracket for centre console

- ❑ with lock for emergency release cable

5 - Damping

- ❑ on the gearshift mechanism
- ❑ A cord for the emergency release cable is guided through the opening in the sound damper

6 - Shift housing

- ❑ Perform emergency release of gearshift ⇒ “3.3.3 Emergency release out of P position, Octavia IV”, page 55
- ❑ Removing and installing ⇒ “3.5.4 Removing and installing the gearshift mechanism with selector lever control cable, Octavia IV”, page 76

7 - Upper bracket for the centre console

8 - Screw

- ❑ for attaching the upper bracket for the centre console to the lower part
- ❑ 8 Nm

9 - Screw

- ❑ Cable support bracket for selector lever control cable
- ❑ 20 Nm

10 - Grommet

- ❑ Attach into cable support

11 - Spacer

- ❑ Fitting position: the large ∅ points to the gearbox.

12 - Adjustment element for selector lever control cable

- ❑ Removing and installing ⇒ “3.10 Replacing cable adjusting element”, page 99

13 - Nut

14 - Screw

- ❑ Replace after removal
- ❑ 10 Nm + 90°

15 - Gearshift lever on the gearbox

3.3 Emergency release out of P position

⇒ “3.3.1 Emergency release from P position - Karoq, Superb III”, page 54

⇒ “3.3.2 Emergency release out of P position, Kodiaq”, page 54

⇒ “3.3.3 Emergency release out of P position, Octavia IV”, page 55

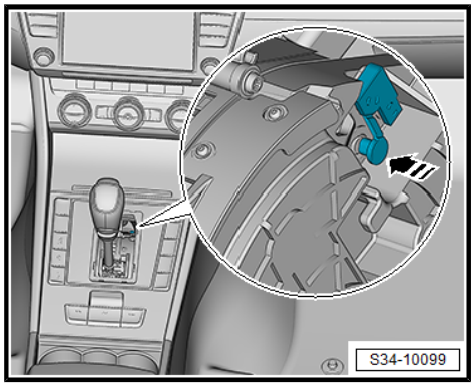
3.3.1 Emergency release from P position - Karoq, Superb III

– Removing the cover for the shift mechanism ⇒ “3.4 Removing and installing selector lever handle”, page 58 .

– Lift the gearshift cover upwards over the handle.

– Depress the brake pedal or pull on the handbrake.

– Press the yellow plastic wedge in -direction of arrow- and hold in this position.



The selector lever can now be shifted out of position »P«.

If the selector lever is then shifted again into the position “P”, it is locked again in position “P”.

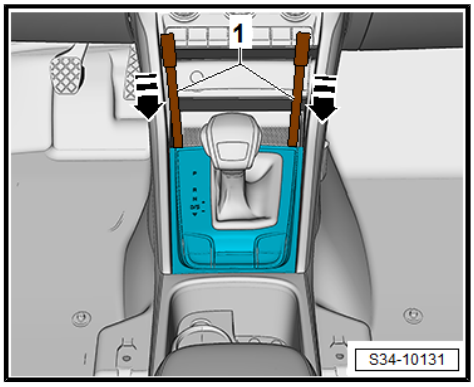
3.3.2 Emergency release out of P position, Kodiaq

Special tools and workshop equipment required

- ◆ Release tool - T30098-

– Depress the brake pedal or activate the handbrake.

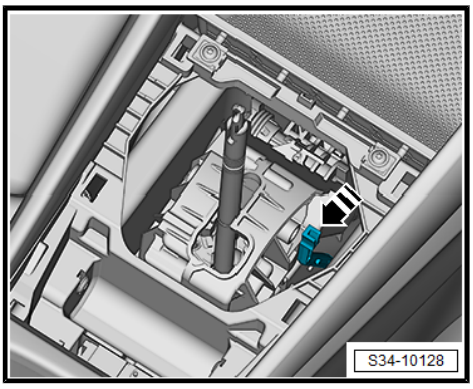
– Fit the release tool - T30098- -1- in the -direction of arrow- under the cover for shift mechanism and loosen the cover by lifting it.
– Lift cover for shift mechanism upwards using the selector lever handle.



– Press the yellow plastic lever in -direction of arrow- and hold in this position.

The selector lever can now be shifted out of position »P«.

If the selector lever is then shifted again into the position “P”, it is locked again in position “P”.



3.3.3 Emergency release out of P position, Octavia IV

Special tools and workshop equipment required

♦ Wedge - T10383/1-

♦ Rig pin - T10027A-

For emergency release of the »P«position, the cover with the control element for shift mechanism must be released. The shift cover must not be completely removed. It is sufficient to detach them from the centre console and then lift them up.

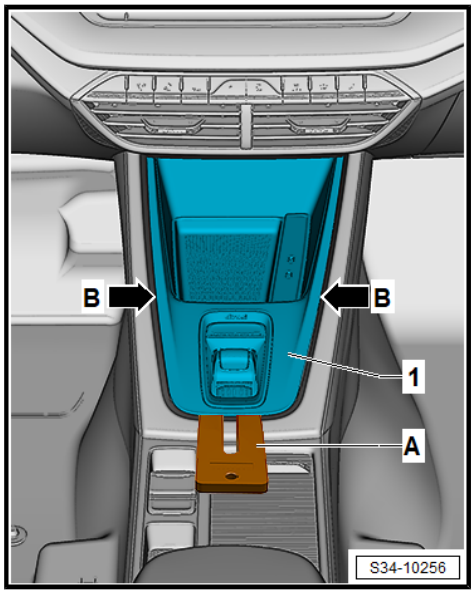
• The plugs on the switch cover do not need to be disconnected.
• Depending on the type of repair, the vehicle must be properly secured against unintentional rolling - permanent or temporary emergency release.

Remove the shift cover

– Insert wedge - T10383/1- -A- between the shift cover and the centre console, as shown in the illustration, and partially remove the cover by lifting it up.

– Push the wedge underneath the shift cover into the area of -Arrows B-, and release the cover from the locks by lifting.

– Raise cover for shift mechanism upwards.

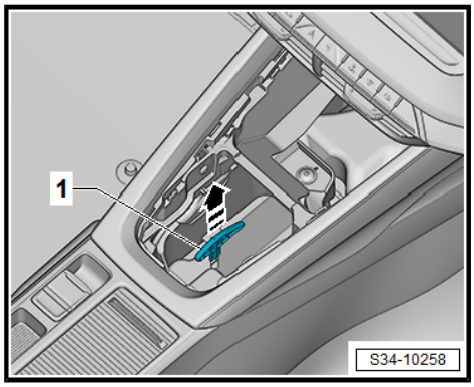


The emergency release from the P position is carried out using the control cable with handle -1-, which is located in the locks on the left side of the centre console. The handle -1- is connected to the P position emergency release fuse via the control cable.

The handle of the cable -1- is placed in the lock on the left side of the centre console.

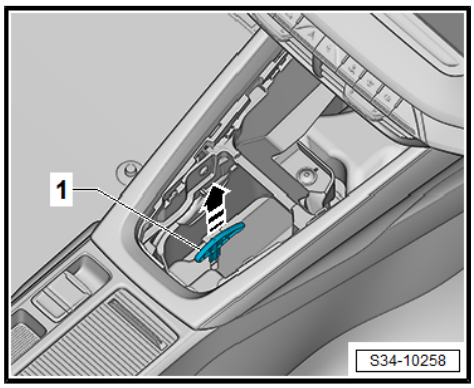
Permanent emergency release

If the battery is disconnected (de-energized), the parking lock is permanently blocked and can only be released by an emergency release.



– Pull on the cable handle -1- until it stops (approx. 40 mm) and hold it briefly pulled out.

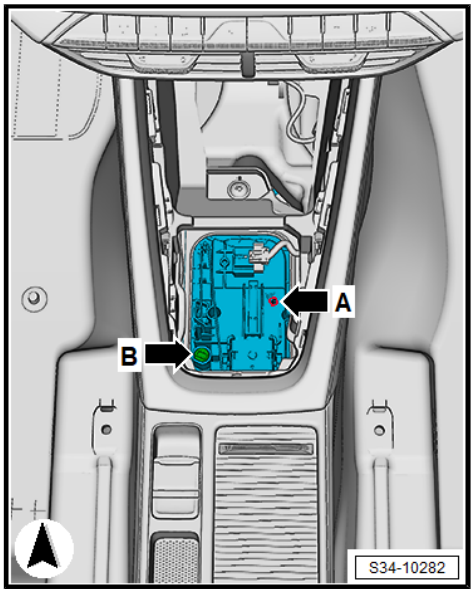
The parking lock is now permanently switched off and cannot be mechanically blocked again. The parking lock can only be locked by pressing the button »P« on the control element for shift mechanism, and only after connecting the battery and after starting up the electrical system.



Temporary emergency release with the option of reactivating the parking lock

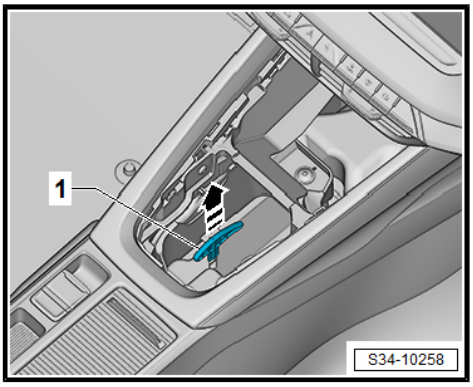
For a temporary release with the option to reactivate the parking lock, use locking pin - T10027A- .

– Block the shift mechanism by inserting the locking pin - T10027A- into the opening -A-.



– Pull on the cable handle -1- until it stops and hold in this position.

The parking lock is now switched off.



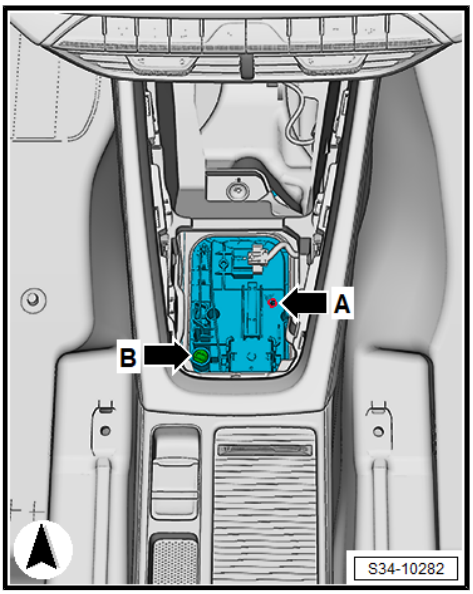
– Press and hold lock button -B-.
– Release the emergency release cable (handle -1- previous figure).

The lock button remains in the lower position.

The parking lock is now temporarily deactivated.

Activate the parking lock again

The emergency release can be released by repeatedly pulling the control cable.

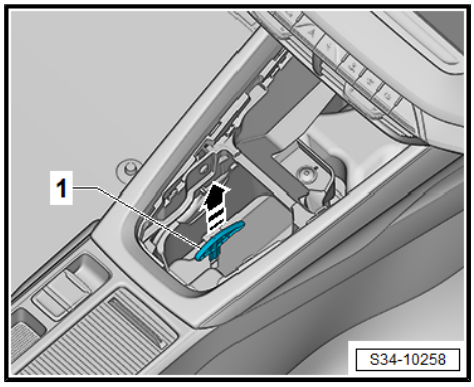


– Pull on the cable handle -1- until it stops and hold.

The lock button jumps back up when pulling the cable -1-.

By releasing the emergency release cable, it is pulled back into the shift mechanism.

The parking lock is now activated again.



3.4 Removing and installing selector lever handle

⇒ “3.4.1 Removing and installing selector lever handle - Superb III”, page 58

⇒ “3.4.2 Removing and installing gearshift knob - Karoq”, page 60

⇒ “3.4.3 Removing and installing selector lever handle - Kodiaq”, page 63

⇒ “3.4.4 Removing and installing the cover with operating element for the gearshift mechanism - Octavia IV”, page 64

3.4.1 Removing and installing selector lever handle - Superb III

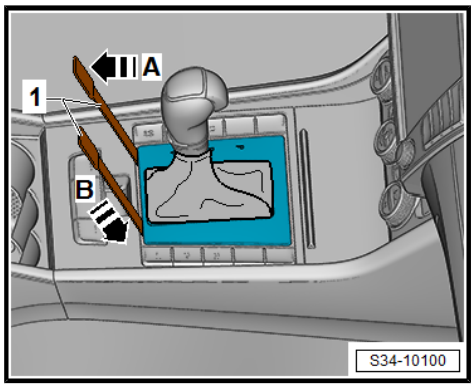
Special tools and workshop equipment required

- Release tool - T30098-
- Hose binding claw

Removing

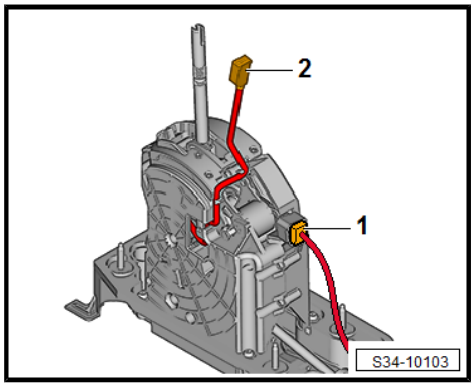
– Fit the release tool - T30098- -1- in the -direction of arrow B- under the cover for shift mechanism and loosen the cover by lifting it in the -direction of arrow A-.

– Pull the cover upwards over the handle.



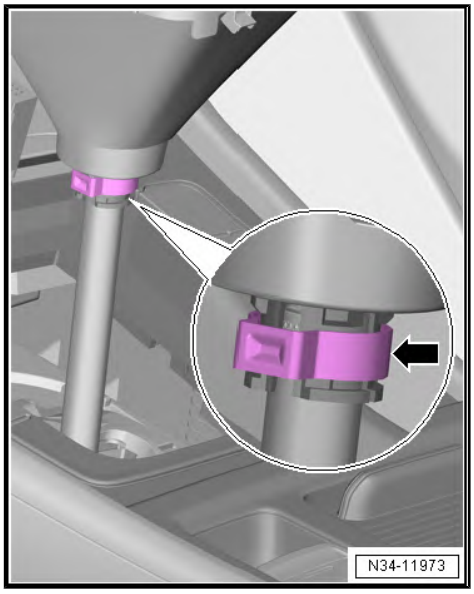
– Release plug connection -2-C from the lamp for selector lever scale illumination - L101- and disconnect.

Do not pay attention to the position -1-.

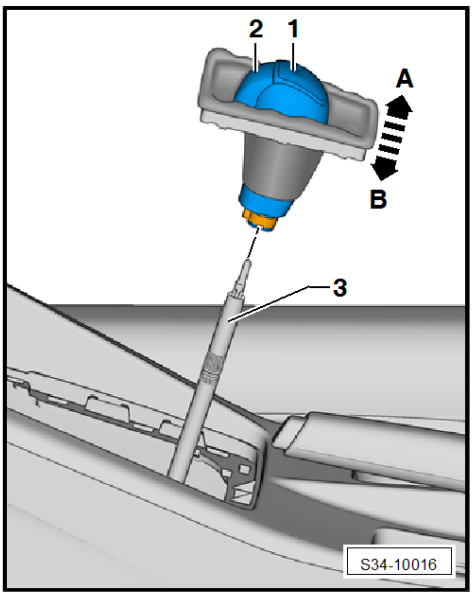


– Open the warm-type clamp -arrow- below the handle.

• Replace the clamp after disassembly.



– Detach the selector lever handle -1- together with the selector lever collar from the selector lever towards the top -arrow A- so that the lock button -2- is not pressed in.



Note

Do not observe -arrow B-.

Installing

Installation is carried out in the reverse order. When installing, observe the following:

NOTICE

The shift mechanism can be damaged.

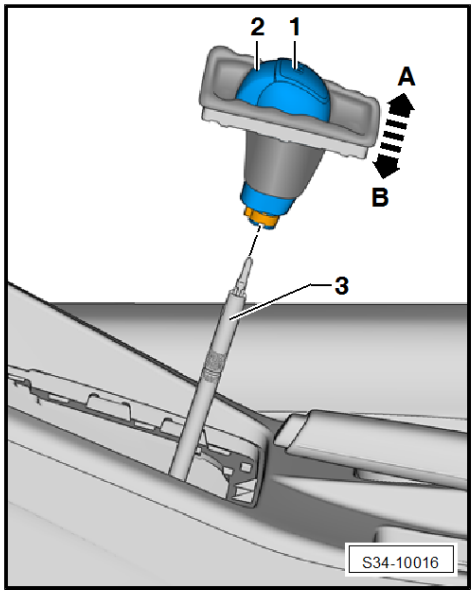
If the selector lever handle is installed with the lock button pressed in, then the selector lever handle as well as the selector lever control cable can be destroyed.

– **In the installation position, the lock button on the selector lever must not be pressed in and must protrude.**

– **If the lock button was inadvertently pressed in when removing the selector lever handle, it must be repositioned ⇒ "3.9 Installing the lock button at the selector lever handle", page 97 .**

– Press the selector lever handle -1- onto the selector lever in -direction of arrow B- in such a way that the lock button -2- is not touched.

- The selector lever handle must latch into the round slot of the selector lever.
- The lock button -2- points in direction of travel.
- A new clamp is fitted to the handle.



– Tighten warm-type clamp -arrow- using the hose binding claw .

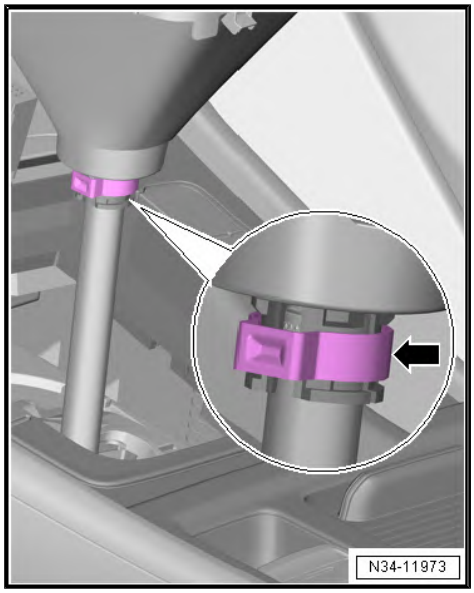
- The selector lever is only correctly secured when the gripper clamp is under tension.
- Only then the lock button at the handle may be pressed.

The lock button can only show high resistance when it is pressed on for the first time after installing the selector lever handle.

– Press lock button at selector lever handle.

– Install the cover for the selector lever.

– Inspect gearshift mechanism
⇒ “3.6 Inspecting the gearshift mechanism”, page 81 .



3.4.2 Removing and installing gearshift knob - Karoq

Special tools and workshop equipment required

♦ Release tool - T30098-

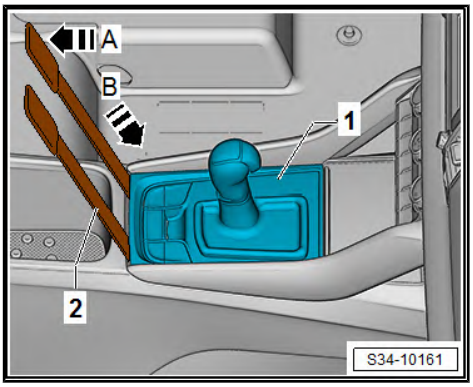
♦ Hose binding claw

Removing

– Push the unlocking tools - T30098- -2- into the gap between the centre console and the switch cover in the -direction of arrow B-.

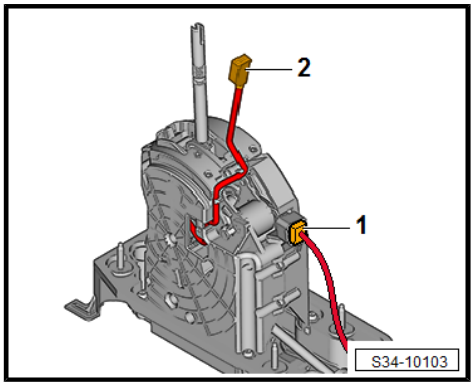
• Fist, slide the unlocking tools - T30098- -2- into the gap in the middle of the switch cover and then carefully push it into the edges.

– With unlocking tools - T30098- -2-, carefully lever out the switch cover from the centre console -arrow A-.



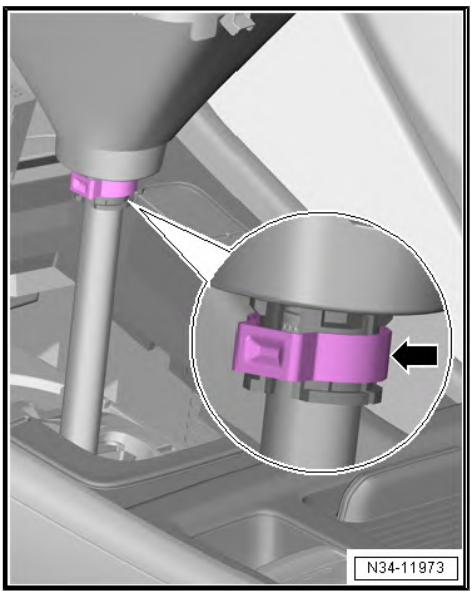
– Release plug connection -2-C from the lamp for selector lever scale illumination - L101- and disconnect.

Do not pay attention to the position -1-.

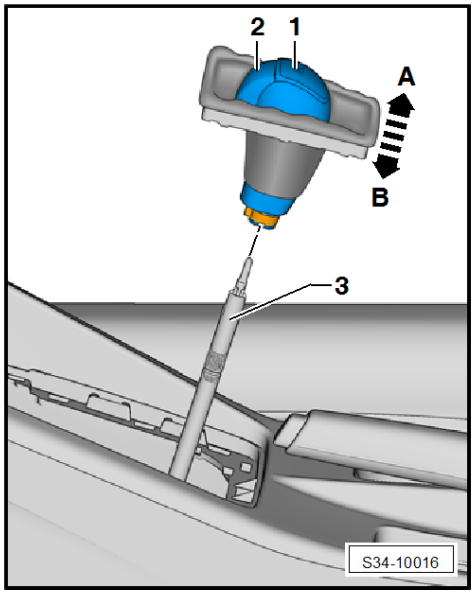


– Open the warm-type clamp -arrow- below the handle.

• Replace the clamp after disassembly.



– Detach the selector lever handle -1- together with the selector lever collar from the selector lever towards the top -arrow A- so that the lock button -2- is not pressed in.



Note

Do not observe -arrow B-.

Installing

Installation is carried out in the reverse order. When installing, observe the following:

NOTICE

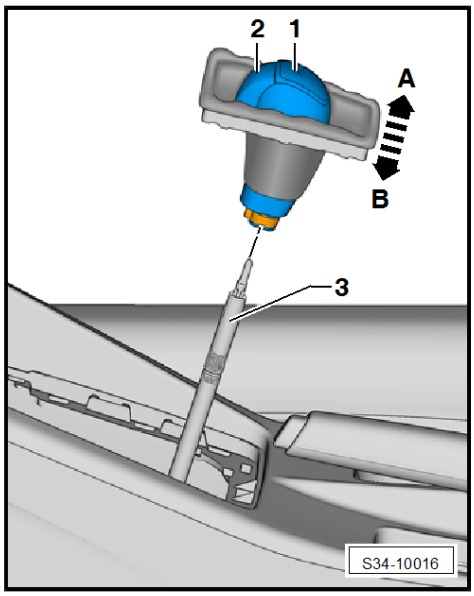
The shift mechanism can be damaged.

If the selector lever handle is installed with the lock button pressed in, then the selector lever handle as well as the selector lever control cable can be destroyed.

- **In the installation position, the lock button on the selector lever must not be pressed in and must protrude.**
- **If the lock button was inadvertently pressed in when removing the selector lever handle, it must be repositioned** ⇒ "3.9 Installing the lock button at the selector lever handle", page 97 .

– Press the selector lever handle -1- onto the selector lever in -direction of arrow B- in such a way that the lock button -2- is not touched.

- The selector lever handle must latch into the round slot of the selector lever.
- The lock button -2- points in direction of travel.
- A new clamp is fitted to the handle.



– Tighten warm-type clamp -arrow- using the hose binding claw .

• The selector lever is only correctly secured when the gripper clamp is under tension.

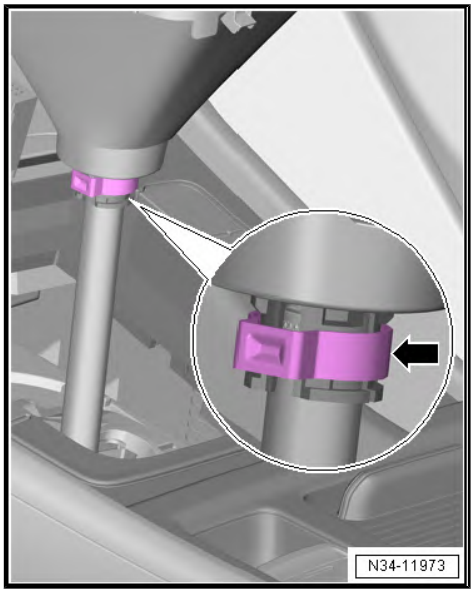
• Only then the lock button at the handle may be pressed.

The lock button can only show high resistance when it is pressed on for the first time after installing the selector lever handle.

– Press lock button at selector lever handle.

– Install the cover for the selector lever.

– Inspect gearshift mechanism
⇒ “3.6 Inspecting the gearshift mechanism”, page 81 .



3.4.3 Removing and installing selector lever handle - Kodiaq

Special tools and workshop equipment required

♦ Release tool - T30098-

♦ Hose binding claw

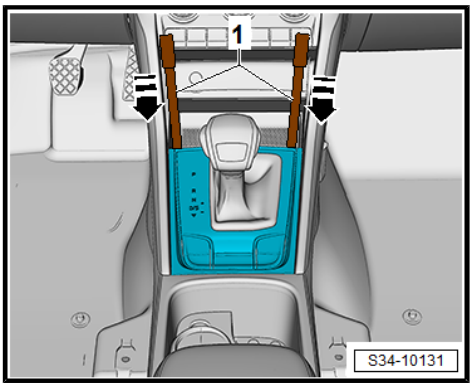
depending on vehicle equipment, different types of selector lever handles are used - assignment ⇒ Electronic Catalogue of Original Parts .

Removing

– Depress the brake pedal or activate the handbrake.

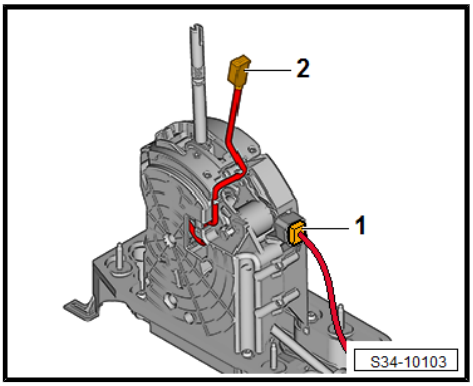
– Fit the release tool - T30098- -1- in the -direction of arrow- under the cover for shift mechanism and loosen the cover by lifting it.

– Lift the gearshift cover upwards over the handle.



– Release plug connection -2-C from the lamp for selector lever scale illumination - L101- and disconnect.

Do not pay attention to the position -1-.

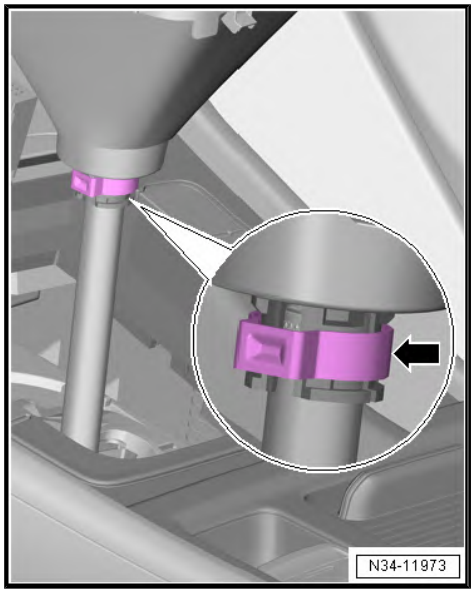


– Open the warm-type clamp -arrow- below the handle.

• Replace the clamp after disassembly.

– Detach the handle together with the selector lever collar from the selector lever towards the top so that the lock button is not pressed in.

• The lock button must also not be pressed after removing, otherwise the selector lever handle cannot be installed.



Installing

Installation is carried out in the reverse order. When installing, observe the following:

• If the lock button was inadvertently pressed in when removing the selector lever handle, it must be repositioned ⇒ “3.9 Installing the lock button at the selector lever handle”, page 97 .

– Slide the selector lever handle onto the selector lever up to the stop with a new warm-type clamp.

• Do not secure the clamp yet.

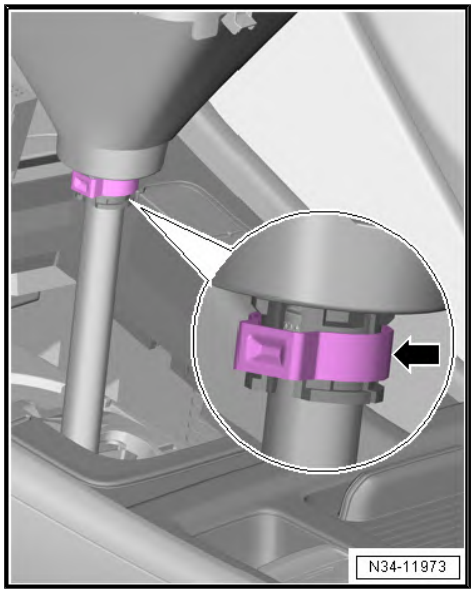
– Press the button in the selector lever handle to test it.

If assembled incorrectly, the button will stay in the selector lever handle and will not return to its original position.

• In this case, you must pull the handle off the selector lever, return the button to its original position ⇒ “3.9 Installing the lock button at the selector lever handle”, page 97 and then install the handle again.

– Use the hose binding claw to secure the warm-type clamp to the selector lever handle -arrow-.

– Install the cover for the selector lever.



3.4.4 Removing and installing the cover with operating element for the gearshift mechanism - Octavia IV

Special tools and workshop equipment required

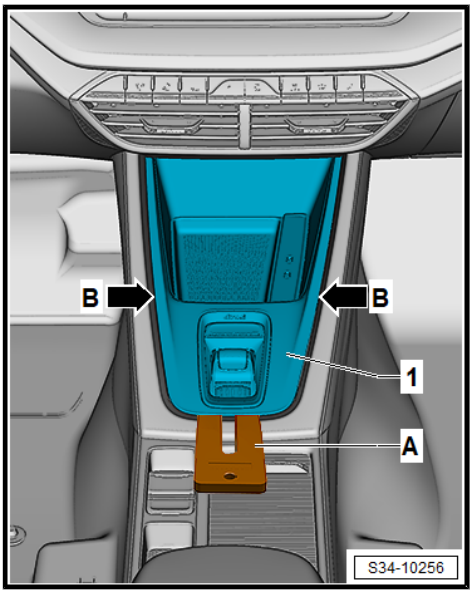
♦ Wedge - T10383/1-

Removing

– Insert wedge - T10383/1- -A- between the shift cover and the centre console, as shown in the illustration, and partially remove the cover by lifting it up.

– Insert the wedge underneath the shift cover into the area of -Arrows B-, and release from the locks by lifting.

– Raise cover for shift mechanism upwards.

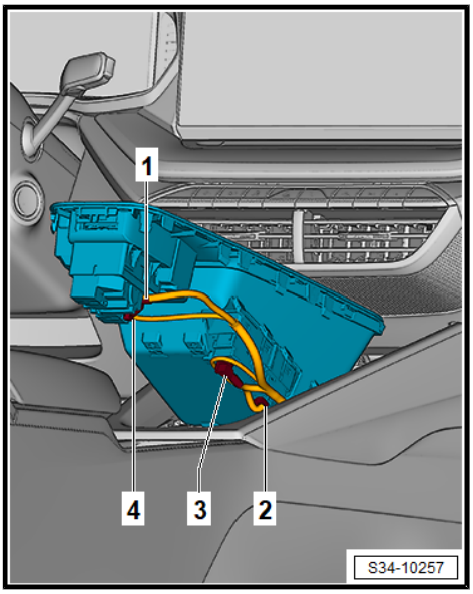


– Remove plugs -1-, -2-, -3- and -4- on the cover and control element gearshift mechanism one after the other.

– Remove cover with control element for shift mechanism from the centre console.

Installing

Installation is carried out in the reverse order.



3.5 Removing and installing selector mechanism

⇒ “3.5.1 Removing and installing shift mechanism with selector lever control cable - Karoq, Kodiaq, Superb III”, page 65

⇒ “3.5.2 Removing and installing shift mechanism without selector lever control cable - Karoq, Superb III”, page 69

⇒ “3.5.3 Removing and installing shift mechanism without selector lever cable, Kodiaq”, page 73

⇒ “3.5.4 Removing and installing the gearshift mechanism with selector lever control cable, Octavia IV”, page 76

3.5.1 Removing and installing shift mechanism with selector lever control cable - Karoq, Kodiaq, Superb III

Special tools and workshop equipment required

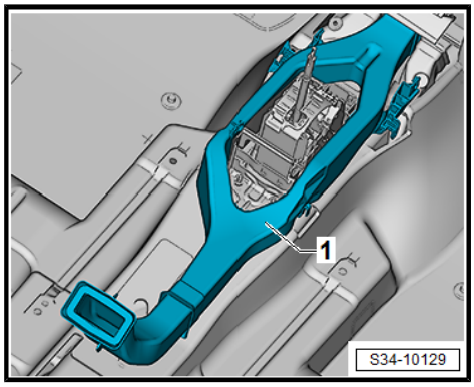
♦ Unlocking tool -T10236-

Removing

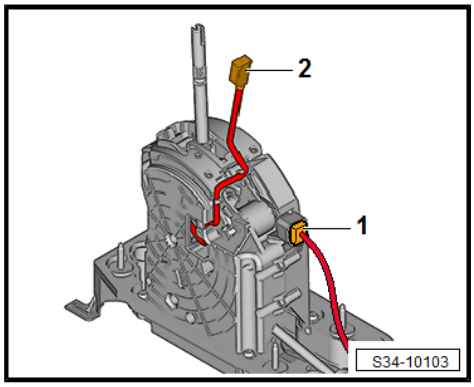
– Remove handle for shift mechanism
⇒ “3.4 Removing and installing selector lever handle”, page 58

– Remove centre console ⇒ Body assembly work inside; Rep. gr. 68 ; centre console ,

– Remove the air guide in the centre console ⇒ Heating, air conditioning; Rep. gr. 80 ; Overview of installation locations - heating; Overview of installation locations - components in the passenger compartment front .



– Disconnect plug connection for vehicle wiring harness to selector mechanism -1-.



Note

-Do not consider Pos. 2-.

– Remove air filter housing:

Petrol engines ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing

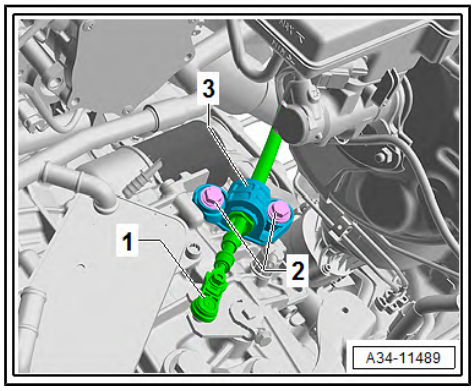
Diesel engines ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing

– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .

– Push ball socket -1- of selector lever control cable off the gearshift lever with the unlocking tool - T10236- .

– Unscrew screws -2- of the cable support for selector lever control cable and place to one side.

• Do not bend or buckle selector lever control cable.



For vehicles with front-wheel-drive

– Detach both underfloor trim panels -2- and -4- ⇒ General body repairs - exterior; Rep. gr. 66 ; Underfloor trim panel .

• Detach underfloor trim panels by unscrewing the nuts on inner side only (side at exhaust pipe).

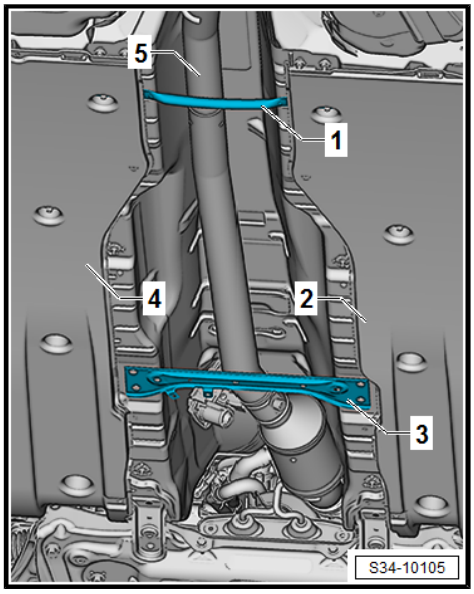
– Removing tunnel cross-pieces (if present) -1- and -3- ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody protection; installing and removing tunnel cross-piece .

– Silencer -5- ⇒ Engine; Rep. gr. 26 ; Exhaust pipes/silencers .

For vehicles with four-wheel drive

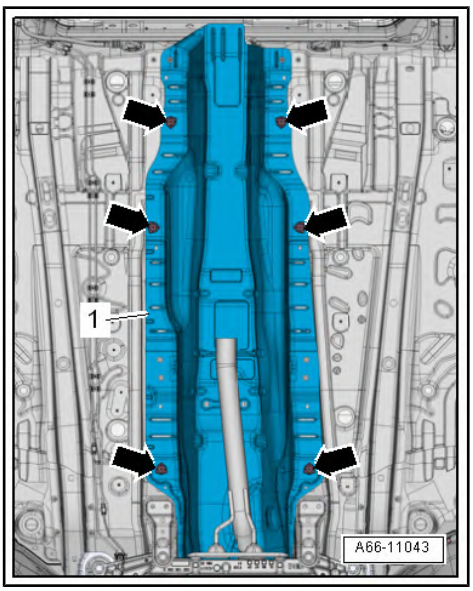
– Remove the propshaft ⇒ Propeller shaft and rear final drive; Rep. gr. 39 ; Propeller shaft; remove and install propeller shaft

Continued for all vehicles



– Remove the safety clamps -arrows- and heat shield for the center tunnel underneath the shift mechanism -1- ⇒ General body repairs, exterior; Rep. gr. 66 ; Sound damping .

• A second mechanic is needed under the vehicle to remove the shift mechanism.

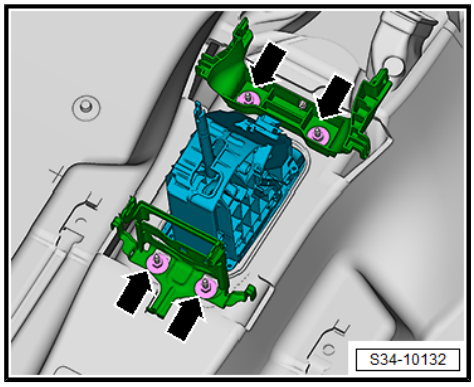


– Unscrew the nuts -arrows- in the vehicle interior.

– Remove the shift mechanism together with the selector lever control cable downwards.

• While doing so, guide the selector lever cable out of the cable support.

• Do not bend or buckle selector lever control cable.



Installing

Installation is carried out in the reverse order. When installing, observe the following:

• Do not bend or buckle selector lever control cable.

• Do not grease selector lever control cable.

• After installing the shift mechanism, check the selector lever control cable is moving freely and adjust
⇒ “3.8 Inspecting and adjusting the selector lever control cable”, page 95 .

– Install the heat shield underneath the gearshift mechanism ⇒ General body repairs, exterior; Rep. gr. 66 ; Sound damping .

For vehicles with four-wheel drive

– Install the propeller shaft ⇒ Propeller shaft and rear final drive ; Rep. gr. 39 ; Propeller shaft; remove and install propeller shaft .

Continued for all vehicles

– Install exhaust system and align free of stress ⇒ Engine; Rep. gr. 26 ; Exhaust pipes/silencers .

– Install the tunnel cross-piece ⇒ External body repairs; Rep. gr. 66 ; Underbody protection; install and remove tunnel cross-piece .

– Install the underfloor trim panels ⇒ General body repairs, exterior; Rep. gr. 66 ; Underfloor trim panel .

– Install the air duct element in the centre console ⇒ Heating system, air conditioning system; Rep. gr. 80 ; Overview of installation locations - heating system; Overview of installation locations - components in the passenger compartment front .

– Install centre console ⇒ Body assembly work inside; Rep. gr. 68 ; centre console ,

– Installing the selector lever handle and cover for the shift mechanism
⇒ “3.4 Removing and installing selector lever handle”, page 58 .

– Setting selector lever control cable
⇒ “3.8 Inspecting and adjusting the selector lever control cable”, page 95 .

– Install air filter housing:

Petrol engines ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing

Diesel engines ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing

– Install battery tray and battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .

– Inspect gearshift mechanism
⇒ “3.6 Inspecting the gearshift mechanism”, page 81 .

Tightening torques and summaries of components

Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ⇒ “3.2 Summary of components - Gearshift mechanism”, page 49

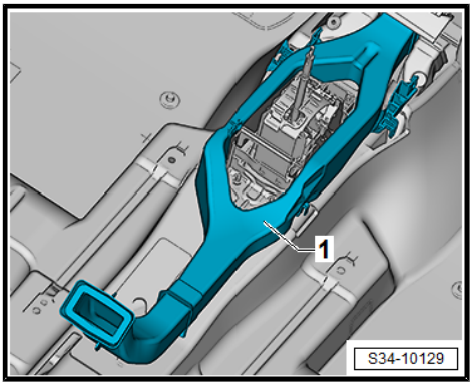
3.5.2 Removing and installing shift mechanism without selector lever control cable - Karoq, Superb III

Removing

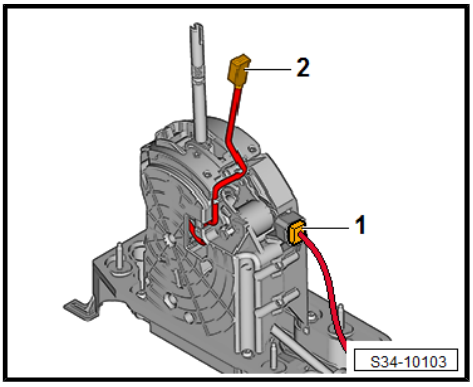
– Remove handle for shift mechanism ⇒ “3.4 Removing and installing selector lever handle”, page 58

– Remove centre console ⇒ Body assembly work inside; Rep. gr. 68 ; centre console ,

– Remove the air guide in the centre console ⇒ Heating, air conditioning; Rep. gr. 80 ; Overview of installation locations - heating; Overview of installation locations - components in the passenger compartment front .



– Disconnect plug connection for vehicle wiring harness to selector mechanism -1-.



Note

-Do not consider Pos. 2-.

– Bring selector lever for the shift mechanism into position “N”.

- The catch can only be released and the selector lever cable disconnected from the shift mechanism in this position.

For vehicles with front-wheel-drive

– Detach both underfloor trim panels -2- and -4- ⇒ General body repairs - exterior; Rep. gr. 66 ; Underfloor trim panel .

• Detach underfloor trim panels by unscrewing the nuts on inner side only (side at exhaust pipe).

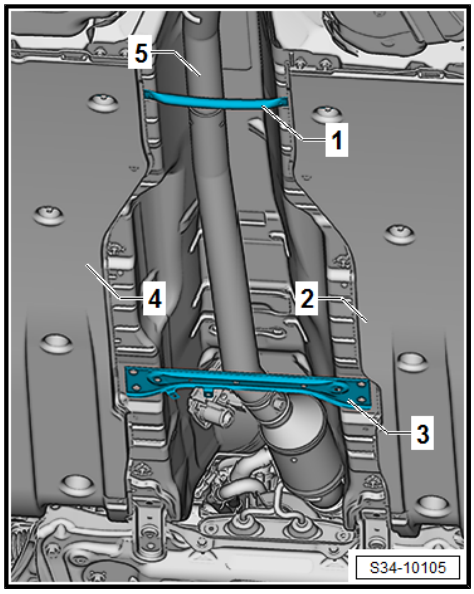
– Remove tunnel cross-pieces -1- and -3- ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody protection; installing and removing tunnel cross-piece .

– Silencer -5- ⇒ Engine; Rep. gr. 26 ; Exhaust pipes/silencers .

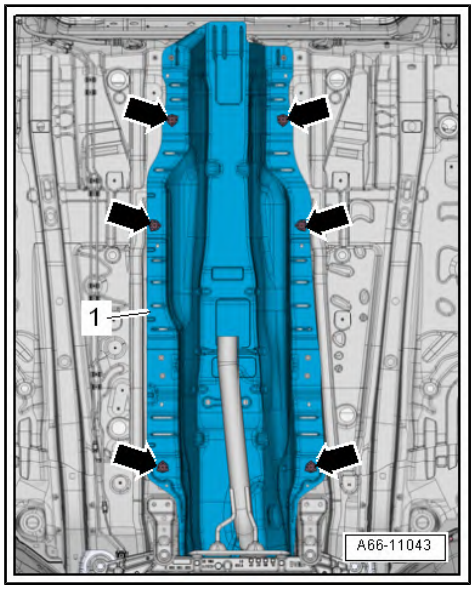
For vehicles with four-wheel drive

– Remove the propshaft ⇒ Propeller shaft and rear final drive; Rep. gr. 39 ; Propeller shaft; remove and install propeller shaft

Continued for all vehicles

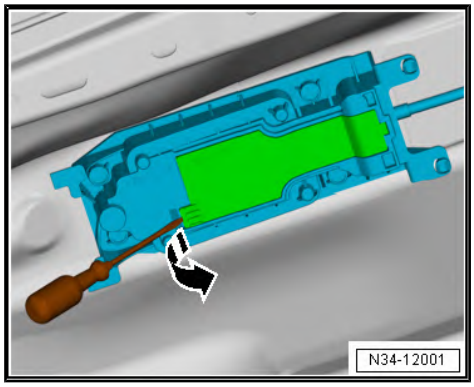


– Remove the safety clamps -arrows- and heat shield for the center tunnel underneath the shift mechanism -1- ⇒ General body repairs, exterior; Rep. gr. 66 ; Sound damping .

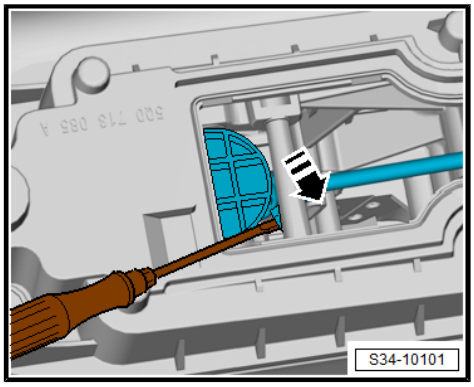


– Lift off with a screwdriver and remove cover at the bottom from the shift mechanism -arrow-.

• Replace cover for shift mechanism after disassembly.



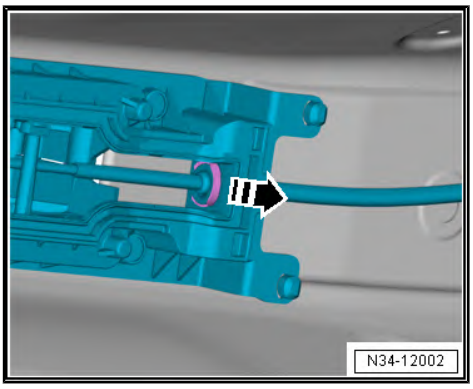
– Using a screwdriver, pull the shift cable from the shift lever in the -direction of the arrow-.



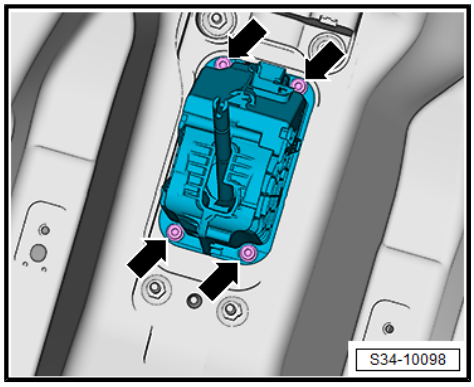
– Remove the lock washer -arrow- and detach the selector lever cable.

• Replace the lock washer after removing it.

– Pull the selector lever cable out of the shift mechanism.



– Unscrew screws -arrows- and remove the shift mechanism upwards.



Installing

Installation is carried out in the reverse order. When installing, observe the following:

- Do not bend or buckle the selector lever control cable.
- Do not grease selector lever control cable.
- After installing the shift mechanism, check the selector lever control cable for ease of movement and adjust ⇒ “3.8 Inspecting and adjusting the selector lever control cable”, page 95 .
- The selector lever for the shift mechanism is at position “N”. The selector lever control cable can only be locked in this position.

– Insert selector lever cable into the shift mechanism, push onto selector lever and secure with new lock washer.

– Close shift mechanism at the bottom with new cover.

– Install the heat shield underneath the gearshift mechanism ⇒ General body repairs, exterior; Rep. gr. 66 ; Sound damping .

For vehicles with four-wheel drive

– Install the propeller shaft ⇒ Propeller shaft and rear final drive ; Rep. gr. 39 ; Propeller shaft; remove and install propeller shaft .

Continued for all vehicles

– Install rear silencer ⇒ Engine; Rep. gr. 26 ; Exhaust pipes/ silencers .

– Install the tunnel cross-piece ⇒ External body repairs; Rep. gr. 66 ; Underbody protection; install and remove tunnel cross-piece .

– Install both underfloor trim panels ⇒ General body repairs, exterior; Rep. gr. 66 ; Underfloor trim panel .

– Install centre console ⇒ Body assembly work inside; Rep. gr. 68 ; centre console ,

– Install the selector lever handle ⇒ “3.4 Removing and installing selector lever handle”, page 58 .

– Setting selector lever control cable ⇒ “3.8 Inspecting and adjusting the selector lever control cable”, page 95 .

– Inspect gearshift mechanism ⇒ “3.6 Inspecting the gearshift mechanism”, page 81 .

Tightening torques and summaries of components

Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ⇒ “3.2 Summary of components - Gearshift mechanism”, page 49

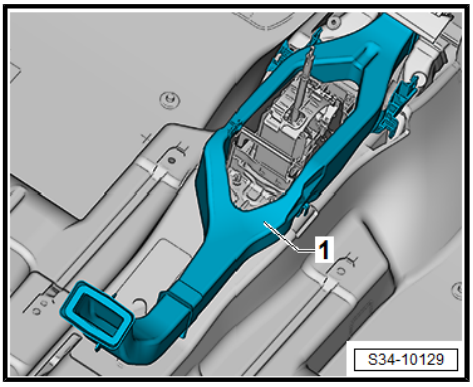
3.5.3 Removing and installing shift mechanism without selector lever cable, Kodiaq

Removing

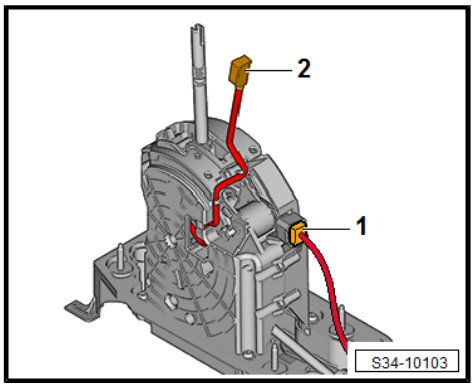
– Removing selector lever handle
⇒ “3.4 Removing and installing selector lever handle”, page 58 .

– Remove centre console ⇒ Body assembly work inside; Rep. gr. 68 ; centre console ,

– Remove the air guide in the centre console -1-.



– Disconnect plug connection for vehicle wiring harness to selector mechanism -1-.



Note

-Do not consider Pos. 2-.

– Bring selector lever for the shift mechanism into position “N”.

The control cable can only be detached in this position.

For vehicles with front-wheel-drive

– Detach both underfloor trim panels -2- and -4- ⇒ General body repairs - exterior; Rep. gr. 66 ; Underfloor trim panel .

• Detach underfloor trim panels by unscrewing the nuts on inner side only (side at exhaust pipe).

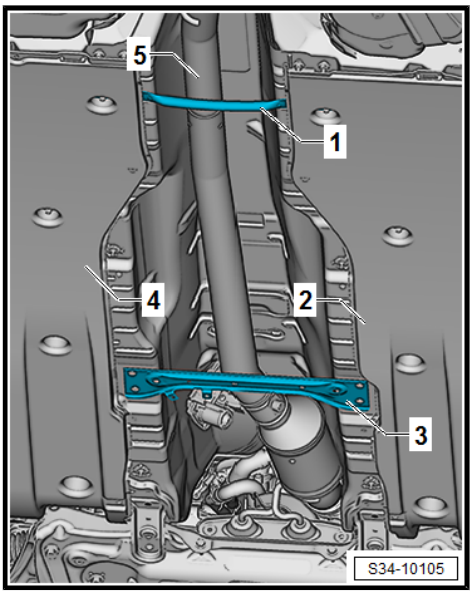
– Remove tunnel cross-pieces -1- and -3- ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody protection; installing and removing tunnel cross-piece .

– Silencer -5- ⇒ Engine; Rep. gr. 26 ; Exhaust pipes/silencers .

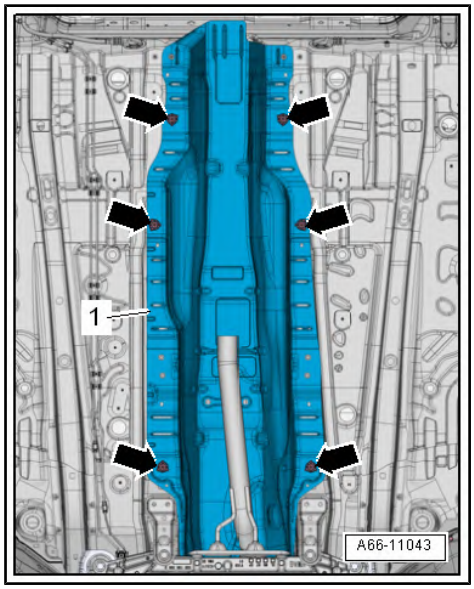
For vehicles with four-wheel drive

– Remove the propshaft ⇒ Propeller shaft and rear final drive; Rep. gr. 39 ; Propeller shaft; remove and install propeller shaft

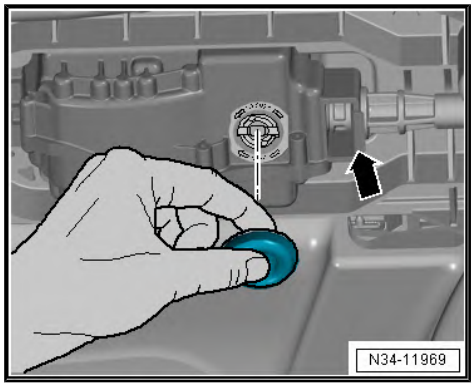
Continued for all vehicles



– Remove the safety clamps -arrows- and heat shield for the center tunnel underneath the shift mechanism -1- ⇒ General body repairs, exterior; Rep. gr. 66 ; Sound damping .

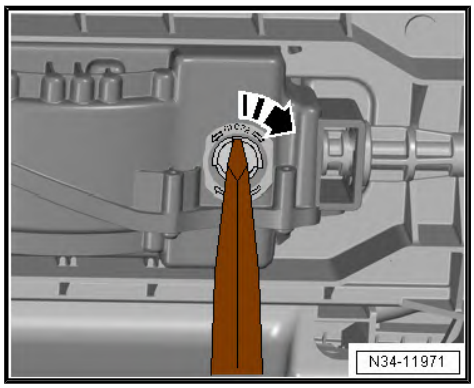


– Detach the plug from the bottom part of the shift mechanism and take off the lock washer for the selector lever cable -arrow-.

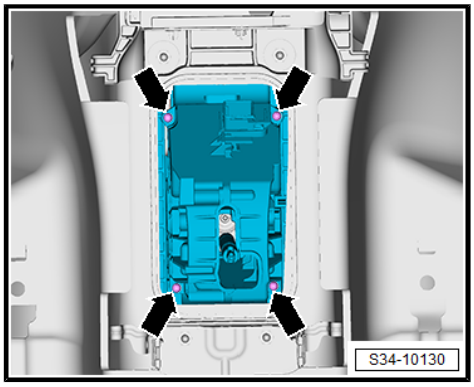


– Turn the catch for the selector lever cable 90° in -direction of arrow- with a large screwdriver.

– Pull the selector lever cable out of the shift mechanism.



– Unscrew screws -arrows- and remove the shift mechanism upwards.

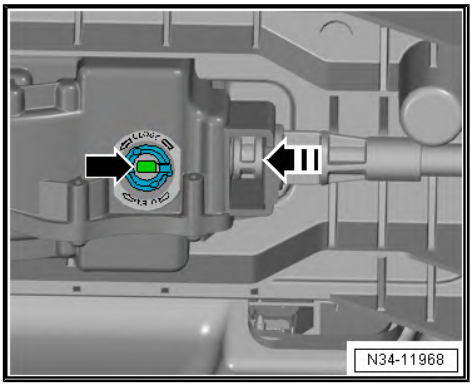


Installing

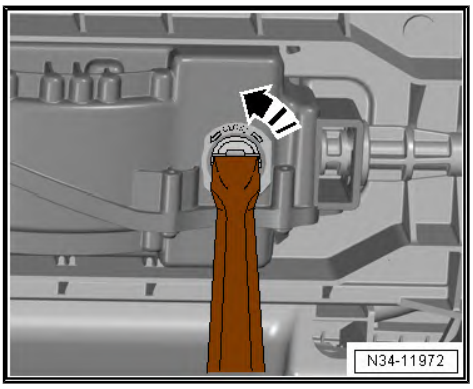
Installation is carried out in the reverse order. When installing, observe the following:

- ♦ Do not bend or buckle the selector lever control cable.
- ♦ Do not grease selector lever control cable.
- ♦ After installing the shift mechanism, check the selector lever control cable for ease of movement and adjust ⇒ “3.8 Inspecting and adjusting the selector lever control cable”, page 95 .
- • The selector lever for the shift mechanism is at position “N”. The selector lever control cable can only be locked in this position.

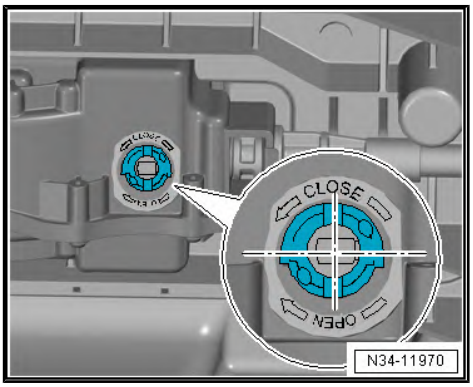
– Insert the selector lever cable into the shift mechanism far enough for it to be visible in the catch for the shift mechanism -arrow-.



– Turn the catch for the selector lever cable 90° in -direction of arrow- with a large screwdriver.



- • The selector lever cable is secured once the recesses of the catch are at right angles to the end of the cable.



– Install a new lock washer -arrow- and insert plug.

– Install the heat shield underneath the gearshift mechanism ⇒ General body repairs, exterior; Rep. gr. 66 ; Sound damping .

For vehicles with four-wheel drive

– Install the propeller shaft ⇒ Propeller shaft and rear final drive ; Rep. gr. 39 ; Propeller shaft; remove and install propeller shaft .

Continued for all vehicles

– Install exhaust system and align free of stress ⇒ Engine; Rep. gr. 26 ; Exhaust pipes/silencers .

– Install the tunnel cross-piece ⇒ External body repairs; Rep. gr. 66 ; Underbody protection; install and remove tunnel cross-piece .

– Install the underfloor trim panels ⇒ General body repairs, exterior; Rep. gr. 66 ; Underfloor trim panel .

– Install centre console ⇒ Body assembly work inside; Rep. gr. 68 ; centre console ,

– Install the selector lever handle
⇒ “3.4 Removing and installing selector lever handle”, page 58 .

– Setting selector lever control cable
⇒ “3.8 Inspecting and adjusting the selector lever control cable”, page 95 .

Tightening torques and summaries of components

Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

♦ Shift mechanism to body
⇒ “3.2 Summary of components - Gearshift mechanism”, page 49

3.5.4 Removing and installing the gearshift mechanism with selector lever control cable, Octavia IV

• Before repair, the circuit must put in the “P” position.

– Switch into the “P” position by pressing the button.

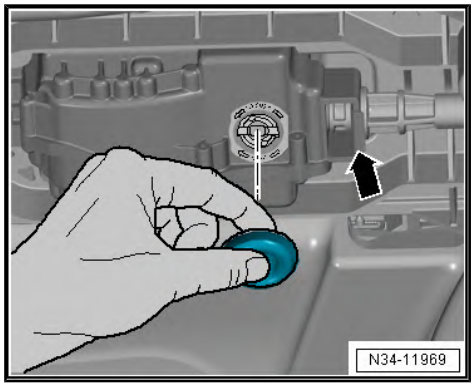
Removing

– Remove air filter housing:

  Petrol engines ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing

  Diesel engines ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing

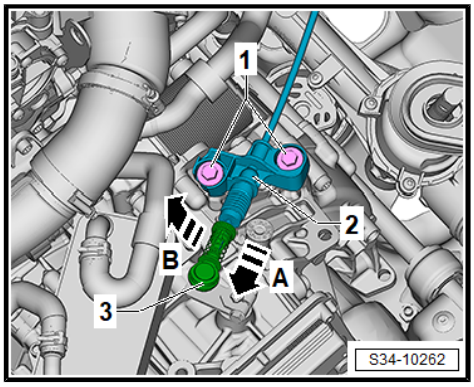
– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .



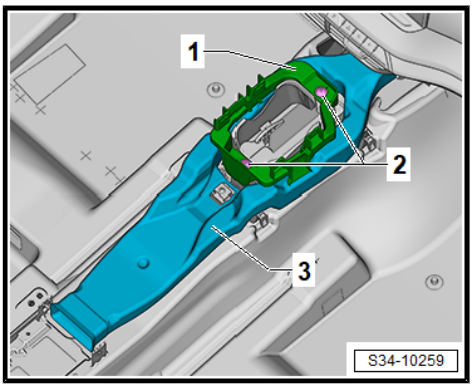
– Press the actuator locking mechanism for the selector control cable -3- in -Arrow direction A- until it stops and secure it by turning it anti-clockwise in -Arrow direction B-.
– Remove the screws -1- for the selector lever control cable support.
– Remove the selector lever cable -2- from the actuator -3- and put it to one side.

• Do not bend or knick the selector lever control cable during removal.

– Remove shift cover with control element for shift mechanism ⇒ “3.4.4 Removing and installing the cover with operating element for the gearshift mechanism - Octavia IV”, page 64 .
– Remove centre console ⇒ Body assembly work inside; Rep. gr. 68 ; centre console ,

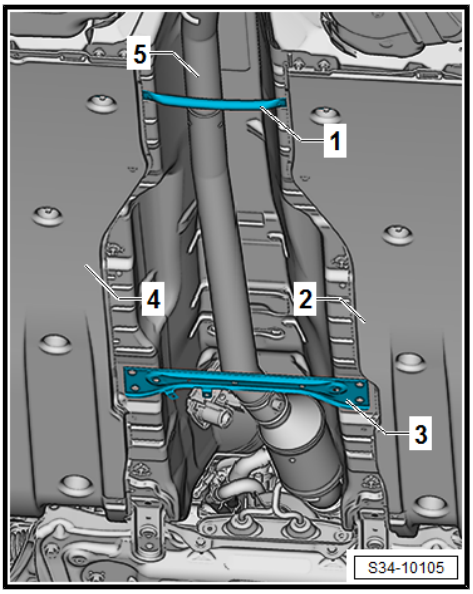


– Screw out screws -2- and remove the bracket -1-.
– Remove the air guide in the centre console -3-.



– Detach both underfloor trim panels -2- and -4- ⇒ General body repairs - exterior; Rep. gr. 66 ; Underfloor trim panel .

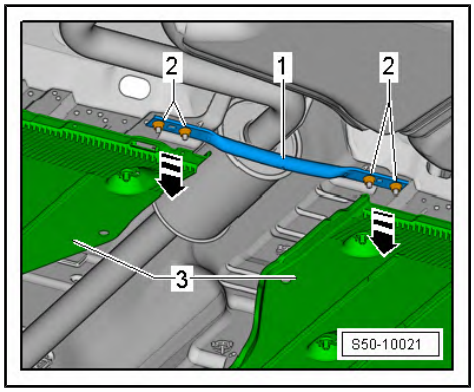
• Detach underfloor trim panels by unscrewing the nuts on inner side only (side at exhaust pipe).



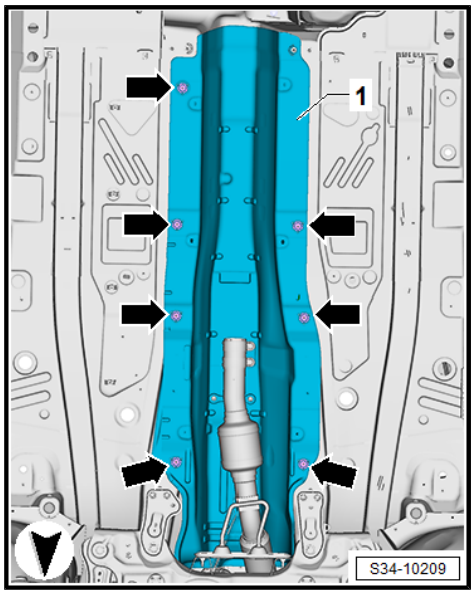
– Remove screws -2- and take out tunnel bridge at the back -1-.

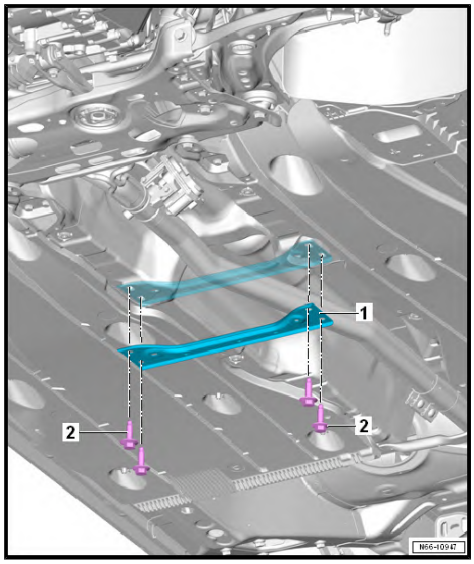
• To remove the screws -2-, partially fold down the underbody panels at the rear -3-.

– Remove silencer -5- (previous figure S34–10105) ⇒ Engine; Rep. gr. 26 ; Exhaust pipes/silencers .

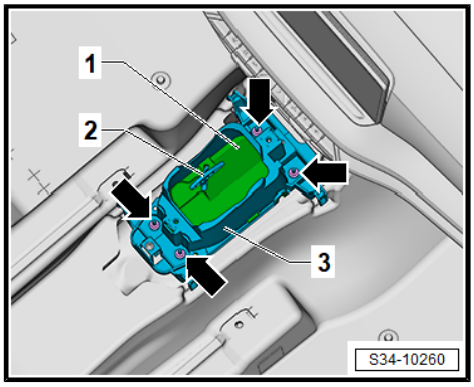


– Remove the safety clamps -arrows- and heat shield for the centre tunnel underneath the shift mechanism -1-.





- Screw tunnel bridge in front -1- onto the body with 2 screws to prevent the shift mechanism from falling out. The shift mechanism can be placed on the tunnel bridge after unscrewing the fastening screws in the vehicle interior.
- Before removing the fastening nuts for the gearshift housing, the emergency release control cable -2- must be detached from the latches on the bracket of the centre console -3-.
- The detached emergency release control cable is connected to the gearshift housing using a cord. The cable is guided through the damping -1- when removing the gearshift mechanism.

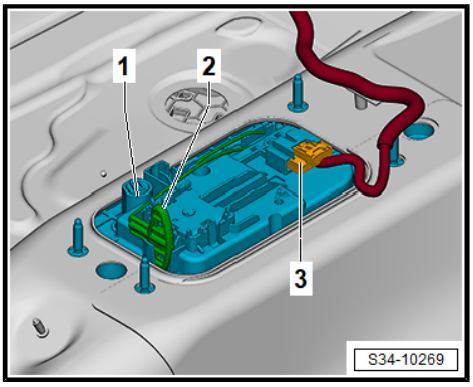


– Remove the nuts -arrows- in the vehicle interior.

After unscrewing the nuts -Arrows- the shift housing is released. This can be placed on the tunnel bridge at the front. At the same time, the bracket for the centre console -3- and the damping -1- in the vehicle interior are detached.

– Remove the bracket for the centre console -3- and the damping -1-.

– Disconnect the put connection -3- and lower the gearshift mechanism with the emergency release control cable -2-.



– Remove the gearshift mechanism, and at the same time, guide the selector lever cable with cable support out of the gearbox area.

- Do not bend or buckle selector lever control cable.

Installing

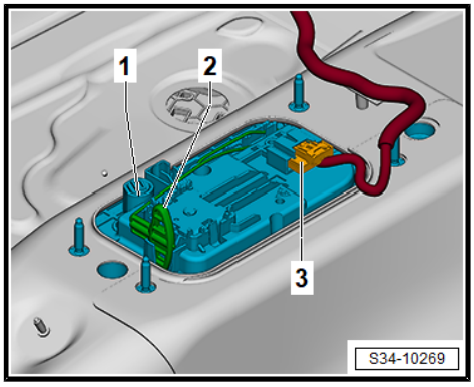
Installation is carried out in the reverse order. When installing, observe the following:

- Do not bend or knick the selector lever control cable during installation.
- Do not grease selector lever control cable.
- After installing the gearshift mechanism, it must be adjusted ⇒ “3.8 Inspecting and adjusting the selector lever control cable”, page 95 .

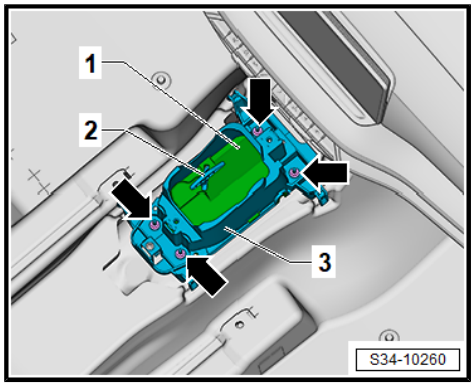
– Pull the control cable for shift mechanism under the vehicle into the engine compartment, place the shift housing on the front tunnel bridge, then pull it into the opening in the centre tunnel and align it.

- Do not bend or knick the selector lever control cable during installation.

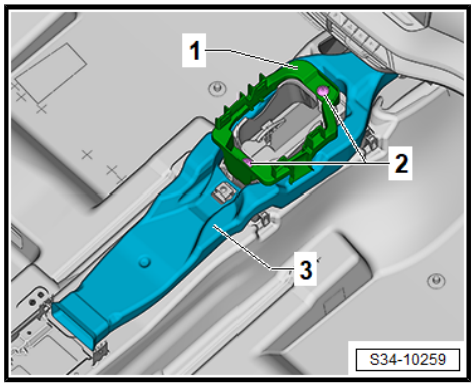
– Connect connector -3-.



– In the vehicle interior, insert the damping -1- into the gearshift housing, and at the same time, pull through the emergency release control cable -2-.
– Fit the brackets for the centre console -3- on the threaded bolts for the gearshift housing, screw on the fastening nuts -arrows- and tighten them crosswise one after the other.
– Insert the emergency release control cable -2- into the locks on the left side of the bracket for the centre console -3-.



– Insert the air guide into the centre console -3-.
– Fit the top bracket for the centre console -1- and tighten the screws -2-.
– Install centre console ⇒ Body assembly work inside; Rep. gr. 68 ; centre console ,
– Install shift cover with control element for shift mechanism ⇒ “3.4.4 Removing and installing the cover with operating element for the gearshift mechanism - Octavia IV”, page 64 .
– Install the heat shield underneath the gearshift mechanism ⇒ General body repairs, exterior; Rep. gr. 66 ; Sound damping .
– Install exhaust system and align free of stress ⇒ Engine; Rep. gr. 26 ; Exhaust pipes/silencers .
– Install the tunnel cross-piece ⇒ External body repairs; Rep. gr. 66 ; Underbody protection; install and remove tunnel cross-piece .
– Install the underfloor trim panels ⇒ General body repairs, exterior; Rep. gr. 66 ; Underfloor trim panel .



– Fasten the control cable on the gearbox with screws -3-, at the same time, push the end of the control cable into the actuator lock -1-.

• The control cable actuator lock is in the pulled (locked) position, the cable end is inserted into the lock -1- and can move freely.

– Setting selector lever control cable
⇒ “3.8 Inspecting and adjusting the selector lever control cable”, page 95 .

– Install air filter housing:

  Petrol engines ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing

  Diesel engines ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing

– Install battery tray and battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .

– Inspect gearshift mechanism
⇒ “3.6 Inspecting the gearshift mechanism”, page 81 .

Tightening torques and summaries of components

Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

◆ ⇒ “3.2 Summary of components - Gearshift mechanism”, page 49

3.6 Inspecting the gearshift mechanism

⇒ “3.6.1 Check shift mechanism Superb III, Kodiaq, Karoq”, page 81

⇒ “3.6.2 Check shift mechanism, Octavia IV”, page 85

3.6.1 Check shift mechanism Superb III, Kodiaq, Karoq

Overview:

◆ Check the shift mechanism is working ⇒ page 81

◆ Check the ignition anti-removal lock is working ⇒ page 83

◆ Check locking bolt - vehicles with keyless locking and starting system ⇒ page 83

◆ Check the lock button on the selector lever handle ⇒ page 83

◆ Checking the plug connections at the gearshift mechanism ⇒ page 84

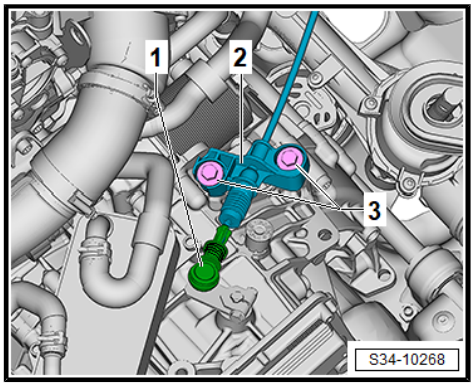
Selector lever position indicator

If all parts of the selector lever position display are lit, it indicates that the gearbox is in emergency operation mode.

Check that the shift mechanism is working

• In selector lever positions “S”, “D”, “R” and Tiptronic position it must not be possible to activate the starter.

• At speeds above 5 km/h and shifting in selector lever position “N”, the selector lever lock solenoid must not engage and block



the selector lever. Selector lever can be shifted in a driving position.

- At speeds below 5 km/h (virtual standstill) and shifting in selector lever position “N”, the selector lever lock solenoid must only engage after approx. 1 s. The selector lever can only be moved from position “N” by activating the brake pedal.

Selector lever in “P”:

– Switch off ignition.

- The selector lever is locked and cannot be switched off with the gearshift knob in the “P” position.

– Switch on the ignition.

- Brake pedal is not operated.
- The selector lever is locked when the button is pressed and cannot be shifted out of position “P”. The selector lever lock solenoid blocks the selector lever.

– Press brake pedal and hold.

- The selector lever lock solenoid releases the selector lever. It is possible to engage a driving gear position.

– Slowly shift selector lever from “P” through “R, N, D, S”; while doing so check whether the selector lever position in the dash panel insert corresponds with the actual selector lever position.

Selector lever in position “N” and ignition switched on:

– Release brake pedal.

- The selector lever is locked and cannot be moved out of position “N”. The selector lever lock solenoid blocks the selector lever.

– Press brake pedal and hold.

- The selector lever lock solenoid releases the selector lever. It is possible to engage a driving gear position.

Shifting out of the position “N” to “D” by activating the brake pedal is also possible without pressing the button on the selector lever. From position “N” to “R” the button on the selector lever also must be pressed.

Selector lever in position “D” and ignition and light switched on:

- The selector lever is locked and cannot be shifted from position “D” to position “S”.

– Press the button on selector lever.

- The selector lever is released and can be shifted from position “D” to position “S”.

Selector lever in position “D/S” and ignition switched on:

– Guide selector lever in the Tiptronic gear.

- The light for “D” on the l amp for selector lever scale illumination - L101- must go out and the “+” and “–” symbols should light up.
- When the selector lever is shifted to the Tiptronic gate, the selector lever position indicator - Y6- in the dash panel insert must change from “P R N D S” to “7 6 5 4 3 2 1”.

- The display of the selector lever position “7 6 5 4 3 2 1” in the dash panel insert must indicate (change) a higher or a lower gear when shifting the selector lever to “+” or to “–”.

If the gearshift mechanism does not function as described:

♦ Inspecting and adjusting the selector lever control cable ⇒ “3.8 Inspecting and adjusting the selector lever control cable”, page 95

♦ Carry out targeted fault finding with ⇒ Vehicle diagnostic tester.

Check the function of the ignition key removal lock

– Turn the ignition key slightly to the right (do not start the engine) in order to set the position “ignition on”.

– Depress brake pedal and hold pressed.

- Shifting the selector lever out of the position “P” when the lock button is pressed at the selector lever handle must be possible without jerking.

– Switch off ignition.

- The key cannot be withdrawn from the ignition starter switch in any other selector lever position except in the position “P”.

– Shift selector lever into position “P”.

– Withdraw ignition key.

- Only withdraw the key from the ignition starter switch if the selector lever is in position “P”.

- The selector lever cannot be shifted out of position “P” when the button is pressed and the brake pedal is actuated.

If the ignition key removal lock does not function as described:

♦ Carry out targeted fault finding with ⇒ Vehicle diagnostic tester.

Check locking bolt - vehicles with keyless locking and starting system

– Turn on the ignition by briefly pressing the button for the starting system - E378- .

– Shift selector lever to position “N”.

– Switch off ignition.

- The warning labels must be displayed in the dash panel insert: “The vehicle cannot be closed.”

– Switch on ignition and switch the selector lever to the “P” position.

– Switch off ignition.

- The vehicle can be closed.

If the specified values are not reached:

♦ Carry out targeted fault finding with ⇒ Vehicle diagnostic tester.

♦ Inspecting and adjusting the selector lever control cable ⇒ “3.8 Inspecting and adjusting the selector lever control cable”, page 95

♦ Check lock button on selector lever handle.

Check lock button on selector lever handle

Check that the lock button is moving:

- The lock button must be able to be pressed without much effort.
- The lock button must re-engage automatically and fully once released.

If the specified values are not reached:

♦ Check that the selector lever handle is correctly installed ⇒ “3.4 Removing and installing selector lever handle”, page 58

♦ Check that the selector cable is not kinked.

Inspect proper operation:

- Ignition is switched on.
- The lock button on the selector lever handle must be pressed for the following shifts.
- If the lock button is not pressed, the selector lever must not be able to be pushed into the following positions.

♦ From the “P” position to “R” with a worn brake pedal.

♦ From the “N” position to “R”, at rest (standstill), after a long wait, and with the brake pedal depressed.

♦ From “R” position to “P”.

If the specified values are not reached:

♦ Check that the selector lever handle is correctly installed ⇒ “3.4 Removing and installing selector lever handle”, page 58

♦ Check the plug connections for the gearshift mechanism.

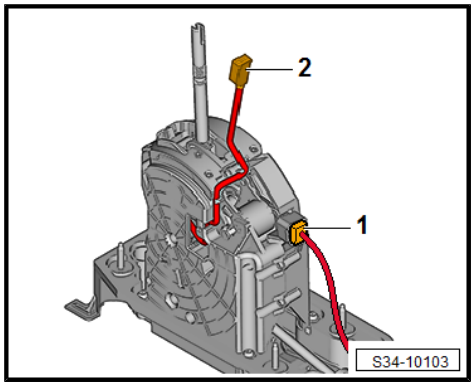
♦ Check the magnet for the selector lever lock - N110- with guided fault finding ⇒ Vehicle diagnostic tester.

♦ Inspecting and adjusting the selector lever control cable ⇒ “3.8 Inspecting and adjusting the selector lever control cable”, page 95

Checking the plug connections at the gearshift mechanism

- Before repairing or checking the plug connections, try to determine the origin of the damage via the “targeted fault finding” using the ⇒ Vehicle diagnostic tester.
- Before checking the plug connections, the event memory of all control units in the vehicle must be queried, and any errors must be eliminated.

– Check plug connections ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.



1 - Plug connection for gearbox shift mechanism connecting lines (with CAN bus line), to the selector lever lock magnet - N110- and selector lever switch locked in P - F319-

2 - Plug connection for selector lever position indicator - Y6-

3.6.2 Check shift mechanism, Octavia IV

WARNING

There is a risk of injury and vehicle damage.

When the engine is running, there is a risk that a gear may be inadvertently engaged.

– **Before working with the engine running, put the gearshift into position »P« by pressing the button and activate the electromechanical parking brake with the button.**

– **Observe safety measures when driving**
⇒ **“1 Safety instructions”, page 1** .

- To test the shift mechanism, all test points must be carried out one after the other.
- If the target values are not reached, check the control element for shift mechanism is correctly installed
⇒ “3.4.4 Removing and installing the cover with operating element for the gearshift mechanism - Octavia IV”, page 64 and carry out guided troubleshooting with ⇒ Vehicle diagnostic tester.

Overview of the tests to be carried out

- Check function of the »P« position button (activation of parking lock) ⇒ page 85
- Inspect function of shift mechanism ⇒ page 86
- Check gear indicator ⇒ page 86
- Check display in dash panel insert ⇒ page 87
- Check parking lock ⇒ page 87

Check function of the »P« position button (activation of the parking lock)

Test step 1.1

- Ignition on, engine switched off, »P«position activated (inserted).

– Press the »P« position button, press the brake pedal.

– Push the control element for shift mechanism forward and release.

Gear »N« must be engaged.

Gear »N« must be displayed on the dial range display - Y5- .

– Press »P« button.

»P«position must be activated.

Gear »P« is displayed on the dial range display - Y5- .

Test step 1.2

- Ignition on, engine running, gear »P« activated, brake pedal is not operated.

– Push and release the control element for shift mechanism by one or two positions back.

Gear »P« must remain engaged.

Test step 1.3

- Ignition on, engine running, gear »P« activated, brake pedal is pressed.

– Push and release the control element for shift mechanism by one or two positions back.

Gear »D« is engaged.

Gear »D« is displayed on the dial range display - Y5- .

– Push and release the control element for shift mechanism by one or two positions back.

Gear »S« is engaged.

Gear »S« is displayed on the dial range display - Y5- .

– Push the control element for shift mechanism forward by one position and release it.

Gear »N« is engaged.

Gear »N« is displayed on the dial range display - Y5- .

– Push the control element for shift mechanism forward by one position and release it.

Gear »R« is engaged.

Gear »R« is displayed on the dial range display - Y5- .

Check that the shift mechanism is working

Test step 2.1

• Engine running, gear »D« activated, drive speed is faster than 4 km / h.

– Engage gear »N«.

Gear »N« is engaged.

– Engage gear »R«.

Not possible to engage gear »R«.

Gear »N« is constantly engaged.

– Engage gear »D« without using the brake pedal.

• The drive speed is higher than 4 km / h.

• It must be possible to engage.

Test step 2.2

• Engine running, gear »D«, »R« or »N« engaged, drive speed is 0 km / h.

– Engage gear »P«.

Gear »P« is displayed on the dial range display - Y5- .

Check gear indicator

Test step 3.1

• Engine running

– Engage gears »P«, »R«, »N«, »D / S« one after the other.

• The currently selected gear must light up more clearly and with a different colour (yellow) compared to other gear symbols.

Test step 3.2

• Engine running

– Engage gear »P«.

• Symbol »P« on the button must light up in yellow.

All other gears must not light up yellow, they only light up in the white base colour.

Check display in dash panel insert

Test step 4.1

- Engine running, gear »P« engaged, brake pedal is not pressed.

– Engage gear »D« or »R«.

- The following message must appear in the dash panel insert: “If you want to engage a gear, press the brake pedal and the selector lever.”

Check parking lock

Test step 5.1

- Engine running, gear »D«, »S« or »R«, vehicle standstill

– Switch off engine.

- Gear »P« must be engaged automatically.

Test step 5.2

- Engine running, gear »N«, vehicle standstill

– Switch off the engine and open the driver's door.

- The following message must appear in the dash panel insert: “Engage P-position before getting out, otherwise the vehicle can roll off.”
- An acoustic signal must also sound.

3.7 Removing and installing the selector lever control cable

⇒ “3.7.1 Removing and installing the selector lever control cable, Karoq, Superb III”, page 87

⇒ “3.7.2 Removing and installing the selector lever control cable - Kodiaq”, page 90

3.7.1 Removing and installing the selector lever control cable, Karoq, Superb III

Special tools and workshop equipment required

♦ Unlocking tool -T10236-

Removing

– Remove engine cover engine ⇒ Engine; Rep. gr. 10

– Remove air filter housing:

Petrol engines ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing

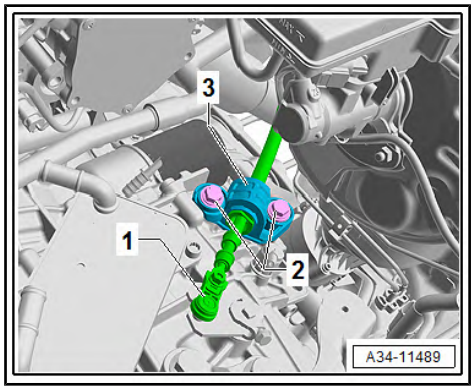
Diesel engines ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing

– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .

– Push ball socket -1- of selector lever control cable off the gearshift lever with the unlocking tool - T10236- .

– Unscrew screws -2- of the cable support for selector lever control cable and place to one side.

• Do not bend or buckle selector lever control cable.



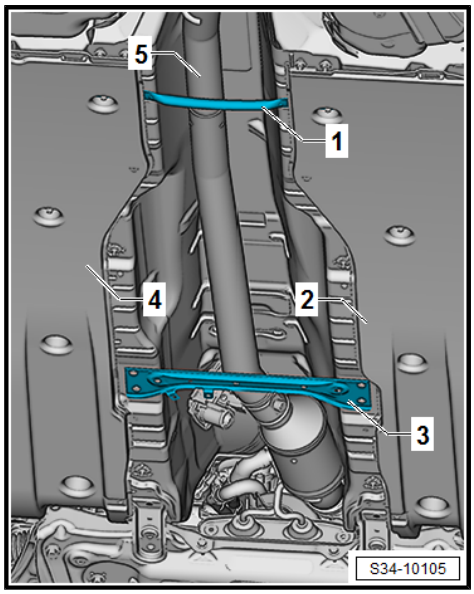
For vehicles with front-wheel-drive

– Detach both underfloor trim panels -2- and -4- ⇒ General body repairs - exterior; Rep. gr. 66 ; Underfloor trim panel .

• Detach underfloor trim panels by unscrewing the nuts on inner side only (side at exhaust pipe).

– Removing tunnel cross-pieces (if present) -1- and -3- ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody protection; installing and removing tunnel cross-piece .

– Silencer -5- ⇒ Engine; Rep. gr. 26 ; Exhaust pipes/silencers .



For vehicles with four-wheel drive

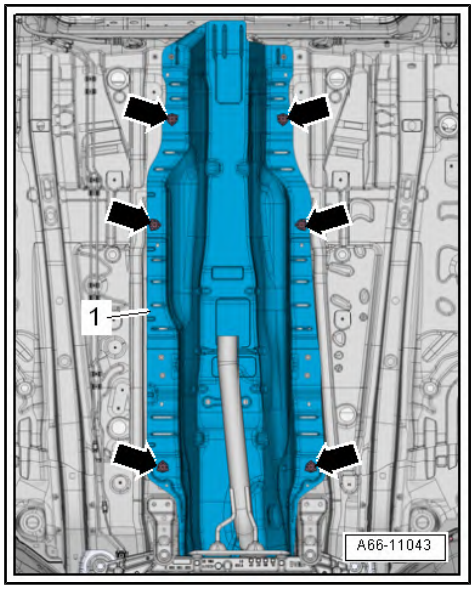
– Remove the propshaft ⇒ Propeller shaft and rear final drive; Rep. gr. 39 ; Propeller shaft; remove and install propeller shaft

Continued for all vehicles

– Remove the safety clamps -arrows- and heat shield for the center tunnel underneath the shift mechanism -1- ⇒ General body repairs, exterior; Rep. gr. 66 ; Sound damping .

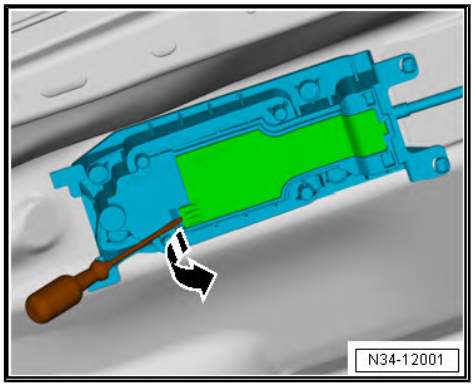
– Bring selector lever for the shift mechanism into position “N”.

• The catch can only be released and the selector lever cable disconnected from the shift mechanism in this position.

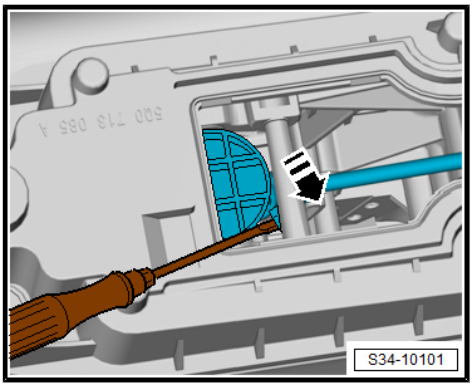


– Lift off with a screwdriver and remove cover at the bottom from the shift mechanism -arrow-.

• Replace cover for shift mechanism after disassembly.



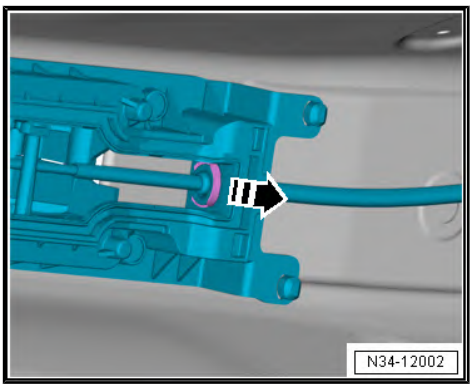
– Using a screwdriver, pull the cable from the shift lever in the -direction of the arrow-.



– Remove the lock washer -arrow- and detach the selector lever cable.

• Replace the lock washer after removing it.

– Pull the selector lever control cable on one side out of the shift mechanism and on the other side out of the cable support/ gearbox and remove.



Installing

Installation is carried out in the reverse order. When installing, observe the following:

• Do not bend or buckle the selector lever control cable.

• Do not grease selector lever control cable.

• The selector lever for the shift mechanism is at position “N”. The cable can only be locked in this position.

– Push cable onto selector lever in the shift mechanism and secure with new lock washer.

– Close shift mechanism at the bottom with new cover.

– Fit selector lever control cable with cable support to gearbox with screws -2-.

• Do not yet push the ball head -1- of the selector lever control cable onto the gearshift lever. Only press on after checking and adjusting the control cable.

– Install the heat shield underneath the gearshift mechanism ⇒ General body repairs, exterior; Rep. gr. 66 ; Sound damping .

For vehicles with four-wheel drive

– Install the propeller shaft ⇒ Propeller shaft and rear final drive ; Rep. gr. 39 ; Propeller shaft; remove and install propeller shaft .

Continued for all vehicles

– Install rear silencer ⇒ Engine; Rep. gr. 26 ; Exhaust pipes/ silencers .

– Install the tunnel cross-piece ⇒ External body repairs; Rep. gr. 66 ; Underbody protection; install and remove tunnel cross-piece .

– Fasten both underfloor trim panels ⇒ General body repairs, exterior; Rep. gr. 66 ; Underfloor trim panel .

– Setting selector lever control cable
⇒ “3.8 Inspecting and adjusting the selector lever control cable”, page 95 .

– Install air filter housing:

Petrol engines ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing

Diesel engines ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing

– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .

– Inspect gearshift mechanism
⇒ “3.6 Inspecting the gearshift mechanism”, page 81 .

Tightening torques and summaries of components

Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

♦ ⇒ “3.2 Summary of components - Gearshift mechanism”, page 49

3.7.2 Removing and installing the selector lever control cable - Kodiaq

Special tools and workshop equipment required

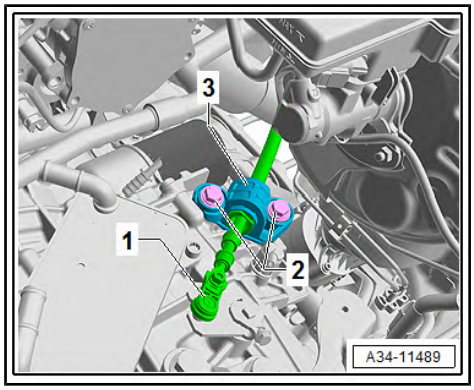
♦ Unlocking tool -T10236-

Removing

– Remove engine cover engine ⇒ Engine; Rep. gr. 10

– Remove air filter housing:

Petrol engines ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing



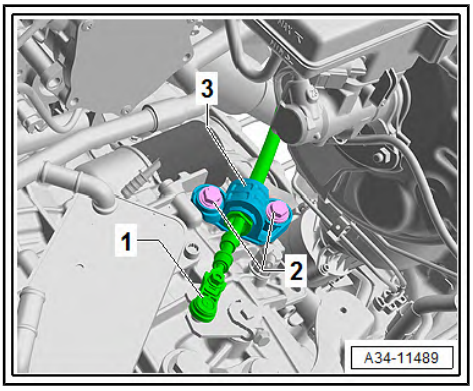
Diesel engines ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing

– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .

– Push ball socket -1- of selector lever control cable off the gearshift lever with the unlocking tool - T10236- .

– Unscrew screws -2- of the cable support for selector lever control cable and place to one side.

• Do not bend or buckle selector lever control cable.



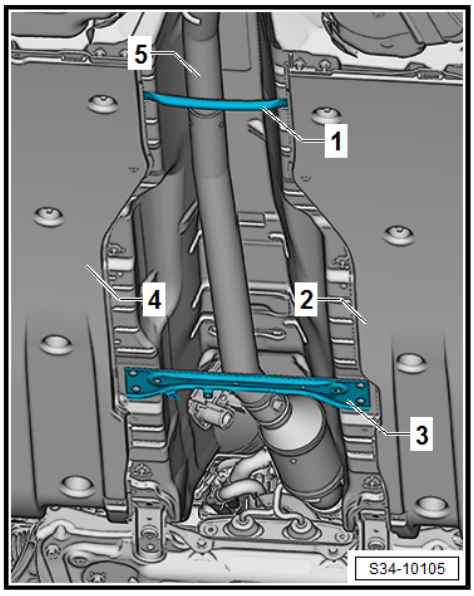
For vehicles with front-wheel-drive

– Detach both underfloor trim panels -2- and -4- ⇒ General body repairs - exterior; Rep. gr. 66 ; Underfloor trim panel .

• Detach underfloor trim panels by unscrewing the nuts on inner side only (side at exhaust pipe).

– Removing tunnel cross-pieces (if present) -1- and -3- ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody protection; installing and removing tunnel cross-piece .

– Silencer -5- ⇒ Engine; Rep. gr. 26 ; Exhaust pipes/silencers .

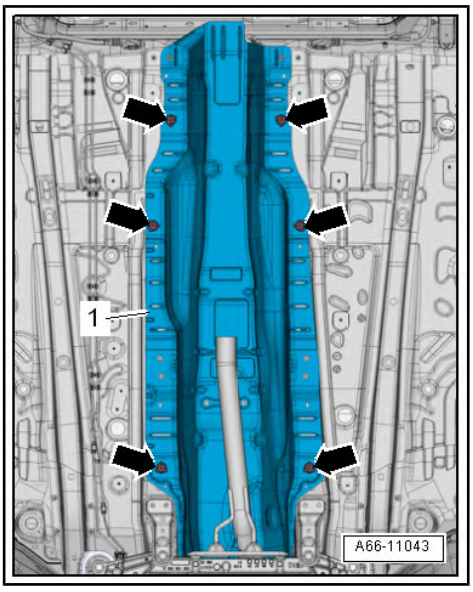


For vehicles with four-wheel drive

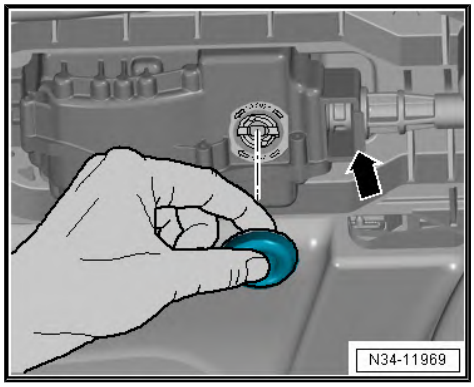
– Remove the propshaft ⇒ Propeller shaft and rear final drive; Rep. gr. 39 ; Propeller shaft; remove and install propeller shaft

Continued for all vehicles

– Remove the safety clamps -arrows- and heat shield for the center tunnel underneath the shift mechanism -1- ⇒ General body repairs, exterior; Rep. gr. 66 ; Underfloor trim panel .

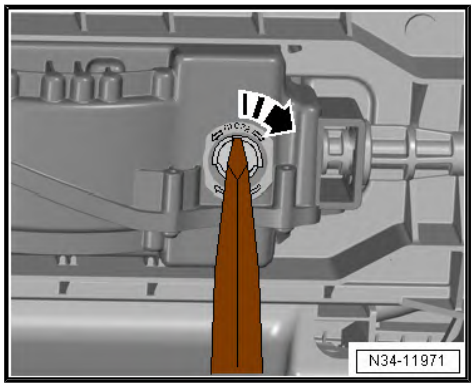


– Detach the plug from the bottom part of the shift mechanism and take off the lock washer for the selector lever cable -arrow-.



– Turn the catch for the selector lever cable 90° in -direction of arrow- with a large screwdriver.

– Pull the selector lever cable out of the shift mechanism and remove.

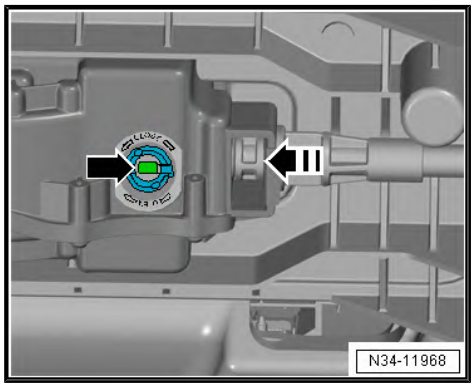


Installing

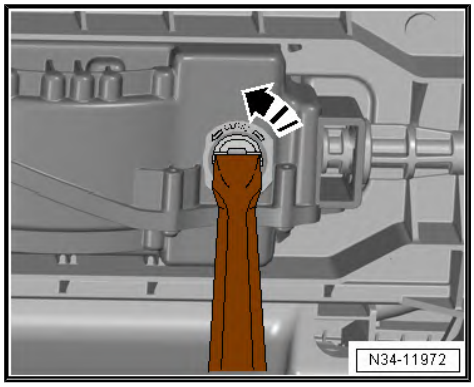
Installation is carried out in the reverse order. When installing, observe the following:

- Do not bend or buckle the selector lever control cable.
- Do not grease selector lever control cable.
- After installing the shift mechanism, check the selector lever control cable for ease of movement and adjust.
- The selector lever for the shift mechanism is at position “N”.

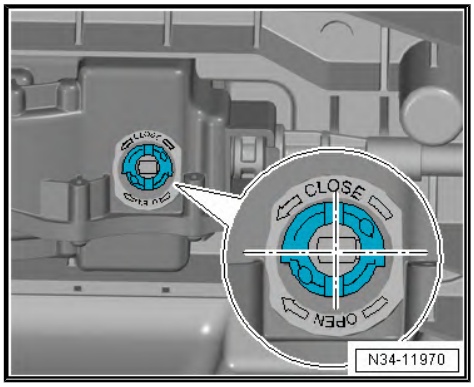
– Insert the selector lever cable into the shift mechanism far enough for it to be visible in the catch for the shift mechanism -arrow-.



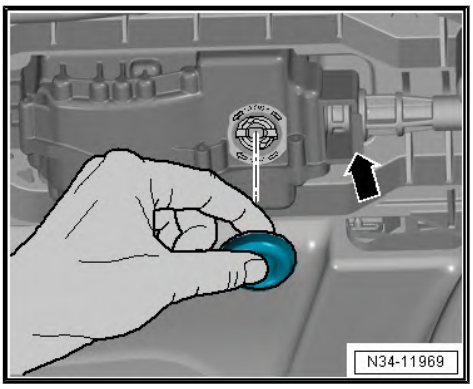
– Turn the catch for the selector lever cable 90° in -direction of arrow- with a large screwdriver.



- The selector lever cable is secured once the recesses of the catch are at right angles to the end of the cable.



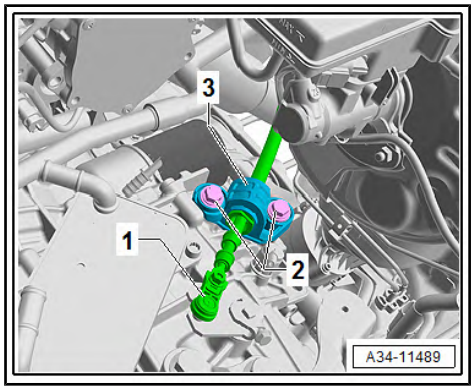
– Install a new lock washer -arrow- and insert plug.



– Fit selector lever control cable with cable support to gearbox with screws -2-.

• Do not yet push the ball head -1- of the selector lever control cable onto the gearshift lever. Only press on after checking and adjusting the control cable.

– Install the heat shield underneath the gearshift mechanism ⇒ General body repairs, exterior; Rep. gr. 66 ; Underfloor trim panel .



For vehicles with four-wheel drive

– Install the propeller shaft ⇒ Propeller shaft and rear final drive ; Rep. gr. 39 ; Propeller shaft; remove and install propeller shaft .

Continued for all vehicles

– Install rear silencer ⇒ Engine; Rep. gr. 26 ; Exhaust pipes/ silencers .

– Install the tunnel cross-piece ⇒ External body repairs; Rep. gr. 66 ; Underbody protection; install and remove tunnel cross-piece .

– Fasten both underfloor trim panels ⇒ General body repairs, exterior; Rep. gr. 66 ; Underfloor trim panel .

– Setting selector lever control cable
⇒ “3.8 Inspecting and adjusting the selector lever control cable”, page 95 .

– Install air filter housing:

Petrol engines ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing

Diesel engines ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing

– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .

– Inspect gearshift mechanism
⇒ “3.6 Inspecting the gearshift mechanism”, page 81 .

Tightening torques and summaries of components

Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

◆ ⇒ “3.2 Summary of components - Gearshift mechanism”, page 49

3.8 Inspecting and adjusting the selector lever control cable

⇒ “3.8.1 Checking and adjusting the selector lever control cable, Karoq, Kodiaq, Superb III”, page 95

⇒ “3.8.2 Adjusting the selector lever control cable, Octavia IV”, page 96

3.8.1 Checking and adjusting the selector lever control cable, Karoq, Kodiaq, Superb III

Special tools and workshop equipment required

♦ Unlocking tool -T10236-

- To check that the selector lever control cable is moving freely, the control cable has to be separated from the gearbox.
- Place the remove end so that it is not touching anything else at any point.
- After checking the control cable, fit and adjust to the gearbox again.
- Do not grease selector lever control cable.

Checking

– Shift selector lever into position “P”.

– Remove air filter housing:

Petrol engines ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing

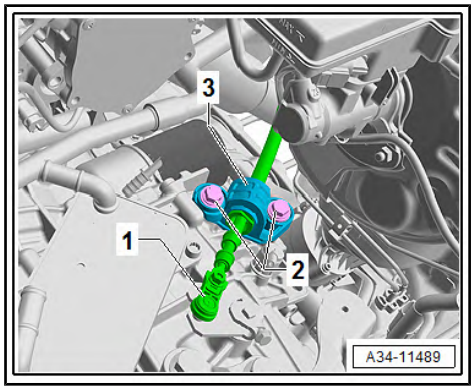
Diesel engines ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing

– Remove the battery with battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .

– Push ball socket -1- of selector lever control cable off the gearshift lever with the unlocking tool - T10236- .

– Slide the selector lever from position “P” to position “S” several times.

• Selector lever must move freely in this case.



Setting

The selector lever control cable must be adjusted if:

♦ the selector lever control cable has been removed from the gearbox

♦ Engine or gearbox was removed and installed

♦ Parts of the assembly bracket have been removed and installed

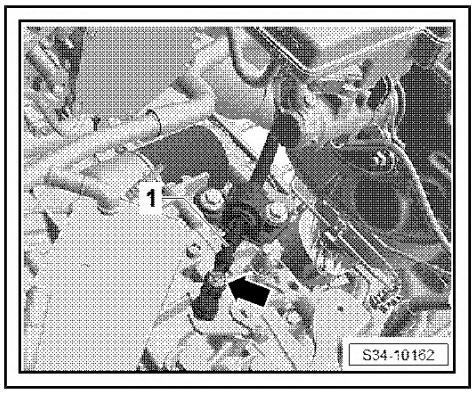
♦ The shift mechanism or the selector lever control cable itself has been removed.

– Shift selector lever in the vehicle into position “P”.

• The gearshift shaft must be in position “P”.

• To check position “P”, turn both front wheels in one direction, e.g. by pushing the vehicle forwards, until the locking lever in the gearbox engages into the park lock and the front wheels are blocked (cannot be simultaneously turned in one direction).

– Loosen adjusting screw -arrow- for selector lever control cable.



– Slightly move the selector lever towards the front and rear, without shifting into another selector lever position.

– Tighten clamping bolt -arrow- on selector lever cable smoothly.

• Pay attention when tightening the clamping screw -arrow- that the selector lever control cable no longer shifts.

– Install air filter housing:

Petrol engines ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing

Diesel engines ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing

– Install the battery with battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .

3.8.2 Adjusting the selector lever control cable, Octavia IV

The selector lever control cable must be adjusted if:

♦ the selector lever control cable has been removed from the gearbox

♦ Engine or gearbox was removed and installed

♦ Parts of the assembly bracket have been removed and installed

♦ The gearshift mechanism has been removed with the selector lever control cable

♦ Adjustment element of the cable for shift mechanism was removed

– Switch into the “P” position by pressing the button.

– Remove air filter housing:

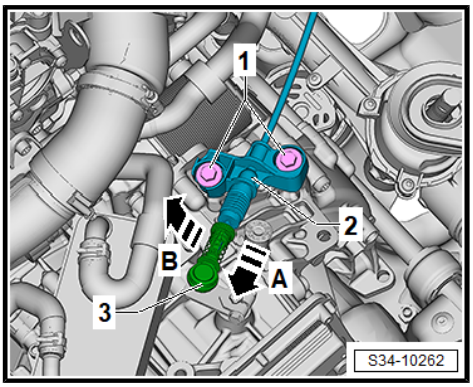
  Petrol engines ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing

  Diesel engines ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing

– Remove the battery with battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .

– Press the actuator locking mechanism for the selector control cable -3- in -Arrow direction A- until it stops and secure it by turning it anti-clockwise in -Arrow direction B-.

- The cable is fastened to the gearbox, the mounting screws -1- are tightened.
- The cable end -2- remains loose in the actuator lock -3-.
- The “P” position is required to set the selector lever control cable correctly on the gearshift mechanism, as well as on the gearshift shaft.

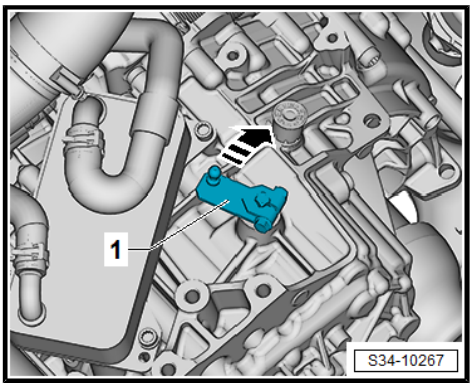


Check the “P” position on the gearshift shaft.

The gearshift shaft is in the “P” position when the gearshift lever on gearbox -1- is pressed in the rear position (rear position towards the interior of the vehicle).

The figure shows the gearshift lever without an actuator or control cable.

– Press the gearshift lever -1- in the direction of the -arrow- towards the interior of the vehicle.



The gearshift lever can still be pressed slightly behind the last position, in which case the lever returns to the last position. The last position is the correct “P” position.

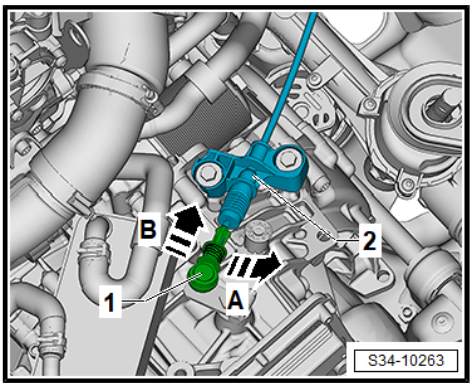
- A check can also be carried out as follows to see whether the “P” position has been engaged, turn both front wheels in one direction, e.g. by pushing the vehicle forwards, until the locking lever in the gearbox engages into the park lock and the front wheels are blocked (cannot be simultaneously turned in one direction).

– Rotate the actuator lock adjustment mechanism for the control cable -1- in the -direction of arrow A- until it stops.

- The control cable -B- must move freely in the lock.

The spring presses the locking mechanism back into its original position -direction of arrow B-.

The selector lever control cable is now adjusted.



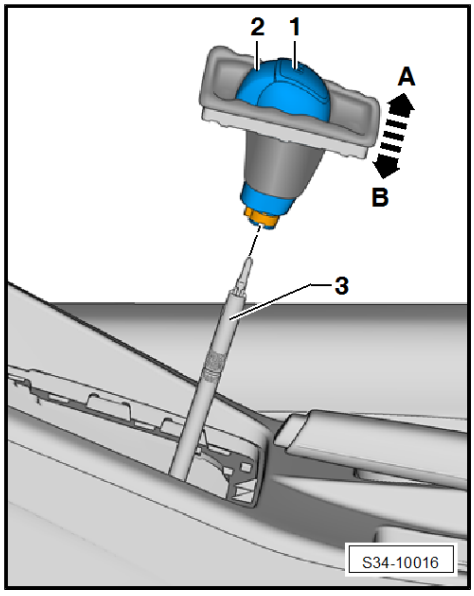
3.9 Installing the lock button at the selector lever handle

Special tools and workshop equipment required

♦ Release tool - T40203-

The lock button -2- at the selector lever handle protrudes in its installed position.

- If the lock button -2- was inadvertently pressed in, it must then be repositioned in order to fit the selector lever handle.

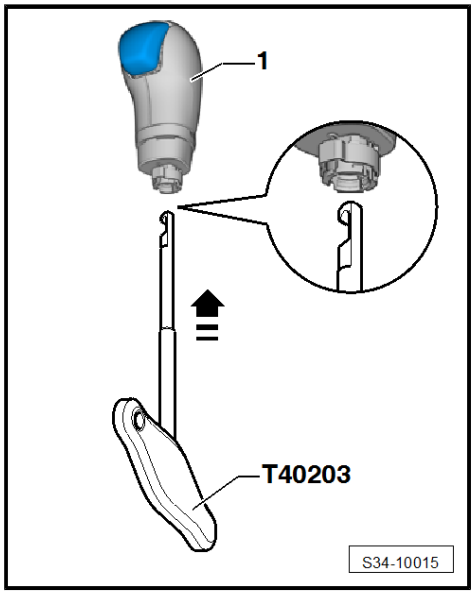


– Carefully guide the release tool - T40203- fully into the selector lever handle -1- -arrow-.

Note

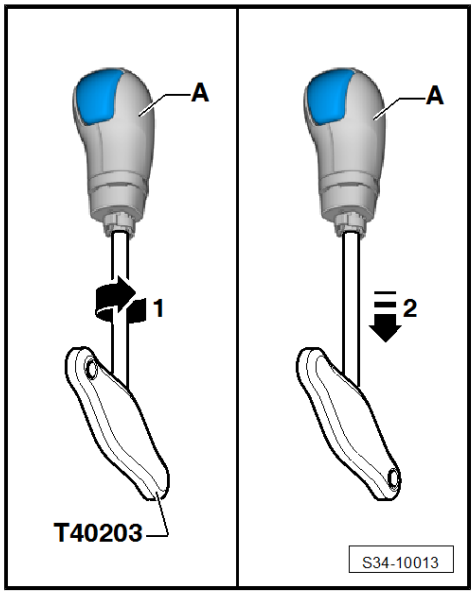
The selector lever handle in the illustration is shown without the selector lever collar. The selector lever collar does not separate from the handle.

- The recess at the release tool - T40203- points to the lock button and the hook points to the left.

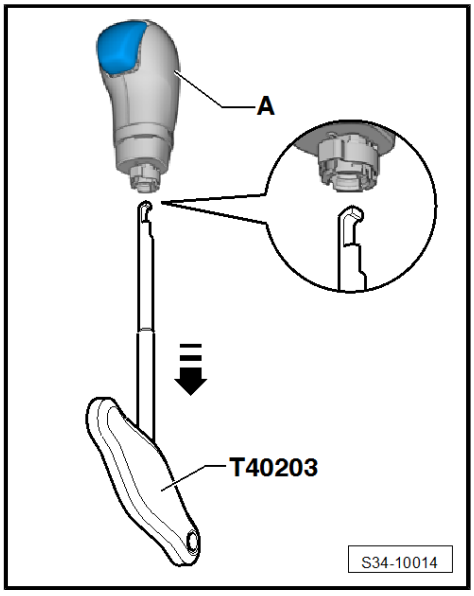


– Hold the selector lever handle -A- and turn the release tool - T40203- by 180° in -direction of arrow 1-.

– Hold the selector lever handle and carefully pull out the release tool - T40203- -arrow 2-.



- When pulling out the release tool - T40203- , the lock button at the selector lever handle -A- is pressed in and locked.
- Do not touch and press in the lock button again before installing the selector lever handle.



3.10 Replacing cable adjusting element

⇒ “3.10.1 Replacing the control cable adjuster, Superb III, Kodiaq, Karoq”, page 99

⇒ “3.10.2 Replacing the control cable adjuster, Octavia IV”, page 100

3.10.1 Replacing the control cable adjuster, Superb III, Kodiaq, Karoq

Special tools and workshop equipment required

- ♦ Release tool - T10236-

Removing

– Remove air filter housing:

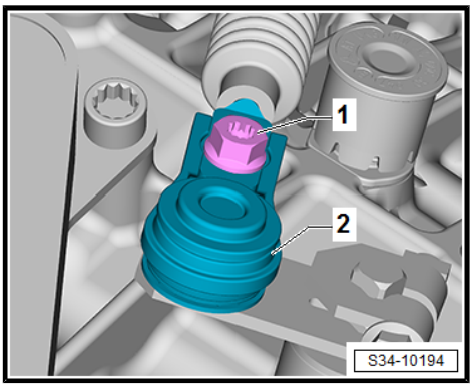
Petrol engines ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing

Diesel engines ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing

– Remove the battery with battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .

– Loosen the adjusting screw -1- for the selector lever control cable.

– Push adjustment element ball socket -2- of selector lever control cable off the gearshift lever with the unlocking tool - T10236- .

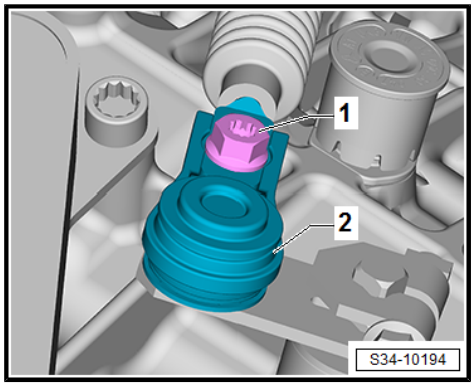


NOTICE

Do not bend or buckle the selector lever control cable.

– Remove the adjusting screw -1- for the selector lever control cable.

– Pull adjusting element -2- off the end of the selector cable.



Installing

Installation is carried out in the reverse order. When installing, observe the following:

- Do not bend or buckle the selector lever control cable.
- Do not grease selector lever control cable.
- After installing the adjusting element, adjust the shift mechanism cable
⇒ “3.8 Inspecting and adjusting the selector lever control cable”, page 95 .

– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .

– Install air filter housing:

Petrol engines ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing

Diesel engines ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing

Specified torques

♦ Adjustment screw for shift mechanism
⇒ “3.2 Summary of components - Gearshift mechanism”, page 49

3.10.2 Replacing the control cable adjuster, Octavia IV

Special tools and workshop equipment required

♦ Release tool - T10236-

Removing

– Remove air filter housing:

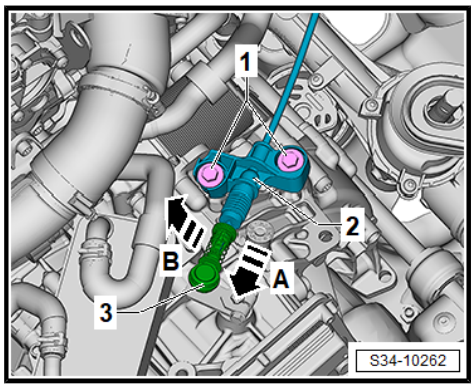
Petrol engines ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing

Diesel engines ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing

– Remove the battery with battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .

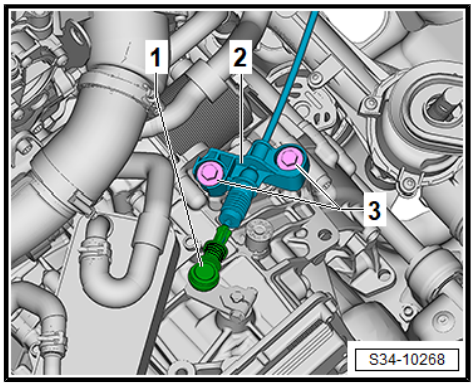
– Press the actuator locking mechanism for the selector control cable -3- in -Arrow direction A- until it stops and secure it by turning it anti-clockwise in -Arrow direction B-.

- The cable is fastened to the gearbox, do not loosen the mounting screws -1-.



– Push adjustment element ball socket -1- of selector lever control cable off the gearshift lever with the unlocking tool -T10236- .

– Remove the control cable adjuster -1- from the end of the selector lever control cable -2-.



NOTICE

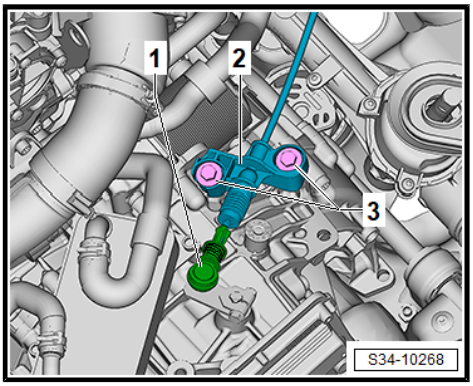
Do not bend or buckle the selector lever control cable.

Installing

Installation is carried out in the reverse order. When installing, observe the following:

- Do not bend or buckle the selector lever control cable.
- Do not grease selector lever control cable.

– Fit the actuator for shift mechanism -1- into the end of the cable -2- and press the ball socket into the gearshift lever.



- Do not release the actuator and leave the lock in the pulled position. The end of the cable can move freely in the lock. The lock is only polled when adjusting the selector lever control cable.

– Adjust cable for shift mechanism ⇒ “3.8 Inspecting and adjusting the selector lever control cable”, page 95 .

– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .

– Install air filter housing:

Petrol engines ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing

Diesel engines ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing

Specified torques

♦ Adjustment screw for shift mechanism ⇒ “3.2 Summary of components - Gearshift mechanism”, page 49

3.11 Replacing the sealing ring for the gearshift shaft

⇒ “3.11.1 Replacing the gearshift shaft seal, Karoq, Kodiaq, Superb III”, page 101

⇒ “3.11.2 Replacing the gearshift shaft sealing ring, Octavia IV”, page 103

3.11.1 Replacing the gearshift shaft seal, Karoq, Kodiaq, Superb III

Special tools and workshop equipment required

♦ Pipe section - MP3-479 (VW 423)-

♦ Release tool - T10236-

♦ Extractor tool - T20143-

– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .

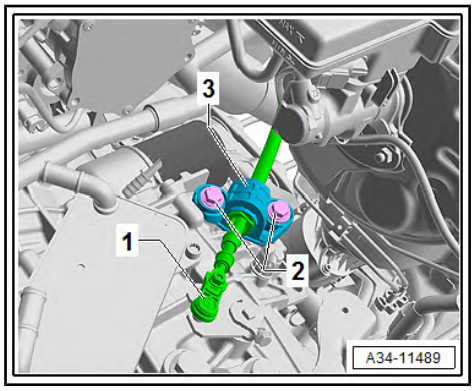
– Remove air filter housing:

  Petrol engines ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing

  Diesel engines ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing

– Push ball socket -1- of selector lever control cable off the gearshift lever with the unlocking tool - T10236- .

– Unscrew screws -2-, detach cable support for selector lever control cable from gearbox -3- and place to one side.

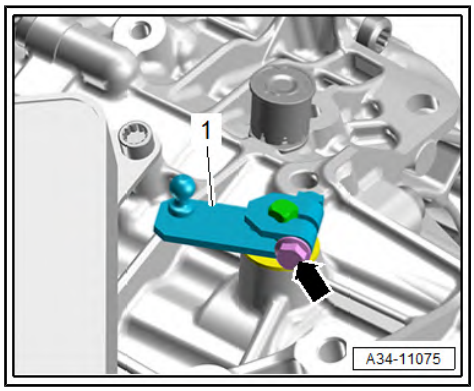


NOTICE

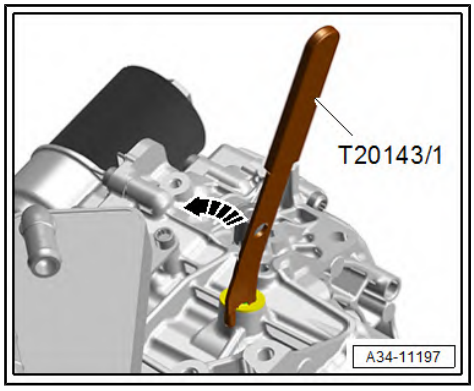
Risk of damage to the selector lever control cable.

– Do not bend or kink selector lever control cable too much, otherwise it will be damaged.

– Unscrew screw -arrows- and remove gearshift lever -1-.

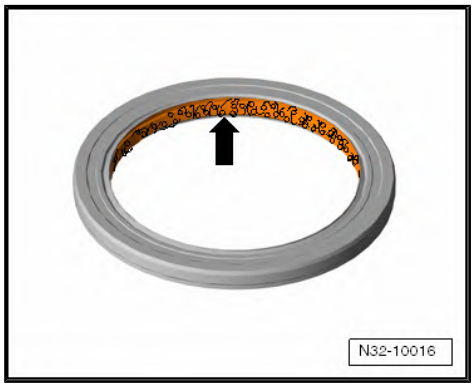


– Lever out the sealing ring for gearshift shaft with the extractor tool - T20143/1- -arrow-.



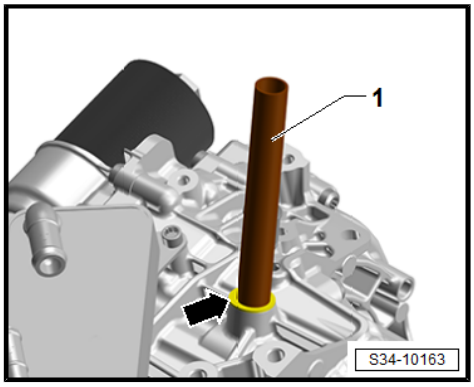
– Lubricate the outer surface and sealing lips of the new sealing ring with gear oil.

– Fill half the space between the sealing lip and dust lip -arrow- with sealing grease ⇒ Electronic Catalogue of Original Parts .

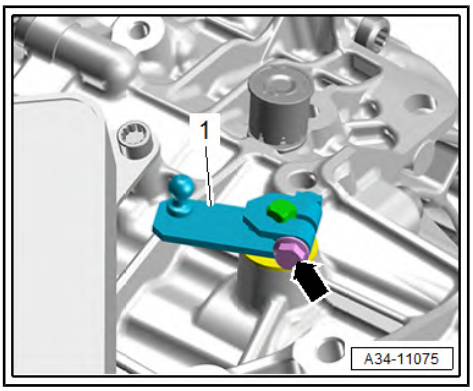


– Drive in new sealing ring with pipe section - MP3-479 (VW 423)- -1- up to the stop.

• The sealing ring must stay straight as it is driven in.



– Fit the gearshift lever -1- to the park lock shaft and tighten the bolt -arrow-.



– Fit cable support with selector lever control cable to gearbox with bolts -2- and push the ball socket -1- onto the gearshift lever.

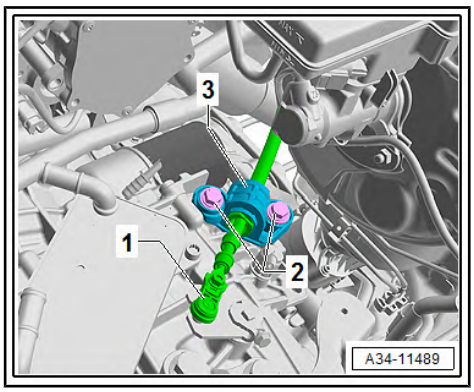
– Setting selector lever control cable ⇒ “3.8 Inspecting and adjusting the selector lever control cable”, page 95 .

– Install air filter housing:

Petrol engines ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing

Diesel engines ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing

– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .



Tightening torques and summaries of components

Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

♦ ⇒ “3.2 Summary of components - Gearshift mechanism”, page 49

3.11.2 Replacing the gearshift shaft sealing ring, Octavia IV

Special tools and workshop equipment required

♦ Pipe section - MP3-479 (VW 423)-

♦ Release tool - T10236-

♦ Extractor tool - T20143-

– Remove air filter housing:

  Petrol engines ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing

  Diesel engines ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing

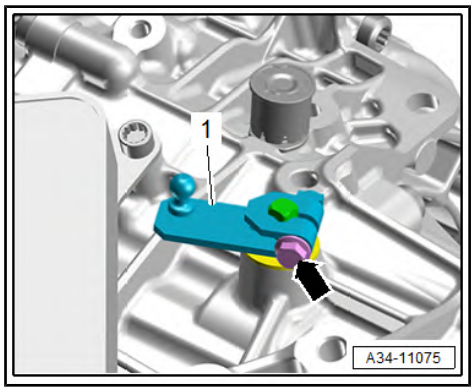
– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .

– Remove the cable control adjustment element for shift mechanism ⇒ “3.10 Replacing cable adjusting element”, page 99 .

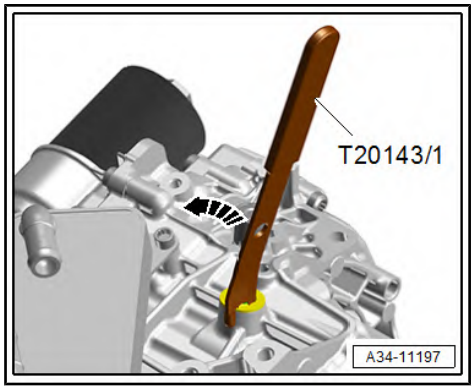
NOTICE

Do not bend or buckle the selector lever control cable.

– Unscrew screw -arrows- and remove gearshift lever -1-.

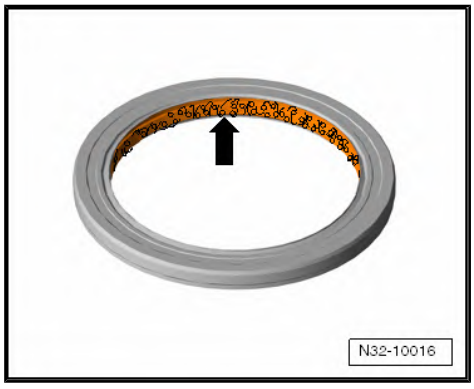


– Lever out the sealing ring for gearshift shaft with the extractor tool - T20143/1- -arrow-.



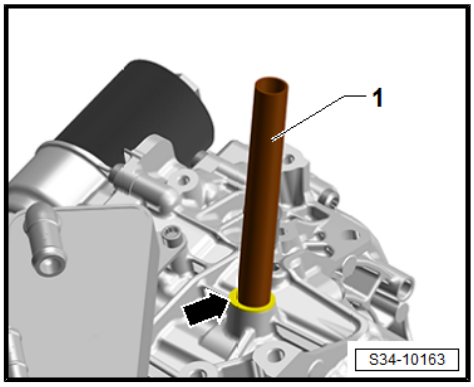
– Lubricate the outer surface and sealing lips of the new sealing ring with gear oil.

– Fill half the space between the sealing lip and dust lip -arrow- with sealing grease ⇒ Electronic Catalogue of Original Parts .



– Drive in new sealing ring with pipe section - MP3-479 (VW 423)- -1- up to the stop.

• The sealing ring must stay straight as it is driven in.



– Fit the gearshift lever -1- to the park lock shaft and tighten the bolt -arrow-.

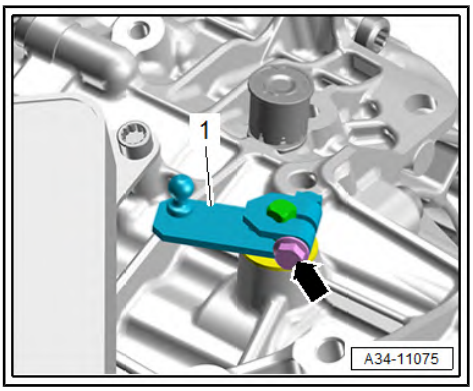
– Install the control cable adjustment element for shift mechanism ⇒ “3.10 Replacing cable adjusting element”, page 99 .

– Install air filter housing:

  Petrol engines ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing

  Diesel engines ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing

– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .



Tightening torques and summaries of components

Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

◆ ⇒ “3.2 Summary of components - Gearshift mechanism”, page 49

4 Removing and installing the gearbox

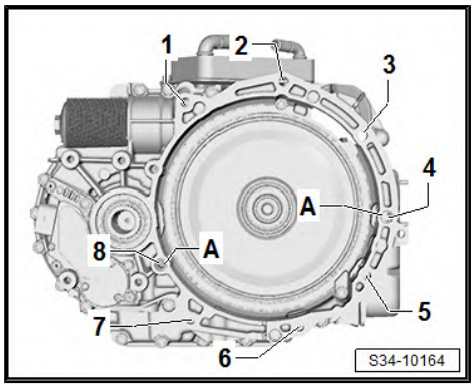
⇒ “4.1 Tightening torques for gearbox”, page 106

⇒ “4.2 Removing the gearbox”, page 108

⇒ “4.3 Installing the gearbox”, page 207

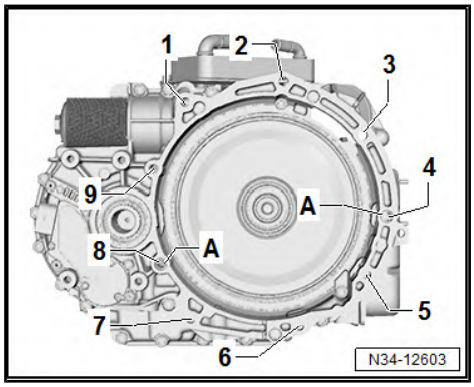
4.1 Tightening torques for gearbox

Vehicles with 2.0 TDI CR engine



Position	Screw	Nm
1.2	M12 x 50 When using the insertion tool - T10509-	80 65
3	M12 x 60 Screw is only accessible through the opening after removing the starter	80
4	M12 x 60	80
5, 6, 7	M10 x 50	40
8	M12 x 70 Screw is accessible from the engine side	80
A	Dowel sleeves	

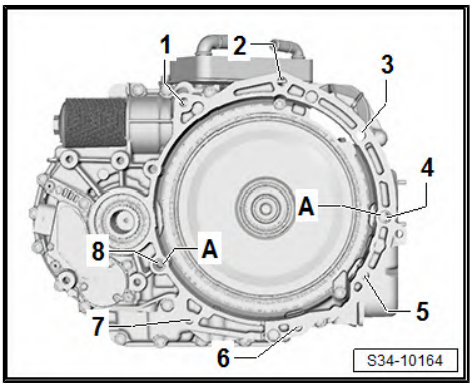
Vehicles with 1.5 l TSI engine



Position	Screw	Nm
1.2	M12 x 70 When using the insertion tool - T10509-	80 65
3	M12 x 70 Screw is only accessible through the opening after removing the starter	80
4	M12 x 80	80
5, 6, 7	M10 x 60	40
8.9	M12 x 80	80

Position	Screw	Nm
	Screw is accessible from the engine side	
A	Dowel sleeves	

Vehicles with 2.0 TFSI engine



Position	Screw	Nm
1.2	M12 x 60 When using the insertion tool - T10509-	80 65
3	M12 x 60 Screw is only accessible through the opening after removing the starter	80
4	M12 x 80	80
5, 6, 7	M10 x 60	40
8	M12 x 80 Screw is accessible from the engine side	80
A	Dowel sleeves	

4.2 Removing the gearbox

⇒ “4.2.1 Removing gearbox, Superb III, vehicles with diesel engine 2.0 l TDI CR, front wheel drive”, page 108

⇒ “4.2.2 Removing gearbox, Superb III, vehicles with diesel engine 2.0 l TDI CR, all-wheel drive”, page 116

⇒ “4.2.3 Removing the gearbox, Superb III, vehicles with 2.0 TFSI petrol engines, front-wheel drive”, page 125

⇒ “4.2.4 Removing gearbox, Superb III, vehicles with diesel engine 2.0 l TDI CR, four-wheel drive”, page 132

⇒ “4.2.5 Removing the gearbox , Karoq, vehicles with 1.5 l TSI petrol engines, all-wheel drive”, page 139

⇒ “4.2.6 Removing the gearbox, Karoq, vehicles with 2.0 l TFSI petrol engines, four-wheel drive”, page 146

⇒ “4.2.7 Removing gearbox, Karoq, vehicles with diesel engine 2.0 lTDI CR, all-wheel drive”, page 155

⇒ “4.2.8 Removing the gearbox, Kodiaq, vehicles with 1.5 TSI petrol engine, front-wheel drive”, page 163

⇒ “4.2.9 Removing gearbox, Kodiaq, vehicles with diesel engine 2.0 TDI CR, front wheel drive”, page 169

⇒ “4.2.10 Removing the gearbox , Karoq, vehicles with 1.5 l TSI petrol engines, four-wheel drive”, page 176

⇒ “4.2.11 Removing the gearbox , Kodiaq, vehicles with 2.0 l TFSI petrol engines, all-wheel drive”, page 183

⇒ “4.2.12 Removing gearbox, Kodiaq, vehicles with diesel engine 2.0 lTDI CR, four-wheel drive”, page 191

⇒ “4.2.13 Removing the gearbox, Octavia IV, vehicles with diesel engine 2.0 TDI CR, front-wheel drive”, page 199

4.2.1 Removing gearbox, Superb III, vehicles with diesel engine 2.0 l TDI CR, front wheel drive

Special tools and workshop equipment required

- Release tool - T10236-
- Hose clamp - MP7-602 (3094)-
- Plug set , e.g. -VAS 6122-
- Insertion tool 18 mm - T10509-
- Socket insert XZN 14 - T10061-
- Interceptor - MP9-200 (10-222A)- or -10-222B-
- Carrier part - T40091/1-
- Adapter - T40091/3-
- Spindle - T40093/3- with adapter - T40093/3-6A-
- Hooks - MP9-200/10 (10-222A/10)- x2
- Shackle - 10-222A/12-
- Tensioning strap - T10038-
- Gearbox mount - 3282-
- Bolt - 3282/34-
- Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS 6931-

- General repair information ⇒ “3 Repair instructions”, page 6 .
- All cable straps that are detached or cut when removing should be attached again in the same place when installing.

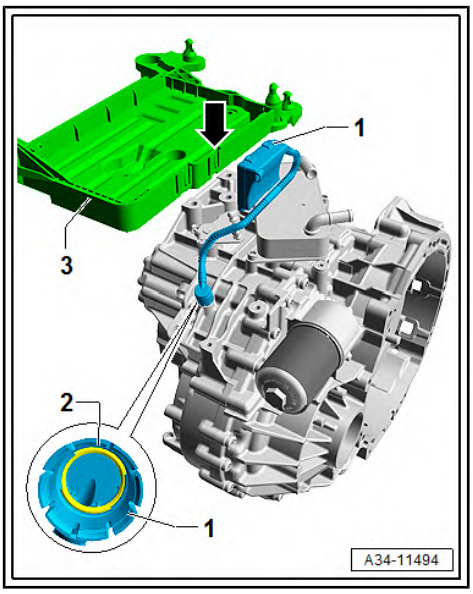
– Shift selector lever into position “P”.

– Remove the plenum panel cover ⇒ External body repairs; Rep. gr. 50 ; Bulkhead; Assembly overview - plenum panel cover .

– Remove the engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; removing and installing engine cover panel .

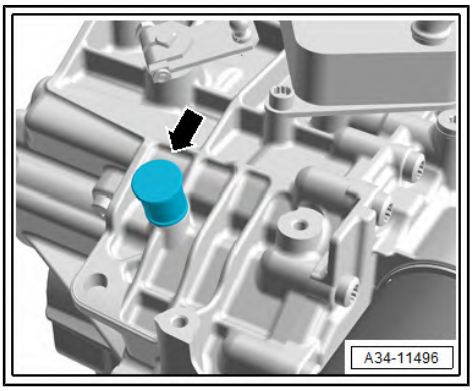
– Remove air filter housing ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing .

– Lift off ventilator -1- (if fitted) with breather hose from the lock -arrow- on the battery tray -3-.



- If the bleed hose is withdrawn from the exhaust pipe of the gearbox, the exhaust pipe must be sealed with a cap -arrow-.
- The cap should prevent dirt from entering the transmission.

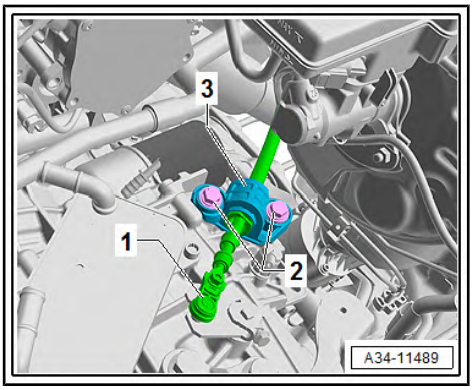
– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .



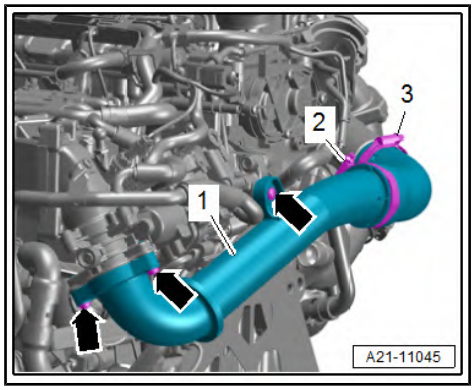
– Push ball socket -1- of selector lever control cable off the gearshift lever with the unlocking tool - T10236- .

– Unscrew screws -2- of the cable support for selector lever control cable and place to one side.

- Do not bend or buckle selector lever control cable.



– Remove screws -arrows-, release clamp -3- and remove charge air pipe.



Ignore clamp -2-.

– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter .

CAUTION

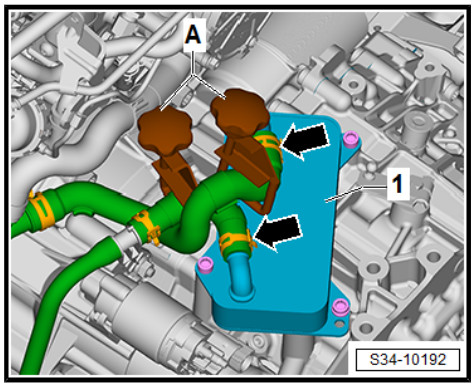
There is overpressure in the cooling system when the engine is at normal operating temperature.

There is a risk of injury from hot coolant or hot steam.

– Slowly open the cap of the compensation bottle, in order to first reduce pressure before pulling off the coolant hoses.

- Do not place fluffing cloths on the gearbox oil cooler and the gearbox, in order to collect flowing out coolant.
- Mark the coolant hoses to the gearbox oil cooler in order to prevent interchanging when installing.

– Clamp off the coolant hoses with the hose clamps - MP7-602 (3094)- -A-.



– Slacken hose clamps -arrows- and remove hoses from gearbox oil cooler.

– Close gearbox oil cooler with a clean plug e.g. from the plug set - VAS 6122- .

NOTICE

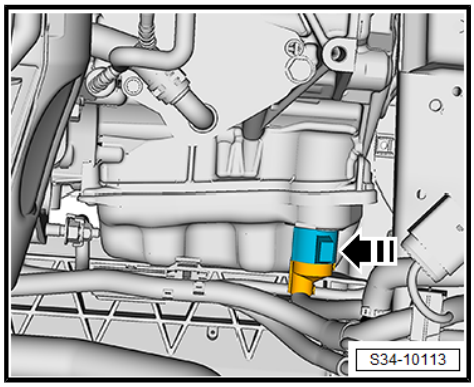
There is a risk of destruction of the dual clutch gearbox mechatronics - J743- .

Static discharges may destroy the control unit and the mechatronics.

– Do not in any circumstances allow the gearbox plug contacts to come into contact with your hands.

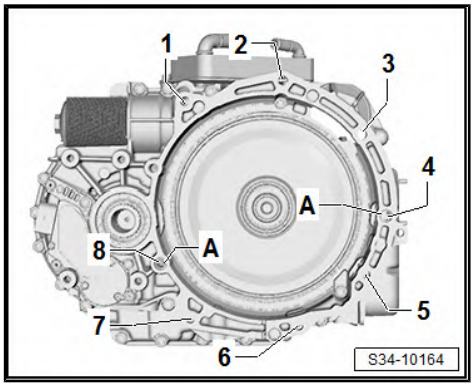
– Grab with the hand (without gloves) at the mass, in order to discharge yourself electrostatically.

– Turn the cap in -direction of arrow- and disconnect electrical plug connection from the dual clutch gearbox mechatronics - J743- .

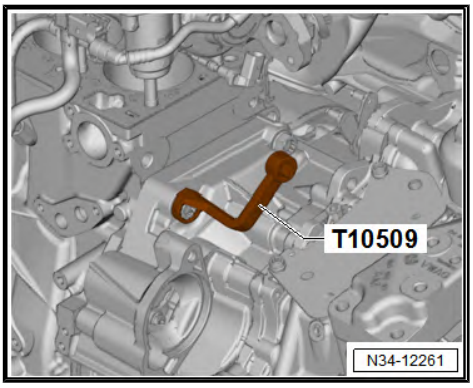


- Lay the electric cables to the side.

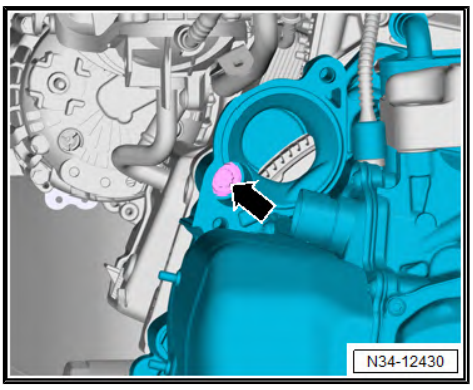
– Remove connecting screws for the top engine/gearbox -1-, -2- and -3-.



The screws -1- and -2- (previous figure S34–10164) can be removed with an insertion tool - T10509- .



The screw -3- (previous figure S34–10164) is located in the starter opening -arrow- and can be removed with plug insert XZN 14 - T10061- .



Install interception device to catch the engine/gearbox assembly.

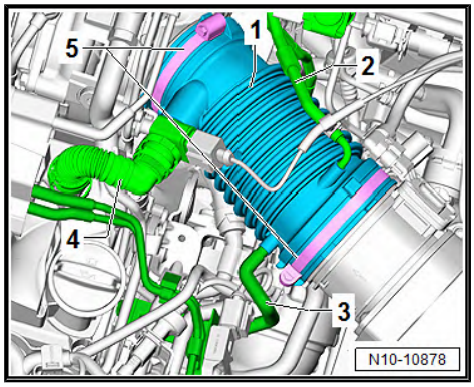
The following special tools are required for attaching the interceptor :

- ♦ Interceptor - MP9-200 (10-222A)- or -10-222B-
- ♦ Carrier part - T40091/1-
- ♦ Adapter - T40091/3-
- ♦ Spindle - T40093/3- with adapter - T40093/3-6A-
- ♦ Hooks - MP9-200/10 (10-222A/10)- x2
- ♦ Shackle - 10-222A/12-

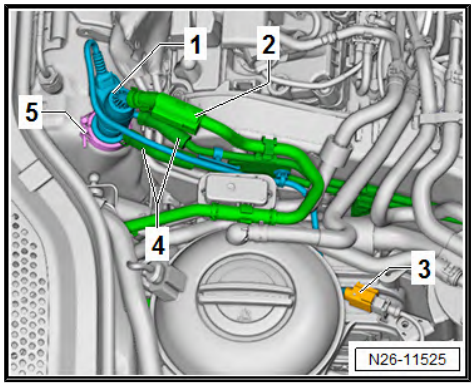
– Remove the engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; removing and installing engine cover panel .

• There are hose lines and cables in the engine mounting eyelet area for the interceptor , which now need to be removed.

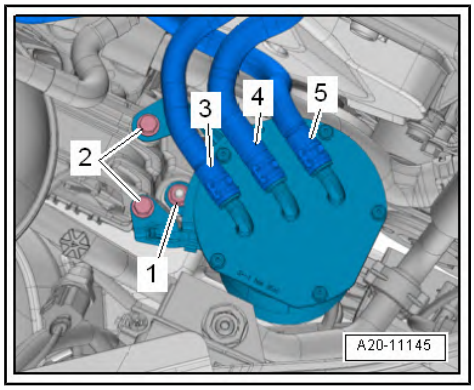
– Push the release buttons on the crankcase ventilation hose -4-, and remove the hose.
– Remove the plug on the hose -4- (if present).
– Detach vacuum hoses -2- and -3-.
– Detach hose clamps -5- and remove in intake hose -1-.
• Before installing the actual interceptor , the adapter - T40093/3-6A- must be positioned on the right longitudinal member, which is then connected to the spindle - T40093/3- .
• To set this up, the fuel filter must be removed.
• The fuel filter this detached from the bracket on the body, do not disconnect the fuel lines.



– Unlock the plug connection -3- and disconnect.
– Remove bracket for connector from fuel filter housing.

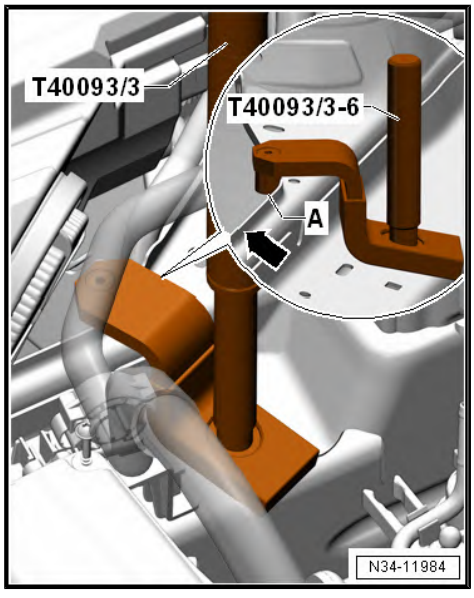


– Screw out the fixing screws of the fuel filter -2-.
– Unscrew nut -1-.
– Place the fule filter with connected fuel hoses on the engine.

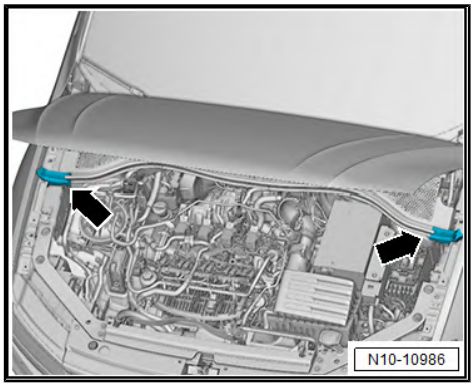


– Position adapter - T40093/3-6A- on the right-hand longitudinal member as shown in the figure.
• Remove the air conditioning system’s refrigerant pipe from the bracket, if required.
• The adapter must be secured by the bolt -A- to the flange of the frame side rail -arrow-.
– Screw the spindle - T40093/3- onto the adapter - T40093/3-6A- .

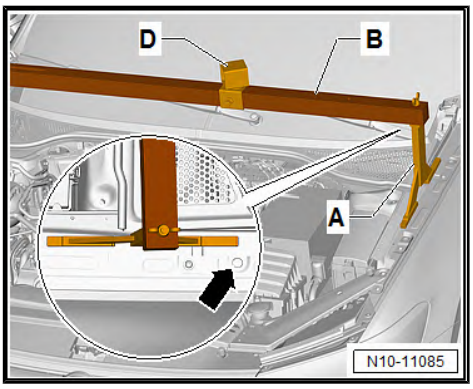
The spindle - T40093/3- is then connected to the support part - T40091/1- (see further workflow).



– Remove the right and left foam parts -arrows- for the water tank seal.



– Attach the adapter - T40091/3- -D- to the carrier -B- for the interceptor - MP9-200 (10-222A)- or -10-222B- .
– At the same time push -B- the hook - MP9-200/10 (10-222A/10)- onto the carrier, as shown in the following figure N10-11147.
– Remove the -B- support adapter -A- and fit the interceptor onto the longitudinal members.
• Align the support adapter -A- with the recess on both sides -arrow-.



– Connect the interceptor -B- using the carrier - T40091/1- -D- to the spindle - T40093/3- -G-.

A - Adapter from the interceptor set

B - Interceptor - MP9-200 (10-222A)- or -10-222B-

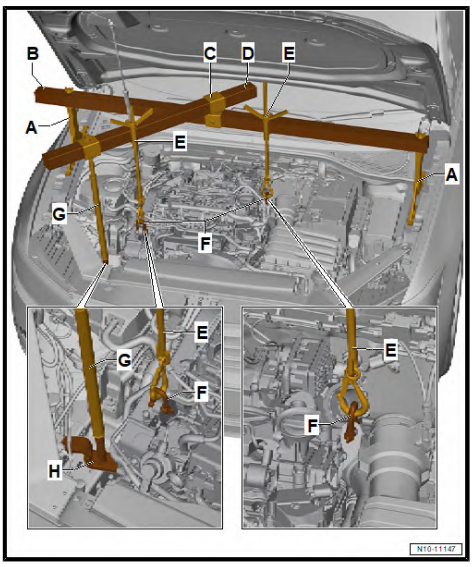
C - Adapter - T40091/3-

D - Carrier part - T40091/1-

E - Hook - MP9-200/10 (10-222A/10)-

F - Shackle - 10-222A/12-

G - Spindle - T40093/3- with adapter - T40093/3-6A-



– With spindle -G- align carrier -D- horizontally and tighten all interlocking elements with locking screws .
– Slightly pre-tension the engine/gearbox assembly via the hooks - MP9-200/10 (10-222A/10)- (do not raise).

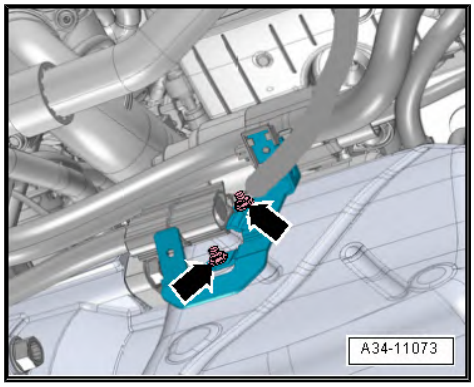
Component	Tightening torque
M12 screws for the supporting device	20 Nm

Continuation Remove transmission

– Remove the sound dampening system ⇒ General body repairs, exterior ; Rep. gr. 66 ; Noise insulation .
– Remove the front left wheelhouse liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheelhouse liner; removing and installing front wheelhouse liner .
– Remove assembly carrier without steering gear ⇒ Chassis, axles, steering; Rep. gr. 40 ; Removing and installing assembly carrier without steering gear .

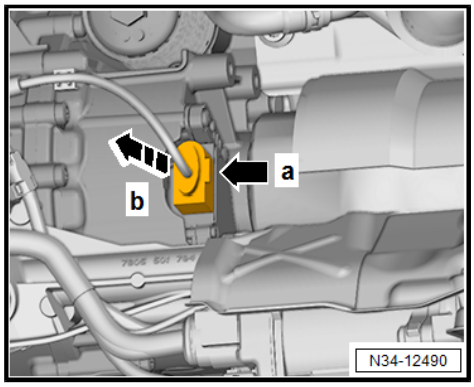
– Unscrew the nuts -arrows- and remove the bracket for electric cables from the threaded bolts on the oil pan.

– Connect electric cables at the side in area of oil sump.



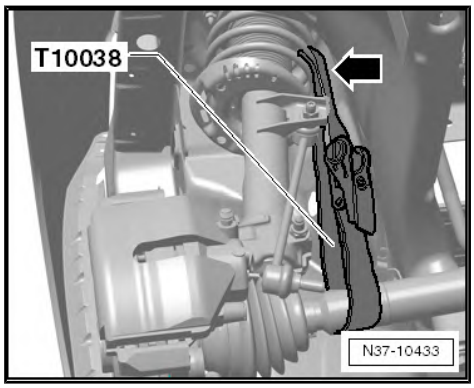
– Disconnect connector for auxiliary hydraulic pump 1 for gear oil - V475- .

– Remove the left and right propeller shafts from the flange shafts on the gearbox ⇒ Chassis, axles, steering; Rep. gr. 40 ; Propeller shaft; remove and install propeller shaft .



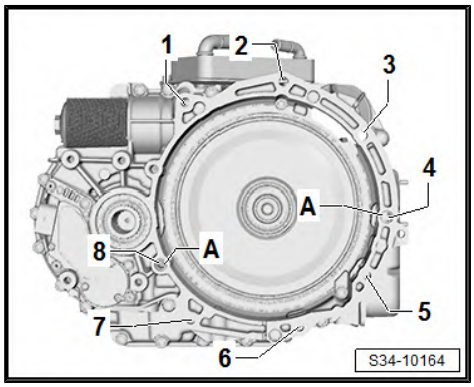
– Secure both drive shafts to the suspension strut with tensioning straps - T10038- .

• Ensure that the surface protection of the drive shafts is not damaged.

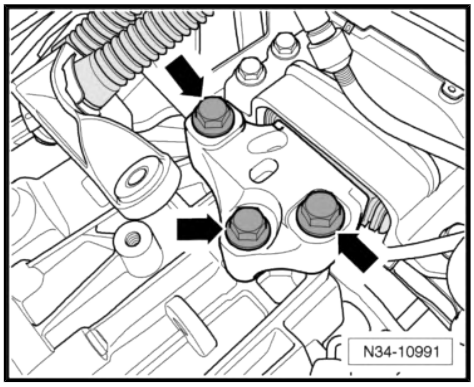


– Unscrew and remove bottom connecting bolts of engine/gearbox -4-, -5-, -6- and -7-.

• The last connecting -screw 8-, which is screwed in from the engine side, can only be loosened and screwed in.



– Unscrew the screws -arrows- from the gearbox mount.



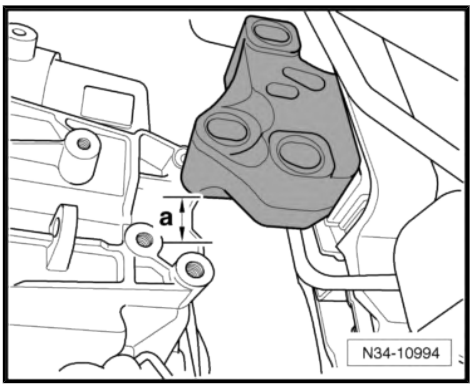
– Lower the engine/gearbox unit via the spindle of the supporting device by dimension -a-.

• Dimension -a- = approx. 90 mm

– Place the gearbox mount - 3282- onto engine/gearbox jack , e.g. -V.A.G 1383A- or -VAS 6931- .

– Position the engine / gearbox jack below the vehicle with the gearbox mount - 3282- .

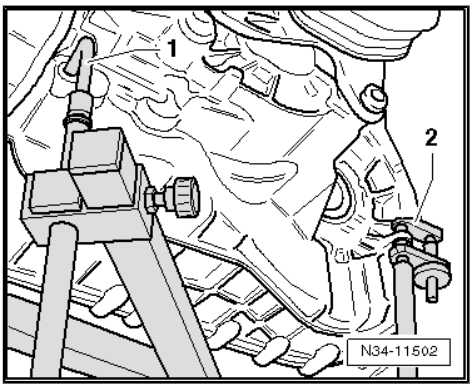
– Align the gearbox mount - 3282- parallel to the gearbox.



– Place the individual elements of the gearbox mount - 3282- to the gearbox, as shown in the figure.

– Insert the fixing hook -1- into the bore on the gearbox housing (next to the oil drain plug for mechatronics).

– Put circlip -2- in the groove of the gearbox housing.



– Screw the bolt - 3282/34- into the threaded hole for the pendulum support and connect it to the gear holder - 3282- .

– Insert the fourth adapter (bolt) from below into the bore of the gearbox.

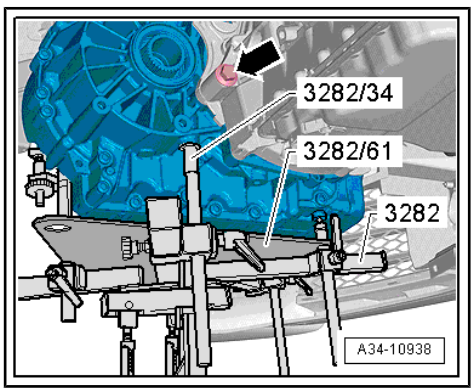
– Support the gearbox with engine / gearbox jack from underneath.

– Remove remaining engine/gearbox connecting bolt.

– Press the gearbox out of the sleeves.

– Carefully separate the gearbox from the engine and lower slowly.

• Observe all lines and coolant hoses when lowering the gearbox.



Transport gearbox ⇒ “6 Transporting the gearbox”, page 217 .

Secure on assembly support
⇒ “7 Attachment at engine and gearbox mount”, page 218 .

4.2.2 Removing gearbox, Superb III, vehicles with diesel engine 2.0 l TDI CR, all-wheel drive

Special tools and workshop equipment required

- Release tool - T10236-
- Hose clamp - MP7-602 (3094)-
- Plug set , e.g. -VAS 6122-
- Insertion tool 18 mm - T10509-
- Socket insert XZN 14 - T10061-
- Interceptor - MP9-200 (10-222A)- or -10-222B-
- Carrier part - T40091/1-
- Adapter - T40091/3-
- Spindle - T40093/3- with adapter - T40093/3-6A-
- Hooks - MP9-200/10 (10-222A/10)- x2
- Shackle - 10-222A/12-
- Tensioning strap - T10038-
- Gearbox mount - 3282-
- Bolt - 3282/34-
- Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS 6931-

- General repair information ⇒ “3 Repair instructions”, page 6 .
- All cable straps that are detached or cut when removing should be attached again in the same place when installing.

For vehicles with four-wheel drive, switch the selector lever to position “N” so that it is then possible to turn using the propshaft when loosening.

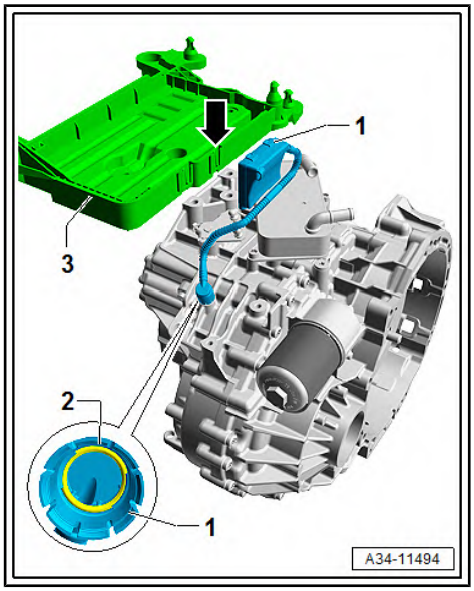
– Shift selector lever to position “N”.

– Remove the plenum panel cover ⇒ External body repairs; Rep. gr. 50 ; Bulkhead; Assembly overview - plenum panel cover .

– Remove the engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; removing and installing engine cover panel .

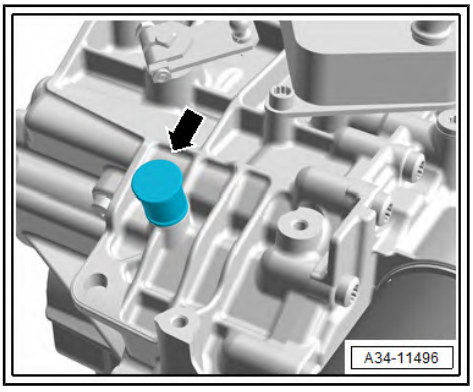
– Remove air filter housing ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing .

– Lift off ventilator -1- (if fitted) with breather hose from the lock -arrow- on the battery tray -3-.



- If the bleed hose is withdrawn from the exhaust pipe of the gearbox, the exhaust pipe must be sealed with a cap -arrow-.
- The cap should prevent dirt from entering the transmission.

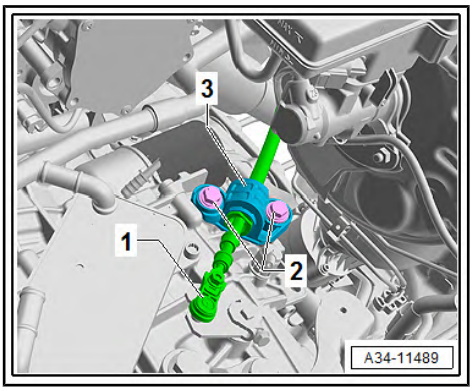
– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .



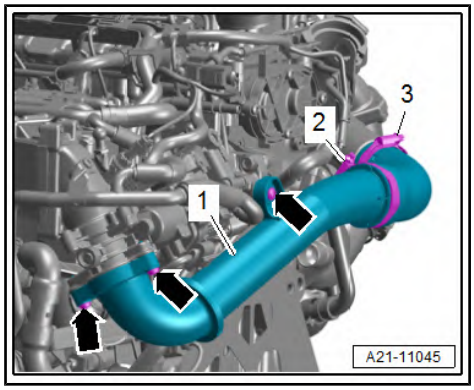
– Push ball socket -1- of selector lever control cable off the gearshift lever with the unlocking tool - T10236- .

– Unscrew screws -2- of the cable support for selector lever control cable and place to one side.

- Do not bend or buckle selector lever control cable.



– Remove screws -arrows-, release clamp -3- and remove charge air pipe.



Ignore clamp -2-.

– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter .

CAUTION

There is overpressure in the cooling system when the engine is at normal operating temperature.

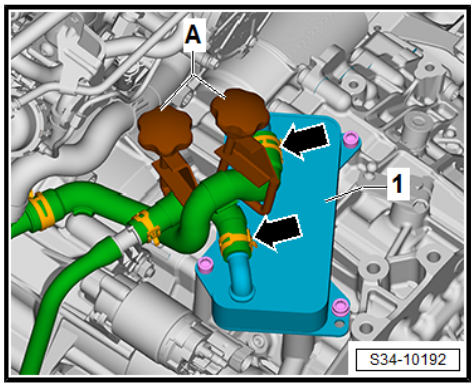
There is a risk of injury from hot coolant or hot steam.

– Slowly open the cap of the compensation bottle, in order to first reduce pressure before pulling off the coolant hoses.

- Do not place fluffing cloths on the gearbox oil cooler and the gearbox, in order to collect flowing out coolant.
- Mark the coolant hoses to the gearbox oil cooler in order to prevent interchanging when installing.

– Clamp off the coolant hoses with the hose clamps - MP7-602 (3094)- -A-.

– Slacken hose clamps -arrows- and remove hoses from gearbox oil cooler.



– Close gearbox oil cooler with a clean plug e.g. from the plug set - VAS 6122- .

NOTICE

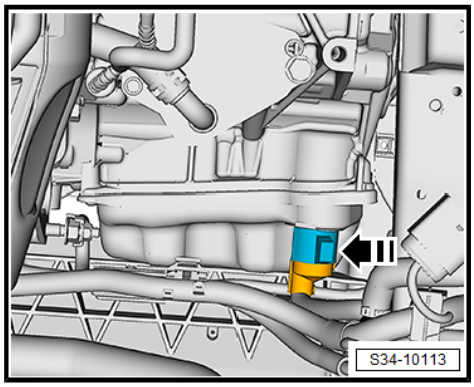
There is a risk of destruction of the dual clutch gearbox mechatronics - J743- .

Static discharges may destroy the control unit and the mechatronics.

– Do not in any circumstances allow the gearbox plug contacts to come into contact with your hands.

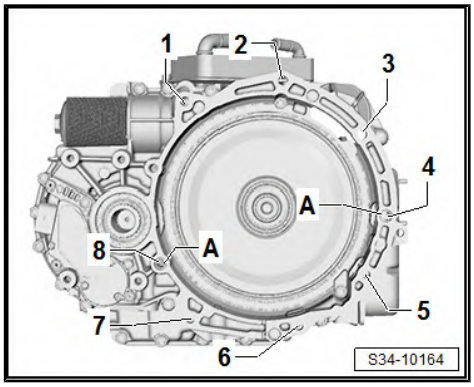
– Grab with the hand (without gloves) at the mass, in order to discharge yourself electrostatically.

– Turn the cap in -direction of arrow- and disconnect electrical plug connection from the dual clutch gearbox mechatronics - J743- .

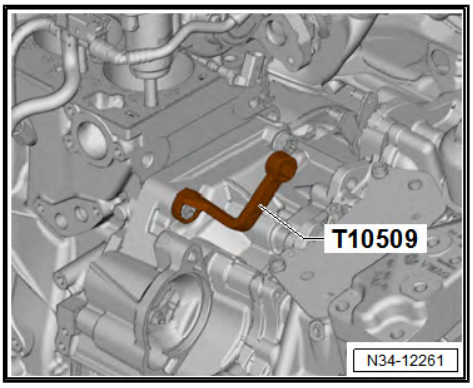


- Lay the electric cables to the side.

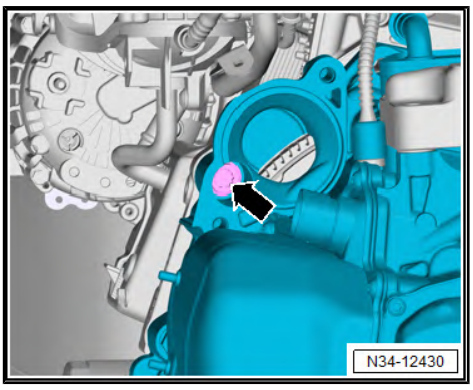
– Remove connecting screws for the top engine/gearbox -1-, -2- and -3-.



The screws -1- and -2- (previous figure S34–10164) can be removed with an insertion tool - T10509- .



The screw -3- (previous figure S34–10164) is located in the starter opening -arrow- and can be removed with plug insert XZN 14 - T10061- .



Install interception device to catch the engine/gearbox assembly.

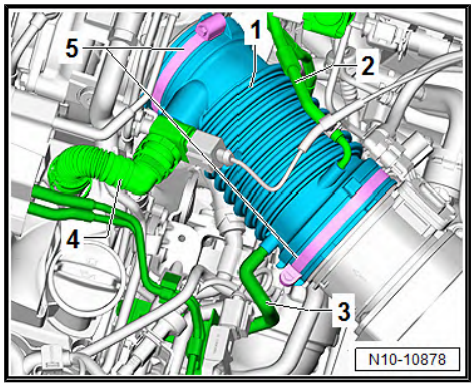
The following special tools are required for attaching the interceptor :

- ♦ Interceptor - MP9-200 (10-222A)- or -10-222B-
- ♦ Carrier part - T40091/1-
- ♦ Adapter - T40091/3-
- ♦ Spindle - T40093/3- with adapter - T40093/3-6A-
- ♦ Hooks - MP9-200/10 (10-222A/10)- x2
- ♦ Shackle - 10-222A/12-

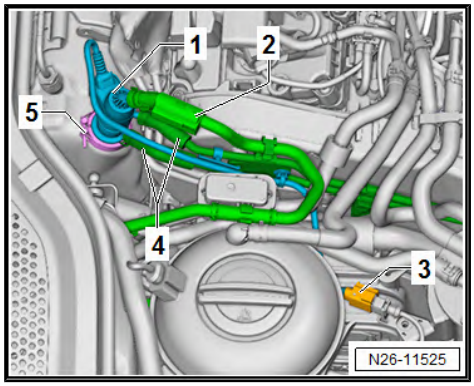
– Remove the engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; removing and installing engine cover panel .

- There are hose lines and cables in the engine mounting eyelet area for the interceptor , which now need to be removed.

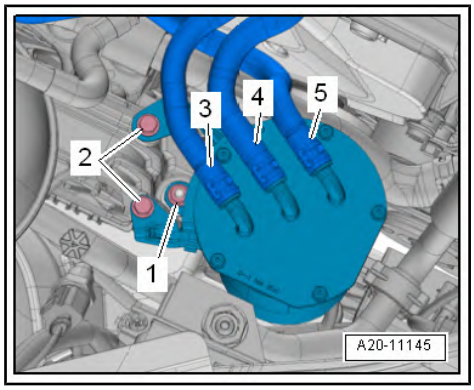
– Push the release buttons on the crankcase ventilation hose -4-, and remove the hose.
– Remove the plug on the hose -4- (if present).
– Detach vacuum hoses -2- and -3-.
– Detach hose clamps -5- and remove in intake hose -1-.
• Before installing the actual interceptor , the adapter - T40093/3-6A- must be positioned on the right longitudinal member, which is then connected to the spindle - T40093/3- .
• To set this up, the fuel filter must be removed.
• The fuel filter this detached from the bracket on the body, do not disconnect the fuel lines.



– Unlock the plug connection -3- and disconnect.
– Remove bracket for connector from fuel filter housing.

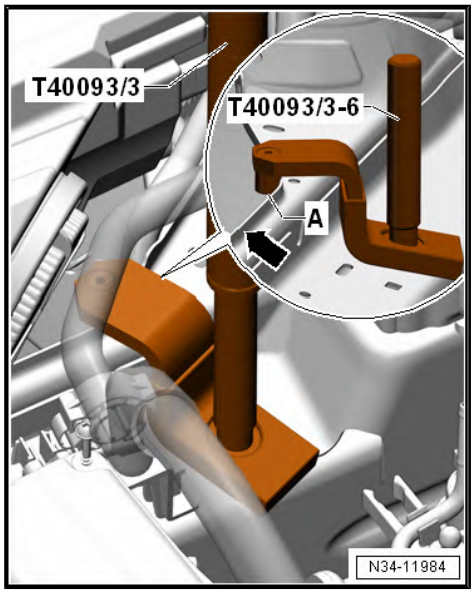


– Screw out the fixing screws of the fuel filter -2-.
– Unscrew nut -1-.
– Place the fule filter with connected fuel hoses on the engine.

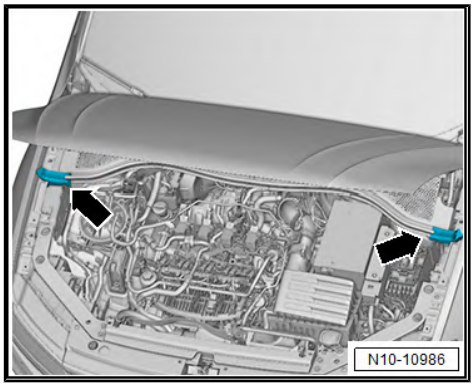


– Position adapter - T40093/3-6A- on the right-hand longitudinal member as shown in the figure.
• Remove the air conditioning system’s refrigerant pipe from the bracket, if required.
• The adapter must be secured by the bolt -A- to the flange of the frame side rail -arrow-.
– Screw the spindle - T40093/3- onto the adapter - T40093/3-6A- .

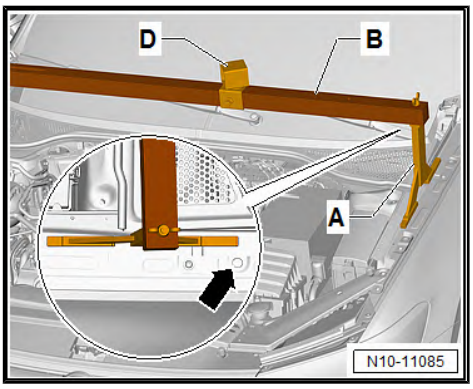
The spindle - T40093/3- is then connected to the support part - T40091/1- (see further workflow).



– Remove the right and left foam parts -arrows- for the water tank seal.



– Attach the adapter - T40091/3- -D- to the carrier -B- for the interceptor - MP9-200 (10-222A)- or -10-222B- .
– At the same time push -B- the hook - MP9-200/10 (10-222A/10)- onto the carrier, as shown in the following figure N10-11147.
– Remove the -B- support adapter -A- and fit the interceptor onto the longitudinal members.
• Align the support adapter -A- with the recess on both sides -arrow-.



– Connect the interceptor -B- using the carrier - T40091/1- -D- to the spindle - T40093/3- -G-.

A - Adapter from the interceptor set

B - Interceptor - MP9-200 (10-222A)- or -10-222B-

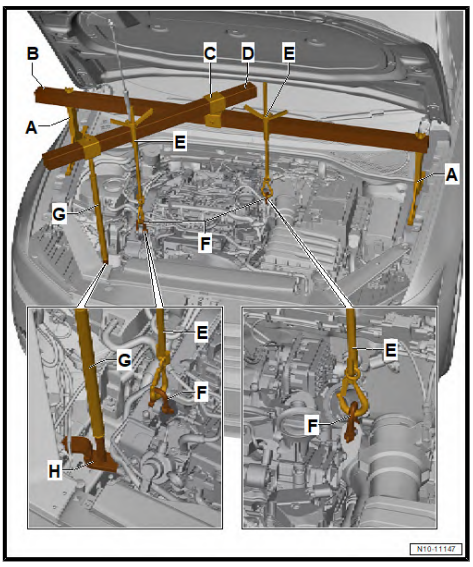
C - Adapter - T40091/3-

D - Carrier part - T40091/1-

E - Hook - MP9-200/10 (10-222A/10)-

F - Shackle - 10-222A/12-

- Spindle - T40093/3- with adapter - T40093/3-6A-



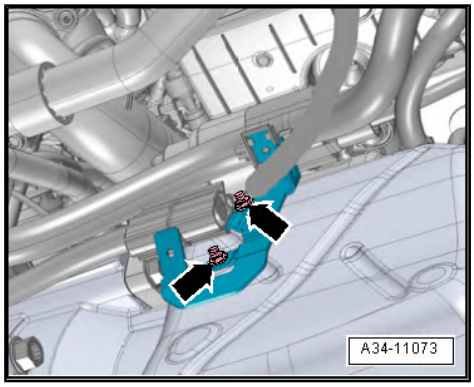
– With spindle -G- align carrier -D- horizontally and tighten all interlocking elements with locking screws .
– Slightly pre-tension the engine/gearbox assembly via the hooks - MP9-200/10 (10-222A/10)- (do not raise).

Component	Tightening torque
M12 screws for the supporting device	20 Nm

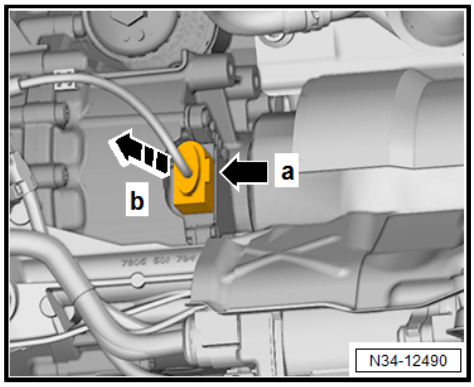
Continuation Remove transmission

– Remove the sound dampening system ⇒ General body repairs, exterior ; Rep. gr. 66 ; Noise insulation .
– Remove the front left and right wheelhouse liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheelhouse liner; removing and installing front wheelhouse liner .

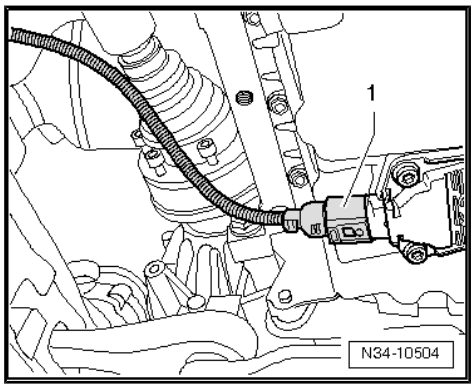
– Unscrew the nuts -arrows- and remove the bracket for electric cables from the threaded bolts on the oil pan.
– Connect electric cables at the side in area of oil sump.



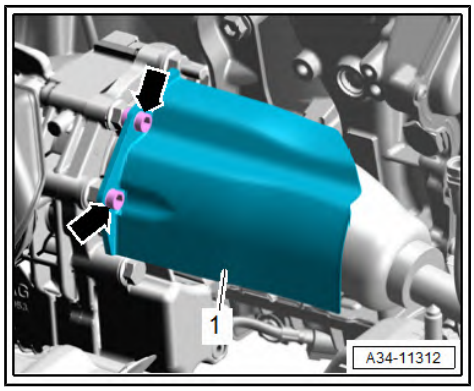
– Disconnect connector for auxiliary hydraulic pump 1 for gear oil - V475- .



– Disconnect the connector on the oil level and oil temperature sender - G266- -1-.
– Remove assembly carrier without steering gear ⇒ Chassis, axles, steering; Rep. gr. 40 ; Removing and installing assembly carrier without steering gear .

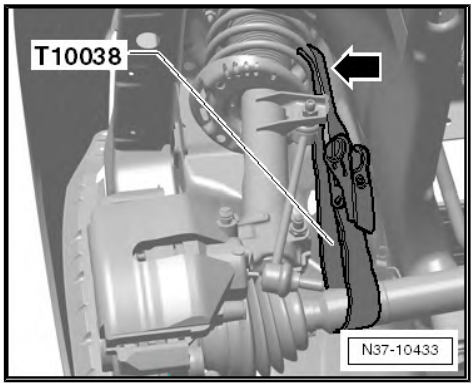


– Unscrew nuts -arrows- and remove heat shield for right drive shaft.
– Remove the left and right propeller shafts from the flange shafts on the gearbox ⇒ Chassis, axles, steering; Rep. gr. 40 ; Propeller shaft; remove and install propeller shaft .



– Secure both drive shafts to the suspension strut with tensioning straps - T10038- .

• Ensure that the surface protection of the drive shafts is not damaged.

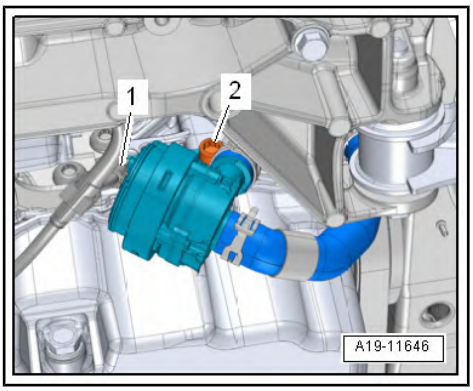


– Separate electrical plug connection -1-.

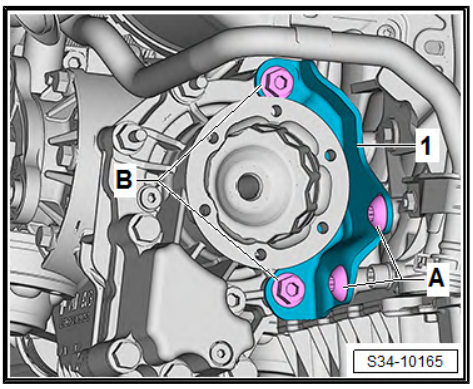
– Unscrew screw -2-, detach heating backup pump - V488- and push to side.

– Remove propshaft from angle gearbox ⇒ Propeller shaft and rear final drive; Rep. gr. 39 ; Propeller shaft; remove and install propeller shaft .

– Tie the propshaft to the top so as not to damage paint damage on the surface of the propshaft.

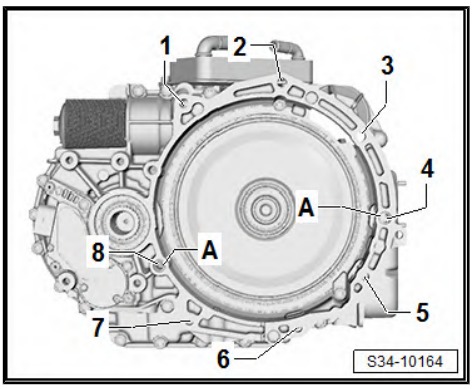


– Unscrew screws -A- and -B- and remove bracket for angle gearbox.

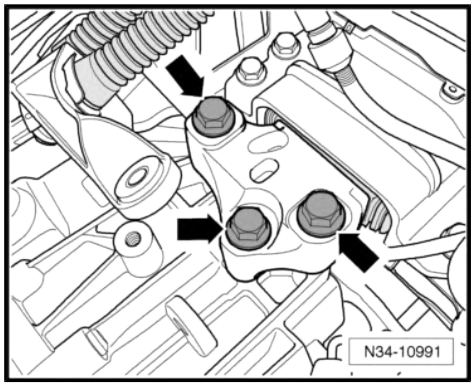


– Unscrew and remove bottom connecting bolts of engine/gearbox -4-, -5-, -6- and -7-.

• The last connecting -screw 8-, which is screewed in from the engine side, can only be loosened and screwed in.



– Unscrew the screws -arrows- from the gearbox mount.



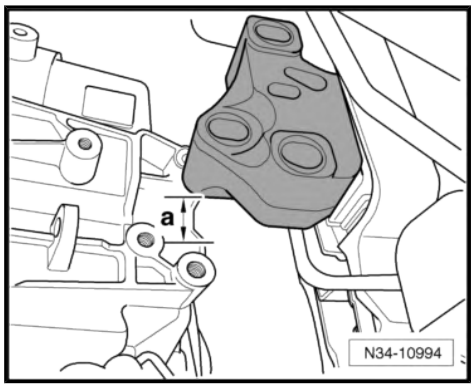
– Lower the engine/gearbox unit via the spindle of the supporting device by dimension -a-.

• Dimension -a- = approx. 90 mm

– Position gearbox mount - 3282- on the engine/gearbox jack - V.A.G 1383A- .

– Position the engine/gearbox jack -V.A.G 1383A- or -VAS 6931- below the vehicle using the gearbox mount - 3282- .

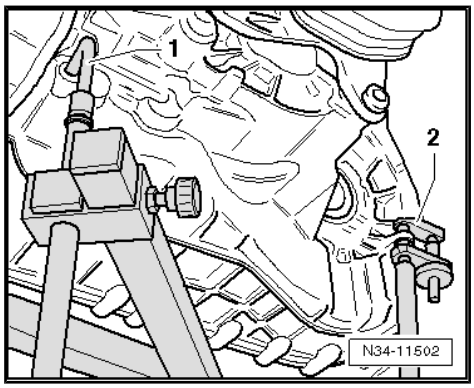
– Align the gearbox mount - 3282- parallel to the gearbox.



– Place the individual elements of the gearbox mount - 3282- to the gearbox, as shown in the figure.

– Insert the fixing hook -1- into the bore on the gearbox housing (next to the oil drain plug for mechatronics).

– Put circlip -2- in the groove of the gearbox housing.



– Screw the bolt - 3282/34- into the threaded hole for the pendulum support and connect it to the gear holder - 3282- .

– Insert the fourth adapter (bolt) from below into the bore of the gearbox.

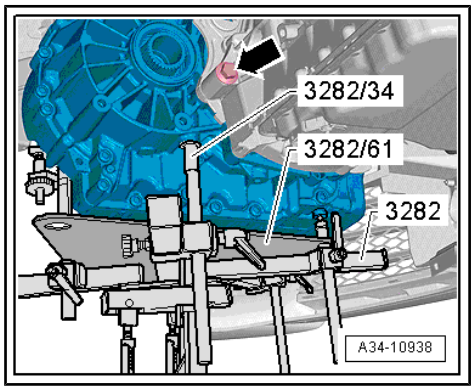
– Support the gearbox with engine / gearbox jack from underneath.

– Remove remaining engine/gearbox connecting bolt.

– Press the gearbox out of the sleeves.

– Carefully separate the gearbox from the engine and lower slowly.

• Observe all lines and coolant hoses when lowering the gearbox.



Transport gearbox ⇒ “6 Transporting the gearbox”, page 217 .

Secure on assembly support
⇒ “7 Attachment at engine and gearbox mount”, page 218 .

4.2.3 Removing the gearbox, Superb III, vehicles with 2.0 TFSI petrol engines, front-wheel drive

Special tools and workshop equipment required

- Release tool - T10236-
- Hose clamp - MP7-602 (3094)-
- Plug set , e.g. -VAS 6122-
- Insertion tool 18 mm - T10509-
- Socket insert XZN 14 - T10061-
- Interceptor - T30099- or -T30099A-
- Surface - T30119-
- Support - 10-222A/31-
- Adapter - MP9-200/18 (10-222A/18)-
- Hook - MP9-200/10 (10-222A/10)-
- Clutch - T40091/3-
- Tensioning strap - T10038-
- Gearbox mount - 3282-
- Bolt - 3282/34-
- Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS 6931-

• General repair information ⇒ “3 Repair instructions”, page 6 .

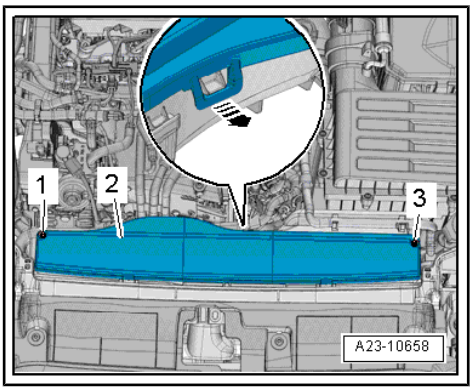
• All cable straps that are detached or cut when removing should be attached again in the same place when installing.

– Shift selector lever into position “P”.

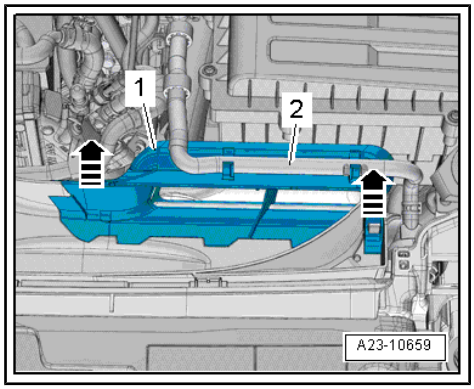
– Remove the engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; removing and installing engine cover panel .

– Remove screws -1- and -3-.

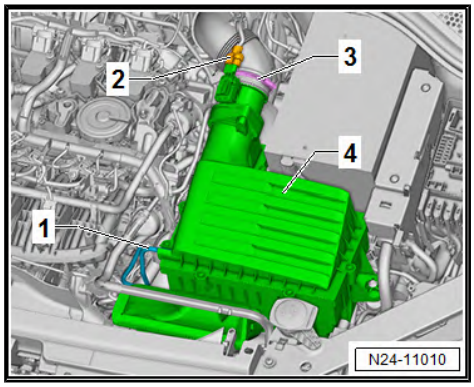
– Unlock safety strap -arrow- and remove intake cover -2- .



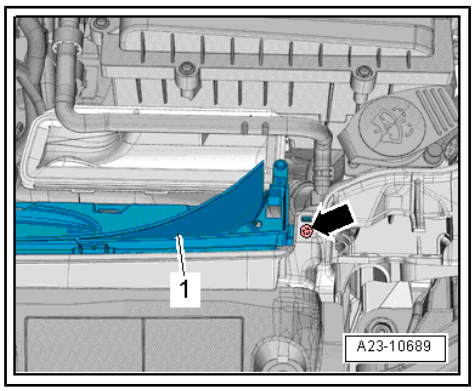
– Remove coolant hose -2- from the clamps on the intake manifold.
– Unlock safety strap -arrows- and remove the air guide pipe top -1-.



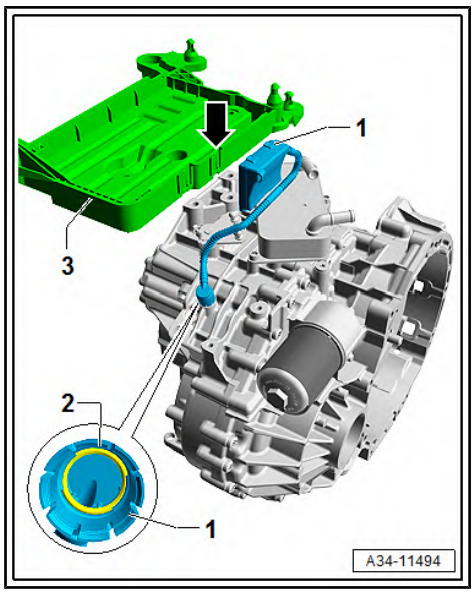
– Detach vacuum hose -1- from air filter housing.
– Unplug connector -2- for air mass meter - G70- .
– Release hose clamp -3- and remove air duct.
– Undo the air filter housing -4- from the rubber bolts and remove it upwards.



– Remove screw left and right -arrow-.
– Unclip and remove the air guide pipe bottom -1-.



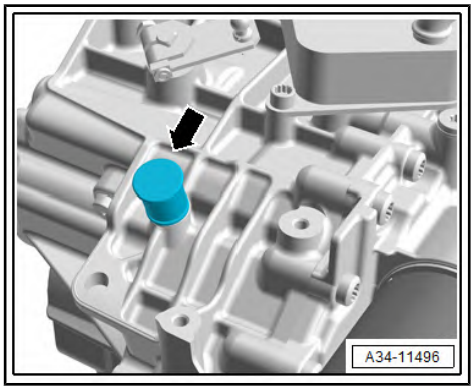
– Lift off ventilator -1- (if fitted) with breather hose from the lock -arrow- on the battery tray -3-.



- If the bleed hose is withdrawn from the exhaust pipe of the gearbox, the exhaust pipe must be sealed with a cap -arrow-.
- The cap should prevent dirt from entering the transmission.

– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .

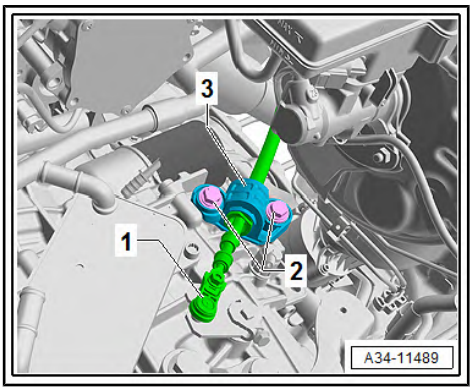
– Remove the plenum panel cover ⇒ External body repairs; Rep. gr. 50 ; Bulkhead; Assembly overview - plenum panel cover .



– Push ball socket -1- of selector lever control cable off the gearshift lever with the unlocking tool - T10236- .

– Unscrew screws -2- of the cable support for selector lever control cable and place to one side.

- Do not bend or buckle selector lever control cable.



NOTICE

There is a risk of destruction of the dual clutch gearbox mechatronics - J743- .

Static discharges may destroy the control unit and the mechatronics.

– Do not in any circumstances allow the gearbox plug contacts to come into contact with your hands.

– Grab with the hand (without gloves) at the mass, in order to discharge yourself electrostatically.

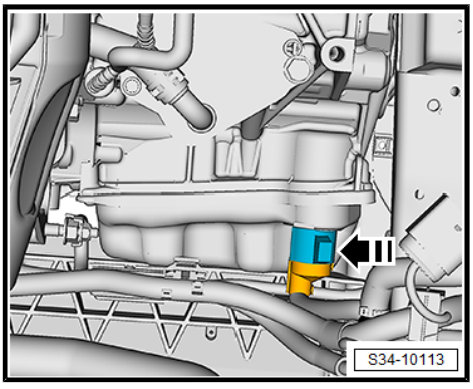
– Turn the cap in -direction of arrow- and disconnect electrical plug connection from the dual clutch gearbox mechatronics - J743- .

- Lay the electric cables to the side.

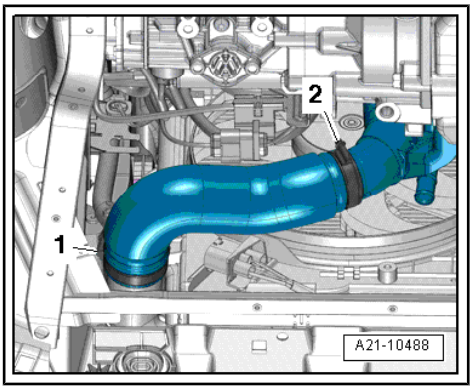
– Disconnect earth lead from lower starter bolt.

– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter .

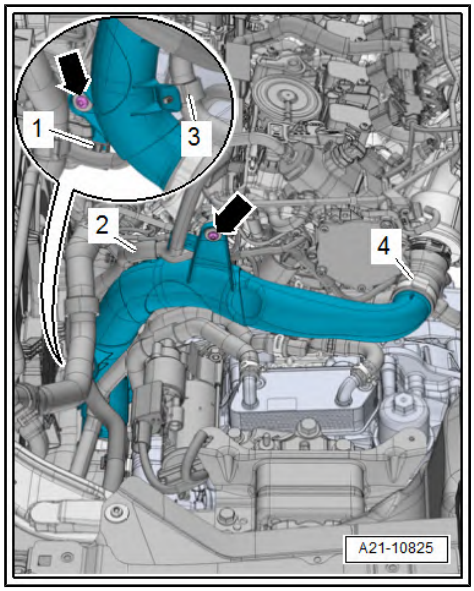
– Remove the sound dampening system ⇒ General body repairs, exterior ; Rep. gr. 66 ; Noise insulation .



– Loosen hose clamps -1-, -2- and remove air guide hose from charge-air cooler.



– Expose electric wiring harnesses -1- and -2- at the air guide pipe.
– Slacken screw clamp -4-.
– Remove screws -arrows- and remove the air guide pipe.
– Seal the open pipes with a clean plug from the plug set , e.g. -VAS 6122- .



CAUTION

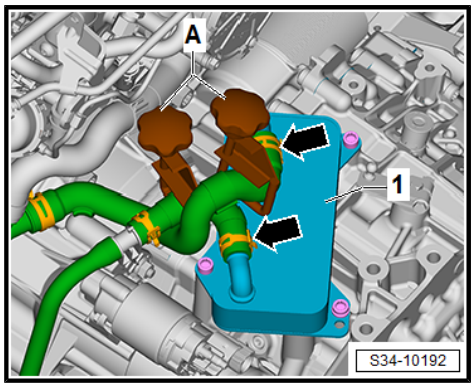
There is overpressure in the cooling system when the engine is at normal operating temperature.

There is a risk of injury from hot coolant or hot steam.

– Slowly open the cap of the compensation bottle, in order to first reduce pressure before pulling off the coolant hoses.

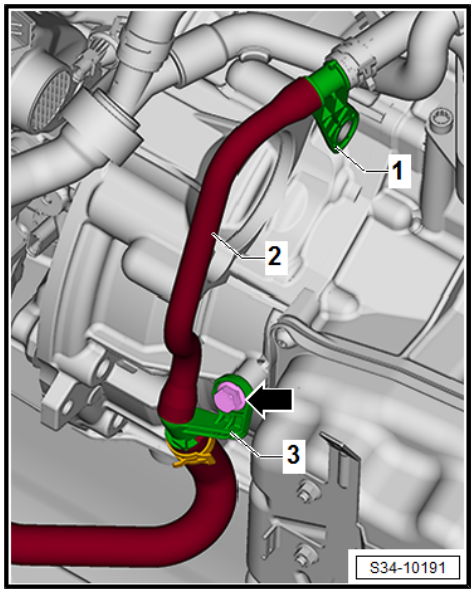
- Do not place fluffing cloths on the gearbox oil cooler and the gearbox, in order to collect flowing out coolant.
- Mark the coolant hoses to the gearbox oil cooler in order to prevent interchanging when installing.

– Clamp off the coolant hoses with the hose clamps - MP7-602 (3094)- -A-.
– Slacken hose clamps -arrows- and remove hoses from gearbox oil cooler -1-.
– Close gearbox oil cooler with a clean plug e.g. from the plug set - VAS 6122- .

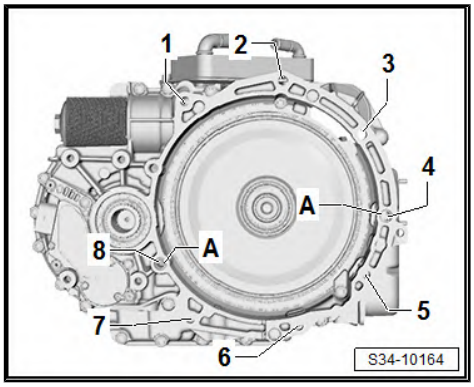


– Remove screw -arrow- on coolant tube holder -3-, detach tube -2- from gearbox and tie up to one side.

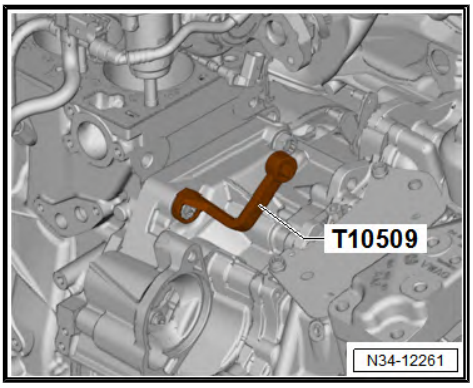
The other holder for coolant tube -1- has already been detached when the starter was previous removed.



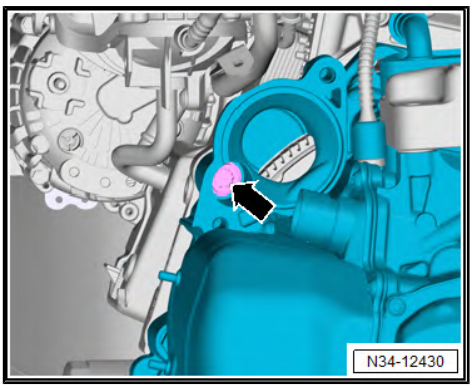
– Remove connecting screws for the top engine/gearbox -1-, -2- and -3-.



The screws -1- and -2- (previous figure S34–10164) can be removed with an insertion tool - T10509- .



The screw -3- (previous figure S34–10164) is located in the starter opening -arrow- and can be removed with plug insert XZN 14 - T10061- .



Supporting the engine/gearbox assembly

– Remove caps of screwed connections for front suspension strut domes.

– Attach support bracket together with the other elements according to the illustration.

1 - Supporting plate - T30119-

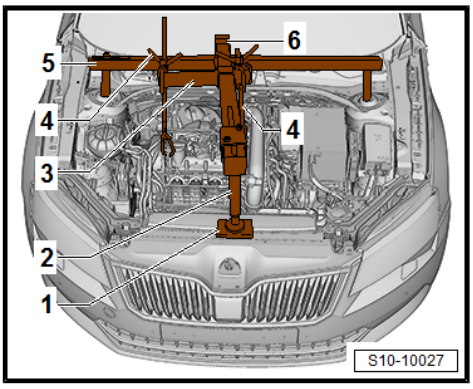
2 - Support - 10-222A/31-

3 - Adapter - MP9-200/18 (10-222A/18)-

4 - Hook - MP9-200/10 (10-222A/10)-

5 - Interceptor - T30099- or -T30099A-

6 - Adapter - T40091/3-



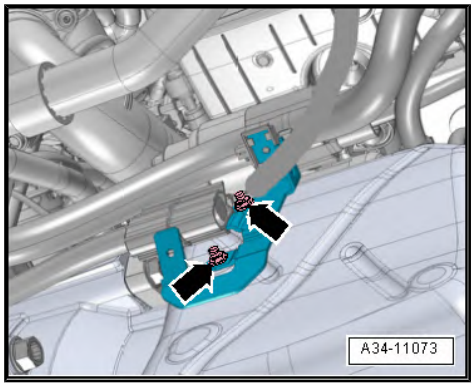
– Slightly pre-tension the engine/gearbox assembly via the hooks (do not raise).

– Remove the front left wheelhouse liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheelhouse liner; removing and installing front wheelhouse liner .

– Remove assembly carrier without steering gear ⇒ Chassis, axles, steering; Rep. gr. 40 ; Removing and installing assembly carrier without steering gear .

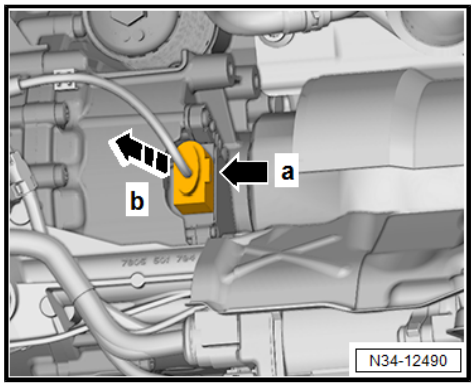
– Unscrew the nuts -arrows- and remove the bracket for electric cables from the threaded bolts on the oil pan.

– Connect electric cables at the side in area of oil sump.



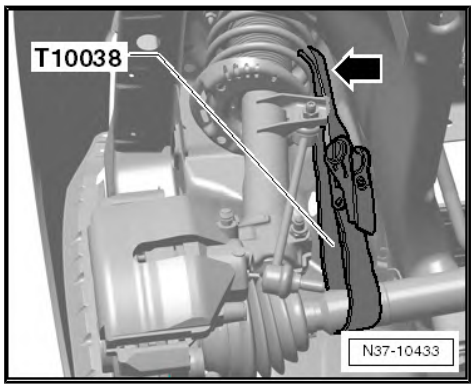
– Disconnect connector for auxiliary hydraulic pump 1 for gear oil - V475- .

– Remove the left and right propeller shafts from the flange shafts on the gearbox ⇒ Chassis, axles, steering; Rep. gr. 40 ; Propeller shaft; remove and install propeller shaft .



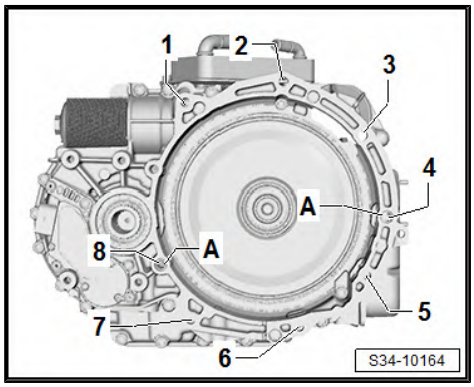
– Secure both drive shafts to the suspension strut with tensioning straps - T10038- .

• Ensure that the surface protection of the drive shafts is not damaged.

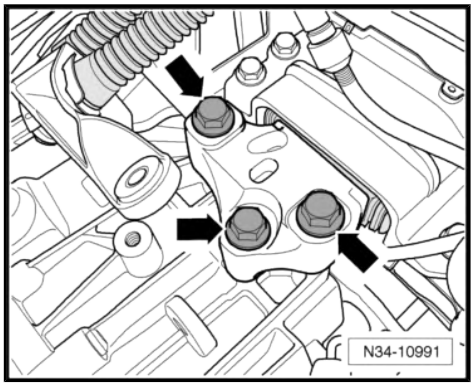


– Unscrew and remove bottom connecting bolts of engine/gearbox -4-, -5-, -6- and -7-.

• The last connecting -screw 8-, which is screwed in from the engine side, can only be loosened and screwed in.



– Unscrew the screws -arrows- from the gearbox mount.



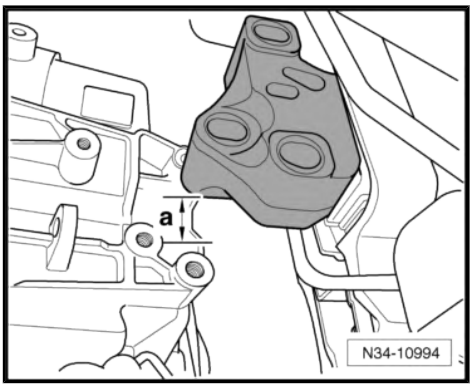
– Lower the engine/gearbox unit via the spindle of the supporting device by dimension -a-.

• Dimension -a- = approx. 90 mm

– Place the gearbox mount - 3282- onto engine/gearbox jack , e.g. -V.A.G 1383A- or -VAS 6931- .

– Position the engine / gearbox jack below the vehicle with the gearbox mount - 3282- .

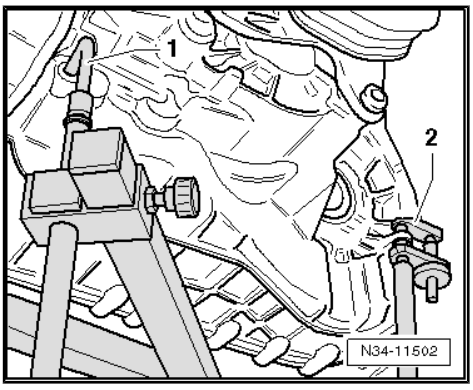
– Align the gearbox mount - 3282- parallel to the gearbox.



– Place the individual elements of the gearbox mount - 3282- to the gearbox, as shown in the figure.

– Insert the fixing hook -1- into the bore on the gearbox housing (next to the oil drain plug for mechatronics).

– Put circlip -2- in the groove of the gearbox housing.



– Screw the bolt - 3282/34- into the threaded hole for the pendulum support and connect it to the gear holder - 3282- .

– Insert the fourth adapter (bolt) from below into the bore of the gearbox.

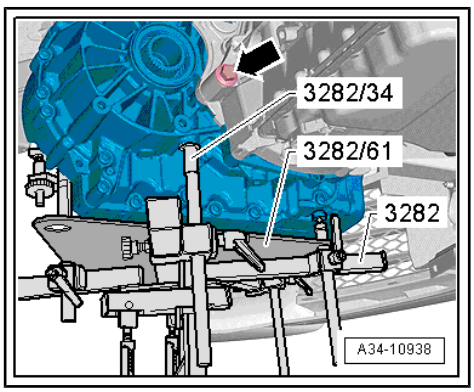
– Support the gearbox with engine / gearbox jack from underneath.

– Remove remaining engine/gearbox connecting bolt.

– Press the gearbox out of the sleeves.

– Carefully separate the gearbox from the engine and lower slowly.

• Observe all lines and coolant hoses when lowering the gearbox.



Transport gearbox ⇒ “6 Transporting the gearbox”, page 217 .

Secure on assembly support
⇒ “7 Attachment at engine and gearbox mount”, page 218 .

4.2.4 Removing gearbox, Superb III, vehicles with diesel engine 2.0 l TDI CR, four-wheel drive

Special tools and workshop equipment required

- Release tool - T10236-
- Hose clamp - MP7-602 (3094)-
- Plug set , e.g. -VAS 6122-
- Insertion tool 18 mm - T10509-
- Socket insert XZN 14 - T10061-
- Interceptor - T30099- or -T30099A-
- Surface - T30119-
- Support - 10-222A/31-
- Adapter - MP9-200/18 (10-222A/18)-
- Hook - MP9-200/10 (10-222A/10)-
- Clutch - T40091/3-
- Tensioning strap - T10038-
- Gearbox mount - 3282-
- Bolt - 3282/34-
- Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS 6931-

- General repair information ⇒ “3 Repair instructions”, page 6 .
- All cable straps that are detached or cut when removing should be attached again in the same place when installing.

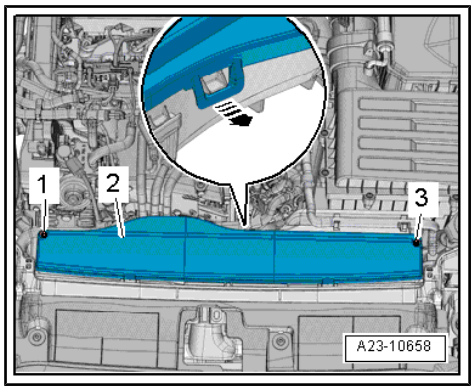
For vehicles with four-wheel drive, switch the selector lever to position “N” so that it is then possible to turn using the propshaft when loosening.

– Shift selector lever to position “N”.

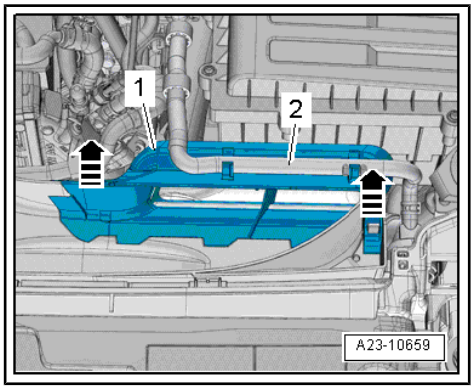
– Remove the engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; removing and installing engine cover panel .

– Remove screws -1- and -3-.

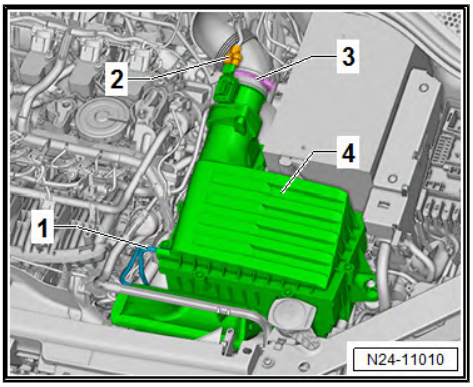
– Unlock safety strap -arrow- and remove intake cover -2- .



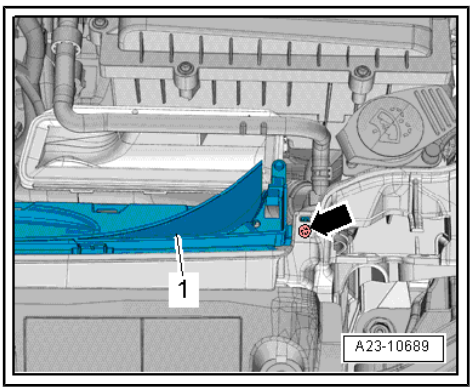
– Remove coolant hose -2- from the clamps on the intake manifold.
– Unlock safety strap -arrows- and remove the air guide pipe top -1-.



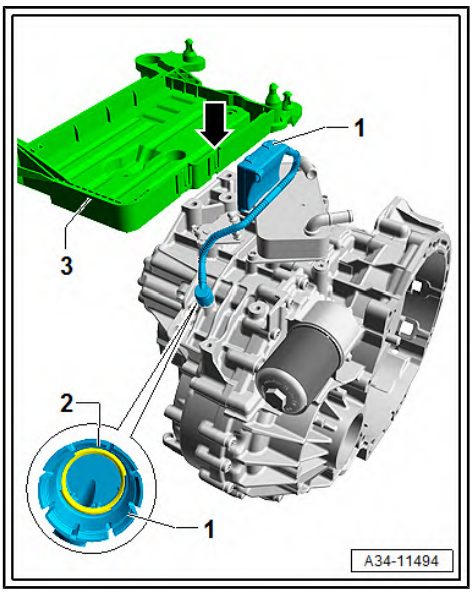
– Detach vacuum hose -1- from air filter housing.
– Unplug connector -2- for air mass meter - G70- .
– Release hose clamp -3- and remove air duct.
– Undo the air filter housing -4- from the rubber bolts and remove it upwards.



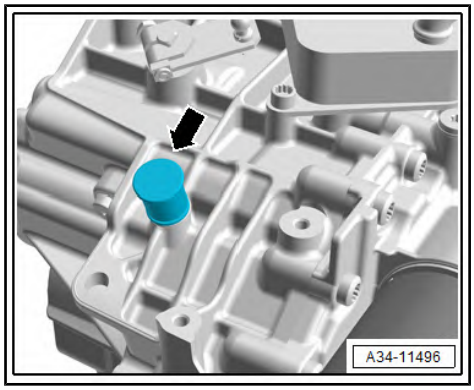
– Remove screw left and right -arrow-.
– Unclip and remove the air guide pipe bottom -1-.



– Lift off ventilator -1- (if fitted) with breather hose from the lock -arrow- on the battery tray -3-.

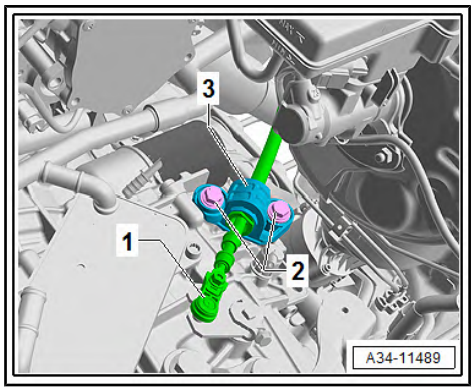


- If the bleed hose is withdrawn from the exhaust pipe of the gearbox, the exhaust pipe must be sealed with a cap -arrow-.
- The cap should prevent dirt from entering the transmission.



– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .
– Remove the plenum panel cover ⇒ External body repairs; Rep. gr. 50 ; Bulkhead; Assembly overview - plenum panel cover .

– Push ball socket -1- of selector lever control cable off the gearshift lever with the unlocking tool - T10236- .
– Unscrew screws -2- of the cable support for selector lever control cable and place to one side.
- Do not bend or buckle selector lever control cable.



NOTICE

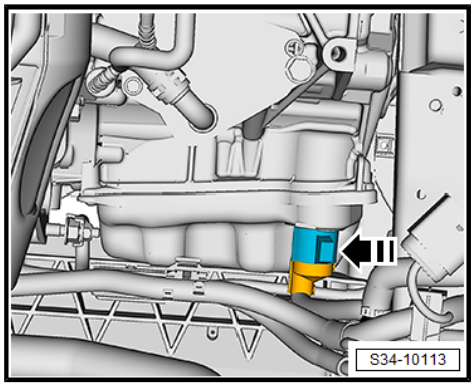
There is a risk of destruction of the dual clutch gearbox mechatronics - J743- .

Static discharges may destroy the control unit and the mechatronics.

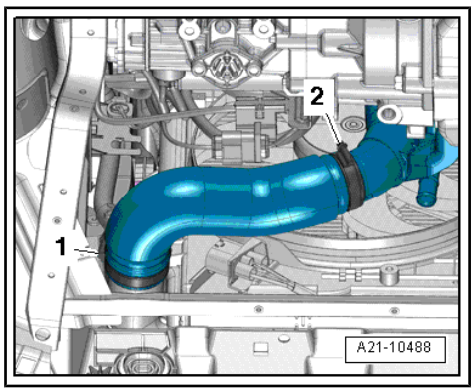
– Do not in any circumstances allow the gearbox plug contacts to come into contact with your hands.

– Grab with the hand (without gloves) at the mass, in order to discharge yourself electrostatically.

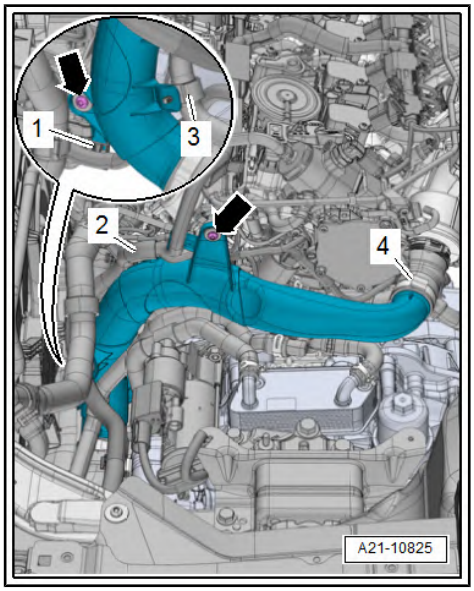
– Turn the cap in -direction of arrow- and disconnect electrical plug connection from the dual clutch gearbox mechatronics - J743- .
- Lay the electric cables to the side.
– Disconnect earth lead from lower starter bolt.
– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter .
– Remove the sound dampening system ⇒ General body repairs, exterior ; Rep. gr. 66 ; Noise insulation .



– Loosen hose clamps -1-, -2- and remove air guide hose from charge-air cooler.



– Expose electric wiring harnesses -1- and -2- at the air guide pipe.
– Slacken screw clamp -4-.
– Remove screws -arrows- and remove the air guide pipe.
– Seal the open pipes with a clean plug from the plug set - VAS 6122- .



CAUTION

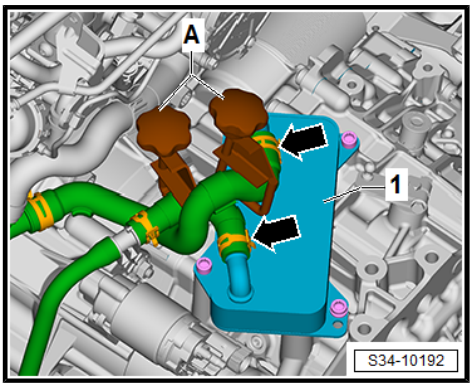
There is overpressure in the cooling system when the engine is at normal operating temperature.

There is a risk of injury from hot coolant or hot steam.

– Slowly open the cap of the compensation bottle, in order to first reduce pressure before pulling off the coolant hoses.

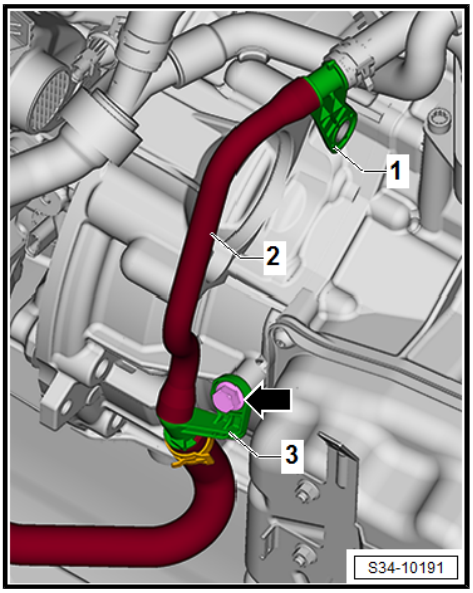
- Do not place fluffing cloths on the gearbox oil cooler and the gearbox, in order to collect flowing out coolant.
- Mark the coolant hoses to the gearbox oil cooler in order to prevent interchanging when installing.

– Clamp off the coolant hoses with the hose clamps - MP7-602 (3094)- -A-.
– Slacken hose clamps -arrows- and remove hoses from gearbox oil cooler -1-.
– Close gearbox oil cooler with a clean plug e.g. from the plug set - VAS 6122- .

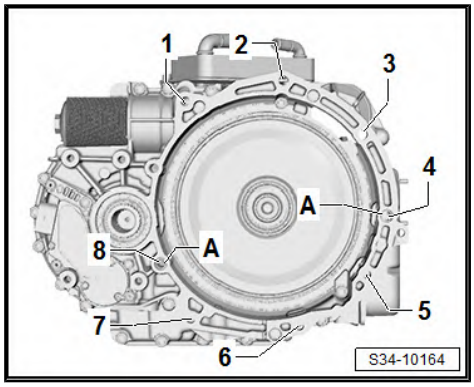


– Remove screw -arrow- on coolant tube holder -3-, detach tube -2- from gearbox and tie up to one side.

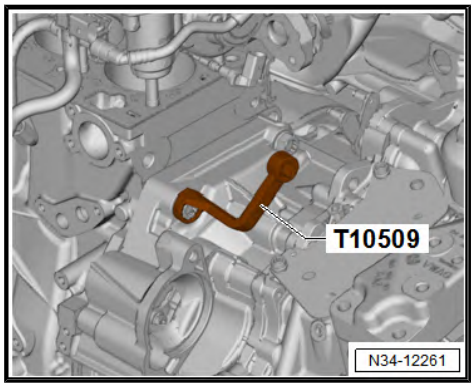
The other holder for coolant tube -1- has already been detached when the starter was previous removed.



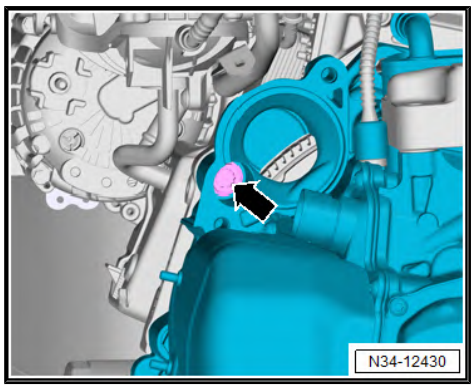
– Remove connecting screws for the top engine/gearbox -1-, -2- and -3-.



The screws -1- and -2- (previous figure S34–10164) can be removed with an insertion tool - T10509- .



The screw -3- (previous figure S34–10164) is located in the starter opening -arrow- and can be removed with plug insert XZN 14 - T10061- .



Supporting the engine/gearbox assembly

– Remove caps of screwed connections for front suspension strut domes.

– Attach support bracket together with the other elements according to the illustration.

1 - Supporting plate - T30119-

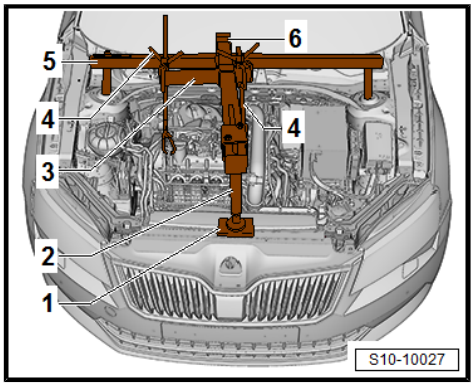
2 - Support - 10-222A/31-

3 - Adapter - MP9-200/18 (10-222A/18)-

4 - Hook - MP9-200/10 (10-222A/10)-

5 - Interceptor - T30099- or -T30099A-

6 - Adapter - T40091/3-



– Slightly pre-tension the engine/gearbox assembly via the hooks (do not raise).

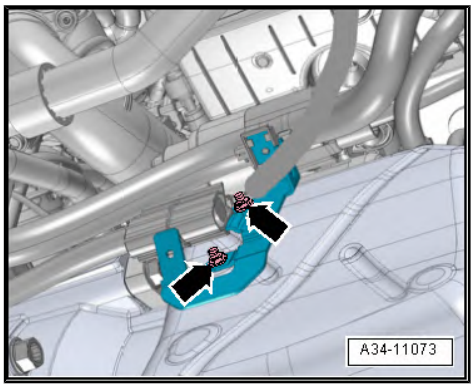
– Remove the front left and right wheelhouse liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheelhouse liner; removing and installing front wheelhouse liner .

– Remove assembly carrier without steering gear ⇒ Chassis, axles, steering; Rep. gr. 40 ; Removing and installing assembly carrier without steering gear .

– Remove propshaft from angle gearbox ⇒ Propeller shaft and rear final drive; Rep. gr. 39 ; Propeller shaft; remove and install propeller shaft .

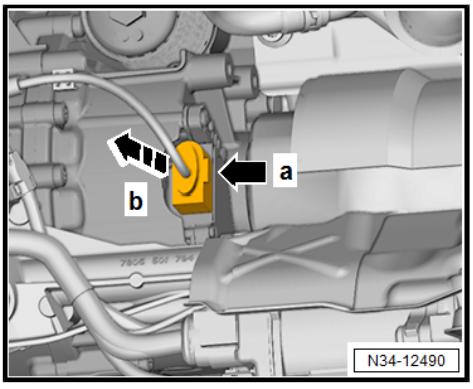
– Unscrew the nuts -arrows- and remove the bracket for electric cables from the threaded bolts on the oil pan.

– Connect electric cables at the side in area of oil sump.



– Disconnect connector for auxiliary hydraulic pump 1 for gear oil - V475- .

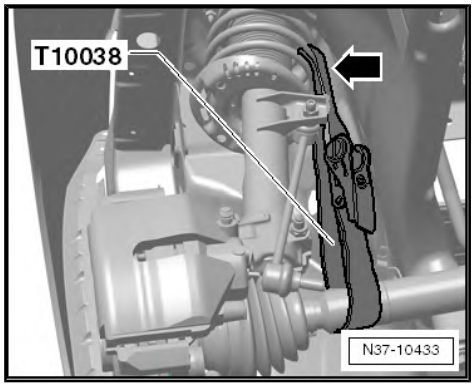
– Remove the left and right propeller shafts from the flange shafts on the gearbox ⇒ Chassis, axles, steering; Rep. gr. 40 ; Propeller shaft; remove and install propeller shaft .



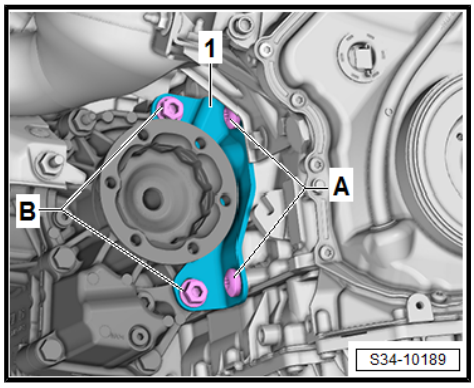
– Secure both drive shafts to the suspension strut with tensioning straps - T10038- .

• Ensure that the surface protection of the drive shafts is not damaged.

– Tie the propshaft to the top so as not to damage paint damage on the surface of the propshaft.

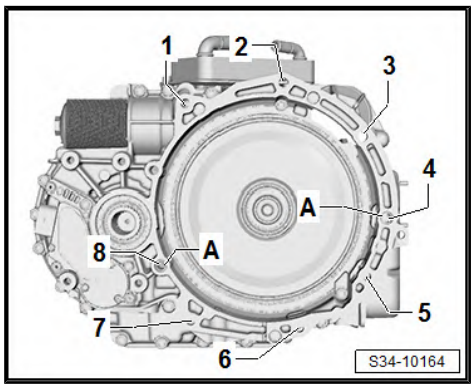


– Unscrew screws -A- and -B- and remove bracket for angle gearbox -1-.

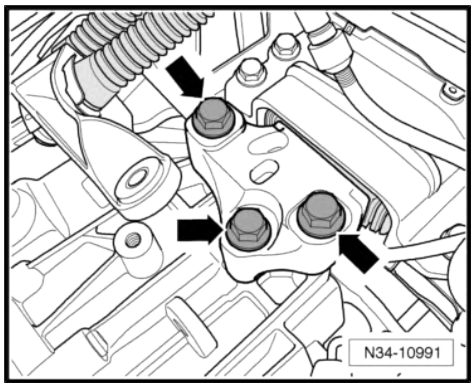


– Unscrew and remove bottom connecting bolts of engine/gearbox -4-, -5-, -6- and -7-.

• The last connecting -screw 8-, which is screwed in from the engine side, can only be loosened and screwed in.



– Unscrew the screws -arrows- from the gearbox mount.



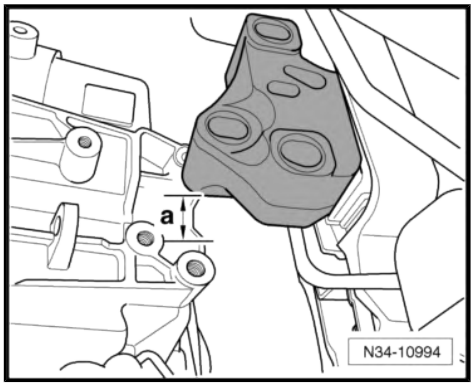
– Lower the engine/gearbox unit via the spindle of the supporting device by dimension -a-.

• Dimension -a- = approx. 90 mm

– Place the gearbox mount - 3282- onto engine/gearbox jack , e.g. -V.A.G 1383A- or -VAS 6931- .

– Position the engine / gearbox jack below the vehicle with the gearbox mount - 3282- .

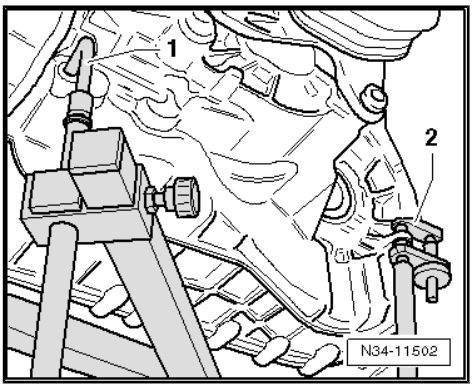
– Align the gearbox mount - 3282- parallel to the gearbox.



– Place the individual elements of the gearbox mount - 3282- to the gearbox, as shown in the figure.

– Insert the fixing hook -1- into the bore on the gearbox housing (next to the oil drain plug for mechatronics).

– Put circlip -2- in the groove of the gearbox housing.



– Screw the bolt - 3282/34- into the threaded hole for the pendulum support and connect it to the gear holder - 3282- .

– Insert the fourth adapter (bolt) from below into the bore of the gearbox.

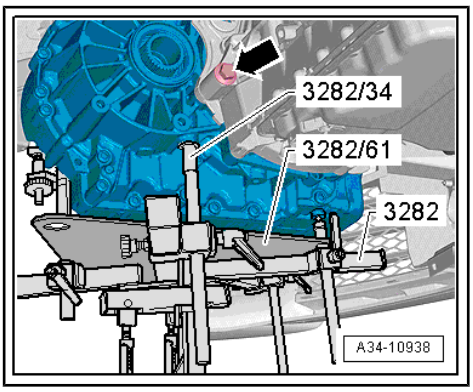
– Support the gearbox with engine / gearbox jack from underneath.

– Remove remaining engine/gearbox connecting bolt.

– Press the gearbox out of the sleeves.

– Carefully separate the gearbox from the engine and lower slowly.

• Observe all lines and coolant hoses when lowering the gearbox.



Transport gearbox ⇒ “6 Transporting the gearbox”, page 217 .

Secure on assembly support
⇒ “7 Attachment at engine and gearbox mount”, page 218 .

4.2.5 Removing the gearbox , Karoq, vehicles with 1.5 l TSI petrol engines, all-wheel drive

Special tools and workshop equipment required

♦ Release tool - T10236-

♦ Hose clamp - MP7-602 (3094)-

♦ Plug set , e.g. -VAS 6122-

♦ Insertion tool 18 mm - T10509-

♦ Socket insert XZN 14 - T10061-

♦ Interceptor - MP9-200 (10-222A)- or -10-222B-

- ♦ Adapter - 10-222A/13-
- ♦ Hook - MP9-200/10 (10-222A/10)- 2 units
- ♦ Shackle - 10-222A/12-
- ♦ Tensioning strap - T10038-
- ♦ Gearbox mount - 3282-
- ♦ Bolt - 3282/34-
- ♦ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS 6931-
- • General repair information ⇒ “3 Repair instructions”, page 6 .
- • All cable straps that are detached or cut when removing should be attached again in the same place when installing.

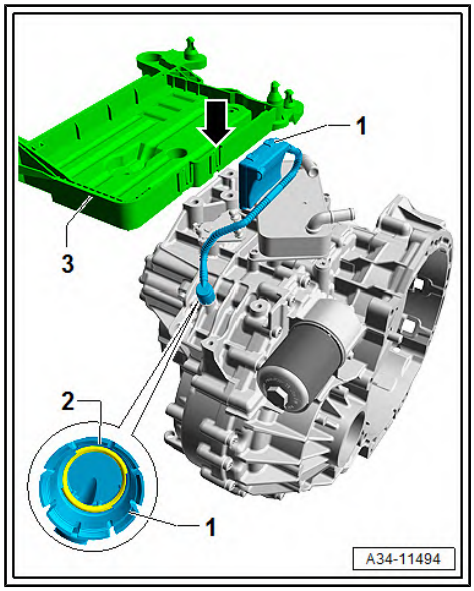
For vehicles with four-wheel drive, switch the selector lever to position “N” so that it is then possible to turn using the propshaft when loosening.

– Shift selector lever to position “N”.

– Remove the engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; removing and installing engine cover panel .

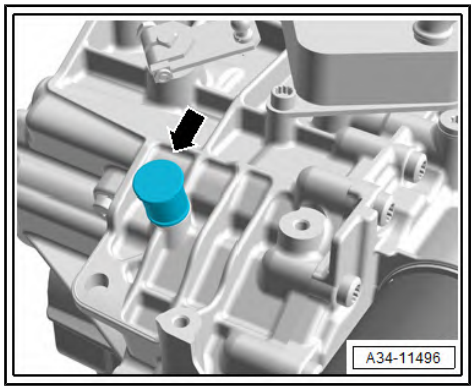
– Remove air filter housing ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing .

– Lift off ventilator -1- (if fitted) with breather hose from the lock -arrow- on the battery tray -3-.



- • If the bleed hose is withdrawn from the exhaust pipe of the gearbox, the exhaust pipe must be sealed with a cap -arrow-.
- • The cap should prevent dirt from entering the transmission.

– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .

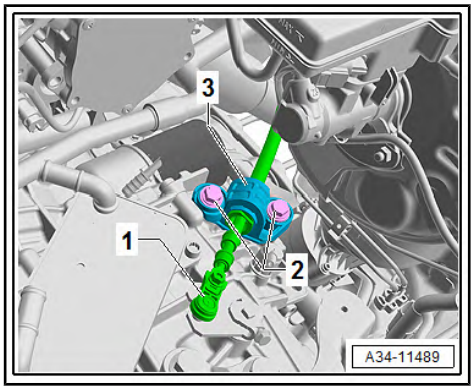


– Push ball socket -1- of selector lever control cable off the gearshift lever with the unlocking tool - T10236- .

– Unscrew screws -2- of the cable support for selector lever control cable and place to one side.

• Do not bend or buckle selector lever control cable.

– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter .



CAUTION

There is overpressure in the cooling system when the engine is at normal operating temperature.

There is a risk of injury from hot coolant or hot steam.

– Slowly open the cap of the compensation bottle, in order to first reduce pressure before pulling off the coolant hoses.

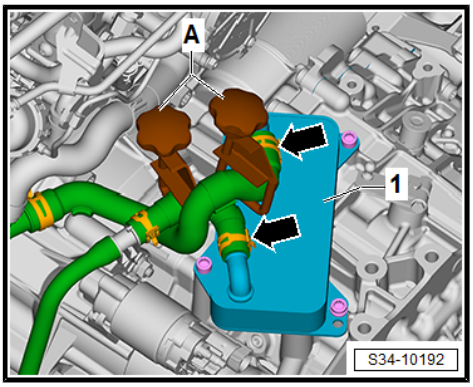
• Do not place fluffing cloths on the gearbox oil cooler and the gearbox, in order to collect flowing out coolant.

• Mark the coolant hoses to the gearbox oil cooler in order to prevent interchanging when installing.

– Clamp off the coolant hoses with the hose clamps - MP7-602 (3094)- -A-.

– Slacken hose clamps -arrows- and remove hoses from gearbox oil cooler.

– Close gearbox oil cooler with a clean plug e.g. from the plug set - VAS 6122- .



NOTICE

There is a risk of destruction of the dual clutch gearbox mechatronics - J743- .

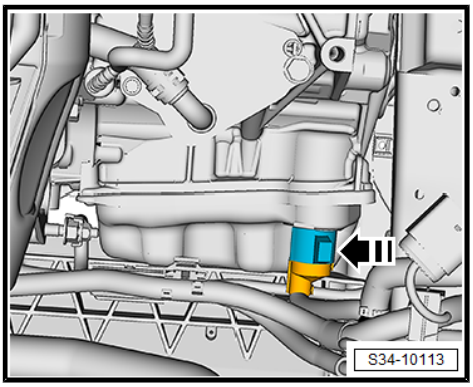
Static discharges may destroy the control unit and the mechatronics.

– Do not in any circumstances allow the gearbox plug contacts to come into contact with your hands.

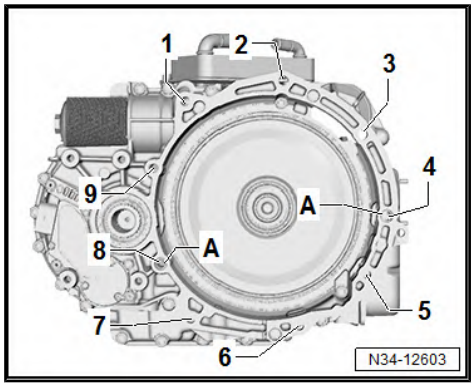
– Grab with the hand (without gloves) at the mass, in order to discharge yourself electrostatically.

– Turn the cap in -direction of arrow- and disconnect electrical plug connection from the dual clutch gearbox mechatronics - J743- .

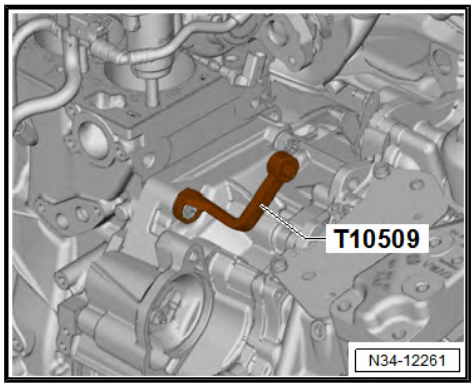
• Lay the electric cables to the side.



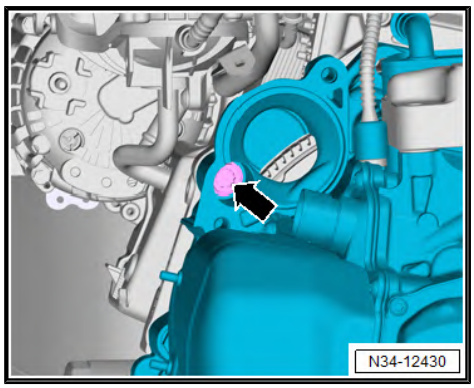
– Remove connecting screws for the top engine/gearbox -1-, -2- and -3-.



The screws -1- and -2- (previous figure S34–10164) can be removed with an insertion tool - T10509- .

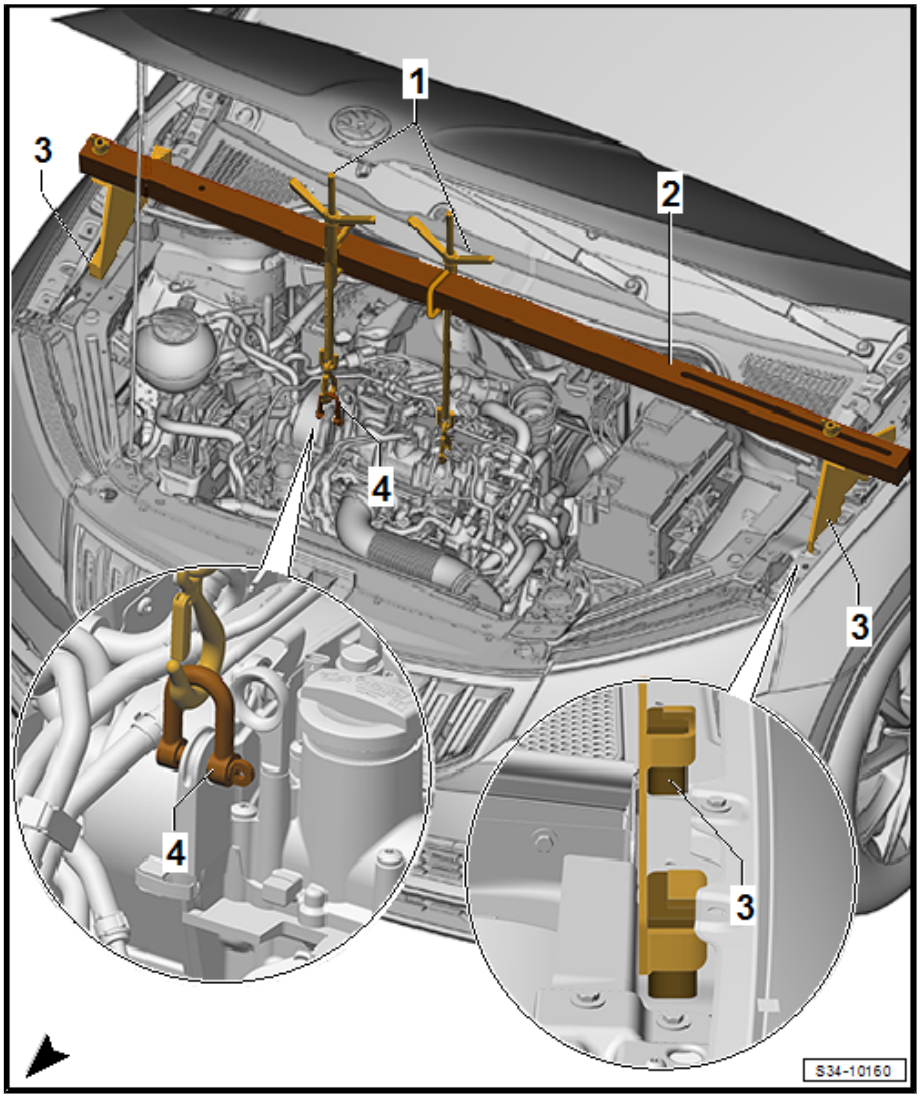


The screw -3- (previous figure S34–10164) is located in the starter opening -arrow- and can be removed with plug insert XZN 14 - T10061- .



Supporting the engine/gearbox assembly

– Fit the supporting device as shown and place on the vehicle.



1 - Hook - MP9-200/10 (10-222A/10)-

2 - Interceptor - MP9-200 (10-222A)- or -10-222B-

3 - Adapter - 10-222A/13-

4 - Shackle - 10-222A/12-

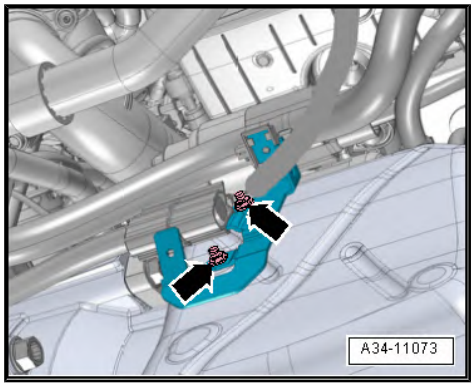
- Adapter - 10-222A/13- -3- With the inscription L is on the right side of the vehicle.
- Adapter - 10-222A/13- -3- with the inscription R is located on the left side of the vehicle.
- The arrows on the adapters - 10-222A/13- point forwards in the direction of travel.

– Slightly pre-tension the engine/gearbox unit via the spindles of the supporting device .

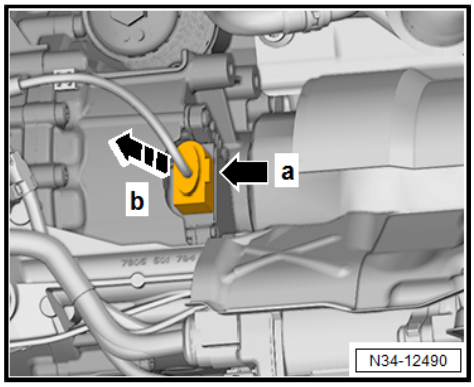
– Remove the sound dampening system ⇒ General body repairs, exterior ; Rep. gr. 66 ; Noise insulation .

– Remove the front left and right wheelhouse liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheelhouse liner; removing and installing front wheelhouse liner .

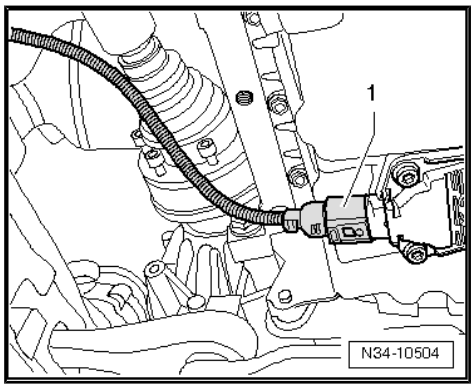
– Unscrew the nuts -arrows- and remove the bracket for electric cables from the threaded bolts on the oil pan.
– Connect electric cables at the side in area of oil sump.



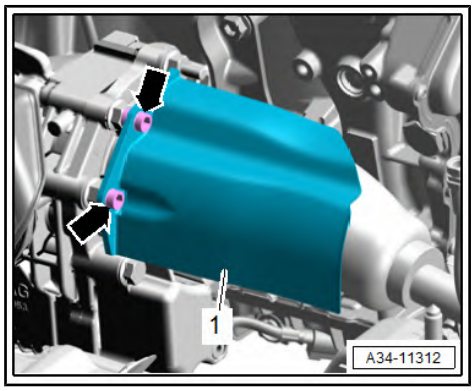
– Disconnect connector for auxiliary hydraulic pump 1 for gear oil - V475- .



– Disconnect the connector on the oil level and oil temperature sender - G266- -1-.
– Remove assembly carrier without steering gear ⇒ Chassis, axles, steering; Rep. gr. 40 ; Removing and installing assembly carrier without steering gear .



– Unscrew nuts -arrows- and remove heat shield for right drive shaft.
– Remove the left and right propeller shafts from the flange shafts on the gearbox ⇒ Chassis, axles, steering; Rep. gr. 40 ; Propeller shaft; remove and install propeller shaft .

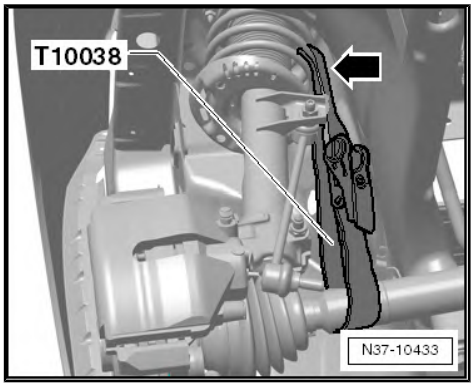


– Secure both drive shafts to the suspension strut with tensioning straps - T10038- .

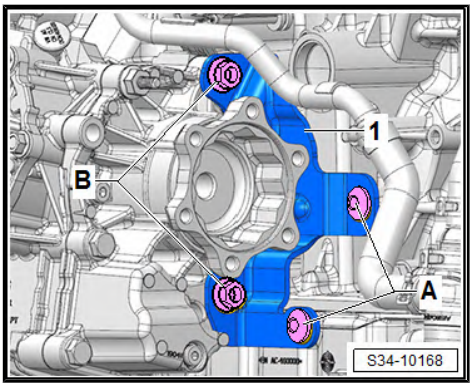
• Ensure that the surface protection of the drive shafts is not damaged.

– Remove propshaft from angle gearbox ⇒ Propeller shaft and rear final drive; Rep. gr. 39 ; Propeller shaft; remove and install propeller shaft .

– Tie the propshaft to the top so as not to damage paint damage on the surface of the propshaft.

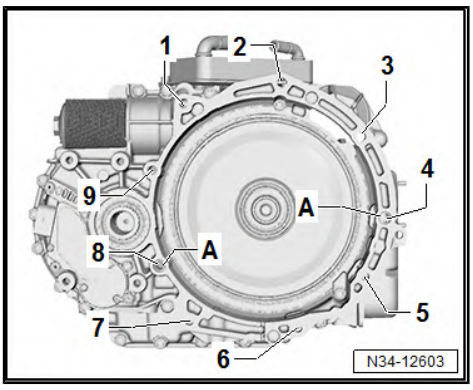


– Unscrew screws -A- and -B- and remove bracket for angle gearbox.

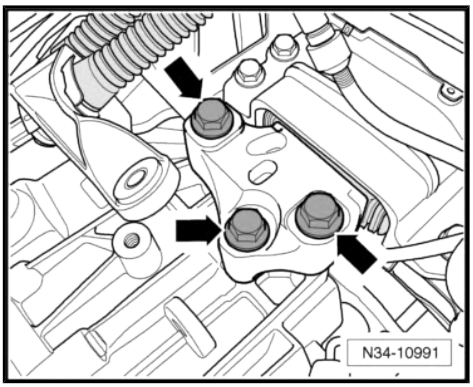


– Unscrew and remove bottom connecting bolts of engine/gearbox -4-, -5-, -6- and -7-.

• The last connecting screws -8- and -9- , which are screwed in from the engine side, can only be loosened and screwed in.



– Unscrew the screws -arrows- from the gearbox mount.



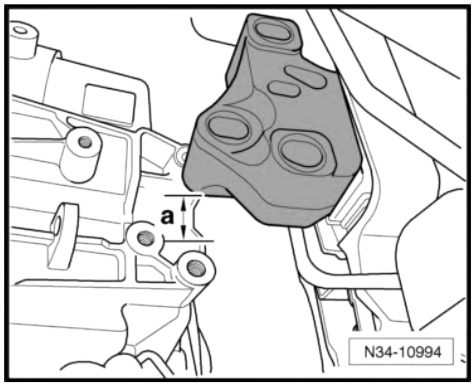
– Lower the engine/gearbox unit via the spindle of the supporting device by dimension -a-.

• Dimension -a- = approx. 90 mm

– Position gearbox mount - 3282- on the engine/gearbox jack - V.A.G 1383A- .

– Position the engine/gearbox jack -V.A.G 1383A- or -VAS 6931- below the vehicle using the gearbox mount - 3282- .

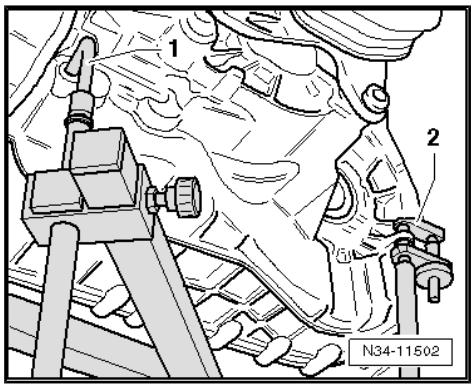
– Align the gearbox mount - 3282- parallel to the gearbox.



– Place the individual elements of the gearbox mount - 3282- to the gearbox, as shown in the figure.

– Insert the fixing hook -1- into the bore on the gearbox housing (next to the oil drain plug for mechatronics).

– Put circlip -2- in the groove of the gearbox housing.



– Screw the bolt - 3282/34- into the threaded hole for the pendulum support and connect it to the gear holder - 3282- .

– Insert the fourth adapter (bolt) from below into the bore of the gearbox.

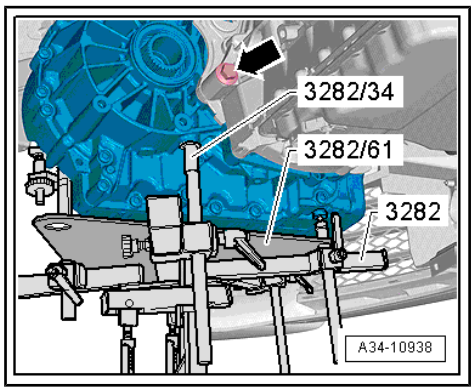
– Support the gearbox with engine / gearbox jack from underneath.

– Remove remaining engine/gearbox connecting screws.

– Press the gearbox out of the sleeves.

– Carefully separate the gearbox from the engine and lower slowly.

• Observe all lines and coolant hoses when lowering the gearbox.



Transport gearbox ⇒ “6 Transporting the gearbox”, page 217 .

Secure on assembly support
⇒ “7 Attachment at engine and gearbox mount”, page 218 .

4.2.6 Removing the gearbox, Karoq, vehicles with 2.0 l TFSI petrol engines, four-wheel drive

Special tools and workshop equipment required

♦ Release tool - T10236-

♦ Hose clamp - MP7-602 (3094)-

♦ Plug set , e.g. -VAS 6122-

♦ Insertion tool 18 mm - T10509-

♦ Socket insert XZN 14 - T10061-

♦ Interceptor - MP9-200 (10-222A)- or -10-222B-

- ♦ Adapter - 10-222A/13-
- ♦ Hook - MP9-200/10 (10-222A/10)- 2 units
- ♦ Tensioning strap - T10038-
- ♦ Gearbox mount - 3282-
- ♦ Bolt - 3282/34-
- ♦ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS 6931-
- • General repair information ⇒ “3 Repair instructions”, page 6 .
- • All cable straps that are detached or cut when removing should be attached again in the same place when installing.

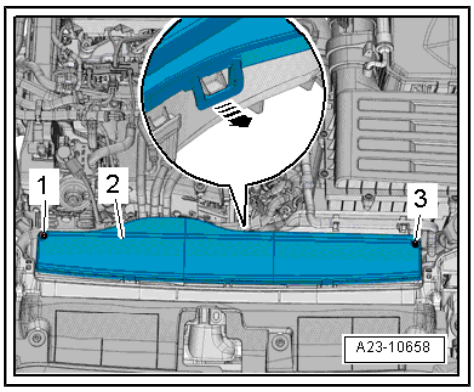
For vehicles with four-wheel drive, switch the selector lever to position “N” so that it is then possible to turn using the propshaft when loosening.

– Shift selector lever to position “N”.

– Remove the engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; removing and installing engine cover panel .

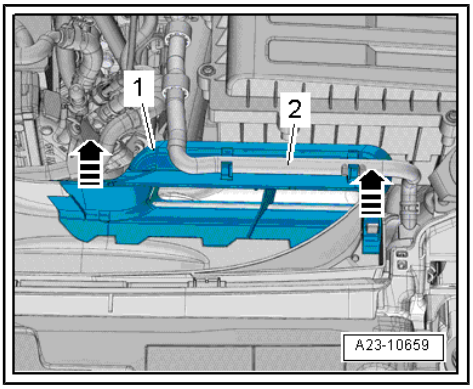
– Remove screws -1- and -3-.

– Unlock safety strap -arrow- and remove intake cover -2- .



– Remove coolant hose -2- from the clamps on the intake manifold.

– Unlock safety strap -arrows- and remove the air guide pipe top -1-.

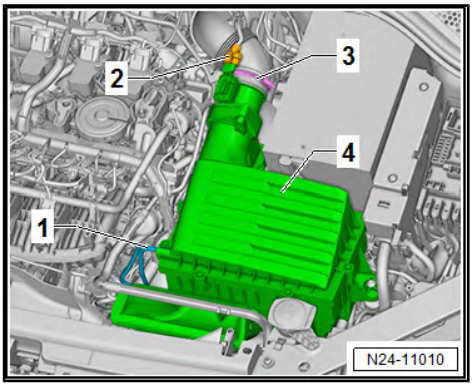


– Detach vacuum hose -1- from air filter housing.

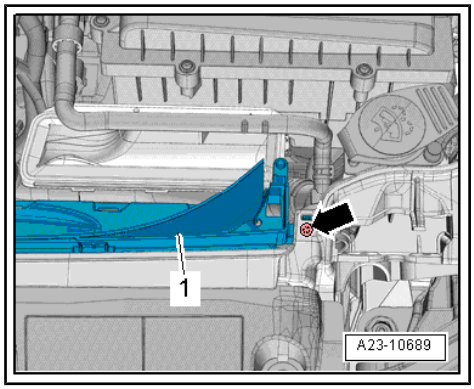
– Unplug connector -2- for air mass meter - G70- .

– Release hose clamp -3- and remove air duct.

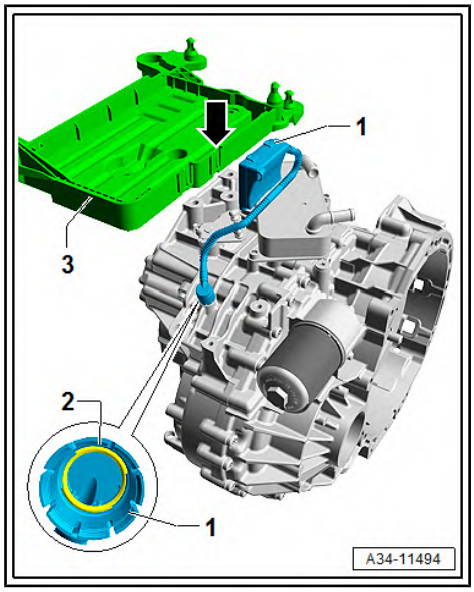
– Undo the air filter housing -4- from the rubber bolts and remove it upwards.



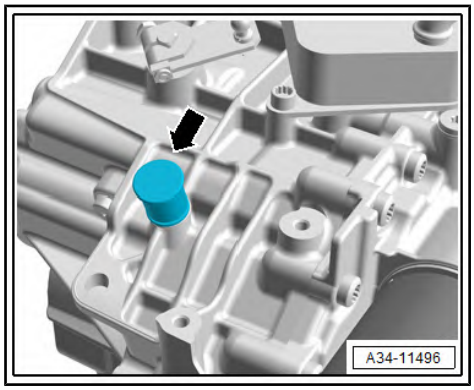
– Remove screw left and right -arrow-.
– Unclip and remove the air guide pipe bottom -1-.



– Lift off ventilator -1- (if fitted) with breather hose from the lock -arrow- on the battery tray -3-.



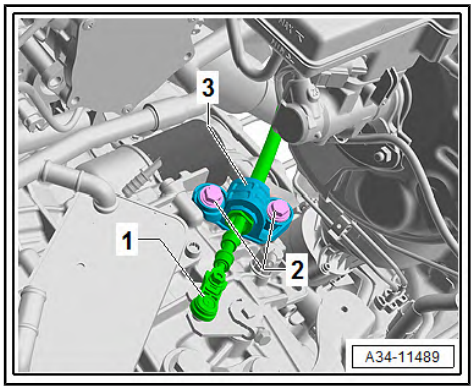
• If the bleed hose is withdrawn from the exhaust pipe of the gearbox, the exhaust pipe must be sealed with a cap -arrow-.
• The cap should prevent dirt from entering the transmission.
– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .
– Remove the plenum panel cover ⇒ External body repairs; Rep. gr. 50 ; Bulkhead; Assembly overview - plenum panel cover .



– Push ball socket -1- of selector lever control cable off the gearshift lever with the unlocking tool - T10236- .

– Unscrew screws -2- of the cable support for selector lever control cable and place to one side.

• Do not bend or buckle selector lever control cable.



NOTICE

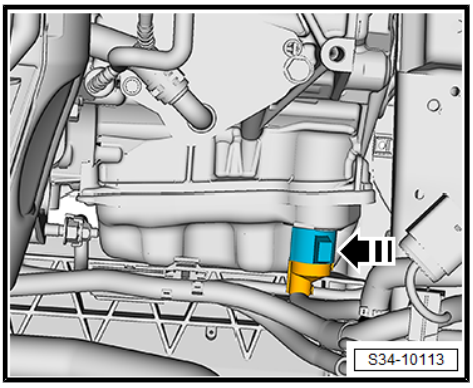
There is a risk of destruction of the dual clutch gearbox mechatronics - J743- .

Static discharges may destroy the control unit and the mechatronics.

– Do not in any circumstances allow the gearbox plug contacts to come into contact with your hands.

– Grab with the hand (without gloves) at the mass, in order to discharge yourself electrostatically.

– Turn the cap in -direction of arrow- and disconnect electrical plug connection from the dual clutch gearbox mechatronics - J743- .



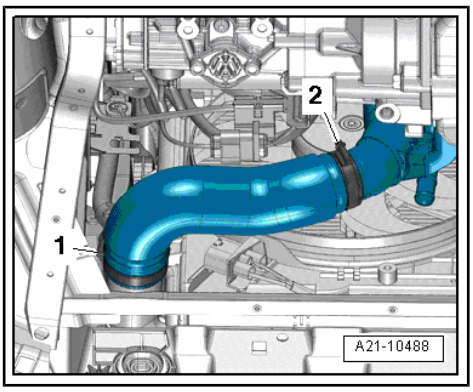
• Lay the electric cables to the side.

– Disconnect earth lead from lower starter bolt.

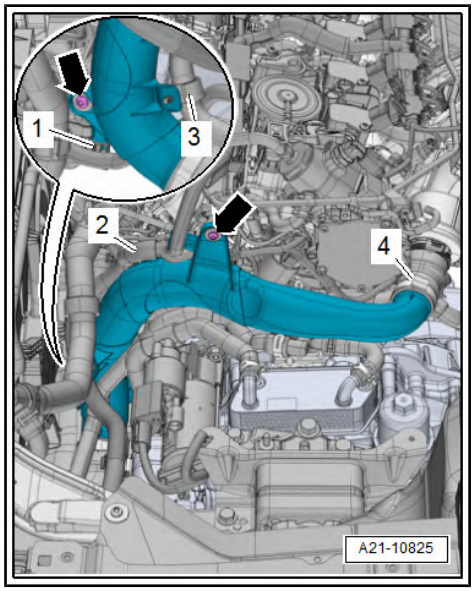
– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter .

– Remove the sound dampening system ⇒ General body repairs, exterior ; Rep. gr. 66 ; Noise insulation .

– Loosen hose clamps -1-, -2- and remove air guide hose from charge-air cooler.



– Expose electric wiring harnesses -1- and -2- at the air guide pipe.
– Slacken screw clamp -4-.
– Remove screws -arrows- and remove the air guide pipe.
– Seal the open pipes with a clean plug from the plug set - VAS 6122- .



CAUTION

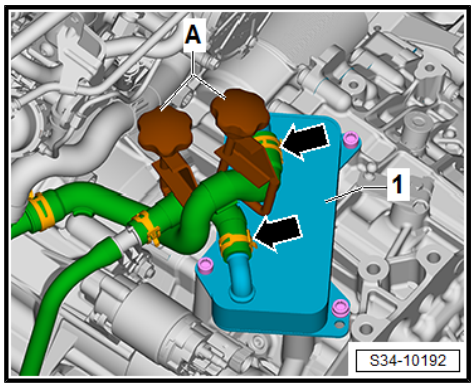
There is overpressure in the cooling system when the engine is at normal operating temperature.

There is a risk of injury from hot coolant or hot steam.

– Slowly open the cap of the compensation bottle, in order to first reduce pressure before pulling off the coolant hoses.

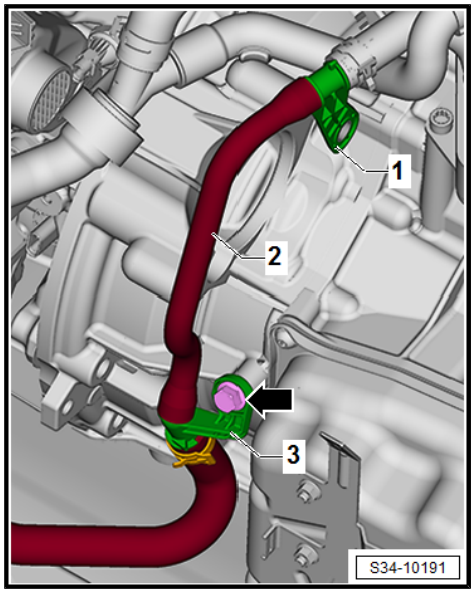
- Do not place fluffing cloths on the gearbox oil cooler and the gearbox, in order to collect flowing out coolant.
- Mark the coolant hoses to the gearbox oil cooler in order to prevent interchanging when installing.

– Clamp off the coolant hoses with the hose clamps - MP7-602 (3094)- -A-.
– Slacken hose clamps -arrows- and remove hoses from gearbox oil cooler -1-.
– Close gearbox oil cooler with a clean plug e.g. from the plug set - VAS 6122- .

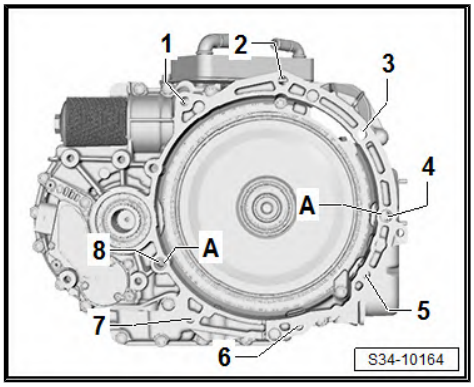


– Remove screw -arrow- on coolant tube holder -3-, detach tube -2- from gearbox and tie up to one side.

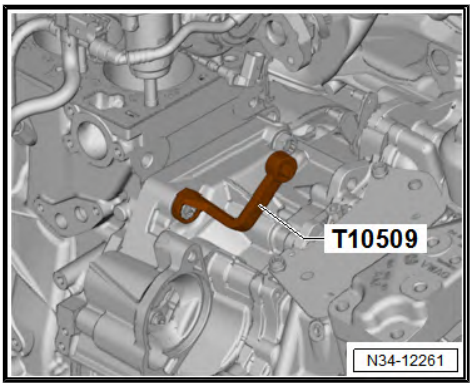
The other holder for coolant tube -1- has already been detached when the starter was previous removed.



– Remove connecting screws for the top engine/gearbox -1-, -2- and -3-.

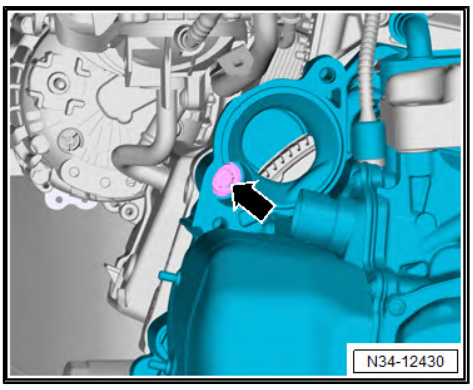


The screws -1- and -2- (previous figure S34–10164) can be removed with an insertion tool - T10509- .

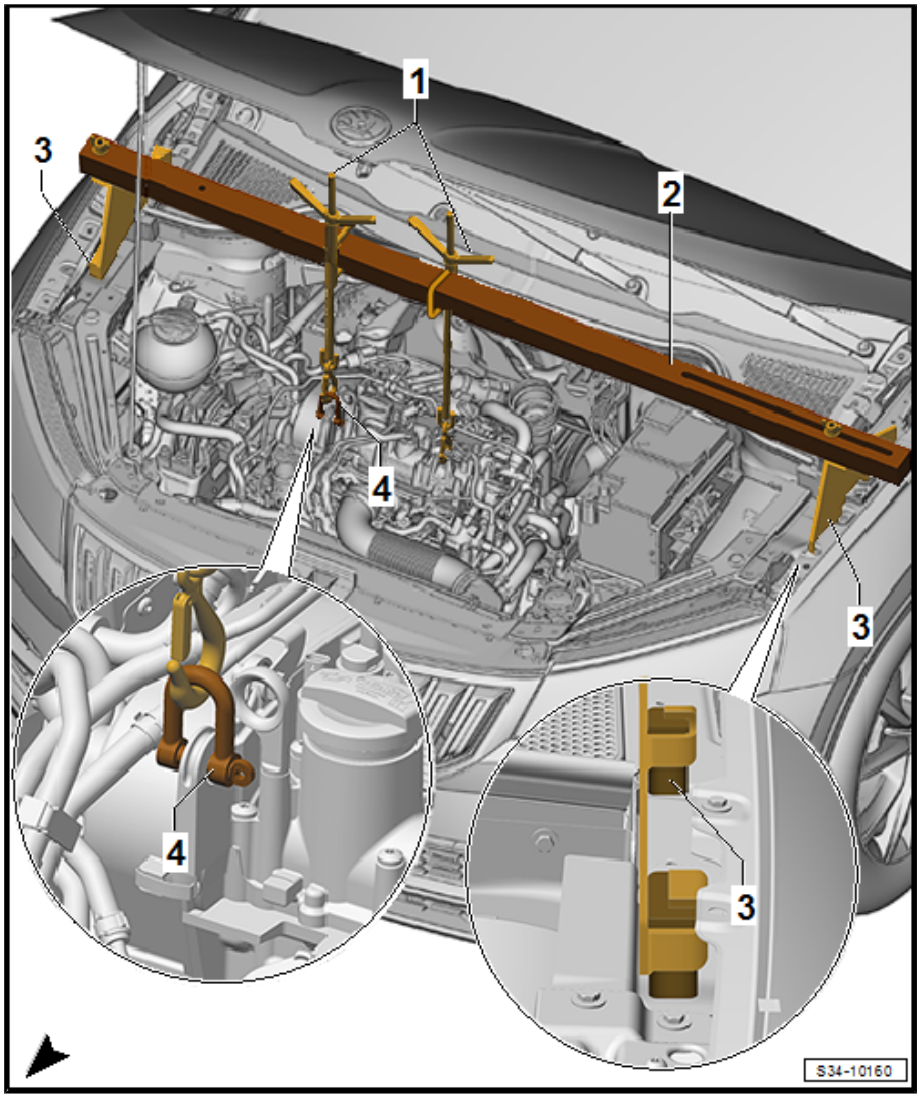


The screw -3- (previous figure S34–10164) is located in the starter opening -arrow- and can be removed with plug insert XZN 14 - T10061- .

Supporting the engine/gearbox assembly



– Fit the supporting device as shown and place on the vehicle.



1 - Hook - MP9-200/10 (10-222A/10)-

2 - Interceptor - MP9-200 (10-222A)- or -10-222B-

3 - Adapter - 10-222A/13-

4 - this position is not used to suspend the 2.0 TFSI gasoline engine

- Adapter - 10-222A/13- -3- With the inscription L is on the right side of the vehicle.
- Adapter - 10-222A/13- -3- with the inscription R is located on the left side of the vehicle.
- The arrows on the adapters - 10-222A/13- point forwards in the direction of travel.

– Slightly pre-tension the engine/gearbox unit via the spindles of the supporting device .

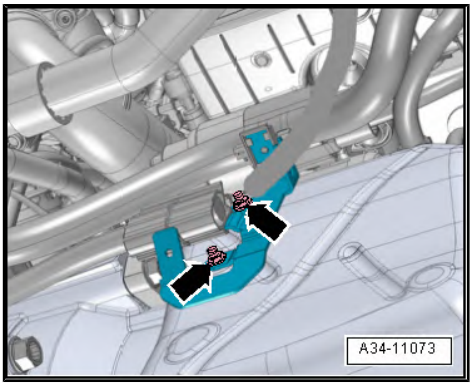
– Remove the front left and right wheelhouse liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheelhouse liner; removing and installing front wheelhouse liner .

– Remove assembly carrier without steering gear ⇒ Chassis, axles, steering; Rep. gr. 40 ; Removing and installing assembly carrier without steering gear .

– Remove propshaft from angle gearbox ⇒ Propeller shaft and rear final drive; Rep. gr. 39 ; Propeller shaft; remove and install propeller shaft .

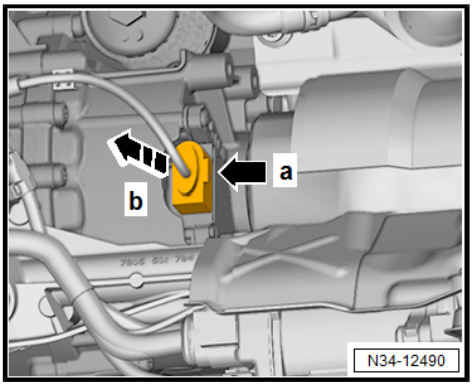
– Unscrew the nuts -arrows- and remove the bracket for electric cables from the threaded bolts on the oil pan.

– Connect electric cables at the side in area of oil sump.



– Disconnect connector for auxiliary hydraulic pump 1 for gear oil - V475- .

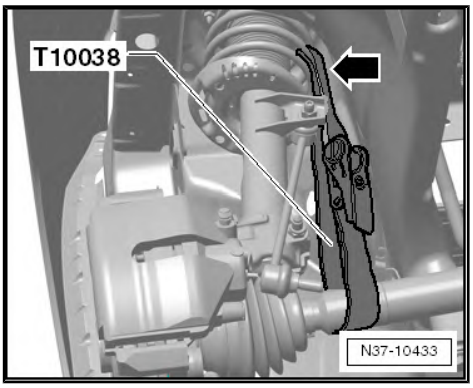
– Remove the left and right propeller shafts from the flange shafts on the gearbox ⇒ Chassis, axles, steering; Rep. gr. 40 ; Propeller shaft; remove and install propeller shaft .



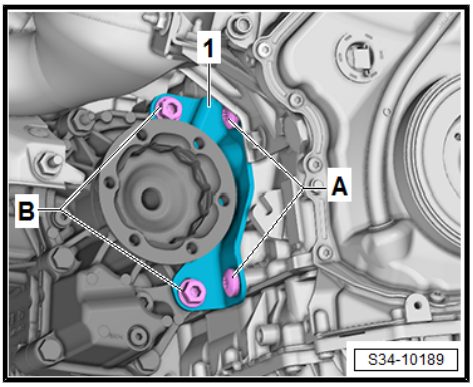
– Secure both drive shafts to the suspension strut with tensioning straps - T10038- .

• Ensure that the surface protection of the drive shafts is not damaged.

– Tie the propshaft to the top so as not to damage paint damage on the surface of the propshaft.

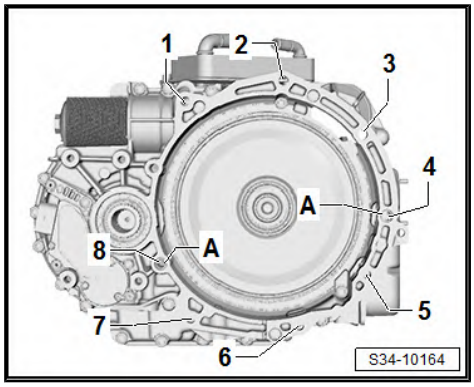


– Unscrew screws -A- and -B- and remove bracket for angle gearbox -1-.

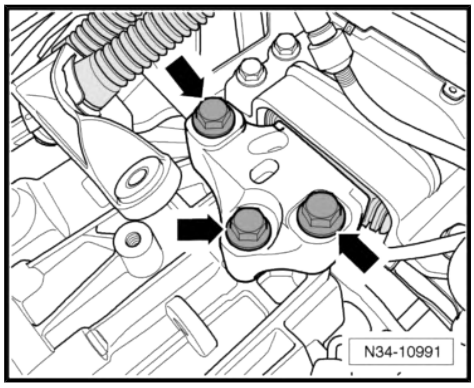


– Unscrew and remove bottom connecting bolts of engine/gearbox -4-, -5-, -6- and -7-.

• The last connecting -screw 8-, which is screwed in from the engine side, can only be loosened and screwed in.



– Unscrew the screws -arrows- from the gearbox mount.



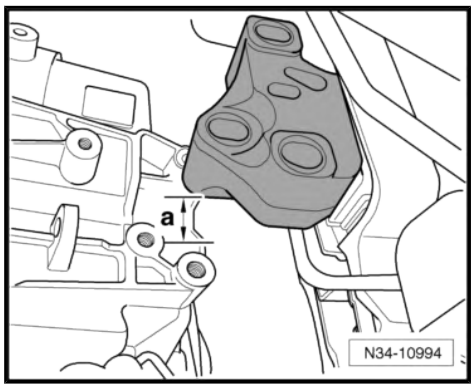
– Lower the engine/gearbox unit via the spindle of the supporting device by dimension -a-.

• Dimension -a- = approx. 90 mm

– Place the gearbox mount - 3282- onto engine/gearbox jack , e.g. -V.A.G 1383A- or -VAS 6931- .

– Position the engine / gearbox jack below the vehicle with the gearbox mount - 3282- .

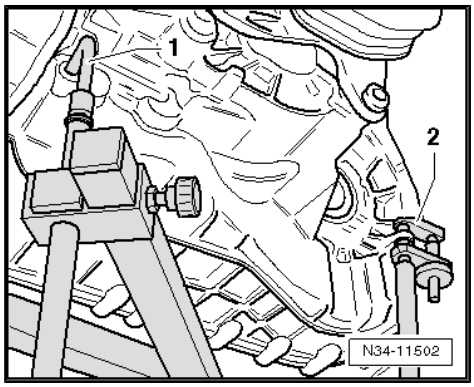
– Align the gearbox mount - 3282- parallel to the gearbox.



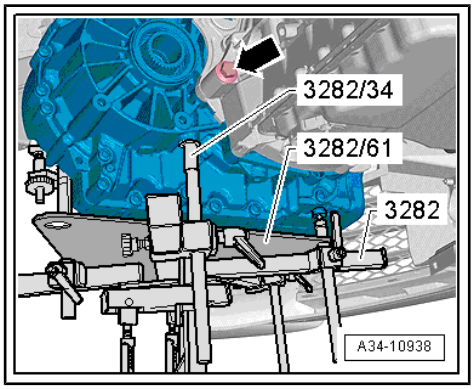
– Place the individual elements of the gearbox mount - 3282- to the gearbox, as shown in the figure.

– Insert the fixing hook -1- into the bore on the gearbox housing (next to the oil drain plug for mechatronics).

– Put circlip -2- in the groove of the gearbox housing.



– Screw the bolt - 3282/34- into the threaded hole for the pendulum support and connect it to the gear holder - 3282- .
– Insert the fourth adapter (bolt) from below into the bore of the gearbox.
– Support the gearbox with engine / gearbox jack from underneath.
– Remove remaining engine/gearbox connecting bolt.
– Press the gearbox out of the sleeves.
– Carefully separate the gearbox from the engine and lower slowly.
• Observe all lines and coolant hoses when lowering the gearbox.



Transport gearbox ⇒ “6 Transporting the gearbox”, page 217 .

Secure on assembly support
⇒ “7 Attachment at engine and gearbox mount”, page 218 .

4.2.7 Removing gearbox, Karoq, vehicles with diesel engine 2.0 ITDI CR, all-wheel drive

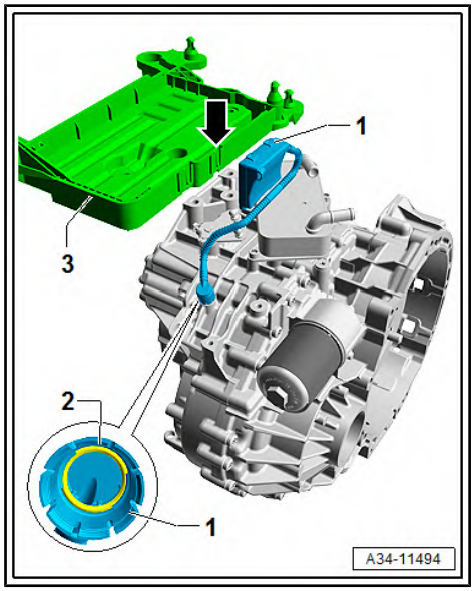
Special tools and workshop equipment required

♦ Release tool - T10236-
♦ Hose clamp - MP7-602 (3094)-
♦ Plug set , e.g. -VAS 6122-
♦ Insertion tool 18 mm - T10509-
♦ Socket insert XZN 14 - T10061-
♦ Interceptor - MP9-200 (10-222A)- or -10-222B-
♦ Adapter - MP9-200/18 (10-222A/18)- (2 units)
♦ Adapter - 10-222A/13-
♦ Hook - MP9-200/10 (10-222A/10)-
♦ Shackle - 10-222A/12-
♦ Tensioning strap - T10038-
♦ Gearbox mount - 3282-
♦ Bolt - 3282/34-
♦ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS 6931-
• General repair information ⇒ “3 Repair instructions”, page 6 .
• All cable straps that are detached or cut when removing should be attached again in the same place when installing.

For vehicles with four-wheel drive, switch the selector lever to position “N” so that it is then possible to turn using the propshaft when loosening.

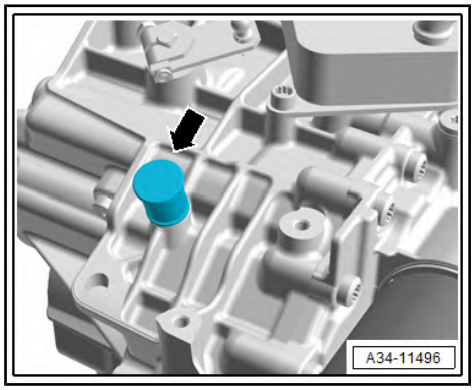
– Shift selector lever to position “N”.
– Remove the engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; removing and installing engine cover panel .
– Remove air filter housing ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing .

– Lift off ventilator -1- (if fitted) with breather hose from the lock -arrow- on the battery tray -3-.



- If the bleed hose is withdrawn from the exhaust pipe of the gearbox, the exhaust pipe must be sealed with a cap -arrow-.
- The cap should prevent dirt from entering the transmission.

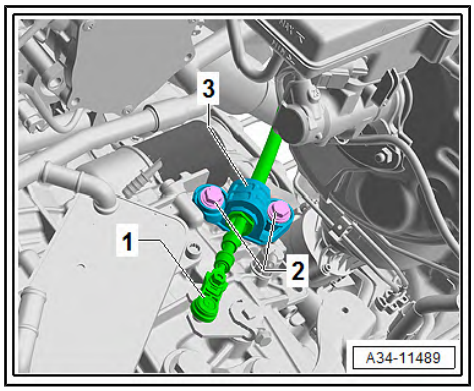
– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .



– Push ball socket -1- of selector lever control cable off the gearshift lever with the unlocking tool - T10236- .

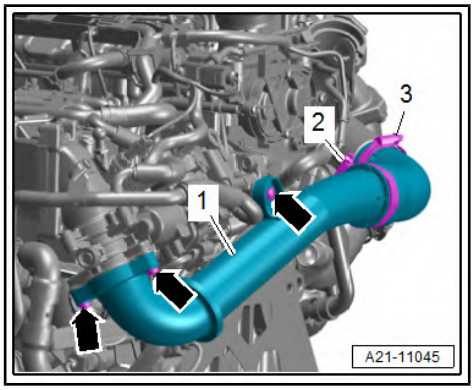
– Unscrew screws -2- of the cable support for selector lever control cable and place to one side.

- Do not bend or buckle selector lever control cable.



– Remove screws -arrows-, release clamp -3- and remove charge air pipe.

Ignore clamp -2-.



CAUTION

There is overpressure in the cooling system when the engine is at normal operating temperature.

There is a risk of injury from hot coolant or hot steam.

– Slowly open the cap of the compensation bottle, in order to first reduce pressure before pulling off the coolant hoses.

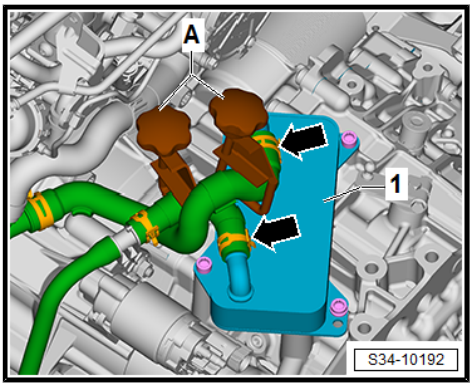
- Do not place fluffing cloths on the gearbox oil cooler and the gearbox, in order to collect flowing out coolant.
- Mark the coolant hoses to the gearbox oil cooler in order to prevent interchanging when installing.

– Clamp off the coolant hoses with the hose clamps - MP7-602 (3094)- -A-.

– Slacken hose clamps -arrows- and remove hoses from gearbox oil cooler.

– Close gearbox oil cooler with a clean plug e.g. from the plug set - VAS 6122- .

– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter .



NOTICE

There is a risk of destruction of the dual clutch gearbox mechatronics - J743- .

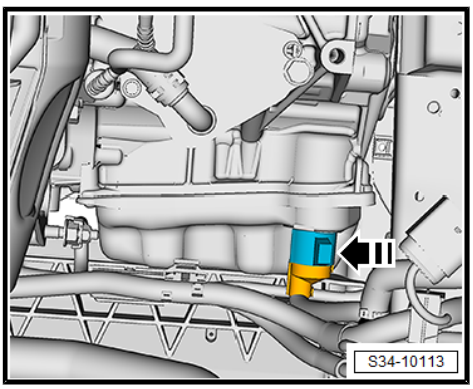
Static discharges may destroy the control unit and the mechatronics.

– Do not in any circumstances allow the gearbox plug contacts to come into contact with your hands.

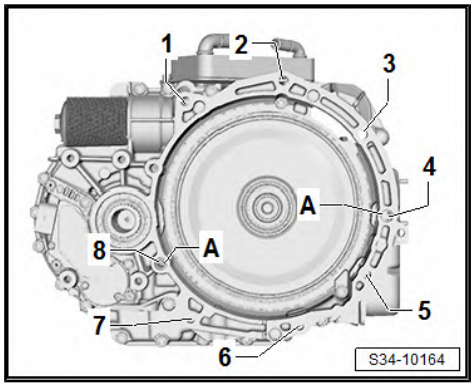
– Grab with the hand (without gloves) at the mass, in order to discharge yourself electrostatically.

– Turn the cap in -direction of arrow- and disconnect electrical plug connection from the dual clutch gearbox mechatronics - J743- .

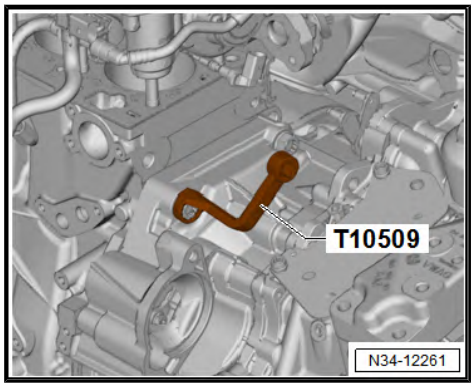
- Lay the electric cables to the side.



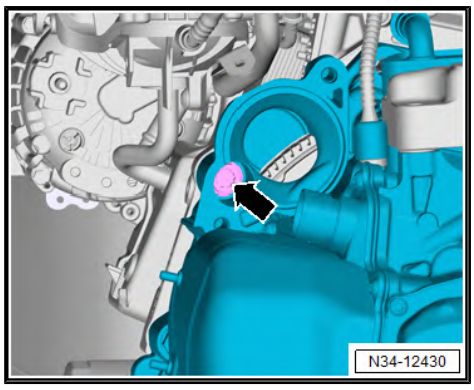
– Remove connecting screws for the top engine/gearbox -1-, -2- and -3-.



The screws -1- and -2- (previous figure S34–10164) can be removed with an insertion tool - T10509- .

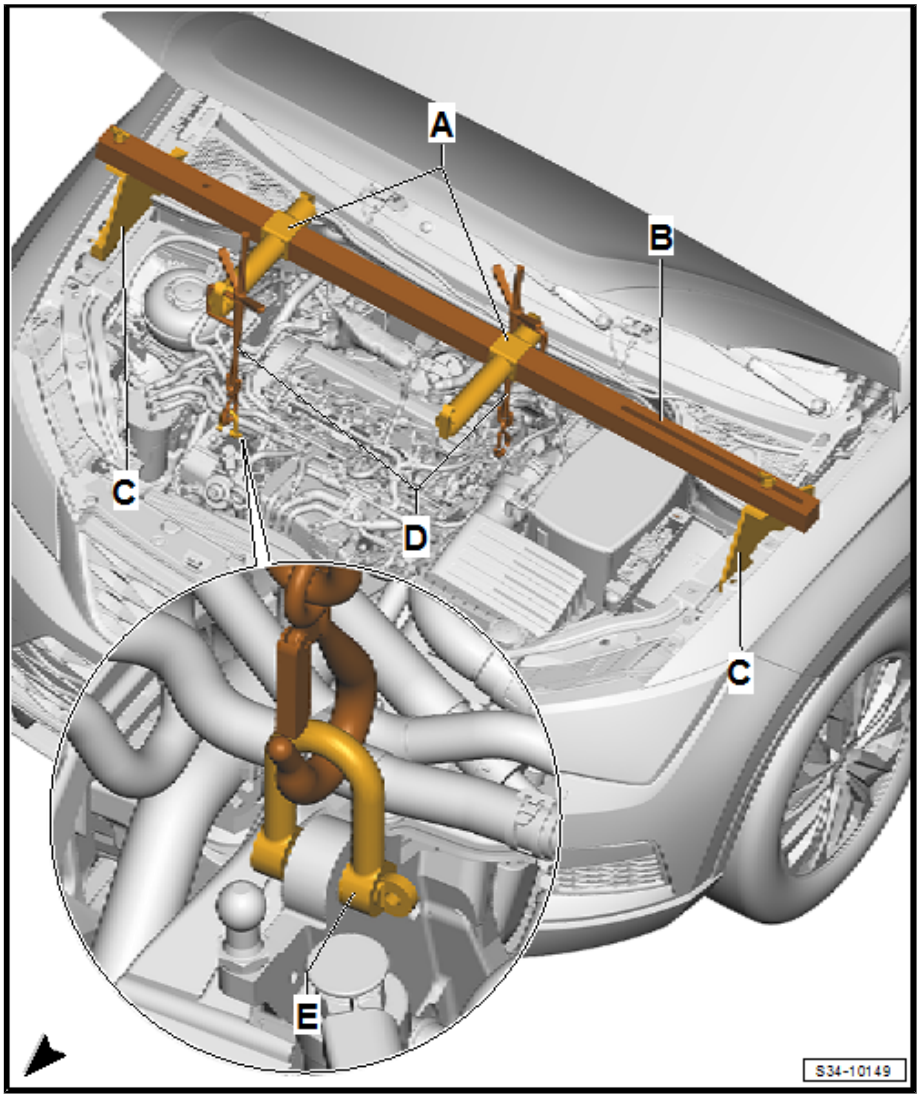


The screw -3- (previous figure S34–10164) is located in the starter opening -arrow- and can be removed with plug insert XZN 14 - T10061- .



Supporting the engine/gearbox assembly

– Fit the supporting device as shown and place on the vehicle.



A - Adapter - MP9-200/18 (10-222A/18)-

B - Interceptor - MP9-200 (10-222A)- or -10-222B-

C - Adapter - 10-222A/13-

D - Hook - MP9-200/10 (10-222A/10)-

E - Shackle - 10-222A/12-

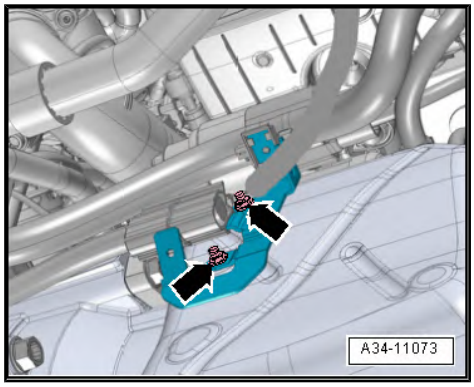
- Adapter - 10-222A/13- -C- with the inscription L is on the right side of the vehicle.
- Adapter - 10-222A/13- -C- with the inscription R is located on the left side of the vehicle.
- The arrows on the adapters - 10-222A/13- point forwards in the direction of travel.

– Slightly pre-tension the engine/gearbox unit via the spindles of the supporting device .

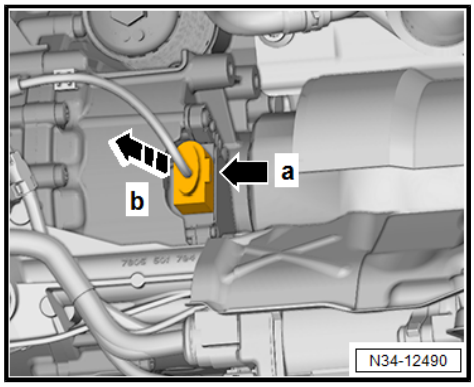
– Remove the sound dampening system ⇒ General body repairs, exterior ; Rep. gr. 66 ; Noise insulation .

– Remove the front left and right wheelhouse liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheelhouse liner; removing and installing front wheelhouse liner .

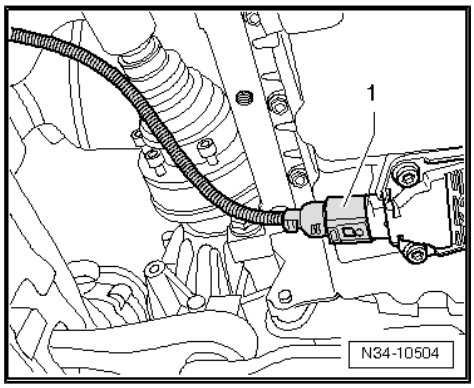
– Unscrew the nuts -arrows- and remove the bracket for electric cables from the threaded bolts on the oil pan.
– Connect electric cables at the side in area of oil sump.



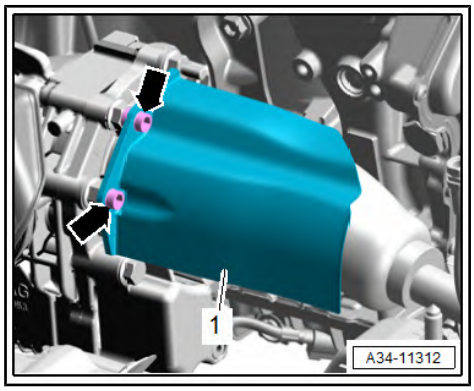
– Disconnect connector for auxiliary hydraulic pump 1 for gear oil - V475- .



– Disconnect the connector on the oil level and oil temperature sender - G266- -1-.
– Remove assembly carrier without steering gear ⇒ Chassis, axles, steering; Rep. gr. 40 ; Removing and installing assembly carrier without steering gear .

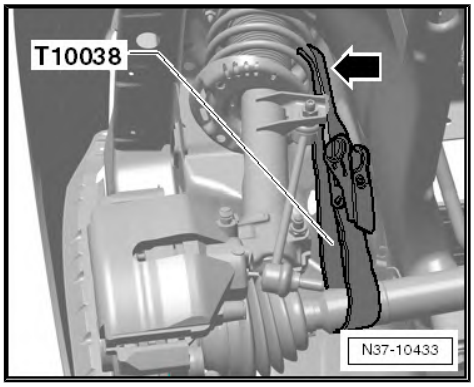


– Unscrew nuts -arrows- and remove heat shield for right drive shaft.
– Remove the left and right propeller shafts from the flange shafts on the gearbox ⇒ Chassis, axles, steering; Rep. gr. 40 ; Propeller shaft; remove and install propeller shaft .



– Secure both drive shafts to the suspension strut with tensioning straps - T10038- .

• Ensure that the surface protection of the drive shafts is not damaged.

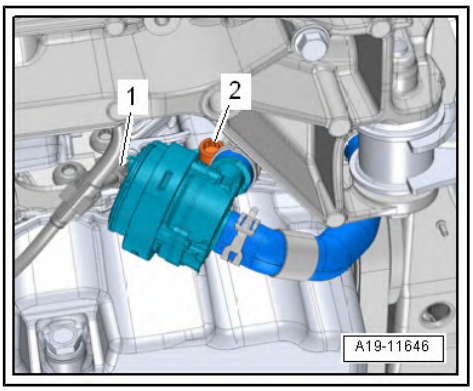


– Separate electrical plug connection -1-.

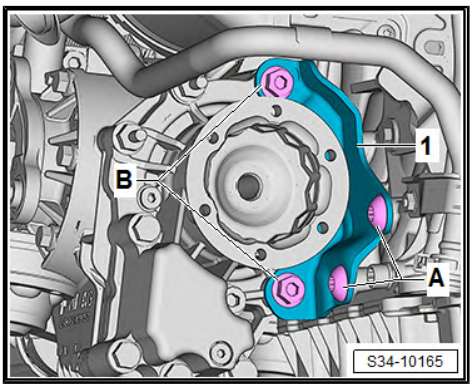
– Unscrew screw -2-, detach heating backup pump - V488- and push to side.

– Remove propshaft from angle gearbox ⇒ Propeller shaft and rear final drive; Rep. gr. 39 ; Propeller shaft; remove and install propeller shaft .

– Tie the propshaft to the top so as not to damage paint damage on the surface of the propshaft.

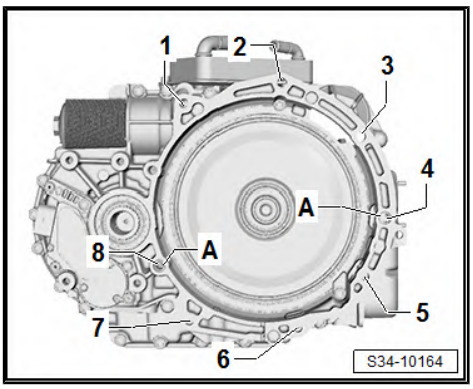


– Unscrew screws -A- and -B- and remove bracket for angle gearbox.

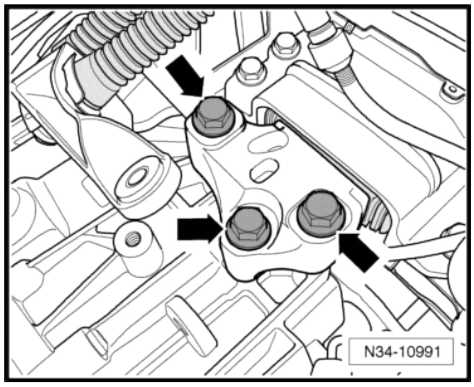


– Unscrew and remove bottom connecting bolts of engine/gearbox -4-, -5-, -6- and -7-.

• The last connecting -screw 8-, which is screewed in from the engine side, can only be loosened and screwed in.



– Unscrew the screws -arrows- from the gearbox mount.



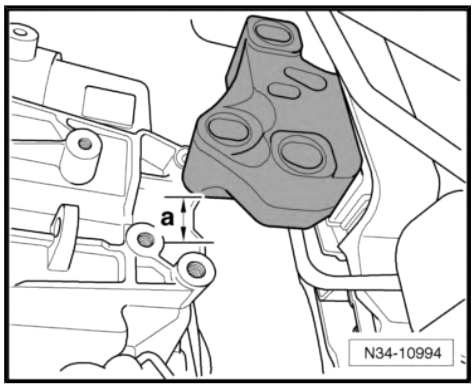
– Lower the engine/gearbox unit via the spindle of the supporting device by dimension -a-.

• Dimension -a- = approx. 90 mm

– Position gearbox mount - 3282- on the engine/gearbox jack - V.A.G 1383A- .

– Position the engine/gearbox jack -V.A.G 1383A- or -VAS 6931- below the vehicle using the gearbox mount - 3282- .

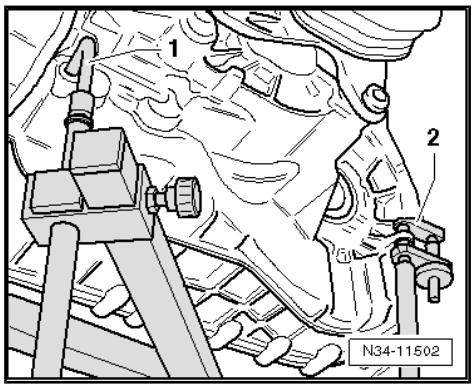
– Align the gearbox mount - 3282- parallel to the gearbox.



– Place the individual elements of the gearbox mount - 3282- to the gearbox, as shown in the figure.

– Insert the fixing hook -1- into the bore on the gearbox housing (next to the oil drain plug for mechatronics).

– Put circlip -2- in the groove of the gearbox housing.



– Screw the bolt - 3282/34- into the threaded hole for the pendulum support and connect it to the gear holder - 3282- .

– Insert the fourth adapter (bolt) from below into the bore of the gearbox.

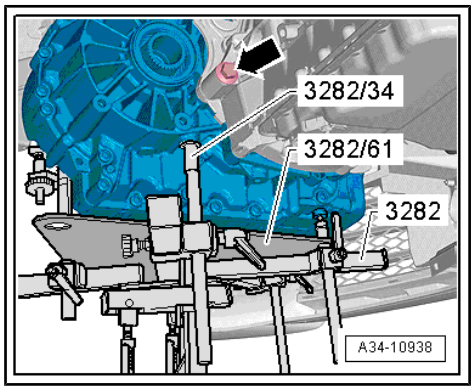
– Support the gearbox with engine / gearbox jack from underneath.

– Remove remaining engine/gearbox connecting bolt.

– Press the gearbox out of the sleeves.

– Carefully separate the gearbox from the engine and lower slowly.

• Observe all lines and coolant hoses when lowering the gearbox.



Transport gearbox ⇒ “6 Transporting the gearbox”, page 217 .

Secure on assembly support
⇒ “7 Attachment at engine and gearbox mount”, page 218 .

4.2.8 Removing the gearbox, Kodiaq, vehicles with 1.5 TSI petrol engine, front-wheel drive

Special tools and workshop equipment required

- Release tool - T10236-
- Hose clamp - MP7-602 (3094)-
- Plug set , e.g. -VAS 6122-
- Insertion tool 18 mm - T10509-
- Socket insert XZN 14 - T10061-
- Interceptor - MP9-200 (10-222A)- or -10-222B-
- Adapter - 10-222A/29-
- Spindle - T40093/3-
- Carrier part - T40091/1-
- Clutch - T40091/3-
- Adapter - MP9-200/18 (10-222A/18)-
- Hook - MP9-200/10 (10-222A/10)- 2 units
- Shackle - 10-222A/12-
- Adapter - T40093/3-6- or -T40093/3-6A-
- Tensioning strap - T10038-
- Gearbox mount - 3282-
- Bolt - 3282/34-
- Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS 6931-

• General repair information ⇒ “3 Repair instructions”, page 6 .

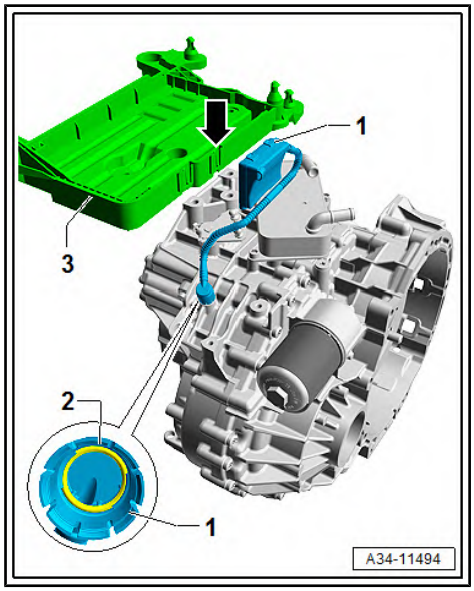
• All cable straps that are detached or cut when removing should be attached again in the same place when installing.

– Shift selector lever into position “P”.

– Remove the engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; removing and installing engine cover panel .

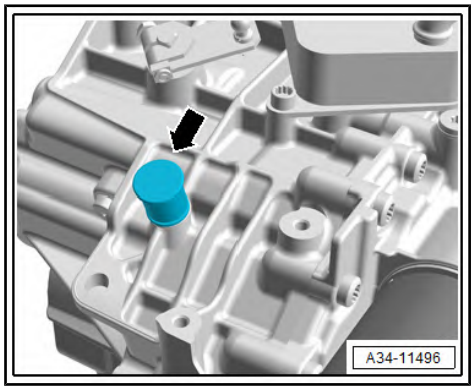
– Remove air filter housing ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing .

– Lift off ventilator -1- (if fitted) with breather hose from the lock -arrow- on the battery tray -3-.



- If the bleed hose is withdrawn from the exhaust pipe of the gearbox, the exhaust pipe must be sealed with a cap -arrow-.
- The cap should prevent dirt from entering the transmission.

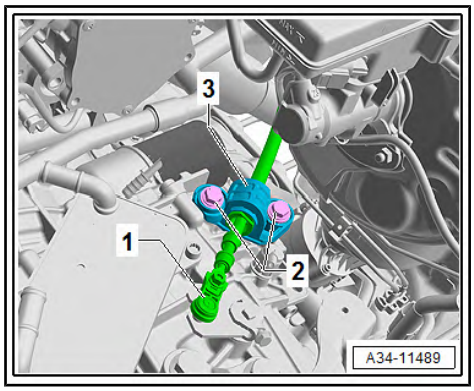
– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .



– Push ball socket -1- of selector lever control cable off the gearshift lever with the unlocking tool - T10236- .

– Unscrew screws -2- of the cable support for selector lever control cable and place to one side.

- Do not bend or buckle selector lever control cable.



CAUTION

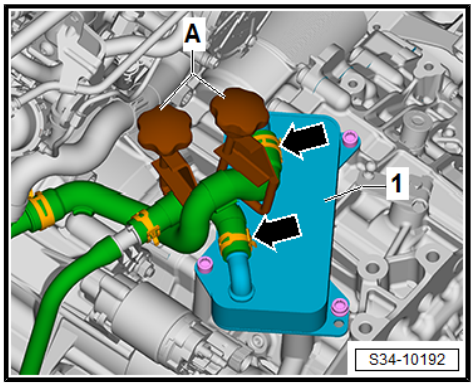
There is overpressure in the cooling system when the engine is at normal operating temperature.

There is a risk of injury from hot coolant or hot steam.

– Slowly open the cap of the compensation bottle, in order to first reduce pressure before pulling off the coolant hoses.

- Do not place fluffing cloths on the gearbox oil cooler and the gearbox, in order to collect flowing out coolant.
- Mark the coolant hoses to the gearbox oil cooler in order to prevent interchanging when installing.

– Clamp off the coolant hoses with the hose clamps - MP7-602 (3094)- -A-.
– Slacken hose clamps -arrows- and remove hoses from gearbox oil cooler.
– Close gearbox oil cooler with a clean plug e.g. from the plug set - VAS 6122- .
– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter .



NOTICE

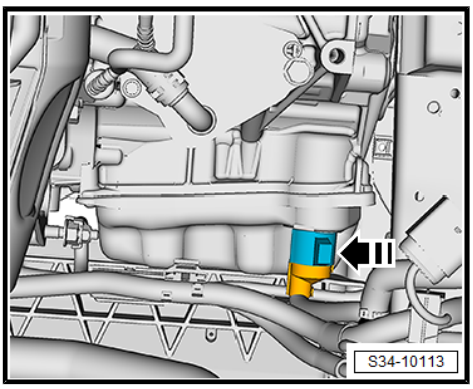
There is a risk of destruction of the dual clutch gearbox mechatronics - J743- .

Static discharges may destroy the control unit and the mechatronics.

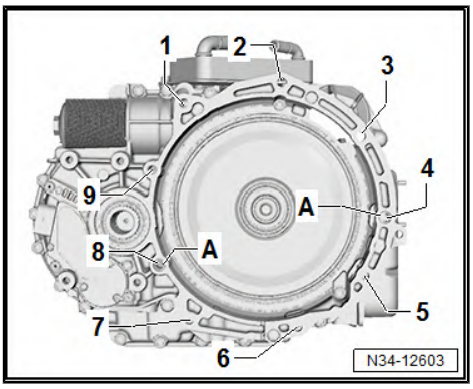
– Do not in any circumstances allow the gearbox plug contacts to come into contact with your hands.

– Grab with the hand (without gloves) at the mass, in order to discharge yourself electrostatically.

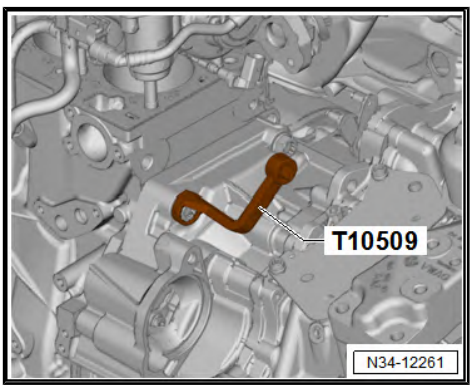
– Turn the cap in -direction of arrow- and disconnect electrical plug connection from the dual clutch gearbox mechatronics - J743- .
• Lay the electric cables to the side.



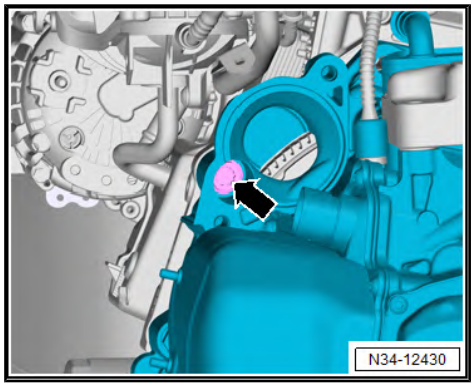
– Remove connecting screws for the top engine/gearbox -1-, -2- and -3-.



The screws -1- and -2- (previous figure N34–12603) can be removed with an insertion tool - T10509- .



The screw -3- (previous figure N34–12603) is located in the starter opening -arrow- and can be removed with plug insert XZN 14 - T10061- .



– Remove the sound dampening system ⇒ General body repairs, exterior ; Rep. gr. 66 ; Noise insulation .

– Remove the front left and right wheelhouse liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheelhouse liner; removing and installing front wheelhouse liner .

Supporting the engine/gearbox assembly

- To fit the supporting device , the cross member must be detached on the right side of the vehicle.

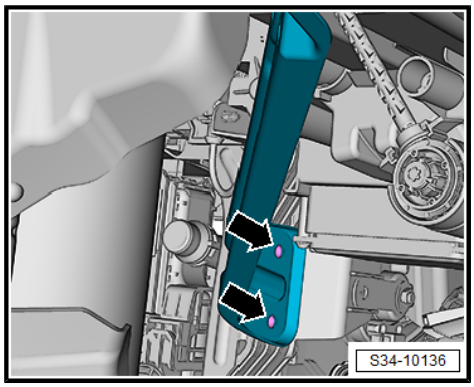
The member is located in the area underneath the right wheelhouse liner.

Detaching the cross member creates a space to fit the spindle - T40093/3- with adapter - T40093/3-6- or -T40093/3-6A- for the supporting device .

– Remove the front right wheelhouse liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheelhouse liner; Removing and installing the front wheelhouse liner .

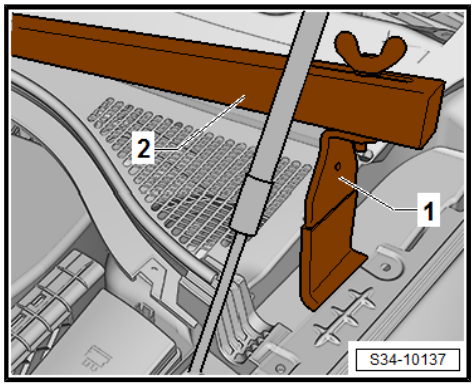
– Unscrew screws -arrows- and detach the cross member from the front wall.

- If hose and cable connections are located in the area of the lifting eyes of the engine for the supporting device , these must now be removed.



– Fit the adapter - 10-222A/29- -1- to the body under the wing plate on both sides of the vehicle, as shown.

- Adapter with symbol “L” is installed on the “right” side of the vehicle.
- Adapter with symbol “R” is installed on the “left” side of the vehicle.
- The arrow shows the direction of travel on each side.



– Assemble the interceptor - MP9-200 (10-222A)- or -10-222B- together with the other elements as shown in the figure.

A - Adapter - 10-222A/29-

B - Interceptor - MP9-200 (10-222A)- or -10-222B-

C - Spindle - T40093/3-

D - Carrier part - T40091/1-

E - Connecting crosspiece - T40091/3-

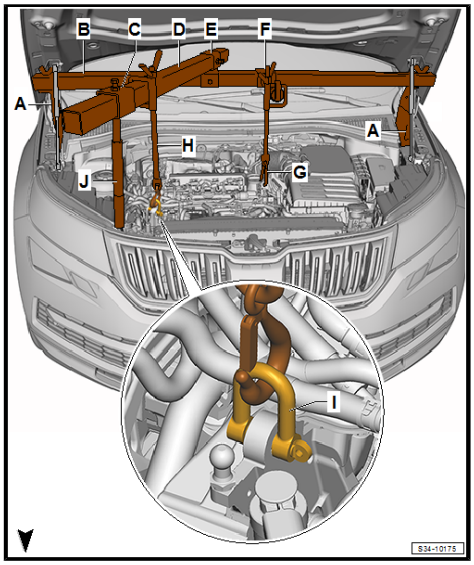
F - Adapter - MP9-200/18 (10-222A/18)-

G - Hook - MP9-200/10 (10-222A/10)-

H - Hook - MP9-200/10 (10-222A/10)-

I - Shackle - 10-222A/12-

J - Adapter - T40093/3-6- or -T40093/3-6A-



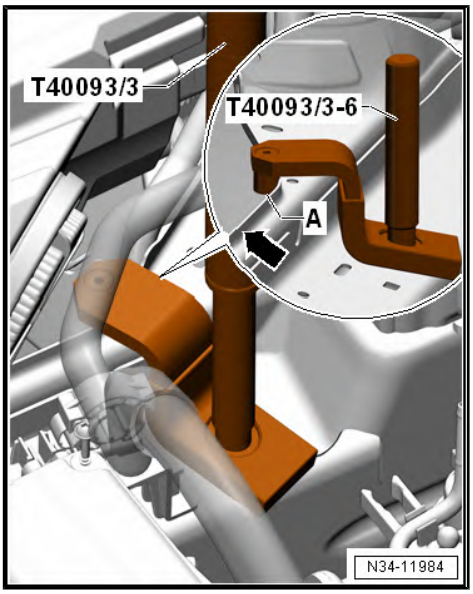
– Position adapter - T40093/3-6- or -T40093/3-6A- on the frame side rail as shown.

• The adapter - T40093/3-6- or -T40093/3-6A- must be secured by bolt -A- to the flange of the frame side rail -arrow-.

• Connect adapter - T40093/3-6- or -T40093/3-6A- to the spindle - T40093/3- of the supporting device and pre-tension supporting device using the assembled spindle.

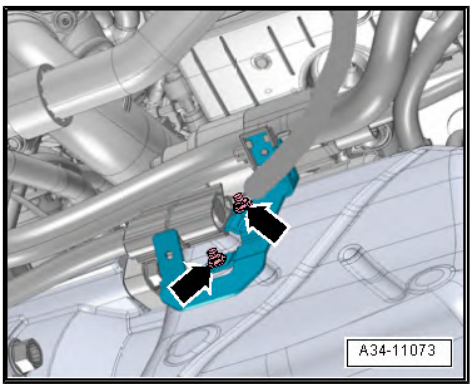
– Slightly pre-tension the engine/gearbox unit via the spindles of the interceptor (do not raise).

– Remove assembly carrier without steering gear ⇒ Chassis, axles, steering; Rep. gr. 40 ; Removing and installing assembly carrier without steering gear .



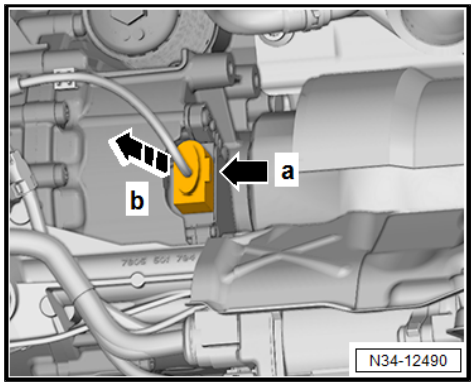
– Unscrew the nuts -arrows- and remove the bracket for electric cables from the threaded bolts on the oil pan.

– Connect electric cables at the side in area of oil sump.



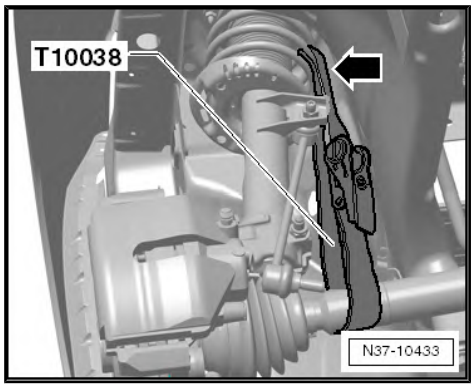
– Disconnect connector for auxiliary hydraulic pump 1 for gear oil - V475- .

– Remove the left and right propeller shafts from the flange shafts on the gearbox ⇒ Chassis, axles, steering; Rep. gr. 40 ; Propeller shaft; remove and install propeller shaft .



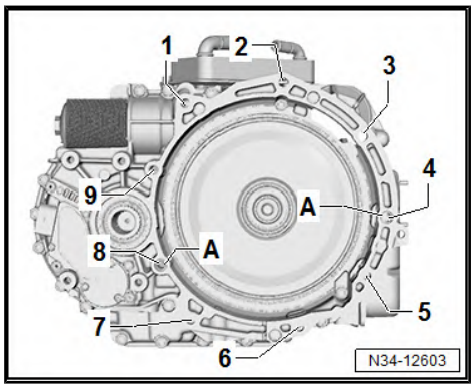
– Secure both drive shafts to the suspension strut with tensioning straps - T10038- .

• Ensure that the surface protection of the drive shafts is not damaged.

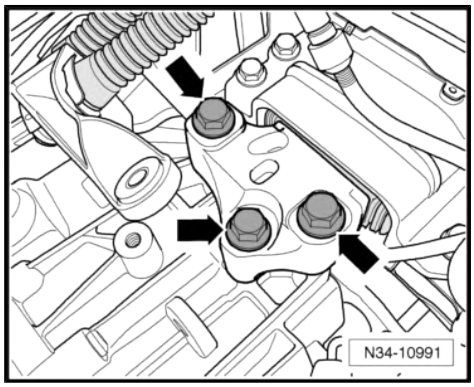


– Unscrew and remove bottom connecting bolts of engine/gearbox -4-, -5-, -6- and -7-.

• The last connecting screws -8- and -9- , which are screwed in from the engine side, can only be loosened and screwed in.



– Unscrew the screws -arrows- from the gearbox mount.



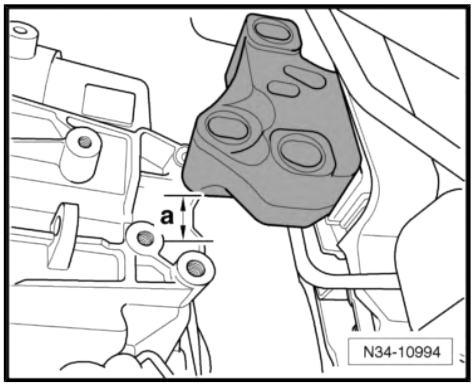
– Lower the engine/gearbox unit via the spindle of the supporting device by dimension -a-.

• Dimension -a- = approx. 90 mm

– Place the gearbox mount - 3282- onto engine/gearbox jack , e.g. -V.A.G 1383A- or -VAS 6931- .

– Position the engine / gearbox jack below the vehicle with the gearbox mount - 3282- .

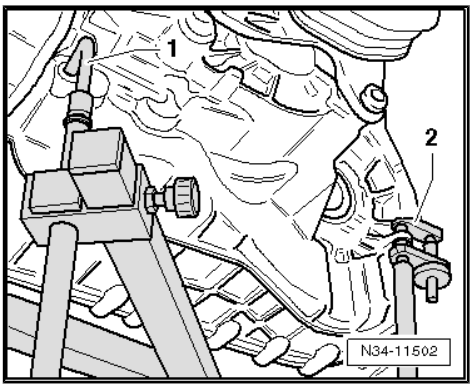
– Align the gearbox mount - 3282- parallel to the gearbox.



– Place the individual elements of the gearbox mount - 3282- to the gearbox, as shown in the figure.

– Insert the fixing hook -1- into the bore on the gearbox housing (next to the oil drain plug for mechatronics).

– Put circlip -2- in the groove of the gearbox housing.



– Screw the bolt - 3282/34- into the threaded hole for the pendulum support and connect it to the gear holder - 3282- .

– Insert the fourth adapter (bolt) from below into the bore of the gearbox.

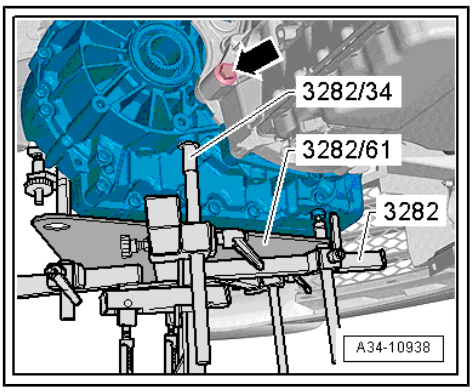
– Support the gearbox with engine / gearbox jack from underneath.

– Remove remaining engine/gearbox connecting screws.

– Press the gearbox out of the sleeves.

– Carefully separate the gearbox from the engine and lower slowly.

• Observe all lines and coolant hoses when lowering the gearbox.



Transport gearbox ⇒ “6 Transporting the gearbox”, page 217 .

Secure on assembly support
⇒ “7 Attachment at engine and gearbox mount”, page 218 .

4.2.9 Removing gearbox, Kodiaq, vehicles with diesel engine 2.0 TDI CR, front wheel drive

Special tools and workshop equipment required

♦ Release tool - T10236-

♦ Hose clamp - MP7-602 (3094)-

♦ Plug set , e.g. -VAS 6122-

♦ Insertion tool 18 mm - T10509-

♦ Socket insert XZN 14 - T10061-

♦ Interceptor - MP9-200 (10-222A)- or -10-222B-

- ♦ Adapter - 10-222A/29-
- ♦ Spindle - T40093/3-
- ♦ Carrier part - T40091/1-
- ♦ Clutch - T40091/3-
- ♦ Adapter - MP9-200/3 (10-222A/3)-
- ♦ Hook - MP9-200/10 (10-222A/10)- 2 units
- ♦ Shackle - 10-222A/12-
- ♦ Adapter - T40093/3-6- or -T40093/3-6A-
- ♦ Tensioning strap - T10038-
- ♦ Gearbox mount - 3282-
- ♦ Bolt - 3282/34-
- ♦ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS 6931-

• General repair information ⇒ “3 Repair instructions”, page 6 .

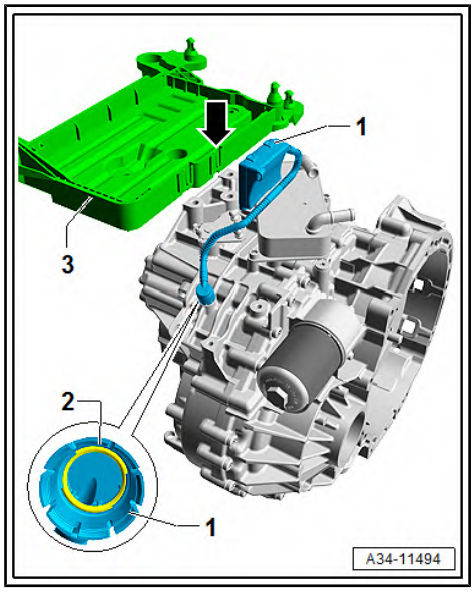
• All cable straps that are detached or cut when removing should be attached again in the same place when installing.

– Shift selector lever into position “P”.

– Remove the engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; removing and installing engine cover panel .

– Remove air filter housing ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing .

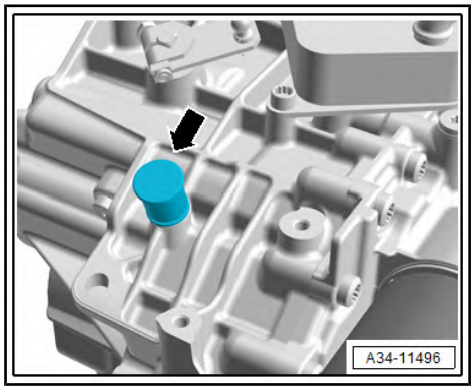
– Lift off ventilator -1- (if fitted) with breather hose from the lock -arrow- on the battery tray -3-.



• If the bleed hose is withdrawn from the exhaust pipe of the gearbox, the exhaust pipe must be sealed with a cap -arrow-.

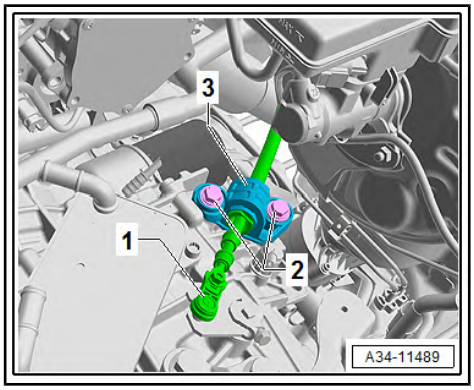
• The cap should prevent dirt from entering the transmission.

– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .



– Push ball socket -1- of selector lever control cable off the gearshift lever with the unlocking tool - T10236- .
– Unscrew screws -2- of the cable support for selector lever control cable and place to one side.

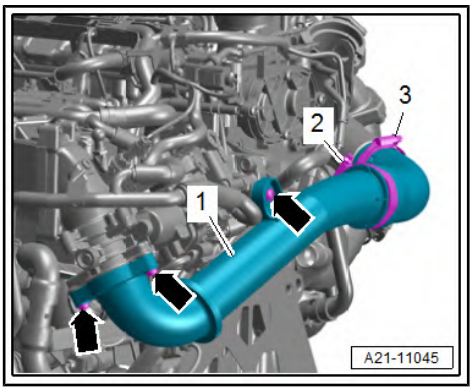
• Do not bend or buckle selector lever control cable.



– Remove screws -arrows-, release clamp -3- and remove charge air pipe.

Ignore clamp -2-.

– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter .



CAUTION

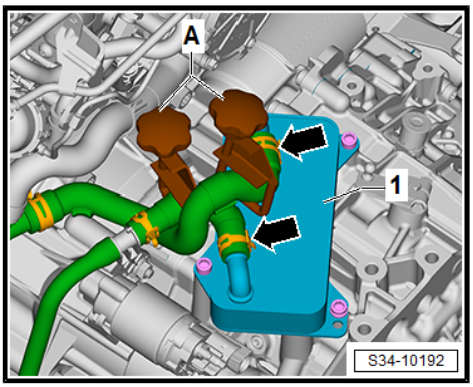
There is overpressure in the cooling system when the engine is at normal operating temperature.

There is a risk of injury from hot coolant or hot steam.

– Slowly open the cap of the compensation bottle, in order to first reduce pressure before pulling off the coolant hoses.

• Do not place fluffing cloths on the gearbox oil cooler and the gearbox, in order to collect flowing out coolant.
• Mark the coolant hoses to the gearbox oil cooler in order to prevent interchanging when installing.

– Clamp off the coolant hoses with the hose clamps - MP7-602 (3094)- -A-.
– Slacken hose clamps -arrows- and remove hoses from gearbox oil cooler.
– Close gearbox oil cooler with a clean plug e.g. from the plug set - VAS 6122- .



NOTICE

There is a risk of destruction of the dual clutch gearbox mechatronics - J743- .

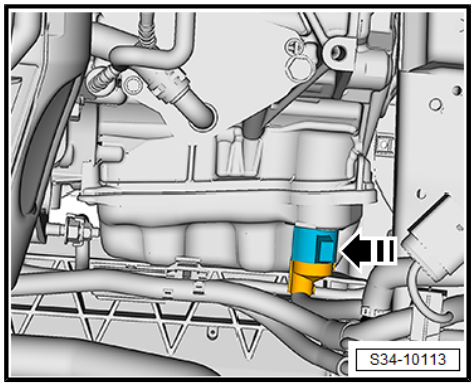
Static discharges may destroy the control unit and the mechatronics.

– Do not in any circumstances allow the gearbox plug contacts to come into contact with your hands.

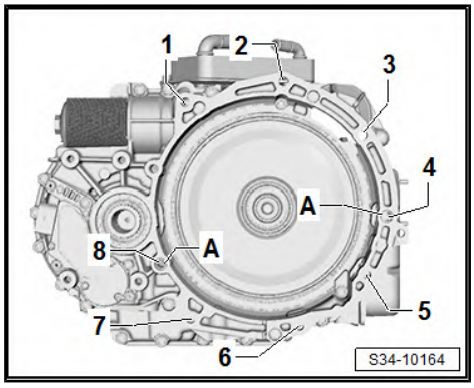
– Grab with the hand (without gloves) at the mass, in order to discharge yourself electrostatically.

– Turn the cap in -direction of arrow- and disconnect electrical plug connection from the dual clutch gearbox mechatronics -J743- .

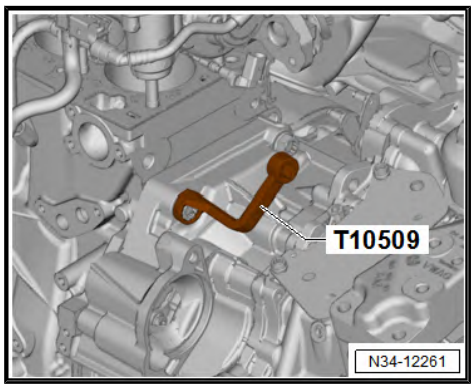
• Lay the electric cables to the side.



– Remove connecting screws for the top engine/gearbox -1-, -2- and -3-.



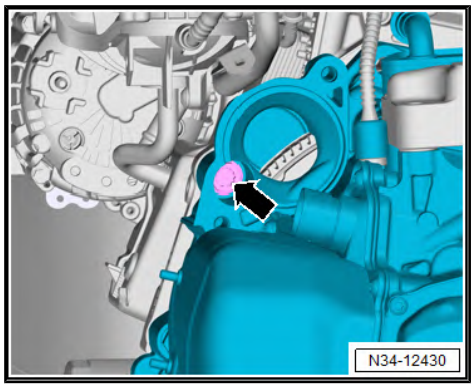
The screws -1- and -2- (previous figure N34–12603) can be removed with an insertion tool - T10509- .



The screw -3- (previous figure N34–12603) is located in the starter opening -arrow- and can be removed with plug insert XZN 14 - T10061- .

– Remove the sound dampening system ⇒ General body repairs, exterior ; Rep. gr. 66 ; Noise insulation .

– Remove the front left and right wheelhouse liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheelhouse liner; removing and installing front wheelhouse liner .



Supporting the engine/gearbox assembly

• To fit the supporting device , the cross member must be detached on the right side of the vehicle.

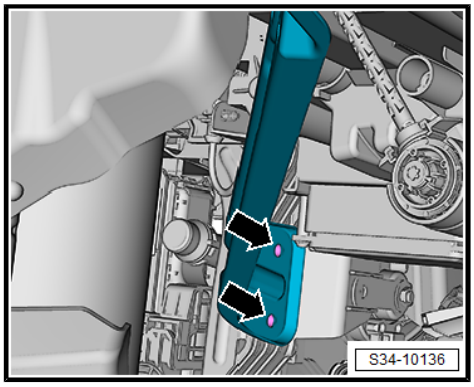
The member is located in the area underneath the right wheelhouse liner.

Detaching the cross member creates a space to fit the spindle - T40093/3- with adapter - T40093/3-6- or -T40093/3-6A- for the supporting device .

– Remove the front right wheelhouse liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheelhouse liner; Removing and installing the front wheelhouse liner .

– Unscrew screws -arrows- and detach the cross member from the front wall.

• If hose and cable connections are located in the area of the lifting eyes of the engine for the supporting device , these must now be removed.

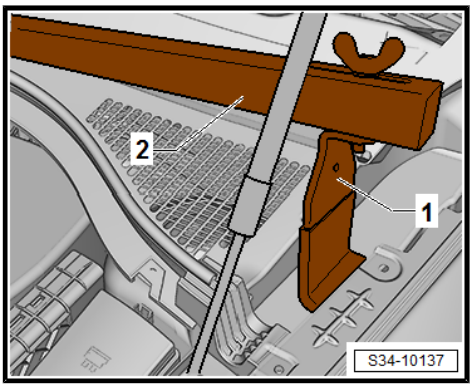


– Fit the adapter - 10-222A/29- -1- to the body under the wing plate on both sides of the vehicle, as shown.

• Adapter with symbol “L” is installed on the “right” side of the vehicle.

• Adapter with symbol “R” is installed on the “left” side of the vehicle.

• The arrow shows the direction of travel on each side.



– Assemble the interceptor - MP9-200 (10-222A)- or -10-222B- together with the other elements as shown in the figure.

A - Adapter - 10-222A/29-

B - Interceptor - MP9-200 (10-222A)- or -10-222B-

C - Spindle - T40093/3-

D - Carrier part - T40091/1-

E - Connecting crosspiece - T40091/3-

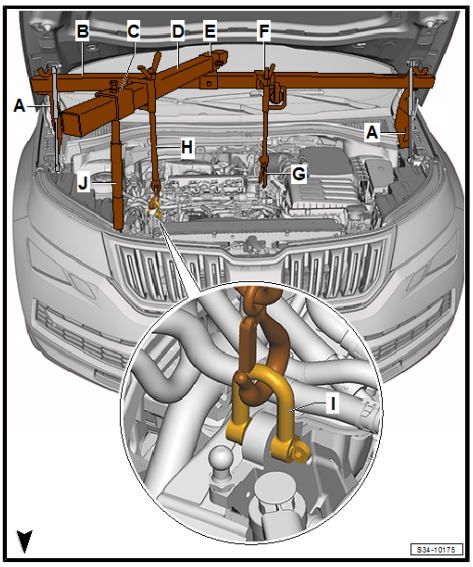
F - Adapter - MP9-200/3 (10-222A/3)-

G - Hook - MP9-200/10 (10-222A/10)-

H - Hook - MP9-200/10 (10-222A/10)-

I - Shackle - 10-222A/12-

J - Adapter - T40093/3-6- or -T40093/3-6A-



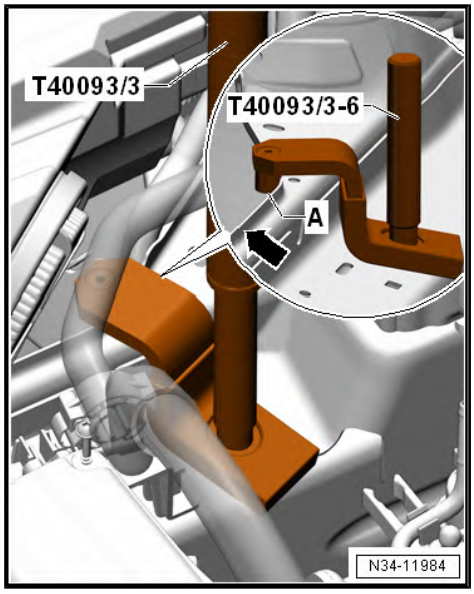
– Position adapter - T40093/3-6- or -T40093/3-6A- on the frame side rail as shown.

• The adapter - T40093/3-6- or -T40093/3-6A- must be secured by bolt -A- to the flange of the frame side rail -arrow-.

• Connect adapter - T40093/3-6- or -T40093/3-6A- to the spindle - T40093/3- of the supporting device and pre-tension supporting device using the assembled spindle.

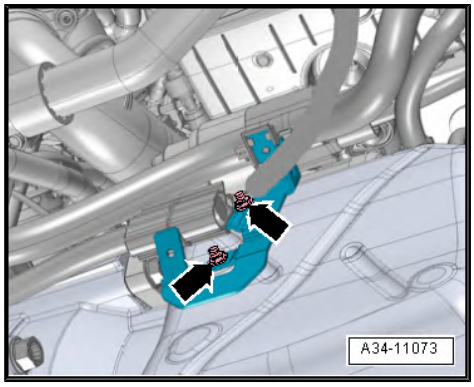
– Slightly pre-tension the engine/gearbox unit via the spindles of the interceptor (do not raise).

– Remove assembly carrier without steering gear ⇒ Chassis, axles, steering; Rep. gr. 40 ; Removing and installing assembly carrier without steering gear .



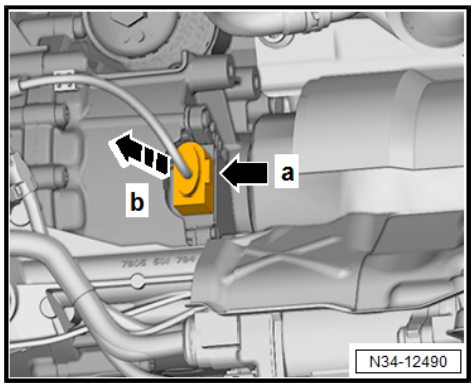
– Unscrew the nuts -arrows- and remove the bracket for electric cables from the threaded bolts on the oil pan.

– Connect electric cables at the side in area of oil sump.



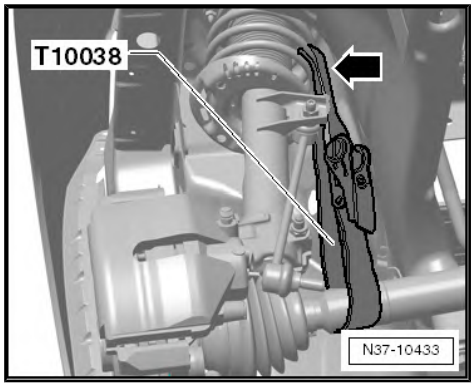
– Disconnect connector for auxiliary hydraulic pump 1 for gear oil - V475- .

– Remove the left and right propeller shafts from the flange shafts on the gearbox ⇒ Chassis, axles, steering; Rep. gr. 40 ; Propeller shaft; remove and install propeller shaft .



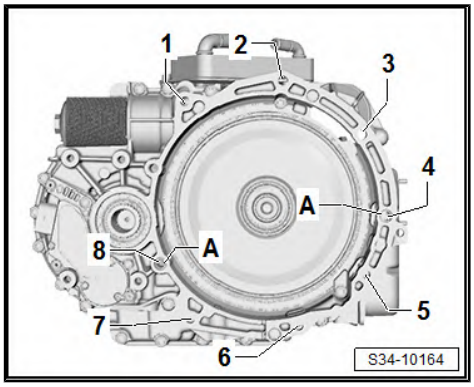
– Secure both drive shafts to the suspension strut with tensioning straps - T10038- .

• Ensure that the surface protection of the drive shafts is not damaged.

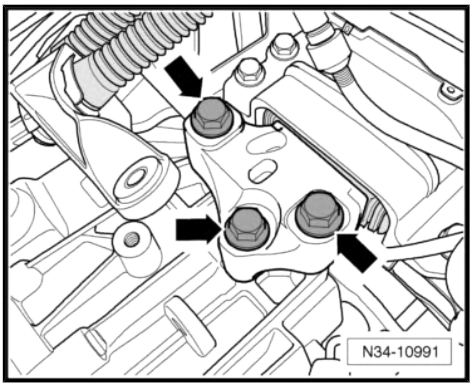


– Unscrew and remove bottom connecting bolts of engine/gearbox -4-, -5-, -6- and -7-.

• The last connecting -screw 8-, which is screwed in from the engine side, can only be loosened and screwed in.



– Unscrew the screws -arrows- from the gearbox mount.



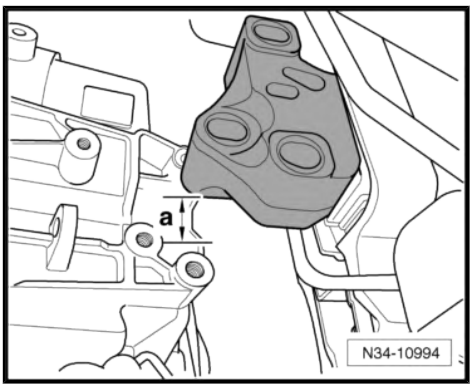
– Lower the engine/gearbox unit via the spindle of the supporting device by dimension -a-.

• Dimension -a- = approx. 90 mm

– Place the gearbox mount - 3282- onto engine/gearbox jack , e.g. -V.A.G 1383A- or -VAS 6931- .

– Position the engine / gearbox jack below the vehicle with the gearbox mount - 3282- .

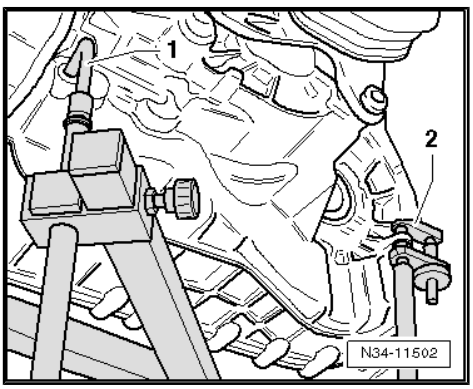
– Align the gearbox mount - 3282- parallel to the gearbox.



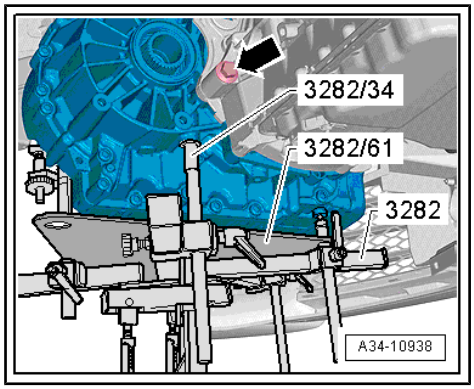
– Place the individual elements of the gearbox mount - 3282- to the gearbox, as shown in the figure.

– Insert the fixing hook -1- into the bore on the gearbox housing (next to the oil drain plug for mechatronics).

– Put circlip -2- in the groove of the gearbox housing.



– Screw the bolt - 3282/34- into the threaded hole for the pendulum support and connect it to the gear holder - 3282- .
– Insert the fourth adapter (bolt) from below into the bore of the gearbox.
– Support the gearbox with engine / gearbox jack from underneath.
– Remove remaining engine/gearbox connecting bolt.
– Press the gearbox out of the sleeves.
– Carefully separate the gearbox from the engine and lower slowly.
• Observe all lines and coolant hoses when lowering the gearbox.



Transport gearbox ⇒ “6 Transporting the gearbox”, page 217 .

Secure on assembly support
⇒ “7 Attachment at engine and gearbox mount”, page 218 .

4.2.10 Removing the gearbox , Karoq, vehicles with 1.5 l TSI petrol engines, four-wheel drive

Special tools and workshop equipment required

♦ Release tool - T10236-
♦ Hose clamp - MP7-602 (3094)-
♦ Plug set , e.g. -VAS 6122-
♦ Insertion tool 18 mm - T10509-
♦ Socket insert XZN 14 - T10061-
♦ Interceptor - MP9-200 (10-222A)- or -10-222B-
♦ Adapter - 10-222A/29-
♦ Spindle - T40093/3-
♦ Carrier part - T40091/1-
♦ Clutch - T40091/3-
♦ Adapter - MP9-200/18 (10-222A/18)-
♦ Hook - MP9-200/10 (10-222A/10)- 2 units
♦ Shackle - 10-222A/12-
♦ Adapter - T40093/3-6- or -T40093/3-6A-
♦ Tensioning strap - T10038-
♦ Gearbox mount - 3282-
♦ Bolt - 3282/34-
♦ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS 6931-
• General repair information ⇒ “3 Repair instructions”, page 6 .
• All cable straps that are detached or cut when removing should be attached again in the same place when installing.

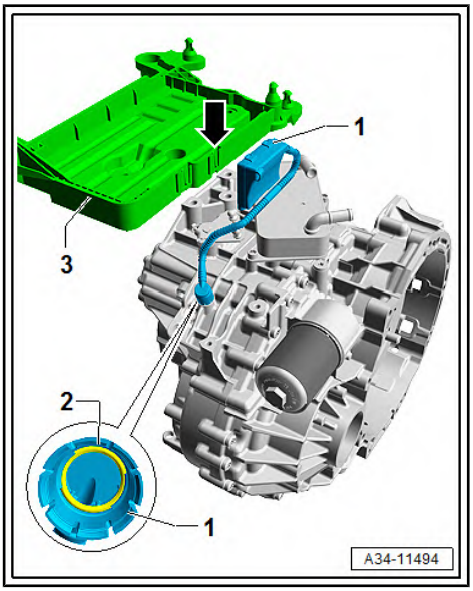
For vehicles with four-wheel drive, switch the selector lever to position “N” so that it is then possible to turn using the propshaft when loosening.

– Shift selector lever to position “N”.

– Remove the engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; removing and installing engine cover panel .

– Remove air filter housing ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing .

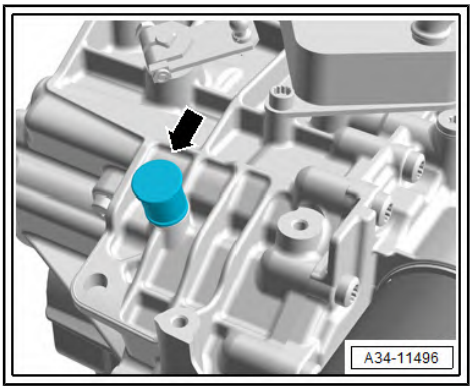
– Lift off ventilator -1- (if fitted) with breather hose from the lock -arrow- on the battery tray -3-.



• If the bleed hose is withdrawn from the exhaust pipe of the gearbox, the exhaust pipe must be sealed with a cap -arrow-.

• The cap should prevent dirt from entering the transmission.

– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .

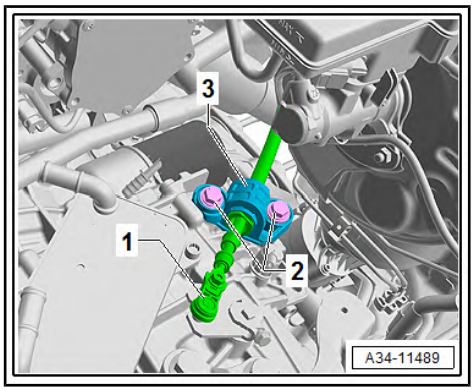


– Push ball socket -1- of selector lever control cable off the gearshift lever with the unlocking tool - T10236- .

– Unscrew screws -2- of the cable support for selector lever control cable and place to one side.

• Do not bend or buckle selector lever control cable.

– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter .



⚠ CAUTION

There is overpressure in the cooling system when the engine is at normal operating temperature.

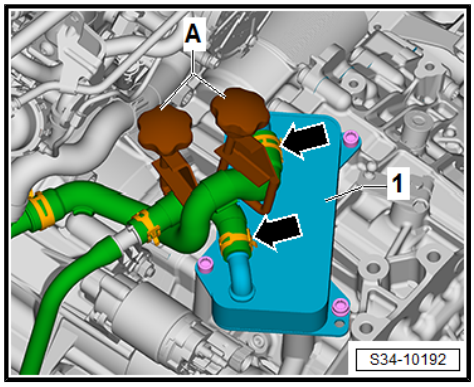
There is a risk of injury from hot coolant or hot steam.

– Slowly open the cap of the compensation bottle, in order to first reduce pressure before pulling off the coolant hoses.

• Do not place fluffing cloths on the gearbox oil cooler and the gearbox, in order to collect flowing out coolant.

• Mark the coolant hoses to the gearbox oil cooler in order to prevent interchanging when installing.

– Clamp off the coolant hoses with the hose clamps - MP7-602 (3094)- -A-.
– Slacken hose clamps -arrows- and remove hoses from gearbox oil cooler.
– Close gearbox oil cooler with a clean plug e.g. from the plug set - VAS 6122- .



NOTICE

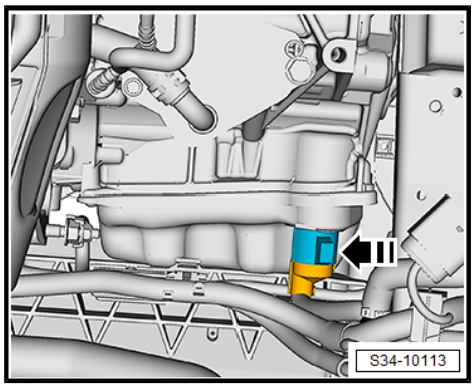
There is a risk of destruction of the dual clutch gearbox mechatronics - J743- .

Static discharges may destroy the control unit and the mechatronics.

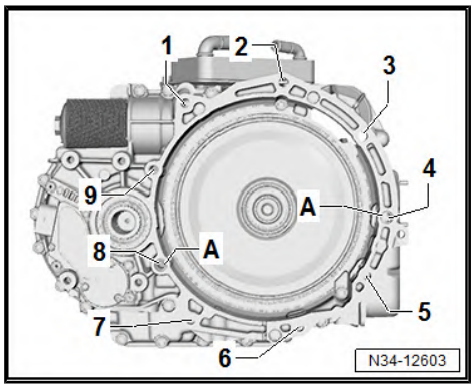
– Do not in any circumstances allow the gearbox plug contacts to come into contact with your hands.

– Grab with the hand (without gloves) at the mass, in order to discharge yourself electrostatically.

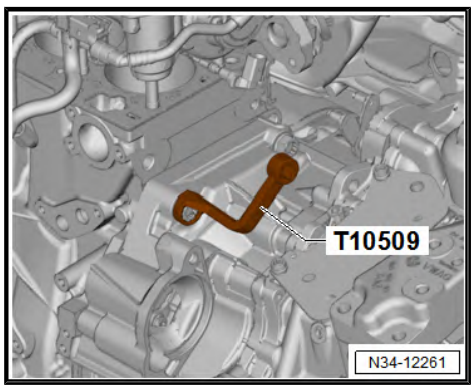
– Turn the cap in -direction of arrow- and disconnect electrical plug connection from the dual clutch gearbox mechatronics - J743- .
• Lay the electric cables to the side.



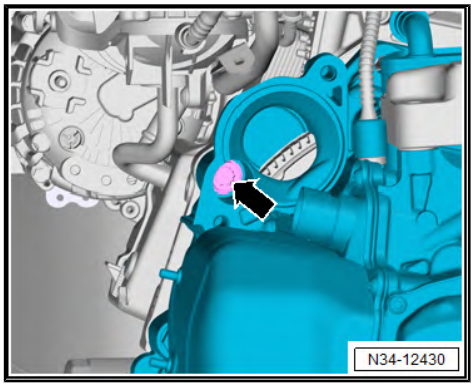
– Remove connecting screws for the top engine/gearbox -1-, -2- and -3-.



The screws -1- and -2- (previous figure N34–12603) can be removed with an insertion tool - T10509- .



The screw -3- (previous figure N34–12603) is located in the starter opening -arrow- and can be removed with plug insert XZN 14 - T10061- .



– Remove the sound dampening system ⇒ General body repairs, exterior ; Rep. gr. 66 ; Noise insulation .
– Remove the front left and right wheelhouse liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheelhouse liner; removing and installing front wheelhouse liner .

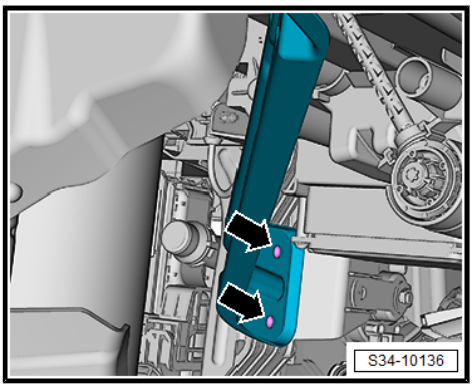
Supporting the engine/gearbox assembly

- To fit the supporting device , the cross member must be detached on the right side of the vehicle.

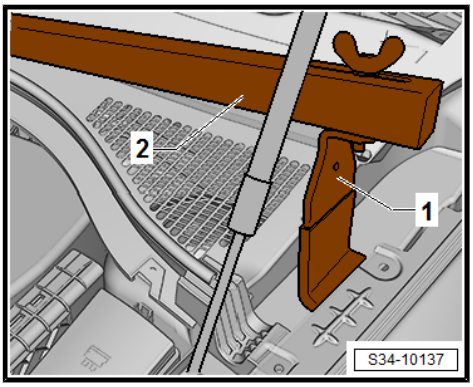
The member is located in the area underneath the right wheelhouse liner.

Detaching the cross member creates a space to fit the spindle - T40093/3- with adapter - T40093/3-6- or -T40093/3-6A- for the supporting device .

– Unscrew screws -arrows- and detach the cross member from the front wall.
- If hose and cable connections are located in the area of the lifting eyes of the engine for the supporting device , these must now be removed.



– Fit the adapter - 10-222A/29- -1- to the body under the wing plate on both sides of the vehicle, as shown.
- Adapter with symbol “L” is installed on the “right” side of the vehicle.
- Adapter with symbol “R” is installed on the “left” side of the vehicle.
- The arrow shows the direction of travel on each side.



– Assemble the interceptor - MP9-200 (10-222A)- or -10-222B- together with the other elements as shown in the figure.

A - Adapter - 10-222A/29-

B - Interceptor - MP9-200 (10-222A)- or -10-222B-

C - Spindle - T40093/3-

D - Carrier part - T40091/1-

E - Connecting crosspiece - T40091/3-

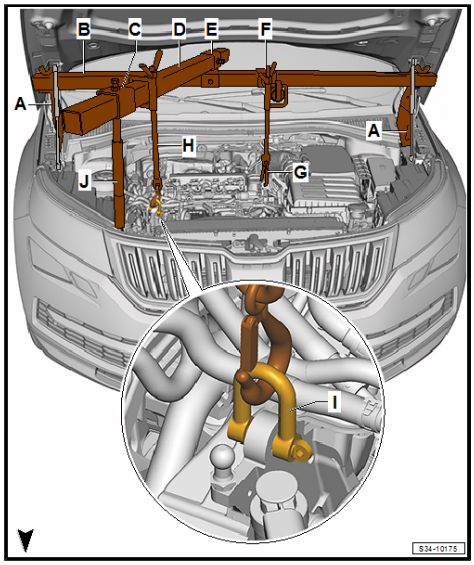
F - Adapter - MP9-200/18 (10-222A/18)-

G - Hook - MP9-200/10 (10-222A/10)-

H - Hook - MP9-200/10 (10-222A/10)-

I - Shackle - 10-222A/12-

J - Adapter - T40093/3-6- or -T40093/3-6A-



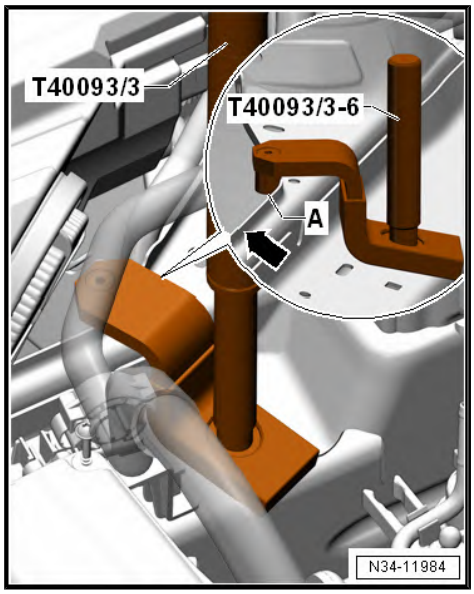
– Position adapter - T40093/3-6- or -T40093/3-6A- on the frame side rail as shown.

• The adapter - T40093/3-6- or -T40093/3-6A- must be secured by bolt -A- to the flange of the frame side rail -arrow-.

• Connect adapter - T40093/3-6- or -T40093/3-6A- to the spindle - T40093/3- of the supporting device and pre-tension supporting device using the assembled spindle.

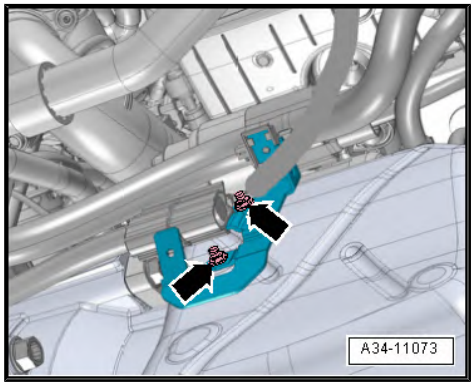
– Slightly pre-tension the engine/gearbox unit via the spindles of the interceptor (do not raise).

– Remove assembly carrier without steering gear ⇒ Chassis, axles, steering; Rep. gr. 40 ; Removing and installing assembly carrier without steering gear .

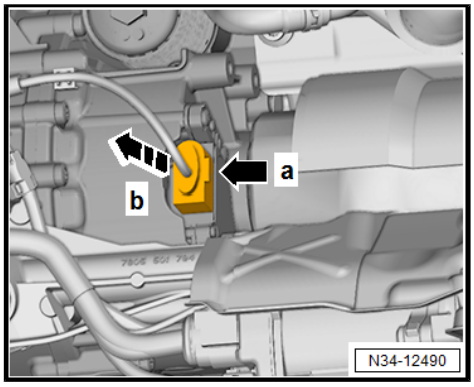


– Unscrew the nuts -arrows- and remove the bracket for electric cables from the threaded bolts on the oil pan.

– Connect electric cables at the side in area of oil sump.

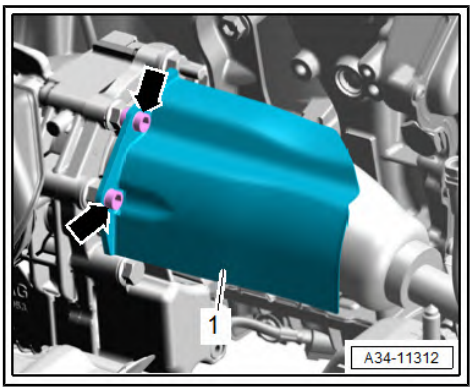


– Disconnect connector for auxiliary hydraulic pump 1 for gear oil - V475- .



– Unscrew nuts -arrows- and remove heat shield for right drive shaft.

– Remove the left and right propeller shafts from the flange shafts on the gearbox ⇒ Chassis, axles, steering; Rep. gr. 40 ; Propeller shaft; remove and install propeller shaft .

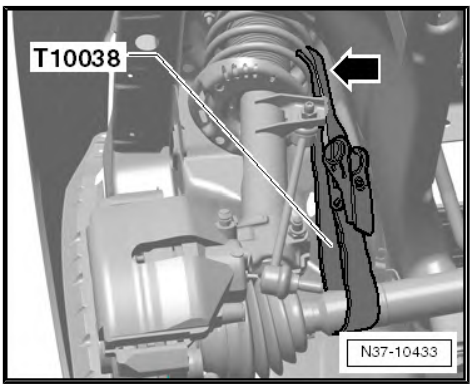


– Secure both drive shafts to the suspension strut with tensioning straps - T10038- .

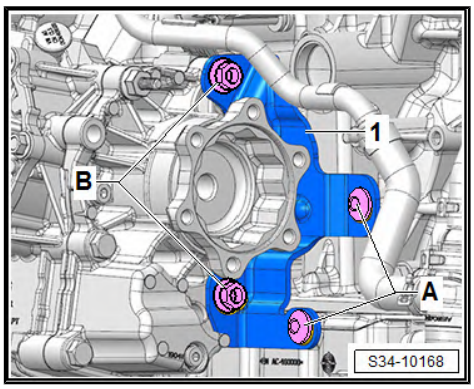
• Ensure that the surface protection of the drive shafts is not damaged.

– Remove propshaft from angle gearbox ⇒ Propeller shaft and rear final drive; Rep. gr. 39 ; Propeller shaft; remove and install propeller shaft .

– Tie the propshaft to the top so as not to damage paint damage on the surface of the propshaft.

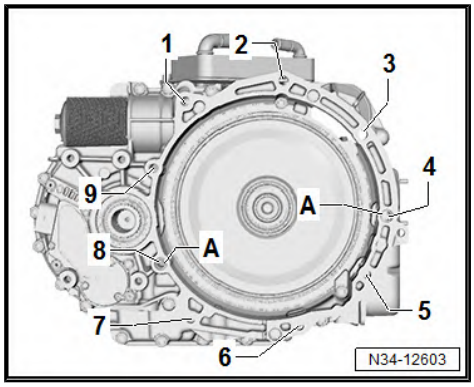


– Unscrew screws -A- and -B- and remove bracket for angle gearbox.

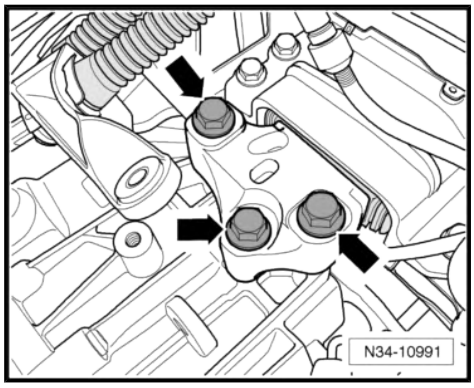


– Unscrew and remove bottom connecting bolts of engine/gearbox -4-, -5-, -6- and -7-.

• The last connecting screws -8- and -9- , which are screwed in from the engine side, can only be loosened and screwed in.



– Unscrew the screws -arrows- from the gearbox mount.



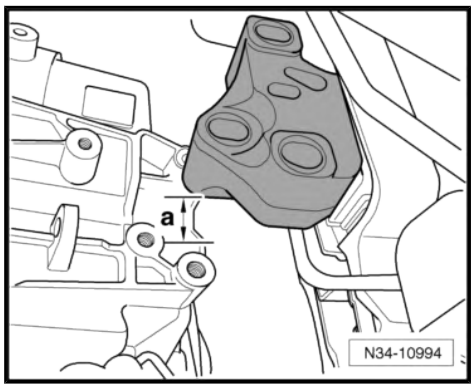
– Lower the engine/gearbox unit via the spindle of the supporting device by dimension -a-.

• Dimension -a- = approx. 90 mm

– Position gearbox mount - 3282- on the engine/gearbox jack - V.A.G 1383A- .

– Position the engine/gearbox jack -V.A.G 1383A- or -VAS 6931- below the vehicle using the gearbox mount - 3282- .

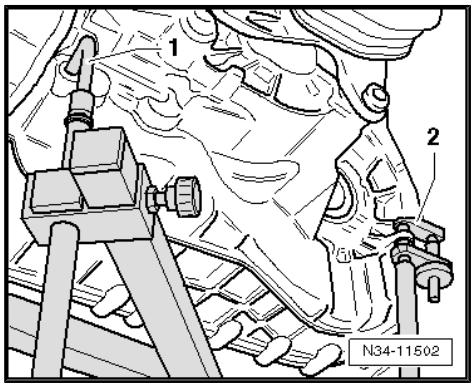
– Align the gearbox mount - 3282- parallel to the gearbox.



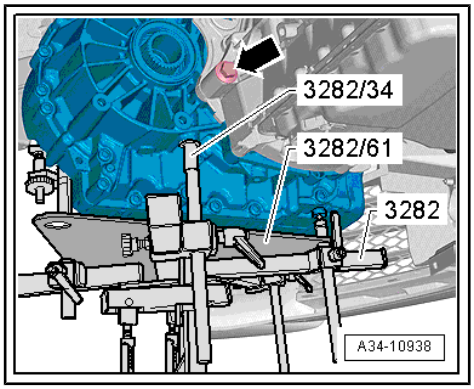
– Place the individual elements of the gearbox mount - 3282- to the gearbox, as shown in the figure.

– Insert the fixing hook -1- into the bore on the gearbox housing (next to the oil drain plug for mechatronics).

– Put circlip -2- in the groove of the gearbox housing.



– Screw the bolt - 3282/34- into the threaded hole for the pendulum support and connect it to the gear holder - 3282- .
– Insert the fourth adapter (bolt) from below into the bore of the gearbox.
– Support the gearbox with engine / gearbox jack from underneath.
– Remove remaining engine/gearbox connecting screws.
– Press the gearbox out of the sleeves.
– Carefully separate the gearbox from the engine and lower slowly.
• Observe all lines and coolant hoses when lowering the gearbox.



Transport gearbox ⇒ “6 Transporting the gearbox”, page 217 .

Secure on assembly support
⇒ “7 Attachment at engine and gearbox mount”, page 218 .

4.2.11 Removing the gearbox , Kodiaq, vehicles with 2.0 l TFSI petrol engines, all-wheel drive

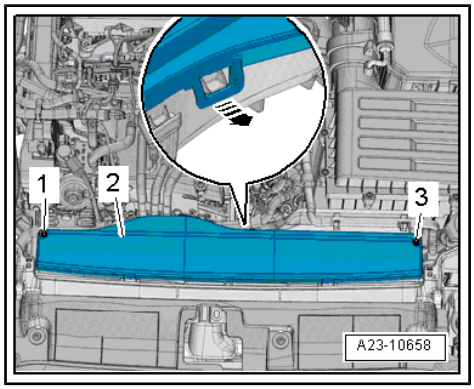
Special tools and workshop equipment required

♦ Release tool - T10236-
♦ Hose clamp - MP7-602 (3094)-
♦ Plug set , e.g. -VAS 6122-
♦ Insertion tool 18 mm - T10509-
♦ Socket insert XZN 14 - T10061-
♦ Interceptor - MP9-200 (10-222A)- or -10-222B-
♦ Adapter - 10-222A/29-
♦ Spindle - T40093/3-
♦ Carrier part - T40091/1-
♦ Clutch - T40091/3-
♦ Adapter - MP9-200/18 (10-222A/18)-
♦ Hook - MP9-200/10 (10-222A/10)- 2 units
♦ Shackle - 10-222A/12-
♦ Adapter - T40093/3-6- or -T40093/3-6A-
♦ Tensioning strap - T10038-
♦ Gearbox mount - 3282-
♦ Bolt - 3282/34-
♦ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS 6931-
• General repair information ⇒ “3 Repair instructions”, page 6 .
• All cable straps that are detached or cut when removing should be attached again in the same place when installing.

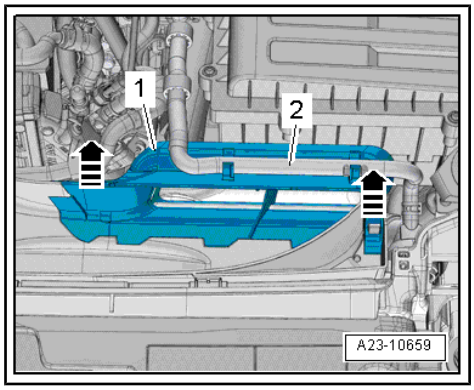
For vehicles with four-wheel drive, switch the selector lever to position “N” so that it is then possible to turn using the propshaft when loosening.

– Shift selector lever to position “N”.

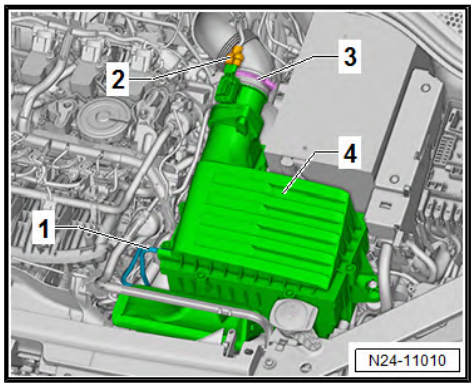
– Remove the engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; removing and installing engine cover panel .
– Remove screws -1- and -3-.
– Unlock safety strap -arrow- and remove intake cover -2- .



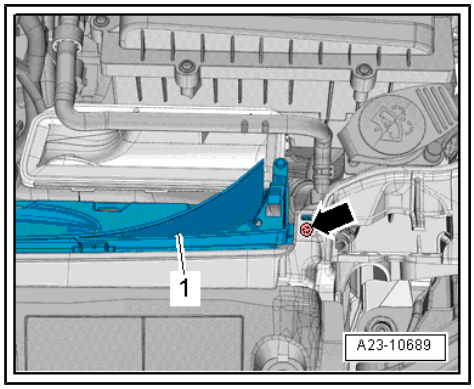
– Remove coolant hose -2- from the clamps on the intake manifold.
– Unlock safety strap -arrows- and remove the air guide pipe top -1-.



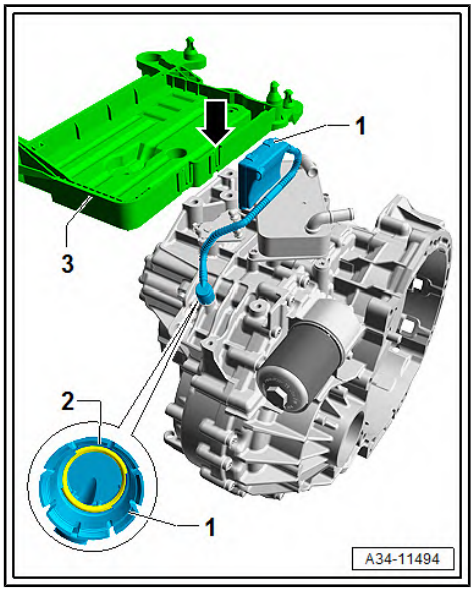
– Detach vacuum hose -1- from air filter housing.
– Unplug connector -2- for air mass meter - G70- .
– Release hose clamp -3- and remove air duct.
– Undo the air filter housing -4- from the rubber bolts and remove it upwards.



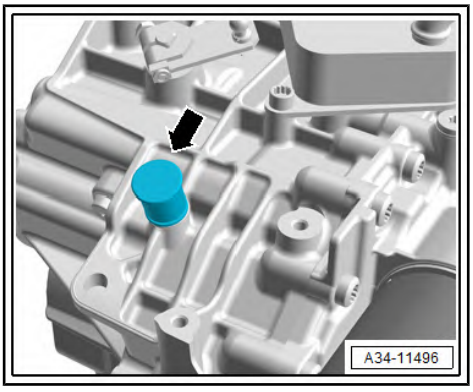
– Remove screw left and right -arrow-.
– Unclip and remove the air guide pipe bottom -1-.



– Lift off ventilator -1- (if fitted) with breather hose from the lock -arrow- on the battery tray -3-.

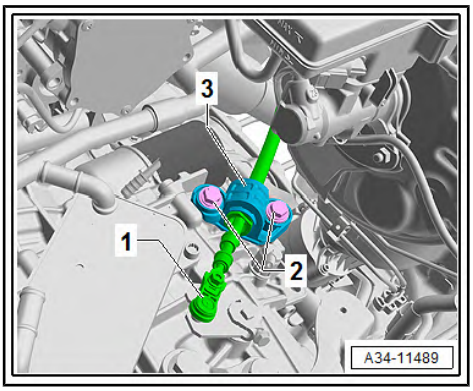


- If the bleed hose is withdrawn from the exhaust pipe of the gearbox, the exhaust pipe must be sealed with a cap -arrow-.
- The cap should prevent dirt from entering the transmission.



– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .
– Remove the plenum panel cover ⇒ External body repairs; Rep. gr. 50 ; Bulkhead; Assembly overview - plenum panel cover .

– Push ball socket -1- of selector lever control cable off the gearshift lever with the unlocking tool - T10236- .
– Unscrew screws -2- of the cable support for selector lever control cable and place to one side.
- Do not bend or buckle selector lever control cable.



NOTICE

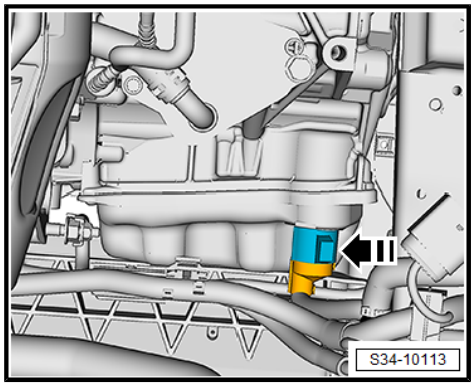
There is a risk of destruction of the dual clutch gearbox mechatronics - J743- .

Static discharges may destroy the control unit and the mechatronics.

– Do not in any circumstances allow the gearbox plug contacts to come into contact with your hands.

– Grab with the hand (without gloves) at the mass, in order to discharge yourself electrostatically.

– Turn the cap in -direction of arrow- and disconnect electrical plug connection from the dual clutch gearbox mechatronics - J743- .



• Lay the electric cables to the side.

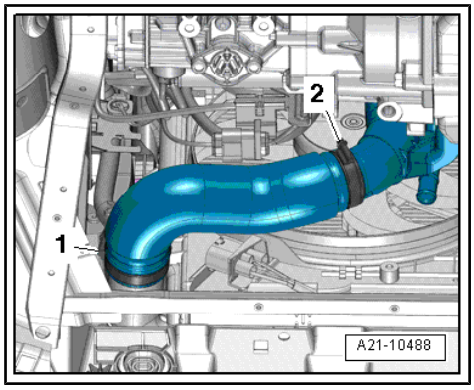
– Disconnect earth lead from lower starter bolt.

– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter .

– Remove the sound dampening system ⇒ General body repairs, exterior ; Rep. gr. 66 ; Noise insulation .

– Remove the front left and right wheelhouse liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheelhouse liner; removing and installing front wheelhouse liner .

– Loosen hose clamps -1-, -2- and remove air guide hose from charge-air cooler.

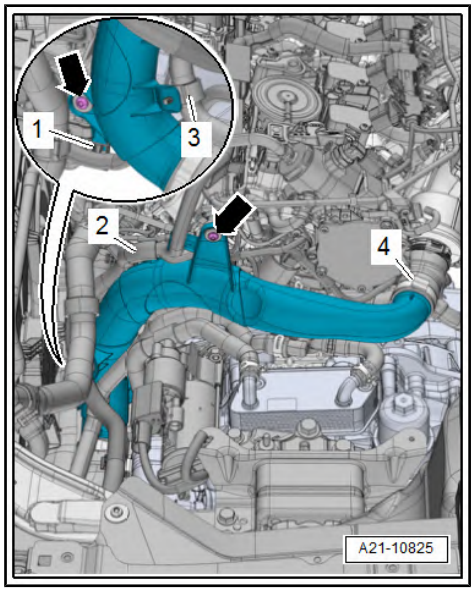


– Expose electric wiring harnesses -1- and -2- at the air guide pipe.

– Slacken screw clamp -4-.

– Remove screws -arrows- and remove the air guide pipe.

– Seal the open pipes with a clean plug from the plug set - VAS 6122- .



CAUTION

There is overpressure in the cooling system when the engine is at normal operating temperature.

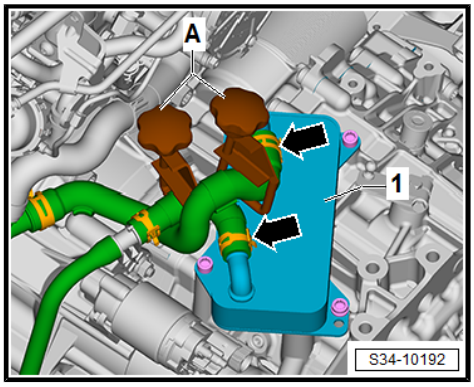
There is a risk of injury from hot coolant or hot steam.

– Slowly open the cap of the compensation bottle, in order to first reduce pressure before pulling off the coolant hoses.

• Do not place fluffing cloths on the gearbox oil cooler and the gearbox, in order to collect flowing out coolant.

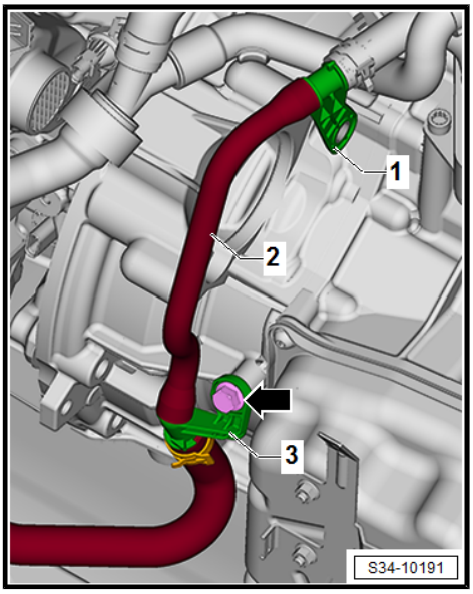
• Mark the coolant hoses to the gearbox oil cooler in order to prevent interchanging when installing.

– Clamp off the coolant hoses with the hose clamps - MP7-602 (3094)- -A-.
– Slacken hose clamps -arrows- and remove hoses from gearbox oil cooler -1-.
– Close gearbox oil cooler with a clean plug e.g. from the plug set - VAS 6122- .

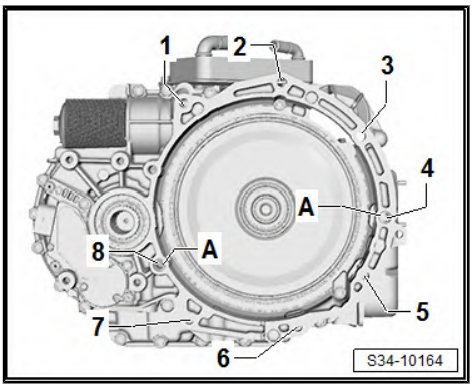


– Remove screw -arrow- on coolant tube holder -3-, detach tube -2- from gearbox and tie up to one side.

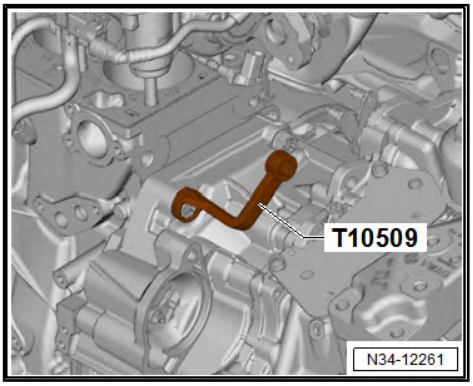
The other holder for coolant tube -1- has already been detached when the starter was previous removed.



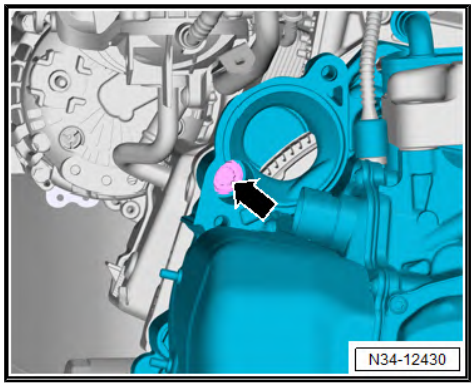
– Remove connecting screws for the top engine/gearbox -1-, -2- and -3-.



The screws -1- and -2- (previous figure S34–10164) can be removed with an insertion tool - T10509- .



The screw -3- (previous figure S34–10164) is located in the starter opening -arrow- and can be removed with plug insert XZN 14 - T10061- .



Supporting the engine/gearbox assembly

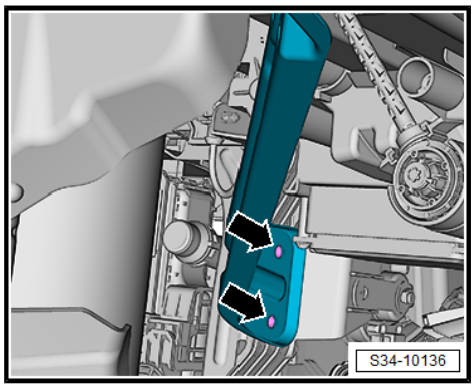
- To fit the supporting device , the cross member must be detached on the right side of the vehicle.

The member is located in the area underneath the right wheelhouse liner.

Detaching the cross member creates a space to fit the spindle - T40093/3- with adapter - T40093/3-6- or for the supporting device - T40093/3-6A- .

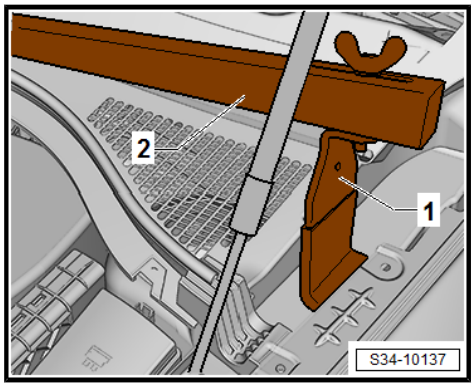
– Remove the front right wheelhouse liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheelhouse liner; Removing and installing the front wheelhouse liner .

– Unscrew screws -arrows- and detach the cross member from the front wall.



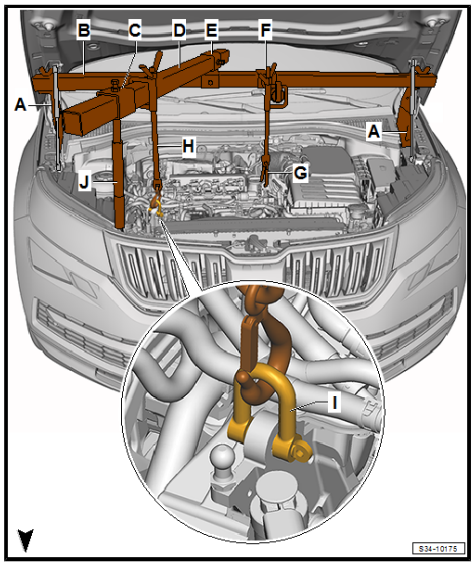
- If hose and cable connections are located in the area of the lifting eyes of the engine for the supporting device , these must now be removed.

– Fit the adapter - 10-222A/29- -1- to the body under the wing plate on both sides of the vehicle, as shown.



- Adapter with symbol “L” is installed on the “right” side of the vehicle.
- Adapter with symbol “R” is installed on the “left” side of the vehicle.
- The arrow shows the direction of travel on each side.

– Assemble the interceptor - MP9-200 (10-222A)- or -10-222B- together with the other elements as shown in the figure.



A - Adapter - 10-222A/29-

B - Interceptor - MP9-200 (10-222A)- or -10-222B-

C - Spindle - T40093/3-

D - Carrier part - T40091/1-

E - Connecting crosspiece - T40091/3-

F - Adapter - MP9-200/18 (10-222A/18)-

G - Hook - MP9-200/10 (10-222A/10)-

H - Hook - MP9-200/10 (10-222A/10)-

I - Shackle - 10-222A/12-

J - Adapter - T40093/3-6- or -T40093/3-6A-

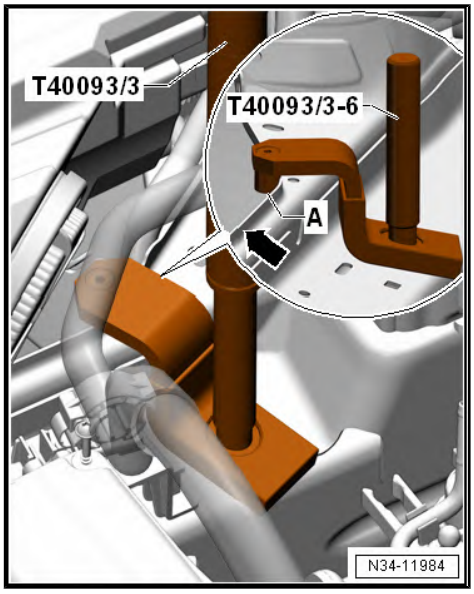
– Position adapter - T40093/3-6- or -T40093/3-6A- on the frame side rail as shown.

• The adapter - T40093/3-6- or -T40093/3-6A- must be secured by bolt -A- to the flange of the frame side rail -arrow-.

• Connect adapter - T40093/3-6- or -T40093/3-6A- to the spindle - T40093/3- of the supporting device and pre-tension supporting device using the assembled spindle.

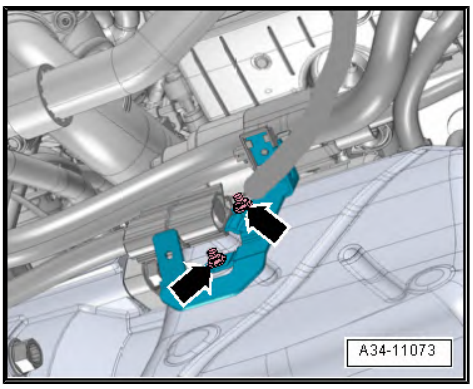
– Slightly pre-tension the engine/gearbox unit via the spindles of the interceptor (do not raise).

– Remove assembly carrier without steering gear ⇒ Chassis, axles, steering; Rep. gr. 40 ; Removing and installing assembly carrier without steering gear .



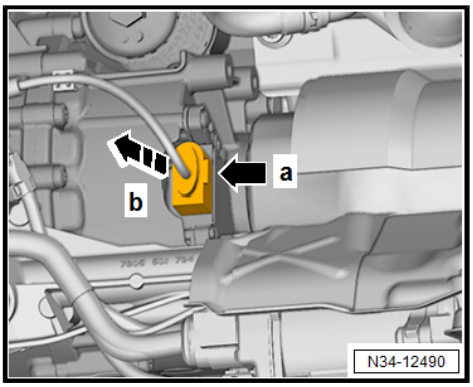
– Unscrew the nuts -arrows- and remove the bracket for electric cables from the threaded bolts on the oil pan.

– Connect electric cables at the side in area of oil sump.



– Disconnect connector for auxiliary hydraulic pump 1 for gear oil - V475- .

– Remove the left and right propeller shafts from the flange shafts on the gearbox ⇒ Chassis, axles, steering; Rep. gr. 40 ; Propeller shaft; remove and install propeller shaft .

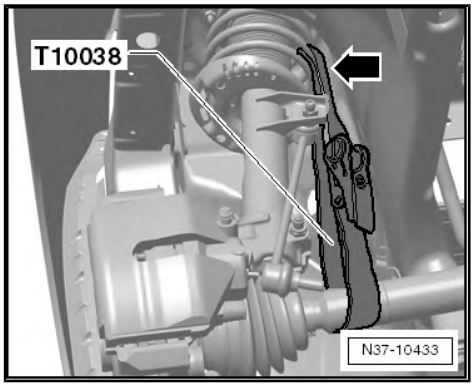


– Secure both drive shafts to the suspension strut with tensioning straps - T10038- .

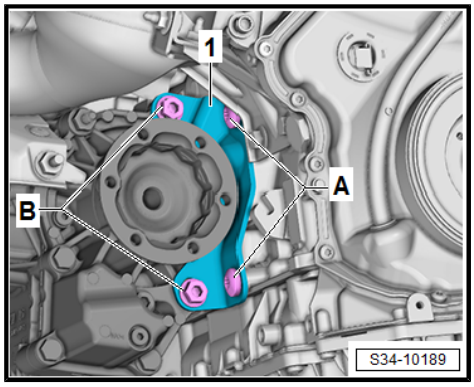
• Ensure that the surface protection of the drive shafts is not damaged.

– Remove propshaft from angle gearbox ⇒ Propeller shaft and rear final drive; Rep. gr. 39 ; Propeller shaft; remove and install propeller shaft .

– Tie the propshaft to the top so as not to damage paint damage on the surface of the propshaft.

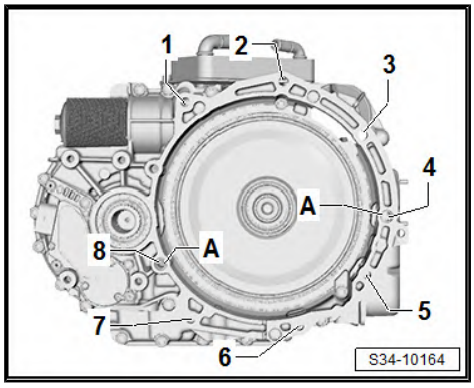


– Unscrew screws -A- and -B- and remove bracket for angle gearbox -1-.

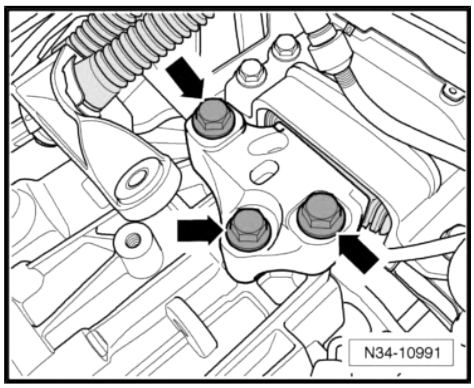


– Unscrew and remove bottom connecting bolts of engine/gearbox -4-, -5-, -6- and -7-.

• The last connecting -screw 8-, which is screwed in from the engine side, can only be loosened and screwed in.



– Unscrew the screws -arrows- from the gearbox mount.



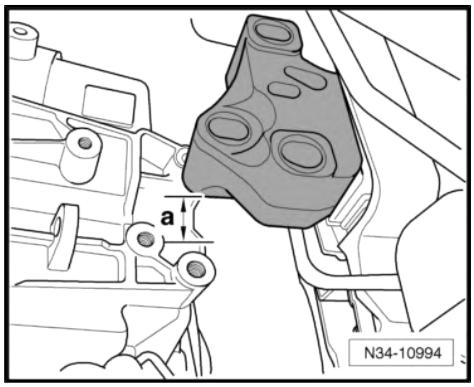
– Lower the engine/gearbox unit via the spindle of the supporting device by dimension -a-.

• Dimension -a- = approx. 90 mm

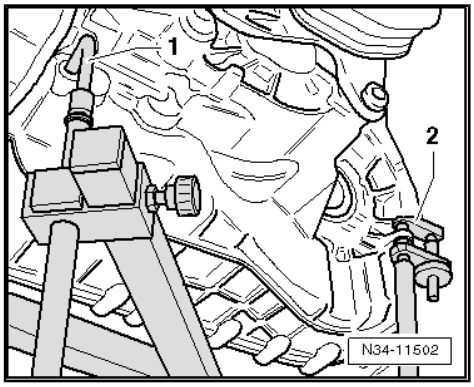
– Place the gearbox mount - 3282- onto engine/gearbox jack , e.g. -V.A.G 1383A- or -VAS 6931- .

– Position the engine / gearbox jack below the vehicle with the gearbox mount - 3282- .

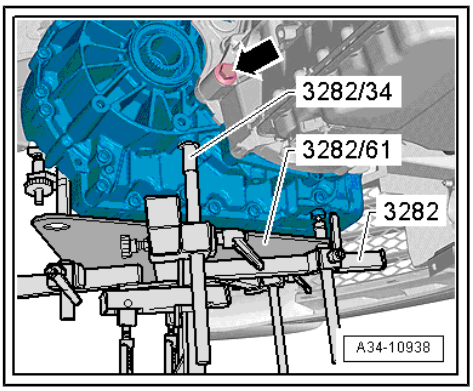
– Align the gearbox mount - 3282- parallel to the gearbox.



– Place the individual elements of the gearbox mount - 3282- to the gearbox, as shown in the figure.
– Insert the fixing hook -1- into the bore on the gearbox housing (next to the oil drain plug for mechatronics).
– Put circlip -2- in the groove of the gearbox housing.



– Screw the bolt - 3282/34- into the threaded hole for the pendulum support and connect it to the gear holder - 3282- .
– Insert the fourth adapter (bolt) from below into the bore of the gearbox.
– Support the gearbox with engine / gearbox jack from underneath.
– Remove remaining engine/gearbox connecting bolt.
– Press the gearbox out of the sleeves.
– Carefully separate the gearbox from the engine and lower slowly.
• Observe all lines and coolant hoses when lowering the gearbox.



Transport gearbox ⇒ “6 Transporting the gearbox”, page 217 .

Secure on assembly support
⇒ “7 Attachment at engine and gearbox mount”, page 218 .

4.2.12 Removing gearbox, Kodiaq, vehicles with diesel engine 2.0 ITDI CR, four-wheel drive

Special tools and workshop equipment required

♦ Release tool - T10236-
♦ Hose clamp - MP7-602 (3094)-
♦ Plug set , e.g. -VAS 6122-
♦ Insertion tool 18 mm - T10509-
♦ Socket insert XZN 14 - T10061-
♦ Interceptor - MP9-200 (10-222A)- or -10-222B-
♦ Adapter - 10-222A/29-
♦ Spindle - T40093/3-
♦ Carrier part - T40091/1-
♦ Clutch - T40091/3-
♦ Adapter - MP9-200/3 (10-222A/3)-
♦ Hook - MP9-200/10 (10-222A/10)- 2 units
♦ Shackle - 10-222A/12-
♦ Adapter - T40093/3-6- or -T40093/3-6A-
♦ Tensioning strap - T10038-

- ♦ Gearbox mount - 3282-
- ♦ Bolt - 3282/34-
- ♦ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS 6931-
- • General repair information ⇒ “3 Repair instructions”, page 6 .
- • All cable straps that are detached or cut when removing should be attached again in the same place when installing.

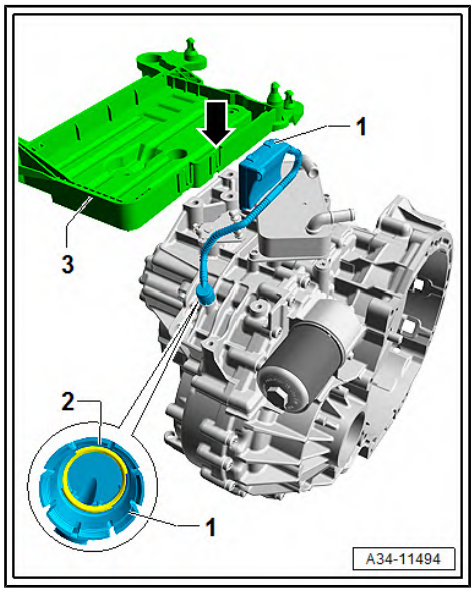
For vehicles with four-wheel drive, switch the selector lever to position “N” so that it is then possible to turn using the propshaft when loosening.

– Shift selector lever to position “N”.

– Remove the engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; removing and installing engine cover panel .

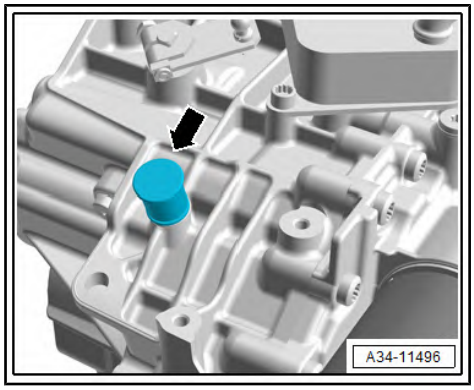
– Remove air filter housing ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing .

– Lift off ventilator -1- (if fitted) with breather hose from the lock -arrow- on the battery tray -3-.



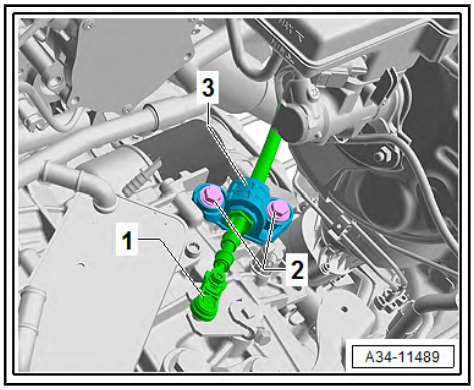
- • If the bleed hose is withdrawn from the exhaust pipe of the gearbox, the exhaust pipe must be sealed with a cap -arrow-.
- • The cap should prevent dirt from entering the transmission.

– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .



– Push ball socket -1- of selector lever control cable off the gearshift lever with the unlocking tool - T10236- .
– Unscrew screws -2- of the cable support for selector lever control cable and place to one side.

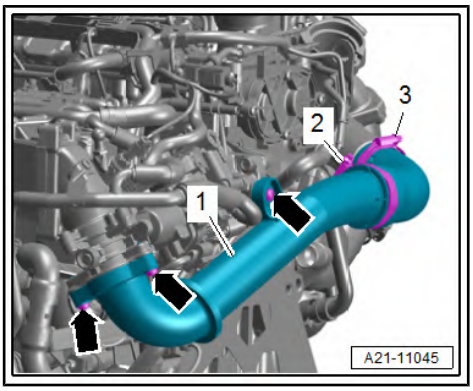
• Do not bend or buckle selector lever control cable.



– Remove screws -arrows-, release clamp -3- and remove charge air pipe.

Ignore clamp -2-.

– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter .



CAUTION

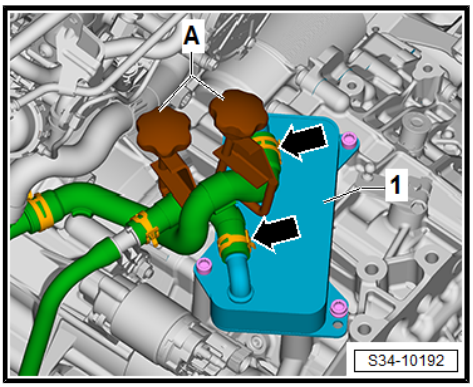
There is overpressure in the cooling system when the engine is at normal operating temperature.

There is a risk of injury from hot coolant or hot steam.

– Slowly open the cap of the compensation bottle, in order to first reduce pressure before pulling off the coolant hoses.

• Do not place fluffing cloths on the gearbox oil cooler and the gearbox, in order to collect flowing out coolant.
• Mark the coolant hoses to the gearbox oil cooler in order to prevent interchanging when installing.

– Clamp off the coolant hoses with the hose clamps - MP7-602 (3094)- -A-.
– Slacken hose clamps -arrows- and remove hoses from gearbox oil cooler.
– Close gearbox oil cooler with a clean plug e.g. from the plug set - VAS 6122- .



NOTICE

There is a risk of destruction of the dual clutch gearbox mechatronics - J743- .

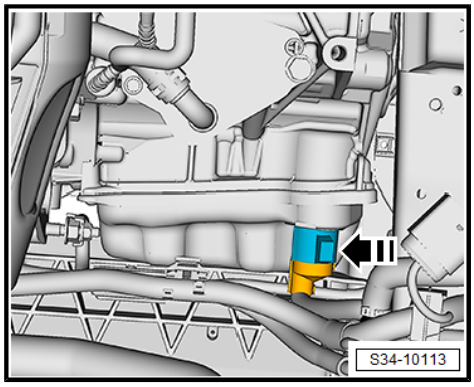
Static discharges may destroy the control unit and the mechatronics.

– Do not in any circumstances allow the gearbox plug contacts to come into contact with your hands.

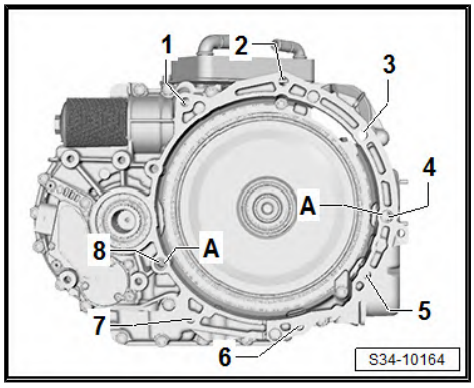
– Grab with the hand (without gloves) at the mass, in order to discharge yourself electrostatically.

– Turn the cap in -direction of arrow- and disconnect electrical plug connection from the dual clutch gearbox mechatronics -J743- .

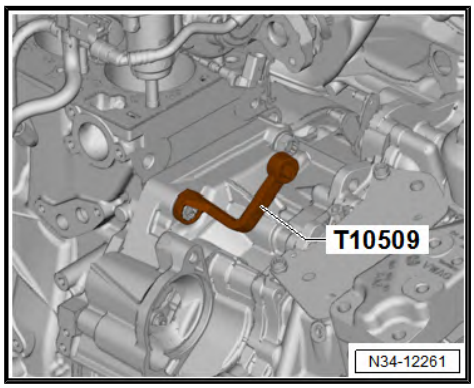
• Lay the electric cables to the side.



– Remove connecting screws for the top engine/gearbox -1-, -2- and -3-.



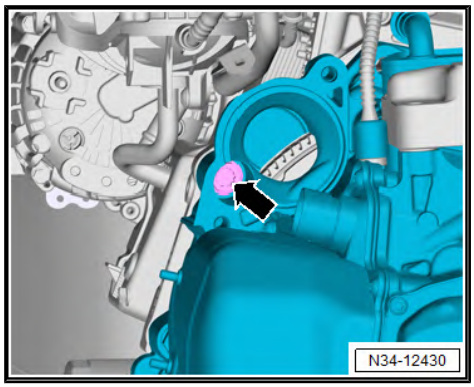
The screws -1- and -2- (previous figure S34–10164) can be removed with an insertion tool - T10509- .



The screw -3- (previous figure S34–10164) is located in the starter opening -arrow- and can be removed with plug insert XZN 14 - T10061- .

– Remove the sound dampening system ⇒ General body repairs, exterior ; Rep. gr. 66 ; Noise insulation .

– Remove the front left and right wheelhouse liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheelhouse liner; removing and installing front wheelhouse liner .



Supporting the engine/gearbox assembly

• To fit the supporting device , the cross member must be detached on the right side of the vehicle.

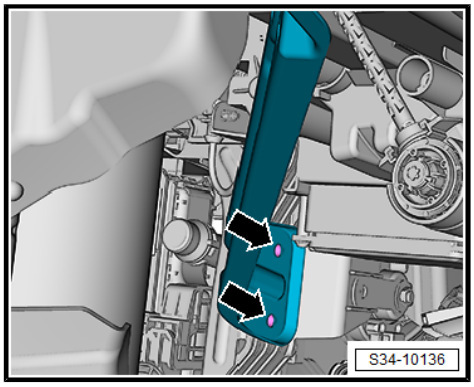
The member is located in the area underneath the right wheelhouse liner.

Detaching the cross member creates a space to fit the spindle - T40093/3- with adapter - T40093/3-6- or -T40093/3-6A- for the supporting device .

– Remove the front right wheelhouse liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheelhouse liner; Removing and installing the front wheelhouse liner .

– Unscrew screws -arrows- and detach the cross member from the front wall.

• If hose and cable connections are located in the area of the lifting eyes of the engine for the supporting device , these must now be removed.

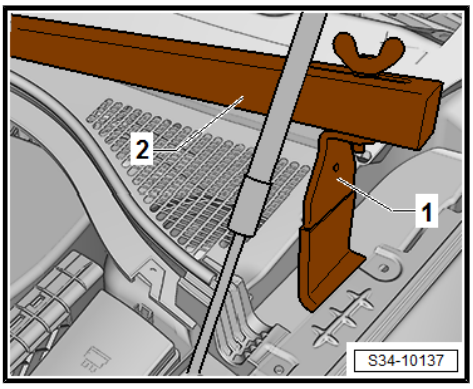


– Fit the adapter - 10-222A/29- -1- to the body under the wing plate on both sides of the vehicle, as shown.

• Adapter with symbol “L” is installed on the “right” side of the vehicle.

• Adapter with symbol “R” is installed on the “left” side of the vehicle.

• The arrow shows the direction of travel on each side.



– Assemble the interceptor - MP9-200 (10-222A)- or -10-222B- together with the other elements as shown in the figure.

A - Adapter - 10-222A/29-

B - Interceptor - MP9-200 (10-222A)- or -10-222B-

C - Spindle - T40093/3-

D - Carrier part - T40091/1-

E - Connecting crosspiece - T40091/3-

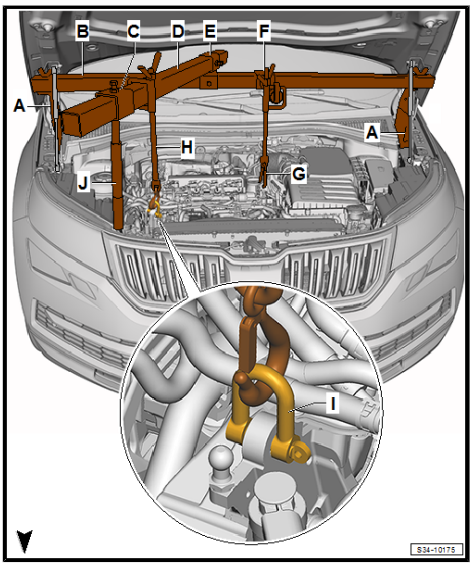
F - Adapter - MP9-200/3 (10-222A/3)-

G - Hook - MP9-200/10 (10-222A/10)-

H - Hook - MP9-200/10 (10-222A/10)-

I - Shackle - 10-222A/12-

J - Adapter - T40093/3-6- or -T40093/3-6A-



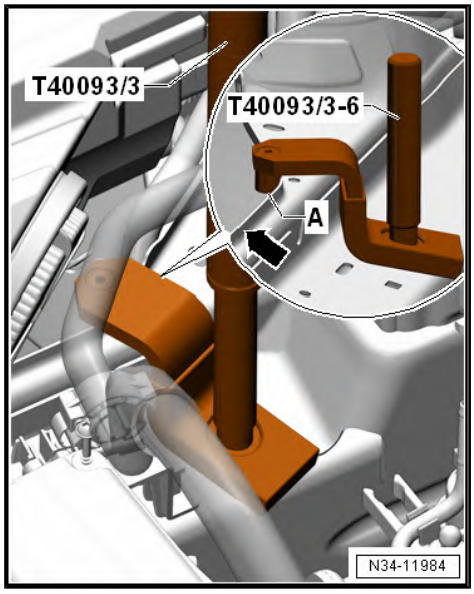
– Position adapter - T40093/3-6- or -T40093/3-6A- on the frame side rail as shown.

• The adapter - T40093/3-6- or -T40093/3-6A- must be secured by bolt -A- to the flange of the frame side rail -arrow-.

• Connect adapter - T40093/3-6- or -T40093/3-6A- to the spindle - T40093/3- of the supporting device and pre-tension supporting device using the assembled spindle.

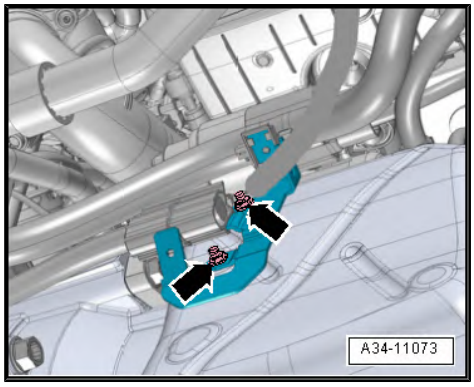
– Slightly pre-tension the engine/gearbox unit via the spindles of the interceptor (do not raise).

– Remove assembly carrier without steering gear ⇒ Chassis, axles, steering; Rep. gr. 40 ; Removing and installing assembly carrier without steering gear .

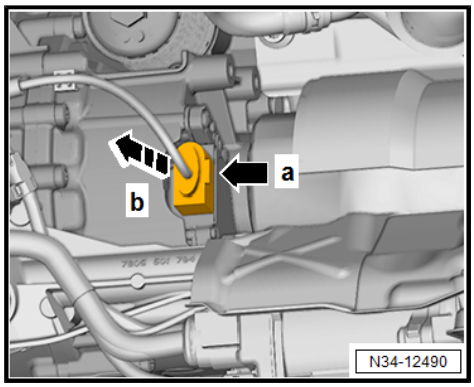


– Unscrew the nuts -arrows- and remove the bracket for electric cables from the threaded bolts on the oil pan.

– Connect electric cables at the side in area of oil sump.

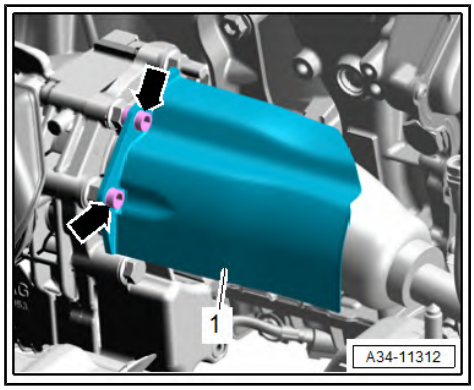


– Disconnect connector for auxiliary hydraulic pump 1 for gear oil - V475- .



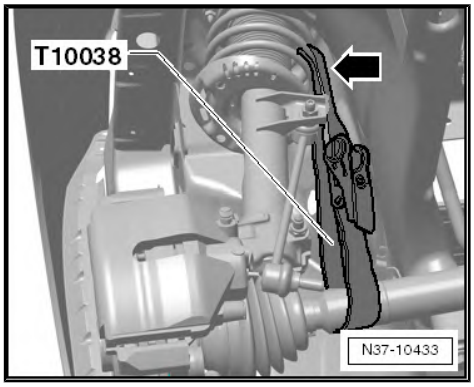
– Unscrew nuts -arrows- and remove heat shield for right drive shaft.

– Remove the left and right propeller shafts from the flange shafts on the gearbox ⇒ Chassis, axles, steering; Rep. gr. 40 ; Propeller shaft; remove and install propeller shaft .



– Secure both drive shafts to the suspension strut with tensioning straps - T10038- .

• Ensure that the surface protection of the drive shafts is not damaged.

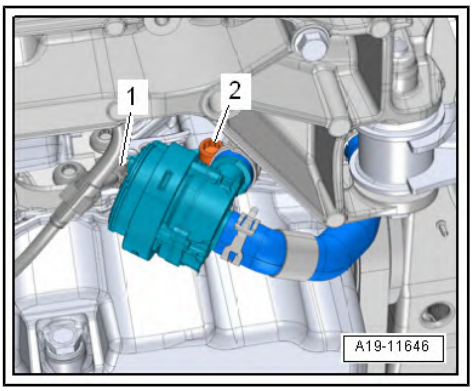


– Separate electrical plug connection -1-.

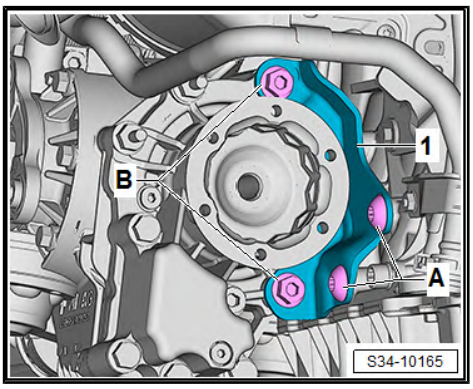
– Unscrew screw -2-, detach heating backup pump - V488- and push to side.

– Remove propshaft from angle gearbox ⇒ Propeller shaft and rear final drive; Rep. gr. 39 ; Propeller shaft; remove and install propeller shaft .

– Tie the propshaft to the top so as not to damage paint damage on the surface of the propshaft.

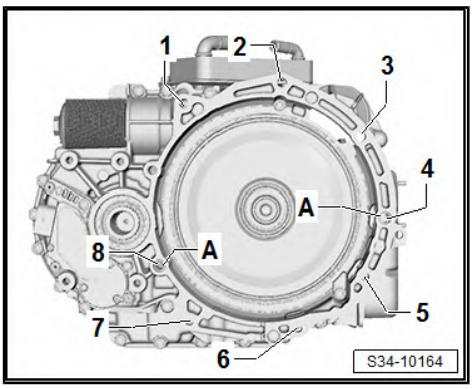


– Unscrew screws -A- and -B- and remove bracket for angle gearbox.

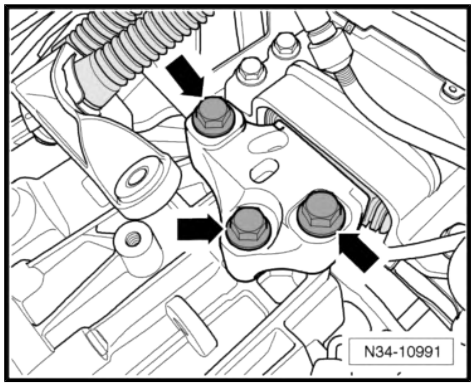


– Unscrew and remove bottom connecting bolts of engine/gearbox -4-, -5-, -6- and -7-.

• The last connecting -screw 8-, which is screewed in from the engine side, can only be loosened and screwed in.



– Unscrew the screws -arrows- from the gearbox mount.



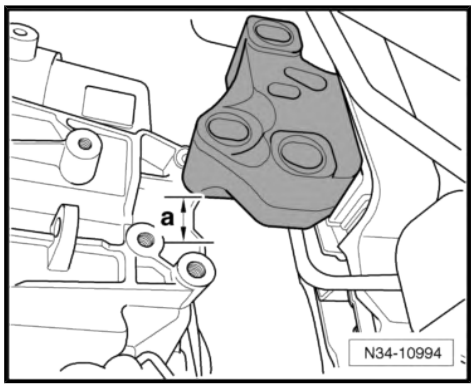
– Lower the engine/gearbox unit via the spindle of the supporting device by dimension -a-.

• Dimension -a- = approx. 90 mm

– Position gearbox mount - 3282- on the engine/gearbox jack - V.A.G 1383A- .

– Position the engine/gearbox jack -V.A.G 1383A- or -VAS 6931- below the vehicle using the gearbox mount - 3282- .

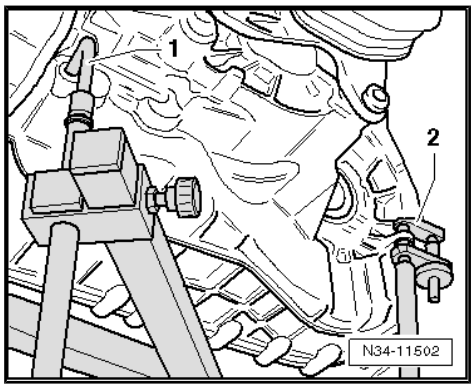
– Align the gearbox mount - 3282- parallel to the gearbox.



– Place the individual elements of the gearbox mount - 3282- to the gearbox, as shown in the figure.

– Insert the fixing hook -1- into the bore on the gearbox housing (next to the oil drain plug for mechatronics).

– Put circlip -2- in the groove of the gearbox housing.



– Screw the bolt - 3282/34- into the threaded hole for the pendulum support and connect it to the gear holder - 3282- .

– Insert the fourth adapter (bolt) from below into the bore of the gearbox.

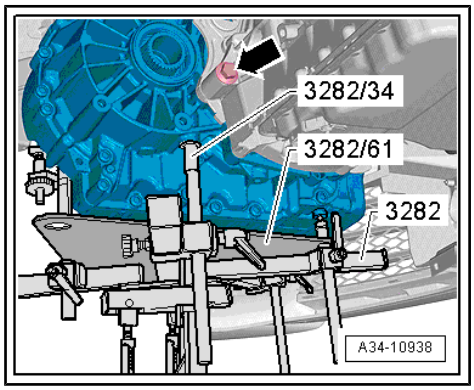
– Support the gearbox with engine / gearbox jack from underneath.

– Remove remaining engine/gearbox connecting bolt.

– Press the gearbox out of the sleeves.

– Carefully separate the gearbox from the engine and lower slowly.

• Observe all lines and coolant hoses when lowering the gearbox.



Transport gearbox ⇒ “6 Transporting the gearbox”, page 217 .

Secure on assembly support
⇒ “7 Attachment at engine and gearbox mount”, page 218 .

4.2.13 Removing the gearbox, Octavia IV, vehicles with diesel engine 2.0 TDI CR, front-wheel drive

Special tools and workshop equipment required

- ♦ Hose clamp - MP7-602 (3094)-
- ♦ Plug set , e.g. -VAS 6122-
- ♦ Insertion tool 18 mm - T10509-
- ♦ Socket insert XZN 14 - T10061-
- ♦ Interceptor - MP9-200 (10-222A)- or -10-222B-
- ♦ Adapter - 10-222A/29-
- ♦ Spindle - T40093/3- using Adapter - T40093/3-6A- 2x
- ♦ Support part - T40091/1- 2x
- ♦ Adapter - T40091/3- 2x
- ♦ Adapter - MP9-200/18 (10-222A/18)-
- ♦ Hooks - MP9-200/10 (10-222A/10)- x2
- ♦ Shackle - 10-222A/12-
- ♦ Tensioning strap - T10038-
- ♦ Gearbox mount - 3282-
- ♦ Bolt - 3282/34-
- ♦ Engine and gearbox jack , e.g. -V.A.G 1383A- or -VAS 6931-

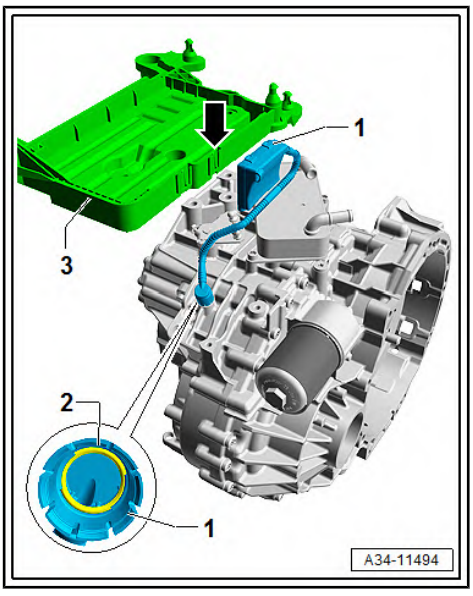
• General repair information ⇒ “3 Repair instructions”, page 6 .

• All cable straps that are detached or cut when removing should be attached again in the same place when installing.

– Shift selector lever into position “P”.

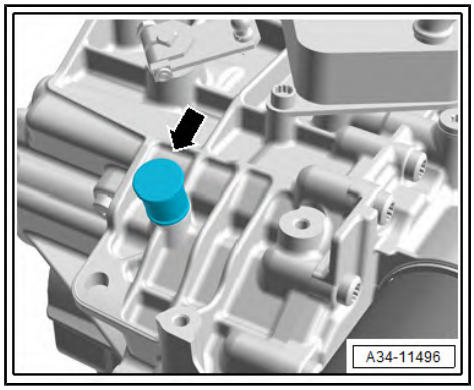
– Remove air filter housing ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing .

– Lift off ventilator -1- (if fitted) with breather hose from the lock -arrow- on the battery tray -3-.

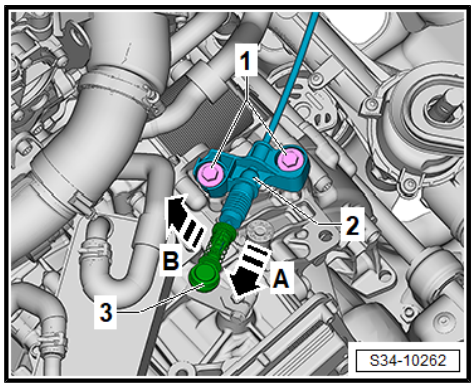


- If the bleed hose is withdrawn from the exhaust pipe of the gearbox, the exhaust pipe must be sealed with a cap -arrow-.
- The cap should prevent dirt from entering the transmission.

– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .



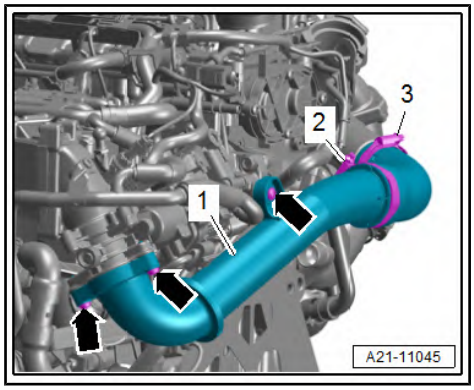
– Press the actuator locking mechanism for the selector control cable -3- in -Arrow direction A- until it stops and secure it by turning it anti-clockwise in -Arrow direction B-.
– Remove the screws -1- for the selector lever control cable support.
– Remove the selector lever cable -2- from the actuator -3- and tie it upwards.
- Do not bend or knick the selector lever control cable during removal.



– Remove screws -arrows-, release clamp -3- and remove charge air pipe.

Ignore clamp -2-.

– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter .



CAUTION

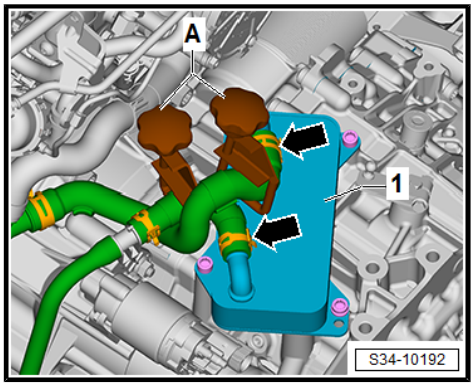
There is overpressure in the cooling system when the engine is at normal operating temperature.

There is a risk of injury from hot coolant or hot steam.

– Slowly open the cap of the compensation bottle, in order to first reduce pressure before pulling off the coolant hoses.

- Do not place fluffing cloths on the gearbox oil cooler and the gearbox, in order to collect flowing out coolant.
- Mark the coolant hoses to the gearbox oil cooler in order to prevent interchanging when installing.

– Clamp off the coolant hoses with the hose clamps - MP7-602 (3094)- -A-.
– Slacken hose clamps -arrows- and remove hoses from gearbox oil cooler.
– Close gearbox oil cooler with a clean plug e.g. from the plug set - VAS 6122- .



NOTICE

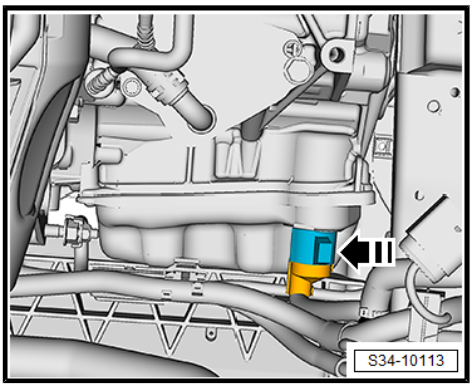
There is a risk of destruction of the dual clutch gearbox mechatronics - J743- .

Static discharges may destroy the control unit and the mechatronics.

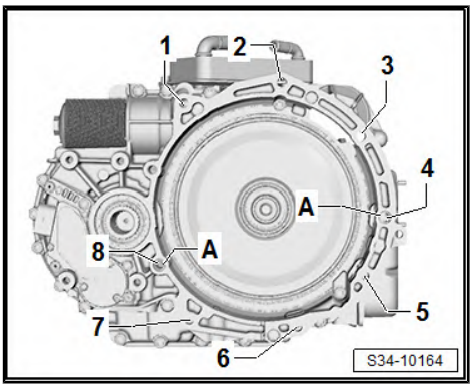
– Do not in any circumstances allow the gearbox plug contacts to come into contact with your hands.

– Grab with the hand (without gloves) at the mass, in order to discharge yourself electrostatically.

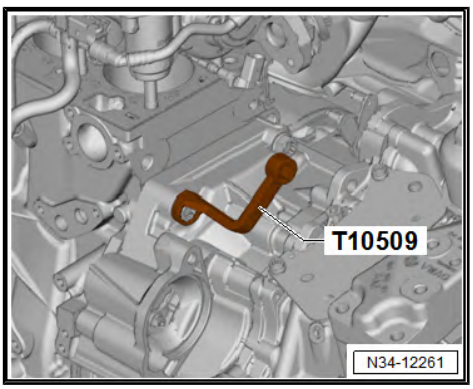
– Turn the cap in -direction of arrow- and disconnect electrical plug connection from the dual clutch gearbox mechatronics - J743- .
• Lay the electric cables to the side.



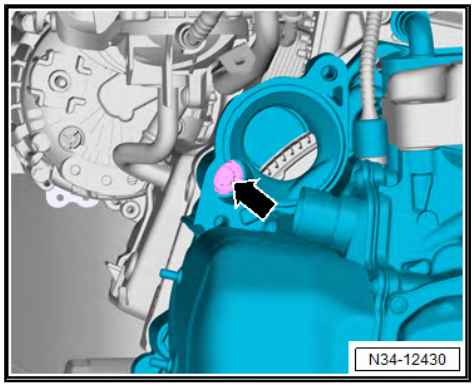
– Remove connecting screws for the top engine/gearbox -1-, -2- and -3-.



The screws -1- and -2- (previous figure S34–10164) can be removed with an insertion tool - T10509- .



The screw -3- (previous figure S34–10164) is located in the starter opening -arrow- and can be removed with plug insert XZN 14 - T10061- .



Install interception device to catch the engine/gearbox assembly.

– Remove the engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; removing and installing engine cover panel .

- If hose and cable connections are located in the area of the lifting eyes of the engine for the supporting device , these must now be removed.

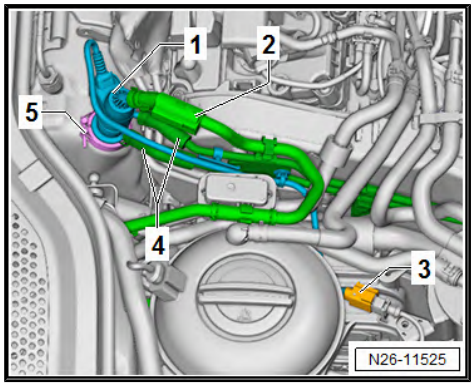
The following special tools are required for attaching the interceptor :

- ♦ Interceptor - MP9-200 (10-222A)- or -10-222B-
- ♦ Adapter - 10-222A/29-
- ♦ Spindle - T40093/3- using Adapter - T40093/3-6A- 2x
- ♦ Support part - T40091/1- 2x
- ♦ Adapter - T40091/3- 2x
- ♦ Adapter - MP9-200/18 (10-222A/18)-
- ♦ Hooks - MP9-200/10 (10-222A/10)- x2
- ♦ Shackle - 10-222A/12-

- Before setting up the actual interceptor , the adapters - T40093/3-6A- must be positioned on the longitudinal members.
- On the right side of the vehicle, the fuel filter must be removed for attaching the spindle - T40093/3- using the adapter - T40093/3-6A- .
- The fuel filter this detached from the bracket on the body, do not disconnect the fuel lines.

– Unlock the plug connection -3- and disconnect.

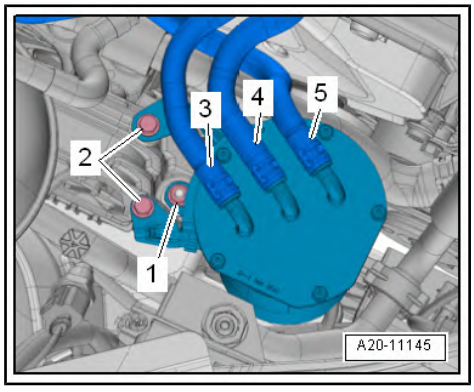
– Remove bracket for connector from fuel filter housing.



– Screw out the fixing screws of the fuel filter -2-.

– Unscrew nut -1-.

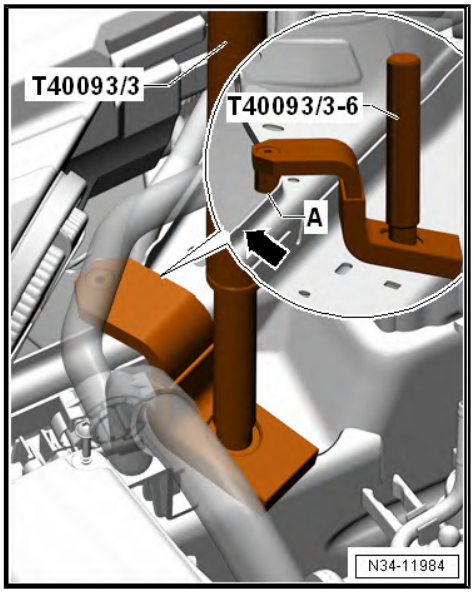
– Place the fule filter with connected fuel hoses on the engine.



– Position adapter - T40093/3-6A- on the right-hand longitudinal member as shown in the figure.

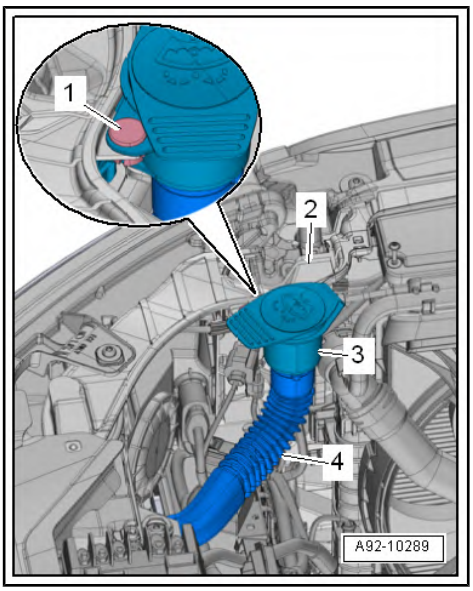
• The adapter must be secured by the bolt -A- to the flange of the frame side rail -arrow-.

– Disconnect plastic holder with electrical lead from left side member and place laterally, so that a second adapter - T40093/3-6A- can be positioned.



– Remove the expansion clip -1- and push the filler neck -3- of the windscreen washer tank out of the bearing -2-.

– Loosen the filler neck -3- and move it to the side so that the spindle - T40093/3- can be positioned with the adapter - T40093/3-6A- .



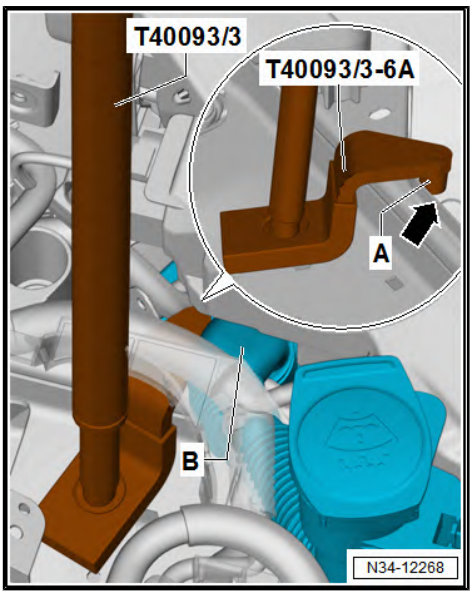
– Position adapter - T40093/3-6A- on the left side member, just behind the windscreen washer tank filler pipe, as shown in the figure.

• The adapter must be secured by the bolt -A- to the flange of the frame side rail -arrow-.

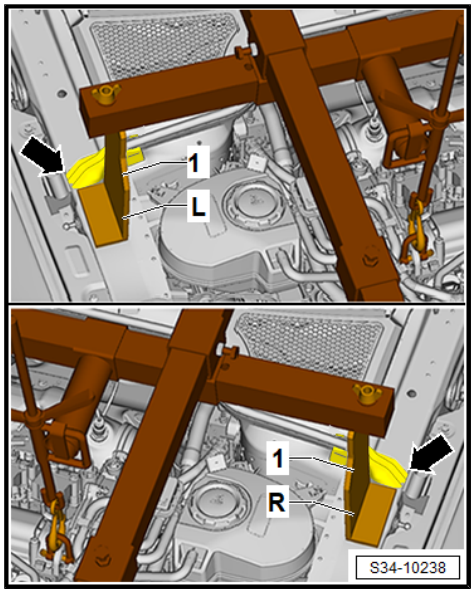
– Screw spindles - T40093/3- on both adapters - T40093/3-6A- .

Both spindles - T40093/3- are subsequently connected with straps - T40091/1- (see further workflow).

• If hose and cable connections are located in the area of the lifting eyes of the engine for the supporting device , these must now be removed.



- Installation position of adapter - 10-222A/29- -1-.
- The adapters - 10-222A/29- are immediately positioned behind the foam seals of the water box on the right and left -arrow-.
- Adapter with symbol “L” is installed on the “right” side of the vehicle.
- Adapter with symbol “R” is installed on the “left” side of the vehicle.



– Assemble the interceptor - MP9-200 (10-222A)- or -10-222B- together with the other elements as shown in the figure.

A - Adapter - 10-222A/29-

B - Interceptor - MP9-200 (10-222A)- or -10-222B-

C - Spindle - T40093/3- using Adapter - T40093/3-6A-

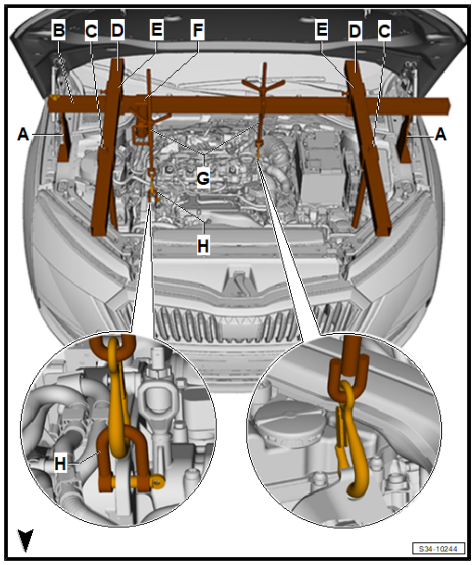
D - Carrier part - T40091/1-

E - Adapter - T40091/3-

F - Adapter - MP9-200/18 (10-222A/18)-

G - Hook - MP9-200/10 (10-222A/10)-

H - Shackle - 10-222A/12-



– Using spindles - T40093/3- -C- align the carriers - T40091/1- -D- horizontally on the right and left sides and tighten all interlocking elements with locking screws.

– Slightly pre-tension the engine/gearbox assembly via the hooks - MP9-200/10 (10-222A/10)- (do not raise).

Component	Tightening torque
M12 screws for the supporting device	20 Nm

Continuation Remove transmission

– Remove wheels at the front.

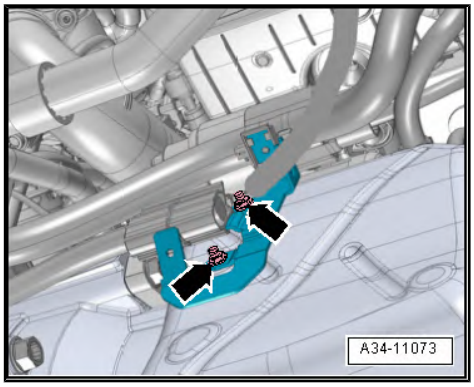
– Remove the sound dampening system ⇒ General body repairs, exterior ; Rep. gr. 66 ; Noise insulation .

– Remove the front left wheelhouse liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheelhouse liner; removing and installing front wheelhouse liner .

– Remove assembly carrier without steering gear ⇒ Chassis, axles, steering; Rep. gr. 40 ; Removing and installing assembly carrier without steering gear .

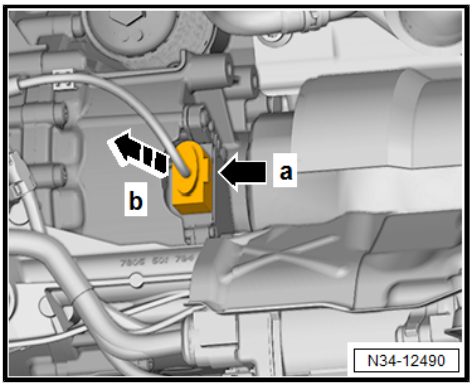
– Unscrew the nuts -arrows- and remove the bracket for electric cables from the threaded bolts on the oil pan.

– Connect electric cables at the side in area of oil sump.



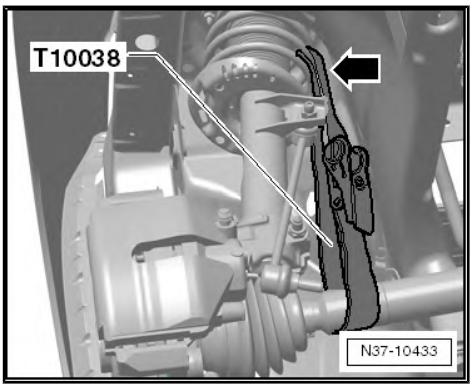
– Disconnect connector for auxiliary hydraulic pump 1 for gear oil - V475- .

– Remove the left and right propeller shafts from the flange shafts on the gearbox ⇒ Chassis, axles, steering; Rep. gr. 40 ; Propeller shaft; remove and install propeller shaft .



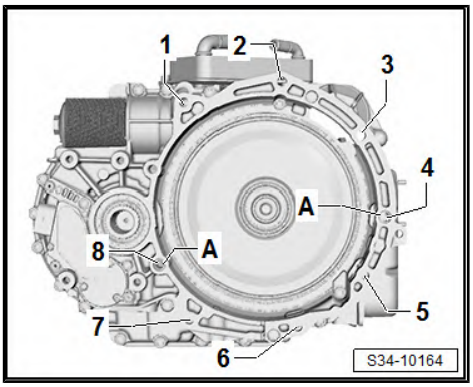
– Secure both drive shafts to the suspension strut with tensioning straps - T10038- .

• Ensure that the surface protection of the drive shafts is not damaged.

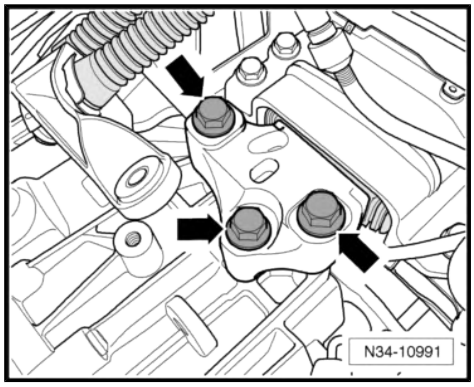


– Unscrew and remove bottom connecting bolts of engine/gearbox -4-, -5-, -6- and -7-.

• The last connecting -screw 8-, which is screwed in from the engine side, can only be loosened and screwed in.



– Unscrew the screws -arrows- from the gearbox mount.



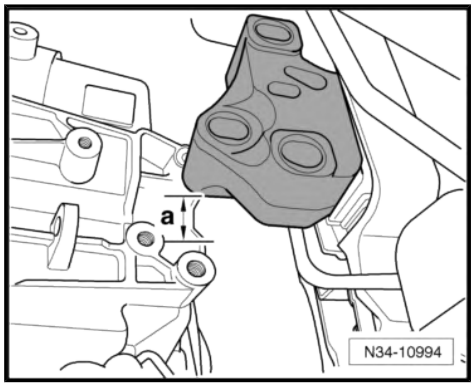
– Lower the engine/gearbox unit via the spindle of the supporting device by dimension -a-.

• Dimension -a- = approx. 90 mm

– Place the gearbox mount - 3282- onto engine/gearbox jack , e.g. -V.A.G 1383A- or -VAS 6931- .

– Position the engine / gearbox jack below the vehicle with the gearbox mount - 3282- .

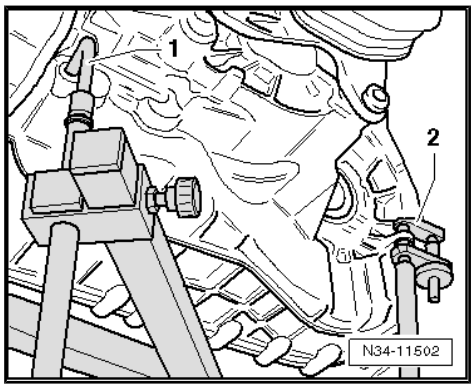
– Align the gearbox mount - 3282- parallel to the gearbox.



– Place the individual elements of the gearbox mount - 3282- to the gearbox, as shown in the figure.

– Insert the fixing hook -1- into the bore on the gearbox housing (next to the oil drain plug for mechatronics).

– Put circlip -2- in the groove of the gearbox housing.



– Screw the bolt - 3282/34- into the threaded hole for the pendulum support and connect it to the gear holder - 3282- .

– Insert the fourth adapter (bolt) from below into the bore of the gearbox.

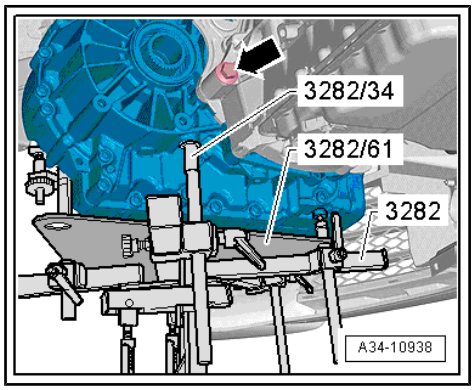
– Support the gearbox with engine / gearbox jack from underneath.

– Remove remaining engine/gearbox connecting bolt.

– Press the gearbox out of the sleeves.

– Carefully separate the gearbox from the engine and lower slowly.

• Observe all lines and coolant hoses when lowering the gearbox.



Transport gearbox ⇒ “6 Transporting the gearbox”, page 217 .

Secure on assembly support
⇒ “7 Attachment at engine and gearbox mount”, page 218 .

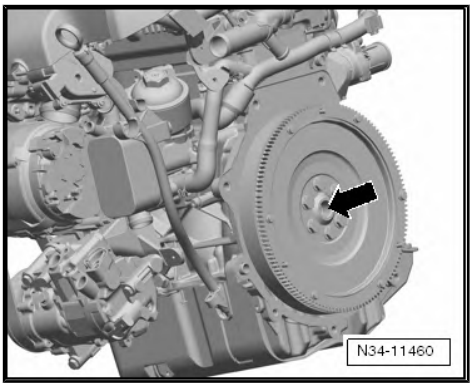
4.3 Installing the gearbox

⇒ “4.3.1 Installing the gearbox, vehicles with front-wheel-drive”, page 207

⇒ “4.3.2 Installing the gearbox, vehicles with all-wheel drive”, page 210

4.3.1 Installing the gearbox, vehicles with front-wheel-drive

Installation is carried out in the reverse order. When installing, observe the following:



- When installing the new gearbox, adapt die immobiliser ⇒ Vehicle diagnostic tester.
- Replace needle bearing -arrow- in the crankshaft ⇒ Rep. gr. 13 ; Crankshaft; replace needle bearing in the crankshaft .
- Lubricate the bolt and serration lightly with correct high-temperature grease ⇒ Electronic Catalogue of Original Parts .
- Check whether the dowel sleeves -A- for centering the gearbox are present in the cylinder block, insert if necessary.
- Check that the intermediate plate is seated correctly between engine and gearbox.
- Replace self-locking nuts and bolts each time they are removed.
- Use new screws which must be tightened to a torque angle as well as sealing rings and seals.
- Secure all hose connections with hose clamps which comply with the series design ⇒ Electronic Catalogue of Original Parts .
- All cable straps that are detached or cut when removing should be attached again in the same place when installing.
- Do not grease selector lever control cable.

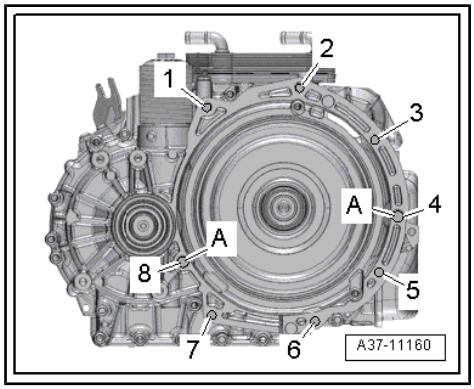
– Carefully raise gearbox with engine/gearbox jack and bring it to its installation position using the spindles of the gearbox mount - 3282- .

- The engine and gearbox must be in line.
- Slide in the engine and gearbox by hand until the engine flange and the gearbox flange are in contact.
- If necessary, you can turn the crankshaft.
- Do no trap any lines when inserting the gearbox.

– Screw on gearbox to the engine
⇒ “4.1 Tightening torques for gearbox”, page 106 .

– Remove the gearbox mount - 3282- from the gearbox.

– Evenly lift up the gearbox via the hooks of the supporting device to the supporting arm of the gearbox mount.

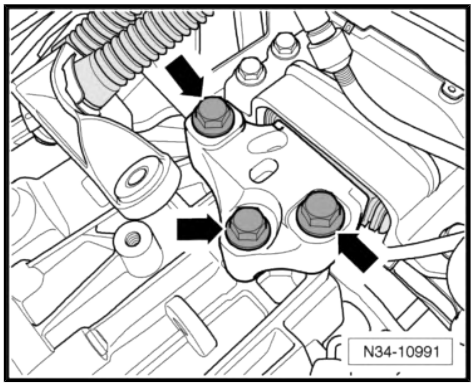


NOTICE

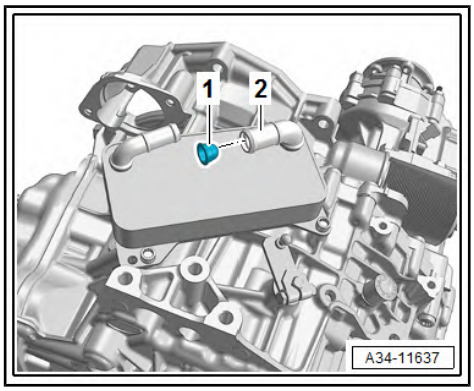
Risk of damage to thread for gearbox console.

– **Before screwing in the screws, the gearbox console and supporting arm of the gearbox mount must be completely parallel to each other.**

– Insert new bolts -arrows- for gearbox mount and tighten at first by hand.
– Adjust the engine/gearbox unit ⇒ Rep. gr. 10 ; Assembly mounting; adjust the assembly mounting .
– Remove supporting device .
– Install the left and right propeller shafts on the flange shafts on the gearbox ⇒ Chassis, axles, steering; Rep. gr. 40 ; Propeller shaft; remove and install propeller shaft .
– Remove heat shield for right drive shaft (if present) ⇒ Chassis, axles, steering; Rep. gr. 40 ; Drive shaft; removing and installing heat shield for drive shaft .
– Install assembly carrier ⇒ Chassis, axles, steering; Rep. gr. 40 ; Assembly carrier; Removing and installing assembly carrier without steering gear.
– Install the front left and right wheelhouse liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheelhouse liner; removing and installing front wheelhouse liner .
– Install the noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation .



– Carefully remove gearbox oil cooler screen -1-, then clean and re-install.



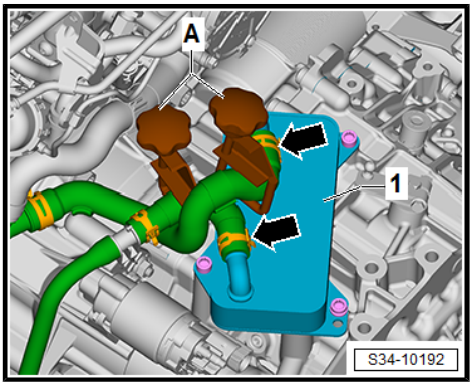
– Connect the coolant hoses to the gearbox oil cooler and secure with clamps -arrows-.
– Remove hose clamps - MP7-602 (3094)- -A-.

NOTICE

There is a risk of destruction of the dual clutch gearbox mechatronics - J743- .

Static discharges may destroy the control unit and the mechatronics.

– **Do not in any circumstances allow the gearbox plug contacts to come into contact with your hands.**



– Carefully connect the connector -1- up to the stop and lock the cap by turning it to the right (in -direction of arrow-).

– Install starter ⇒ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter .

Vehicles with 2.0 TFSI and 2.0 TDI CR engines

– Install charge air line ⇒ Rep. gr. 21 ; Charge air system; Summary of components - charge air system .

Continued for all vehicles

– Setting selector lever control cable
⇒ “3.8 Inspecting and adjusting the selector lever control cable”, page 95 .

– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .

– Install air filter housing:

Petrol engines ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing

Diesel engines ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing

– Check coolant level, top up if necessary ⇒ Engine; Rep. gr. 19 ; Cooling system/coolant; Draining and filling up coolant .

– Inspect gear oil level and top up if necessary
⇒ “9.3 Checking the gear oil level”, page 227 .

– Install the front wheels ⇒ Chassis, axles, steering; Rep. gr. 44 ; Wheels, tyres .

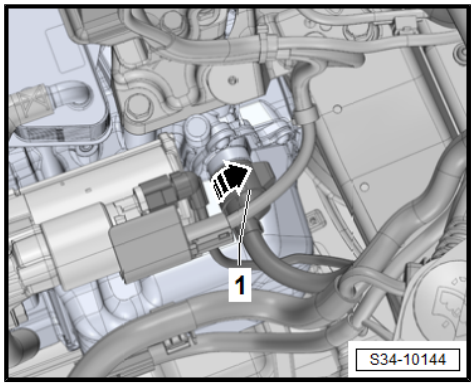
– Install the engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; Remove and install engine cover panel .

Tightening torques and summaries of components

Note

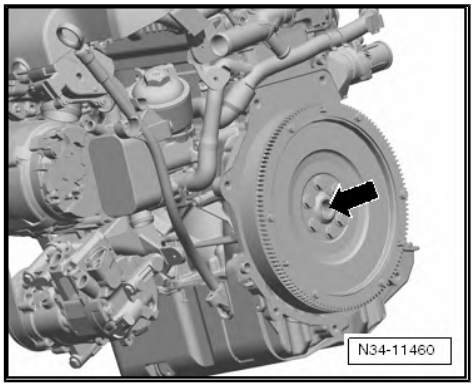
Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- Gearbox to engine
⇒ “4.1 Tightening torques for gearbox”, page 106
- Gearbox console to gearbox
⇒ “5 Assembly bracket”, page 215



4.3.2 Installing the gearbox, vehicles with all-wheel drive

Installation is carried out in the reverse order. When installing, observe the following:


N34-11460

- After the installation of the new mechatronics, the basic setting has to be done and the immobilizer has to be ⇒ Vehicle diagnostic tester adapted.
- Replace needle bearing -arrow- in the crankshaft ⇒ Rep. gr. 13 ; Crankshaft; replace needle bearing in the crankshaft .
- Install angular gear (if this has been removed) ⇒ “2.3 Install angle gearbox”, page 43 .
- Lubricate the bolt and serration lightly with correct high-temperature grease ⇒ Electronic Catalogue of Original Parts .
- Check whether the dowel sleeves -A- for centering the gearbox are present in the cylinder block, insert if necessary.
- Check that the intermediate plate is seated correctly between engine and gearbox.
- Replace self-locking nuts and bolts each time they are removed.
- Use new screws which must be tightened to a torque angle as well as sealing rings and seals.
- Secure all hose connections with hose clamps which comply with the series design ⇒ Electronic Catalogue of Original Parts .
- All cable straps that are detached or cut when removing should be attached again in the same place when installing.
- Do not grease selector lever control cable.

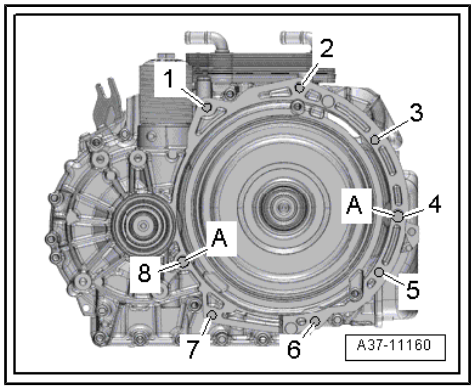
– Carefully raise gearbox with engine/gearbox jack and bring it to its installation position using the spindles of the gearbox mount - 3282- .

- The engine and gearbox must be in line.
- Slide in the engine and gearbox by hand until the engine flange and the gearbox flange are in contact.
- If necessary, you can turn the crankshaft.
- Do no trap any lines when inserting the gearbox.

– Screw on gearbox to the engine ⇒ “4.1 Tightening torques for gearbox”, page 106 .

– Remove the gearbox mount - 3282- from the gearbox.

– Evenly lift up the gearbox via the hooks of the supporting device to the supporting arm of the gearbox mount.



NOTICE

Risk of damage to thread for gearbox console.

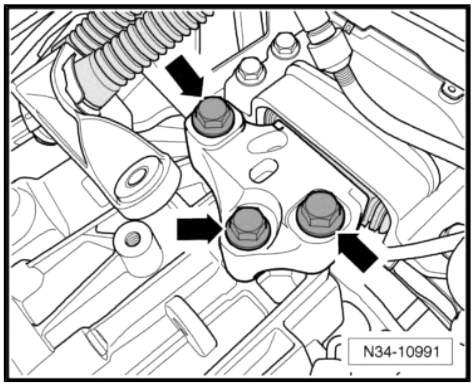
– Before screwing in the screws, the gearbox console and supporting arm of the gearbox mount must be completely parallel to each other.

– Insert new bolts -arrows- for gearbox mount and tighten at first by hand.

– Adjust the engine/gearbox unit ⇒ Rep. gr. 10 ; Assembly mounting; adjust the assembly mounting .

– Remove supporting device .

– Fit propshaft to angle gearbox ⇒ Propshaft and rear final drive; Rep. gr. 39 ; Propshaft; remove and install propshaft .



• When fitting the propshaft, make sure that the sealing ring -arrow- in the centring sleeve is not damaged.

• In case of damaged sealing ring the propshaft must be replaced.

• Install all parts of the propshaft and flange of the angle gearbox marked relative to each other in the same position.

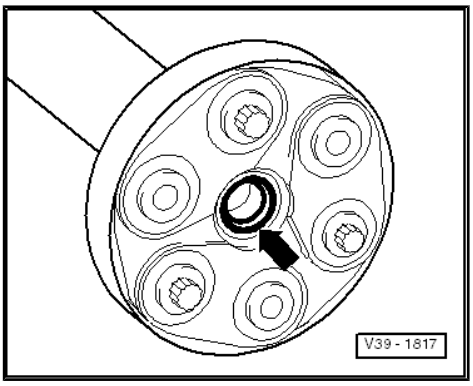
– Install the left and right propeller shafts on the flange shafts on the gearbox ⇒ Chassis, axles, steering; Rep. gr. 40 ; Propeller shaft; remove and install propeller shaft .

– Install heat shield for right drive shaft ⇒ Chassis, axles, steering; Rep. gr. 40 ; Drive shaft; removing and installing heat shield for drive shaft .

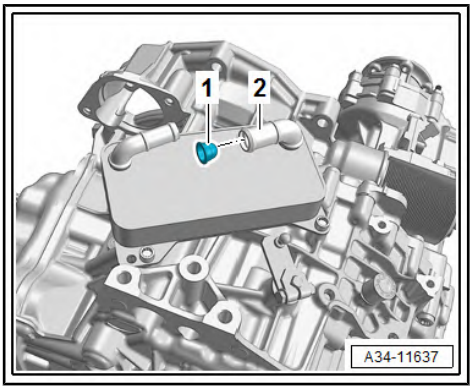
– Install assembly carrier ⇒ Chassis, axles, steering; Rep. gr. 40 ; Assembly carrier; Removing and installing assembly carrier without steering gear.

– Install the front left and right wheelhouse liner ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheelhouse liner; removing and installing front wheelhouse liner .

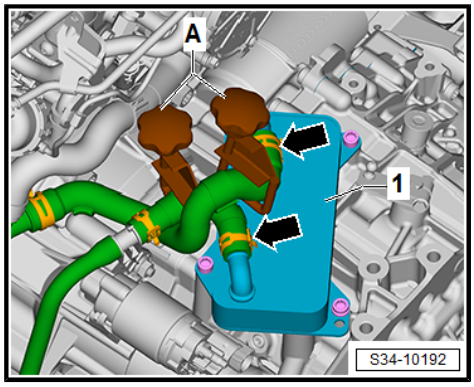
– Install the noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation .



– Carefully remove gearbox oil cooler screen -1-, then clean and re-install.



– Connect the coolant hoses to the gearbox oil cooler and secure with clamps -arrows-.
– Remove hose clamps - MP7-602 (3094)- -A-.

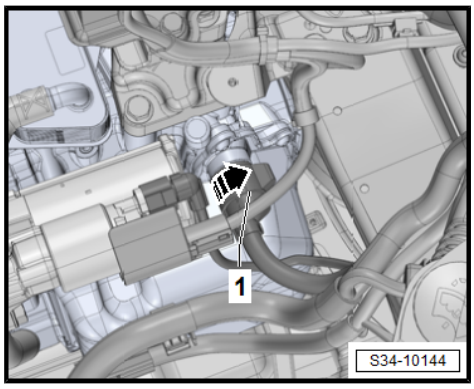


NOTICE

There is a risk of destruction of the dual clutch gearbox mechatronics - J743- .

Static discharges may destroy the control unit and the mechatronics.

– **Do not in any circumstances allow the gearbox plug contacts to come into contact with your hands.**



– Carefully connect the connector -1- up to the stop and lock the cap by turning it to the right (in -direction of arrow-).
– Install starter ⇒ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter .

Vehicles with 2.0 TFSI and 2.0 TDI CR engines

– Install charge air line ⇒ Rep. gr. 21 ; Charge air system; Summary of components - charge air system .

Continued for all vehicles

– Setting selector lever control cable
⇒ “3.8 Inspecting and adjusting the selector lever control cable”, page 95 .
– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .
– Install air filter housing:

  Petrol engines ⇒ Rep. gr. 24 ; Air filter; Removing and installing air filter housing

  Diesel engines ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing
– Check coolant level, top up if necessary ⇒ Engine; Rep. gr. 19 ; Cooling system/coolant; Draining and filling up coolant .
– Inspect gear oil level and top up if necessary
⇒ “9.3 Checking the gear oil level”, page 227 .
– Install the front wheels ⇒ Chassis, axles, steering; Rep. gr. 44 ; Wheels, tyres .
– Install the engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; Remove and install engine cover panel .
– After the installation of the new mechatronics, the basic setting has to be done and the immobilizer has to be ⇒ Vehicle diagnostic tester adapted.

Tightening torques and summaries of components

Note

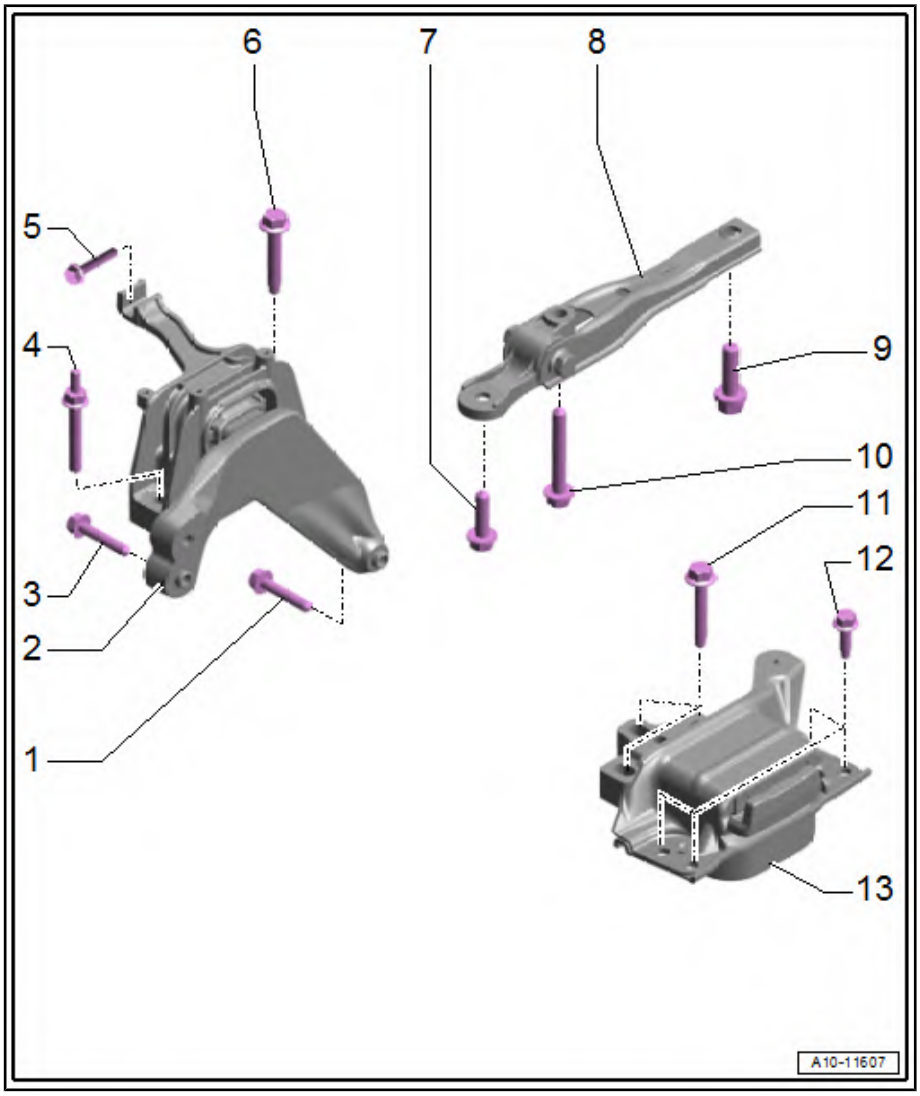
Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- Gearbox to engine
⇒ “4.1 Tightening torques for gearbox”, page 106
- Gearbox console to gearbox
⇒ “5 Assembly bracket”, page 215

5 Assembly bracket

⇒ “5.1 Assembly overview - assembly mountings”, page 215

5.1 Assembly overview - assembly mountings



1 - Screw

- ❑ ⇒ Rep. gr. 10 ; Powertrain mounting; Assembly overview - powertrain mounting .

2 - Engine mounting

- ❑ with supporting arm
- ❑ removing and installing ⇒ Rep. gr. 10 ; Assembly mountings; installing and removing engine bracket

3 - Screw

- ❑ ⇒ Rep. gr. 10 ; Powertrain mounting; Assembly overview - powertrain mounting .

4 - Screw

- ❑ ⇒ Rep. gr. 10 ; Powertrain mounting; Assembly overview - powertrain mounting .

5 - Screw

- ❑ ⇒ Rep. gr. 10 ; Powertrain mounting; Assembly overview - powertrain mounting .

6 - Screw

- ❑ ⇒ Rep. gr. 10 ; Powertrain mounting; Assembly overview - powertrain mounting .

7 - Screw

- ❑ ⇒ Rep. gr. 10 ; Powertrain mounting; Assembly overview - powertrain mounting .

8 - Pendulum support

- ❑ removing and installing ⇒ Rep. gr. 10 ; Assembly mountings; installing and removing pendulum support

9 - Screw

- ❑ ⇒ Rep. gr. 10 ; Powertrain mounting; Assembly overview - powertrain mounting .

10 - Screw

- ❑ ⇒ Rep. gr. 10 ; Powertrain mounting; Assembly overview - powertrain mounting .

11 - Screw

- ❑ Gearbox mount to gearbox
- ❑ Replace after removal
- ❑ 60 Nm + 90°

12 - Screw

- ❑ ⇒ Rep. gr. 10 ; Powertrain mounting; Assembly overview - powertrain mounting .

13 - Gearbox mount

- ❑ removing and installing ⇒ Rep. gr. 10 ; Assembly mountings; installing and removing gearbox mount

6 Transporting the gearbox

Special tools and workshop equipment required

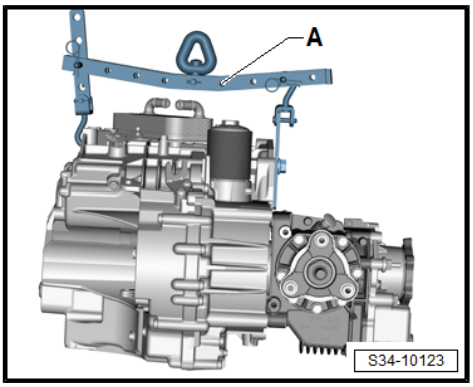
- ♦ Lifting device - MP9-201 (2024A)-
- ♦ Workshop crane , e.g. -VAS 6100-

• The gearbox is filled with oil. Therefore, do not turn the gearbox so that the breather is underneath when transporting, otherwise there is a risk of oil escaping.

If necessary, the cover of the breather can be removed and the opening can be closed with a suitable screw plug.

– Attach the lifting device for engine - MP9-201 (2024A)- -A- to the gearbox, as shown in the figure.

– Hook the lifting device for engine - MP9-201 (2024A)- with gearbox attached to workshop crane , e.g -VAS 6100- .



7 Attachment at engine and gearbox mount

Attachment at engine and gearbox mount

Special tools and workshop equipment required

- Bracket - VW 313- or -VAS 6095- or -VAS 6095A-
- Gearbox mount - T30109 (VW353)-
- Adapter - VW 309A-

The gearbox is filled with oil, so do not to turn the gearbox so that the breather is underneath when transporting or on the assembly support. Oil may escape from the gearbox in this position.

- If the gearbox filled with oil is turned on the assembly stand, first pull off the breather and close the opening with an oil-tight screw plug.

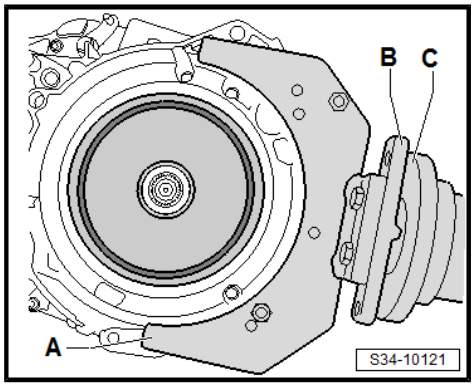
CAUTION

The centre of gravity of the gearbox is outside the turning centre on the assembly stand .

Risk of injury if turned unintentionally.

– For turning the gearbox, a second mechanic must hold the gearbox housing in order to avoid unintended turning.

– Secure the gearbox to the assembly stand, as shown in the figure.



A - Gearbox mount - T30109 (VW353)-

B - Adapter - VW 309A-

C - Bracket - VW 313- or -VAS 6095- or -VAS 6095A-

Securing the angle gearbox or front axle differential lock engine and gearbox mount

Special tools and workshop equipment required

- Gearbox mount - T10108-
- Bracket - VW 313- or -VAS 6095- or -VAS 6095A-

CAUTION

The centre of gravity of the gearbox is outside the turning centre on the assembly stand .

Risk of injury if turned unintentionally.

– For turning the gearbox, a second mechanic must hold the gearbox housing in order to avoid unintended turning.

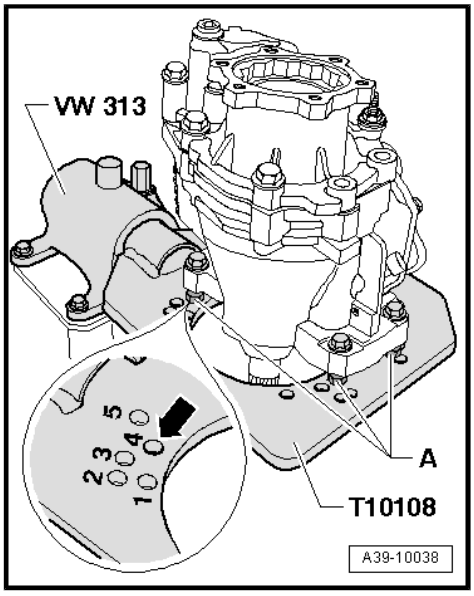
Angular gearbox, differential lock for front axle is filled with oil, if required. Therefore, do not turn the differential lock downwards with the breather if required during transport and on the mounting block. Oil may escape from the gearbox or different lock in this position.

- If the gearbox filled with oil is turned on the assembly stand, first pull off the breather and close the opening with an oil-tight screw plug.

– Place the angle gearbox on the opening marked with number “4” -arrow- in the gearbox bracket - T10108- with bracket - VW 313- or -VAS 6095- or -VAS 6095A- .

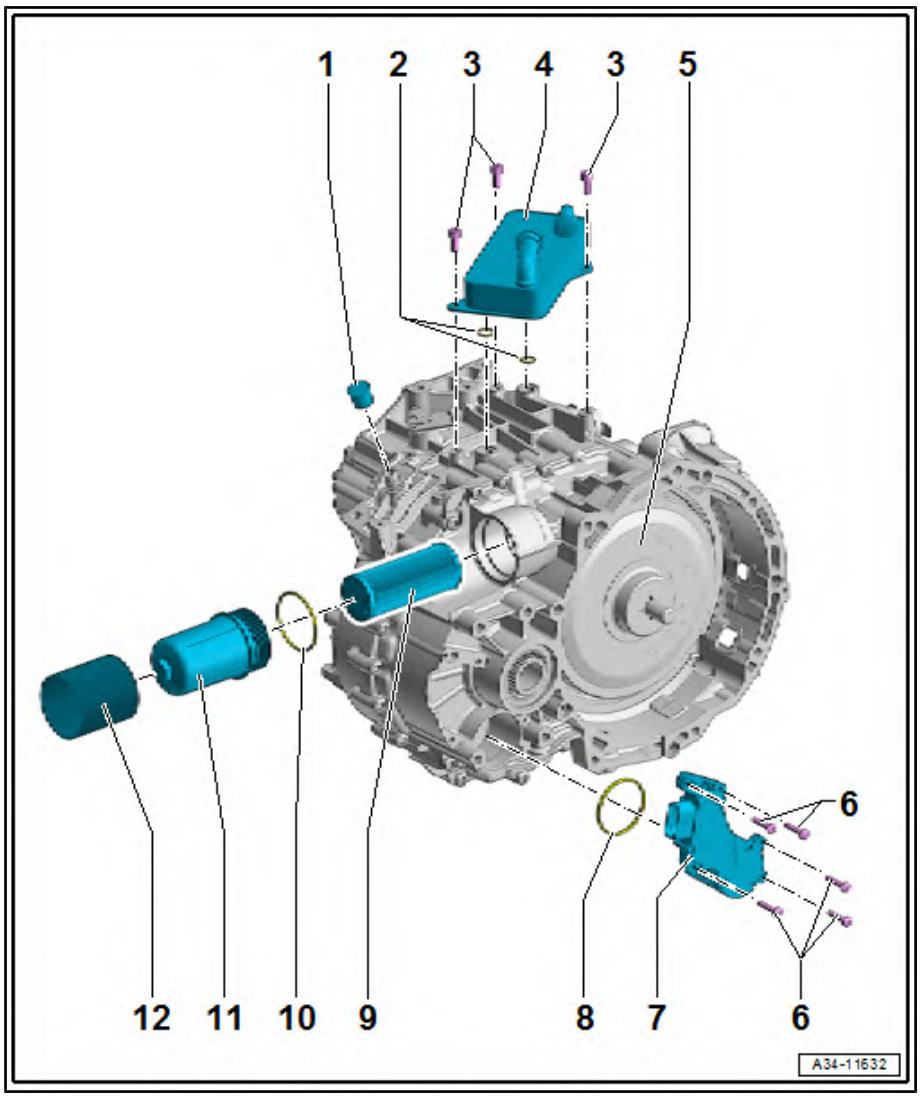
• Place nut M12 x 10 -pos. A- between angle gearbox and gearbox mount.

– Then align the angle gearbox with the 3 remaining openings and secure with inserted nuts -A-.



8 Transmission fluid circuit

8.1 Summary of components - gear oil circuit



1 - Cover caps for gearbox bleeder

2 - Sealing ring

- ❑ for gearbox oil cooler
- ❑ Replace after removal

3 - Screw

- ❑ Replace after removal
- ❑ 15 Nm + 60°

4 - Gearbox oil cooler

- ❑ Removing and installing ⇒ “8.2 Removing and installing gearbox oil cooler”, page 221

5 - Gearbox

- ❑ Removing and installing ⇒ “4 Removing and installing the gearbox”, page 106

6 - Screw

- ❑ Replace after removal
- ❑ 8 Nm + 45°

7 - Motor for auxiliary hydraulic pump 1 for gear oil - V475-

- ❑ Removing and installing ⇒ “8.3 Removing and installing auxiliary hydraulic pump 1 for gear oil V475 ”, page 222

8 - Sealing ring

9 - Gearbox oil filter

- ❑ Instructions for changing oil and filter ⇒ page 8
- ❑ Removing and installing ⇒ “8.4 Remove and install the gear oil filter”, page 224

10 - Sealing ring

- ❑ Replace after removal
- ❑ insert with gear oil

11 - Oil filter housing for gearbox

- ❑ 50 Nm

12 - Heat shield

- ❑ for gear oil filter

8.2 Removing and installing gearbox oil cooler

Special tools and workshop equipment required

- Hose clamp - MP7-602 (3094)-
- Plug set , e.g. -VAS 6122-

Removing

– Shift selector lever into position “P”.

– Remove air filter housing ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing .

– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .

CAUTION

Risk of scalding from hot coolant

– When the engine is warm, the cooling system is under overpressure, so there is a risk of scalding from hot steam and hot coolant.

– Cover the cap on the coolant expansion tank with a cloth and open carefully to release the excess pressure from the system.

– Wear protective spectacles and protective gloves.

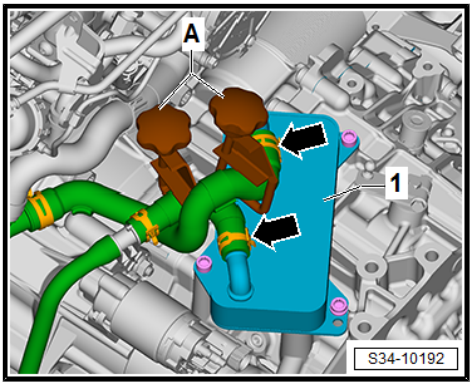
– Place a sufficient quantity of lint-free textiles on gear oil cooler and gearbox to catch escaping coolant.

– Close the coolant hoses with the hose clamps - MP7-602 (3094)- -A-.

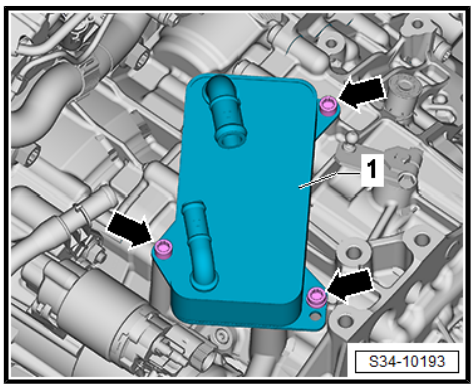
– Remove clamps -arrow- and disconnect the coolant hoses from the gearbox oil cooler -1-.

– Seal open lines with a clean plug e.g. from the plug set - VAS 6122- .

• There must be no coolant on the gearbox.

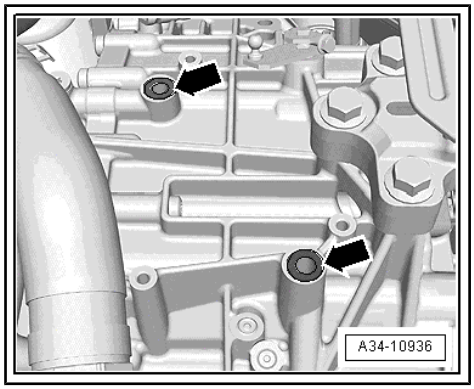


– Screw out the screws -arrows- and remove the gearbox oil cooler -1-.

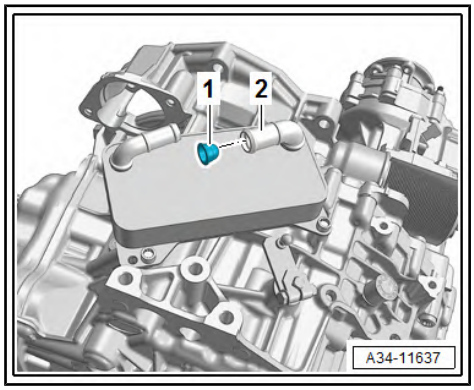


Installing

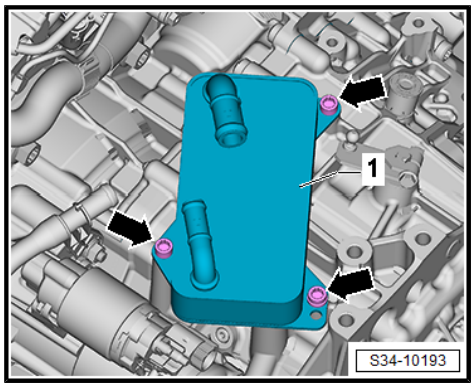
Installation is carried out in the reverse order; pay attention to the following points:



- Before installing, replace sealing rings -arrows-.
- Moisten sealing rings with gear oil before inserting.
- If the sealing surface on the gearbox oil cooler is damaged, the cooler must be replaced.
- When installing the original gearbox oil cooler, carefully remove the screen -1-, then clean and re-install.



– Carefully fit the gearbox oil cooler -1-, taking note of the sealing rings.
– Screw in and tighten screws -arrows- one after the other crosswise.
– Check gear oil level
⇒ “9.3 Checking the gear oil level”, page 227 .
– Check coolant level, top up if necessary ⇒ Engine; Rep. gr. 19 ; Cooling system/coolant; Draining and filling up coolant .
– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .
– Install air filter ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing .



Tightening torques and summaries of components

Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

♦ Gearbox oil cooler to gearbox
⇒ “8.1 Summary of components - gear oil circuit”, page 220

8.3 Removing and installing auxiliary hydraulic pump 1 for gear oil - V475-

Special tools and workshop equipment required

♦ Extractor tool - T10530-

Removing

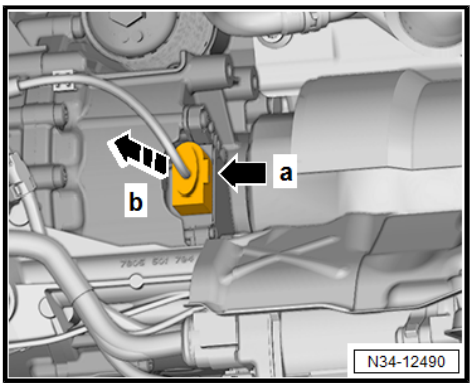
Vehicles with four-wheel drive

– Remove angle gearbox
⇒ “2.2 Remove angle gearbox”, page 36 .

Continued for all vehicles

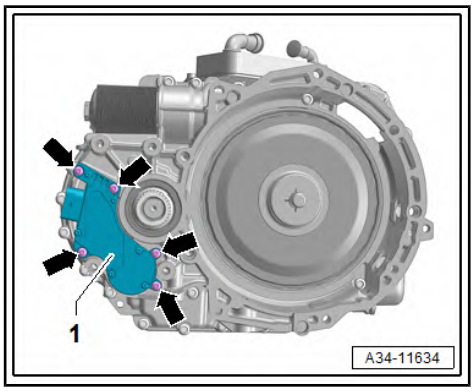
– Drain out gear oil
⇒ “9.4 Draining and filling gearbox oil”, page 231 .

– Unlock lock -a- and disconnect connector for -b- auxiliary hydraulic pump 1 for gear oil - V475- .



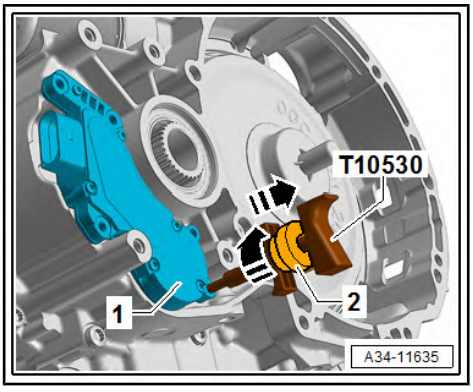
– Unscrew securing bolts -arrows-.

Shown on gearbox removed from vehicle.



– Insert extractor tool - T10530- into the bolt hole and then turn nut -2- clockwise until the extractor tool is clamped.

– Carefully pull out the motor for auxiliary hydraulic pump 1 for gear oil - V475- using the extractor tool - T10530- .



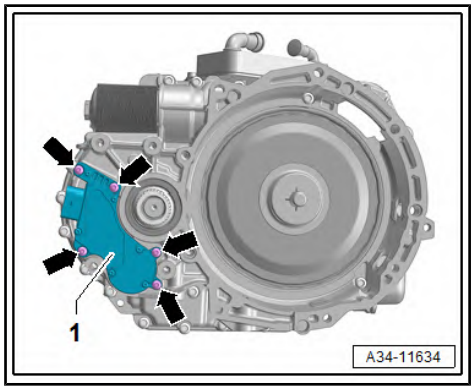
Installing

• Wet the sealing ring with gear oil before installing the pump.

– Push motor for auxiliary hydraulic pump 1 for gear oil - V475- evenly into the gearbox housing by hand.

– Bolt on pump with new bolts -arrow- and tighten bolts crosswise in stages.

– Pour in gear oil
⇒ “9.4 Draining and filling gearbox oil”, page 231



Vehicles with four-wheel drive

– Install angle gearbox ⇒ “2.3 Install angle gearbox”, page 43

Tightening torques and summaries of components

Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

◆ ⇒ “8.1 Summary of components - gear oil circuit”, page 220

8.4 Remove and install the gear oil filter

When changing the gear oil, the gearbox oil filter must not always be replaced.

- Therefore follow the instructions for when the gearbox oil filter must be replaced and when not ⇒ page 8 .

– Remove the sound dampening system ⇒ General body repairs, exterior ; Rep. gr. 66 ; Noise insulation .

– Remove air filter housing ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing .

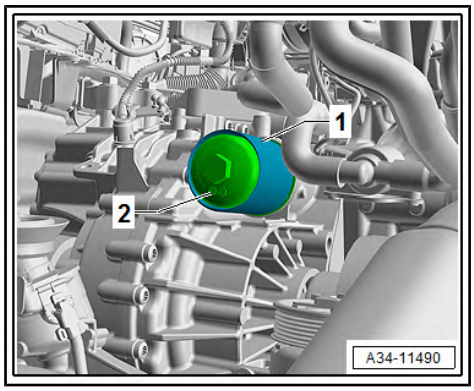
– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .

A residual amount of gear oil is left in the oil filter. The gear oil flows out when the oil filter housing is unscrewed.

- Before detaching the oil filter housing for gearbox, cover the area around the filter with enough lint-free cloths.
- Thoroughly clean all points that may be reached by the gear oil that flows out.

– Remove heat protection from oil filter for gearbox -1-.

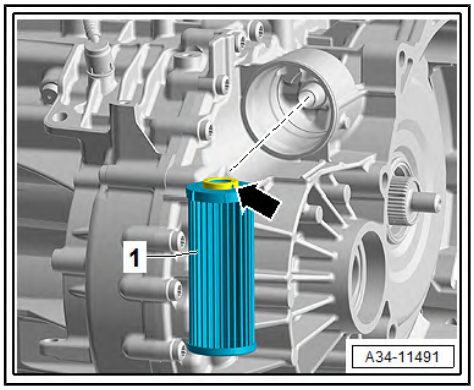
– Detach and screw out oil filter housing for gearbox and remove oil filter element.



Installing

- Replace the sealing rings for the oil filter housing and moisten with gear oil before assembly.
- Replace missing or damaged heat protection for oil filter housing.

– Insert oil filter element with suction belt -arrow- into the gearbox.
– Insert oil filter housing and tighten, then fit heat shield.
– Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .
– Install air filter ⇒ Rep. gr. 23 ; Air filter; Removing and installing air filter housing .
– Check gear oil level
⇒ “9.3 Checking the gear oil level”, page 227 .
– Install the noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation .



Tightening torques and summaries of components

Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

◆ ⇒ “8.1 Summary of components - gear oil circuit”, page 220

9 Gear oil

9.1 Summary of components - oil drain plugs and check screws

1 - Overflow pipe

- ❑ Pay attention to the instructions for the overflow pipe and different variants ⇒ page 9
- ❑ 3 Nm

2 - Sealing ring

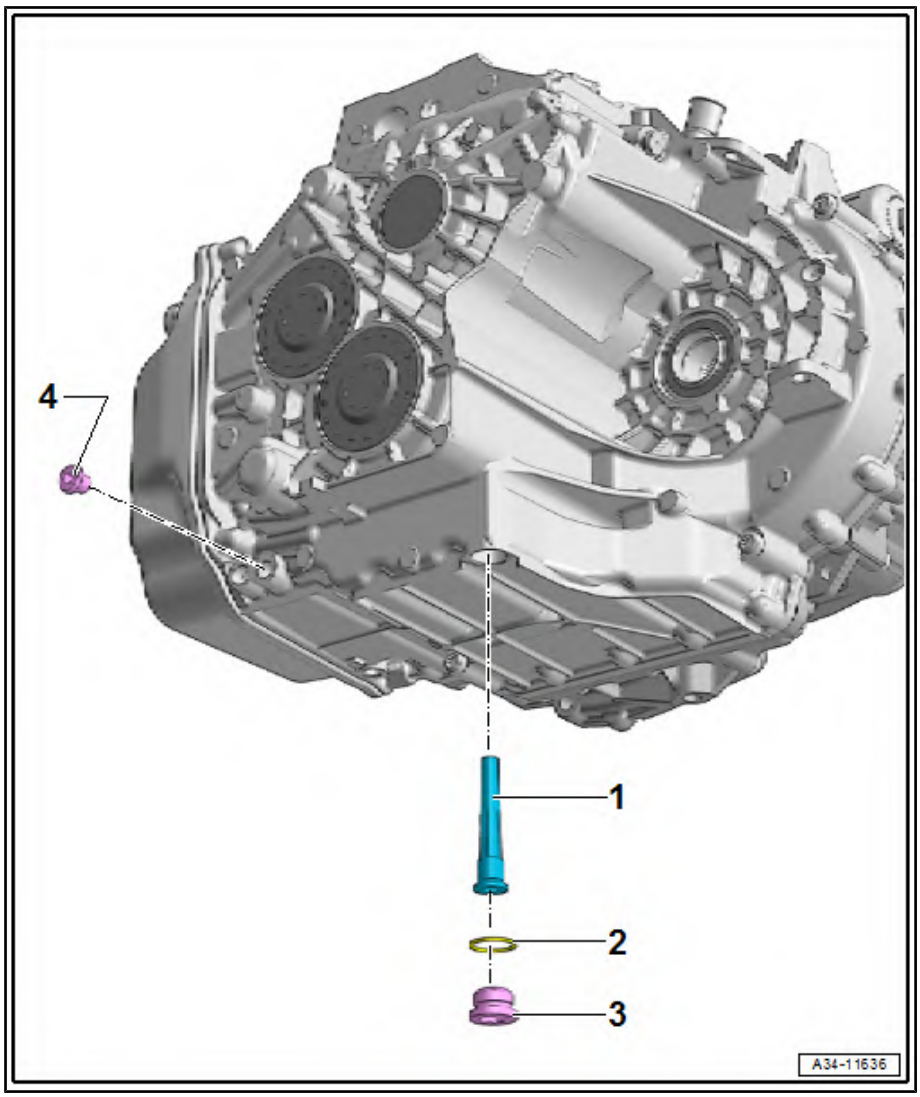
- ❑ Replace after removal

3 - Drain plug

- ❑ for gear oil
- ❑ 45 Nm

4 - Drain plug for mechatronics

- ❑ Replace after removal
- ❑ 10 Nm + 45°

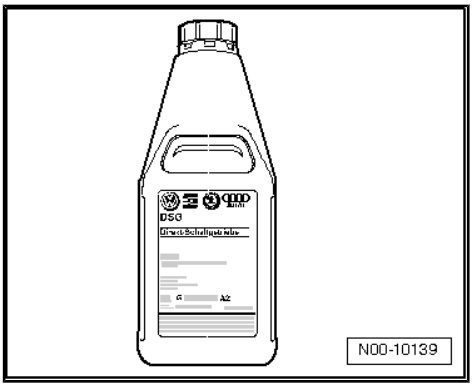


9.2 Tools needed for changing the gear oil

Special tools and workshop equipment required

- ♦ Adapter for oil filling - VAS 6262A-
- ♦ Adapter - VAS 6262/6- or adapter - VAS 6262/7-
- ♦ Old oil collecting and suction equipment , e.g. -VAS 6622A-
- ♦ Vehicle diagnosis tester
- ♦ Protective goggles

♦ Acid-resistant gloves

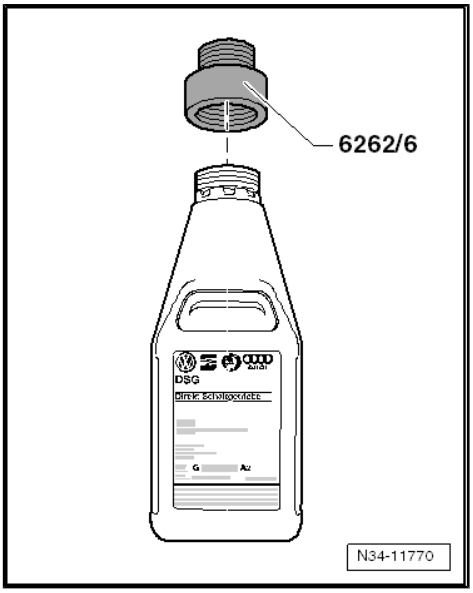


- Only spare part gear oil should be used for the dual clutch gearbox “0GC” ⇒ Electronic Catalogue of Original Parts .
- If the thread of the oil bottle does not match the oil filling adapter - VAS 6262A- , the adapter - VAS 6262/6- or adapter - VAS 6262/7- must be used in addition.

Work on the oil filling adapter - VAS 6262A- hose.

- The pipe of the oil filling adapter - VAS 6262A- must be shortened to prevent it colliding with the bottom of some oil bottles.

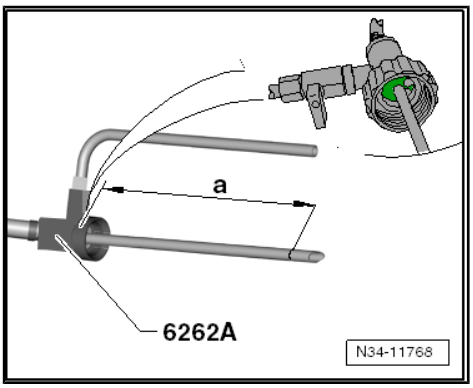
Shorten the pipe of the adapter for oil filling - VAS 6262A-



Dimension -a- is measured from the shaft (green area in the figure) of the oil filling adapter .

Dimension -a- = 210 mm.

– Shorten the tube of the adapter to dimension -a-.



9.3 Checking the gear oil level

Special tools and workshop equipment required

♦ Adapter for oil filling - VAS 6262A-

♦ Adapter - VAS 6262/6- or adapter - VAS 6262/7-

♦ Old oil collecting and suction equipment , e.g. -VAS 6622A-

♦ Vehicle diagnosis tester

♦ Protective goggles

♦ Acid-resistant gloves

– Remove the sound dampening system ⇒ General body repairs, exterior ; Rep. gr. 66 ; Noise insulation .

Test conditions

- Observe the general repair instructions ⇒ “3.3 General repair instructions”, page 7 .
- Observe rules for cleanliness ⇒ “3.1 Rules of cleanliness”, page 6 .
- Vehicle on completely level ground.
- The gearbox is not in the emergency running mode.
- Selector lever in “P” position, handbrake activated.
- The air conditioning and heating systems are switched off.
- The engine is running at idling speed.

CAUTION

Risk of accident

The radiator fan may run automatically.

– When working close to the radiator, keep sufficient distance from the fan.

Checking the gear oil level

The gear oil level changes with the gearbox oil temperature.

The gearbox is not filled correctly if the gearbox oil temperature is too low or too high.

The gearbox function is impaired if the gear oil level is too high or too low.

- The gear oil temperature must be approx. 30°C when starting work.

– Connect ⇒ Vehicle diagnostic tester and identify the vehicle with `Guided Functions`.

– Select the `dual-clutch gearbox`.

– Select `check oil level`.

- The target temperature at the start of the test may not exceed 30°C, otherwise, the gearbox must be allowed to cool down.

CAUTION

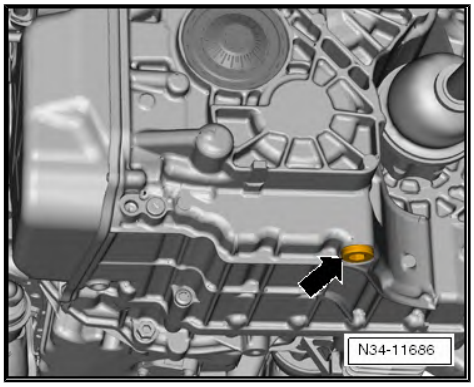
Risk of injury from hot gear oil.

– Wear protective spectacles and protective gloves.

– Place the waste oil collection and extraction unit such as -VAS 6622A- drip tray underneath the gearbox, if required.

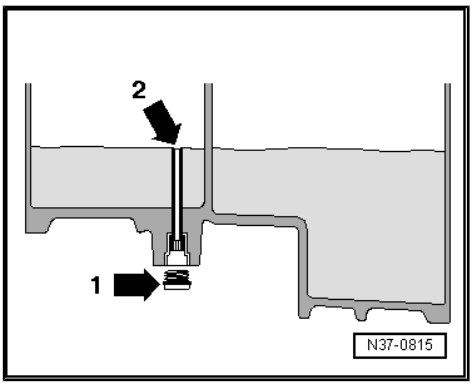
- The engine is running at idling speed.
- Selector lever in “P” position, handbrake activated.

– Remove oil drain plug -arrow-.



• Built up gear oil flows out of the overflow pipe -arrow 2-.

When you open the drain plug -arrow 1-, a small amount of gear oil always flows out, regardless of the gear oil level.



NOTICE

There are different versions of overflow pipe.

Insufficient oil quantity and overfilling the oil impairs the function of the individual parts of the gearbox and may cause damage.

– Check which overflow pipe is installed and carry out the oil level check right after the workshop process.

Gearbox with beige overflow pipe

NOTICE

The gearbox is damaged if overfilled.

– The correct oil level is below the level of the overflow pipe.

– You must therefore unscrew the overflow pipe by 2 turns to check and correctly adjust the oil level.

– Loosen overflow pipe by 2 turns.

Gearbox with red overflow pipe

• Unscrewing the overflow pipe to check the oil level is not required.

Continued for all versions

• If a small quantity of oil still runs out at temperatures of 35 - 45 °C (oil starts to drip), the gearbox oil level is OK.

A small amount of oil comes out of the overflow pipe every 30 seconds, regardless of the oil level. This is caused by pulsation in the cooling oil for the coupling.

Such escaping oil do not indicated whether the gear oil level is adequate, so they must not be taken into account when determining the oil level.

• If no oil escapes when checking, top up oil ⇒ page 230 .

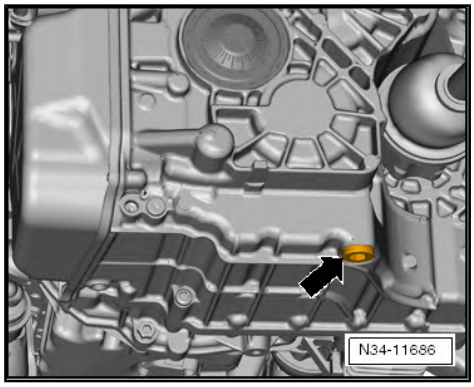
• If the oil level is OK.

Gearbox with beige overflow pipe

– Tighten overflow pipe, as per the instructions ⇒ page 9 .

Continued for all versions

– Screw in and tighten oil drain plug -arrow- with new seal.



Top up with gearbox oil

NOTICE

Risk of damage to gearbox.

- **Only spare part gear oil should be used for the 7-speed gearbox 0GC ⇒ Electronic Catalogue of Original Parts .**

Other gear oils lead to malfunctions and/or gearbox failure.

The adapter for oil filling must be clean and the gearbox oil must not be mixed with other oils!

The oil that has escaped must not be used again.

For topping up, use adapter for oil filling - VAS 6262A- .

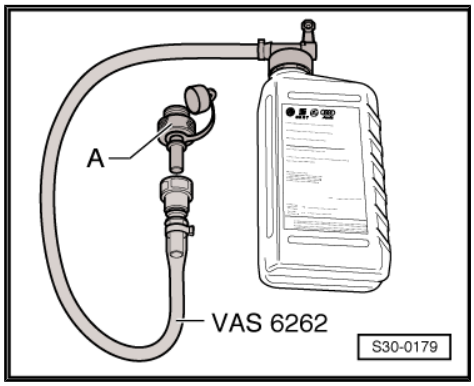
- Shake oil bottle well before opening to mix any sediments at the bottom of the bottle with the oil.
- If the thread of the oil bottle does not match the oil filling adapter - VAS 6262A- , the adapter - VAS 6262/6- or adapter - VAS 6262/7- must be used in addition.

Gearbox with beige overflow pipe

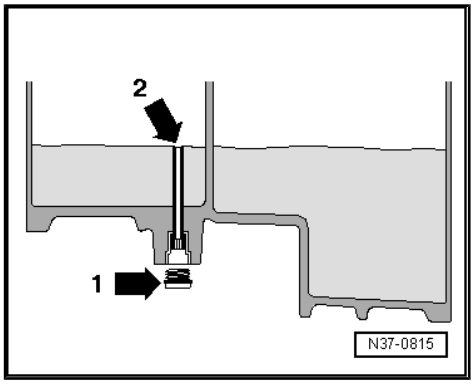
– Screw in the overflow pipe as far as it will go, paying attention to the instructions ⇒ page 9 .

Continued for all versions

– Screw the gearbox oil bottle to the adapter for oil filling - VAS 6262A- .



– Screw the adapter for oil filling - VAS 6262A- -A- by hand into the hole of the check and filler screw -arrow 1-.
– Hold the bottle with the adapter for oil filling - VAS 6262A- as high as possible above the level of the gearbox and fill with 1 litre of gear oil.
– Disconnect the adapter for oil filling - VAS 6262A- from the quick coupler and let excess gear oil drain off.
– Checking the gear oil level ⇒ page 228
• If no oil escapes through the opening:
– Fill up with another 1.0 litres of oil and repeat the procedure.



Tightening torques and summaries of components

Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

♦ Oil drain plug to gearbox
⇒ “9.1 Summary of components - oil drain plugs and check screws”, page 226

9.4 Draining and filling gearbox oil

Special tools and workshop equipment required

♦ Adapter for oil filling - VAS 6262A-
♦ Adapter - VAS 6262/6- or -VAS 6262/7-
♦ Old oil collecting and suction equipment , e.g. -VAS 6622A-
♦ Vehicle diagnosis tester
♦ Protective goggles
♦ Acid-resistant gloves

NOTICE

Risk of damage to gearbox

– Do not run the engine or tow the vehicle when the cover for mechatronics has been removed or without filling gear oil.

Conditions

• Observe the general repair instructions
⇒ “3.3 General repair instructions”, page 7 .
• Observe rules for cleanliness
⇒ “3.1 Rules of cleanliness”, page 6 .
• Follow the instructions for the overflow tube ⇒ page 9 .
• Vehicle on completely level ground.
• Remove the sound dampening system ⇒ General body repairs, exterior ; Rep. gr. 66 ; Noise insulation .
• Engine switched off.
• The gearbox is not in the emergency running mode.
• Selector lever in “P” position, handbrake activated.

CAUTION

Risk of accident

The radiator fan may run automatically.

– When working close to the radiator, keep sufficient distance from the fan.

CAUTION

Risk of injury from hot gear oil.

– Wear protective spectacles and protective gloves.

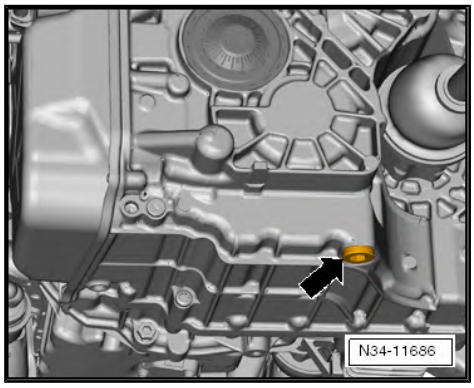
Draining out gear oil

– Place the waste oil collection and extraction unit such as -VAS 6622A- drip tray underneath the gearbox, if required.

– Unscrew the check and filler screw -arrow-.

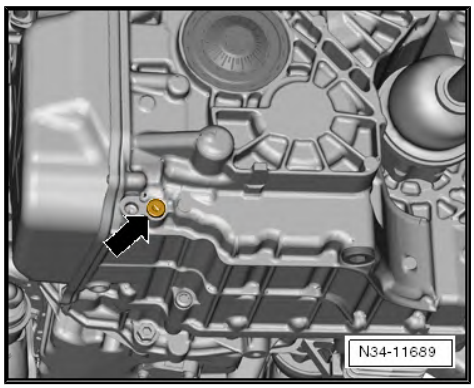
• Accumulated gear oil flows out of the overflow pipe.

– Unscrew the overflow pipe and let the gear oil drain out.



– Unscrew the oil drain plug for mechatronics -arrow-.

The remaining gear oil drains out.



Tip:

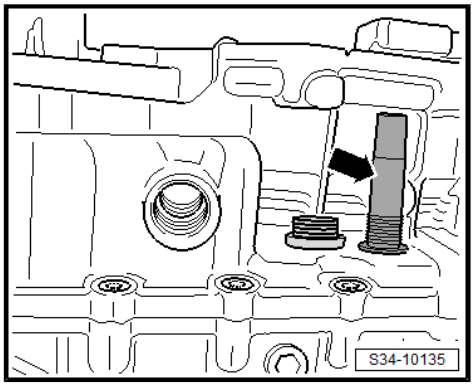
• Wait approx. 4 minutes until all the gear oil has leaked out.

– Screw in new drain plug for mechatronics.

Pour in gear oil

• Follow the instructions for the overflow tube ⇒ page 9 .

– Screw in overflow pipe -arrow-.



NOTICE

Risk of damage to gearbox.

- **Only spare part gear oil should be used for the 7-speed gearbox 0GC ⇒ Electronic Catalogue of Original Parts .**

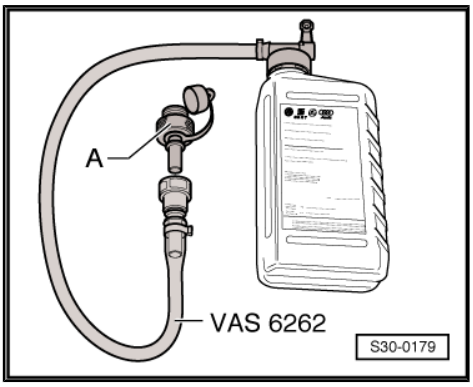
Other gear oils lead to malfunctions and/or gearbox failure.

The adapter for oil filling must be clean and the gearbox oil must not be mixed with other oils!

For topping up, use adapter for oil filling - VAS 6262A- .

- The pipe of the adapter for oil filling - VAS 6262A- must be shortened to prevent it colliding with the bottom of soil oil bottles ⇒ page 227 .
- Shake oil bottle well before opening to mix any sediments at the bottom of the bottle with the oil.
- If the thread of the oil bottle does not match the oil filling adapter - VAS 6262A- , the adapter - VAS 6262/6- or -VAS 6262/7- must be used in addition.

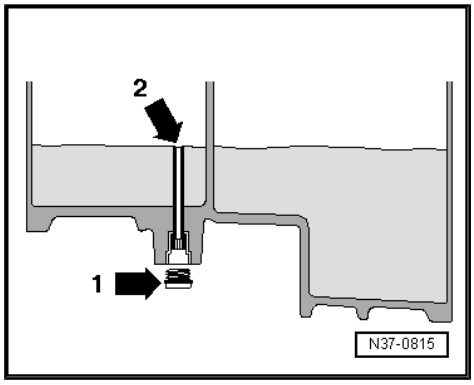
– Screw the gearbox oil bottle to the adapter for oil filling - VAS 6262A- .



– Screw the adapter for oil filling - VAS 6262A- -A- by hand into the hole of the check and filler screw -arrow 1-.

– Hold the bottle with the adapter for oil filling - VAS 6262A- as high as possible above the level of the gearbox and fill with 6 litres of gear oil.

To change the bottle, the shut-off valve can be sealed or the adapter for oil filling - VAS 6262A- can be held higher than the gearbox.



Note

The exact oil level is refilled during the oil level check.

• Selector lever in »P«.

– Start engine and run in idle.

– Depress the brake pedal and shift the selector lever to all positions “P, R, N, D/S”, during which you should leave the selector lever in each position for at least 3 seconds.

– Shift selector lever back into position “P”.

– Check gear oil level
⇒ “9.3 Checking the gear oil level”, page 227 .

Tightening torques and summaries of components

Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

◆ Oil drain plugs and overflow pipe to gearbox
⇒ “9.1 Summary of components - oil drain plugs and check screws”, page 226

35 – Gears, shafts

1 Disassemble and assemble wheels and shafts

At present no repairs are carried out on the pinions and shafts.

39 – Final drive - differential

1 Gear oil

⇒ “1.1 Checking the gear oil level”, page 236

⇒ “1.2 Draining and filling gearbox oil”, page 237

1.1 Checking the gear oil level

⇒ “1.1.1 Inspecting gear oil in the angle gearbox”, page 236

1.1.1 Inspecting gear oil in the angle gearbox

Special tools and workshop equipment required

- Catch pan
- Protective goggles
- Acid-resistant gloves

The angle gearbox has an automatic oil filling for final drives.

Oil specification for the angle gearbox ⇒ Electronic Catalogue of Original Parts

Test conditions

- Observe the general repair instructions ⇒ “3 Repair instructions”, page 6 .
- The vehicle must be completely level.
- Selector lever in “P”.
- Engine switched off.

– Remove the sound dampening system ⇒ General body repairs, exterior ; Rep. gr. 66 ; Noise insulation .

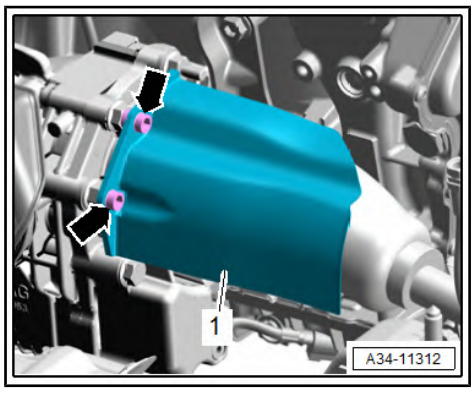
– Unscrew nuts and remove protection plate for right drive shaft (if present).

– Place the catch pan under the gearbox.

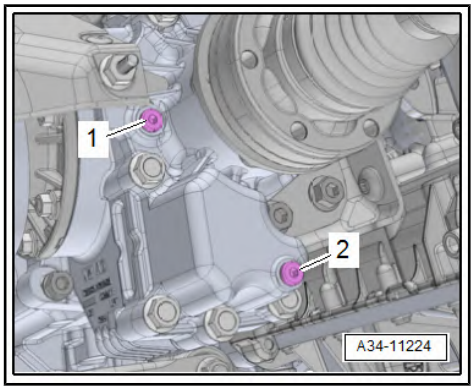
CAUTION

Risk of injury from hot oil for final drives.

– Wear protective spectacles and protective gloves.



– Unscrew oil filler plug -1-.



- Oil level in angle gearbox should be at lower edge of oil filler hole.
- Replace filler screw after disassembly.
- If oil gets onto the angle gearbox. it must be removed immediately.

If oil level is low:

– Fill angle gearbox with oil for final drives
⇒ “1.2 Draining and filling gearbox oil”, page 237 .

– Screw in new oil filler plug for angle gearbox.

– Install protection plate for right drive shaft ⇒ Chassis, axles, steering; Rep. gr. 40 ; Drive shaft; removing and installing drive shaft heat shield .

– Install the noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation .

Tightening torques and summaries of components

Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

♦ Oil filling and drain plug for angle gearbox
⇒ “4.1 Assembly overview - angle gearbox parts”, page 247 .

1.2 Draining and filling gearbox oil

⇒ “1.2.1 Draining and filling gear oil in the angle gearbox”, page 237

1.2.1 Draining and filling gear oil in the angle gearbox

Special tools and workshop equipment required

♦ Filling device - VAS 6291A-

♦ Adapter - VAS 6262/6- or -VAS 6262/7-

♦ Adapter for oil filling - VAS 6291/3-

♦ Catch pan

♦ Protective goggles

♦ Acid-resistant gloves

Oil needs to be drained from the angle gear only for repairs. Oil is not replaced.

Oil specification for the angle gearbox ⇒ Electronic Catalogue of Original Parts

Conditions

- Observe the general repair instructions
⇒ “3 Repair instructions”, page 6 .
- The vehicle must be completely level.
- Selector lever in “P”.
- Engine switched off.

Drain oil

– Remove the sound dampening system ⇒ General body repairs, exterior ; Rep. gr. 66 ; Noise insulation .

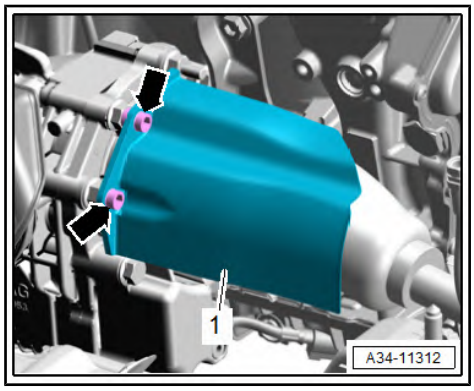
– Remove protection plate for right drive shaft (if present) -arrows- to provide better access to the filler screw.

– Place the catch pan under the gearbox.

CAUTION

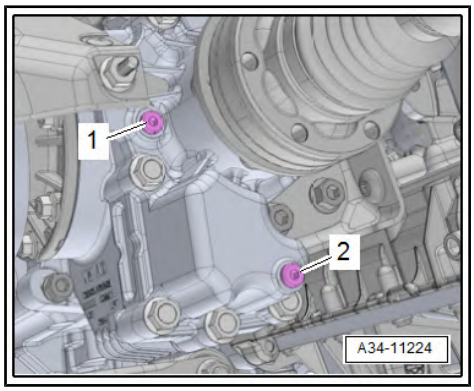
Risk of injury from hot oil for final drives.

– Wear protective spectacles and protective gloves.



– Remove the oil drain plug -2- and let the gear oil drain off.

– Screw in new oil drain plug -2- and tighten.

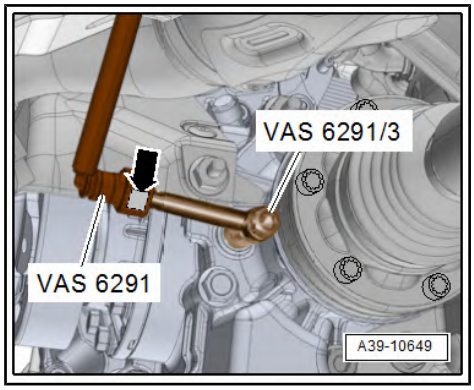


Replenish oil

– Unscrew oil filler plug -1-.

– Screw in adapter for oil filling - VAS 6291/3- into the filler hole as far as it will go.

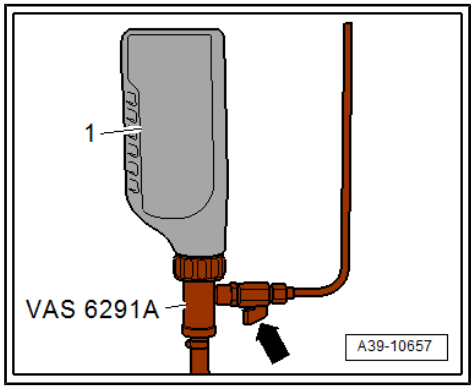
– Attach angular piece of filling device - VAS 6291A- to adapter for oil filling - VAS 6291/3- .



- The hose must not sag.
- Make sure that the valve of the filling device - VAS 6291A- -arrow- is closed.

– Screw oil reservoir onto filling device - VAS 6291A- .

- On some oil bottles, the adapter - VAS 6262/6- or -VAS 6262/7- must be used.



– Open the valve -arrow- and hold the oil reservoir as high as possible above the level of the gearbox.

• The angle gearbox is filled correctly when oil comes out at the adapter for oil filling - VAS 6291/3- .

• If no oil flows out, continue the filling procedure.

– Remove adapter for oil filling - VAS 6291/3- .

– Screw in previous gearbox oil filler plug and tighten slightly.

– Start engine, engage a gear and allow gearbox to rotate for about 2 minutes.

– Switch off engine and unscrew oil drain plug.

– Check the oil level.

• Set value: the oil level in the final drive must be at the lower edge of oil filler hole.

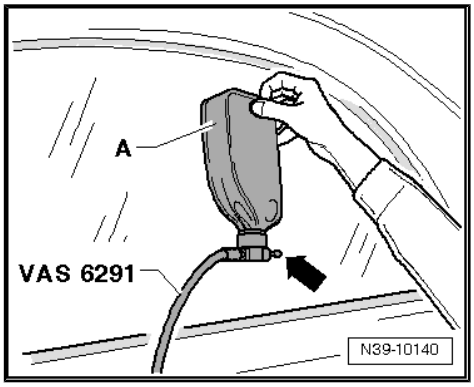
• As needed, replenish oil for final drives up to lower edge of oil filler hole.

• If oil gets onto the angle gearbox. it must be removed immediately.

– Install new oil filler plug.

– Install heat shield for right drive shaft ⇒ Chassis, axles, steering; Rep. gr. 40 ; Drive shaft; removing and installing heat shield for drive shaft .

– Install the noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation .



Tightening torques and summaries of components

Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

◆ Oil filling and drain plug for angle gearbox
⇒ “4.1 Assembly overview - angle gearbox parts”, page 247 .

2 Sealing rings

2.1 Installation overview - sealing rings

1 - Right sealing ring

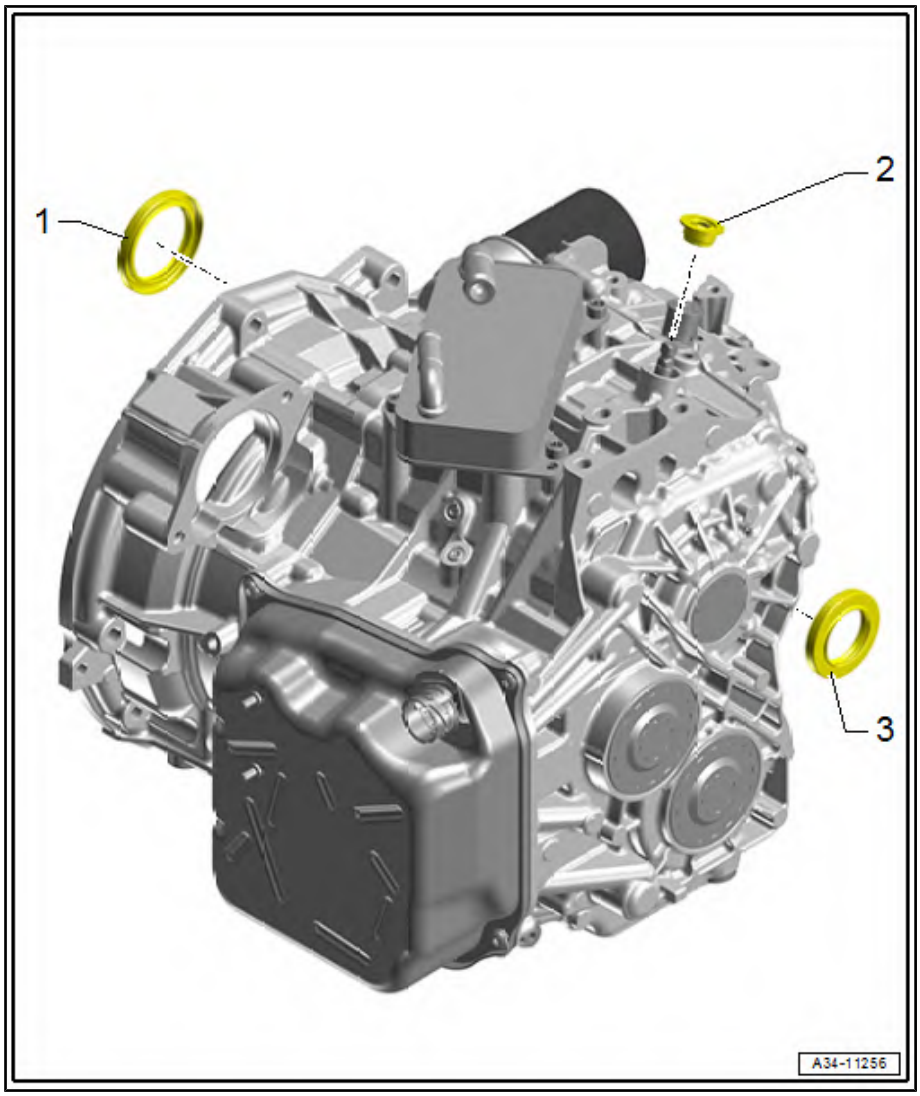
- ❑ Replace ⇒ “2.3 Replacing right sealing ring”, page 242

2 - Sealing ring for gearshift shaft

- ❑ Replace ⇒ “3.11 Replacing the sealing ring for the gear-shift shaft”, page 101

3 - Left sealing ring

- ❑ Replace ⇒ “2.2 Replacing left sealing ring”, page 240



2.2 Replacing left sealing ring

Special tools and workshop equipment required

- ♦ Extractor tool - T10055-
- ♦ Thrust piece - T10457-
- ♦ Catch pan
- ♦ Commercially available drill

Removing

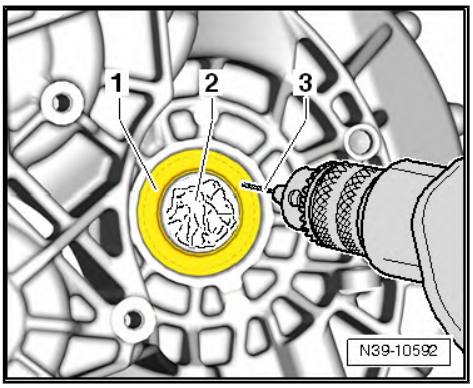
– Remove left drive shaft ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shafts .

NOTICE

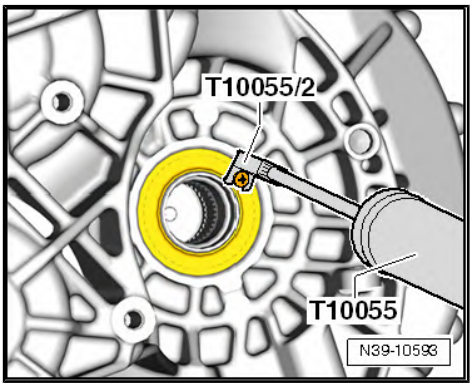
Risk of damage to the bearing when drilling

- **Only drill through the metal plate ring of the radial shaft seal.**
- **Do not screw in the sheet metal screw too deep.**

- Close the openings for the drive shaft with a clean cloth -2-.
- Grease drill -3- so that the swarf from drilling sticks to the drill.
- Carefully drill a hole with a diameter of 2-4 mm into the outer metal plate -1- of the sealing ring.

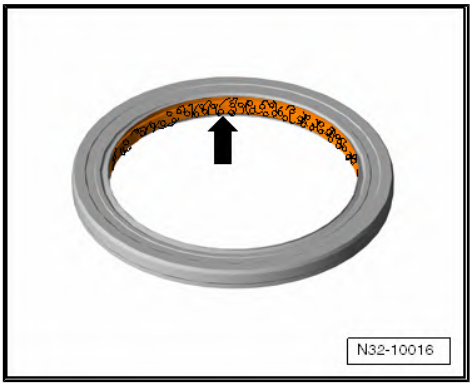


- Screw a sheet metal screw with a diameter of approx. 4 mm into the drilled hole of the seal.
- The sheet metal screw must not be screwed in too deep, so that the bearing behind the screw is not damaged.
- Place the catch pan under the gearbox.
- Pull out the seal with the extractor - T10055- with adapter - T10055/2- .
- Carefully pull the cloth out of the opening for the drive shaft.
- Dirt and swarf must not get into the gearbox.
- Thoroughly clean the gearbox and the opening for the drive shaft.
- If you an only pull out the steel ring, carefully lever out the rest of the seal with a screwdriver.

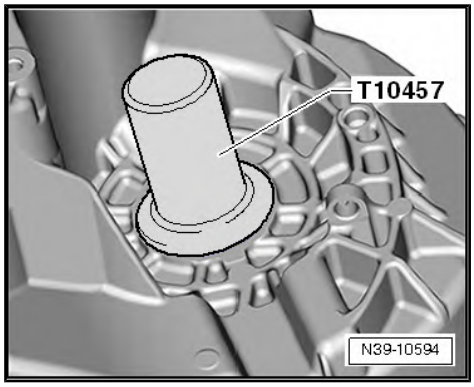


Installing

- Fill the space between the sealing lip and dust lip with sealing grease for radial shaft seal - G 052 128 A1- -arrow- and moisten the outer circumference with gear oil.
- Fitting position: The open side of the sealing ring faces towards the gearbox.
- Fit seal ring by hand and press in as far as possible, so that the seal is fixed in the gearbox housing.



– Use the gasket ring with press-on sleeve - T10457- to drive the gasket ring as far as it will go into the gearbox housing.



• Keep the sealing ring straight.

– Install left drive shaft ⇒ Chassis, axles, steering; Rep. gr. 40 ; Drive shaft; removing and installing drive shaft .

– Check gear oil, top up if necessary
⇒ “9.3 Checking the gear oil level”, page 227 .

2.3 Replacing right sealing ring

⇒ “2.3.1 Replace sealing ring on right, vehicles with front drive”, page 242

⇒ “2.3.2 Replacing right sealing ring, vehicles with four-wheel drive”, page 243

2.3.1 Replace sealing ring on right, vehicles with front drive

Special tools and workshop equipment required

♦ Extractor tool - T10055-

♦ Thrust piece - T40372-

♦ Catch pan

♦ Commercially available drill

Removing

The gearbox is installed.

– Install right drive shaft ⇒ Chassis, axles, steering; Rep. gr. 40 ; Drive shaft; removing and installing drive shaft .

NOTICE

Risk of damage to the bearing when drilling

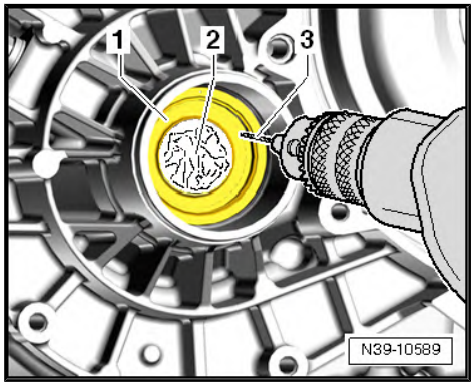
– Only drill through the metal plate ring of the radial shaft seal.

– Do not screw in the sheet metal screw too deep.

– Close the openings for the drive shaft with a clean cloth -2-.

– Grease drill -3- so that the swarf from drilling sticks to the drill.

– Carefully drill a hole with a diameter of 2-4 mm into the outer metal plate -1- of the sealing ring.



– Screw a sheet metal screw with a diameter of approx. 4 mm into the drilled hole of the seal.

• The sheet metal screw must not be screwed in too deep, so that the bearing behind the screw is not damaged.

– Place the catch pan under the gearbox.

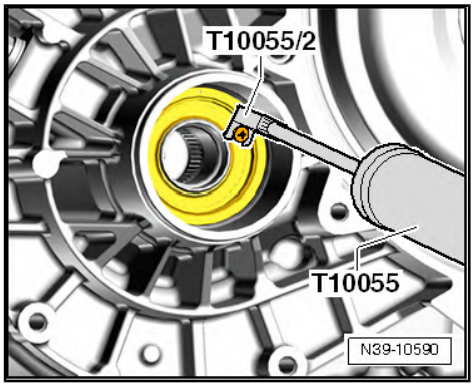
– Pull out the seal with the extractor - T10055- with adapter - T10055/2- .

– Carefully pull the cloth out of the opening for the drive shaft.

• Dirt and swarf must not get into the gearbox.

• Thoroughly clean the gearbox and the opening for the drive shaft.

• If you an only pull out the steel ring, carefully lever out the rest of the seal with a screwdriver.

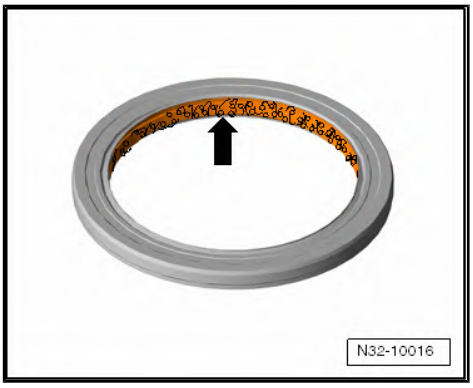


Installing

– Fill the space between the sealing lip and dust lip with sealing grease for radial shaft seal - G 052 128 A1- -arrow- and moisten the outer circumference with gear oil.

• Fitting position: The open side of the sealing ring faces towards the gearbox.

– Fit seal ring by hand and press in as far as possible, so that the seal is fixed in the gearbox housing.

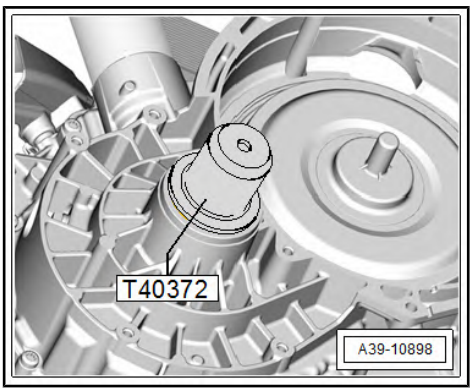


– Use the gasket ring with press-on sleeve - T40372- to drive the gasket ring as far as it will go into the gearbox housing.

• Keep the sealing ring straight.

– Install left drive shaft ⇒ Chassis, axles, steering; Rep. gr. 40 ; Drive shaft; removing and installing drive shaft .

– Check gear oil, top up if necessary
⇒ “9.3 Checking the gear oil level”, page 227 .



2.3.2 Replacing right sealing ring, vehicles with four-wheel drive

Special tools and workshop equipment required

♦ Extractor tool - T20143-

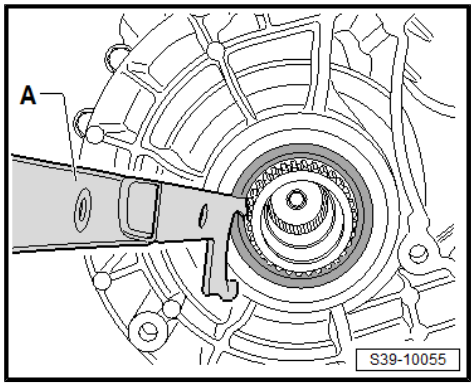
♦ Thrust piece - T10049-

♦ Catch pan

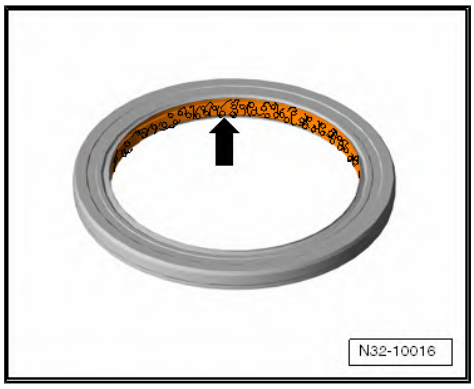
– Remove angle gearbox
⇒ “2.2 Remove angle gearbox”, page 36 .

– Place the catch pan under the gearbox.

– Lever out the sealing ring on the gearbox with extractor hook - T20143/1- or - T20143/2- -A-.



– Fill the space between the sealing lip and dust lip with sealing grease for radial shaft seal - G 052 128 A1- -arrow- and moisten the outer circumference with gear oil.

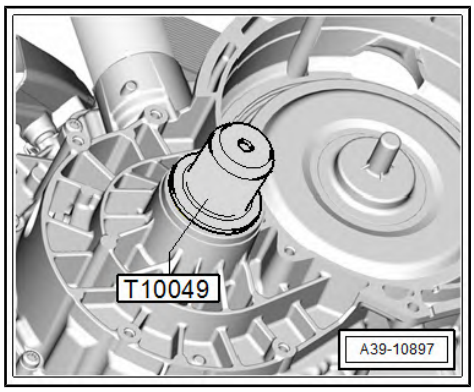


– Drive in new sealing ring with thrust piece - T10049- up to the stop.

• Keep the new sealing ring straight.

– Install angle gearbox ⇒ “2.3 Install angle gearbox”, page 43 .

– Check gear oil level
⇒ “9.3 Checking the gear oil level”, page 227 .



3 Differential

⇒ “3.1 Removing and installing right flange shaft”, page 245

3.1 Removing and installing right flange shaft

⇒ “3.1.1 Removing and installing right flange shaft, vehicles with four-wheel drive”, page 245

3.1.1 Removing and installing right flange shaft, vehicles with four-wheel drive

Special tools and workshop equipment required

- Retractor - T10037-
- Socket - T10107A-
- Catch pan

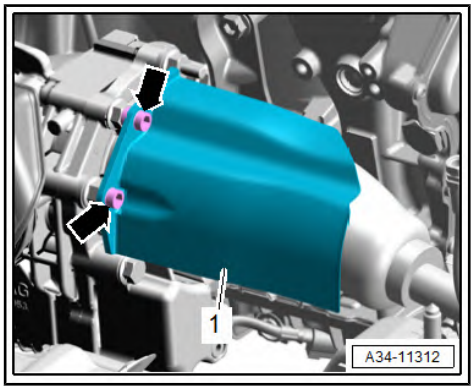
Removing

- The gearbox is installed.

– Unscrew nuts -arrows- and remove heat shield for right drive shaft.

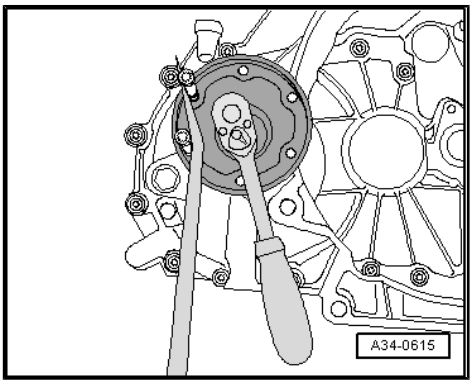
– Remove right drive shaft ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .

– Place the catch pan under the gearbox.

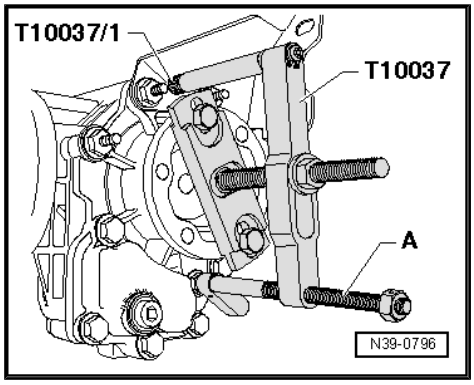


– Tighten the screw on the right flange shaft with a socket insert - T10107A- .

- To loosen the bolt for the flange shaft, insert 2 bolts into the flange and counterhold the flange shaft with am assembly lever.



– Screw on the extractor device - T10037- to the right flange shaft as shown.
– Align extractor - T10037- with the knurled nut - T10037/1- and the moving screw -A- parallel to the flange.
– Take out the flange shaft.



Installing

Installation is carried out in the reverse order. When installing, observe the following:

– Drive in the flange shaft carefully while rotating at the same time.
– Screw on the flange shaft.
– Install right drive shaft ⇒ Chassis, axles, steering; Rep. gr. 40 ; Drive shaft; removing and installing drive shaft .
– Inspecting oil level in the angle gearbox
⇒ “1.1 Checking the gear oil level”, page 236 .

Tightening torques and summaries of components

Note

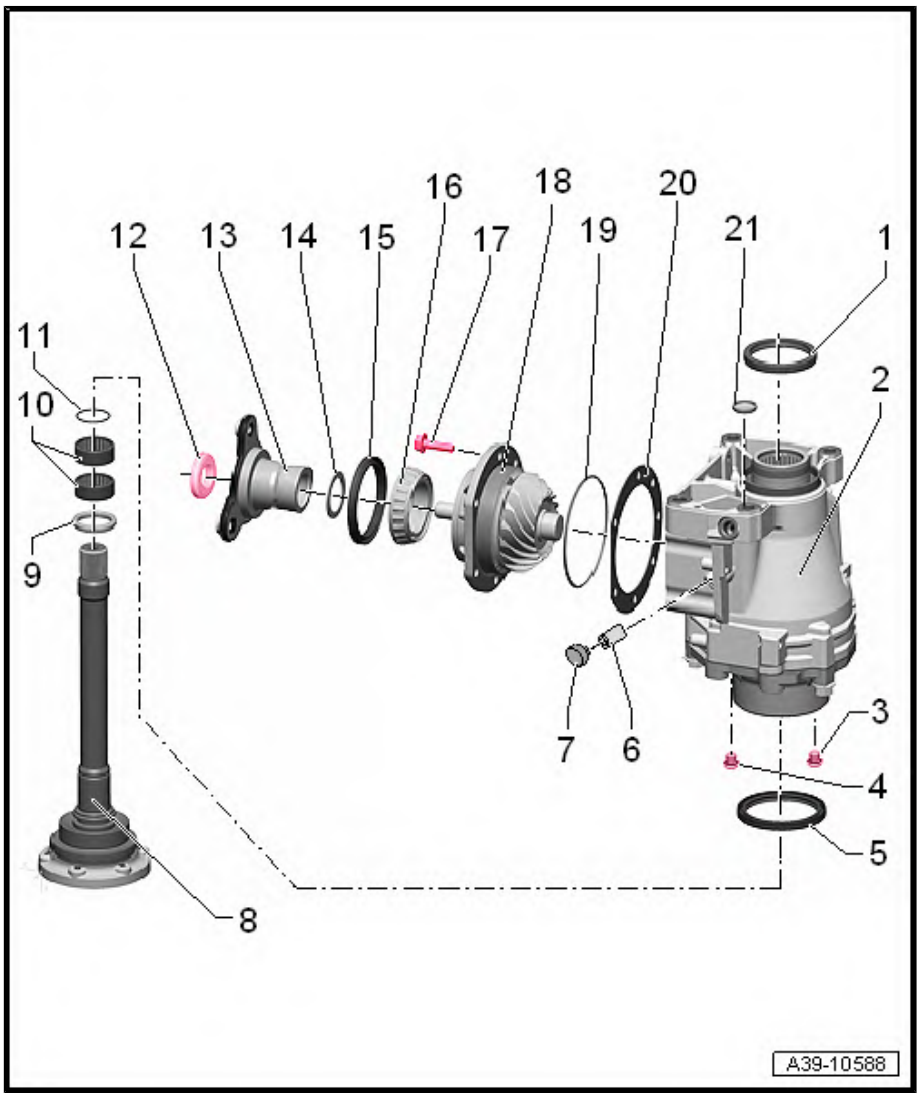
Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

Component	Tightening torque
Screw for right flange shaft	25 Nm

4 Bevel gear components

4.1 Assembly overview - angle gearbox parts

4.1.1 Summary of components - parts of angle gearbox 0CN



1 - Sealing ring

- ❑ on gearbox side
- ❑ Replace ⇒ “4.3.2 Replacing the sealing ring for the angle gearbox - Gearbox side”, page 267

2 - Angle gearboxes 0CN

- ❑ Designation and distinction ⇒ “2.2 Marking angle gearbox”, page 4
- ❑ Summary of components ⇒ “2.1 Summary of components - angle gearbox”, page 35
- ❑ removing ⇒ “2.2 Remove angle gearbox”, page 36
- ❑ installing ⇒ “2.3 Install angle gearbox”, page 43

3 - Oil drain plug

- ❑ with captive sealing ring
- ❑ Replace after removal
- ❑ 20 Nm

4 - Oil filler plug

- ❑ with captive sealing ring
- ❑ Replace after removal
- ❑ 20 Nm

5 - Sealing ring

- ❑ for right flange shaft
- ❑ Replace ⇒ “4.3.1 Replacing sealing ring for angle gearboxes - on flange shaft side”, page 266

6 - Ventilation tube

- ❑ Angle gearbox ventilation
- ❑ pull in up to stop

7 - Cap

- ❑ Angle gearbox ventilation

8 - Right flange shaft

- ❑ Removing and installing
  ⇒ “3.1.1 Removing and installing right flange shaft, vehicles with four-wheel drive”, page 245

9 - Sealing ring

- ❑ insert into the round slot of the right flange shaft
- ❑ remove when replacing the needle bearing (Pos. 10)

10 - Needle bearing

- ❑ Replace ⇒ “4.4 Replacing the right flange shaft needle bearing”, page 268

11 - Circlip

- ❑ Replace after removal

12 - Twelve-point nut

- ❑ Replace after removal
- ❑ secure by caulking after tightening ⇒ page 258
- ❑ 340 Nm

13 - Angle gearbox output flange

- ❑ Removing and installing ⇒ “4.2.1 Remove output flange, Angle gearboxes 0CN”, page 252

14 - Adjusting washer

- ❑ not available as spare part

15 - Sealing ring

- ❑ for angle gearbox output flange
- ❑ Replace ⇒ “4.2.1 Remove output flange, Angle gearboxes 0CN”, page 252

16 - Inner ring/tapered-roller bearing

- ❑ not available as spare part

17 - Screw

- ❑ 7 pieces
- ❑ Tighten in small stages crosswise
- ❑ 38 Nm

18 - Pinion housing

- ❑ with shaft bevel gear and outer ring/ tapered-roller bearing
- ❑ not available as spare part
- ❑ Removing and installing ⇒ “4.2.1 Remove output flange, Angle gearboxes 0CN”, page 252
- ❑ Note screw holes; drive pinion housing will only fit in one position

19 - O-ring

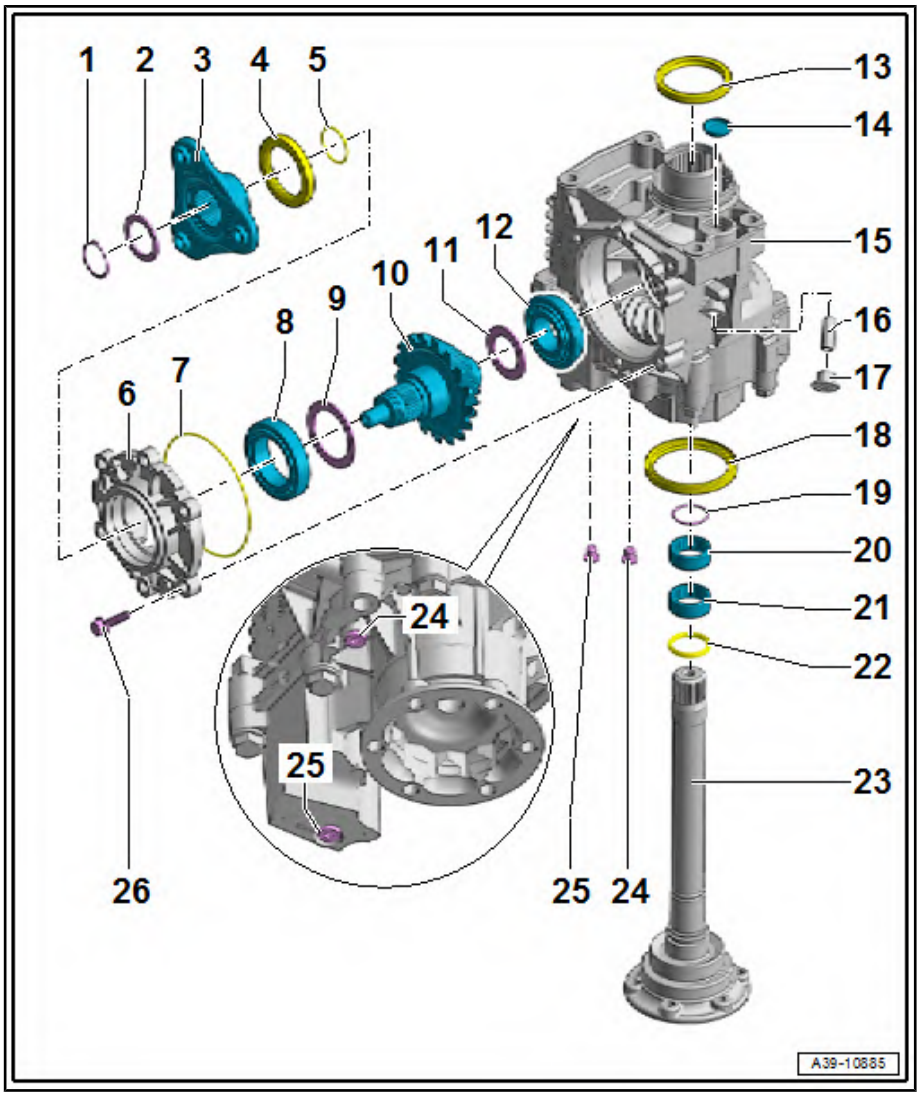
- ❑ To replace, unscrew the screws -pos. 17- and carefully lever out the drive pinion housing from its recess in the pinion housing
- ❑ Do not remove the 12-point nut -pos. 12- and the output flange -pos. 13-

20 - Adjusting washer

- ❑ not available as spare part
- ❑ Note screw holes of the angle gearbox. the adjusting washer will only fit in one position

21 - Screw cap

4.1.2 Summary of components - parts of angle gearbox 0FN



1 - Circlip
- ❑ Replace after removal

2 - Surface
- ❑ Replace after removal

3 - Output flange
- ❑ Removing and installing ⇒ “4.2.2 Remove output flange, Angle gearboxes 0FN”, page 259

4 - Sealing ring
- ❑ Replace ⇒ “4.2.2 Remove output flange, Angle gearboxes 0FN”, page 259

5 - O-ring
- ❑ Replace ⇒ “4.2.2 Remove output flange, Angle gearboxes 0FN”, page 259

6 - Cover
- ❑ not available as spare part

7 - O-ring
- ❑ Replace after removal
- ❑ Replace ⇒ “4.2.2 Remove output flange, Angle gearboxes 0FN”, page 259

8 - Bearings
- ❑ not available as spare part

9 - Adjusting washer
- ❑ not available as spare part

10 - Drive pinion
- ❑ not available as spare part

11 - Adjusting washer
- ❑ not available as spare part

12 - Bearings
- ❑ not available as spare part

13 - Sealing ring
- ❑ Replace ⇒ “4.3.2 Replacing the sealing ring for the angle gearbox - Gearbox side”, page 267

14 - Cap

15 - Angle gearboxes 0FN
- ❑ Designation and identification of the angle gearboxes ⇒ “2.2 Marking angle gearbox”, page 4
- ❑ removing ⇒ “2.2 Remove angle gearbox”, page 36
- ❑ installing ⇒ “2.3 Install angle gearbox”, page 43

16 - Breather

17 - Ventilation flap

18 - Sealing ring

- ❑ Replace ⇒ “4.3.1 Replacing sealing ring for angle gearboxes - on flange shaft side”, page 266

19 - Circlip

20 - Needle bearing

- ❑ Replace ⇒ “4.4 Replacing the right flange shaft needle bearing”, page 268

21 - Needle bearing

- ❑ Replace ⇒ “4.4 Replacing the right flange shaft needle bearing”, page 268

22 - Sealing ring

23 - Flange shaft

- ❑ Removing and installing
  ⇒ “3.1.1 Removing and installing right flange shaft, vehicles with four-wheel drive”, page 245

24 - Oil filler plug

- ❑ with sealing ring
- ❑ 20 Nm

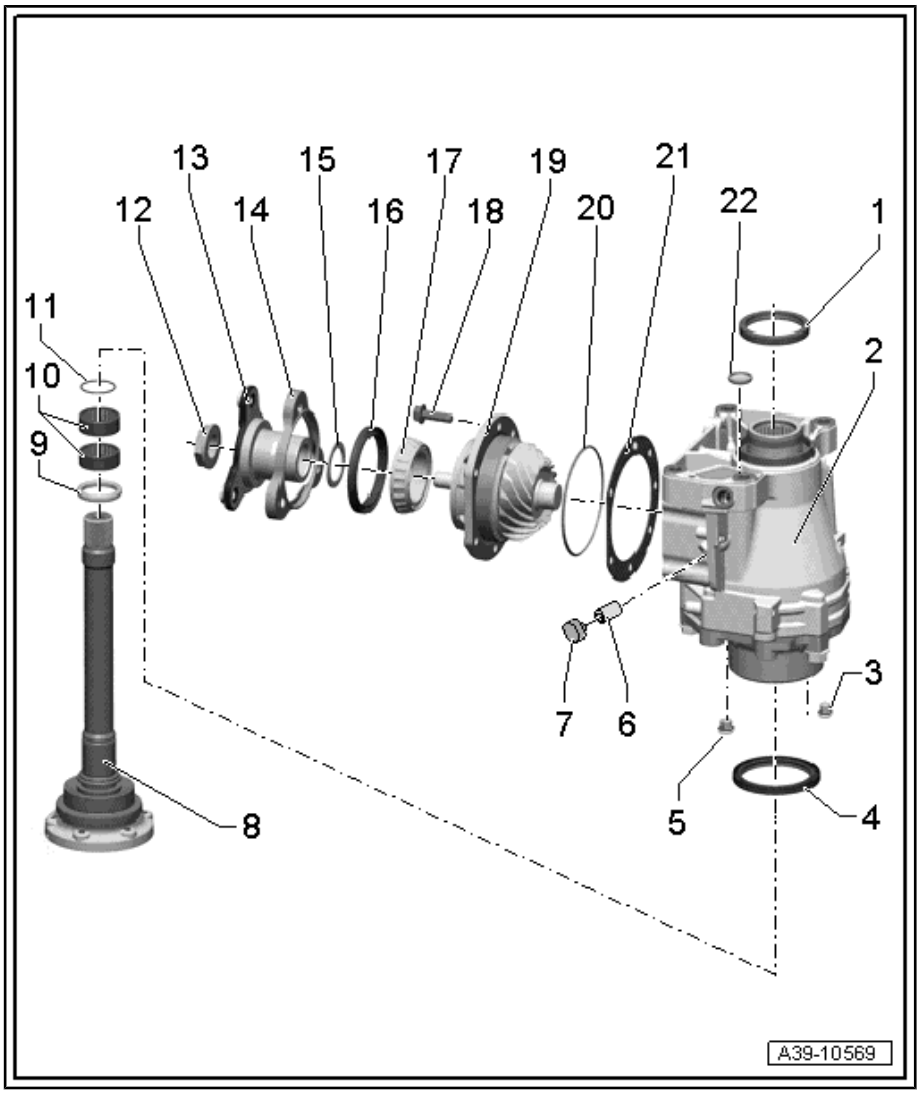
25 - Oil drain plug

- ❑ with sealing ring
- ❑ 20 Nm

26 - Screw

- ❑ 6 pieces
- ❑ gradually tighten crosswise
- ❑ 38 Nm

4.1.3 Summary of components - parts of angle gearbox 0AV



1 - Sealing ring

- ❑ Left on gearbox side
- ❑ Replace ⇒ “4.3.2 Replacing the sealing ring for the angle gearbox - Gearbox side”, page 267

2 - Angle gearboxes 0AV

- ❑ Designation and identification of the angle gearboxes ⇒ “2.2 Marking angle gearbox”, page 4
- ❑ removing ⇒ “2.2 Remove angle gearbox”, page 36
- ❑ installing ⇒ “2.3 Install angle gearbox”, page 43

3 - Oil drain plug

- ❑ with captive sealing ring
- ❑ Replace after removal
- ❑ 15 Nm

4 - Sealing ring

- ❑ Right on the flange shaft side
- ❑ Replace ⇒ “4.3.1 Replacing sealing ring for angle gearboxes - on flange shaft side”, page 266

5 - Oil filler plug

- ❑ with captive sealing ring
- ❑ Replace after removal
- ❑ 15 Nm

6 - Ventilation tube

- ❑ Angle gearbox ventilation

7 - Cap

- ❑ Angle gearbox ventilation

8 - Right flange shaft

- ❑ Removing and installing ⇒ “3.1.1 Removing and installing right flange shaft, vehicles with four-wheel drive”, page 245

9 - Sealing ring

- ❑ insert into the round slot of the right flange shaft
- ❑ remove when replacing the needle bearing (Pos. 10)

10 - Needle bearing

- ❑ Replace ⇒ “4.4 Replacing the right flange shaft needle bearing”, page 268

11 - Circlip

- ❑ Replace after removal

12 - Nut

- ❑ Mounting for output flange
- ❑ Replace after removal
- ❑ Use securing means - D 000 600-
- ❑ 480 Nm

13 - Output flange

- ❑ Removing and installing ⇒ “4.2.3 Remove output flange, Angle gearboxes 0AV”, page 262

14 - Cover cap for output flange

- ❑ replace if damaged

15 - Adjusting washer

16 - Sealing ring

- ❑ for output flange
- ❑ Replace ⇒ “4.2.3 Remove output flange, Angle gearboxes 0AV”, page 262

17 - Inner ring/tapered-roller bearing

- ❑ not available as spare part

18 - Screw

- ❑ 7 pieces
- ❑ Tighten in small stages crosswise
- ❑ 25 Nm

19 - Pinion housing

- ❑ with shaft bevel gear and outer ring/ tapered-roller bearing
- ❑ not available as spare part
- ❑ Removing and installing ⇒ “4.2.3 Remove output flange, Angle gearboxes 0AV”, page 262
- ❑ Note screw holes; the drive pinion housing will only fit in one position

20 - O-ring

- ❑ To replace, remove the drive pinion housing (item 19)

21 - Adjusting washer

- ❑ not available as spare part
- ❑ Note screw holes of the angle gearbox. the adjusting washer will only fit in one position

22 - Screw cap

4.2 Dismantling and assembling the bevel gear

⇒ “4.2.1 Remove output flange, Angle gearboxes 0CN”, page 252

⇒ “4.2.2 Remove output flange, Angle gearboxes 0FN”, page 259

⇒ “4.2.3 Remove output flange, Angle gearboxes 0AV”, page 262

4.2.1 Remove output flange, Angle gearboxes 0CN

Special tools and workshop equipment required

- ♦ Gearbox mount - T10108-
- ♦ Bracket - VW 313- or -VAS 6095- or -VAS 6095A-
- ♦ Mounting bracket - T10108/1-

- Socket insert SW 34
- Alignment rails - MP3-457 (VW 457)-
- Pressure spindle - MP3-423 (VW 407)-
- Tapered-roller bearing extractor - V.A.G 1582-
- Gripper - V.A.G 1582/13-
- Thrust plate - MP3-467 (40-105)-
- Pressure plate - MP3-407 (VW 402)-
- Pressure spindle - MP3-408 (VW 412)-
- Retractor - T30070 (VW 204B)-
- Pipe section - T30055 (3296)-
- Thrust piece - MP3-411 (VW 454)-
- Press-on sleeve - MP3-412 (VW 455)-
- Universal dial gauge bracket - MP3-447 (VW 387)-
- Dial gauge
- Sealing grease ⇒ Electronic Catalogue of Original Parts
- Screw M10 × 30 - 2 pcs
- Screw M8 x 25 - 1 pc
- Nut M12 x 10 - 4 pcs

Designation and identification of the angle gearboxes
⇒ “2.2 Marking angle gearbox”, page 4

The inner ring/tapered-roller bearing is pressed onto the output flange of the angle gearbox.

This will be removed later in the workflow.

Do not replace the tapered-roller bearing for the angle gearbox output flange and the shims!

Removing

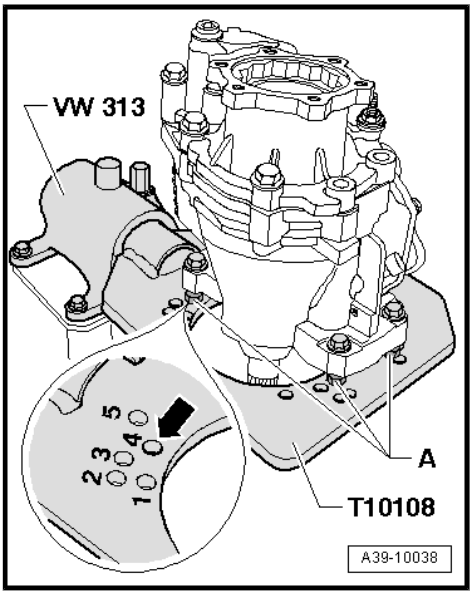
– Remove angle gearbox
⇒ “2.2 Remove angle gearbox”, page 36 .

– Position angle gearbox onto the opening -arrow- marked with the number “4” in the gearbox mount - T10108- .

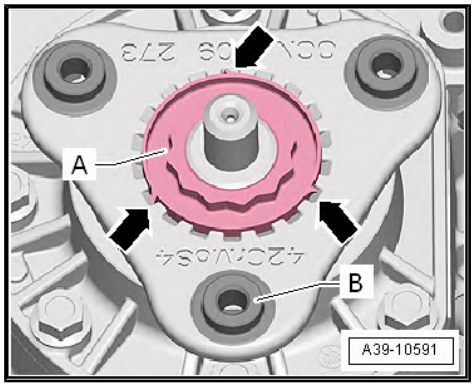
• Place nut M12 x 10 -pos. A- between angle gearbox and gearbox mount.

– Then align the angle gearbox with the 3 remaining openings and secure with inserted nuts -A-.

– Drain oil from the angle gearbox
⇒ “1.2 Draining and filling gearbox oil”, page 237 .



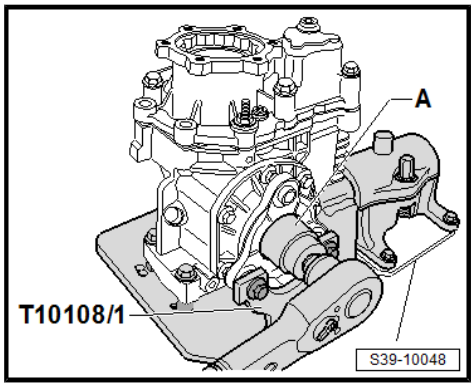
– Drive out caulkings -arrows- of the twelve-point nut -A- from the grooves of the output flange -B-.



– Lock output flange of angle gearbox with bracket - T10108/1- that is attached with 2 screws M10 x 30 -arrows-.

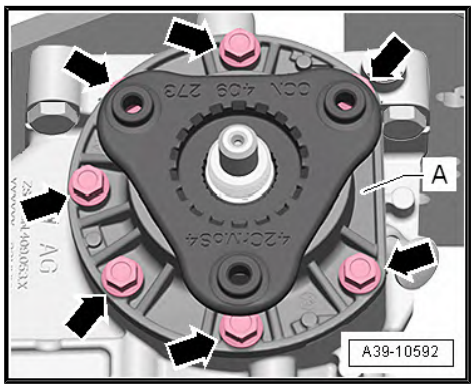
A - Socket insert SW 34

– Unscrew nut for output flange.

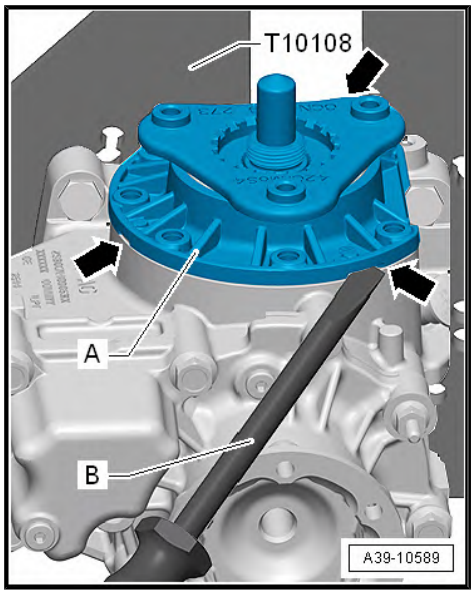


– Pivot angle gearbox so that the output flange is facing up.

– Unscrew screws -arrows- for drive pinion housing -A-.



– Using a suitable screwdriver -B-, lever out the pinion housing with the output flange and bevel gear one after the other in the region of the three recesses -arrows-.



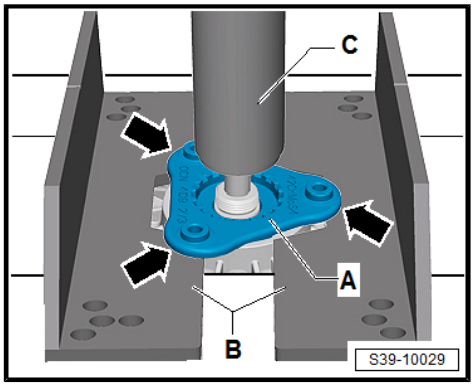
– Place output flange -A- uniformly on the alignment rails - MP3-457 (VW 457)- -arrows-.

B - Alignment rails - MP3-457 (VW 457)-

C - Pressure spindle - MP3-423 (VW 407)-

– Push shaft bevel gear out from the output flange -A-.

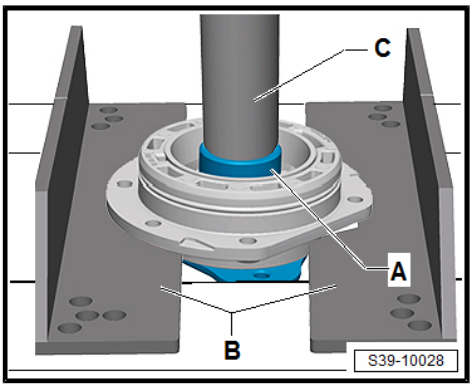
• Secure shaft bevel gear and inner ring/tapered-roller bearing against falling.



– Push output flange -A- out from the drive pinion housing.

B - Alignment rails - MP3-457 (VW 457)-

C - Pressure spindle - MP3-423 (VW 407)-

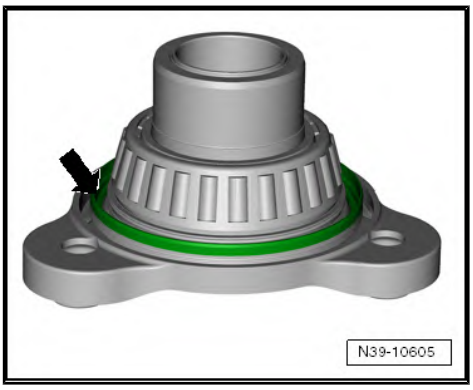


• Sealing ring -arrow- is located on the output flange.

NOTICE

Risk of damage to the inner ring/tapered-roller bearing.

If the inner ring/tapered-roller bearing is damaged, the angle gearbox must be replaced.



• Inner ring/tapered-roller bearing must be pulled off the output flange to remove the sealing ring.

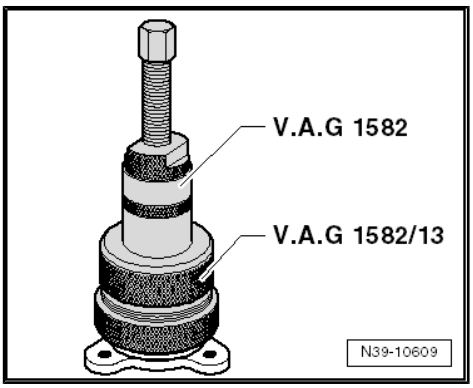
– Pull off inner ring/tapered-roller bearing with gripper - V.A.G 1582/13- .

– Place pressure plate - MP3-467 (40-105)- on the output flange.

– Pull off inner ring/tapered-roller bearing with tapered-roller bearing extractor from output flange.

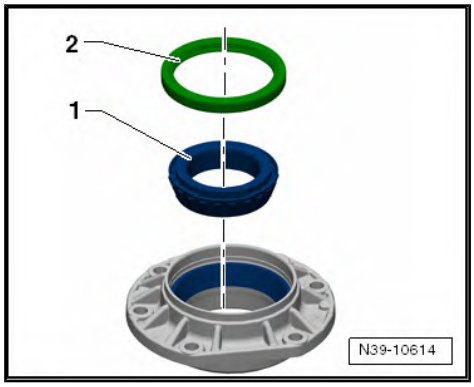
– Remove sealing ring from output flange.

Installing



– Put the existing inner ring/tapered-roller bearing -1- into the drive pinion housing.

– Lightly oil the new sealing ring -2- for output flange around the outer circumference.



– Press in sealing ring until flush.

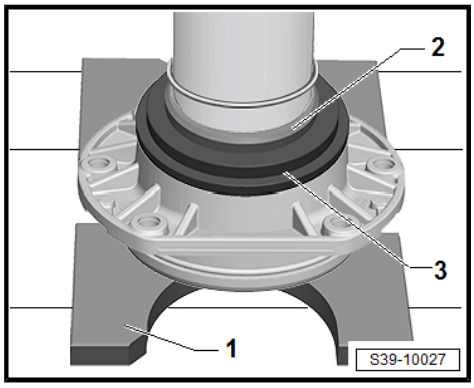
1 - Pressure plate - MP3-407 (VW 402)-

2 - Pressure spindle - MP3-408 (VW 412)-

3 - Retractor - T30070 (VW 204B)-

• The large diameter of the retractor - T30070 (VW 204B)- points towards the sealing ring.

– Fill half the space between the sealing lip and dust lip with sealing grease ⇒ Electronic catalogue of original parts .



– Push inner ring/tapered-roller bearing ⇒ page 256 onto the output flange until it stops.

1 - Pressure plate - MP3-407 (VW 402)-

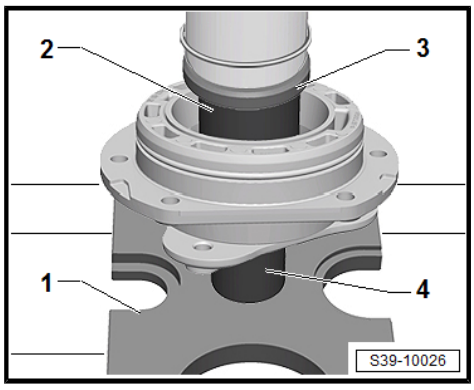
2 - Pipe - T30055 (3296)-

3 - Pressure spindle - MP3-408 (VW 412)-

4 - Thrust piece - MP3-411 (VW 454)-

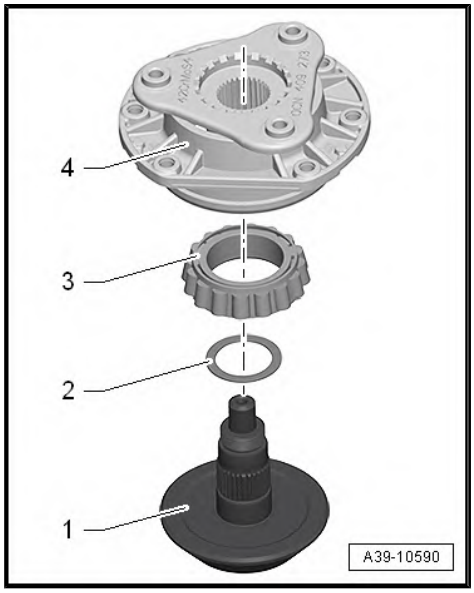
• The large diameter of the thrust piece - MP3-411 (VW 454)- points towards the output flange.

• Press on inner ring/tapered-roller bearing until it stops. Do not apply a large pressing force to the tapered-roller bearing.



– Fit the adjusting washer -2-, inner ring/tapered-roller bearing -3- and pinion housing -4- to the shaft bevel gear -1-.

• Reinstall the previous shim -2-. This ensures the bearing pre-load of the shaft bevel gear in the pinion carrier.



– Gently press drive pinion housing with output flange onto the shaft bevel gear up to the stop.

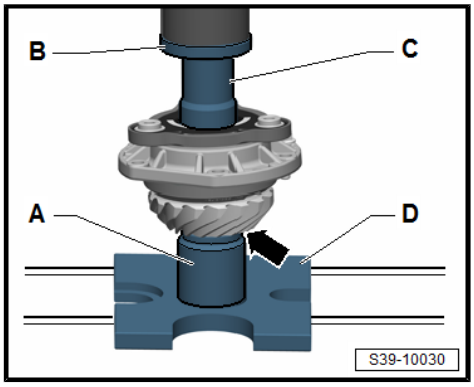
A - Press-on sleeve - MP3-412 (VW 455)-

B - Pressure spindle - MP3-408 (VW 412)-

C - Thrust piece - MP3-411 (VW 454)-

D - Pressure plate - MP3-407 (VW 402)-

- The shoulder -arrow- of the insertion bushing - MP3-412 (VW 455)- points to the shaft bevel gear.
- Rotate the drive pinion housing while pressing it on.



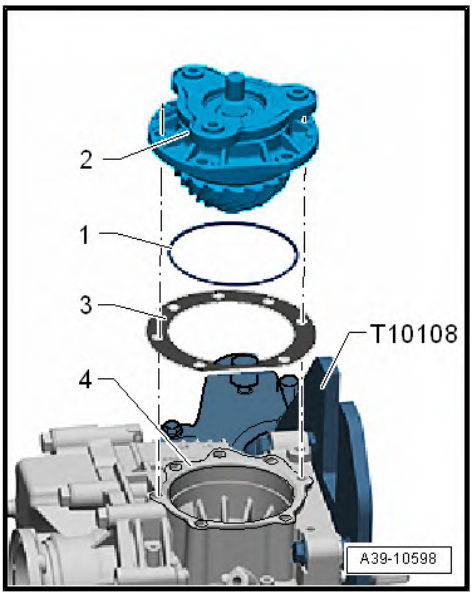
– Align the previous shim -3- opposite the drive pinion housing -2-.

- Drive pinion housing -2- and shim -3- only fit in one position.

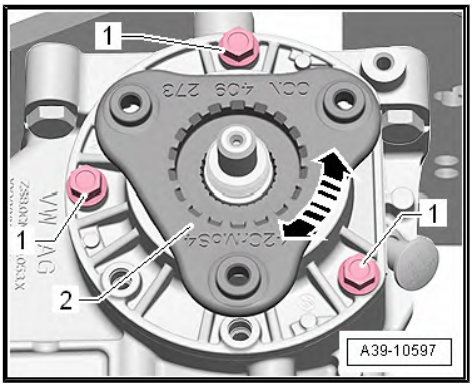
– Moisten new O-ring -1- with oil for final drives and fit onto drive pinion housing -2-.

– Insert drive pinion housing -2- into angle gearbox housing -4-.

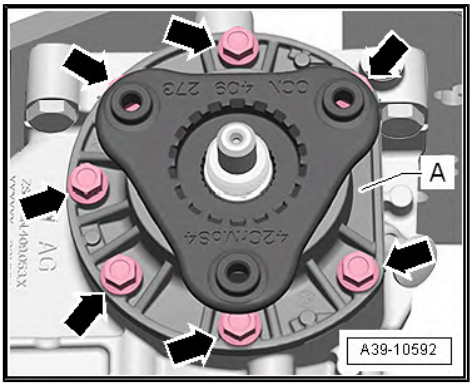
- The teeth of the shaft bevel gear must be engaged with the head.
- Align the screw holes for drive pinion housing opposite the angle gearbox housing.



– Tighten screws -1- in small increments alternately on opposite sides. while rotating the output flange -2- slightly back and forth in the -direction of the arrow-.

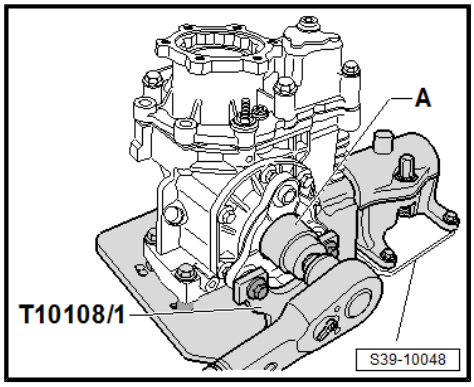


– Tighten screws -arrows- for drive pinion housing -A- cross-wise.



– Tighten new 12-point nut for output flange
⇒ Item 12 (page 248) .

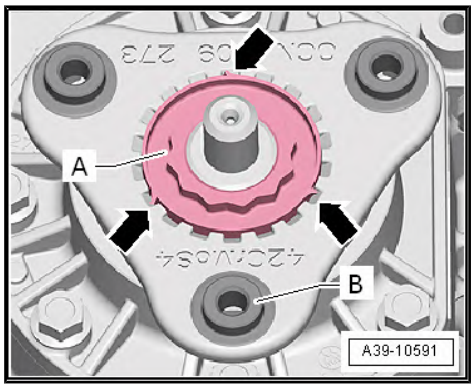
A - Insertion tool SW 34



Secure new 12-point nut for output flange:

– Caulk 12-point nut -A- at 120° offset in the grooves of the output flange -B- -arrows-.

• After tightening the nut for the output flange, check the runout on fixing bolt of the shaft bevel gear.



Measure the runout on the output flange of the shaft bevel gear

A - Universal dial gauge bracket - MP3-447 (VW 387)-

B - Screw M8 x 25

C - Dial gauge

– Fasten a universal dial gauge holder -A- with M8 x 25 bolt -B- on the angle gearbox.

– Position the dial gauge -C- on the fixing bolt of the shaft bevel gear -D-.

– Set the dial gauge to “0” with 1 mm bias.

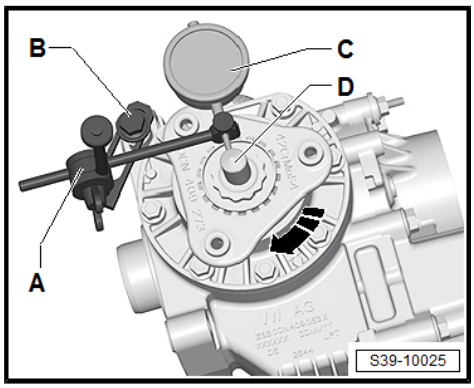
– Rotate output flange one full turn -arrow-.

– Read measured value on the dial gauge.

• Runout: maximum 0.05 mm

– Fill angle gearbox with oil
⇒ “1.2 Draining and filling gearbox oil”, page 237 .

– Install angle gearbox ⇒ “2.3 Install angle gearbox”, page 43 .



Tightening torques and summaries of components

Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

◆ ⇒ “4.1.1 Summary of components - parts of angle gearbox 0CN”, page 247

4.2.2 Remove output flange, Angle gearboxes 0FN

Special tools and workshop equipment required

- Gearbox mount - T10108-
- Bracket - VW 313- or -VAS 6095- or -VAS 6095A-
- Three-arm extractor e. g. -VAS 251 205- or -Kukko 45-2-
- Extractor tool - T20143-
- Counterholder - T40265-
- Thrust piece - T40121-
- Thrust piece - MP3-427 (40-21)-
- Nut M12 x 10 - 4 pcs

Removing

Designation and identification of the angle gearboxes
⇒ “2.2 Marking angle gearbox”, page 4

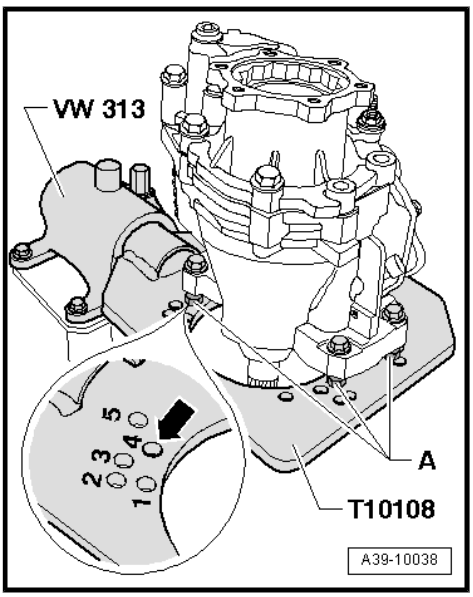
– Position angle gearbox onto the opening -arrow- marked with the number “4” in the gearbox mount - T10108- .

• Place nut M12 x 10 -pos. A- between angle gearbox and gearbox mount.

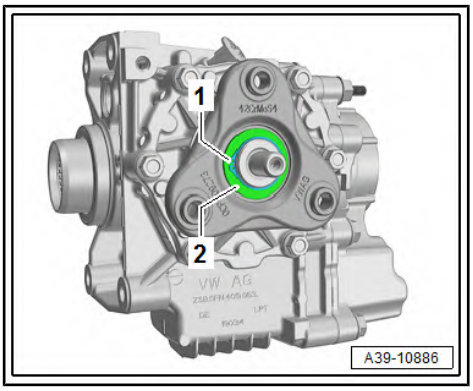
– Then align the angle gearbox with the 3 remaining openings and secure with inserted nuts -A-.

– Drain oil from the angle gearbox
⇒ “1.2 Draining and filling gearbox oil”, page 237 .

– Turn angle gearbox such that output flange is facing up.

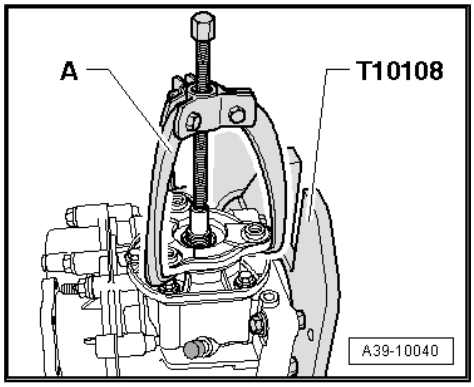


– Remove circlip -1- and take out base -2-.

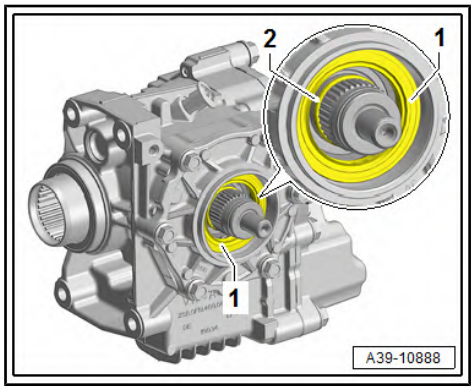


– Extract output flange with three-arm extractor -A- from the bevel gear of the angle gearbox.

A - Three-arm extractor e. g. -VAS 251 205- or -Kukko 45-2-



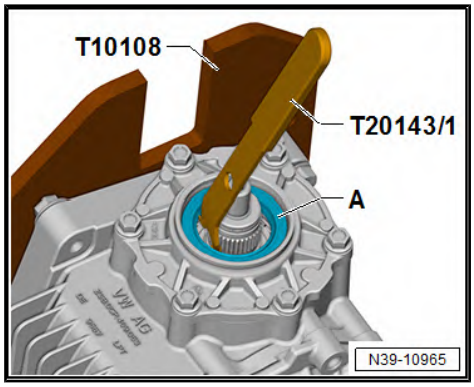
• Replace sealing ring -1- and O-ring -2-.



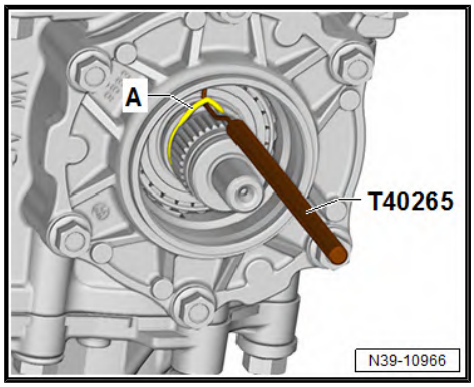
– Pull out sealing ring -A- with extractor tool - T20143/1- .

• The seat of the sealing ring in the housing must not be damaged.

– Clean residues of the sealing compound from the area on the shaft bevel gear.



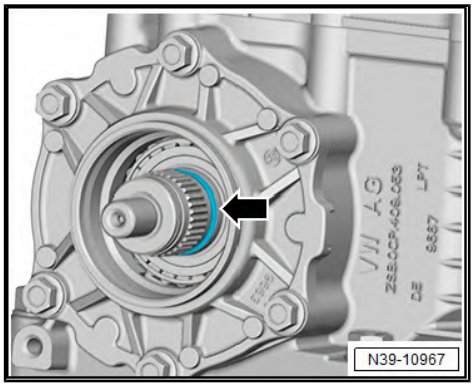
– Remove using ring tool - T40265- the O-ring -A- from the shaft.



Installing

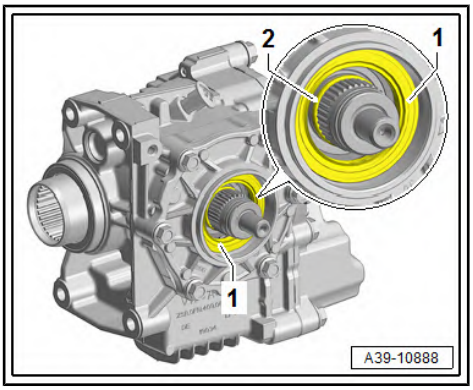
– Position the new O-ring -arrow- onto the shaft.

• The O-ring must be located behind the gear teeth, in the base of the circumferential groove -arrow-.

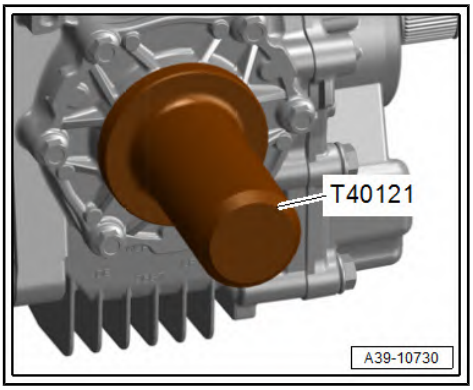


– Lightly wet external circumference of the radial shaft seal ring -1- with gear oil.

• Fill half the space between the sealing lip and dust lip with sealing grease - G 052 128 A1- .



– Drive in sealing ring with pressure plate - T40121- up to the stop.

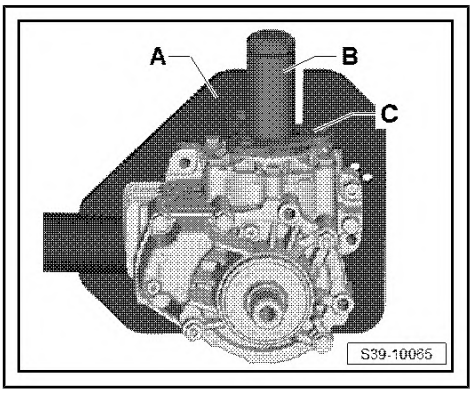


– Drive output flange -A- all the way with plastic hammer carefully onto the shaft.

A - Gearbox mount - T10108-

B - Drive bushing - MP3-427 (40-21)-

C - Angle gearbox output flange



– Use disc -A-.

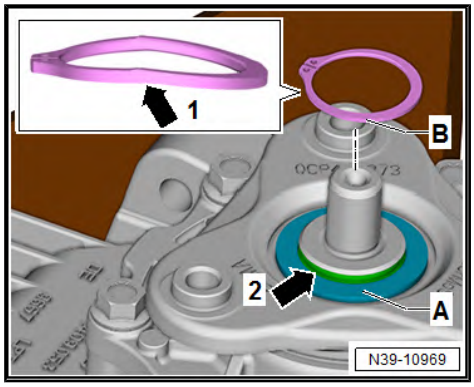
– Secure output flange with locking ring -B-.

Locking ring -B- has a rough profile -Arrow 1-.

- Locking ring -B- must be located at the bottom of the circumferential groove -Arrow 2-.

– Fill angle gearbox with oil
⇒ “1.2 Draining and filling gearbox oil”, page 237 .

– Install angle gearbox ⇒ “2.3 Install angle gearbox”, page 43 .



Tightening torques and summaries of components

Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

- ⇒ “4.1.2 Summary of components - parts of angle gearbox 0FN”, page 249

4.2.3 Remove output flange, Angle gearboxes 0AV

Special tools and workshop equipment required

- Gearbox mount - T10108-
- Bracket - VW 313- or -VAS 6095- or -VAS 6095A-
- Mounting bracket - T10108/1-
- Three-arm extractor e. g. -VAS 251 205- or -Kukko 45-2-
- Thrust plate - MP3-467 (40-105)-
- Tapered-roller bearing extractor - V.A.G 1582-
- Gripper - V.A.G 1582/13-
- Thrust piece - T10049-
- Press-on sleeve - MP3-412 (VW 455)-
- Pressure spindle - MP3-408 (VW 412)-
- Thrust piece - MP3-411 (VW 454)-
- Pressure plate - MP3-406 (VW 401)-
- Mandrel - MP3-481/2 (VW 460/2)-
- Universal dial gauge bracket - MP3-447 (VW 387)-
- Dial gauge
- Insert for key SW 36, head 3/4 "
- 2x screw M10 x 30
- 2x threaded bolt M8 x 30
- Screw M8 x 25 - 1 pc
- Nut M12 x 10 - 4 pcs

Designation and identification of the angle gearboxes
⇒ “2.2 Marking angle gearbox”, page 4

The inner ring/tapered-roller bearing is pressed onto the output flange of the angle gearbox.

This will be removed later in the workflow.

Do not replace the tapered-roller bearing for the angle gearbox output flange and the shims!

Removing

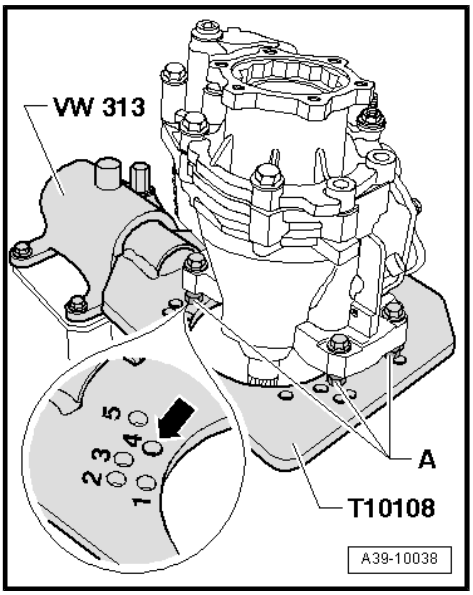
– Remove angle gearbox
⇒ “2.2 Remove angle gearbox”, page 36 .

– Position angle gearbox onto the opening -arrow- marked with the number “4” in the gearbox mount - T10108- .

• Place nut M12 x 10 -pos. A- between angle gearbox and gearbox mount.

– Then align the angle gearbox with the 3 remaining openings and secure with inserted nuts -A-.

– Drain oil from the angle gearbox
⇒ “1.2 Draining and filling gearbox oil”, page 237 .

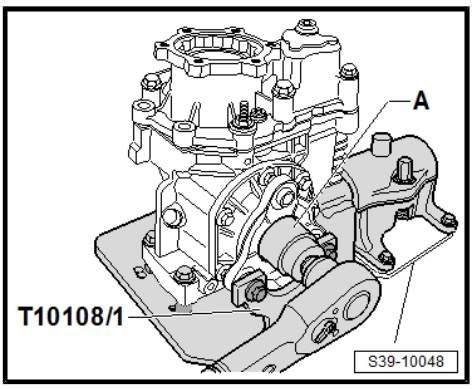


– Lock output flange of angle gearbox with bracket - T10108/1- that is attached with 2 screws M10 x 30 -arrows-.

– Loosen and remove nuts for output shaft flange.

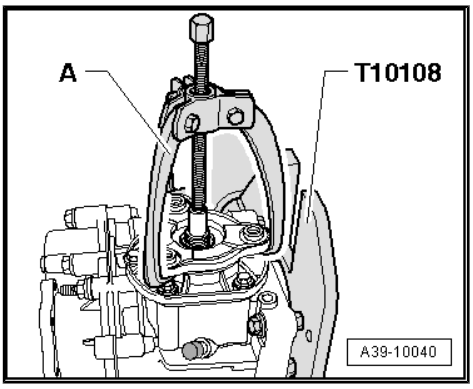
A - Insert for key SW 36, head 3/4 "

– Pivot angle gearbox in assembly support so that the output flange is facing up.

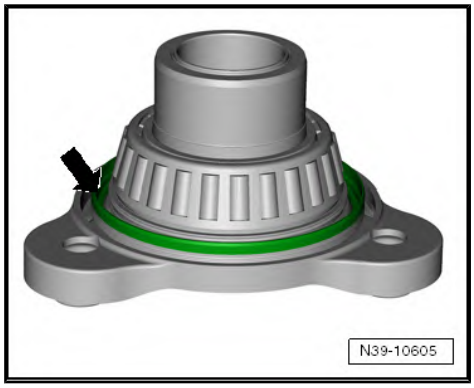


– Pull output flange off the shaft bevel gear of the angle gearbox.

A - Three-arm extractor e. g. -VAS 251 205- or -Kukko 45-2-



When removing the output flange, the inner ring / tapered roller bearing and the sealing ring remain -arrow- on the output flange.



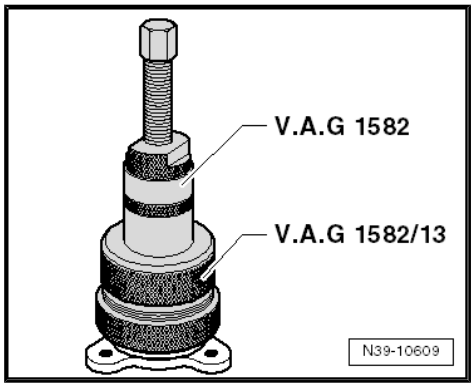
Removing gasket

- The inner ring / tapered-roller bearing must be pulled off the output flange to remove the radial shaft seal ring.

– Place pressure plate - MP3-467 (40-105)- on the output flange.

– Remove inner ring/taper roller bearing with tapered-roller bearing extractor - V.A.G 1582- with gripper - V.A.G 1582/13- from the output flange.

– Remove sealing ring from output flange.



Fitting sealing ring for output flange

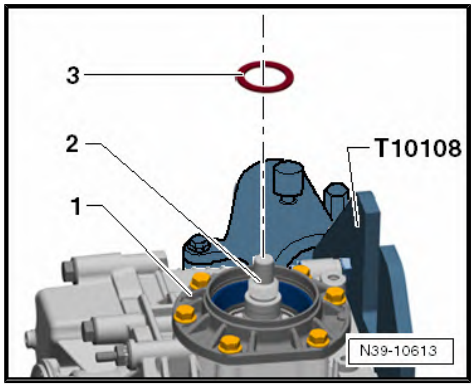
- For the installation of the sealing ring, the drive pinion housing -1- with shaft bevel gear -2- must first be removed.

– Unscrew fixing screws of drive pinion housing -1-.

– Carefully lift out the housing together with the drive pinion with the shaft bevel gear -2- by crosswise levering of the proud edges.

– Clean the thread on the shaft bevel gear.

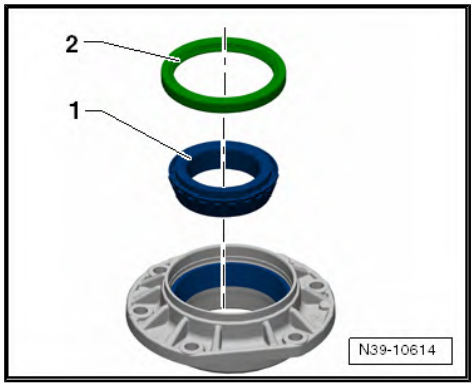
- If the adjusting washer -3- was taken off when the output flange was removed, this must be inserted again into the drive pinion housing.
- The adjusting washer secures the preload of the shaft bevel gear in the drive pinion housing.



– Put the inner ring / tapered-roller bearing -1- into the drive pinion housing.

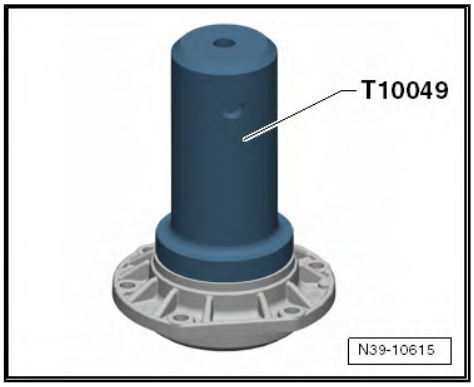
– Lightly wet the new sealing ring -2- on the outer circumference with gear oil.

- Fill half the space between the sealing lip and dust lip with sealing grease - G 052 128 A1- .



– Push in new sealing ring with pressure piece - T10049- .

• Sealing ring must be flush with the upper edge of the housing.



– Gently press drive pinion housing with output flange onto the shaft bevel gear up to the stop.

A - Press-on sleeve - MP3-412 (VW 455)-

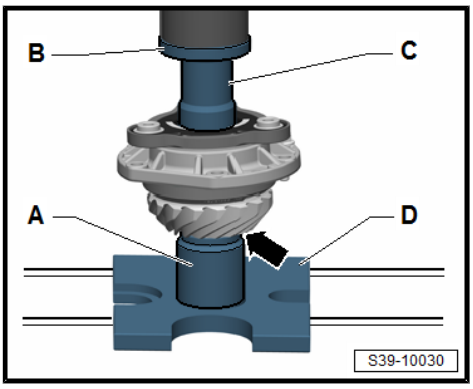
B - Pressure spindle - MP3-408 (VW 412)-

C - Thrust piece - MP3-411 (VW 454)-

D - Pressure plate - MP3-406 (VW 401)-

• The shoulder -arrow- of the insertion bushing - MP3-412 (VW 455)- points to the shaft bevel gear.

• Rotate the drive pinion housing while pressing it on.



– Screw in threaded bolts M8 x 30 mm -A- into the angle gearbox housing.

– Position the new O-ring -1- onto the drive pinion housing -2-.

• Lightly wet new O-ring with gear oil.

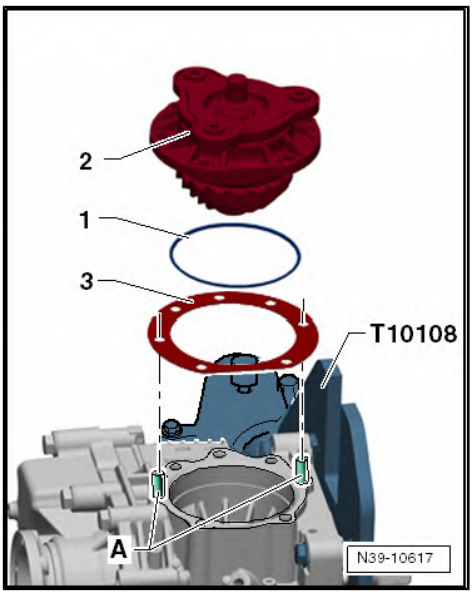
• Drive pinion housing and adjusting washer -3- only fit in one position.

– Position adjusting washer -3-.

– Crosswise carefully press on fully the drive pinion housing -2- with mandrel - MP3-481/2 (VW 460/2)- .

A small gap remains between the drive pinion housing and the angle gearbox housing, which is closed by screwing in the drive pinion housing.

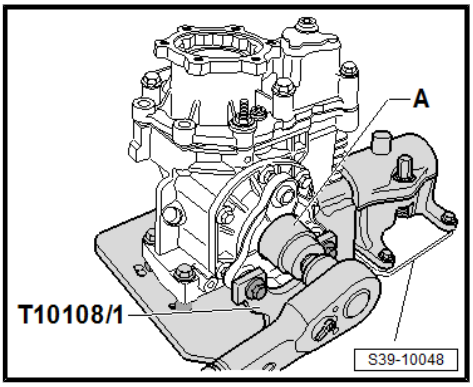
– Stepwise crosswise tighten mounting screws for drive pinion housing -2- to the desired tightening torque.



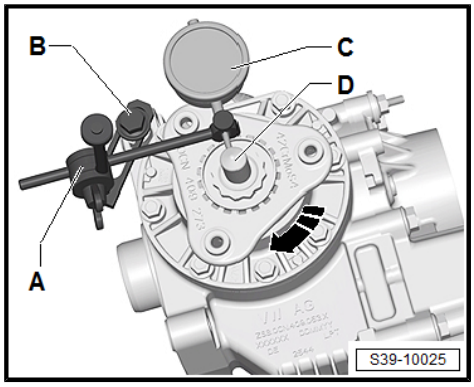
– Lightly wet the thread of the new nut for output flange with locking agent - D 000 600- and tighten to the desired tightening torque.

A - Insert for key SW 36, head 3/4 "

• After tightening the nut for the output flange, check the runout on fixing bolt of the shaft bevel gear.



Measure the runout on the output flange of the shaft bevel gear



A - Universal dial gauge bracket - MP3-447 (VW 387)-

B - Screw M8 x 25

C - Dial gauge

– Fasten a universal dial gauge holder -A- with M8 x 25 bolt -B- on the angle gearbox.

– Position the dial gauge -C- on the fixing bolt of the shaft bevel gear -D-.

– Set the dial gauge to “0” with 1 mm bias.

– Rotate output flange one full turn -arrow-.

– Read measured value on the dial gauge.

• Runout: maximum 0.05 mm

– Fill angle gearbox with oil
⇒ “1.2 Draining and filling gearbox oil”, page 237 .

– Install angle gearbox ⇒ “2.3 Install angle gearbox”, page 43 .

Tightening torques and summaries of components

Note

Replace bolts / nuts that are tightened at an angle of rotation, as well as replacement components after removal.

◆ ⇒ “4.1.3 Summary of components - parts of angle gearbox 0AV”, page 251

4.3 Replacing gasket rings for angle gearboxes

⇒ “4.3.1 Replacing sealing ring for angle gearboxes - on flange shaft side”, page 266

⇒ “4.3.2 Replacing the sealing ring for the angle gearbox - Gearbox side”, page 267

4.3.1 Replacing sealing ring for angle gearboxes - on flange shaft side

Special tools and workshop equipment required

◆ Thrust piece - T10049-

◆ Extractor tool - T20143-

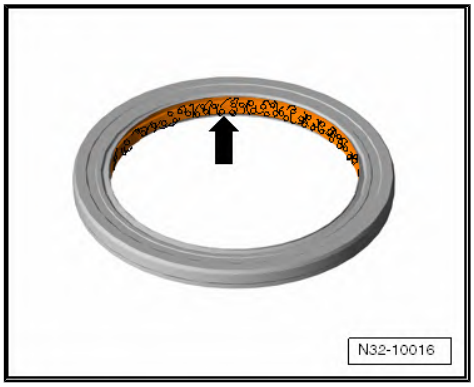
◆ Sealing grease - G 052 128 A1-

• The gearbox including angle gearbox is installed.

– Remove right flange shaft
⇒ “3.1.1 Removing and installing right flange shaft, vehicles with four-wheel drive”, page 245 .

– Remove right sealing ring with extractor tool -T20143/2- .

– Half fill the space between sealing lip and dust lip -arrows- of the new sealing ring with sealing grease -G 052 128 A1- .

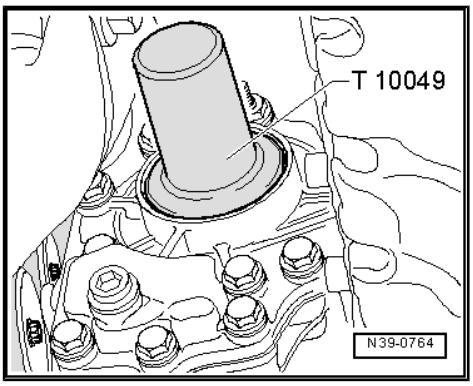


– Drive in new sealing ring with thrust piece - T10049- up to the stop.

• Keep the new sealing ring straight.

– Mount the right flange shaft
⇒ “3.1.1 Removing and installing right flange shaft, vehicles with four-wheel drive”, page 245 .

– Checking the oil level
⇒ “1.1 Checking the gear oil level”, page 236 .



4.3.2 Replacing the sealing ring for the angle gearbox - Gearbox side

Special tools and workshop equipment required

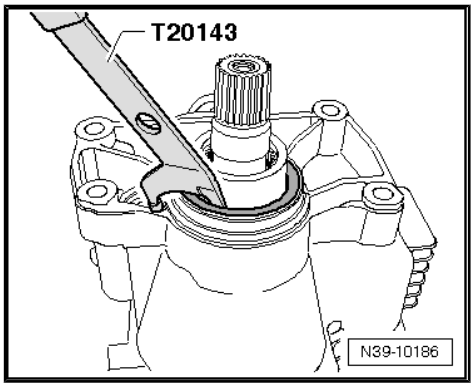
♦ Extractor tool - T20143-

♦ Thrust piece - T10298-

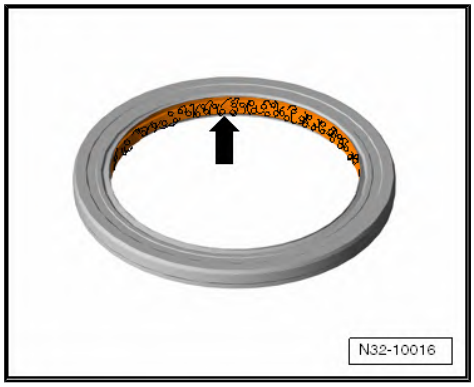
♦ Sealing grease - G 052 128 A1-

– Remove angle gearbox
⇒ “2.2 Remove angle gearbox”, page 36 .

– Pry out the sealing ring on the angle gearbox with extractor tool - T20143/1- or -T20143/2- .



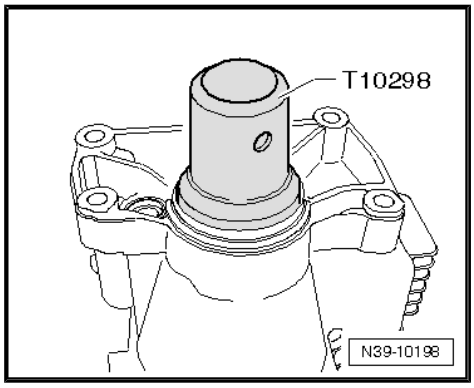
– Half fill the space between sealing lip and dust lip -arrows- of the new sealing ring with sealing grease -G 052 128 A1- .



– Drive in new sealing ring with thrust piece - T10049- up to the stop.

• Keep the new sealing ring straight.

– Install angle gearbox ⇒ “2.3 Install angle gearbox”, page 43 .



4.4 Replacing the right flange shaft needle bearing

Special tools and workshop equipment required

- Pressure plate - MP3-406 (VW 401)-
- Pressure plate - MP3-407 (VW 402)-
- Pressure spindle - MP3-423 (VW 407)-
- Pressure spindle - MP3-408 (VW 412)-
- Assembly tool - MP6-414/5 (3253/5)-
- Assembly tool - T10047-
-

Work procedure

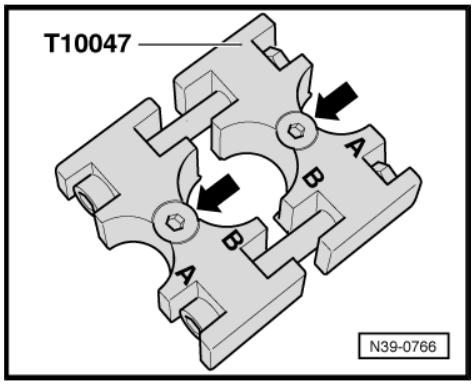
– Remove right flange shaft
⇒ “3.1.1 Removing and installing right flange shaft, vehicles with four-wheel drive”, page 245 .

– Position the assembly device - T10047- as shown.

• Marks “B” on both parts of the device point to each other

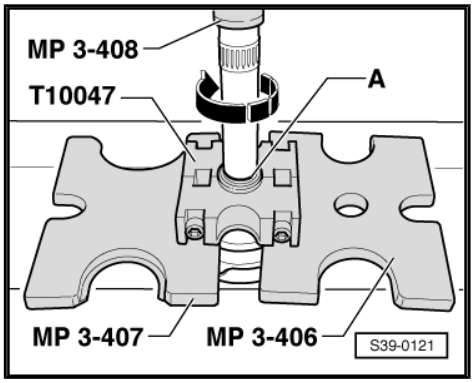
• The pegs -arrows - must be under the needle bearing.

– Screw on parts up to the stop.



– Remove detention ring -A- .

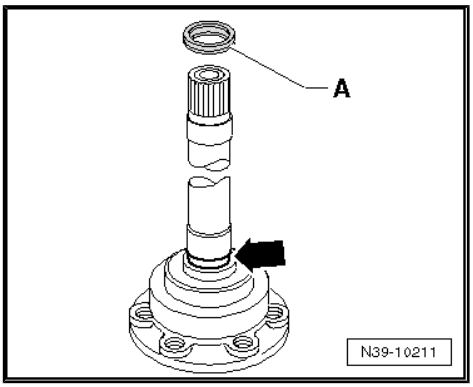
• In order to avoid damaging the contact surface of the needle bearing on the shaft, turn the shaft while pressing -arrow-.



– Remove sealing ring -A- from groove -arrow-.

Installing

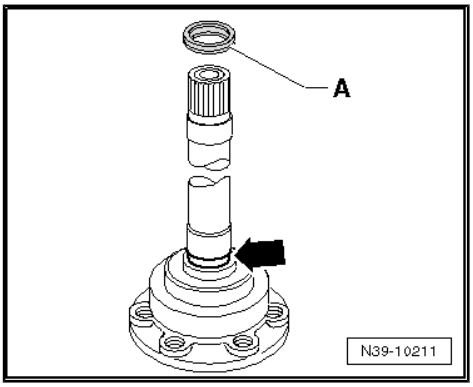
– Installation is carried out in the reverse order. When installing, observe the following:



– Moisten sealing ring -A- with gear oil.

– Insert sealing ring -A- into the groove -arrow-.

– Install assembly device - T10047- ⇒ page 268 .



– Press in the new needle bearing.

• In order to avoid damaging the contact surface of the needle bearing on the shaft, turn the shaft while pressing -arrow-.

– Secure the needle bearing with a new circlip.

– Mount the right flange shaft
⇒ “3.1.1 Removing and installing right flange shaft, vehicles with four-wheel drive”, page 245 .