

Workshop Manual

Audi A6 2011 ➤ , Audi A6 Avant 2011 ➤ ,
Audi A6 China 2012 ➤ ,
Audi A7 Sportback 2011 ➤ ,
Audi A7 Sportback USA 2011 ➤

7-speed dual clutch gearbox 0CK

Edition 05.2018



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List of Workshop Manual Repair Groups

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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.

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00 – Technical data

1 Identification

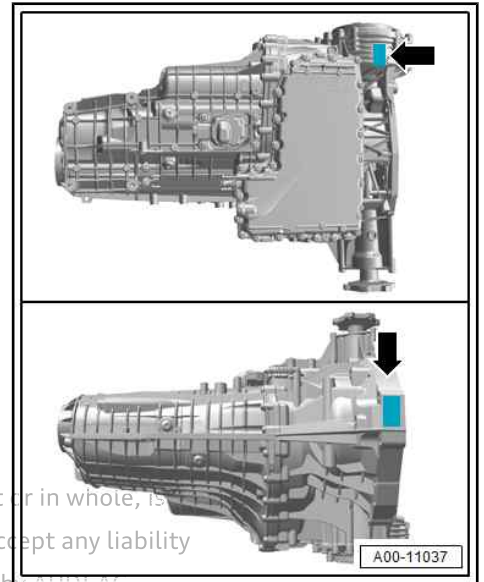
(ARL005829; Edition 05.2018)

The following details are given on the gearbox housing -arrows-:

- ◆ Code letters
- ◆ Serial number
- ◆ Production date



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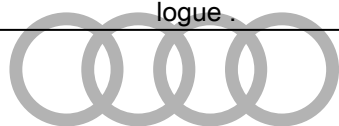


2 Technical data

⇒ "2.1 Capacities", page 2

2.1 Capacities

Capacities	ATF	MTF
Initial filling by manufacturer	approx. 4.35 ltr.	3.8 ltr.
ATF change capacity	approx. 3.5 ltr.	3.8 ltr.
Change interval	⇒ ELSA maintenance tables	
Lubricant	For ATF and MTF specifications for dual clutch gearbox 0CK, refer to ⇒ Electronic parts catalogue .	



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3 Safety precautions

⇒ [“3.1 General safety precautions”, page 3](#)

⇒ [“3.2 Safety precautions when working on vehicles with start/stop system”, page 3](#)

⇒ [“3.3 Safety precautions when using testers and measuring instruments during a road test”, page 4](#)

⇒ [“3.4 Safety precautions when tow-starting and towing”, page 4](#)

3.1 General safety precautions

Observe the following precautions to avoid possible injury and/or damage to the vehicle:

**WARNING**

Accidents and injury can be caused if a gear is inadvertently engaged while the engine is running.

- ◆ *Prior to performing work with the engine running, move the selector lever to position “P” and pull up the parking brake button to apply the electromechanical parking brake.*

Observe the following precautions to avoid possible injury and/or irreparable damage to electrical and electronic components:

- ◆ Switch off ignition before disconnecting and connecting test equipment.

**Caution**

When disconnecting the battery there is a risk of irreparable damage to electronic components.

- ◆ *Observe notes on procedure for disconnecting the battery.*
- ◆ *Always switch off the ignition before disconnecting the battery.*

- Disconnect battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .

3.2 Safety precautions when working on vehicles with start/stop system

Please note the following when working on vehicles with start/stop system:

**WARNING**

Risk of injury due to automatic engine start on vehicles with start/stop system.

- ◆ *On vehicles with activated start/stop system (indicated by a message in the instrument cluster), the engine may start automatically if it needs to.*
- ◆ *Therefore it is important to ensure that the start/stop system is deactivated when performing repairs (switch off ignition, if required switch on ignition again).*

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

Observe the following precautions if test equipment has to be used when road-testing the vehicle.



WARNING

Accidents can be caused if the driver is distracted by test equipment or if test equipment is not secured.

Injuries can be caused if the passenger's airbag is triggered in a collision.

- *The use of test equipment while driving causes distraction.*
- *There is an increased risk of injury if test equipment is not secured.*
- ◆ *Always secure test equipment to the rear seat with a strap and have it operated from there by a second person.*

3.4 Safety precautions when tow-starting and towing



Caution

When the vehicle is towed, the selector lever must be set to position "N" and the vehicle must not be towed for a distance of more than 50 km or at a speed in excess of 50 km/h, as the gearbox would otherwise be seriously damaged.



Note

It is not possible to start the engine by means of tow-starting, for instance in the case of insufficient battery charge or if the starter is not working.

4 Repair instructions

⇒ ["4.1 Rules for cleanliness", page 5](#)

⇒ ["4.2 General repair instructions", page 5](#)

⇒ ["4.3 Deactivating ATF pump and discharging hydraulic accumulator", page 7](#)

⇒ ["4.4 Contact corrosion", page 7](#)

⇒ ["4.5 Safety functions of gearbox control unit", page 7](#)

4.1 Rules for cleanliness

- ◆ Carefully clean connection points and the surrounding area with engine cleaner or brake cleaner and dry thoroughly before opening.
- ◆ Use cleaning fluid - D 009 401 04- to clean the gearbox and its components.
- ◆ Use lint-free cloths for cleaning, such as the "X70" cloth from Kimberly-Clark Professional.
- ◆ Seal off open lines and connections immediately with clean plugs or protective caps from engine bung set - VAS 6122- .
- ◆ After removal, place parts on a clean surface and cover them. Use sheeting and paper. Use lint-free cloths.
- ◆ Carefully cover or seal open components if repairs cannot be carried out immediately.
- ◆ Only install clean components; replacement parts should only be unpacked immediately prior to installation.
- ◆ Protect unplugged electrical connectors against dirt and moisture and make sure connections are dry when attaching.

4.2 General repair instructions

- ◆ Proper tools and the maximum possible care and cleanliness are essential for satisfactory repairs to the transmission units. The usual basic safety precautions also naturally apply when carrying out repair work.
- ◆ To avoid repetition, a number of generally applicable instructions for the various repair procedures are summarised here. They apply to the work described in this Manual.

Guided Fault Finding, Vehicle self-diagnosis and Test Instruments

- ◆ Before servicing the gearbox, the exact cause of the failure should be identified using [Guided Fault Finding](#), [Vehicle Self-diagnosis](#) and [Test Instruments](#) ⇒ Vehicle diagnostic tester.

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For a complete list of special tools used in this Workshop Manual, please refer to ⇒ "Workshop equipment and special tools".

Environmental and waste disposal regulations for oil

- ◆ Gear oil and any other type of oil must be handled with care.
- ◆ Dispose of drained oil properly.
- ◆ Always adhere to statutory environmental and waste disposal regulations.
- ◆ Observe the information shown on the packaging of the oil.



Gearbox

- ◆ Do not run the engine or tow the vehicle with the oil pan removed or when there is no gear oil in the gearbox.
- ◆ Thoroughly clean all joints and connections and the surrounding areas before disconnecting.
- ◆ When installing gearbox, ensure that dowel sleeves are fitted correctly.

O-rings, seals, oil seals and gaskets

- ◆ Always renew O-rings, seals, oil seals and gaskets.
- ◆ After removing gaskets and seals, always inspect the contact surface on the housing or shaft for burrs resulting from removal or for other signs of damage.
- ◆ Thoroughly clean housing joint surfaces before assembling.
- ◆ Always replace paper gaskets. Completely remove old gasket and clean sealing surfaces thoroughly.
- ◆ Lightly lubricate the outer circumference and sealing lip of oil seals with gear oil before installing.
- ◆ Lightly lubricate O-rings with gear oil or vaseline before installation to prevent them from getting crushed during assembly.
- ◆ Do not use any other lubricants where gear oil is specified. Otherwise, there is a risk of problems occurring in the gearbox hydraulics.
- ◆ The open side of the oil seals faces toward the side with fluid filling.
- ◆ When installing a new oil seal, position the seal in the housing so that the sealing lip does not contact the shaft in the same place as the old seal (make use of installation depth tolerances).
- ◆ Observe rules for cleanliness ⇒ [page 5](#) .

Locking elements

- ◆ Do not over-stretch circlips.
- ◆ Renew circlips which have been damaged or over-tensioned.
- ◆ Circlips must be properly seated in the base of the groove.

Nuts, bolts

- ◆ Loosen bolts in reverse sequence to the specified tightening sequence.
- ◆ Bolts and nuts which secure covers and housings should be loosened and tightened in diagonal sequence and in stages if no tightening sequence is specified.
- ◆ Renew self-locking nuts.
- ◆ Use a wire brush to clean the threads of bolts which are secured with locking fluid. Then apply locking fluid - AMV 185 101 A1- to bolt threads before installing.
- ◆ The tightening torques stated apply to non-oiled nuts and bolts.

4.3 Deactivating ATF pump and discharging hydraulic accumulator



WARNING

System is pressurised.

The "7-speed dual clutch gearbox 0CK" is equipped with an electric ATF pump and hydraulic accumulator.

The electric ATF pump may start up at any time.

Because of the hydraulic accumulator, the ATF system is pressurised even when the ignition is off.

- ◆ *The electric ATF pump must always be deactivated and the hydraulic accumulator must be discharged before opening the gearbox.*
- ◆ *If the current state of the system is unclear (e.g. if the gearbox control unit is defective or if the gearbox is from an unknown source), only loosen the bolts on the mechatronic unit very slightly so that the oil pressure in the accumulator can dissipate slowly.*
- ◆ *Unplug electrical connector on automatic gearbox control unit - J217- before removing oil pan.*
- ◆ *Put on safety goggles.*

Deactivating ATF pump and discharging hydraulic accumulator

- Connect ⇒ Vehicle diagnostic tester and start **Diagnosis** mode.
- ◆ **Select own test**
- ◆ **02 - Gearbox electronics, Functions**
- ◆ Select **02 - ATF pressure relief / Disable ATF pump** or **02 - ATF level** ⇒ **Drain off ATF**

4.4 Contact corrosion

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

For this reason, only fasteners with a special surface coating are fitted.

In addition, rubber components, plastic components and adhesives are made of non-conductive material.

If you are not sure whether used parts can be re-installed, always fit new parts ⇒ Electronic parts catalogue .

Please note:

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

4.5 Safety functions of gearbox control unit

In the event of a failure of one or more components/sensors, the gearbox control unit will activate appropriate backup functions.

This ensures that the gearbox will not be damaged, however, the function and quality of the gear shifts will be impaired.

Faults detected by the gearbox are classified in four different categories.

- ◆ 1) The fault is stored and a backup programme enables the vehicle to drive on (in some cases with restrictions). The driver will not be made aware of the problem, as it is not critical to driving safety or to the gearbox itself. The selector lever position display in the instrument cluster will continue to show the selector lever position currently engaged in the normal way. If at all, the driver will only notice the fault if he experiences driveability problems, and will then automatically contact an Audi Service Partner to identify the cause.
- ◆ 2) Certain positions on the selector lever position display in the instrument cluster start to flash. This is to inform the driver that this particular selector lever position is currently not available. Example: position "D" is not available when the selector lever is in position "R" and the vehicle is still rolling backwards. In this case, selector lever position "D" will start to flash on the selector lever position display in the instrument cluster. The gearbox control unit prevents 1st gear from being engaged in order to avoid damage to the gearbox. 1st gear will be engaged once the vehicle has come to a standstill.
- ◆ 3) The complete selector lever position display in the instrument cluster is lit up and flashing. The current selector lever position is indicated in the instrument cluster (e.g. "D" is highlighted). This is an indication that the gearbox has been overloaded or the maximum temperature in the gearbox has been exceeded (overheating), e.g. towing a load that was too heavy.
- ◆ 4) If the complete selector lever position display in the instrument cluster is lit up and flashing, this means that a serious fault in the gearbox has been identified. The display in the instrument cluster no longer shows the current selector lever position. The defect is critical with regard to driving safety or the gearbox itself. It may no longer be possible to use all gears. The driver is made aware by the flashing gear selection indicator that he should immediately contact an Audi Service Partner.

5 Electrical components

⇒ [“5.1 Overview of fitting locations - electrical components”, page 9](#)

5.1 Overview of fitting locations - electrical components

Mechatronic unit for dual clutch gearbox - J743-

⇒ [“1.1 Overview of fitting locations - gearbox control system”, page 106](#)

Gear selector position P switch - F305-

⇒ [“1.3 Exploded view - selector mechanism”, page 14](#)

Selector lever lock solenoid - N110-

⇒ [“1.3 Exploded view - selector mechanism”, page 14](#)

Selector lever sensors control unit - J587- and tiptronic switch - F189- ⇒ [“1.3 Exploded view - selector mechanism”, page 14](#)

Gear sensor - G676- and gear sensor 2 - G869-

⇒ [“1.3 Exploded view - selector mechanism”, page 14](#)



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30 – Clutch

1 Clutch

All work on the dual clutch is described in ⇒ Servicing 7-speed
dual clutch gearbox 0CK; Rep. gr. 30 ; Clutch .

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34 – Controls, housing

1 Selector mechanism

⇒ [“1.1 Exploded view - selector cables”, page 11](#)

⇒ [“1.2 Exploded view - selector lever handle”, page 13](#)

⇒ [“1.3 Exploded view - selector mechanism”, page 14](#)

⇒ [“1.4 Manual release from position P”, page 16](#)

⇒ [“1.5 Removing and installing selector lever handle”,
page 16](#)

⇒ [“1.6 Bringing interlock button in handle into installation position”, page 18](#)

⇒ [“1.7 Removing and installing selector mechanism”, page 20](#)

⇒ [“1.8 Checking selector mechanism”, page 23](#)

⇒ [“1.9 Removing and installing selector lever cable”, page 25](#)

⇒ [“1.10 Checking and adjusting selector lever cable”, page 29](#)

⇒ [“1.11 Removing and installing selector lever lock solenoid N110”, page 33](#)

⇒ [“1.12 Removing and installing selector lever sensors control unit J587”, page 35](#)

⇒ [“1.13 Removing and installing gear sensor”, page 35](#)

⇒ [“1.14 Renewing selector shaft oil seal”, page 37](#)

1.1 Exploded view - selector cables



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1 - Bolt

- ☐ 2x
- ☐ 8 Nm

2 - Cable support bracket

3 - Selector lever cable

- ☐ Do not bend or kink
- ☐ Removing and installing
⇒ [page 25](#)
- ☐ Selector lever cable must be renewed if rubber sleeve is damaged
- ☐ Before installing, lightly lubricate ball socket with polycarbamide grease G 052 142 A2- .
- ☐ When installing, make sure that rubber sleeve on gearbox end is not twisted
- ☐ Adjusting ⇒ [page 29](#)
- ☐ Adjusting to basic setting ⇒ [page 30](#)

4 - Retaining clip

- ☐ For selector lever cable

5 - Gearbox selector lever

6 - Bolt

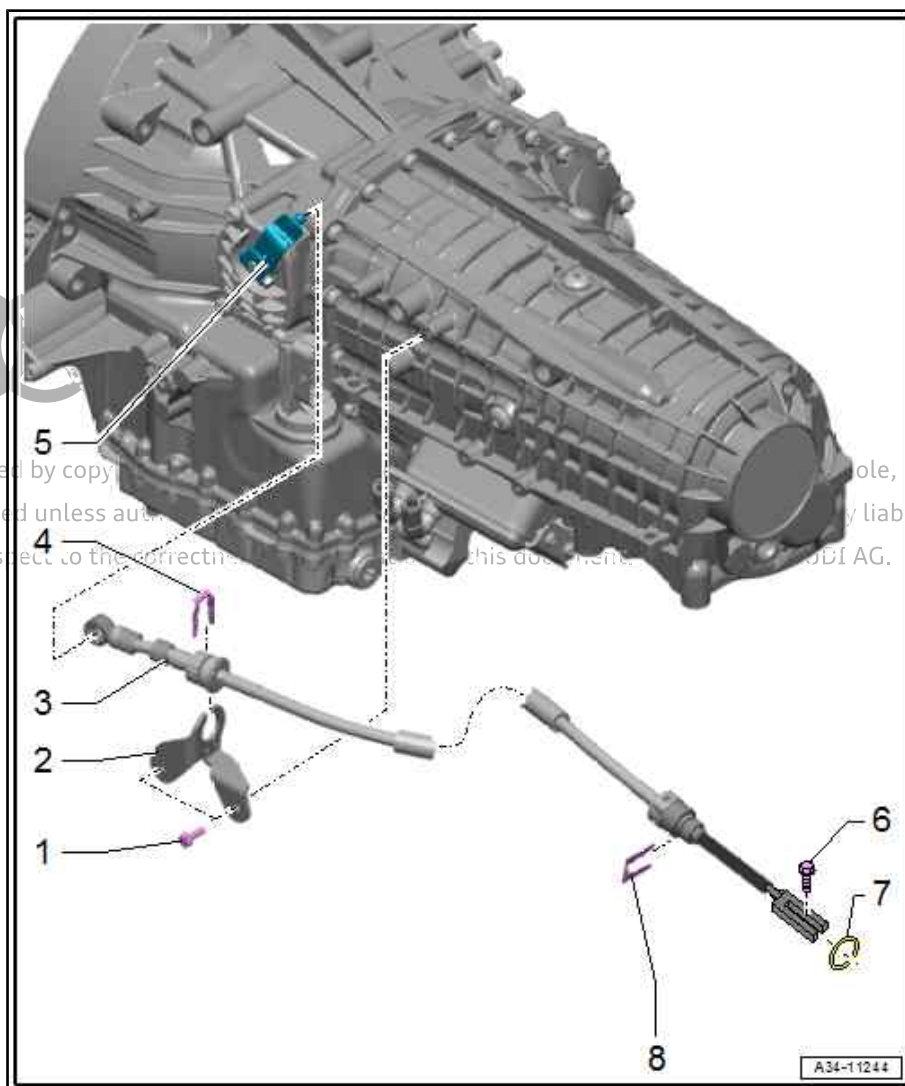
- ☐ For adjusting selector lever cable
- ☐ On selector mechanism
- ☐ 13 Nm

7 - O-ring

- ☐ Renew after removing

8 - Retaining clip

- ☐ For selector lever cable
- ☐ Renew after removing



1.2 Exploded view - selector lever handle

1 - Selector lever position display - Y26-

- ❑ Removing and installing
⇒ Electrical system;
Rep. gr. 96 ; Lights; Re-
moving and installing
selector lever position
display Y26

2 - Multimedia system operating unit - E380-

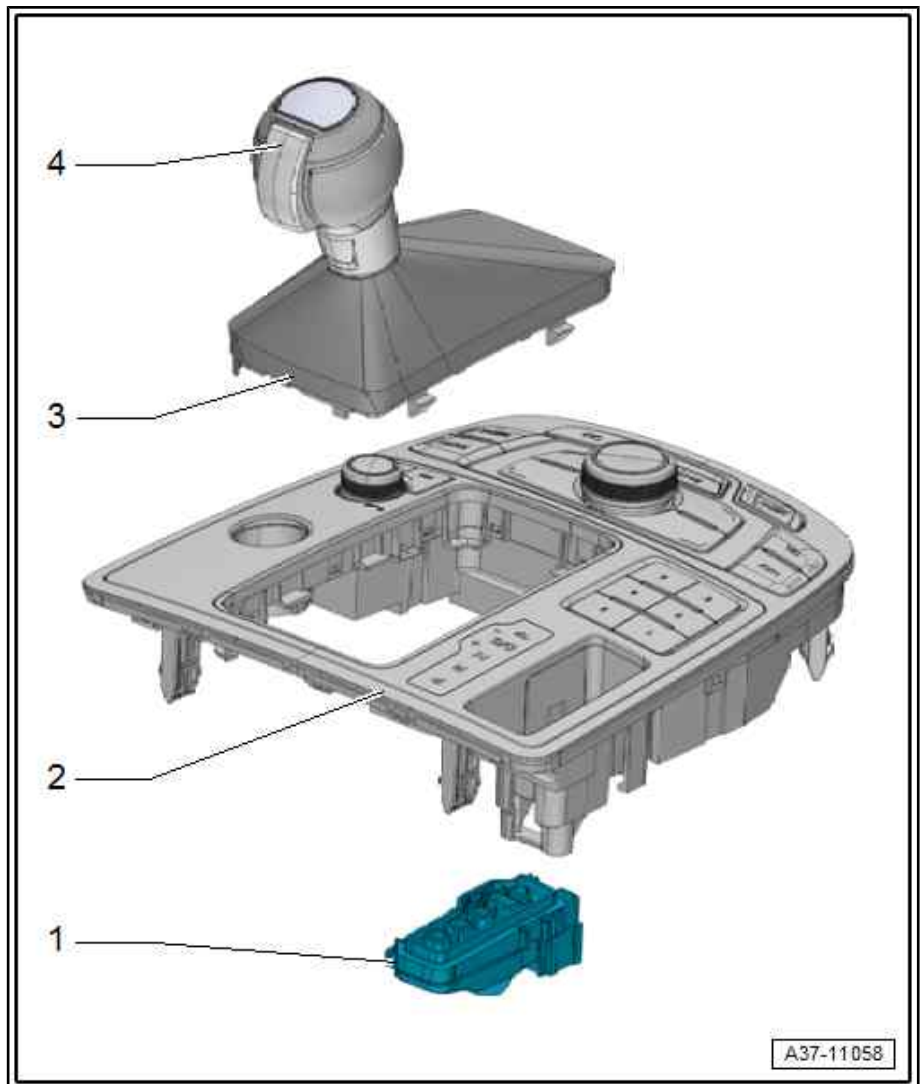
- ❑ Removing and installing
⇒ Communication;
Rep. gr. 91 ; Infotain-
ment system; Removing
and installing multime-
dia system operating
unit E380

3 - Selector lever boot

- ❑ Remove and install to-
gether with selector lev-
er handle ⇒ [page 16](#)

4 - Selector lever handle

- ❑ Removing and installing
⇒ [page 16](#)



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1.3 Exploded view - selector mechanism

Selector mechanism



WARNING

Accidents and injury can be caused if a gear is inadvertently engaged while the engine is running.

- ◆ *Prior to performing work with engine running, move selector lever to position "P" and pull up parking brake button to apply the electromechanical parking brake.*

1 - O-ring

- Renew after removing

2 - Selector lever cable

- Do not bend or kink
- Removing and installing
⇒ [page 25](#)

3 - Bolt

- For adjusting selector lever cable
- Tightening torque
⇒ [Item 6 \(page 12\)](#)

4 - Gear selector position P switch - F305-

- Consists of two reed contacts on printed circuit board in selector lever lock solenoid - N110-
- Can only be renewed together with selector lever lock solenoid - N110-
⇒ [page 33](#)

5 - Selector lever lock solenoid - N110-

- Removing and installing
⇒ [page 33](#)

6 - Cover

- Above selector lever lock solenoid - N110-

7 - Selector lever sensors control unit - J587- and tiptronic switch - F189-

- Removing and installing
⇒ [page 35](#)

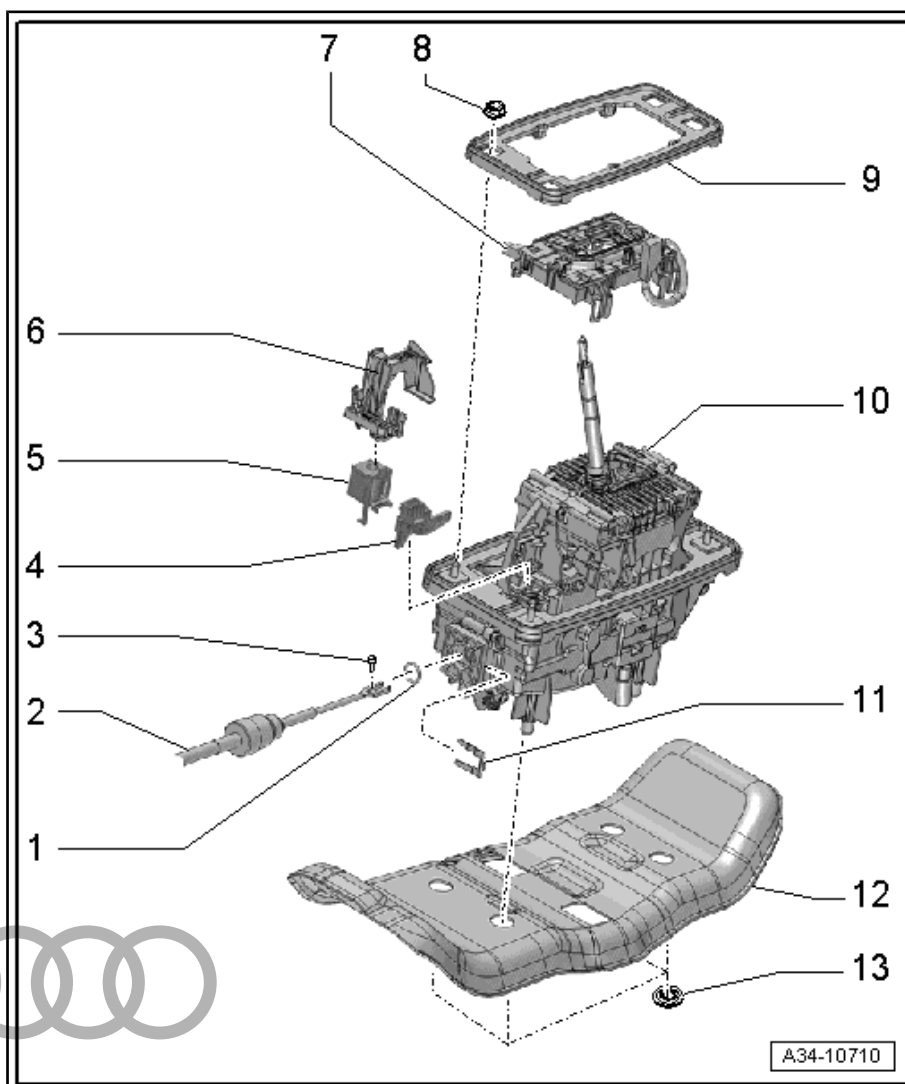
8 - Nut

- Secures selector mechanism to body
- 4x
- 8 Nm

9 - Gasket

10 - Selector mechanism

- Can only be renewed as a complete unit



☐ Removing and installing ⇒ [page 20](#)

- After removing and installing selector mechanism, run appropriate “Guided Function” using vehicle diagnostic tester

11 - Retaining clip

☐ For selector lever cable

12 - Noise insulation

- ☐ Not fitted on all vehicles
- ☐ For correct version, refer to ⇒ Electronic parts catalogue

13 - Retaining washers

- ☐ For noise insulation
- ☐ 4x
- ☐ Renew after removing

Selector mechanism at gearbox

1 - Bolt

- ☐ Renew after removing
- ☐ 3 Nm +90°

2 - Gear sensor - G676- and gear sensor 2 - G869-

- ☐ Removing and installing
⇒ [page 35](#)

3 - Gasket

- ☐ Renew after removing

4 - Oil seal

- ☐ For selector shaft
- ☐ Renewing ⇒ [page 37](#)

5 - Gearbox selector lever

- ☐ Removing and installing
⇒ [“1.14 Renewing selector shaft oil seal”](#),
[page 37](#)

6 - Bolt

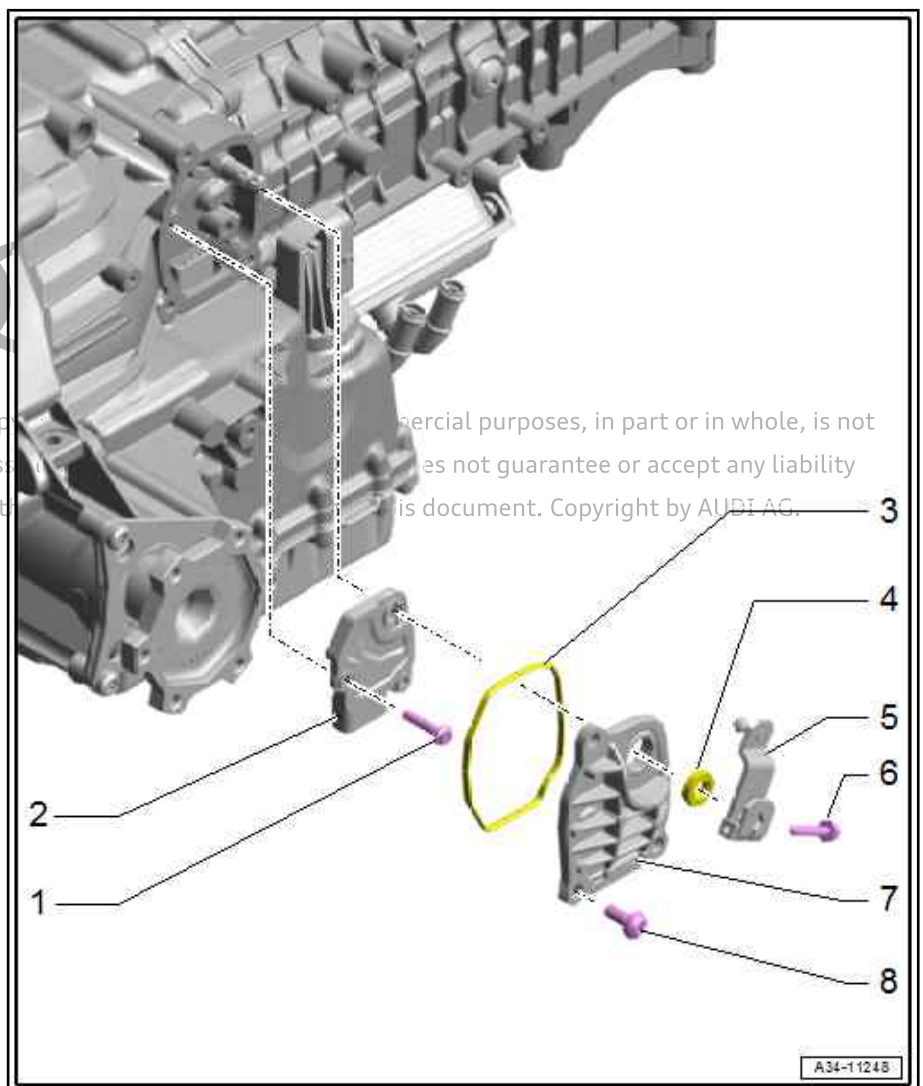
- ☐ Renew after removing
- ☐ 10 Nm +90°

7 - Cover

- ☐ For selector shaft

8 - Bolt

- ☐ Renew after removing
- ☐ 8 Nm +60°



1.4 Manual release from position P



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- ◆ *If the battery is disconnected or discharged, the selector lever cannot be shifted from position "P". In this case, the vehicle cannot be pushed or towed.*
- ◆ *When you operate the manual release mechanism the selector lever lock solenoid - N110- will release the lock without current supply.*

Procedure



Note

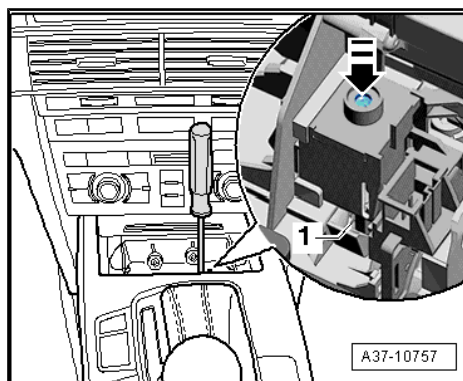
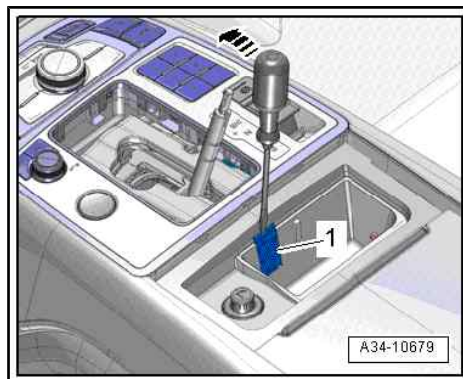
The selector lever handle is removed in the illustration. The handle does not have to be removed in order to manually release the selector mechanism from position "P".

- If fitted, remove front ashtray insert.
- Use screwdriver to pry off cover cap -1- in ashtray housing/ storage tray -arrow-.
- Carefully insert tool (e.g. screwdriver from tool kit) through centre opening in ashtray housing and into cylinder -arrow- on selector lever lock solenoid - N110- and at the same time press and hold interlock button and move selector lever out of position "P".



Note

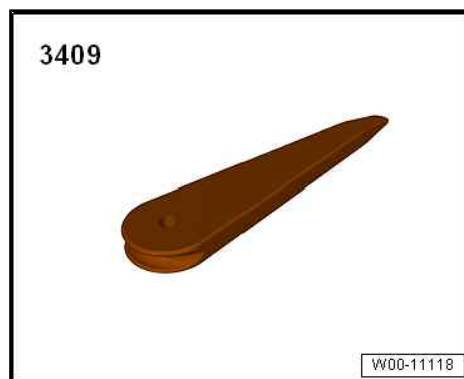
- ◆ *This releases the selector lever lock in position "P" by way of the locking lever -1-.*
- ◆ *The cylinder -arrow- on selector lever lock solenoid - N110- may be partially concealed by noise insulation or wiring (move clear to one side).*



1.5 Removing and installing selector lever handle

Special tools and workshop equipment required

- ◆ Removal wedge - 3409-



- ◆ Thin cable tie or assembly aid for interlock button on handle.
A new selector lever handle is supplied with the assembly aid pre-fitted.

Removing

- Pull up parking brake button to apply electromechanical parking brake.
- Shift selector lever into position "N".

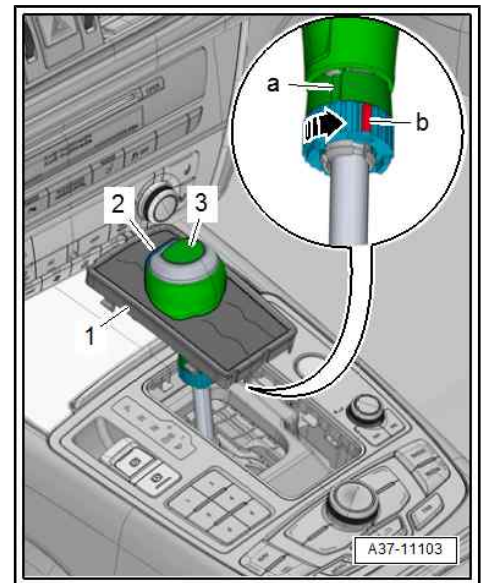
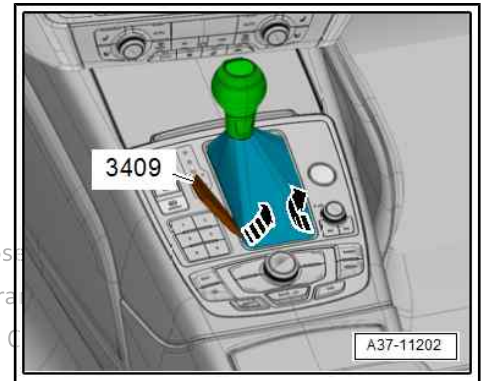


Note

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The selector lever handle is removed together with the selector lever boot.

- Carefully pry out selector lever boot at the sides in direction of -arrows- using removal wedge - 3409- .
- Turn selector lever boot -1- inside out over selector lever handle -3-.
- Turn locking ring as far as stop in direction of -arrow- so that markings -a- and -b- are no longer in line.
- Pull off selector lever handle -3- together with selector lever boot -1-, taking care not to touch interlock button -2-.



Installing

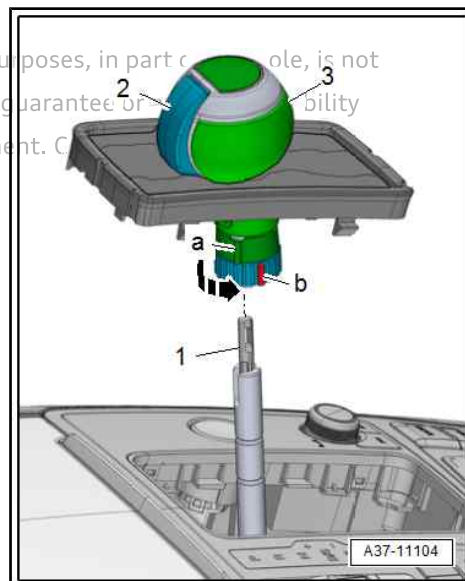
- Turn locking ring in direction of -arrow- as far as stop.
- Markings -a- and -b- should not be in line.
- Interlock button faces direction of travel.



Caution

Risk of damage to the selector mechanism.

- ◆ **The interlock button -2- must protrude from the selector lever handle during installation. If the interlock button was pressed in by mistake when the handle was removed, the interlock button must be moved back to its installation position ➔ [page 18](#).**
- ◆ **If the interlock button has been pressed in and the handle is installed with the interlock button in this position, the handle and the pull rod of the selector mechanism -1- will be damaged irreparably.**

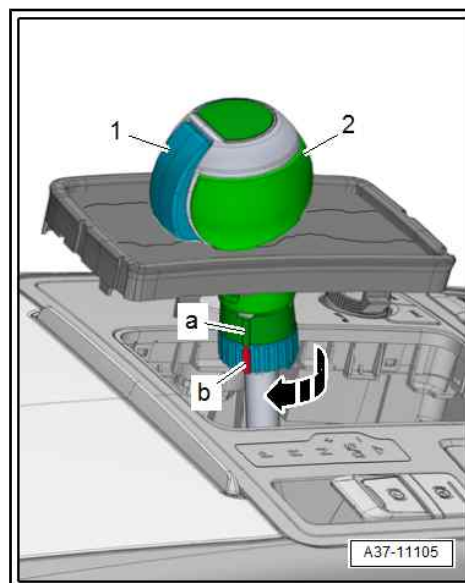


- Carefully press selector lever handle -3- fully onto selector lever, taking care not to touch interlock button -2-.
- The handle must engage in the annular groove on the selector lever.
- Turn locking ring in direction of -arrow- as far as stop.
- It must be possible to turn the locking ring; press handle -2- if necessary.
- Markings -a- and -b- should be in line.



Note

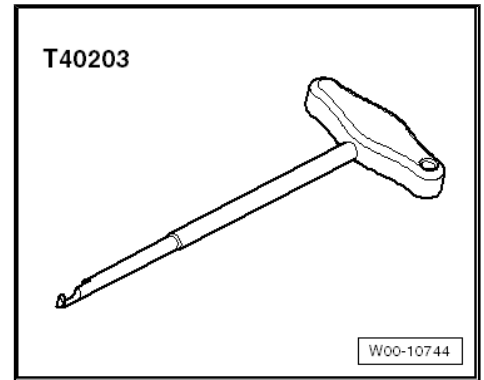
- ◆ **The handle is not locked until the locking ring has been turned. Only then should you press the interlock button on the handle.**
- ◆ **There may be increased resistance when you press the interlock button for the first time after installation.**
- Press interlock button -1- on selector lever handle.
- Move selector lever to positions “R” and “D/S” to check button mechanism.
- If the selector lever cannot be moved into the above positions, the handle must be removed again.
- Pull selector lever boot down and clip onto multimedia system operating unit - E380- .



1.6 Bringing interlock button in handle into installation position

Special tools and workshop equipment required

◆ Release tool - T40203-



Procedure

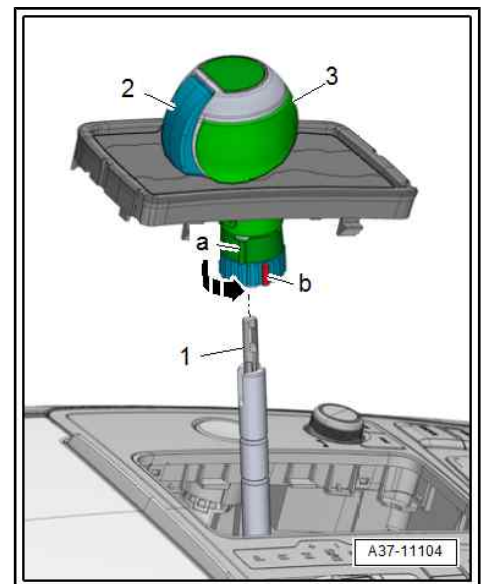
- Installation position: The interlock button -2- must protrude from the selector lever handle.

If the interlock button has been pressed in, it must be moved back into its installation position so that the selector lever handle -3- can be installed.

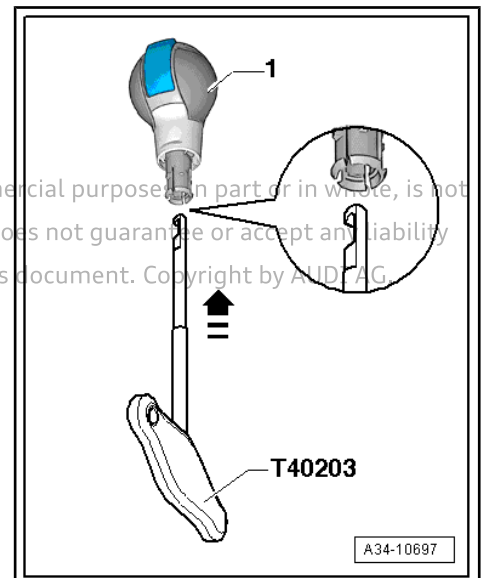


Note

For illustration purposes, the handle is shown without the selector lever boot in the following steps.

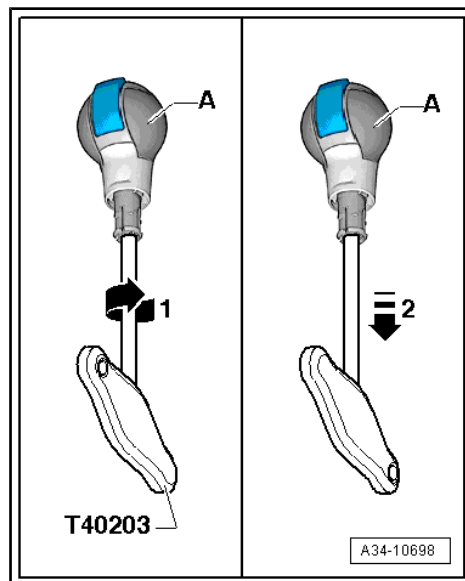


- Carefully insert release tool - T40203- into selector lever handle -1- as far as stop.
- Recess on release tool - T40203- should face interlock button,

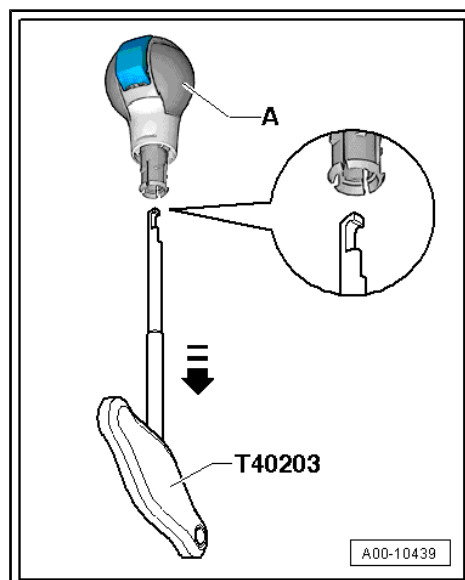


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- Hold selector lever handle -A- and turn release tool - T40203- 180° in direction of -arrow 1-.
- Hold handle and carefully pull out release tool - T40203- -arrow 2-.



- When pulling out release tool -T40203- , interlock button -A- on selector lever handle is pressed out and locked in position.
- Do not touch interlock button on selector lever handle before installing handle so that interlock button is not pressed in again.



1.7 Removing and installing selector mechanism

Special tools and workshop equipment required

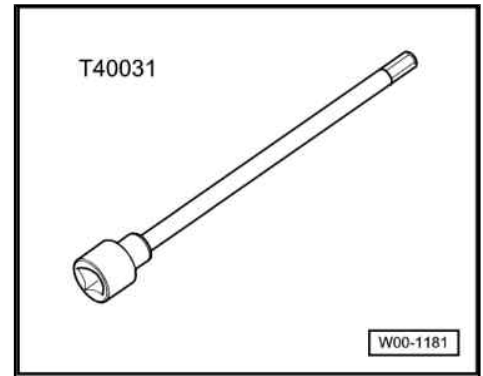
- ◆ Removal lever - 80 - 200-



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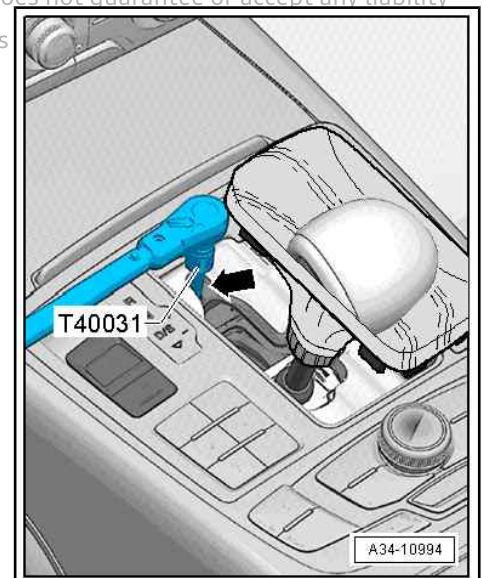


◆ Socket - T40031-



Removing

- Remove selector lever handle ⇒ [page 16](#) .
- Remove ashtray (front) or storage compartment ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing ashtray (front) .
- Shift selector lever to position "D/S".
- Insert socket and key - T40031- through access hole -arrow- in selector mechanism and slacken bolt on selector lever cable approx. one turn.

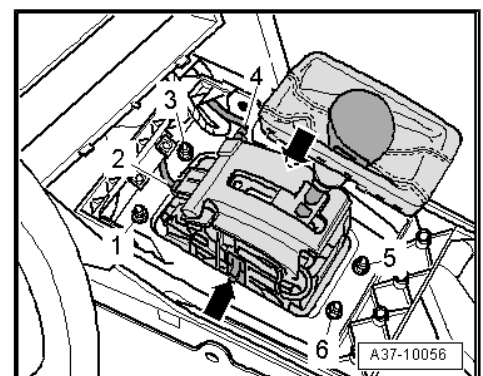


- Unplug electrical connectors -2- and -4-.



Note

- ◆ *Insulating mat is not shown in illustration.*
- ◆ *The assistance of a second mechanic is required to detach the selector mechanism from below.*
- ◆ *Disregard -arrows-.*
- Remove insulating mat above selector mechanism.
- Remove bolts -1, 3, 5, 6-.
- Remove SCR catalytic converter ⇒ Engine, mechanics; Rep. gr. 26 ; Emission control system; Removing and installing catalytic converter .



- Remove retaining washers -1-.
- Detach noise insulation -2- from shift unit -4- and slide noise insulation forwards towards selector lever cable -3-.



- Pull out retaining clip -1- for selector lever cable from the side.
- Pull selector lever cable -2- out of selector mechanism.



Note

Do not bend or kink the selector lever cable.

- Remove selector mechanism.

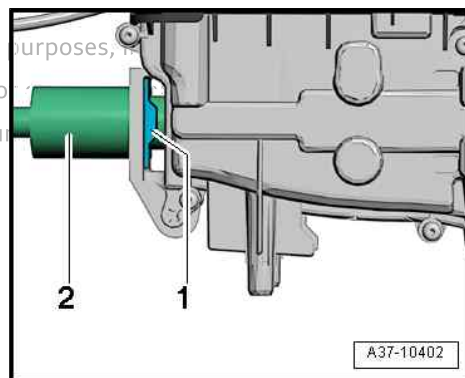
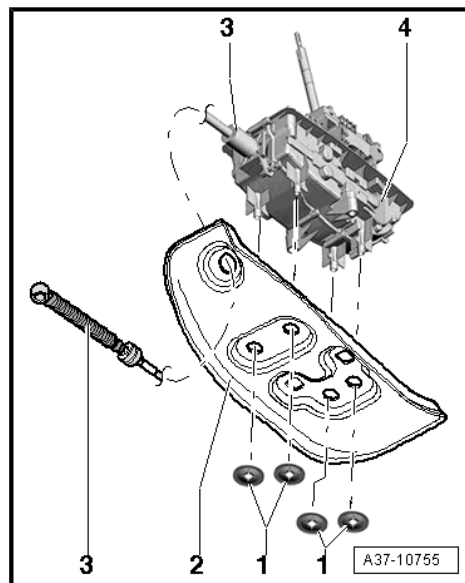
Installing

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

- Insert selector mechanism and secure from above.
- Install selector lever cable ⇒ [page 25](#) .
- Adjust selector lever cable ⇒ [page 29](#) .
- Install SCR catalytic converter ⇒ Engine, mechanics; Rep. gr. 26 ; Emission control system; Removing and installing catalytic converter .
- Check selector mechanism ⇒ [page 23](#) .
- Install ashtray (front) or storage compartment ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing ashtray (front) .
- Install selector lever handle ⇒ [page 16](#) .

Tightening torques:

- ♦ ⇒ [“1.3 Exploded view - selector mechanism”, page 14](#)



1.8 Checking selector mechanism



WARNING

Accidents and injury can be caused if a gear is inadvertently engaged while the engine is running.

- ◆ *Before performing any work with the engine running, set the gearbox to position "P" and pull up the parking brake button to apply the electromechanical parking brake.*
- ◆ *Observe safety precautions when the vehicle is moving
⇒ [page 4](#) .*
- ◆ *You must work through all the tests listed. If specified results are not obtained, adjust selector lever cable (⇒ [page 29](#)) and perform "Guided Fault Finding" using vehicle diagnostic tester .*

Overview:

- ◆ 1. Checking operation of selector mechanism ⇒ [page 23](#)
- ◆ 2. Checking interlock button on selector lever handle
⇒ [page 24](#)

1. Checking operation of selector mechanism

- It should not be possible to operate the starter while the selector lever is in positions "R" "D/S" or in the "tiptronic gate"
- When travelling at speeds above 5 km/h and shifting into selector lever position "N", the solenoid for the selector lever lock must not engage and block the selector lever. The selector lever can be shifted into a driving gear.
- When travelling at speeds below 2 km/h (almost stationary), the solenoid for the selector lever lock should only engage about 1 second after you shift into selector lever position "N". The selector lever cannot be shifted out of "N" position until the brake pedal is pressed.

Selector lever in position "P":

- Pull up parking brake button to apply electromechanical parking brake.
- Switch off ignition.
- The selector lever is locked and cannot be shifted out of "P" position, even when the interlock button on the handle is pressed in.
- Switch on ignition.



Note

To obtain the "ignition on" position, briefly press the entry and start authorisation button - E408- .

- Do not depress brake pedal.
- The selector lever is locked and cannot be shifted out of "P" position, even when the interlock button on the handle is pressed in. Selector lever lock solenoid - N110- blocks selector lever.
- Press and hold brake pedal.
- Selector lever lock solenoid - N110- releases selector lever. It is possible to shift into a driving gear. With interlock button on

selector lever handle pressed, shift selector lever slowly from "P" position through "R, N, and D/S" and check whether the selector lever position display - Y6- in the instrument cluster shows the correct selector lever position in each case.

- Pull selector lever from "D/S" towards the rear and release selector lever.
- The selector lever will return automatically to the position "D/S". The selector lever position display - Y6- in the instrument cluster should change from "D" to "S1" and then back to "D" when the selector lever is pulled back once again.

Selector lever in position "N" and ignition switched on:

- Do not depress brake pedal.
- After a short delay: Selector lever is locked and cannot be shifted out of "N" position even when pressing the interlock button on the selector lever handle. Selector lever lock solenoid - N110- blocks selector lever.
- Depress brake pedal.
- Selector lever lock solenoid - N110- releases selector lever. Shifting into position "D/S" is possible.

Selector lever in position "D/S", ignition switched on:

- Shift selector lever into "tiptronic gate".
- The illuminated "D/S" symbol in the selector lever position display - Y26- should go out and the "+" and "-" symbols should light up.
- The selector lever position display - Y6- in the instrument cluster should change from "D" to "M1" when the selector lever is moved into the "tiptronic gate".
- Do not move selector lever to position "P"; select e.g. position "N".
- Switch off ignition.
- A warning message should be displayed in the instrument cluster.
- The vehicle cannot be locked.
- Move selector lever to position "P".
- Switch off ignition.
- The vehicle can now be locked.

If results do not match specifications: the correctness of information in this document. Copyright by AUDI AG.

- Perform Guided Fault Finding routine using vehicle diagnostic tester .
- Adjust selector lever cable ⇒ [page 29](#) .
- Check interlock button on selector lever handle ⇒ [page 24](#) .

2. Checking interlock button on selector lever handle

Check that interlock button moves freely:

- Interlock button should move easily when pressed without force.
- Interlock button should spring back fully on its own when released.

If results do not match specifications:

- Check whether selector lever handle is correctly installed ⇒ [page 16](#) .

- Check whether selector lever is bent.

Function test:

- Ignition switched on

Press the interlock button on the selector lever handle to move the handle into the positions listed below; it should not be possible to move the selector lever into these positions unless the interlock button is pressed.

- ◆ “P” to “R” (also apply brake pedal)
- ◆ “N” to “R” (vehicle stationary; after waiting for a while, also apply brake pedal)
- ◆ “R” to “P”

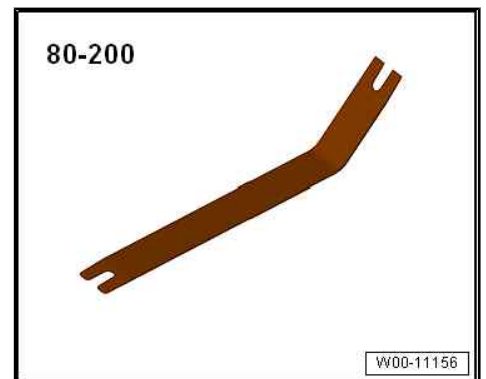
If results do not match specifications:

- Check whether selector lever handle is correctly installed
⇒ [page 16](#) .
- Check electrical connectors on selector mechanism.
- Perform **Guided Fault Finding** using vehicle diagnostic tester and check selector lever lock solenoid - N110- .
- Adjust selector lever cable ⇒ [page 29](#) .

1.9 Removing and installing selector lever cable

Special tools and workshop equipment required

- ◆ Removal lever - 80 - 200-

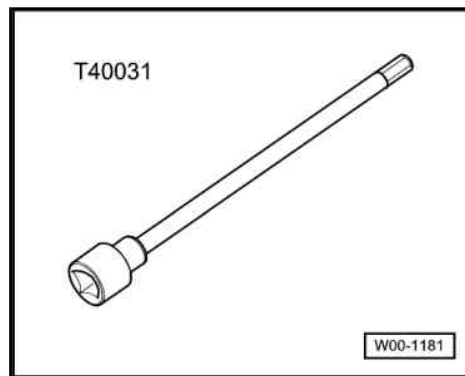


- ◆ Removal wedge - 3409-



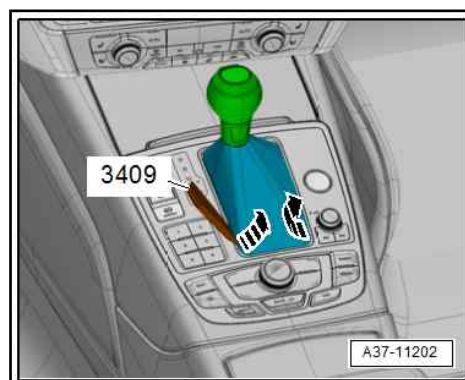
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◆ Socket - T40031-



Removing

- Pull up parking brake button to apply electromechanical parking brake.
- Shift selector lever to position “D/S”.
- Carefully pry out selector lever boot at the side in direction of -arrows- using removal wedge - 3409- and turn selector lever boot inside out over selector lever handle.



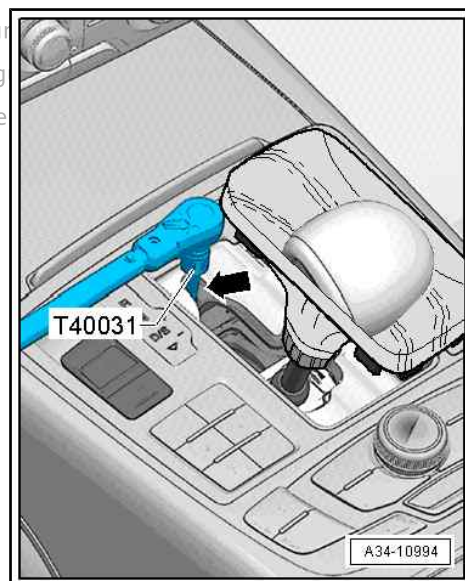
- Insert socket and key - T40031- through access hole - arrow- in selector mechanism and slacken bolt on selector lever cable approx. one turn.

with respect to the correctness of information in this document

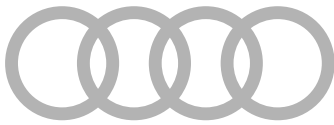


Note

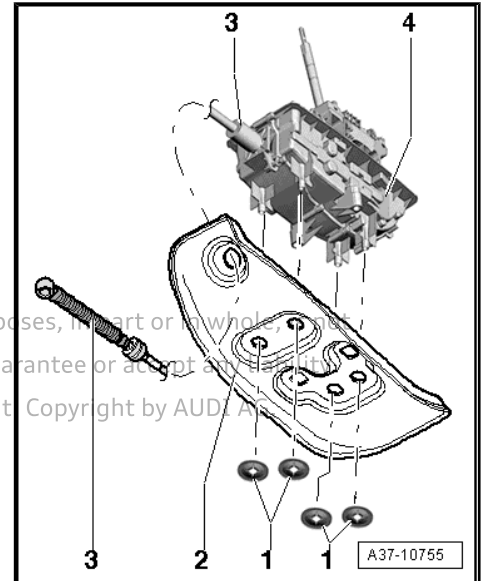
- ◆ *Only loosen clamping bolt – do not remove.*
- ◆ *Clamping bolt can only be accessed with selector lever in position “D/S”.*
- ◆ *With clamping bolt loosened, selector lever must remain in position “D/S”.*
- Remove rear noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Removing and installing underbody trim .



- Remove retaining washers -1-.
- Detach noise insulation -2- from shift unit -4- and slide noise insulation forwards towards selector lever cable -3-.



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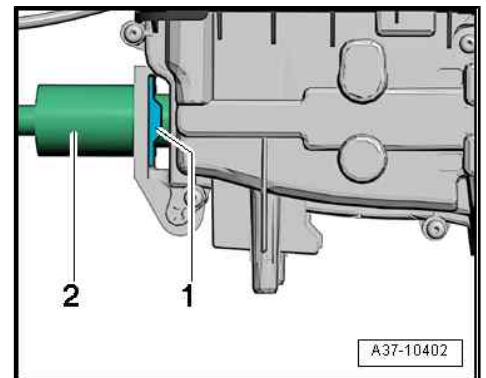


- Pull out retaining clip -1- for selector lever cable from the side.
- Pull selector lever cable -2- out of selector mechanism.



Note

Do not bend or kink the selector lever cable.



- Use removal lever - 80 - 200- to press ball socket -1- on selector lever cable off gearbox selector lever.
- Remove bolts -2- and detach selector lever cable from gearbox.

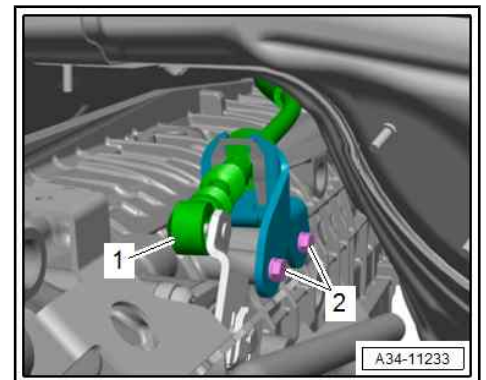
Installing

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

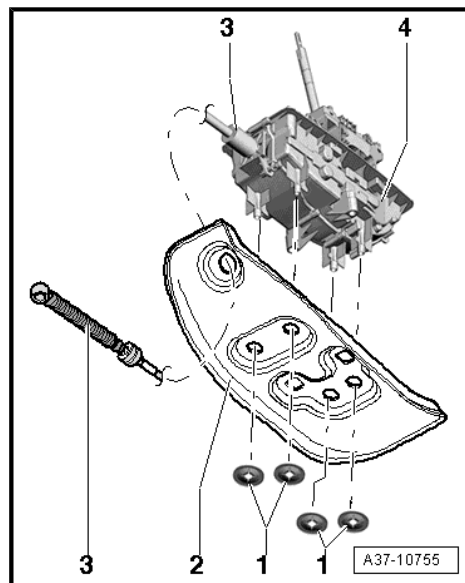


Note

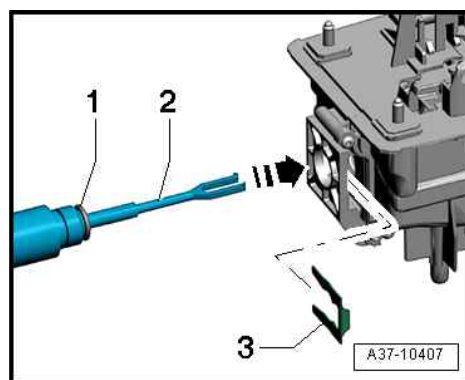
- ◆ *Renew retaining washers for noise insulation.*
- ◆ *Renew O-ring on selector lever cable.*
- ◆ *Before installing, lightly grease cable eye and ball socket on selector lever cable with polycarbamide grease - G 052 142 A2- .*



- Slide selector lever cable -3- through hole on noise insulation -2-.



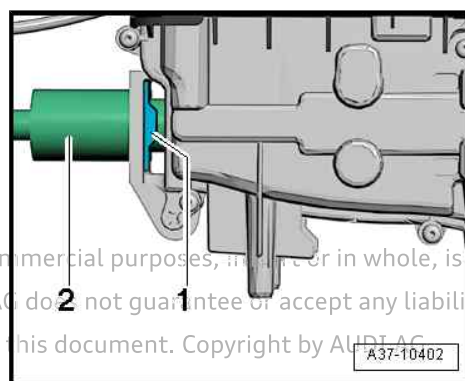
- Fit O-ring -1- on selector lever cable.
- Insert selector lever cable -2- into selector mechanism -arrow-.
- Secure selector lever cable with retaining clip -3-.



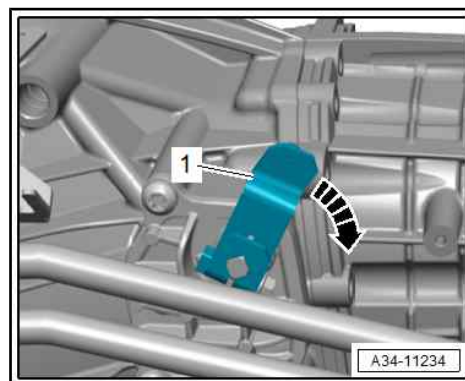
- Installation position: angled end of retaining clip -1- must point towards selector mechanism.



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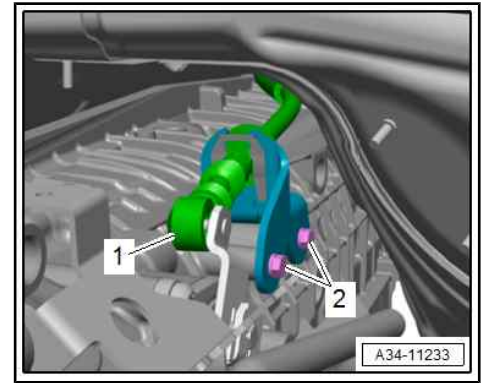
- Press gearbox selector lever -1- on gearbox towards the rear as far as it will go -arrow- until parking lock engages.
- When the parking lock has engaged it should no longer be possible to rotate both front wheels in one direction at the same time.
- Then push gearbox selector lever forward 3 notches so that gearbox is in position “D/S”.
- Check that the selector lever inside the vehicle is also in position “D/S”.



- Carefully press ball socket -1- of selector lever cable onto gearbox selector lever in this position.
- Tighten bolts -2-.

 Note

- ◆ *Do not bend or kink the selector lever cable.*
- ◆ *Take care not to bend the gearbox selector lever when pressing on the cable; support the lever if necessary, as otherwise the selector mechanism can no longer be adjusted accurately.*
- Check selector lever cable and adjust if necessary
⇒ [page 29](#) .
- Check selector mechanism ⇒ [page 23](#) .
- Install noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Removing and installing underbody trim .



Tightening torques

- ◆ ⇒ [“1.1 Exploded view - selector cables”, page 11](#)

1.10 Checking and adjusting selector lever cable

⇒ [“1.10.1 Adjusting selector lever cable”, page 29](#)

⇒ [“1.10.2 Adjusting selector lever cable to basic setting”, page 30](#)

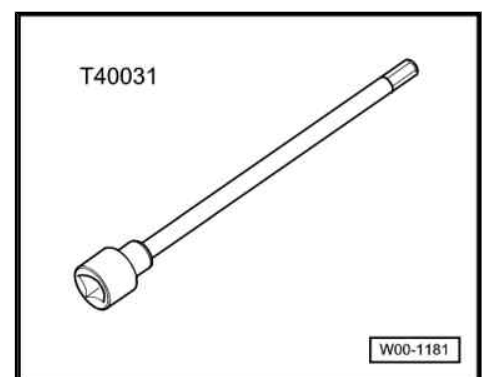
1.10.1 Adjusting selector lever cable

Special tools and workshop equipment required

- ◆ Removal wedge - 3409-

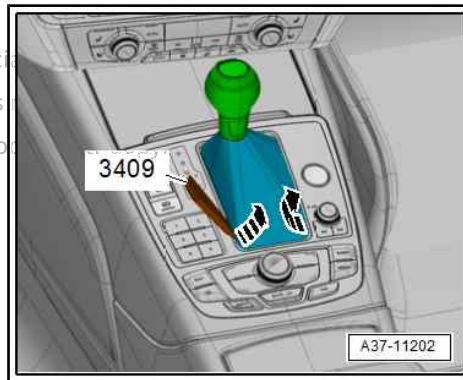


- ◆ Socket - T40031-



Procedure

- Pull up parking brake button to apply electromechanical parking brake.
- Shift selector lever to position "D/S".
- Carefully pry out selector lever boot at the side in direction of -arrows- using removal wedge - 3409- and turn selector lever boot inside out over selector lever handle.

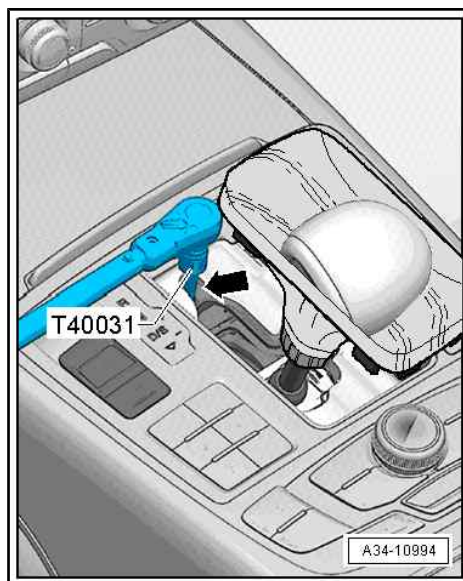


- Insert socket and key - T40031- through access hole -arrow- in selector mechanism and slacken bolt on selector lever cable approx. one turn.



Note

- ◆ Only loosen clamping bolt – do not remove.
- ◆ Clamping bolt can only be accessed with selector lever in position "D/S".
- ◆ With clamping bolt loosened, selector lever must remain in position "D/S".
- Carefully move selector lever slightly forwards and backwards, without shifting lever into a different selector lever position. The selector lever cable is thereby slackened.
- Use socket and key - T40031- to tighten clamping bolt in this position, taking care not to touch selector lever.
- Check selector mechanism ⇒ [page 23](#) .



If selector mechanism is not functioning correctly after adjusting selector lever cable, proceed as follows:

- Adjust selector lever cable to basic setting ⇒ [page 30](#) .

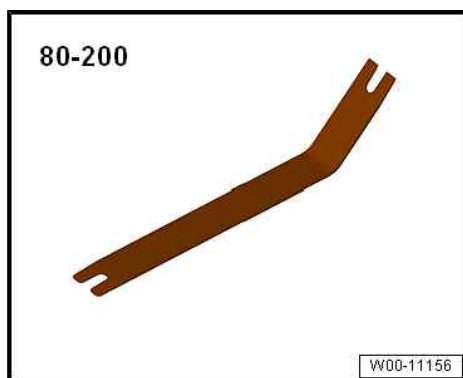
Tightening torques

- ◆ ⇒ ["1.1 Exploded view - selector cables", page 11](#)

1.10.2 Adjusting selector lever cable to basic setting

Special tools and workshop equipment required

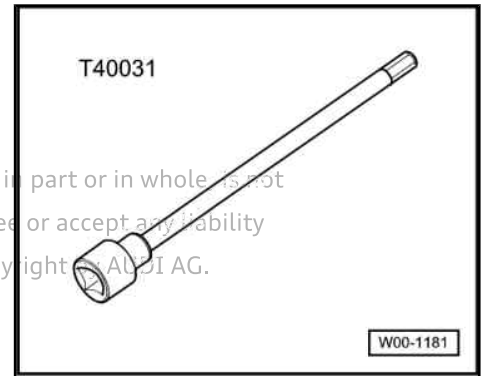
- ◆ Vehicle diagnostic tester
- ◆ Removal lever - 80 - 200-



◆ Socket - T40031-



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Procedure

- **Guided Fault Finding** using the vehicle diagnostic tester has been completed; all faults repaired.
- Using vehicle diagnostic tester in Guided Fault Finding mode, go to “Function/Component Selection” and select the following menu items:
 - ◆ **Drive system**
 - ◆ **0CK gearbox**
 - ◆ **01 - Self-diagnosis compatible systems**
 - ◆ **02 - Gearbox electronics**
 - ◆ **02 - Gearbox electronics, Functions**
 - ◆ **02 - Measured values**
- Select the value for **Gear** from the menu.
- Compare the following readings:
 - ◆ Value for “Gear” on vehicle diagnostic tester
 - ◆ Selector lever position
 - ◆ Gear indicated on selector lever position display - Y26- (on selector mechanism)
 - ◆ Selector lever position display - Y6- in instrument cluster

Requirement:

- The displays should match.

If the displays do not match:

- Adjust selector lever cable ⇒ [page 29](#) .

If the displays cannot be matched by adjusting the selector lever cable:

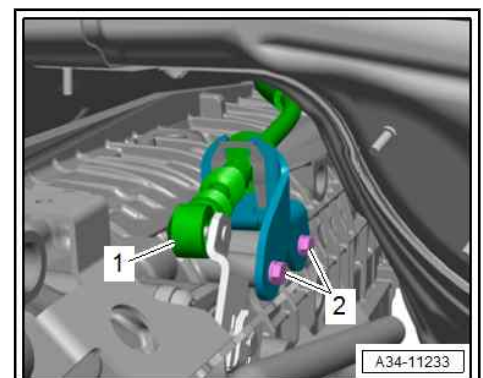
Adjusting selector lever cable to basic setting:

- Use removal lever - 80 - 200- to press ball socket -1- on selector lever cable off gearbox selector lever.

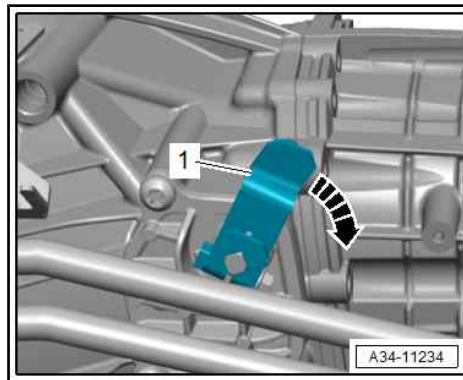


Note

Disregard -item 2-.



- Press gearbox selector lever -1- on gearbox towards the rear as far as it will go -arrow- until parking lock engages.
- When the parking lock has engaged it should no longer be possible to rotate both front wheels in one direction at the same time.
- Then push gearbox selector lever forward 3 notches so that gearbox is in position "D/S".
- Check that the selector lever inside the vehicle is also in position "D/S".

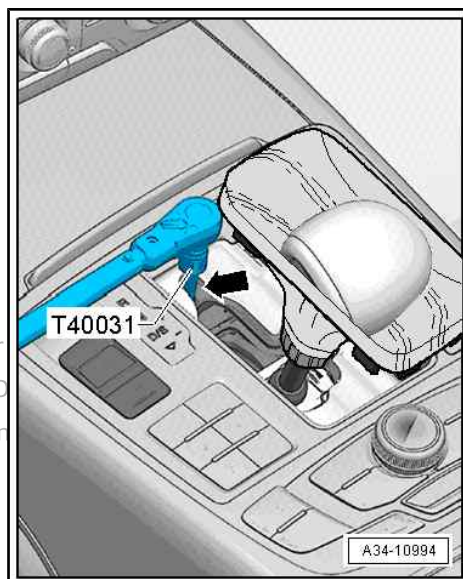


- Insert socket and key - T40031- through access hole -arrow- in selector mechanism and slacken bolt on selector lever cable approx. one turn.



Note

- ◆ Only loosen clamping bolt – do not remove.
- ◆ Clamping bolt can only be accessed with selector lever in position "D/S".
- ◆ With clamping bolt loosened, selector lever must remain in position "D/S".
- Detach socket and key - T40031- from torque wrench and leave it inserted in access hole -arrow- in selector mechanism.

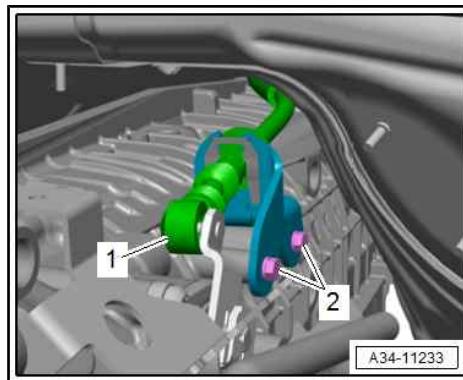


- Carefully press ball socket -1- of selector lever cable onto gearbox selector lever in this position.



Note

- ◆ Take care not to bend the gearbox selector lever when pressing on the cable; support the lever if necessary, as otherwise the selector mechanism can no longer be adjusted accurately.
- ◆ Disregard -item 2-.
- Using vehicle diagnostic tester in Guided Fault Finding mode, select [02 - Gearbox electronics] and function [02 - Measured values].



- Select the value for [Gear] from the menu.
- Compare the following readings:
 - ◆ Value for [Gear] on vehicle diagnostic tester
 - ◆ Selector lever position
 - ◆ Gear indicated on selector lever position display - Y26- (on selector mechanism)
 - ◆ Selector lever position display - Y6- in instrument cluster

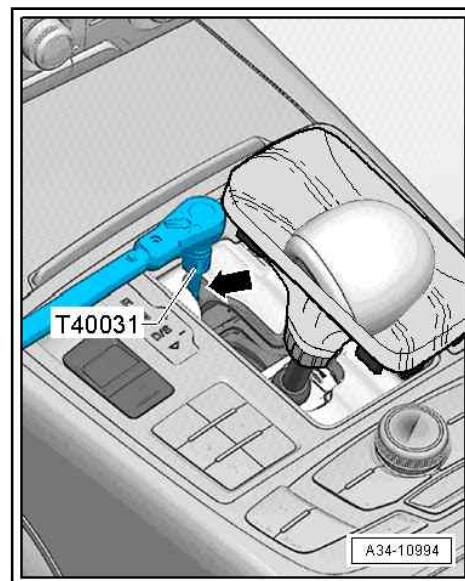
Requirement:

- The displays should match.

- Carefully move selector lever slightly forwards and backwards, without shifting lever into a different selector lever position. The selector lever cable is thereby slackened.
- Use socket and key - T40031- to tighten clamping bolt in this position, taking care not to touch selector lever.
- Check selector mechanism ⇒ [page 23](#) .

Tightening torques

- ◆ ⇒ [“1.1 Exploded view - selector cables”, page 11](#)



1.11 Removing and installing selector lever lock solenoid - N110-

Removing

- Move selector lever to position “P”.
- Remove ashtray (front) ⇒ General body repairs, interior, Rep. gr. 68 ; Centre console; Removing and installing ashtray (front) .
- Unscrew nuts -1, 3, 5, 6- a few turns, but do not remove completely.



Note

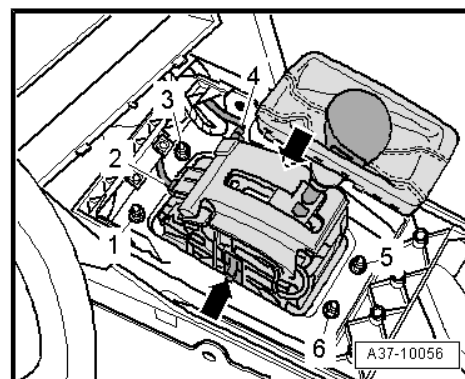
- ◆ *This will lower the selector mechanism slightly and facilitate removal.*
- ◆ *Items marked -2, 4- and -arrows- can be disregarded.*



Caution

The selector mechanism can be damaged by broken retaining clips, retaining tabs or other objects.

- ◆ *Make sure that no parts or objects drop into the selector mechanism. If this happens, the selector mechanism will have to be renewed!*



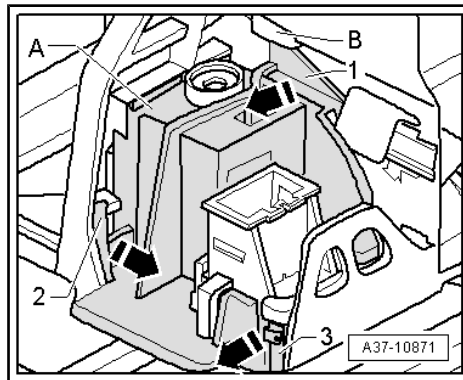
- Release retaining tabs -2- and -3- in direction of -arrow-, lift front of cover -A- slightly and hold in that position.



Note

This prevents the retaining tabs from engaging again.

- Using a screwdriver, release top retaining tab -1- of cover from retainer -B- in direction of -arrow- and lift out cover -A-.

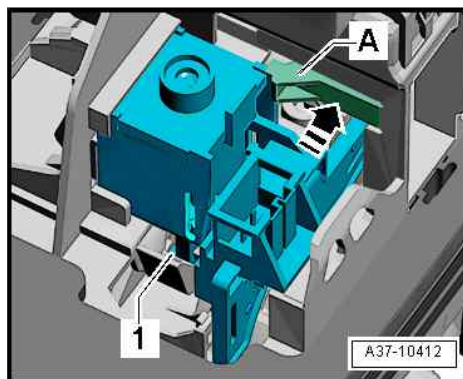


- Unplug electrical connector on selector lever lock solenoid - N110- .
- Press retaining hook -A- in direction of -arrow- and hold in this position.



Note

The selector mechanism must be renewed if the retaining hook -A- breaks off.

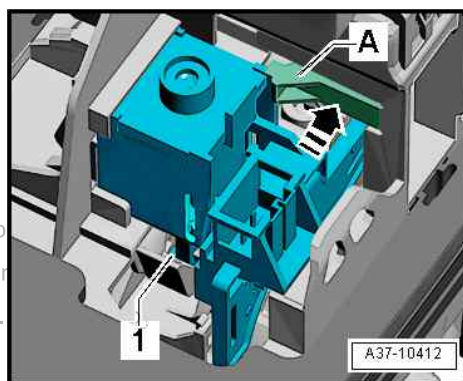
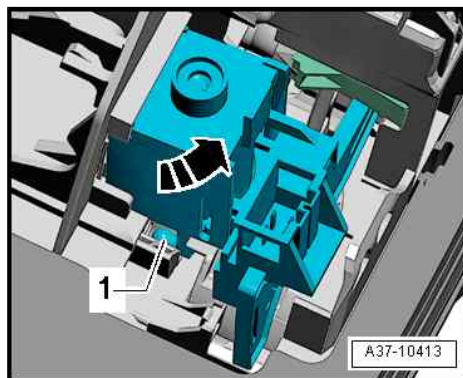


- Tilt bottom part of selector lever lock solenoid - N110- out in direction of -arrow- so that ball rod -1- disengages from operating lever on selector mechanism.
- Detach selector lever lock solenoid - N110- .

Installing

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

- Turn ball rod -1- into correct position for installation.
- Guide selector lever lock solenoid - N110- into selector mechanism at an angle from above and tilt bottom part in opposite direction of -arrow-.
- Ball rod -1- must engage fully in operating lever on selector mechanism; press home with a small screwdriver if necessary.
- Secure selector lever lock solenoid - N110- to retaining hook -A-.

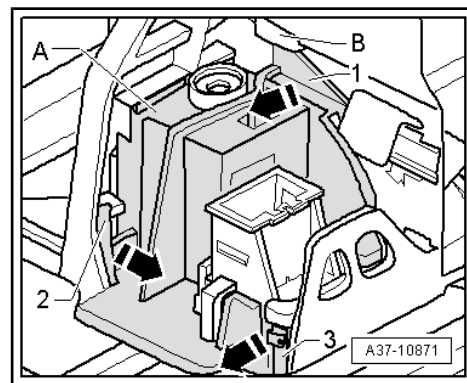


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- Place cover -A- over selector lever lock solenoid - N110- and carefully engage -1 ... 3-.
- Attach electrical connectors.
- Check function of selector mechanism before continuing assembly ⇒ [page 23](#) .
- Install ashtray (front) or storage compartment ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing ashtray (front) .

Tightening torques:

- ◆ ⇒ [“1.3 Exploded view - selector mechanism”, page 14](#)



1.12 Removing and installing selector lever sensors control unit - J587-

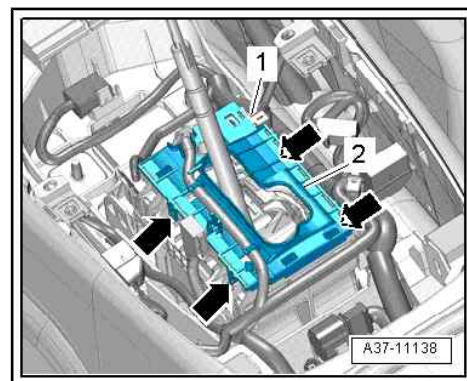
Removing

- Remove selector lever handle ⇒ [page 16](#) .
- Remove multimedia system operating unit - E380- ⇒ Communication; Rep. gr. 91 ; Infotainment system; Removing and installing multimedia system operating unit E380 .
- Unplug electrical connector -1-.
- Release 4 retaining tabs -arrows- and lift out selector lever sensors control unit - J587- -item 2-.

Installing

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

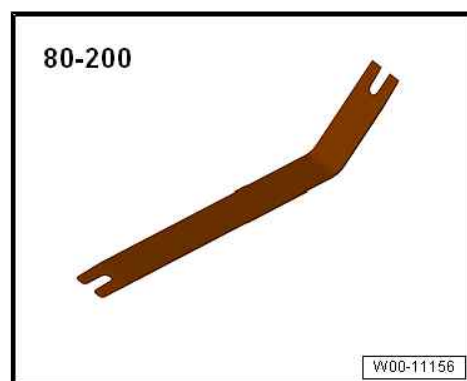
- Make sure selector lever sensors control unit - J587- clicks in place with 4 retaining tabs.
- Install multimedia system operating unit - E380- ⇒ Communication; Rep. gr. 91 ; Infotainment system; Removing and installing multimedia system operating unit E380 .
- Install selector lever handle ⇒ [page 16](#) .



1.13 Removing and installing gear sensor

Special tools and workshop equipment required

- ◆ Removal lever - 80 - 200-



Removing

- Remove mechatronic unit
⇒ [“10.3 Removing and installing mechatronic unit”, page 103](#)

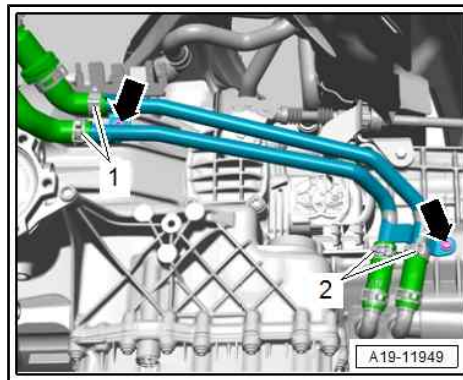
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- Remove bolts -arrows- and press coolant pipes to side.



Note

Disregard items -1 and 2-.



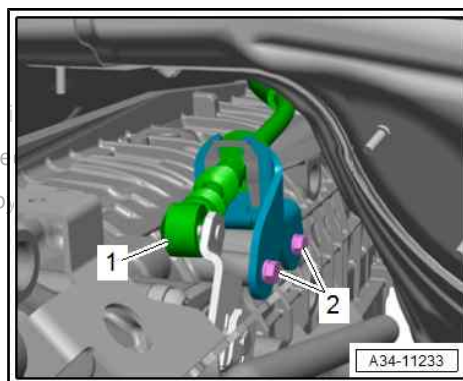
- Use removal lever - 80 - 200- to press ball socket -1- on selector lever cable off gearbox selector lever.



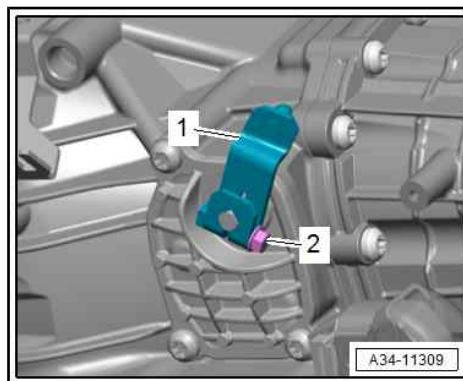
Note

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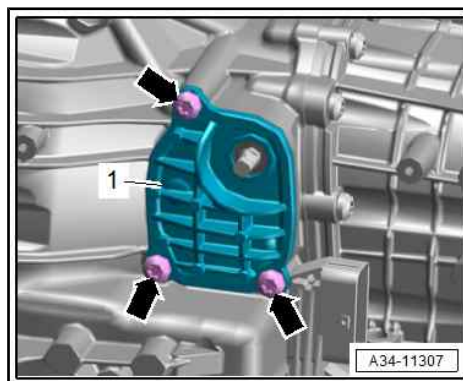
- ♦ **Do not bend or kink the selector lever cable.**
- ♦ **Disregard -item 2-.**



- Unscrew bolt -2- and detach gearbox selector lever -1- from selector shaft.



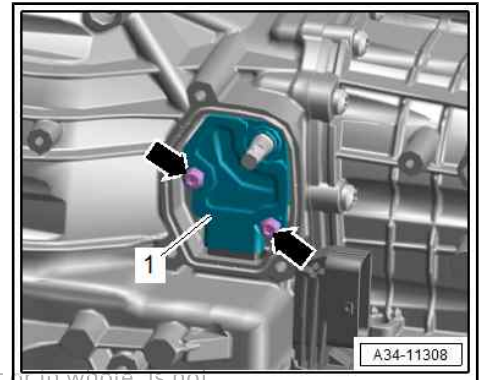
- Remove bolts -arrows- and detach cover -1- for selector shaft.
- Press oil seal for selector shaft out of cover.



- Remove bolts -arrows- and detach gear sensor -item 1-.

Installing

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



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Installation position is authorised by AUDI AG. AUDI AG does not guarantee or accept any liability for damage or injury resulting from the use of this information.

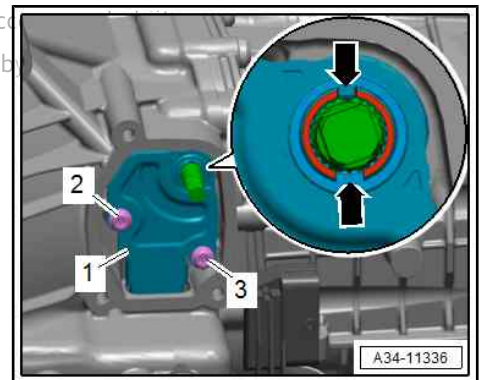
- Selector lever and gear sensor in position »P« (turn clockwise as far as stop)

Tightening torques

- ◆ Selector mechanism at gearbox
⇒ ["1.3 Exploded view - selector mechanism", page 14](#)
- Calibrate gear sensor - G676- .

Procedure

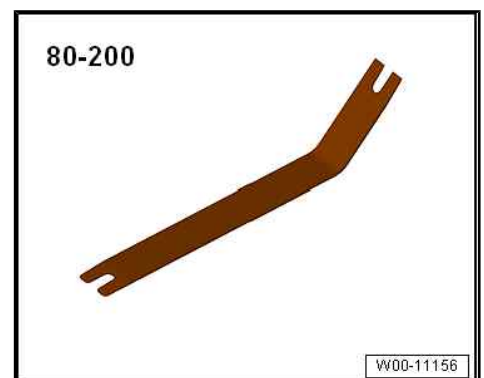
- Connect ⇒ Vehicle diagnostic tester.
- Select **Diagnosis** mode and begin diagnosis.
- Select **Test plan** tab.
- Choose **Select own test** and select following options one after the other:
 - ◆ Drive system
 - ◆ 7-speed dual clutch gearbox 0CK/0CL
 - ◆ 01 - Self-diagnosis compatible systems
 - ◆ 02 - Gearbox electronics 0CK
 - ◆ 02 - Gearbox electronics, functions
 - ◆ 02 - Basic setting ⇒ Calibration of gear sensor -G676



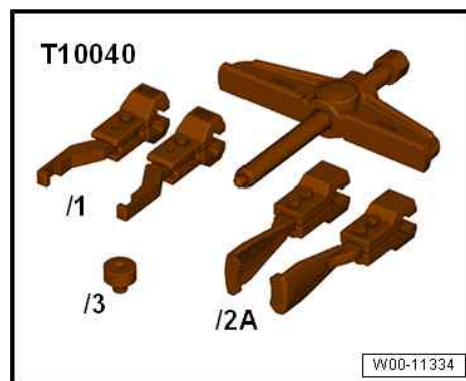
1.14 Renewing selector shaft oil seal

Special tools and workshop equipment required

- ◆ Removal lever - 80 - 200-



- ◆ Thrust piece - T10040/3-



Procedure

- Remove subframe cross brace ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 40 ; Subframe; Removing and installing subframe cross brace .



Caution

Risk of damage to parts of the running gear.

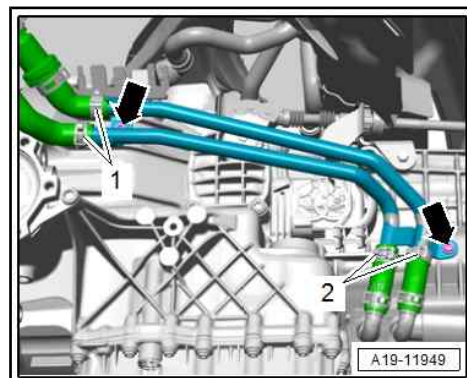
- ◆ **Do not let the vehicle down on the wheels if the gearbox mounting, steering rack or subframe cross brace are not properly installed.**

- Remove bolts -arrows- and press coolant pipes to side.



Note

Disregard items -1 and 2-.



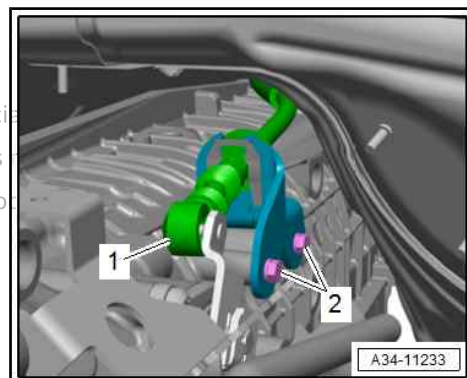
- Use removal lever - 80 - 200- to press ball socket -1- on selector lever cable off gearbox selector lever.



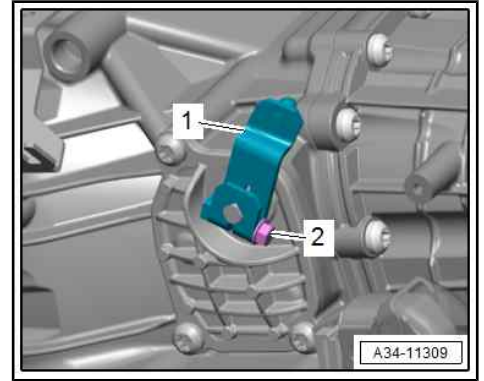
Note

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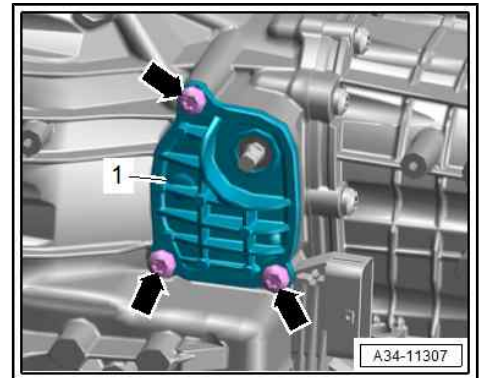
- ◆ **Do not bend or kink the selector lever cable.**
- ◆ **Disregard -item 2-.**



- Unscrew bolt -2- and detach gearbox selector lever -1- from selector shaft.



- Remove bolts -arrows- and detach cover -1- for selector shaft.

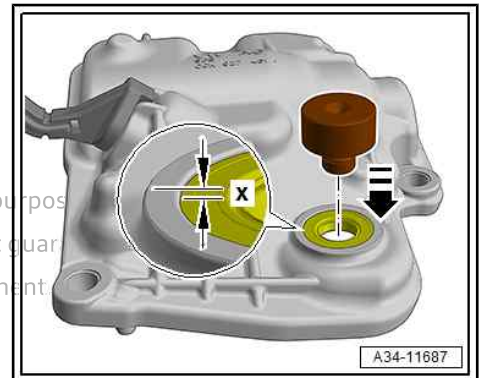


- Press out oil seal using thrust piece - T10040/3- .
- Installation position: open side of oil seal points towards gearbox
- Press in new oil seal to an installation depth of 2 mm using thrust piece - T10040/3- .

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

Tightening torques

- ◆ ⇒ ["1.3 Exploded view - selector mechanism", page 14](#)
- ◆ Coolant pipes ⇒ Engine, mechanics; Rep. gr. 19 ; Coolant pipes
- ◆ Subframe cross brace ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 40 ; Subframe



2 Removing and installing gearbox

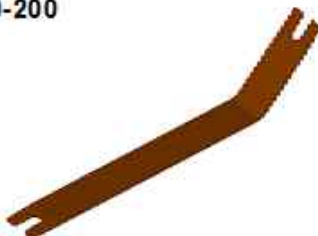
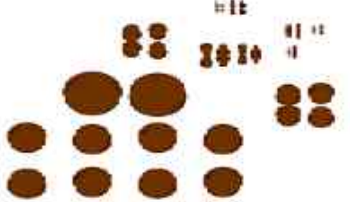
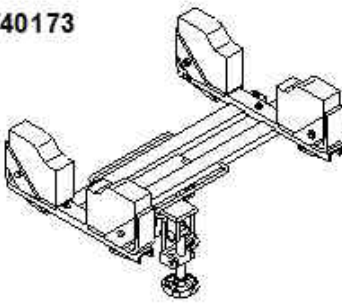
⇒ ["2.1 Removing gearbox", page 40](#)
⇒ ["2.2 Installing gearbox", page 61](#)
⇒ ["2.3 Tightening torques for gearbox", page 69](#)

2.1 Removing gearbox

⇒ ["2.1.1 Removing gearbox - vehicles with 4-cyl. TDI engine", page 40](#)
⇒ ["2.1.2 Removing gearbox - vehicles with 6-cyl. TDI engine", page 46](#)
⇒ ["2.1.3 Removing gearbox - vehicles with 4-cyl. TFSI engine", page 54](#)

2.1.1 Removing gearbox - vehicles with 4-cyl. TDI engine

Special tools and workshop equipment required

80-200 	3094 
V.A.G 1383 A 	VA S 6122 
T40173 	

- ◆ Removal lever - 80 - 200-
- ◆ Hose clamps up to 25 mm - 3094-
- ◆ Engine and gearbox jack - V.A.G 1383 A-

◆ Engine bung set - VAS 6122-

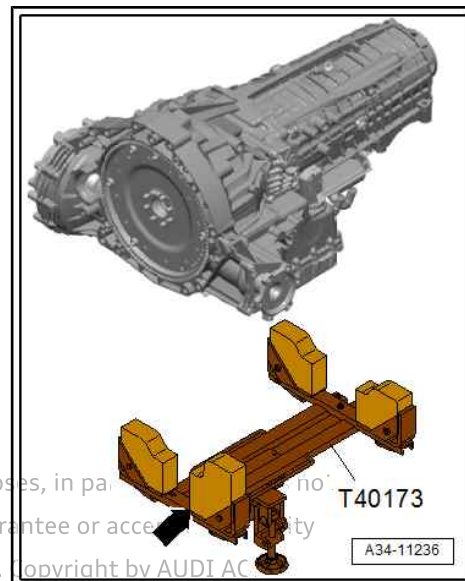
◆ Gearbox support - T40173-

Preparing gearbox support - T40173- :

- Mounting block -arrow- must be rotated so that the longer side faces upwards, as shown in illustration.

Procedure

- Move selector lever to position “P”.
- Bring front wheels into straight-ahead position.
- Disable ATF pump and discharge hydraulic accumulator
⇒ [“4.3 Deactivating ATF pump and discharging hydraulic accumulator”, page 7](#)
- Switch off ignition.



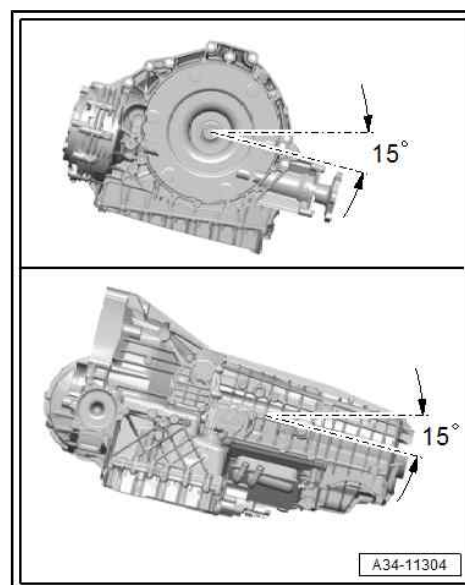
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Caution

Risk of damage to gearbox if ATF and gear oil (MTF) mix via shared breather opening.

- ◆ ***When the gearbox is filled with ATF and gearbox oil (MTF), it must not be tilted further than 15° horizontally or vertically.***
- ◆ ***If it is necessary to tilt the gearbox further, both the ATF and the gearbox oil (MTF) must be drained ⇒ [page 95](#) and ⇒ [page 87](#).***



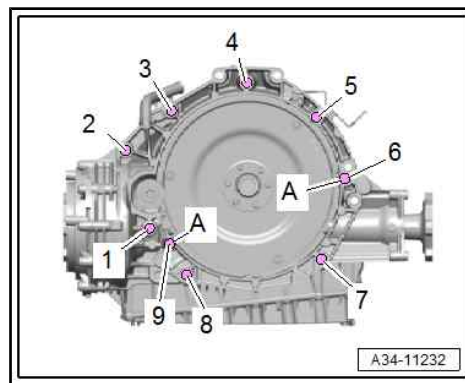
Caution

When disconnecting the battery there is a risk of irreparable damage to electronic components.

- ◆ ***Observe notes on procedure for disconnecting the battery.***

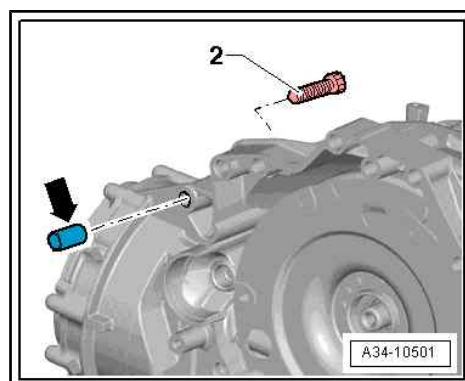
- Disconnect earth wire from battery terminal ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- Remove engine cover panel ⇒ Engine, mechanics; Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .
- Remove plenum chamber partition panel ⇒ General body repairs, exterior; Rep. gr. 50 ; Bulkhead; Removing and installing plenum chamber partition panel .

- Remove bolts -2 ... 5- securing gearbox to engine (accessible from above).



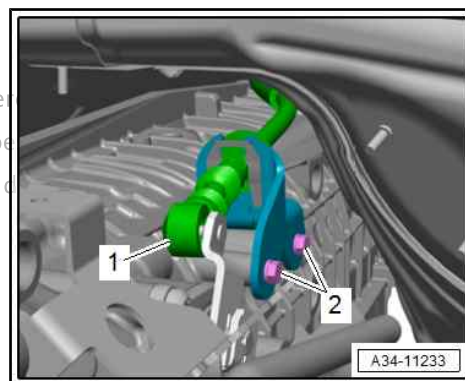
Note

Bolt -2- secures the starter to the gearbox and has an additional spacer sleeve -arrow-.



- Use removal lever - 80 - 200- to press ball socket -1- on selector lever cable off gearbox selector lever.

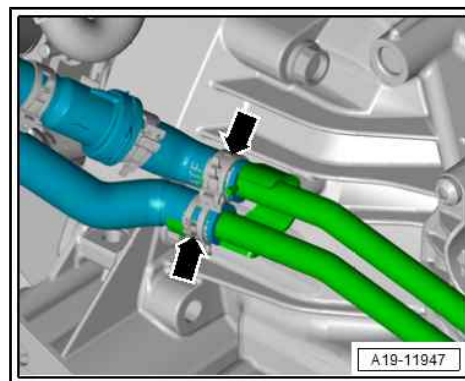
- Remove bolts -2-



Note

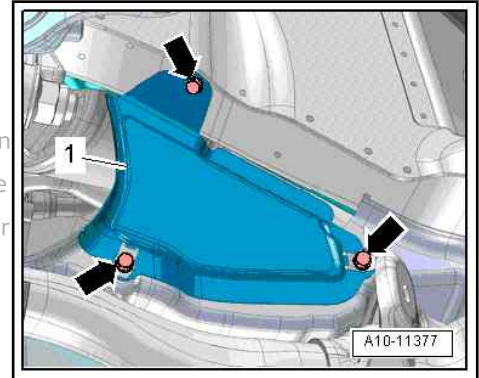
Place a cloth underneath to catch escaping coolant.

- Clamp off coolant hoses using hose clamps up to 25 mm - 3094- and disconnect hoses (release hose clips -arrows-).
- Remove front wheels ⇒ Rep. gr. 44 .
- Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Removing and installing underbody trim .



- Remove bolts (left and right) -arrows- and detach heat shield -1-.

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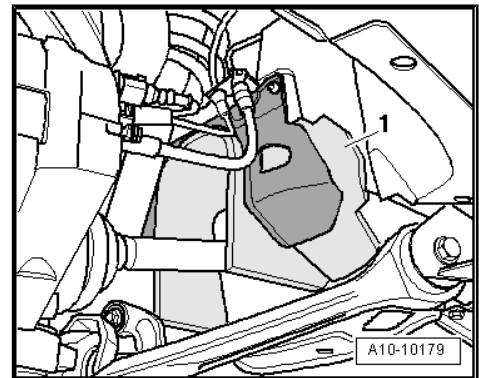
- Remove cover -1- for drive shaft from wheel housing (both sides).
- Remove subframe cross brace ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 40 ; Subframe; Removing and installing subframe cross brace .
- Detach intermediate steering shaft from steering rack and telescope shaft upwards ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 48 ; Steering column; Removing and installing intermediate steering shaft .



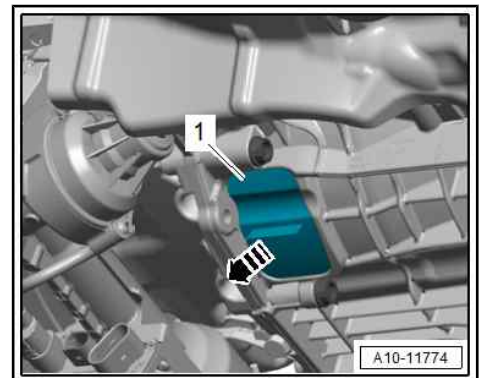
Caution

Risk of damage to parts of the running gear.

- ◆ ***Do not let the vehicle down on the wheels if the gearbox mounting, steering rack or subframe cross brace are not properly installed.***



- Detach bottom cover -1- from gearbox -arrow-.



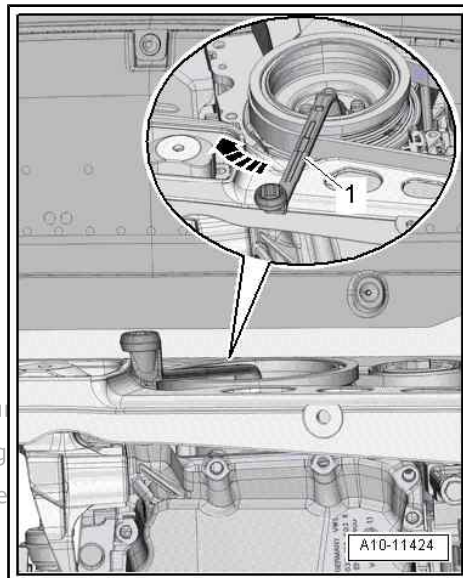
- Remove cap from vibration damper.
- To slacken bolts for flywheel, counterhold crankshaft with angled ring spanner -1- at central bolt on vibration damper.



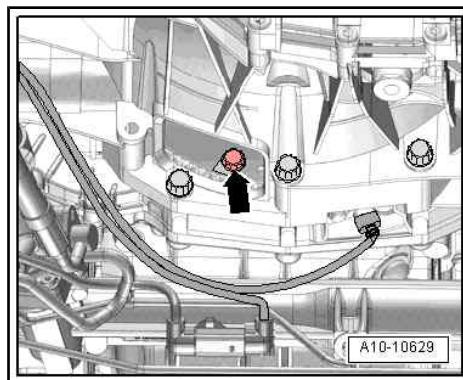
Note

When you then turn the crankshaft, turn only in direction of engine rotation -arrow-.

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- Remove 3 bolts -arrow- for flywheel (turn crankshaft 120° in direction of engine rotation each time).

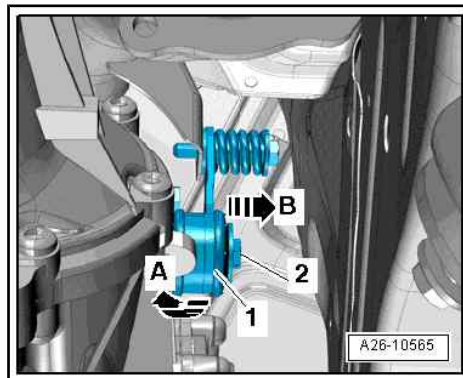


- Remove bolt -2- securing retaining bracket to gearbox.
- Push retainer -1- in direction of -arrow B- and pivot to the rear -arrow A-.

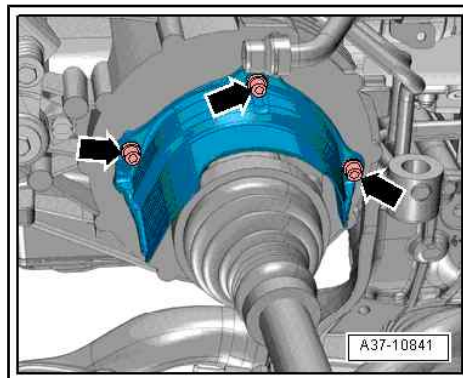


Note

The front exhaust pipe remains installed.



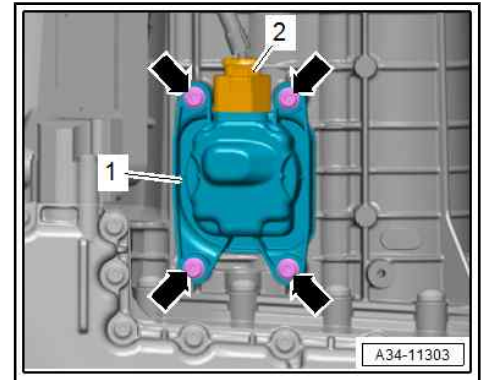
- Remove bolts -arrows- and detach heat shield for drive shaft (right-side).
- Unbolt drive shafts (left and right) from flange shafts on gearbox ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 40 ; Drive shaft; Loosening and tightening bolt securing drive shaft .



- Unplug electrical connector -2- at gear oil pump -1-.



Disregard -arrows-.

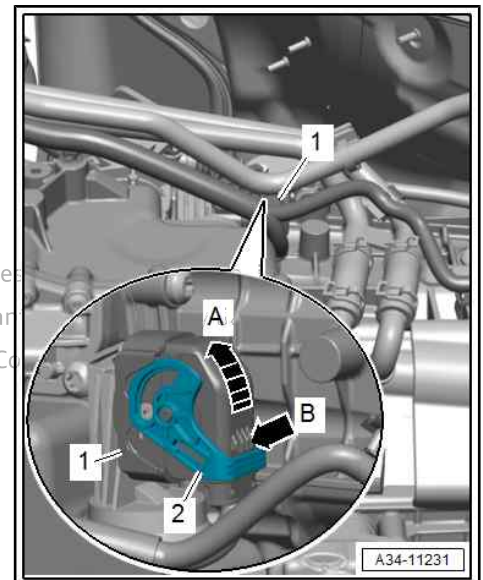


Caution

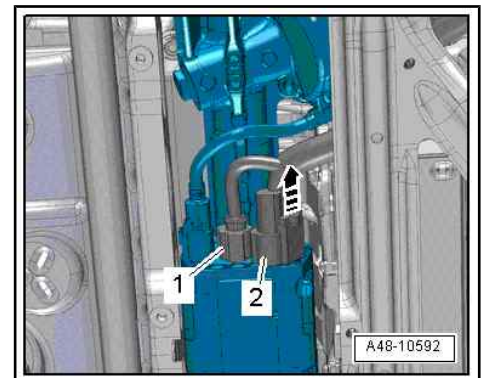
The gearbox control unit (mechatronic unit) can be irreparably damaged by electrostatic discharge.

- ◆ **Before handling electrical connectors, mechanic must discharge static. To do so, touch an earthed metal object, such as a heater radiator or lifting platform, with your hand.**
- ◆ **Do not touch contact pins in gearbox connector with bare hands.**

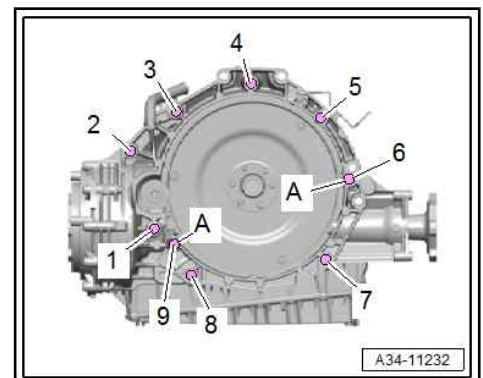
- Press catch -arrow B-, pull retaining bracket -2- in direction of arrow -A- and unplug connector -1-.
- Move electrical wiring harness clear on gearbox and on cross member.



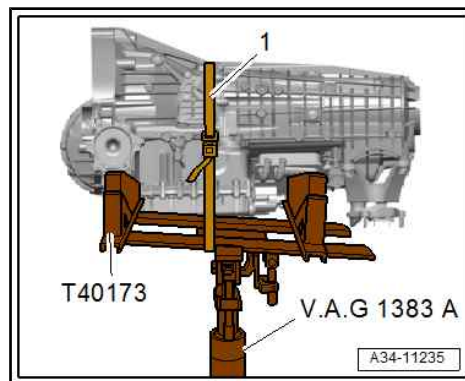
- Unplug electrical connector -1-.
- Unplug electrical connector -2- from power steering control unit - J500- (to do so, release retainer -arrow- and press down release catch).
- Move electrical wiring harness clear.



- Remove bolt -1- for starter.
- Detach starter from gearbox but do not remove starter.
- Remove remaining engine/gearbox securing bolts -6 ... 9-.



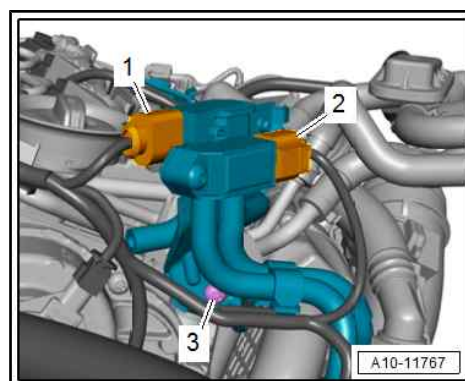
- Position engine and gearbox jack - V.A.G 1383 A- with gearbox support - T40173- (set up beforehand) underneath gearbox and secure with tensioning strap -1- as shown in illustration.
- Remove tunnel cross member ➔ [page 73](#) .



Caution

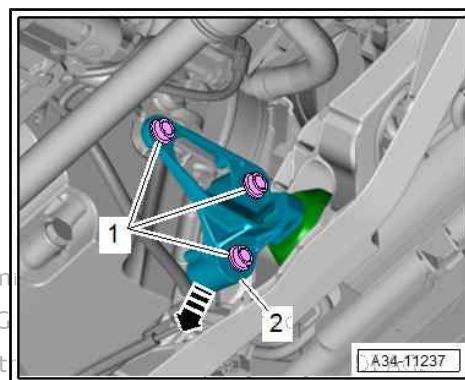
Risk of irreparable damage to exhaust gas pressure sensor 1 - G450- and pressure differential sender - G505- when lowering the gearbox.

- ◆ **Connections of exhaust gas pressure sensor 1 - G450- and pressure differential sender - G505- can break off if too much pressure is applied.**



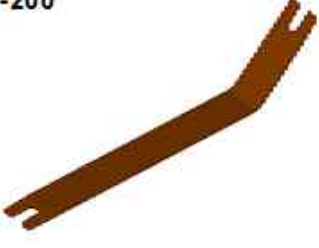
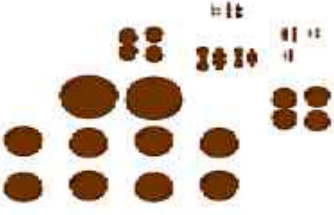
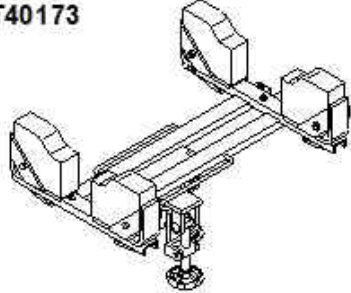
Exhaust gas pressure sensor 1 - G450- and pressure differential sender - G505- ➔ Rep. gr. 23 ; Senders and sensors

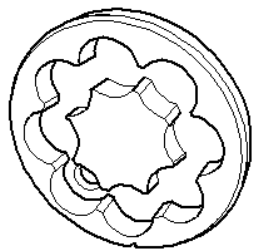
- Slacken bolts -1- for torque reaction support -2-.
- Using engine and gearbox jack - V.A.G 1383 A- , lower gearbox just enough so that torque reaction support is positioned at very bottom of its adjustment range -arrow- (pay attention to exhaust gas pressure sensor 1 - G450- and pressure differential sender - G505- when doing so).
- Tighten bolts for torque reaction support again.
- Detach gearbox from engine and lower carefully using engine and gearbox jack - V.A.G 1383 A- (pay attention to electrical wiring and SCR line when doing so).

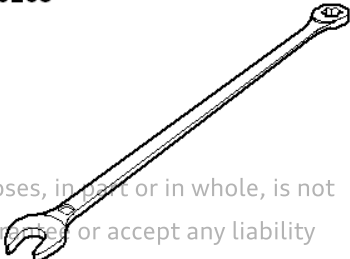


2.1.2 Removing gearbox - vehicles with 6-cyl. TDI engine

**Special tools and workshop
equipment required**

80-200 	3094 
V.A.G 1383 A 	VA S 6122 
T40173 	G34-16129

T40257  W00-11009
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T40263  W00-10993
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T40314 2. Removing and installing gearbox 
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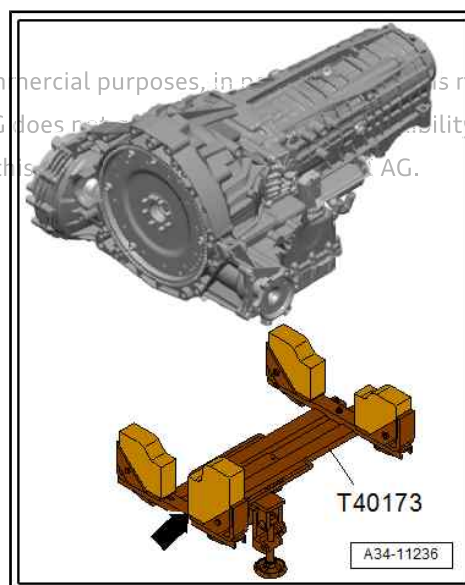
- ◆ Removal lever - 80 - 200-
- ◆ Hose clamps up to 25 mm - 3094-
- ◆ Engine and gearbox jack - V.A.G 1383 A-
- ◆ Engine bung set - VAS 6122-
- ◆ Gearbox support - T40173-
- ◆ Turning over tool - T40257-
- ◆ Wrench 21 mm - T40263-
- ◆ Adapter -T40314-
- ◆ Tensioning strap - T10038-

Preparing gearbox support - T40173- :

- Mounting block -arrow- must be rotated so that the longer side faces upwards, as shown in illustration.

Procedure

- Move selector lever to position "P".
- Bring front wheels into straight-ahead position.
- Disable ATF pump and discharge hydraulic accumulator
⇒ ["4.3 Deactivating ATF pump and discharging hydraulic accumulator", page 7](#) .
- Switch off ignition.





Caution

Risk of damage to gearbox if ATF and gear oil (MTF) mix via shared breather opening.

- ◆ **When the gearbox is filled with ATF and gearbox oil (MTF), it must not be tilted further than 15° horizontally or vertically.**
- ◆ **If it is necessary to tilt the gearbox further, both the ATF and the gearbox oil (MTF) must be drained ⇒ [page 95](#) and ⇒ [page 87](#).**



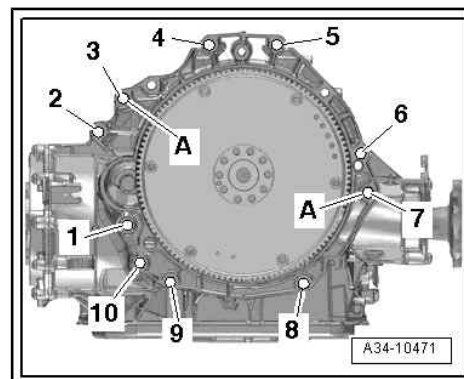
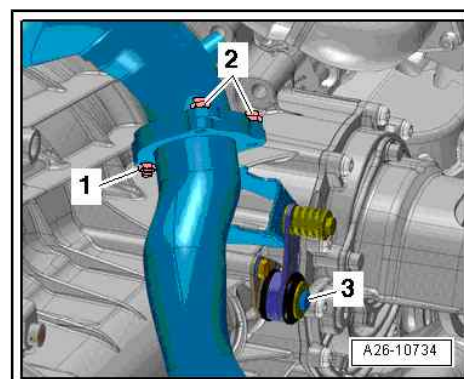
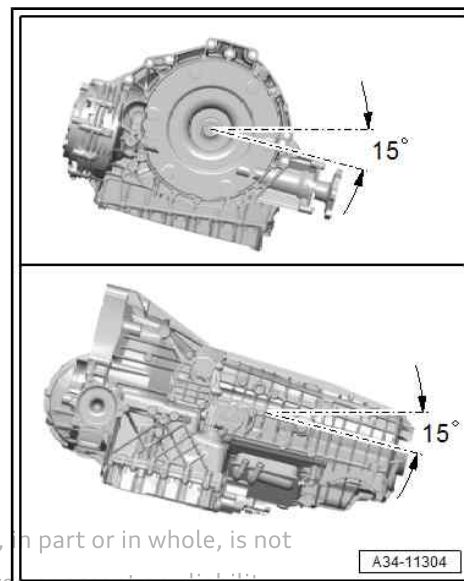
Caution

When disconnecting the battery there is a risk of irreparable damage to electronic components.

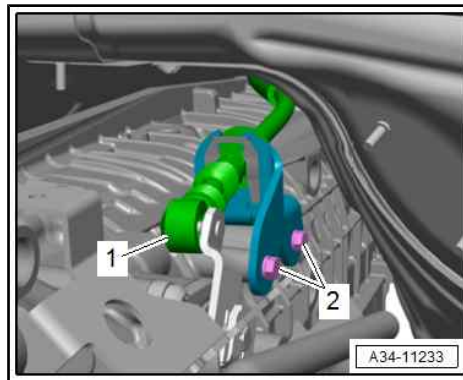
- ◆ **Observe notes on procedure for disconnecting the battery.**

- Disconnect earth wire from battery terminal ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- Remove engine cover panel ⇒ Engine, mechanics; Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .
- Remove plenum chamber partition panel ⇒ General body repairs, exterior; Rep. gr. 50 ; Bulkhead; Removing and installing plenum chamber partition panel .
- Remove particulate filter and front exhaust pipe ⇒ Engine, mechanics; Rep. gr. 26 ; Exhaust pipes/silencers; Exploded view - silencers .

- Remove bolts -2 ... 5- securing gearbox to engine (accessible from above).



- Use removal lever - 80 - 200- to press ball socket -1- on selector lever cable off gearbox selector lever.
- Remove bolts -2-.

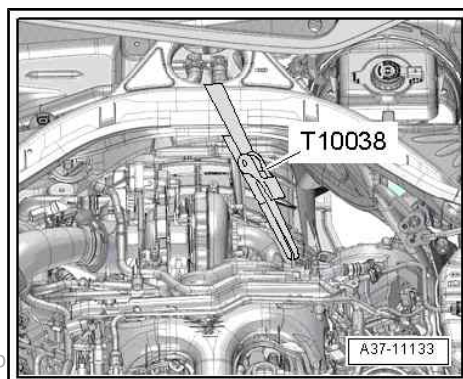


- Fit body brace in installation position and screw in bolts hand-tight.
- Secure engine with tensioning strap - T10038- as shown in illustration.

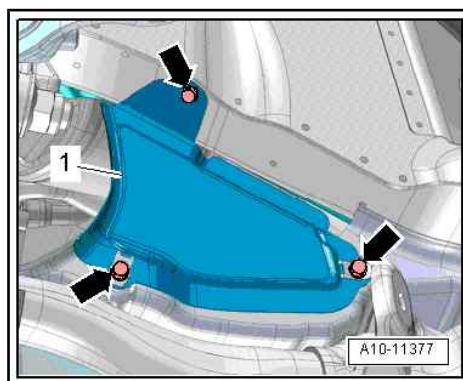


Note

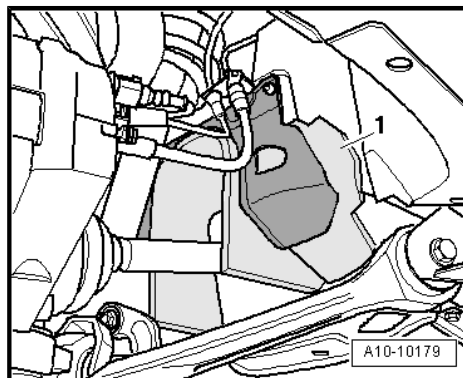
Use engine support eyelet on cylinder bank 1 if required.



- Remove front wheels ⇒ Rep. gr. 44 .
- Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Removing and installing underbody trim .
- Remove bolts (left and right) -arrows- and detach heat shield -1-.



- Remove cover -1- for drive shaft from wheel housing (both sides).
- Remove subframe cross brace ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 40 ; Subframe; Removing and installing subframe cross brace .
- Detach intermediate steering shaft from steering rack and telescope shaft upwards ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 48 ; Steering column; Removing and installing intermediate steering shaft .

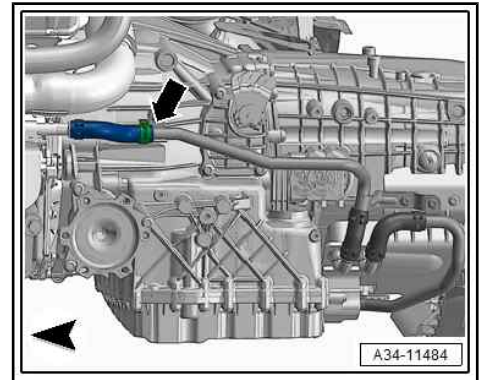


Caution

Risk of damage to parts of the running gear.

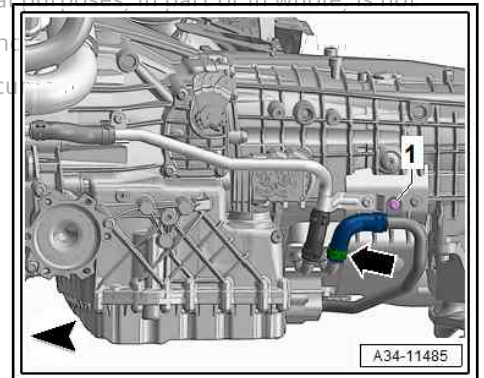
- ◆ Do not let the vehicle down on the wheels if the gearbox mounting, steering rack or subframe cross brace are not properly installed.

- Release hose clip -arrow- and detach coolant hose.

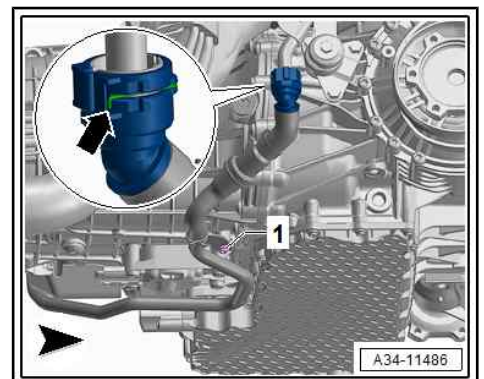


- Remove bolt -1-, release hose clip -arrow- and detach coolant hose.

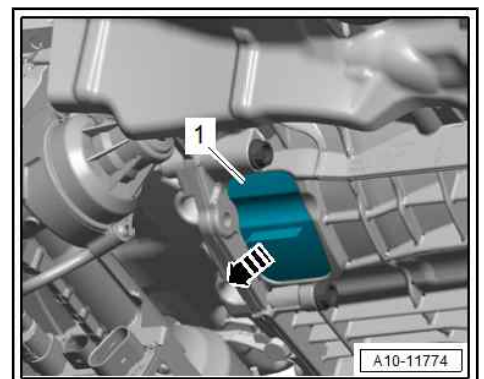
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- Remove bolt -1-, release retaining clip -arrow- and remove coolant line.

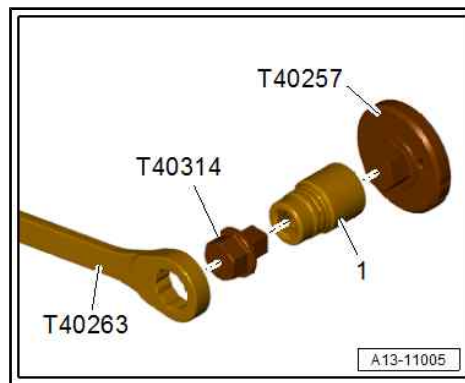


- Detach bottom cover -1- from gearbox -arrow-.



- Fit tools together, as shown in illustration.

1 - Socket (21 mm) for 1/2" drive

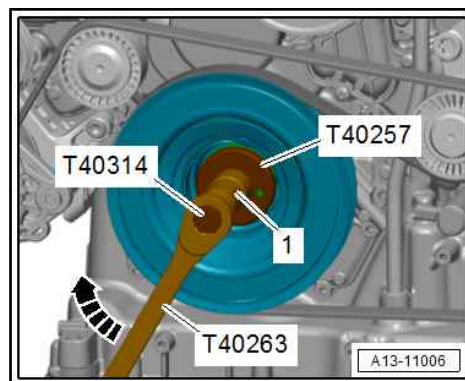


- To slacken bolts for dual-mass flywheel, counterhold crankshaft.

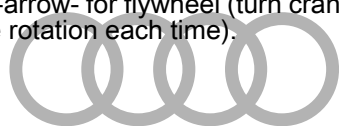


Note

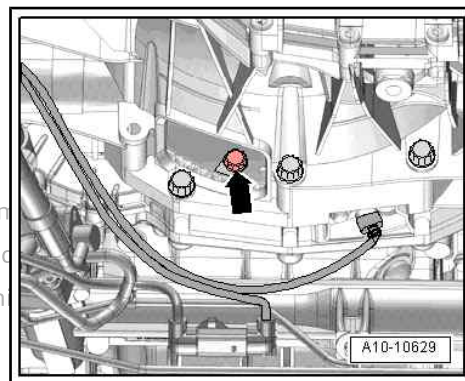
When you then turn the crankshaft, only turn crankshaft in direction of engine rotation -arrow-.



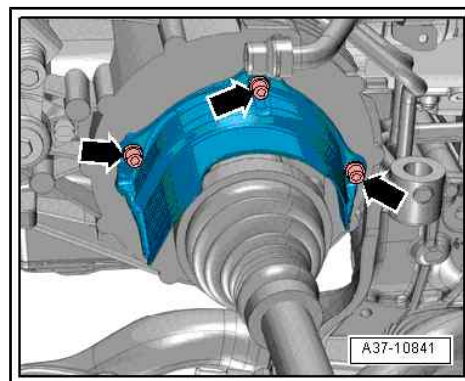
- Remove 6 bolts -arrow- for flywheel (turn crankshaft 60° in direction of engine rotation each time).



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- Remove bolts -arrows- and detach heat shield for drive shaft (right-side).
- Unbolt drive shafts (left and right) from flange shafts on gearbox ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 40 ; Drive shaft; Loosening and tightening bolt securing drive shaft .

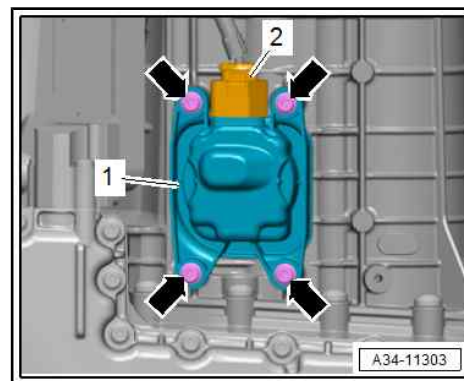


- Unplug electrical connector -2- at gear oil pump -1-.



Note

Disregard -arrows-.

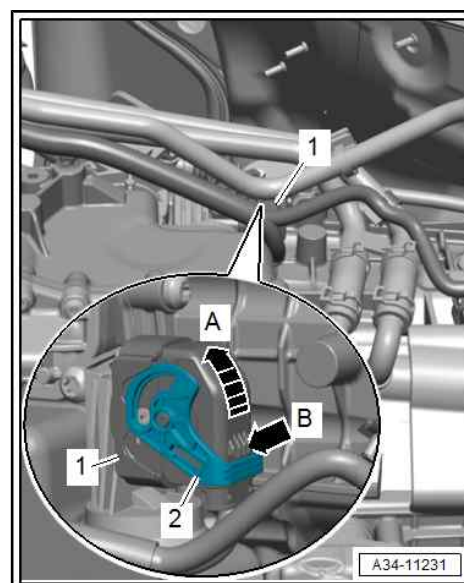


Caution

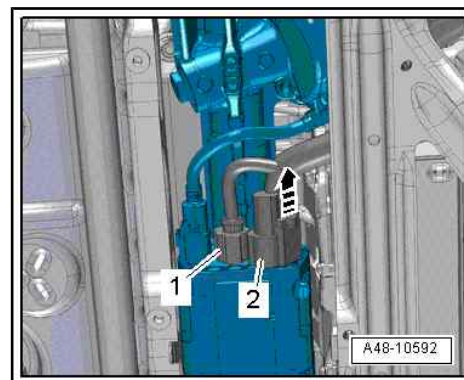
The gearbox control unit (mechatronic unit) can be irreparably damaged by electrostatic discharge.

- ◆ **Before handling electrical connectors, mechanic must discharge static. To do so, touch an earthed metal object, such as a heater radiator or lifting platform, with your hand.**
- ◆ **Do not touch contact pins in gearbox connector with bare hands.**

- Press catch -arrow B-, pull retaining bracket -2- in direction of arrow -A- and unplug connector -1-.
- Move electrical wiring harness clear on gearbox and on cross member.



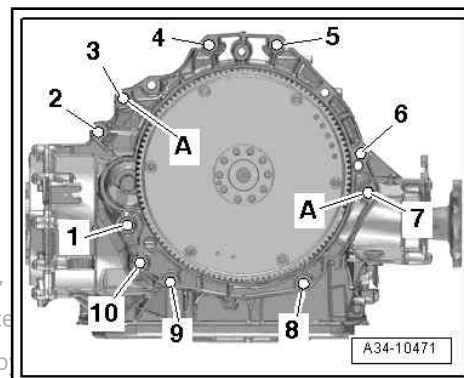
- Unplug electrical connector -1-.
- Unplug electrical connector -2- from power steering control unit - J500- (to do so, release retainer -arrow- and press down release catch).
- Move electrical wiring harness clear.



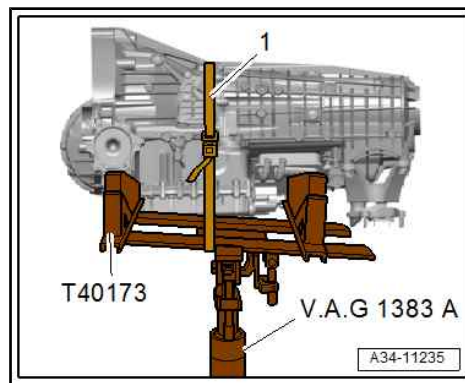
- Remove bolt -1- for starter.
- Detach starter from gearbox but do not remove starter.
- Remove remaining engine/gearbox securing bolts -6 ... 9-.



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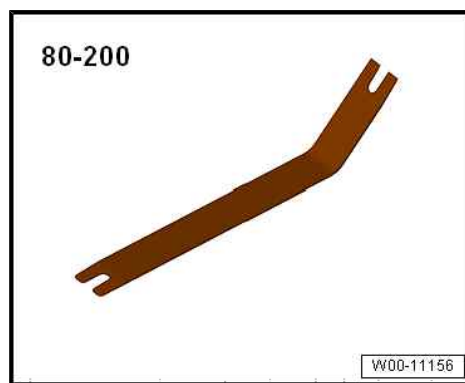
- Position engine and gearbox jack - V.A.G 1383 A- with gearbox support - T40173- (set up beforehand) underneath gearbox and secure with tensioning strap -1- as shown in illustration.
- Remove tunnel cross member ⇒ [page 73](#) .
- Detach gearbox from engine and lower carefully using engine and gearbox jack - V.A.G 1383 A- (pay attention to electrical wiring and SCR line when doing so).



2.1.3 Removing gearbox - vehicles with 4-cyl. TFSI engine

Special tools and workshop equipment required

- ◆ Removal lever - 80 - 200-



- ◆ Hose clamps up to 25 mm - 3094-



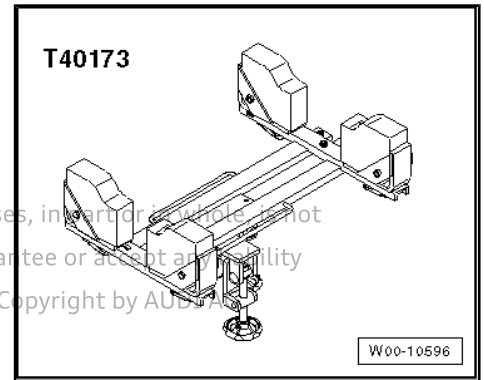
- ◆ Engine and gearbox jack - V.A.G 1383 A-



◆ Gearbox support - T40173-



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◆ Tensioning strap - T10038-



◆ Counterhold tool - T10355-

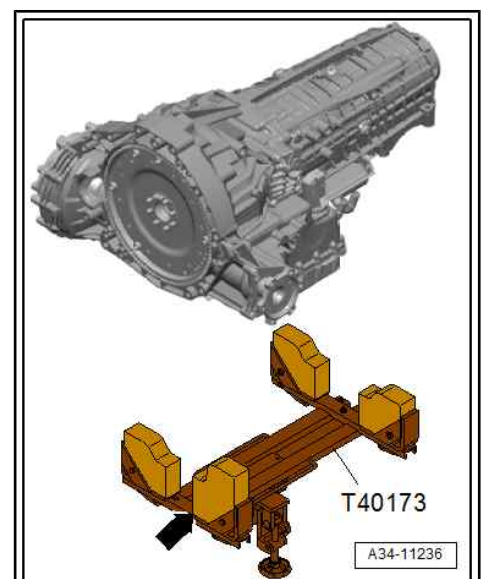


Preparing gearbox support - T40173- :

- Mounting block -arrow- must be rotated so that the longer side faces upwards, as shown in illustration.

Procedure

- Move selector lever to position “P”.
- Bring front wheels into straight-ahead position.
- Disable ATF pump and discharge hydraulic accumulator
⇒ [“4.3 Deactivating ATF pump and discharging hydraulic accumulator”, page 7](#) .
- Switch off ignition.





Caution

Risk of damage to gearbox if ATF and gear oil (MTF) mix via shared breather opening.

- ◆ **When the gearbox is filled with ATF and gearbox oil (MTF), it must not be tilted further than 15° horizontally or vertically.**
- ◆ **If it is necessary to tilt the gearbox further, both the ATF and the gearbox oil (MTF) must be drained ⇒ [page 95](#) and ⇒ [page 87](#) .**



Caution

When disconnecting the battery there is a risk of irreparable damage to electronic components.

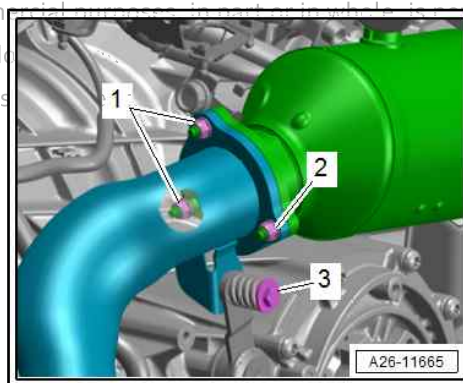
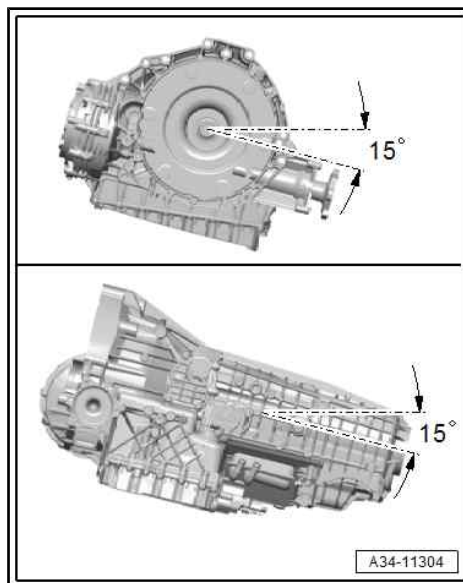
- ◆ **Observe notes on procedure for disconnecting the battery.**

- Disconnect earth wire from battery terminal ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- Remove engine cover panel ⇒ Engine, mechanics; Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .



- Remove front exhaust pipe ⇒ Engine, mechanics; Rep. gr. 26 ; Exhaust pipes/silencers; Exploded view - silencers

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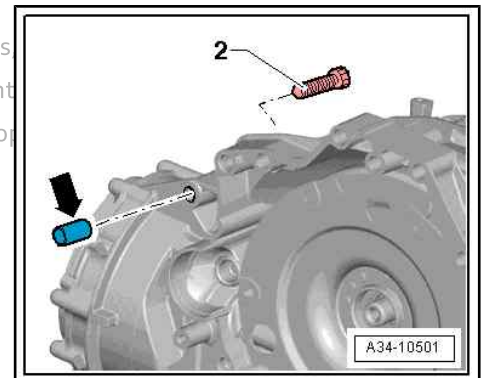
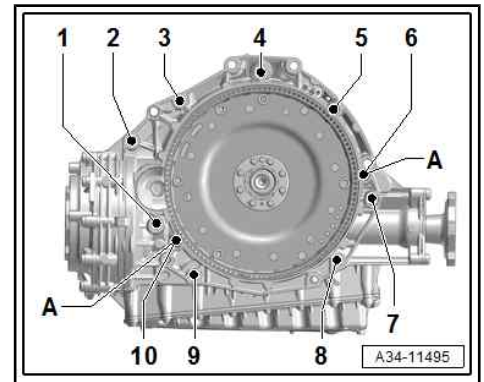
- Remove bolts -2 ... 5- securing gearbox to engine (accessible from above).



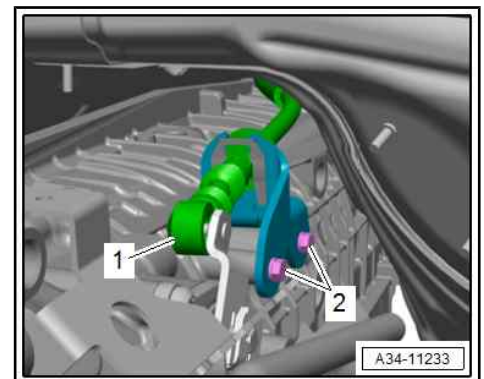
Note

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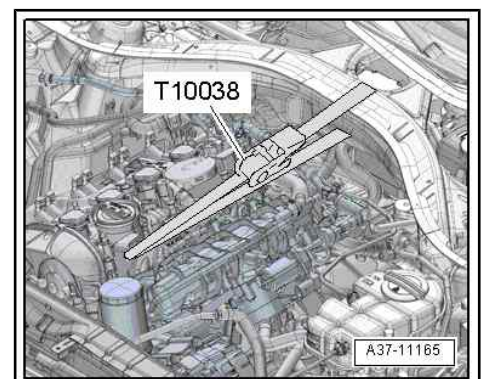
Bolt -2- secures the starter to the gearbox and has an additional spacer sleeve -arrow-.



- Use removal lever - 80 - 200- to press ball socket -1- on selector lever cable off gearbox selector lever.
- Remove bolts -2-.



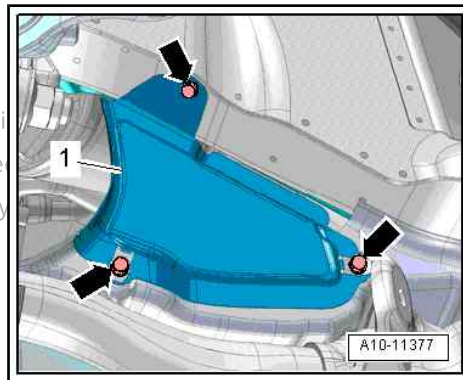
- Secure engine with tensioning strap - T10038- as shown in illustration.
- Remove front wheels ⇒ Rep. gr. 44 .
- Remove noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Removing and installing underbody trim .



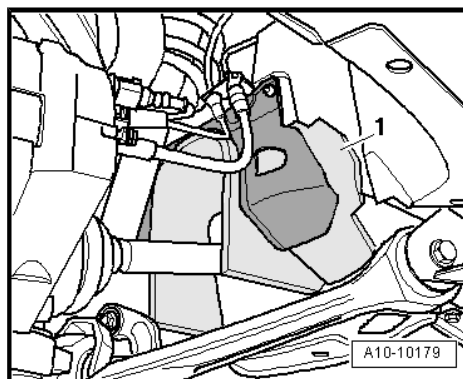


- Remove bolts (left and right) -arrows- and detach heat shield -1-.

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- Remove cover -1- for drive shaft from wheel housing (both sides).
- Remove subframe cross brace ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 40 ; Subframe; Removing and installing subframe cross brace .
- Detach intermediate steering shaft from steering rack and telescope shaft upwards ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 48 ; Steering column; Removing and installing intermediate steering shaft .

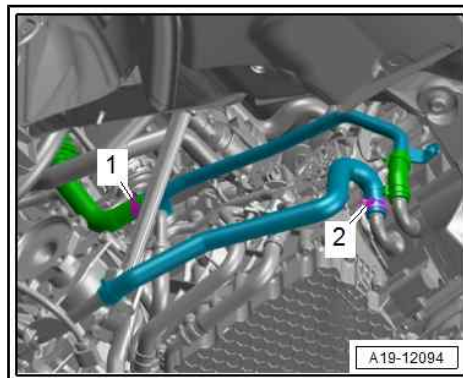


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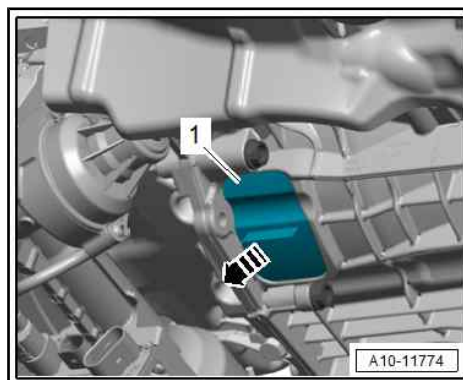
Risk of damage to parts of the running gear.

- ◆ **Do not let the vehicle down on the wheels if the gearbox mounting, steering rack or subframe cross brace are not properly installed.**

- Clamp off coolant hoses using hose clamps up to 25 mm - 3094- and disconnect hoses (release hose clips -1- and -2-).



- Detach bottom cover -1- from gearbox -arrow-.



- To slacken bolts for flywheel, counterhold crankshaft.

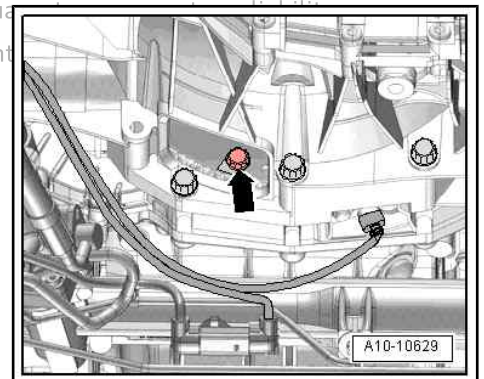
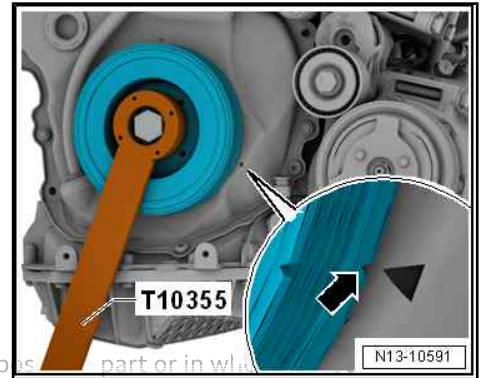
 Note

When you then turn the crankshaft, only turn crankshaft in direction of engine rotation.

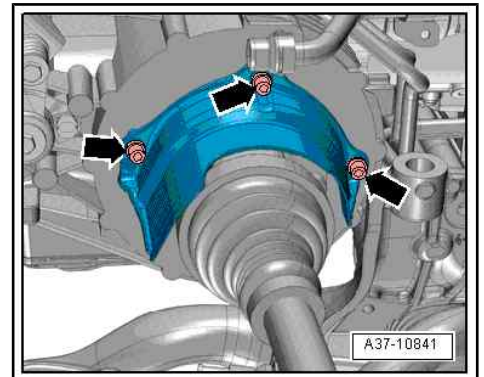


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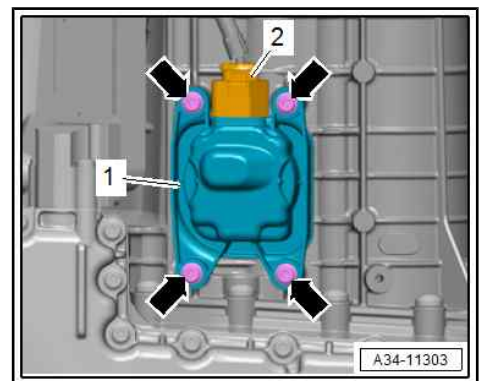
- Remove 3 bolts -arrow- for flywheel (turn crankshaft 120° in direction of engine rotation each time).



- Remove bolts -arrows- and detach heat shield for drive shaft (right-side).
- Unbolt drive shafts (left and right) from flange shafts on gearbox ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 40 ; Drive shaft; Loosening and tightening bolt securing drive shaft .



- Unplug electrical connector -2- at gear oil pump -1-.



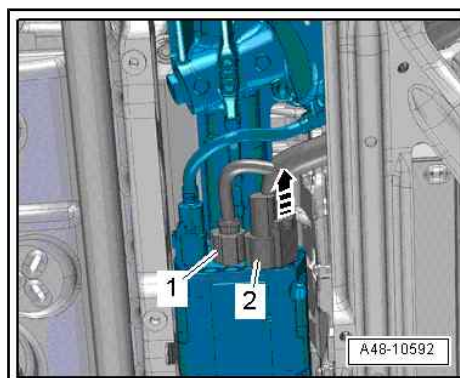
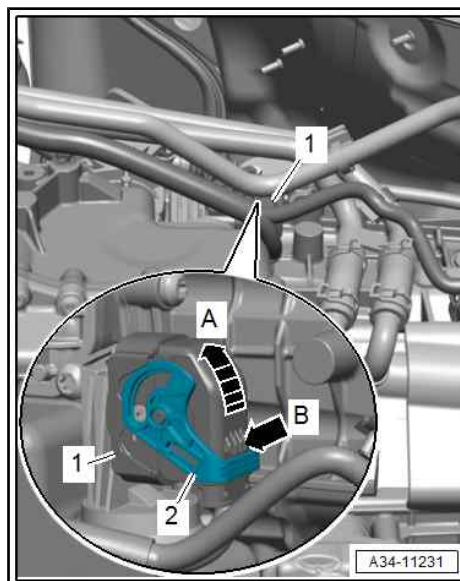


Caution

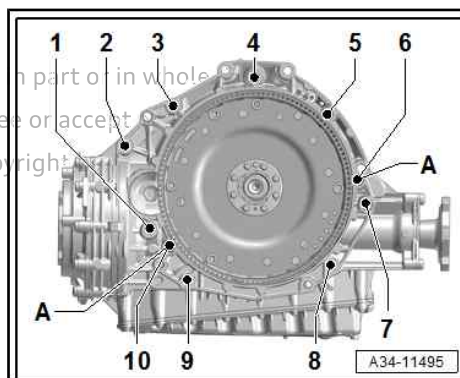
The gearbox control unit (mechatronic unit) can be irreparably damaged by electrostatic discharge.

- ◆ *Before handling electrical connectors, mechanic must discharge static. To do so, touch an earthed metal object, such as a heater radiator or lifting platform, with your hand.*
- ◆ *Do not touch contact pins in gearbox connector with bare hands.*

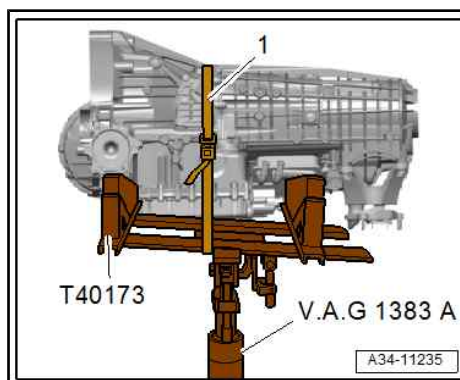
- Press catch -arrow B-, pull retaining bracket -2- in direction of arrow -A- and unplug connector -1-.
- Move electrical wiring harness clear on gearbox and on cross member.
- Unplug electrical connector -1-.
- Unplug electrical connector -2- from power steering control unit - J500- (to do so, release retainer -arrow- and press down release catch).
- Move electrical wiring harness clear.



- Remove bolt -1- for starter.
- Detach starter from gearbox but do not remove starter.
- Remove remaining engine/gearbox securing bolts -6- -9-.



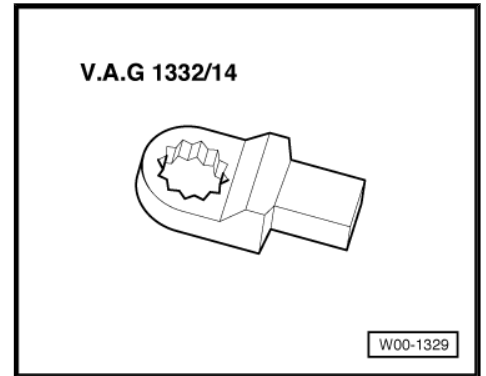
- Position engine and gearbox jack - V.A.G 1383 A- with gearbox support - T40173- (set up beforehand) underneath gearbox and secure with tensioning strap -1- as shown in illustration.
- Remove tunnel cross member ➔ [page 73](#) .
- Detach gearbox from engine and lower carefully using engine and gearbox jack - V.A.G 1383 A- (pay attention to electrical wiring and SCR line when doing so).



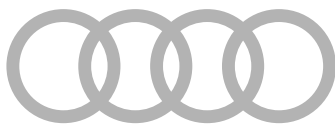
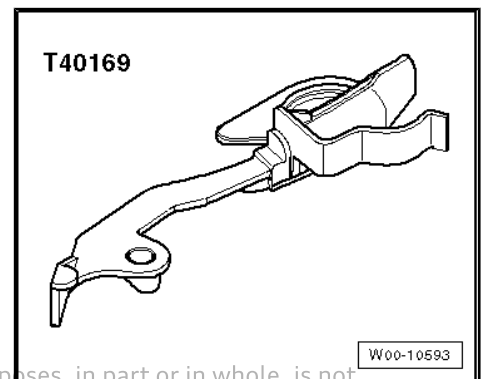
2.2 Installing gearbox

Special tools and workshop equipment required

- ◆ Ring spanner insert, 16 mm - V.A.G 1332/14-

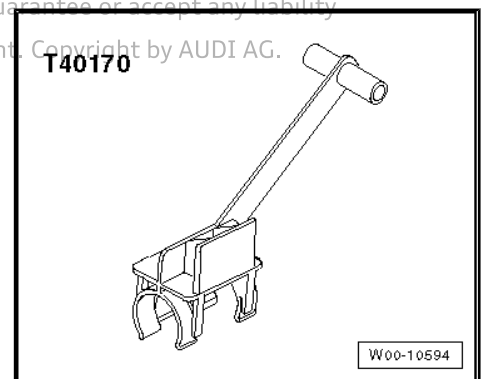


- ◆ Assembly aid - T40169-



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- ◆ Transportation lock - T40170-



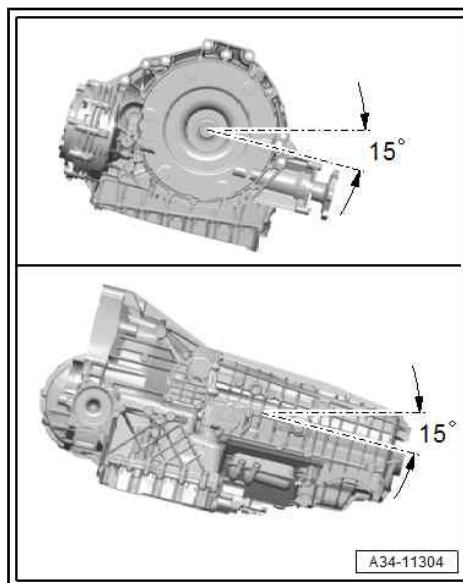
Procedure



Caution

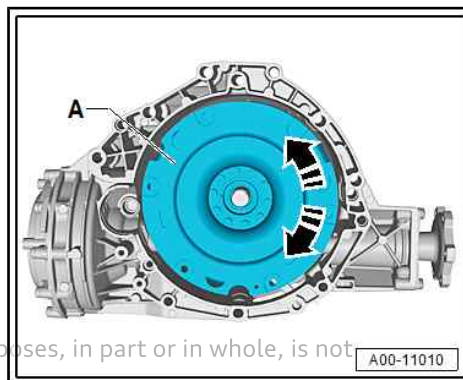
Risk of damage to gearbox if ATF and gear oil (MTF) mix via shared breather opening.

- ◆ When the gearbox is filled with ATF and gearbox oil (MTF), it must not be tilted further than 15° horizontally or vertically.
- ◆ If it is necessary to tilt the gearbox further, both the ATF and the gearbox oil (MTF) must be drained ⇒ [page 95](#) and ⇒ [page 87](#).



Note

- ◆ Renew bolts which are tightened by turning through a specified angle.
- ◆ Renew self-locking nuts and bolts, as well as O-rings, seals and gaskets.
- ◆ Secure hose connections with the correct hose clips (as original equipment); refer to ⇒ *Electronic parts catalogue*.
- ◆ Re-attach all cable ties at the same locations when re-installing.
- ◆ You may hear a clacking sound from the LuK version dual-mass flywheel -A- with centrifugal pendulum absorber.
- ◆ When the clutch module -A- is turned, a clacking sound can be heard at intervals of approx. 90°. This is caused by moving pendulum masses in the dual-mass flywheel and is not a fault.

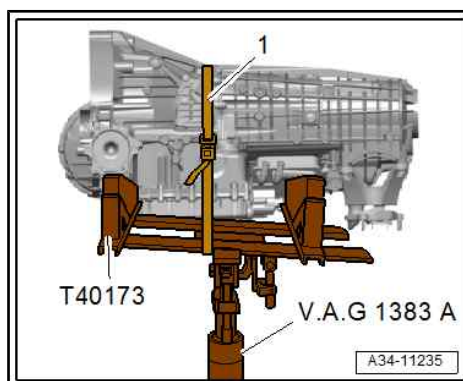


Caution

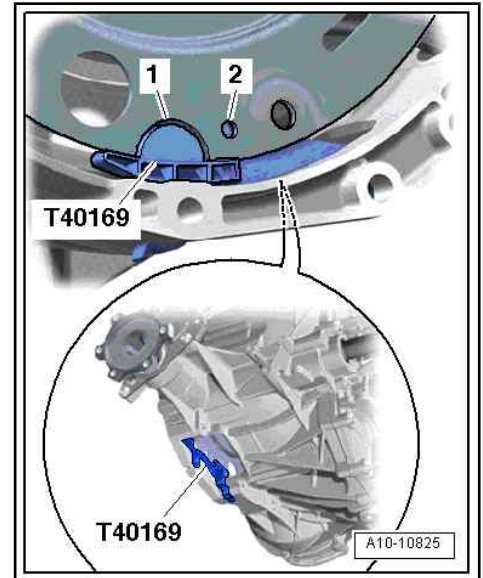
Risk of leaks on oil pan.

- ◆ Do not apply gearbox support - T40173- at oil pan.

- Position gearbox on gearbox support - T40173- and secure with tensioning strap -1-, as shown in illustration.



- The following preparations must be made before joining the engine and gearbox:
- Insert assembly aid - T40169- into gearbox housing and fly-wheel from below, as shown in illustration.

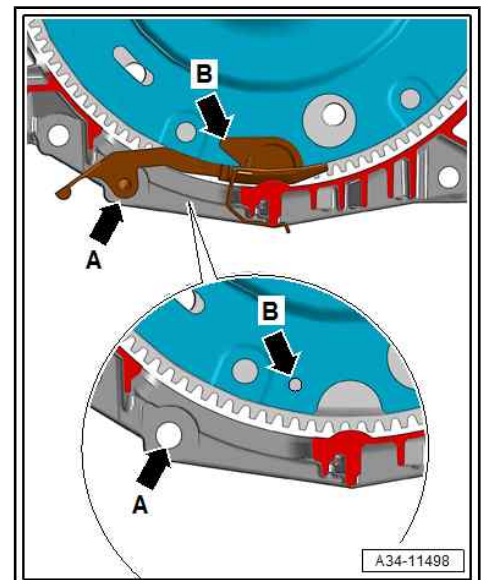


- The assembly tool must engage in the semi-circular recess and in the hole (-arrow A- and -arrow B-).



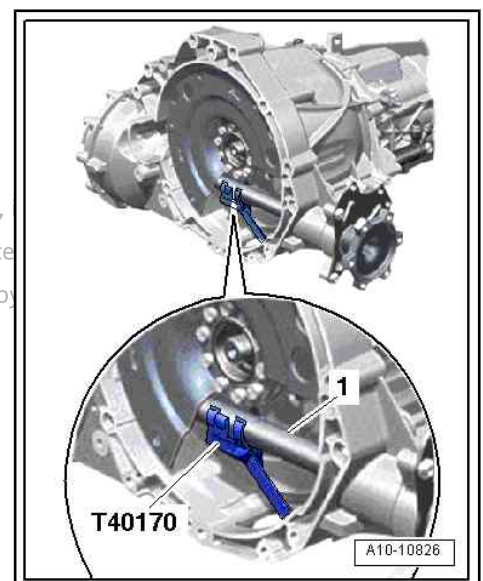
Note

There is only one inspection hole -arrow B- at the periphery; turn the flywheel accordingly.

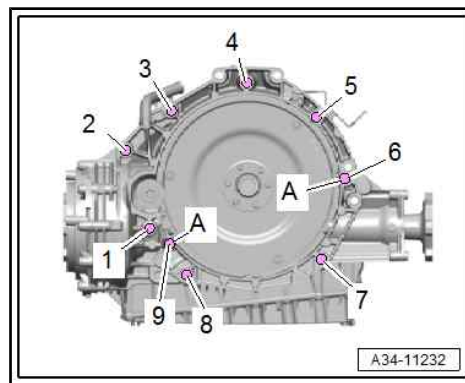


- Insert transportation lock - T40170- into gearbox housing from below and clamp onto flange shaft -1-.
- Check whether aluminium bolts securing engine to gearbox can be reused; if so, apply marking ➔ [page 70](#) .

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- Check whether dowel sleeves -A- for centring engine and gearbox are fitted in cylinder block; install missing dowel sleeves.
- Join gearbox with engine and tighten bolts -6- and -9-.

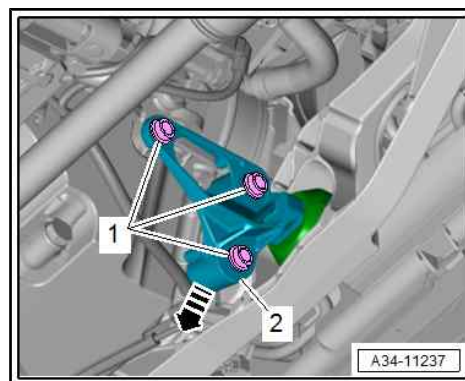


Vehicles with 4-cylinder TDI engine

- Loosen bolts -1- securing torque reaction support.
- Raise gearbox and secure tunnel cross member
⇒ [page 73](#) .
- Adjust and tighten torque reaction support -2- ⇒ Engine, mechanics; Rep. gr. 10 ; Assembly mountings .

All vehicles

- Secure tunnel cross member ⇒ [page 73](#) .
- Lower engine and gearbox jack - V.A.G 1383 A- with gearbox support - T40173- and move aside.



Caution

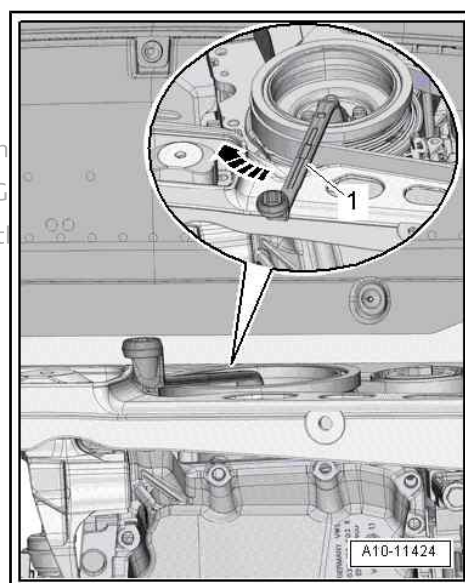
Vibrations or rattling noises may occur when driving off if the flywheel was under stress when it was bolted on.

- ◆ *It is important to keep to the sequence of steps as listed below.*
- ◆ *The flywheel must be flat on the drive plate when the first securing bolt is screwed in.*

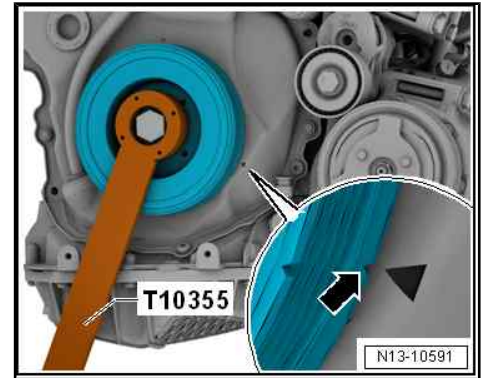
- Turn crankshaft at vibration damper 360° in direction of engine rotation -arrow-.

Vehicles with 4-cylinder TDI engine:

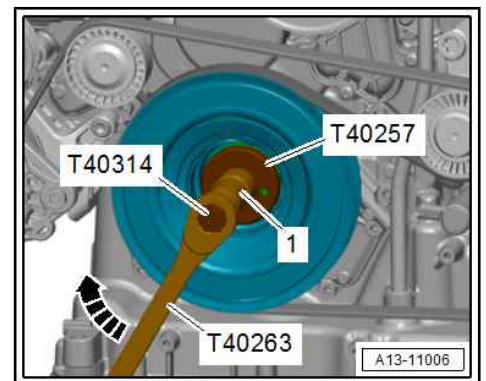
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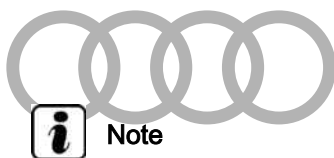
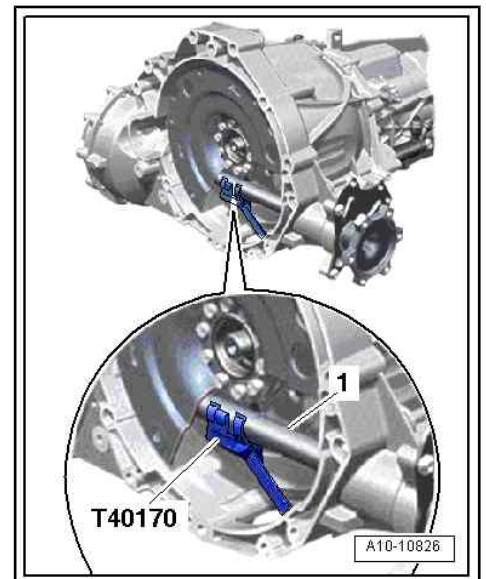
Vehicles with 4-cylinder TFSI engine:



Vehicles with 6-cylinder TDI engine



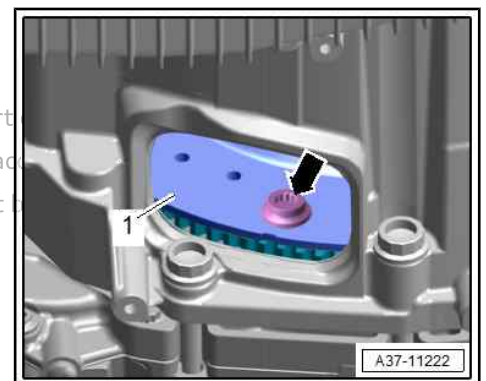
- Remove transportation lock - T40170- .



Note

The vibration damper -1- must be flat on the drive plate when the first bolt is screwed in.

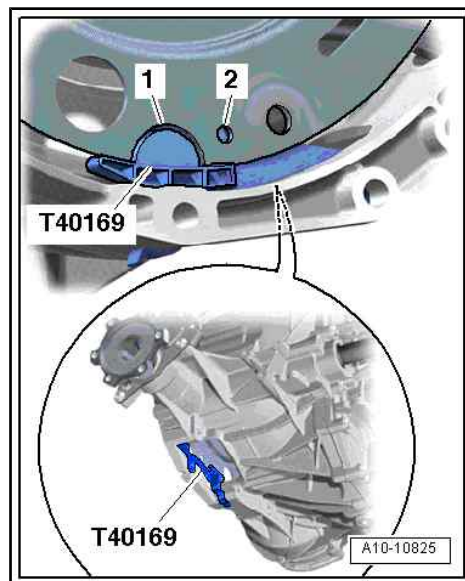
- Tighten first bolt -arrow- to 10 Nm and loosen again, then tighten to 2 Nm (hand-tight).



- Remove assembly aid - T40169- .
- Secure flywheel to drive plate as follows:

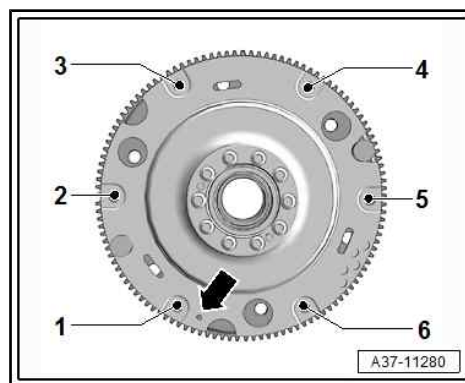
Vehicles with 4-cylinder engine (three securing bolts)

- Using an angled ring spanner, turn crankshaft at vibration damper 120° further in direction of engine rotation.
- Screw in next bolt in this crankshaft position and tighten to 60 Nm.
- Turn crankshaft 120° further in direction of engine rotation, screw in next bolt and tighten to 60 Nm.
- Turn crankshaft 120° further in direction of engine rotation and tighten final bolt to 60 Nm.



Vehicles with 6-cylinder engine (six securing bolts)

- Turn crankshaft via vibration damper 180° further in direction of engine rotation, screw in bolt -4- and tighten to 60 Nm.
- Turn crankshaft 60° further in direction of engine rotation (for each bolt), screw in bolts -5- and -6- and tighten to 60 Nm.
- Turn crankshaft 60° further in direction of engine rotation and tighten bolt -1- to 60 Nm.
- Turn crankshaft 60° further in direction of engine rotation (for each bolt), screw in bolts -2- and -3- and tighten to 60 Nm.



All vehicles

- Tighten engine/gearbox connecting bolts accessible from below.

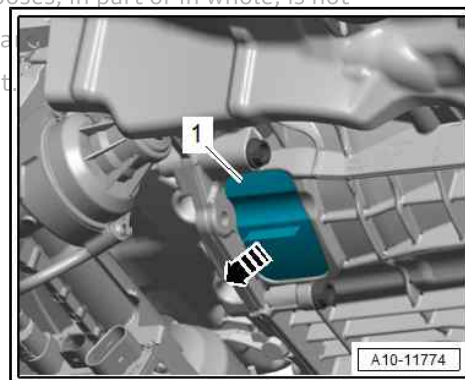
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Tightening torque

⇒ "2.3 Tightening torques for gearbox", page 69

Perform remaining installation steps in reverse sequence; observe the following:

- Install selector lever cable ⇒ [page 25](#) .



Vehicles with 4-cyl. engine:

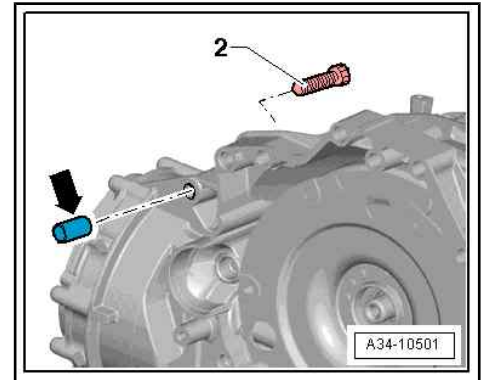


Note

- ◆ *Bolt -2- secures the starter to the gearbox and has an additional spacer sleeve -arrow-.*
- ◆ *The spacer sleeve must be fitted between the starter and the gearbox.*

All vehicles:

- Install starter ⇒ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter .



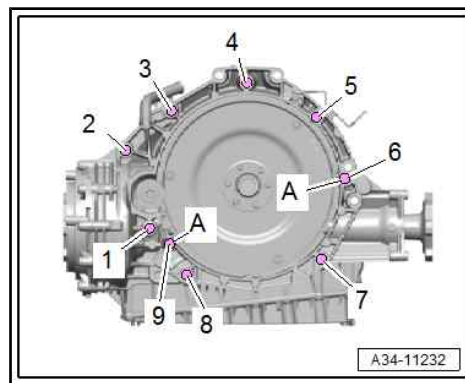
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- Tighten remaining engine/gearbox securing bolts.

Tightening torque

⇒ [“2.3 Tightening torques for gearbox”, page 69](#)

- Secure intermediate steering shaft to steering rack ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 48 ; Steering column; Removing and installing steering column .
- Electrical connections and routing ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.
- Secure drive shafts to gearbox ⇒ Running gear, front-wheel and four-wheel drive; Rep. gr. 40 ; Drive shaft; Loosening and tightening bolt securing drive shaft .
- Install heat shield for drive shaft ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 40 ; Drive shaft; Exploded view - drive shaft .
- Install heat shield on subframe ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 40 ; Subframe .
- Install cross brace for subframe ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 40 ; Subframe; Removing and installing subframe cross brace .
- Install plenum chamber partition panel ⇒ General body repairs, exterior; Rep. gr. 50 ; Bulkhead; Removing and installing plenum chamber partition panel .
- Fill up with coolant ⇒ Engine, mechanics; Rep. gr. 19 ; Cooling system/coolant; Draining and filling cooling system ⇒ Rep. gr. 19 .
- Install covers for drive shafts and noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Removing and installing underbody trim .
- Observe measures required after connecting battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- Check selector lever cable and adjust if necessary
⇒ [page 29](#) .
- Check MTF level and top up as required
⇒ [“8 Gear oil”, page 86](#) .
- Check ATF level and top up as required
⇒ [“9.1 Checking ATF level”, page 91](#) .



Note

It is not necessary to check the ATF/MTF level if a brand new gearbox is being installed.

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Note

If renewing the gearbox, run the function “Replace control unit” in ⇒ Vehicle diagnostic tester.

Procedure

- Connect ⇒ Vehicle diagnostic tester.
- Select **Diagnosis** mode and begin diagnosis.
- Select **Test plan** tab.

– Choose **Select own test** and select following options one after the other:

- ◆ Drive system
- ◆ 7-speed dual clutch gearbox 0CK/0CL
- ◆ 01 - Self-diagnosis compatible systems
- ◆ 02 - Gearbox electronics 0CK
- ◆ 02 - Gearbox electronics, functions
- ◆ 02 - Replace control unit ⇒ Complete gearbox

2.3 Tightening torques for gearbox



Note

- ◆ *Tightening torques apply only to lightly greased, oiled, phosphated or black-finished nuts and bolts.*
- ◆ *Additional lubricants such as engine or gear oil may be used, but do not use lubricants containing graphite.*
- ◆ *Do not use degreased parts.*
- ◆ *Tolerance for tightening torques: ± 15%*

Flywheel to drive plate ⇒ Servicing 7-speed dual clutch gearbox 0CK; Rep. gr. 30 ; Clutch; Exploded view - flywheel and dual clutch

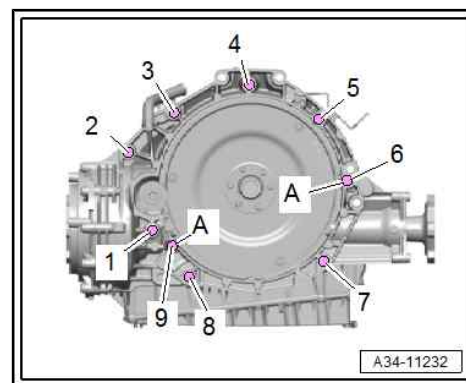
Assembly mountings

⇒ **“5.1 Exploded view - assembly mountings”, page 73**

Engine/gearbox attachment (4-cyl. TDI engine):

Item	Bolt	Nm
1 ¹⁾	M10x50 ²⁾	65
2 ³⁾	M12x100 ⁴⁾	30 + 90°
3, 6	M12x75 ⁴⁾	30 + 90°
4, 5	M12x120 ⁴⁾	30 + 90°
7, 8	M10x40 ⁴⁾	15 + 90°
9	M12x50 ⁴⁾	30 + 90°
A	Dowel sleeves for centralising	

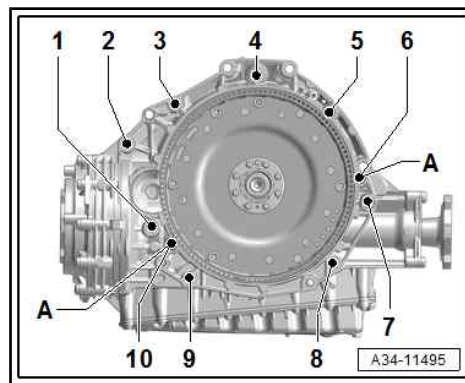
- 1¹⁾ Also secures starter.
- 2²⁾ Property class 10.9; the steel bolt can be re-used any number of times.
- 3³⁾ Also secures starter, with additional spacer sleeve between starter and gearbox.
- 4⁴⁾ Bolts can be used twice only ⇒ **page 70** .



Gearbox to 4-cylinder FSI engine:

Item	Bolt	Nm
1 ¹⁾	M10x50 ²⁾	65
2 ¹⁾	M12x100 ⁴⁾	30 + 90°
3, 6	M12x75 ⁴⁾	30 + 90°
4, 5	M12x120 ⁴⁾	30 + 90°
7	M12x100 ⁴⁾	30 + 90°
8, 9	M10x40 ⁴⁾	15 + 90°
10	M12x50 ⁴⁾	30 + 90°
A	Dowel sleeves for centralising	

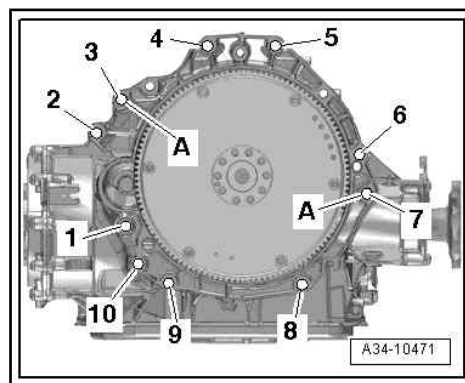
- 1¹⁾ Also secures starter.
- 2²⁾ Property class 10.9; the steel bolt can be re-used any number of times.
- 4⁴⁾ Bolts can be used twice only ⇒ [page 70](#) .



Engine/gearbox attachment (6-cyl. TDI engine):

Item	Bolt	Nm
1 ¹⁾	M10x50 ²⁾	65
2 ¹⁾	M12x100 ⁴⁾	30 + 90°
3, 4, 5, 6	M12x100 ⁴⁾	30 + 90°
7	M12x125 ⁴⁾	30 + 90°
8, 9, 10	M10x60 ⁴⁾	15 + 90°
A	Dowel sleeves for centralising	

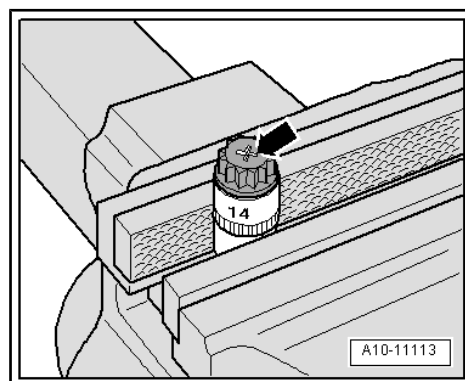
- 1¹⁾ Also secures starter.
- 2²⁾ Property class 10.9; the steel bolt can be re-used any number of times.
- 4⁴⁾ Bolts can be used twice only ⇒ [page 70](#) .



The aluminium bolts -2 ... 10- may only be used twice. After they have been used once, an "X" -arrow- must therefore be chiselled onto the bolts.

To prevent damage to the bolts, they must not be clamped in a vice when marking them. Clamp a 14 mm socket with 1/2" drive in the vice instead, and insert the bolt into the socket, as shown in illustration.

Bolts marked with an "X" must not be used again.



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3 Transporting gearbox

Description of work sequence ⇒ Servicing 7-speed dual clutch gearbox 0CK; Rep. gr. 34 ; Transporting gearbox





4 Securing to engine and gearbox support

Description of work sequence ⇒ Servicing 7-speed dual clutch gearbox 0CK; Rep. gr. 34 ; Securing to engine and gearbox support



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5 Assembly mountings

⇒ ["5.1 Exploded view - assembly mountings", page 73](#)

⇒ ["5.2 Removing and installing tunnel cross member", page 73](#)

⇒ ["5.3 Removing and installing gearbox support with gearbox mounting", page 75](#)

⇒ ["5.4 Removing and installing gearbox mounting", page 76](#)

5.1 Exploded view - assembly mountings

1 - Tunnel cross member

- ☐ Removing and installing
⇒ [page 73](#)

2 - Bolt

- ☐ 70 Nm

3 - Nut

- ☐ 20 Nm

4 - Gearbox support

5 - Bolt

- ☐ 40 Nm

6 - Gearbox mounting

- ☐ Removing and installing
⇒ [page 76](#)

7 - Stop

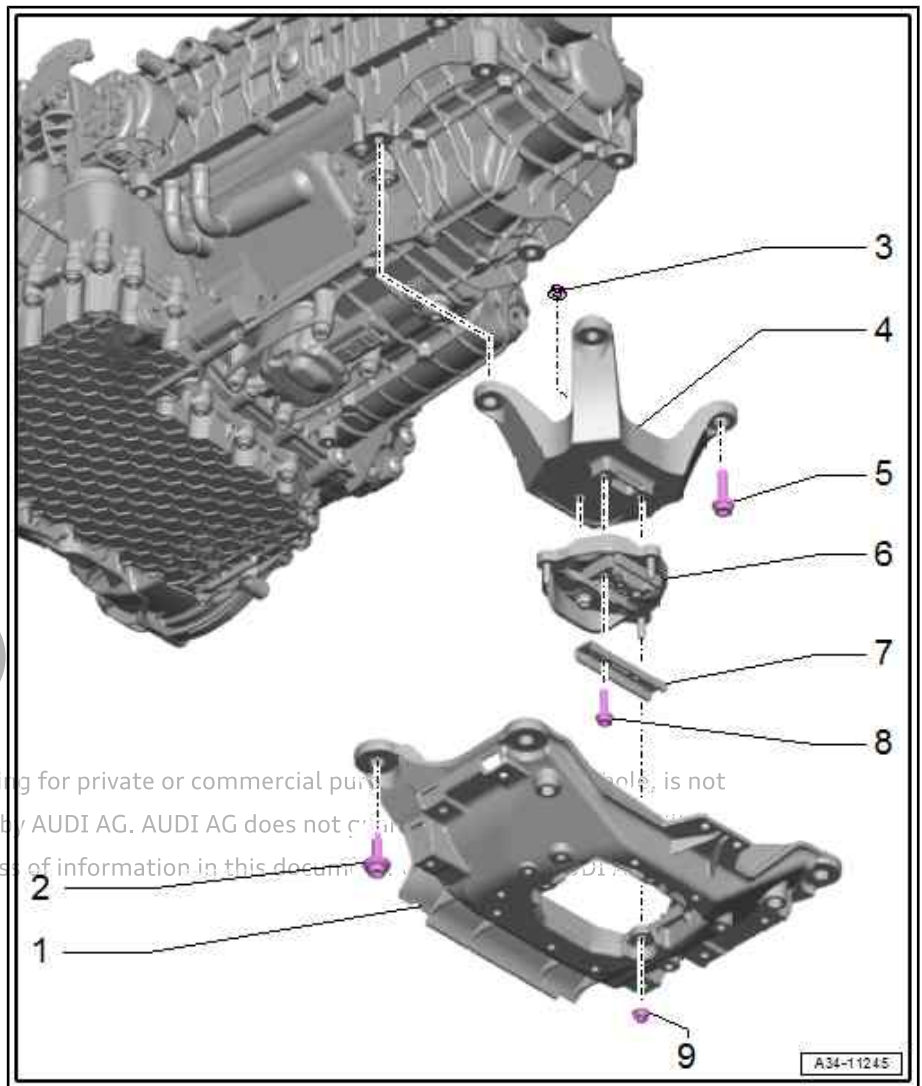
- ☐ For gearbox mounting

8 - Bolt

- ☐ Renew after removing
- ☐ 20 Nm +90°

9 - Nut

- ☐ 20 Nm



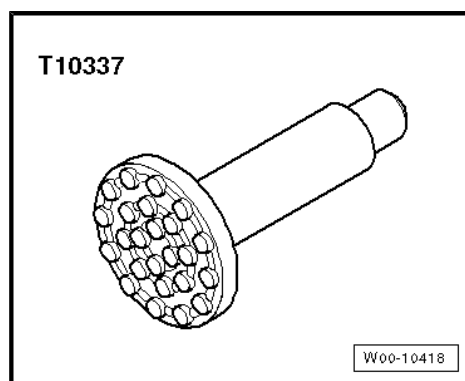
5.2 Removing and installing tunnel cross member

Special tools and workshop equipment required

◆ Engine and gearbox jack - V.A.G 1383 A-

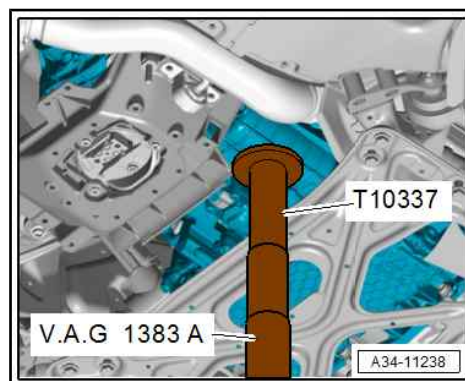


◆ Gearbox support - T10337-



Removing

- Remove rear noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Removing and installing underbody trim .
- Set up gearbox support - T10337- on engine and gearbox jack - V.A.G 1383 A- and position underneath gearbox, as shown in illustration.
- Raise gearbox slightly.

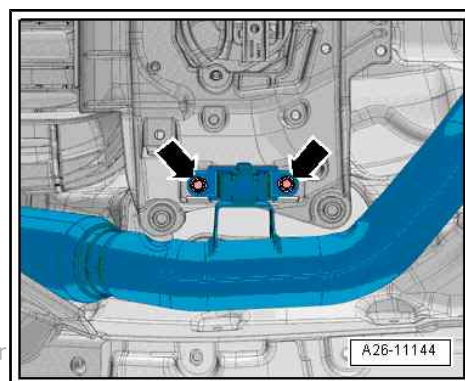


WARNING

Risk of accident.

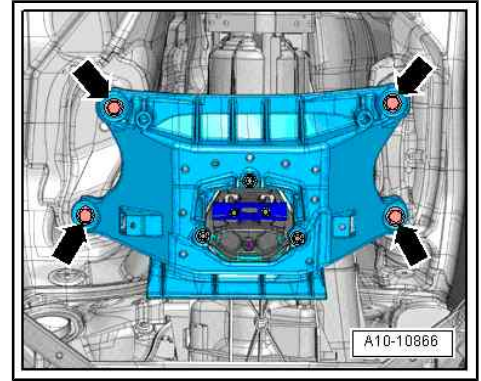
- ◆ *Engine and gearbox jack - V.A.G 1383 A- must remain in position when work is being carried out and must not be left unattended under the vehicle.*

- Remove bolts -arrows- for front silencer.



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- Remove bolts -arrows- for tunnel cross member.



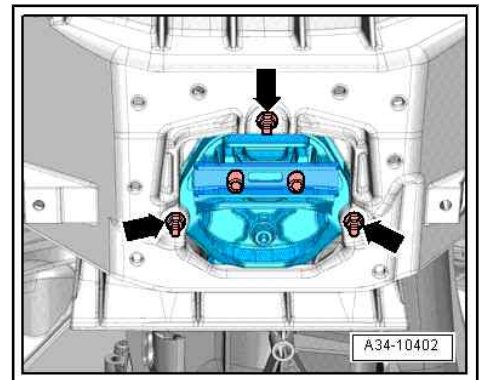
- Unscrew nuts -arrows- and remove tunnel cross member.

Installing

Installation is carried out in reverse sequence.

Tightening torques

- ◆ ⇒ [“5.1 Exploded view - assembly mountings”, page 73](#)
- ◆ Front silencer ⇒ Engine, mechanics; Rep. gr. 26 ; Exhaust pipes/silencers; Exploded view - silencers
- ◆ Noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Removing and installing underbody trim



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5.3 Removing and installing gearbox support with gearbox mounting

Removing

- Remove tunnel cross member ⇒ [page 73](#) .
- Remove bolts -arrows- and detach gearbox support from gearbox together with gearbox mounting.

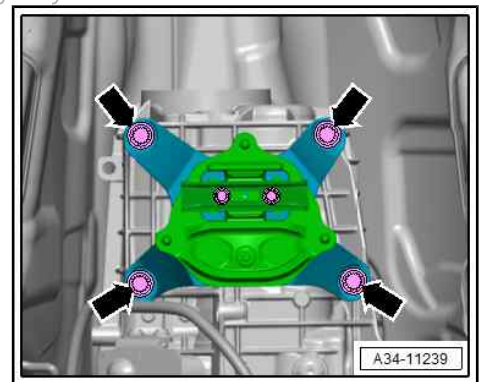
Installing

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

- Install tunnel cross member ⇒ [page 73](#) .

Tightening torques

- ◆ ⇒ [“5.1 Exploded view - assembly mountings”, page 73](#)
- ◆ Front silencer ⇒ Engine, mechanics; Rep. gr. 26 ; Exhaust pipes/silencers; Exploded view - silencers



5.4 Removing and installing gearbox mounting

Removing

- Remove gearbox support together with gearbox mounting ⇒ [page 75](#).
- Remove bolts -1- and detach stop -2- for gearbox mounting.
- Remove nut -5- and detach gearbox mounting -3- from gearbox support -4-.

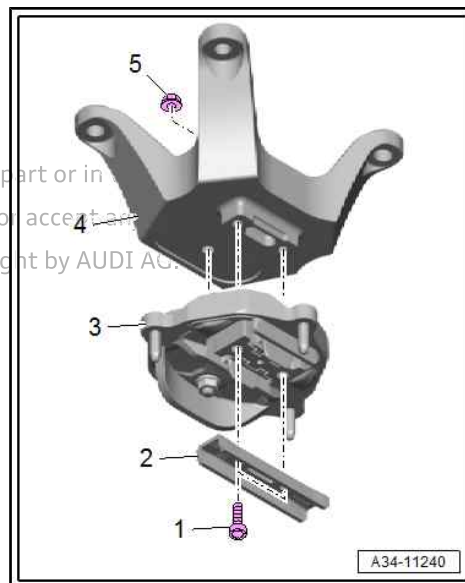
Installing

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

- Fit gearbox support -4- on gearbox mounting -3-.
- Hand-tighten nut -5-.
- Tighten bolts -1- for stop -2-.
- Tighten nut -5-.
- Install gearbox support with gearbox mounting ⇒ [page 75](#).

Tightening torques

- ◆ ⇒ [“5.1 Exploded view - assembly mountings”, page 73](#)



6 Gear oil circuit

⇒ ["6.1 Overview - gear oil circuit", page 77](#)

⇒ ["6.2 Removing and installing gear oil pump", page 77](#)

6.1 Overview - gear oil circuit

1 - Plug

- ☐ For ATF inspection and filler hole
- ☐ Tightening torque
⇒ [Item 1 \(page 82\)](#)

2 - Plug

- ☐ For MTF inspection and filler hole
- ☐ Renew after removing
- ☐ 35 Nm

3 - Electric pump 2 for gearbox - V553- (MTF pump)

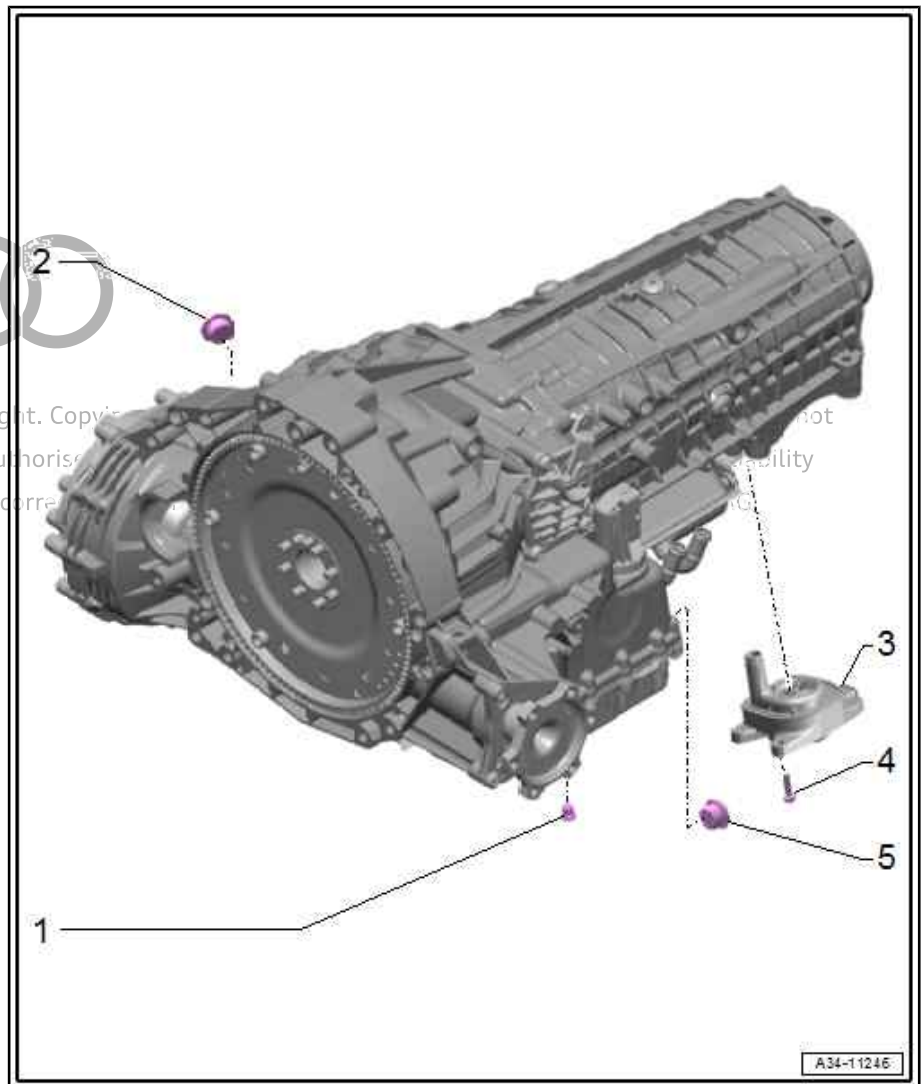
- ☐ With welded gasket
- ☐ Must be removed to drain gear oil (MTF)
- ☐ Renew gear oil pump if gasket is damaged
- ☐ Removing and installing
⇒ [page 77](#)

4 - Bolt

- ☐ Renew after removing
- ☐ 3 Nm +90°

5 - Drain plug

- ☐ For ATF
- ☐ Tightening torque
⇒ [Item 5 \(page 82\)](#)

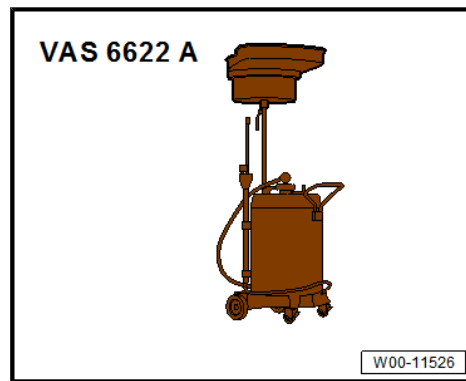


6.2 Removing and installing gear oil pump

Electric pump 2 for gearbox - V553- (MTF pump)

Special tools and workshop equipment required

- ◆ Used oil collection and extraction unit - VAS 6622A-



- ◆ Safety goggles

Removing



Note

- ◆ Refer to general repair instructions ⇒ [page 5](#) .
- ◆ Observe rules for cleanliness ⇒ [page 5](#) .
- Vehicle must be absolutely horizontal for refilling procedure (drive it onto a four-pillar lifting platform or over an inspection pit).
- Remove rear noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Removing and installing underbody trim .
- Place used oil collection and extraction unit - VAS 6622A- underneath.



WARNING

Risk of eye injury.

- ◆ Put on safety goggles.



Caution

Risk of electrochemical corrosion.

- ◆ Connector area must remain free of gear oil (MTF).
- ◆ Wait until gear oil has drained off before unplugging electrical connector -2-.



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Gearbox drains abruptly when oil pump is removed.

- Remove bolts -arrows- and detach oil pump -1-.
- When gear oil has drained off, unplug electrical connector -2-.

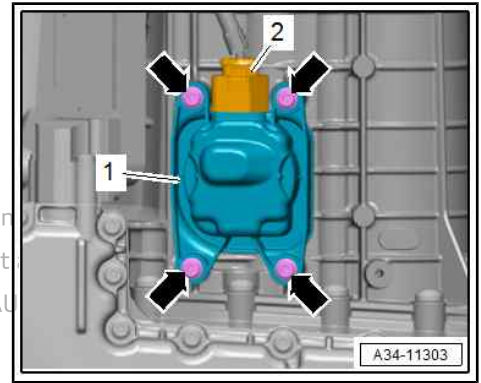


Caution

Risk of damage to gearbox

If there is no gear oil (MTF) in the gearbox (or not enough oil):

- ◆ **The engine must not be started.**
- ◆ **The vehicle must not be towed.**



Installing

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



Note

- ◆ *Any gear oil (MTF) that has escaped can cause discolouration of the gear oil pump housing.*
- ◆ *Clean sealing surfaces.*
- Fill up gear oil (MTF) ⇒ [page 87](#) .

Tightening torques

- ◆ ⇒ [“6.1 Overview - gear oil circuit”, page 77](#)
- ◆ Rear noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Removing and installing underbody trim

7 ATF circuit

⇒ ["7.1 Exploded view - ATF circuit", page 80](#)

⇒ ["7.2 Removing and installing ATF cooler", page 82](#)

7.1 Exploded view - ATF circuit



Caution

Risk of damage to gearbox

- ◆ *All plugs inserted in ATF lines and gearbox when dismantling must be removed.*
- ◆ *If you forget to remove the plugs, the ATF cooling will be ineffective and the gearbox will be damaged.*



WARNING

System is pressurised.

- *Deactivate ATF pump and discharge hydraulic accumulator before opening ATF circuit.*
- *See also*
⇒ ["4.3 Deactivating ATF pump and discharging hydraulic accumulator", page 7](#).

ATF cooler and ATF lines



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1 - O-rings

- ☐ Renew after removing

2 - ATF pipe

- ☐ Renew after removing

3 - O-rings

- ☐ Renew after removing

4 - ATF cooler

- ☐ Removing and installing
⇒ [page 82](#)

5 - Guard plate

6 - Bolt

- ☐ 8 Nm

7 - Bracket

8 - Bolt

- ☐ Tightening torque and
sequence ⇒ [page 81](#)

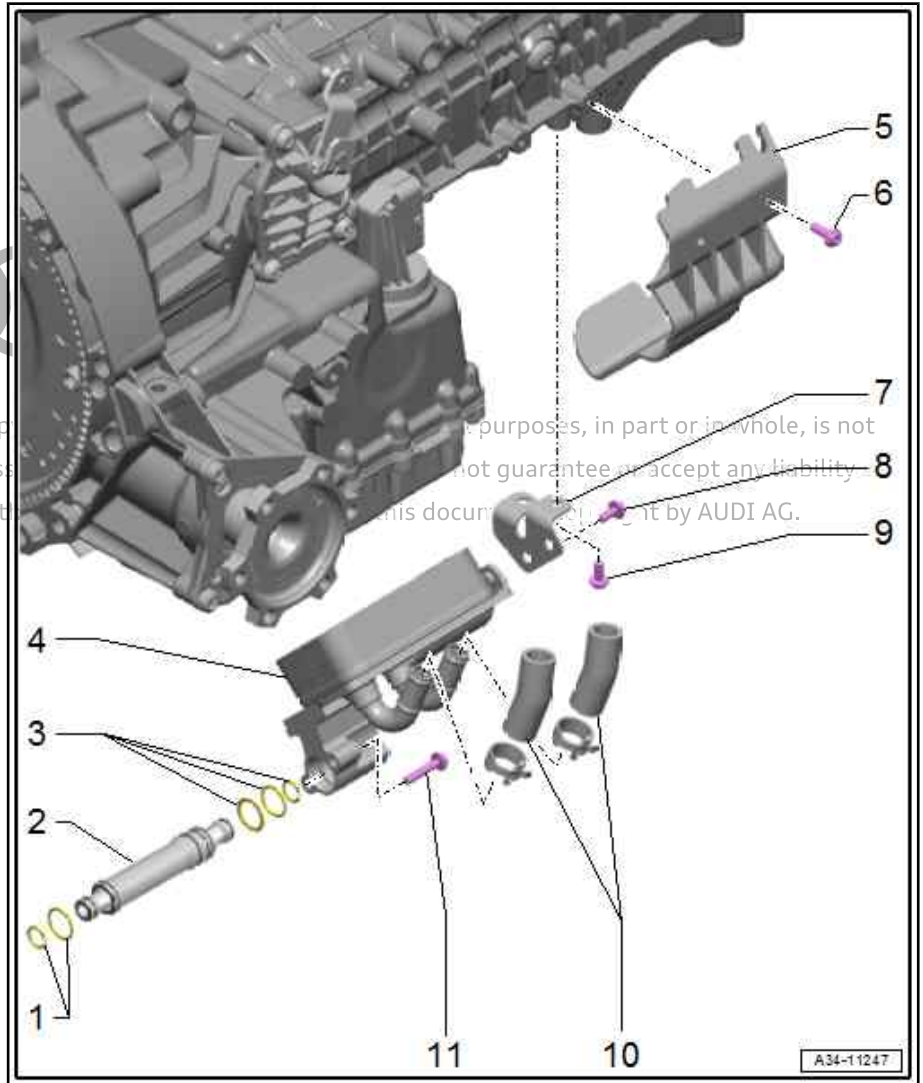
9 - Bolt

- ☐ Tightening torque and
sequence ⇒ [page 81](#)

10 - Coolant hoses

11 - Bolt

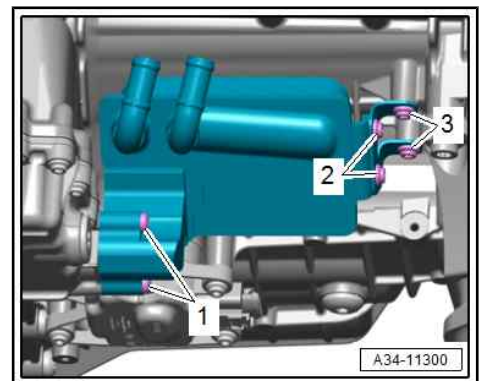
- ☐ Tightening torque and
sequence ⇒ [page 81](#)



ATF cooler - tightening torque and sequence

– Tighten bolts in stages in the sequence described:

Stage	Bolts	Tightening torque/angle specification
1.	-1-	Screw in by hand until contact is made
2.	-1-	3 Nm + 90°
3.	-2, 3-	Screw in by hand until contact is made
4.	-2, 3-	3 Nm + 30°



Drain plugs and screw plugs

1 - Plug

- ☐ For ATF inspection and filler hole
- ☐ Renew after removing

Aluminium oil pan:

- ☐ 8 Nm +30°

Plastic oil pan:

- ☐ Tighten as far as stop

2 - Plug

- ☐ For MTF inspection and filler hole
- ☐ Tightening torque
⇒ [Item 2 \(page 77\)](#)

3 - Electric pump 2 for gearbox - V553- (MTF pump)

- ☐ Must be removed to drain gear oil (MTF)
⇒ [page 77](#)

4 - Bolt

- ☐ Tightening torque
⇒ [Item 4 \(page 77\)](#)

5 - Drain plug

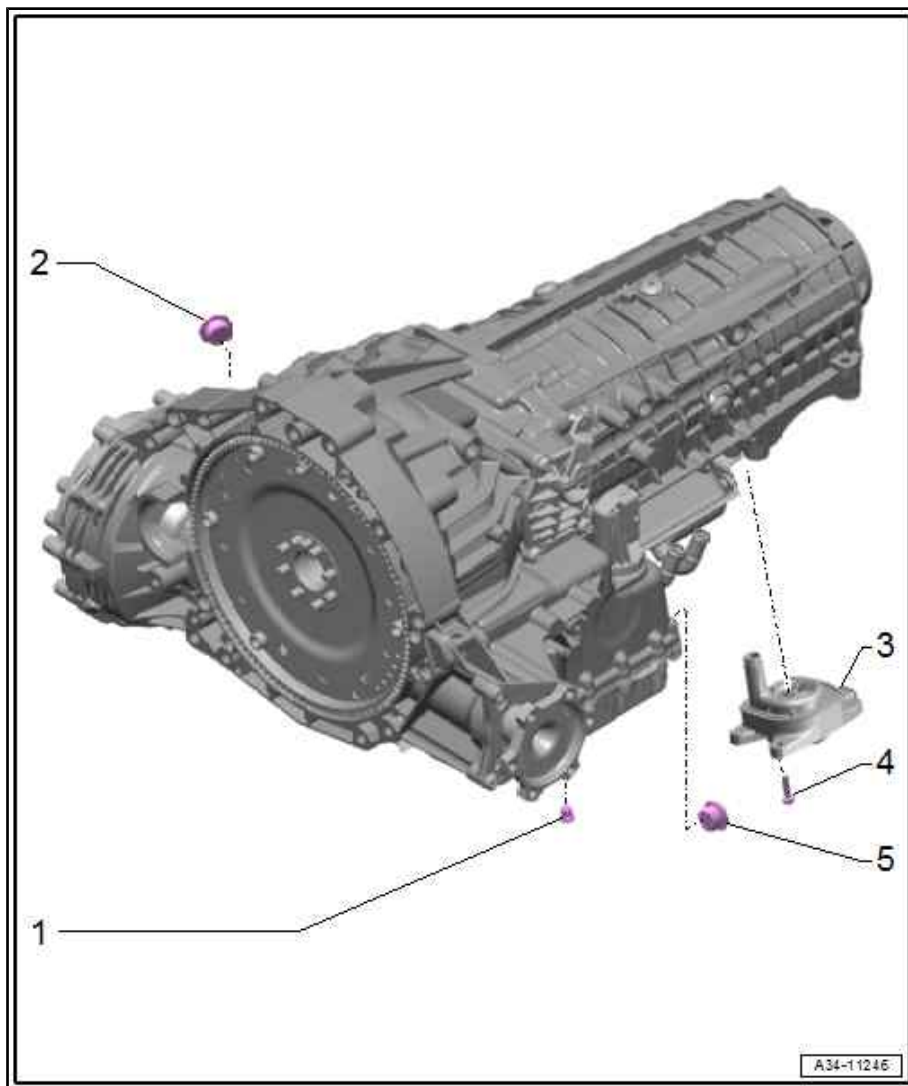
- ☐ For ATF
- ☐ Renew after removing

Aluminium oil pan:

- ☐ 35 Nm

Plastic oil pan:

- ☐ Tighten as far as stop



7.2 Removing and installing ATF cooler

Special tools and workshop equipment required

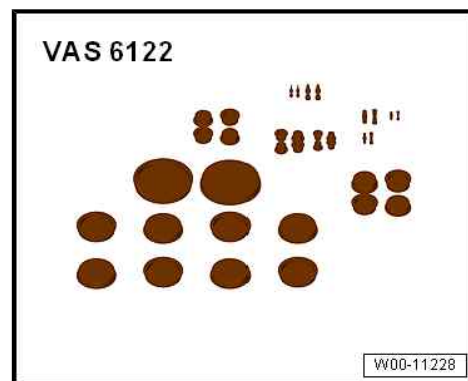
- ◆ Hose clamps up to 25 mm - 3094-



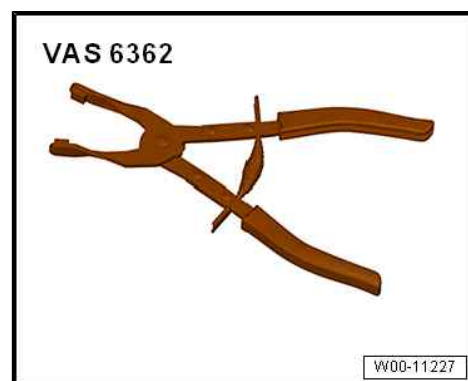
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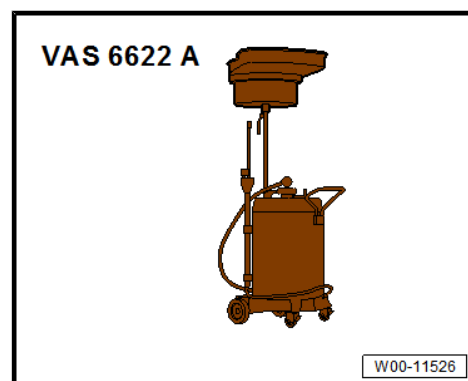
◆ Engine bung set - VAS 6122-



◆ Hose clip pliers - VAS 6362-



◆ Used oil collection and extraction unit - VAS 6622A-



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Removing



WARNING

System is pressurised.

- *Deactivate ATF pump and discharge hydraulic accumulator before removing ATF cooler.*

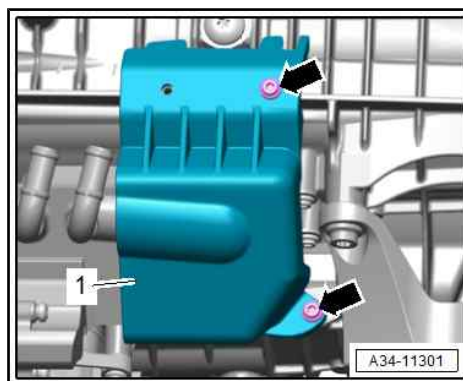
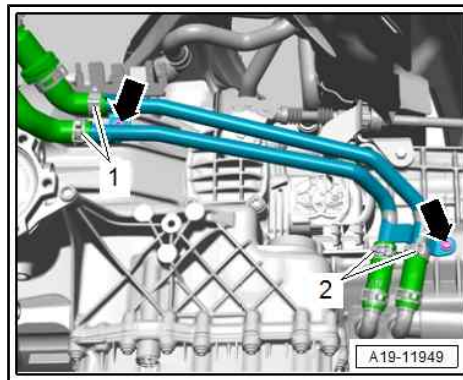
- Using ⇒ Vehicle diagnostic tester, discharge ATF accumulator in automatic gearbox control unit - J217- and disable gearbox auxiliary hydraulic pump - V552-
⇒ ["4.3 Deactivating ATF pump and discharging hydraulic accumulator", page 7](#) .
- Drain ATF ⇒ [page 95](#) .
- Remove bolts -arrows-.
- Move electrical wiring clear.



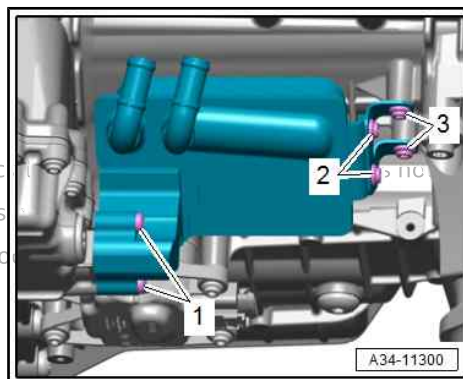
Note

Place a cloth underneath to catch escaping coolant.

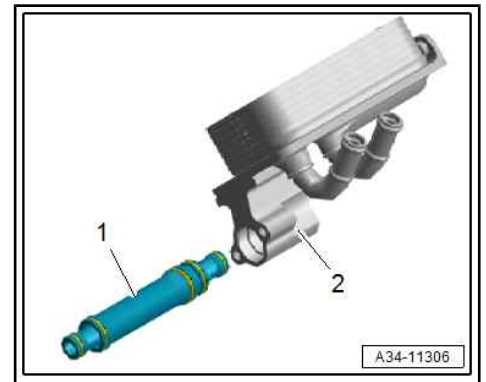
- Clamp off coolant hoses -1- using hose clamps up to 25 mm - 3094- and disconnect hoses (release hose clips -2-).
- Remove bolts -arrows- and detach guard plate -1-.



- Place used oil collection and extraction unit - VAS 6622A- underneath.
- Only slacken bolts -2- (but do not remove) and remove bolts -1, 3-.
- Pull ATF cooler out of oil pan.



- Detach ATF pipe -1- from ATF cooler -2-.
- Seal off open lines and connections with clean plugs from engine bung set - VAS 6122- .



Installing

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



Note

- ◆ *Renew ATF pipe with seals after removal.*
- ◆ *Clean ATF cooler before installing.*

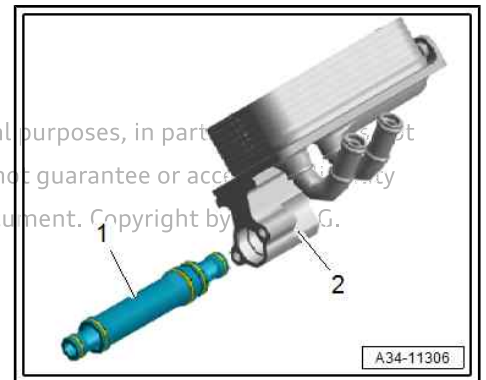
- Insert ATF pipe -1- in oil pan.



Caution

Risk of leaks on gear oil cooler!

- ◆ *Note installation position of ATF pipe.*
- ◆ *Pipe end with three seals faces ATF cooler.*



- Install ATF cooler -2- on oil pan.
- Screw in bolts by hand until they make contact and then tighten to specified torque
⇒ [Fig. ““ATF cooler - tightening torque and sequence””, page 81](#) .
- Secure coolant pipes to gearbox ⇒ Engine, mechanics; Rep. gr. 19 ; Coolant pipes; Removing and installing coolant pipes .
- Check ATF level ⇒ [page 91](#) .

8 Gear oil

⇒ "8.1 Checking gear oil level", page 86

⇒ "8.2 Draining and filling gear oil", page 87

8.1 Checking gear oil level

Procedure



Note

- ◆ Refer to general repair instructions ⇒ [page 5](#).
- ◆ Observe rules for cleanliness ⇒ [page 5](#).
- ◆ Always use the correct fluid for the different parts of the gearbox: gear oil (MTF) system and ATF system.
- ◆ Renew plug for inspection and filler hole.
- Gear oil about 20 °C (room temperature).
- Vehicle must be absolutely horizontal (drive it onto a four-pillar lifting platform or over an inspection pit).
- The vehicle must be stationary with the engine switched off for at least 15 minutes to allow the oil level to stabilise.



WARNING

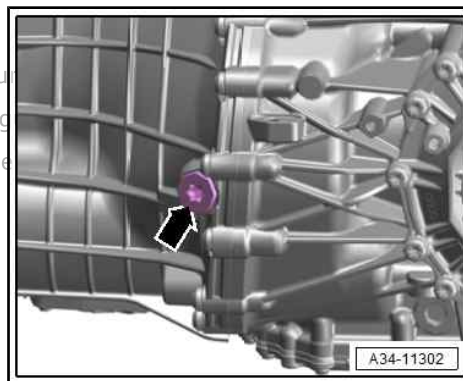
Risk of eye injury.

- ◆ Put on safety goggles.

- Unscrew plug -arrow- for inspection and filler hole on right side of gearbox housing.
- Gear oil level (MTF) must be 2 mm below bottom lip of filler and inspection hole.
- If oil level is not correct, fill up with gear oil ⇒ [page 89](#).

Tightening torques

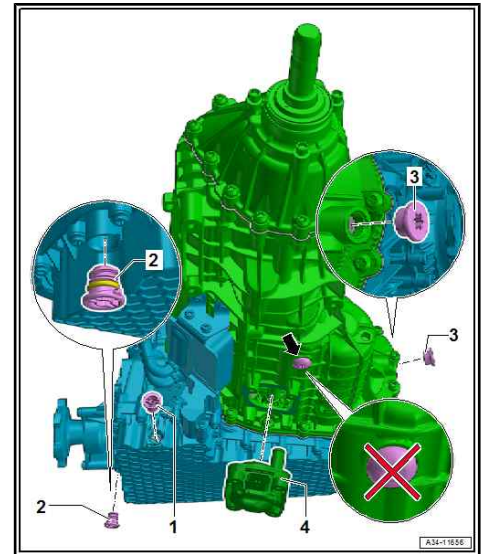
- ◆ Screw plug ⇒ "6.1 Overview - gear oil circuit", page 77
- ◆ Noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Removing and installing underbody trim



8.2 Draining and filling gear oil

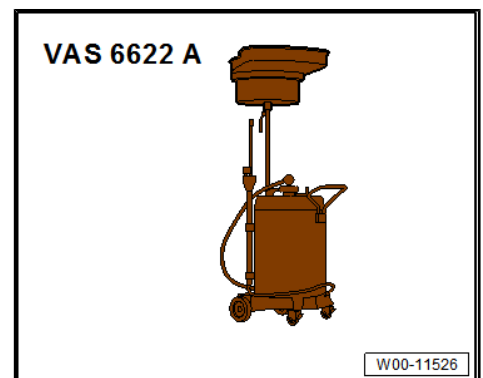
Note

- ◆ The 7-speed dual clutch gearbox has an ATF section and an MTF section.
- ◆ The ATF is in the blue section of the gearbox and can be drained off via the ATF drain plug -1- and added via the ATF filler plug -2- ⇒ "9 ATF", page 91.
- ◆ The MTF is in the green section of the gearbox and can be drained off by removing the MTF pump -4- and added via the MTF inspection plug -3- ⇒ "8.2 Draining and filling gear oil", page 87.
- ◆ The bolt securing the gear cluster -arrow- is not a drain plug!

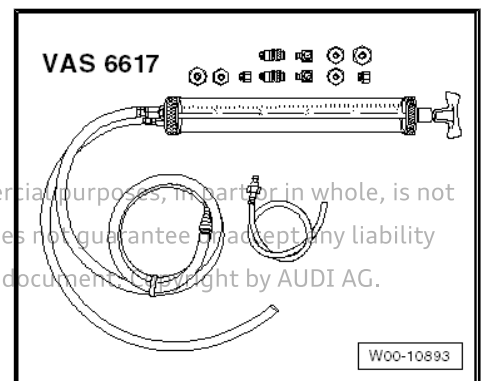


Special tools and workshop equipment required

- ◆ Used oil collection and extraction unit - VAS 6622A-



- ◆ Hand pump for gear oil - VAS 6617-



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- ◆ Safety goggles



Draining



Note

- ◆ *The dual clutch gearbox does not have a drain plug for its oil system; electric pump 2 for gearbox - V553- (MTF pump) must be removed to drain the gear oil.*
- ◆ *Refer to general repair instructions ⇒ [page 5](#).*
- ◆ *Observe rules for cleanliness ⇒ [page 5](#).*
- Gear oil about 20 °C (room temperature).
- Vehicle must be absolutely horizontal (drive it onto a four-pillar lifting platform or over an inspection pit).
- Remove rear noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Removing and installing underbody trim .
- Place used oil collection and extraction unit - VAS 6622A- underneath.



WARNING

Risk of eye injury.

- ◆ *Put on safety goggles.*



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Caution

Risk of electrochemical corrosion.

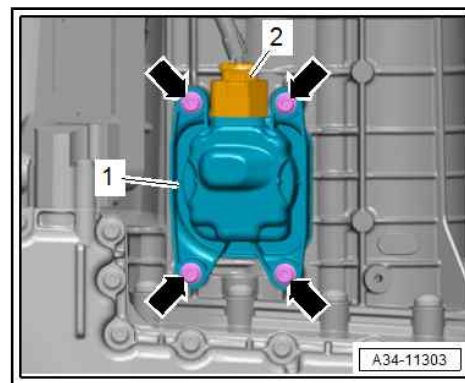
- ◆ *Connector area must remain free of gear oil (MTF).*
- ◆ *DO NOT unplug electrical connector -2-.*



Note

Gearbox drains abruptly when oil pump is removed.

- Remove bolts -arrows-, detach oil pump -1- and secure with wire so that it does not drop.
- Drain gear oil (MTF).



Caution

Risk of damage to gearbox

If there is no gear oil (MTF) in the gearbox (or not enough oil):

- ◆ *The engine must not be started.*
- ◆ *The vehicle must not be towed.*



Note

- ◆ *Any gear oil (MTF) that has escaped can cause discolouration of the gear oil pump housing.*
- ◆ *Clean sealing surface.*
- Install oil pump ⇒ [page 77](#).
- Clean subframe cross brace and remove any remaining gear oil.

Filling



WARNING

Risk of eye injury.

- ◆ *Put on safety goggles.*

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Caution

Risk of damage to gearbox

- ◆ *Only the gear oil (MTF) available as a replacement part may be used for dual clutch gearbox 0CK.*
- ◆ *Other types of oil cause malfunctions and/or failure of the gearbox.*
- ◆ *For the correct type, refer to ⇒ Electronic parts catalogue .*
- ◆ *The hand pump for gear oil - VAS 6617- must be clean; the ATF must not be mixed with any other types of lubricant. If necessary, rinse hand pump with gear oil (MTF).*

- Unscrew plug -arrow- for inspection and filler hole on right side of gearbox housing.
- Slowly fill gear oil (MTF) using hand pump for gear oil - VAS 6617- .
- Gear oil (MTF) specifications ⇒ Electronic parts catalogue
- Repeat the procedure in several steps by adding gear oil (MTF) every 15 seconds until level is 2 mm below bottom edge of inspection and filler hole.



Note

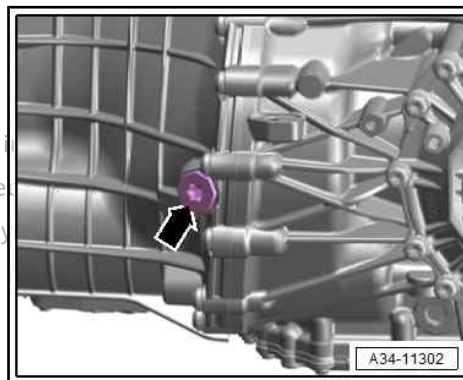
Make sure to wait the required amount of time so that the various oil chambers in the gearbox are filled evenly.

- Tighten plug.

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

Tightening torques

- ◆ Screw plug ⇒ ["6.1 Overview - gear oil circuit", page 77](#)
- ◆ Noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Removing and installing underbody trim



9 ATF

⇒ ["9.1 Checking ATF level", page 91](#)

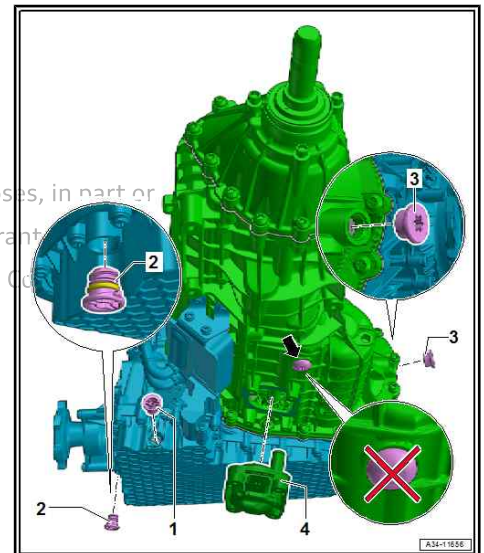
⇒ ["9.2 Draining and filling ATF", page 95](#)

9.1 Checking ATF level



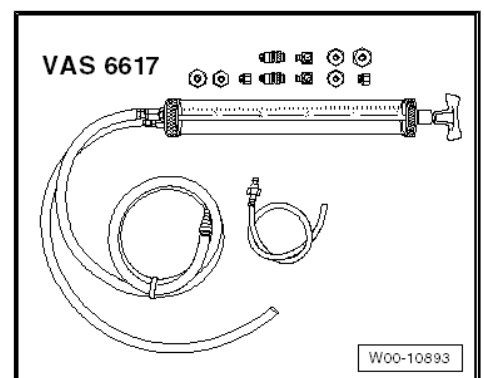
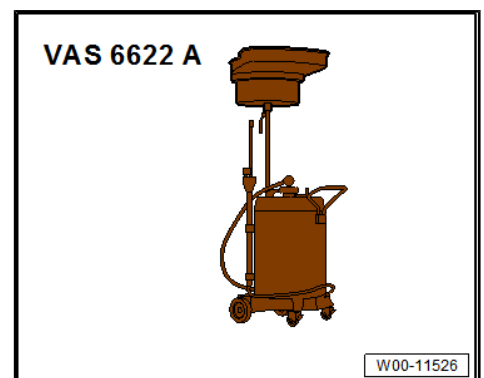
Note

- ◆ The 7-speed dual clutch gearbox has an ATF section and an MTF section.
- ◆ The ATF is in the blue section of the gearbox and can be drained off via the ATF drain plug -1- and added via the ATF filler plug -2- ⇒ ["9 ATF", page 91](#).
- ◆ The MTF is in the green section of the gearbox and can be drained off by removing the MTF pump -4- and added via the MTF inspection plug -3- ⇒ ["8.2 Draining and filling gear oil", page 87](#).
- ◆ The bolt securing the gear cluster -arrow- is not a drain plug!



Special tools and workshop equipment required

- ◆ Vehicle diagnostic tester
- ◆ Used oil collection and extraction unit - VAS 6622A-
- ◆ Hand pump for gear oil - VAS 6617- with -VAS 6617/1- and -VAS 6617/2-



- ◆ Adapters - VAS 6617/12-
- ◆ Safety goggles
- ◆ Protective gloves (acid resistant)

Test conditions

- Gearbox must not be in emergency running (backup) mode.
- Vehicle must be absolutely horizontal (on a four-pillar lifting platform or over an inspection pit).
- Gearbox is in position "P".
- Parking brake button must be pulled up to apply the electro-mechanical parking brake.
- Extraction hose on an exhaust gas extractor (switched on) must be connected.
- Air conditioner and heating switched off.
- Vehicle diagnostic tester is connected.
- The ATF temperature must not be higher than 35° C at the beginning of the test. If the temperature is higher, allow the gearbox to cool down before proceeding.



Note

- ◆ *ATF level will change depending on ATF temperature.*
- ◆ *If ATF level is checked when ATF temperature is too low, this will lead to overfilling.*
- ◆ *If ATF level is checked when ATF temperature is too high, this will lead to underfilling.*
- ◆ *Both overfilling and underfilling will impair the function of the gearbox.*

Procedure



Note

Renew plug for inspection and filler hole.

- Connect ⇒ Vehicle diagnostic tester and start **Diagnosis** mode.
- ◆ **Select own test**
- ◆ **02 - Gearbox electronics, Functions**
- ◆ **02 - ATF level** ⇒ **Check ATF level**
- Follow instructions on screen.



Caution

Risk of damage to gearbox

- ◆ ***The engine must not be started if only a little or no ATF remains in gearbox after repair work or after excessive ATF leakage.***
- ◆ ***In this case the gearbox must be filled with ATF before proceeding further ⇒ [page 95](#).***

- Remove rear noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Removing and installing underbody trim .



Note

- ◆ *The ATF level can be checked at the ATF inspection and filler hole.*
- ◆ *The ATF level is correct if a small amount of fluid comes out at the ATF inspection and filler hole when ATF temperature is between 35 °C and 45 °C (the fluid level rises due to expansion as it warms up).*
- Place used oil collection and extraction unit - VAS 6622A- underneath.



WARNING

Risk of eye injury.

- ◆ *Put on safety goggles.*

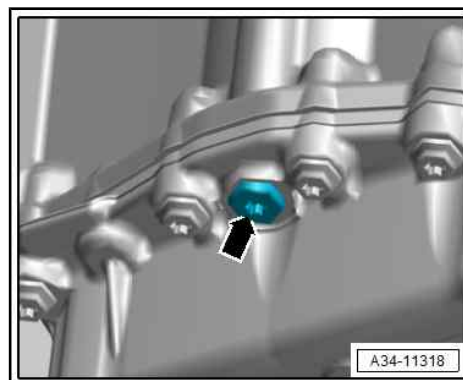
- As soon as an ATF temperature of 35 °C is reached, unscrew plug for ATF inspection and filler hole -arrow- and drain off any surplus ATF.

If ATF emerges from ATF inspection and filler hole before ATF has reached 45 °C, ATF level is OK.

- Assemble gearbox ➔ [page 94](#) .

If no ATF emerges from ATF inspection and filler hole when ATF has reached 45 °C, top up with ATF:

Switch off engine and allow gearbox to cool down to 35° C.



Caution

Risk of damage to gearbox

- ◆ *Only the ATF available as a replacement part may be used for dual clutch gearbox 0CK.*
- ◆ *Other types of oil cause malfunctions and/or failure of the gearbox.*
- ◆ *For the correct type, refer to ➔ Electronic parts catalogue .*
- ◆ *The hand pump for gear oil - VAS 6617- must be clean; the ATF must not be mixed with any other types of lubricant. If necessary, rinse hand pump with ATF.*



WARNING

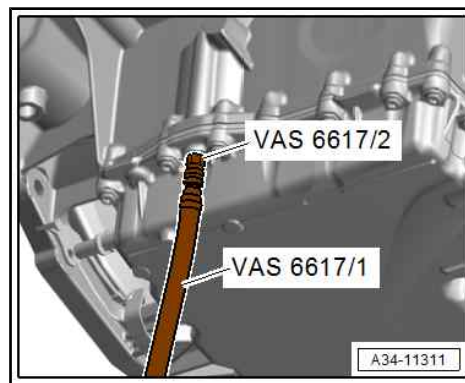
Risk of eye injury.

- ◆ *Put on safety goggles.*

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Vehicles with sheet-metal oil pan:

- Connect hand pump for gear oil - VAS 6617- with -VAS 6617/1- and -VAS 6617/2- at ATF inspection and filler hole.



Vehicles with plastic oil pan:

- Insert hand pump for gear oil - VAS 6617- with -VAS 6617/1- and adapter - VAS 6617/12- into hole.

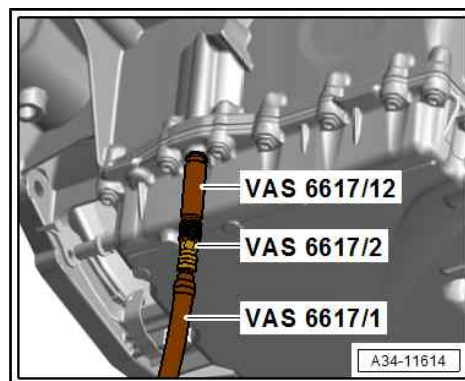
All vehicles (continued):



Caution

Risk of damage to gearbox if ATF and gear oil (MTF) mix via shared breather opening.

- ◆ Do not fill with more than 0.5 ltr. of ATF.



- Use hand pump to fill gearbox with 0.5 ltr. of ATF.
- Repeat entire work sequence for “ATF level check”.

Assembling



Note

The ATF inspection and filler hole must be closed again before the ATF reaches a temperature of 45 °C.

- Tighten plug for inspection and filler hole. The ATF level check is now completed.

- Install noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Removing and installing underbody trim .

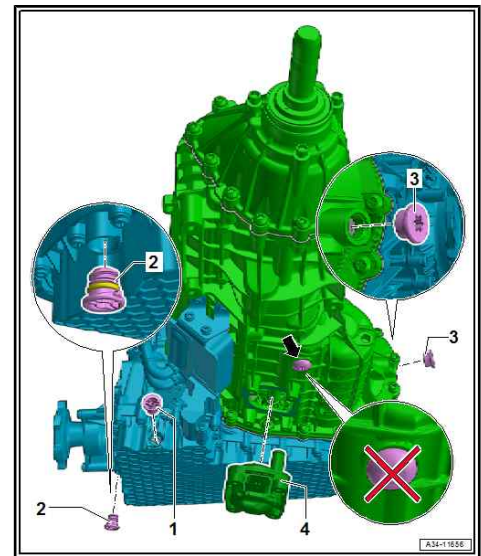
Tightening torques

- ◆ Screw plug ⇒ [Item 1 \(page 82\)](#)
- ◆ Noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Removing and installing underbody trim

9.2 Draining and filling ATF

Note

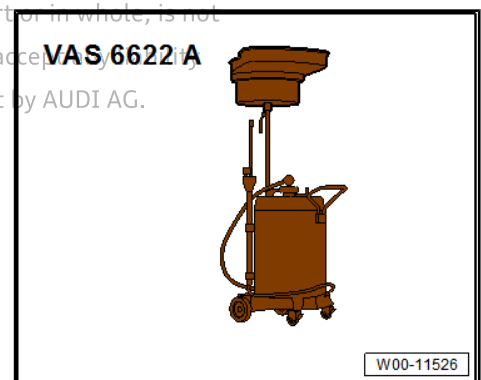
- ◆ The 7-speed dual clutch gearbox has an ATF section and an MTF section.
- ◆ The ATF is in the blue section of the gearbox and can be drained off via the ATF drain plug -1- and added via the ATF filler plug -2-.
- ◆ The MTF is in the green section of the gearbox and can be drained off by removing the MTF pump -4- and added via the MTF inspection plug -3-.
- ◆ The bolt securing the gear cluster -arrow- is not a drain plug!



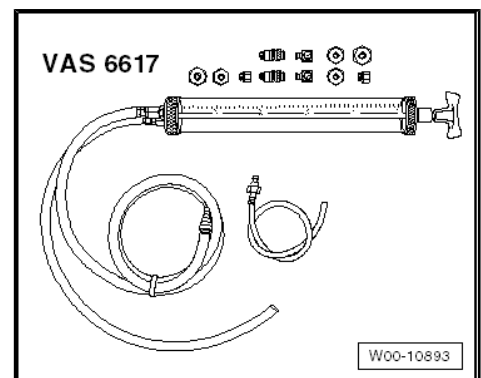
Special tools and workshop equipment required

- ◆ Vehicle diagnostic tester
- ◆ Used oil collection and extraction unit - VAS 6622A-

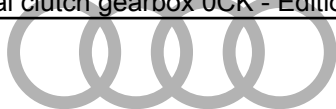
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- ◆ Hand pump for gear oil - VAS 6617- with -VAS 6617/1- and -VAS 6617/2-



- ◆ Adapters - VAS 6617/12-
- ◆ Safety goggles
- ◆ Protective gloves (acid resistant)



Draining



Note

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Renew ATF drain plug and plug for inspection and filler hole.

- Engine not running.
- Vehicle must be absolutely horizontal (drive it onto a four-pillar lifting platform or over an inspection pit).
- Selector lever in "P".
- Parking brake button must be pulled up to apply the electro-mechanical parking brake.
- Remove rear noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Removing and installing underbody trim .
- Place used oil collection and extraction unit - VAS 6622A- underneath.
- Connect ⇒ Vehicle diagnostic tester and start **Diagnosis** mode.
- ◆ **Select own test**
- ◆ **02 - Gearbox electronics, Functions**
- ◆ **02 - ATF level** ⇒ **Drain ATF**
- Follow instructions on screen.



WARNING

Risk of eye injury.

- ◆ *Put on safety goggles.*

- Remove ATF drain plug -arrow- and allow ATF to drain off.



Caution

Risk of damage to gearbox

- ◆ ***The engine must not be started when there is no more ATF in the gearbox.***



Note

Always adhere to waste disposal regulations.

- Tighten ATF drain plug.
- Clean subframe cross brace and remove any remaining ATF.

Filling



Caution

Risk of damage to gearbox

- ◆ ***Only the ATF available as a replacement part may be used for dual clutch gearbox 0CK.***
- ◆ ***Other types of oil cause malfunctions and/or failure of the gearbox.***
- ◆ ***For the correct type, refer to ⇒ Electronic parts catalogue .***
- ◆ ***The hand pump for gear oil - VAS 6617- must be clean; the ATF must not be mixed with any other types of lubricant. If necessary, rinse hand pump with ATF.***

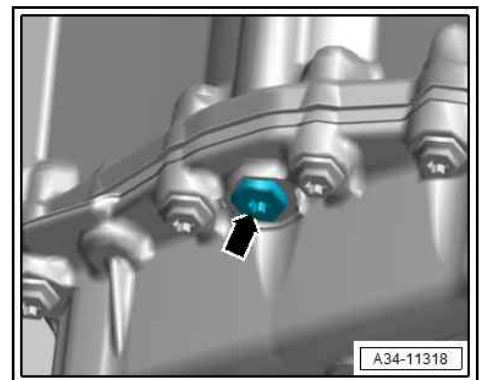
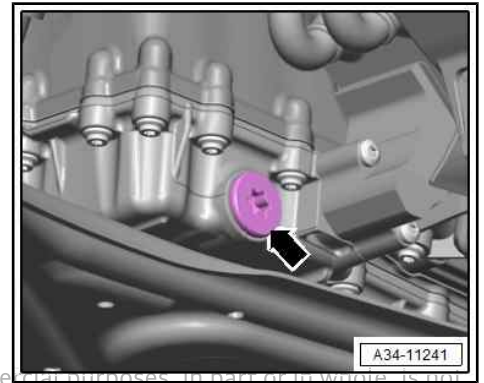


WARNING

Risk of eye injury.

- ◆ ***Put on safety goggles.***

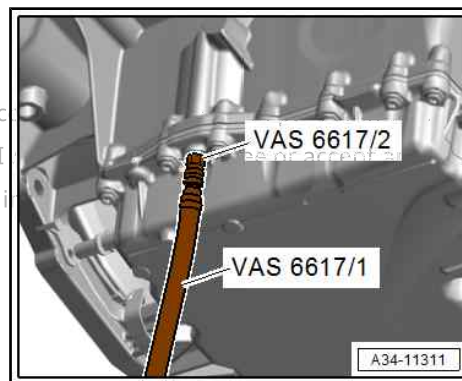
- Unscrew plug for inspection and filler hole -arrow-.



Vehicles with aluminium oil pan:

- Connect hand pump for gear oil - VAS 6617- with -VAS 6617/1- and -VAS 6617/2- at ATF inspection and filler hole.

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Vehicles with plastic oil pan:

- Insert hand pump for gear oil - VAS 6617- with -VAS 6617/1- and adapter - VAS 6617/12- into hole.

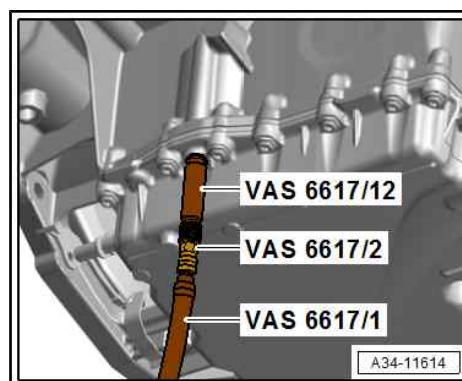
All vehicles (continued):



Caution

Risk of damage to gearbox if ATF and gear oil (MTF) mix via shared breather opening.

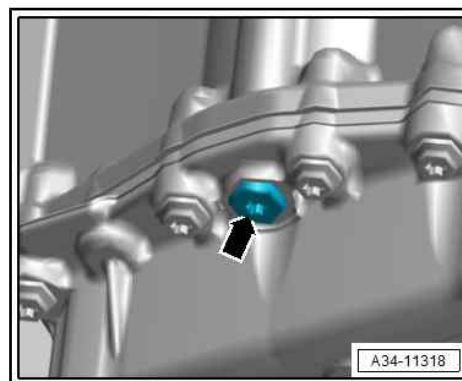
- ◆ Do not fill with more than 3.5 ltr. of ATF.



- Use hand pump to fill gearbox with 3.5 ltr. of ATF.
- Connect ⇒ Vehicle diagnostic tester and start **Diagnosis** mode.
- ◆ **Select own test**
- ◆ **02 - Gearbox electronics, Functions**
- ◆ **02 - ATF level** ⇒ **02 - Top up ATF**
- Follow instructions on screen.
- Screw in and tighten plug for inspection and filler hole -arrow-.

Tightening torques

- ◆ Screw plug ⇒ [Item 1 \(page 82\)](#)
- ◆ Noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Removing and installing underbody trim



10 Mechatronic unit

⇒ ["10.1 Exploded view - mechatronic unit", page 99](#)

⇒ ["10.2 Removing and installing oil pan", page 100](#)

⇒ ["10.3 Removing and installing mechatronic unit", page 103](#)

10.1 Exploded view - mechatronic unit

- 1 - Oil pan**
☐ Removing and installing
⇒ [page 100](#)

- 2 - Bolt**
☐ Tightening torque and
sequence ⇒ [page 100](#)
☐ Renew

- 3 - Gasket**
☐ Renew after removing

- 4 - Bolt**
☐ Tightening torque ⇒
Servicing 7-speed dual
clutch gearbox 0CK;
Rep. gr. 34 ; Mecha-
tronic unit for dual clutch
gearbox J743; Exploded
view - mechatronic
unit

- 5 - Bracket**

- 6 - Hydraulic pressure sender
2 - G546-**
☐ Removing and installing
⇒ Servicing 7-speed
dual clutch gearbox
0CK; Rep. gr. 34 ; Me-
chatronic unit for dual
clutch gearbox J743;
Exploded view - mecha-
tronic unit

- 7 - O-rings**
☐ Renew after removing

- 8 - Contact element**

- 9 - Bolt**
☐ Tightening torque ⇒ Servicing 7-speed dual clutch gearbox 0CK; Rep. gr. 34 ; Mechatronic unit for dual clutch gearbox J743; Exploded view - mechatronic unit

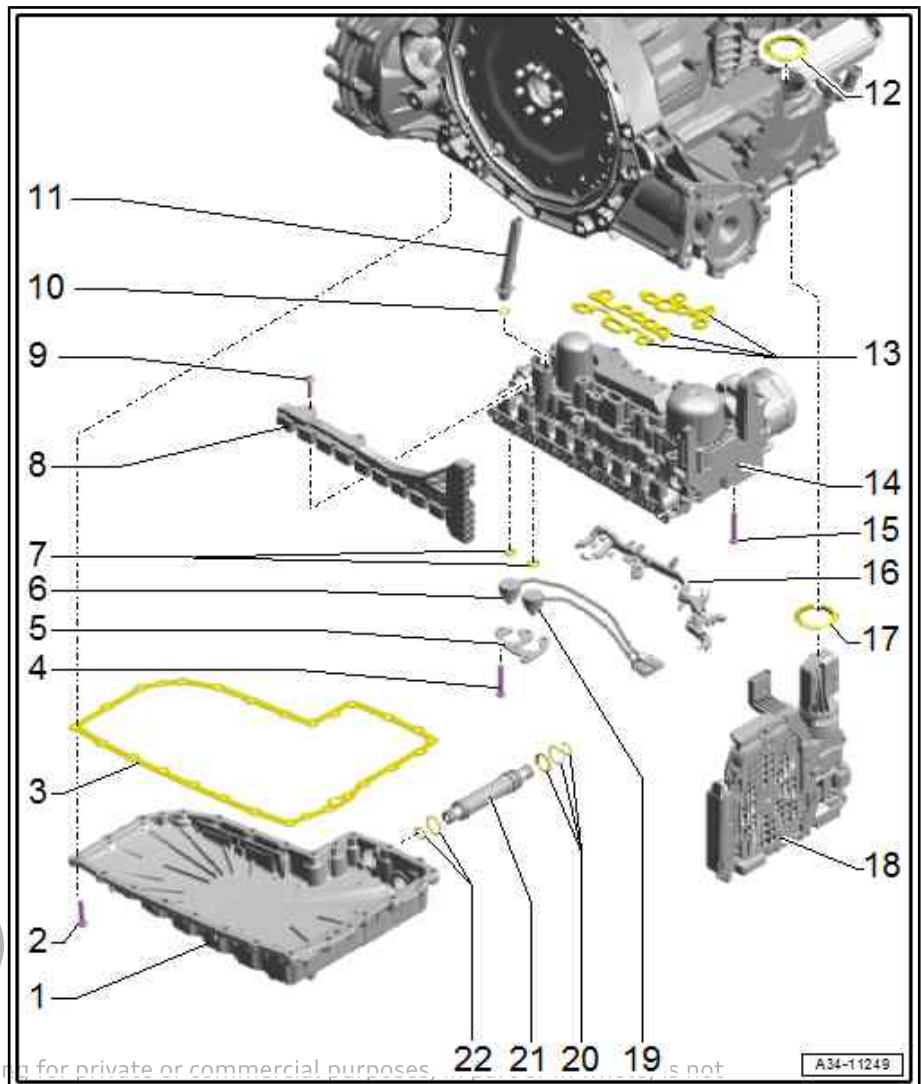
- 10 - O-ring**
☐ Renew after removing

- 11 - Breather pipe**

- 12 - Dust ring**

- 13 - Gaskets**
☐ Renew after removing

- 14 - Mechatronic unit**
☐ Removing and installing ⇒ [page 103](#)



15 - Bolt for mechatronic unit ⇒ Servicing 7-speed dual clutch gearbox 0CK; Rep. gr. 34 ; Mechatronic unit for dual clutch gearbox J743; Exploded view - mechatronic unit

16 - Wiring

17 - Seal

- ☐ Renew after removing

18 - Automatic gearbox control unit - J217-

- ☐ Removing and installing ⇒ Servicing 7-speed dual clutch gearbox 0CK; Rep. gr. 34 ; Mechatronic unit for dual clutch gearbox J743; Exploded view - mechatronic unit

19 - Hydraulic pressure sender 1 - G545-

- ☐ Removing and installing ⇒ Servicing 7-speed dual clutch gearbox 0CK; Rep. gr. 34 ; Mechatronic unit for dual clutch gearbox J743; Exploded view - mechatronic unit

20 - O-rings

- ☐ Renew after removing

21 - ATF pipe

- ☐ Renew after removing

22 - Seals

- ☐ Renew after removing

Oil pan - tightening torque and sequence

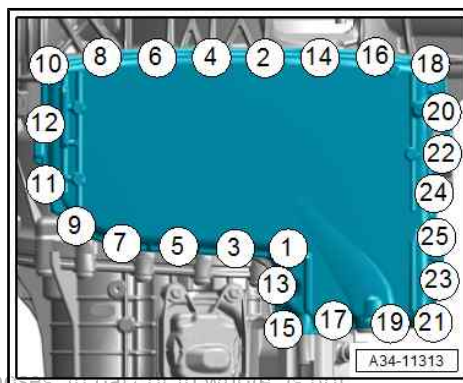


Note

For aluminium and plastic oil pans

– Tighten bolts in stages in the sequence described:

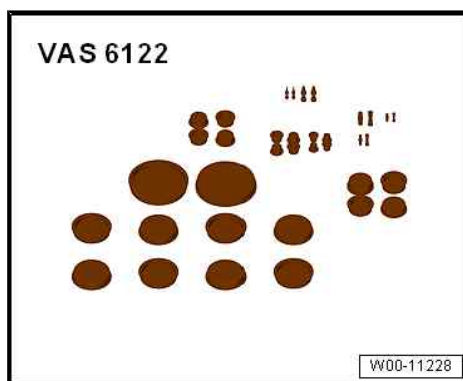
Stage	Bolts	Tightening torque/angle specification
1.	-1 ... 25-	Screw in by hand until contact is made
2.	-1 ... 25-	3 Nm
3.	-1 ... 25-	90°



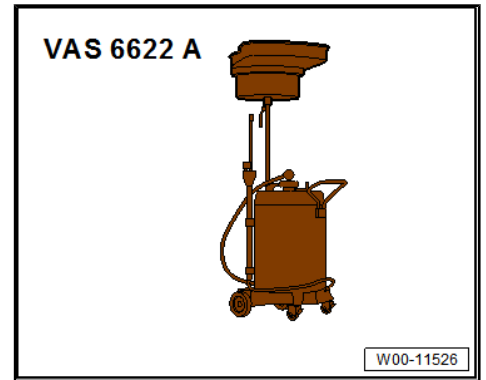
10.2 Removing and installing oil pan

Special tools and workshop equipment required

- ◆ Engine bung set - VAS 6122-



- ◆ Used oil collection and extraction unit - VAS 6622A-



Removing



Caution

Risk of damage to the gearbox.

- ◆ *Do not run the engine or tow the vehicle with the oil pan removed or when there is no gear oil in the gearbox.*



WARNING

System is pressurised.

- *Deactivate ATF pump and discharge hydraulic accumulator before removing oil pan.*

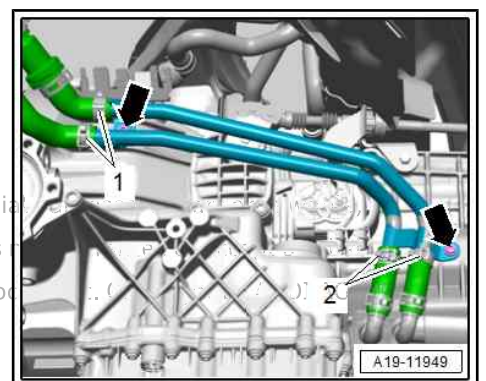
- Using ⇒ Vehicle diagnostic tester, discharge ATF accumulator in automatic gearbox control unit - J217- and disable gearbox auxiliary hydraulic pump - V552-
⇒ ["4.3 Deactivating ATF pump and discharging hydraulic accumulator", page 7](#) .
- Remove subframe cross brace ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 40 ; Subframe; Removing and installing subframe cross brace .
- Drain ATF ⇒ [page 95](#) .
- Remove bolts -arrows-



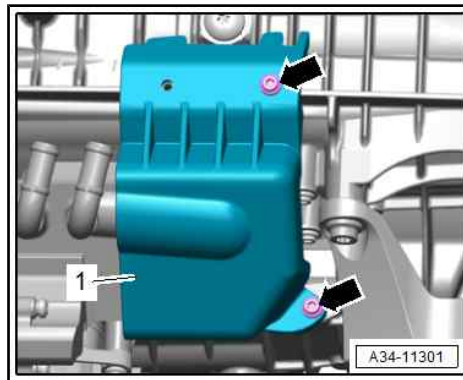
Note

Coolant hoses -2- remain connected to ATF cooler.

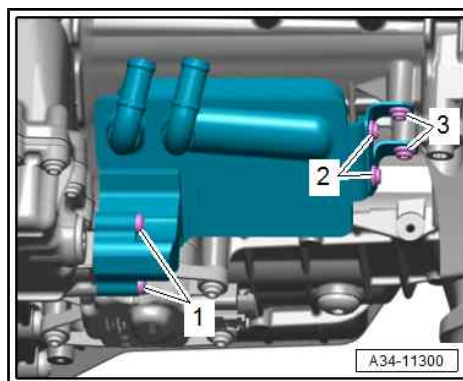
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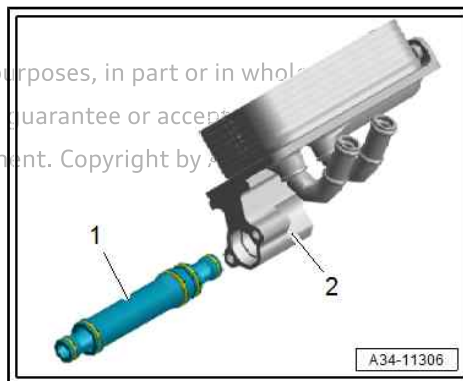
- Remove bolts -arrows- and detach guard plate -1-.



- Place used oil collection and extraction unit - VAS 6622A- underneath.
- Only slacken bolts -2- (but do not remove) and remove bolts -1, 3-.



- Pull ATF cooler -2- out of oil pan and hang up at side, ensuring that ATF pipe remains fitted on oil pan.
- Pull ATF pipe -1- out of oil pan.
- Seal off open lines and connections with clean plugs from engine bung set -VAS 6122-.



- Remove bolts in the sequence -25 ... 1- and detach oil pan.

Installing

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



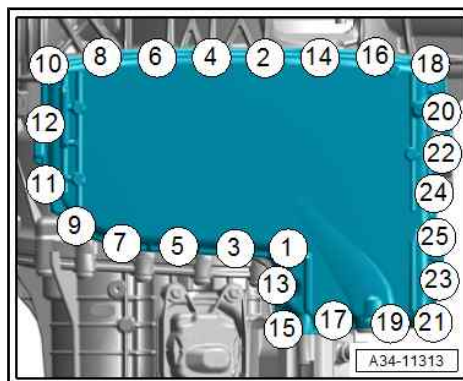
Note

Renew seal and ATF pipe.

- Install ATF cooler ⇒ [page 82](#) .

Tightening torques

- ♦ ⇒ [Fig. “Oil pan - tightening torque and sequence”](#), [page 100](#)
- ♦ Subframe cross brace ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 40 ; Subframe



10.3 Removing and installing mechatronic unit

Special tools and workshop equipment required

- ◆ Used oil collection and extraction unit - V.A.G 1782-

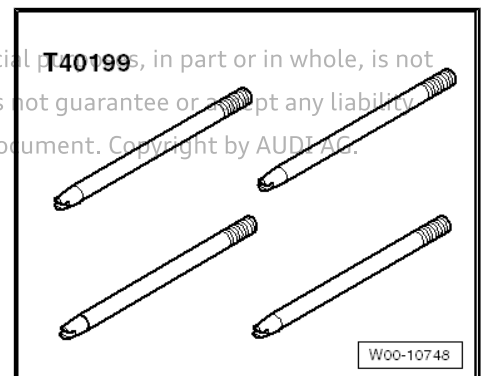


- ◆ Assembly tool - T40305-

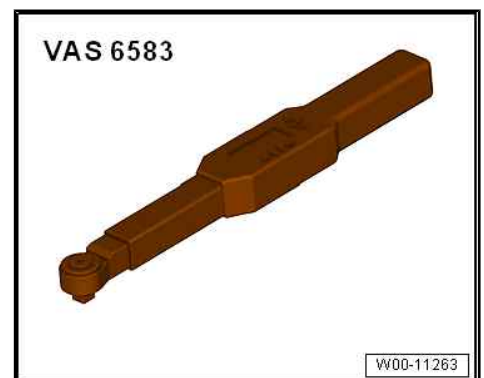


- ◆ Guide pin - T40199-

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- ◆ Torque wrench - VAS 6583-



- ◆ Cover - T40322-

◆ Support - T40321-

Removing



WARNING

System is pressurised.

- ***Deactivate ATF pump and discharge hydraulic accumulator before removing oil pan.***

- Using ⇒ Vehicle diagnostic tester, discharge ATF accumulator in automatic gearbox control unit - J217- and disable gearbox auxiliary hydraulic pump - V552-
⇒ ["4.3 Deactivating ATF pump and discharging hydraulic accumulator", page 7](#) .
- Remove subframe cross brace ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 40 ; Subframe; Removing and installing subframe cross brace .
- Remove oil pan
⇒ ["10.2 Removing and installing oil pan", page 100](#) .

All further work on the dual clutch is described in ⇒ Servicing 7-speed dual clutch gearbox 0CK; Rep. gr. 34 ; Mechatronic unit; Removing and installing mechatronic unit .

Installing

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

Tightening torques

⇒ ["10.1 Exploded view - mechatronic unit", page 99](#)

35 – Gears, shafts

1 Dismantling and assembling gears and shafts

At present there is no provision for dismantling and assembling
gears and shafts.

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39 – Final drive - differential

1 Gearbox control system

⇒ "1.1 Overview of fitting locations - gearbox control system",
page 106

1.1 Overview of fitting locations - gearbox control system

1 - Mechatronic unit for dual clutch gearbox - J743-

- Removing and installing
⇒ page 103

2 - Gearbox oil temperature sender - G93-

3 - Temperature sender in control unit - G510-

4 - Automatic gearbox control unit - J217-

5 - Gearbox input speed sender 2 - G612-

6 - Gearbox input speed sender 1 - G632-

7 - Gear selector movement sensor 4 - G490-

8 - Gear selector movement sensor 3 - G489-

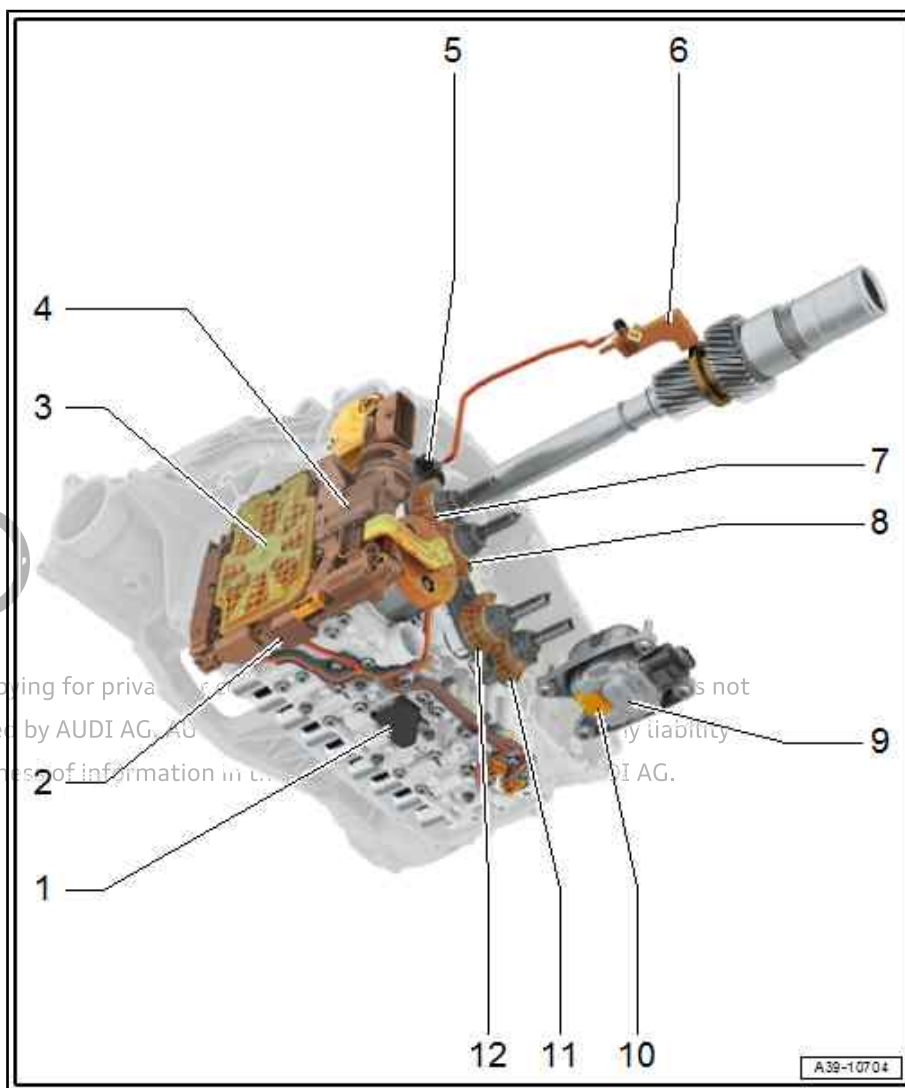
9 - Electric pump 2 for gearbox - V553-

- Removing and installing
⇒ page 77

10 - Gearbox oil temperature sender 2 - G754-

11 - Gear selector movement sensor 2 - G488-

12 - Gear selector movement sensor 1 - G487-



1 - Gearbox auxiliary hydraulic pump - V552-

2 - Rotor position sender for gearbox auxiliary hydraulic pump - G847-

3 - Gear sensor 2 - G869-

❑ Removing and installing
⇒ [page 35](#)

4 - Gear sensor - G676-

❑ Removing and installing
⇒ [page 35](#)

5 - Automatic gearbox pressure regulating valve 3 - N217-

6 - Solenoid valve 4 - N91-

7 - Solenoid valve 3 - N90-

8 - Solenoid valve 5 - N92-

9 - Solenoid valve 6 - N93-

10 - Solenoid valve 1 - N88-

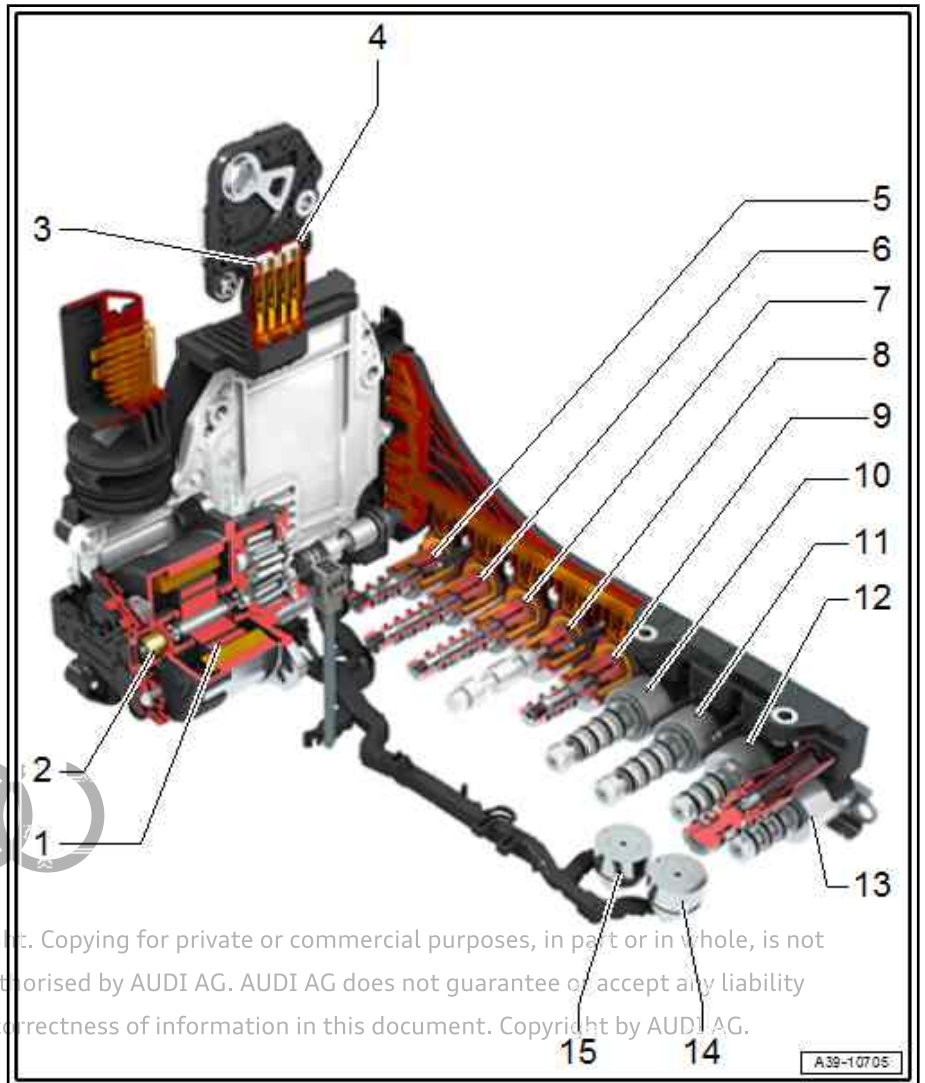
11 - Solenoid valve 2 - N89-

12 - Automatic gearbox pressure regulating valve 2 - N216-

13 - Automatic gearbox pressure regulating valve 1 - N215-

14 - Hydraulic pressure sender 1 - G545-

15 - Hydraulic pressure sender 2 - G546-



2 Oil seals

⇒ ["2.1 Overview of fitting locations - oil seals", page 108](#)

⇒ ["2.2 Renewing oil seal \(left-side\)", page 108](#)

⇒ ["2.3 Renewing oil seal \(right-side\)", page 108](#)

2.1 Overview of fitting locations - oil seals

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1 - Flywheel

- ❑ Removing and installing
⇒ Servicing; Rep. gr. 30 ; Clutch; Removing and installing flywheel

2 - Flange shaft oil seal (left-side)

- ❑ Renewing ⇒ Servicing; Rep. gr. 39 ; Oil seals; Renewing oil seal (left-side)

3 - Front differential

4 - O-ring

- ❑ Renew after removing

5 - Cover for final drive

- ❑ Removing and installing
⇒ Servicing; Rep. gr. 39 ; Oil seals; Renewing oil seal (left-side)

6 - Flange shaft (right-side)

- ❑ Removing and installing
⇒ [page 117](#)

7 - Flange shaft oil seal (right-side)

- ❑ Renewing ⇒ [page 108](#)

8 - Gearbox selector lever

9 - Oil seal for selector shaft

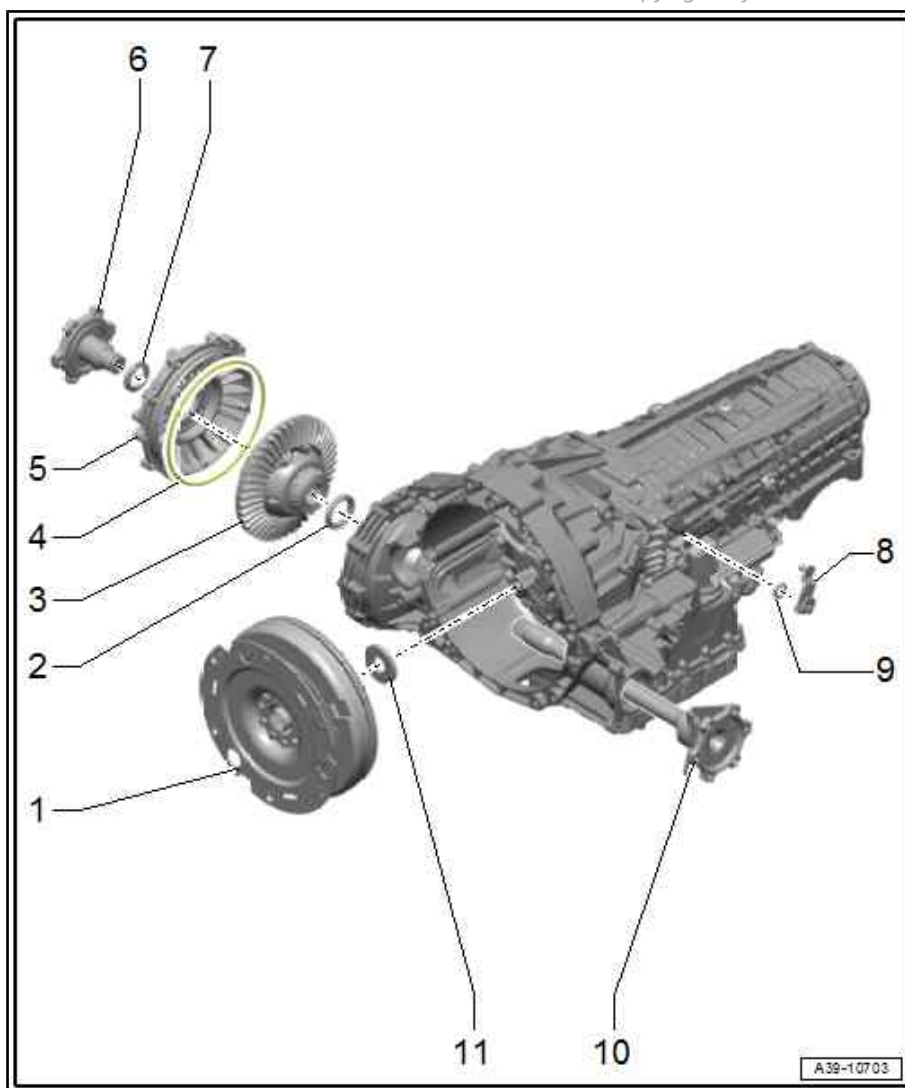
- ❑ Renewing ⇒ [page 37](#)

10 - Flange shaft (left-side)

- ❑ Removing and installing
⇒ [page 114](#)

11 - Input shaft oil seal

- ❑ Renewing ⇒ Servicing; Rep. gr. 39 ; Oil seals; Renewing input shaft oil seal



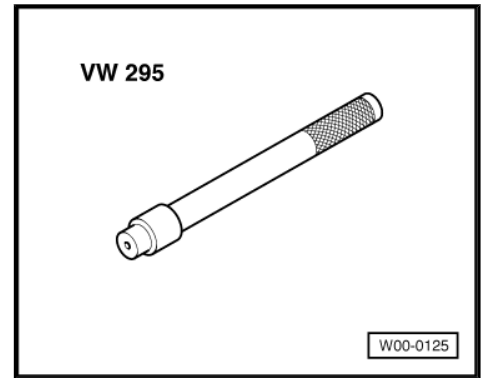
2.2 Renewing oil seal (left-side)

Description of work sequence ⇒ Servicing; Rep. gr. 39 ; Oil seals; Renewing oil seal (left-side)

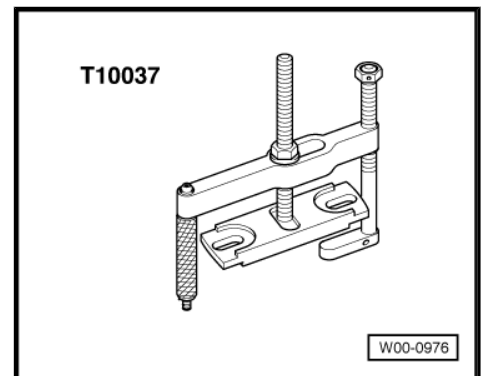
2.3 Renewing oil seal (right-side)

Special tools and workshop equipment required

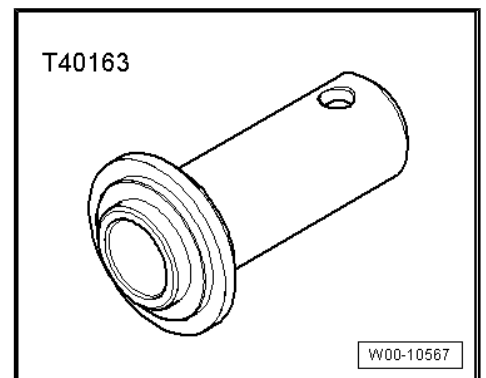
◆ Drift - VW 295-



◆ Puller - T10037-



◆ Thrust piece - T40163-

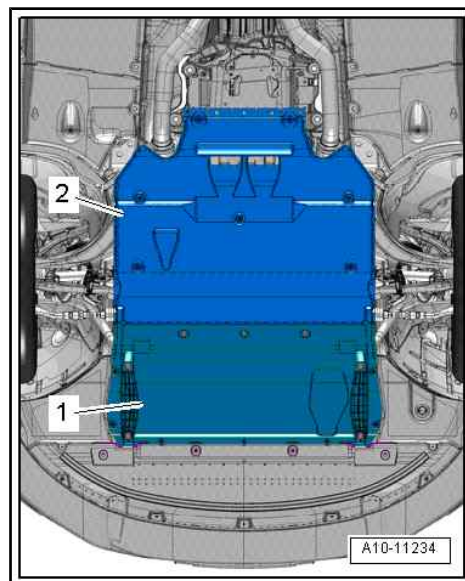


◆ Sealing grease - G 052 128 A1-

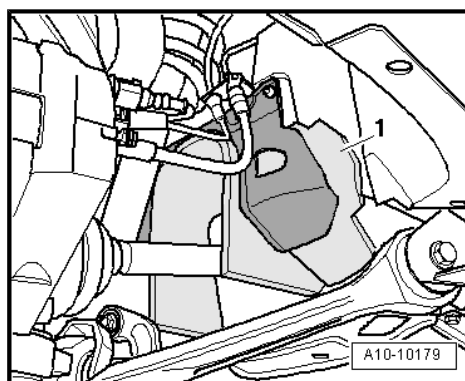
Removing

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- Gearbox is installed.
 - Refer to general repair instructions [→ page 3](#).
 - Remove front right wheel.

- Remove rear noise insulation -2- ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Removing and installing underbody trim .



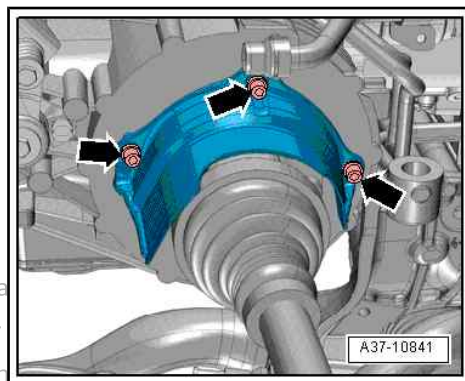
- If fitted, remove noise insulation -1- from wheel housing (right-side).



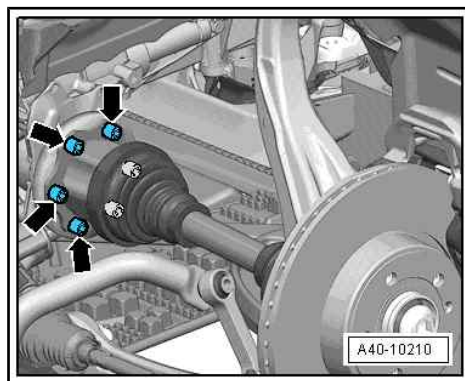
- Remove bolts -arrows- and detach heat shield for drive shaft (right-side).



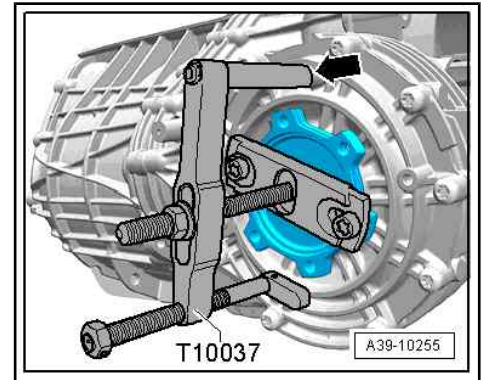
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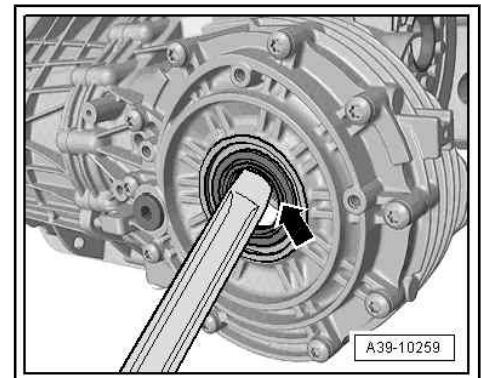
- Unbolt drive shaft (right-side) from gearbox and place to one side ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 40 ; Drive shaft; Loosening and tightening bolt securing drive shaft .



- Place drip tray under gearbox.
- Remove flange shaft (right-side); to do so, secure puller - T10037- to gearbox housing -arrow-.



- Lever out flange shaft oil seal.



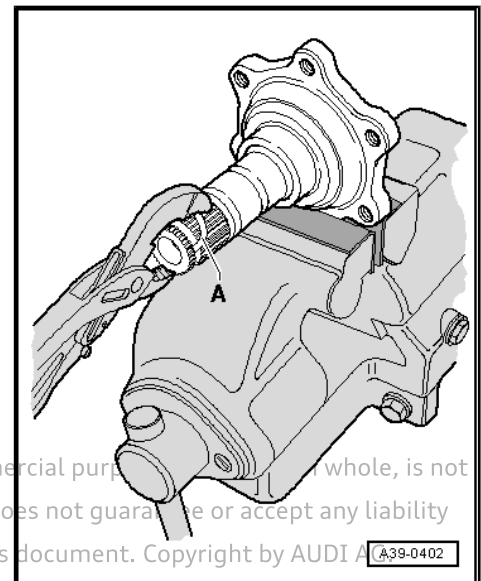
Installing

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

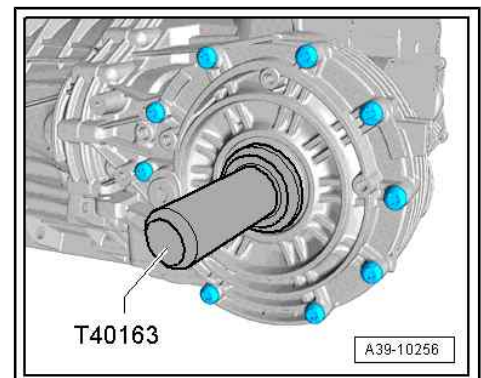
- Always renew circlip for flange shaft -A-.
- Clamp flange shaft in vice, using jaw protectors. Use new circlip -A- to press old circlip out of groove in flange shaft.



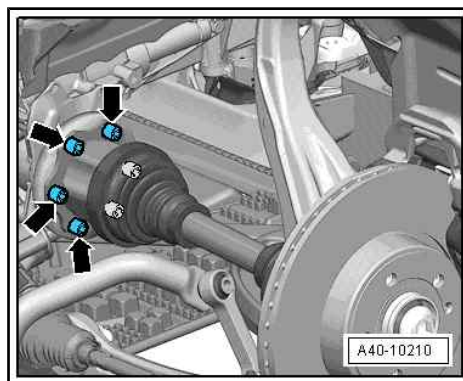
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- Lightly oil outer circumference of new oil seal.
- Drive in new flange shaft oil seal (right-side) as far as stop; keep seal straight when installing.
- Pack space between sealing lip and dust lip half-full with sealing grease - G 052 128 A1- .
- Knock flange shaft in with drift - VW 295- .



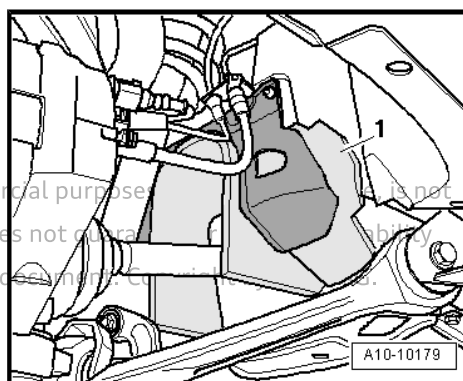
- Attach drive shaft to flange shaft ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 40 ; Drive shaft; Loosening and tightening bolt securing drive shaft .
- Install heat shield for drive shaft and tighten bolts to specified torque ⇒ [page 112](#) .
- Top up gear oil and check oil level ⇒ [page 87](#) .



- If fitted, install noise insulation -1- in wheel housing (right-side).
- Install rear noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Underbody trim; Removing and installing underbody trim .

Tightening torque

Component	Nm
Heat shields for drive shafts to gearbox	23



3 Differential

⇒ ["3.1 Exploded view - differential", page 113](#)

⇒ ["3.2 Removing and installing flange shaft \(left-side\)", page 114](#)

⇒ ["3.3 Removing and installing flange shaft \(right-side\)", page 117](#)

3.1 Exploded view - differential

1 - Flange shaft oil seal (left-side)

- ☐ Renewing ⇒ Servicing; Rep. gr. 39 ; Oil seals; Renewing oil seal (left-side)

2 - Shim

- ☐ Behind tapered roller bearing outer race

3 - Tapered roller bearing outer race

4 - Front differential

5 - Bolt

- ☐ Tightening torque and sequence ⇒ [page 114](#)

6 - Circlip

- ☐ Renew

7 - Flange shaft (right-side)

- ☐ Removing and installing ⇒ [page 117](#)

8 - Flange shaft oil seal (right-side)

- ☐ Renewing ⇒ [page 108](#)

9 - Cover for final drive

- ☐ Removing and installing ⇒ Servicing; Rep. gr. 39 ; Oil seals; Renewing oil seal (left-side)

10 - O-ring

- ☐ Renew after removing

11 - Shim

- ☐ Behind tapered roller bearing outer race

12 - Tapered roller bearing outer race

13 - Flange shaft (left-side)

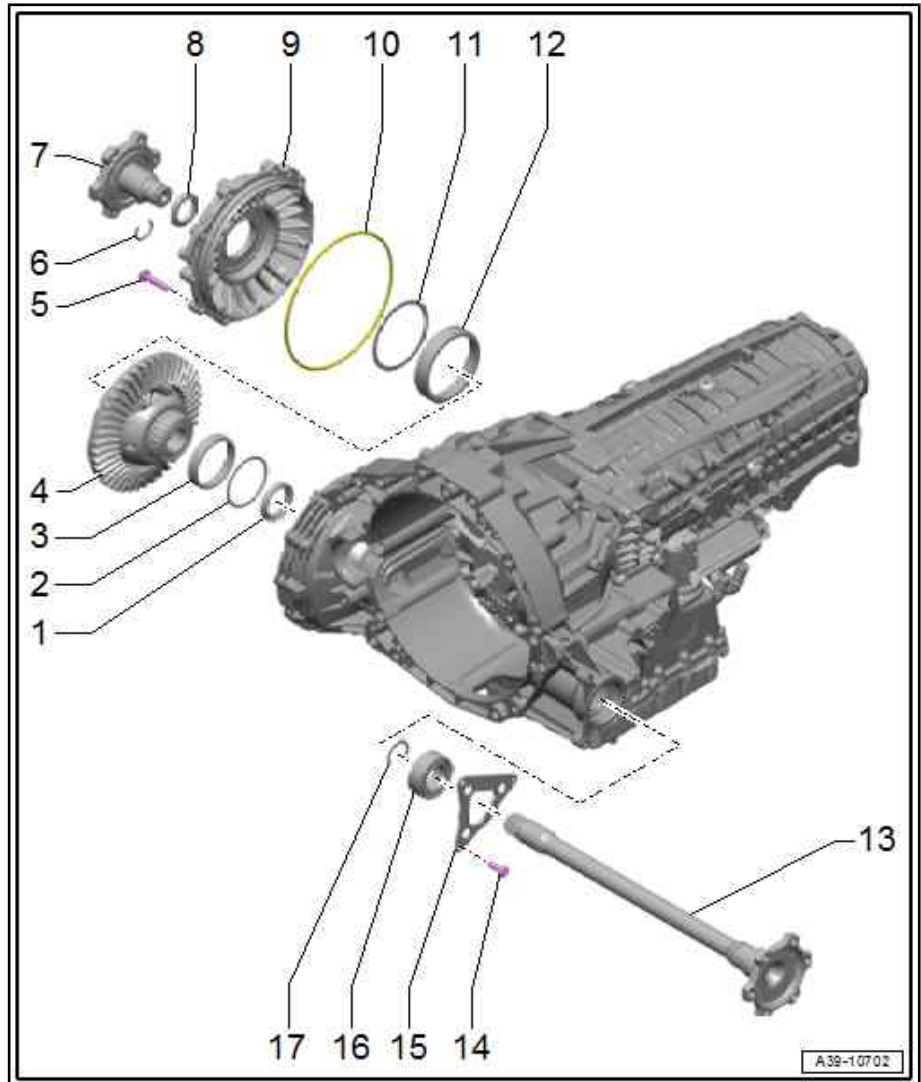
- ☐ Removing and installing ⇒ [page 114](#)

14 - Bolt

- ☐ 3x
- ☐ Tightening torque: 10 Nm + 90°

15 - Bearing plate

- ☐ Secured to flange shaft (left-side) together with bearing -item 16- by circlip -17-



16 - Bearing

- ☐ For flange shaft (left-side)

17 - Circlip

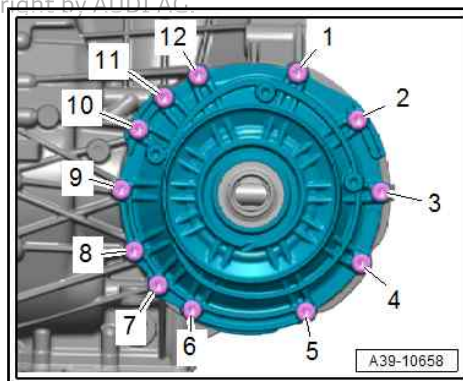
- ☐ For bearing for flange shaft (left-side)

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Cover for final drive - tightening torque and sequence

- Tighten bolts in stages in the sequence described:

Stage	Bolts	Tightening torque/angle specification
1.	-1 ... 12-	3 Nm
2.	-1 ... 12-	20 Nm
3.	-1 ... 12-	90°



3.2 Removing and installing flange shaft (left-side)

Special tools and workshop equipment required

- ◆ Engine and gearbox jack - V.A.G 1383 A-



- ◆ Sealing grease ⇒ Electronic parts catalogue

Removing

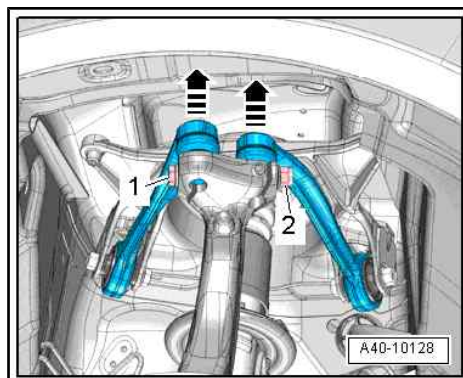
- Gearbox in vehicle
- Drain off gear oil ⇒ [page 87](#) .
- Remove drive shaft (left-side) ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .
- Unscrew nut -2- and remove bolt -1-.
- Remove upper links upwards from wheel bearing housing -arrows-.



Note

The slots in the wheel bearing housing must NOT be widened.

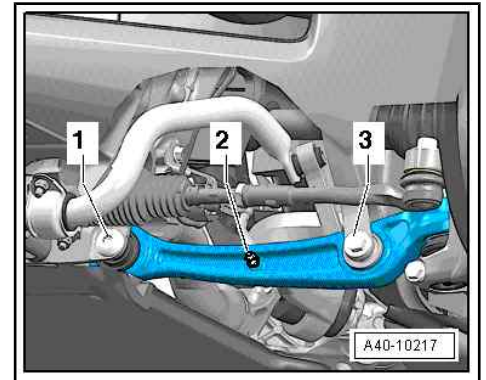
- Pivot wheel bearing housing up to one side.



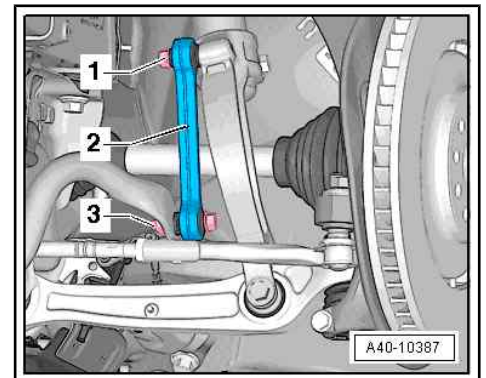
- Support track control link with engine and gearbox jack - V.A.G 1383 A- .
- Unfasten bolted connection -3- for shock absorber.

 Note

Disregard items -1 and 2-.

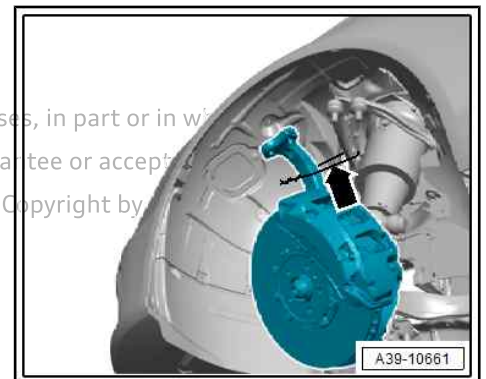


- Unfasten bolted connections -1- and -3-.
- Take out coupling rod -2-.

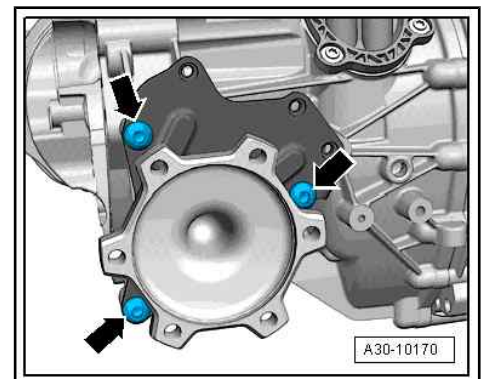


- Tie wheel bearing housing to one side with wire -arrow-.

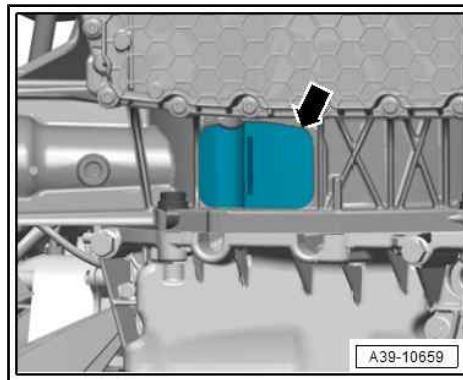
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- Unscrew bolts -arrows- on mounting bracket for flange shaft.



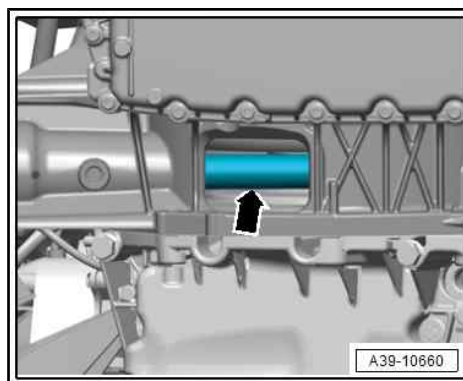
- Pull cover -arrow- (bottom) out of gearbox.



WARNING

Risk of damage to oil seal between final drive and gearbox housing when detaching flange shaft.

- ◆ Hold flange shaft -arrow- so that it is centred, otherwise oil seal will be damaged by flange shaft splines.
- ◆ If the oil seal is damaged, it must be renewed.



- To avoid damaging oil seal, support flange shaft and guide it out through opening in gearbox.
- Remove flange shaft (left-side) from gearbox in direction of -arrow A-.



Note

-Items 1, 3- and -arrow B- can be disregarded.

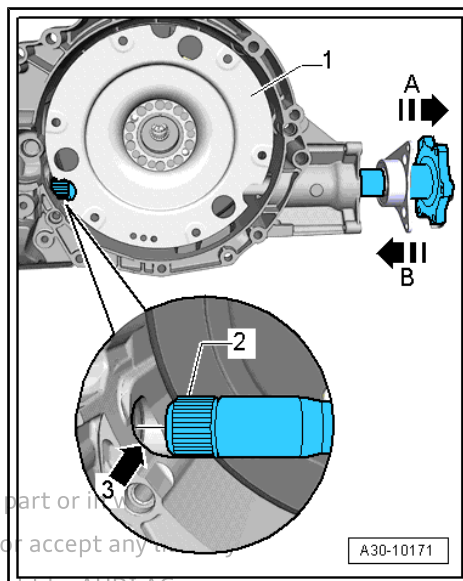
Installing

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



Note

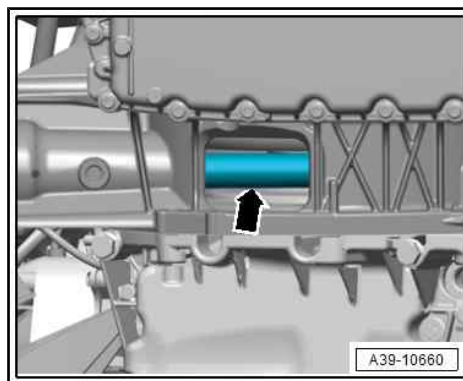
Renew bolts which are tightened by turning through a specified angle.



WARNING

Risk of damage to oil seal between final drive and gearbox housing when inserting flange shaft.

- ◆ Hold flange shaft -arrow- so that it is centred, otherwise oil seal will be damaged by flange shaft splines.
- ◆ If the oil seal is damaged, it must be renewed.

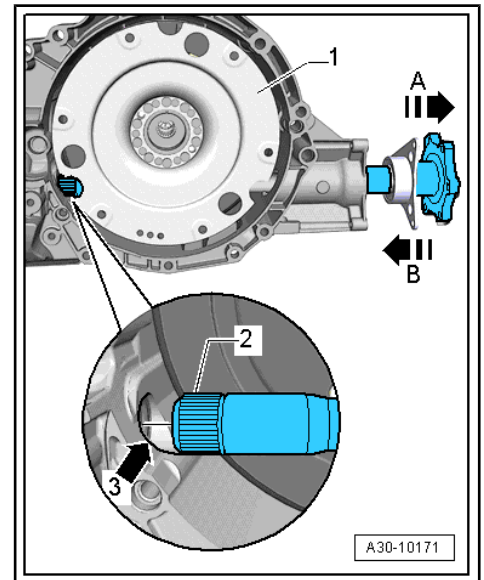


- To avoid damaging oil seal, support flange shaft and guide it in through opening in gearbox.

- Slide flange-shaft (left-side) -2- into gearbox in direction of -arrow B- (keep end of shaft centred while guiding it into oil seal on front final drive -arrow 3-).

Tightening torque

- ◆ ⇒ ["3.1 Exploded view - differential", page 113](#)
- ◆ Upper links and coupling rod ⇒ Running gear; front-wheel drive and four-wheel drive; Rep. gr. 40 ; Suspension strut, upper links; Exploded view - suspension strut, upper links
- ◆ Drive shaft ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 40 ; Drive shaft; Exploded view - drive shaft



3.3 Removing and installing flange shaft (right-side)

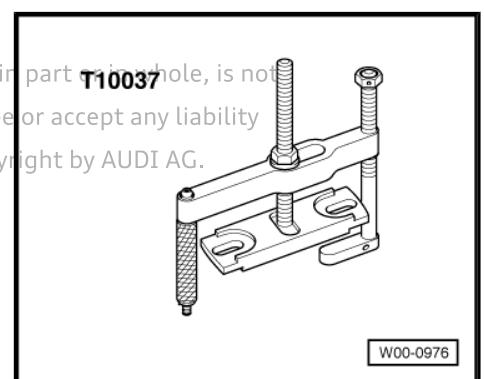
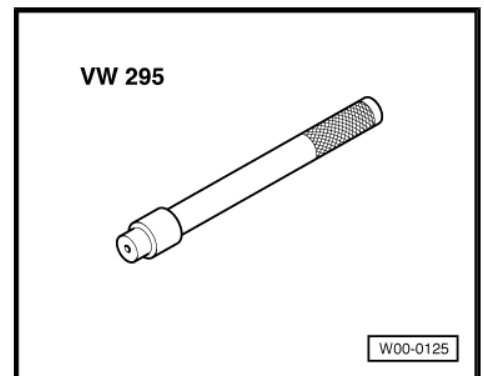
Special tools and workshop equipment required

- ◆ Drift - VW 295-

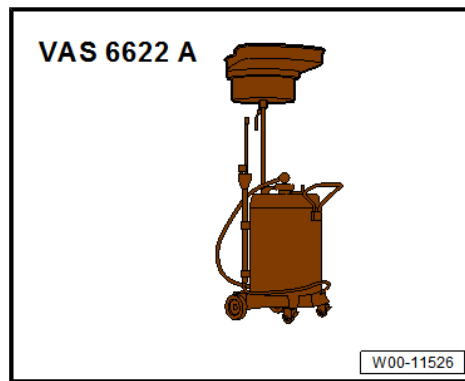


- ◆ Puller - T10037-

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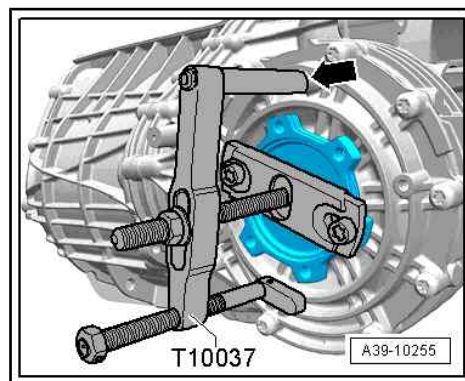
- ◆ Used oil collection and extraction unit - VAS 6622A-



- ◆ Sealing grease ⇒ Electronic parts catalogue
- ◆ Nuts M10 (2x)

Removing

- Remove drive shaft (right-side) ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .
- Place used oil collection and extraction unit - VAS 6622A- underneath.
- Secure puller - T10037- to gearbox housing -arrow- and detach flange shaft.



Installing

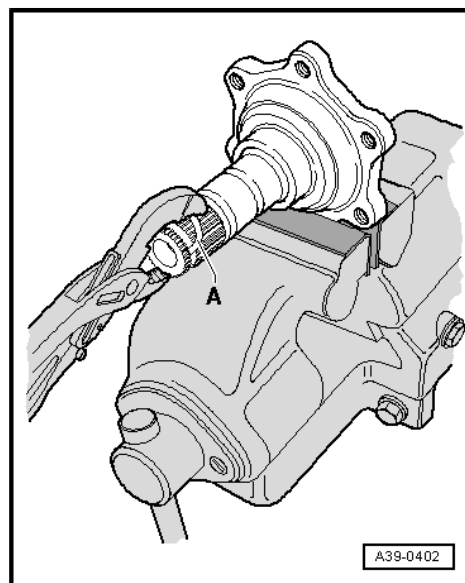
Installation is carried out in reverse order; note the following:



Note

Renew circlip.

- Clamp flange shaft in vice, using jaw protectors. Use new circlip -A- to press old circlip out of groove in flange shaft.
- Pack space between sealing lip and dust lip half full with sealing grease; for sealing grease refer to ⇒ Electronic parts catalogue .
- Drive in flange shaft (right-side) with drift - VW 295- .
- Install drive shaft (right-side) ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .
- Check gear oil level ⇒ [page 86](#) .



Tightening torque

- ◆ Drive shaft ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 40 ; Drive shaft; Exploded view - drive shaft