

Repair Manual

Audi A6 2011 ➤

Audi A6 Avant 2011 ➤

Audi A7 Sportback 2011 ➤

Audi A7 Sportback USA 2011 ➤

7-Speed Dual Clutch Transmission 0CK									
Engine ID	CYN B	CPN B							

Edition 11.2015

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List of Workshop Manual Repair Groups

Repair Group

00 - General, Technical Data

30 - Clutch

34 - Controls, Housing

35 - Gears, Shafts

39 - Final Drive, Differential



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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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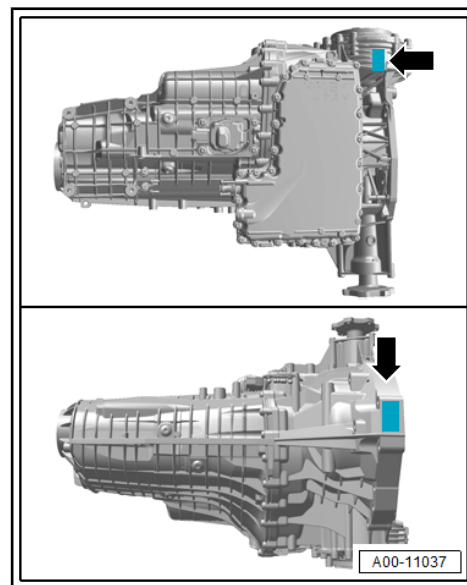
00 – General, Technical Data

1 Identification

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The following details can be found on the transmission housing -arrows-:

- ◆ Codes
- ◆ Serial Number
- ◆ Production Date



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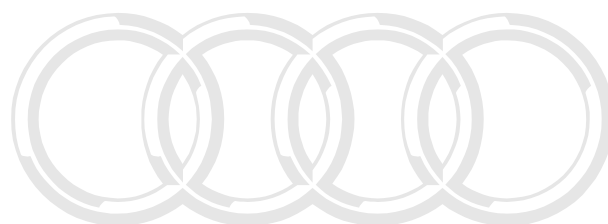


2 Technical Data

⇒ "2.1 Capacities", page 2

2.1 Capacities

Capacities	Automatic Transmission Fluid	Transmission Fluid
Original filling by the manufacturer	Refer to ⇒ Fluid Capacity Tables; Rep. Gr. 03	Refer to ⇒ Fluid Capacity Tables; Rep. Gr. 03
ATF change quantity	Refer to ⇒ Maintenance Intervals; Rep. Gr. 03	Refer to ⇒ Maintenance Intervals; Rep. Gr. 03
Change Interval	⇒ Maintenance Intervals; Rep. Gr. 03	
Lubricant	For ATF and MTF transmission fluid for S tronic transmission 0CK. Refer to the Parts Catalog	



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3 Safety Precautions

⇒ [“3.1 General Safety Precautions”, page 3](#)

⇒ [“3.2 Start/Stop System Safety Precautions”, page 3](#)

⇒ [“3.3 Road Test with Testing Equipment Safety Precautions”, page 4](#)

⇒ [“3.4 Safety Precautions when Tow Starting and Towing”, page 4](#)

3.1 General Safety Precautions

Observe the following to Avoid Personal Injury and Vehicle Damage:



WARNING

There is a risk of injury and accident from accidentally engaging a gear when the engine is running.

- ◆ *Before work is done when the engine is running, place the selector lever in the “P” position and press the parking brake button to engage the electro-mechanical parking brake.*

To Prevent Personal Injury and Damage to Electrical and Electronic Components, Observe the Following:

- ◆ Connect and disconnect test equipment only when the ignition is off.



Caution

Risk of damaging electronic components when disconnecting the battery.

- ◆ *Complete the steps for disconnecting the battery.*
- ◆ *Always turn off the ignition before disconnecting the battery.*

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

3.2 Start/Stop System Safety Precautions

Pay Attention to the following When Working on a Vehicle with Stop/Start System:



WARNING

There is a risk of injury if the engine starts automatically in vehicles with the Start/Stop System.

- ◆ *For vehicles with an activated Start/Stop System (recognizable from a notification in the instrument cluster), the motor can be started automatically if needed.*
- ◆ *Make sure the Start/Stop System is disabled when working on the vehicle (turn off ignition, if needed, turn the ignition back on).*



3.3 Road Test with Testing Equipment Safety Precautions

If Testing Equipment Must Be Used during a Road Test, Observe the Following:



WARNING

Distraction and testing equipment that is not secured properly can cause accidents.

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The passenger airbag could pose a risk if it deploys in a collision.

- *Operating testing equipment while driving is a distraction.*
- *Testing equipment that is not secured probably increases the risk of injury.*
- ◆ *Always secure testing equipment on the rear seat using a strap and have a second person in the rear seat operate it.*

3.4 Safety Precautions when Tow Starting and Towing



Caution

Move the selector lever to "N" when towing the vehicle. Do not drive longer than 50 km and do not drive faster than 50 km/h (31 mph) because this will damage the transmission.



Note

The engine cannot be tow started, for example, if the battery is too weak or if the starter is not working.

4 Repair Information

⇒ [“4.1 Guidelines for Clean Working Conditions”, page 5](#)

⇒ [“4.2 General Repair Information”, page 5](#)

⇒ [“4.3 ATF Pump, Deactivating and Draining the Hydraulic Pump Reservoir”, page 7](#)

⇒ [“4.4 Contact Corrosion”, page 7](#)

⇒ [“4.5 Transmission Control Module Safety Functions”, page 8](#)

4.1 Guidelines for Clean Working Conditions

- ◆ Always clean connection places and surrounding areas with engine or brake cleaner before loosening and dry cleaned places.
- ◆ Clean the transmission and transmission components using Cleaning Solution - D 009 401 04- .
- ◆ Use lint-free cloths when cleaning, for example, the “ X70 / ” cloth made by Kimberly-Clark Professional.
- ◆ Seal all open lines and connections immediately with clean plugs or caps from the Engine Bung Set - VAS6122- .
- ◆ Place removed parts on a clean surface and cover them. Use foil and paper. Use a lint-free cloth!
- ◆ Carefully cover or plug unpacked components if repairs cannot be performed immediately.
- ◆ Only install clean components: Install replacement parts immediately after removing them from their packaging.
- ◆ Protect the disconnected connectors from dirt and moisture and only connect when they are dry.

4.2 General Repair Information

- ◆ Carefulness, cleanliness and the correct tools are required for transmission repairs to be successful. The usual basic safety precautions also, naturally apply when carrying out vehicle repairs.
- ◆ Some general repair information that applies to several procedures throughout this manual is summarized here. They apply to this repair manual.

Guided Fault Finding, On Board Diagnostics (OBD) and Test Instruments

- ◆ Determine the cause of the malfunction as accurately as possible using Guided Fault Finding, OBD and Test Instruments before starting any repairs on the transmission using the Vehicle Diagnostic Tester .

Special Tools and Equipment

For a complete list of special tools used in the Repair Manual. Refer to Workshop Equipment and Special Tools.

Oil, Environmental and Disposal Regulations

- ◆ Handle transmission fluid, axle oil and other fluids with care.
- ◆ Dispose of the drained fluids properly.
- ◆ Follow the legal environmental and disposal regulations.



- ◆ Follow the information provided on oil packaging.

Transmission

- ◆ Do not run engine or tow the vehicle when the oil pan is removed or when there is no transmission fluid.
- ◆ Always clean the connection locations and the area around them before loosening.
- ◆ During installation, make sure that the alignment bushings are fitted correctly.

O-Rings, Gaskets, Seals

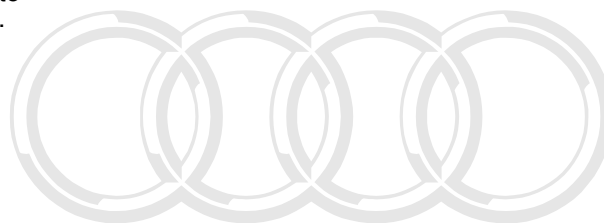
- ◆ O-rings, gaskets and seals must be replaced.
- ◆ After removing gaskets, examine contact surface on housing/shaft for burr resulting from removal or for other signs of damage.
- ◆ Thoroughly clean housing joint surfaces before assembling.
- ◆ Replace paper gaskets, thoroughly clean sealing surfaces and completely remove old seals.
- ◆ Lightly coat the seals with ATF along outer circumference and along the sealing lip.
- ◆ Coat the O-rings with transmission fluid or Vaseline before inserting them so they are not crushed during installation.
- ◆ Do not use any other lubricants in the gear oil area. Otherwise there is a danger of malfunction of the transmission hydraulics.
- ◆ The open side of the seals point toward the fluid to be sealed in.
- ◆ When installing the new shaft seals, make sure the sealing lip does not run on the same point as the sealing lip of the old seal (use insertion depth tolerances).
- ◆ Follow the guidelines for clean working conditions. Refer to [⇒ "4.1 Guidelines for Clean Working Conditions", page 5](#).

Fasteners

- ◆ Do not overstretch the circlips.
- ◆ Replace damaged or stretched circlips.
- ◆ The circlips must fit completely inside the groove.

Bolts and Nuts

- ◆ Loosen the bolts opposite the tightening sequence.
- ◆ Nuts and bolts which secure covers and housings should be loosened and tightened crosswise in stages if no tightening sequence is specified.
- ◆ Replace the self-locking nuts.
- ◆ Use a wire brush to clean the threads of bolts that were screwed in with locking compound. Install the bolts with Locking Fluid - AMV 185 101 A1-.
- ◆ The tightening specifications stated apply to non-oiled nuts and bolts.



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4.3 ATF Pump, Deactivating and Draining the Hydraulic Pump Reservoir



WARNING

The system is under pressure.

The ATF transmission "7 speed S tronic Transmission 0CK" is equipped with an electronic ATF pump and a hydraulic pressure reservoir.

The electronic ATF pump can start up at any time.

The ATF system also remains under pressure with the ignition switched off due to the hydraulic pressure reservoir.

- ◆ *The electronic ATF pump must be deactivated every time before opening the transmission, and the hydraulic pressure reservoir is drained.*
- ◆ *When the system status is not clear, for example the cause of a faulty transmission control module or transmission is unknown, only loosen the mechatronic bolts to a minimal degree, so that the oil pressure in the pressure reservoir can decrease slowly.*
- ◆ *Disconnect the Transmission Control Module - J217- connector before removing the oil pan.*
- ◆ *Wear protective eyewear.*

ATF Pump, Deactivating and Draining the Hydraulic Pump Reservoir

- Connect the Vehicle Diagnostic Tester with the vehicle and start the **Diagnostic** mode.

- ◆ **Select Vehicle Test**
- ◆ **02-Transmission Electronics, Functions**
- ◆ **02 ATF Pressure Reduction/Disabling the ATF Pump** or **02-ATF Level** ⇒ **Draining ATF**

4.4 Contact Corrosion

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

For this reason, only fasteners with a special surface coating may be installed.

Furthermore, only rubber/plastic parts and adhesive made of electrically non-conductive materials are used.

If there are doubts about whether parts can be used or not, then use new parts. Refer to the Parts Catalog.



Note

- ◆ *Only original replacement parts are recommended, they are checked and compatible with aluminum.*
- ◆ *The use of Audi accessories is recommended.*
- ◆ *Damage resulting from contact corrosion is not covered by the warranty.*

4.5 Transmission Control Module Safety Functions

If one or more components and/or sensors malfunction, the automatic control module will activate the appropriate replacement function. This guarantees the non-destructive operation of the transmission with respective implications on shift function and quality.

When malfunctions are detected by the transmission, a distinction is made between 4 possible statuses.

- ◆ 1.: The fault is stored and a substitute program permits further driving (in some cases with restrictions). The driver is not notified of this status, because it is neither critical for the driving safety nor for the transmission. The selector lever position indicator in the instrument cluster provides a normal display of the current selector lever position arrow. The driver will only notice the fault - if it is noticed at all - in terms of handling problems and will then automatically consult Audi Service.
- ◆ 2. Certain selector lever positions will flash in the transmission range display in the instrument cluster. The driver is shown that a desired gear selection is currently not possible. This is the case if, for example, a reverse drive (selector lever position "R" and the vehicle rolls backwards) is engaged in the driving gear "D". The selector lever position "D" in the selector lever position indicator in the instrument cluster will blink in this case. The transmission control module prevents engaging the 1st gear in order to avoid damaging the transmission. The 1st gear is engaged after the vehicle comes to a standstill.
- ◆ 3. The selector lever position display in the instrument cluster is completely illuminated and blinks. The selector lever position can be recognized in the instrument cluster, for example, "D" is highlighted. The transmission was overloaded in this case and the maximum temperature in the transmission was exceeded (overheating), for example, due to towing a trailer with an excessively high load.
- ◆ 4. A fully illuminated, flashing transmission range display in instrument cluster is an indication of a serious fault in the transmission. In the display in the instrument cluster, you can no longer recognize which position is selected on the selector lever. The status is critical for driving safety or for the transmission. Under certain conditions, all gears can no longer be engaged. Through the blinking gear selection indicator, the driver is told to visit an Audi service dealer.



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5 Electrical Components

Refer to

⇒ [“5.1 Component Location Overview - Electrical Components”, page 9](#)

5.1 Component Location Overview - Electrical Components

DSG Transmission Mechatronic - J743- . Refer to

⇒ [“1.1 Component Location Overview - Transmission Control Module”, page 104](#)

Transmission Park Selector Switch - F305- . Refer to

⇒ [“1.3 Overview - Selector Mechanism”, page 14](#)

Shift Lock Solenoid - N110- . Refer to

⇒ [“1.3 Overview - Selector Mechanism”, page 14](#)

Selector Lever Sensor System Control Module - J587- with Tip-tronic Switch - F189- . Refer to

⇒ [“1.3 Overview - Selector Mechanism”, page 14](#)

Drive Position Sensor - G676- and Drive Position Sensor 2 - G869- . Refer to

⇒ [“1.3 Overview - Selector Mechanism”, page 14](#)



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30 – Clutch

1 Clutch

All work procedures for the dual clutch are described under: ⇒ S
tronic Transmission Internal Components; Rep. Gr. 30 ; Clutch



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34 – Controls, Housing

1 Selector Mechanism

⇒ [“1.1 Overview - Operating Cables”, page 11](#)

⇒ [“1.2 Overview - Selector Lever Handle”, page 13](#)

⇒ [“1.3 Overview - Selector Mechanism”, page 14](#)

⇒ [“1.4 Emergency Release from P”, page 16](#)

⇒ [“1.5 Selector Lever Handle, Removing and Installing”, page 16](#)

⇒ [“1.6 Button in Handle, Moving Into Installation Position”, page 18](#)

⇒ [“1.7 Selector Mechanism, Removing and Installing”, page 20](#)

⇒ [“1.8 Selector Mechanism, Checking”, page 22](#)

⇒ [“1.9 Selector Lever Cable, Removing and Installing”, page 25](#)

⇒ [“1.10 Selector Lever Cable, Checking and Adjusting”, page 28](#)

⇒ [“1.11 Shift Lock Solenoid N110 , Removing and Installing”, page 32](#)

⇒ [“1.12 Selector Lever Sensor System Control Module J587 , Removing and Installing”, page 34](#)

⇒ [“1.13 Drive Position Sensor G676 , Removing and Installing”, page 34](#)

⇒ [“1.14 Selector Shaft Seal, Replacing”, page 36](#)

1.1 Overview - Operating Cables

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1 - Bolt

- ☐ 8 Nm
- ☐ Quantity: 2

2 - Cable Mounting Bracket

3 - Selector Lever Cable

- ☐ Do not bend
- ☐ Removing and installing. Refer to [⇒ "1.9 Selector Lever Cable, Removing and Installing", page 25](#).
- ☐ The selector lever cable must be replaced if the rubber grommet is damaged.
- ☐ Lubricate the ball socket lightly with Polycarbamide Grease - G 052 142 A2- before installing.
- ☐ Make sure the rubber grommet on the transmission side is not twisted when installing.
- ☐ Adjusting. Refer to [⇒ "1.10.1 Selector Lever Cable, Adjusting", page 28](#).
- ☐ Bring into installed position. Refer to [⇒ "1.10.2 Selector Lever Cable, Bringing into Basic Setting", page 29](#).

4 - Clip

- ☐ For selector lever cable

5 - Gearshift Lever

6 - Bolt

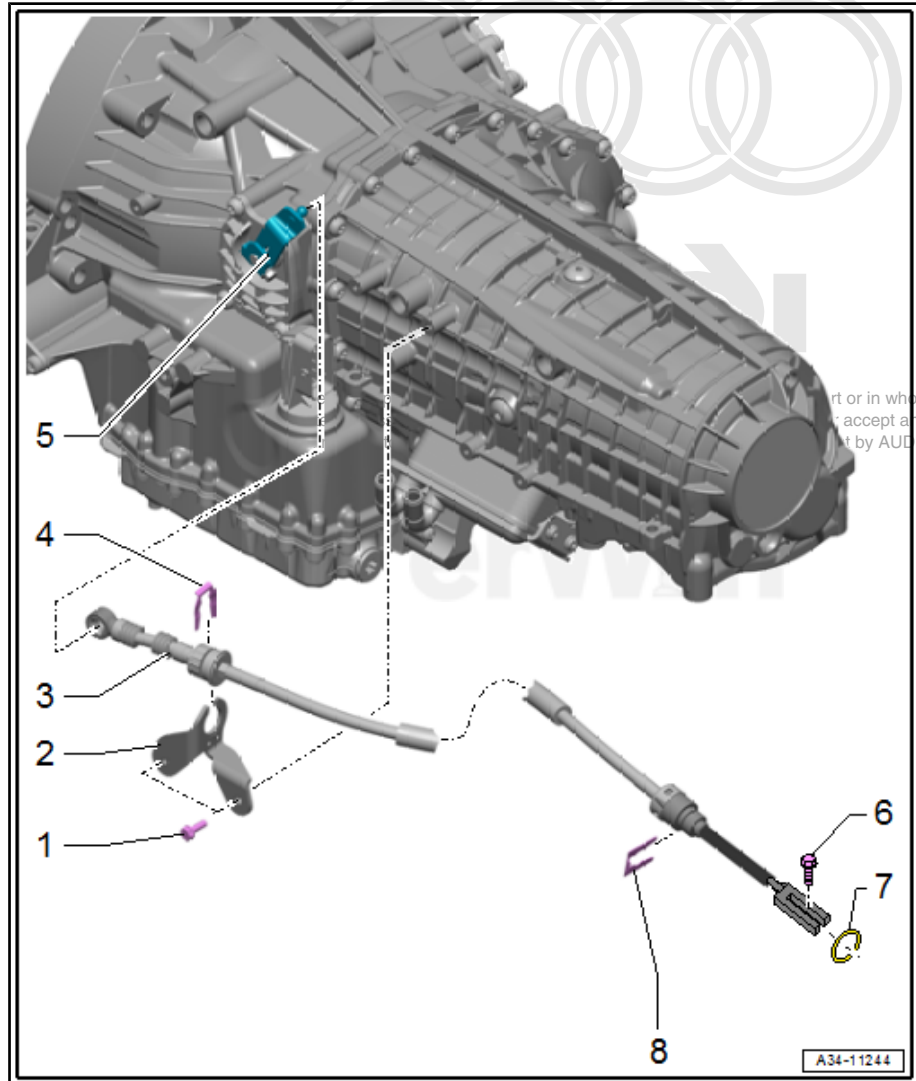
- ☐ 13 Nm
- ☐ For selector lever cable adjustment
- ☐ On the gearshift mechanism

7 - O-Ring

- ☐ Replace after removing

8 - Clip

- ☐ For selector lever cable
- ☐ Replace after removing



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1.2 Overview - Selector Lever Handle

1 - Selector Lever Transmission Range Position Display Unit - Y26-

- ❑ Removing and installing. Refer to ⇒ Electrical Equipment; Rep. Gr. 96 ; Lamps; Selector Lever Transmission Range Position Display Unit Y26, Removing and Installing. .

2 - Multimedia System Control Head - E380-

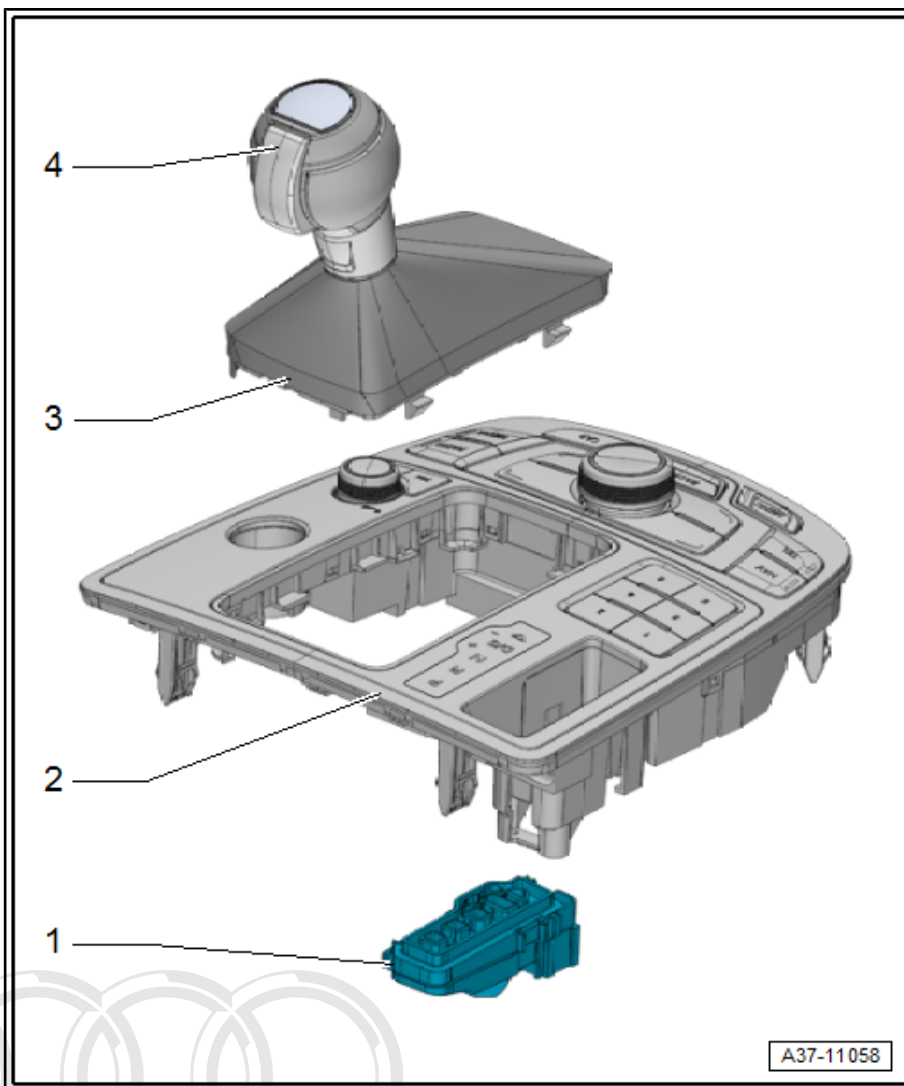
- ❑ Removing and installing. Refer to ⇒ Communication; Rep. Gr. 91 ; Infotainment-System; Multimedia System Control Head E380, Removing and Installing .

3 - Selector Lever Boot

- ❑ Removing and installing together with the selector lever handle. Refer to ⇒ ["1.5 Selector Lever Handle, Removing and Installing", page 16](#)

4 - Selector Lever Handle

- ❑ Removing and installing. Refer to ⇒ ["1.5 Selector Lever Handle, Removing and Installing", page 16](#) .



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1.3 Overview - Selector Mechanism

Selector Mechanism



WARNING

There is a risk of injury and accident from accidentally engaging a gear when the engine is running.

1 - O-Ring

- ☐ Replace after removing

2 - Selector Lever Cable

- ☐ Do not bend
- ☐ Removing and installing. Refer to
⇒ ["1.9 Selector Lever Cable, Removing and Installing", page 25](#) .

3 - Bolt

- ☐ For selector lever cable adjustment
- ☐ Tightening specification
-item 6-
⇒ [Item 6 \(page 12\)](#) .

4 - Transmission Park Selector Switch - F305-

- ☐ Consists of two micro-switches on the circuit board on the Shift Lock Solenoid - N110- .
- ☐ Can only be replaced together with the Shift Lock Solenoid - N110- .
Refer to
⇒ ["1.11 Shift Lock Solenoid N110 , Removing and Installing", page 32](#) .

5 - Shift Lock Solenoid - N110-

- ☐ Removing and installing. Refer to
⇒ ["1.11 Shift Lock Solenoid N110 , Removing and Installing", page 32](#) .

6 - Cap

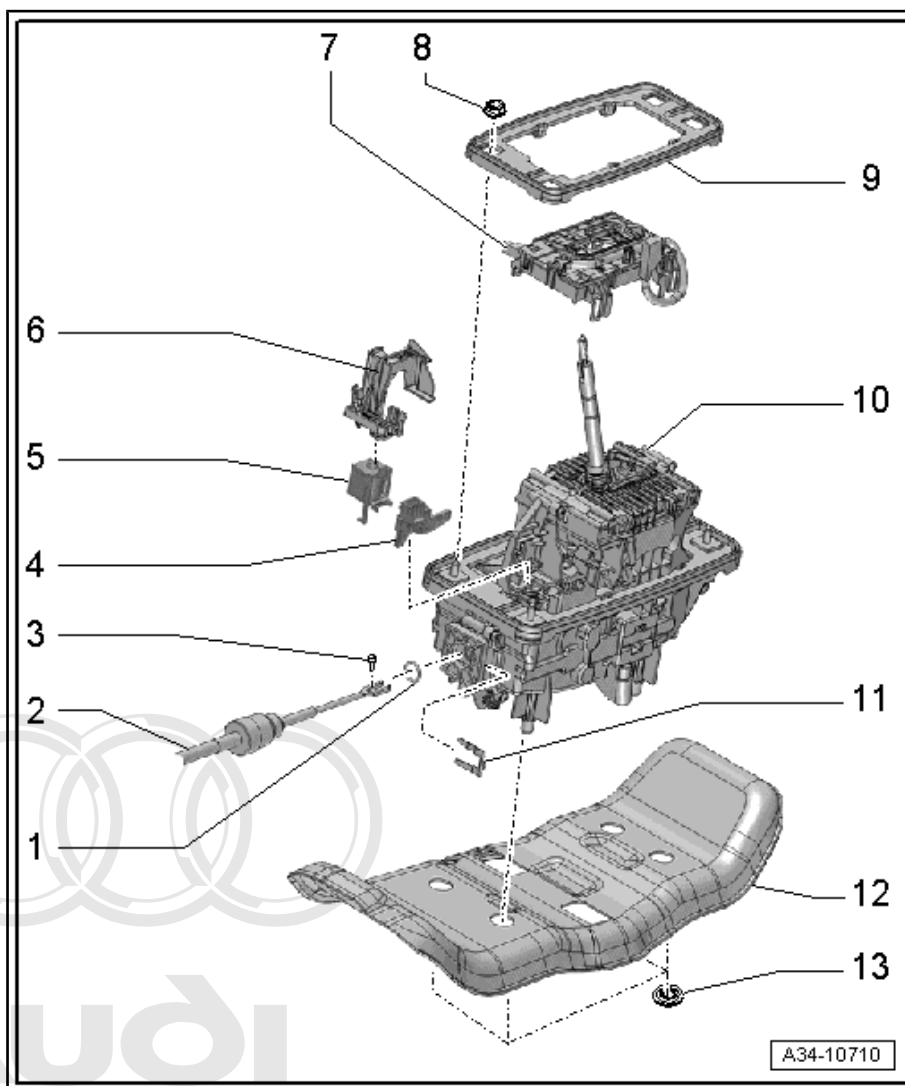
- ☐ Via the Shift Lock Solenoid - N110-

7 - Selector Lever Sensor System Control Module - J587- with Tiptronic Switch - F189-

- ☐ Removing and installing. Refer to
⇒ ["1.12 Selector Lever Sensor System Control Module J587 , Removing and Installing", page 34](#) .

8 - Nut

- ☐ 8 Nm
- ☐ Quantity: 4
- ☐ For securing the shift mechanism to the body



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9 - Seal

10 - Selector Mechanism

- ☐ Can only be replaced as a unit
- ☐ Removing and installing. Refer to ➤ ["1.7 Selector Mechanism, Removing and Installing", page 20](#).
- Perform "Guided Functions" using the Vehicle Diagnostic Tester after removing and installing the selector mechanism.

11 - Clip

- ☐ For selector lever cable

12 - Noise Insulation

- ☐ Not equipped on all vehicles
- ☐ Allocation. Refer to the Parts Catalog.

13 - Lock Washers

- ☐ For the noise insulation
- ☐ Quantity: 4
- ☐ Replace after removing

Gearshift Mechanism on Transmission

1 - Bolt

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

2 - Drive Position Sensor - G676- and Drive Position Sensor 2 - G869-

- ☐ Removing and installing. Refer to ➤ ["1.13 Drive Position Sensor G676, Removing and Installing", page 34](#).

3 - Seal

- ☐ Replace after removing

4 - Seal

- ☐ For the selector shaft
- ☐ Replacing. Refer to ➤ ["1.14 Selector Shaft Seal, Replacing", page 36](#).

5 - Gearshift Lever

- ☐ Removing and installing. Refer to

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➤ ["1.14 Selector Shaft Seal, Replacing", page 36](#).

6 - Bolt

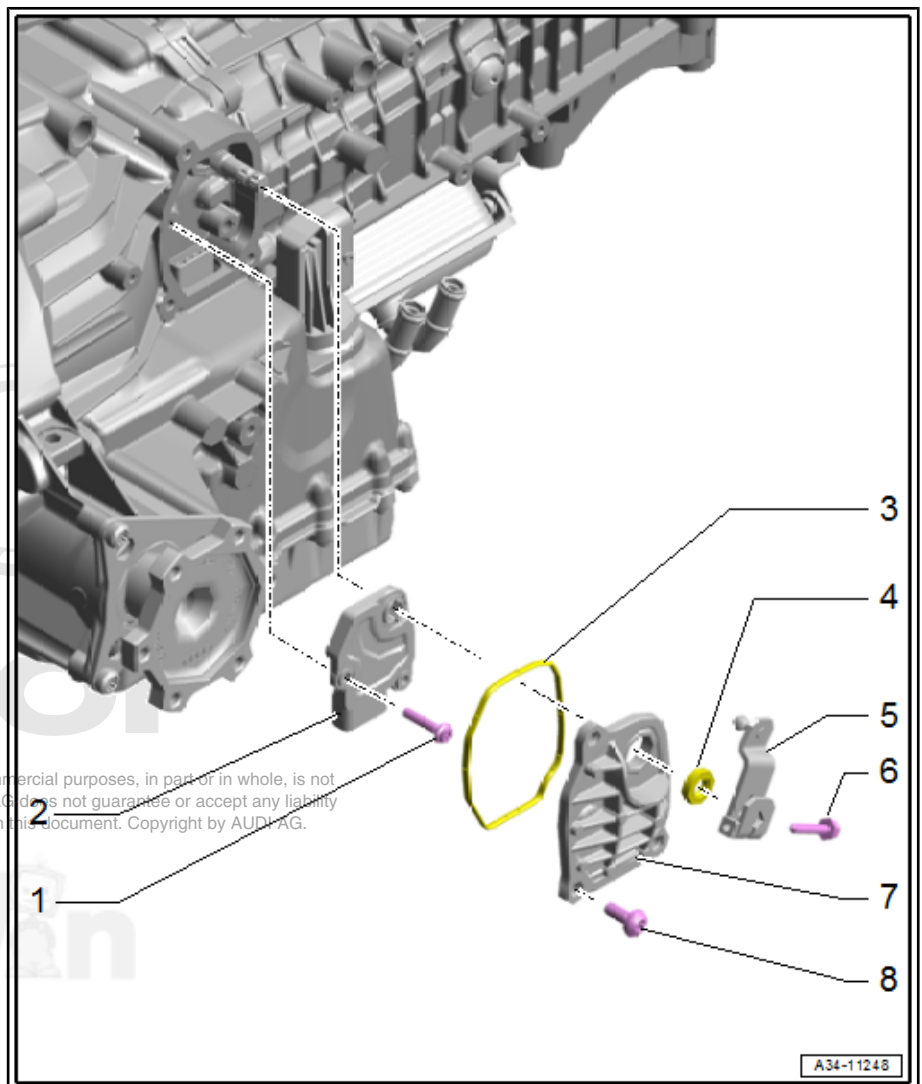
- ☐ 10 Nm +90°
- ☐ Replace after removing

7 - Cover

- ☐ For the selector shaft

8 - Bolt

- ☐ 8 Nm +60°



- ❑ Replace after removing

1.4 Emergency Release from P



Note

- ◆ *The selector lever will not move out of "P" if the battery is disconnected or is discharged. The vehicle cannot be moved or towed.*
- ◆ *The Shift Lock Solenoid - N110- will cancel out the lock when the emergency release is activated.*

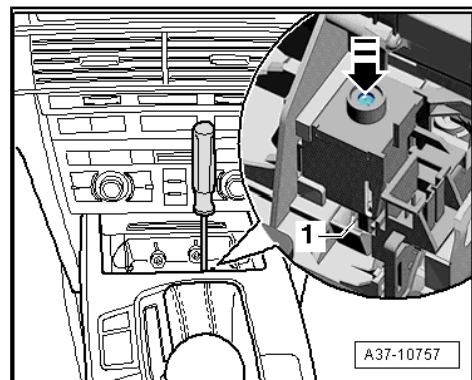
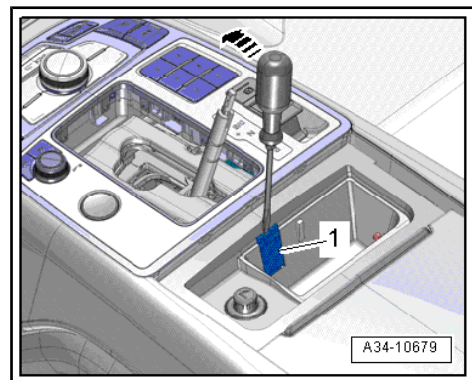
Procedure



Note

The handle on the selector lever is not shown in the illustration. It is not necessary to remove the handle in order to unlock the selector mechanism when it is in "P".

- Remove the front ashtray insert, if equipped.
- Pry out the cap -1- inside the ashtray housing with a screwdriver in direction of -arrow-.
- Press the cylinder in direction of -arrow- on the Shift Lock Solenoid - N110- , for example using the screwdriver from the vehicle tool kit, through the center opening in the ashtray housing and at the same time, shift the selector lever out of "P" while pressing the button on the selector lever.



Note

- ◆ *This unlocks the locking lever -1- when the selector lever is in "P".*
- ◆ *If the cylinder -arrow- on the Shift Lock Solenoid - N110- is covered by insulation or a wire, then move the insulation or the wire to the side.*

1.5 Selector Lever Handle, Removing and Installing

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Special tools and workshop equipment required

- ◆ Trim Removal Wedge - 3409-
- ◆ The cable ties or the assembly aid for the button on the handle. The assembly aid is already installed at the factory when a new handle is ordered.

Removing

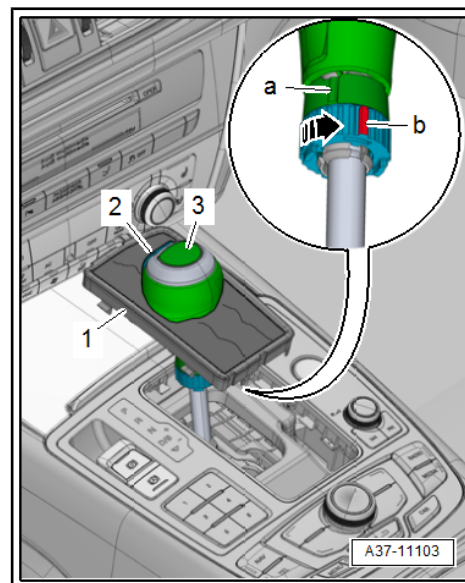
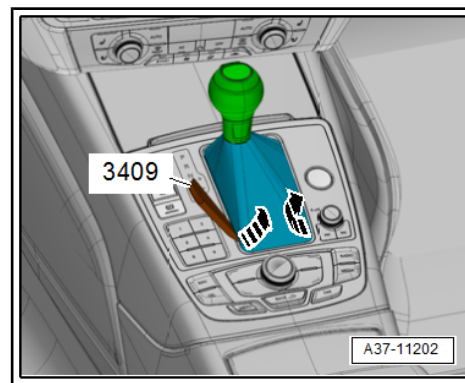
- Press the button on the electro-mechanical parking brake to activate it.
- Move the selector lever into “N”.



Note

Both the selector lever handle and the selector lever boot are removed.

- Carefully pry out the selector lever boot on the side using the Trim Removal Wedge - 3409- in direction of -arrows-.
- Fold the selector lever boot -1- upward and over the selector lever handle -3-.
- Turn the locking ring all the way in direction of -arrow-. The markings -a and b- no longer line up.
- Remove the selector lever handle -3- together with the selector lever boot -1- without touching the locking button -2-.



Installing

- Turn the locking ring all the way in direction of -arrow-.
- The markings -a and b- are not above one another.
- The locking button points in the drive direction.



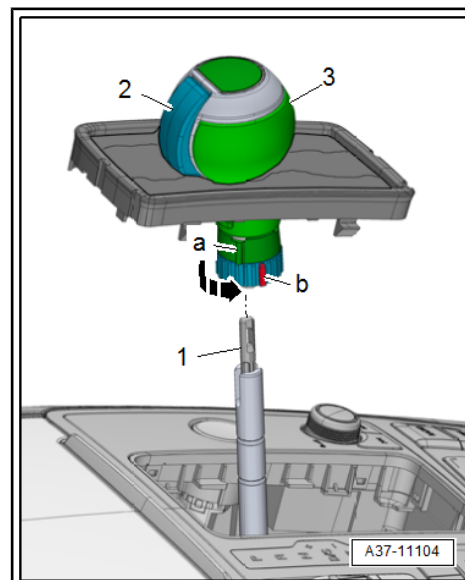
Caution

The selector mechanism could get damaged.

- ◆ *The locking button -2- on the selector lever handle must be extended when installing. If the button should get pushed in unintentionally while the handle is removed, then it must be brought back into its installation position. Refer to ["1.6 Button in Handle, Moving Into Installation Position", page 18](#).*
- ◆ *If the locking button is pushed in while the handle is being installed, destroy the handle and the selector mechanism pull rod -1-.*

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- Press the selector lever handle -3- onto the lever completely without touching the locking button -2-.
- When doing this, the handle must engage into ring groove of the selector lever.

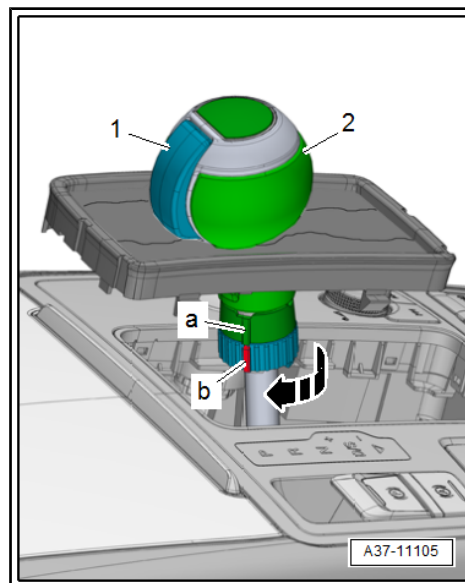


- Turn the locking ring all the way in direction of -arrow-.
- It must be possible to turn the locking ring; press the handle -2- on again if necessary.
- The markings -a and b- are above one another.



Note

- ◆ If the locking ring was turned, then the handle is not properly locked. Only then may the locking button be pressed on the handle.
- ◆ The locking button may have an increased resistance to pressure when it is pushed the first time after installing the handle.
- Press the locking button -1- in the selector lever handle.
- Move the selector lever button mechanism through “R” and “S” to perform the function test.
- If the selector lever positions cannot be reached, remove the handle again.
- Pull the selector lever boot downward and attach it to the Multimedia System Control Head - E380- .



1.6 Button in Handle, Moving Into Installation Position

Special tools and workshop equipment required

- ◆ Locking Button Removal Tool - T40203-

Procedure

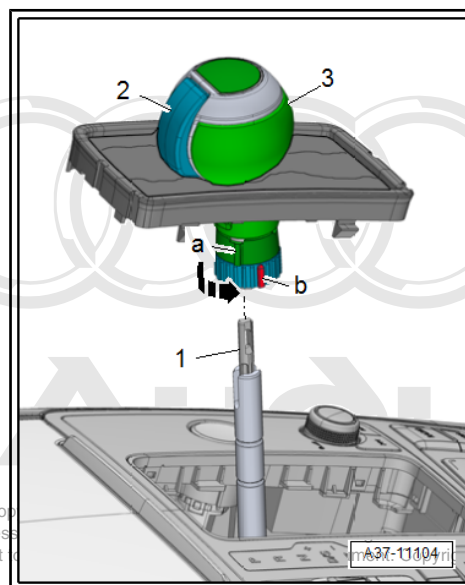
- The locking button -2- projects out in its installation position in the handle.

If the locking button was pressed in, then it must be brought back to its installation position so that the handle -3- can be installed.



Note

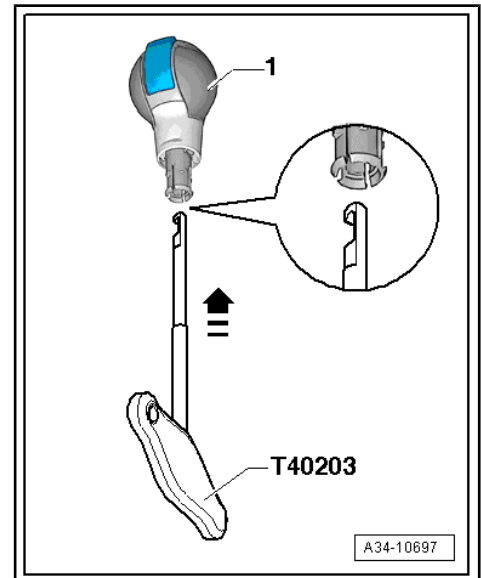
To improve the illustration, the handle is shown without the selector lever boot for the following steps.



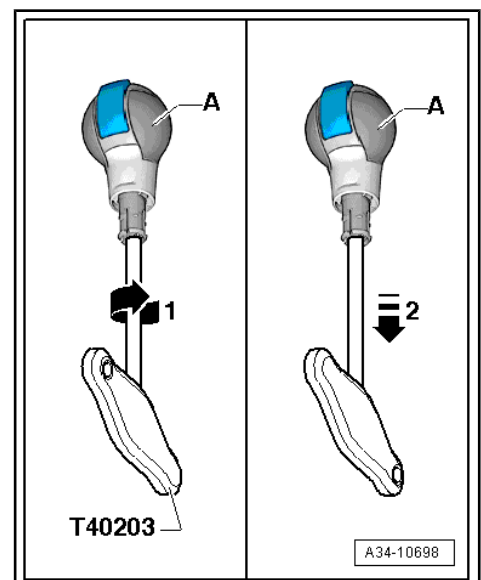
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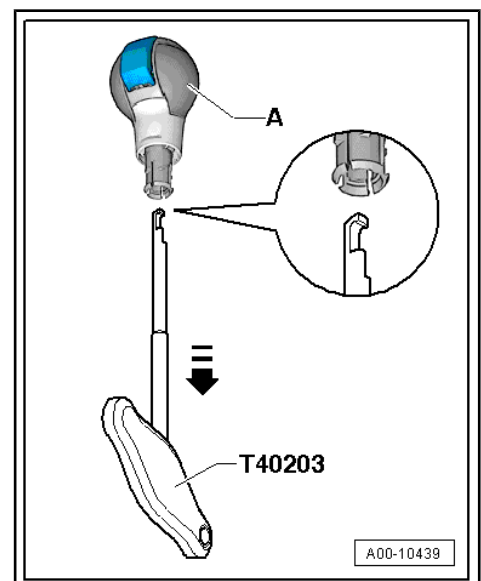
- Carefully install the Locking Button Removal Tool - T40203- all the way into the handle -1-.
- The cut-out on the Locking Button Removal Tool - T40203- faces the locking button and the hook toward the left.



- Hold the handle -A- tight and turn the Locking Button Removal Tool - T40203- 180° in direction of arrow -1-.
- Hold the handle tight and carefully remove the Locking Button Removal Tool - T40203- in direction of -arrow 2-.



- While the Locking Button Removal Tool - T40203- is being removed, the locking button -A- on the handle will be pushed out and will lock.
- Do not touch the locking button anymore before installing the handle so that the button does not fall back in.



1.7 Selector Mechanism, Removing and Installing

Special tools and workshop equipment required

- ◆ Pry Lever - 80-200-
- ◆ Socket And Key - T40031-



Caution

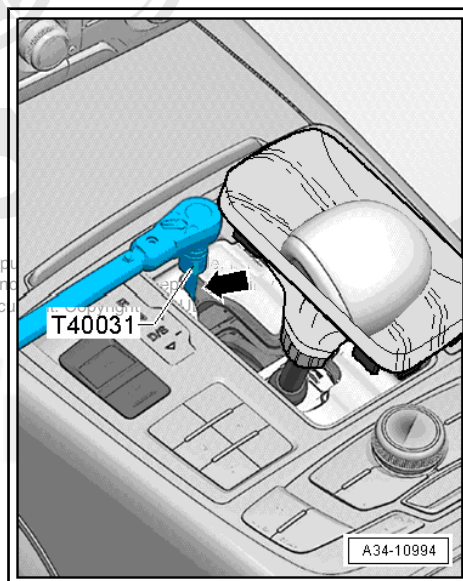
This procedure contains mandatory replaceable parts. Refer to component overview and parts catalog prior to starting procedure.

Mandatory Replacement Parts

- ◆ Washers, lock - Selector lever cable
- ◆ O-ring - Selector lever cable

Removing

- Remove the selector lever handle. Refer to ⇒ ["1.5 Selector Lever Handle, Removing and Installing", page 16](#).
- Remove the front ashtray or storage compartment. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Center Console, Front Storage Compartment, Removing and Installing .
- Move the selector lever into "D/S".
- Insert the Socket And Key - T40031- through the opening -arrow- in the selector mechanism and loosen the bolt on the selector lever cable approximately one turn.



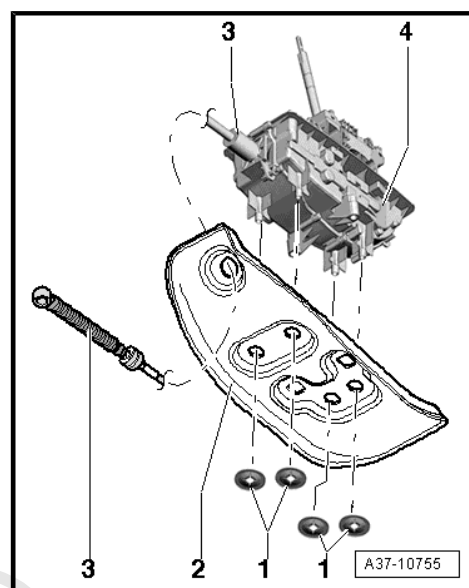
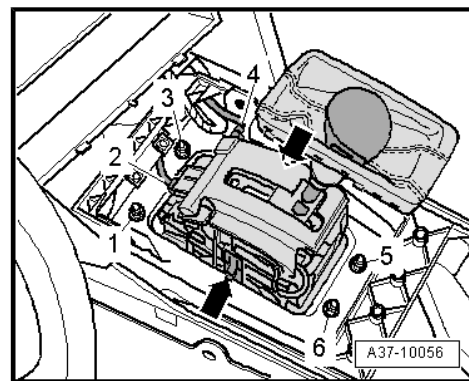
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- Disconnect the connectors -2 and 4-.



Note

- ◆ *The illustration does not show the insulation mat.*
- ◆ *A second technician is needed to remove the shift mechanism under the vehicle.*
- ◆ *Ignore -arrows-.*
- Remove the insulation mat over the shift mechanism.
- Remove the nuts -1, 3, 5 and 6-.
- Remove the selective catalytic reduction catalytic converter. Refer to ⇒ Engine, Mechanical; Rep. Gr. 26 ; Emissions Control System; Catalytic Converter, Removing and Installing .
- Remove the lock washer -1-.
- Pull the noise insulation -2- off the selector mechanism -4- and push it forward toward the selector lever cable -3-.



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- Remove the selector lever cable clip -1- sideways.
- Remove the selector lever cable -2- from the selector mechanism.



Note

Do not bend or kink the selector lever cable.

- Remove the selector mechanism.

Installing

Install in reverse order of removal. Note the following:

- Install the selector mechanism and tighten it from the top.
- Install selector lever cable. Refer to
⇒ [“1.9 Selector Lever Cable, Removing and Installing”, page 25](#) .
- Adjust the selector lever cable. Refer to
⇒ [“1.10.1 Selector Lever Cable, Adjusting”, page 28](#) .
- Install the selective catalytic reduction catalytic converter. Refer to ⇒ Rep. Gr. 26 ; Emissions Control System; Catalytic Converter, Removing and Installing .
- Check the selector mechanism. Refer to
⇒ [“1.8 Selector Mechanism, Checking”, page 22](#) .
- Install the front ashtray or storage compartment. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Center Console, Front Storage Compartment, Removing and Installing .
- Install the selector lever handle. Refer to
⇒ [“1.5 Selector Lever Handle, Removing and Installing”, page 16](#) .

Tightening Specifications

- ◆ Refer to ⇒ [“1.3 Overview - Selector Mechanism”, page 14](#)

1.8 Selector Mechanism, Checking

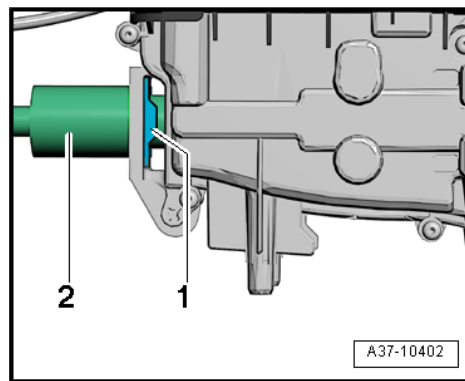


WARNING

There is a risk of injury and accident from accidentally engaging a gear when the engine is running.

- ◆ *Shift the transmission into “P” and set the parking brake to lock the electro-mechanical parking brake before working on a running engine.*
- ◆ *Pay attention to the safety precautions when driving. Refer to
⇒ [“3.3 Road Test with Testing Equipment Safety Precautions”, page 4](#) .*
- ◆ *Perform all tests. If the specified values are not reached, adjust the selector lever cable (refer to
⇒ [“1.10.1 Selector Lever Cable, Adjusting”, page 28](#)) and perform “Guided Fault Finding” using the Vehicle Diagnostic Tester.*

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Overview

- ◆ 1. Selector mechanism function test. Refer to ⇒ [page 23](#)

- ◆ 2. Selector lever handle locking button, checking. Refer to
⇒ [page 24](#)

1. Selector Mechanism Functionality Test

- Never operate the starter when the selector lever is in “R”, “D/S” and the “tiptronic gate”.
- If selector lever position “N” is selected at speeds greater than 5 km/h, the shift lock solenoid must not engage and block the selector lever. The selector lever can be moved into a another gear.
- For speeds below 2 km/h (almost standstill) and shifting into selector lever position “N”, the shift lock solenoid must only engage after approximately 1 second. The selector lever can be moved out of “N” only when the brake pedal is pressed.

Selector lever in “P”:

- Press the button on the electro-mechanical parking brake to activate it.
- Turn off the ignition.
- Selector lever is locked and cannot be shifted out of position “P” while locking button on selector lever handle is pressed.
- Turn on the ignition.

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Note

Press the Access/Start Authorization Button - E408- briefly to get “ignition on”.

- Do not press the brake pedal.
- Selector lever is locked and cannot be shifted out of position “P” while locking button on selector lever handle is pressed. The Shift Lock Solenoid - N110- locks the selector lever.
- Press the brake pedal and hold it down.
- The Shift Lock Solenoid - N110- unlocks the selector lever. It is possible to shift into a gear. Press the button in the selector lever handle and slowly move the selector lever from “P” and through “R, N, D, S”. While doing this, make sure the Transmission Range Display - Y6- inside the instrument cluster matches the actual position of the selector lever.
- Pull the selector lever toward the rear out of “D/S” and then release it again.
- The selector lever moves automatically back into “D/S”. The Transmission Range Display - Y6- must change from “D” to “S1” in the instrument cluster and then go back to “D” after pulling the lever toward the rear.

The selector lever is in “N” and the ignition is turned on:

- Do not press the brake pedal.
- After a brief moment: The selector lever is locked and cannot be moved out of “N” even though the locking button in the selector lever handle is pressed. The Shift Lock Solenoid - N110- locks the selector lever.
- Press the brake pedal.
- The Shift Lock Solenoid - N110- unlocks the selector lever. It is possible to shift into “D/S”.

The selector lever is in “D/S” and the ignition is on:

- Move the selector lever into the “tiptronic gate”.
- The “D/S” in the Selector Lever Transmission Range Position Display Unit - Y26- must turn off and the “+” and “-” must turn on.
- The Transmission Range Display - Y6- inside the instrument cluster must change from “D” to “M1” when the selector lever moves into the “tiptronic gate”
- Do not move the selector lever into “P” but rather, for example, into “N”.
- Turn off the ignition.
- A warning message must appear in the instrument cluster.
- The vehicle cannot be locked.
- Move the selector lever into “P”.
- Turn off the ignition.
- The vehicle can be locked.

If the specified values are not obtained:

- Perform Guided Fault Finding using the Vehicle Diagnostic Tester .
- Adjust the selector lever cable. Refer to [⇒ “1.10.1 Selector Lever Cable, Adjusting”, page 28](#) .
- Locking button on selector lever handle, checking. Refer to [⇒ page 24](#) .

2. Selector Lever Handle Locking Button, Checking

Make sure locking button moves easily.

- It must be possible to press the locking button without using great force.
- After releasing, the locking button must come all the way back out by itself.

If the specified values are not obtained:

- Make sure the selector lever handle is installed correctly. Refer to [⇒ “1.5 Selector Lever Handle, Removing and Installing”, page 16](#) .
- Make sure the selector lever is not bent.

Function test:

- The ignition is switched on.

The locking button on the selector lever handle must be pressed for the following shifts. If it is not pressed, the selector lever cannot be shifted into the specified position.

- ◆ Move the selector lever from “P” into “R” and press the brake pedal at the same time.
- ◆ Move from “N” into “R” while stationary, press the brake pedal after waiting longer
- ◆ “R” into “P”

If the specified values are not obtained:

- Make sure the selector lever handle is installed correctly. Refer to [⇒ “1.5 Selector Lever Handle, Removing and Installing”, page 16](#) .

- Check the connectors on the selector mechanism.
- Perform **Guided Fault Finding** using the Vehicle Diagnostic Tester and check the Shift Lock Solenoid - N110- .
- Adjust the selector lever cable. Refer to
⇒ [“1.10.1 Selector Lever Cable, Adjusting”, page 28](#) .

1.9 Selector Lever Cable, Removing and Installing

Special tools and workshop equipment required

- ◆ Pry Lever - 80-200-
- ◆ Trim Removal Wedge - 3409-
- ◆ Socket And Key - T40031-



Caution

This procedure contains mandatory replaceable parts. Refer to component overview and parts catalog prior to starting procedure.

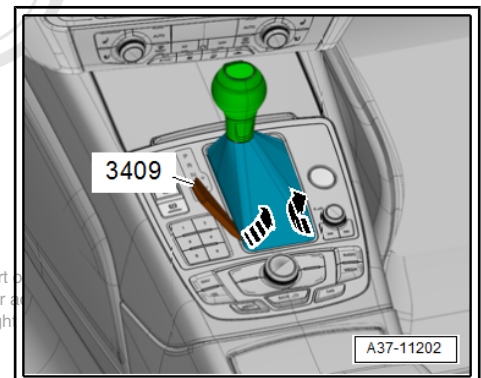
Mandatory Replacement Parts

- ◆ Washers, lock - Selector lever cable
- ◆ O-ring - Selector lever cable

Removing

- Press the button on the electro-mechanical parking brake to activate it.
- Move the selector lever into “D/S”.
- Carefully pry out the selector lever boot on the side using the Trim Removal Wedge - 3409- -arrows- and fold it upward.

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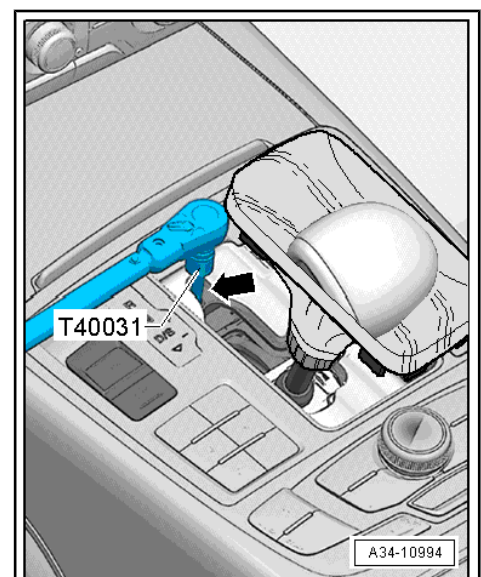


- Insert the Socket And Key - T40031- through the opening -arrow- in the selector mechanism and loosen the bolt on the selector lever cable approximately one turn.

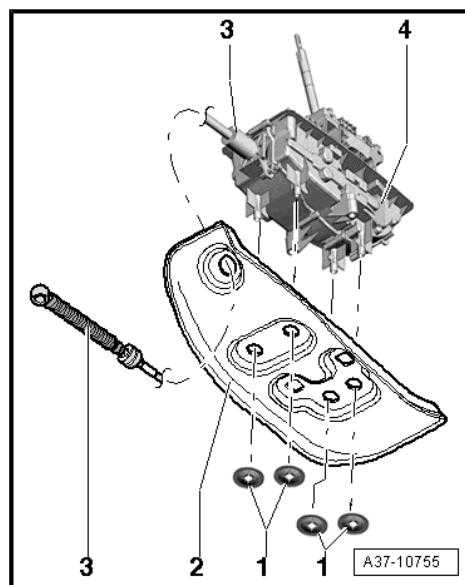


Note

- ◆ *Only loosen the clamping screw - do not remove it.*
- ◆ *The clamping screw is only accessible when the selector lever is in “D/S”.*
- ◆ *The selector lever must remain in “D/S” when the clamping screw is loose.*
- Remove the rear noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Underbody Trim Panel, Removing and Installing .



- Remove the lock washer -1-.
- Pull the noise insulation -2- off the selector mechanism -4- and push it forward toward the selector lever cable -3-.



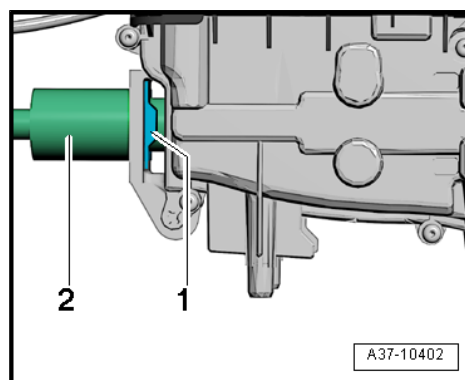
- Remove the selector lever cable clip -1- sideways.
- Remove the selector lever cable -2- from the selector mechanism.



Note

Do not bend or kink the selector lever cable.

- Remove the ball socket -1- on the selector lever cable from the selector shaft lever using the Pry Lever - 80-200- .
- Remove the bolts -2- and then remove the selector lever cable from the transmission.



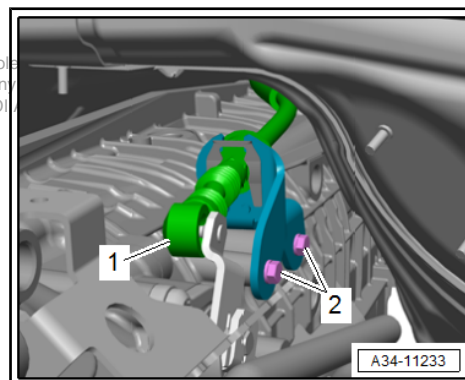
Installing

Install in reverse order of removal. Note the following:

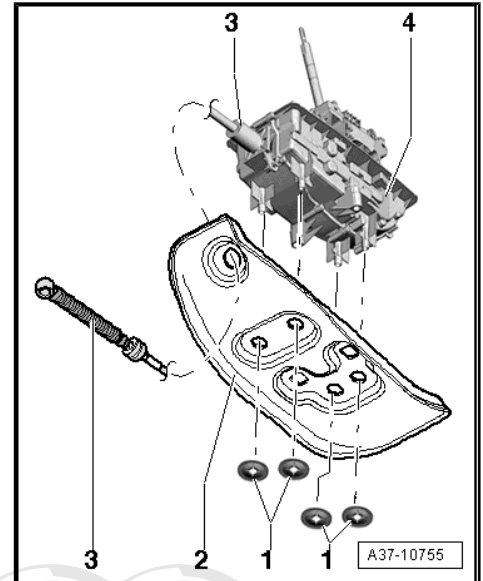


Note

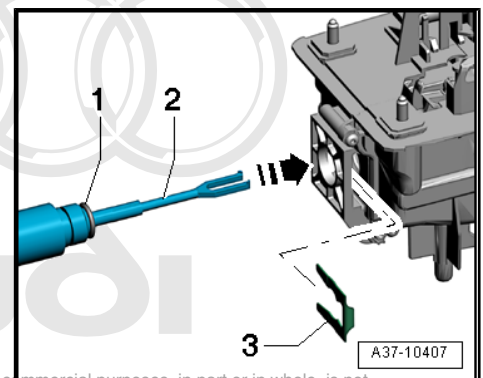
- ◆ *Replace the lock washers for the noise insulation.*
- ◆ *Replace the O-ring on the selector lever cable.*
- ◆ *Lubricate the cable eye and the ball socket on the selector lever cable with Polycarbamide Grease - G 052 142 A2- before installing.*



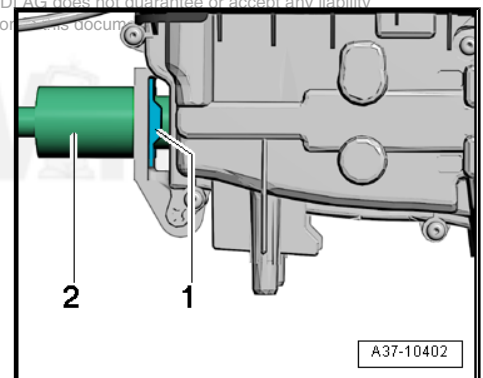
- Slide the noise insulation -2- over the opening on the selector lever cable -3-.



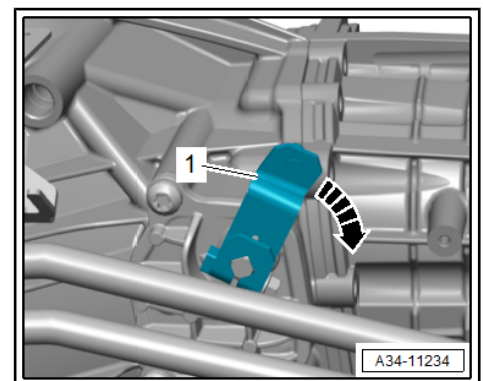
- Insert the O-ring -1- on the selector lever cable.
- Slide the selector lever cable -2- into the gearshift mechanism in direction of -arrow-.
- Secure the selector lever cable with a clip -3-.



- Installed position: the angled end of the clip -1- faces the selector mechanism.



- Push the selector lever -1- on the transmission all the way to the back in direction of -arrow- until the parking lock locks into place.
- When parking lock is engaged, it must not be possible to turn the front wheels.
- Press the selector shaft lever forward three detents so the transmission is in “D/S”.
- Make sure the selector lever inside the vehicle is also in “D/S”.

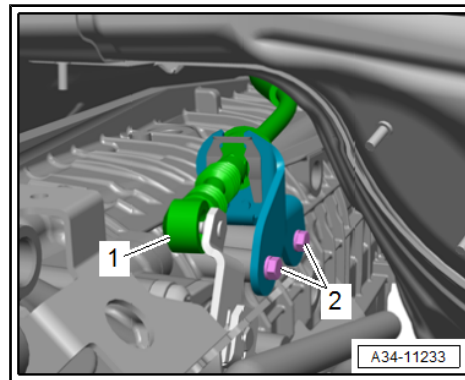


- Carefully press the selector lever cable ball socket -1- in this position onto the selector shaft lever.
- Tighten the bolts -2-.



Note

- ◆ Do not bend or kink the selector lever cable.
- ◆ Do not bend selector shaft lever when pressing on, otherwise shift mechanism can no longer be adjusted exactly.
- Check and adjust the selector lever cable. Refer to [⇒ "1.10.1 Selector Lever Cable, Adjusting", page 28](#) .
- Check the selector mechanism. Refer to [⇒ "1.8 Selector Mechanism, Checking", page 22](#) .
- Install the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Underbody Trim Panel, Removing and Installing .



Tightening Specifications

- ◆ Refer to [⇒ "1.1 Overview - Operating Cables", page 11](#)

1.10 Selector Lever Cable, Checking and Adjusting

[⇒ "1.10.1 Selector Lever Cable, Adjusting", page 28](#)

[⇒ "1.10.2 Selector Lever Cable, Bringing into Basic Setting", page 29](#)

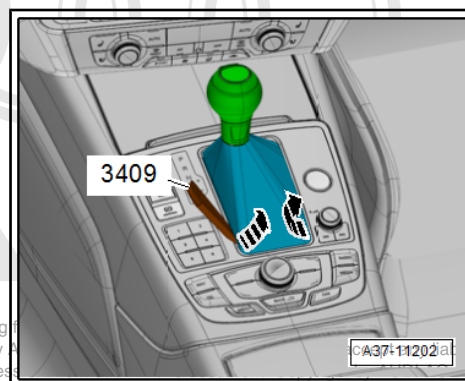
1.10.1 Selector Lever Cable, Adjusting

Special tools and workshop equipment required

- ◆ Trim Removal Wedge - 3409-
- ◆ Socket And Key - T40031-

Procedure

- Press the button on the electro-mechanical parking brake to activate it.
- Move the selector lever into "D/S".
- Carefully pry out the selector lever boot on the side using the Trim Removal Wedge - 3409- -arrows- and fold it upward.



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- Insert the Socket And Key - T40031- through the opening -arrow- in the selector mechanism and loosen the bolt on the selector lever cable approximately one turn.

 Note

- ◆ *Only loosen the clamping screw - do not remove it.*
- ◆ *The clamping screw is only accessible when the selector lever is in "D/S".*
- ◆ *The selector lever must remain in "D/S" when the clamping screw is loose.*
- Carefully move the selector forward and back gently without shifting into another selector lever position. This releases the tension in the selector lever cable.
- Tighten the clamping screw in this position with the Socket And Key - T40031- without touching the selector lever.
- Check the selector mechanism. Refer to [⇒ "1.8 Selector Mechanism, Checking", page 22](#) .

If shift mechanism does not function properly after adjusting selector lever cable:

- Bring the selector lever cable into the basic setting. Refer to [⇒ "1.10.2 Selector Lever Cable, Bringing into Basic Setting", page 29](#) .

Tightening Specifications

- ◆ Refer to [⇒ "1.1 Overview - Operating Cables", page 11](#)

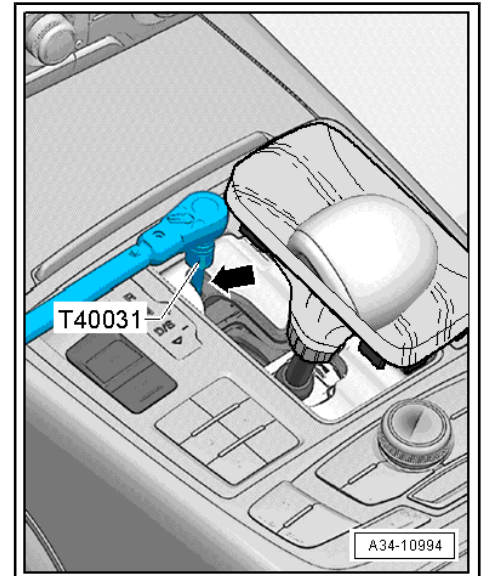
1.10.2 Selector Lever Cable, Bringing into Basic Setting

Special tools and workshop equipment required

- ◆ Vehicle Diagnostic Tester
- ◆ Pry Lever - 80-200-
- ◆ Socket And Key - T40031-

Procedure

- **Guided Fault Finding** with the Vehicle Diagnostic Tester is completed; all faults have been corrected.
- Select the following menu options under "Functions/Component selection" in Fault Finding on the Vehicle Diagnostic Tester :
 - ◆ **Drivetrain**
 - ◆ **0CK Transmission**
 - ◆ **01 OBD-Capable System**
 - ◆ **02-Transmission Electronics**
 - ◆ **02-Transmission Electronics, Functions**
 - ◆ **02-Measured Values**
- Select **Driving Mode** from the list.
- Compare the following displays:



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- ◆ Measured value "driving mode" on the Vehicle Diagnostic Tester
- ◆ Selector lever position
- ◆ Selector Lever Transmission Range Position Display Unit - Y26- on the shift mechanism
- ◆ Transmission Range Display - Y6- in the instrument cluster

Conditions:

- The displays must match.

If the displays do not match:

- Adjust the selector lever cable. Refer to
⇒ ["1.10.1 Selector Lever Cable, Adjusting", page 28](#) .

If the individual displays cannot be reached by adjusting the selector lever cable:

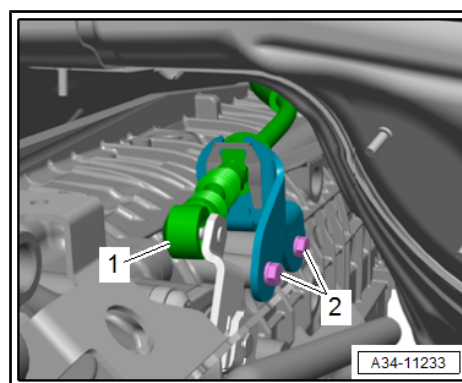
Selector Lever Cable, Bringing Into Basic Setting:

- Remove the ball socket -1- on the selector lever cable from the selector shaft lever using the Pry Lever - 80-200- .

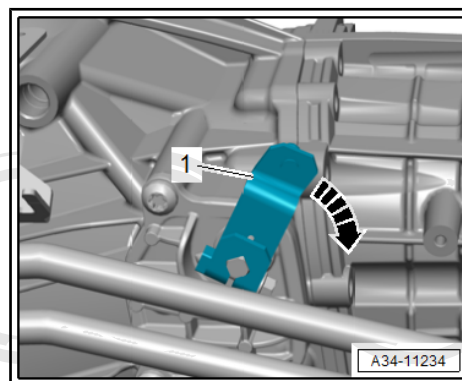


Note

Ignore item -2-.



- Push the selector lever -1- on the transmission all the way to the back in direction of -arrow- until the parking lock locks into place.
- When parking lock is engaged, it must not be possible to turn the front wheels.
- Press the selector shaft lever forward three detents so the transmission is in "D/S".
- Make sure the selector lever inside the vehicle is also in "D/S".



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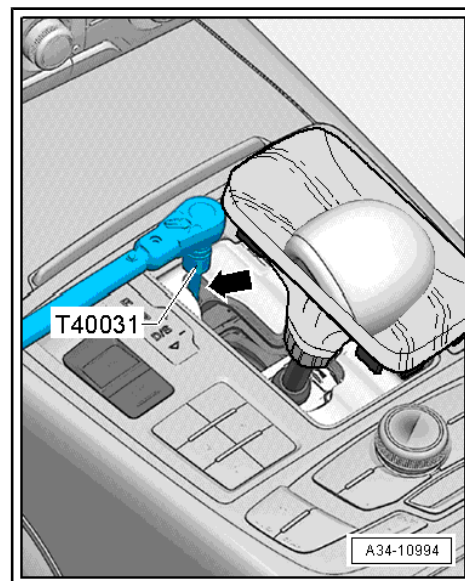
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- Insert the Socket And Key - T40031- through the opening -arrow- in the selector mechanism and loosen the bolt on the selector lever cable approximately one turn.



Note

- ◆ Only loosen the clamping screw - do not remove it.
- ◆ The clamping screw is only accessible when the selector lever is in "D/S".
- ◆ The selector lever must remain in "D/S" when the clamping screw is loose.
- Remove the Socket And Key - T40031- from the torque wrench and let the move it through the opening -arrow- in the selector mechanism.



- Carefully press the selector lever cable ball socket -1- in this position onto the selector shaft lever.

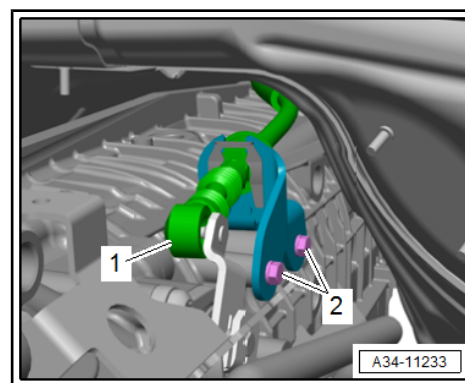


Note

- ◆ Do not bend selector shaft lever when pressing on, otherwise shift mechanism can no longer be adjusted exactly.
- ◆ Ignore item -2-.
- Select [02-Measured Values] in Fault Finding [02 Transmission Electronics] on the Vehicle Diagnostic Tester
- Select [Driving Mode] from the list.
- Compare the following displays:
 - ◆ Measured value [Driving Mode] on the Vehicle Diagnostic Tester
 - ◆ Selector lever position
 - ◆ Selector Lever Transmission Range Position Display Unit - Y26- on the shift mechanism
 - ◆ Transmission Range Display - Y6- in the instrument cluster

Conditions:

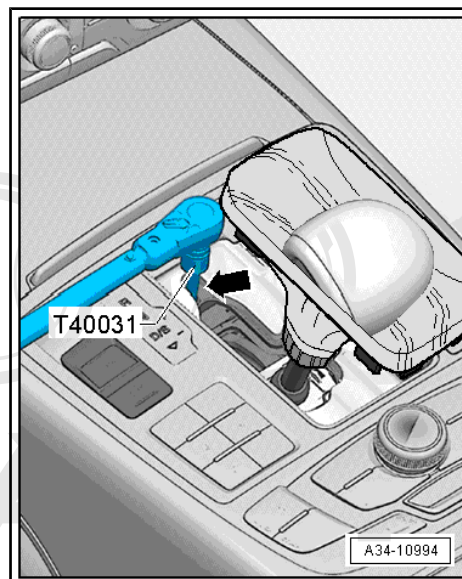
- The displays must match.



- Carefully move the selector forward and back gently without shifting into another selector lever position. This releases the tension in the selector lever cable.
- Tighten the clamping screw in this position with the Socket And Key - T40031- without touching the selector lever.
- Check the selector mechanism. Refer to
⇒ ["1.8 Selector Mechanism, Checking", page 22](#) .

Tightening Specifications

- ◆ Refer to ⇒ ["1.1 Overview - Operating Cables", page 11](#)



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1.11 Shift Lock Solenoid - N110- , Removing and Installing

Removing

- Move the selector lever into "P".
- Remove the front ashtray or storage compartment. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Center Console, Front Storage Compartment, Removing and Installing .
- Loosen the nuts -1, 3, 5 and 6- a few turns but do not remove them completely.



Note

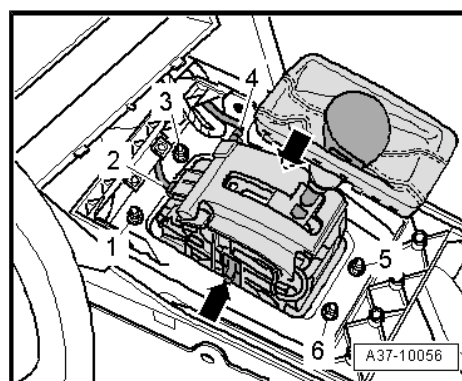
- ◆ *This lowers the selector mechanism slightly and improves accessibility for further removal.*
- ◆ *Ignore -2 and 4- and -arrow-.*



Caution

The shift mechanism can be destroyed by broken clips, tabs or other objects.

- ◆ *Make sure no components or other objects fall into the shift mechanism. The shift mechanism must be replaced if that happens.*



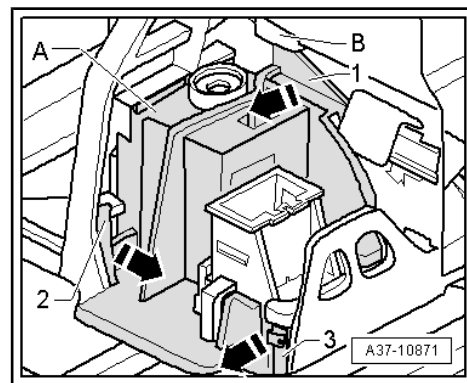
- Open the retaining tabs -2 and 3- in direction of -arrow-, slightly raise the front of the sealing cap -A- and hold it in that position.



Note

This prevents the retaining tabs from engaging again.

- Open the upper tab -1- in direction of -arrow- above the bracket -B- and remove the cap -A-.

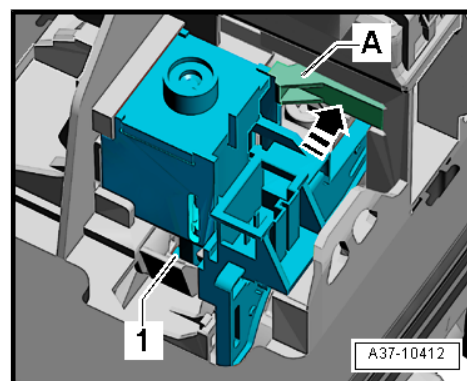


- Disconnect the connector on the Shift Lock Solenoid - N110- .
- Push the hook -A- in direction of -arrow- and hold it in this position.

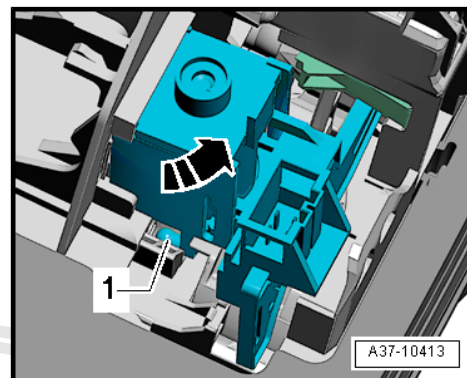


Note

Replace the selector mechanism if any of the hooks -A- are broken off.



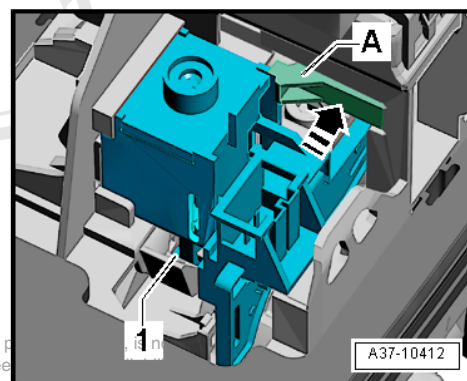
- Tilt the Shift Lock Solenoid - N110- in direction of -arrow- so that the ball rod -1- comes out of the lever on the selector mechanism.
- Remove the Shift Lock Solenoid - N110- .



Installing

Install in reverse order of removal. Note the following:

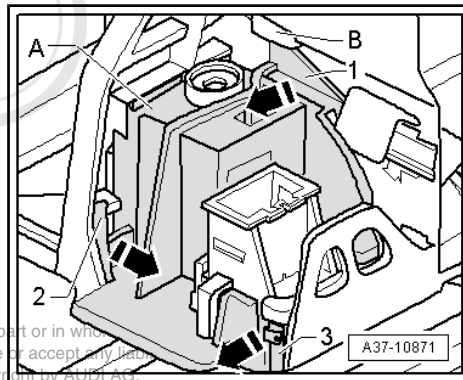
- Turn the ball rod -1- into the correct installed position.
- Install the Shift Lock Solenoid - N110- at an angle into the selector mechanism and then tilt it opposite the direction of -arrow-.
- The ball rod -1- must engage completely in the operating lever on shift mechanism. Press it down using a small screwdriver if necessary.
- Attach the Shift Lock Solenoid - N110- to the hook -A-.



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erWin

- Position the cover -A- over the Shift Lock Solenoid - N110- and carefully lock it in -1 through 3-.
- Connect the electrical connectors.
- Check the shift mechanism function before completing assembly. Refer to
⇒ [“1.8 Selector Mechanism, Checking”, page 22](#) .
- Install the front ashtray or storage compartment. Refer to ⇒ Body Interior; Rep. Gr. 68 ; Center Console, Front Storage Compartment, Removing and Installing .



Tightening Specifications

- ♦ Refer to ⇒ [“1.3 Overview - Selector Mechanism”, page 14](#).

1.12 Selector Lever Sensor System Control Module - J587- , Removing and Installing

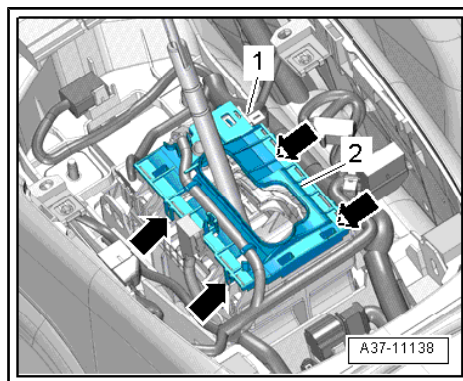
Removing

- Remove the selector lever handle. Refer to
⇒ [“1.5 Selector Lever Handle, Removing and Installing”, page 16](#) .
- Remove the Multimedia System Control Head - E380- . Refer to ⇒ Communication; Rep. Gr. 91 ; Infotainment-System; Multimedia System Control Head E380, Removing and Installing .
- Disconnect the connector -1-.
- Open the four tabs -arrows- and remove the Selector Lever Sensor System Control Module - J587- -2- upward.

Installing

Install in reverse order of removal. Note the following:

- Let the Selector Lever Sensor System Control Module - J587- latch with the four tabs.
- Install the Multimedia System Control Head - E380- . Refer to ⇒ Communication; Rep. Gr. 91 ; Infotainment-System; Multimedia System Control Head E380, Removing and Installing .
- Install the selector lever handle. Refer to
⇒ [“1.5 Selector Lever Handle, Removing and Installing”, page 16](#) .



1.13 Drive Position Sensor - G676- , Removing and Installing

Special tools and workshop equipment required

- ♦ Pry Lever - 80-200-

Removing

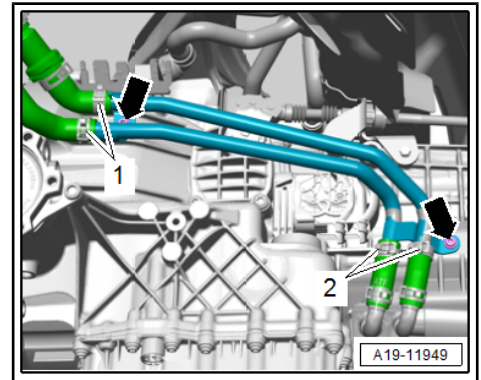
- Remove the Mechatronic. Refer to
⇒ [“10.3 Mechatronic, Removing and Installing”, page 95](#) .

- Remove the bolts -arrows-, push aside the coolant pipe.



Note

Ignore items -1 and 2-.

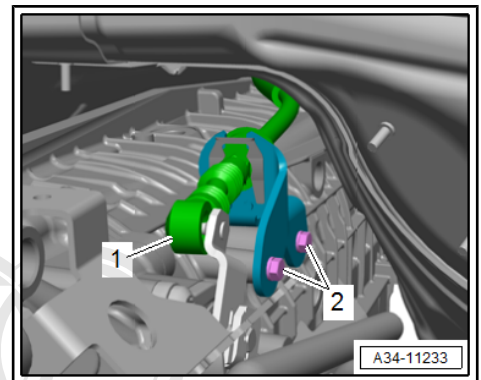


- Remove the ball socket -1- on the selector lever cable from the selector shaft lever using the Pry Lever - 80-200- .

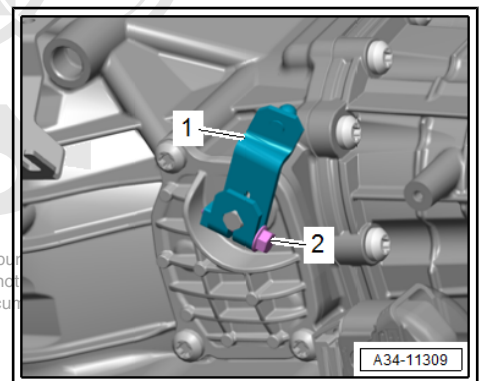


Note

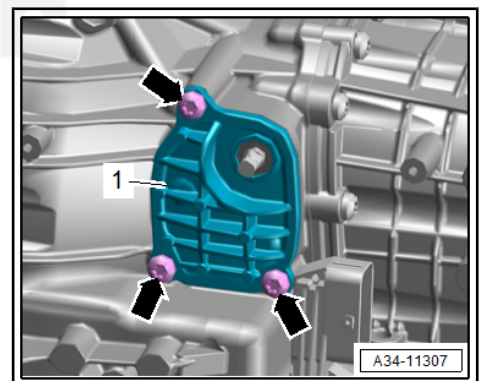
- ◆ *Do not bend or kink the selector lever cable.*
- ◆ *Ignore item -2-.*



- Remove the bolt -2- and remove the gearshift lever -1- from the gearshift shaft.



- Remove the bolts -arrows- and the gearshift shaft cover -1-.
- Push the gearshift shaft seal from the gearshift shaft cover.

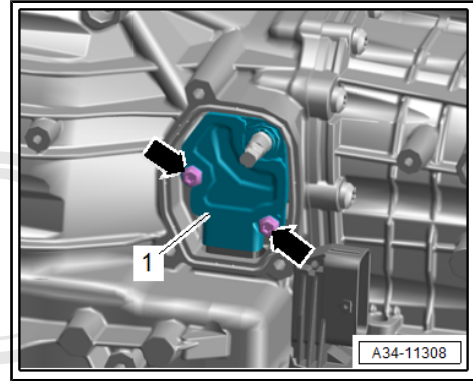


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- Remove the bolts -arrows- and remove the Drive Position Sensor -1-.

Installing

Install in reverse order of removal. Note the following:



Installation Position

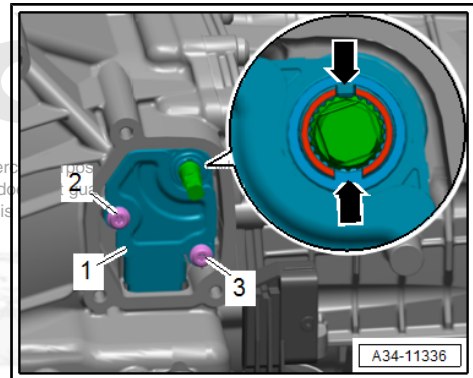
- The selector lever and Drive Position Sensor are in »P« (turn clockwise until stop)
- Install the selector shaft seal. Refer to ⇒ [“1.14 Selector Shaft Seal, Replacing”](#), page 36

Tightening Specifications

- ◆ Refer to ⇒ [“1.3 Overview - Selector Mechanism”](#), page 14
- Calibrate the Drive Position Sensor - G676- .

Procedure

- Connect Vehicle Diagnostic Tester .
- Select **Diagnostic** mode and start the diagnostic.
- Select the **Test Plan** tab.
- **Select Individual Test** button and select the following tree structure one after the other:
 - ◆ Drivetrain
 - ◆ 7-speed S tronic transmission 0CK/0CL
 - ◆ 01 - OBD-capable system
 - ◆ 02 - Transmission electronics 0CK
 - ◆ 02 - Transmission electronics, functions
 - ◆ 02 - Basic setting⇒ Drive Position Sensor -G676, Calibration



1.14 Selector Shaft Seal, Replacing

Special tools and workshop equipment required

- ◆ Pry Lever - 80-200-
- ◆ Seal Installer - Selector Shaft - T10135-

Procedure

- Remove the subframe crossbrace. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Subframe; Subframe Crossbrace, Removing and Installing .



Caution

The suspension components could be damaged.

- ◆ *Do not rest the vehicle on its wheels if the subframe mount, the steering gear or the subframe crossbrace are not installed correctly.*



Note

Ignore items -1 and 2-.

- Remove the bolts -arrows-, push aside the coolant pipe.



Note

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

- Remove the bolt -2- and remove the gearshift lever -1- from the gearshift shaft.

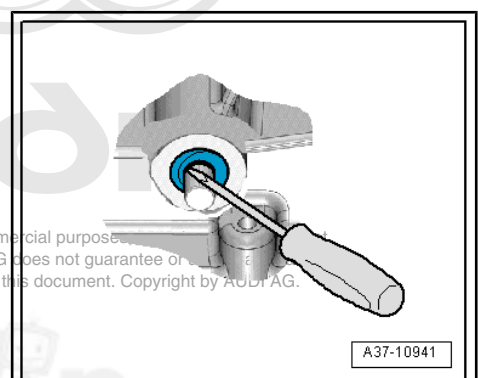
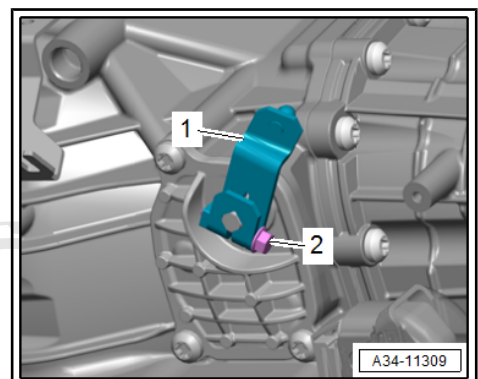
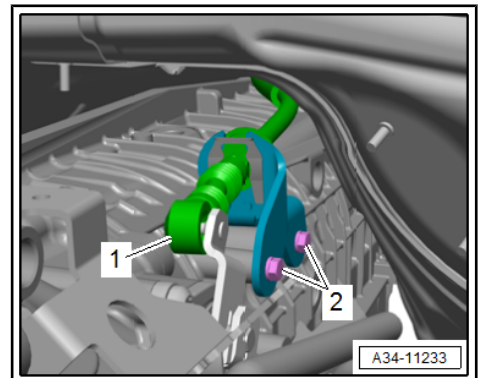
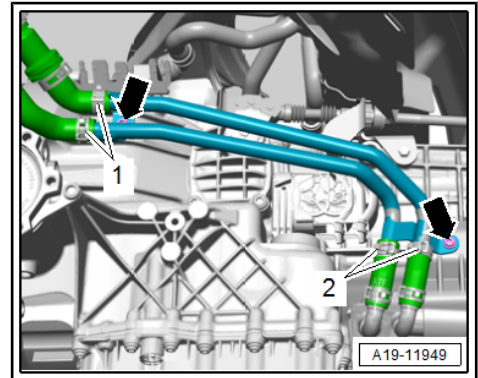


Caution

The selector shaft running surface could get damaged.

- ◆ *Position the screwdriver.*

- Pierce seal with a small screwdriver and pull out.

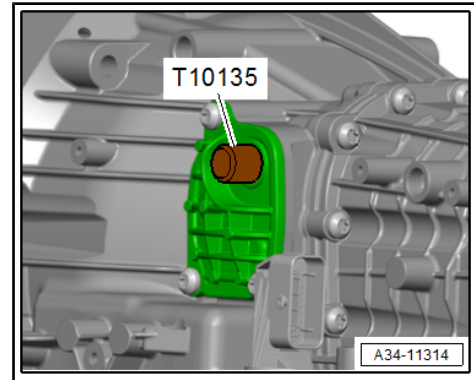


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- Apply ATF to the circumference and the space between the sealing lips of the new seal.
- Installed position: open side of the seal faces the transmission.
- Slide the seal onto the selector shaft.
- Install the seal all the way in using the Seal Installer - Selector Shaft - T10135- . Do not tilt the seal when installing.
- Slide the gearshift lever onto the gearshift shaft and tighten.

Tightening Specifications

- ◆ Refer to ⇒ [“1.3 Overview - Selector Mechanism”, page 14](#)
- ◆ Refer to ⇒ Rep. Gr. 19 ; Coolant Pipes
- ◆ Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Sub-frame .



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2 Transmission, Removing and Installing

⇒ [“2.1 Transmission, Removing”, page 39](#)

⇒ [“2.2 Transmission, Installing”, page 57](#)

⇒ [“2.3 Transmission Tightening Specifications”, page 65](#)

2.1 Transmission, Removing

⇒ [“2.1.2 Transmission, Removing, 6-Cylinder TDI Engine”, page 44](#)

⇒ [“2.1.3 Transmission, Removing, Vehicles with 4-Cylinder FSI Engine”, page 51](#)

2.1.1 Transmission, Removing, Vehicles with 4-Cylinder TDI Engine

Special tools and workshop equipment required

- ◆ Pry Lever - 80-200-
- ◆ Hose Clamps - Up To 25mm - 3094-
- ◆ Engine and Gearbox Jack - VAS6931-
- ◆ Engine Bung Set - VAS6122-
- ◆ Gearbox Support - T40173-

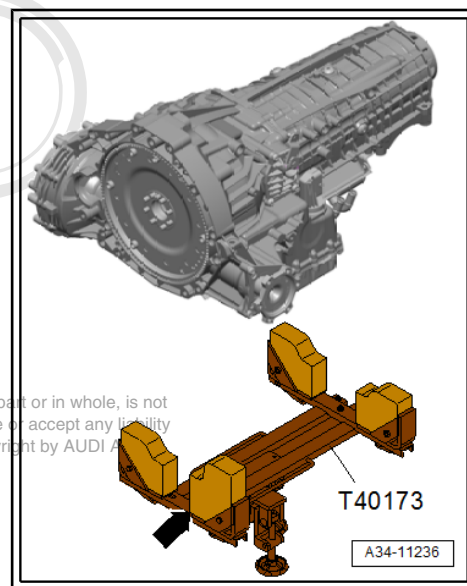
Preparing the Gearbox Support - T40173- :

- The bracket -arrow- must be turned so that the longer side faces up, as illustrated.

Procedure

- Move the selector lever into “P”.
- Position the front wheels so they are straight.
- Disable the ATF pump and drain the hydraulic pressure reservoir. Refer to
⇒ [“4.3 ATF Pump, Deactivating and Draining the Hydraulic Pump Reservoir”, page 7](#) .
- Turn off the ignition.

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Caution

Risk of damaging the transmission by mixing ATF and transmission fluid (MTF) through the same bleeder.

- ◆ **The transmission filled with ATF and MTF transmission fluid must be tilted a maximum of 15° in lateral and longitudinal direction.**
- ◆ **If more of an incline is needed, then the ATF and MTF transmission fluids must be drained. Refer to ➔ "9.2 ATF, Draining and Filling", page 88 and ➔ "8.2 Transmission Fluid, Draining and Filling", page 82 .**

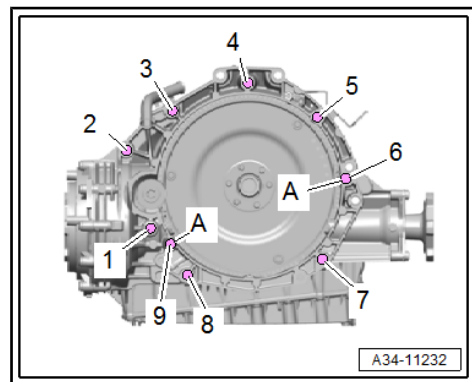
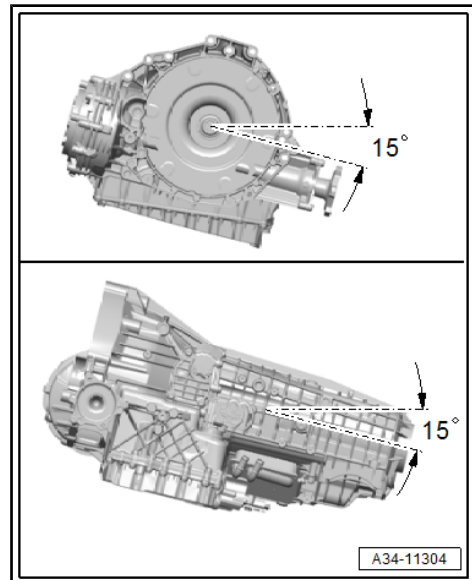


Caution

Risk of damaging electronic components when disconnecting the battery.

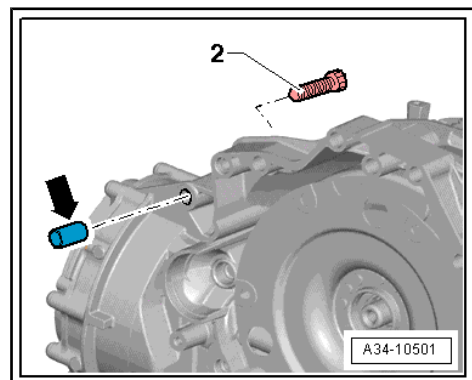
- ◆ **Complete the steps for disconnecting the battery.**

- Disconnect the battery ground cable. Refer to ➔ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .
- Remove the engine cover. Refer to ➔ Rep. Gr. 10 .
- Remove the plenum chamber bulkhead. Refer to ➔ Body Exterior; Rep. Gr. 50 .
- Remove the bolts -2 through 5- connecting the engine to the transmission. They are accessible from above.



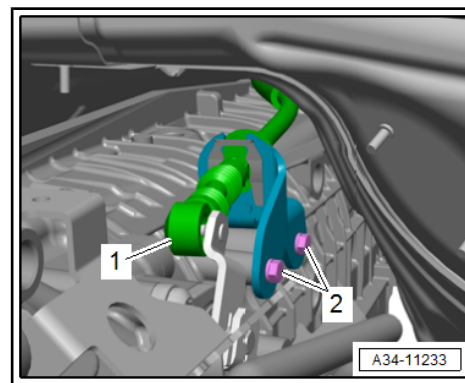
Note

The bolt -2- attaches the starter to the transmission and has an additional spacer sleeve -arrow-.



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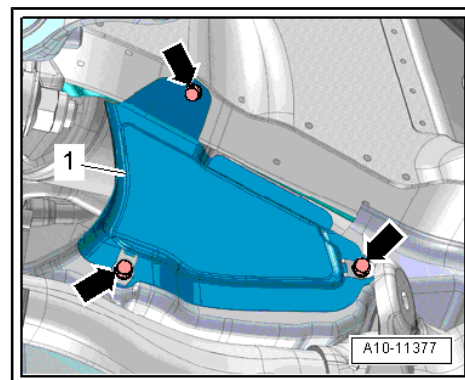
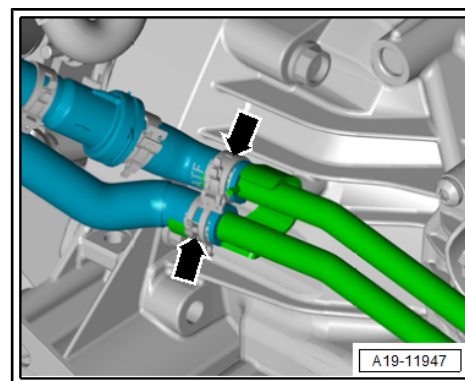
- Remove the ball socket -1- on the selector lever cable from the selector shaft lever using the Pry Lever - 80 - 200- .
- Remove the bolts -2-.



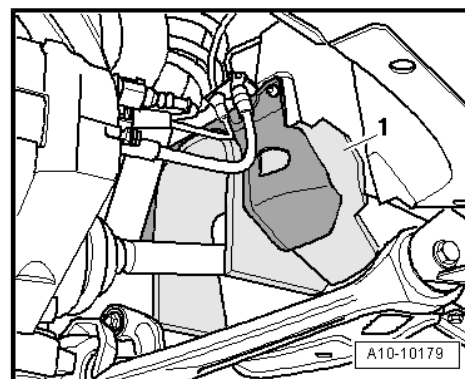
Note

Use a cloth to catch any leaking coolant.

- Loosen the hose clamps -arrows- and then disconnect and remove the coolant hoses with Hose Clamps - Up To 25mm - 3094- .
- Remove the front wheels. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44 .
- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Noise Insulation, Removing and Installing
- Remove the left and right bolts -arrows- and the heat shield -1-.



- Remove the left and right driveshaft cover -1- inside the wheel housing.
- Remove the subframe crossbrace. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 .
- Remove the steering intermediate shaft from the steering gear and push them both upward. Refer to ⇒ Suspension, Wheels, and Steering; Rep. Gr. 48 .

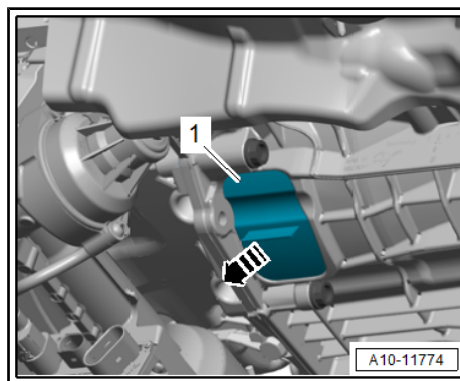


Caution

The suspension components could be damaged.

- ◆ ***Do not rest the vehicle on its wheels if the subframe mount, the steering gear or the subframe crossbrace are not installed correctly.***

- Remove the lower cover -1- from the transmission -arrow-.

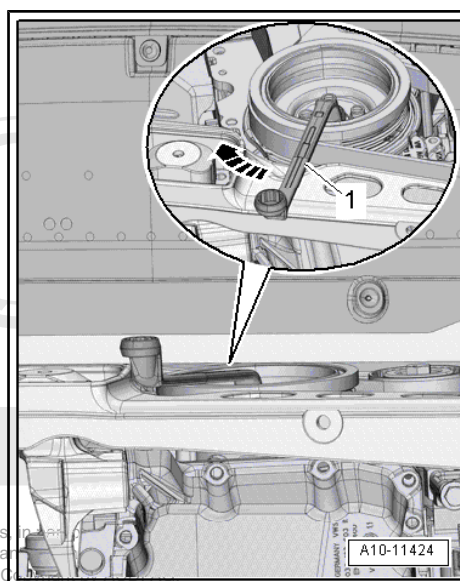


- Remove the cap from the vibration damper.
- Counterhold the crankshaft with an angled wrench -1- to loosen the flywheel bolts on the central bolt on the vibration damper.

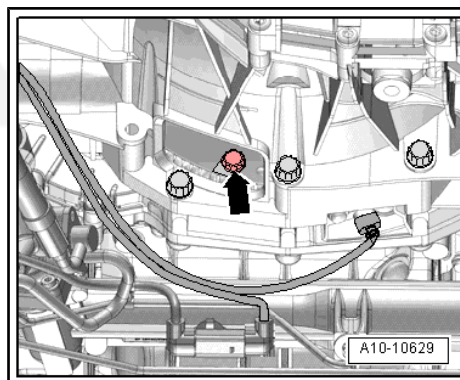


Note

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



- Remove the 3 flywheel bolts -arrow- while turning the crankshaft 120° further in the direction of engine rotation.

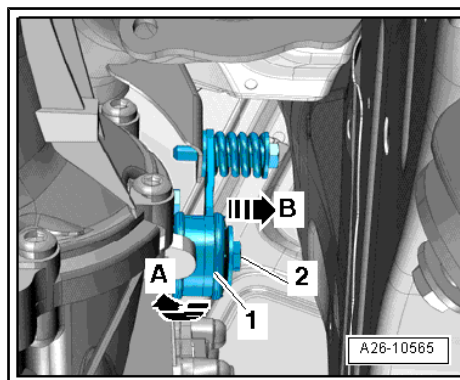


- Remove the bolt -2- for the belt on the transmission.
- Press the tab -1- in -direction of arrow B- and swivel it toward the rear -arrow A-.

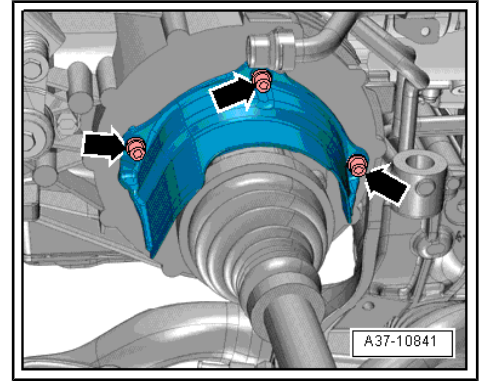


Note

The front exhaust pipe remains installed.



- Remove the bolts -arrows- and remove the heat shield from the right driveshaft.
- Remove the left and right driveshaft from the transmission flange shaft. Refer to ➔ Suspension, Wheels, Steering; Rep. Gr. 40 .

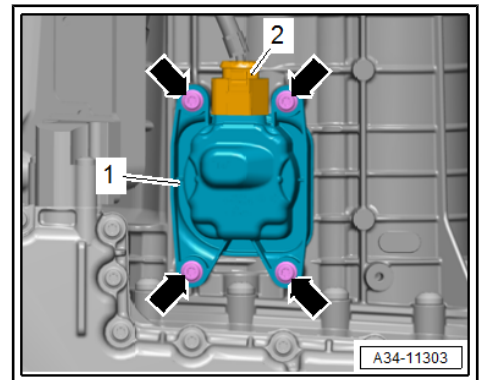


- Disconnect the connector -2- on the transmission fluid pump -1-.



Note

Ignore -arrows-.

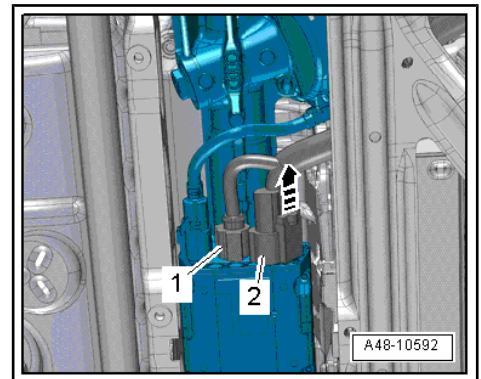
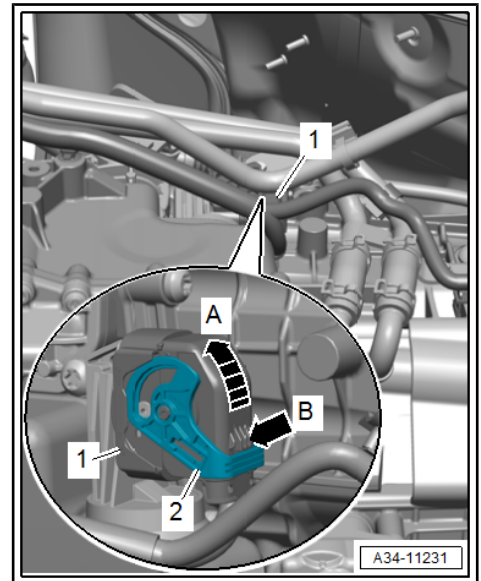


Caution

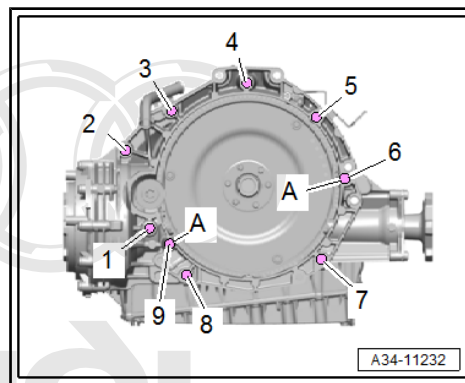
There is a risk of destroying the transmission control module (Mechatronic) with static discharge.

- ◆ ***Always "discharge" the static electricity before working with electric connectors. Do this by touching a grounded object, for example vehicle ground, the vehicle or the hoist.***
- ◆ ***Do not touch contacts in transmission connector with hands.***

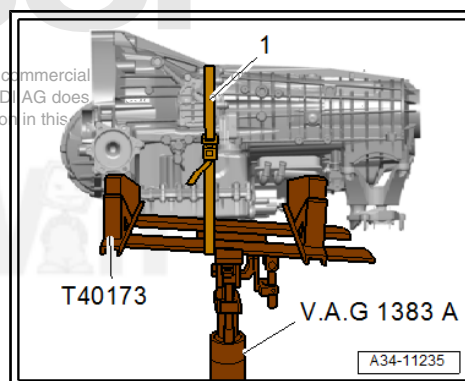
- Disconnect the connector -1- by pressing the locking mechanism -B arrow- and pull the locking bracket -2- in the -direction of arrow A-.
- Free up the wiring harness on the transmission and on the crossmember.
- Disconnect the connector -1-.
- Loosen the retainer -arrow-, push the release downward and disconnect the connector -2- from the Power Steering Control Module - J500- .
- Free up the wiring harness.



- Remove the starter bolt -1-.
- Remove the starter from the transmission and leave it in the installation position.
- Remove the remaining bolts -6 through 9- on the transmission connection to the engine.



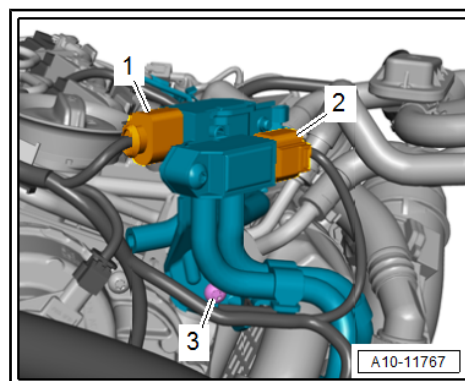
- Place the Engine and Gearbox Jack - VAS6931- with the prepared Gearbox Support - T40173- under the transmission and secure with the tensioning strap -1- as shown in the illustration.
- Remove the tunnel crossmember. Refer to ⇒ ["5.2 Tunnel Crossmember, Removing and Installing", page 69](#).



Caution

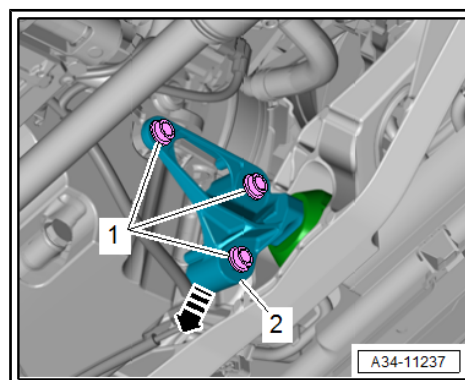
Risk of destroying the Exhaust Pressure Sensor 1 - G450- and Differential Pressure Sensor - G505- when lowering the transmission.

- ◆ If the pressure is too high the connection from the Exhaust Pressure Sensor 1 - G450- and Differential Pressure Sensor - G505- can break.



Exhaust Pressure Sensor 1 - G450- and Differential Pressure Sensor - G505- : Refer to ⇒ Rep. Gr. 23 ; Sensors

- Loosen the bolts -1- for the torque support -2-.
- Lower the transmission Engine and Gearbox Jack - VAS6931- only until the torque support is set in its adjustment range at the very bottom -arrow-. Pay attention to the Exhaust Pressure Sensor 1 - G450- and Differential Pressure Sensor - G505- while doing this.
- Re-tighten the bolts for the torque support.
- Push the transmission off the engine and lower it carefully using the Engine and Gearbox Jack - VAS6931- while doing so pay attention to wires and the selective catalytic reduction line.



2.1.2 Transmission, Removing, 6-Cylinder TDI Engine

Special tools and workshop equipment required

- ◆ Pry Lever - 80-200-
- ◆ Hose Clamps - Up To 25mm - 3094-

- ◆ Engine and Gearbox Jack - VAS6931-
- ◆ Engine Bung Set - VAS6122-
- ◆ Gearbox Support - T40173-
- ◆ Crankshaft Turning Tool - T40257-
- ◆ Wrench - 21mm - T40263-
- ◆ Adapter -T40314-
- ◆ Tensioning Strap - T10038-
- ◆ Pry Lever - 80-200-
- ◆ Hose Clamps - Up To 25mm - 3094-
- ◆ Engine and Gearbox Jack - VAS6931-
- ◆ Engine Bung Set - VAS6122-
- ◆ Gearbox Support - T40173-



Caution

This procedure contains mandatory replaceable parts. Refer to component overview and parts catalog prior to starting procedure.

Mandatory Replacement Parts
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◆ Bolts - Engine to transmission

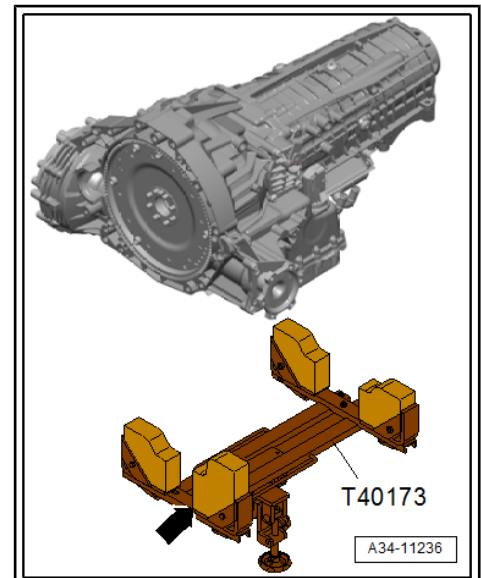
- ◆ Bolts - Flywheel
- ◆ Bolts - Transmission fluid pump
- ◆ Gasket Front exhaust pipe
- ◆ Nuts - Front exhaust pipe

Preparing the Gearbox Support - T40173- :

- The bracket -arrow- must be turned so that the longer side faces up, as illustrated.

Procedure

- Move the selector lever into “P”.
- Position the front wheels so they are straight.
- Disable the ATF pump and drain the hydraulic pressure reservoir. Refer to [⇒ “4.3 ATF Pump, Deactivating and Draining the Hydraulic Pump Reservoir”, page 7](#) .
- Turn off the ignition.





Caution

Risk of damaging the transmission by mixing ATF and transmission fluid (MTF) through the same bleeder.

- ◆ **The transmission filled with ATF and MTF transmission fluid may be tilted a maximum of 15° laterally and length-wise direction.**
- ◆ **If more of an incline is needed, then the ATF and MTF transmission fluids must be drained. Refer to ⇒ "9.2 ATF, Draining and Filling", page 88 and ⇒ "8.2 Transmission Fluid, Draining and Filling", page 82.**

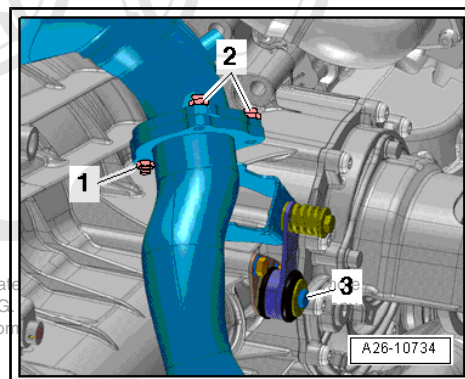
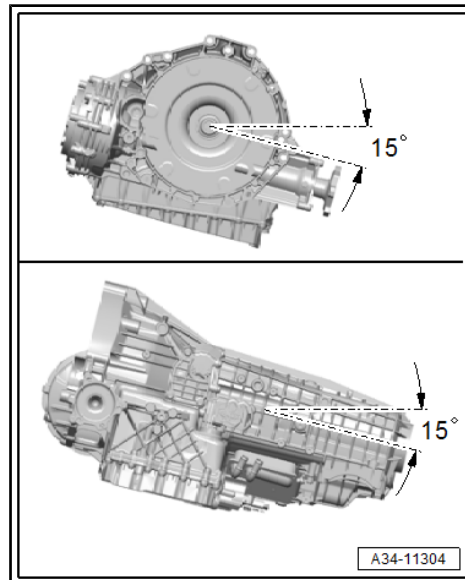


Caution

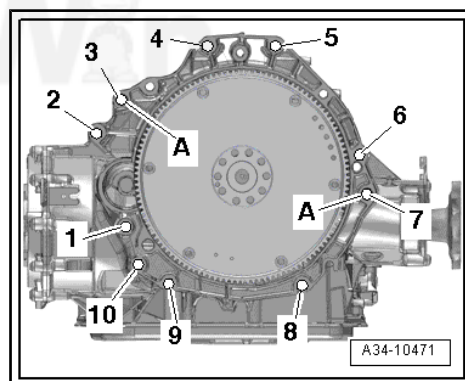
Risk of damaging electronic components when disconnecting the battery.

- ◆ **Complete the steps for disconnecting the battery.**

- Disconnect the battery ground cable. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .
- Remove the engine cover. Refer to ⇒ Rep. Gr. 10 ; Engine Cover; Engine Cover, Removing and Installing .
- Remove the plenum chamber bulkhead. Refer to ⇒ Body Exterior; Rep. Gr. 50 ; Bulkhead; Plenum Chamber Bulkhead, Removing and Installing .
- Remove the particulate filter and the front exhaust pipe. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .

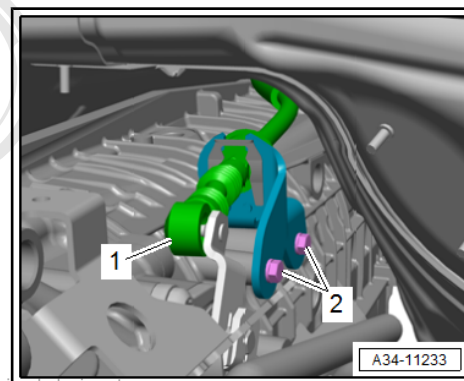


- Remove the bolts -2 through 5- connecting the engine to the transmission. They are accessible from above.

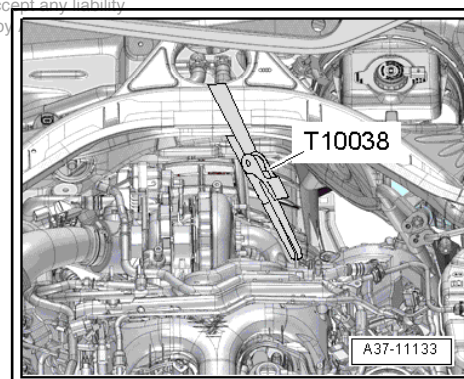


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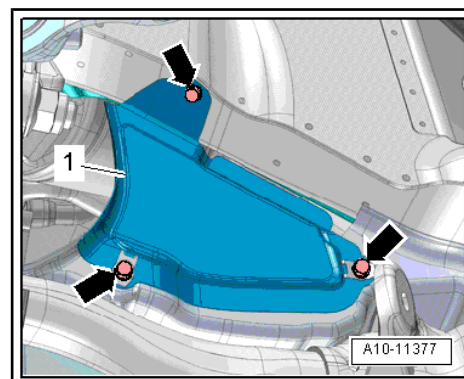
- Remove the ball socket -1- on the selector lever cable from the selector shaft lever using the Pry Lever - 80-200- .
- Remove the bolts -2-.



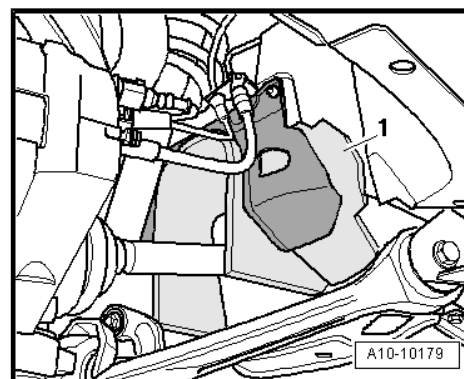
- Move the tower brace into its installed position and then tighten the bolts hand-tight.
- Secure the engine with the Tensioning Strap - T10038- as illustrated.
- Remove the front wheels. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 44 ; Wheels and Tires .
- Remove the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Underbody Trim Panel, Removing and Installing .



- Remove the left and right bolts -arrows- and the heat shield -1-.



- Remove the left and right drive axle cover -1- inside the wheel housing.
- Remove the subframe crossbrace. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Subframe; Subframe Crossbrace, Removing and Installing .
- Remove the steering intermediate shaft from the steering gear and push them both upward. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 48 ; Steering Column; Steering Intermediate Shaft, Removing and Installing .

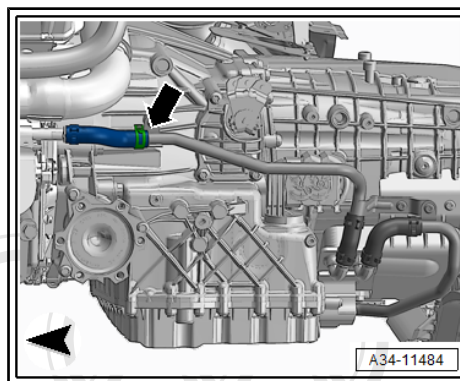


Caution

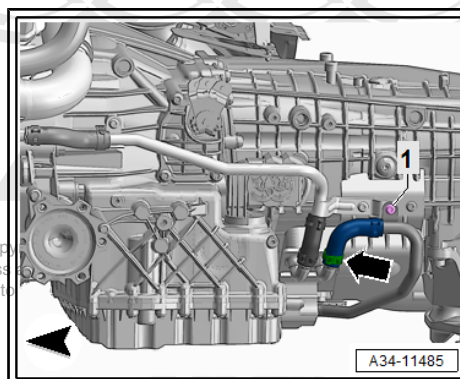
The suspension components could be damaged.

- ◆ *Do not rest the vehicle on its wheels if the subframe mount, the steering gear or the subframe crossbrace are not installed correctly.*

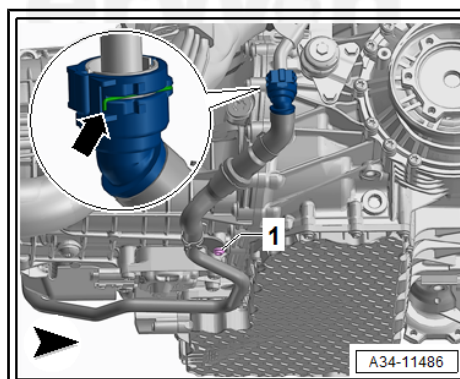
- Loosen the clamp -arrow- and remove the coolant hose.



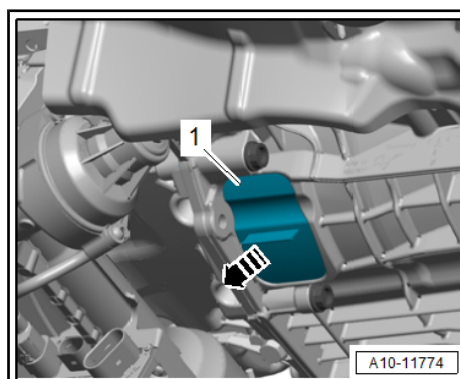
- Remove the bolt -1-, loosen the hose clamp -arrow- and remove the coolant hose.



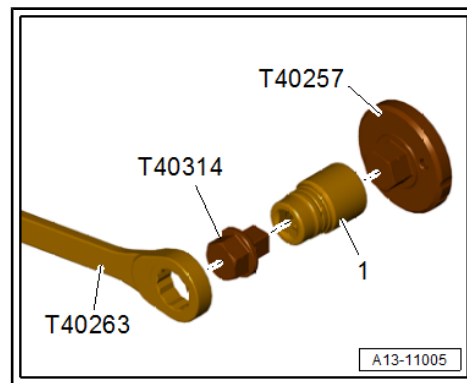
- Remove the coolant line by removing the bolt -1- and opening the clip -arrow-.



- Remove the lower cover -1- from the transmission -arrow-.



- Connect the tools the as illustrated.
- 1 - Socket 21 mm for 1/2"- drive

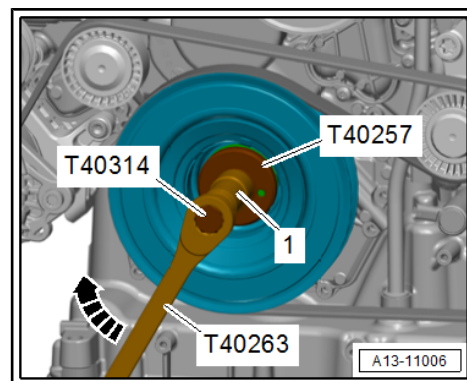


- Counterhold the crankshaft to loosen the dual mass flywheel bolts.

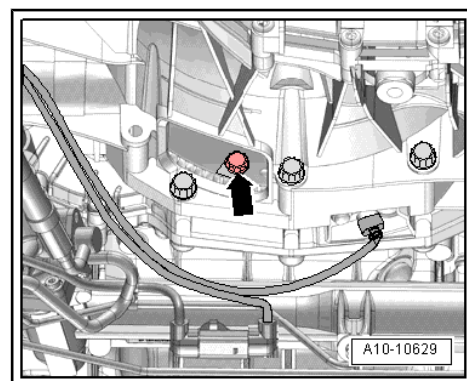


Note

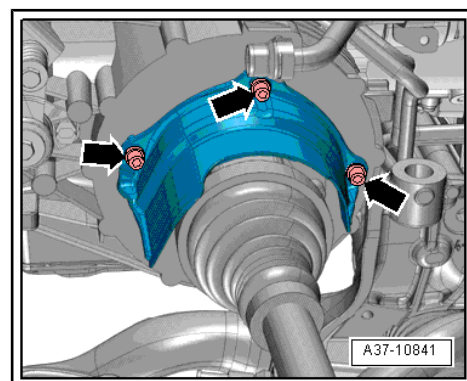
When mounting, turn the crankshaft only in the direction of engine rotation -arrow-.



- Remove the six flywheel bolts -arrow- while turning the crankshaft 60° further in the direction of engine rotation.



- Remove the bolts -arrows- and remove the heat shield from the right drive axle.
- Remove the left and right drive axle from the transmission flange shaft. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Drive Axle Threaded Connection, Loosening and Tightening .



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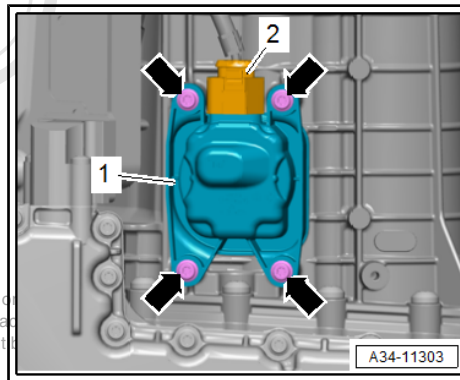
- Disconnect the connector -2- on the transmission fluid pump -1-.



Note

Ignore -arrows-.

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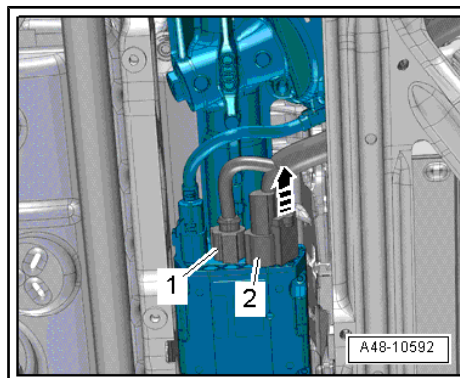
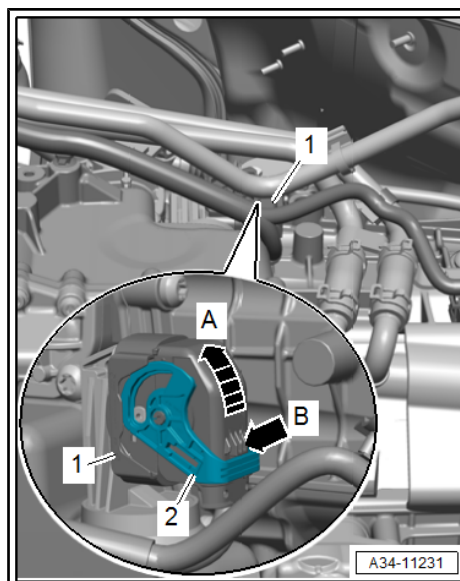


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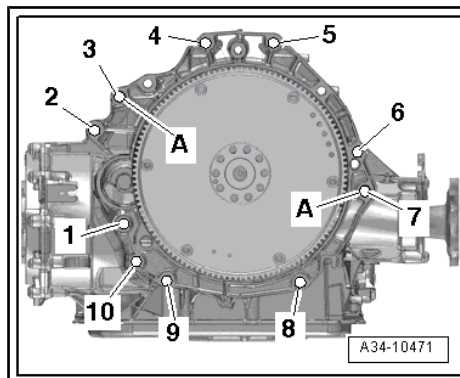
There is a risk of destroying the transmission control module (Mechatronic) with static discharge.

- ◆ Always "discharge" the static electricity before working with electric connectors. Do this by touching a grounded object, for example vehicle ground, the vehicle or the hoist.
- ◆ Do not touch contacts in transmission connector with hands.

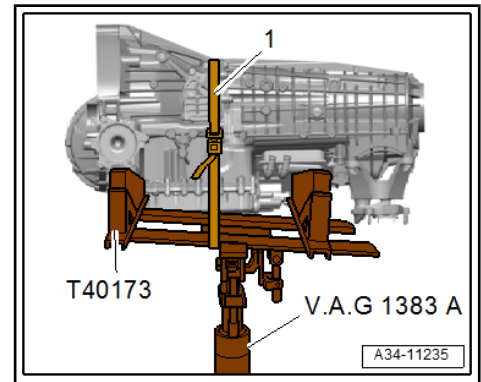
- Disconnect the connector -1- by pressing the locking mechanism -B arrow- and pull the locking bracket -2- in direction of -arrow A-.
- Free up the wiring harness on the transmission and on the crossmember.
- Disconnect the connector -1-.
- Loosen the retainer -arrow-, push the release downward and disconnect the connector -2- from the Power Steering Control Module - J500- .
- Free up the wiring harness.



- Remove the starter bolt -1-.
- Remove the starter from the transmission and leave it in the installation position.
- Remove the remaining bolts -6 through 9- on the transmission connection to the engine.



- Place the Engine and Gearbox Jack - VAS6931- with the prepared Gearbox Support - T40173- under the transmission and secure with the tensioning strap -1- as shown in the illustration.
- Remove the tunnel crossmember. Refer to
⇒ ["5.2 Tunnel Crossmember, Removing and Installing", page 69](#).
- Push the transmission off the engine and lower it carefully using the Engine and Gearbox Jack - VAS6931- while doing so pay attention to wires and the selective catalytic reduction line.



2.1.3 Transmission, Removing, Vehicles with 4-Cylinder FSI Engine

Special tools and workshop equipment required

- ◆ Pry Lever - 80-200-
- ◆ Hose Clamps - Up To 25mm - 3094-
- ◆ Engine and Gearbox Jack - VAS6931-
- ◆ Engine Bung Set - VAS6122-
- ◆ Gearbox Support - T40173-
- ◆ Crankshaft Turning Tool - T40257-
- ◆ Wrench - 21mm - T40263-
- ◆ Adapter -T40314-
- ◆ Tensioning Strap - T10038-
- ◆ Counterhold - Vibration Damper - T10355-



Caution

This procedure contains mandatory replaceable parts. Refer to component overview and parts catalog prior to starting procedure.

Mandatory Replacement Parts

- ◆ Bolts - Engine to transmission
- ◆ Bolts - Flywheel
- ◆ Bolts - Transmission fluid pump
- ◆ Gasket Front exhaust pipe
- ◆ Nuts - Front exhaust pipe

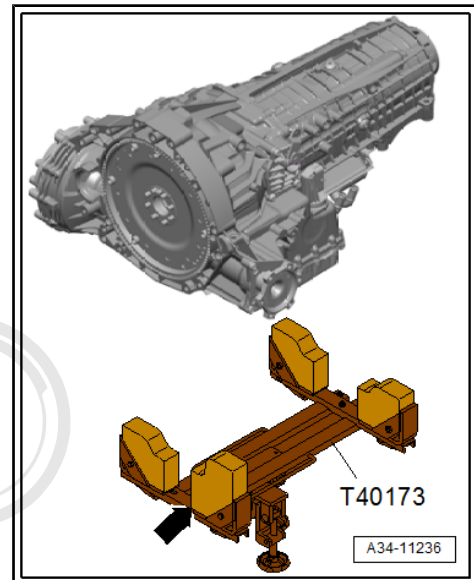
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Preparing the Gearbox Support - T40173- :

- The bracket -arrow- must be turned so that the longer side faces up, as illustrated.

Procedure

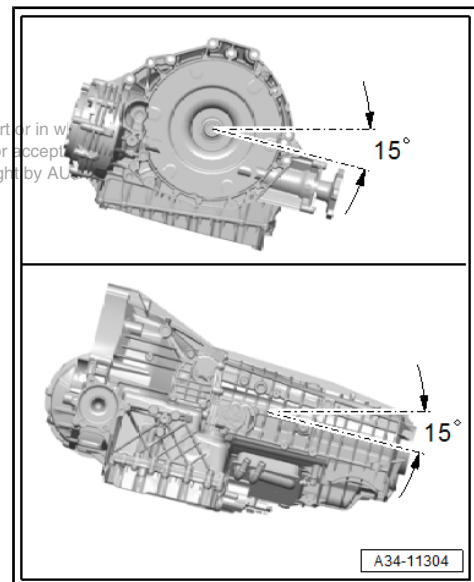
- Move the selector lever into “P”.
- Position the front wheels so they are straight.
- Disable the ATF pump and drain the hydraulic pressure reservoir. Refer to
⇒ [“4.3 ATF Pump, Deactivating and Draining the Hydraulic Pump Reservoir”, page 7](#) .
- Turn off the ignition.



Caution

Risk of damaging the transmission by mixing ATF and transmission fluid (MTF) through the same bleeder.

- ◆ The transmission filled with ATF and MTF transmission fluid may be tilted a maximum of 15° laterally and length-wise direction.
- ◆ If more of an incline is needed, then the ATF and MTF transmission fluids must be drained. Refer to
⇒ [“9.2 ATF, Draining and Filling”, page 88](#) and
⇒ [“8.2 Transmission Fluid, Draining and Filling”, page 82](#) .

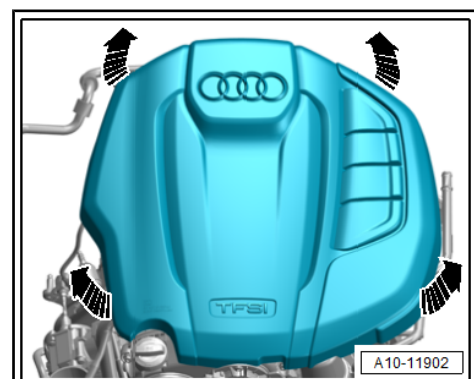


Caution

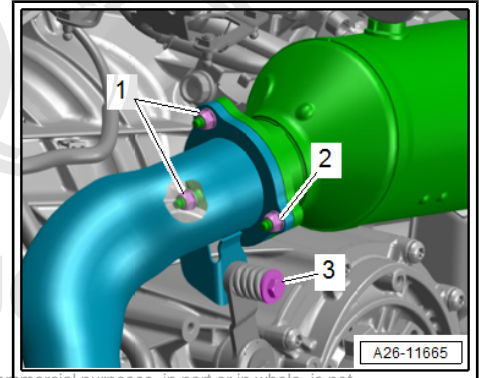
Risk of damaging electronic components when disconnecting the battery.

- ◆ Complete the steps for disconnecting the battery.

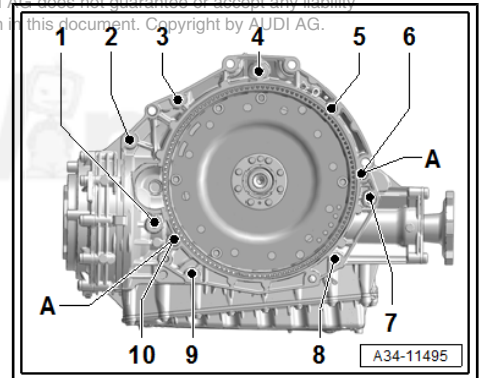
- Disconnect the battery ground cable. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .
- Remove the engine cover. Refer to⇒ Rep. Gr. 10 ; Engine Cover; Engine Cover, Removing and Installing .



- Remove the front exhaust pipe. Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipes/Mufflers; Overview - Muffler .

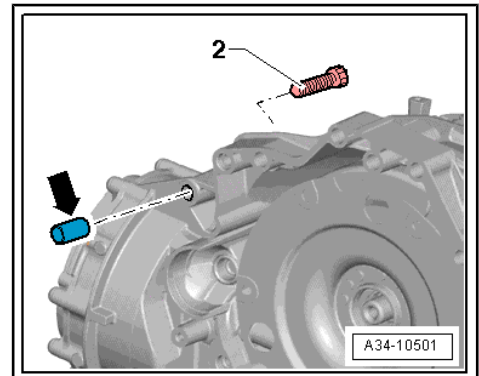


- Remove the bolts -2 through 5- connecting the engine to the transmission. They are accessible from above.

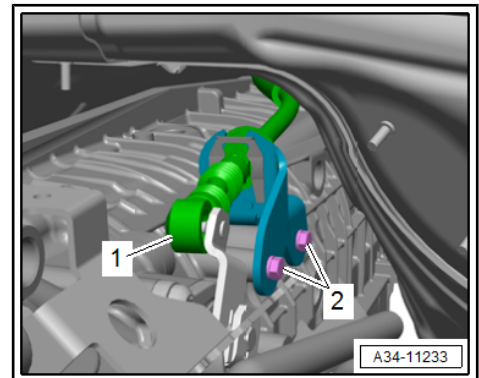


Note

The bolt -2- attaches the starter to the transmission and has an additional spacer sleeve -arrow-.

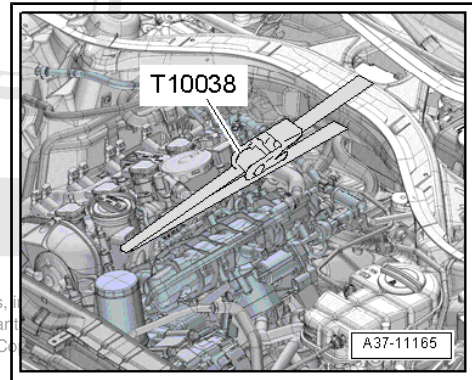


- Remove the ball socket -1- on the selector lever cable from the selector shaft lever using the Pry Lever - 80-200- .
- Remove the bolts -2-.

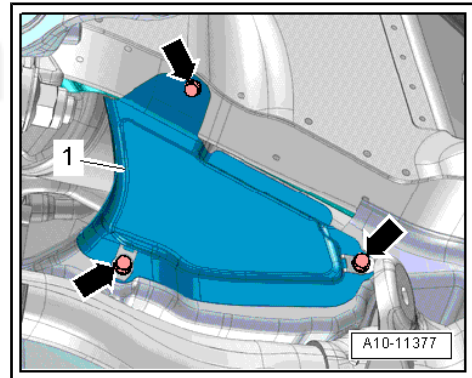


- Secure the engine with the Tensioning Strap - T10038- as illustrated.
- Remove the front wheels. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 44 ; Wheels and Tires .
- Remove the noise insulation. Refer to ➤ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Underbody Trim Panel, Removing and Installing .

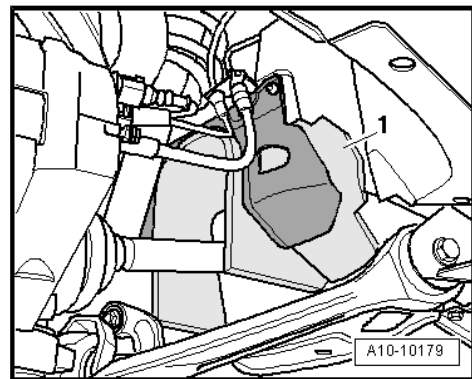
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- Remove the left and right bolts -arrows- and the heat shield -1-.



- Remove the left and right drive axle cover -1- inside the wheel housing.
- Remove the subframe crossbrace. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 40 ; Subframe; Subframe Crossbrace, Removing and Installing .
- Remove the steering intermediate shaft from the steering gear and push them both upward. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Drive Axle Threaded Connection, Loosening and Tightening .



Caution

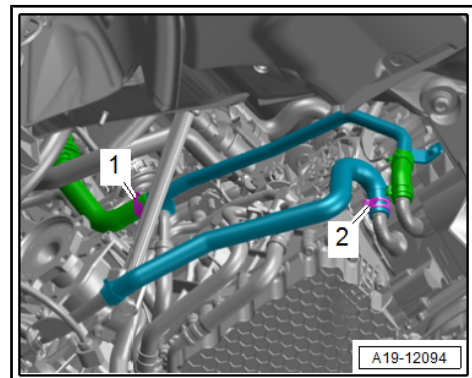
The suspension components could be damaged.

- ◆ *Do not rest the vehicle on its wheels if the subframe mount, the steering gear or the subframe crossbrace are not installed correctly.*

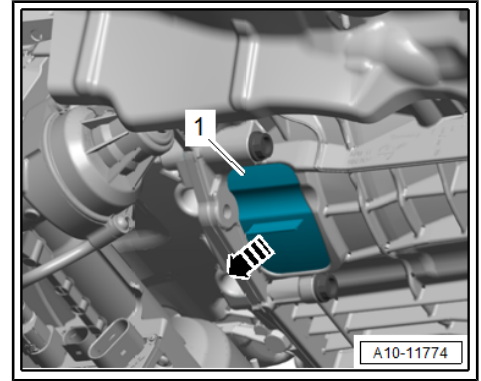
- Loosen the hose clamp -2-, remove the coolant hose from the transmission and let the coolant drain.

Seal open coolant lines using the Engine Bung Set - VAS6122- .

- Loosen the hose clamp -1- and remove the coolant hose from the ATF cooler.



- Remove the lower cover -1- from the transmission -arrow-.



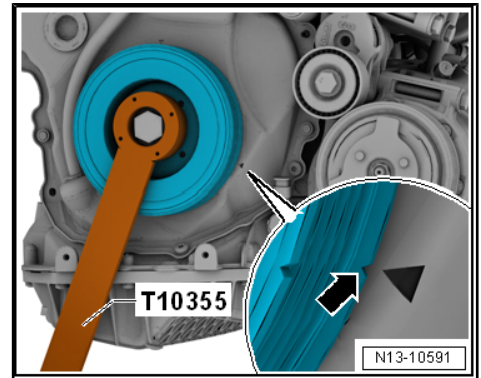
- Counterhold the crankshaft to loosen the flywheel bolts.



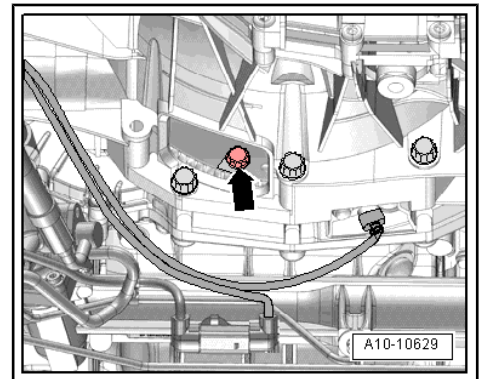
Note

Turn the crankshaft only in the direction of engine rotation.

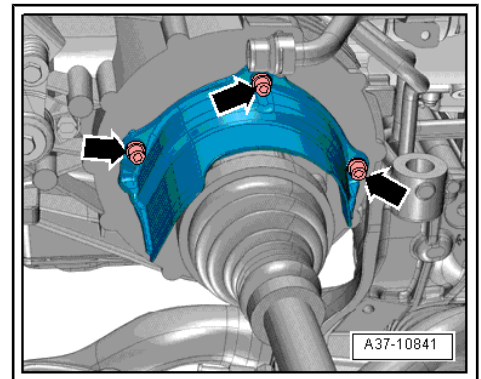
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- Remove the 3 flywheel bolts -arrow- while turning the crankshaft 120° further in the direction of engine rotation.



- Remove the bolts -arrows- and remove the heat shield from the right drive axle.
- Remove the left and right drive axle from the transmission flange shaft. Refer to ➔ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Drive Axle Threaded Connection, Loosening and Tightening .



- Disconnect the connector -2- on the transmission fluid pump -1-.



Note

Ignore -arrows-.



Caution

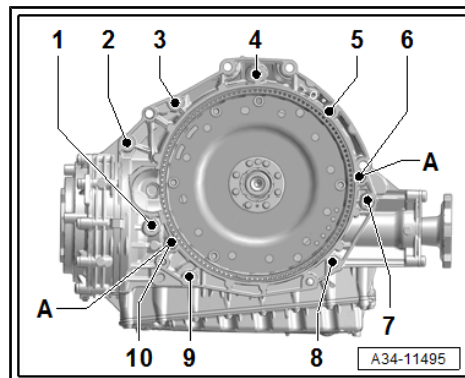
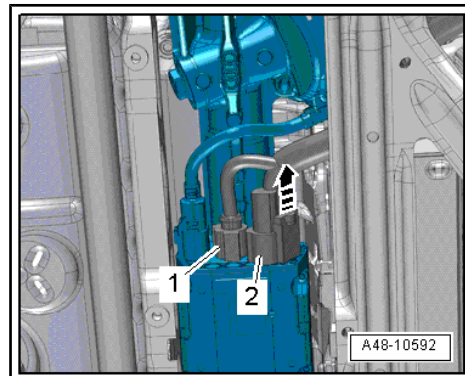
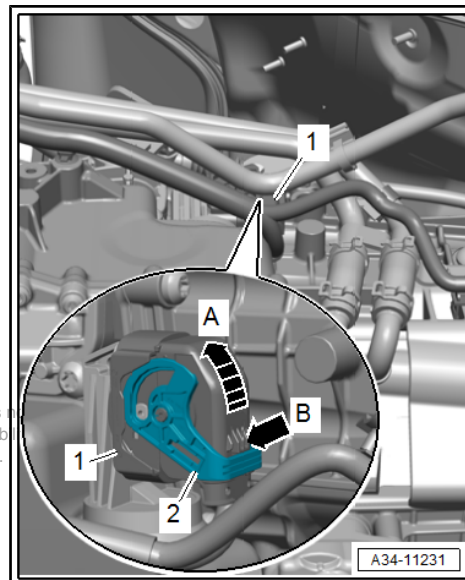
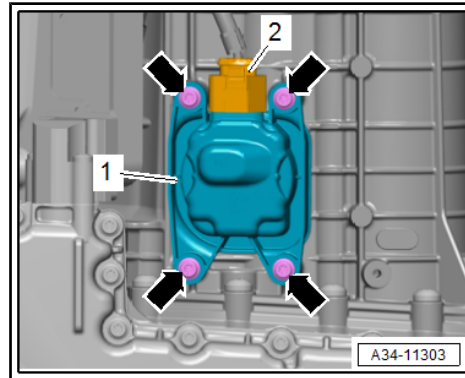
There is a risk of destroying the transmission control module (Mechatronic) with static discharge.

- ◆ Always "discharge" the static electricity before working with electric connectors. Do this by touching a grounded object, for example vehicle ground, the vehicle or the hoist.
- ◆ Do not touch contacts in transmission connector with hands.

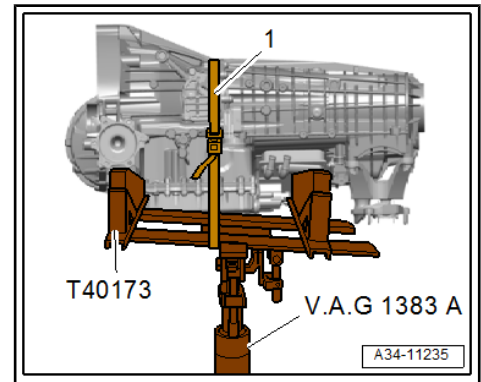
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- Disconnect the connector -1- by pressing the locking mechanism -B arrow- and pull the locking bracket -2- in the direction of -arrow A-.
- Free up the wiring harness on the transmission and on the crossmember.
- Disconnect the connector -1-.
- Loosen the retainer -arrow-, push the release downward and disconnect the connector -2- from the Power Steering Control Module - J500- .
- Free up the wiring harness.

- Remove the starter bolt -1-.
- Remove the starter from the transmission and leave it in the installation position.
- Remove the remaining bolts -6 through 9- on the transmission connection to the engine.



- Place the Engine and Gearbox Jack - VAS6931- with the prepared Gearbox Support - T40173- under the transmission and secure with the tensioning strap - 1- as shown in the illustration.
- Remove the tunnel crossmember. Refer to
⇒ ["5.2 Tunnel Crossmember, Removing and Installing", page 69](#).
- Push the transmission off the engine and lower it carefully using the Engine and Gearbox Jack - VAS6931- while doing so pay attention to wires and the selective catalytic reduction line.



2.2 Transmission, Installing

Special tools and workshop equipment required

- ◆ Torque Wrench 1332 Insert - Ring Wrench - 16mm - VAG1332/14-
- ◆ Clutch Module Assembly Aid - T40169-
- ◆ Clutch Module Transportation Lock - T40170-



Caution

This procedure contains mandatory replaceable parts. Refer to component overview and parts catalog prior to starting procedure.

Mandatory Replacement Parts

- ◆ Bolts - Engine to transmission
- ◆ Bolts - Flywheel
- ◆ Gasket Front exhaust pipe
- ◆ Nuts - Front exhaust pipe
- ◆ Bolts - Transmission fluid pump

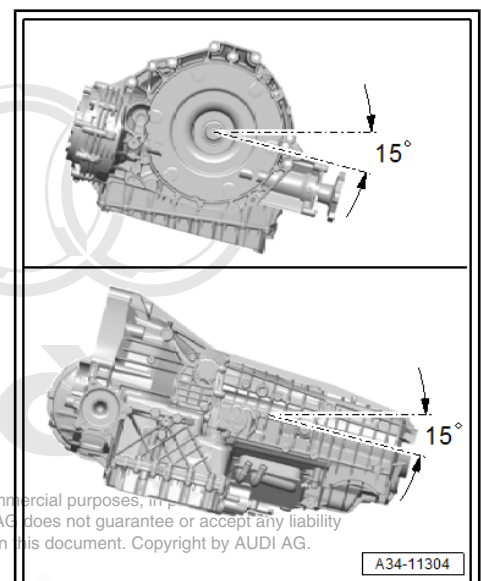
Procedure



Caution

Risk of damaging the transmission by mixing ATF and transmission fluid (MTF) through the same bleeder.

- ◆ The transmission filled with ATF and MTF transmission fluid may be tilted a maximum of 15° laterally and lengthwise direction.
- ◆ If more of an incline is needed, then the ATF and MTF transmission fluids must be drained. Refer to
⇒ ["9.2 ATF, Draining and Filling", page 88](#) and
⇒ ["8.2 Transmission Fluid, Draining and Filling", page 82](#).

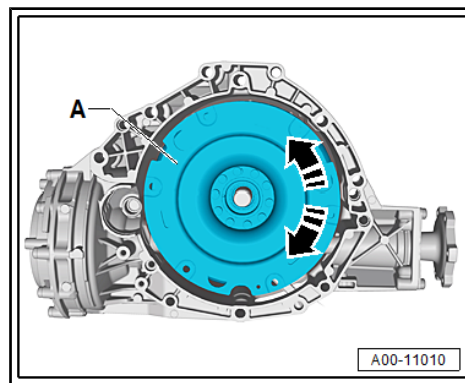


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Note

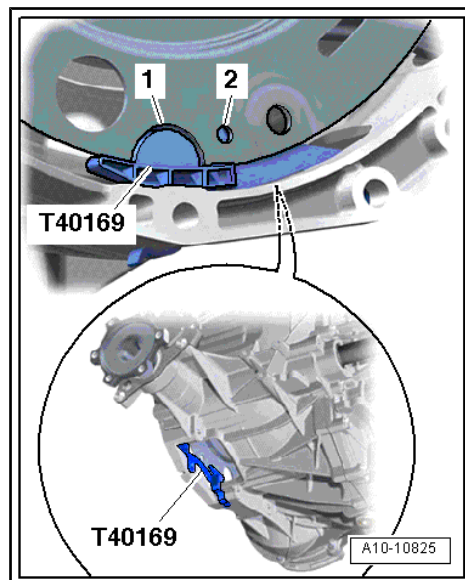
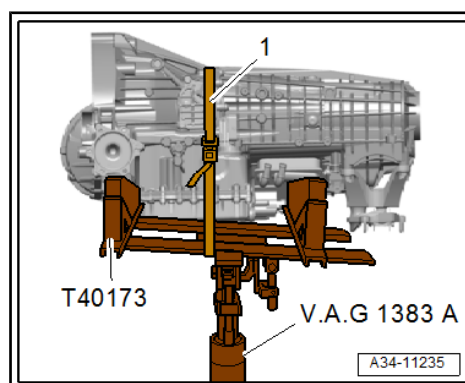
- ◆ Replace the bolts that were tightened with an additional turn.
- ◆ Replace self-locking nuts and bolts, O-rings, sealing rings and seals.
- ◆ Secure hose connections with hose clamps that correspond to the series production. Refer to the Parts Catalog.
- ◆ During installation, all cable ties must be installed at the same location.
- ◆ There is a normal »clicking« in the dual mass flywheel with "LuK" centrifugal pendulum absorber -A-.
- ◆ A »clicking« is heard when turning the clutch module -A- approximately every 90°. This noise comes from shifting pendulum masses (centrifugal pendulum absorber) in the dual mass flywheel and is not a fault.



Caution

Danger of leaks in the oil pan.

- ◆ The Gearbox Support - T40173- must not be set on the oil pan.
- Mount the transmission onto the Gearbox Support - T40173- and secure it using the tension strap -1- as illustrated.
- The following preparations must be made before connecting the engine and transmission:
- Insert the Clutch Module Assembly Aid - T40169- in the transmission housing and the flywheel from below as shown in the illustration.



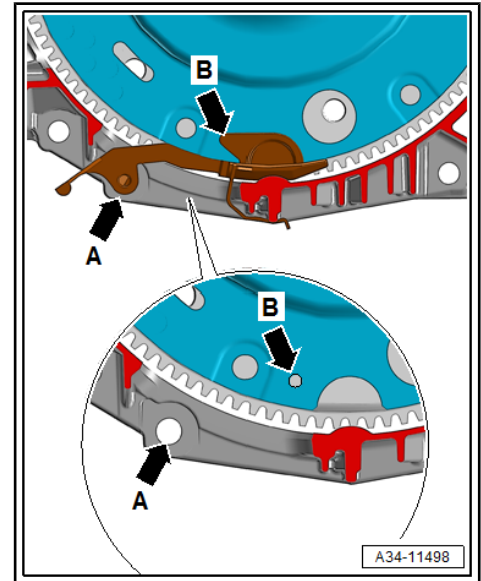
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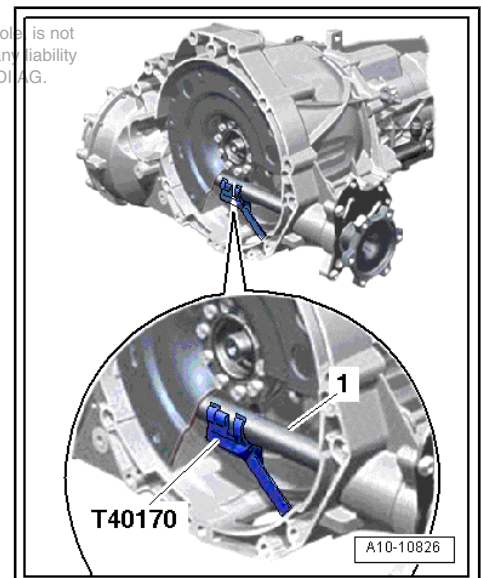
- The tool must grip into the semicircular hole and also in the hole -arrow A- and -arrow B-.

 Note

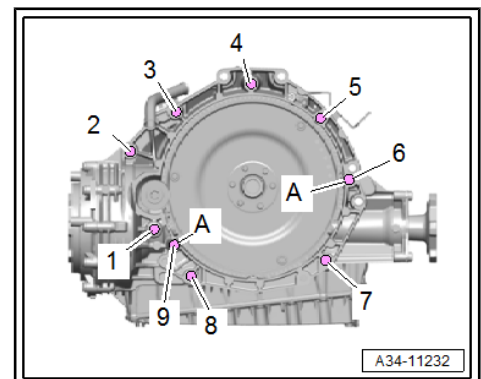
There is only 1 inspection opening -arrow B- on the edge. Rotate the flywheel as needed.



- Insert the Clutch Module Transportation Lock - T40170- in the transmission housing from below and secure it on the flange shaft -1-.
- Inspect the aluminum bolts used to connect the engine to the transmission to see if they can be used again and mark them, if necessary. Refer to [page 66](#).



- Check if the alignment sleeves -A- for centering the engine/ transmission are in the cylinder block and insert them if they are not.
- Connect the transmission to the engine and then tighten the bolts -6 and 9- connecting the engine to the transmission.

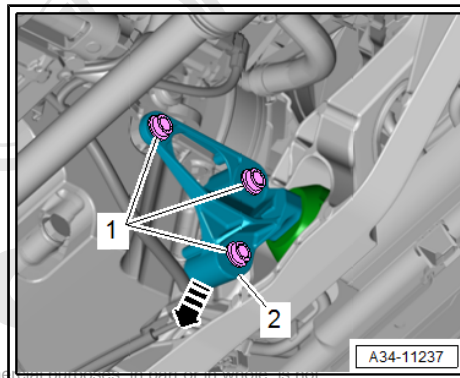


Vehicles with 4-Cylinder TDI Engine

- Loosen the torque support bolts -1-.
- Lift the transmission and install the tunnel crossmember. Refer to ⇒ ["5.1 Overview - Subframe Mount", page 69](#).
- Adjust the torque support -2- and tighten. Refer to ⇒ Rep. Gr. 10 ; Subframe Mount .

All Vehicles

- Install the tunnel crossmember. Refer to ⇒ ["5.1 Overview - Subframe Mount", page 69](#).
- Lower the Engine and Gearbox Jack - VAS6931- with the Gearbox Support - T40173- and set aside.

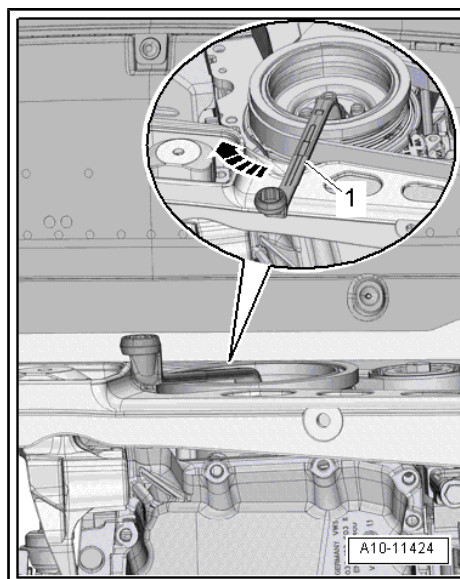


Caution

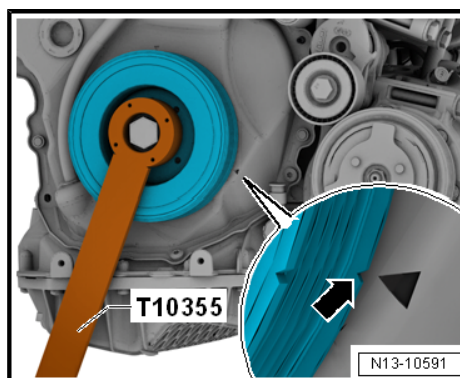
Vibrations or rattling noises when driving may be a result of a tightly bolted flywheel.

- ◆ *The sequence of steps must always be followed in order.*
- ◆ *The flywheel must rest flat on the drive plate when screwing in the first bolt.*

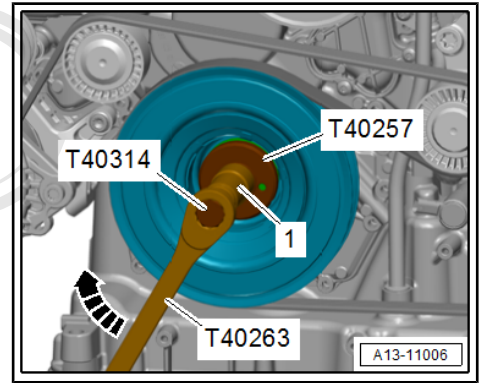
- Turn the crankshaft on the vibration damper 360° in the direction of engine rotation -arrow-.



Vehicles with a 4-Cylinder TFSI Engine

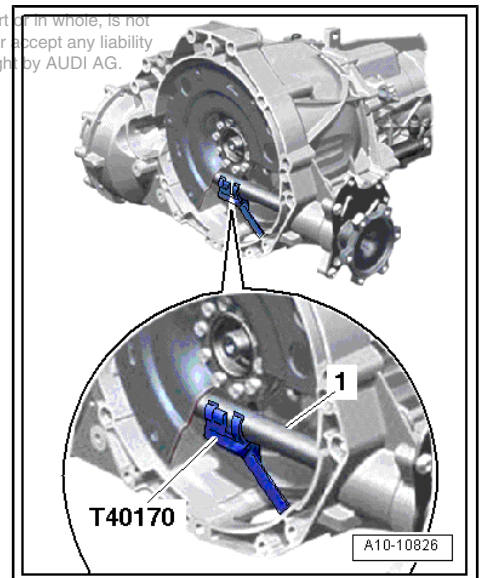


Vehicles with 6-cylinder TDI Engine



- Remove the Clutch Module Transportation Lock - T40170 -

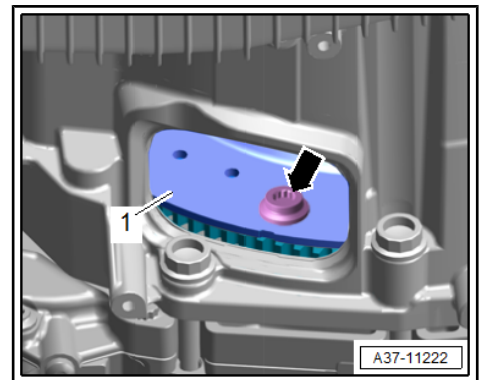
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Note

The vibration damper -1- must rest flat on the drive plate before screwing in the first bolt.

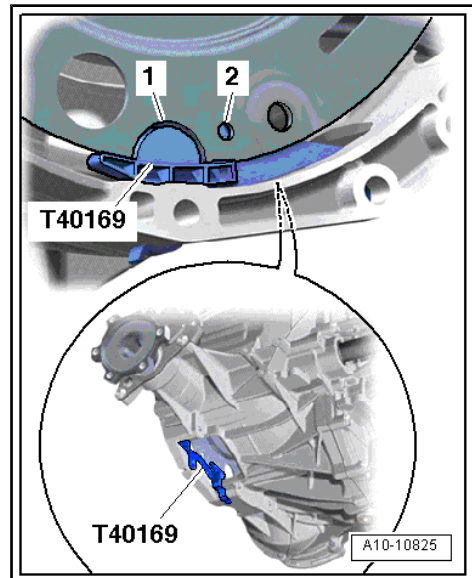
- Install the first bolt -arrow-, tighten to 10 Nm, loosen and then tighten to 2 Nm (hand-tight).



- Remove the Clutch Module Assembly Aid - T40169- .
- Tighten the flywheel to the drive plate as follows:

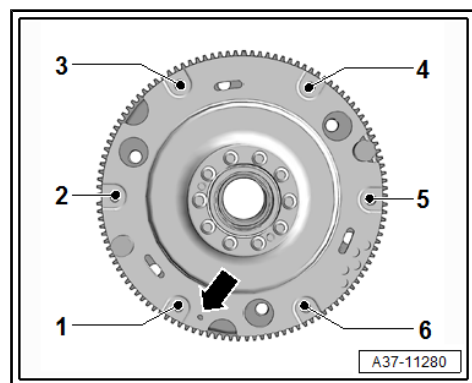
Vehicle with 4-Cylinder Engine (Three Bolts)

- Turn the crankshaft on the vibration damper 120° in the direction of the engine rotation with a large offset open-end wrench.
- With the crankshaft in this position, install the next bolt and tighten to 60 Nm.
- Turn the crankshaft in another 120° the direction of engine rotation and install the next bolt and tighten to 60 Nm.
- Turn the crankshaft another 120° the direction of engine rotation and tighten the last bolt to 60 Nm.



Vehicle with 6-Cylinder Engine (Six Bolts)

- Turn the crankshaft on the vibration damper 180° in the direction of engine rotation, install bolt -4- and tighten to 60 Nm.
- Turn the crankshaft another 60° the direction of engine rotation, install bolts -5 and 6- and tighten to 60 Nm.
- Turn the crankshaft another 60° in the direction of engine rotation and tighten bolt -1- to 60 Nm.
- Turn the crankshaft another 60° the direction of engine rotation, install bolts -2- and -3- and tighten to 60 Nm.



All Vehicles

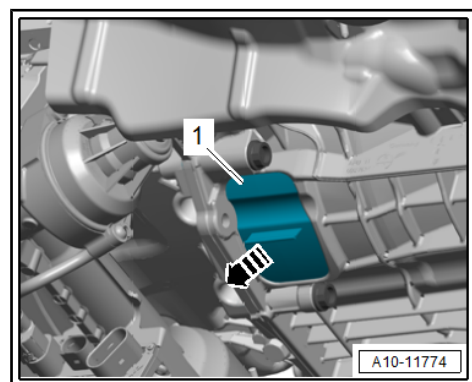
- Tighten then engine bolts to the transmission accessible from underneath.
- Install the cover -1-.

Tightening Specification. Refer to

⇒ ["2.3 Transmission Tightening Specifications", page 65](#) .

Install in reverse order of removal. Note the following:

- Install selector lever cable. Refer to
⇒ ["1.9 Selector Lever Cable, Removing and Installing", page 25](#) .



Vehicles with 4-Cylinder Engine

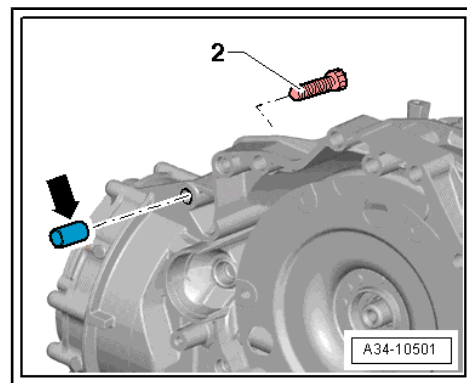


Note

- ◆ The bolt -2- attaches the starter to the transmission and has an additional spacer sleeve -arrow-.
- ◆ The spacer sleeve must be inserted between the starter and the transmission.

All Vehicles

- Install the starter. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Starter; Starter, Removing and Installing .



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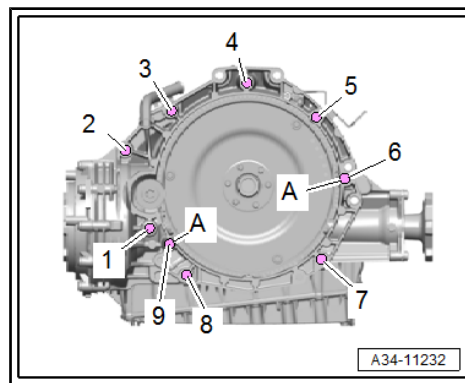
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- Tighten the remaining engine/transmission connecting bolts.

Tightening Specification. Refer to

⇒ **"2.3 Transmission Tightening Specifications", page 65** .

- Attach the steering intermediate shaft to the steering gear. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Drive Axle Threaded Connection, Loosening and Tightening .
- Connections and routing. Refer to ⇒ Wiring diagrams, Troubleshooting & Component locations.
- Attach the drive axles to the transmission. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Drive Axle, Removing and Installing .
- Install the drive axle heat shield. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Overview - Drive Axle .
- Install the heat shield on the subframe. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Subframe; Subframe Heatshield, Removing and Installing .
- Install the subframe crossbrace. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Subframe; Subframe Crossbrace, Removing and Installing .
- Install the plenum chamber bulkhead. Refer to ⇒ Body Exterior; Rep. Gr. 50 ; Bulkhead; Plenum Chamber Bulkhead, Removing and Installing .
- Fill the coolant. Refer to ⇒ Rep. Gr. 19 ; Cooling System/ Coolant; Coolant, Draining and Filling .
- Install the drive axle covers and noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Underbody Trim Panel, Removing and Installing .
- Complete the steps required after connecting the battery. Refer to ⇒ Electrical Equipment; Rep. Gr. 27 ; Battery; Battery, Disconnecting and Connecting .
- Check and adjust the selector lever cable. Refer to ⇒ **"1.10.1 Selector Lever Cable, Adjusting", page 28** .
- Check the MTF level and correct if necessary. Refer to ⇒ **"8 Transmission Fluid", page 81** .
- Check the ATF level and correct if necessary. Refer to ⇒ **"9.1 ATF Level, Checking", page 85** .



Note

- ◆ *If a new factory transmission is installed, an ATF/MTF level test is not necessary.*
- ◆ *If the transmission is replaced, the "Replace control module" function must be performed using the Vehicle Diagnostic Tester .*

Procedure

- Connect Vehicle Diagnostic Tester .
- Select **Diagnostic** mode and start the diagnostic.
- Select the **Test Plan** tab.
- **Select Individual Test** button and select the following tree structure one after the other:

- ◆ Drivetrain
- ◆ 7-speed S tronic transmission 0CK/0CL
- ◆ 01 - OBD-capable system
- ◆ 02 - Transmission electronics 0CK
- ◆ 02 - Transmission electronics, functions
- ◆ 02 - Replace control module ⇒ Entire transmission

2.3 Transmission Tightening Specifications



Note

- ◆ *The tightening specifications apply only to lightly greased, oiled, phosphated or blackened nuts and bolts.*
- ◆ *Additional lubricants, such as engine oil or transmission fluid are permissible, but lubricants containing graphite are not.*
- ◆ *Do not use any ungreased parts.*
- ◆ *Tightening Specification tolerance $\pm 15\%$.*

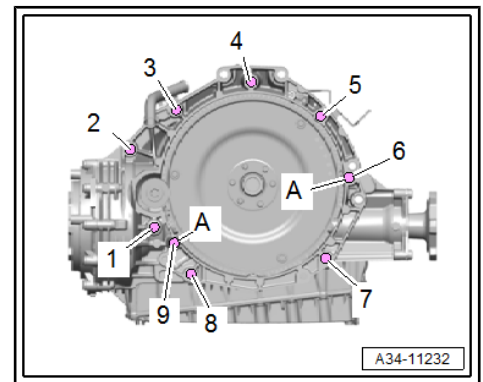
Drive Plate Flywheel. Refer to ⇒ S tronic Transmission Internal Components; Rep. Gr. 30 ; Clutch; Overview - Flywheel and Dual Clutch .

Assembly Mounts. Refer to
⇒ **"5.1 Overview - Subframe Mount", page 69** .

Transmission on 4-Cylinder TDI Engine

Item	Bolt	Nm
1 ¹⁾	M10x50 ²⁾	65
2 ³⁾	M12x100 ⁴⁾	30 + 90°
3, 6	M12x75 ⁴⁾	30 + 90°
4, 5	M12 x 120 ⁴⁾	30 + 90°
7, 8	M10x40 ⁴⁾	15 +90°
9	M12 x 50 ⁴⁾	30 + 90°
A	Alignment sleeves for centering	

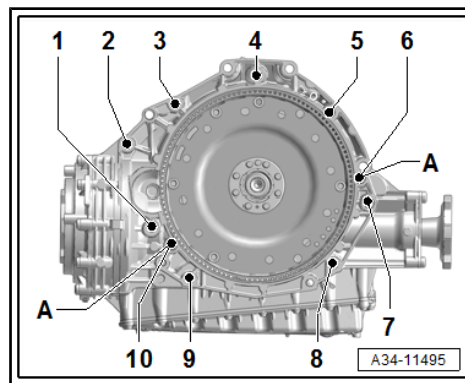
- ¹⁾ Mount the auxiliary adapter
- ²⁾ Bolt strength rating 10.9. There is no limit to the number of times steel bolts may be used.
- ³⁾ Also secures that starter; with an additional spacer sleeve between the starter and the transmission.
- ⁴⁾ The bolts may be used 2 times. Refer to ⇒ **page 66** .



Transmission 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	M12 x 120 4)	30 + 90°
7	M12x100 4)	30 + 90°
8, 9	M10x40 4)	15 +90°
10	M12 x 50 4)	30 + 90°
A	Alignment sleeves for centering	

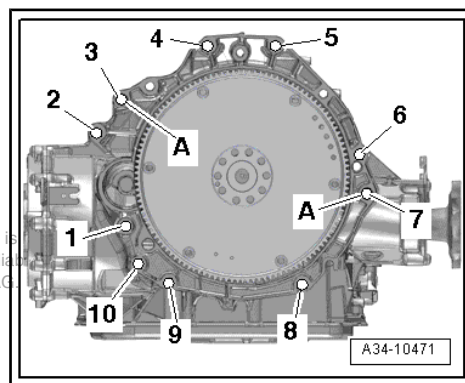
- 1) Mount the auxiliary adapter
- 2) Bolt strength rating 10.9. There is no limit to the number of times steel bolts may be used.
- 4) The bolts may be used 2 times. Refer to [⇒ page 66](#) .



Transmission to 6-Cylinder 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	Alignment sleeves for centering	

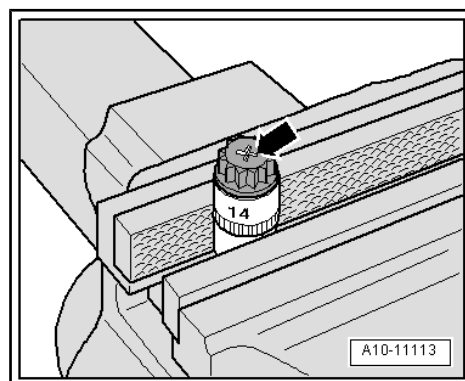
- 1) Mount the auxiliary adapter
- 2) Bolt strength rating 10.9. There is no limit to the number of times steel bolts may be used.
- 4) The bolts may be used 2 times. Refer to [⇒ page 66](#) .



The aluminum bolts -2 through 10- can be used twice. Therefore, the bolts must be marked with two notches "X" made by a chisel after they have been used the first time -arrow-.

To prevent damaging the bolts when marking them, do not clamp them in a vise. Insert the bolt using a 14 mm socket with a 1/2 drive, which is inserted in to the vise, as illustrated.

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



3 Transmission, Transporting

Description of the Procedure. Refer to ⇒ S tronic Transmission
Internal Components; Rep. Gr. 34 ; Transmission, Transporting .

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4 Securing on Engine and Transmis- sion Holder

Description of the Procedure. Refer to ⇒ S tronic Transmission
Internal Components; Rep. Gr. 34 ; Securing on Engine and
Transmission Holder .



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5 Subframe Mount

⇒ ["5.1 Overview - Subframe Mount", page 69](#)

⇒ ["5.2 Tunnel Crossmember, Removing and Installing", page 69](#)

⇒ ["5.3 Transmission Support with Transmission Mount, Removing and Installing", page 71](#)

⇒ ["5.4 Transmission Mount, Removing and Installing", page 71](#)

5.1 Overview - Subframe Mount

1 - Tunnel Crossmember

- ☐ Removing and installing. Refer to
⇒ ["5.2 Tunnel Crossmember, Removing and Installing", page 69](#).

2 - Bolt

- ☐ 70 Nm

3 - Nut

- ☐ 20 Nm

4 - Transmission Support

5 - Bolt

- ☐ 40 Nm

6 - Transmission Mount

- ☐ Removing and installing. Refer to
⇒ ["5.4 Transmission Mount, Removing and Installing", page 71](#).

7 - Stop

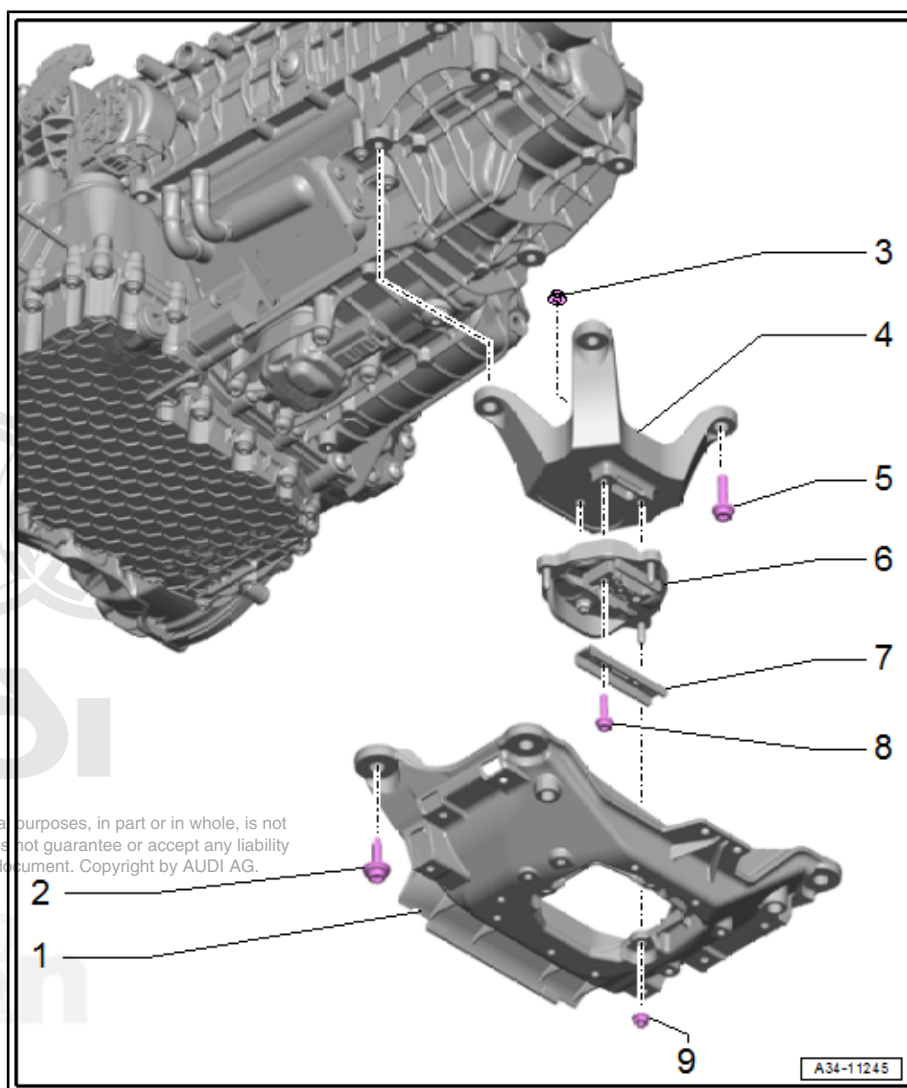
- ☐ For the transmission mount

8 - Bolt

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

9 - Nut

- ☐ 20 Nm



5.2 Tunnel Crossmember, Removing and Installing

Special tools and workshop equipment required

- ◆ Engine and Gearbox Jack - VAS6931-
- ◆ Engine/Gearbox Jack - Gearbox Support - T10337-

Removing

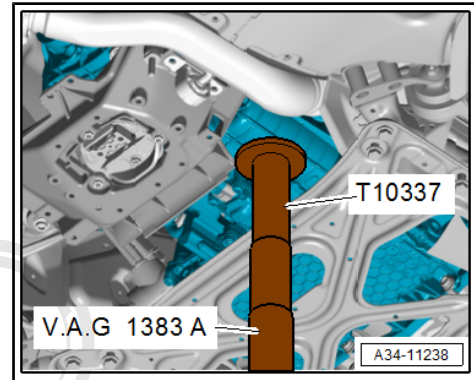
- Remove the rear noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Underbody Trim Panel, Removing and Installing .
- Place the Engine/Gearbox Jack - Gearbox Support - T10337- on the Engine and Gearbox Jack - VAS6931- and set it on the bottom of the transmission, as shown in the image.
- Raise the transmission slightly.



WARNING

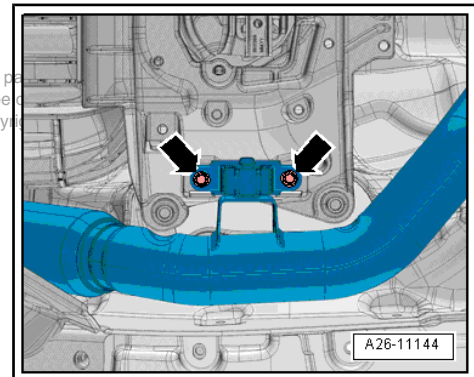
There is the risk of an accident.

- ◆ *The Engine and Gearbox Jack - VAS6931- may only be used during assembly and must not sit unsupervised under the vehicle.*

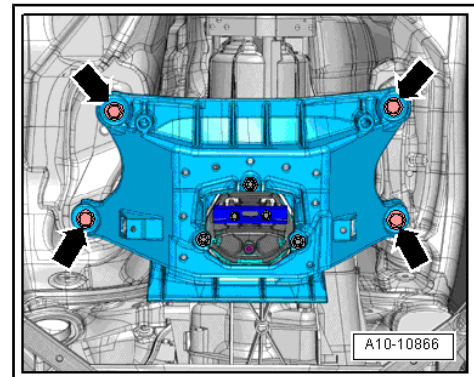


- Remove the bolts from the front muffler -arrows-.

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- Remove the bolts from the tunnel crossmember -arrows-.



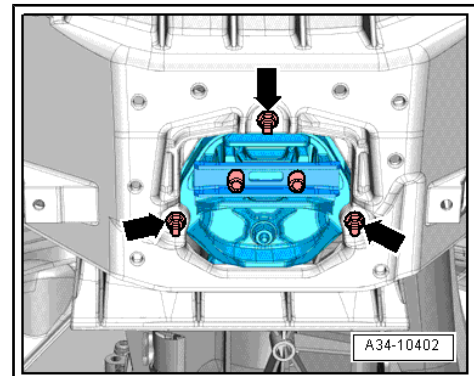
- Remove the nuts -arrows- and the tunnel crossmember.

Installing

Install in reverse order of removal.

Tightening Specifications

- ◆ Refer to ⇒ [“5.1 Overview - Subframe Mount”, page 69](#)
- ◆ Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipe/Muffler; Overview - Muffler
- ◆ Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Underbody Trim Panel, Removing and Installing .



5.3 Transmission Support with Transmission Mount, Removing and Installing

Removing

- Remove the tunnel crossmember. Refer to
⇒ [“5.2 Tunnel Crossmember, Removing and Installing”, page 69](#).
- Remove the bolts -arrows- and the transmission support with the transmission mount from the transmission.

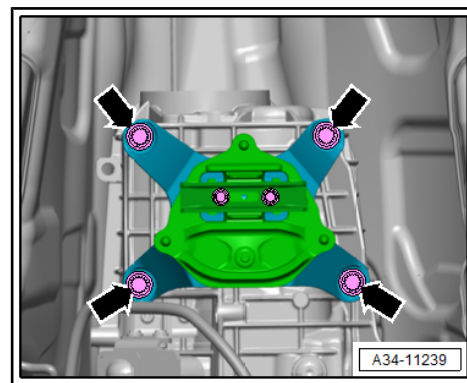
Installing

Install in reverse order of removal. Note the following:

- Install tunnel crossmember. Refer to
⇒ [“5.2 Tunnel Crossmember, Removing and Installing”, page 69](#).

Tightening Specifications

- ◆ Refer to ⇒ [“5.1 Overview - Subframe Mount”, page 69](#)
- ◆ Refer to ⇒ Rep. Gr. 26 ; Exhaust Pipe/Muffler; Overview - Muffler



5.4 Transmission Mount, Removing and Installing



Caution

This procedure contains mandatory replaceable parts. Refer to component overview prior to starting procedure.

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Mandatory Replacement Parts

- ◆ Bolts - Transmission mount stop

Removing

- Remove the transmission support with the transmission mount. Refer to
⇒ [“5.3 Transmission Support with Transmission Mount, Removing and Installing”, page 71](#).
- Remove the bolts -1- and remove the stop -2- from the transmission mount.

- Remove the nut -5- and remove the transmission mount -3- from the transmission support -4-.

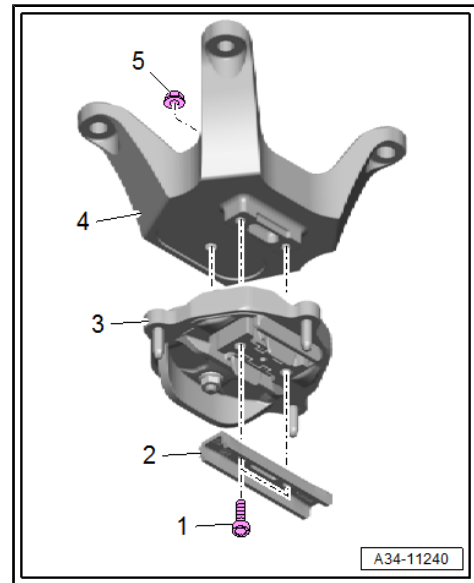
Installing

Install in reverse order of removal. Note the following:

- Place transmission support -4- on the transmission mount -3-.
- Install the nut -5- hand-tight.
- Tighten the bolts -1- for the stopper -2-.
- Tighten the nut -5-.
- Install the transmission support and transmission mount. Refer to
⇒ [“5.3 Transmission Support with Transmission Mount, Removing and Installing”, page 71](#) .

Tightening Specifications

- ◆ Refer to ⇒ [“5.1 Overview - Subframe Mount”, page 69](#)



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6 Transmission Fluid Circuit

⇒ ["6.1 Overview - Transmission Fluid Circuit", page 73](#)

⇒ ["6.2 Transmission Fluid Pump, Removing and Installing", page 73](#)

6.1 Overview - Transmission Fluid Circuit

1 - Sealing Plug

- ☐ For the ATF check and fill hole
- ☐ Tightening Specification -item 1-
⇒ [Item 1 \(page 77\)](#) .

2 - Sealing Plug

- ☐ 35 Nm
- ☐ For transmission fluid inspection and fill hole
- ☐ Replace after removing

3 - Transmission Electric Pump 2 - V553- (Transmission Fluid Pump)

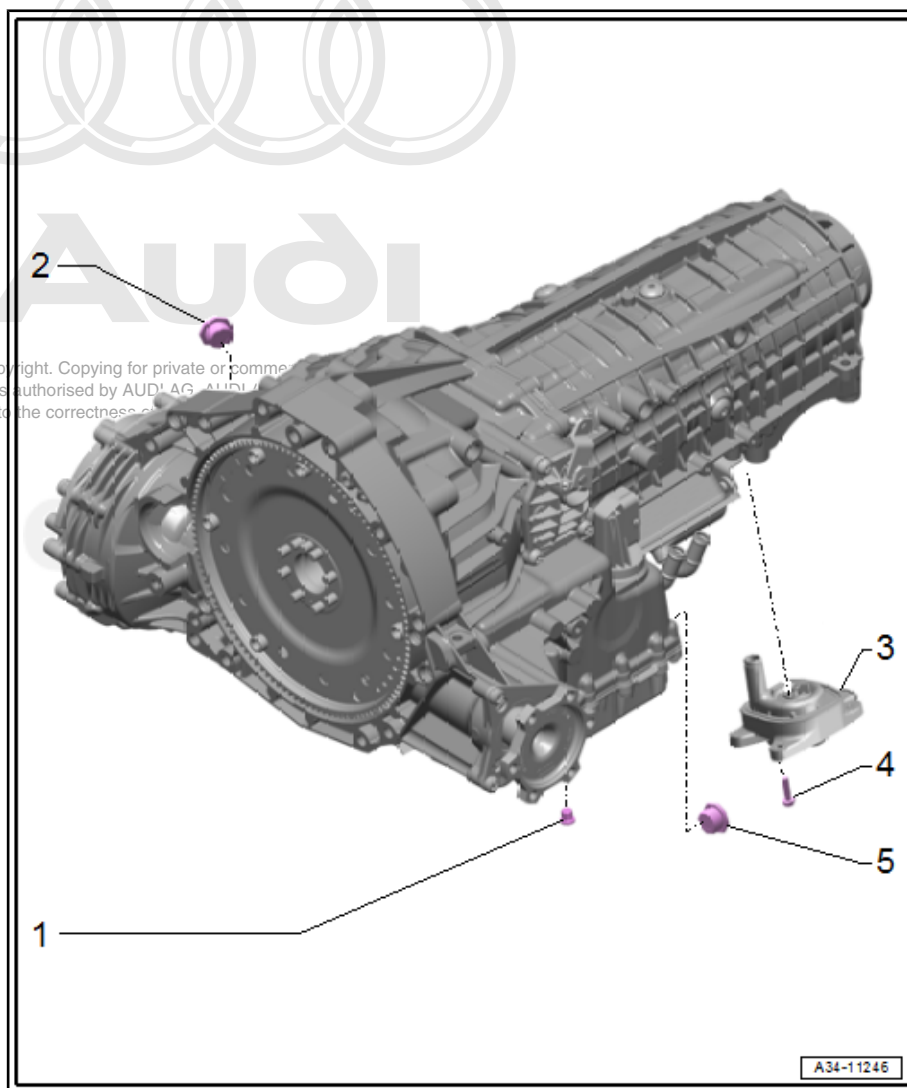
- ☐ With seal welded on
- ☐ Must be removed for draining the transmission fluid (MTF)
- ☐ Replace the transmission fluid pump if the seal is damaged.
- ☐ Removing and installing. Refer to
⇒ ["6.2 Transmission Fluid Pump, Removing and Installing", page 73](#) .

4 - Bolt

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

5 - Drain Plug

- ☐ For the ATF
- ☐ Tightening Specification -item 5- ⇒ [Item 5 \(page 77\)](#)



6.2 Transmission Fluid Pump, Removing and Installing

Transmission Electric Pump 2 - V553- (Transmission Fluid Pump)

Special tools and workshop equipment required

- ◆ Used Oil Collection and Extraction Unit - SMN372500-
- ◆ Protective eyewear



Caution

This procedure contains mandatory replaceable parts. Refer to component overview and parts catalog prior to starting procedure.

Mandatory Replacement Parts

- ◆ Bolts - Transmission fluid pump

Removing



Note

- ◆ Follow the general repair instructions. Refer to ["4 Repair Information", page 5](#).
- ◆ Follow the guidelines for clean working conditions. Refer to ["4.1 Guidelines for Clean Working Conditions", page 5](#).
- Move vehicle onto a four-pillar shop hoist or over a work pit so that it is absolutely horizontal for the refilling.
- Remove the rear noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Underbody Trim Panel, Removing and Installing .
- Place the Used Oil Collection and Extraction Unit - SMN372500- underneath.



WARNING

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Danger of eye injury.

- ◆ ***Wear protective eyewear.***



Caution

Risk of electrical corrosion.

- ◆ ***There must not be any transmission fluid (MTF) in the connector area.***
- ◆ ***Disconnect the connector -2- only after the transmission fluid drains.***



Note

When removing the oil pump, the transmission drains abruptly.

- Remove the bolts -arrows- and then remove the oil pump -1-.
- After draining the transmission fluid, disconnect the connector -2-.

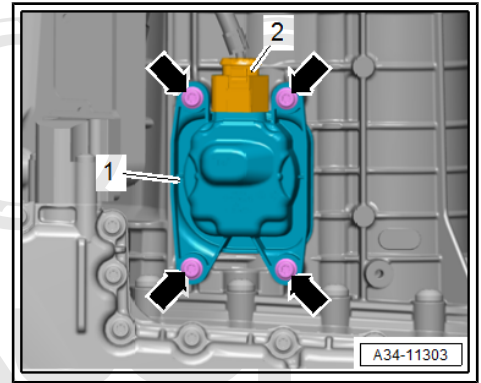


Caution

Danger of causing damage to the transmission.

Without any or with too little manual transmission fluid inside the transmission:

- ◆ ***Do not start the engine.***
- ◆ ***Do not tow the vehicle.***



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Installing

Install in reverse order of removal. Note the following:



Note

- ◆ *Worn out manual transmission fluid (MTF) can stain the transmission fluid filter housing.*
- ◆ *Clean debris off sealing surfaces.*
- Fill with transmission fluid (MTF). Refer to
⇒ [“8.2 Transmission Fluid, Draining and Filling”, page 82](#) .

Tightening Specifications

- ◆ Refer to
⇒ [“6.1 Overview - Transmission Fluid Circuit”, page 73](#)
- ◆ Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel;
Underbody Trim Panel, Removing and Installing .

7 ATF Circuit

⇒ ["7.1 Overview - ATF Circuit", page 76](#)

⇒ ["7.2 ATF Cooler, Removing and Installing", page 78](#)

7.1 Overview - ATF Circuit



Caution

Danger of causing damage to the transmission.



WARNING

The system is under pressure.

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ATF Cooler, ATF Line

1 - O-Rings

- ☐ Replace after removing

2 - ATF Pipe

- ☐ Replace after removing

3 - O-Rings

- ☐ Replace after removing

4 - ATF Cooler

- ☐ Removing and installing. Refer to
⇒ ["7.2 ATF Cooler, Removing and Installing", page 78](#).

5 - Guard Plate

6 - Bolt

- ☐ 8 Nm

7 - Bracket

8 - Bolt

- ☐ Tightening specification and sequence. Refer to
⇒ [Fig. "ATF Cooler - Tightening Specification and Sequence", page 77](#).

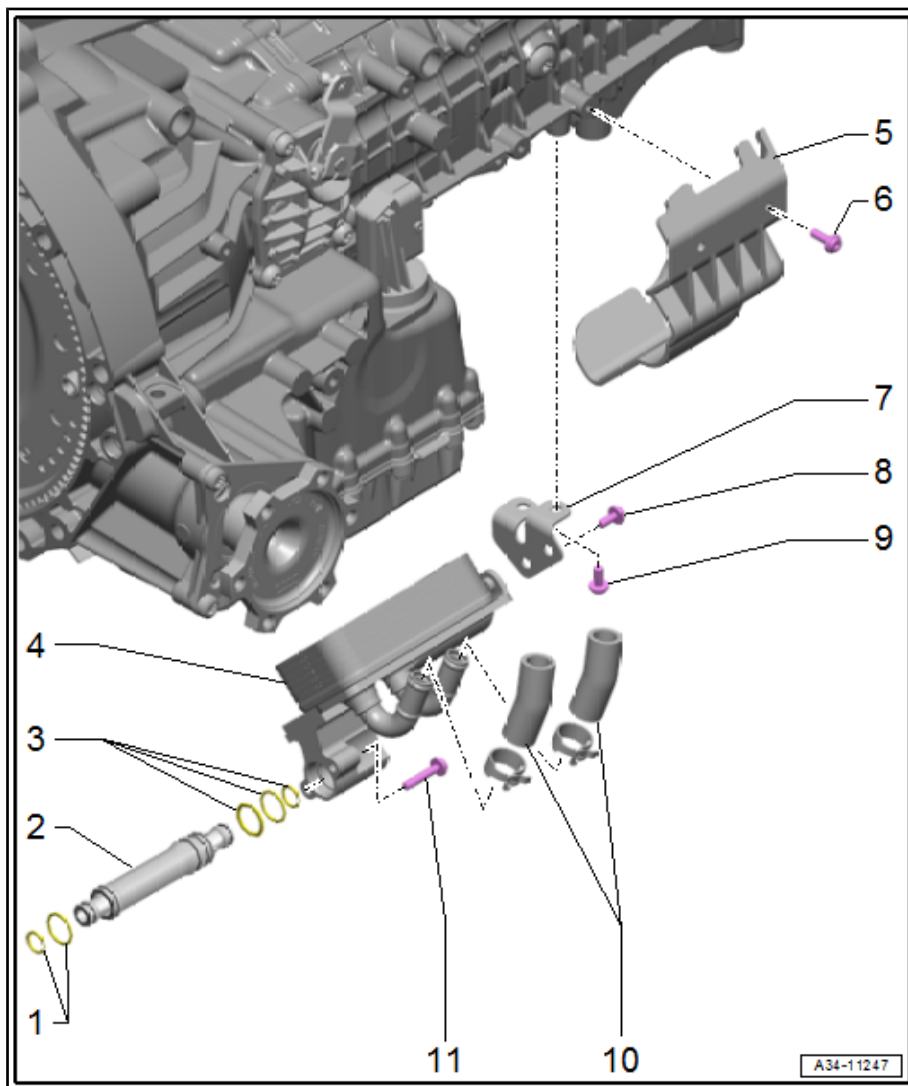
9 - Bolt

- ☐ Tightening specification and sequence. Refer to
⇒ [Fig. "ATF Cooler - Tightening Specification and Sequence", page 77](#).

10 - Coolant Hoses

11 - Bolt

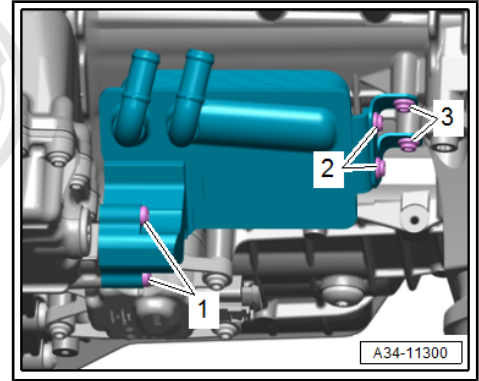
- ☐ Tightening Specification and sequence. Refer to
⇒ [Fig. "ATF Cooler - Tightening Specification and Sequence", page 77](#).



ATF Cooler - Tightening Specification and Sequence

– Tighten the bolts in steps according to the specified sequence:

Step	Bolts	Tightening Specification/Additional Turn
1.	-1-	Install the bolt hand-tight.
2.	-1-	3 Nm +90°
3.	-2 and 3-	Install the bolt hand-tight.
4.	-2 and 3-	3 Nm + 30°



Drain and Sealing Plug

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1 - Sealing Plug

- Aluminum transmission fluid pan:
 - ☐ 8 Nm +30°
- Plastic transmission fluid pan:
 - ☐ Tighten all the way
 - ☐ Replace after removing
 - ☐ For the ATF check and fill hole

2 - Sealing Plug

- ☐ For transmission fluid inspection and fill hole
- ☐ Tightening specification -item 2-
⇒ [Item 2 \(page 73\)](#).

3 - Transmission Electric Pump 2 - V553- (Transmission Fluid Pump)

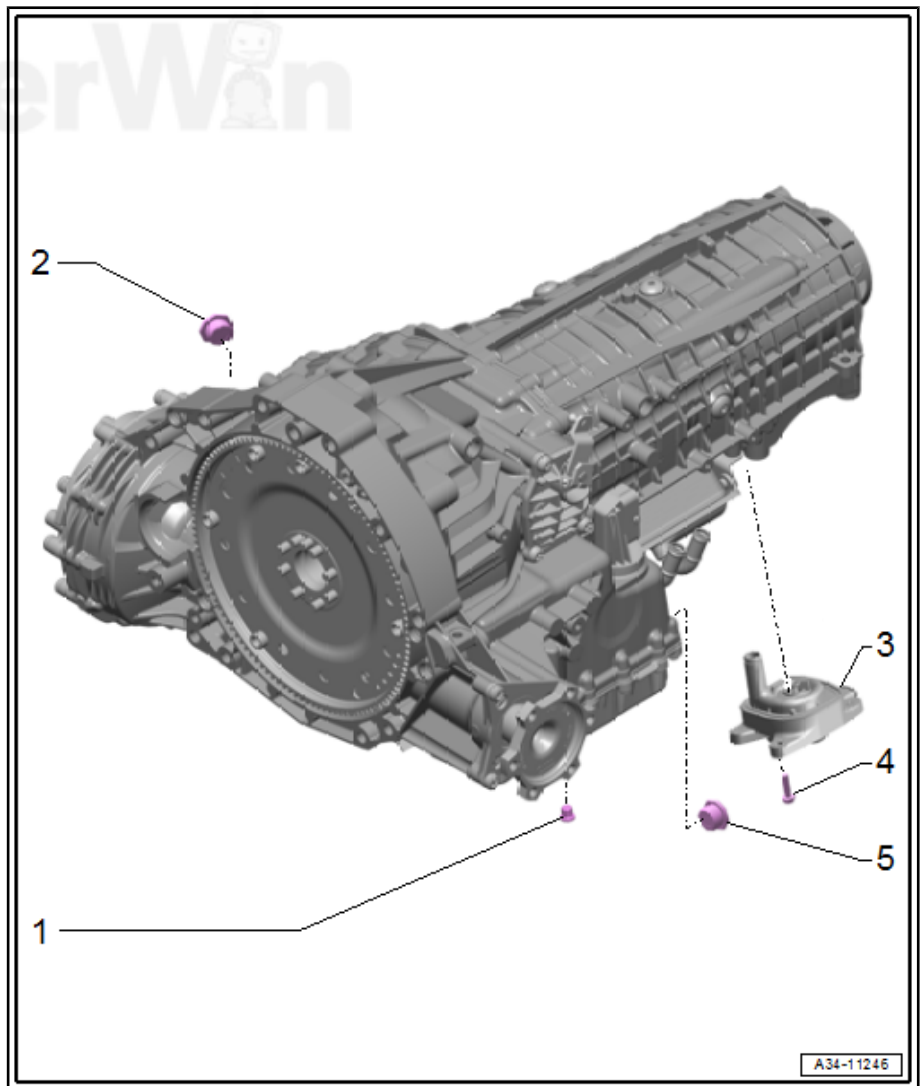
- ☐ Must be removed for draining the transmission fluid (MTF). Refer to
⇒ ["6.2 Transmission Fluid Pump, Removing and Installing", page 73](#)

4 - Bolt

- ☐ Tightening Specification -item 4-
⇒ [Item 4 \(page 73\)](#).

5 - Drain Plug

- Aluminum transmission fluid pan:
 - ☐ 35 Nm
- Plastic transmission fluid pan:
 - ☐ Tighten all the way
 - ☐ Replace after removing
 - ☐ For the ATF



7.2 ATF Cooler, Removing and Installing

Special tools and workshop equipment required

- ◆ Hose Clamps - Up To 25mm - 3094-
- ◆ Engine Bung Set - VAS6122-
- ◆ Hose Clip Pliers - VAS6362-
- ◆ Used Oil Collection and Extraction Unit - SMN372500-



Caution

This procedure contains mandatory replaceable parts. Refer to component overview and parts catalog prior to starting procedure.

Mandatory Replacement Parts

- ◆ Bolts - Transmission fluid cooler
- ◆ O-rings - Transmission fluid cooler

Removing



WARNING

The system is under pressure.

- *Deactivate the ATF pump and drain the hydraulic pressure reservoir before removing the ATF cooler!*

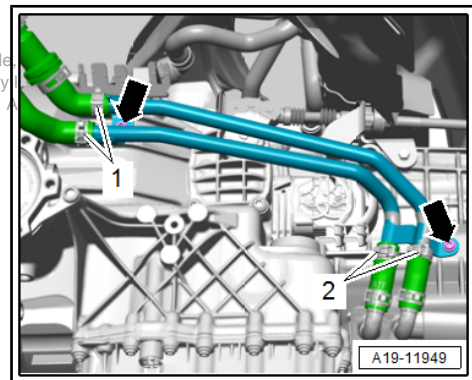
- Using the Vehicle Diagnostic Tester in the Transmission Control Module - J217- empty the ATF pressure reservoir and disable the Transmission Fluid Auxiliary Hydraulic Pump - V552- . Refer to
⇒ ["4.3 ATF Pump, Deactivating and Draining the Hydraulic Pump Reservoir", page 7](#) .
- Drain the ATF. Refer to
⇒ ["9.2 ATF, Draining and Filling", page 88](#) .
- Remove the bolts -arrows-.
- Free up the wires.



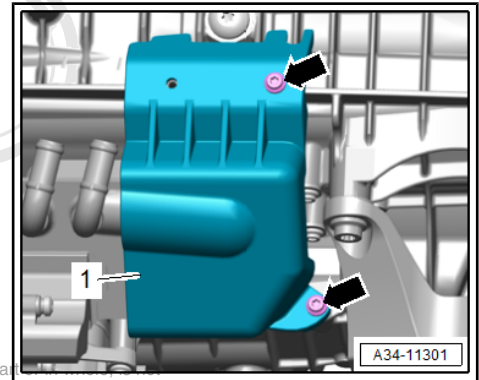
Note

Use a cloth to catch any leaking coolant.

- Loosen the hose clamps -2- and then disconnect and remove the coolant hoses -1- with Hose Clamps - Up To 25mm - 3094- .

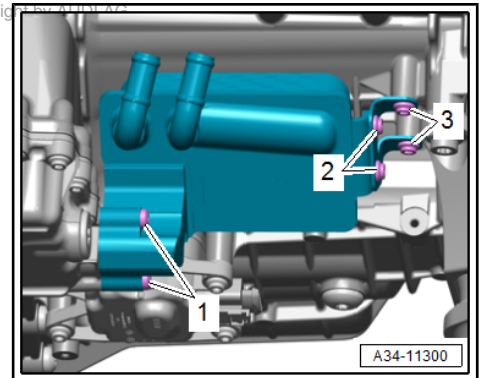


- Remove the bolts -arrows- and remove the protective plate -1-.

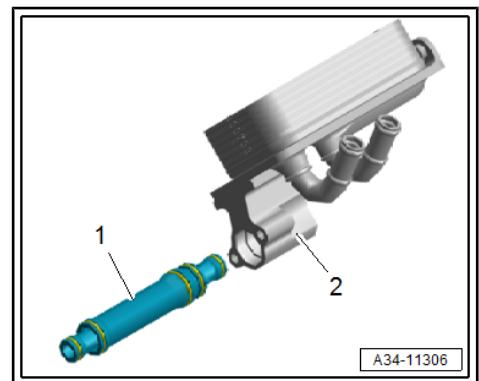


- Place the Used Oil Collection and Extraction Unit -SMN372500- underneath.

- Only loosen bolts -2- and remove the bolts -1 and 3-.
- Remove the ATF cooler from the oil pan.



- Remove the ATF pipe -1- from the ATF cooler -2-.
- Seal the open lines and connections with clean plugs from the Engine Bung Set - VAS6122- .



Installing

Install in reverse order of removal. Note the following:



Note

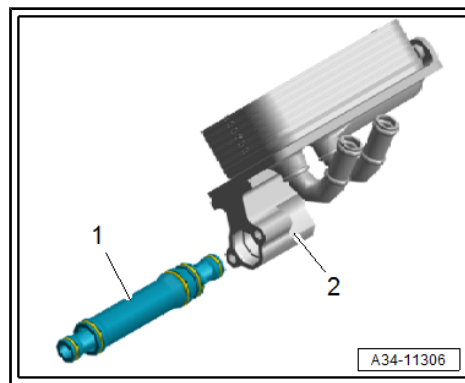
- ◆ Replace the ATF pipe with seals after removing.
- ◆ Clean the ATF cooler before installing.
- Insert the ATF pipe -1- in the oil pan.



Caution

Leak on the transmission fluid cooler!

- ◆ Pay attention to the ATF pipe installation position.
- ◆ The side of the pipe with three seals faces the ATF cooler.



- Insert the ATF cooler -2- on the oil pan.
- Install the bolts all the way in by hand and tighten in the previously specified tightening sequence. Refer to ⇒ [Fig. "ATF Cooler - Tightening Specification and Sequence"](#), page 77 .
- Secure the coolant pipe on the transmission. Refer to ⇒ Rep. Gr. 19 ; Coolant Pipes; Coolant Pipes, Removing and Installing.
- Check the ATF level. Refer to ⇒ ["9.1 ATF Level, Checking"](#), page 85 .

8 Transmission Fluid

⇒ ["8.1 Transmission Fluid Level, Checking", page 81](#)

⇒ ["8.2 Transmission Fluid, Draining and Filling", page 82](#)

8.1 Transmission Fluid Level, Checking



Caution

This procedure contains mandatory replaceable parts. Refer to component overview and parts catalog prior to starting procedure.

Mandatory Replacement Parts

- ◆ Sealing plug - Transmission inspection and fill hole

Procedure



Note

- ◆ Follow the general repair instructions. Refer to ⇒ ["4 Repair Information", page 5](#).
- ◆ Follow the guidelines for clean working conditions. Refer to ⇒ ["4.1 Guidelines for Clean Working Conditions", page 5](#).
- ◆ Do not exchange the transmission (MTF) chamber with the ATF chamber.
- ◆ Replace the sealing plug for the inspection and fill hole.
- Transmission fluid temperature at about 20 °C (68 °F) (room temperature).
- Move vehicle onto a four-pillar shop hoist or over a work pit so that it is absolutely horizontal.
- The transmission must be still for at least 15 minutes to make sure the oil settles internally.



WARNING

Danger of eye injury.

- ◆ *Wear protective eyewear.*

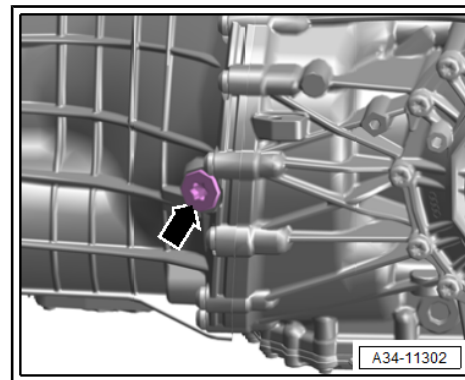
- Remove the sealing plug -arrow- from the inspection and fill hole on the right side of the transmission housing.
- The manual transmission fluid (MTF) must be 2 mm from the lower edge of the inspection and fill hole.
- If the oil level is not correct, fill the transmission fluid. Refer to

[page 83](#)

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Tightening Specifications

- ◆ Refer to ⇒ ["6.1 Overview - Transmission Fluid Circuit", page 73](#)
- ◆ Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Underbody Trim Panel, Removing and Installing .



8.2 Transmission Fluid, Draining and Filling

Special tools and workshop equipment required

- ◆ Used Oil Collection and Extraction Unit - SMN372500-
- ◆ Pressurized Gearbox Oil Filler Kit - VAS6617-
- ◆ Protective eyewear



Caution

This procedure contains mandatory replaceable parts. Refer to component overview and parts catalog prior to starting procedure.

Mandatory Replacement Parts

- ◆ Sealing plug - Transmission inspection and fill hole
- ◆ Bolts - Transmission oil pump

Draining



Note

- ◆ *The S tronic transmission does not have any drain plug for the transmission fluid system. To drain the transmission fluid, the Transmission Electric Pump 2 - V553- (transmission fluid pump) must be removed.*
- ◆ *Follow the general repair instructions. Refer to ⇒ ["4 Repair Information", page 5](#).*
- ◆ *Follow the guidelines for clean working conditions. Refer to ⇒ ["4.1 Guidelines for Clean Working Conditions", page 5](#).*
- Transmission fluid temperature at about 20 °C (68 °F) (room temperature).
- Move vehicle onto a four-pillar shop hoist or over a work pit so that it is absolutely horizontal.
- Remove the rear noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Underbody Trim Panel, Removing and Installing .
- Place the Used Oil Collection and Extraction Unit - SMN372500- underneath.



WARNING

Danger of eye injury.

- ◆ ***Wear protective eyewear.***

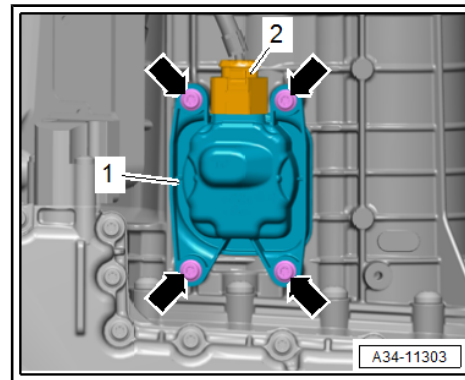
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Caution

Risk of electrical corrosion.

- ◆ *There must not be any transmission fluid (MTF) in the connector area.*
- ◆ *Do NOT disconnect the connector -2-.*



Note

When removing the oil pump, the transmission drains abruptly.

- Remove the bolts -arrows- and remove the oil pump -1- and secure with wire so that it does not fall.
- Drain the transmission fluid (MTF).



Caution

Danger of causing damage to the transmission.

Without any or with too little manual transmission fluid (MTF) inside the transmission:

- ◆ *Do not start the engine.*
- ◆ *Do not tow the vehicle.*



Note

- ◆ *Worn out manual transmission fluid (MTF) can stain the transmission fluid filter housing.*
- ◆ *Clean debris from the sealing surfaces.*
- Install the oil pump. Refer to [⇒ "6.2 Transmission Fluid Pump, Removing and Installing", page 73](#).
- Clean the subframe crossbrace and remove any remaining transmission fluid.

Filling



WARNING

Danger of eye injury.

- ◆ *Wear protective eyewear.*

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Caution

Danger of causing damage to the transmission.

- ◆ ***Only use the specified transmission fluid (MTF) in the parts list for the S tronic transmission 0CK.***
- ◆ ***Using other fluids can cause malfunctions or transmission failure.***
- ◆ ***For the correct allocation. Refer to the Parts Catalog.***
- ◆ ***The Pressurized Gearbox Oil Filler Kit - VAS6617- must be clean and ATF must not be mixed with another fluid! Apply transmission fluid (MTF) to the hand pump if necessary.***

- Remove the sealing plug -arrow- from the inspection and fill hole on the right side of the transmission housing.
- Slowly fill transmission fluid (MTF) using Pressurized Gearbox Oil Filler Kit - VAS6617- .
- Transmission fluid (MTF) specification. Refer to the Parts Catalog.
- Repeat the procedure gradually every 15 seconds, until the transmission fluid is 2 mm under the lower edge of the inspection and fill hole.



Note

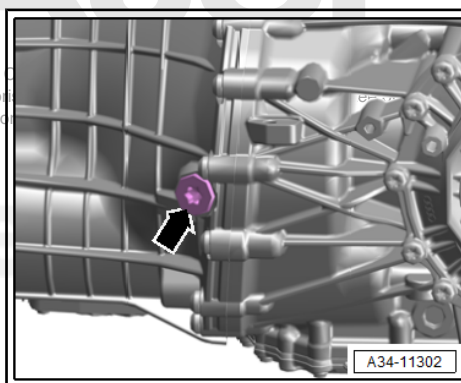
It is important to follow the waiting period to make sure the various oil spaces in the transmission are filled equally.

- Tighten the plug.

Install in reverse order of removal. Note the following:

Tightening Specifications

- ◆ Refer to
⇒ ["6.1 Overview - Transmission Fluid Circuit", page 73](#)
- ◆ Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Underbody Trim Panel, Removing and Installing .



9 Automatic Transmission Fluid

⇒ [“9.1 ATF Level, Checking”, page 85](#)

⇒ [“9.2 ATF, Draining and Filling”, page 88](#)

9.1 ATF Level, Checking

Special tools and workshop equipment required

- ◆ Vehicle Diagnostic Tester
- ◆ Used Oil Collection and Extraction Unit - SMN372500-
- ◆ Pressurized Gearbox Oil Filler Kit - VAS6617- with Pressurized Gearbox Oil Filler - Hand Pump - VAS6617/1- and Pressurized Gearbox Oil Filler - Adapter 2 - VAS6617/2-
- ◆ Adapter VAS6617/12 - VAS6617/12-
- ◆ Protective eyewear
- ◆ Acid-resistant safety gloves



Caution

This procedure contains mandatory replaceable parts. Refer to component overview prior to starting procedure.

Mandatory Replacement Parts

- ◆ Sealing plug - Transmission inspection and fill hole

Test Conditions

- The transmission must not be in the emergency running
- Move the vehicle onto a 4-column shop hoist or over a work pit so it is completely level.
- Transmission is in “P”.
- The parking brake button is pressed to activate the electro-mechanical parking brake.
- Exhaust hose/hoses of an exhaust extraction system connected.
- The Air Conditioning (A/C) and the heater are off.
- Vehicle Diagnostic Tester is connected.
- The ATF temperature must not be higher than 35 °C (95 °F) at the beginning of the test. Let the transmission must cool down first, if necessary.



Note

- ◆ *The ATF level will vary depending on the temperature of the ATF.*
- ◆ *It is possible to overfill the ATF if the level is checked when the temperature is too low.*
- ◆ *It is possible to underfill the ATF if the level is checked when the temperature is too high.*
- ◆ *Overfilling or underfilling will influence the function of the transmission.*



Procedure



Note

Replace the sealing plug for the inspection and fill hole.

- Connect the Vehicle Diagnostic Tester with the vehicle and start the **Diagnostic** mode.

- ◆ **Select Vehicle Test**

- ◆ **02-Transmission Electronics, Functions**

- ◆ **02-ATF Level** ⇒ **Check the ATF Level**

- Follow the instructions in the display.



Caution

Danger of causing damage to the transmission.

- ◆ ***Engine must not be started if only a small amount or no ATF is in the transmission after repair work or after significant ATF loss.***
- ◆ ***In this case, pre-filling is necessary. Refer to ⇒ "9.2 ATF, Draining and Filling", page 88 .***

- Remove the rear noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Underbody Trim Panel, Removing and Installing .



Note

- ◆ *The ATF level is checked at the ATF check and fill hole.*
- ◆ *The ATF level is correct if a small amount of fluid drips out of the inspection and fill opening (this is normal as the fluid expands as it heats up) at an ATF temperature between 35 and 45 °C (95 and 113 °F)*

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erWin

- Place the Used Oil Collection and Extraction Unit - SMN372500- underneath.



WARNING

Danger of eye injury.

- ◆ *Wear protective eyewear.*

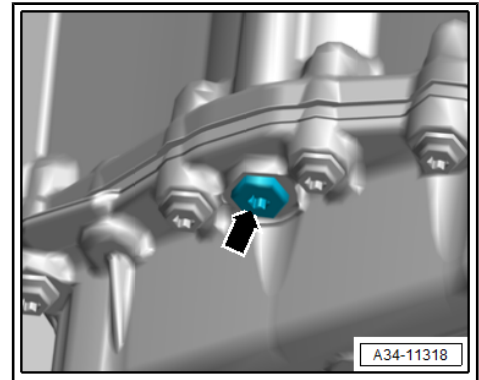
- As soon as the ATF temperature reaches 35 °C (95 °F), remove the inspection and fill hole sealing plug -arrow- and, if necessary, drain any excess ATF.

If the ATF Starts to Drip out of the Inspection and Fill Hole before It Reaches 45 °C (113 °F), Then the ATF Level Is OK.

- Assemble the vehicle. Refer to ➔ [page 88](#) .

If No ATF Drips out of the Inspection and Fill Hole before It Reaches 45 °C (113 °F), Fill the ATF:

Switch off the engine and let the transmission cool down to 35 °C (95 °F).



Caution

Danger of causing damage to the transmission.

- ◆ *Only use the listed replacement ATF for the S tronic transmission 0CK.*
- ◆ *Using other fluids can cause malfunctions or transmission failure.*
- ◆ *For the correct allocation. Refer to the Parts Catalog.*
- ◆ *The Pressurized Gearbox Oil Filler Kit - VAS6617- must be clean and ATF must not be mixed with another fluid! Rinse the hand pump with ATF if necessary.*



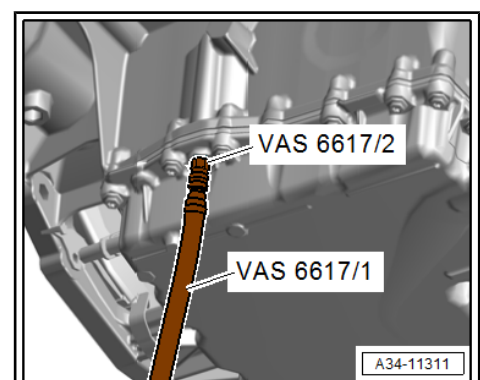
WARNING

Danger of eye injury.

- ◆ *Wear protective eyewear.*

Vehicle with Metal Oil Pan

- Connect the Pressurized Gearbox Oil Filler Kit - VAS6617- with Pressurized Gearbox Oil Filler - Hand Pump - VAS6617/1- and Adapter VAS6617/12 - VAS6617/12- to the ATF check and fill hole.



Vehicles with Plastic Transmission Fluid Pan:

- Guide the Pressurized Gearbox Oil Filler Kit - VAS6617- with Pressurized Gearbox Oil Filler - Hand Pump - VAS6617/1- and Pressurized Gearbox Oil Filler - Adapter - VAS6617/11- in the hole.

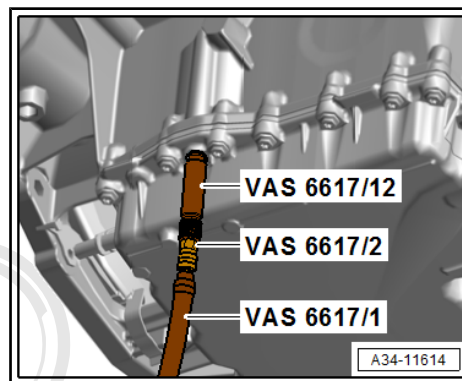
All Vehicles



Caution

Risk of damaging the transmission by mixing ATF and transmission fluid (MTF) through the same bleeder.

- ◆ *The ATF filling quantity of 0.5 liters (0.52 quarts) must not be exceeded.*



- Fill the transmission with 0.5 liters (0.52 quarts) of ATF using the hand pump.
- Repeat the “Check ATF level” procedure in its entirety.

Assembling



Note

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The ATF check and fill hole must be sealed off again before the ATF reaches 45 °C (113 °F).

- Tighten the sealing plug for the inspection and fill hole. The ATF level test is now completed.
- Install the noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Noise Insulation; Noise Insulation, Removing and Installing .

Tightening Specifications

- ◆ Plug -item 1- ⇒ [Item 1 \(page 77\)](#)
- ◆ Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Underbody Trim Panel, Removing and Installing .

9.2 ATF, Draining and Filling

Special tools and workshop equipment required

- ◆ Vehicle Diagnostic Tester
- ◆ Used Oil Collection and Extraction Unit - SMN372500-
- ◆ Pressurized Gearbox Oil Filler Kit - VAS6617- with Pressurized Gearbox Oil Filler - Hand Pump - VAS6617/1- and Pressurized Gearbox Oil Filler - Adapter 2 - VAS6617/2-
- ◆ Pressurized Gearbox Oil Filler - Adapter - VAS6617/11-
- ◆ Protective eyewear
- ◆ Acid-resistant safety gloves



Caution

This procedure contains mandatory replaceable parts. Refer to component overview prior to starting procedure.

Mandatory Replacement Parts

- ◆ Sealing plug - Transmission inspection and fill hole

Draining



Note

Replace the ATF drain plug and sealing plug for the inspection and fill hole.

- The engine is off.
- Move vehicle onto a four-pillar shop hoist or over a work pit so that it is absolutely horizontal.
- The selector level is in "P".
- The parking brake button should be activated to close the electro-mechanical parking brake.
- Remove the rear noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Underbody Trim Panel, Removing and Installing .
- Place the Used Oil Collection and Extraction Unit - SMN372500- underneath.
- Connect the Vehicle Diagnostic Tester with the vehicle and start the **Diagnostic** mode.
- ◆ **Select Vehicle Test**
- ◆ **@2-Transmission Electronics, Functions**
- ◆ **@2-ATF lLevel** ⇒ **Drain ATF**
- Follow the instructions in the display.



WARNING

Danger of eye injury.

- ◆ ***Wear protective eyewear.***

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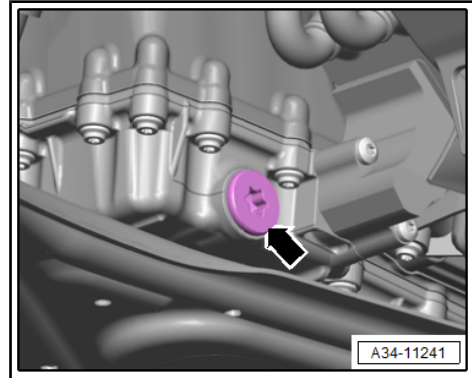
- Remove the ATF drain plug -arrow- and let the ATF drain out.



Caution

Danger of causing damage to the transmission.

- ◆ *Do not start the engine when there is no ATF in the transmission.*



Note

Follow the disposal requirements.

- Tighten the ATF drain plug.
- Clean the subframe crossbrace and remove any remaining ATF.

Filling



Caution

Danger of causing damage to the transmission.

- ◆ *Only use the listed replacement ATF for the S tronic transmission 0CK.*
- ◆ *Using other fluids can cause malfunctions or transmission failure.*
- ◆ *For the correct allocation. Refer to the Parts Catalog.*
- ◆ *The Pressurized Gearbox Oil Filler Kit - VAS6617- must be clean and ATF must not be mixed with another fluid! Rinse the hand pump with ATF if necessary.*

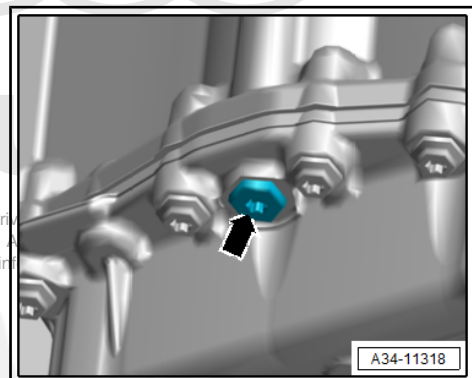


WARNING

Danger of eye injury.

- ◆ *Wear protective eyewear.*

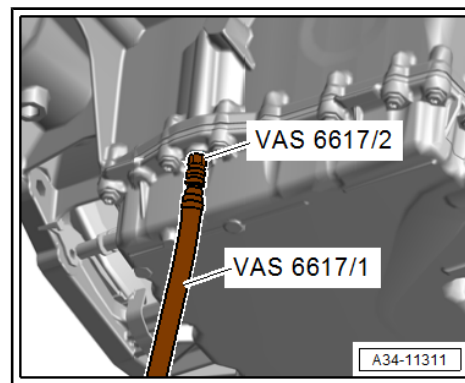
- Remove the inspection and fill hole sealing plug -arrow-.



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Vehicles with Aluminum Transmission Fluid Pan:

- Connect the Pressurized Gearbox Oil Filler Kit - VAS6617- with Pressurized Gearbox Oil Filler - Hand Pump - VAS6617/1- and Pressurized Gearbox Oil Filler - Adapter 2 - VAS6617/2- to the ATF check and fill hole.



Vehicles with Plastic Transmission Fluid Pan:

- Guide the Pressurized Gearbox Oil Filler Kit - VAS6617- with Pressurized Gearbox Oil Filler - Hand Pump - VAS6617/1- and Adapter VAS6617/12 - VAS6617/12- in the hole.

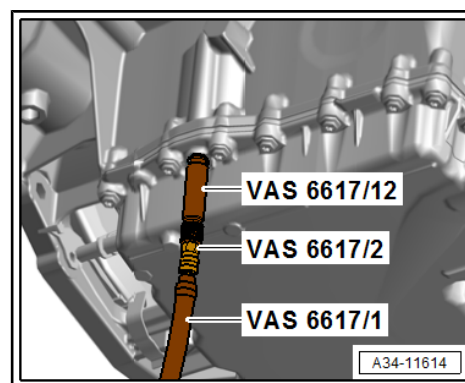
All Vehicles



Caution

Risk of damaging the transmission by mixing ATF and transmission fluid (MTF) through the same bleeder.

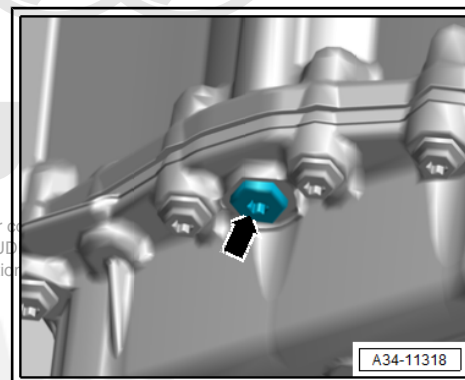
- ◆ *The ATF filling quantity of 3.5 liters (3.7 quarts) must not be exceeded.*



- Fill the transmission with 3.5 liters (3.7 quarts) of ATF using the hand pump.
- Connect the Vehicle Diagnostic Tester with the vehicle and start the **Diagnostic** mode.
- ◆ **Select Vehicle Test**
- ◆ **02-Transmission Electronics, Functions**
- ◆ **02-ATF Level** ⇒ **02-Fill ATF**
- Follow the instructions in the display.
- Tighten the inspection and fill hole sealing plug -arrow-.

Tightening Specifications

- ◆ Plug -item 1- ⇒ [Item 1 \(page 77\)](#)
- ◆ Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Underbody Trim Panel, Removing and Installing .



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10 Mechatronic

⇒ ["10.1 Overview - Mechatronic", page 92](#)

⇒ ["10.2 Oil Pan, Removing and Installing", page 93](#)

⇒ ["10.3 Mechatronic, Removing and Installing", page 95](#)

10.1 Overview - Mechatronic

1 - Oil Pan

- ❑ Removing and installing. Refer to ⇒ ["10.2 Oil Pan, Removing and Installing", page 93](#).

2 - Bolt

- ❑ Tightening specification and sequence. Refer to ⇒ [Fig. "Oil Pan - Tightening Specification and Sequence"](#), page 93.

3 - Seal

- ❑ Replace after removing

4 - Bolt

- ❑ Tightening specification. Refer to ⇒ S tronic Transmission Internal Components; Rep. Gr. 34 ; Mechatronic; Overview - Mechatronic

5 - Bracket

6 - Hydraulic Pressure Sensor 2 - G546-

- ❑ Removing and installing. Refer to ⇒ S tronic Transmission Internal Components; Rep. Gr. 34 ; Mechatronic; Overview - Mechatronic

7 - O-Rings

- ❑ Replace after removing

8 - Contact Element

9 - Bolt

- ❑ Tightening specification. Refer to ⇒ S tronic Transmission Internal Components; Rep. Gr. 34 ; Mechatronic; Overview - Mechatronic

10 - O-Ring

- ❑ Replace after removing

11 - Bleed Pipe

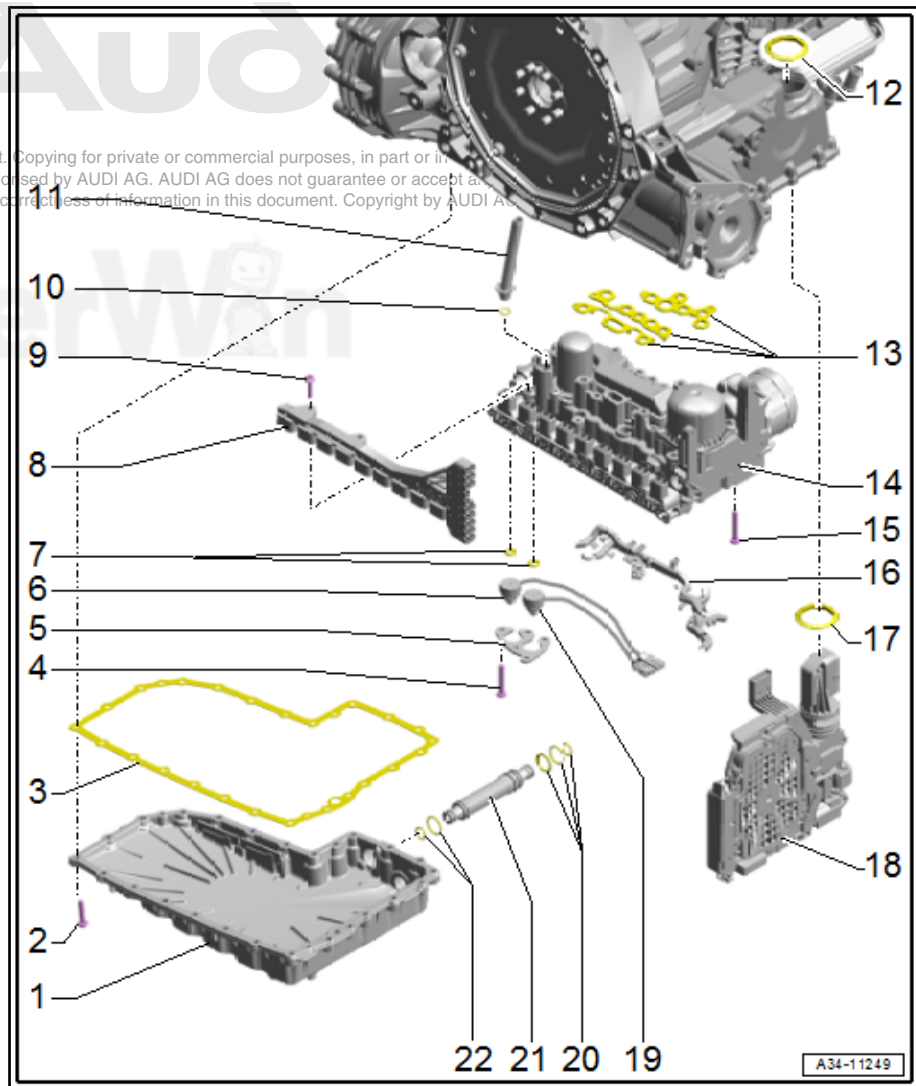
12 - Dust Ring

13 - Seals

- ❑ Replace after removing

14 - Mechatronic

- ❑ Removing and installing. Refer to ⇒ ["10.3 Mechatronic, Removing and Installing", page 95](#).



15 - Mechatronic Bolt

- ☐ Refer to ⇒ S tronic Transmission Internal Components; Rep. Gr. 34 ; Mechatronic; Overview - Mechatronic

16 - Wiring Guide

17 - Seal

- ☐ Replace after removing

18 - Transmission Control Module - J217-

- ☐ Removing and installing. Refer to ⇒ S tronic Transmission Internal Components; Rep. Gr. 34 ; Mechatronic; Overview - Mechatronic

19 - Hydraulic Pressure Sensor 1 - G545-

- ☐ Removing and installing. Refer to ⇒ S tronic Transmission Internal Components; Rep. Gr. 34 ; Mechatronic; Overview - Mechatronic

20 - O-Rings

- ☐ Replace after removing

21 - ATF Pipe

- ☐ Replace after removing

22 - Seals

- ☐ Replace after removing

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Oil Pan - Tightening Specification and Sequence

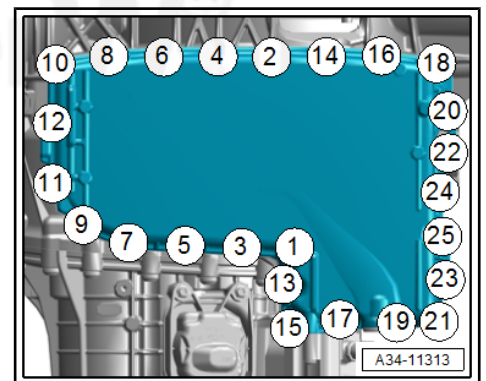


Note

For aluminum and plastic transmission fluid pans

- Tighten the bolts in steps according to the specified sequence:

Step	Bolts	Tightening Specification/Additional Turn
1.	-1 through 25-	Install the bolt hand-tight.
2.	-1 through 25-	3 Nm
3.	-1 through 25-	90°



10.2 Oil Pan, Removing and Installing

Special tools and workshop equipment required

- ◆ Engine Bung Set - VAS6122-
- ◆ Used Oil Collection and Extraction Unit - SMN372500-



Caution

This procedure contains mandatory replaceable parts. Refer to component overview prior to starting procedure.

Mandatory Replacement Parts

- ◆ ATF pipe
- ◆ Seal - Oil pan

Removing



Caution

Risk of transmission damage.

- ◆ *Do not run engine or tow vehicle with oil pan removed or without transmission fluid.*



WARNING

The system is under pressure.

- *Deactivate the ATF pump and drain the hydraulic pressure reservoir before removing the oil pan!*

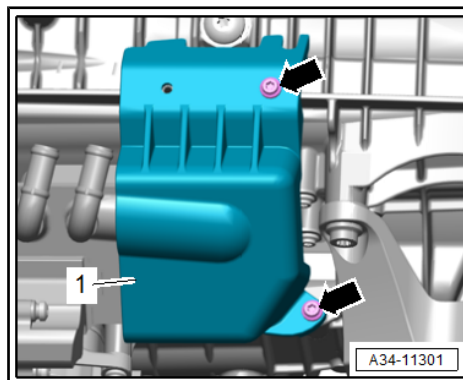
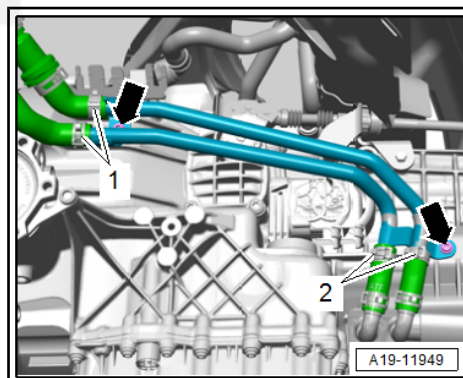
- Using the Vehicle Diagnostic Tester in the Transmission Control Module - J217- empty the ATF pressure reservoir and disable the Transmission Fluid Auxiliary Hydraulic Pump - V552- . Refer to
⇒ ["4.3 ATF Pump, Deactivating and Draining the Hydraulic Pump Reservoir", page 7](#) .
- Remove the subframe crossbrace. Refer to ⇒ [Suspension, Wheels, Steering; Rep. Gr. 40 ; Subframe, Subframe Crossbrace, Removing and Installing](#) .
- Drain the ATF. Refer to
⇒ ["9.2 ATF, Draining and Filling", page 88](#) .
- Remove the bolts -arrows-.



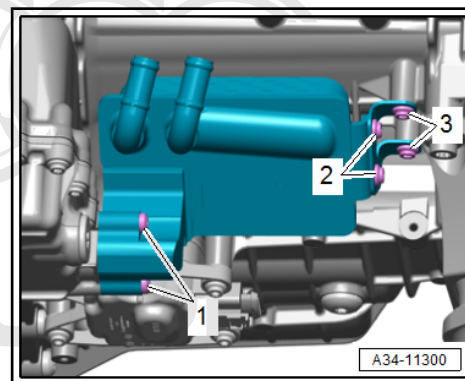
Note

The coolant hose -2- stays connected to the ATF cooler.

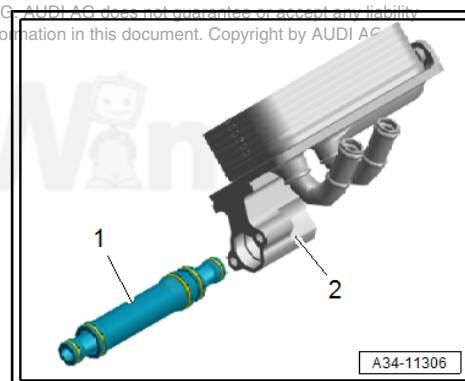
- Remove the bolts -arrows- and remove the protective plate -1-.



- Place the Used Oil Collection and Extraction Unit - SMN372500- underneath.
- Only loosen bolts -2- and remove the bolts -1 and 3-.



- Remove the ATF cooler -2- from the oil pan and hang it to the side. Make sure that the ATF pipe stays installed in the oil pan while doing this.
- Remove the ATF pipe -1- from the oil pan.
- Seal the open lines and connections with clean plugs from the Engine Bung Set - VAS6122- .



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

Installing

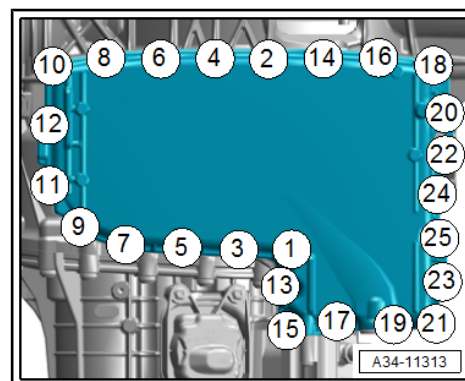
Install in reverse order of removal. Note the following:



Note

Replace the seal and the ATF pipe.

- Installing the ATF cooler. Refer to
⇒ [“7.2 ATF Cooler, Removing and Installing”, page 78](#) .



Tightening Specifications

- ◆ Refer to
⇒ [Fig. “Oil Pan - Tightening Specification and Sequence”](#),
[page 93](#)
- ◆ Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Sub-frame .

10.3 Mechatronic, Removing and Installing

Special tools and workshop equipment required

- ◆ Used Oil Collection and Extraction Unit - SMN372500-
- ◆ Assembly Tool - T40305-
- ◆ Oil Sump Assembly Pin - T40199-
- ◆ Electronic Torque Wrench 3-60Nm - VAS6583-
- ◆ Cover - T40322-
- ◆ Support - T40321-

Removing



WARNING

The system is under pressure.

- *Deactivate the ATF pump and drain the hydraulic pressure reservoir before removing the oil pan!*

- Using the Vehicle Diagnostic Tester in the Transmission Control Module - J217- empty the ATF pressure reservoir and disable the Transmission Fluid Auxiliary Hydraulic Pump V552- . Refer to

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⇒ ["4.3 ATF Pump, Deactivating and Draining the Hydraulic Pump Reservoir", page 7](#) .

- Remove the subframe crossbrace. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Subframe; Subframe Crossbrace, Removing and Installing .
- Remove the oil pan. Refer to

⇒ ["10.2 Oil Pan, Removing and Installing", page 93](#)

All other procedures for the Mechatronic is described in ⇒ Servicing - 7-Speed Dual Clutch Transmission 0CK; Rep. Gr. 34 ; Mechatronic; Mechatronic, Removing and Installing .

Installing

Install in reverse order of removal. Note the following:

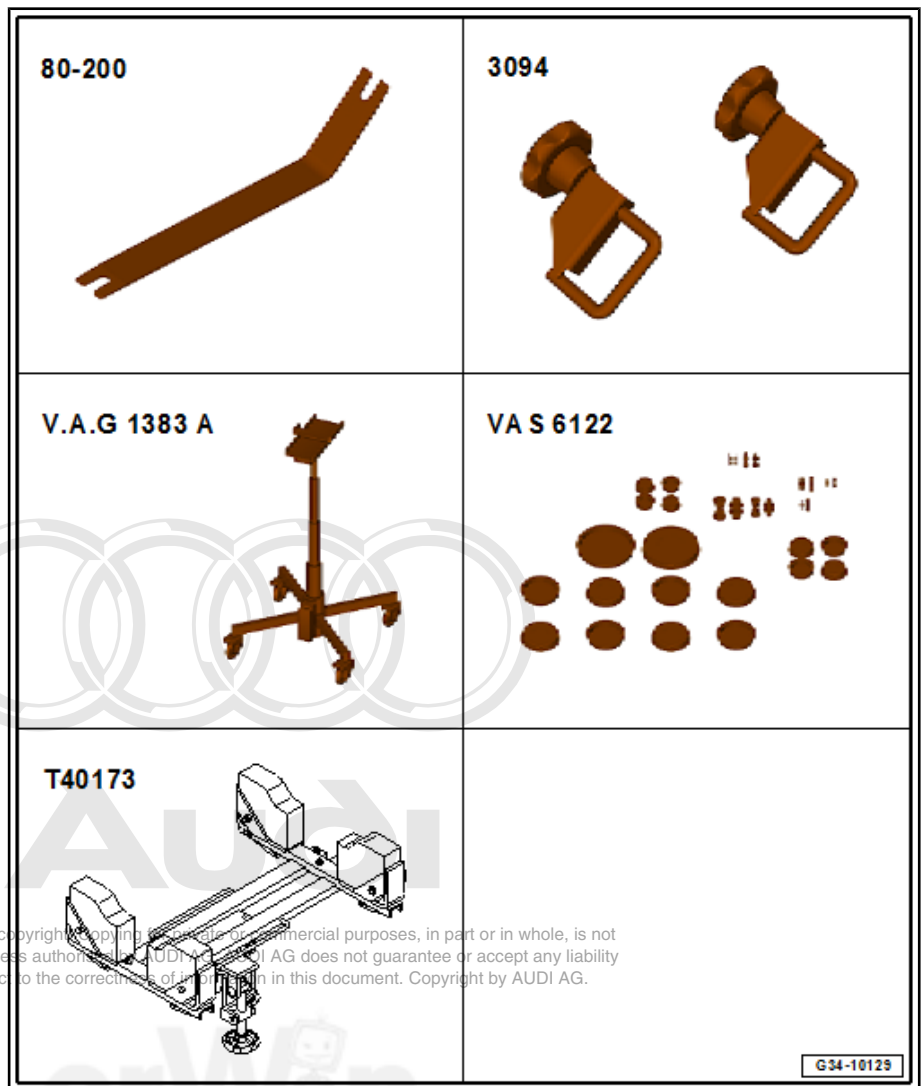
Tightening specifications. Refer to

⇒ ["10.1 Overview - Mechatronic", page 92](#) .

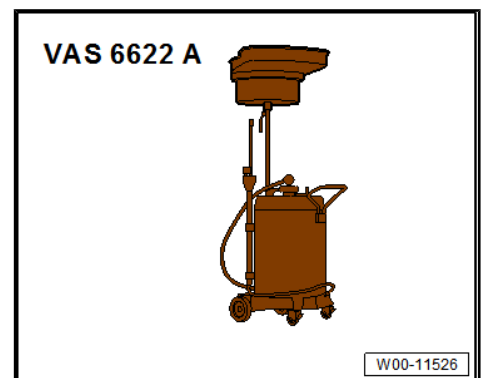
11 Special Tools

Special tools and workshop equipment required

- ◆ Pry Lever - 80-200-
- ◆ Hose Clamps - Up To 25mm - 3094-
- ◆ Engine and Gearbox Jack - VAS6931-
- ◆ Engine Bung Set - VAS6122-
- ◆ Gearbox Support - T40173-

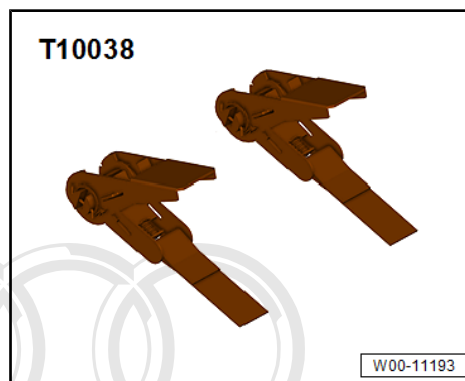


- ◆ Used Oil Collection and Extraction Unit - SMN372500-





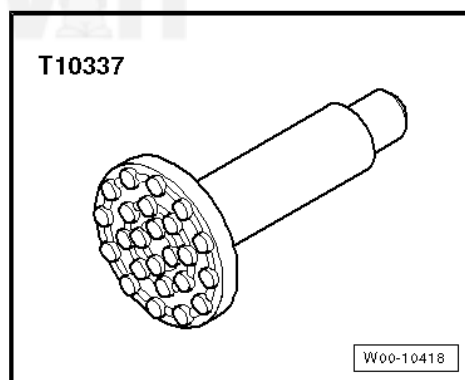
◆ Tensioning Strap - T10038-



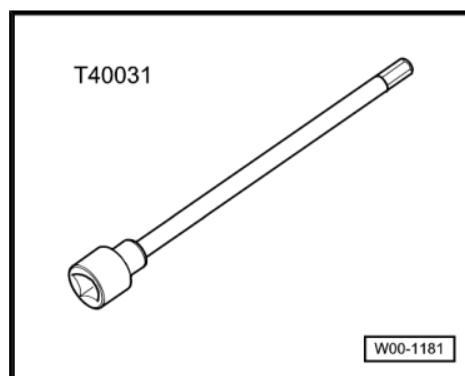
◆ Seal Installer - Selector Shaft - T10135-



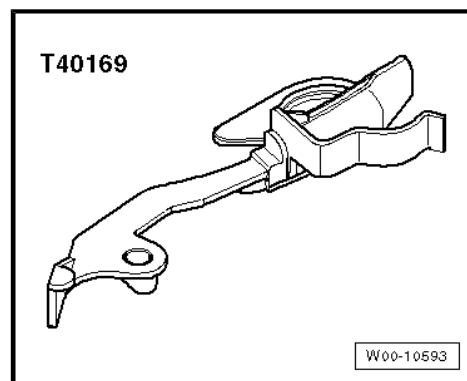
◆ Engine/Gearbox Jack - Gearbox Support - T10337-



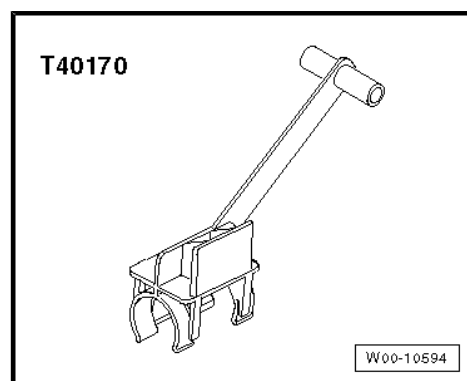
◆ Socket And Key - T40031-



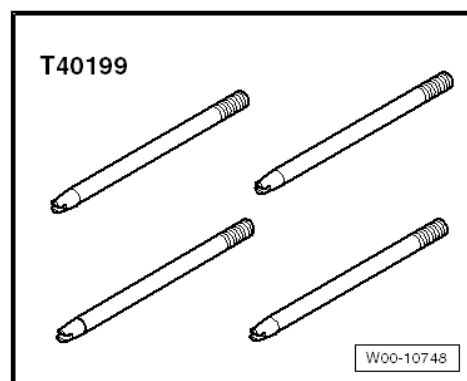
◆ Clutch Module Assembly Aid - T40169-



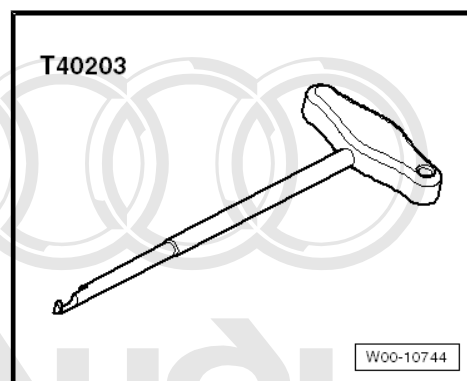
◆ Clutch Module Transportation Lock - T40170-



◆ Oil Sump Assembly Pin - T40199-

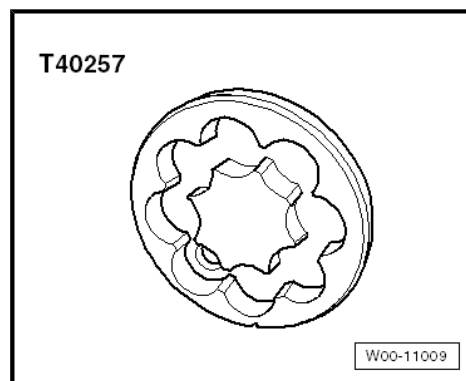


◆ Locking Button Removal Tool - T40203-

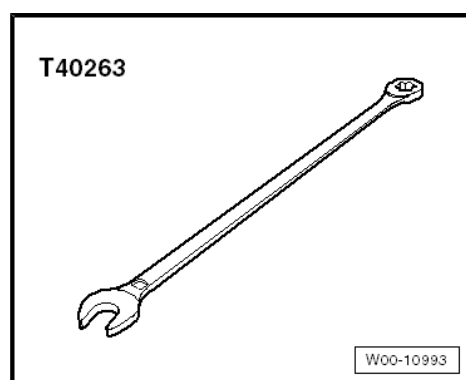


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◆ Crankshaft Turning Tool - T40257-



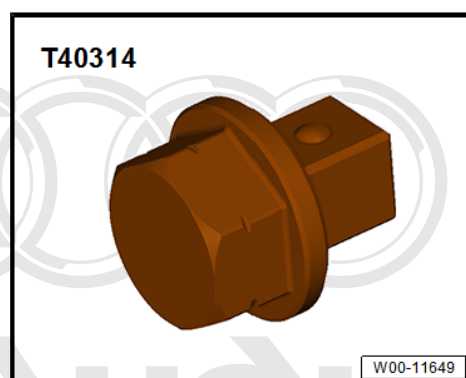
◆ Wrench - 21mm - T40263-



◆ Assembly Tool - T40305-

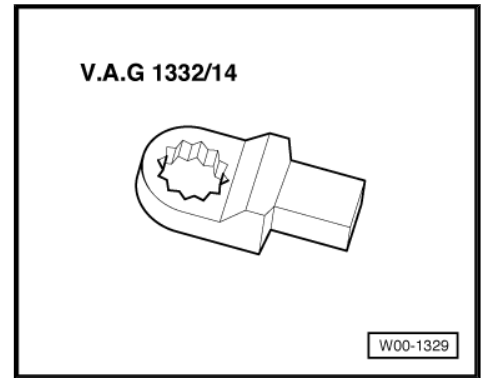


◆ Adapter -T40314-

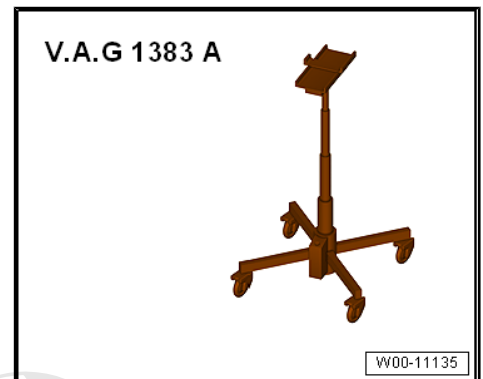


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- ◆ Torque Wrench 1332 Insert - Ring Wrench - 16mm - VAG1332/14-



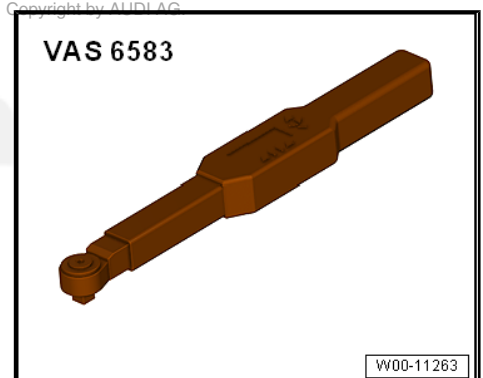
- ◆ Engine and Gearbox Jack - VAS6931-



- ◆ Hose Clip Pliers - VAS6362-



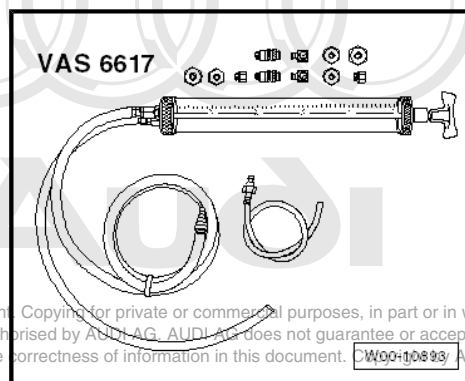
- ◆ Electronic Torque Wrench 3-60Nm - VAS6583-



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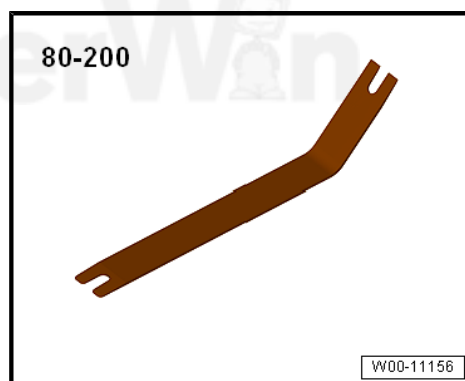


- ◆ Pressurized Gearbox Oil Filler Kit - VAS6617- with Pressurized Gearbox Oil Filler - Hand Pump - VAS6617/1- and Pressurized Gearbox Oil Filler - Adapter 2 - VAS6617/2-



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- ◆ Pry Lever - 80-200-



- ◆ Trim Removal Wedge - 3409-



- ◆ Cover - T40322-
- ◆ Support - T40321-
- ◆ Adapter VAS6617/12 - VAS6617/12-

35 – Gears, Shafts

1 Gears and Shafts, Disassembling and Assembling

It Is Not Possible to Disassemble and Assemble the Gears and Shafts at This Time.

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39 – Final Drive, Differential

1 Transmission Control

⇒ ["1.1 Component Location Overview - Transmission Control Module", page 104](#)

1.1 Component Location Overview - Transmission Control Module

1 - DSG Transmission Mechatronic - J743-

- ❑ Removing and installing. Refer to
⇒ ["10.3 Mechatronic, Removing and Installing", page 95](#) .

2 - Transmission Fluid Temperature Sensor - G93-

3 - Temperature Sensor In Control Module - G510-

4 - Transmission Control Module - J217-

5 - Transmission Input Speed Sensor 2 - G612-

6 - Transmission Input Speed Sensor 1 - G632-

7 - Gear Position Distance Sensor 4 - G490-

8 - Gear Position Distance Sensor 3 - G489-

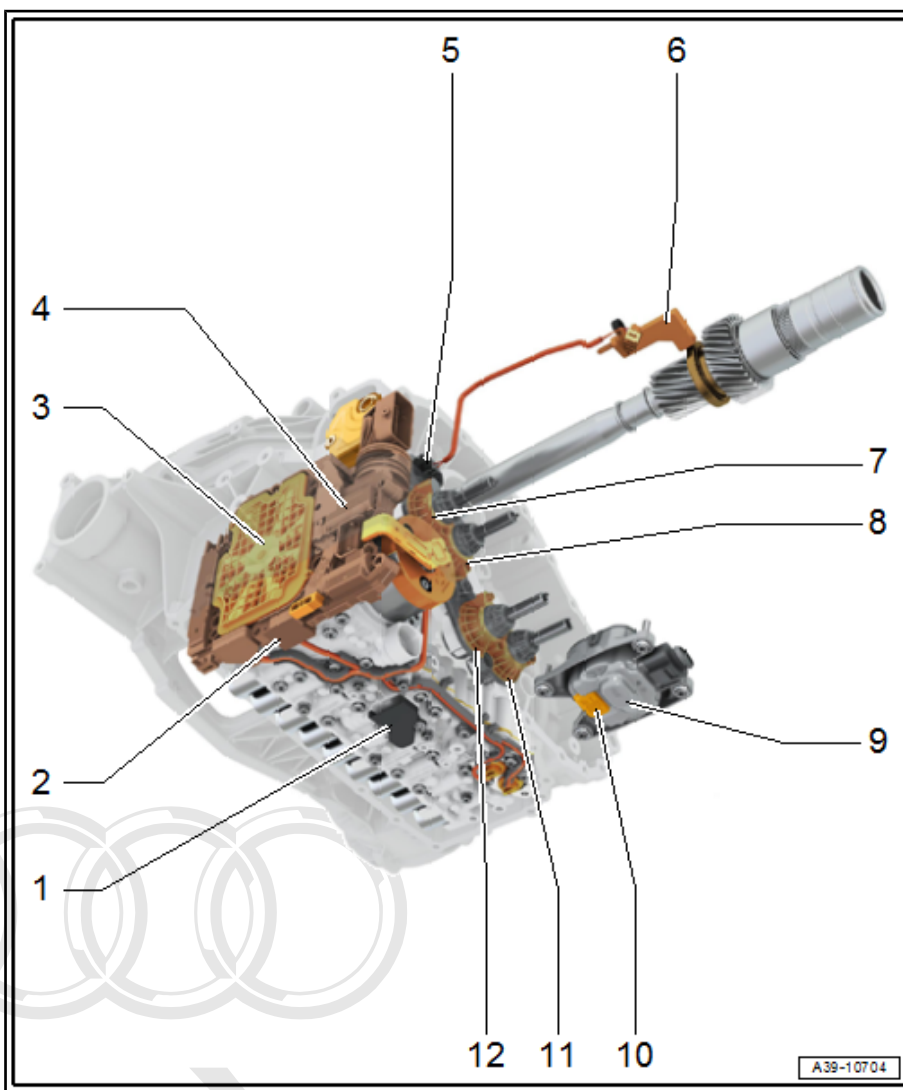
9 - Transmission Electric Pump 2 - V553-

- ❑ Removing and installing. Refer to
⇒ ["6.2 Transmission Fluid Pump, Removing and Installing", page 73](#) .

10 - Transmission Fluid Temperature Sensor 2 - G754-

11 - Gear Position Distance Sensor 2 - G488-

12 - Gear Position Distance Sensor 1 - G487-



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1 - Transmission Fluid Auxiliary Hydraulic Pump - V552-

2 - Transmission Fluid Auxiliary Hydraulic Pump Rotor Position Sensor - G847-

3 - Drive Position Sensor 2 - G869-

- ❑ Removing and installing. Refer to
⇒ ["1.13 Drive Position Sensor G676 , Removing and Installing", page 34](#) .

4 - Drive Position Sensor - G676-

- ❑ Removing and installing. Refer to
⇒ ["1.13 Drive Position Sensor G676 , Removing and Installing", page 34](#) .

5 - Automatic Transmission 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-

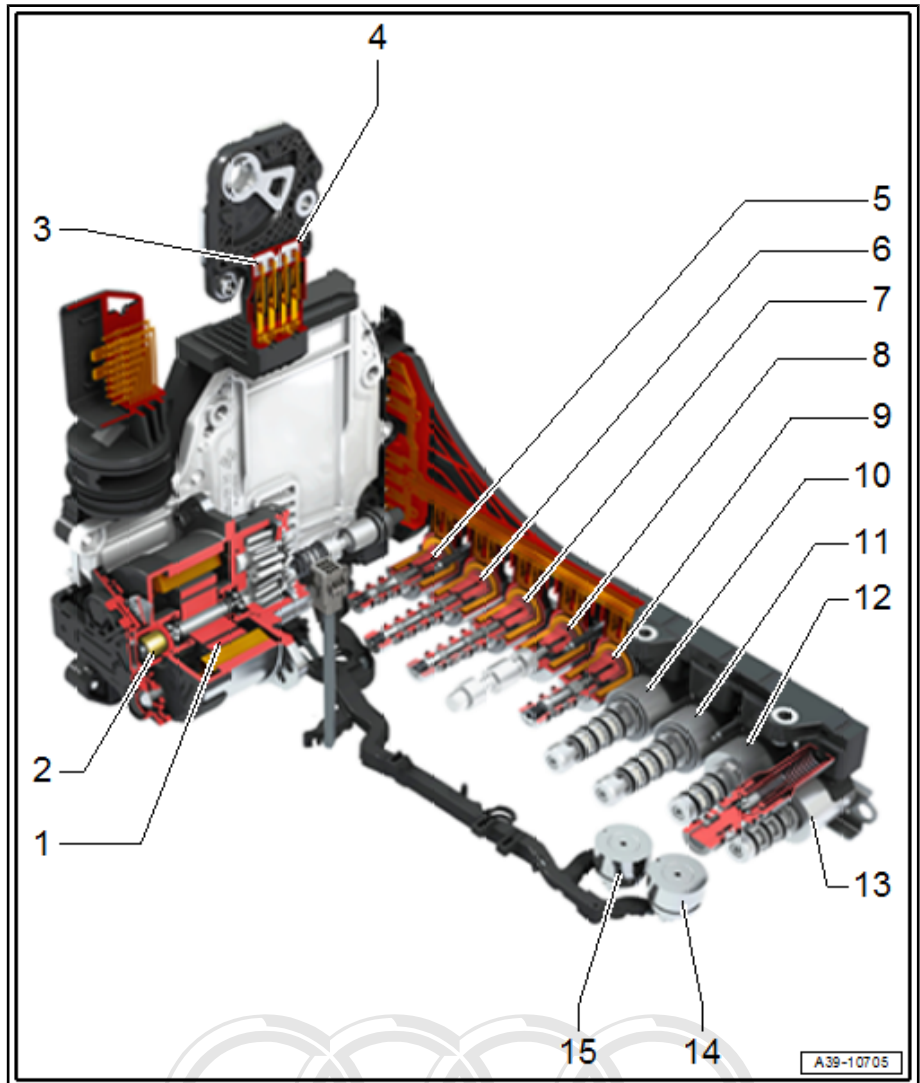
11 - Solenoid Valve 2 - N89-

12 - Automatic Transmission Pressure Regulating Valve 2 - N216-

13 - Automatic Transmission Pressure Regulating Valve 1 - N215-

14 - Hydraulic Pressure Sensor 1 - G545-

15 - Hydraulic Pressure Sensor 2 - G546-



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2 Seals

⇒ ["2.1 Component Location Overview - Seals", page 106](#)

⇒ ["2.2 Left Seal, Replacing", page 107](#)

⇒ ["2.3 Right Seal, Replacing", page 107](#)

2.1 Component Location Overview - Seals

1 - Flywheel

- ❑ Removing and installing. Refer to ⇒ S tronic Transmission Internal Components; Rep. Gr. 30 ; Clutch; Flywheel, Removing and Installing .

2 - Left Flange Shaft Seal

- ❑ Replacing. Refer to ⇒ Rear Final Drive; Rep. Gr. 39 ; Seals; Left Seal, Replacing .

3 - Front Differential

4 - O-Ring

- ❑ Replace after removing

5 - Final Drive Cover

- ❑ Removing and installing. Refer to ⇒ Rear Final Drive; Rep. Gr. 39 ; Seals; Left Seal, Replacing .

6 - Right Flange Shaft

- ❑ Removing and installing. Refer to ⇒ ["3.3 Right Flange Shaft, Removing and Installing", page 115](#) .

7 - Right Flange Shaft Seal

- ❑ Replacing. Refer to ⇒ ["2.3 Right Seal, Replacing", page 107](#) .

8 - Gearshift Lever

9 - Gearshift Shaft Seal

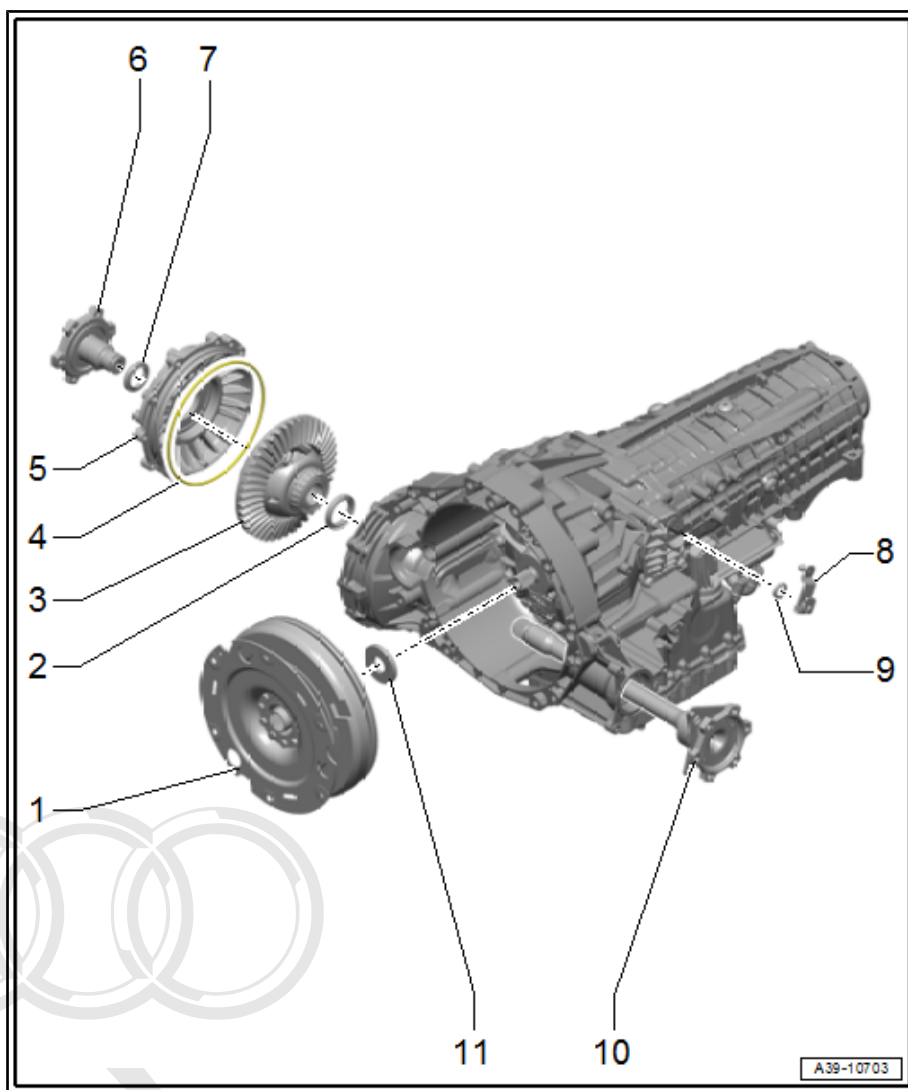
- ❑ Replacing. Refer to ⇒ ["1.14 Selector Shaft Seal, Replacing", page 36](#) .

10 - Left Flange Shaft

- ❑ Removing and installing. Refer to ⇒ ["3.2 Left Flange Shaft, Removing and Installing", page 112](#) .

11 - Input Shaft Seal

- ❑ Replacing. Refer to ⇒ Rear Final Drive; Rep. Gr. 39 ; Seals; Input Shaft Seal, Replacing .



2.2 Left Seal, Replacing

Description of the Procedure. Refer to ➔ Rear Final Drive; Rep. Gr. 39 ; Seals; Left Seal, Replacing

2.3 Right Seal, Replacing

Special tools and workshop equipment required

- ◆ Bearing/Bushing Installer - Multiple Use - VW295-
- ◆ Puller - Flanged Shaft - T10037-
- ◆ Seal Installer - Flange Shaft - T40163-
- ◆ Sealing Grease - G 052 128 A1-



Caution

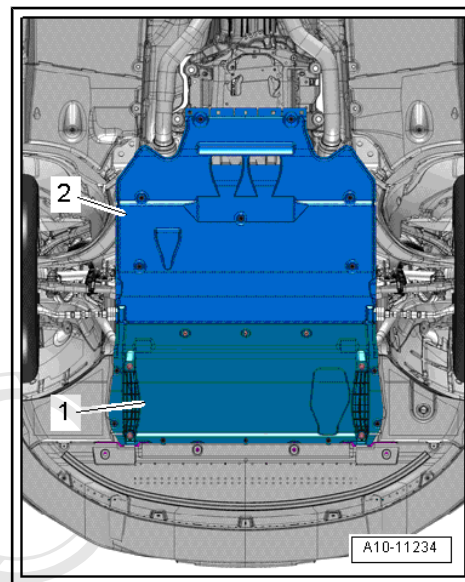
This procedure contains mandatory replaceable parts. Refer to component overview prior to starting procedure.

Mandatory Replacement Parts

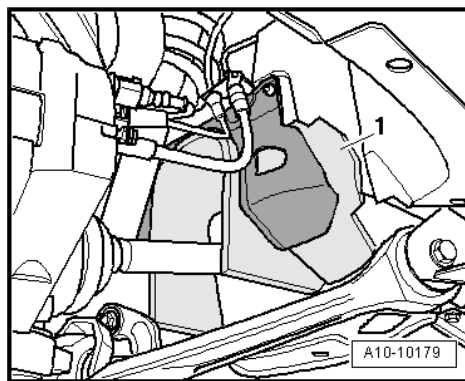
- ◆ Circlip - Driveshaft

Removing

- Transmission is installed.
- General repair instructions. Refer to ➔ ["3 Safety Precautions", page 3](#) .
- Remove right front wheel.
- Remove the rear noise insulation -2-. Refer to ➔ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Underbody Trim Panel, Removing and Installing .

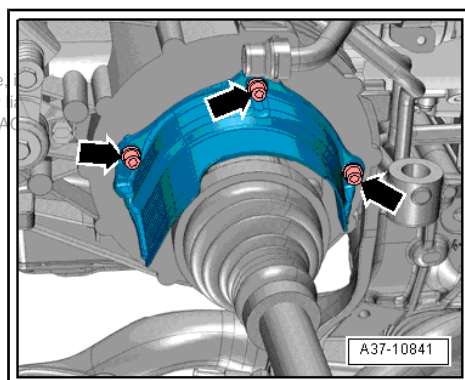


- If equipped, remove the noise insulation -1- in the right wheel housing.

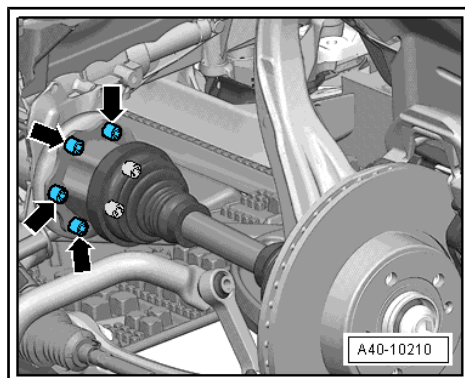


- Remove the bolts -arrows- and remove the heat shield from the right drive axle.

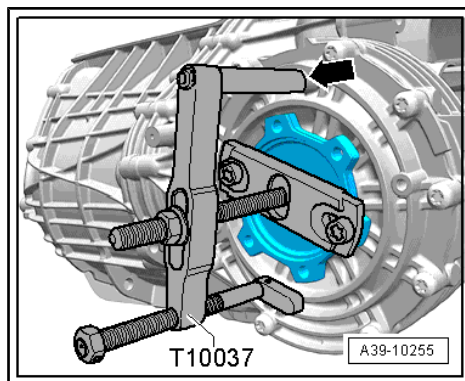
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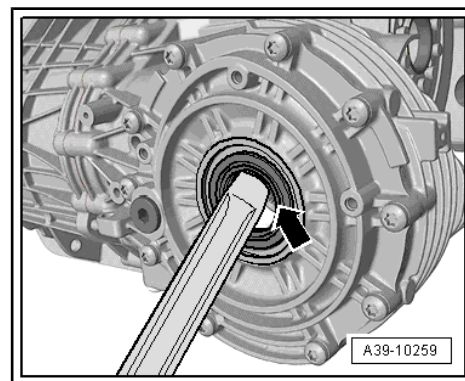
- Remove the right drive axle on the transmission and lay it aside. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Driveshaft; Driveshaft Threaded Connection, Loosening and Tightening .



- Place the Drip Tray under the transmission.
- Remove right flange shaft by fastening Puller - Flanged Shaft - T10037- to transmission housing -arrow-.



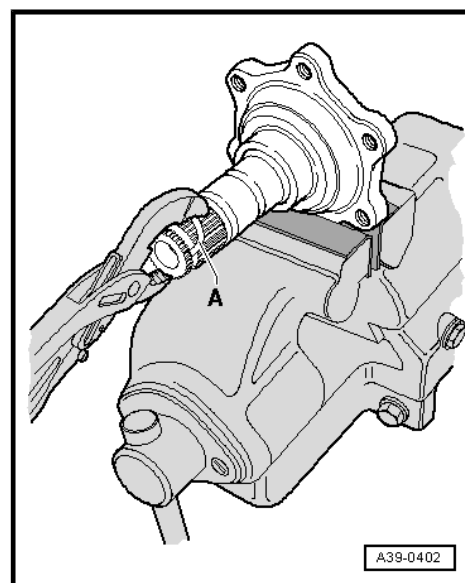
- Pry out the flange shaft seal.



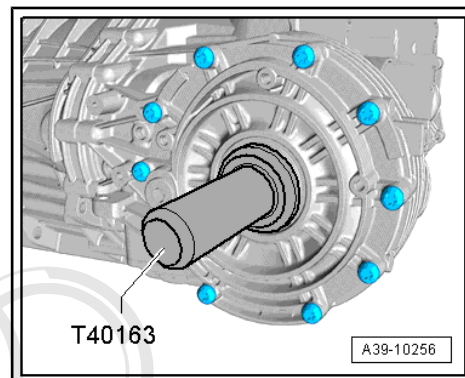
Installing

Install in reverse order of removal. Note the following:

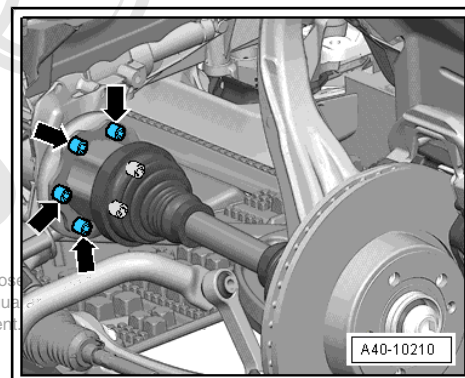
- Always replace the flange shaft circlip -A-.
- Clamp the flange shaft in a vise with jaw protectors. Remove the old circlip from the groove in the flange shaft using the new circlip -A-.



- Lightly coat the outer circumference of the new shaft seal with oil.
- Install the new right flange shaft seal all the way without tilting it.
- Fill the space between the sealing and dust lip halfway with Sealing Grease - G 052 128 A1- .
- Drive in the flange shaft using the Bearing/Bushing Installer - Multiple Use - VW295- .



- Attach the drive axle to the flange shaft. Refer to ➤ Suspension, Wheels, Steering; Rep. Gr. 40 ; Driveshaft; Driveshaft Threaded Connection, Loosening and Tightening .
- Install the driveshaft heat shield and tighten the bolts to the tightening specification. Refer to ➤ [page 110](#) .
- Fill the transmission fluid and check the level. Refer to ➤ ["8.2 Transmission Fluid, Draining and Filling", page 82](#) .

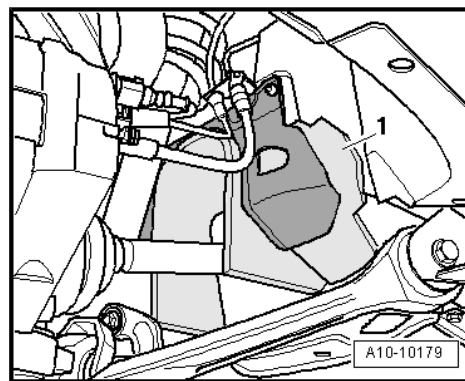


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- If equipped, install the noise insulation -1- in the right wheel housing.
- Install the rear noise insulation. Refer to ⇒ Body Exterior; Rep. Gr. 66 ; Underbody Trim Panel; Underbody Trim Panel, Removing and Installing .

Tightening Specification

Component	Nm
Driveshaft heat shield to transmission	23



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3 Differential

⇒ [“3.1 Overview - Differential”, page 111](#)

⇒ [“3.2 Left Flange Shaft, Removing and Installing”, page 112](#)

⇒ [“3.3 Right Flange Shaft, Removing and Installing”, page 115](#)

3.1 Overview - Differential

1 - Left Flange Shaft Seal

- ☐ Replacing. Refer to ⇒ [Rear Final Drive; Rep. Gr. 39 ; Seals; Left Seal, Replacing](#) .

2 - Shim

- ☐ Behind the taper roller bearing outer race

3 - Taper Roller Bearing Outer Race

4 - Front Differential

5 - Bolt

- ☐ Tightening specification and sequence. Refer to ⇒ [Fig. “Final Drive Cover - Tightening Specification And Sequence”](#), page 112 .

6 - Circlip

- ☐ Replacing

7 - Right Flange Shaft

- ☐ Removing and installing. Refer to ⇒ [“3.3 Right Flange Shaft, Removing and Installing”, page 115](#) .

8 - Right Flange Shaft Seal

- ☐ Replacing. Refer to ⇒ [“2.3 Right Seal, Replacing”, page 107](#) .

9 - Final Drive Cover

- ☐ Removing and installing. Refer to ⇒ [Rear Final Drive; Rep. Gr. 39 ; Seals; Left Seal, Replacing](#) .

10 - O-Ring

- ☐ Replace after removing

11 - Shim

- ☐ Behind the taper roller bearing outer race

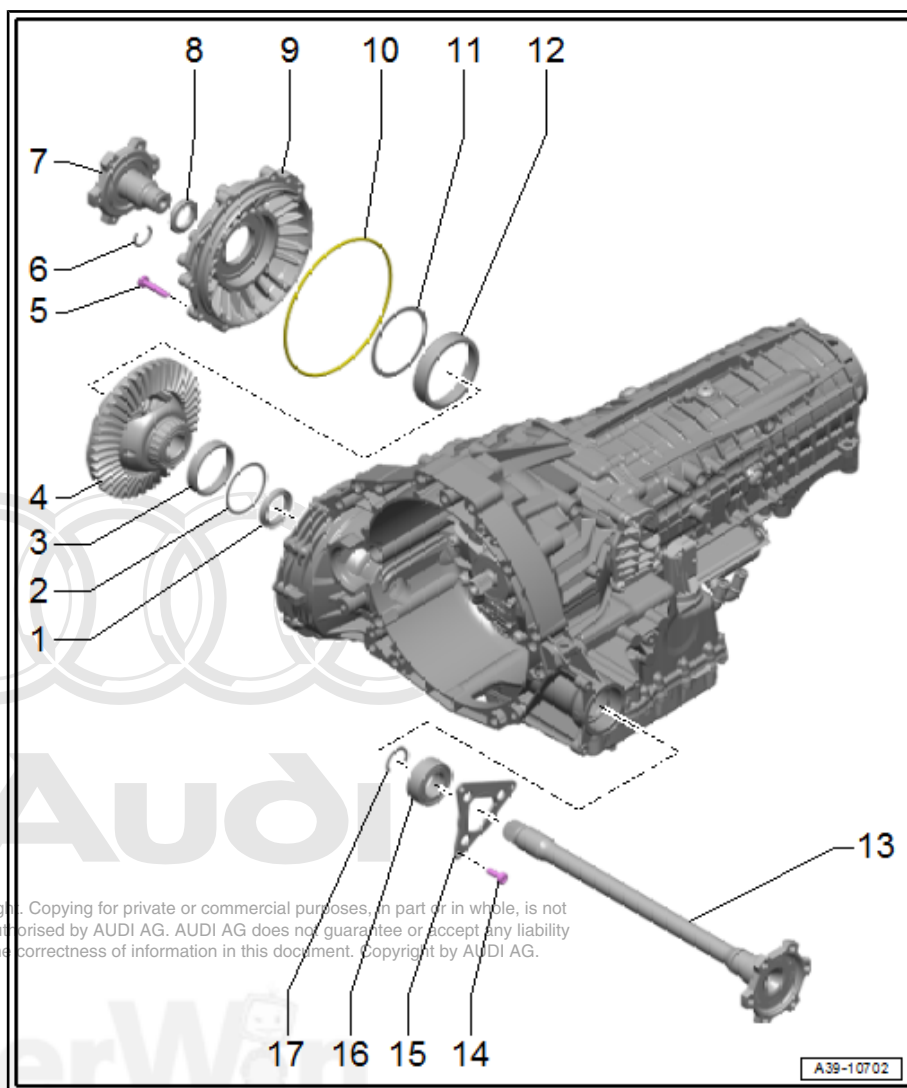
12 - Taper Roller Bearing Outer Race

13 - Left Flange Shaft

- ☐ Removing and installing. Refer to ⇒ [“3.2 Left Flange Shaft, Removing and Installing”, page 112](#) .

14 - Bolt

- ☐ 10 Nm + 90° turn
- ☐ Quantity: 3



15 - Gear Carrier

- ☐ Attached to the left flange shaft with the bearing -16- and the circlip -17-

16 - Bearings

- ☐ For the left flange shaft

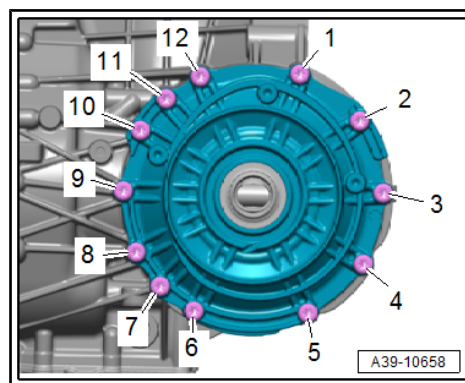
17 - Circlip

- ☐ For the left flange shaft bearing

Final Drive Cover - Tightening Specification And Sequence

- Tighten the bolts in steps according to the specified sequence:

Step	Bolts	Tightening Specification/Additional Turn
1.	-1 to 12-	3 Nm
2.	-1 to 12-	20 Nm
3.	-1 to 12-	90°



3.2 Left Flange Shaft, Removing and Installing

Special tools and workshop equipment required

- ◆ Engine and Gearbox Jack - VAS6931-
- ◆ Grease. Refer to the Parts Catalog.



Caution

This procedure contains mandatory replaceable parts. Refer to component overview prior to starting procedure.

Mandatory Replacement Parts

- ◆ Bolts - Upper control arm
- ◆ Nut - Upper control arm
- ◆ Bolts - Flange shaft mounting bracket

Removing

- The transmission is installed.
- Drain the transmission fluid. Refer to ⇒ [8.2 Transmission Fluid, Draining and Filling, page 82](#).
- Install the left drive axle. Refer to ⇒ [Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Drive Axle, Removing and Installing](#).

- To do this, remove the nut -2- and bolt -1-.
- Remove the upper control arm upward from the wheel bearing housing -arrows-.

 Note

Do not expand the slots in the wheel bearing housing.

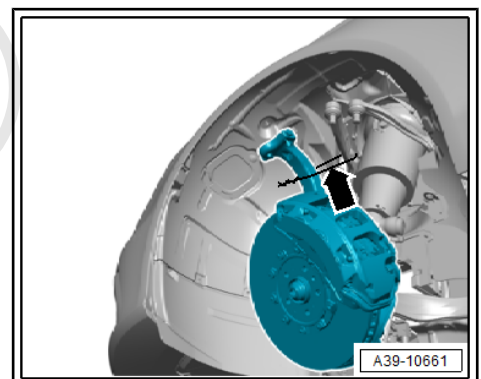
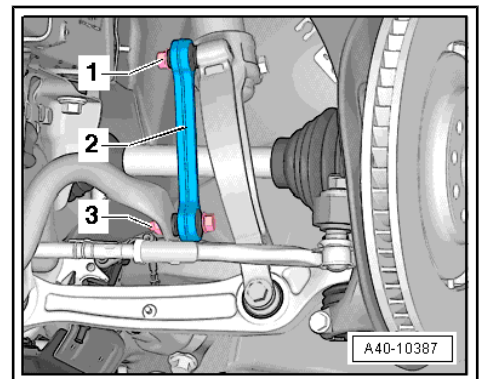
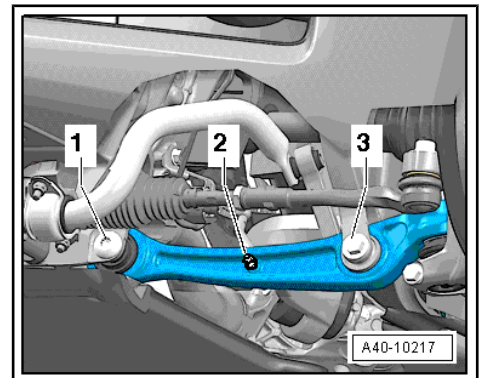
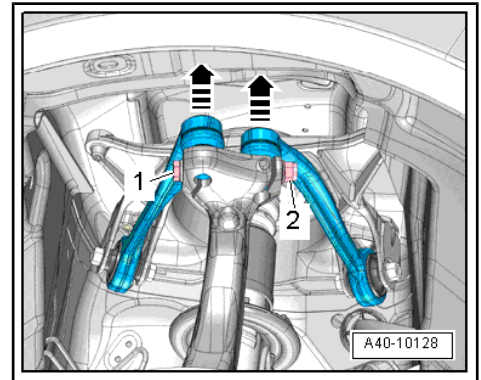
- Tilt the wheel bearing housing to the side.
- Support the control arm with the Engine and Gearbox Jack - VAS6931- .
- Loosen the shock absorber threaded connection -3-.

 Note

Ignore items -1 and 2-.

- Remove bolts -1 and 3-.
- Remove the coupling rod -2-.

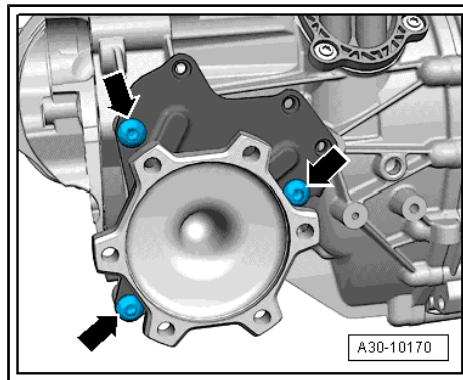
- Bind the wheel bearing housing with wire -arrow- to the side.



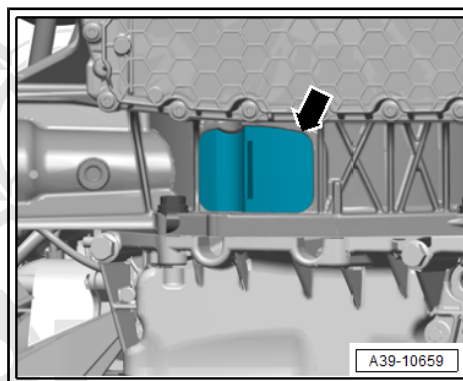
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erWin

- Remove the bolts -arrows- from the flange shaft mounting bracket.



- Remove the lower cover -arrow- from the transmission.

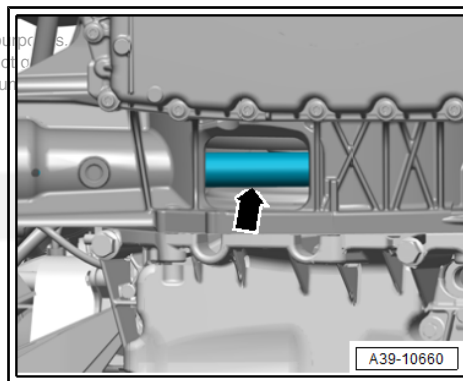


WARNING

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Risk of damaging the seal between the final drive and the transmission housing when removing the flange shaft.

- ◆ If the flange shaft -arrow- is not held in a central position, the seal on the flange shaft spline will be damaged.
- ◆ A seal must be replaced if it is damaged.



- To avoid damaging the seal, support and guide the flange shaft out of the opening in the transmission.
- Remove the left flange shaft from the transmission -arrow A-.



Note

Ignore item -1, 3- and -arrow B-.

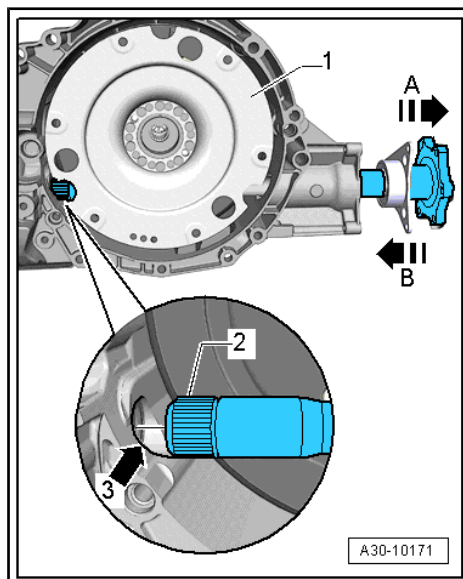
Installing

Install in reverse order of removal. Note the following:



Note

Replace the bolts that were tightened with an additional turn.





WARNING

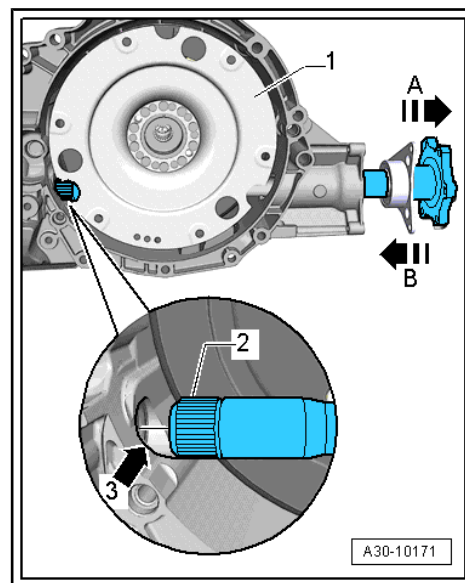
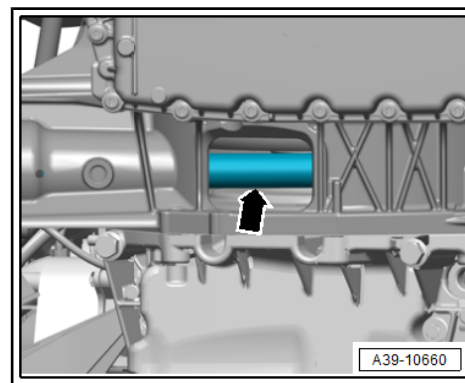
Risk of damaging the seal between the final drive and the transmission housing when installing the flange shaft.

- ◆ *If the flange shaft -arrow- is not held in a central position, the seal on the flange shaft spline will be damaged.*
- ◆ *A seal must be replaced if it is damaged.*

- To avoid damaging the seal when inserting the flange shaft, support and guide the flange shaft into the opening in the transmission.
- Slide the left flange shaft -2- into the transmission in direction of -arrow B-. When doing this, insert the flange shaft centrally into the seal on the front differential -arrow 3-.

Tightening Specification

- ◆ Refer to ⇒ [“3.1 Overview - Differential”, page 111](#)
- ◆ Upper control arm and coupling rod. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Upper Control Arm; Overview - Suspension Strut, Upper Control Arm
- ◆ Drive axle. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Overview - Drive Axle .



3.3 Right Flange Shaft, Removing and Installing

Special tools and workshop equipment required

- ◆ Bearing/Bushing Installer - Multiple Use - VW295-
- ◆ Puller - Flanged Shaft - T10037-
- ◆ Used Oil Collection and Extraction Unit - SMN372500-
- ◆ Grease. Refer to the Parts Catalog.

- ◆ M10 nut, quantity: 2
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Caution

This procedure contains mandatory replaceable parts. Refer to component overview prior to starting procedure.

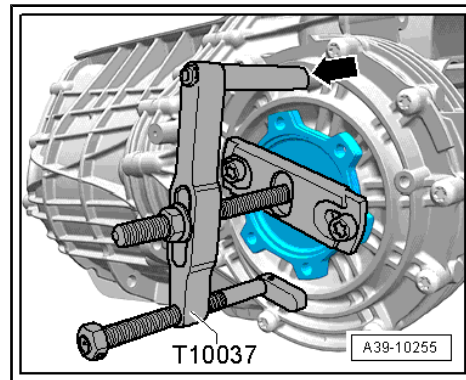
Mandatory Replacement Parts

- ◆ Circlip - Flange shaft

Removing

- Remove the right drive axle. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Drive Axle Removing and Installing .

- Place the Used Oil Collection and Extraction Unit - SMN372500- underneath.
- Attach the Puller - Flanged Shaft - T10037- to the transmission housing -arrow- and remove the flange shaft.



Installing

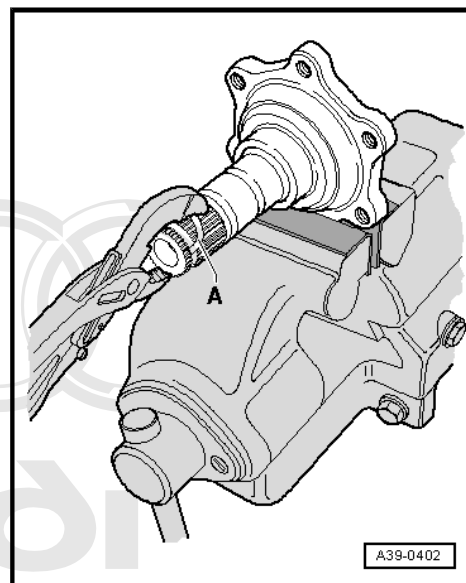
Install in reverse order of removal. Note the following:



Note

Replacing the circlip

- Clamp the flange shaft in a vise with jaw protectors. Use the new circlip -A- to press the previous circlip out of the flange shaft groove.
- Fill the space between the sealing- and dust lip half way with sealing grease. Refer to the Parts Catalog.
- Drive in the right flange shaft using the Bearing/Bushing Installer - Multiple Use - VW295- .
- Install the right drive axle. Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Drive Axle Removing and Installing .



- Check transmission fluid level. Refer to ["8.1 Transmission Fluid Level, Checking", page 81](#)

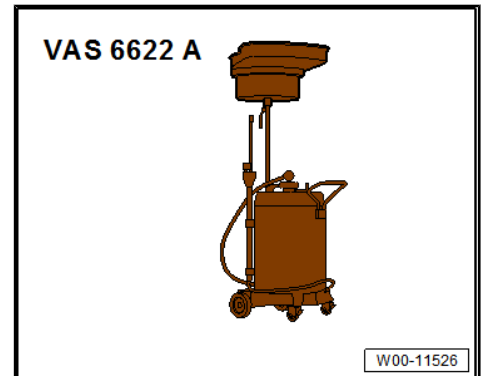
Tightening Specification

- ◆ Refer to ⇒ Suspension, Wheels, Steering; Rep. Gr. 40 ; Drive Axle; Overview - Drive Axle .

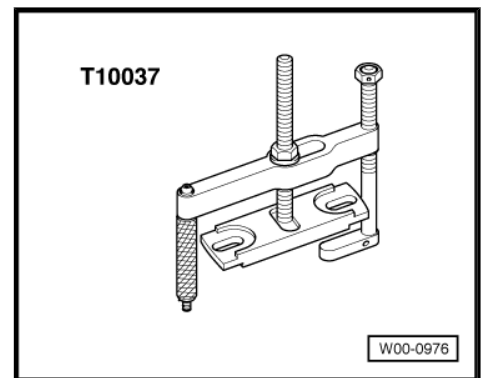
4 Special Tools

Special tools and workshop equipment required

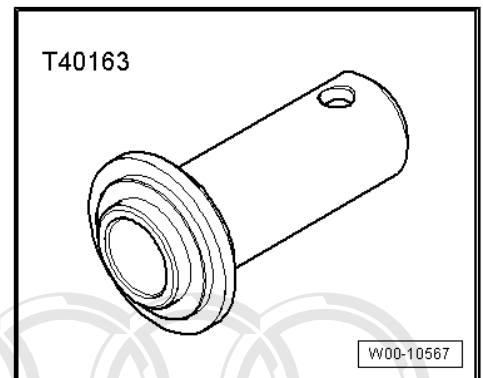
- ◆ Used Oil Collection and Extraction Unit - SMN372500-



- ◆ Puller - Flanged Shaft - T10037-



- ◆ Seal Installer - Flange Shaft - T40163-



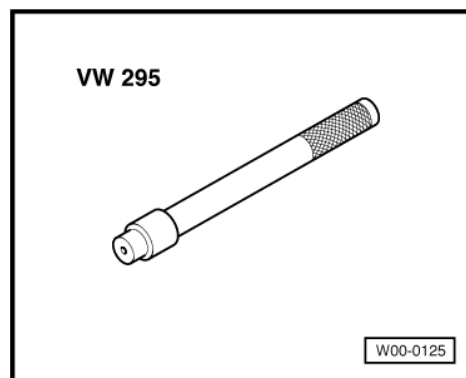
- ◆ Engine and Gearbox Jack - VAS6931-



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◆ Bearing/Bushing Installer - Multiple Use - VW295-



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5 Revision History

DRUCK NUMBER: A005A006421

Fac- tory Edi- tion	Edit Edi- tion	Job Type	Fee dba ck	Notes	Quality Checke d By
11.2 015	03/0 1/20 16	Fac- tory Up- date	N/A	Added MRP's.	Eric P.
08.2 015	10/9/ 2015	Fac- tory Up- date	N/A		Jim H
05.2 015	5/6/2 015	Feed back			Jim H
	1/15/ 2015	Title Cha nge	N/A		Jim H
	12/9/ 2014	Fac- tory Up- date	N/A		Jim H
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	11/5/ 2014	Fac- tory New	N/A		Jim H



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Cautions & Warnings

Please read these WARNINGS and CAUTIONS before proceeding with maintenance and repair work. You must answer that you have read and you understand these WARNINGS and CAUTIONS before you will be allowed to view this information.

- If you lack the skills, tools and equipment, or a suitable workshop for any procedure described in this manual, we suggest you leave such repairs to an authorized Audi retailer or other qualified shop. We especially urge you to consult an authorized Audi retailer before beginning repairs on any vehicle that may still be covered wholly or in part by any of the extensive warranties issued by Audi.
- Disconnect the battery negative terminal (ground strap) whenever you work on the fuel system or the electrical system. Do not smoke or work near heaters or other fire hazards. Keep an approved fire extinguisher handy.
- Audi is constantly improving its vehicles and sometimes these changes, both in parts and specifications, are made applicable to earlier models. Therefore, part numbers listed in this manual are for reference only. Always check with your authorized Audi retailer parts department for the latest information.
- Any time the battery has been disconnected on an automatic transmission vehicle, it will be necessary to reestablish Transmission Control Module (TCM) basic settings using the VAG 1551 Scan Tool (ST).
- Never work under a lifted vehicle unless it is solidly supported on stands designed for the purpose. Do not support a vehicle on cinder blocks, hollow tiles or other props that may crumble under continuous load. Never work under a vehicle that is supported solely by a jack. Never work under the vehicle while the engine is running.
- For vehicles equipped with an anti-theft radio, be sure of the correct radio activation code before disconnecting the battery or removing the radio. If the wrong code is entered when the power is restored, the radio may lock up and become inoperable, even if the correct code is used in a later attempt.
- If you are going to work under a vehicle on the ground, make sure that the ground is level. Block the wheels to keep the vehicle from rolling. Disconnect the battery negative terminal (ground strap) to prevent others from starting the vehicle while you are under it.
- Do not attempt to work on your vehicle if you do not feel well. You increase the danger of injury to yourself and others if you are tired, upset or have taken medicine or any other substances that may impair you or keep you from being fully alert.
- Never run the engine unless the work area is well ventilated. Carbon monoxide (CO) kills.
- Always observe good workshop practices. Wear goggles when you operate machine tools or work with acid. Wear goggles, gloves and other protective clothing whenever the job requires working with harmful substances.
- Tie long hair behind your head. Do not wear a necktie, a scarf, loose clothing, or a necklace when you work near machine tools or running engines. If your hair, clothing, or jewelry were to get caught in the machinery, severe injury could result.

next

Cautions & Warnings

- Do not re-use any fasteners that are worn or deformed in normal use. Some fasteners are designed to be used only once and are unreliable and may fail if used a second time. This includes, but is not limited to, nuts, bolts, washers, circlips and cotter pins. Always follow the recommendations in this manual - replace these fasteners with new parts where indicated, and any other time it is deemed necessary by inspection.
- Illuminate the work area adequately but safely. Use a portable safety light for working inside or under the vehicle. Make sure the bulb is enclosed by a wire cage. The hot filament of an accidentally broken bulb can ignite spilled fuel or oil.
- Friction materials such as brake pads and clutch discs may contain asbestos fibers. Do not create dust by grinding, sanding, or by cleaning with compressed air. Avoid breathing asbestos fibers and asbestos dust. Breathing asbestos can cause serious diseases such as asbestosis or cancer, and may result in death.
- Finger rings should be removed so that they cannot cause electrical shorts, get caught in running machinery, or be crushed by heavy parts.
- Before starting a job, make certain that you have all the necessary tools and parts on hand. Read all the instructions thoroughly, do not attempt shortcuts. Use tools that are appropriate to the work and use only replacement parts meeting Audi specifications. Makeshift tools, parts and procedures will not make good repairs.
- Catch draining fuel, oil or brake fluid in suitable containers. Do not use empty food or beverage containers that might mislead someone into drinking from them. Store flammable fluids away from fire hazards. Wipe up spills at once, but do not store the oily rags, which can ignite and burn spontaneously.
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Use pneumatic and electric tools only to loosen threaded parts and fasteners. Never use these tools to tighten fasteners, especially on light alloy parts. Always use a torque wrench to tighten fasteners to the tightening torque listed.
- Keep sparks, lighted matches, and open flame away from the top of the battery. If escaping hydrogen gas is ignited, it will ignite gas trapped in the cells and cause the battery to explode.
- Be mindful of the environment and ecology. Before you drain the crankcase, find out the proper way to dispose of the oil. Do not pour oil onto the ground, down a drain, or into a stream, pond, or lake. Consult local ordinances that govern the disposal of wastes.
- The air-conditioning (A/C) system is filled with a chemical refrigerant that is hazardous. The A/C system should be serviced only by trained automotive service technicians using approved refrigerant recovery/recycling equipment, trained in related safety precautions, and familiar with regulations governing the discharging and disposal of automotive chemical refrigerants.
- Before doing any electrical welding on vehicles equipped with anti-lock brakes (ABS), disconnect the battery negative terminal (ground strap) and the ABS control module connector.
- Do not expose any part of the A/C system to high temperatures such as open flame. Excessive heat will increase system pressure and may cause the system to burst.

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Cautions & Warnings

- When boost-charging the battery, first remove the fuses for the Engine Control Module (ECM), the Transmission Control Module (TCM), the ABS control module, and the trip computer. In cases where one or more of these components is not separately fused, disconnect the control module connector(s).
- Some of the vehicles covered by this manual are equipped with a supplemental restraint system (SRS), that automatically deploys an airbag in the event of a frontal impact. The airbag is operated by an explosive device. Handled improperly or without adequate safeguards, it can be accidentally activated and cause serious personal injury. To guard against personal injury or airbag system failure, only trained Audi Service technicians should test, disassemble or service the airbag system.
- Do not quick-charge the battery (for boost starting) for longer than one minute, and do not exceed 16.5 volts at the battery with the boosting cables attached. Wait at least one minute before boosting the battery a second time.
- Never use a test light to conduct electrical tests of the airbag system. The system must only be tested by trained Audi Service technicians using the VAG 1551 Scan Tool (ST) or an approved equivalent. The airbag unit must never be electrically tested while it is not installed in the vehicle.
- Some aerosol tire inflators are highly flammable. Be extremely cautious when repairing a tire that may have been inflated using an aerosol tire inflator. Keep sparks, open flame or other sources of ignition away from the tire repair area. Inflate and deflate the tire at least four times before breaking the bead from the rim. Completely remove the tire from the rim before attempting any repair.
- When driving or riding in an airbag-equipped vehicle, never hold test equipment in your hands or lap while the vehicle is in motion. Objects between you and the airbag can increase the risk of injury in an accident.

I have read and I understand these Cautions and Warnings.

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OK