Workshop Manual

Audi A6 2005 ➢

multitronic 01J, front-wheel drive

Edition 09.2009

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List of Workshop Manual Repair Groups

Repair Group

00 - Technical data

13 - Crankshaft group

37 - Controls, housing

38 - Gears, control

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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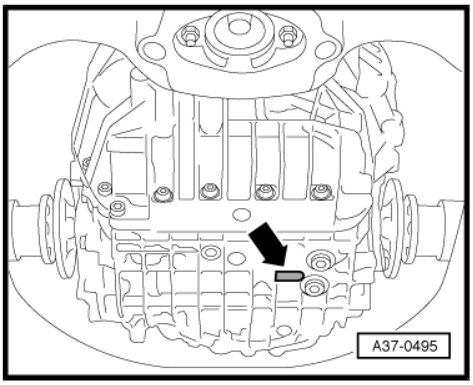
00 – Technical data

1 Gearbox identification

The continuously variable automatic gearbox “multitronic 01J, front-wheel drive” is installed in the Audi A6 2005 > in combination with various engine types. Allocation ⇒ page 3 .

Location of code letters on gearbox

Gearbox code letters and gearbox serial number are stamped onto the bottom of the gearbox case -arrow-.



Example:	FRC	03	07	01
	I	I	I	I
	Code letters	Day	Month	Year (2001) of manufacture

Note

The code letters for the gearbox are also given on the vehicle data stickers.

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2 Notes on continuously variable automatic gearbox “multitronic 01J, front-wheel drive”

Detailed information on the basic principle of this gearbox ⇒ Self-study programme No. 228 ; CVT gearbox multitronic 01J .

Note

The multitronic 01J is also referred to as “Continuously Variable Transmission”, in short “CVT”.

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3 Code letters, gearbox allocation, ratios, equipment

Front-wheel drive

multitronic		01J					
Gearbox	Code letters	GAC HSX JAV JFH JQH JZF KSZ		GYZ HSZ JFL JQL JZJ KEM KTD		HHA HRY HSW JFG JQF JZD	
Allocation	Model	Audi A6 2005 ▸		Audi A6 2005 ▸		Audi A6 2005 ▸	
	Engine	2.4 ltr. MPI - 130 kW		2.0 ltr TDI unit injector - 100 kW or 103 kW		3.0 ltr. MPI - 160 kW	
Ratio between input shaft and pulley set		54 : 43	1.256	51 : 46	1.109	51 : 46	1.109
Front final drive		43 : 9	4.778	43 : 9	4.778	43 : 9	4.778

multitronic		01J					
Gearbox	Code letters	HHY HHZ HSV JEY JFF JQD JQE JZB JZC KSV KSW KYL KYM		HJF JFK JQK JWB JZH KTB KTC KYQ KYR		HKB KSX LDL LDN LDP	
Allocation	Model	Audi A6 2005 ▸		Audi A6 2005 ▸		Audi A6 2005 ▸	
	Engine	3.2 ltr. FSI - 188 kW		2.0 ltr. TFSI - 125 kW		2.8 ltr. FSI - 154 kW	
Ratio between input shaft and pulley set		49 : 48	1.021	51 : 46	1.109	51 : 46	1.109
Front final drive		43 : 9	4.778	43 : 9	4.778	43 : 9	4.778

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multitronic		01J					
Gearbox	Code letters	HRX HSY JAW JFJ JQJ JZG KTA KYN KYP		LDQ		LGL	
Allocation	Model	Audi A6 2005 ▸		Audi A6 2005 ▸		Audi A6 2005 ▸	
	Engine	2.4 ltr. MPI - 130 kW		2.0 ltr. TDI common rail - 100 kW		3.2 ltr. FSI - 195 kW	
Ratio between input shaft and pulley set		57 : 41	1.390	51 : 46	1.109	49 : 48	1.021

multitronic	01J					
Front final drive	43 : 9	4.778	43 : 9	4.778	43 : 9	4.778

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4 Gearbox fluid capacities

ATF section in gearbox

Capacities	Gearbox	multitronic
Initial filling	approx. 7.5 ltr.	01J
Changing	4.5 … 5.0 ltr. Change interval for ATF⇒ Maintenance tables	
Lubricant	ATF for multitronic 01J	

ATF for multitronic 01J is available as a replacement part ⇒ Electronic parts catalogue .

Caution

Risk of damage to the gearbox.

The ATF required for the CVT multitronic 01J gearbox is different from the fluid used in fixed-ratio automatic gearboxes. Only the ATF available as a replacement part for multitronic 01J may be used in the CVT gearbox.

Checking ATF level and changing ATF ⇒ page 113

Front final drive

Capacities	Front final drive	multitronic
Initial filling	approx. 1.3 ltr.	01J
Changing	No change intervals Lifetime filling No change required unless repair work has been performed (max. 1.3 ltr.)	
Lubricant	Gear oil for multitronic 01J	

Gear oil for multitronic 01J is available as a replacement part ⇒ Electronic parts catalogue .

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Caution

Risk of damage to the gearbox.

- ***The two gearbox versions multitronic 01J and 0AN require different types of gear oil. Only the correct type of gear oil for the respective gearbox (available as a replacement part) may be used in the front final drive. Use only the gear oil that is listed for the gearbox code ⇒ Electronic parts catalogue .***
- ***Mixing the gear oil with other types of oil, even in very small quantities, can result in damage to gearbox components.***

Checking oil level in front final drive ⇒ page 140 .

5 Safety precautions

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

WARNING

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

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

Danger from toxic exhaust gases when engine is running.

- *When the engine is running, the exhaust system must always be connected to the exhaust gas extractor.*

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

- Switch off ignition before disconnecting and connecting test equipment.

Caution

When disconnecting the battery there is a risk of serious damage to electronic components:

- *Observe the correct procedure for disconnecting the battery.*
- *Always switch off the ignition before disconnecting the battery.*

– Disconnect battery ⇒ Electrical system; Rep. Gr. 27 .

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

WARNING

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

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

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

6 Notes on tow-starting and towing

WARNING

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

Note

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

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7 Repair instructions

Proper tools and the maximum possible care and cleanliness are essential for satisfactory gearbox repairs. The usual basic safety precautions also naturally apply when carrying out repair work.

To avoid repetition, a number of generally applicable instructions for the various repair procedures are summarised here. They apply to the work described in this Manual.

Environmental and waste disposal regulations for oil

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

Special tools

For a complete list of special tools used in this Workshop Manual ⇒ Workshop equipment and special tools

Manual release of the selector mechanism

If the battery has been disconnected or is fully discharged and you need to tow or push the vehicle, please note that you will have to manually release the selector mechanism from position “P” in order to be able to move it from “P” to “N”: vehicles up to 11.2005 ⇒ page 23 , vehicles from 11.2005 onwards ⇒ page 48 .

Gearbox

- Observe rules for cleanliness when working on gearbox ⇒ page 10 .
- The engine must not be run and the vehicle must not be towed with the end cover removed or without ATF in the gearbox.
- After installing, the following fluid levels must be checked and topped up if necessary: ATF in gearbox ⇒ page 113 and gear oil in front final drive ⇒ page 140 . Capacities ⇒ page 5 , specifications ⇒ Electronic parts catalogue .

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O-rings, oil seals and gaskets

- Always renew O-rings, oil seals and gaskets.
- After removing gaskets and seals, always inspect the contact surface on the housing or shaft for burrs resulting from removal or for other signs of damage.
- Thoroughly clean housing joint surfaces before assembling.
- Lightly lubricate the outer circumference and sealing lip of oil seals with ATF before installing.
- Lightly lubricate O-rings with ATF before installation to prevent them from being crushed during assembly.
- Use only ATF for parts running in ATF. Other lubricants will cause malfunction of the gearbox hydraulics.
- The open side of the oil seal should face the side containing the fluid.
- When installing a new oil seal, position the seal such that the sealing lip does not contact the shaft in the same place as the old seal (make use of installation depth tolerances).
- After installing, the following fluid levels must be checked and topped up if necessary: ATF in gearbox ⇒ page 113 and gear

oil in front final drive ⇒ page 140 . Capacities ⇒ page 5 , specifications ⇒ Electronic parts catalogue .

Nuts, bolts

- Loosen bolts in reverse sequence to the specified tightening sequence.
- Bolts and nuts used to secure covers and housings must be tightened in steps according to the specified tightening sequence and method.
- Nuts and bolts which secure covers and housings should be loosened and tightened in diagonal sequence and in stages if no tightening sequence is specified.
- The tightening torques stated apply to non-oiled nuts and bolts.
- Always renew self-locking bolts and nuts.
- Use a wire brush to clean the threads of bolts which are secured with locking fluid. Then apply locking fluid - AMV 185 101 A1- to bolt threads before installing.
- Threaded holes which take self-locking bolts or bolts coated with locking fluid must be cleaned (using a tap or similar). Otherwise there is a danger of the bolts shearing off the next time they are removed.

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Circlips, snap rings

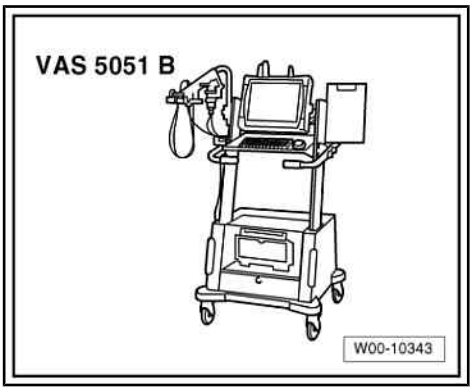
- Do not over-stretch circlips.
- Always renew circlips which have been damaged or over-stretched.
- Circlips must be properly seated in the base of the groove.

Bearings

- Install needle bearings so the lettering (side with thicker metal) faces towards the installing tool.
- Lubricate bearings with gear oil or ATF, depending on fitting location.
- Do not interchange inner or outer races of bearings of the same size.
- Always renew the tapered roller bearings on one shaft together and use new bearings from a single manufacturer.

Guided Fault Finding

- Before servicing the gearbox, the exact cause of the failure must be determined using the functions “Guided Fault Finding”, “Vehicle Self-diagnosis” and “Test Instruments” ⇒ Vehicle diagnosis, testing and information system VAS 5051.



8 Rules for cleanliness when working on the gearbox

- Thoroughly clean all joints and connections and the surrounding areas before dismantling.
- Use cleaning fluid -D 009 401 04- to clean the gearbox and its components.
- Use lint-free cloths for cleaning, such as the “WYPALL X70 / WORKHORSE” cloth from Kimberly-Clark Professional.
- Place removed parts on a clean surface and cover them over. Use sheeting and paper. Use lint-free cloths.
- Carefully cover or seal open components if repairs cannot be carried out immediately.
- Only install clean components: do not remove replacement parts from packaging until just before installation.
- Protect unplugged electrical connectors against dirt and moisture and make sure connections are dry when attaching.

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9 Contact corrosion!

Contact corrosion can occur if non-approved fasteners are used on the vehicle (bolts, nuts, washers etc.).

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

Rubber or plastic parts and adhesives also consist of non-conductive materials.

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

Please note:

- We recommend only genuine spare parts: these have been fully tested.
- We recommend the use of accessories approved by Audi.
- Damage resulting from contact corrosion is not covered by the warranty.

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13 – Crankshaft group

1 Damper unit, for description refer to: Engine, mechanics; Repair group 13

The removal and installation procedures are described in the corresponding Workshop Manual ⇒ Engine, mechanics; Rep. Gr. 13 .

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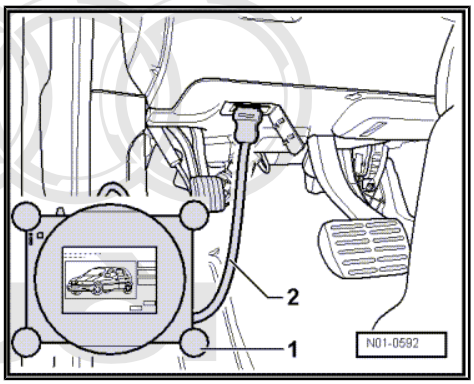
37 – Controls, housing

1 Electrical/electronic components and fitting locations



Diagnostic connector

- Fitting location: the diagnosis connector for the diagnostic tester, e.g. vehicle diagnostic, testing and information system -VAS 5051B- , is located in the driver's footwell.

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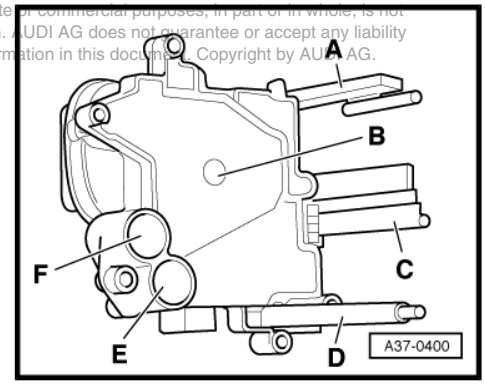
Automatic gearbox control unit -J217-

- Fitting location: the automatic gearbox control unit -J217- is fitted at rear end of gearbox directly on hydraulic control unit.



The components listed below are integrated in the automatic gearbox control unit -J217- :

A - Gearbox output speed sender -G195- and gearbox output speed sender 2 -G196-

B - Gearbox oil temperature sender -G93-

C - Multi-function switch -F125-

D - Gearbox input speed sender -G182-

E - Hydraulic pressure sender 1 for automatic gearbox -G193-

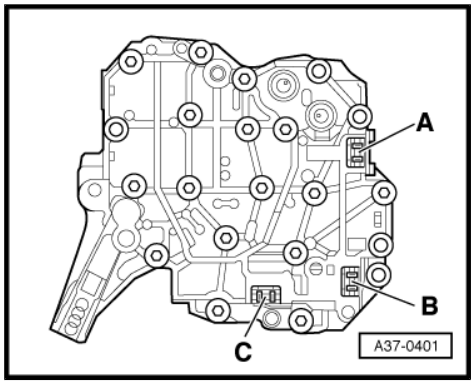
F - Hydraulic pressure sender 2 for automatic gearbox -G194-

Note

The automatic gearbox control unit -J217- is monitored via self-diagnosis.

Removing and installing automatic gearbox control unit -J217- ⇒ Servicing multitronic 01J and 0AN; Rep. Gr. 38 (first remove end cover ⇒ page 134)

Hydraulic control unit



- Fitting location: The hydraulic control unit is bolted to rear end of gearbox. The automatic gearbox control unit -J217- is fitted directly onto the hydraulic control unit.

A - Connector for automatic gearbox pressure control valve 1 -N215-

B - Connector for automatic gearbox pressure control valve 2 -N216-

C - Connector for solenoid valve 1 -N88-

Removing and installing hydraulic control unit ⇒ Servicing multitronic 01J and 0AN; Rep. Gr. 38 (first remove end cover ⇒ page 134)

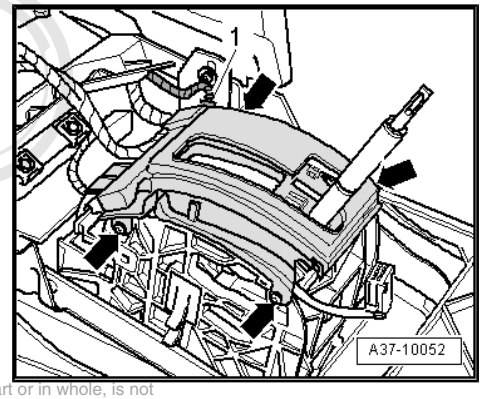
The following valves are integrated into the hydraulic control unit (not shown in illustration):

- Automatic gearbox pressure control valve 1 -N215- (clutch solenoid valve)
- Automatic gearbox pressure control valve 2 -N216- (solenoid valve for transmission ratio)
- Solenoid valve 1 -N88- (clutch cooling/safety shut-off).
- Clutch cooling valve
- Minimum-pressure valve
- Pressure limiting valve
- Clutch control valve
- Control-pressure valve

Note

- *The valves are monitored via self-diagnosis.*
- *Description and function of the individual valves ⇒ Self-study programme No. 228 ; CVT gearbox multitronic 01J .*

Selector lever sensors control unit -J587- and tiptronic switch -F189- - vehicles up to 11.2005



- Fitting location: the selector lever sensors control unit -J587- and the tiptronic switch -F189- are combined in a single component -2- which is secured onto the shift unit -arrows-.

⇒ “3.8 Removing and installing selector lever sensors control unit J587 and tiptronic switch F189 (vehicles up to 11.2005)”, page 31

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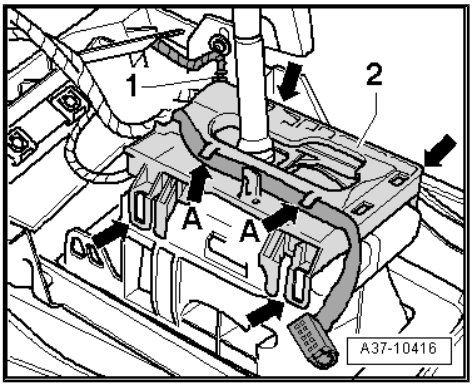
Selector lever sensors control unit -J587- and tiptronic switch -F189- - vehicles from 11.2005 onwards

- Fitting location: the selector lever sensors control unit -J587- and the tiptronic switch -F189- are combined in a single component -2- which is clipped onto the shift unit -arrows-.

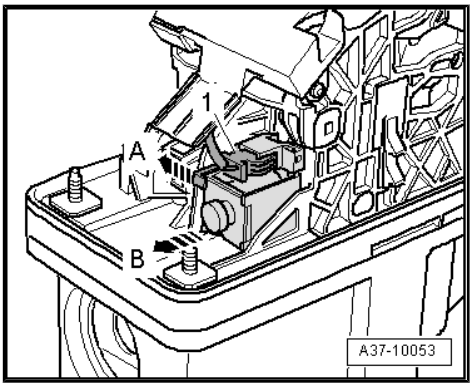
⇒ “4.8 Removing and installing selector lever sensors control unit J587 and tiptronic switch F189 (vehicles from 11.2005 onwards)”, page 55 .



Selector lever lock solenoid -N110- - vehicles up to 11.2005

- Fitting location: the selector lever lock solenoid -N110- -item 1- is clipped onto the selector mechanism.

⇒ “3.7 Removing and installing selector lever lock solenoid N110 (vehicles up to 11.2005)”, page 29 .



Selector lever lock solenoid -N110- - vehicles from 11.2005 onwards

- Fitting location: the selector lever lock solenoid -N110- -item 1- is clipped onto the selector mechanism.

⇒ “4.7 Removing and installing selector lever lock solenoid N110 (vehicles from 11.2005 onwards)”, page 54

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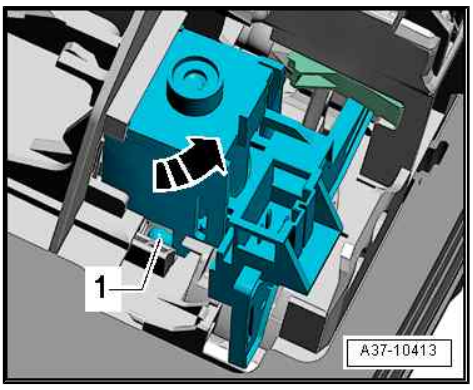
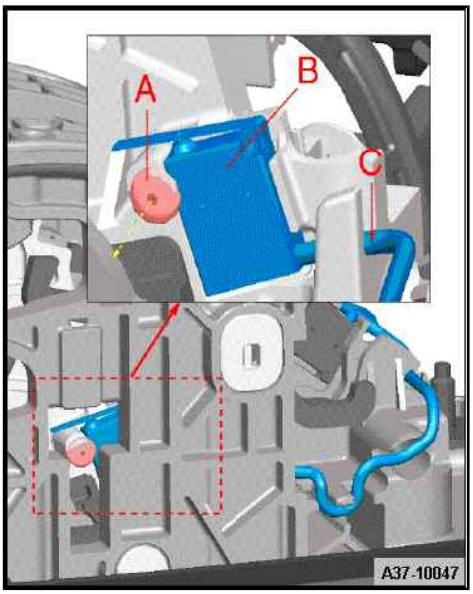


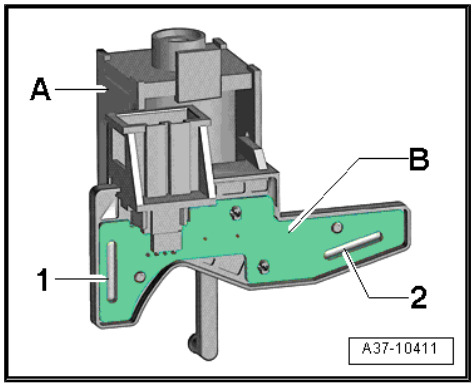
Gear selector position P switch -F305- - vehicles up to 11.2005

- Fitting location: Gear selector position P switch -F305- consists of two microswitches -1- and -2- secured to the right of the selector mechanism.

⇒ “3.10 Removing and installing gear selector position P switch F305 (vehicles up to 11.2005)”, page 35



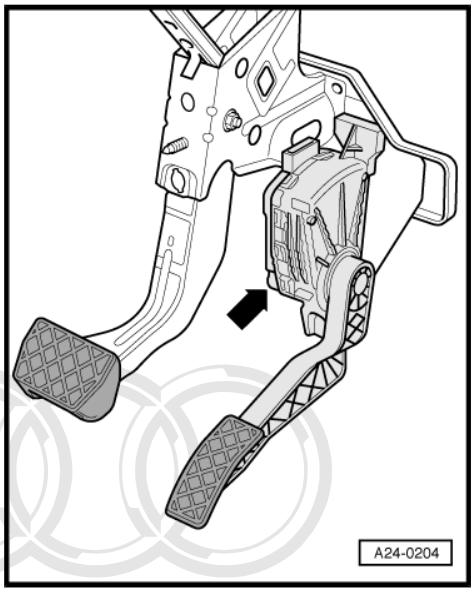
Gear selector position P switch -F305- - vehicles from 11.2005 onwards



- Fitting location: Gear selector position P switch -F305- consists of two microswitches -1- and - 2- installed on printed circuit board -B- in selector lever lock solenoid -N110- -A-.

Gear selector position P switch -F305- can only be renewed together with selector lever lock solenoid -N110-
⇒ “4.7 Removing and installing selector lever lock solenoid N110 (vehicles from 11.2005 onwards)”, page 54 .

Kick-down switch -F8-



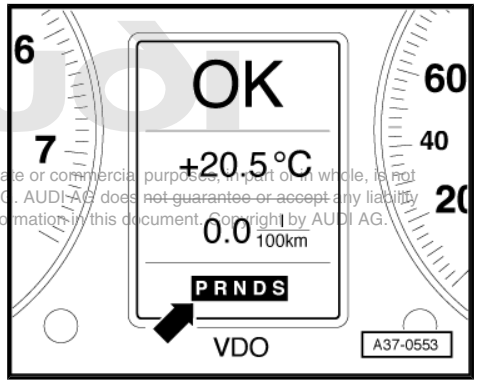
- Fitting location: the engine control unit stores a specific value obtained from the accelerator position sender -G79- and the accelerator pedal position sender 2 -G185- .

The accelerator pedal position senders are integrated in the accelerator pedal module -arrow-.

Note

Renew the accelerator pedal module if the accelerator pedal position sender is defective ⇒ Fuel supply system, petrol engines; Rep. Gr. 20 or ⇒ Fuel supply system, diesel engines; Rep. Gr. 20 .

Selector lever position display -Y6-



- Fitting location: The selector lever position display -Y6- is integrated in the instrument cluster.

Note

- *If all the characters in the display light up together, this indicates a simple fault.*
- *A flashing display indicates a critical fault.*
- *A blank display indicates defective wiring or a defective selector lever position display -Y6- .*
- *If the selector lever position display -Y6- is defective, the instrument cluster must be renewed ⇒ Electrical system; Rep. Gr. 90 .*

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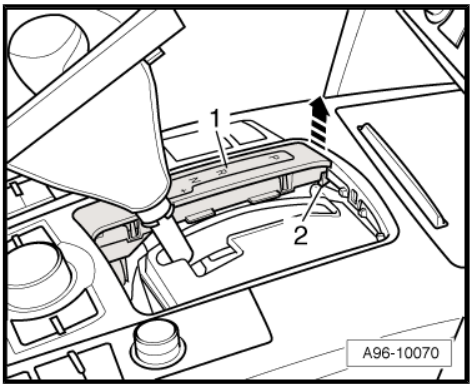
Selector lever position display -Y26-



- The selector lever position display -Y26- -item 1- is clipped into the centre console.

⇒ “3.5 Removing and installing selector lever position display Y26 (vehicles up to 11.2005)”, page 27 or
⇒ “4.5 Removing and installing selector lever position display Y26 (vehicles from 11.2005 onwards)”, page 52 .

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2 Checking selector mechanism

Overview:

- 1. Checking operation of selector mechanism ⇒ page 18
- 2. Checking ignition key removal lock ⇒ page 19
- 3. Checking interlock button on selector lever handle ⇒ page 19

1. Checking operation of selector mechanism

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

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

– Do not depress brake pedal.

- The selector lever is locked and cannot be shifted out of “P” position, even when the interlock button on the handle is pressed in. Selector lever lock solenoid -N110- blocks selector lever.

– Press and hold brake pedal.

- Selector lever lock solenoid -N110- releases selector lever. It is possible to shift into a driving gear. With interlock button on selector lever handle pressed, shift selector lever slowly from “P” position through “R, N, D and S” and check whether the selector lever position display -Y6- in the instrument cluster shows the correct selector lever position in each case.

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

– Do not depress brake pedal.

- After a short delay: Selector lever is locked and cannot be shifted out of “N” position even when pressing the interlock button on the selector lever handle. Selector lever lock solenoid -N110- blocks selector lever.

– Depress brake pedal.

- Selector lever lock solenoid -N110- releases selector lever. Shifting into position “D” is possible.

Selector lever in position “D”, ignition switched on:

– Shift selector lever into “tiptronic gate”.

- The illuminated “D” symbol in the selector lever position display -Y26- should go out and the “+” and “–” symbols should light up.
- The selector lever position display -Y6- in the instrument cluster should change from “PRNDS” to “654321” when the selector lever is moved into the “tiptronic gate”.

If results do not match specifications:

– Perform “Guided Fault Finding” using a diagnostic tester, e.g. vehicle diagnostic, testing and information system -VAS 5051B- .

– Adjust selector lever cable: vehicles up to 11.2005 ⇒ page 44 , vehicles from 11.2005 onwards ⇒ page 65 .

– Check interlock button on selector lever handle ⇒ page 19 .

– Check ignition key removal lock.

2. Checking ignition key removal lock

– Turn the ignition key slightly clockwise to the “ignition on” position.

– Press and hold brake pedal.

• When interlock button in selector lever handle is pressed, it should be possible to move selector lever out of position “P” without “catching”.

– Switch off ignition.

• It should not be possible to remove the ignition key when the selector lever is in any position other than “P”.

– Shift selector lever to position “P”.

– Remove ignition key.

• It should only be possible to remove ignition key in selector lever position “P”.

• Selector lever can then not be shifted out of “P” position with interlock button pressed and brake pedal depressed.

If the ignition key removal lock does not function as described, perform “Guided Fault Finding” using a vehicle diagnostic tester, e.g. vehicle diagnostic, testing and information system -VAS 5051B- .

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3. Checking interlock button on selector lever handle

Check that interlock button moves freely:

• Interlock button should move easily when pressed without force.

• Interlock button should spring back fully on its own when released.

If results do not match specifications:

– Make sure that selector lever handle is correctly installed: vehicles up to 11.2005 ⇒ page 24 , vehicles from 11.2005 onwards ⇒ page 49

– Check whether selector rod or selector lever is bent.

Function test:

• Ignition switched on

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

♦ “P” to “R” (also depress brake pedal)

♦ “D” to “S”

♦ “N” to “R” (brake pedal also has to be depressed after a short delay when vehicle is stationary)

♦ “R” to “P”

If results do not match specifications:

– Make sure that selector lever handle is correctly installed: vehicles up to 11.2005 ⇒ page 24 , vehicles from 11.2005 onwards ⇒ page 49

– Perform “Guided Fault Finding” using a diagnostic tester, e.g. vehicle diagnostic, testing and information system -VAS 5051B- and check selector lever lock solenoid -N110- .

– Adjust selector lever cable: vehicles up to 11.2005 ⇒ page 44 , vehicles from 11.2005 onwards ⇒ page 65 .

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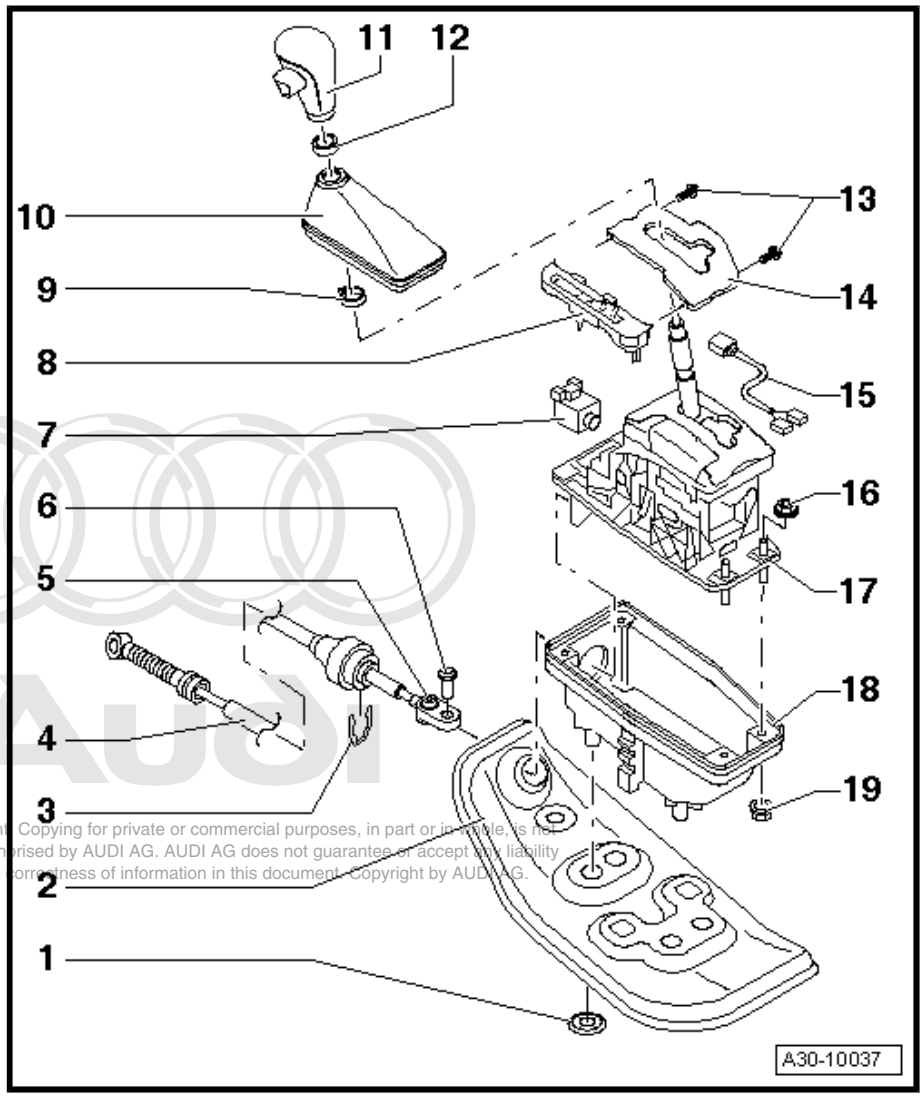
3 Exploded view - selector mechanism (vehicles up to 11.2005)

WARNING

Prior to performing work with engine running, move selector lever to position "P" and operate parking brake button to apply the electronic parking brake.

Check selector mechanism before dismantling ⇒ page 18 .



1 - Securing clip

2 - Noise insulation

3 - Retaining clip

- For securing selector lever cable to shift unit

4 - Selector lever cable

- Do not bend or kink
- ⇒ "3.12 Removing and installing selector lever cable (vehicles up to 11.2005)", page 40
- Selector lever cable must be renewed if rubber sleeve is damaged
- Before installing, lightly lubricate ball socket with polycarbamide grease - G 052 142 A2- .
- When installing, make sure that rubber sleeve on gearbox end is not twisted
- ⇒ "3.13 Adjusting selector lever cable (vehicles up to 11.2005)", page 44

5 - Clamping bolt, 13 Nm

6 - Pin for selector lever cable

- To remove selector lever cable, pull plastic securing spring on selector mechanism forwards slightly and push up pin just far enough to release cable.

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7 - Selector lever lock solenoid -N110-

- ⇒ "3.7 Removing and installing selector lever lock solenoid N110 (vehicles up to 11.2005)", page 29

8 - Selector lever position display -Y26-

- ⇒ "3.5 Removing and installing selector lever position display Y26 (vehicles up to 11.2005)", page 27

9 - Clamp

- Secures selector lever handle to selector lever
- Removing and installing
  ⇒ "3.3 Removing and installing selector lever handle (vehicles up to 11.2005)", page 24

10 - Selector lever boot

- ⇒ “3.4 Separating selector lever boot from selector lever handle (vehicles up to 11.2005)”, page 27

11 - Selector lever handle

- ⇒ “3.3 Removing and installing selector lever handle (vehicles up to 11.2005)”, page 24

12 - Trim ring

- Removing and installing
  ⇒ “3.4 Separating selector lever boot from selector lever handle (vehicles up to 11.2005)”, page 27

13 - 1.2 Nm

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

- ⇒ “3.8 Removing and installing selector lever sensors control unit J587 and tiptronic switch F189 (vehicles up to 11.2005)”, page 31

15 - Gear selector position P switch -F305-

- ⇒ “3.10 Removing and installing gear selector position P switch F305 (vehicles up to 11.2005)”, page 35

16 - 8 Nm

17 - Shift unit

- Can only be renewed as a complete unit
- ⇒ “3.9 Removing and installing shift unit (vehicles up to 11.2005)”, page 32

18 - Selector mechanism cover (bottom)

19 - 10 Nm

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3.1 Exploded view - selector lever handle and selector lever position display -Y26- (vehicles up to 11.2005)

1 - Clamp

- ❑ Secures selector lever handle to selector lever
- ❑ Removing and installing ⇒ “3.3 Removing and installing selector lever handle (vehicles up to 11.2005)”, page 24

2 - Trim ring

- ❑ Removing and installing ⇒ “3.4 Separating selector lever boot from selector lever handle (vehicles up to 11.2005)”, page 27

3 - Selector lever handle

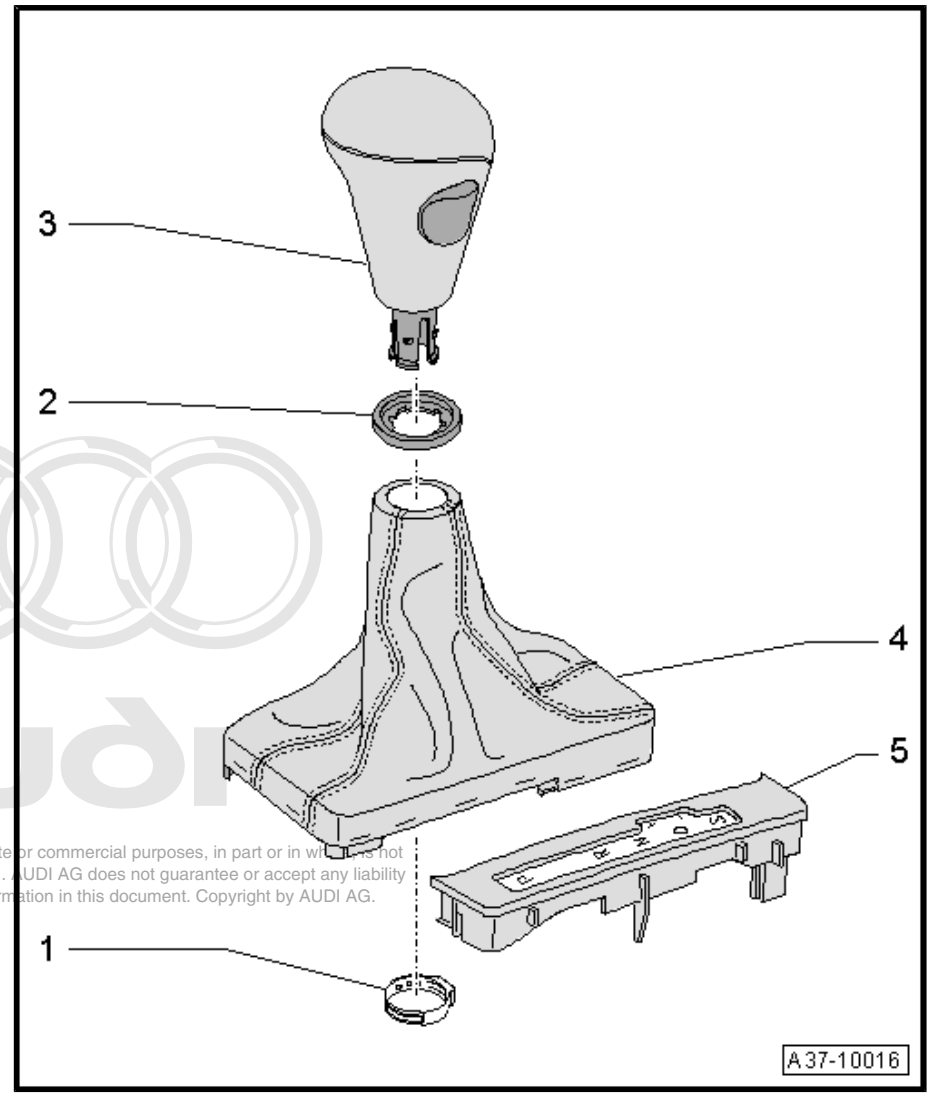
- ❑ ⇒ “3.3 Removing and installing selector lever handle (vehicles up to 11.2005)”, page 24

4 - Selector lever boot

- ❑ ⇒ “3.4 Separating selector lever boot from selector lever handle (vehicles up to 11.2005)”, page 27

5 - Selector lever position display -Y26-

- ❑ ⇒ “3.5 Removing and installing selector lever position display Y26 (vehicles up to 11.2005)”, page 27



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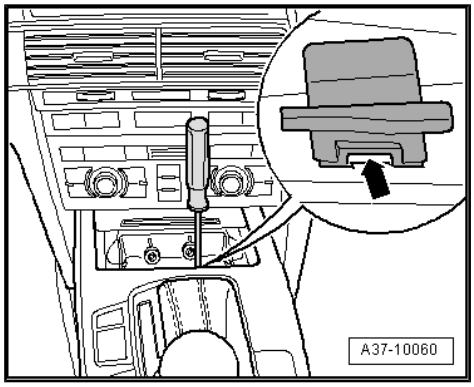
3.2 Operating manual release for selector mechanism (vehicles up to 11.2005)

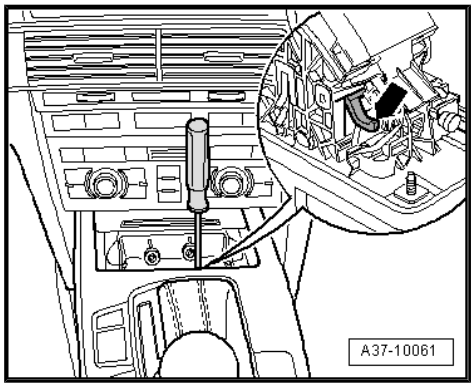
Note

- ♦ *If the battery is disconnected or discharged, the selector lever cannot be shifted from position “P”.*
- ♦ *When you operate the manual release mechanism the selector lever lock solenoid -N110- will release the lock without current supply.*

– Remove insert for front ashtray.
– Use screwdriver to pry off the cover cap in the ashtray housing -arrow-.



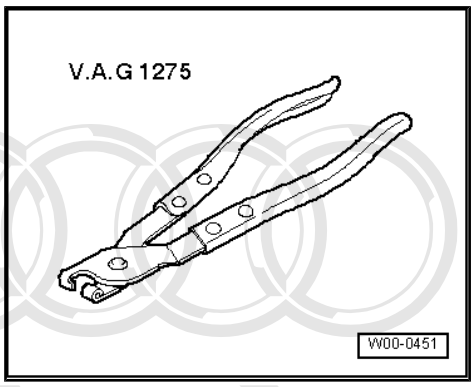
– Use a screwdriver or similar to press on the manual release lever -arrow- and simultaneously shift the selector lever out of position “P”.



3.3 Removing and installing selector lever handle (vehicles up to 11.2005)

Special tools and workshop equipment required

♦ Hose clip pliers -V.A.G 1275-



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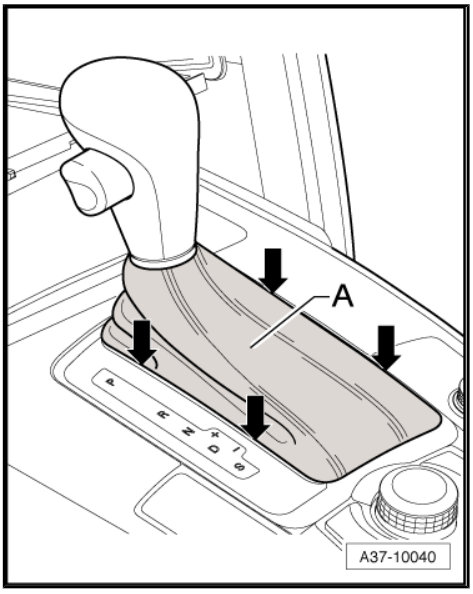
Removing

– Shift selector lever to position “N”.

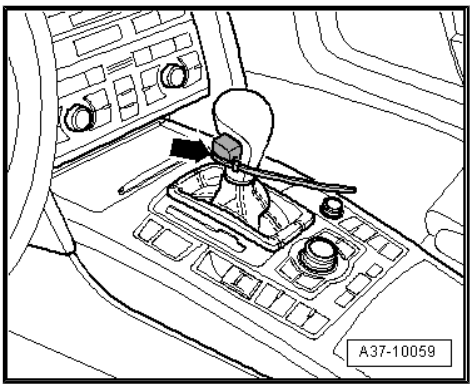
Note

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

– Unclip retaining frame for selector lever boot -1- from centre console and lift off -arrows-.

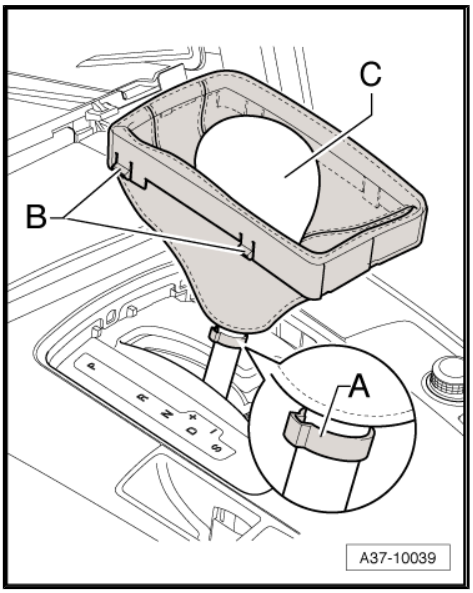


– Use a cable tie to secure the interlock button in pulled-out position -arrow-, as shown in the illustration.



– Turn up selector lever boot -1- over selector lever handle -2-.

– Release clamp -arrow- and detach selector lever handle together with selector lever boot. Avoid touching the interlock button.



Note

Detach selector lever boot from selector lever handle *⇒ page 27* .

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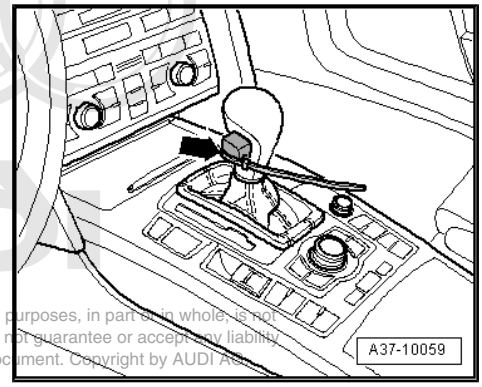
Installing



Note

- *To install the selector lever handle the interlock button has to be pulled out to the stop and must be secured with either a cable tie -arrow- or with the assembly aid supplied together with the new handle.*
- *If, by mistake, the interlock button has not been secured, it must not be pulled out of the selector lever handle by means of mechanical tools. Apply a compressed-air gun at the bottom of the handle and press the interlock button out with compressed air.*

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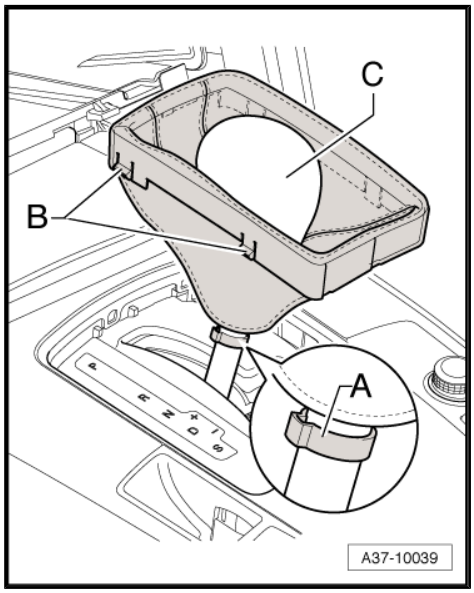
– Place selector lever handle fully on selector lever - interlock button points towards the driver.

• The handle must engage in the annular groove on the selector lever.

– Remove the cable tie or assembly aid, allowing the interlock button mechanism to engage in the vertical groove on the selector lever. If necessary, press the interlock button into the selector lever handle.

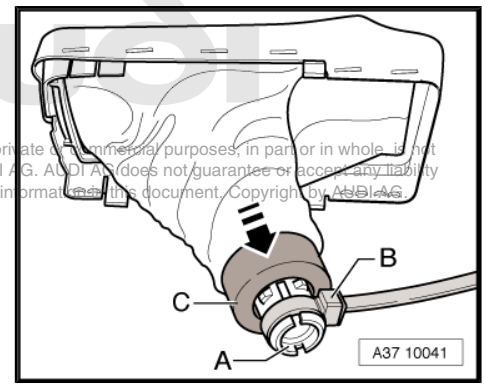


– Secure selector lever handle -2- onto selector lever with clamp -arrow-. Use hose clip pliers -V.A.G 1275- for this purpose.

– Clip retaining frame for selector lever boot -1- onto centre console.

3.4 Separating selector lever boot from selector lever handle (vehicles up to 11.2005)

Removing



– Remove selector lever handle ⇒ page 24 .

– Tie together spring tips -1- of selector lever handle using cable tie -3- as shown in illustration.

– Slide sleeve -2- of selector lever boot past retaining tabs on spring tips -arrow-.

– Remove cable tie and detach sleeve with selector lever boot from selector lever.

Installing

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

Fitting position of selector lever boot:

- The longer side of the retaining frame for the selector lever boot faces the driver's side.

– Install selector lever handle ⇒ page 24 .

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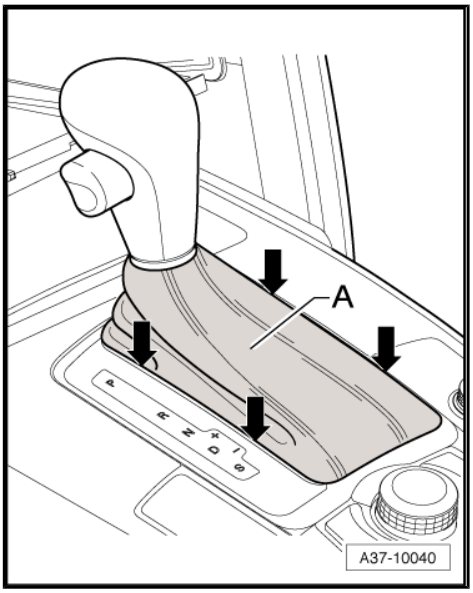
3.5 Removing and installing selector lever position display -Y26- (vehicles up to 11.2005)

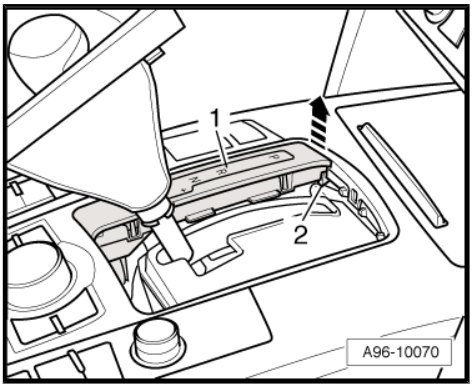
Removing



– Shift selector lever to position “N”.

– Unclip retaining frame for selector lever boot -1- from centre console and lift off -arrows-.

– Turn up selector lever boot.



– Release retaining spring -2- and detach selector lever position display -Y26- -item 1- -arrow-.

– Unplug electrical connector.

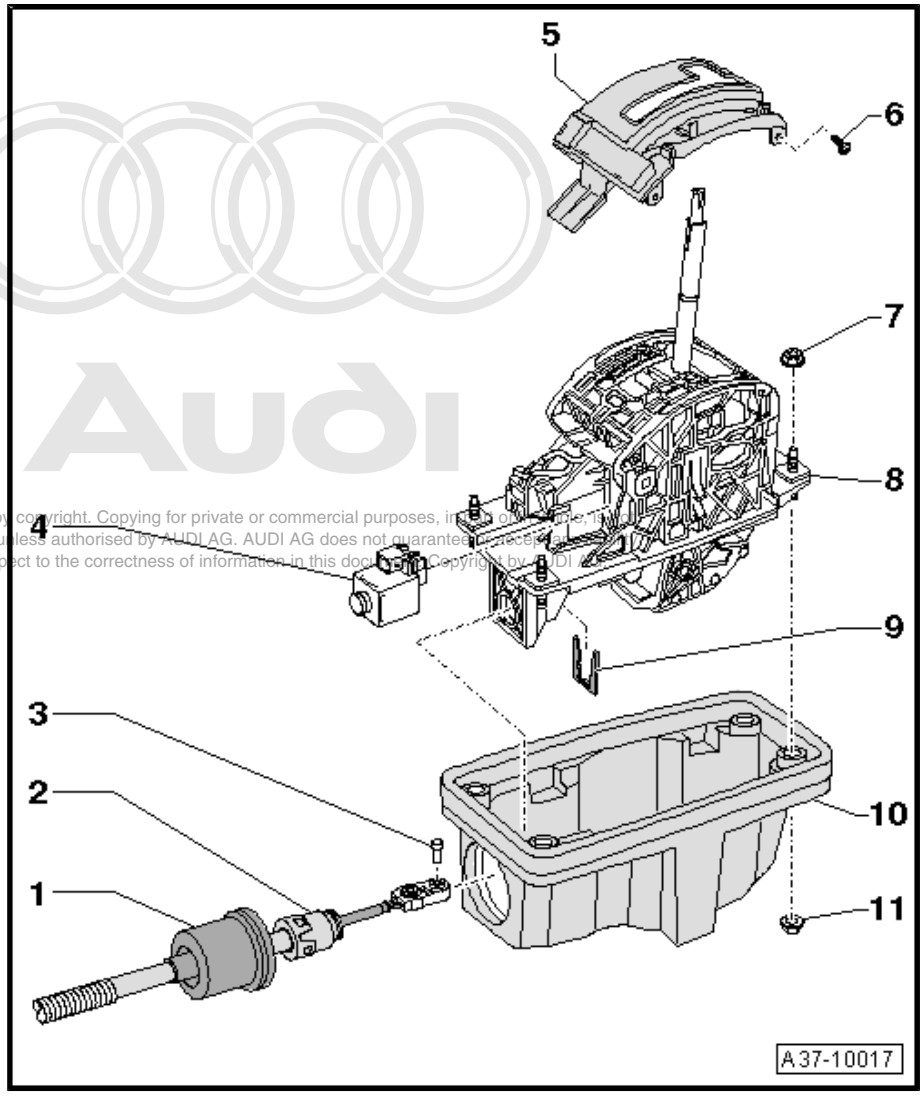
Installing

Perform installation in reverse sequence of removal.

3.6 Exploded view - shift unit (vehicles up to 11.2005)

Note

Lubricate all bearings and moving surfaces with polycarbamide grease -G 052 142 A2- .



1 - Rubber sleeve for selector lever cable

- ❑ Check that rubber sleeve for selector lever cable is correctly engaged on selector mechanism cover (bottom) and make sure it seals properly.

2 - Selector lever cable

- ❑ Do not bend or kink
- ❑ ⇒ “3.12 Removing and installing selector lever cable (vehicles up to 11.2005)”, page 40
- ❑ Selector lever cable must be renewed if rubber sleeve is damaged
- ❑ When installing, make sure that rubber sleeve on gearbox end is not twisted
- ❑ ⇒ “3.13 Adjusting selector lever cable (vehicles up to 11.2005)”, page 44

3 - Pin for selector lever cable

- ❑ To remove selector lever cable, pull plastic securing spring on selector mechanism forwards slightly and push up pin just far enough to release cable.

4 - Selector lever lock solenoid -N110-

- ❑ ⇒ “3.7 Removing and installing selector lever lock solenoid N110 (vehicles up to 11.2005)”, page 29

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

- ❑ ⇒ “3.8 Removing and installing selector lever sensors control unit J587 and tiptronic switch F189 (vehicles up to 11.2005)”, page 31

6 - 1.2 Nm

7 - 8 Nm

8 - Shift unit

- ❑ Can only be renewed as a complete unit
- ❑ ⇒ “3.9 Removing and installing shift unit (vehicles up to 11.2005)”, page 32

9 - Retaining clip

- ❑ For securing selector lever cable to shift unit

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10 - Selector mechanism cover (bottom)

11 - 10 Nm

3.7 Removing and installing selector lever lock solenoid -N110- (vehicles up to 11.2005)

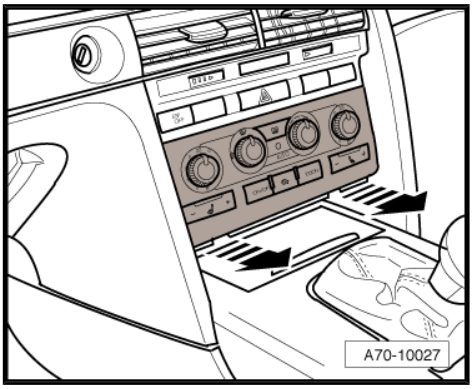
Removing

– Shift selector lever to position “S”.

– Grip climatronic control unit -J255- at recesses on bottom (operating and display unit).

– Pull out climatronic control unit -J255- (operating and display unit) from retaining frame -arrows-.

– Put climatronic control unit -J255- (operating and display unit) on a cloth and place onto centre console, to avoid damaging the surface.



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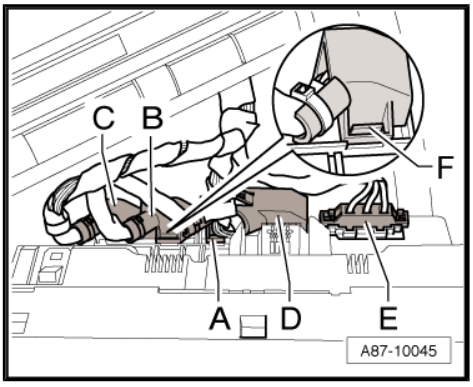
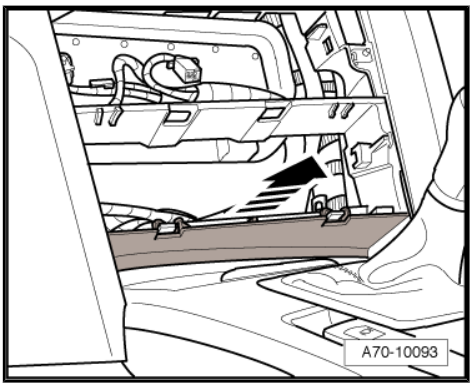
– Unplug electrical connectors in the sequence -A … D- by releasing the retainer tab -F-.

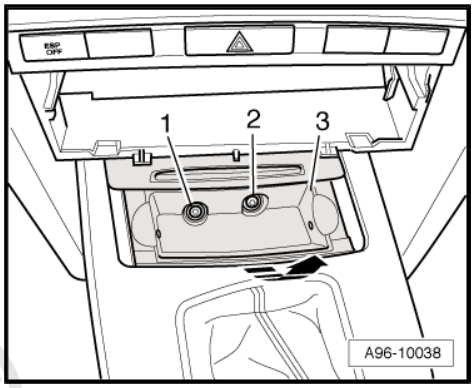
– Detach electrical connector -E-.



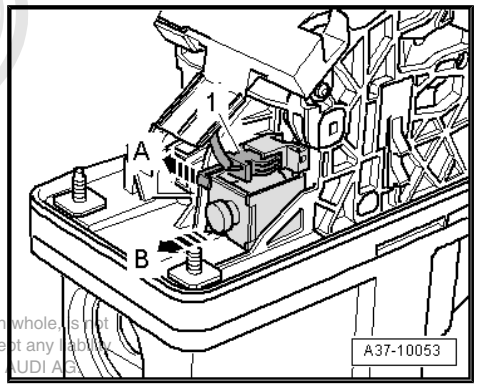
– Detach trim cover above ashtray -arrow-.



– Open front ashtray.
– Remove insert for front ashtray.
– Remove bolts -1- and -2-.
– Remove housing for front ashtray -3- -arrow-.
– Unplug electrical connector (if fitted).



– Unplug electrical connector -1- from selector lever lock solenoid -N110- .
– Release retainer -arrow A- and pull out selector lever lock solenoid -N110- from the front -arrows B-.



Note

For illustration purposes here shown with selector mechanism removed.

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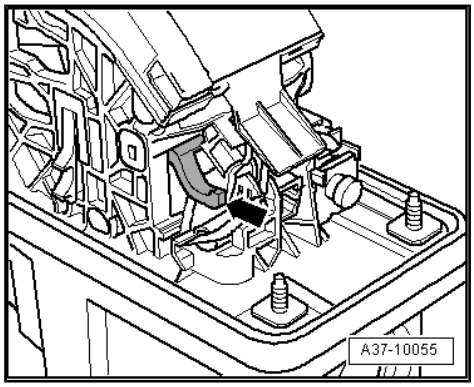
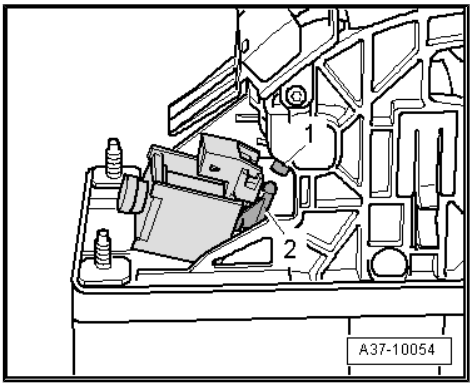
Installing

• Selector lever in position “S”.
– Move manual release lever -arrow- upwards.



Note

The operating lever -1- for selector lever lock solenoid -N110- moves into installation position when the manual release lever is moved upwards.



– At the same time place the selector lever lock solenoid -N110- into guide at an angle from above.
– Press selector lever lock solenoid -N110- into guide until it engages.
• At the same time the ball head -2- of the selector lever lock solenoid -N110- should engage in the operating rod of the selector mechanism.

Perform remaining installation operations in reverse order of removal.

Tightening torque

Component	Nm
Housing for front ashtray to centre console frame	3

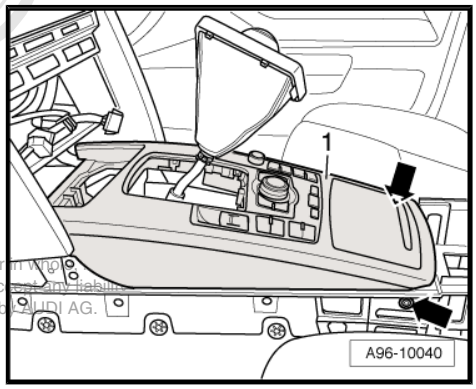
3.8 Removing and installing selector lever sensors control unit -J587- and tiptronic switch -F189- (vehicles up to 11.2005)

Note

♦ *Selector lever sensors control unit -J587- and tiptronic switch -F189- are integrated in one unit.*
♦ *The magnets for the tiptronic switch -F189- are secured on the cover.*

Removing

– Remove selector lever handle ⇒ page 24 .
– Remove centre console (front) -1- ⇒ General body repairs, interior; Rep. Gr. 68 .



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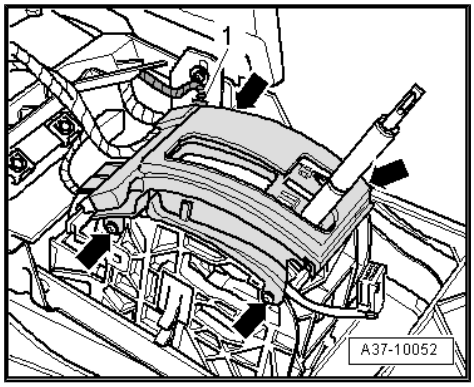
– Detach electrical connector -1-.

– Unscrew bolts -arrows- and remove selector lever sensors control unit -J587- with tiptronic switch -F189- .



Installing

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

– Install centre console (front) ⇒ General body repairs, interior; Rep. Gr. 68 .

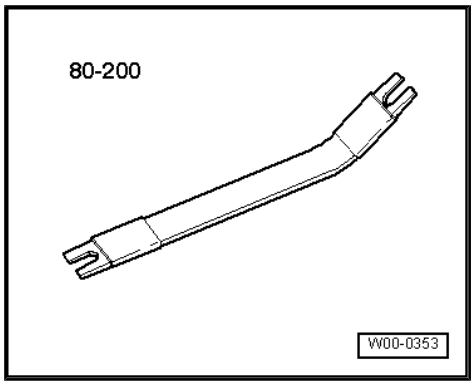
– Install selector lever handle ⇒ page 24 .

Tightening torque
⇒ "3.6 Exploded view - shift unit (vehicles up to 11.2005)", page 28

3.9 Removing and installing shift unit (vehicles up to 11.2005)

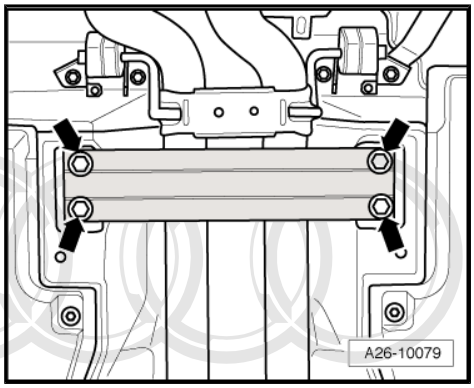
Special tools and workshop equipment required

♦ Removal lever -80 - 200-

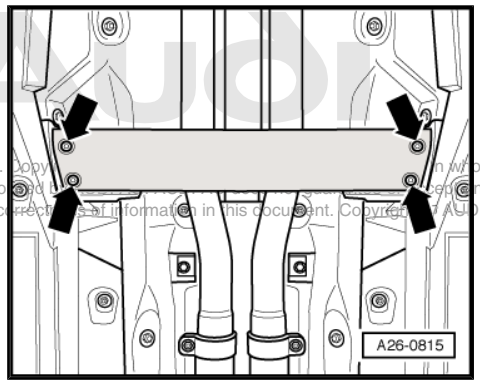


Removing

– Remove rear cross piece -arrows-.



– Remove front cross piece -arrows-.



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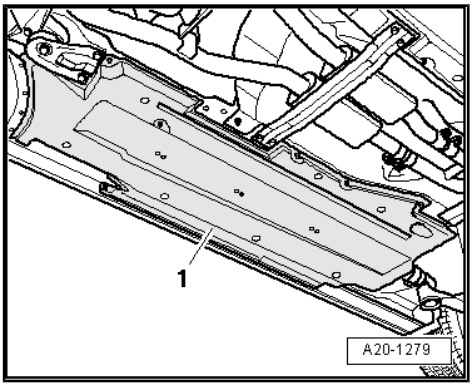
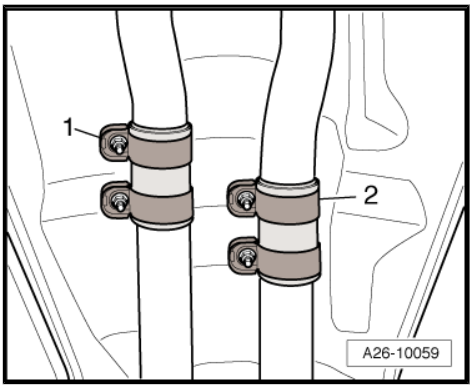
– Remove cover -1- on vehicle underside (left and right).



– Loosen clamps -1- and -2-.



Note

The flexible pipe connection (de-coupling element) on the front exhaust pipe must not be bent more than 10° – otherwise it can be damaged.

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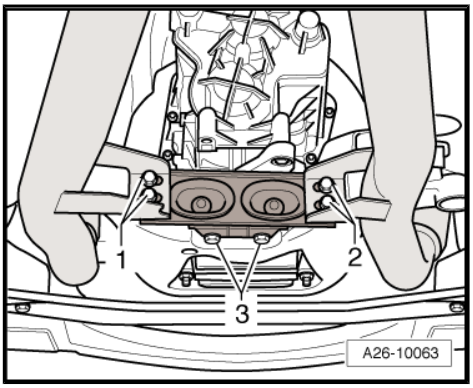
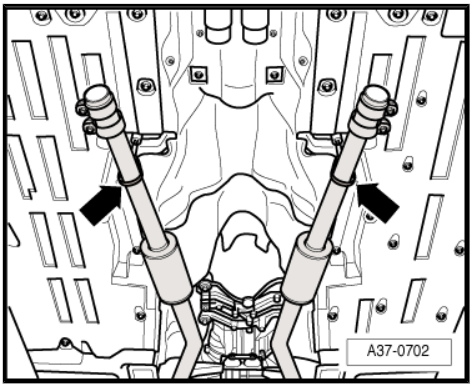
– Unscrew bolts -1- and -2- at rear bracket for front exhaust pipe.



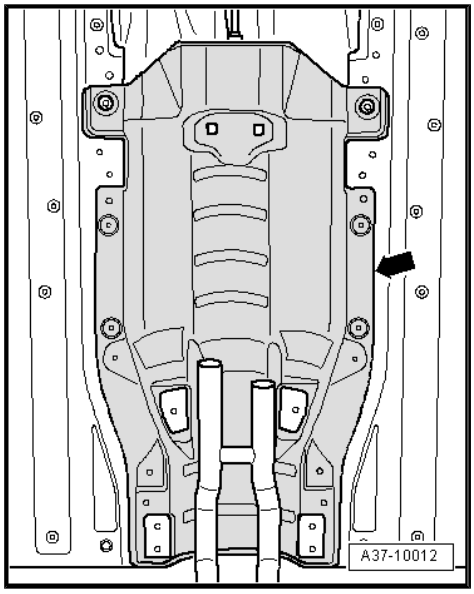
Note

-Item 3- can be disregarded.

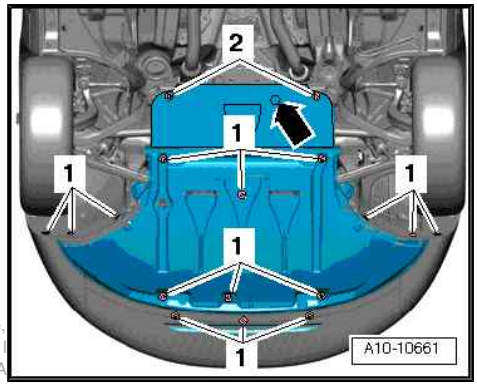
– Tie left and right exhaust pipes up to body -arrows-.



– Remove heat shield -arrow-.



– Remove rear noise insulation ⇒ General body repairs, exterior; Rep. Gr. 50 .



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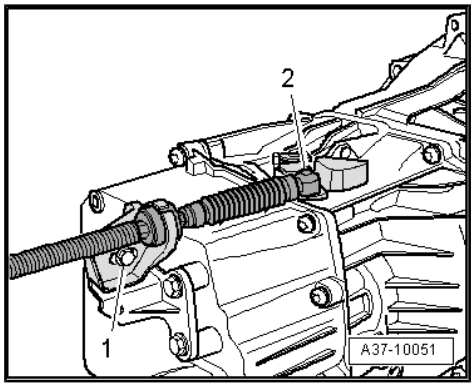
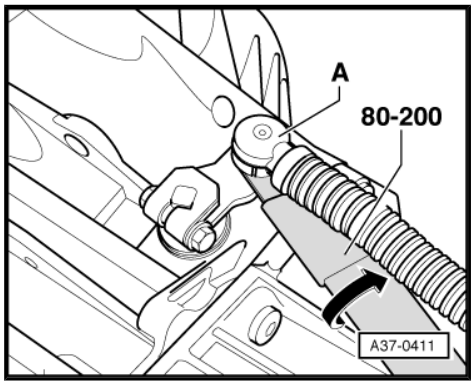
– Mark installation position of support bracket for selector lever cable.
– Unscrew bolt -1- from support bracket for selector lever cable.



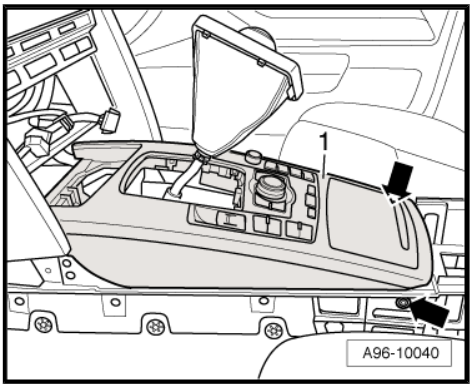
– Use removal lever -80 - 200- to pry ball socket -A- on selector lever cable off gearbox selector lever.



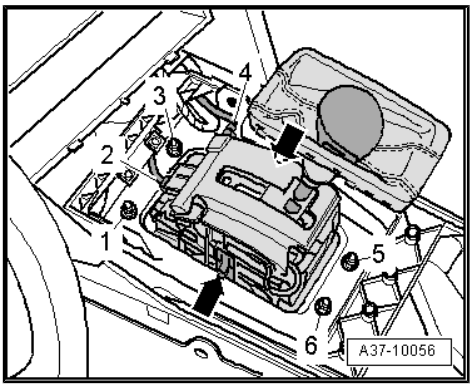
Note

Do not bend or kink the selector lever cable.

– Remove centre console (front) -1- ⇒ General body repairs, interior; Rep. Gr. 68 .



– Unplug electrical connectors -2- and -4-.
– Remove bolts -1- and -3-, -5- and -6-.



Note

The assistance of a second mechanic is required to detach the selector mechanism from below.

– Press retaining clips -arrows- inwards and lower selector mechanism.

Installing

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

Note

- *Before installing, lightly lubricate ball socket on selector lever cable with polycarbamide grease -G 052 142 A2- .*
- *Do not bend or kink the selector lever cable.*

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– Fit support bracket for selector lever cable according to marking on bracket at rear of gearbox.
– Adjust selector lever cable ⇒ page 44 .
– Install exhaust system so it is free of stress ⇒ Engine, mechanics; Rep. Gr. 26 .
– Install rear cross piece ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. Gr. 40 .
– Install front cross piece ⇒ General body repairs, exterior; Rep. Gr. 50 .
– Install centre console (front) ⇒ General body repairs, interior; Rep. Gr. 68 .
– Check selector mechanism ⇒ page 18 .

Tightening torque
⇒ "3.6 Exploded view - shift unit (vehicles up to 11.2005)", page 28

3.10 Removing and installing gear selector position P switch -F305- (vehicles up to 11.2005)

The gear selector position P switch -F305- consists of two microswitches. The two microswitches provide the signal required by

the electronic ignition key removal lock to release the key only in selector position P.

The first switch is closed when the selector lever lock solenoid -N110- is not actuated in selector position “P”, (brake pedal not depressed) and the manual release of the selector lever below the ashtray is not operated.

The second switch is closed when the button on the selector lever handle in selector position “P” is not operated.

Note the following points before renewing gear selector position P switch -F305- :

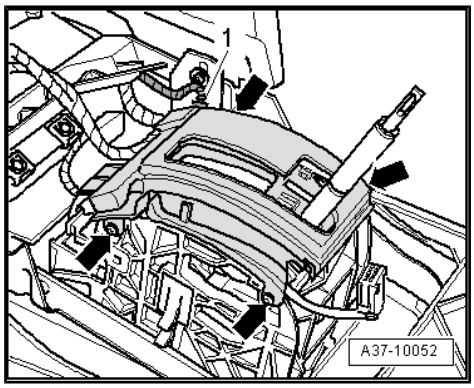
1 - The two switches are connected in series, i.e. both switches must be closed before the ignition key can be removed. The switches can be checked with a diagnostic tester, e.g. vehicle diagnostic, testing and information system -VAS 5051B- in the Guided Fault Finding mode. After performing the vehicle system test, select the test program `F305 - Gear selector position P switch` (Powertrain / multitronic 01J, front-wheel drive / 01 - systems capable of self-diagnosis / 02 - gearbox electronics / electrical components).

2 - It is also possible to perform an electrical check on the switches. When performing a continuity test using a multimeter, note that the resistance is approx. 470 Ohm with both switches closed.

Removing

– Remove selector mechanism ⇒ page 56

– Unscrew bolts -arrows- and remove selector lever sensors control unit -J587- with tiptronic switch -F189- .



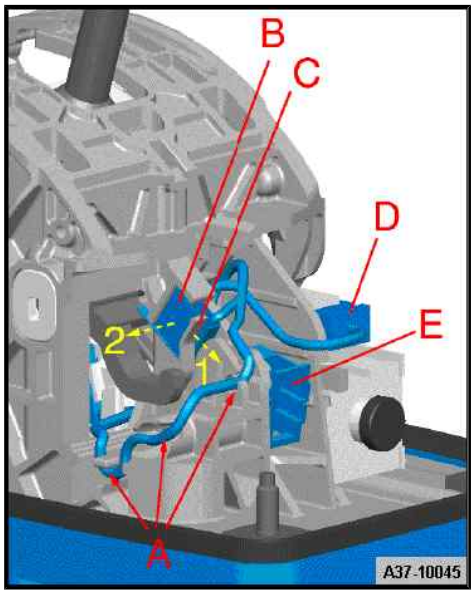
– Release connector -D- and detach from selector lever lock solenoid -N110- .

– Release connector -E- and disconnect by pulling it off upwards.

– Press tab -C- in direction of -arrow 1-.

– Remove microswitch -B- by pulling it off in direction of -arrow 2-.

– Disengage electrical wire at selector mechanism -arrows A-.



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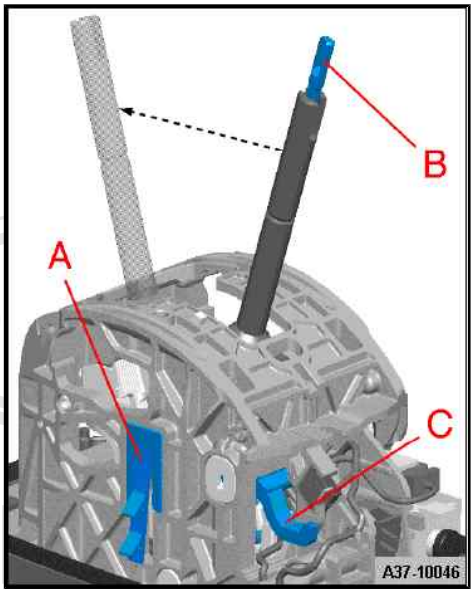
– Unclip retaining clips -A- on both sides of selector mechanism.
– Press parking lock -C- downwards and hold.
– Pull selector rod -B- upwards and shift selector lever in direction of -arrow- into selector lever position “S” onto stop.



– Push locating pin -A- in direction of -arrow- forwards through rear opening for retaining clip using a screwdriver.

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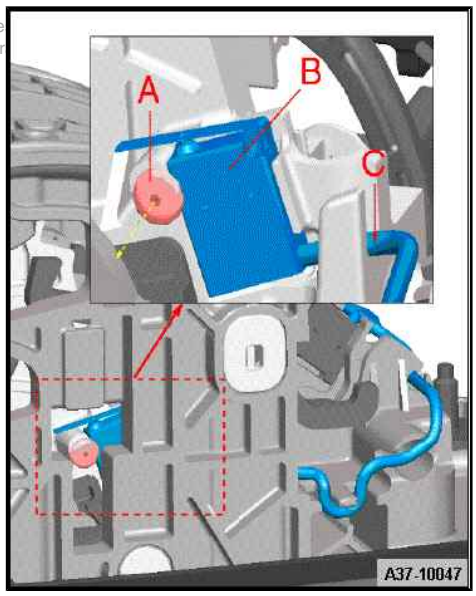
Note

The locating pin -A- can remain installed; it is sufficient to press it forward far enough for the microswitch -B- to be removed.

– Pull off microswitch -B- to front
– Disengage electrical wire at lug -arrows C- and detach microswitch from selector mechanism.

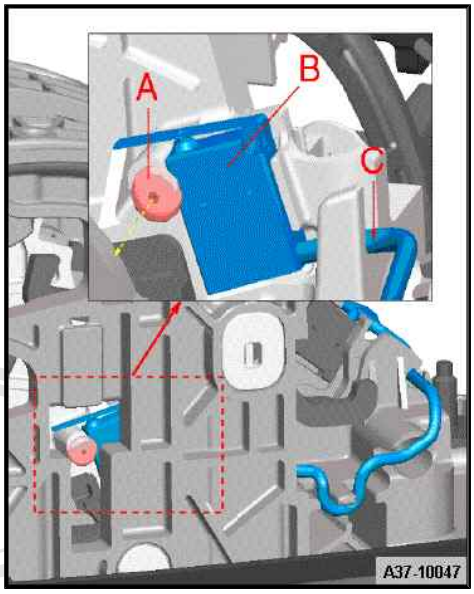


Installing

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

– Take hold of the long electrical wire and guide microswitch into selector mechanism through opening below parking lock button.

– Plug microswitch -B- into gearshift gate.



Note

The microswitch must be seated flush all around.

– Secure wire to lug -arrows C-.

– Press in locating pin -A- in opposite direction of arrow onto stop using a screwdriver.

Note

- *The locating pin -A- locates the microswitch -B- in the gearshift gate.*
- *If the microswitch is not correctly installed or not located properly, the ignition key removal lock will not function as required.*

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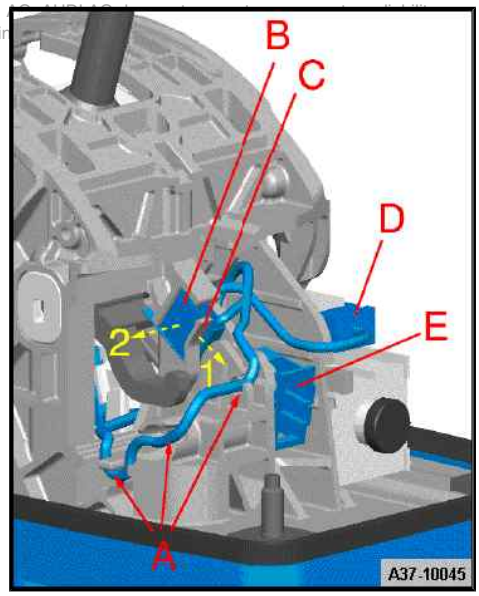
– Locate the electrical wire -arrows A- on the selector mechanism as shown in the illustration.

– Install microswitch -B-.



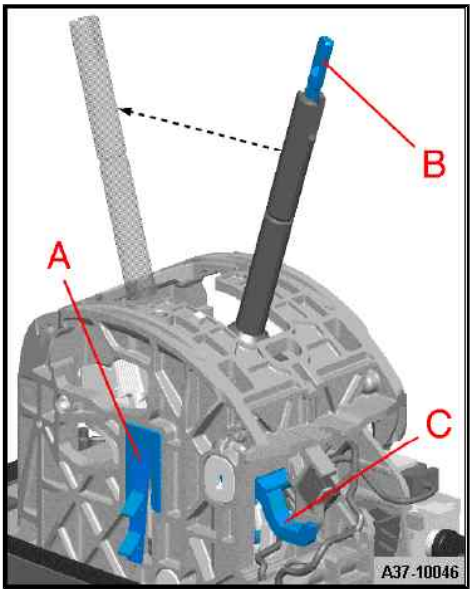
Note

If the microswitch is not correctly installed or not located properly, the ignition key removal lock will not function as required.

– Plug connector -D- onto selector lever lock solenoid -N110- .

– Clip in connector -E- from above.

– Clip in retaining clips -A- on both sides of selector mechanism.
– Install selector lever sensors control unit -J587- and tiptronic switch -F189- ⇒ page 55 .
– Install selector mechanism ⇒ page 56 .



3.11 Exploded view - selector lever cable (vehicles up to 11.2005)

1 - 9 Nm

2 - Gearbox selector lever

❑ With damper

3 - 23 Nm

4 - Lock nut, -13 Nm-

5 - Selector lever cable

❑ Do not bend or kink

❑ ⇒ "3.12 Removing and installing selector lever cable (vehicles up to 11.2005)", page 40

❑ Selector lever cable must be renewed if rubber sleeve is damaged

❑ Before installing, lightly lubricate ball socket with polycarbamide grease - G 052 142 A2-.

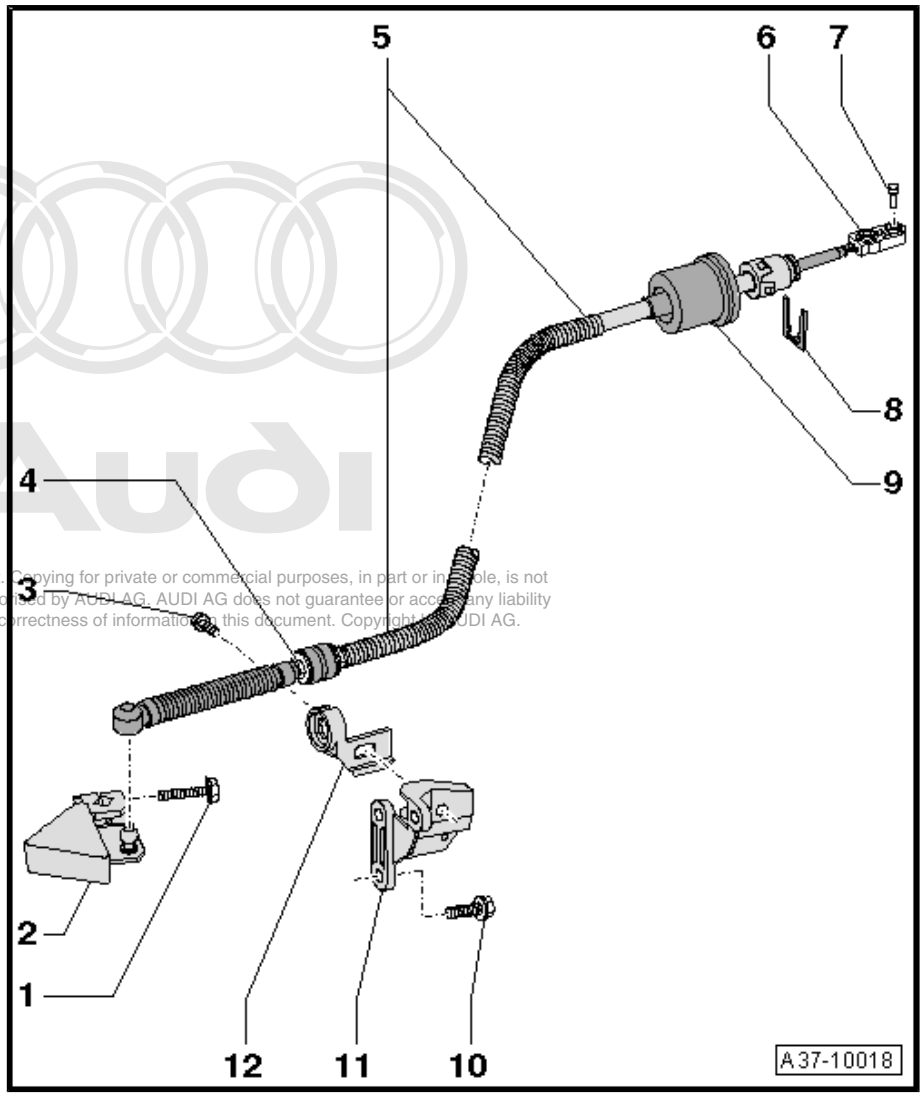
❑ When installing, make sure that rubber sleeve on gearbox end is not twisted

❑ ⇒ "3.13 Adjusting selector lever cable (vehicles up to 11.2005)", page 44

6 - Clamping bolt for selector lever cable, 13 Nm

7 - Pin for selector lever cable

❑ To remove selector lever cable, pull plastic securing spring on selector mechanism forwards slightly and push up pin just far enough to release cable.



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8 - Retaining clip

- ❑ For securing selector lever cable to shift unit

9 - Rubber sleeve for selector lever cable

- ❑ Check that rubber sleeve for selector lever cable is correctly engaged on selector mechanism cover (bottom) and make sure it seals properly.

10 - 23 Nm

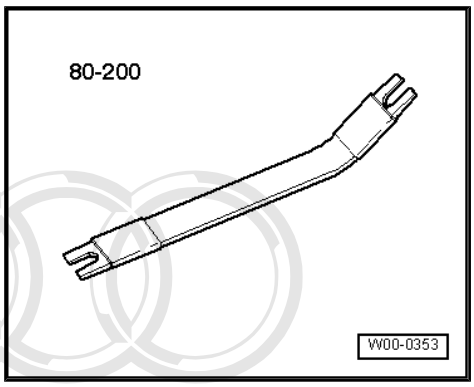
11 - Bracket on rear of gearbox for selector lever cable

12 - Support bracket for selector lever cable

3.12 Removing and installing selector lever cable (vehicles up to 11.2005)

Special tools and workshop equipment required

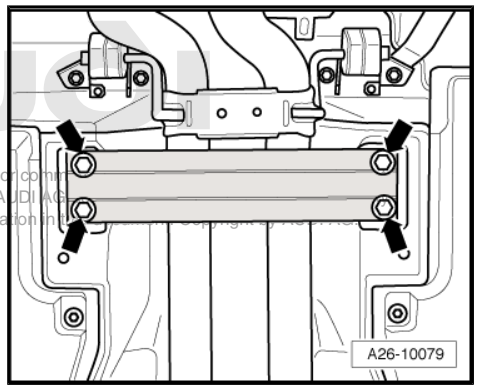
- ♦ Removal lever -80 - 200-



Removing

– Shift selector lever to position “S”.

– Remove rear cross piece -arrows-.



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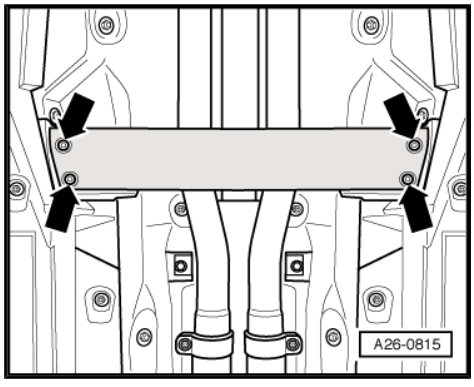
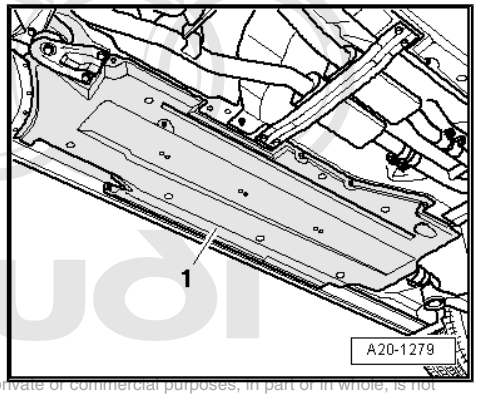
– Remove front cross piece -arrows-.



– Remove cover -1- on vehicle underside (left and right).



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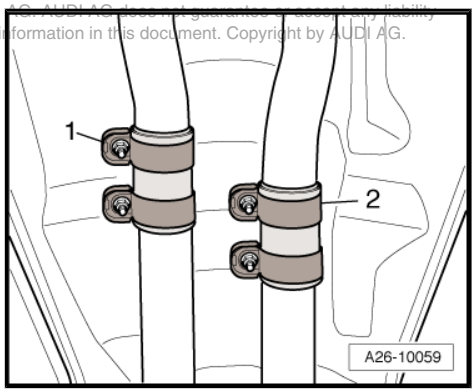
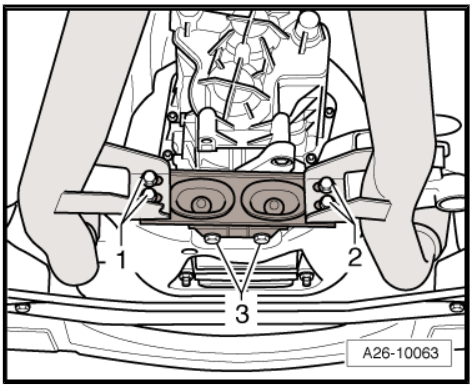
– Loosen clamps -1- and -2-.



Note

The flexible pipe connection (de-coupling element) on the front exhaust pipe must not be bent more than 10° – otherwise it can be damaged.

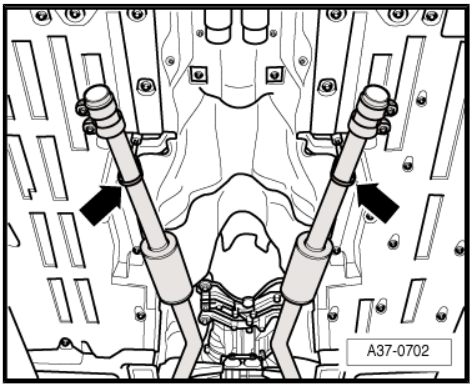
– Unscrew bolts -1- and -2- at rear bracket for front exhaust pipe.



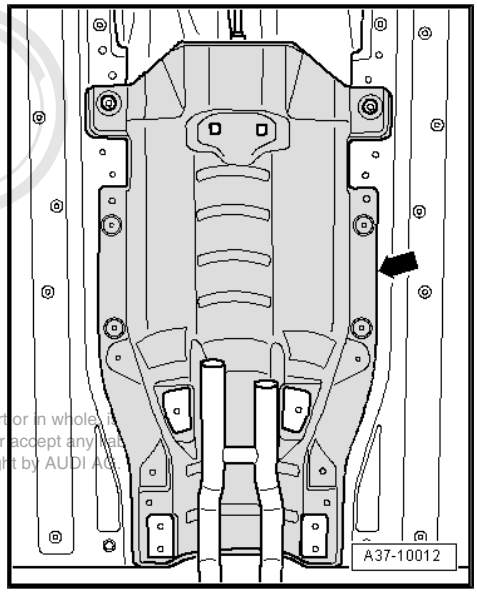
Note

-Item 3- can be disregarded.

– Tie left and right exhaust pipes up to body -arrows-.



– Remove heat shield -arrow-.



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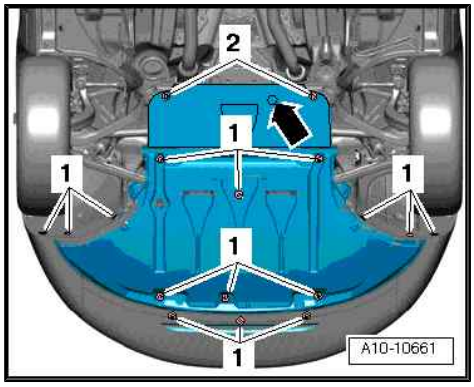
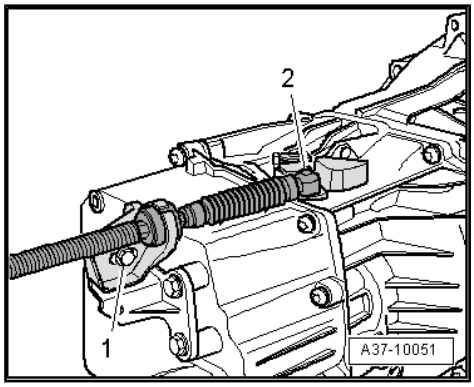
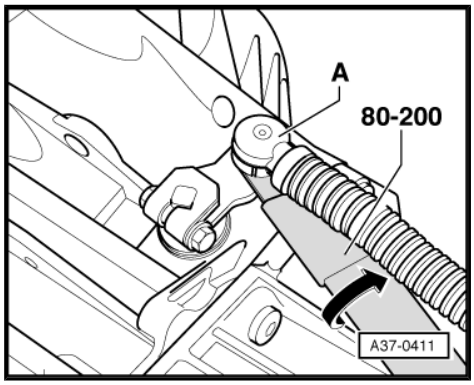
– Remove rear noise insulation ⇒ General body repairs, exterior; Rep. Gr. 50 .



– Mark installation position of support bracket for selector lever cable.
– Unscrew bolt -1- from support bracket for selector lever cable.



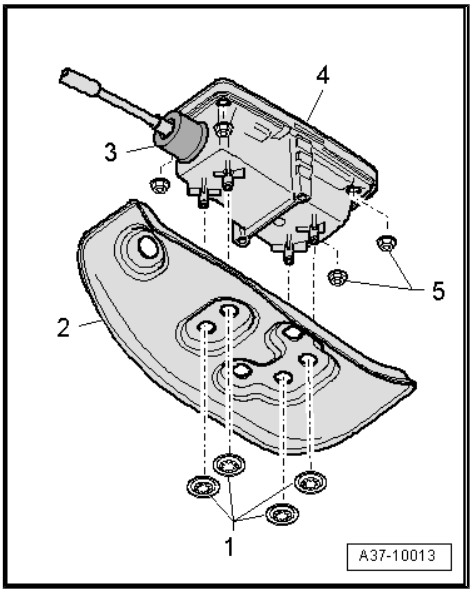
– Use removal lever -80 - 200- to pry ball socket -A- on selector lever cable off gearbox selector lever.



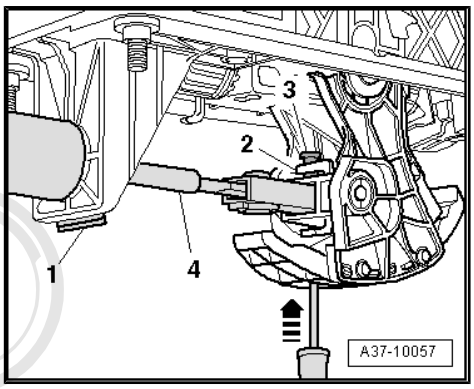
Note

Do not bend or kink the selector lever cable.

– Lever off lock washers -1-.
– Push noise insulation -2- forwards.
– Detach rubber sleeve -3- from selector mechanism cover (bottom) -4-.
– Remove nuts -5-.
– Fold selector mechanism cover (bottom) and noise insulation to front.



– Remove retaining clip -1- for selector lever cable by pulling it off downwards at the selector mechanism.
– Pull plastic securing spring -2- slightly forwards and press pin -3- upwards, but only as far as is necessary using a screwdriver.



Note

Ensure that pin is not pressed out completely.

– Pull selector lever cable -4- out of selector mechanism.

Installing

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

Note

- *Do not bend or kink the selector lever cable.*
- *Before installing, lightly lubricate ball socket on selector lever cable with polycarbamide grease -G 052 142 A2- .*

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– Push selector lever cable into selector mechanism and secure cable with retaining clip -1-.

• Installation position: angled end of retaining clip must point towards rear.

– Insert end of selector lever cable -4- in joint on selector lever.

– Push pin -3- down -arrow-.

– Check that plastic securing spring -2- has locked the pin.

– Fit support bracket for selector lever cable to new selector lever cable.

– Fit support bracket for selector lever cable according to marking on bracket at rear of gearbox.

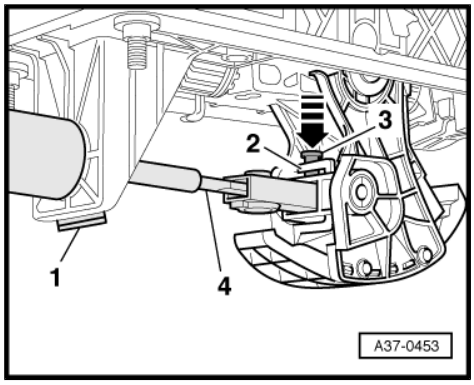
– Adjust selector lever cable ⇒ page 44 .

– Install exhaust system so it is free of stress ⇒ Engine, mechanics; Rep. Gr. 26 .

– Install rear cross piece ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. Gr. 40 .

– Install front cross piece ⇒ General body repairs, exterior; Rep. Gr. 50 .

– Check selector mechanism ⇒ page 18 .

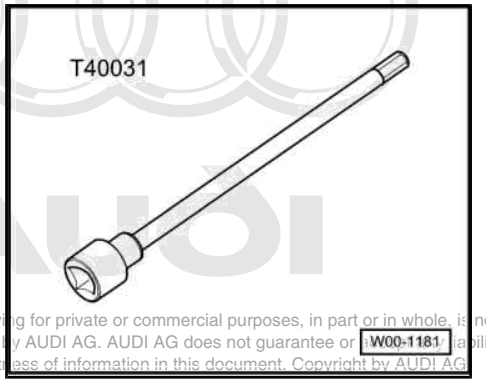


Tightening torques
⇒ "3.6 Exploded view - shift unit (vehicles up to 11.2005)", page 28 ,
⇒ "3.11 Exploded view - selector lever cable (vehicles up to 11.2005)", page 39

3.13 Adjusting selector lever cable (vehicles up to 11.2005)

Special tools and workshop equipment required

◆ Socket and key -T40031-



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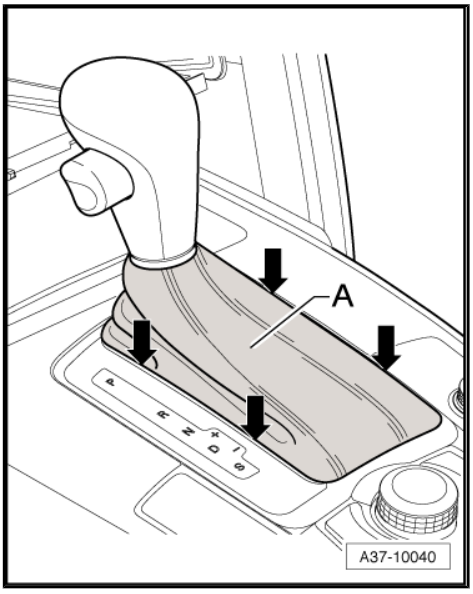
Procedure

– Unclip retaining frame for selector lever boot -1- from centre console and lift off -arrows-.

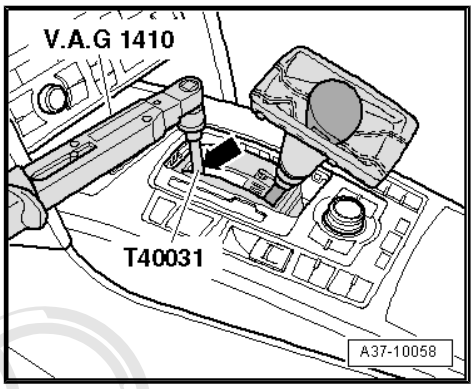


– Shift selector lever to position “S”.

Note

- *Clamping bolt can only be accessed with selector lever in position “S”.*
- *Loosen clamping bolt approx. 1 turn - do not remove.*

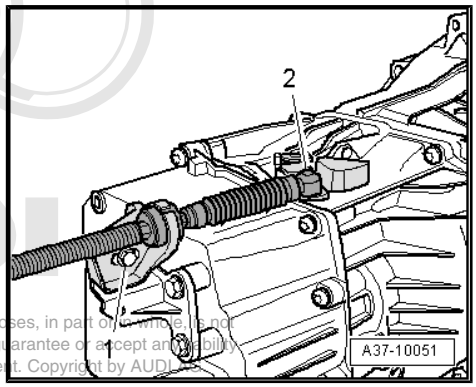
– Loosen clamping bolt for selector lever cable approx. 1 turn using socket and key -T40031- .



– Push gearbox selector lever (on gearbox) together with end of selector lever cable -2- forwards as far as stop (position “S” on gearbox).

– Carefully move selector lever slightly forwards and backwards, without shifting lever into a different selector lever position. The selector lever cable is thereby slackened.

– Check exact position of selector lever in position “S”.



Note

When tightening the clamping bolt, the selector lever must not be pulled forwards or backwards, as otherwise the setting will not be accurate.

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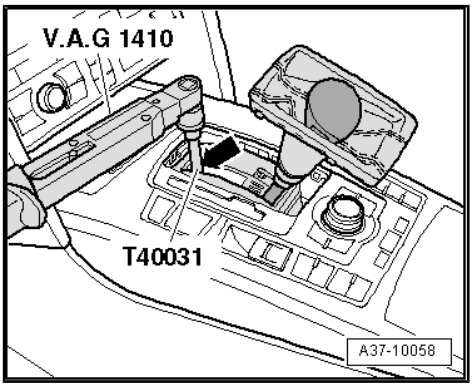
– Tighten clamping bolt on selector lever cable -arrow- in this position.

Assembly is performed in reverse sequence.

Tightening torque

⇒ “3.11 Exploded view - selector lever cable (vehicles up to 11.2005)”, page 39

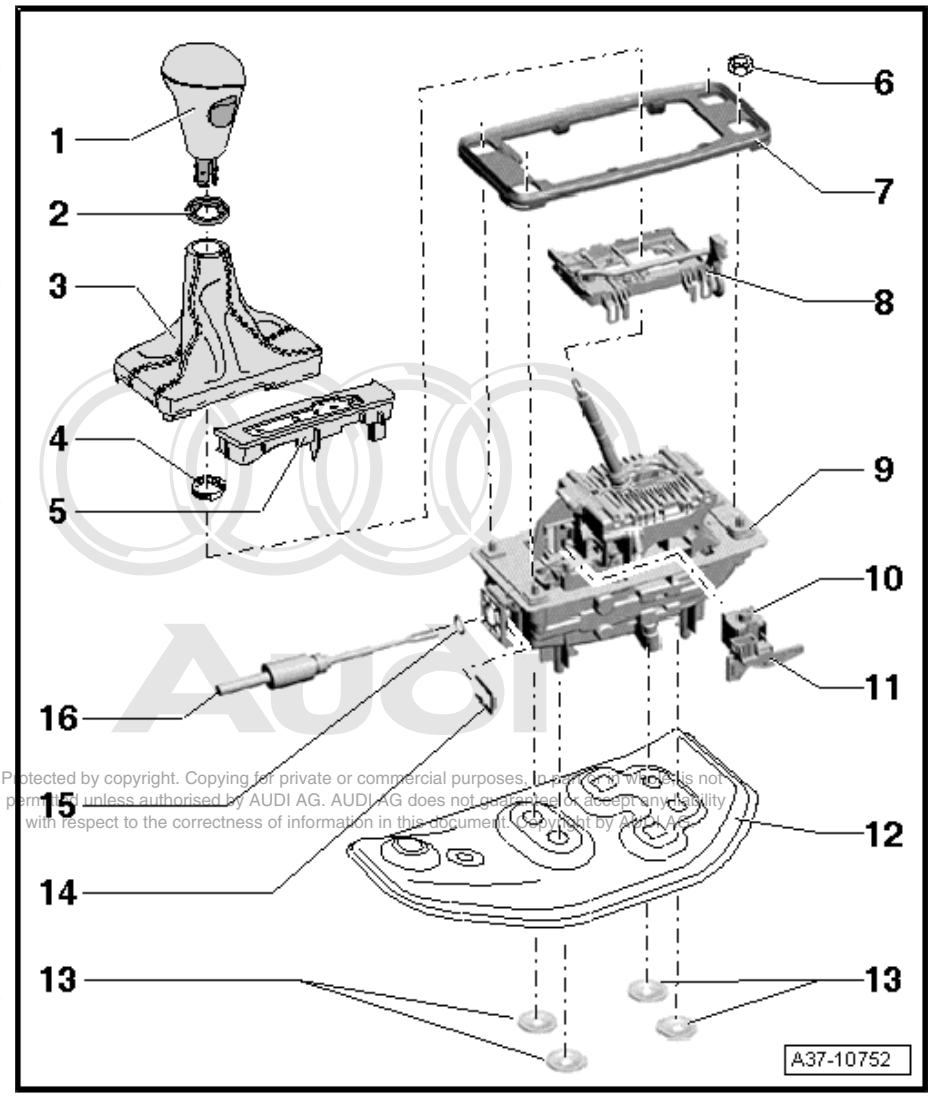


4 Exploded view - selector mechanism (vehicles from 11.2005 onwards)

WARNING

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

Check selector mechanism before dismantling ⇒ page 18 .



1 - Selector lever handle

- ⇒ "4.3 Removing and installing selector lever handle (vehicles from 11.2005 onwards)", page 49

2 - Trim ring

- Removing and installing ⇒ "4.4 Separating selector lever boot from selector lever handle (vehicles from 11.2005 onwards)", page 52

3 - Selector lever boot

- Removing and installing ⇒ "4.4 Separating selector lever boot from selector lever handle (vehicles from 11.2005 onwards)", page 52

4 - Clip

- Secures selector lever handle to selector lever
- Removing and installing ⇒ "4.3 Removing and installing selector lever handle (vehicles from 11.2005 onwards)", page 49

5 - Selector lever position display -Y26-

- ⇒ "4.5 Removing and installing selector lever position display Y26 (vehicles from 11.2005 onwards)", page 52

6 - Nut, 8 Nm

- For securing selector mechanism to body
- 4x

7 - Rubber seal

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

- ⇒ "4.8 Removing and installing selector lever sensors control unit J587 and tiptronic switch F189 (vehicles from 11.2005 onwards)", page 55

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9 - Shift unit

- Can only be renewed as a complete unit
- ⇒ “4.10 Removing and installing shift unit (vehicles from 11.2005 onwards)”, page 56

10 - Selector lever lock solenoid -N110-

- ⇒ “4.7 Removing and installing selector lever lock solenoid N110 (vehicles from 11.2005 onwards)”, page 54

11 - Gear selector position P switch -F305-

- Consists of two microswitches on printed circuit board in selector lever lock solenoid -N110-
- Can only be renewed together with selector lever lock solenoid -N110- ,
  ⇒ “4.7 Removing and installing selector lever lock solenoid N110 (vehicles from 11.2005 onwards)”, page 54

12 - Noise insulation

- Different versions ⇒ Electronic parts catalogue
- Not fitted on all vehicles

13 - Retaining washers

- For securing noise insulation to shift unit
- 4x
- Renew

14 - Retaining clip

- Secures selector lever cable to shift unit

15 - O-ring

- Renew

16 - Selector lever cable

- Do not bend or kink
- ⇒ “4.11 Exploded view - selector lever cable (vehicles from 11.2005 onwards)”, page 58

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4.1 Exploded view - selector lever handle and selector lever position display -Y26- (vehicles from 11.2005 onwards)

1 - Clip

- ❑ To secure selector lever handle to selector lever
- ❑ Removing and installing ⇒ “4.3 Removing and installing selector lever handle (vehicles from 11.2005 onwards)”, page 49

2 - Trim ring

- ❑ Removing and installing ⇒ “4.4 Separating selector lever boot from selector lever handle (vehicles from 11.2005 onwards)”, page 52

3 - Selector lever handle

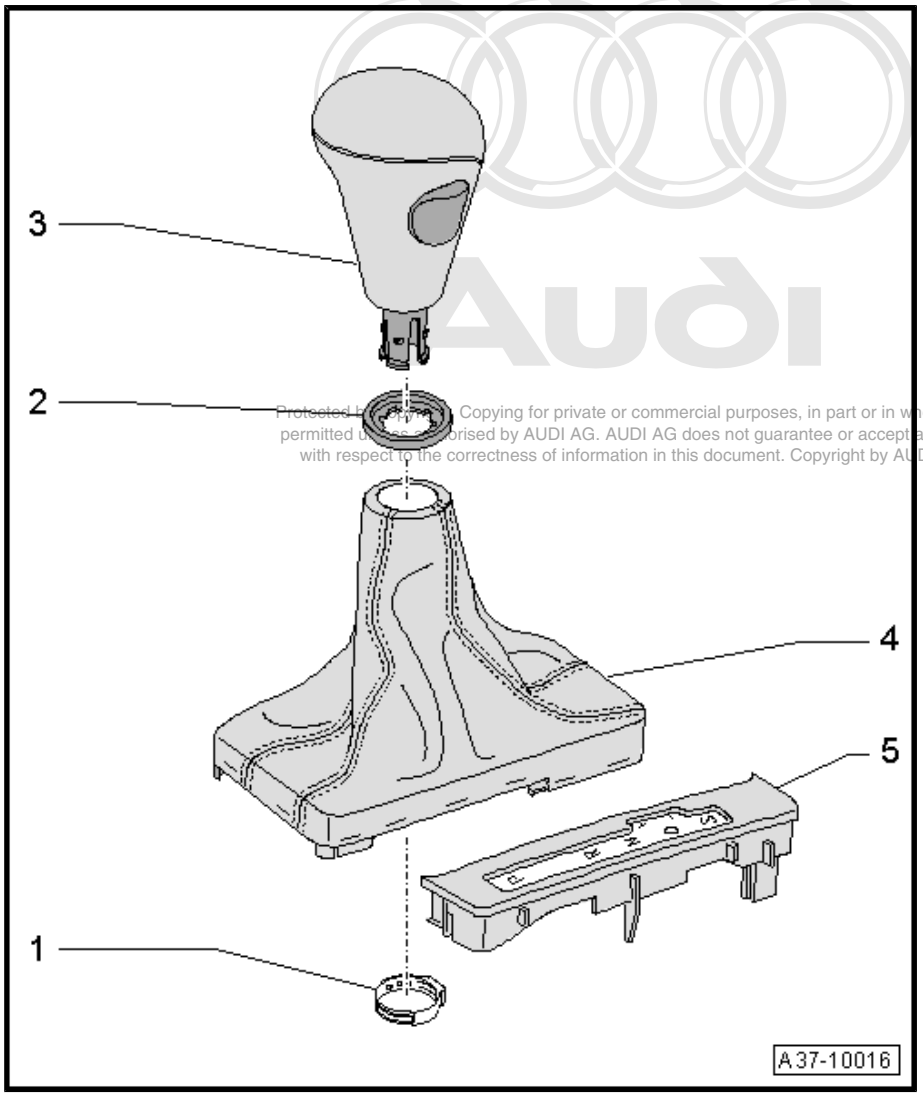
- ❑ ⇒ “4.3 Removing and installing selector lever handle (vehicles from 11.2005 onwards)”, page 49

4 - Selector lever boot

- ❑ ⇒ “4.4 Separating selector lever boot from selector lever handle (vehicles from 11.2005 onwards)”, page 52

5 - Selector lever position display -Y26-

- ❑ ⇒ “4.5 Removing and installing selector lever position display Y26 (vehicles from 11.2005 onwards)”, page 52



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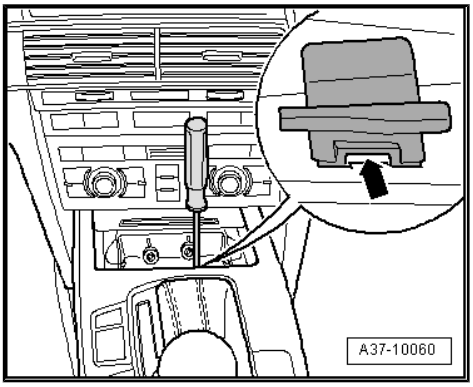
4.2 Manual release for selector mechanism (vehicles from 11.2005 onwards)

Note

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

– Remove insert for front ashtray.

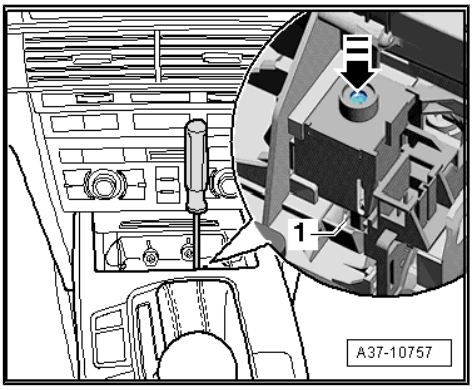
– Use screwdriver to pry off the cover cap in the ashtray housing -arrow-.



Note

The shape of the cover cap may differ from the illustration.

– Insert tool (e.g. screwdriver) through centre opening in ashtray housing and into cylinder -arrow- on selector lever lock solenoid -N110- and at the same time press and hold button and move selector lever out of position “P”.



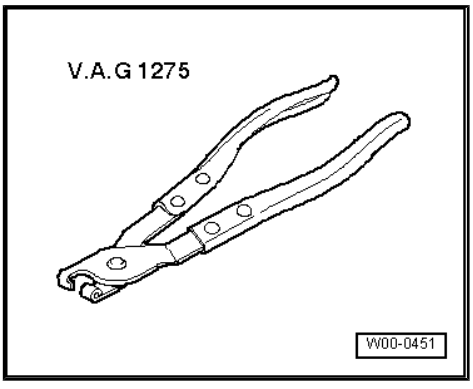
Note

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

4.3 Removing and installing selector lever handle (vehicles from 11.2005 onwards)

Special tools and workshop equipment required

- Hose clip pliers -V.A.G 1275-



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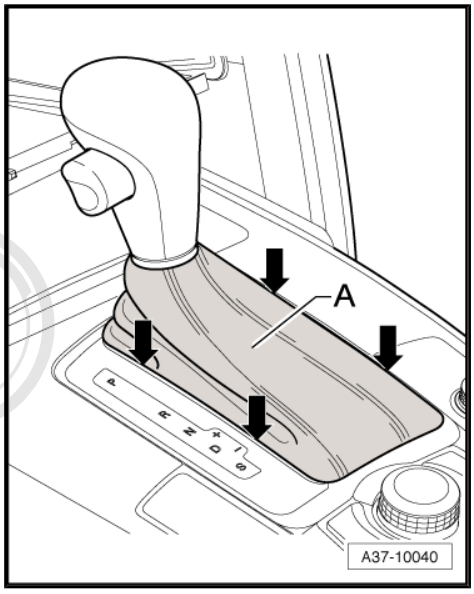
Removing

– Shift selector lever to position “N”.

Note

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

– Unclip retaining frame for selector lever boot -1- from centre console and lift off -arrows-.



– Use a cable tie to secure the interlock button in pulled-out position -arrow-, as shown in the illustration.

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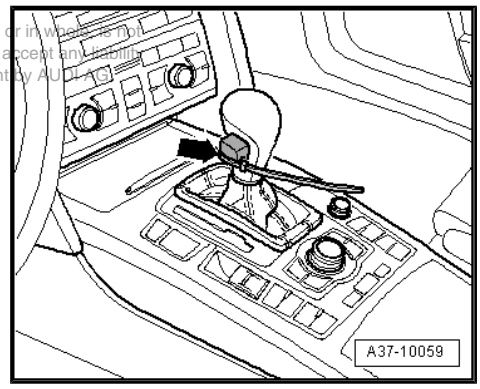
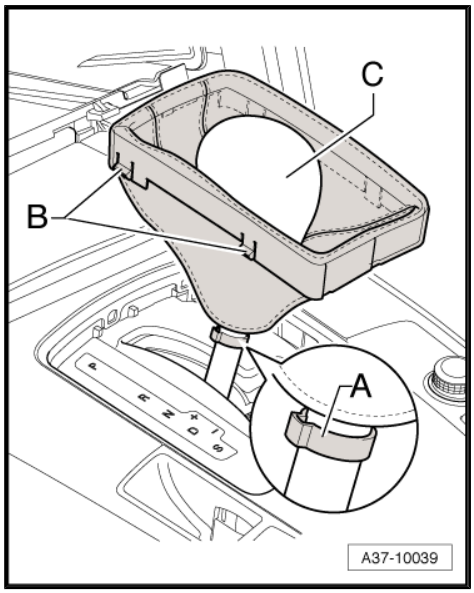


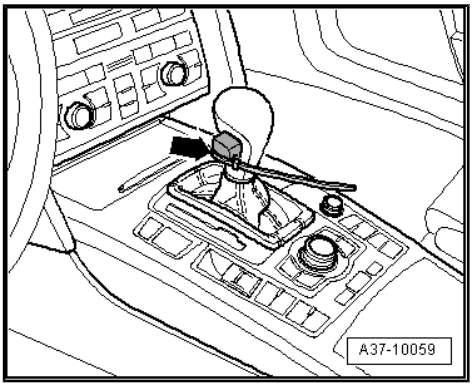
– Turn up selector lever boot -1- over selector lever handle -2-.
– Release clamp -arrow- and detach selector lever handle together with selector lever boot. Avoid touching the interlock button.

Note

Detach selector lever boot from selector lever handle
⇒ page 52 .



Installing



Note

- ♦ *To install the selector lever handle the interlock button has to be pulled out to the stop and must be secured with either a cable tie -arrow- or with the assembly aid supplied together with the new handle.*
- ♦ *If, by mistake, the interlock button has not been secured, it must not be pulled out of the selector lever handle by means of mechanical tools. Apply a compressed-air gun at the bottom of the handle and press the interlock button out with compressed air.*

– Place selector lever handle fully on selector lever - interlock button points towards the driver.

• The handle must engage in the annular groove on the selector lever.

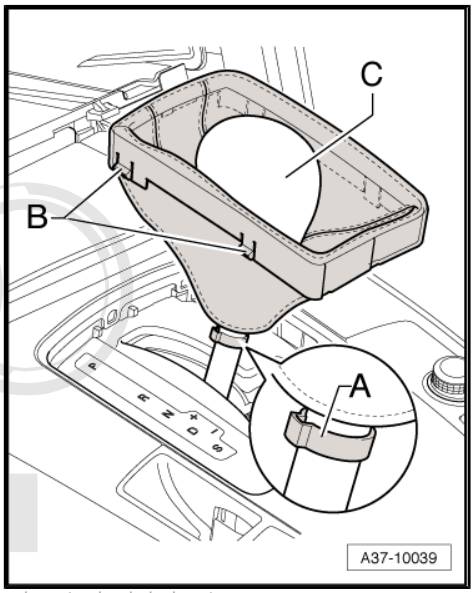
– Remove the cable tie or assembly aid, allowing the interlock button mechanism to engage in the vertical groove on the selector lever. If necessary, press the interlock button into the selector lever handle.

– Move selector lever to positions “R” and “S” to check button mechanism.

• If the selector lever cannot be moved into the above positions, the handle must be removed again.

– Secure selector lever handle -2- onto selector lever with clamp -arrow-. Use hose clip pliers -V.A.G 1275- for this purpose.

– Clip retaining frame for selector lever boot -1- onto centre console.



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4.4 Separating selector lever boot from selector lever handle (vehicles from 11.2005 onwards)

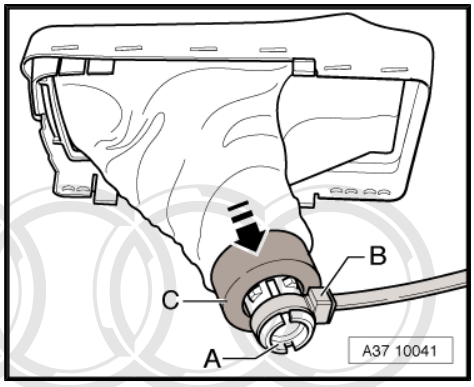
Removing

– Remove selector lever handle ⇒ page 49 .

– Tie together spring tips -1- of selector lever handle using cable tie -3- as shown in illustration.

– Slide sleeve -2- of selector lever boot past retaining tabs on spring tips -arrow-.

– Remove cable tie and detach sleeve with selector lever boot from selector lever.



Installing

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

Fitting position of selector lever boot:

- The longer side of the retaining frame for the selector lever boot faces the driver's side.

– Install selector lever handle ⇒ page 49 .

Audi
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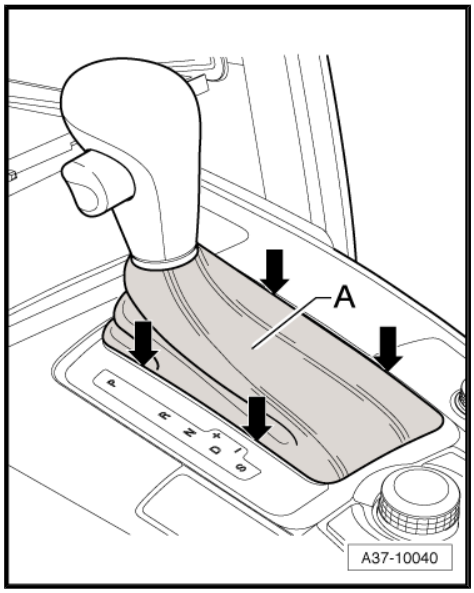
4.5 Removing and installing selector lever position display -Y26- (vehicles from 11.2005 onwards)

Removing

– Shift selector lever to position “N”.

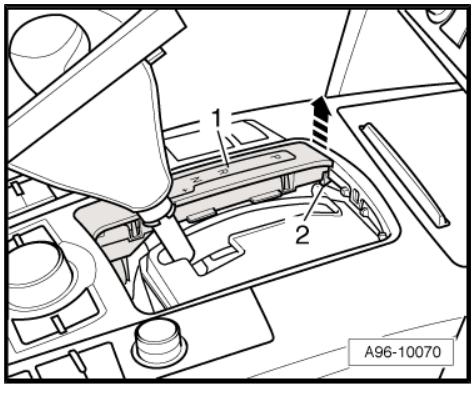
– Unclip retaining frame for selector lever boot -1- from centre console and lift off -arrows-.

– Turn up selector lever boot.



– Release retaining spring -2- and detach selector lever position display -Y26- -item 1- -arrow-.

– Unplug electrical connector.



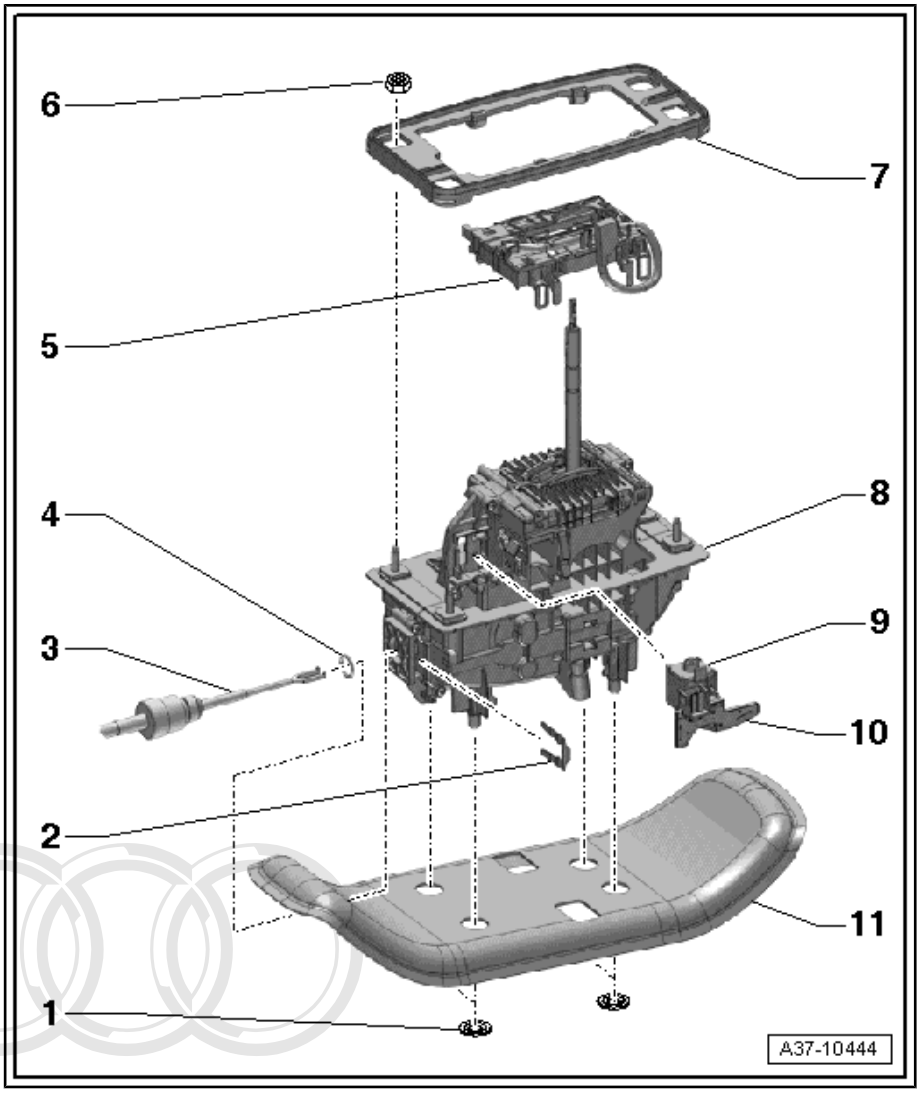
Installing

Perform installation in reverse sequence of removal.

4.6 Exploded view - shift unit (vehicles from 11.2005 onwards)

Note

Lubricate all bearings and moving surfaces with polycarbamide grease -G 052 142 A2- .



1 - Securing clip

- For securing noise insulation to shift unit
- 4x
- Renew

2 - Retaining clip

- For securing selector lever cable to shift unit

3 - O-ring

- Renew

4 - Selector lever cable

- Do not bend or kink
- ⇒ “4.12 Removing and installing selector lever cable (vehicles from 11.2005 onwards)”, page 59
- Selector lever cable must be renewed if rubber sleeve is damaged
- When installing, make sure that rubber sleeve on gearbox end is not twisted
- ⇒ “4.13 Adjusting selector lever cable (vehicles from 11.2005 onwards)”, page 65

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

- ⇒ “4.8 Removing and installing selector lever sensors control unit J587 and tiptronic switch F189 (vehicles from 11.2005 onwards)”, page 55

6 - Nut, 8 Nm

- For securing selector mechanism to body

7 - Gasket

8 - Shift unit

- Can only be renewed as a complete unit
- ⇒ “4.10 Removing and installing shift unit (vehicles from 11.2005 onwards)”, page 56

9 - Selector lever lock solenoid -N110-

- ⇒ “4.7 Removing and installing selector lever lock solenoid N110 (vehicles from 11.2005 onwards)”, page 54

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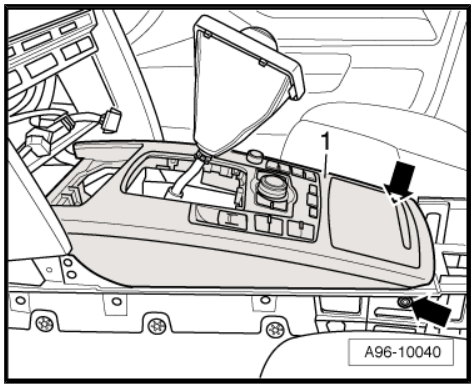
10 - Gear selector position P switch -F305-

- ❑ Can only be renewed together with selector lever lock solenoid -N110-
⇒ “4.7 Removing and installing selector lever lock solenoid N110 (vehicles from 11.2005 onwards)”, page 54

11 - Noise insulation

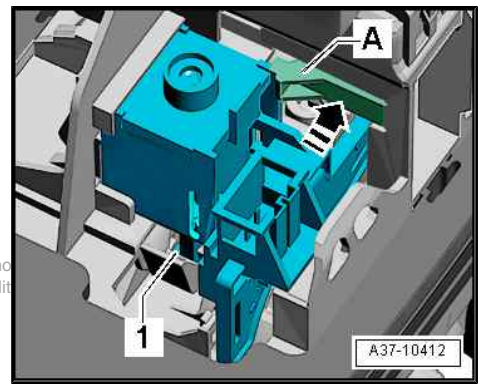
4.7 Removing and installing selector lever lock solenoid -N110- (vehicles from 11.2005 onwards)

Removing



– Shift selector lever to position “P”.

– Remove centre console (front) -1- ⇒ General body repairs, interior; Rep. Gr. 68 .



– Unplug electrical connector at selector lever lock solenoid -N110- .

– Press retaining hook -A- into selector mechanism -arrow- and hold in.

Note

The shift unit must be renewed if the retaining hook -A- breaks off.

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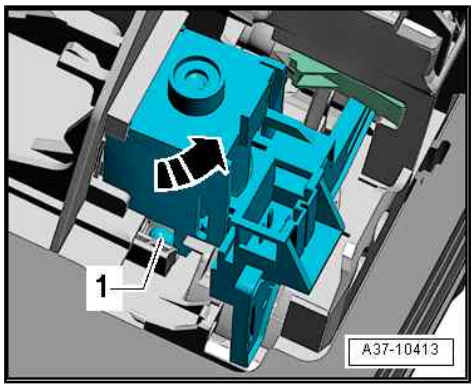


– Tilt bottom part of selector lever lock solenoid -N110- out in direction of -arrow- so that ball head -1- disengages from operating lever on selector mechanism.

– Detach selector lever lock solenoid -N110- .

Installing

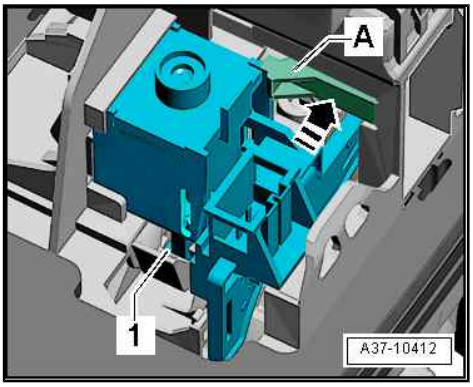
Installation is carried out in reverse sequence; note the following:

– Turn ball head -1- into correct installation position.

– Insert selector lever lock solenoid -N110- into selector mechanism at an angle from above.

– Tilt bottom part of selector lever lock solenoid -N110- in opposite direction of -arrow-.

– Ball head -1- must engage fully in operating lever on selector mechanism; press home with a small screwdriver if necessary.
– Secure selector lever lock solenoid -N110- to retaining hook -A-.
– Attach all electrical connectors.
– Check function of selector mechanism before carrying out remaining steps for installation ⇒ page 18 .
– Install centre console (front) ⇒ General body repairs, interior; Rep. Gr. 68 .



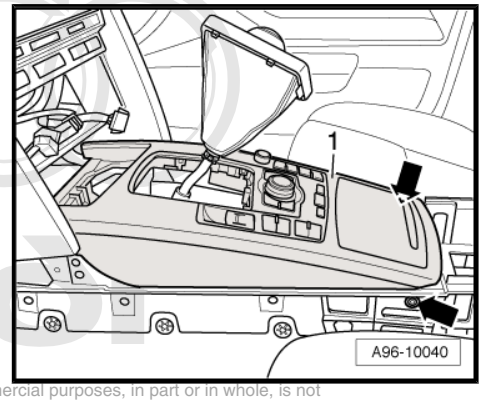
4.8 Removing and installing selector lever sensors control unit -J587- and tiptronic switch -F189- (vehicles from 11.2005 onwards)

Note

- *Selector lever sensors control unit -J587- and tiptronic switch -F189- are integrated in one unit.*
- *The magnets for the tiptronic switch -F189- are secured on the cover.*

Removing

– Remove selector lever handle ⇒ page 49 .
– Remove centre console (front) -1- ⇒ General body repairs, interior; Rep. Gr. 68 .



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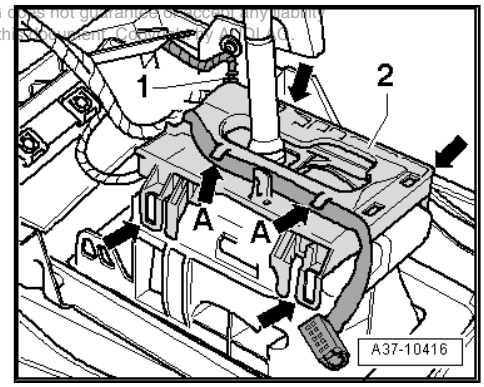
– Detach electrical connector -1-.
– Release four retaining lugs -arrows- and lift out selector lever sensors control unit -J587- with tiptronic switch -F189- .

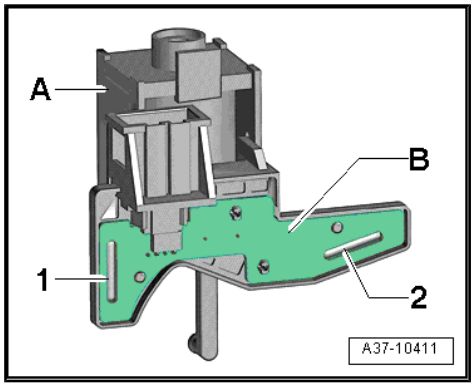


Installing

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

– Make sure selector lever sensors control unit -J587- with tiptronic switch -F189- clicks in place with four retaining lugs -arrows-.
– Secure wiring for selector lever position display -Y26- -arrows-.
– Install centre console (front) ⇒ General body repairs, interior; Rep. Gr. 68 .
– Install selector lever handle ⇒ page 49 .

4.9 Removing and installing gear selector position P switch -F305- (vehicles from 11.2005 onwards)



Gear selector position P switch -F305-

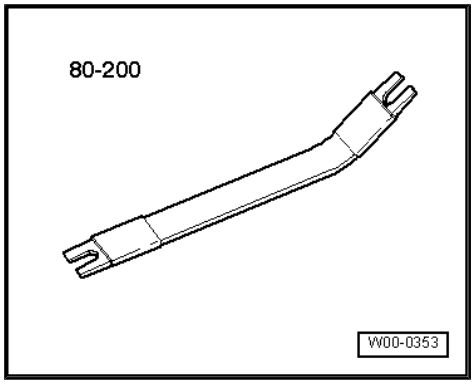
- Fitting location: Gear selector position P switch -F305- consists of two microswitches -1- and - 2- installed on printed circuit board -B- in selector lever lock solenoid -N110- -A-.

Installing: Gear selector position P switch -F305- can only be renewed together with selector lever lock solenoid -N110-
⇒ “4.7 Removing and installing selector lever lock solenoid N110 (vehicles from 11.2005 onwards)”, page 54

4.10 Removing and installing shift unit (vehicles from 11.2005 onwards)

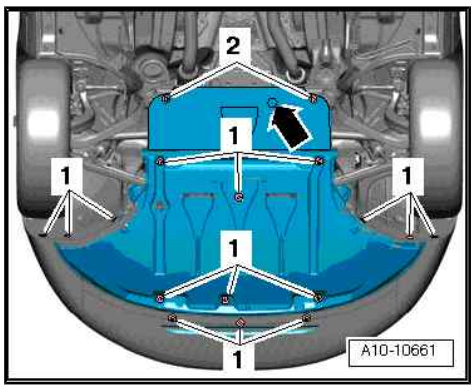
Special tools and workshop equipment required

- Removal lever -80 - 200-



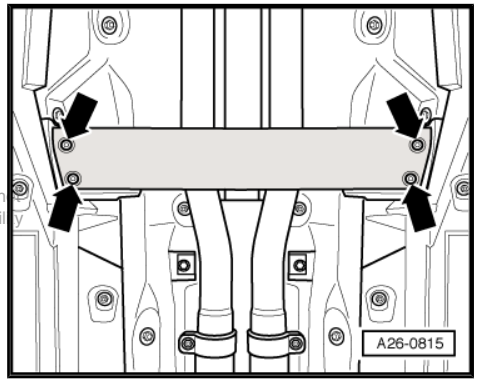
Removing

– Remove rear noise insulation ⇒ General body repairs, exterior; Rep. Gr. 50 .



Vehicles with twin exhaust system:

– Remove front cross piece -arrows-.



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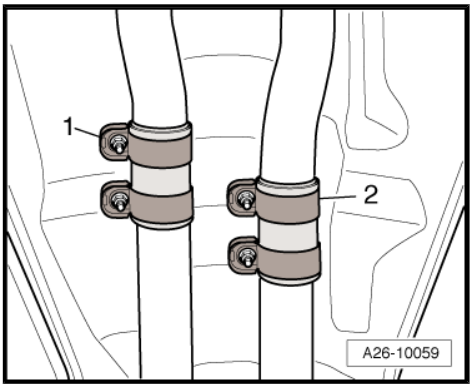
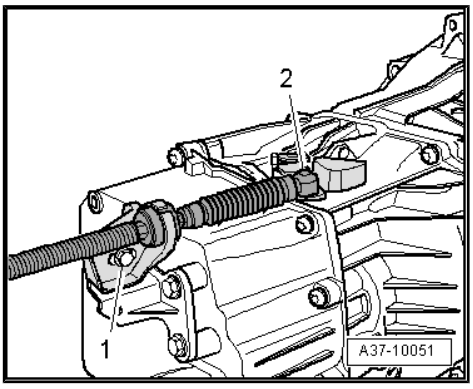
– Loosen left clamp -1- and move towards the rear.
– Tie up left exhaust pipe to left side of body.



Continued for all vehicles:

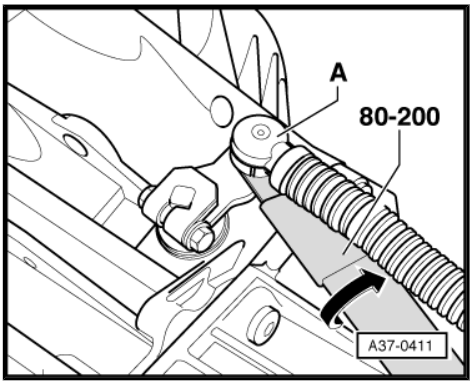
– Mark installation position of support bracket for selector lever cable.
– Unscrew bolt -1- from support bracket for selector lever cable.



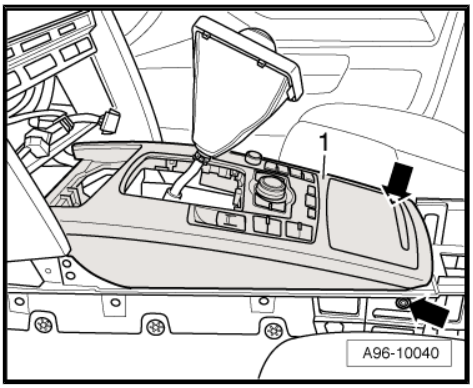
– Use removal lever -80 - 200- to pry ball socket -A- on selector lever cable off gearbox selector lever.

Note

Do not bend or kink the selector lever cable.



– Remove centre console (front) -1- ⇒ General body repairs, interior; Rep. Gr. 68 .



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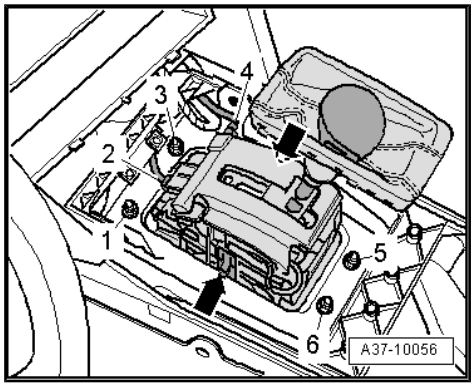
– Unplug electrical connectors -2- and -4-.
– Remove bolts -1- and -3-, -5- and -6-.



Note

The assistance of a second mechanic is required to detach the selector mechanism from below.

– Press retaining clips -arrows- inwards and lower selector mechanism.

Installing

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

Note

- *Before installing, lightly lubricate ball socket on selector lever cable with polycarbamide grease -G 052 142 A2- .*
- *Do not bend or kink the selector lever cable.*

– Fit support bracket for selector lever cable according to marking on bracket at rear of gearbox.
– Adjust selector lever cable ⇒ page 65 .
– Check selector mechanism ⇒ page 18 .
– Install exhaust system so it is free of stress ⇒ Engine, mechanics; Rep. Gr. 26 .
– Install front cross piece ⇒ General body repairs, exterior; Rep. Gr. 50 .
– Install centre console (front) ⇒ General body repairs, interior; Rep. Gr. 68 .

Tightening torque
⇒ "4.6 Exploded view - shift unit (vehicles from 11.2005 onwards)", page 53

4.11 Exploded view - selector lever cable (vehicles from 11.2005 onwards)

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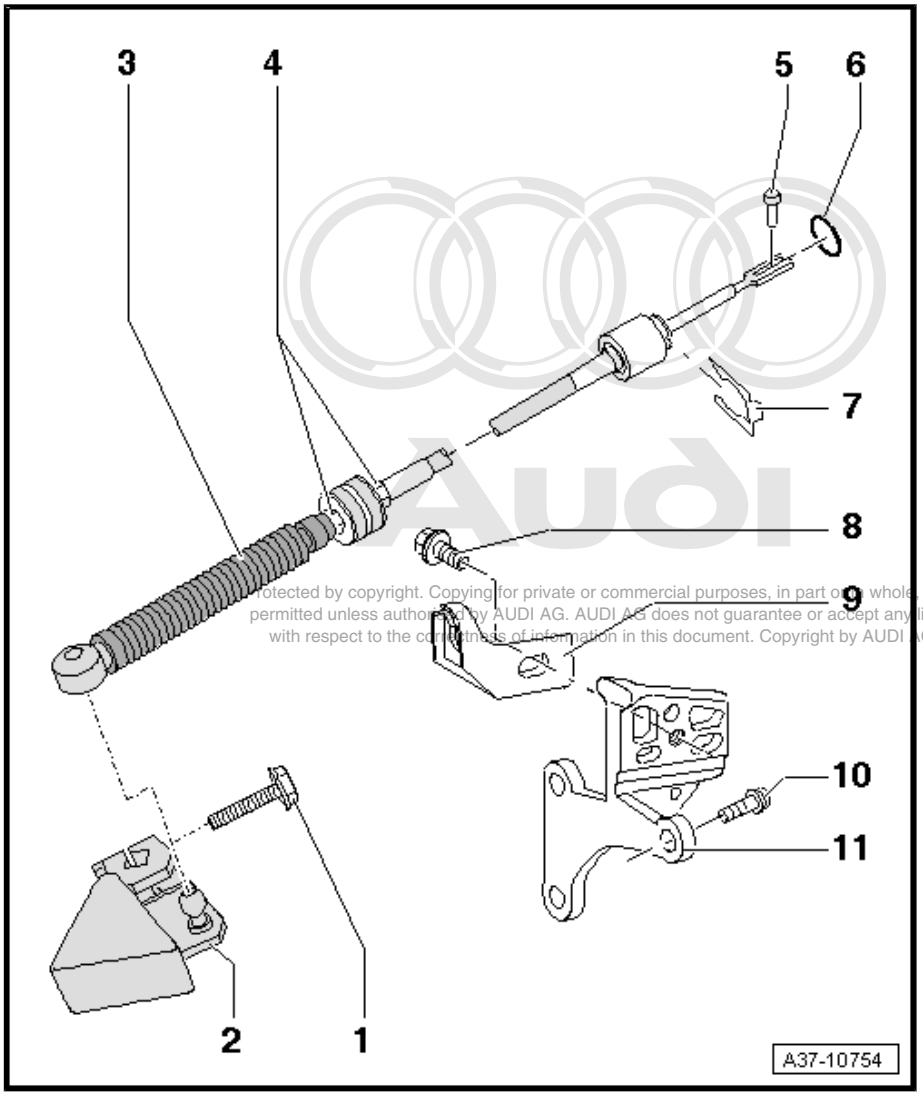


1 - Bolt

- ❑ 9 Nm

2 - Gearbox selector lever

- ❑ Some versions have a damper weight

3 - Selector lever cable

- ❑ Do not bend or kink
- ❑ ⇒ “4.12 Removing and installing selector lever cable (vehicles from 11.2005 onwards)”, page 59
- ❑ Selector lever cable must be renewed if rubber sleeve is damaged
- ❑ Before installing, lightly lubricate ball socket with polycarbamide grease - G 052 142 A2- .
- ❑ When installing, make sure that rubber sleeve on gearbox end is not twisted
- ❑ ⇒ “4.13 Adjusting selector lever cable (vehicles from 11.2005 onwards)”, page 65

4 - Nut

- ❑ 13 Nm, 2x
- ❑ Permanently mounted on selector lever cable
- ❑ Lock nuts secure selector lever cable to support bracket

5 - Bolt

- ❑ 13 Nm
- ❑ For adjusting selector lever cable

6 - O-ring

- ❑ Always renew

7 - Retaining clip

- ❑ For securing selector lever cable to shift unit

8 - Bolt

- ❑ 23 Nm

9 - Support bracket for selector lever cable

10 - Bolt

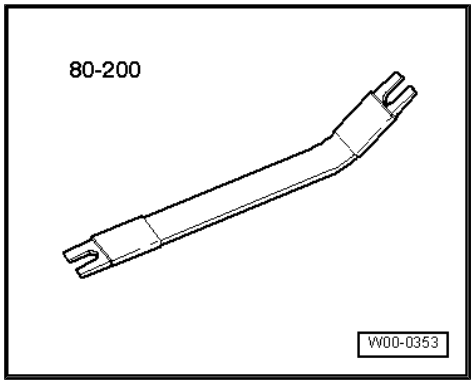
- ❑ 23 Nm

11 - Bracket on rear of gearbox for selector lever cable

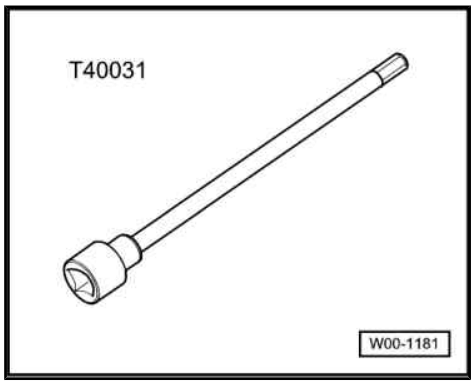
4.12 Removing and installing selector lever cable (vehicles from 11.2005 onwards)

Special tools and workshop equipment required

- Removal lever -80-200-



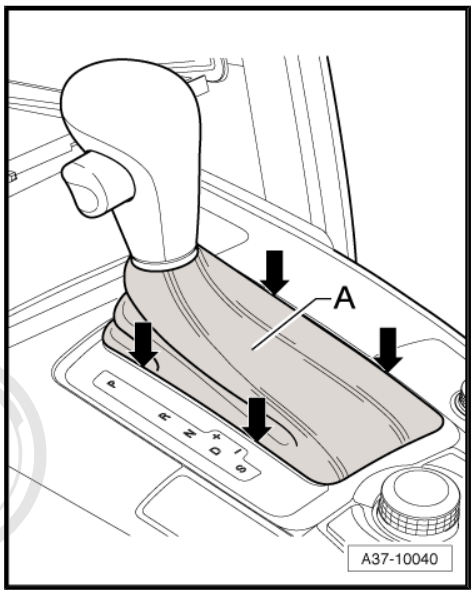
- Socket and key -T40031-



Removing

– Shift selector lever to position “D”.

– Unclip retaining frame for selector lever boot -1- from centre console and lift off -arrows-.



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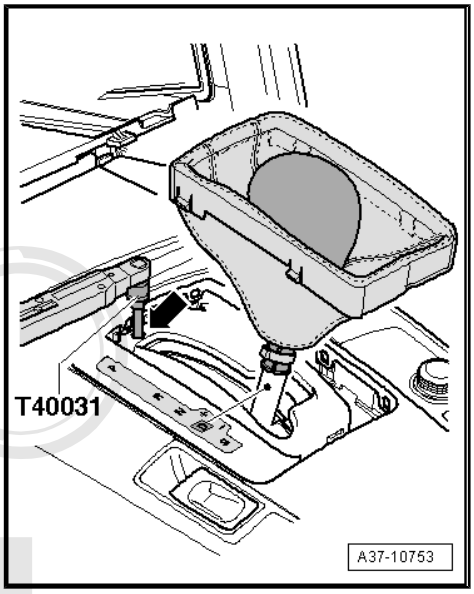
– Insert socket and key -T40031- through access hole -arrow- in selector mechanism and slacken bolt on selector lever cable approx. one turn.



Note

- *Only loosen clamping bolt – do not remove.*
- *Clamping bolt can only be accessed with selector lever in position "D".*
- *With clamping bolt loosened, selector lever must remain in position "D".*

– Remove noise insulation panels ⇒ General body repairs, exterior; Rep. Gr. 50 .

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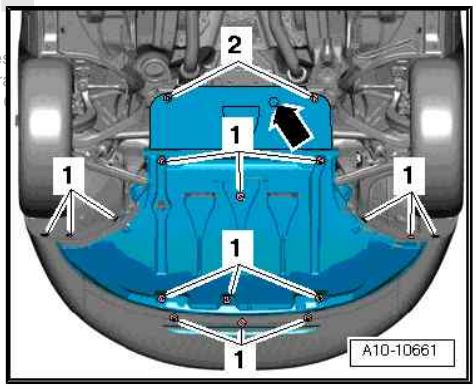
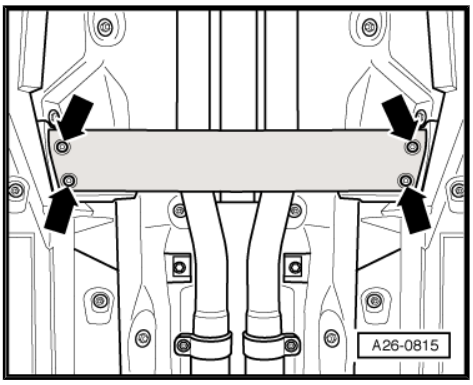


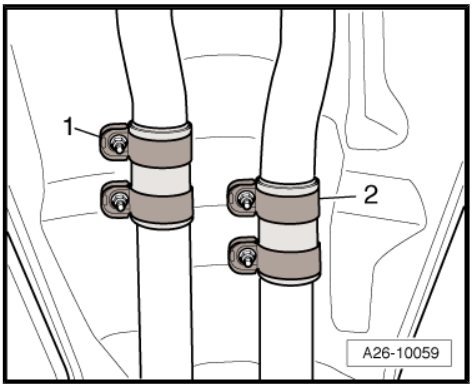
Vehicles with twin exhaust system:

– Remove front cross piece -arrows-.



– Loosen left clamp -1- and move towards the rear.

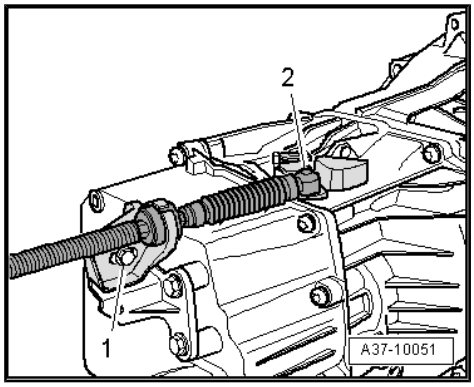
– Tie up left exhaust pipe to left side of body.



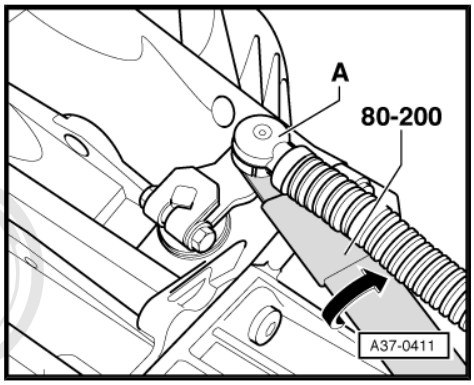
Continued for all vehicles:

– Mark installation position of support bracket for selector lever cable.

– Unscrew bolt -1- from support bracket for selector lever cable.



– Use removal lever -80 - 200- to pry ball socket -A- on selector lever cable off gearbox selector lever.



Note

Do not bend or kink the selector lever cable.

– Remove four retaining washers -1-.

Note

Always renew retaining washers.

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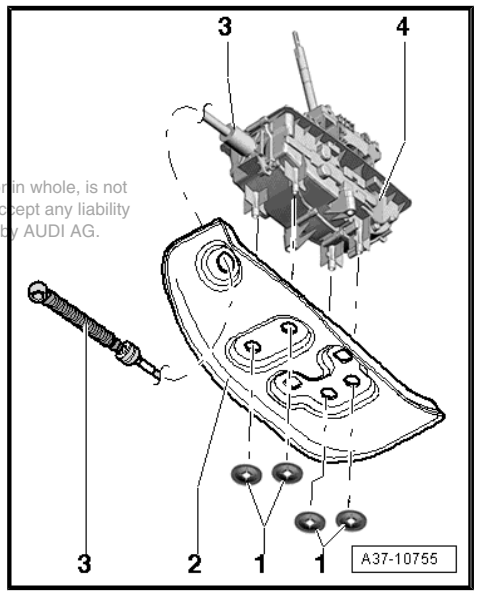
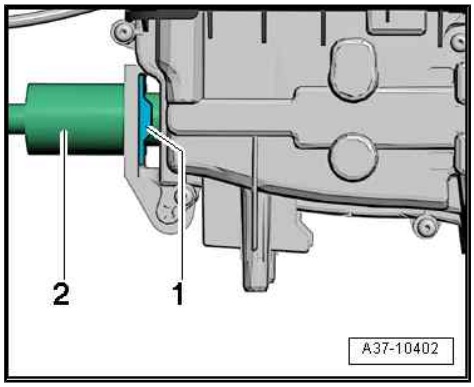
– Pull off noise insulation -2- and slide forwards.



– Pull off retaining clip -1- for selector lever cable from the side.

– Pull selector lever cable -2- out of selector mechanism.



Installing

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

Note

Before installing, lightly grease cable eye and ball socket on selector lever cable with polycarbamide grease -G 052 142 A2- .

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

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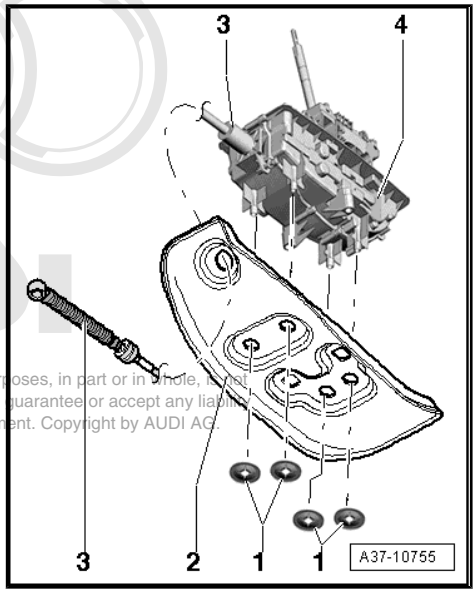
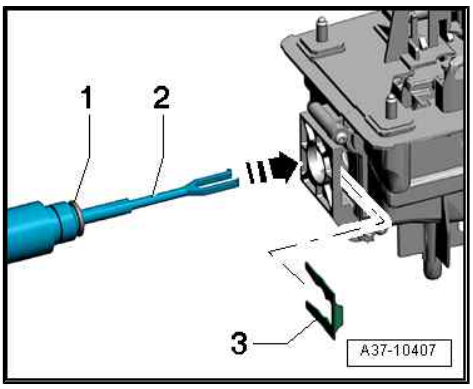
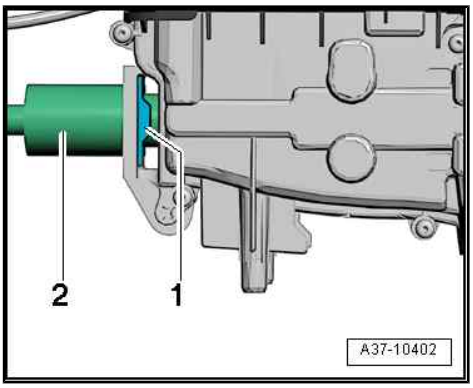


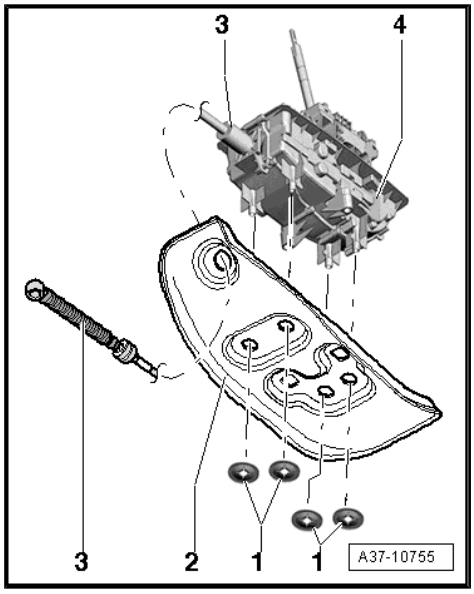
– Renew O-ring -1- on selector lever cable.
– Insert selector lever cable -2- into shift unit -arrow-.
– Secure selector lever cable -2- with retaining clip -3-.



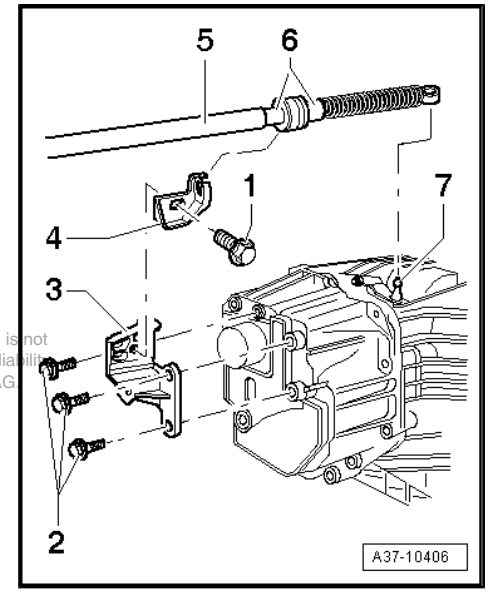
• Installation position: angled end of retaining clip must point towards selector mechanism.



– Secure noise insulation to selector mechanism using four new retaining washers -1-.



– Attach selector lever cable -5- to cable support bracket -4- by tightening lock nuts -6-.



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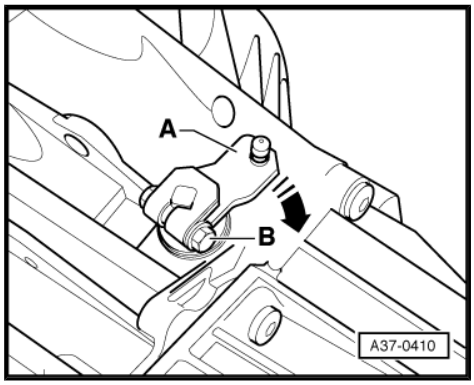
– Press gearbox selector lever -A- on gearbox to rear as far as it will go -arrow- until parking lock engages.

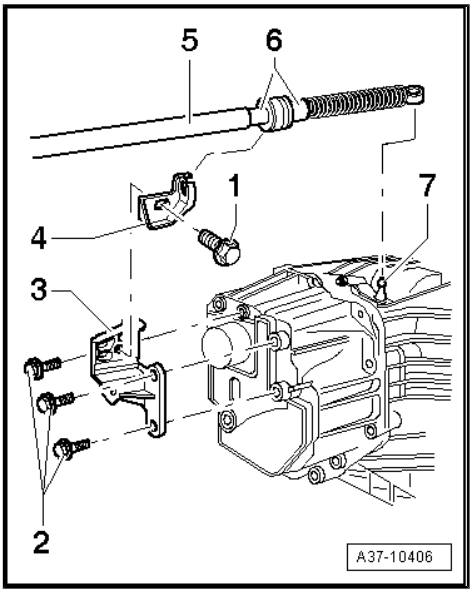


Note

When the parking lock has engaged it should no longer be possible to rotate both front wheels in one direction at the same time.

– Then push gearbox selector lever forward three notches so that gearbox is in position “D”.
– Check that selector lever is also in position “D” inside the vehicle.

– Carefully press ball socket -5- of selector lever cable onto gearbox selector lever -7- in this position.



Note

Take care not to bend gearbox selector lever when pressing on cable; support lever if necessary, as otherwise selector mechanism can no longer be adjusted accurately.

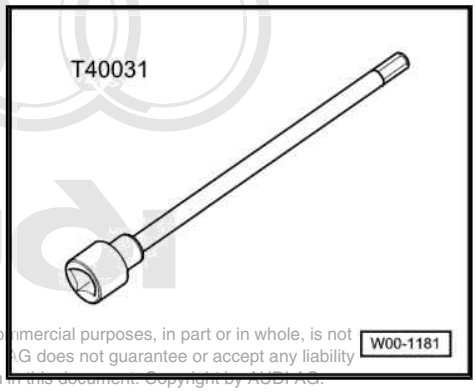
– Fit cable support bracket -4- to bracket at rear of gearbox.
– Adjust selector lever cable ⇒ page 65 .
– Check selector mechanism ⇒ page 18 .
– Install exhaust system so it is free of stress ⇒ Engine, mechanics; Rep. Gr. 26 .
– Install front cross piece ⇒ General body repairs, exterior; Rep. Gr. 50 .

Tightening torques
⇒ "4.11 Exploded view - selector lever cable (vehicles from 11.2005 onwards)", page 58

4.13 Adjusting selector lever cable (vehicles from 11.2005 onwards)

Special tools and workshop equipment required

♦ Socket and key -T40031-



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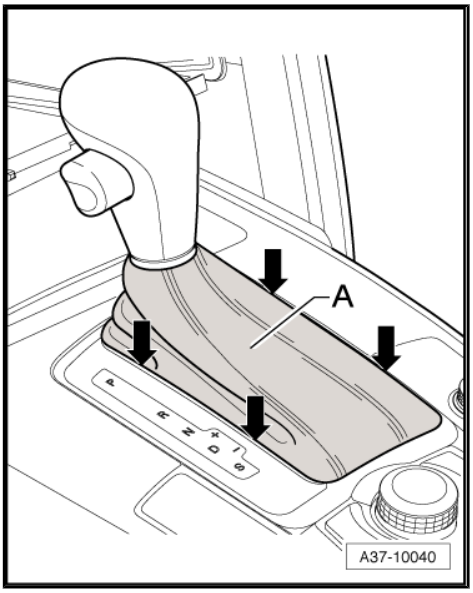
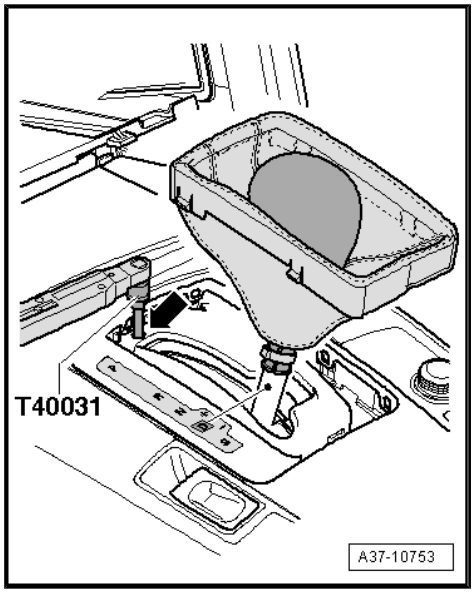
Procedure

– Unclip retaining frame for selector lever boot -1- from centre console and lift off -arrows-.



– Shift selector lever to position “D”.

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



Note

- *Only loosen clamping bolt approx. one turn - do not remove.*
- *Clamping bolt can only be accessed with selector lever in position “D”.*
- *With clamping bolt loosened, selector lever must remain in position “D”.*

– Carefully move selector lever slightly forwards and backwards, without shifting lever into a different selector lever position. The selector lever cable is thereby slackened.

– Check that selector lever is set accurately in position “D”. To do so, push selector lever slightly towards driver's seat.

Note

Do not touch selector lever again during adjustment process.

– Use socket and key -T40031- to tighten clamping bolt in this position, making sure not to touch selector lever; tightening torque ⇒ page 58 .

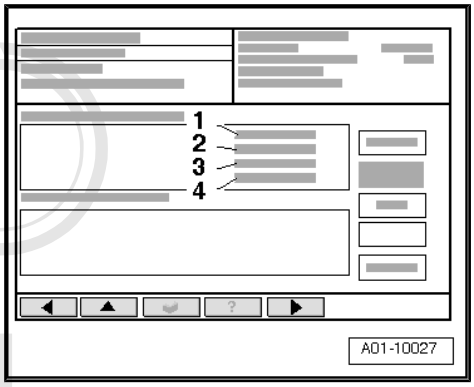
– Check selector mechanism ⇒ page 18 .

Note

Use a diagnostic tester, e.g. vehicle diagnostic, testing and information system -VAS 5051B- to compare the position of the multifunction switch -F125- with the position of the selector lever.

- Diagnostic tester connected up; `Vehicle self-diagnosis`, `02 - Gearbox electronics`, `Measured values`, `Display group 2` selected.

– Compare display in zone -1- with position on selector lever.



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

– Adjust selector lever cable to basic setting ⇒ page 66 .

4.14 Adjusting selector lever cable to basic setting (vehicles from 11.2005 onwards)

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Special tools and workshop equipment required

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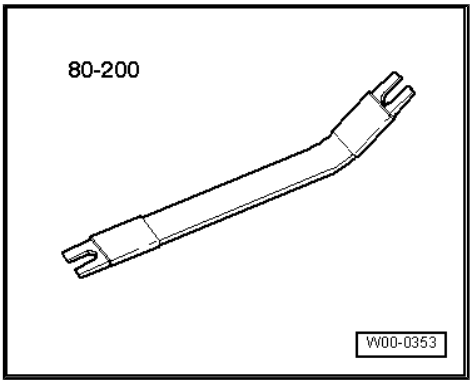
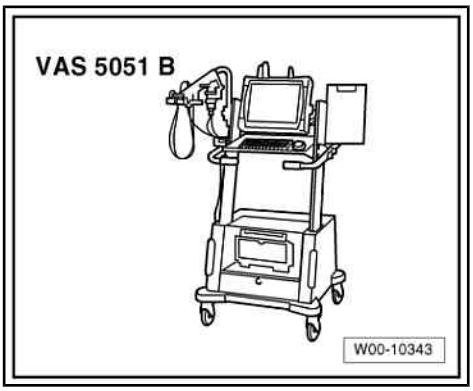
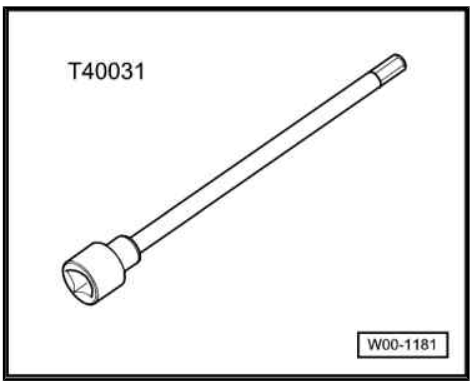
- Removal lever -80 - 200-



- Diagnostic tester, e.g. vehicle diagnostic, testing and information system -VAS 5051B-

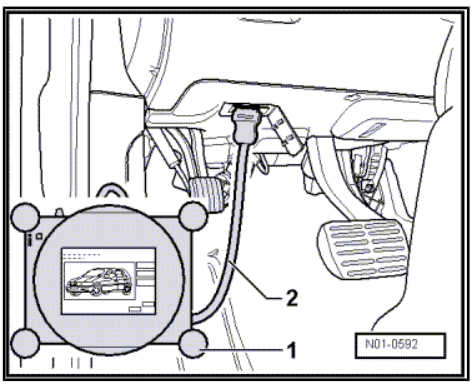


- Socket and key -T40031-



Procedure

- “Guided Fault Finding” using the diagnostic tester has been completed.
- Diagnostic tester connected up; `Vehicle self-diagnosis`, `02 - Gearbox electronics`, `Measured values`, `Display group 2` selected.



Compare position of selector lever cable with position of multi-function switch -F125- :

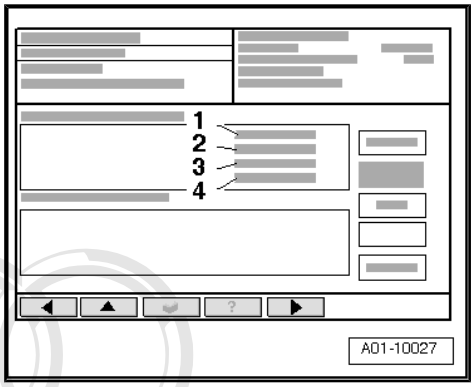
– Compare display in zone -1- with position on selector lever, with selector lever position display -Y26- (on selector mechanism) and with selector lever position display -Y6- (on instrument cluster).

• The displays should match

If the displays do not match:

– Adjust selector lever cable ⇒ page 65 .

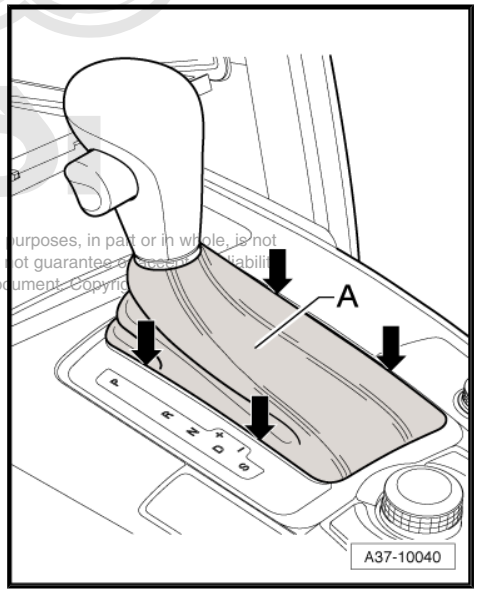
If the displays cannot be matched by adjusting the selector lever cable:



Adjust selector lever cable to basic setting:

– Unclip retaining frame for selector lever boot -1- from centre console and lift off -arrows-.

– Shift selector lever to position “D”.



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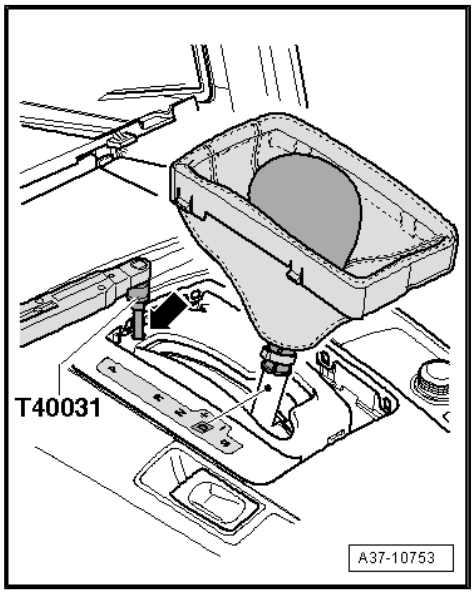
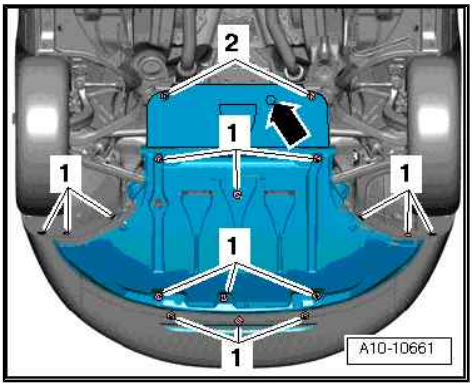
– Insert socket and key -T40031- through access hole -arrow- in selector mechanism and slacken bolt on selector lever cable approx. one turn.



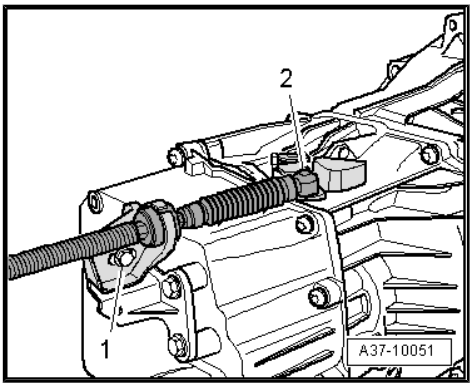
Note

- *Only loosen clamping bolt – do not remove.*
- *Clamping bolt can only be accessed with selector lever in position “D”.*
- *With clamping bolt loosened, selector lever must remain in position “D”.*

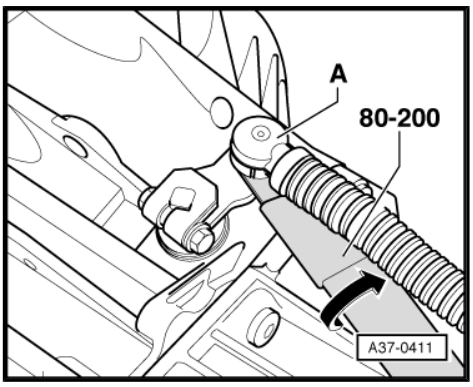
– Remove noise insulation panels ⇒ General body repairs, exterior; Rep. Gr. 50 .



– Unscrew bolt -1- from support bracket for selector lever cable.



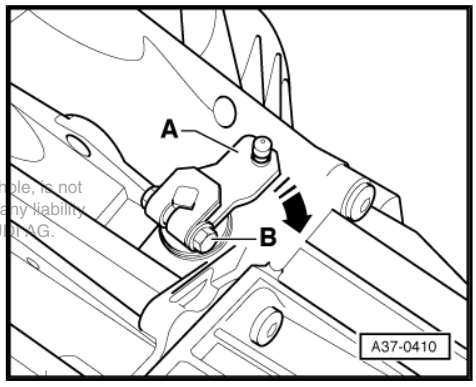
– Use removal lever -80 - 200- to pry ball socket -A- on selector lever cable off gearbox selector lever.



Note

Do not bend or kink the selector lever cable.

– Press gearbox selector lever -A- on gearbox to rear as far as it will go -arrow- until parking lock engages.



Note

When the parking lock has engaged it should no longer be possible to rotate both front wheels in one direction at the same time.

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– Then push gearbox selector lever forward three notches so that gearbox is in position “D”.

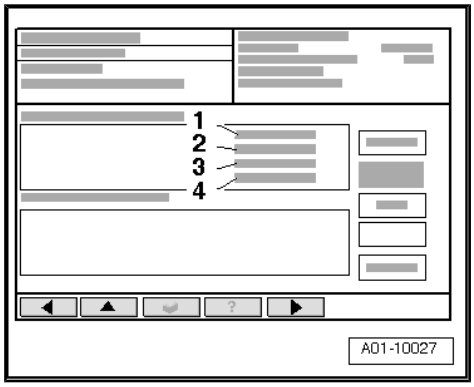
– Check that selector lever is also in position “D” inside the vehicle.

• Diagnostic tester connected up; `Vehicle self-diagnosis`, `02 - Gearbox electronics`, `Measured values`, `Display group 2` selected.

Compare position of selector lever cable with position of multi-function switch -F125- :

– Compare display in zone -1- with position on selector lever, with selector lever position display -Y26- (on selector mechanism) and with selector lever position display -Y6- (on instrument cluster).

• The displays should match

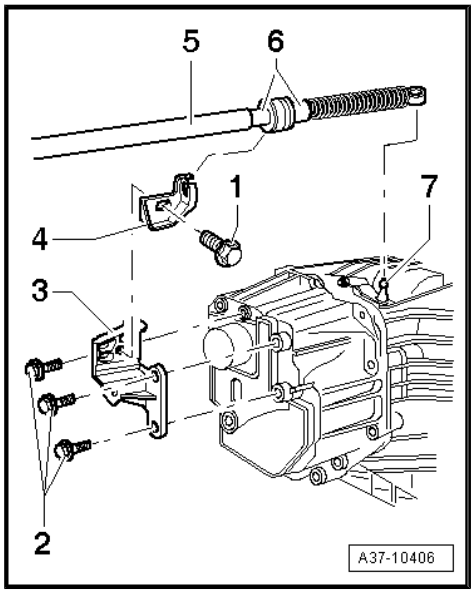


Note

◆ *Do not bend or kink the selector lever cable.*

◆ *Before installing, lightly grease cable eye and ball socket on selector lever cable with polycarbamide grease -G 052 142 A2- .*

– Carefully press ball socket -5- of selector lever cable onto gearbox selector lever -7- in this position.



Note

Take care not to bend gearbox selector lever when pressing on cable; support lever if necessary, as otherwise selector mechanism can no longer be adjusted accurately.

– Fit cable support bracket -4- to bracket at rear of gearbox.

– Adjust selector lever cable ⇒ page 65 .

– Check selector mechanism ⇒ page 18 .

Tightening torques
⇒ “4.11 Exploded view - selector lever cable (vehicles from 11.2005 onwards)”, page 58

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5 Removing and installing gearbox

Overview:

- ⇒ “5.1 Removing gearbox - vehicles with 2.0 ltr. TFSI engine”, page 71
- ⇒ “5.2 Installing gearbox - vehicles with 2.0 ltr. TFSI engine”, page 76
- ⇒ “5.3 Removing gearbox - vehicles with 2.4 ltr. MPI or 2.8 ltr./ 3.2 ltr. FSI engine”, page 78
- ⇒ “5.4 Installing gearbox - vehicles with 2.4 ltr. MPI or 2.8 ltr./ 3.2 ltr. FSI engine”, page 84
- ⇒ “5.5 Removing gearbox - vehicles with 3.0 ltr. MPI engine”, page 86
- ⇒ “5.6 Installing gearbox - vehicles with 3.0 ltr. MPI engine”, page 96
- ⇒ “5.7 Removing gearbox - vehicles with 2.0 ltr. TDI engine (unit injector and common rail)”, page 98
- ⇒ “5.8 Installing gearbox - vehicles with 2.0 ltr. TDI engine (unit injector and common rail)”, page 103

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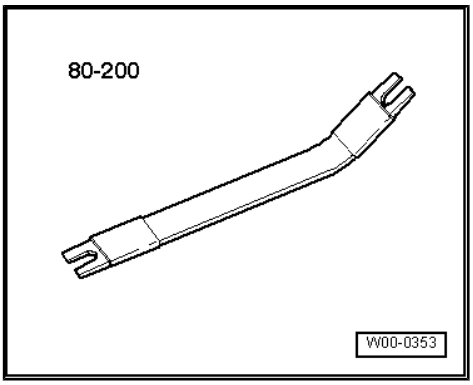
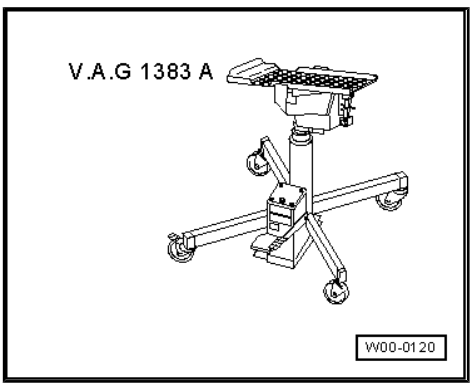
5.1 Removing gearbox - vehicles with 2.0 ltr. TFSI engine

Special tools and workshop equipment required

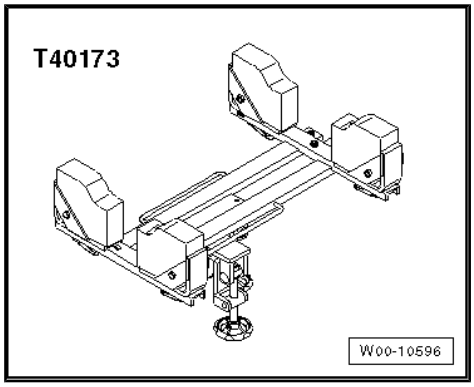
- Removal lever -80 - 200-



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



♦ Gearbox support -T40173-



Procedure

- Lock carrier and torque reaction support installed.

Note

All cable ties which are released or cut open during removal must be fitted in the same position when installing.

Caution

Follow steps required when disconnecting battery ⇒ Electrical system; Rep. Gr. 27 .

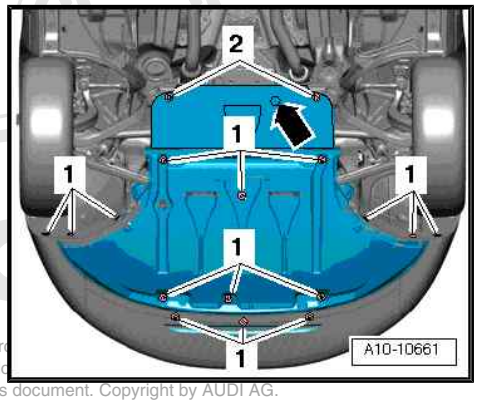
– Switch off ignition.

Note

The ignition key must be left in the ignition lock when disconnecting the battery so that the front wheels can be turned after the battery has been disconnected.

– Disconnect battery ⇒ Electrical system; Rep. Gr. 27 .

– Remove noise insulation panels ⇒ General body repairs, exterior; Rep. Gr. 50 .



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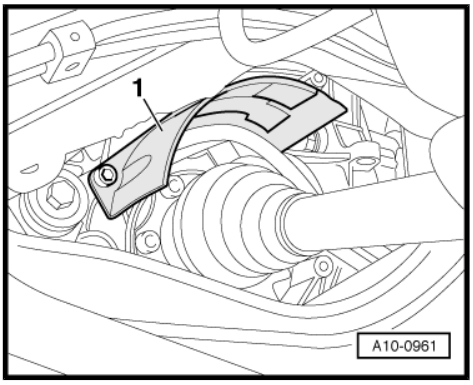
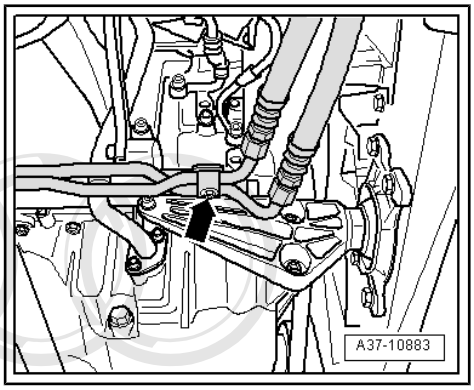
– Remove heat shield -1- for drive shaft (right-side).
– Unbolt drive shafts (left and right) from gearbox flange shafts.



– Unbolt brackets for ATF pipes -arrow-.



Note

- *Observe rules for cleanliness when working on automatic gearbox ⇒ page 10 .*
- *Place a cloth below the connection to catch escaping ATF.*

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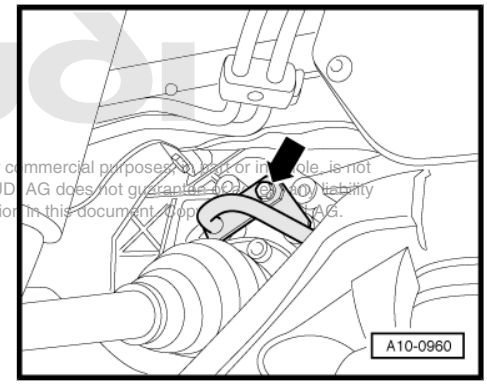
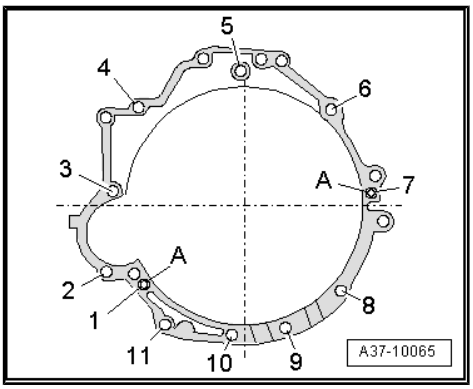
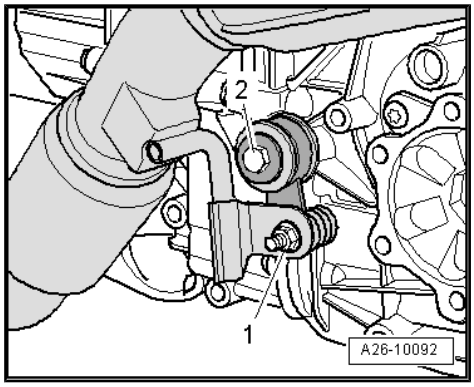
– Unscrew bolt -arrow- and detach ATF pipes from gearbox.



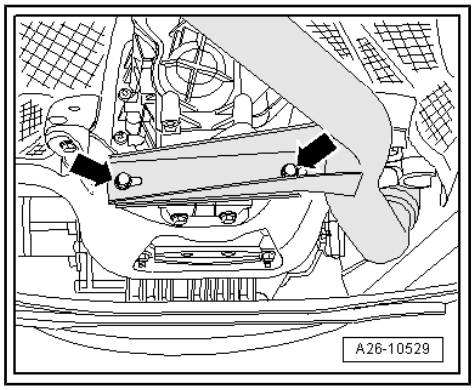
– Remove bolts -8 … 11- securing gearbox to engine.



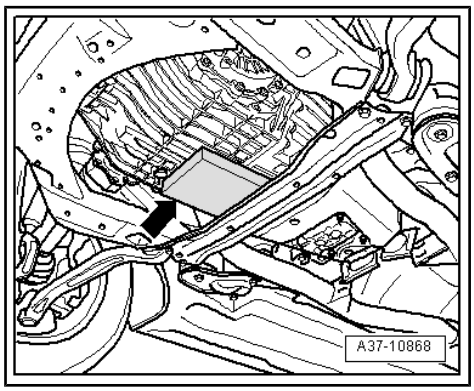
– Remove bolts -1- and -2- and detach right bracket for turbocharger.



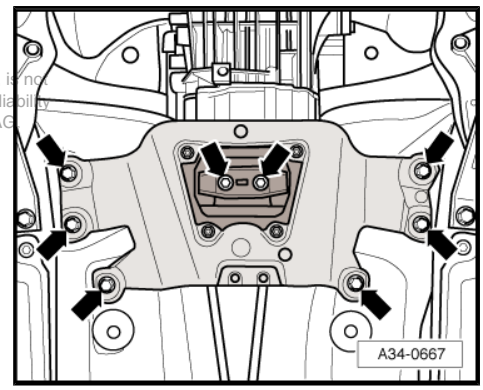
– Remove bolts -arrows- on rear bracket for front exhaust pipe.



– Position wooden block (approx. 30 mm thick) -arrow- between gearbox and cross piece for subframe, as shown in illustration.



– Remove bolts -arrows- and detach tunnel cross member.



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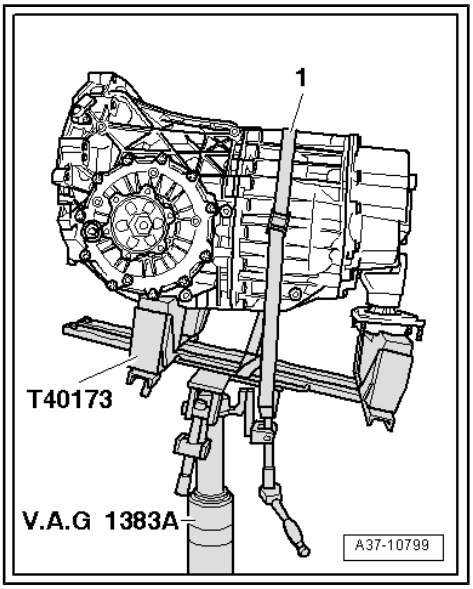
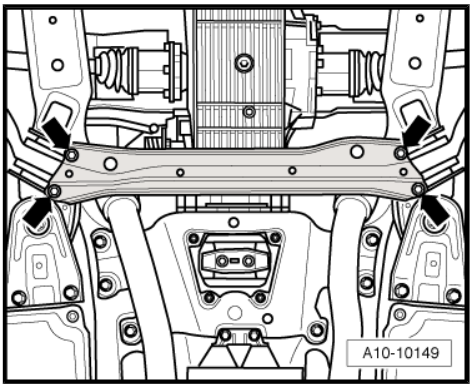
– Position engine and gearbox jack -V.A.G 1383 A- with gearbox support -T40173- underneath gearbox and secure with tensioning strap -1- as shown in illustration.



– Unbolt cross piece from subframe -arrows-.

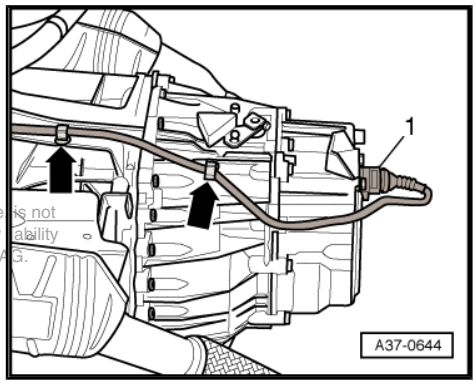
– Lower gearbox with engine and gearbox jack -V.A.G 1383 A- until bolts (top) securing gearbox to engine are accessible from rear.



Caution

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

- ***Before handling the electrical connector, the mechanic must discharge static by briefly touching an earthed metal object, such as vehicle earth, lifting platform or heater radiator, etc.***
- ***Do not touch contact pins in gearbox connector with bare hands.***



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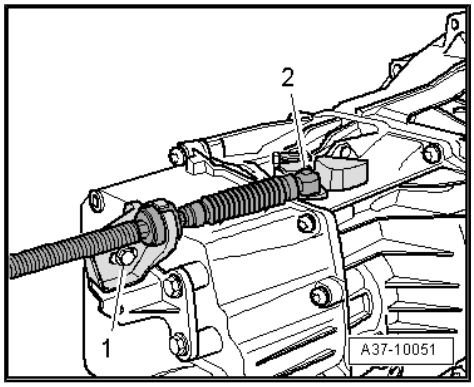
– Release electrical connector -1- and detach from gearbox.

– Move wiring harness to engine clear -arrows-.

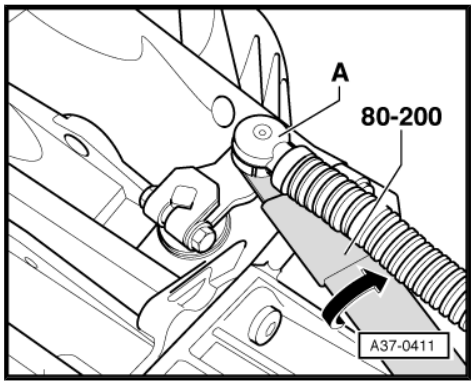
Note

For illustration purposes here shown with gearbox removed.

– Mark installation position of support bracket for selector lever cable.
– Unscrew bolt -1- from support bracket for selector lever cable.



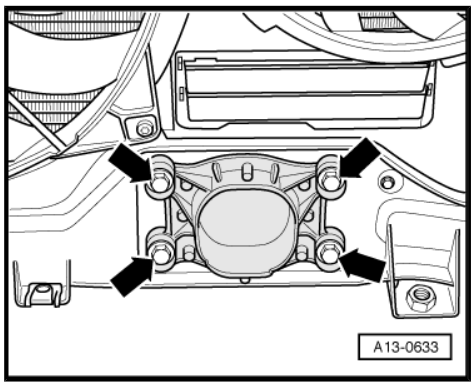
– Use removal lever -80 - 200- to pry ball socket -A- on selector lever cable off gearbox selector lever.



Note

Do not bend or kink the selector lever cable.

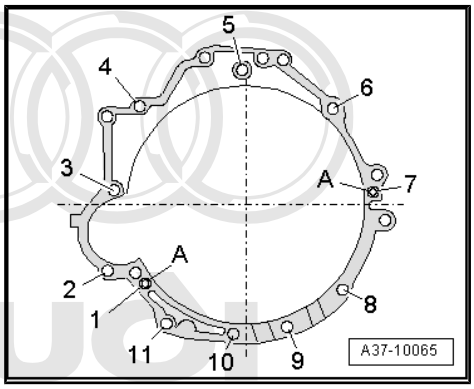
– Slacken bolts -arrows- at stop for torque reaction support.
– Press up stop for torque reaction support and re-tighten bolts to 23 Nm.



Note

Adjusting the stop for torque reaction support prevents the engine from tilting at the front after the gearbox is removed.

– Remove bolts -1 … 7- securing gearbox to engine.
– Detach gearbox from engine and lower carefully using engine and gearbox jack -V.A.G 1383 A- .



Note

Do not remove starter.

5.2 Installing gearbox - vehicles with 2.0 ltr. TFSI engine

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Tightening torques: ⇒ page 78

Note

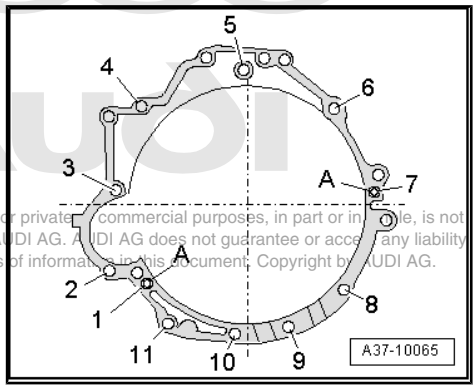
- *Before fitting a replacement gearbox, always clean the ATF pipes and ATF cooler ⇒ page 126 and renew the additional ATF filter ⇒ page 128 .*
- *Renew self-locking nuts and bolts when performing assembly work.*
- *Renew oil seals, gaskets, O-rings and bolts which are tightened by turning through a specified angle.*
- *Secure all hose connections with the correct hose clips (as original equipment); refer to ⇒ Electronic parts catalogue .*
- *Re-attach all cable ties at the same locations when re-installing.*

– Clean gearbox input shaft splines and damper unit splines on flywheel. Remove corrosion and apply only a very thin coating of grease for clutch plate splines -G 000 100- to the splines. It is important to remove excess grease.

– Check that dowel sleeves -A- for centralising engine/gearbox are in the cylinder block; install any missing dowel sleeves.

– Before installing gearbox, tie electrical wiring off to one side so that it cannot be trapped between the engine and the gearbox.

– Fit support bracket for selector lever cable according to marking on bracket at rear of gearbox.



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– Raise gearbox carefully and move to installation position using gearbox support -T40173- .

– Bolt gearbox onto engine.

– Install cross piece for subframe ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. Gr. 40 .

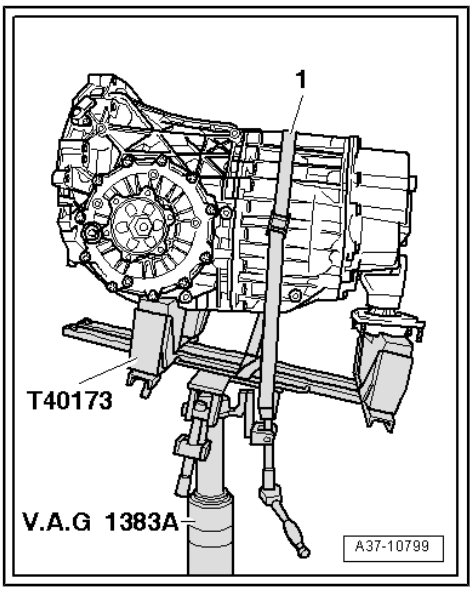
– Install tunnel cross member ⇒ page 110 .

– Install ATF pipes with new O-rings ⇒ page 122 .

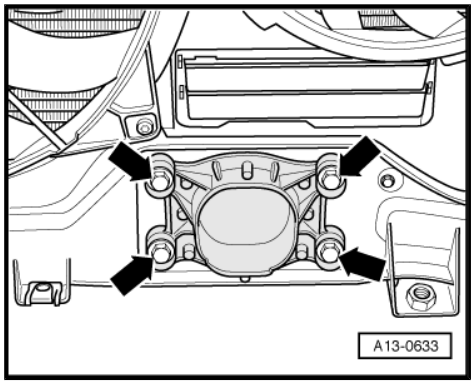
– Install selector lever cable ⇒ page 59 .

– Install front exhaust pipe and align exhaust system so it is free of stress ⇒ Engine, mechanics; Rep. Gr. 26

– Bolt drive shafts to flange shafts ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. Gr. 40 .



– Loosen bolts -arrows- for torque reaction support.
– Allow stop for torque reaction support to settle on rubber buffer for torque reaction support under its own weight and re-tighten bolts ⇒ Engine, mechanics; Rep. Gr. 10 .
– Electrical connections and routing ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.
– Follow steps required after connecting battery ⇒ Electrical system; Rep. Gr. 27 .
– Check selector lever cable adjustment ⇒ page 44 .
– Check oil level in front final drive ⇒ page 140 .
– Check and top up ATF level ⇒ page 113 .



Tightening torques

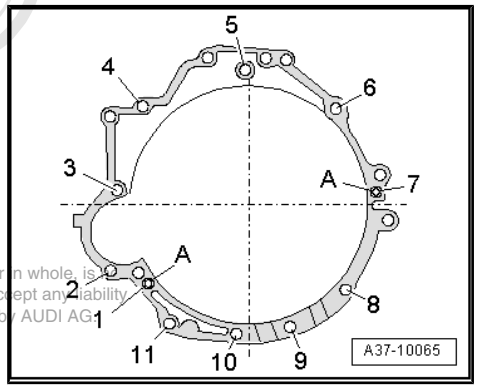
Note

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

Engine/gearbox securing bolts

Item	Bolt [1]	Nm
1	M12x67	65
2 [2]	M10x60	45
3 [2], 4, 5, 7	M12x75	65
6	M12x100	65
8 [3]	M10x50	45
9, 10, 11	M10x45	45
A	Dowel sleeves for centralising	

- [1] Renew bolts for securing gearbox to engine
- [2] Secures starter to gearbox
- [3] Bolt with nut



Component		Nm
Bolts/nuts	M6	9
	M8	20
	M10	40
	M12	65
Except for the following:		
Heat shield for drive shaft to gearbox		23

5.3 Removing gearbox - vehicles with 2.4 ltr. MPI or 2.8 ltr./3.2 ltr. FSI engine

Special tools and workshop equipment required

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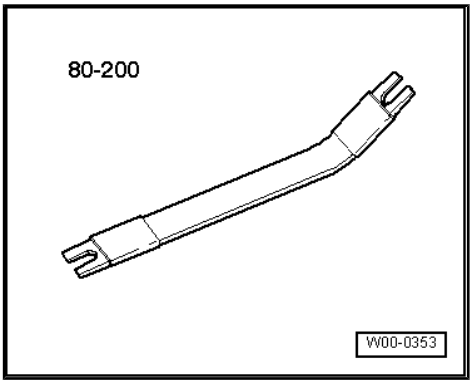
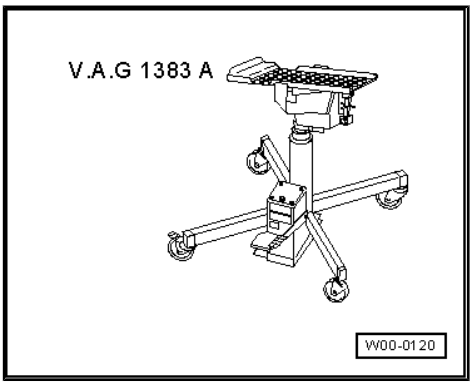
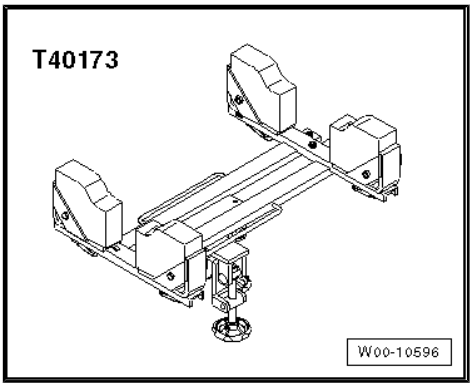
- Removal lever -80 - 200-



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



- Gearbox support -T40173-



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Procedure

- Lock carrier and torque reaction support installed.

Note

All cable ties which are released or cut open during removal must be fitted in the same position when installing.

Caution

Follow steps required when disconnecting battery ⇒ Electrical system; Rep. Gr. 27 .

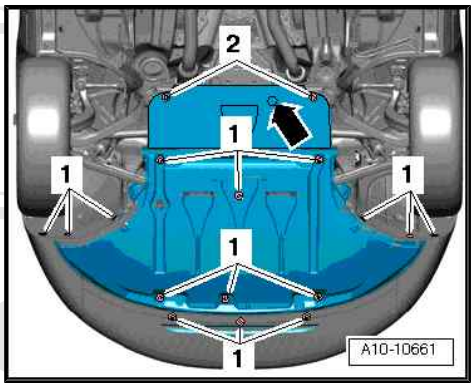
– Switch off ignition.

Note

The ignition key must be left in the ignition lock when disconnecting the battery so that the front wheels can be turned after the battery has been disconnected.

– Disconnect battery ⇒ Electrical system; Rep. Gr. 27 .

– Remove noise insulation panels ⇒ General body repairs, exterior; Rep. Gr. 50 .



– Unbolt heat shields -arrow- for drive shafts (left and right).

– Unbolt drive shafts (left and right) from gearbox flange shafts.

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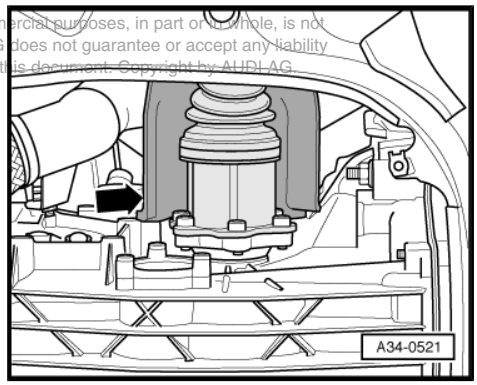
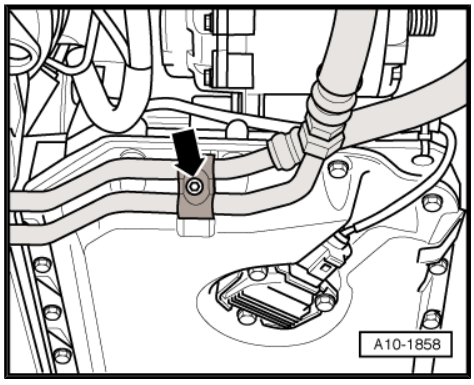
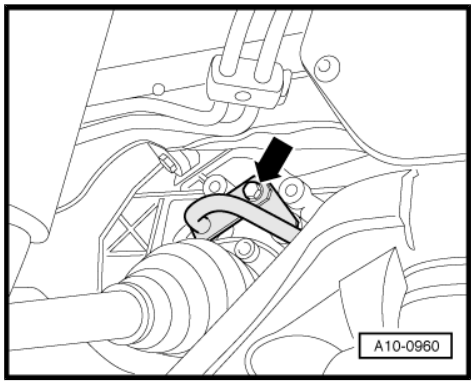


– Unbolt bracket for ATF pipes -arrow-.

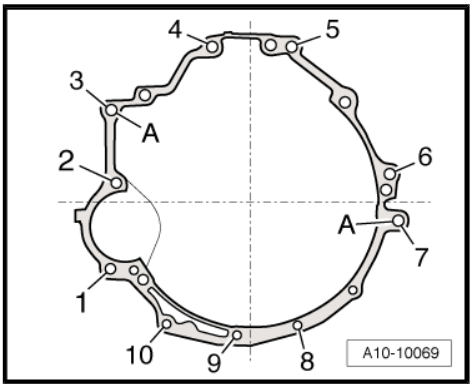


Note

- *Observe rules for cleanliness when working on automatic gearbox ⇒ page 10 .*
- *Place a cloth below the connection to catch escaping ATF.*



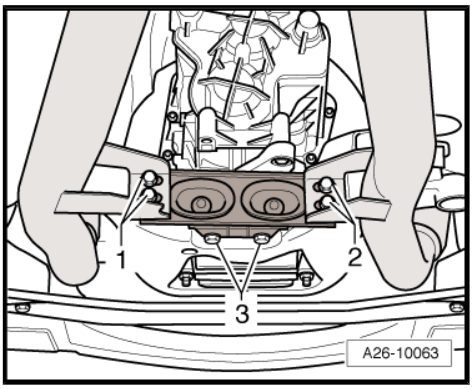
– Remove bolts -8 … 10- securing gearbox to engine.



Note

The flexible pipe connection (de-coupling element) on the front exhaust pipe must not be bent more than 10° – otherwise it can be damaged.

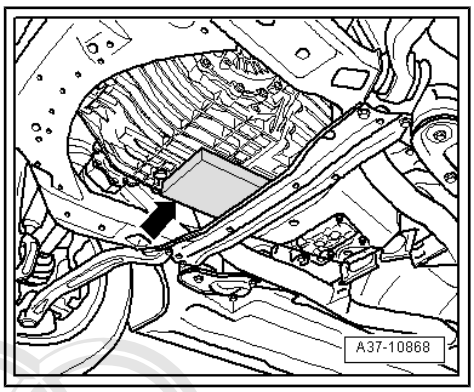
– Remove bolts -2- at bracket for front exhaust pipe.



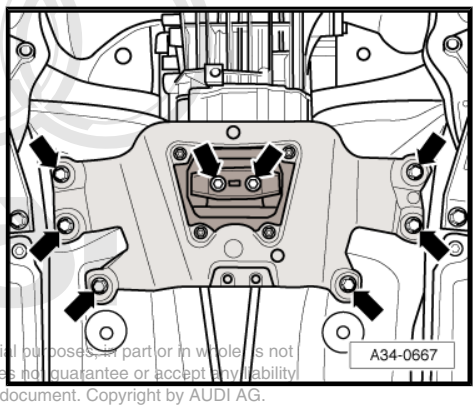
Note

-Items 1 and 3- can be disregarded.

– Position wooden block (approx. 30 mm thick) -arrow- between gearbox and cross piece for subframe, as shown in illustration.



– Remove bolts -arrows- for tunnel cross member.



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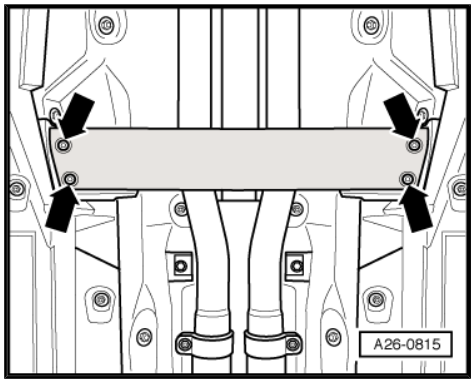
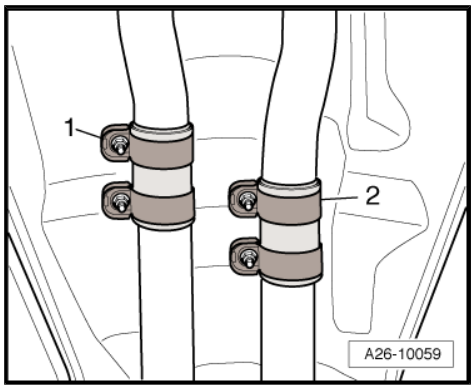
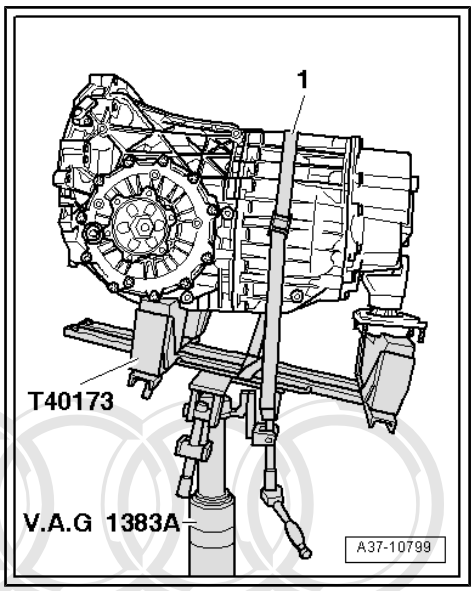
– Remove front cross piece -arrows-.



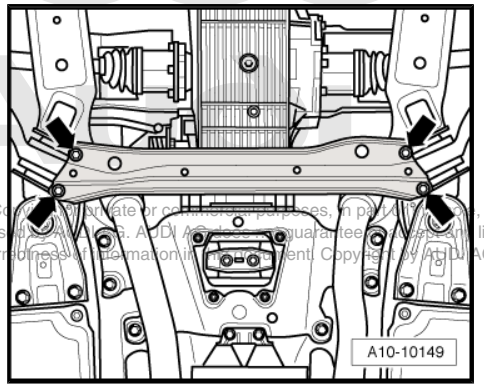
– Loosen clamps -1- and -2-.
– Lower catalytic converters with front silencers at rear and have a second mechanic detach tunnel cross member.
– Secure catalytic converters and front silencers using clamps.



– Position engine and gearbox jack -V.A.G 1383 A- with gearbox support -T40173- underneath gearbox and secure with tensioning strap -1- as shown in illustration.



– Unbolt cross piece from subframe -arrows-.
– Lower gearbox with engine and gearbox jack -V.A.G 1383 A- until bolts (top) securing gearbox to engine are accessible from rear.



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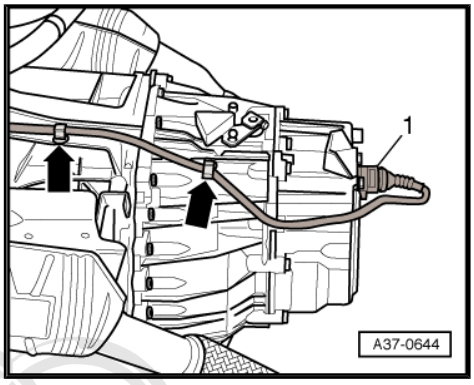
Caution

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

- *Before handling the electrical connector, the mechanic must discharge static by briefly touching an earthed metal object, such as vehicle earth, lifting platform or heater radiator, etc.*
- *Do not touch contact pins in gearbox connector with bare hands.*

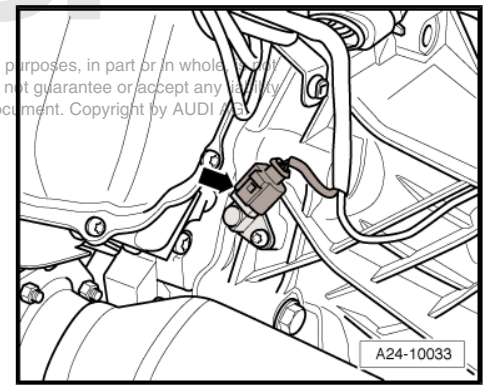


– Release electrical connector -1- and detach from gearbox.
– Move wiring harness to engine clear -arrows-.

Note

For illustration purposes here shown with gearbox removed.

– Unplug electrical connector -arrow- for engine speed sender - G28- .



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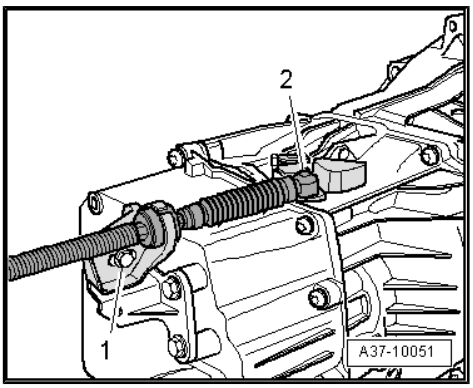
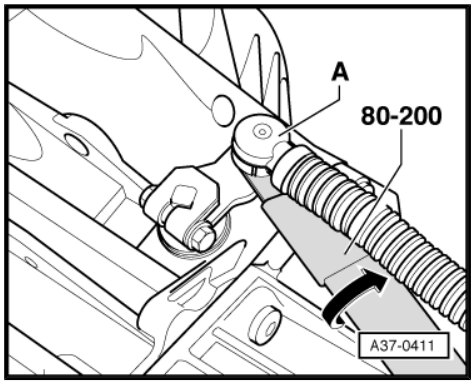
– Mark installation position of support bracket for selector lever cable.
– Unscrew bolt -1- from support bracket for selector lever cable.



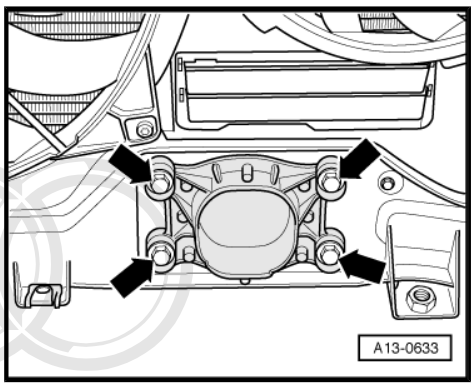
– Use removal lever -80 - 200- to pry ball socket -A- on selector lever cable off gearbox selector lever.



Note

Do not bend or kink the selector lever cable.

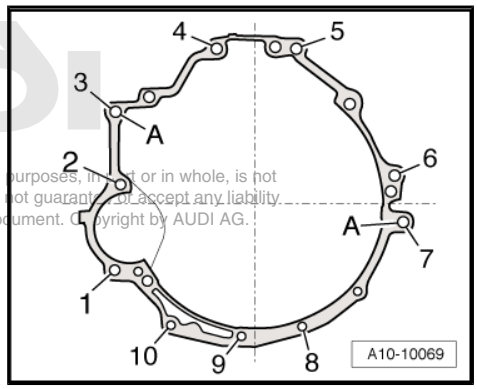
– Slacken bolts -arrows- at stop for torque reaction support.
– Press up stop for torque reaction support and re-tighten bolts to 23 Nm.



Note

Adjusting the stop for torque reaction support prevents the engine from tilting at the front after the gearbox is removed.

– Remove bolts -1 … 7- securing gearbox to engine.
– Detach gearbox from engine and lower carefully using engine and gearbox jack -V.A.G 1383 A- .



Note

Do not remove starter.

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5.4 Installing gearbox - vehicles with 2.4 ltr. MPI or 2.8 ltr./3.2 ltr. FSI engine

Tightening torques: ⇒ page 86

Note

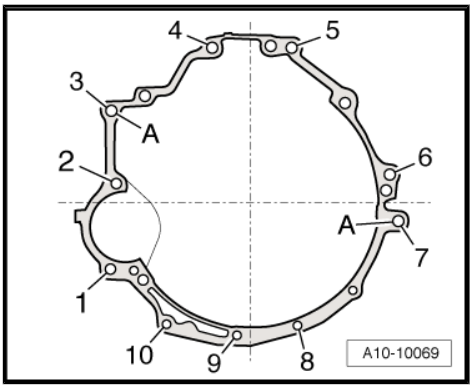
- *Before fitting a replacement gearbox, always clean the ATF pipes and ATF cooler ⇒ page 126 and renew the additional ATF filter ⇒ page 128 .*
- *Renew self-locking nuts and bolts when performing assembly work.*
- *Renew oil seals, gaskets, O-rings and bolts which are tightened by turning through a specified angle.*
- *Secure all hose connections with the correct hose clips (as original equipment); refer to ⇒ Electronic parts catalogue .*
- *Re-attach all cable ties at the same locations when re-installing.*

– Clean gearbox input shaft splines and damper unit splines on flywheel. Remove corrosion and apply only a very thin coating of grease for clutch plate splines -G 000 100- to the splines. It is important to remove excess grease.

– Check that dowel sleeves -A- for centralising engine/gearbox are in the cylinder block; install any missing dowel sleeves.

– Before installing gearbox, tie electrical wiring off to one side so that it cannot be trapped between the engine and the gearbox.

– Fit support bracket for selector lever cable according to marking on bracket at rear of gearbox.



– Raise gearbox carefully and move to installation position using gearbox support -T40173- .

– Bolt gearbox onto engine.

– Install cross piece for subframe ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. Gr. 40 .

– Install tunnel cross member ⇒ page 110 .

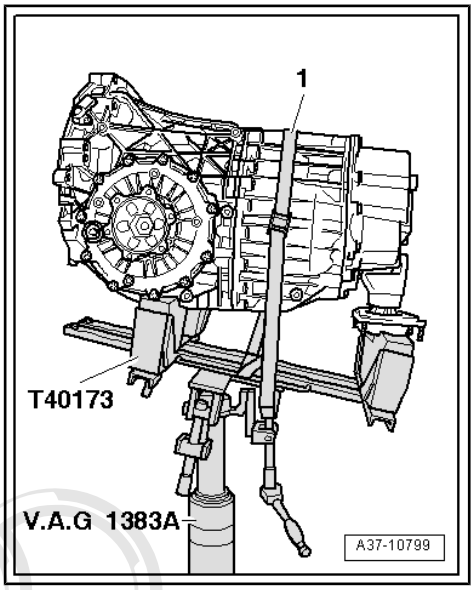
– Install ATF pipes with new O-rings ⇒ page 122 .

– Install selector lever cable ⇒ page 59 .

– Install front exhaust pipes and align exhaust system so it is free of stress ⇒ Engine, mechanics; Rep. Gr. 26

– Install front cross piece ⇒ General body repairs, exterior; Rep. Gr. 50 .

– Bolt drive shafts to flange shafts ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. Gr. 40 .



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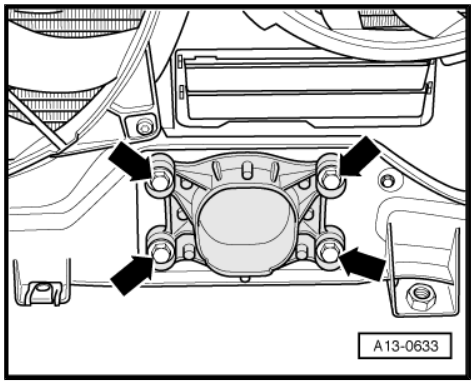
– Loosen bolts -arrows- for torque reaction support.
– Allow stop for torque reaction support to settle on rubber buffer for torque reaction support under its own weight and re-tighten bolts ⇒ Engine, mechanics; Rep. Gr. 10 .
– Electrical connections and routing ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.
– Follow steps required after connecting battery ⇒ Electrical system; Rep. Gr. 27 .
– Check selector lever cable adjustment ⇒ page 44 .
– Check oil level in front final drive ⇒ page 140 .
– Check and correct ATF level ⇒ page 113 .



Tightening torques

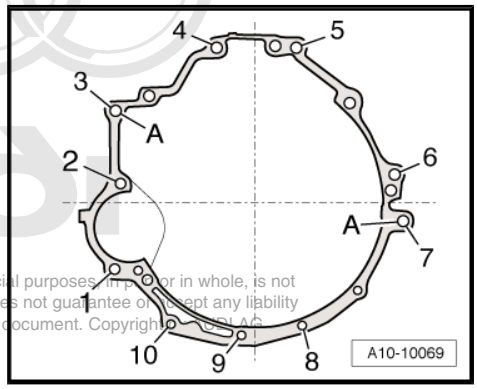
Note

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

Engine/gearbox securing bolts

Item	Bolt [1]	Nm
1	M12x67	65
2 [2]	M10x60	45
3 [2], 4, 5, 7 [3]	M12x75	65
6	M12x100	65
8	M10x50	45
9, 10, 11	M10x45	45
A	Dowel sleeves for centralising	

- [1] Renew bolts for securing gearbox to engine
- [2] Secures starter to gearbox
- [3] Bolt with nut



Component		Nm
Bolts/nuts	M6	9
	M8	20
	M10	40
	M12	65
Except for the following:		
Heat shield for drive shaft to gearbox		23

5.5 Removing gearbox - vehicles with 3.0 ltr. MPI engine

Special tools and workshop equipment required

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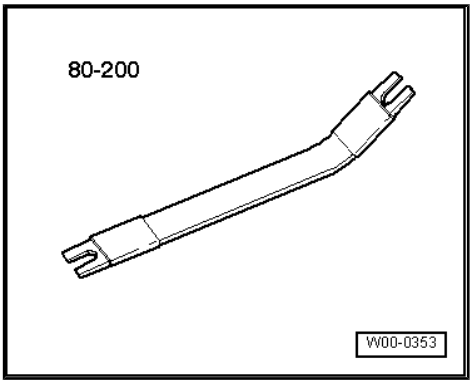
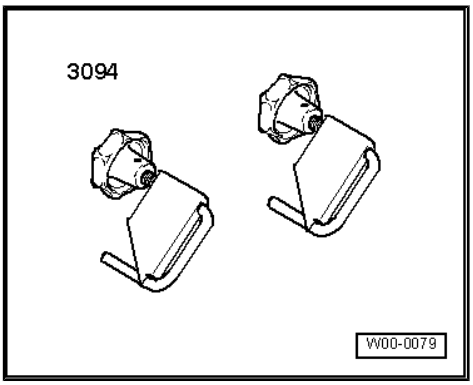
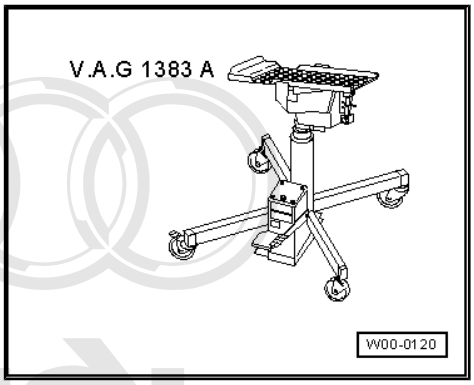
- Removal lever -80 - 200-



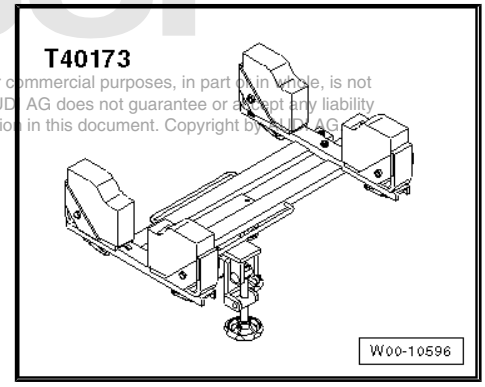
- Hose clamps, up to 25 mm -3094-



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



- Gearbox support -T40173-



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Procedure

- Lock carrier and torque reaction support installed.

Note

All cable ties which are released or cut open during removal must be fitted in the same position when installing.

Caution

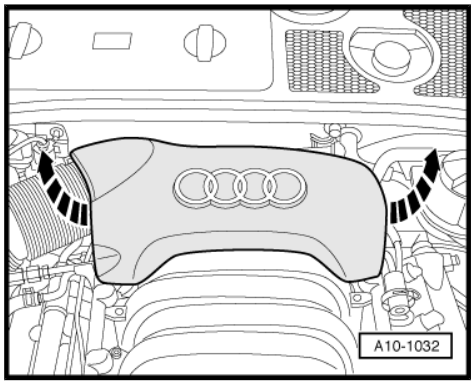
Follow steps required when disconnecting battery ⇒ Electrical system; Rep. Gr. 27 .

– Switch off ignition.

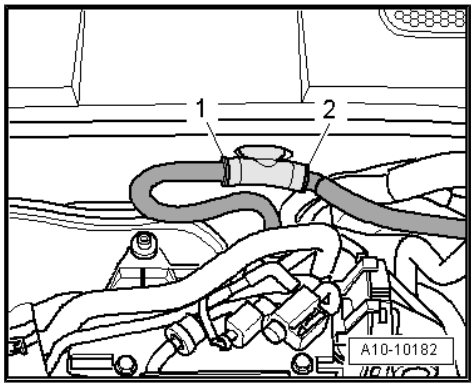
Note

The ignition key must be left in the ignition lock when disconnecting the battery so that the front wheels can be turned after the battery has been disconnected.

– Disconnect battery ⇒ Electrical system; Rep. Gr. 27 .
– Pull off rear engine cover panel -arrows-.



– Detach vacuum hoses -1- and -2- from T-connection at plenum chamber partition panel.



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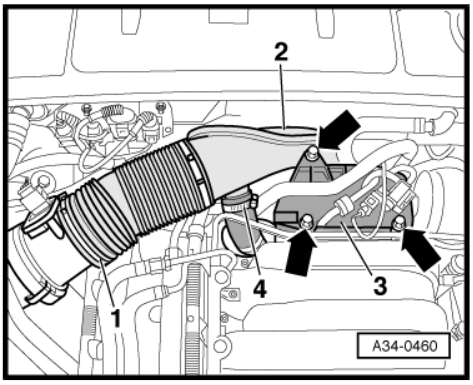
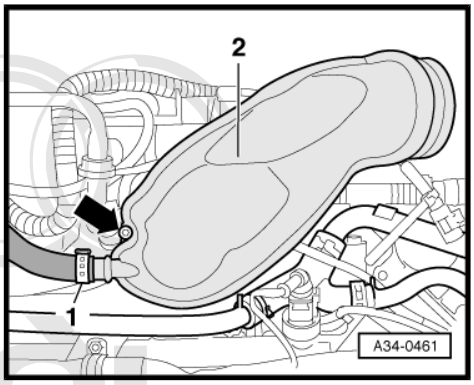
– Detach air intake hose -1- from air-mass meter -G70- .
– Remove bolts -arrows- from solenoid valve mounting plate -3-.
– Pull hose -4- off air duct -2-.



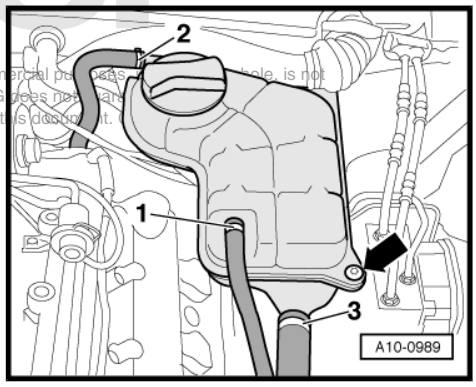
– Unscrew bolt -arrow- and detach air duct -2- from throttle valve module -J338- .
– If fitted, detach hose -1- from air duct.



Note

For illustration purposes, the air duct is shown from rear, with engine removed.

– Clamp off coolant hose -2- with a hose clamp -3094- .
– Detach coolant hose from coolant expansion tank and plug opening.
– Unbolt coolant expansion tank -arrow- and disconnect electrical connector from coolant shortage indicator switch -F66- at bottom of coolant expansion tank.
– Place coolant expansion tank to one side, leaving coolant hoses -1- and -3- connected.



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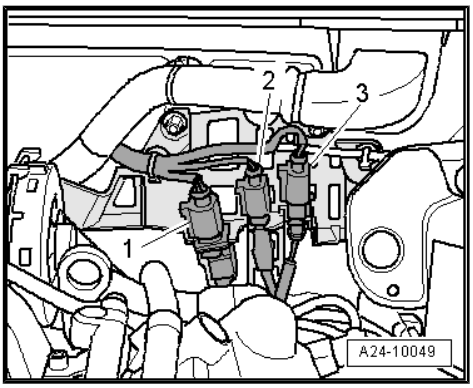
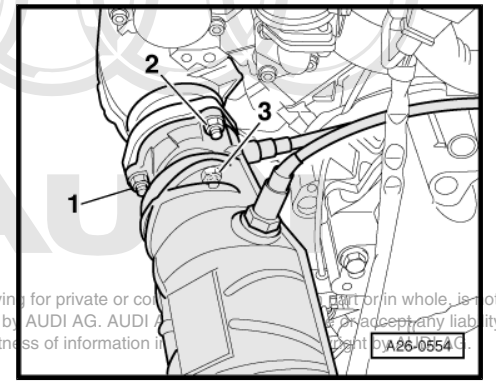
– Remove electrical connectors -1- and -3- from retainer on left side of plenum chamber partition panel and unplug connectors.
– Guide electrical wires to Lambda probes downwards.



Note

-Item 2- can be disregarded.

– Unscrew nut -2- (access from above), connecting left front exhaust pipe with exhaust manifold.



Note

For illustration purposes here shown from rear, with engine removed.

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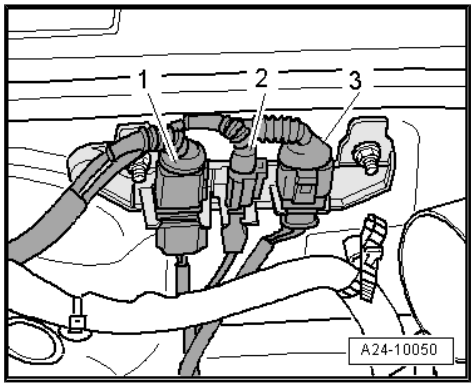
– Remove electrical connectors -1- and -3- from retainer on right side of plenum chamber partition panel and unplug connectors.

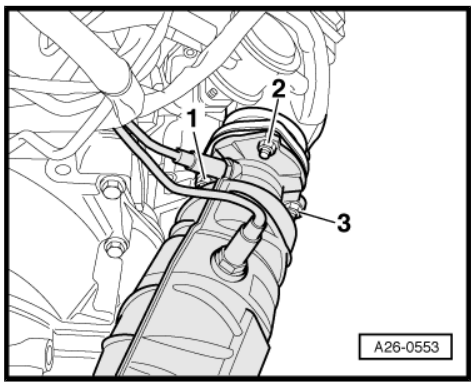
– Guide electrical wires to Lambda probes downwards.



Note

-Item 2- can be disregarded.

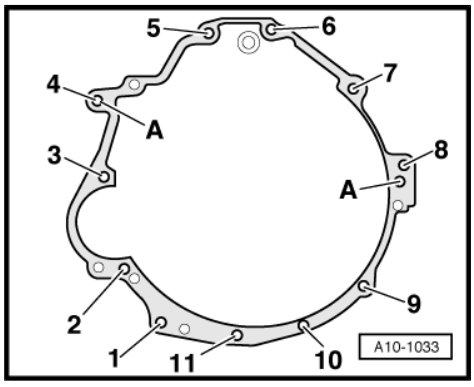
– Unscrew nut -2- (access from above), connecting right front exhaust pipe with exhaust manifold.



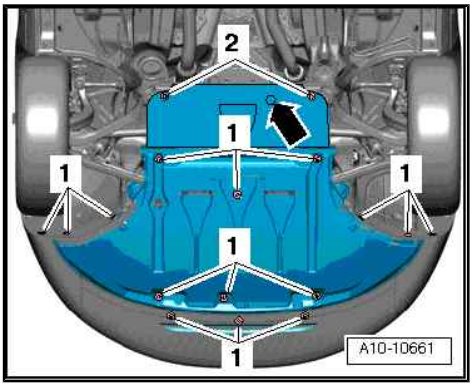
Note

For illustration purposes here shown from rear, with engine removed.

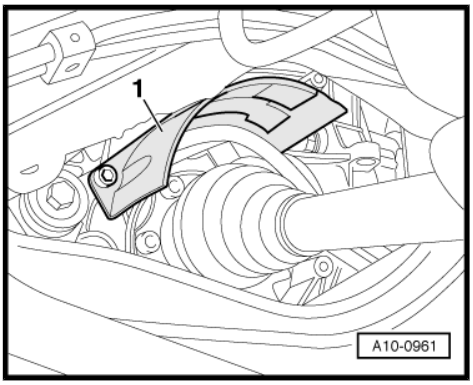
– Remove bolts -5- and -6- securing gearbox to engine.



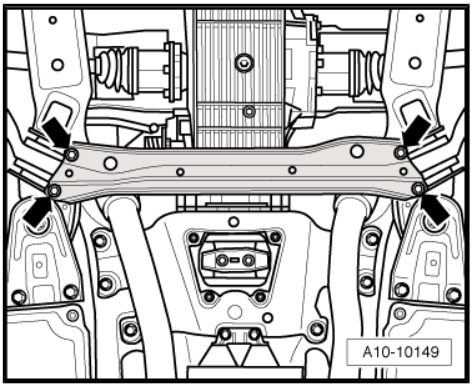
– Remove noise insulation panels ⇒ General body repairs, exterior; Rep. Gr. 50 .



– Unbolt heat shields -1- for drive shaft (left and right).
– Unbolt drive shafts (left and right) from gearbox flange shafts.



– Unbolt cross piece from subframe -arrows-.



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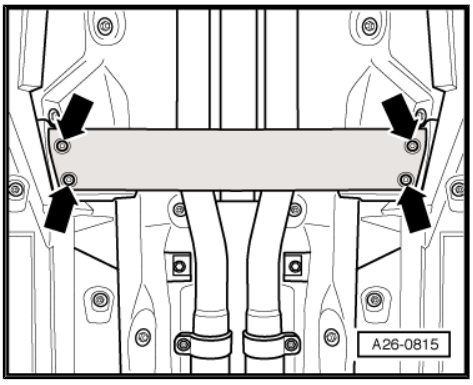
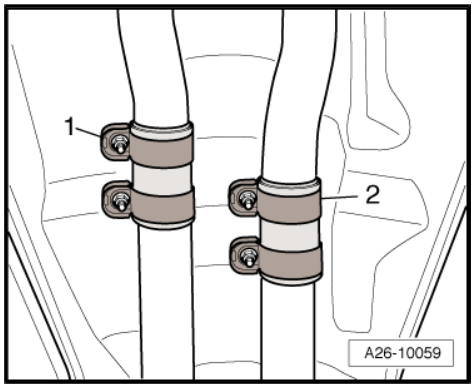
– Remove front cross piece -arrows-.



– Loosen clamps -1- and -2-.



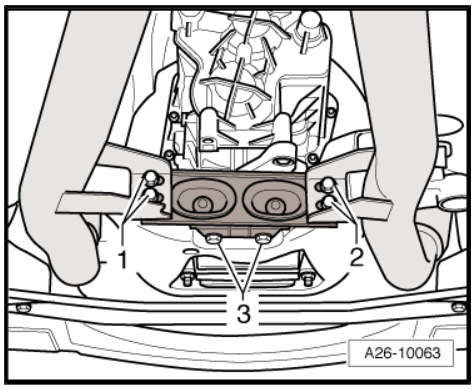
Note

To stabilise exhaust system, the clamps must first remain in their installation position; the front exhaust pipes remain inserted in clamps.

Note

The flexible pipe connection (de-coupling element) on the front exhaust pipe must not be bent more than 10° – otherwise it can be damaged.

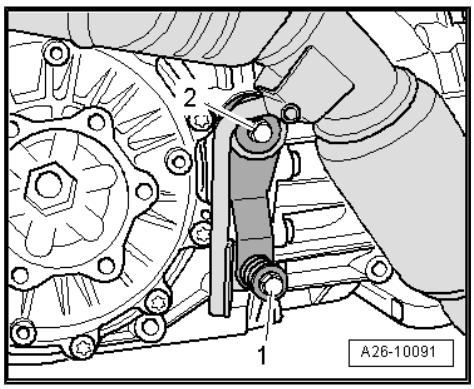
– Unscrew bolts -1- and -2- at rear bracket for front exhaust pipe.



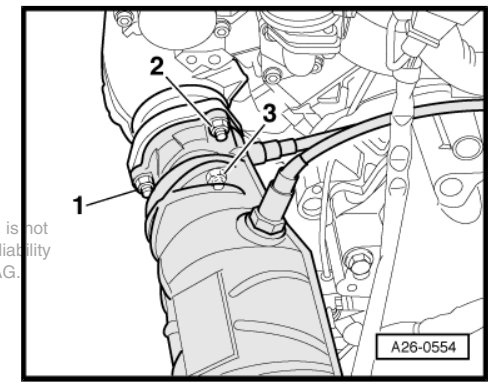
Note

-Item 3- can be disregarded.

– Remove bolts -1- and -2-.
– Detach bracket (left side) for front exhaust pipe.



– Move Lambda probe wiring clear.
– Unscrew nuts -1- and -3- (accessible from below) connecting front exhaust pipe to exhaust manifold on left side.



Note

For illustration purposes here shown with engine removed.

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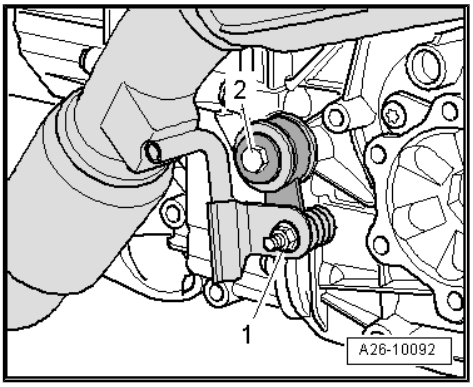
– Remove front exhaust pipe with catalytic converter.

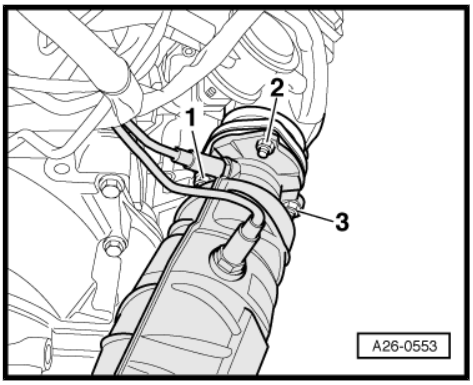
– Remove bolts -1- and -2-.
– Detach bracket (right side) for front exhaust pipe.



– Move Lambda probe wiring clear.
– Unscrew nuts -1- and -3- (accessible from below) connecting front exhaust pipe to exhaust manifold on right side.

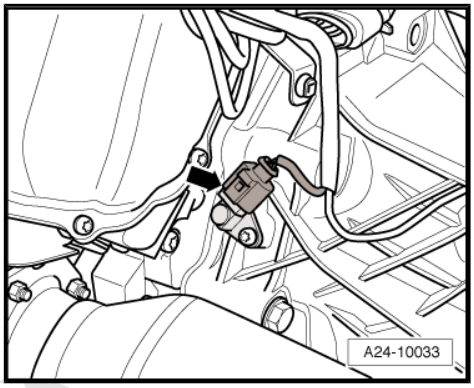
Note

For illustration purposes here shown with engine removed.

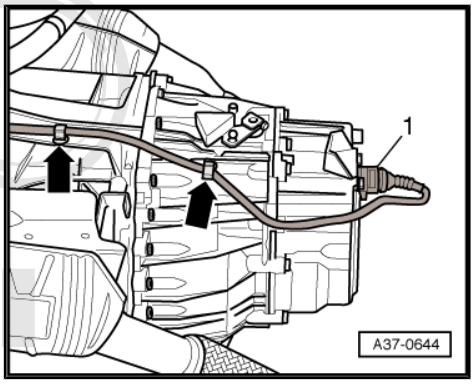


– Remove front exhaust pipe with catalytic converter.

– Unplug electrical connector -arrow- for engine speed sender - G28- .



– Release electrical connector -1- and detach from gearbox.
– Move wiring harness clear -arrows-.



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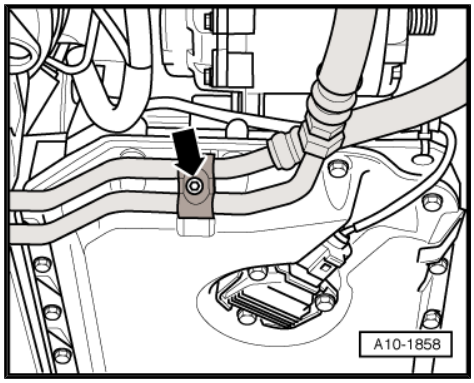
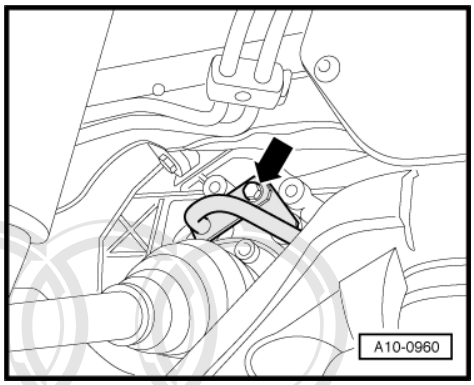
– Unbolt bracket for ATF pipe (right-side) on bottom section of sump -arrow-.



Note

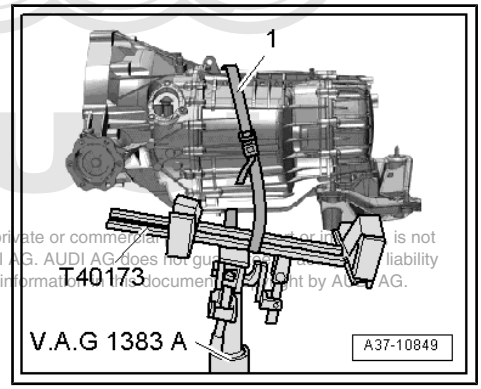
- *Observe rules for cleanliness when working on automatic gearbox ⇒ page 10 .*
- *Place a cloth below the connection to catch escaping ATF.*



– Unscrew bolt -arrow- and detach ATF pipes from gearbox.

– Tie up ATF pipes to one side.

– Position engine and gearbox jack -V.A.G 1383 A- with gearbox support -T40173- underneath gearbox and secure with tensioning strap -1- as shown in illustration.



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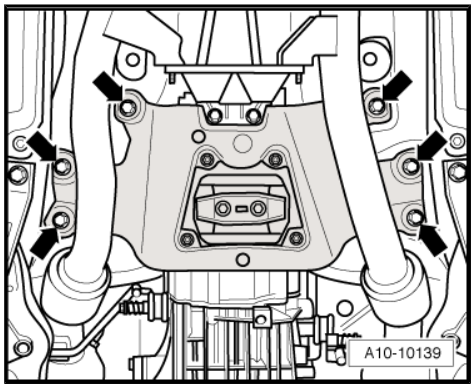
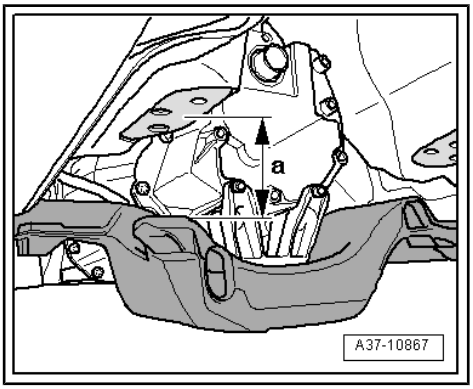
– Remove bolts -arrows- for tunnel cross member.



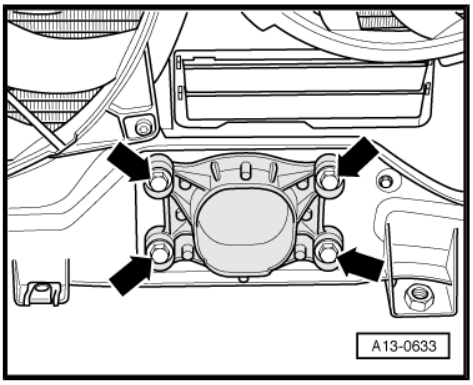
– Lower gearbox initially by dimension -a- using engine and gearbox jack -V.A.G 1383 A- .

• Dimension -a- = 60 mm.



– Slacken bolts -arrows- at stop for torque reaction support.

– Press up stop for torque reaction support and re-tighten bolts to 23 Nm.

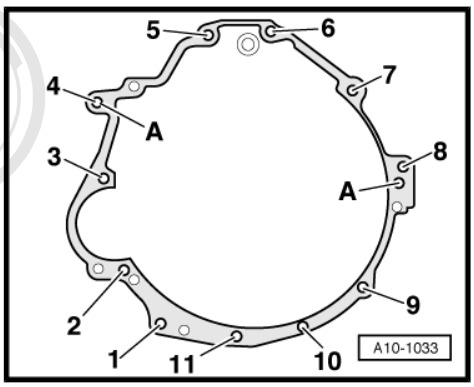


Note

Adjusting the stop for torque reaction support prevents the engine from tilting at the front after the gearbox is removed.

– Remove bolts -1 … 4- and -7 … 11-.

– Pull gearbox off dowel sleeves -A- and carefully lower gearbox far enough to be able to access selector lever cable.



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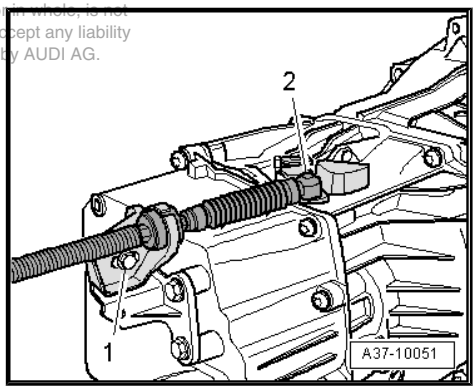
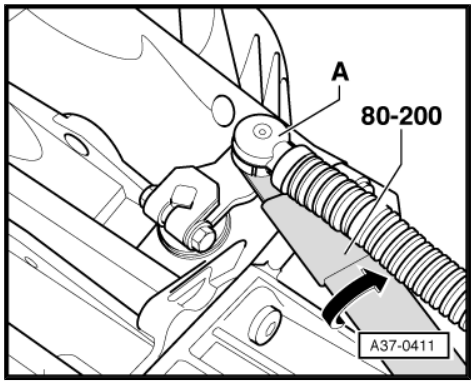
– Mark installation position of support bracket for selector lever cable.

– Unscrew bolt -1- from support bracket for selector lever cable.



– Use removal lever -80 - 200- to pry ball socket -A- on selector lever cable off gearbox selector lever.



Note

Do not bend or kink the selector lever cable.

– Keep lowering gearbox slowly.

– When lowering gearbox make sure there is sufficient clearance for drive shafts.

5.6 Installing gearbox - vehicles with 3.0 ltr. MPI engine

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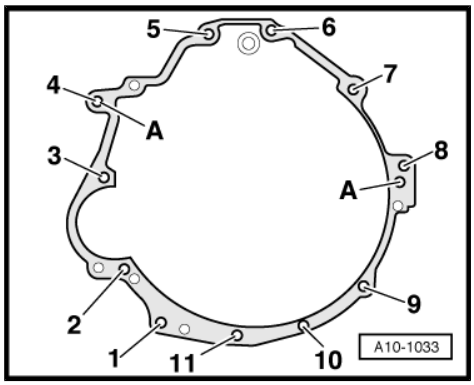
Tightening torques: ⇒ page 97

Note

- *Before fitting a replacement gearbox, always clean the ATF pipes and ATF cooler ⇒ page 126 and renew the additional ATF filter ⇒ page 128 .*
- *Renew self-locking nuts and bolts when performing assembly work.*
- *Renew oil seals, gaskets, O-rings and bolts which are tightened by turning through a specified angle.*
- *Secure all hose connections with the correct hose clips (as original equipment); refer to ⇒ Electronic parts catalogue .*
- *Re-attach all cable ties at the same locations when re-installing.*

– Clean gearbox input shaft splines and damper unit splines on flywheel. Remove corrosion and apply only a very thin coating of grease for clutch plate splines -G 000 100- to the splines. It is important to remove excess grease.

– Check that dowel sleeves -A- for centralising engine/gearbox are in the cylinder block; install any missing dowel sleeves.



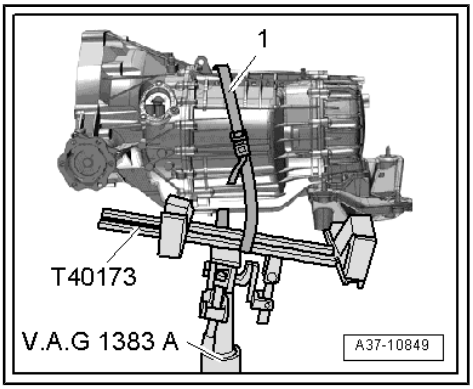
– Before installing gearbox, tie electrical wiring off to one side so that it cannot be trapped between the engine and the gearbox.

– Lift gearbox high enough to be able to install selector lever cable.

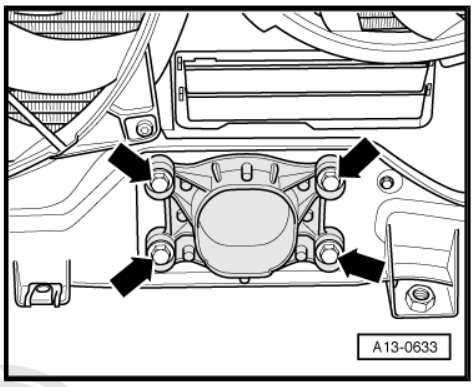
Note

- *Do not bend or kink the selector lever cable.*
- *Before installing, lightly lubricate ball socket on selector lever cable with polycarbamide grease -G 052 142 A2- .*

– Fit support bracket for selector lever cable according to marking on bracket at rear of gearbox.



- Raise gearbox carefully and move to installation position using gearbox support -T40173- .
- Bolt gearbox onto engine with new bolts.
- Raise the gearbox slightly at the rear to install the lower bolts for securing gearbox to engine.
- Install gearbox support ⇒ page 108 .
- Install tunnel cross member ⇒ page 110 .
- Install ATF pipes with new O-rings ⇒ page 122 .
- Install front exhaust pipes and align exhaust system so it is free of stress ⇒ Engine, mechanics; Rep. Gr. 26
- Install front cross piece ⇒ General body repairs, exterior; Rep. Gr. 50 .
- Install cross piece for subframe ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. Gr. 40 .
- Bolt drive shafts to flange shafts ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. Gr. 40 .



- Loosen bolts -arrows- for torque reaction support.
- Allow stop for torque reaction support to settle on rubber buffer for torque reaction support under its own weight and re-tighten bolts ⇒ Engine, mechanics; Rep. Gr. 10 .
- Electrical connections and routing ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.
- Follow steps required after connecting battery ⇒ Electrical system; Rep. Gr. 27 .
- Check selector lever cable adjustment ⇒ page 44 .
- Check oil level in front final drive ⇒ page 140 .
- Check and correct ATF level ⇒ page 113 .

Tightening torques

Note

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

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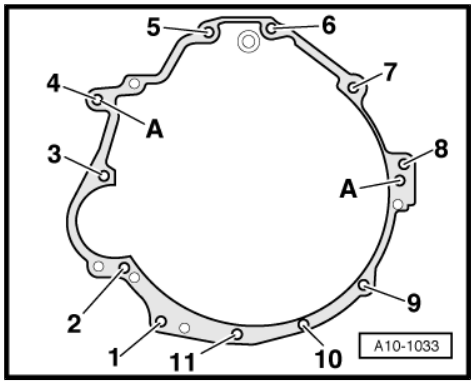
Engine/gearbox securing bolts



Item	Bolt [1]	Nm
1, 10, 11	M10x45	45
2 [2]	M10x80	65
3	M12x100	65
4, 8	M12x67	65
5, 6	M12x75	65
7	M10x90	45
9	M10x60	45
A	Dowel sleeves for centralising	

- [1] Renew bolts for securing gearbox to engine
- [2] Property class 10.9

Component		Nm
Bolts/nuts	M6	9
	M8	20
	M10	40
	M12	65
Except for the following:		
Heat shield for drive shaft to gearbox		23

5.7 Removing gearbox - vehicles with 2.0 ltr. TDI engine (unit injector and common rail)

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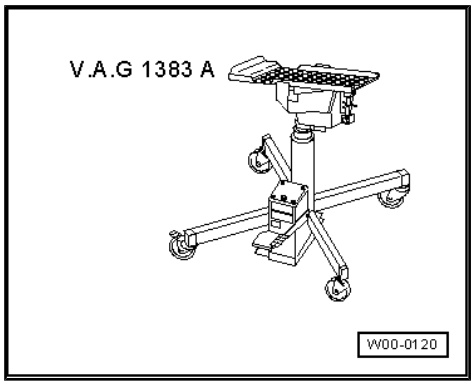
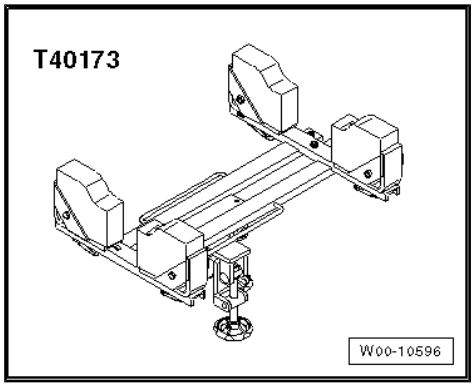
Special tools and workshop equipment required

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



- Gearbox support -T40173-



Procedure

- Lock carrier and torque reaction support installed.

Note

All cable ties which are released or cut open during removal must be fitted in the same position when installing.

Caution

Follow steps required when disconnecting battery ⇒ Electrical system; Rep. Gr. 27 .

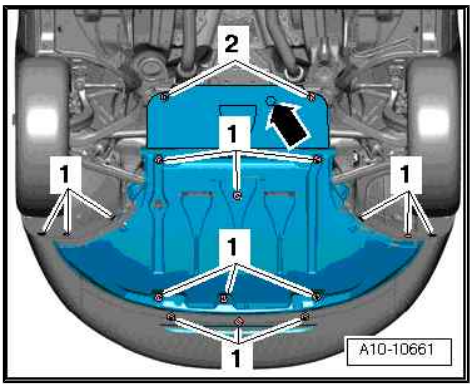
– Switch off ignition.

Note

The ignition key must be left in the ignition lock when disconnecting the battery so that the front wheels can be turned after the battery has been disconnected.

– Disconnect battery ⇒ Electrical system; Rep. Gr. 27 .

– Remove noise insulation panels ⇒ General body repairs, exterior; Rep. Gr. 50 .



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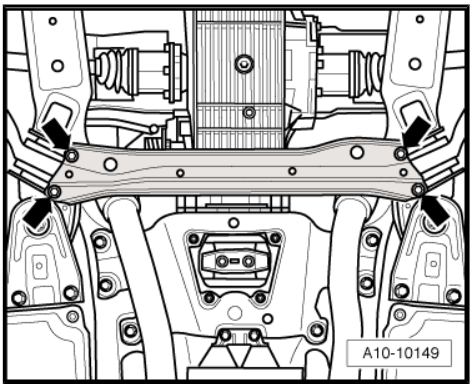
If fitted, unbolt cross piece from subframe -arrows-

– Remove front exhaust pipe ⇒ Engine, mechanics; Rep. Gr. 26 .

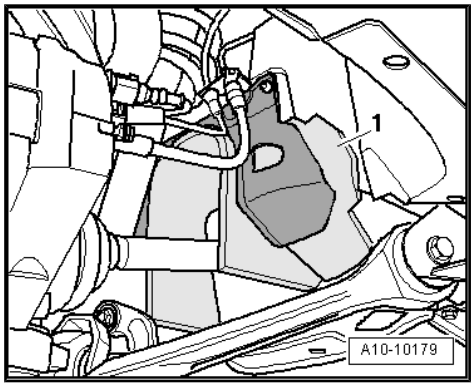
Vehicles with diesel particulate filter:

– Remove particulate filter ⇒ Engine, mechanics; Rep. Gr. 26 .

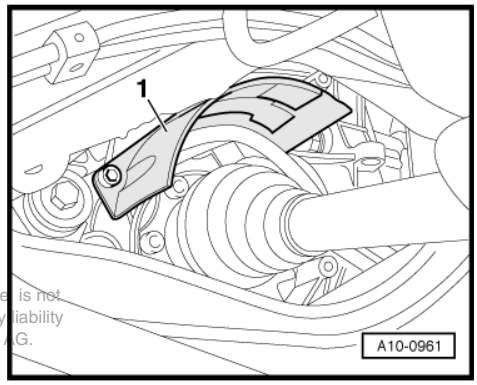
All vehicles:



– Remove noise insulation panels -1- in wheel housing (left and right).



– Remove heat shield -1- for drive shaft (right-side).
– Unbolt drive shafts (left and right) from gearbox flange shafts.



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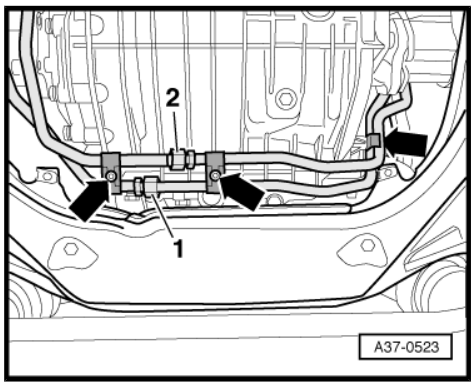
– Place used oil collection and extraction unit -V.A.G 1782- below connection.



Note

Observe rules for cleanliness when working on automatic gearbox ⇒ page 10 .

– Unbolt bracket for ATF pipes -left arrows-.

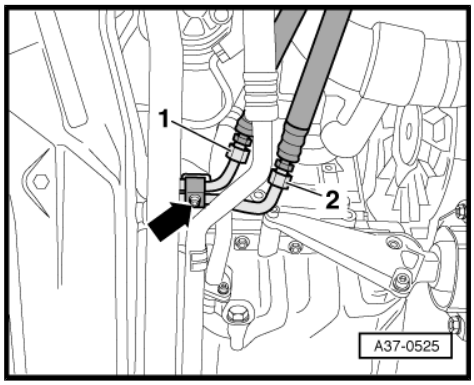
Note

-Right arrow- can be disregarded.

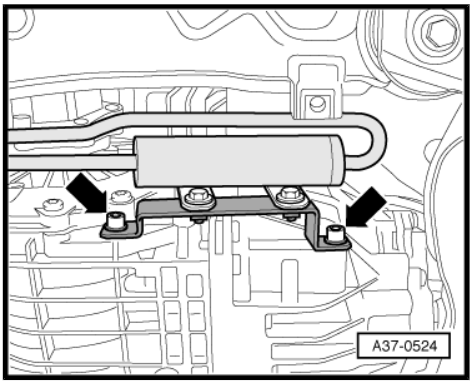
– Unscrew union nuts -1- and -2- and disconnect ATF pipes.

Note

ATF pipes without connection points may be installed on some versions. In this case, the ATF pipes must be disconnected at the front union nuts -1- and -2- ⇒ page 122 .



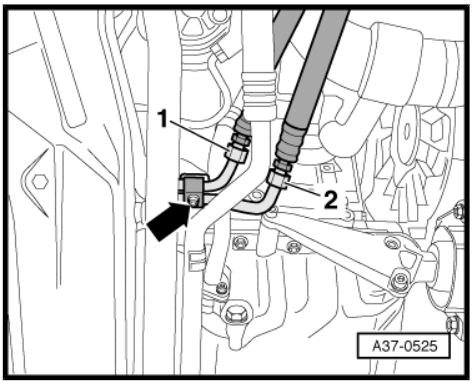
– Unbolt ATF filter from gearbox -arrows-.



– Unbolt bracket for ATF pipes -arrow-.

Note

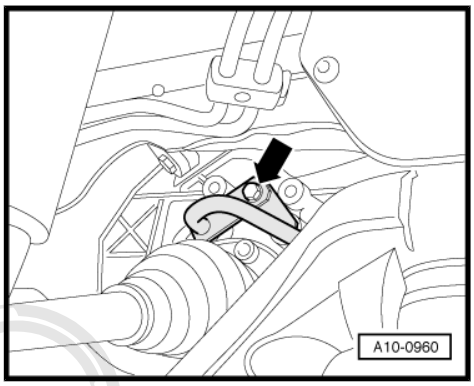
-Items 1 and 2- can be disregarded on vehicles with multi-piece ATF pipes.



Note

- *Observe rules for cleanliness when working on automatic gearbox ⇒ page 10 .*
- *Place a cloth below the connection to catch escaping ATF.*

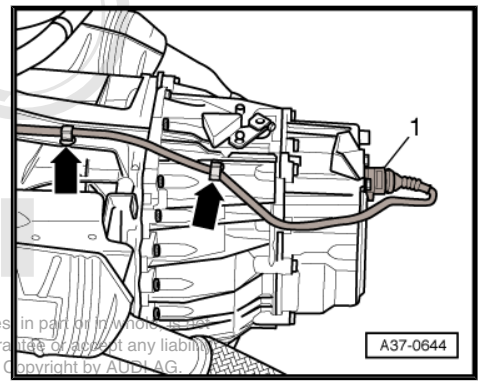
– Unscrew bolt -arrow- and detach ATF pipes from gearbox.



Caution

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

- ***Before handling the electrical connector, the mechanic must discharge static by briefly touching an earthed metal object, such as vehicle earth, lifting platform or heater radiator, etc.***
- ***Do not touch contact pins in gearbox connector with bare hands.***



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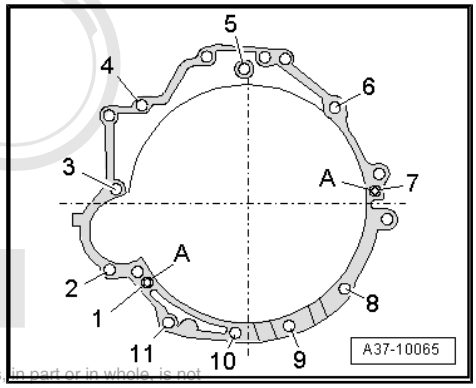
– Release electrical connector -1- and detach from gearbox.

– Move wiring harness to engine clear -arrows-.

Note

For illustration purposes here shown with gearbox removed.

– Remove bolts -8 … 11- securing gearbox to engine.



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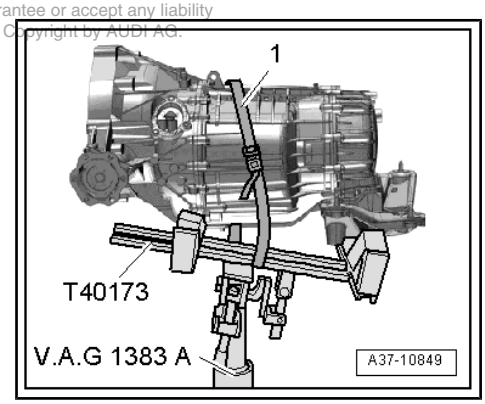
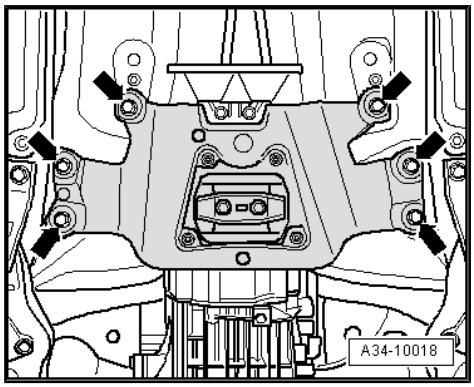
– Position engine and gearbox jack -V.A.G 1383 A- with gearbox support -T40173- underneath gearbox and secure with tensioning strap -1- as shown in illustration.

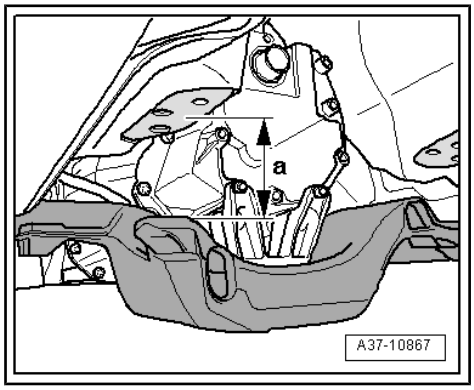


– Remove bolts -arrows- at tunnel cross member.

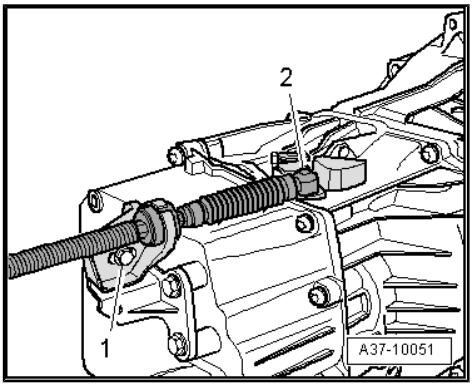


– Lower gearbox initially by dimension -a- using engine and gearbox jack -V.A.G 1383 A- .

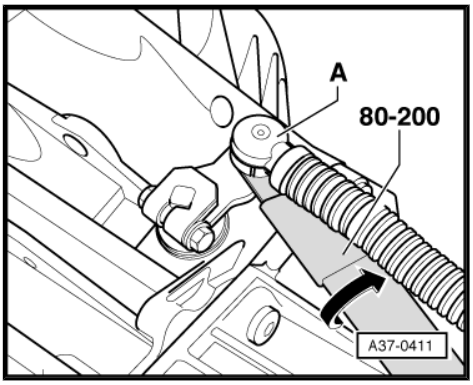
• Dimension -a- = 80 mm.



– Mark installation position of support bracket for selector lever cable.
– Unscrew bolt -1- from support bracket for selector lever cable.



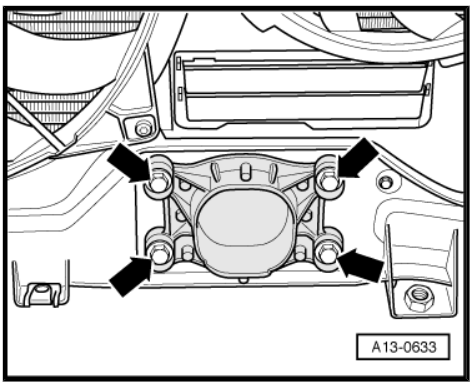
– Use removal lever -80 - 200- to pry ball socket -A- on selector lever cable off gearbox selector lever.



Note

Do not bend or kink the selector lever cable.

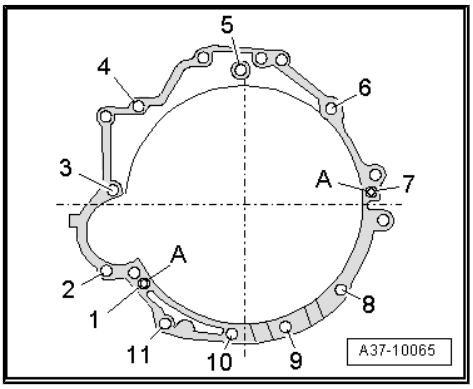
– Slacken bolts -arrows- at stop for torque reaction support.
– Press up stop for torque reaction support and re-tighten bolts to 23 Nm.



Note

Adjusting the stop for torque reaction support prevents the engine from tilting at the front after the gearbox is removed.

– Remove bolts -1 … 6- securing gearbox to engine.
– Detach starter from gearbox but do not remove starter.
– Detach gearbox from engine and keep lowering it carefully using engine and gearbox jack -V.A.G 1383 A- .



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5.8 Installing gearbox - vehicles with 2.0 ltr. TDI engine (unit injector and common rail)

Tightening torques: ⇒ page 105

Note

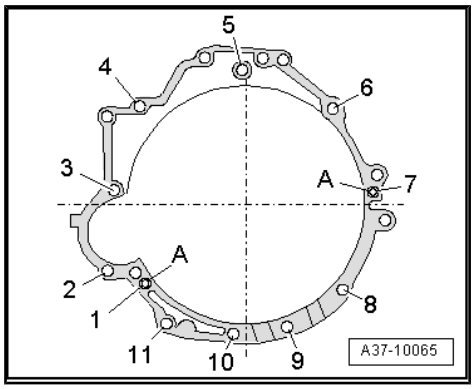
- *Before fitting a replacement gearbox, always clean the ATF pipes and ATF cooler ⇒ page 126 and renew the additional ATF filter ⇒ page 130 .*
- *Renew self-locking nuts and bolts when performing assembly work.*
- *Renew oil seals, gaskets, O-rings and bolts which are tightened by turning through a specified angle.*
- *Secure all hose connections with the correct hose clips (as original equipment); refer to ⇒ Electronic parts catalogue .*
- *Re-attach all cable ties at the same locations when re-installing.*

– Clean gearbox input shaft splines and damper unit splines on flywheel. Remove corrosion and apply only a very thin coating of grease for clutch plate splines -G 000 100- to the splines. It is important to remove excess grease.

– Check that dowel sleeves -A- for centralising engine/gearbox are in the cylinder block; install any missing dowel sleeves.

– Before installing gearbox, tie electrical wiring off to one side so that it cannot be trapped between the engine and the gearbox.

– Lift gearbox high enough to be able to install selector lever cable.

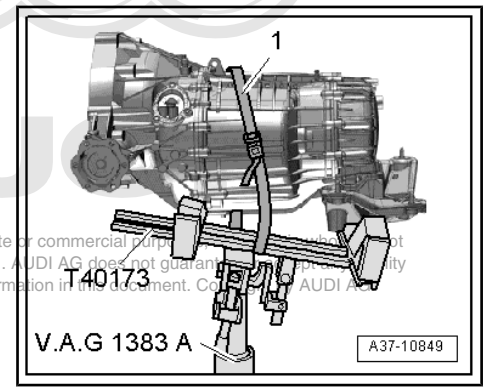


Note

- *Do not bend or kink the selector lever cable.*
- *Before installing, lightly lubricate ball socket on selector lever cable with polycarbamide grease -G 052 142 A2- .*

– Fit support bracket for selector lever cable according to marking on bracket at rear of gearbox.

– Raise gearbox carefully and move to installation position using gearbox support -T40173- .



– Bolt gearbox onto engine.

– Install tunnel cross member ⇒ page 110 .

– Install ATF pipes with new O-rings ⇒ page 122 .

– Install front exhaust pipe and align exhaust system so it is free of stress ⇒ Engine, mechanics; Rep. Gr. 26 .

– Install cross piece for subframe ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. Gr. 40 .

– Bolt drive shafts to flange shafts ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. Gr. 40 .

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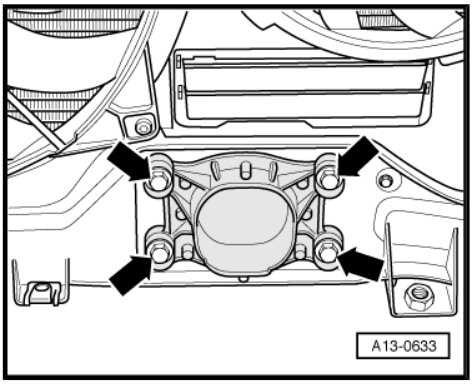

- Loosen bolts -arrows- for torque reaction support.
- Allow stop for torque reaction support to settle on rubber buffer for torque reaction support under its own weight and re-tighten bolts ⇒ Engine, mechanics; Rep. Gr. 10 .
- Electrical connections and routing ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.
- Follow steps required after connecting battery ⇒ Electrical system; Rep. Gr. 27 .
- Check selector lever cable adjustment ⇒ page 44 .
- Check oil level in front final drive ⇒ page 140 .
- Check and correct ATF level ⇒ page 113 .

Tightening torques

Note

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

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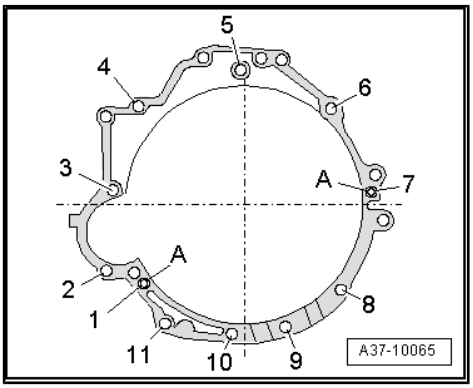
Engine/gearbox securing bolts



Item	Bolt [1]	Nm
1	M12x67	65
2 [2]	M10x60	45
3 [2], 4, 5, 7	M12x75	65
6	M12x100	65
8 [3]	M10x50	45
9, 10, 11	M10x45	45
A	Dowel sleeves for centralising	

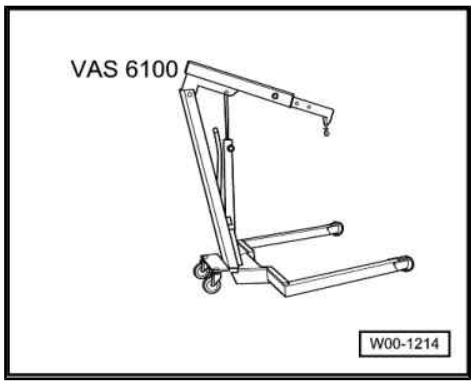
- [1] Renew bolts for securing gearbox to engine
- [2] Secures starter to gearbox
- [3] Bolt with nut

Component		Nm
Bolts/nuts	M6	9
	M8	20
	M10	40
	M12	65
Except for the following:		
Heat shield for drive shaft to gearbox		23

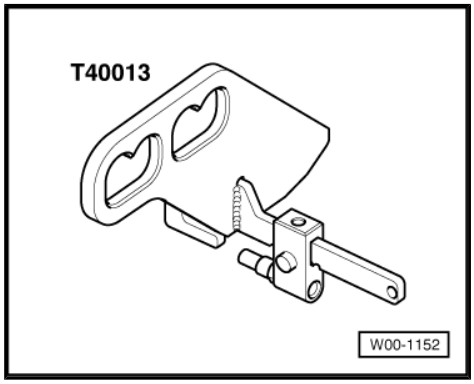
6 Transporting the automatic gearbox

Special tools and workshop equipment required

- Workshop hoist -VAS 6100-



- Lifting aid -T40013-

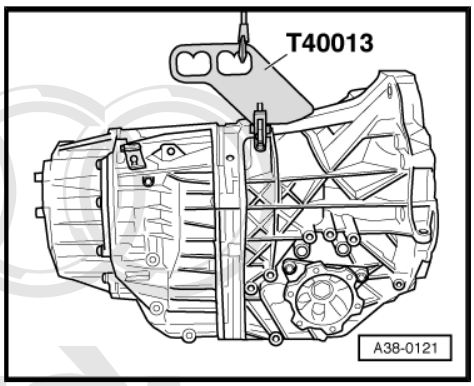


Procedure

– Attach lifting aid -T40013- to upper web of gearbox housing and secure in place.

– Engage hook of workshop hoist -VAS 6100- in notch on lifting aid , as shown in illustration.

– Lift gearbox with workshop hoist -VAS 6100- and lifting aid -T40013- .



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7 Securing gearbox to engine and gearbox support

- Gearbox removed

Description of work sequence ⇒ Servicing multitronic 01J and 0AN; Rep. Gr. 39

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8 Exploded view - gearbox mounting, gearbox support and tunnel cross member

1 - Gearbox

- ❑ Note: only end cover is shown here

2 - Bolt

- ❑ 23 Nm

3 - Gearbox support

- ❑ ⇒ “8.1 Removing and installing gearbox mounting and gearbox support”, page 108

4 - Gearbox mounting

- ❑ ⇒ “8.1 Removing and installing gearbox mounting and gearbox support”, page 108

5 - Bolt

- ❑ 23 Nm

6 - Tunnel cross member

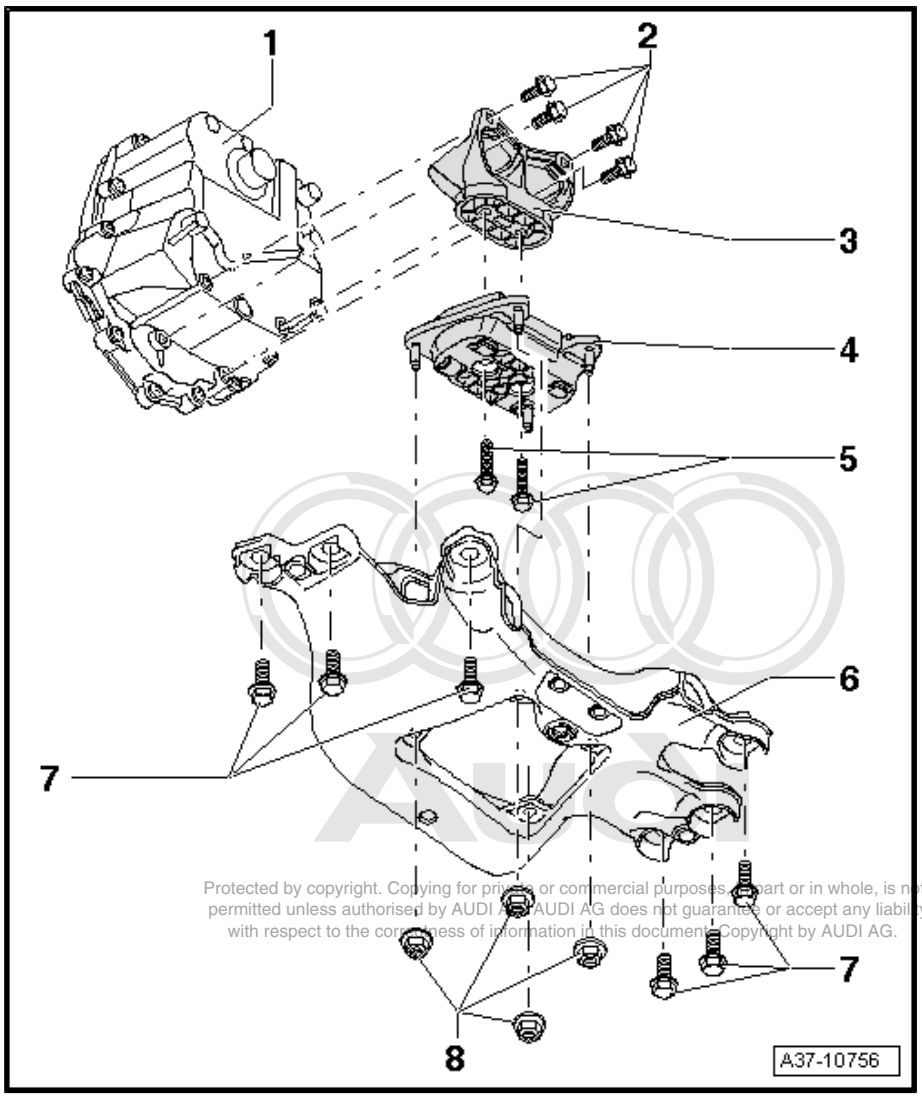
- ❑ ⇒ “8.2 Removing and installing tunnel cross member”, page 110

7 - Bolt

- ❑ 50 Nm

8 - Nut

- ❑ 23 Nm



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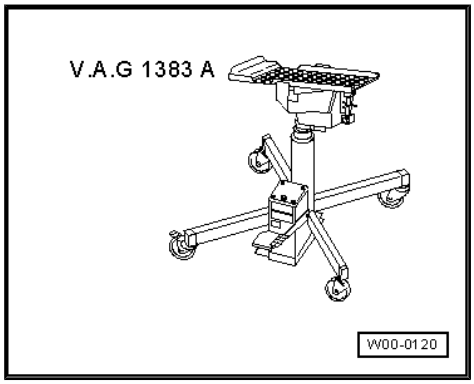
8.1 Removing and installing gearbox mounting and gearbox support

Special tools and workshop equipment required

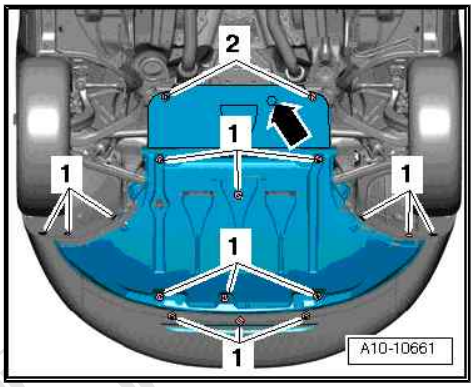
- ♦ Engine and gearbox jack -V.A.G 1383 A-



♦ Block of wood

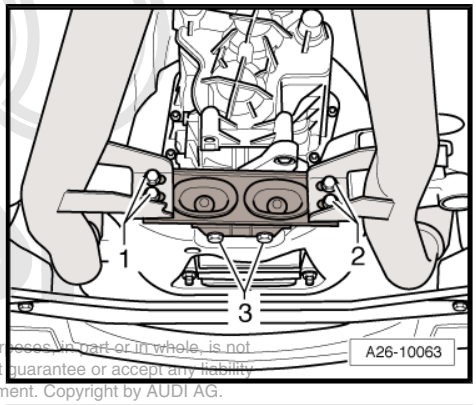
Removing

– Remove noise insulation panels ⇒ General body repairs, exterior; Rep. Gr. 50 .



Vehicles with twin exhaust system:

– Unscrew bolts -1 … 3- and remove rear bracket for front exhaust pipe.



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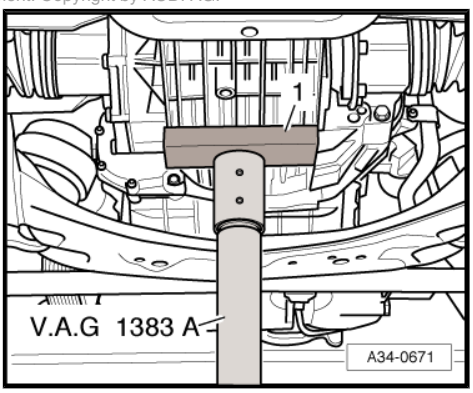
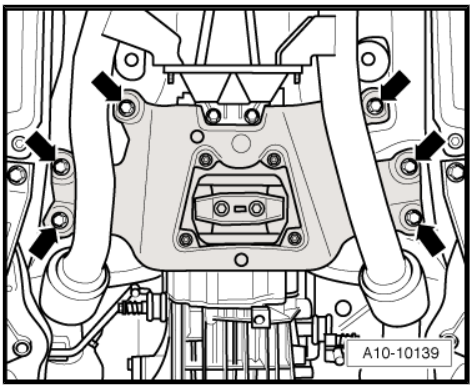
Continued for all vehicles:

– Apply lifting column of engine and gearbox jack -V.A.G 1383 A- to gearbox from below (place a block of wood -1- between lifting column and gearbox).

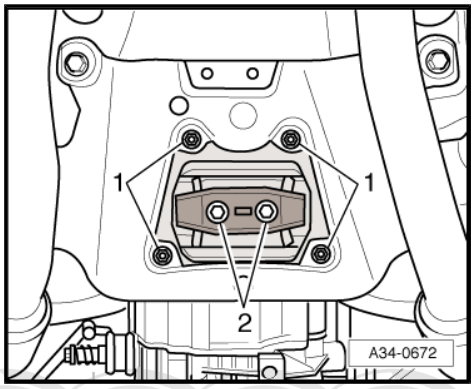
– Use engine and gearbox jack -V.A.G 1383 A- to lift gearbox up slightly.



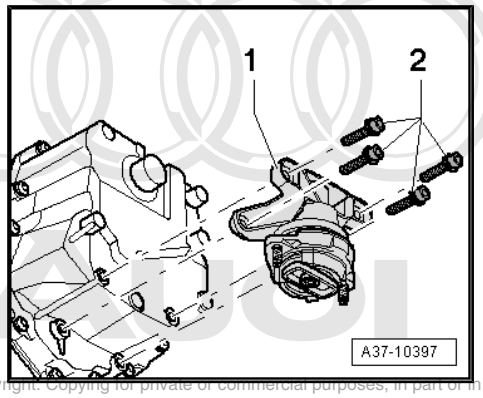
– Remove bolts -arrows- for tunnel cross member.



– Remove bolts -1- and -2- and move tunnel cross member slightly towards rear.
– Remove gearbox mounting between gearbox and tunnel cross member.



– Unscrew bolts -2- and detach gearbox support -1- from gearbox.



Installing

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

Vehicles with twin exhaust system:

– Install bracket for front exhaust pipes ⇒ Engine, mechanics; Rep. Gr. 26 .

Tightening torques
⇒ "8 Exploded view - gearbox mounting, gearbox support and tunnel cross member", page 108

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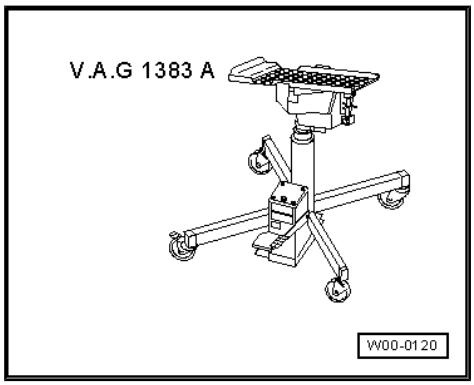
8.2 Removing and installing tunnel cross member

Special tools and workshop equipment required

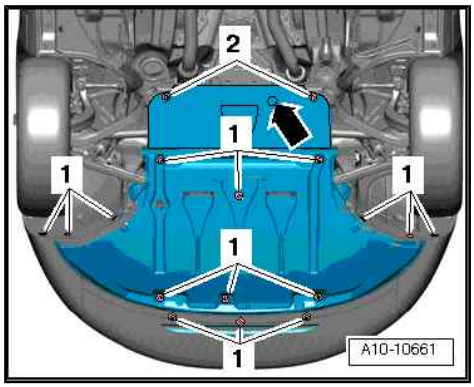
♦ Engine and gearbox jack -V.A.G 1383 A-



♦ Block of wood

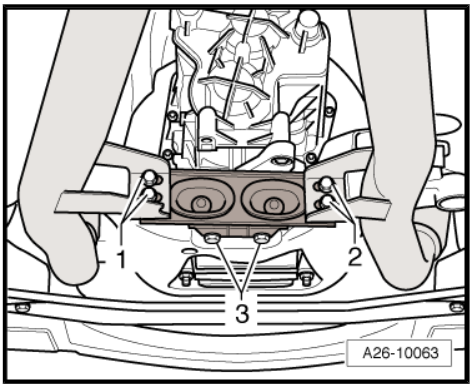
Removing

– Remove rear noise insulation ⇒ General body repairs, exterior; Rep. Gr. 50 .



Vehicles with twin exhaust system:

– Unscrew bolts -1 … 3- and remove rear bracket for front exhaust pipe.

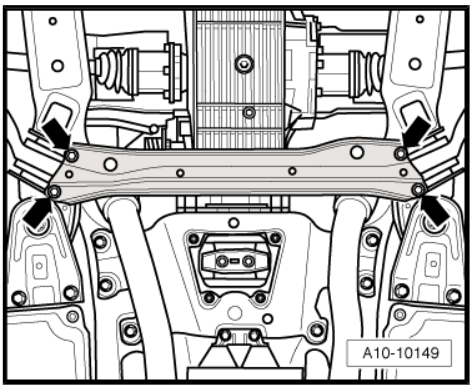


Note

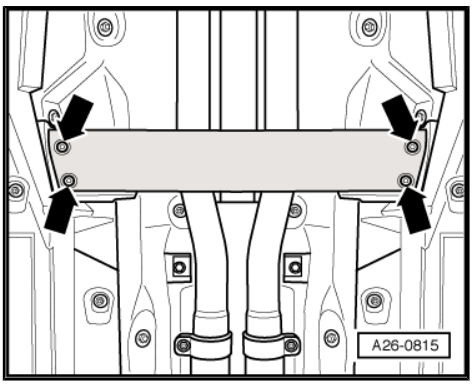
The illustration shows a vehicle with two front exhaust pipes.

Continued for all vehicles:

– Unbolt cross piece from subframe -arrows-.



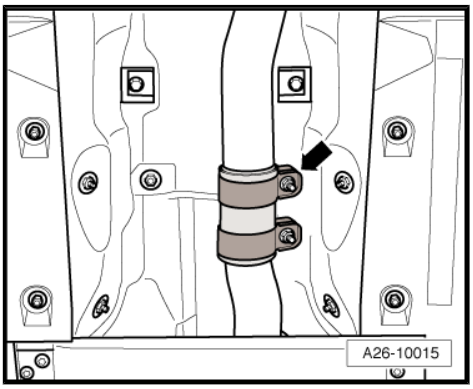
– Remove cross piece -arrows-.



Caution

The flexible pipe connection (de-coupling element) on the front exhaust pipe must not be bent more than 10° – otherwise it can be damaged.

– Disconnect exhaust system at clamp -arrow-.



WARNING

- ***Make sure that the lock carrier remains installed during the following work steps and is not in the service position.***
- ***This is the only way to ensure that the engine/gearbox assembly does not drop out towards the rear when the tunnel cross member is released.***
- ***The engine torque reaction support on the lock carrier takes up the weight of the assembly.***

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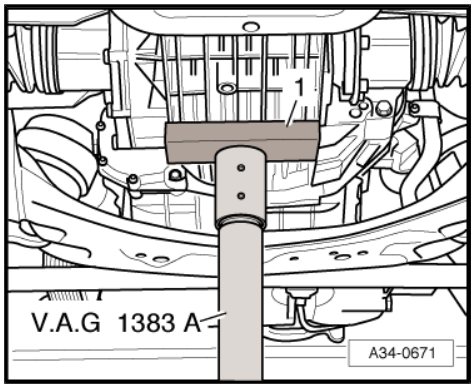
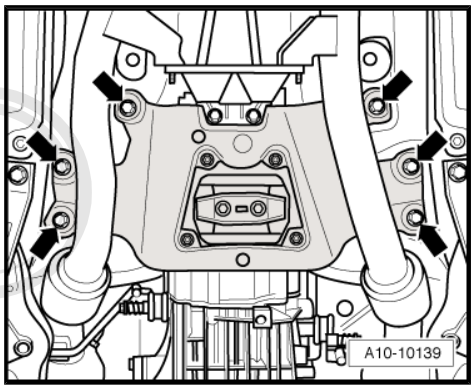
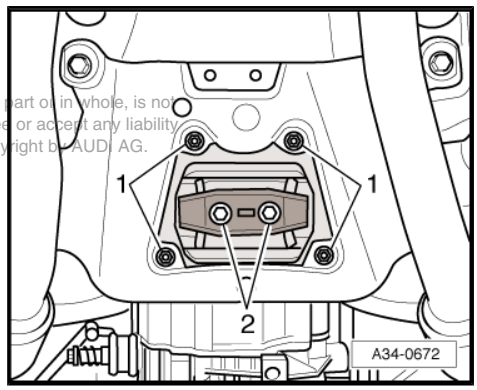
– Apply lifting column of engine and gearbox jack -V.A.G 1383 A- to gearbox from below (place a block of wood -1- between lifting column and gearbox).
– Use engine and gearbox jack -V.A.G 1383 A- to lift gearbox up slightly.



– Remove bolts -arrows- for tunnel cross member.



– Unscrew nuts -1- and detach tunnel cross member.



Note

Bolts -2- can be disregarded.

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Installing

Perform installation in reverse sequence of removal.

Vehicles with twin exhaust system:

– Install bracket for front exhaust pipes ⇒ Engine, mechanics; Rep. Gr. 26 .
– Install exhaust system so it is free of stress ⇒ Engine, mechanics; Rep. Gr. 26 .

Continued for all vehicles:

– Install front cross piece ⇒ General body repairs, exterior; Rep. Gr. 50 .
– Install cross piece for subframe ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. Gr. 40 .

Tightening torques

⇒ "8 Exploded view - gearbox mounting, gearbox support and tunnel cross member", page 108

9 ATF in gearbox

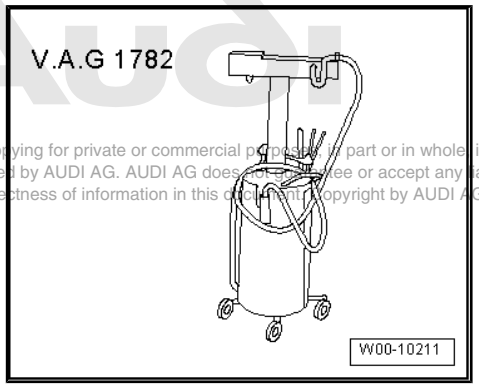
Overview:

- ⇒ “9.1 Checking and correcting ATF level”, page 113
- ⇒ “9.2 Changing ATF or filling up after performing repairs”, page 119

9.1 Checking and correcting ATF level

Special tools and workshop equipment required

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



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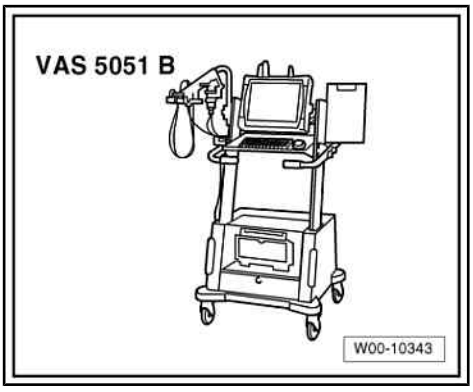
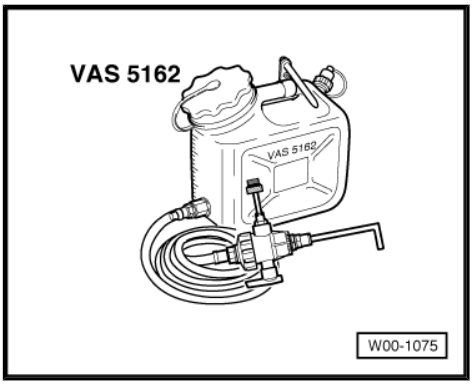
- Diagnostic tester, e.g. vehicle diagnostic, testing and information system -VAS 5051B-



- ATF charging device for CVT gearboxes -VAS 5162-



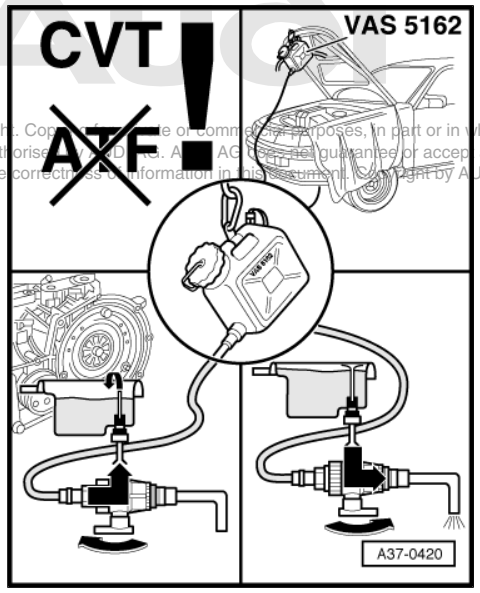
- Safety goggles

Caution

The ATF required for the CVT multitronic 01J gearbox is different from the fluid used in fixed-ratio automatic gearboxes. Use only the ATF supplied as a replacement part for multitronic gearbox 01J. ATF specifications ⇒ Electronic parts catalogue .

Note

- *The illustration on the reservoir of the ATF charging device for CVT gearboxes -VAS 5162- displays a warning in the top left corner to use ONLY the ATF specially formulated for the multitronic gearbox (continuously variable transmission).*
- *The illustration also shows the steps to follow when filling up; these are also described below.*



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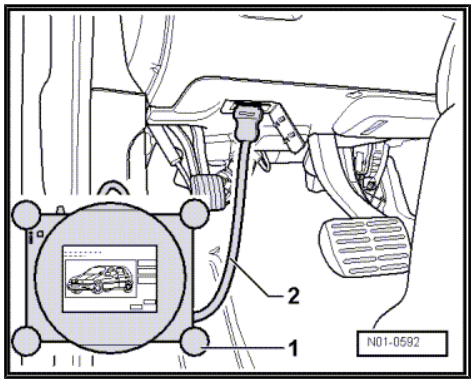
Caution

- *The engine must not be started if only a little or no ATF remains in gearbox after repair work or after excessive ATF leakage.*
- *In this case you need to fill the gearbox first with 4.5 … 5 litres of ATF.*

Test conditions



- Gearbox must not be in emergency running (backup) mode.
- Drive vehicle onto lifting platform or inspection pit to make sure it is placed absolutely horizontal.
- Exhaust hose(s) of an exhaust gas extractor (switched on) must be connected.
- Engine idling.
- The air-conditioner and heating system must be switched off.
- Diagnostic tester connected up; `Vehicle self-diagnosis` and `02 - Gearbox electronics` selected.
- The ATF temperature at the beginning of the test must not be higher than 30°C. If necessary, first allow the gearbox to cool down.

Note

- *The ATF level will vary according to the ATF temperature.*
- *If the ATF level is checked when the ATF temperature is too low, this will result in overfilling.*
- *If the ATF level is checked when the ATF temperature is too high, this will result in underfilling.*
- *Both overfilling and underfilling will impair the function of the gearbox.*
- *The ATF temperature is taken from the reading on the diagnostic tester.*

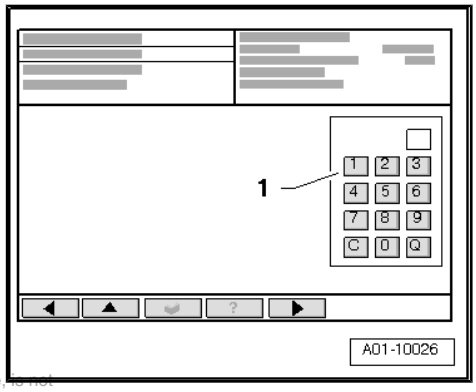
ATF temperature reading

Display on diagnostic tester:

– From menu -1-, select function Measured values and advance by pressing → button.

Display on diagnostic tester:

– Using keypad -1- press buttons 1 0 for Display group 10 and confirm entry by pressing Q button.



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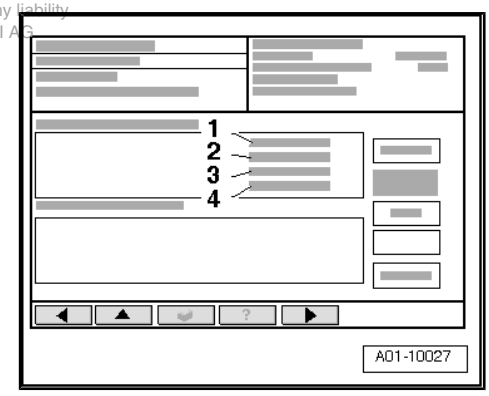
Display on diagnostic tester:

– Reading for ATF temperature is shown in display zone -3-.



Checking and correcting ATF level

Note

- *Engine keeps running at idle speed.*
- *The ATF level is checked at the ATF inspection plug.*
- *The ATF level is correct if a small amount of fluid comes out at the ATF inspection plug when ATF temperature is between 35°C and 45°C, or 50°C in hot climates (the fluid level rises due to expansion as it warms up).*

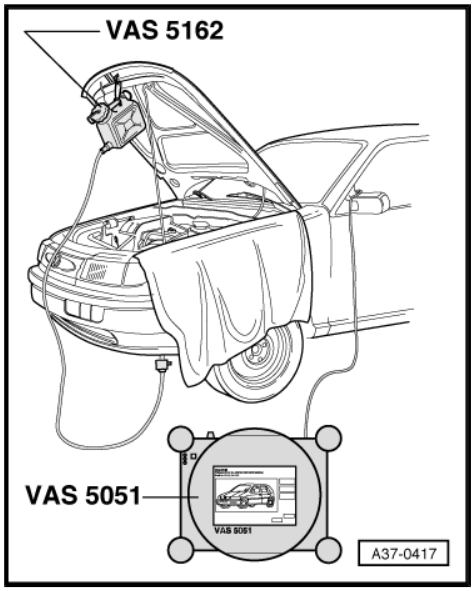
– Fill ATF charging device for CVT gearboxes -VAS 5162- with ATF for CVT gearboxes.

• ATF specifications ⇒ Electronic parts catalogue .

Caution

The ATF charging device must be clean and the ATF must not be mixed with other types of ATF!

– Attach filled reservoir of ATF charging device for CVT gearboxes -VAS 5162- at the highest possible point on the vehicle.



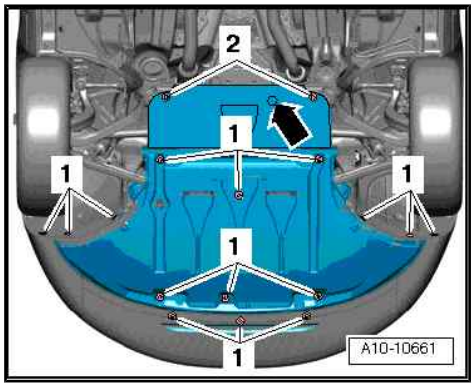
Note

The stopcock on ATF charging device for CVT gearboxes -VAS 5162- must be closed.

– With the brake pedal depressed, shift through all selector lever positions (“P”, “R”, “N”, “D”, “S”) and hold in each position for approx. 2 seconds (at idling speed).

– Remove rear noise insulation ⇒ General body repairs, exterior; Rep. Gr. 50 .

– Place used oil collection and extraction unit -V.A.G 1782- below gearbox.



WARNING

Wear safety goggles.

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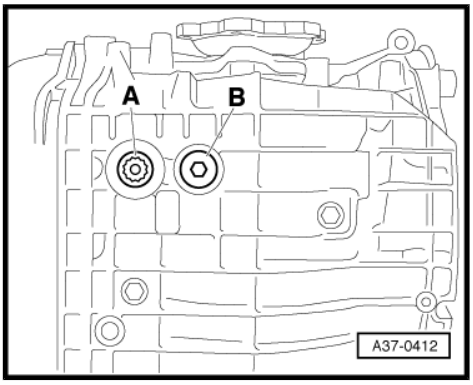
– When the ATF has reached a temperature of 35°C, unscrew ATF inspection plug -B-.



Note

When the plug is opened, approx. 5 cl of ATF will always run out of the inner oil level tube.

If ATF continues to come out through ATF inspection opening via overflow pipe before ATF has reached a temperature of 40 °C, the ATF level is OK.

– Renew ATF inspection plug and tighten.

• Tightening torque: 30 Nm

Note

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♦ *ATF inspection plug must be screwed in again at the latest when ATF reaches temperature of 45 °C (countries with hot climates: 50 °C).*

♦ *If ATF temperature exceeds 45 °C, too much fluid will escape as it expands when heated. In this case the quantity of fluid in the gearbox is NOT sufficient!*

The ATF level check is now completed.

– Exit from function Measured values by pressing ↵ button.

– Press End output.

– Switch off ignition and unplug diagnostic connector.

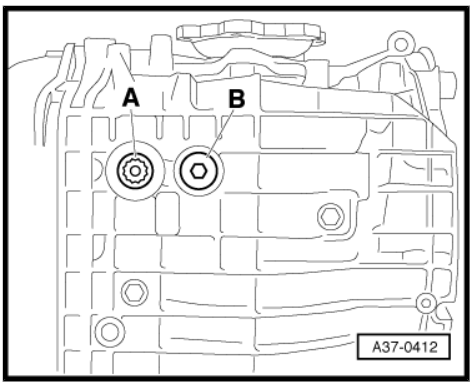
If no ATF fluid has drained out of the inspection plug when temperature reaches 40 °C, top up ATF ⇒ page 117 **.**

Filling up ATF

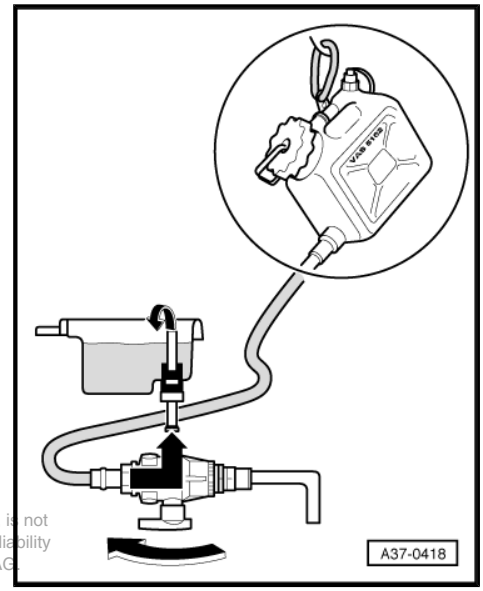
Note

Engine keeps running at idle speed.

– Screw connecting piece on stopcock of ATF charging device for CVT gearboxes -VAS 5162- into threaded hole for ATF inspection plug -B-.



– Turn stopcock in direction of filling hose -lower arrow-. ATF flows into gearbox.
– Hold a suitable container under drain pipe of ATF charging device for CVT gearboxes -VAS 5162- .



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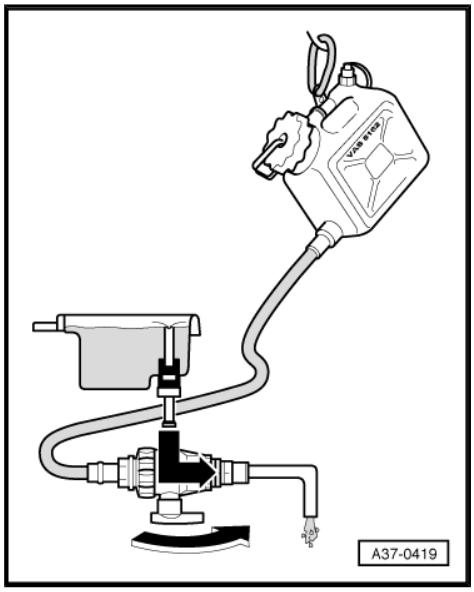
– Check ATF level by turning stopcock in direction of drain pipe -lower arrow-.

Fluid level is correct if only a small quantity of ATF comes out of drain pipe before ATF reaches a temperature of 45 °C.



Note

Approx. 5 cl of ATF will always run out of internal fluid level pipe.

– If no additional ATF emerges, turn stopcock back in direction of filler hose and allow some more ATF to flow into gearbox; check ATF level repeatedly.
– Once correct ATF level has been reached unscrew stopcock.

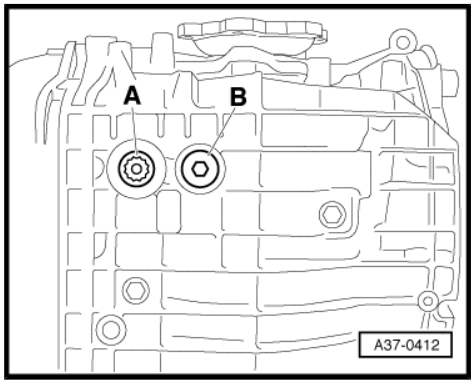
Note

A few drops of ATF will escape after unscrewing stopcock.

– Renew ATF inspection plug and tighten.
- Tightening torque: 30 Nm

Note

- *ATF inspection plug -B- must be screwed in again at the latest when ATF reaches temperature of 45 °C (countries with hot climates: 50 °C).*
- *If ATF temperature exceeds 45 °C, too much fluid will escape as it expands when heated. In this case the quantity of fluid in the gearbox is NOT sufficient!*

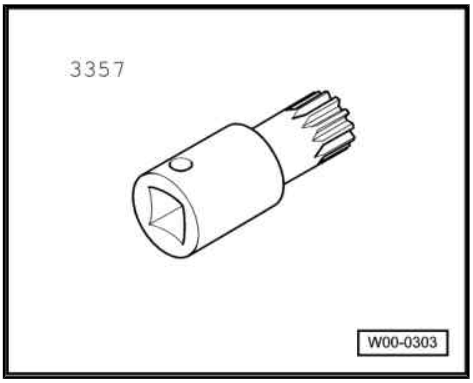


– Exit from function `Measured values` by pressing ↵ button.
– Press `End output`.
– Switch off ignition and unplug diagnostic connector.

9.2 Changing ATF or filling up after performing repairs

Special tools and workshop equipment required

- Multi-point bit -3357-



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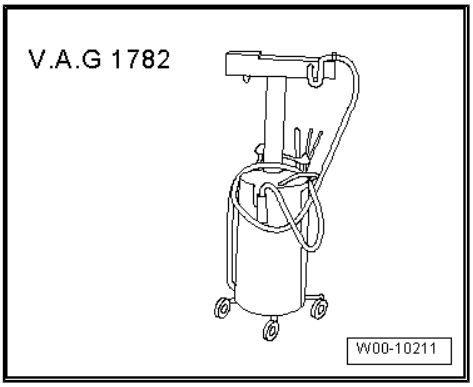
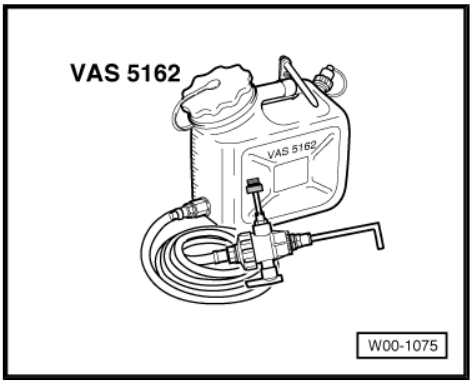
- Used oil collection and extraction unit -V.A.G 1782-



- ATF charging device for CVT gearboxes -VAS 5162-



- Safety goggles

Procedure

- Drive vehicle onto lifting platform or inspection pit to make sure it is placed absolutely horizontal.

> **Caution**
>
> *Do not run engine or tow vehicle when there is no ATF in the gearbox.*

Note

- *Please observe requirements for disposal.*
- *Before fitting a replacement gearbox, always blow through the ATF cooler and ATF pipes with compressed air (not more than 10 bar) and renew the additional ATF filter ⇒ page 128 .*

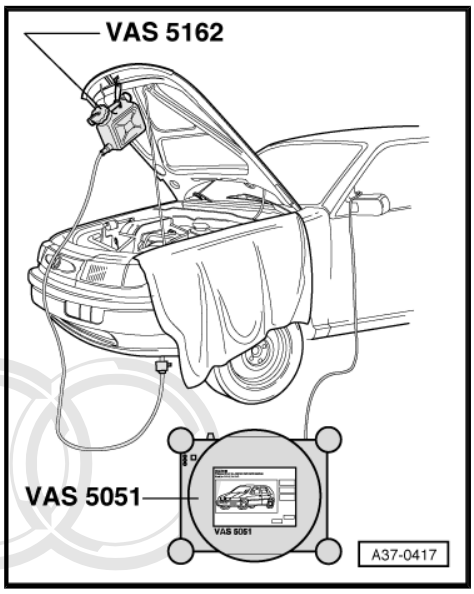
– Fill ATF charging device for CVT gearboxes -VAS 5162- with ATF for multitronic gearbox.

• ATF specifications ⇒ Electronic parts catalogue .

Caution

The ATF charging device must be clean and the ATF must not be mixed with other types of ATF!

– Attach filled reservoir of ATF charging device for CVT gearboxes -VAS 5162- at the highest possible point on the vehicle.

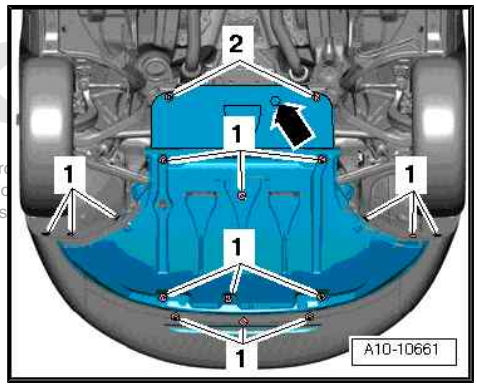


Note

The stopcock on ATF charging device for CVT gearboxes -VAS 5162- must be closed.

– Remove rear noise insulation ⇒ General body repairs, exterior; Rep. Gr. 50 .

– Place used oil collection and extraction unit -V.A.G 1782- below gearbox.



WARNING

Wear safety goggles.

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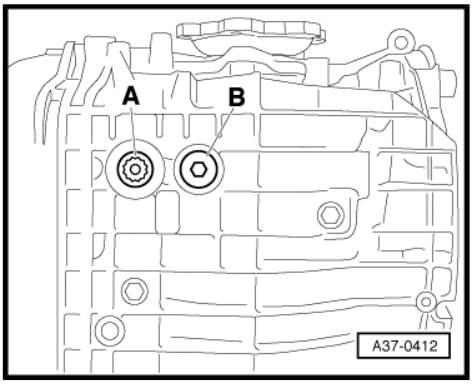
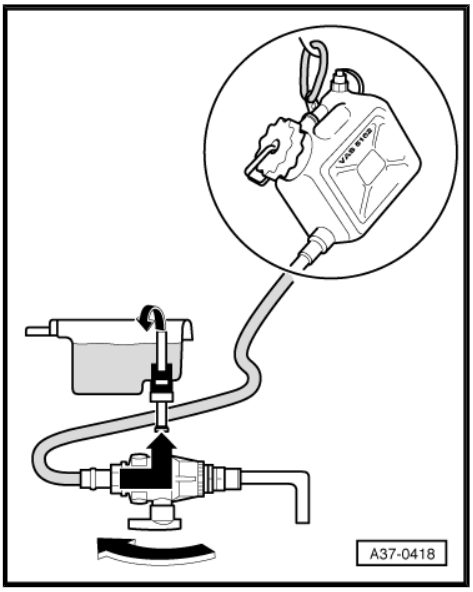
– Unscrew ATF drain plug -A- with multi-point bit -3357- and drain off ATF.
– Re-tighten ATF drain plug.
• Tightening torque: 24 Nm
– Unscrew ATF inspection plug -B-.
– Screw connecting piece on stopcock of ATF charging device for CVT gearboxes -VAS 5162- into threaded hole for ATF inspection plug -B-.



– Turn stopcock in direction of filling hose -lower arrow-. ATF flows into gearbox.
– Fill gearbox with at least 4.5 … 5 ltr. of fresh ATF.
– Shift selector lever into position “P”.



Caution

Rev engine up to approx. 2500 rpm immediately after starting.

- *The engine must be revved up to vent air from the ATF pump after performing repairs on the gearbox.*
- *If the engine is not revved up, the pump will run briefly without ATF and may be damaged.*

– Start engine.
– Press accelerator pedal to rev engine briefly up to 2500 rpm.
– Check and top up ATF level ⇒ page 113 .

Note

Observe all notes and test requirements for “Checking and correcting ATF level”.

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10 Exploded view - ATF pipes, ATF cooler and additional ATF filter

Note

- *Rules for cleanliness when working on the automatic gearbox ⇒ page 10 .*
- *General repair instructions ⇒ page 8 .*
- *Before fitting a replacement gearbox, always blow through the ATF cooler and ATF pipes with compressed air (not more than 10 bar) ⇒ page 126 and renew the additional ATF filter. If the ATF which emerges during cleaning is very dirty, the pipes and ATF cooler must additionally be flushed out with clean ATF.*
- *To install, first press ATF pipes onto gearbox or cooler by hand until they engage, then bolt on.*
- *Check ATF level after renewing ATF pipes ⇒ "9.1 Checking and correcting ATF level", page 113 .*

Caution

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

Vehicles with 2.0 ltr. TFSI, 2.4 ltr. MPI or 3.2 ltr. TDI engine

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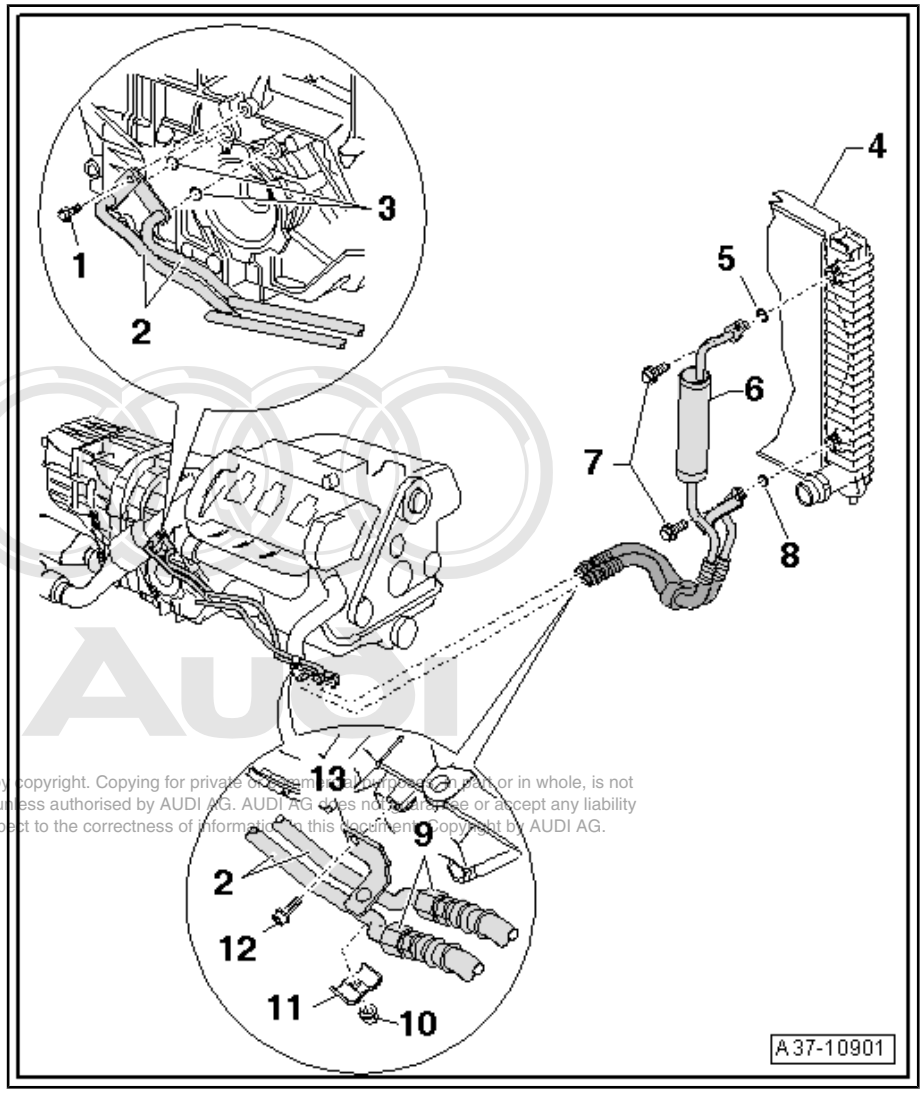

1 - 21 Nm

- ❑ First push in ATF pipes with new O-rings by hand as far as stop

2 - ATF pipes

3 - O-rings

- ❑ Renew
- ❑ Lubricate with ATF when fitting

4 - ATF cooler

- ❑ Integrated in radiator for engine coolant
- ❑ Removing and installing ⇒ Engine, mechanics; Rep. Gr. 19

5 - O-ring

- ❑ Renew
- ❑ Lubricate with ATF when fitting

6 - Additional ATF filter

- ❑ Must be renewed if gearbox is defective
- ❑ ⇒ “10.3 Removing and installing additional ATF filter - vehicles with petrol engine”, page 128

7 - 5 Nm

- ❑ First push in ATF pipes with new O-rings by hand as far as stop

8 - O-ring

- ❑ Renew
- ❑ Lubricate with ATF when fitting

9 - Union nuts, 29 Nm

10 - Nut with washer, 10 Nm

11 - Retaining clip

12 - Bolt with washer, 10 Nm

13 - Bracket

- ❑ For ATF pipes

Vehicles with 3.0 ltr. MPI engine

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1 - 21 Nm

- ❑ First push in ATF pipes with new O-rings by hand as far as stop

2 - ATF pipes

3 - O-rings

- ❑ Renew
- ❑ Lubricate with ATF when fitting

4 - ATF cooler

- ❑ Integrated in radiator for engine coolant
- ❑ Removing and installing ⇒ Engine, mechanics; Rep. Gr. 19

5 - O-ring

- ❑ Renew
- ❑ Lubricate with ATF when fitting

6 - Additional ATF filter

- ❑ Must be renewed if gearbox is defective
- ❑ ⇒ “10.3 Removing and installing additional ATF filter - vehicles with petrol engine”, page 128

7 - 5 Nm

- ❑ First push in ATF pipes with new O-rings by hand as far as stop

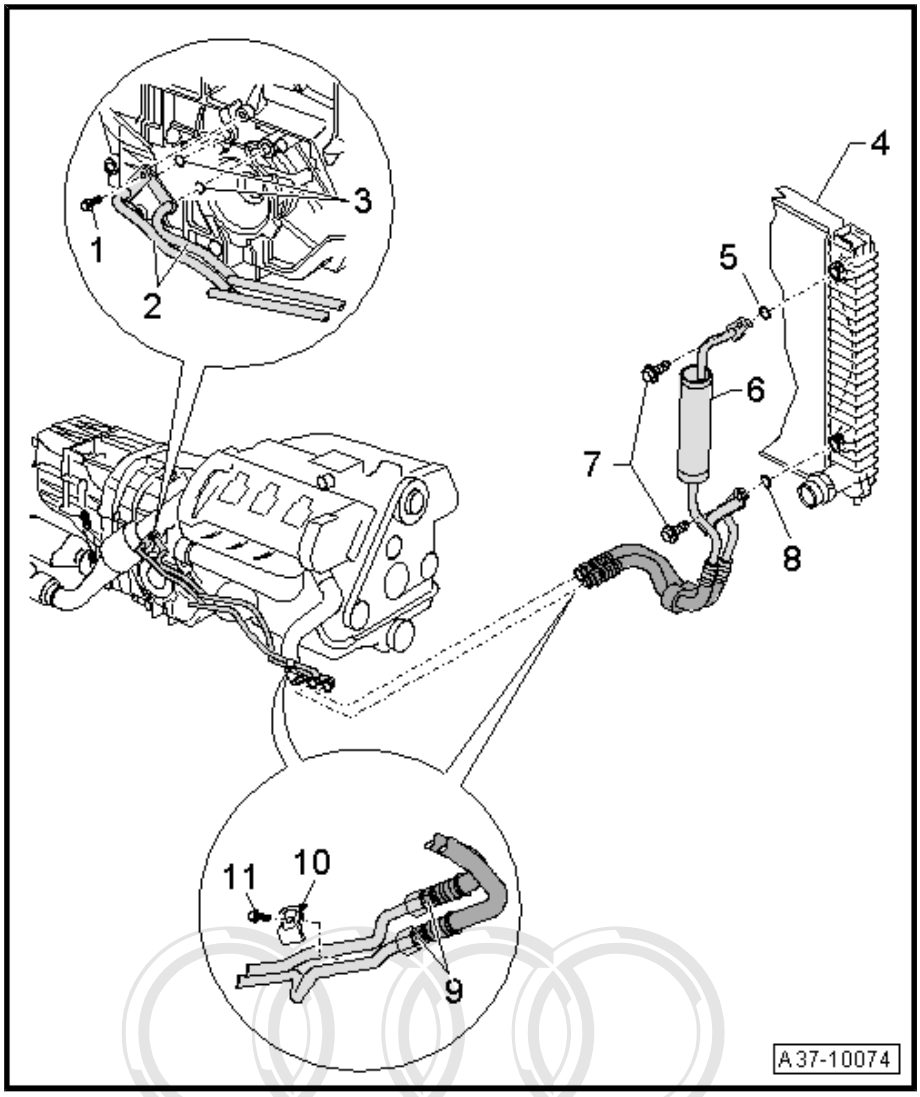
8 - O-ring

- ❑ Renew
- ❑ Lubricate with ATF when fitting

9 - Union nuts, 29 Nm

10 - Retaining clip

11 - 5 Nm



Vehicles with 2.0 ltr. TDI engine

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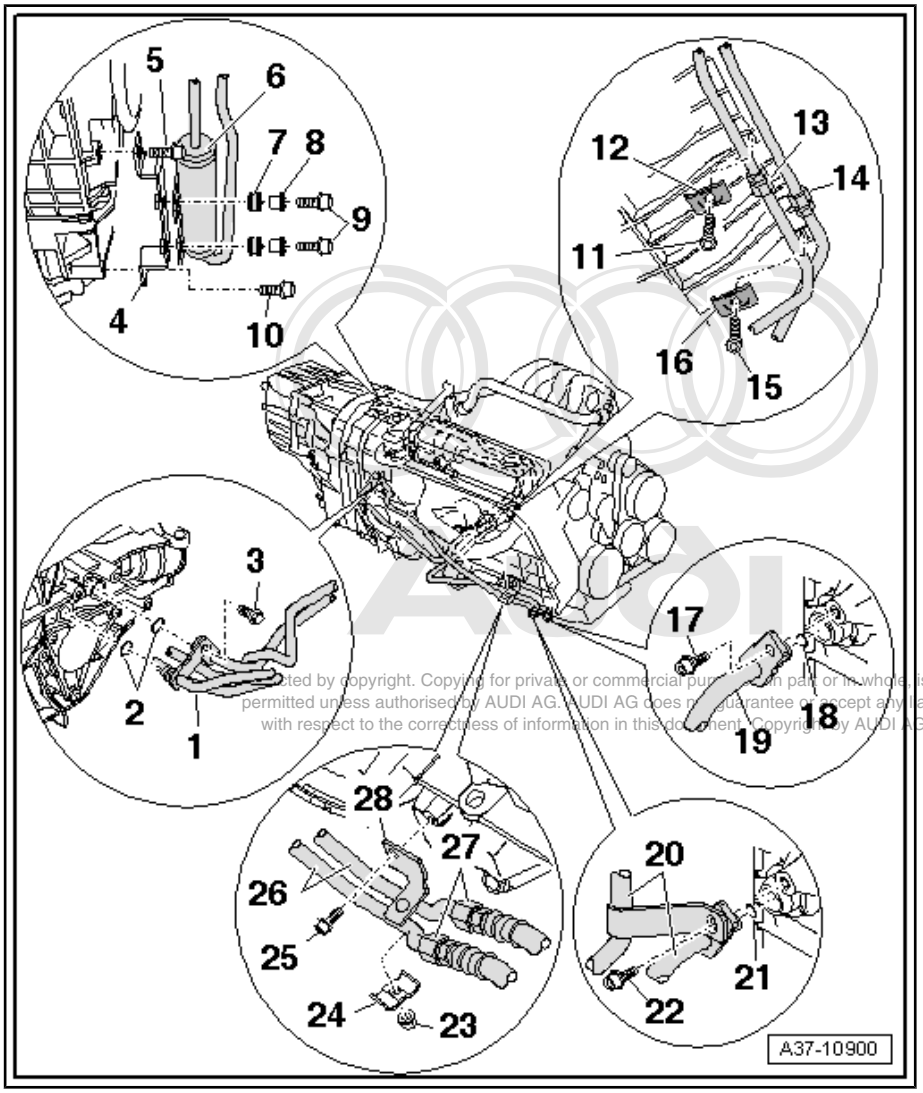

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1 - ATF pipes

- ❑ To additional ATF filter and to ATF cooler

2 - O-rings

- ❑ Renew
- ❑ Lubricate with ATF when fitting

3 - Bolt with washer, 21 Nm

4 - Bracket

5 - Bolt with washer, 40 Nm

6 - Additional ATF filter

- ❑ Must be renewed if gearbox is defective
- ❑ On some versions an additional ATF filter is fitted together with ATF pipes without connection points. This can be replaced with the additional ATF filter with multi-piece ATF pipes
- ❑ ⇒ “10.4 Removing and installing additional ATF filter - vehicles with 2.0 ltr. TDI engine”, page 130

7 - Bonded rubber bush

- ❑ 2x

8 - Spacer sleeve

- ❑ 2x

9 - Bolt with washer, 20 Nm

10 - Bolt with washer, 46 Nm

11 - Bolt with washer, 5 Nm

12 - Retaining clip

13 - Union nut, 29 Nm

- ❑ An ATF pipe without connection point is fitted here on some versions. This can be replaced with the additional ATF filter with multi-piece ATF pipes

14 - Union nut, 29 Nm

- ❑ An ATF pipe without connection point is fitted here on some versions. This can be replaced with the additional ATF filter with multi-piece ATF pipes

15 - Bolt with washer, 5 Nm

16 - Retaining clip

17 - Bolt with washer, 5 Nm

18 - O-ring

- ❑ Renew
- ❑ Lubricate with ATF when fitting

19 - ATF pipe

20 - ATF pipes

21 - O-ring

- ❑ Renew

❑ Lubricate with ATF when fitting

22 - Bolt with washer, 5 Nm

23 - Nut with washer, 10 Nm

24 - Retaining clip

25 - Bolt with washer, 10 Nm

26 - ATF pipes

27 - Union nuts, 29 Nm

28 - Bracket

❑ For ATF pipes

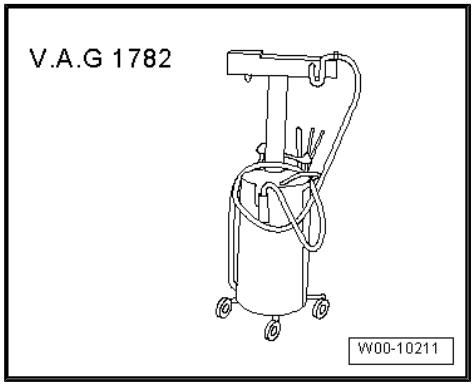
10.1 Cleaning ATF pipes and ATF cooler

Note

Rules for cleanliness when working on the automatic gearbox *⇒ page 10* *.*

Special tools and workshop equipment required

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



- Hose, approx. 18 mm dia.
- Compressed-air gun (commercially available)
- Safety goggles

Procedure

– Before installing a replacement gearbox, always blow through the ATF cooler and ATF pipes with compressed air (not more than 10 bar).

– Also always renew additional ATF filter before installing replacement gearbox.

– Place used oil collection and extraction unit -V.A.G 1782- below gearbox.

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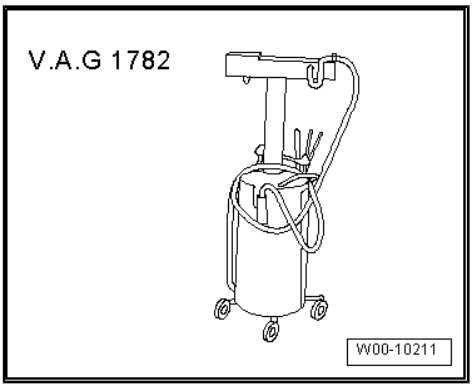
Note

- *If the ATF which emerges during cleaning is very dirty, the pipes and ATF cooler must additionally be flushed out with clean ATF.*
- *Removing and installing ATF pipes* *⇒ page 122* *.*

10.2 Removing and installing ATF pipes

Special tools and workshop equipment required

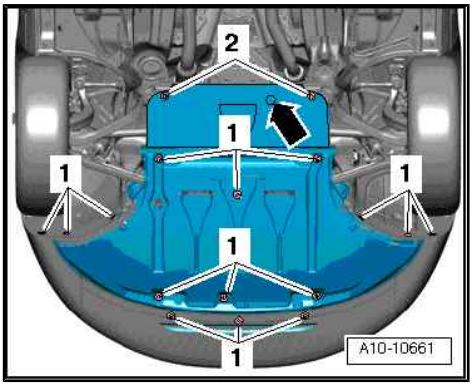
- Used oil collection and extraction unit -V.A.G 1782-



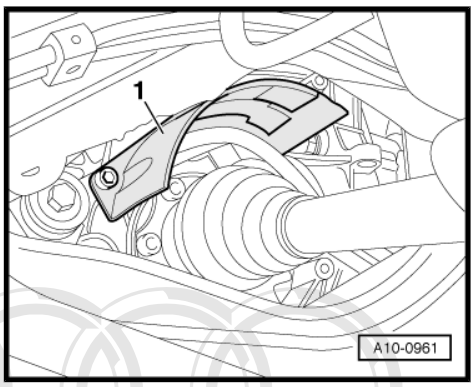
Removing

– Remove rear noise insulation ⇒ General body repairs, exterior; Rep. Gr. 50 .

– Remove additional ATF filter on vehicles with 2.0 ltr. TDI engine ⇒ page 130 .



– Remove heat shield -1- for drive shaft (right-side).

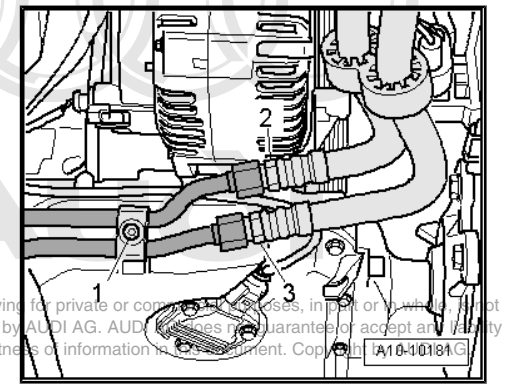


– Place used oil collection and extraction unit -V.A.G 1782- below gearbox.

– Unscrew union nuts -2- and -3- and disconnect ATF pipes.

– Remove retaining clip -1-.

– On vehicles with 2.0 ltr. TDI engine, remove another retaining clip from front bottom of gearbox.



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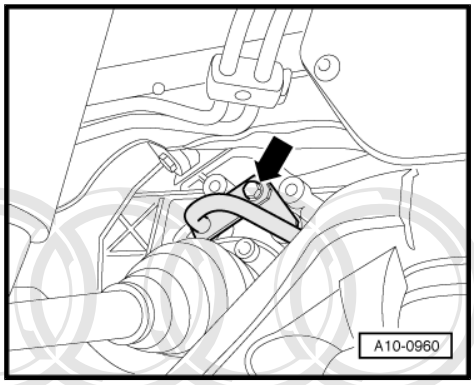
Note

- *Observe rules for cleanliness when working on automatic gearbox ⇒ page 10 .*
- *Place a cloth below the connection to catch escaping ATF.*

– Remove bolt -arrow- and detach ATF pipes from gearbox.



Installing

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

Note

Renew O-rings

– First insert ATF pipes into gearbox by hand as far as stop, then secure with bolts.
– On vehicles with 2.0 ltr. TDI engine, install additional ATF filter ⇒ page 130 .

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Tightening torques
⇒ "10 Exploded view - ATF pipes, ATF cooler and additional ATF filter", page 122

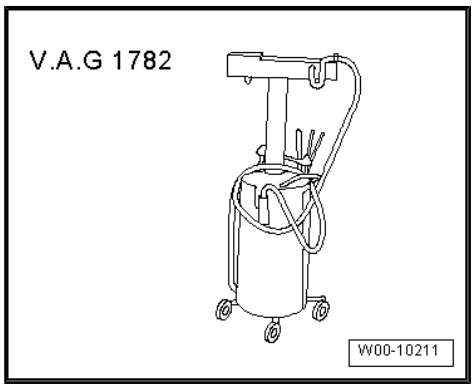
10.3 Removing and installing additional ATF filter - vehicles with petrol engine

Note

- *Rules for cleanliness when working on the automatic gearbox ⇒ page 10 .*
- *General repair instructions ⇒ page 8 .*
- *Before fitting a replacement gearbox, always blow through the ATF cooler and ATF pipes with compressed air (not more than 10 bar) ⇒ page 126 and renew the additional ATF filter. If the ATF which emerges during cleaning is very dirty, the pipes and ATF cooler must additionally be flushed out with clean ATF.*
- *To install, first press ATF pipes into cooler by hand as far as stop, then bolt on.*

Special tools and workshop equipment required

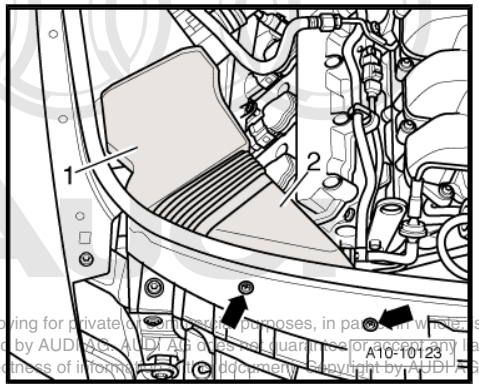
- Used oil collection and extraction unit -V.A.G 1782-



Removing

– Remove bolts -arrows-.

– Remove air ducts -1- and -2-.



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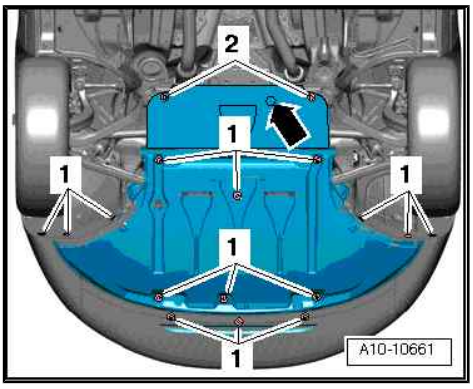
– Remove noise insulation panels ⇒ General body repairs, exterior; Rep. Gr. 50 .

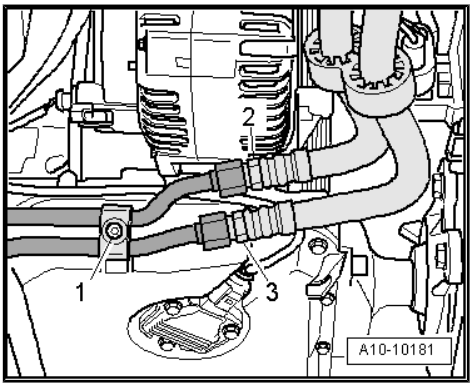


– Place used oil collection and extraction unit -V.A.G 1782- below gearbox.

– Unscrew union nuts -2- and disconnect ATF pipe.

Note

-Item 1- and -item 3- can be disregarded.



– Remove bolts -1- and -2- and detach additional ATF filter.

Installing

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

Note

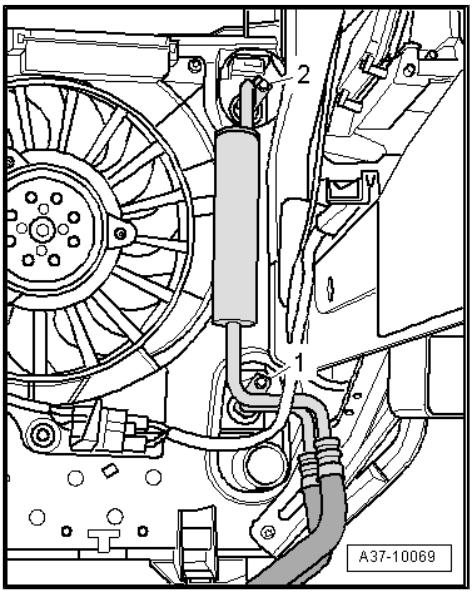
Renew O-rings

– To install, first press additional ATF filter with new O-rings onto cooler by hand as far as stop, then bolt on.

– Check and top up ATF level ⇒ page 113 .

Tightening torques

⇒ "10 Exploded view - ATF pipes, ATF cooler and additional ATF filter", page 122



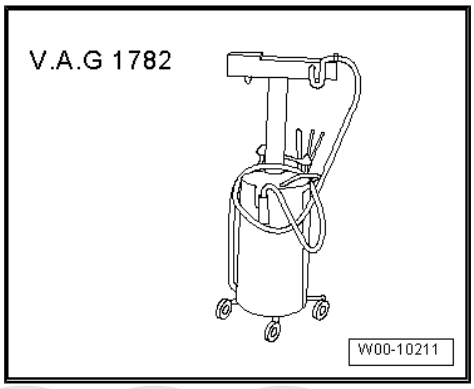
10.4 Removing and installing additional ATF filter - vehicles with 2.0 ltr. TDI engine

Note

- *Rules for cleanliness when working on the automatic gearbox ⇒ page 10 .*
- *General repair instructions ⇒ page 8 .*
- *Before fitting a replacement gearbox, always blow through the ATF cooler and ATF pipes with compressed air (not more than 10 bar) ⇒ page 126 and renew the additional ATF filter. If the ATF which emerges during cleaning is very dirty, the pipes and ATF cooler must additionally be flushed out with clean ATF.*
- *To install, first press ATF pipes into cooler by hand as far as stop, then bolt on.*

Special tools and workshop equipment required

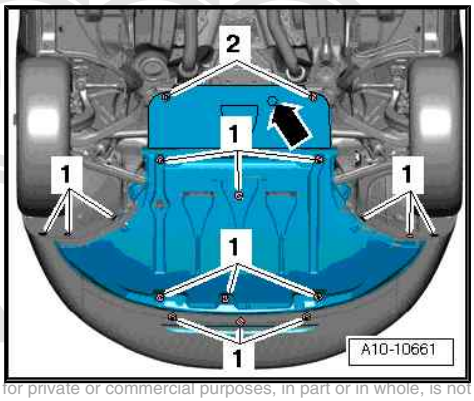
- Used oil collection and extraction unit -V.A.G 1782-



Removing

– Remove noise insulation panels ⇒ General body repairs, exterior; Rep. Gr. 50 .

– Place used oil collection and extraction unit -V.A.G 1782- below connections.



Note

Observe rules for cleanliness when working on automatic gearbox ⇒ page 10 .

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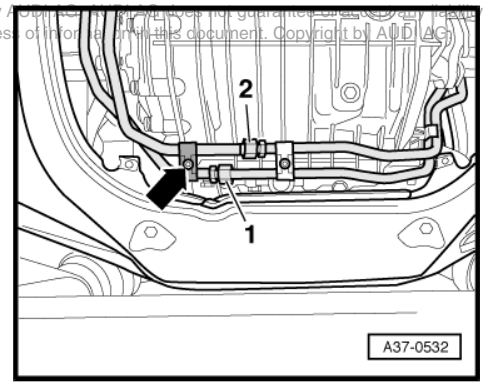
Vehicles with multi-piece ATF pipes:

– Unscrew union nuts -1- and -2- and disconnect ATF pipes.

– Unbolt clamp for ATF pipes -arrow-.

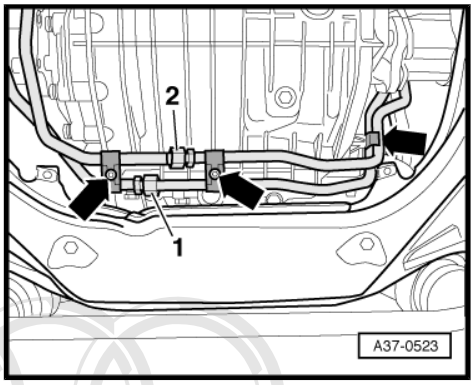


Vehicles with ATF pipes with no connection points:

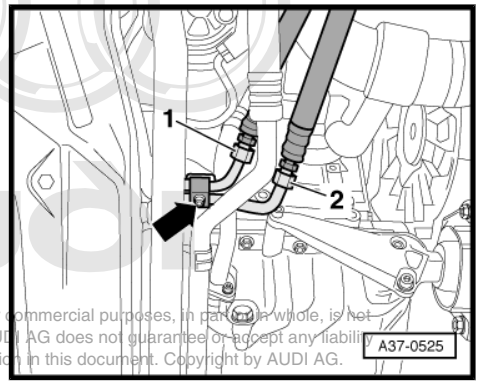
Note

These vehicles do not have union nuts -1- and -2-; the ATF pipes to the additional ATF filter have no connection points.

– Unbolt bracket for ATF pipes -arrows-.



– Loosen front union nut -2- on pipe going to additional ATF filter.
– Unbolt bracket for ATF pipes -arrow-.



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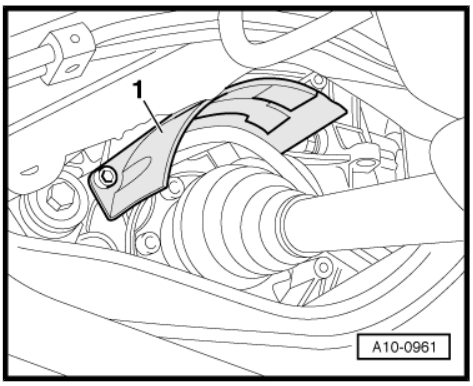
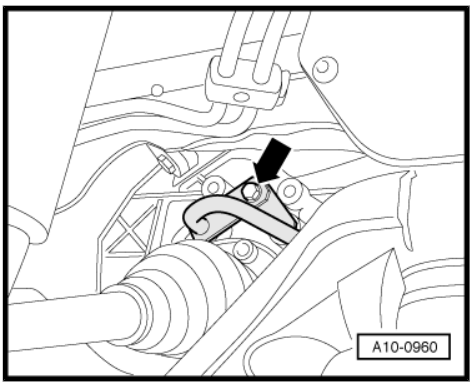
– Remove heat shield -1- for drive shaft (right-side).

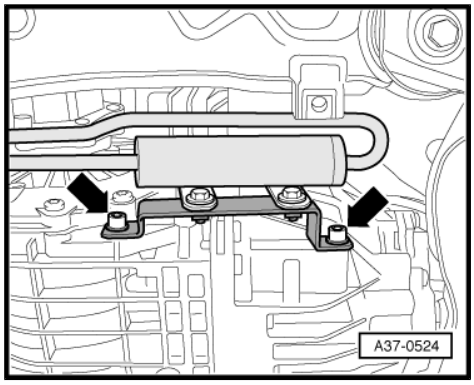


– Unscrew bolt -arrow- and detach ATF pipes from gearbox.



Continued for all vehicles:

– Unbolt additional ATF filter from gearbox -arrows-.



Installing

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

Note

The additional ATF filter with ATF pipes without connection points can be replaced with the additional ATF filter with multi-piece ATF pipes.

– Check and top up ATF level ⇒ page 113 .

Tightening torques
⇒ "10 Exploded view - ATF pipes, ATF cooler and additional ATF filter", page 122

10.5 Removing and installing ATF breather pipe

If ATF emerges at underside of gearbox bell housing, oil seal for input shaft and/or ATF breather pipe may be leaking. The actual cause of the leak must be determined before renewing any components.

The ATF breather pipe must be renewed if leaking.

- Gearbox removed

Description of work sequence ⇒ Servicing multitronic 01J and 0AN; Rep. Gr. 37

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11 Renewing oil seal for selector shaft

- Gearbox removed

Description of work sequence ⇒ Servicing multitronic 01J and 0AN; Rep. Gr. 37

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38 – Gears, control

1 Dismantling and assembling gearbox

Caution

Do not run engine or tow vehicle with end cover removed or when there is no ATF in the gearbox.

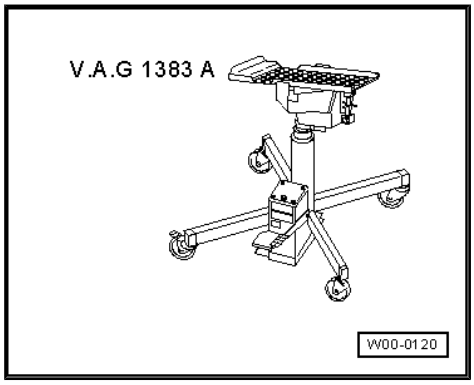
1.1 Removing and installing end cover

Note

- *Rules for cleanliness when working on the automatic gearbox* ⇒ page 10 .
- *General repair instructions* ⇒ page 8 .

Special tools and workshop equipment required

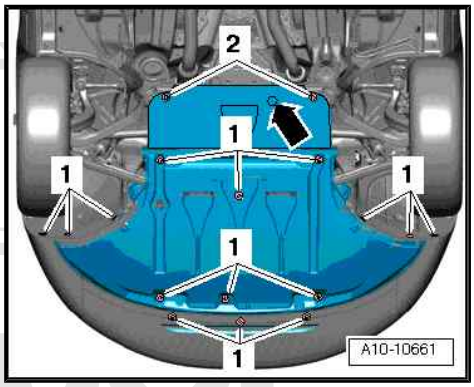
- Engine and gearbox jack -V.A.G 1383 A-



Removing

– Remove noise insulation panels ⇒ General body repairs, exterior; Rep. Gr. 50 .

– Drain off ATF ⇒ page 119 .



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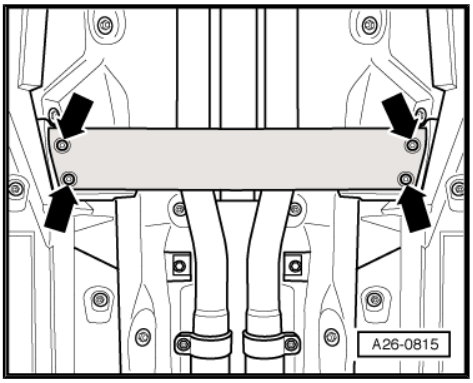
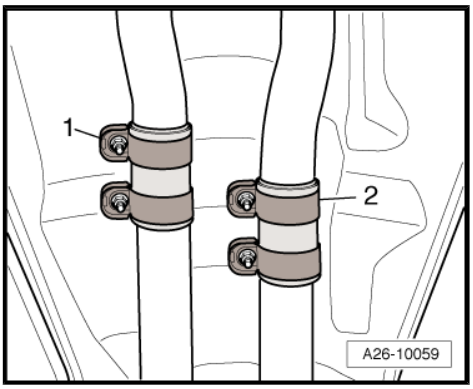
Vehicles with twin exhaust system:

– Remove front cross piece -arrows-.



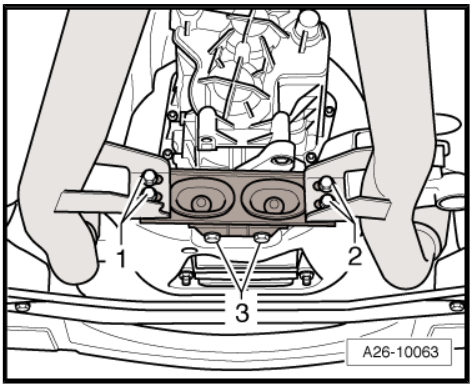
– Loosen clamps -1- and -2-.



Note

The flexible pipe connection (de-coupling element) on the front exhaust pipe must not be bent more than 10° – otherwise it can be damaged.

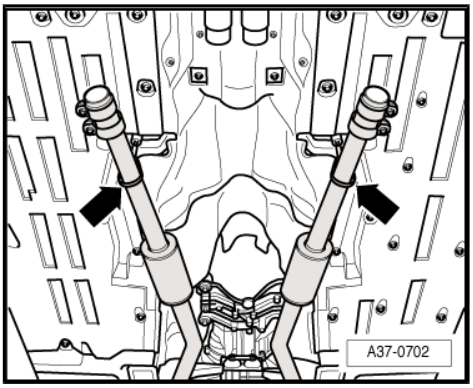
– Unscrew bolts -1- and -2- at rear bracket for front exhaust pipe.



Note

-Item 3- can be disregarded.

– Tie left and right exhaust pipes up to body -arrows-.



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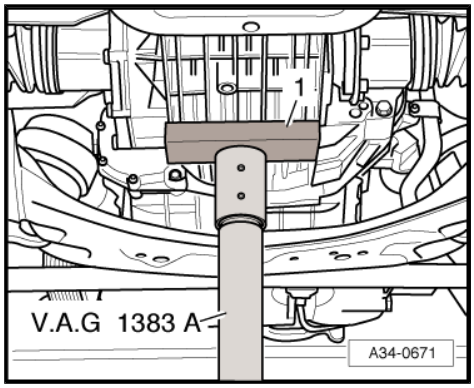
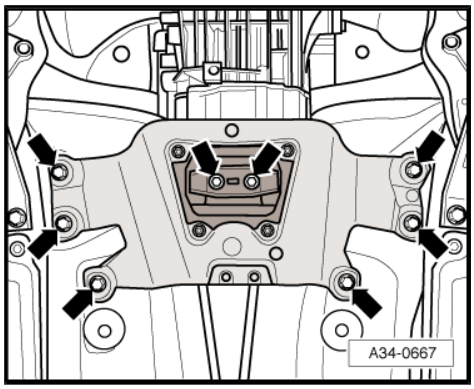
Continued for all vehicles:

– Apply lifting column of engine and gearbox jack -V.A.G 1383 A- to gearbox from below (place a block of wood -1- between lifting column and gearbox).

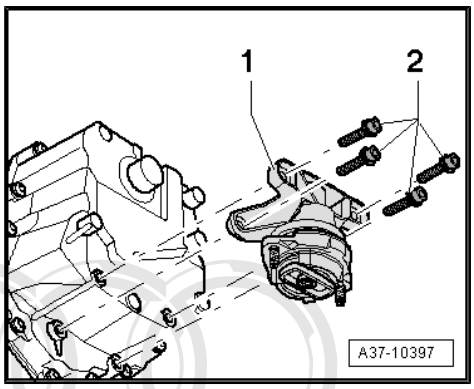
– Use engine and gearbox jack -V.A.G 1383 A- to lift gearbox up slightly.



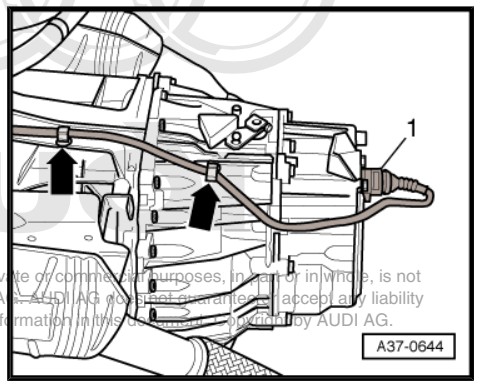
– Remove bolts -arrows- and detach tunnel cross member.



– Unscrew bolts -2- and detach gearbox support -1- from gearbox.



– Release electrical connector -1- and detach from gearbox.



Note

-Arrows- can be disregarded.

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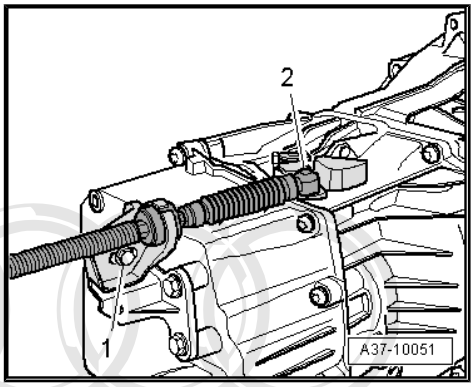
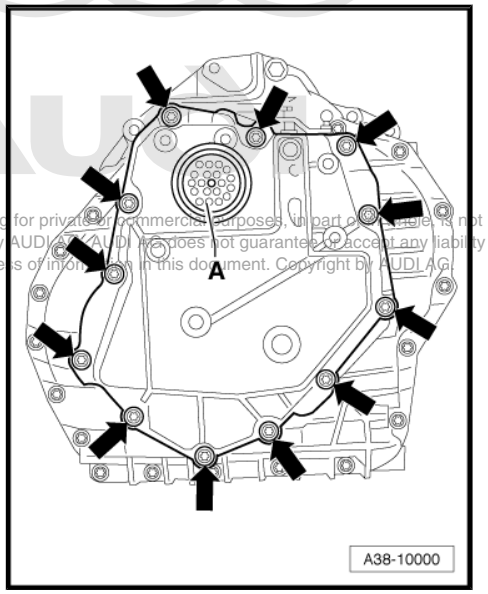
– Mark installation position of support bracket for selector lever cable.
– Unscrew bolt -1- from support bracket for selector lever cable.



Note

-Item 2- can be disregarded.

– Remove bolts -arrows- and take off end cover.



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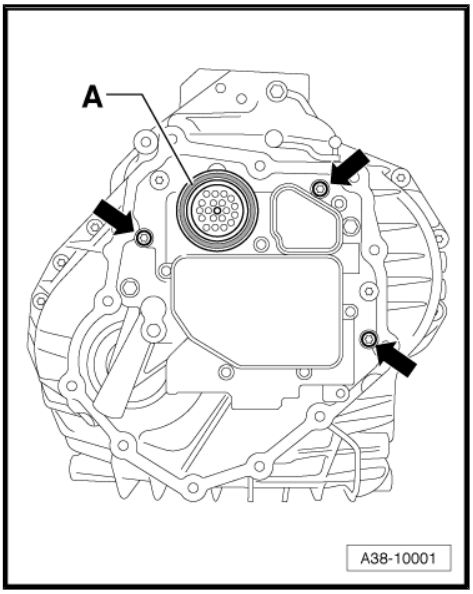
Installing

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

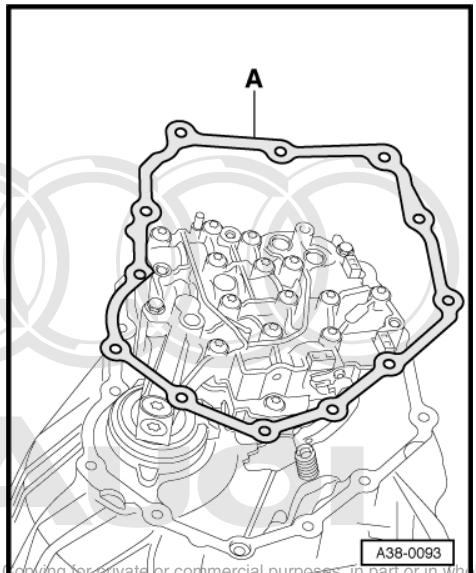
Note

Renew oil seals, seals/gaskets and bolts for end cover.

– Slide new twin-lip seal -A- onto connector of automatic gearbox control unit -J217- , with twin lips facing outwards.
– Clean sealing surfaces on gearbox housing and end cover.
– If any dowel sleeves were removed from gearbox housing or cover, these must be re-fitted in same places.



– Place new gasket for end cover -A- onto gearbox housing.



Note

- *The gasket can be either metal or paper. The new gasket must be made of the same material as the old one ⇒ Parts catalogue .*
- *Make sure dowel sleeves are correctly seated.*

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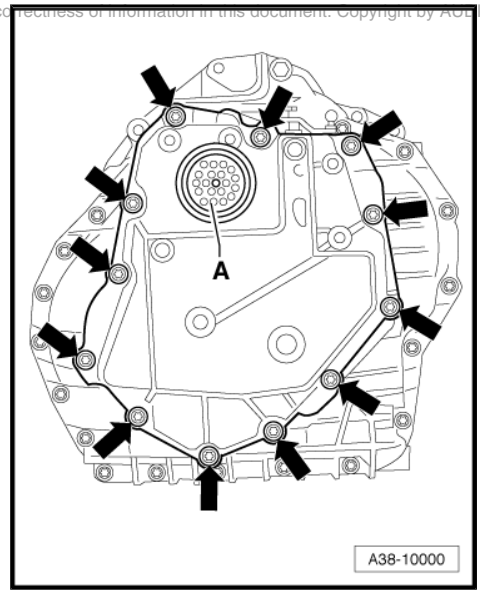
– Fit end cover and make sure that gasket does not move out of position.

– Screw in new bolts -arrows- in diagonal sequence until hand-tight and then tighten to specified torque.

– Check installation position of twin-lip seal -A-:

• Twin-lip seal must be flush fitted (the sealing lips must not be kinked).

– Push gearbox selector lever into position “D”.



Note

In order to set gearbox selector lever (on gearbox) to position “D”, first move lever rearwards as far as it will go, into position “P”. Then shift it three positions to the front (in direction of travel).

– Fit support bracket for selector lever cable according to marking on bracket at rear of gearbox.

– Install gearbox support ⇒ page 108 .

– Install tunnel cross member ⇒ page 110 .

– Install exhaust system so it is free of stress ⇒ Engine, mechanics; Rep. Gr. 26 .

– Fill up with ATF ⇒ page 119 .

Tightening torque

Component	Nm
End cover to gearbox	15 + 90° 1) 2)

1) Renew bolts.

2) 90° is equivalent to a quarter turn

1.2 Removing and installing automatic gearbox control unit -J217-

• End cover must be removed ⇒ page 134 .

Description of work sequence ⇒ Servicing multitronic 01J and 0AN; Rep. Gr. 38

1.3 Cleaning selector shaft

- Automatic gearbox control unit -J217- must be removed.

Description of work sequence ⇒ Servicing multitronic 01J and 0AN; Rep. Gr. 38

1.4 Removing and installing hydraulic control unit

- End cover must be removed ⇒ page 134 .

Description of work sequence ⇒ Servicing multitronic 01J and 0AN; Rep. Gr. 38

1.5 Removing and installing input shaft

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- Gearbox must be removed and secured to engine/gearbox support ⇒ page 107 .

Description of work sequence ⇒ Servicing multitronic 01J and 0AN; Rep. Gr. 38

1.6 Renewing oil seal for input shaft

If ATF emerges at underside of gearbox bell housing, oil seal for input shaft and/or ATF breather pipe may be leaking. The actual cause of the leak must be determined before renewing any components.

- Gearbox removed

Description of work sequence ⇒ Servicing multitronic 01J and 0AN; Rep. Gr. 38

39 – Final drive - differential

1 Gear oil level in front final drive

Note

- *General repair instructions ⇒ page 8 .*
- *Rules for cleanliness when working on the automatic gearbox ⇒ page 10 .*

1.1 Checking gear oil level in front final drive

Note

The prescribed oil level is to be adhered to exactly; the gearbox reacts very sensitively to over-filling.

Test sequence

– Carry out a short test drive in order to heat gear oil to approx. 60 °C.

– Drive vehicle onto a lifting platform or over an inspection pit in order for it to be absolutely horizontal.

– Switch off engine and let gear oil drip into gearbox housing for 5 minutes.

– Remove rear noise insulation ⇒ General body repairs, exterior; Rep. Gr. 50 .

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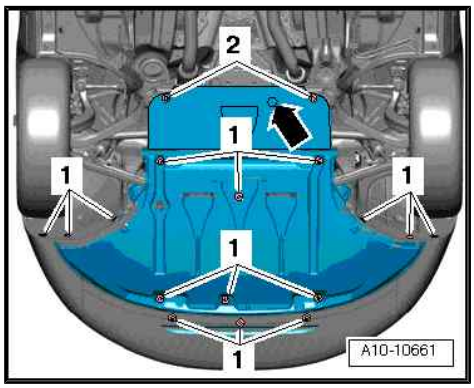

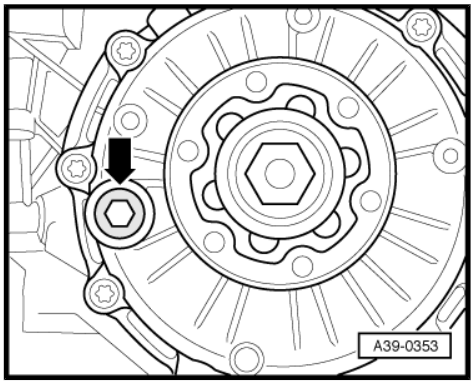

– Remove screw plug -arrow-.
– Check the oil level with a suitable improvised tool, e.g. bent wire.
• Specification: oil level 8.5 mm below bottom lip of oil filler hole.
– Top up gear oil if necessary.

Caution

Risk of damage to the gearbox.

- ***The two gearbox versions multitronic 01J and 0AN require different types of gear oil. Only the correct type of gear oil for the respective gearbox (available as a replacement part) may be used in the front final drive. Use only the gear oil that is listed for the gearbox code ⇒ Electronic parts catalogue .***
- ***Mixing the gear oil with other types of oil , even in very small quantities, can result in damage to gearbox components.***

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Note

When servicing at the workshop the oil can also be filled up to the bottom lip of the oil filler hole. However, it will then be necessary to extract 0.2 litre in order to reach the correct oil level.

– Tighten new screw plug.

Tightening torque

Component	Nm
Screw plug to gearbox	20 3)

3) Renew screw plug.

2 Servicing front final drive

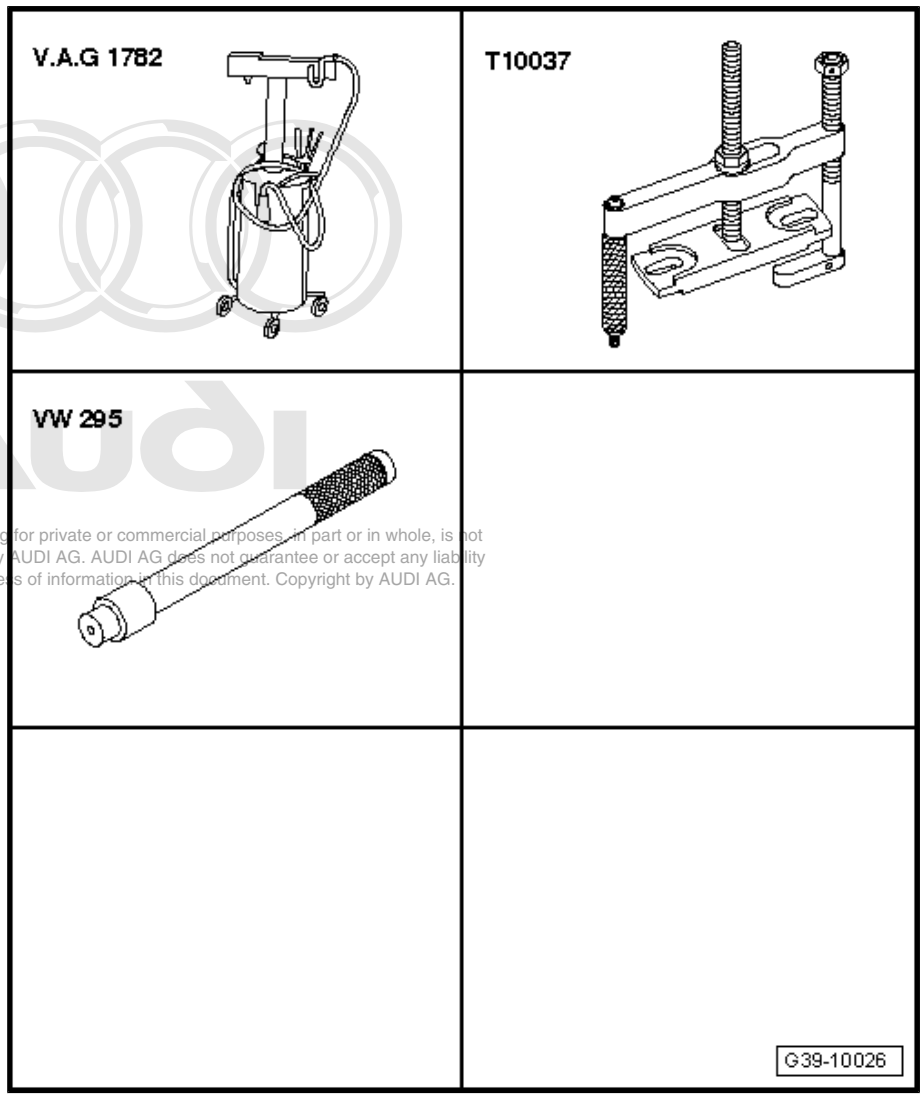
Note

- *General repair instructions* ⇒ page 8 .
- *Rules for cleanliness when working on the automatic gearbox* ⇒ page 10 .

2.1 Removing and installing flange shaft (left-side)

Special tools and workshop equipment required

- Used oil collection and extraction unit -V.A.G 1782-
- Puller -T10037-
- Drift -VW 295-



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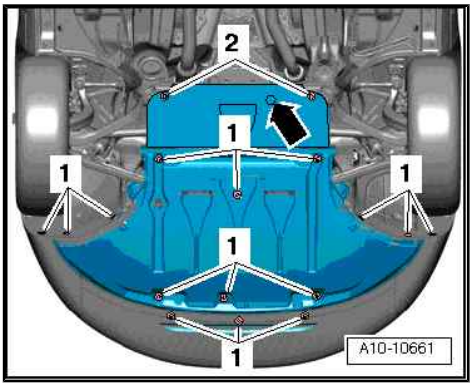
Removing

- Gearbox in vehicle

– Remove front left wheel.



Note

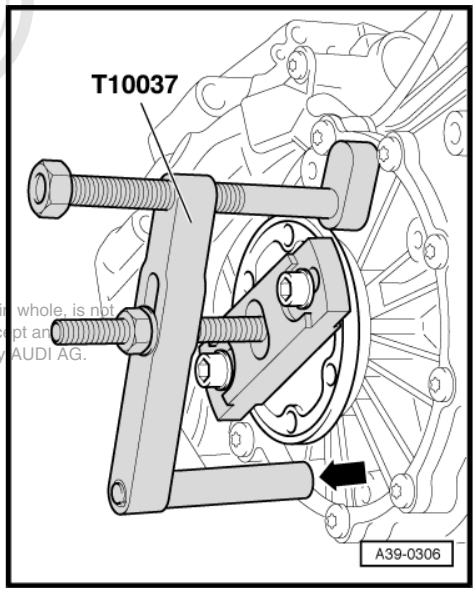
Secure brake disc with one wheel bolt.

– Remove noise insulation panels ⇒ General body repairs, exterior; Rep. Gr. 50 .

– Remove drive shaft (left-side) ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. Gr. 40 .

– Place used oil collection and extraction unit -V.A.G 1782- below gearbox.

– Bolt bottom support of puller -T10037- onto cover for final drive -arrow-.



Note

In order to prevent damage to the needle bearings (polygon bearings) or the differential during removal, the flange shaft must be kept straight when removing (pull out evenly).

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– Pull out left flange shaft using puller -T10037- only until bearing on shaft is removed from gearbox housing.

Installing

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

- Circlip for flange shaft must always be renewed.

– Clamp flange shaft into vice with jaw protectors to renew circlip for flange shaft.

– Press old circlip from groove of flange shaft using new circlip -A-.

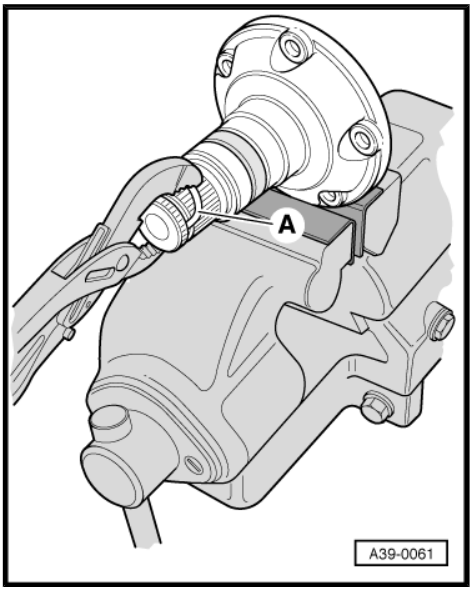
– Clean flange shaft.

– Check oil seal for flange shaft (left-side) and renew if necessary ⇒ Servicing multitronic 01J and 0AN; Rep. Gr. 39 .

– Drive in flange shaft using drift -VW 295- .

– Install drive shaft (left-side) ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. Gr. 40 .

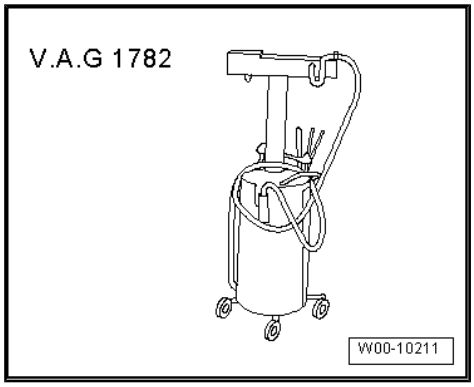
– Check gear oil level in front final drive ⇒ page 140 .



2.2 Removing and installing flange shaft (right-side)

Special tools and workshop equipment required

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



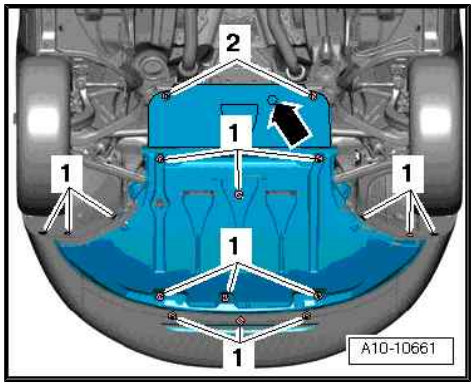
Removing

- Gearbox in vehicle

– Remove front right wheel.

Note

Secure brake disc with one wheel bolt.



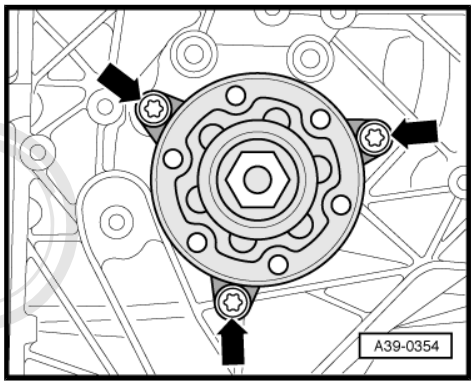
– Remove noise insulation panels ⇒ General body repairs, exterior; Rep. Gr. 50 .

– Remove drive shaft (right-side) ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. Gr. 40 .

– Unbolt mounting bracket for flange shaft -arrows-.

– Place used oil collection and extraction unit -V.A.G 1782- below gearbox.

– Pull out flange shaft (right side) together with mounting bracket.



Installing

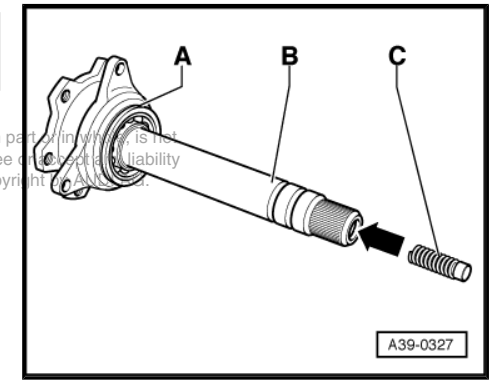
– Clean flange shaft.

– If oil seal is damaged, it must be renewed ⇒ Servicing multitronic 01J and 0AN; Rep. Gr. 39 .

– Renew O-ring -arrow A- in flange shaft mounting bracket.

– Push spring -C- with cap facing outwards into drilling at end of flange shaft -arrow-.

– Insert flange shaft -B- into gearbox.



Note

Make sure that spring -C- remains in flange shaft when inserting, otherwise it might drop into gearbox.

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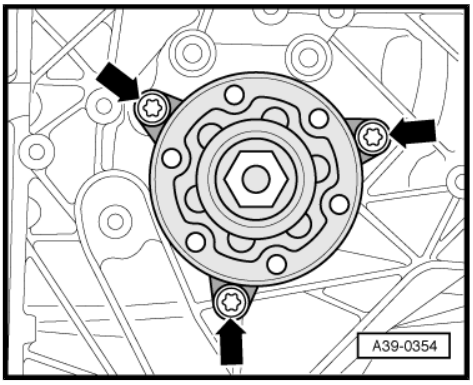
– Bolt on mounting bracket for flange shaft -arrows-.



– Install drive shaft (right-side) ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. Gr. 40 .

– Check gear oil level in front final drive ⇒ page 140 .

Tightening torque

Component	Nm
Flange shaft mounting bracket (right-side) to gearbox	25

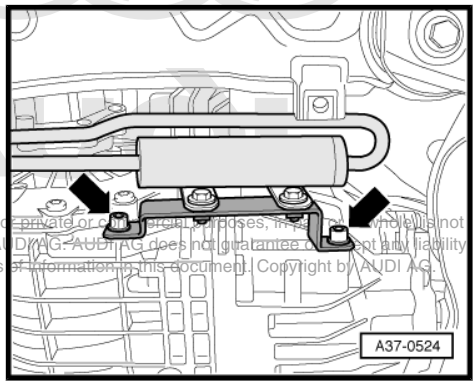
2.3 Removing and installing cover for front final drive

Removing

– Remove flange shaft (left-side) ⇒ page 142 .

On vehicles in which ATF pipes are routed over cover for front final drive:

– Unbolt additional ATF filter from gearbox -arrows-.



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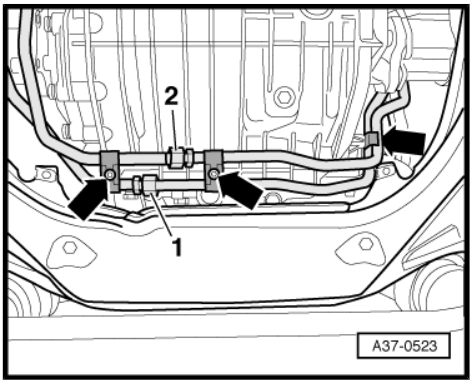
– Unbolt bracket for ATF pipes -arrows-.



Continued for all vehicles:

– Remove cover for front final drive ⇒ Servicing multitronic 01J and 0AN; Rep. Gr. 39 .

Installing

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

Tightening torques:
⇒ “10 Exploded view - ATF pipes, ATF cooler and additional ATF filter”, page 122

– Install cover for front final drive ⇒ Servicing multitronic 01J and 0AN; Rep. Gr. 39 .

– Install flange shaft (left-side) ⇒ page 142 .

– Fill up with gear oil and check gear oil level in front final drive ⇒ page 140 .

Caution

Risk of damage to the gearbox.

The two gearbox versions multitronic 01J and 0AN require different types of gear oil. Only the correct type of gear oil for the respective gearbox (available as a replacement part) may be used in the front final drive ⇒ Electronic parts catalogue .

2.4 Renewing oil seal for flange shaft (left-side)

- Flange shaft (left-side) must be removed ⇒ page 142 .

Description of work sequence ⇒ Servicing multitronic 01J and 0AN; Rep. Gr. 39

2.5 Renewing oil seal for flange shaft (right-side) and grooved ball bearing

- Flange shaft (right-side) must be removed ⇒ page 143 .

Description of work sequence ⇒ Servicing multitronic 01J and 0AN; Rep. Gr. 39

2.6 Renewing oil seal for pinion shaft

- Gearbox removed

Description of work sequence ⇒ Servicing multitronic 01J and 0AN; Rep. Gr. 39

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