

Workshop Manual Audi A6 2011 ➤

6-speed manual gearbox 0CS, 0DJ

Edition 01.2017



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List of Workshop Manual Repair Groups

Repair Group

00 - Technical data

30 - Clutch

34 - Controls, housing

35 - Gears, shafts

39 - Final drive - front differential



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

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00 – Technical data

1 Identification

(ARL005092; Edition 01.2017)

⇒ [“1.1 Gearbox identification”, page 1](#)

1.1 Gearbox identification

⇒ [“4.1 Allocation of gearbox to engine - Audi A6 2011 ►”, page 8](#)



Note

- ◆ From approx. 09/2016 onwards, manual gearboxes 0CS and 0DJ, front-wheel drive are fitted with a forced lubrication system.
- ◆ The gear wheels and bearings on these gearboxes are lubricated via a mechanical oil pump fitted in the gearbox.
- ◆ Visible differences ⇒ [page 1](#)
- ◆ Allocation according to gearbox code letters ⇒ [page 8](#)

Differentiation of manual gearbox 0CS, 0DJ with and without forced lubrication

I - Manual gearbox without forced lubrication

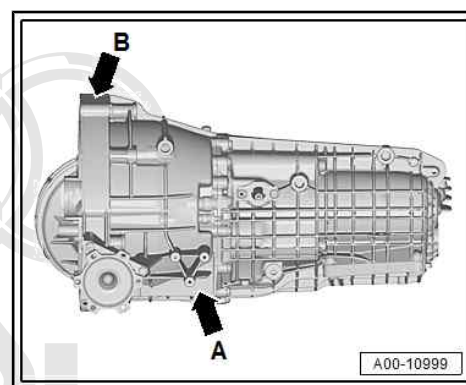
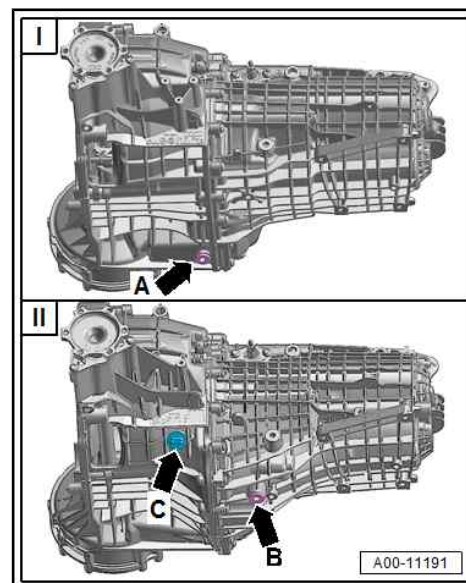
- ◆ Oil drain plug -arrow A- is located in gearbox housing

II - Manual gearbox with forced lubrication

- ◆ Oil drain plug -arrow B- is located in gearbox cover
- ◆ Additional opening in gearbox housing with sealing plug -arrow C-

Location on gearbox

- ◆ -Arrow A- Manual gearbox 0CS or 0DJ ⇒ [page 2](#)
- ◆ -Arrow B- Code letters and production date ⇒ [page 2](#)



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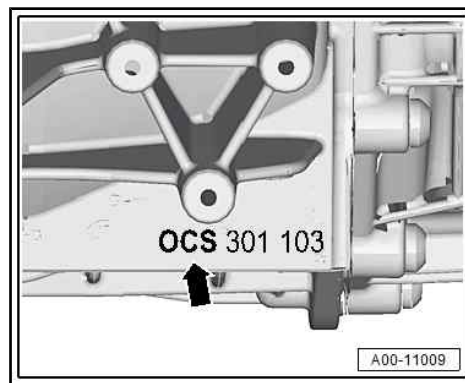
Manual gearbox OCS or 0DJ -arrow-

- ◆ The part number for the gearbox housing (OCS 301 103 in the example) may start with "OCS" or "0DJ".
- ◆ The basic design of manual gearboxes OCS and 0DJ is the same.

Difference:

- ◆ Gearbox OCS does not have weight-optimising modifications.
- ◆ Gearbox 0DJ has weight-optimising modifications.
- ◆ They can only be distinguished by referring to the gearbox code letters

⇒ ["4.1 Allocation of gearbox to engine - Audi A6 2011 ►", page 8](#).



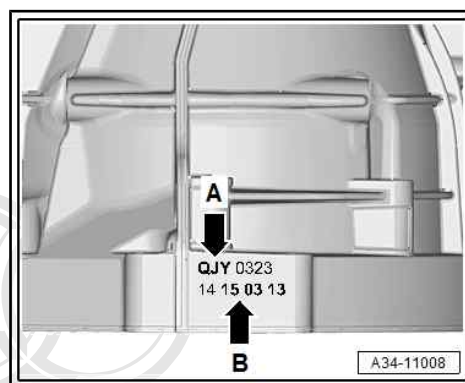
Code letters -arrow A- and production date of gearbox -arrow B-

Example:	QJY	15 03 13
	Code letters	Production date:
		15.03.2013



Note

- ◆ *Additional data depend on manufacture.*
- ◆ *The code letters for the gearbox are also given on the vehicle data stickers.*



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2 Safety precautions

⇒ [“2.1 Safety precautions when working on vehicles with start/stop system”, page 3](#)

⇒ [“2.2 Safety precautions when working on subframe”, page 3](#)

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



WARNING

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

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

2.2 Safety precautions when working on subframe

Note the following when working on the subframe:



Caution

Risk of damage to parts of the running gear.

- ◆ *Do not let the vehicle down on the wheels if the gearbox mounting, steering rack or subframe cross brace are not properly installed.*
- ◆ *Do NOT support the vehicle at the subframe or the subframe cross brace (e.g. with a trolley jack).*

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3 Repair instructions

⇒ ["3.1 General repair instructions", page 4](#)

⇒ ["3.2 Contact corrosion", page 6](#)

3.1 General repair instructions

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

A number of generally applicable instructions for the various repair procedures - which were previously repeated at numerous places in the Workshop Manual - are summarised here. They apply to the work described in this Manual.

Special tools

For a complete list of special tools used in this Workshop Manual
⇒ [Workshop equipment and special tools](#)

Gearbox

- ◆ From approx. 09/2016 onwards, manual gearboxes OCS and 0DJ, front-wheel drive are fitted with a forced lubrication system.
- ◆ The gear wheels and bearings on these gearboxes are lubricated via a mechanical oil pump fitted in the gearbox.
- ◆ Identification ⇒ [page 1](#)
- ◆ Check gear oil level and fill up with gear oil if necessary
⇒ [page 101](#) .
- ◆ For fluid capacities and specifications, refer to appropriate code letters ⇒ [page 10](#) .
- ◆ Allocate bolts and other components according to gearbox code letters, refer to ⇒ Electronic parts catalogue
⇒ ["4.1 Allocation of gearbox to engine - Audi A6 2011 ►", page 8](#) .
- ◆ Thoroughly clean all joints and connections and the surrounding areas before disconnecting.
- ◆ When installing gearbox ensure dowel sleeves are correctly seated.

Sealant

- ◆ Thoroughly clean housing contact surfaces before applying sealing paste.
- ◆ Apply sealing paste (⇒ Electronic parts catalogue) evenly and not too thickly.
- ◆ Breather holes must remain free of sealing paste.

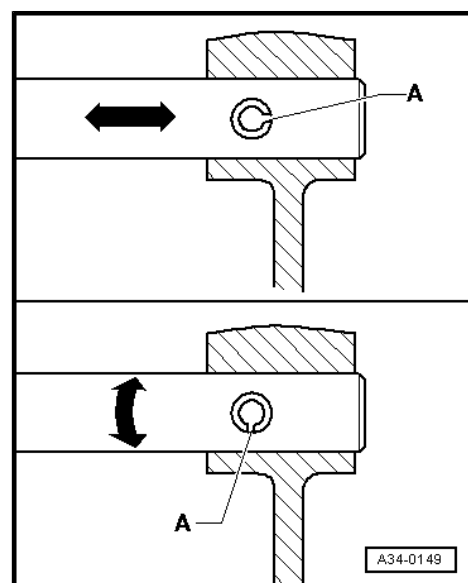
O-rings, seals, oil seals and gaskets

- ◆ Always renew O-rings, seals, oil seals and gaskets after removal.
- ◆ The seals for the flange shafts, input shaft and selector shaft are normally referred to as oil seals.
- ◆ After removing gaskets and oil 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.
- ◆ Before installing oil seals, lightly oil the outer circumference of the seal and fill the space between the sealing lips -arrow- about half full with grease ⇒ Electronic parts catalogue .
- ◆ 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).
- ◆ Lightly lubricate O-rings before installation to prevent them from being trapped and damaged during assembly.
- ◆ After renewing gaskets, O-rings and oil seals, check and, if necessary, top up oil level in gearbox ⇒ [page 101](#) .



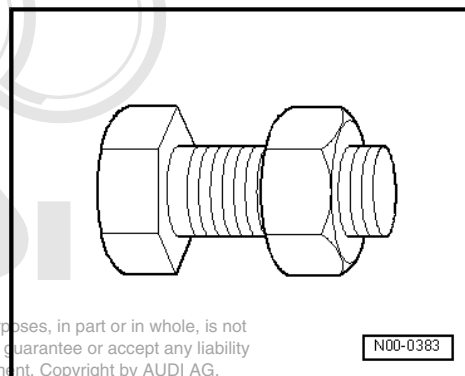
Locking elements

- ◆ 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.
- ◆ **Renew spring pins** Position: the slit -A- should be in line with the line of force -arrow-.



Nuts, bolts

- ◆ Loosen the nuts and bolts in reverse sequence to the specified tightening sequence.
- ◆ 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.
- ◆ Loosen and tighten particularly sensitive parts in diagonal sequence and in stages, taking care to keep them straight.
- ◆ 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 thread tap or similar. Otherwise there is a danger of the bolts shearing off the next time they are removed.
- ◆ To avoid damage to thread, check thread pitch to ensure that correct thread tap is used for cleaning.

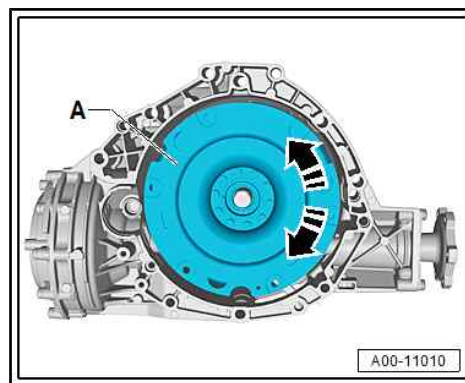


Clutch mechanism; clutch

- ◆ If the clutch pedal does not return to its initial position after releasing it - clutch pedal in rest position -, you must bleed the clutch hydraulics. Further measures → [page 21](#) .
- ◆ The brake fluid in the clutch mechanism should be changed at the same intervals as the brake fluid in the brake system
→ Maintenance ; Booklet 411 ; Description of work; Brake fluid: changing (every 2 years) .

“Clacking” sound in LuK version dual-mass flywheel with centrifugal pendulum absorber

- ◆ Depending on version, clutch modules -A- with or without centrifugal pendulum absorbers may be fitted.
- ◆ When a clutch module with a centrifugal pendulum absorber is turned by hand, a clacking sound can be heard at intervals of approx. 90°.
- ◆ This is caused by a centrifugal pendulum absorber in the dual-mass flywheel and is not a fault.



3.2 Contact corrosion

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

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

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

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

Please note:

- ◆ Use only genuine spare parts: these have been fully tested and are compatible with aluminium.

- ◆ We recommend the use of accessories approved by Audi.
- ◆ Damage caused by contact corrosion is not covered by warranty.



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4 Technical data

⇒ ["4.1 Allocation of gearbox to engine - Audi A6 2011 ►", page 8](#)

⇒ ["4.2 Capacities", page 10](#)

4.1 Allocation of gearbox to engine - Audi A6 2011 ►

⇒ ["4.1.1 Allocation - 6-speed manual gearbox 0DJ \(front-wheel drive\)", page 8](#)

⇒ ["4.1.2 Allocation - 6-speed manual gearbox 0CS \(front-wheel drive\)", page 9](#)

4.1.1 Allocation - 6-speed manual gearbox 0DJ (front-wheel drive)



Note

- ◆ From approx. 09/2016 onwards, manual gearbox 0DJ, front-wheel drive is fitted with a forced lubrication system.
- ◆ The gear wheels and bearings on this gearbox are lubricated via a mechanical oil pump fitted in the gearbox.
- ◆ Identification ⇒ [page 1](#)

The following data can be found in the ⇒ **Electronic parts catalogue**.

- ◆ Production date
- ◆ Gear oil specification
- ◆ Individual gear ratios
- ◆ Correct type of flange shafts
- ◆ Correct type of dual-mass flywheel
- ◆ Correct type of clutch plate and pressure plate

Manual gearbox		6-speed 0DJ (front-wheel drive)		
Code letters		QWA	RYM	
Allocation	Model	Audi A6 2011 ►	Audi A6 2011 ►	
	Engine	1.8 ltr. TFSI - 140 kW	1.8 ltr. TFSI - 140 kW	
Ratio	Final drive	41 : 17 = 2.412	41 : 17 = 2.412	
	Intermediate drive	62 : 42 = 1.476	62 : 42 = 1.476	
Forced lubrication (with oil pump)		No	Yes	

4.1.2 Allocation - 6-speed manual gearbox 0CS (front-wheel drive)



Note

- ◆ From approx. 09/2016 onwards, manual gearbox 0CS, front-wheel drive is fitted with a forced lubrication system.
- ◆ The gear wheels and bearings on this gearbox are lubricated via a mechanical oil pump fitted in the gearbox.
- ◆ Identification ⇒ [page 1](#)

The following data can be found in the ⇒ **Electronic parts catalogue**.

- ◆ Production date
- ◆ Gear oil specification
- ◆ Individual gear ratios
- ◆ Correct type of flange shafts
- ◆ Correct type of dual-mass flywheel
- ◆ Correct type of clutch plate and pressure plate

Manual gearbox		6-speed 0CS (front-wheel drive)		
Code letters		PUC	QJY	RYP
Allocation	Model Engine	Audi A6 2011 ► 2.0 ltr. TDI - 100 kW 2.0 ltr. TDI - 110 kW	Audi A6 2011 ► 2.0 ltr. TDI - 140 kW	Audi A6 2011 ► 2.0 ltr. TDI - 100 kW 2.0 ltr. TDI - 110 kW
Ratio	Final drive	40 : 16 = 2.500	40 : 16 = 2.500	40 : 16 = 2.500
	Intermediate drive	62 : 42 = 1.476	62 : 42 = 1.476	62 : 42 = 1.476
Forced lubrication (with oil pump)		No	No	Yes

Manual gearbox		6-speed 0CS (front-wheel drive)		
Code letters		RYS		
Allocation	Model Engine	Audi A6 2011 ► 2.0 ltr. TDI - 140 kW		
Ratio	Final drive	41 : 17 = 2.412		
	Intermediate drive	60 : 44 = 1.364		
Forced lubrication (with oil pump)		Yes		



4.2 Capacities



Note

- ◆ *6-speed manual gearbox 0CS and 0DJ, front-wheel drive, are available with and without a forced lubrication system.*
- ◆ *The oil capacity is reduced on gearboxes with forced lubrication.*
- ◆ *Identification ⇒ [page 1](#)*

Manual gearbox	6-speed 0CS, 0DJ (front-wheel drive)
Capacity on gearbox without forced lubrication	2.5 ltr.
Capacity on gearbox with forced lubrication	1.8 ltr.
◆ Gear oil specifications ⇒ Electronic parts catalogue	

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5 Transmission layout

⇒ ["5.1 Transmission layout - front-wheel drive", page 11](#)

5.1 Transmission layout - front-wheel drive

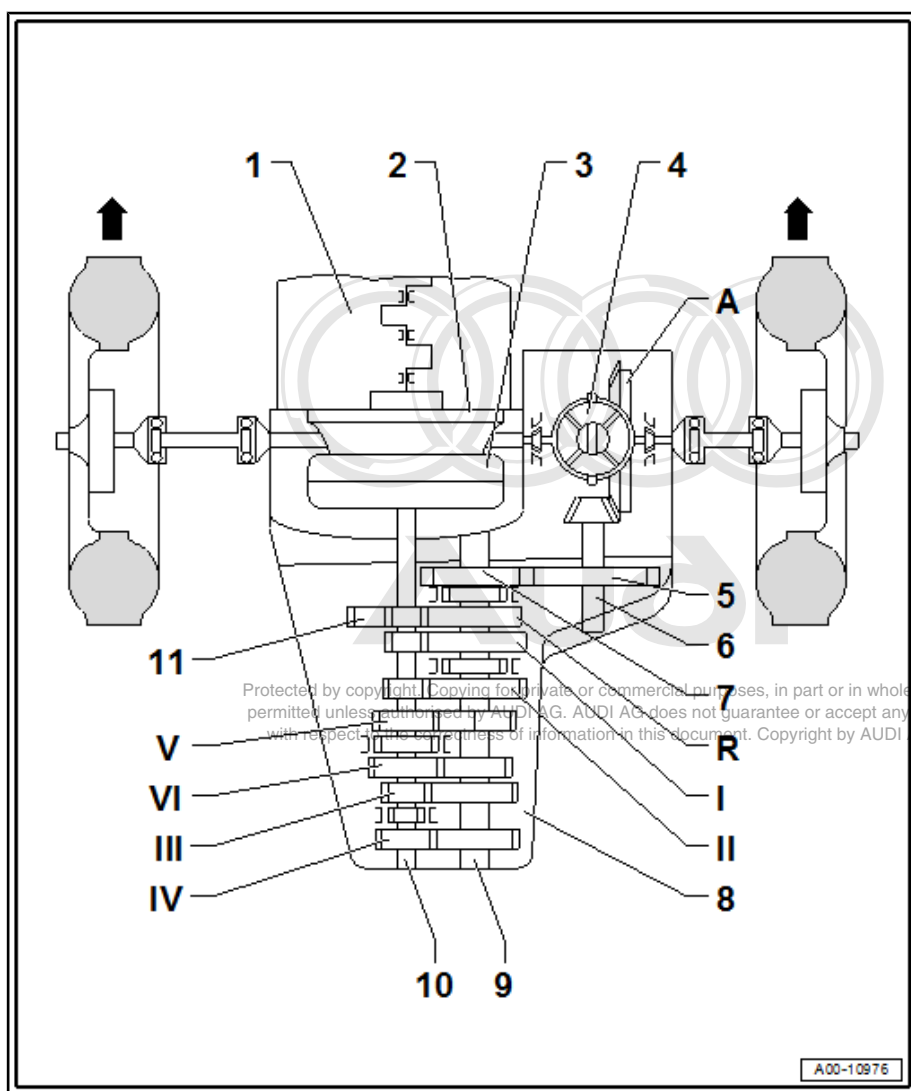
Identification and ratio



Note

-Arrows- point in direction of travel.

- 1 - Engine
- 2 - Drive plate
 - With needle bearing for gearbox input shaft
- 3 - Clutch module
 - Consists of pressure plate, clutch plate and dual-mass flywheel with flange for drive plate
- 4 - Differential
- 5 - Output gear of intermediate drive
- 6 - Pinion shaft
- 7 - Input gear of intermediate drive
- 8 - Manual gearbox
- 9 - Output shaft
- 10 - Input shaft (main shaft)
- 11 - Reverse gear wheel
- I - 1st gear
- II - 2nd gear
- III - 3rd gear
- IV - 4th gear
- V - 5th gear
- VI - 6th gear
- R - Reverse gear
- A - Final drive



6 Electrical components

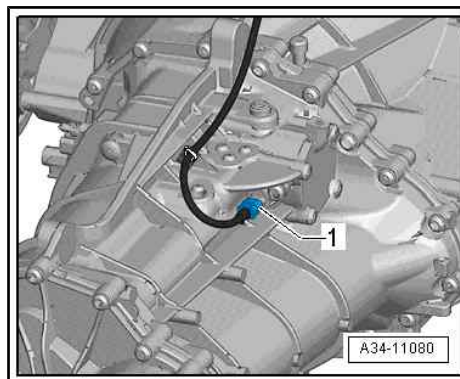
⇒ ["6.1 Overview of fitting locations - electrical components", page 12](#)

6.1 Overview of fitting locations - electrical components

Gear detection sensor - G604-

Fitting location: on right side of gearbox in area of selector shaft

Removing and installing gear detection sensor - G604-
⇒ [page 53](#)

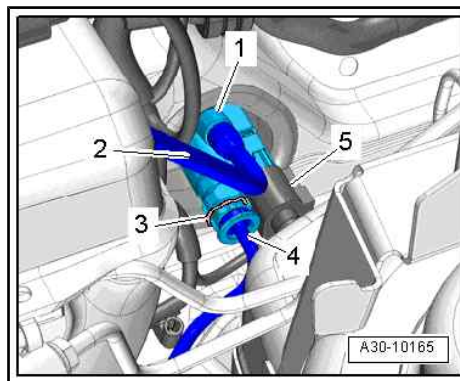


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-5- Clutch position sender - G476-

Fitting location: on clutch master cylinder

- Clutch pedal switch - F36- and clutch pedal switch for engine start - F194- are integrated in the clutch position sender - G476- .
- Can only be renewed together with clutch master cylinder
⇒ [Item 11 \(page 14\)](#) .
- Removing and installing ⇒ [page 22](#)



30 – Clutch

1 Clutch mechanism

⇒ [“1.1 Exploded view - pedal cluster”, page 13](#)

⇒ [“1.2 Exploded view - clutch hydraulics”, page 16](#)

⇒ [“1.3 Removing and installing over-centre spring”, page 18](#)

⇒ [“1.4 Removing and installing clutch pedal”, page 20](#)

⇒ [“1.5 Checking clutch master cylinder and clutch slave cylinder”, page 21](#)

⇒ [“1.6 Removing and installing clutch master cylinder”, page 22](#)

⇒ [“1.7 Bleeding clutch hydraulics”, page 26](#)

1.1 Exploded view - pedal cluster

⇒ [“1.1.1 Exploded view - pedal cluster, LHD vehicles”, page 13](#)

⇒ [“1.1.2 Exploded view - pedal cluster, RHD vehicles”, page 15](#)

1.1.1 Exploded view - pedal cluster, LHD vehicles



Caution

Risk of accident!

- ◆ ***The travel of the clutch pedal and the brake pedal must not be restricted due to additional floor mats or the like.***



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- ◆ ***Apply grease - G 000 450 02 - to all bearings and contact surfaces.***
- ◆ ***Make sure that no brake fluid escapes into the footwell, the plenum chamber or onto the gearbox below. If this does happen, clean the affected area thoroughly.***

1 - Mounting bracket

- ☐ With brake pedal
- ☐ Removing and installing
⇒ Brake system; Rep.
gr. 46 ; Brake pedal;
Removing and installing
mounting bracket

2 - Bearing bush

- ☐ Insert in clutch pedal

3 - Clutch pedal

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

4 - Clutch pedal stop

5 - Locking pin

- ☐ For clutch master cylinder
- ☐ Grease bearing surface

6 - Pivot pin for clutch pedal

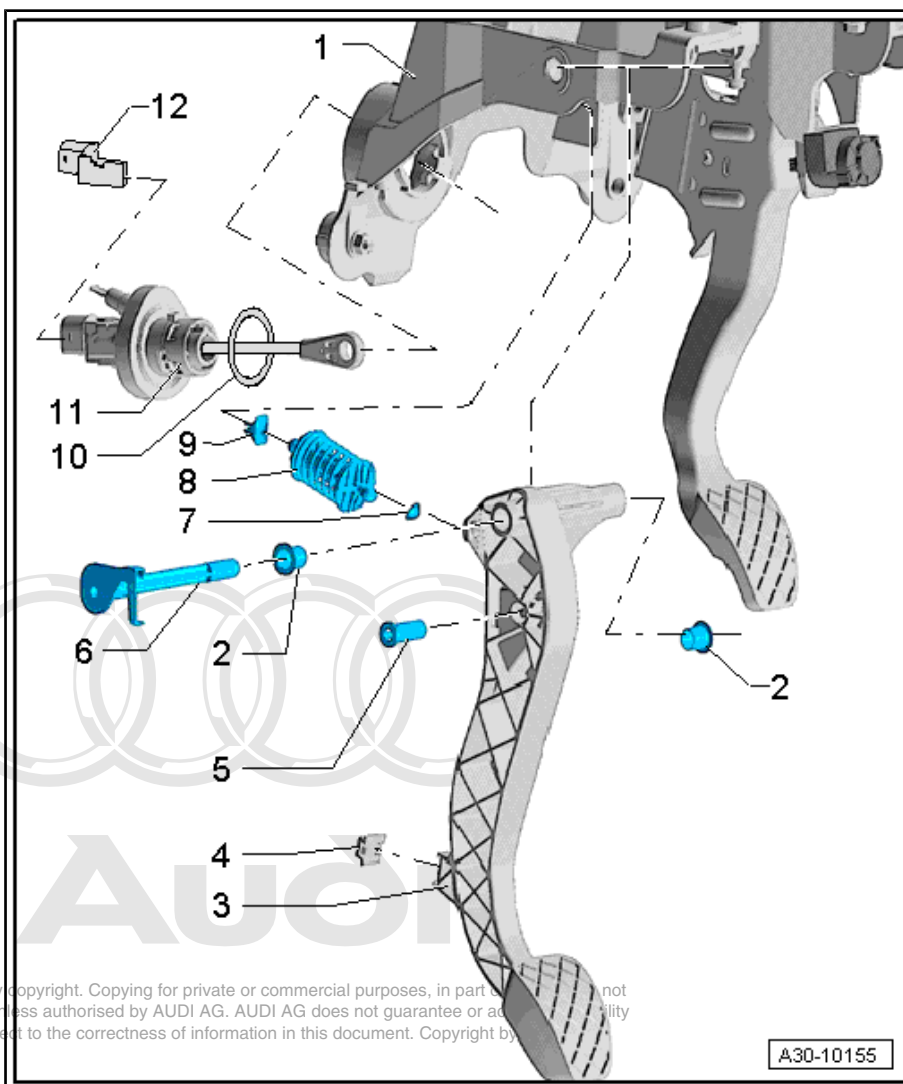
- ☐ Grease bearing surface

7 - Bearing shell

- ☐ Located in clutch pedal

8 - Over-centre spring

- ☐ Black side points towards clutch pedal
- ☐ Note different bearing positions in mounting bracket ⇒ [page 20](#)
- ☐ Removing and installing
⇒ [page 18](#)
- ☐ For correct version, refer to ⇒ Electronic parts catalogue



9 - Bearing shell

- ☐ Note different bearing positions in mounting bracket ⇒ [page 20](#)

10 - Seal

- ☐ Renew after removing

11 - Clutch master cylinder

- ☐ Removing and installing ⇒ [page 22](#)
- ☐ Grease mounting eye of pushrod

12 - Clutch position sender - G476-

- ☐ Can only be renewed together with clutch master cylinder ⇒ [Item 11 \(page 14\)](#)
- ☐ Clutch pedal switch - F36- and clutch pedal switch for engine start - F194- are integrated in clutch position sender - G476-

- ☐ Can only be renewed together with clutch master cylinder ⇒ [Item 13 \(page 16\)](#)

13 - Clutch master cylinder

- ☐ Grease mounting eye of pushrod

14 - Mounting bracket

- ☐ With brake pedal

15 - Seal

16 - Retaining clip

17 - Bearing bush

18 - Bolt

- ☐ 2x
- ☐ 8 Nm

Installing over-centre spring

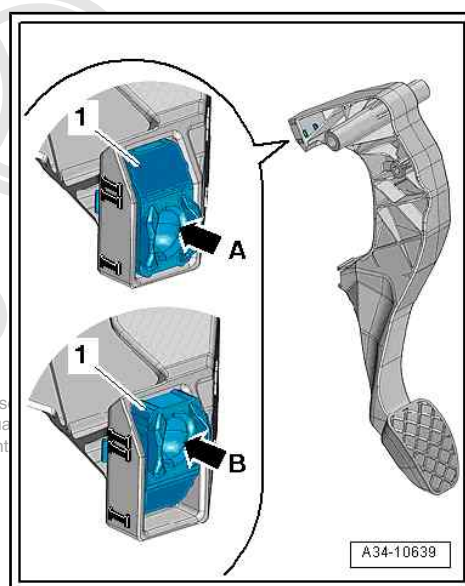
- Always clip in bearing -1- in position "I" -arrow A- on clutch pedal.



Note

Bearing position "II" -arrow B- is not used for the Audi A6.

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1.2 Exploded view - clutch hydraulics

If you suspect a defective clutch master cylinder or clutch slave cylinder, perform function test prior to renewing ⇒ [page 21](#).

1 - Gearbox

- ☐ With clutch slave cylinder installed

2 - Pipe/hose assembly

- ☐ With grommet and frequency modulator (vibration damper)
- ☐ Connecting and disconnecting ⇒ [page 22](#)
- ☐ Allocation for LHD and RHD vehicles ⇒ Electronic parts catalogue

3 - O-rings

- ☐ Renew if damaged
- ☐ Lubricate with brake fluid before installing

4 - Retaining clip

5 - Brake fluid reservoir

6 - Supply hose

- ☐ For clutch master cylinder
- ☐ With integrated sealing grommets
- ☐ Renew supply hose if sealing grommets are damaged

7 - Retaining clip

- ☐ To remove pipe/hose assembly, pull out clip as far as stop ⇒ [page 18](#)

8 - Clutch master cylinder

- ☐ With clutch position sender - G476-
- ☐ Removing and installing ⇒ [page 22](#)
- ☐ After working on hydraulic clutch mechanism, bleed clutch system ⇒ [page 26](#)

9 - Retaining clip

- ☐ Pull out as far as stop to disconnect pipe/hose assembly from pipe

10 - Pipe

- ☐ Connecting and disconnecting ⇒ [page 18](#)
- ☐ Allocation for LHD and RHD vehicles ⇒ Electronic parts catalogue

11 - Bracket

- ☐ For pipe
- ☐ Attached to gearbox

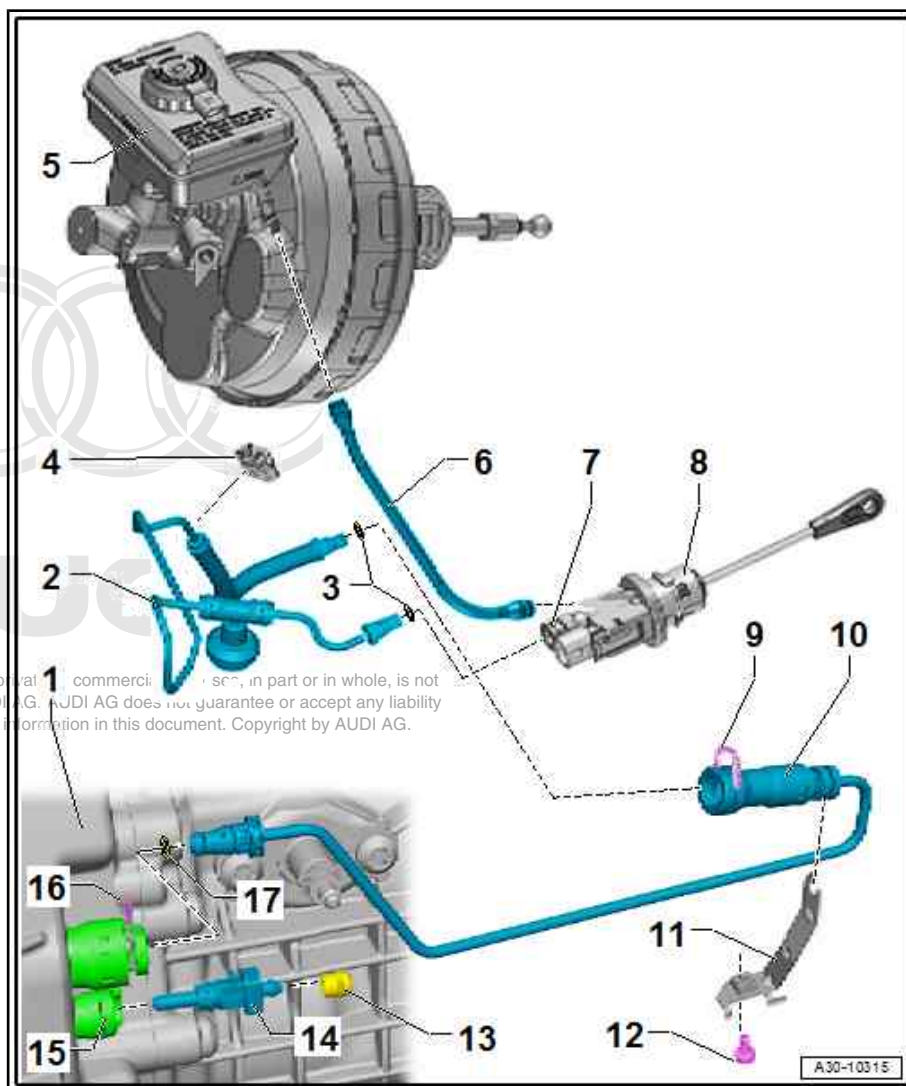
12 - Bolt

- ☐ 20 Nm

13 - Dust cap

14 - Bleeder screw

- ☐ Component of clutch slave cylinder
- ☐ Opening and closing ⇒ [page 26](#)
- ☐ Follow correct procedure when bleeding ⇒ [page 26](#)



15 - Clutch slave cylinder

- ❑ Removing and installing ⇒ Servicing 6-speed manual gearbox 0CS, 0DJ, 0CX; Rep. gr. 30 ; Clutch mechanism; Removing and installing clutch slave cylinder together with release bearing

16 - Retaining clip

- ❑ To remove pipe/hose assembly, pull out clip as far as stop ⇒ [page 18](#) .

17 - O-ring

- ❑ Renew if damaged
- ❑ Lubricate with brake fluid before installing

Connecting and disconnecting pipe/hose assembly

Disconnecting

- Release retaining clip -arrow- using a screwdriver and pull out as far as stop.
- Pull off pipe/hose assembly -1-.

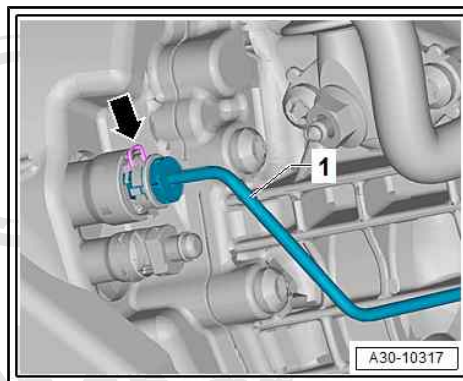
Connecting



Note

Renew O-ring if damaged.

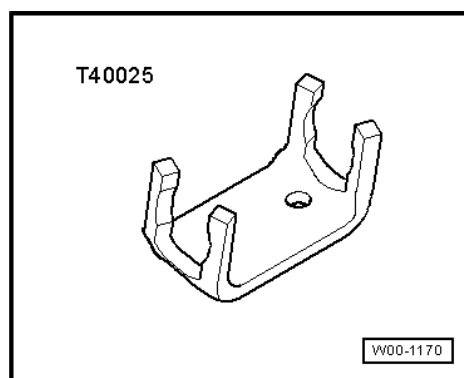
- Fit pipe/hose assembly -1- into connection of clutch slave cylinder.
- Press in retaining clip -arrow- as far as stop.
- Pull on pipe/hose assembly to check it is secure.



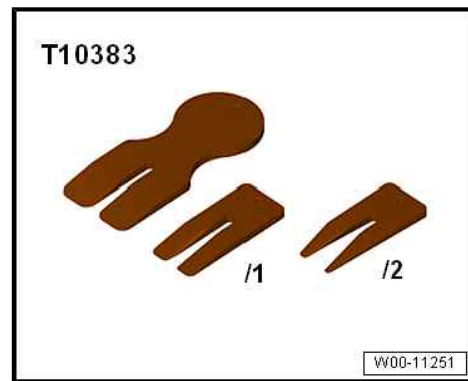
1.3 Removing and installing over-centre spring

Special tools and workshop equipment required

- ◆ Assembly clip - T40025-

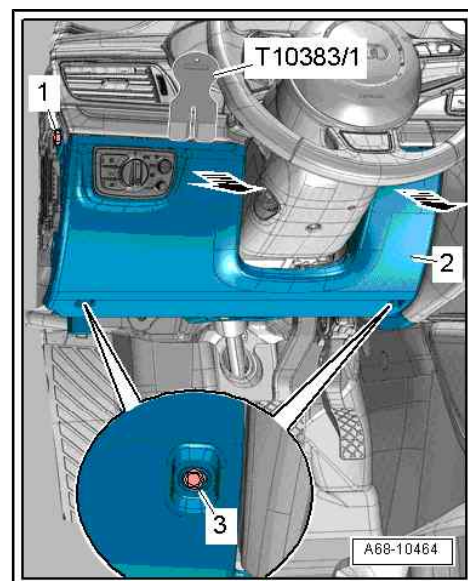


◆ Wedges - T10383-

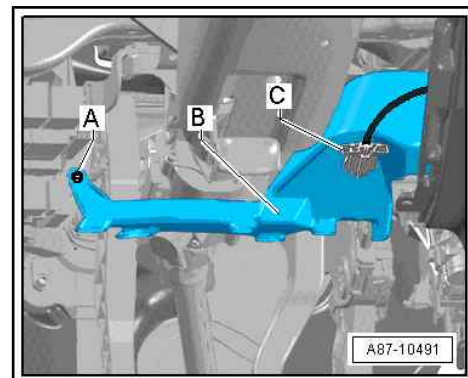


Removing

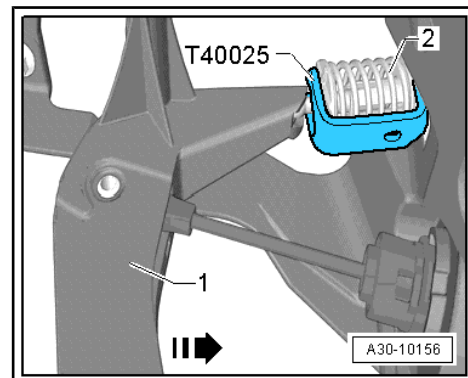
- Remove dash panel cover (driver side) ⇒ General body repairs, interior; Rep. gr. 68 ; Shelves / trim panels; Removing and installing dash panel cover (driver side) .



- Remove footwell vent (left-side) ⇒ Heating, air conditioning; Rep. gr. 80 ; Air duct system; Exploded view - routing of air flow and air distribution in passenger compartment .



- Move clutch pedal -1- slightly in direction of -arrow-. Press assembly clip - T40025- onto over-centre spring -2- while over-centre spring is compressed.
- Depress clutch pedal fully to stop and remove over-centre spring downwards with assembly clip.



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Installing

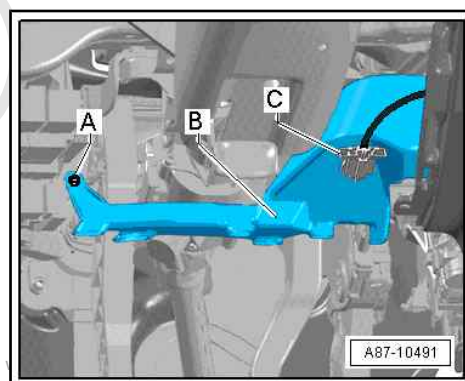
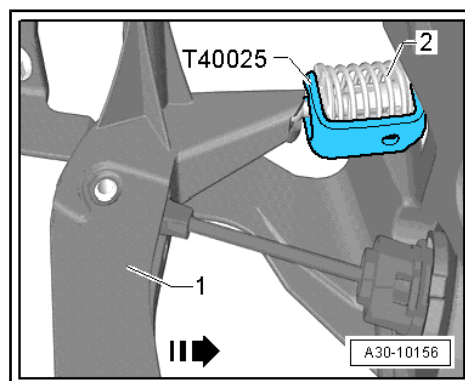
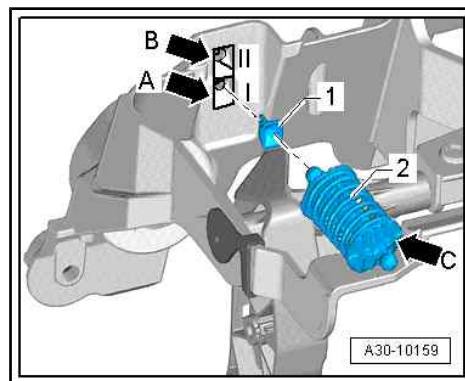
- Always clip in bearing shell -1- in bearing position "I" -arrow A-.



Note

Bearing position "II" -arrow B- is not used for the Audi A6.

- Insert over-centre spring -2-.
- Black side -arrow C- faces clutch pedal.
- Depress clutch pedal -1- fully to stop and install over-centre spring -2- with assembly clip - T40025- .
- Pull clutch pedal back to rest position. Take assembly clip off over-centre spring while over-centre spring is compressed.
- Install footwell vent ⇒ Heating, air conditioning; Rep. gr. 80 ; Air duct system; Exploded view - routing of air flow and air distribution in passenger compartment .
- Install dash panel cover (driver side) ⇒ General body repairs, interior; Rep. gr. 68 ; Shelves / trim panels; Removing and installing dash panel cover (driver side) .

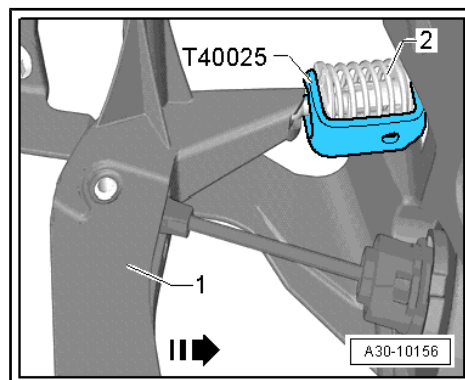


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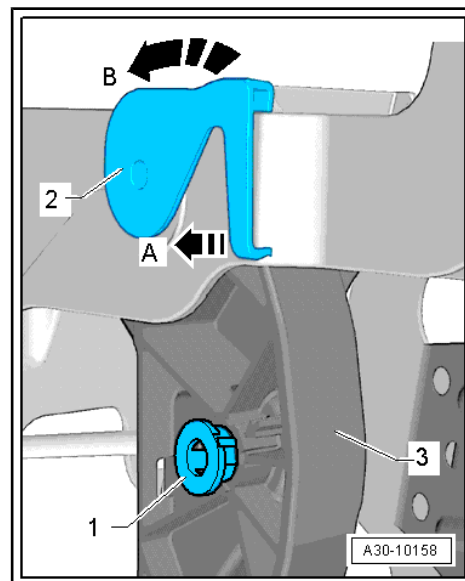
1.4 Removing and installing clutch pedal

Removing

- Remove mounting bracket ⇒ Brake system; Rep. gr. 46 ; Brake pedal; Removing and installing mounting bracket .
- Remove over-centre spring -2- ⇒ [page 18](#) .



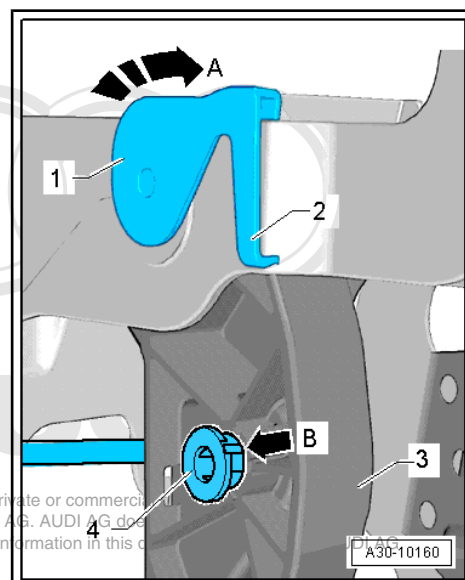
- Remove locking pin -1-.
- Remove pivot pin -2- by lifting retaining tab -arrow A- and turning pivot pin in direction of -arrow B-.
- Pull out pivot pin and remove clutch pedal -3-.



Installing

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

- Apply grease - G 000 450 02- to all bearings and contact surfaces.
- Install clutch pedal -3-, push in pivot pin -1- and lock in direction of -arrow A-. Bottom of retaining tab -2- should engage at pedal bracket.
- Insert locking pin -4-. Shoulder on pin -arrow B- must be introduced into groove on clutch pedal.
- Install over-centre spring ⇒ [page 18](#) .
- Install mounting bracket ⇒ Brake system; Rep. gr. 46 ; Brake pedal; Removing and installing mounting bracket .



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1.5 Checking clutch master cylinder and clutch slave cylinder

Before you renew the clutch master cylinder or slave cylinder you must - in the case of the following faults - first carry out the appropriate checks.

Noises when operating the clutch:

- ◆ First check the over-centre spring / clutch pedal switch for noise.
- ◆ If you hear a noise, remove over-centre spring and repeat check.
- ◆ Renew relevant component.

After releasing clutch pedal it still remains depressed / does not return to its initial position.

- ◆ Check whether the clutch pedal returns all the way to its initial position, thereby uncovering the vent opening in the master cylinder.
- ◆ Check that footwell trim and/or floor mats are not trapped.

- ◆ Make the customer aware that the driver must NOT rest his/her foot on the clutch pedal for long periods of time.
- ◆ This could impair the self-bleeding function of the clutch system as the vent opening in the clutch master cylinder can no longer function.
- ◆ The vent opening must be uncovered, otherwise the permanent self-bleeding function for the hydraulic clutch system will no longer be effective.
- ◆ The vent opening is integrated in the clutch master cylinder. It is not visible from the outside.

Check entire hydraulic system for leaks:

- ◆ Check brake fluid level in brake fluid reservoir.
- ◆ Check clutch master cylinder and slave cylinder as well as the pipe/hose assembly including connections for external leaks (visual inspection).
- ◆ If you identify any leaks you must renew the leaking component.
- ◆ Bleed clutch system ⇒ [page 26](#) .

High pedal force:

- ◆ In the event of a mechanical fault on clutch plate or pressure plate, refer to ⇒ Servicing 6-speed manual gearbox 0CS, 0DJ, 0CX; Rep. gr. 30 ; Exploded view - clutch .

Pedal forces:

- approx. 140 N for complete service life of the clutch

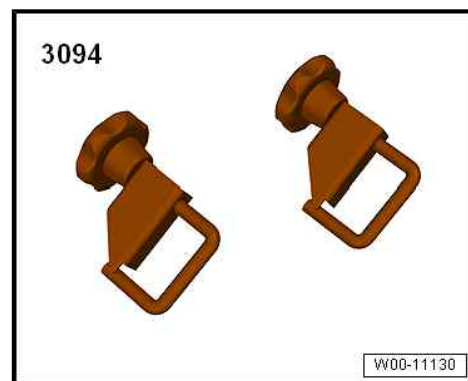
Clutch does not disengage or does not disengage fully:

- ◆ Air in hydraulic system: bleed clutch system ⇒ [page 26](#) and check hydraulic system for external and internal leaks.
- ◆ Clutch plate does not move smoothly on input shaft splines.
- ◆ Needle bearing in drive plate defective (centring bearing for input shaft); renew needle bearing ⇒ Engine, mechanics; Rep. gr. 13 ; Cylinder block (gearbox end); **Renewing needle bearing in drive plate** .
- ◆ Foreign body in clutch system
- ◆ In the event of a mechanical fault on clutch plate or pressure plate, refer to ⇒ Servicing 6-speed manual gearbox 0CS, 0DJ, 0CX; Rep. gr. 30 ; Exploded view - clutch .
- ◆ Wrong components were installed when carrying out repair work (e.g. clutch plate, clutch pressure plate and dual-mass flywheel are not from the same manufacturer); allocation ⇒ Electronic parts catalogue .
- ◆ Components were forgotten when carrying out repair work (e.g. intermediate plate or dowel sleeves between engine and gearbox).
- ◆ Clutch plate was installed incorrectly when carrying out repair work.

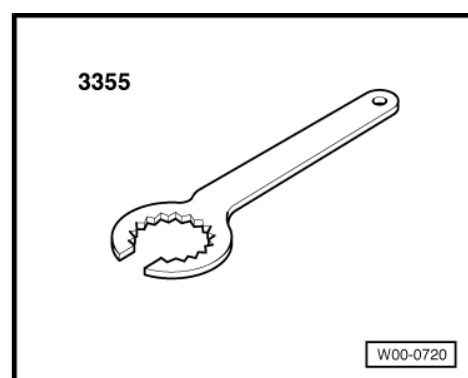
1.6 Removing and installing clutch master cylinder

Special tools and workshop equipment required

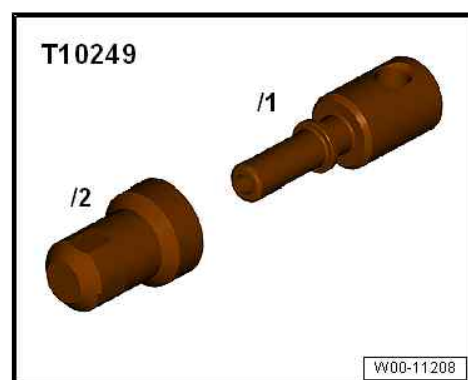
- ◆ Hose clamp, up to 25 mm - 3094-



- ◆ Open ring spanner, 32 mm - 3355-



- ◆ Sealing tool - T10249-



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Removing



Note

If you suspect a defective clutch master cylinder, perform function test prior to renewing ⇒ [page 21](#).

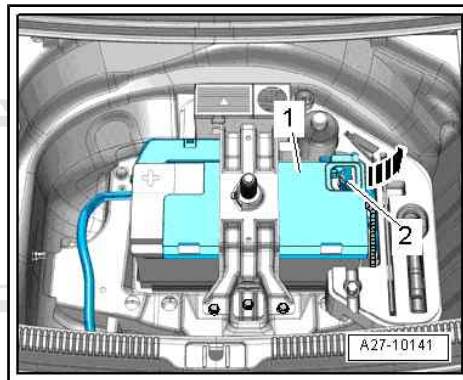


Caution

Risk of irreparable damage to electronic components.

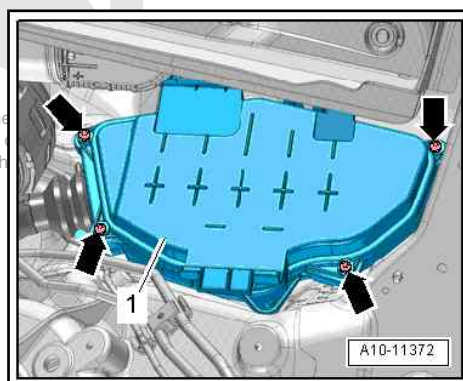
- ◆ *Observe notes on procedure for disconnecting the battery.*

- Disconnect earth wire -2- from battery terminal ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery - vehicles without high-voltage system .



- Remove electronics box -1- in engine compartment ⇒ Electrical system; Rep. gr. 97 ; Relay carriers, fuse carriers, electronics boxes; Removing and installing electronics box .

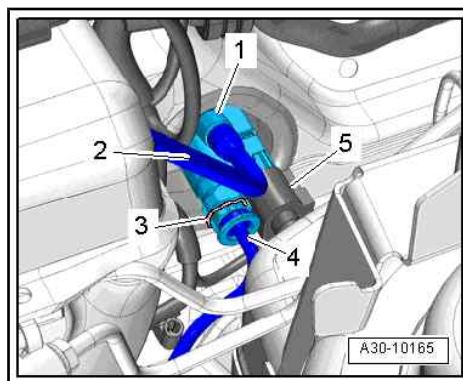
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Note

In the following steps make sure that no brake fluid escapes into the plenum chamber or onto the gearbox below. If this does happen, clean the affected area thoroughly.

- Clamp off supply hose -2- from brake fluid reservoir leading to clutch master cylinder using hose clamp - 3094- . Disconnect hose from clutch master cylinder -1- and plug hose.



Note

- ◆ *Clamping off the supply hose with the hose clamp - 3094- will cause a permanent deformation.*
- ◆ *However, this does not damage the supply hose.*
- ◆ *After removing the hose clamp -3094- , the supply hose must be returned to its original shape.*
- ◆ *Leave connector -item 5- connected.*
- Release retaining clip -3- using a screwdriver and pull out to limit stop.
- Pull off pipe/hose assembly -4-.

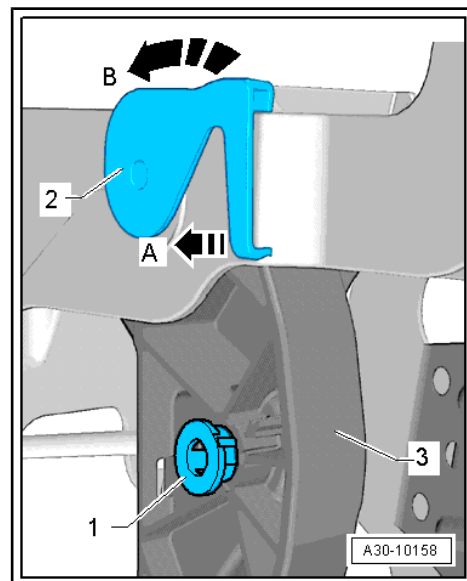


Note

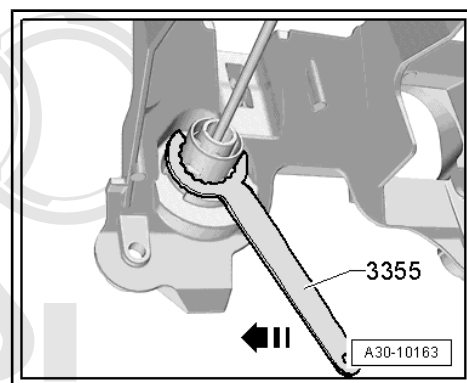
- Remove over-centre spring ⇒ [page 18](#) .
- Pull locking pin -1- out of clutch pedal -3-.



-Item 2- and -arrows A, B- can be disregarded.



- Release clutch master cylinder in direction of -arrow- using open ring spanner, 32 mm - 3355- .



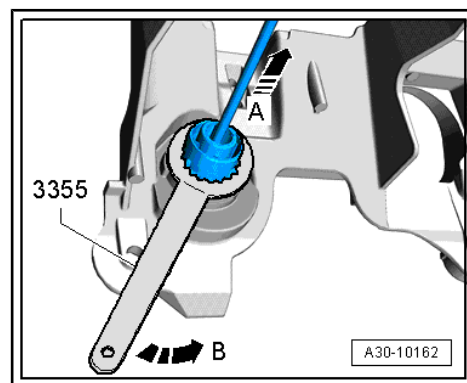
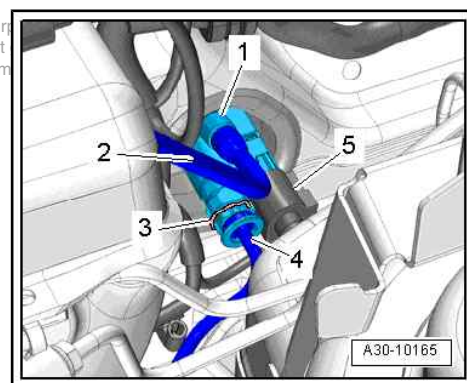
- Pull out clutch master cylinder -1-.
- Release and unplug electrical connector -5-.

Installing



Renew O-ring if damaged.

- Plug in electrical connector -5-.
- Install clutch master cylinder -1-.
- Pull clutch master cylinder into footwell in direction of -arrow A-. At the same time lock clutch master cylinder in direction of -arrow B- using open ring spanner, 32 mm - 3355- .





Caution

Grating/creaking noises can occur when clutch is operated.

- ◆ *Lack of grease at the bearings on the clutch pedal and in particular on the mounting eye of the master cylinder pushrod can cause creaking/grating noises when the clutch is operated.*
- ◆ *Apply grease - G 000 450 02- to all bearings and contact surfaces.*

- Lubricate locking pin -4- and mounting eye of master cylinder push rod.
- Insert locking pin -4-. Shoulder on pin -arrow B- must be introduced into groove on clutch pedal.



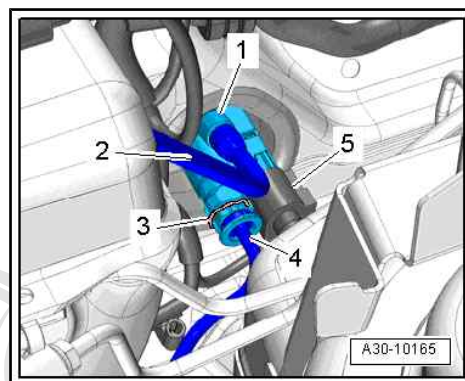
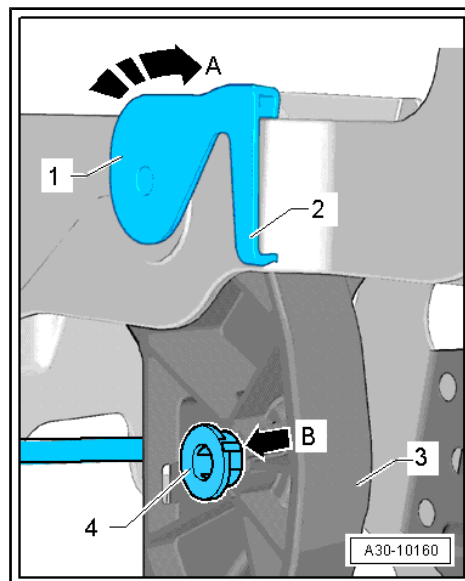
Note

-Items 1, 2, 3- and -arrow A- can be disregarded.

- Install over-centre spring ⇒ [page 18](#) .
- Press in retaining clip -3- as far as stop.
- Insert pipe/hose assembly -4- into clutch master cylinder and make sure that it engages audibly.
- Pull on pipe/hose assembly to check it is secure.
- Slide on supply hose -2- as far as stop.
- Remove hose clamp - 3094- .
- After removing the hose clamp - 3094- , the supply hose -2- must be returned to its original shape.
- Bleed clutch system ⇒ [page 26](#) .

Remaining installation steps are carried out in reverse sequence; note the following:

- Install electronics box in engine compartment ⇒ Electrical system; Rep. gr. 97 ; Relay carriers, fuse carriers, electronics boxes; Removing and installing electronics box .
- Observe measures required after connecting battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery - vehicles without high-voltage system .



1.7 Bleeding clutch hydraulics

Special tools and workshop equipment required

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◆ Brake filling and bleeding equipment - VAS 5234-

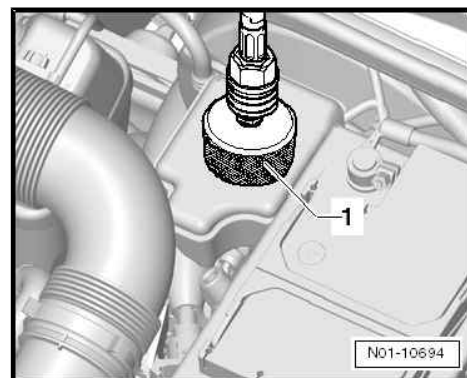


Procedure



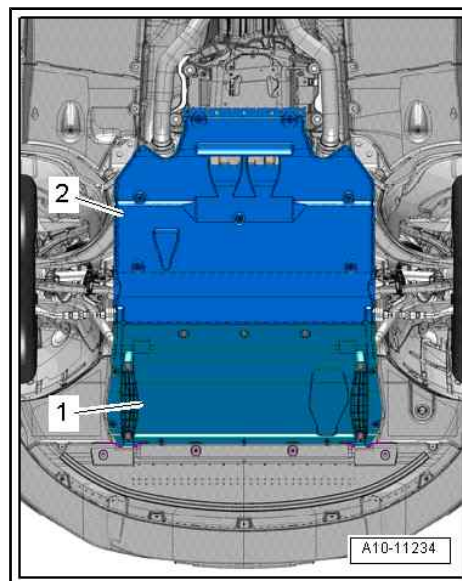
Note

- ◆ *The clutch system must be bled after performing work on the hydraulic clutch mechanism.*
 - ◆ *Brake fluid specification ⇒ Brake system; Rep. gr. 47 ; Hydraulic system*
 - ◆ *When performing the following steps, make sure that no brake fluid escapes onto the gearbox.*
 - ◆ *Before bleeding the clutch system, top up the brake fluid reservoir to the "Max." marking with brake fluid.*
 - ◆ *The brake fluid in the clutch system should be changed at the same intervals as the brake fluid in the brake system ⇒ Maintenance ; Booklet 411 ; Description of work; Brake fluid: changing (every 2 years) .*
- Pull clutch pedal back to rest position.
 - Connect brake filling and bleeding equipment - VAS 5234- , but do not switch on at this stage ⇒ Brake system; Rep. gr. 47 ; Hydraulic system; Bleeding hydraulic system (normal bleeding procedure) .



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

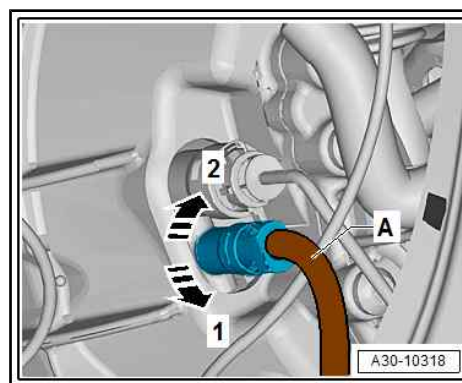


- Remove protective cap from bleeder screw and fit bleeder hose -A- onto clutch slave cylinder.
- Switch on brake filling and bleeding equipment - VAS 5234- .
 - Operating pressure 2.0 bar
- Open bleeder screw by $\frac{1}{2}$ a turn in direction of -arrow 1-.



Note

Ensure bleeder hose is correctly fitted during bleeding operation.



- Pump clutch pedal rapidly all the way in and out by hand 15 to 20 times (approx. 2 times per second).
- Close bleeder screw all the way in direction of -arrow 2-.
- Switch off brake filling and bleeding equipment - VAS 5234- and relieve pressure completely from bleeding equipment.
- Pump clutch pedal all the way in and out 10 times with your foot.
- Check that clutch system is functioning properly.
- Repeat bleeding procedure if necessary.
- Disconnect bleeder hose and fit protective cap.
- Disconnect brake filling and bleeding equipment - VAS 5234- from brake fluid reservoir.
- Install rear noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .

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2 Clutch

⇒ ["2.1 Exploded view - clutch module", page 29](#)

⇒ ["2.2 Tightening sequence - clutch module to drive plate", page 30](#)

⇒ ["3 Removing and installing clutch module", page 33](#)

⇒ ["4 Servicing clutch", page 34](#)

2.1 Exploded view - clutch module



Note

Servicing clutch module -2- ⇒ Servicing 6-speed manual gearbox 0CS, 0DJ, 0CX; Rep. gr. 30 ; Clutch .

1 - Drive plate

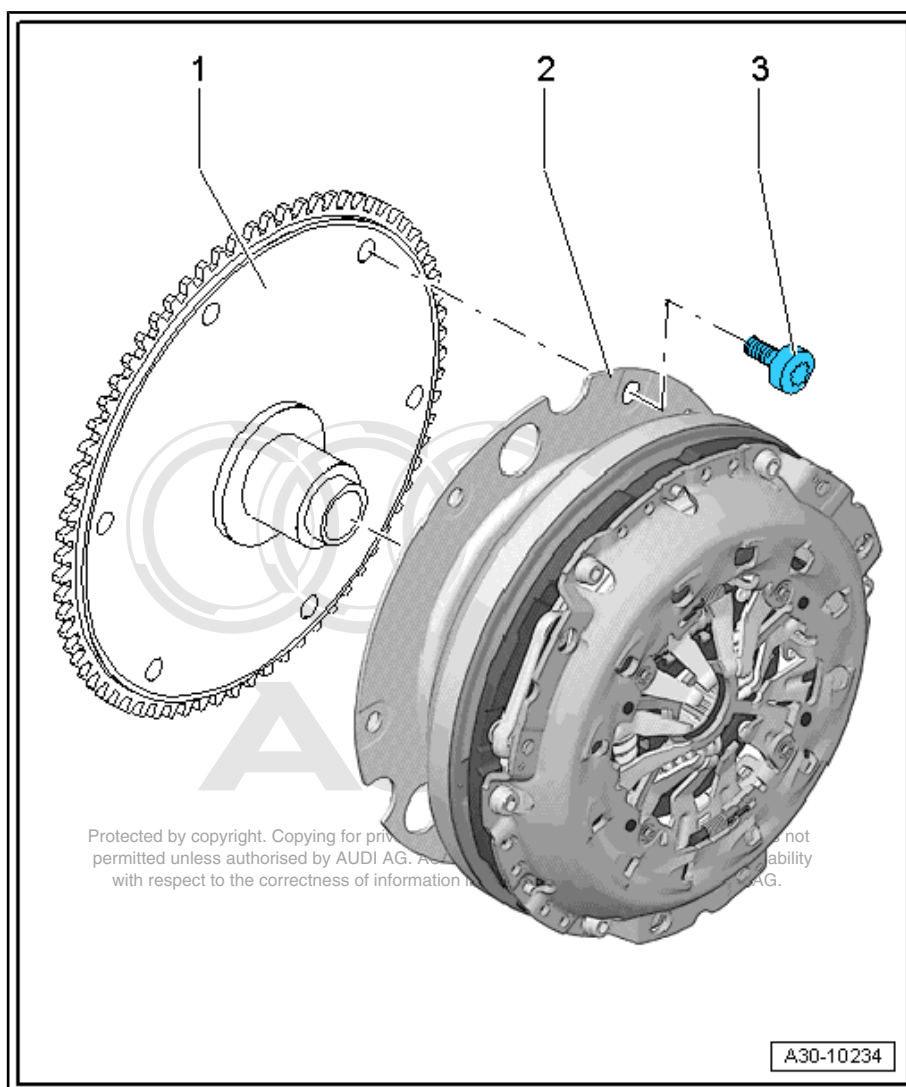
- ☐ 4-cylinder TFSI engine:
3 holes with threaded sleeves
- ☐ 4-cylinder TDI engine: 3
or 6 holes with threaded sleeves
- ☐ With needle bearing
- ☐ Removing and installing
⇒ Engine, mechanics;
Rep. gr. 13 ; Cylinder
block (gearbox end);
Removing and installing
flywheel

2 - Clutch module

- ☐ With flange for drive plate
- ☐ Components: dual-
mass flywheel, clutch
plate and clutch pres-
sure plate
- ☐ Removing and installing
⇒ Servicing 6-speed
manual gearbox 0CS,
0DJ, 0CX; Rep. gr. 30 ;
Removing and installing
clutch module
- ☐ Servicing ⇒ Servicing 6-
speed manual gearbox
0CS, 0DJ, 0CX; Rep.
gr. 30 ; Exploded view -
clutch

3 - Bolt

- ☐ Secures clutch module
to drive plate
- ☐ 60 Nm
- ☐ Follow correct tightening sequence ⇒ [page 30](#)
- ☐ 4-cylinder TFSI engine: 3x
- ☐ 4-cylinder TDI engine: 3x or 6x
- ☐ Always renew



2.2 Tightening sequence - clutch module to drive plate

Special tools and workshop equipment required

- ◆ Torque wrench - V.A.G 1331-

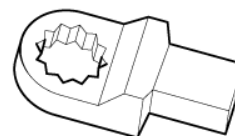
V.A.G 1331



W00-0427

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

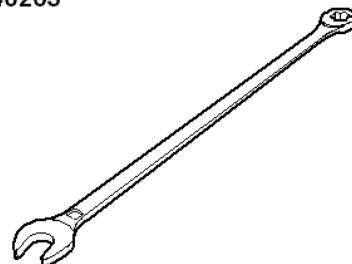
V.A.G 1332/14



W00-1329

- ◆ Wrench 21 mm - T40263-

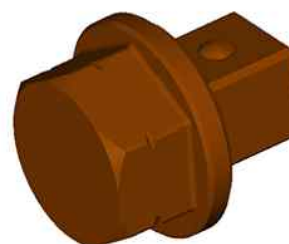
T40263



W00-10993

- ◆ Adapter - T40314-

T40314



W00-11649

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 Note

The following step is essential to ensure that the clutch module makes even and proper contact on the drive plate and does not cant.

Vehicles with 4-cylinder TDI engine

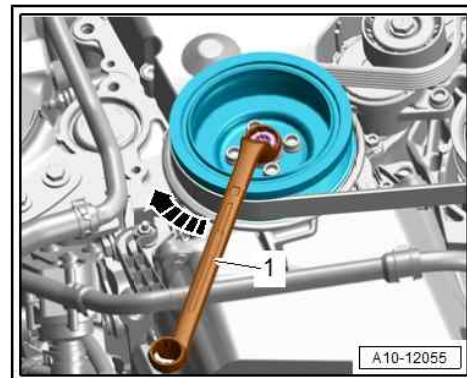
- Remove cap from vibration damper.
- To slacken bolts for flywheel, counterhold crankshaft at central bolt on vibration damper.
- Using an angled ring spanner -1-, turn crankshaft at vibration damper 360° in direction of engine rotation -arrow-.



Caution

Irreparable engine damage can be caused if the toothed belt slips.

- ◆ *Only turn crankshaft in the direction of engine rotation -arrow-.*



Vehicles with 4-cylinder TFSI engine

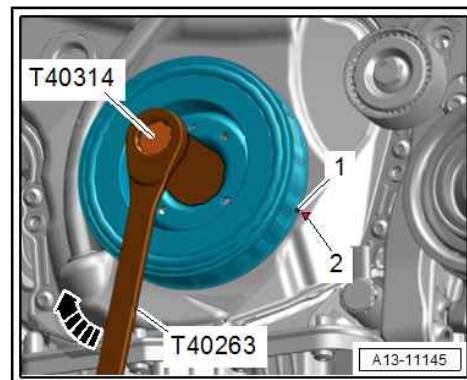
- Using wrench (21 mm) - T40263- and adapter -T40314-, turn crankshaft 360° in direction of engine rotation -arrow-.



Caution

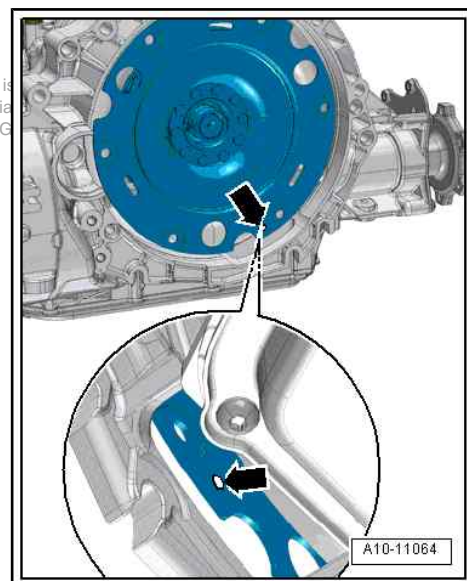
Irreparable damage can be caused if the camshaft drive chain slips.

- ◆ *Only turn crankshaft in the direction of engine rotation -arrow-.*



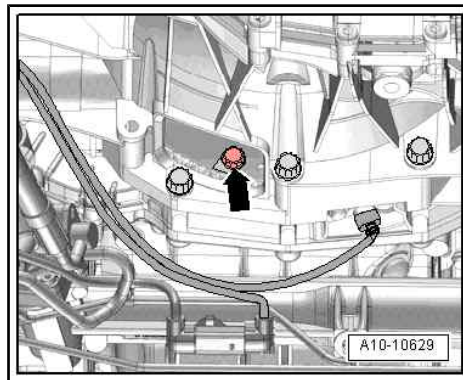
Continued for all vehicles

- Continue turning crankshaft at vibration damper until inspection hole -arrow- is visible in recess on gearbox housing.



Vehicles with three bolts securing clutch module to drive plate

- Screw in first bolt -arrow- hand-tight (2 Nm).
- Turn both front wheels so that clutch module turns 120° further in direction of engine rotation and install second bolt hand-tight (2 Nm).
- Turn clutch module 120° further in direction of engine rotation.
- Now install third bolt and tighten to specified torque.
- Now tighten the remaining two bolts to specified torque.
- Tighten bolt -arrow- using ring spanner insert, 16 mm - V.A.G 1332/14- .

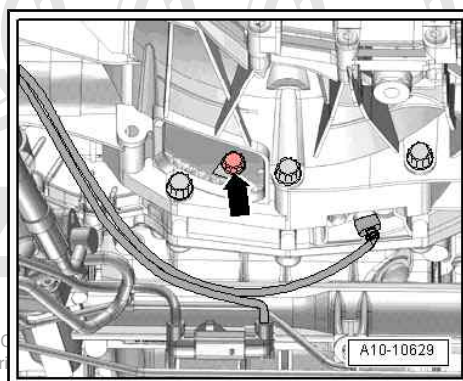


Tightening torque

- ◆ Bolt securing clutch module to drive plate ⇒ [Item 3 \(page 29\)](#)

Vehicles with six bolts securing clutch module to drive plate

- Screw in first bolt -arrow- hand-tight (2 Nm).
- Turn both front wheels so that clutch module turns 180° further in direction of engine rotation.
- Install second bolt and tighten to specified torque.
- Tighten remaining five bolts to specified torque (including first bolt installed), turning clutch module 60° further each time.
- Tighten bolt -arrow- using ring spanner insert, 16 mm - V.A.G 1332/14- .



Tightening torque

- ◆ Bolt securing clutch module to drive plate ⇒ [Item 3 \(page 29\)](#)

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3 Removing and installing clutch module

For a detailed description please refer to the Workshop Manual
⇒ Servicing 6-speed manual gearbox 0CS, 0DJ, 0CX; Rep. gr.
30 ; Removing and installing clutch module .



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4 Servicing clutch

For a detailed description please refer to the Workshop Manual
⇒ Servicing 6-speed manual gearbox 0CS, 0DJ, 0CX; Rep. gr.
30 ; Exploded view - clutch .



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34 – Controls, housing

1 Selector mechanism

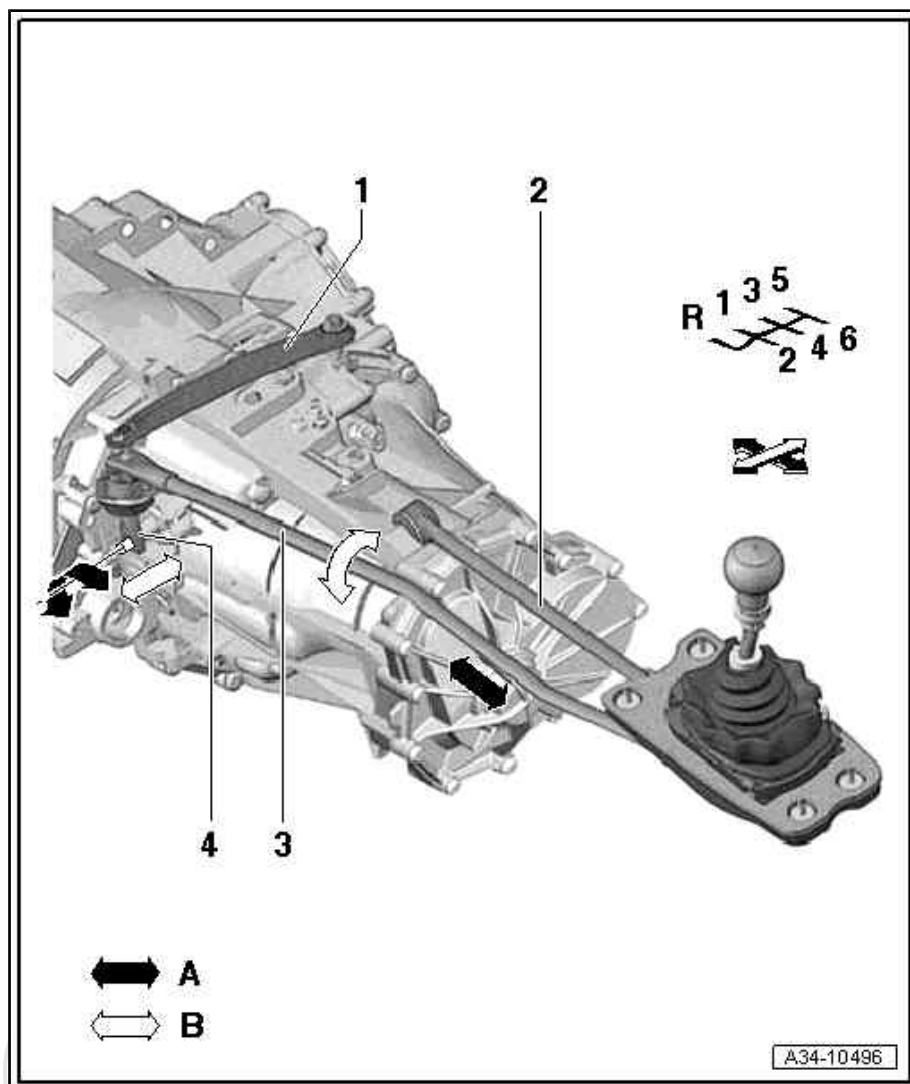
- ⇒ [“1.1 Overview - selector mechanism”, page 35](#)
- ⇒ [“1.2 Exploded view - gear knob and cover”, page 37](#)
- ⇒ [“1.3 Exploded view - selector mechanism”, page 38](#)
- ⇒ [“1.4 Removing and installing gear knob”, page 39](#)
- ⇒ [“1.5 Removing and installing noise insulation”, page 40](#)
- ⇒ [“1.6 Removing and installing selector mechanism”, page 41](#)
- ⇒ [“1.7 Adjusting selector mechanism”, page 47](#)
- ⇒ [“1.8 Checking selector mechanism”, page 50](#)
- ⇒ [“1.9 Renewing selector shaft oil seal”, page 51](#)
- ⇒ [“1.10 Removing and installing gear detection sensor G604”, page 53](#)

1.1 Overview - selector mechanism

-Arrow A- gear selection movement

-Arrow B- gate selection movement

- 1 - Connecting rod
- 2 - Push rod
- 3 - Selector rod
- 4 - Gearbox selector lever



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1.2 Exploded view - gear knob and cover

1 - Gear knob

- ☐ With gear lever boot
- ☐ Removing and installing
⇒ [page 39](#)

2 - Clip

- ☐ Secures gear knob to gear lever
- ☐ Secure with hose clip pliers - V.A.G 1275-

3 - Boot

- ☐ Only supplied together with support ring
⇒ [Item 4 \(page 37\)](#)
- ☐ Removing and installing
⇒ [page 40](#) together with noise insulation
⇒ [Item 5 \(page 37\)](#)

4 - Support ring

- ☐ Only supplied together with boot
⇒ [Item 3 \(page 37\)](#)

5 - Noise insulation

- ☐ Removing and installing
⇒ [page 40](#)

6 - Gasket

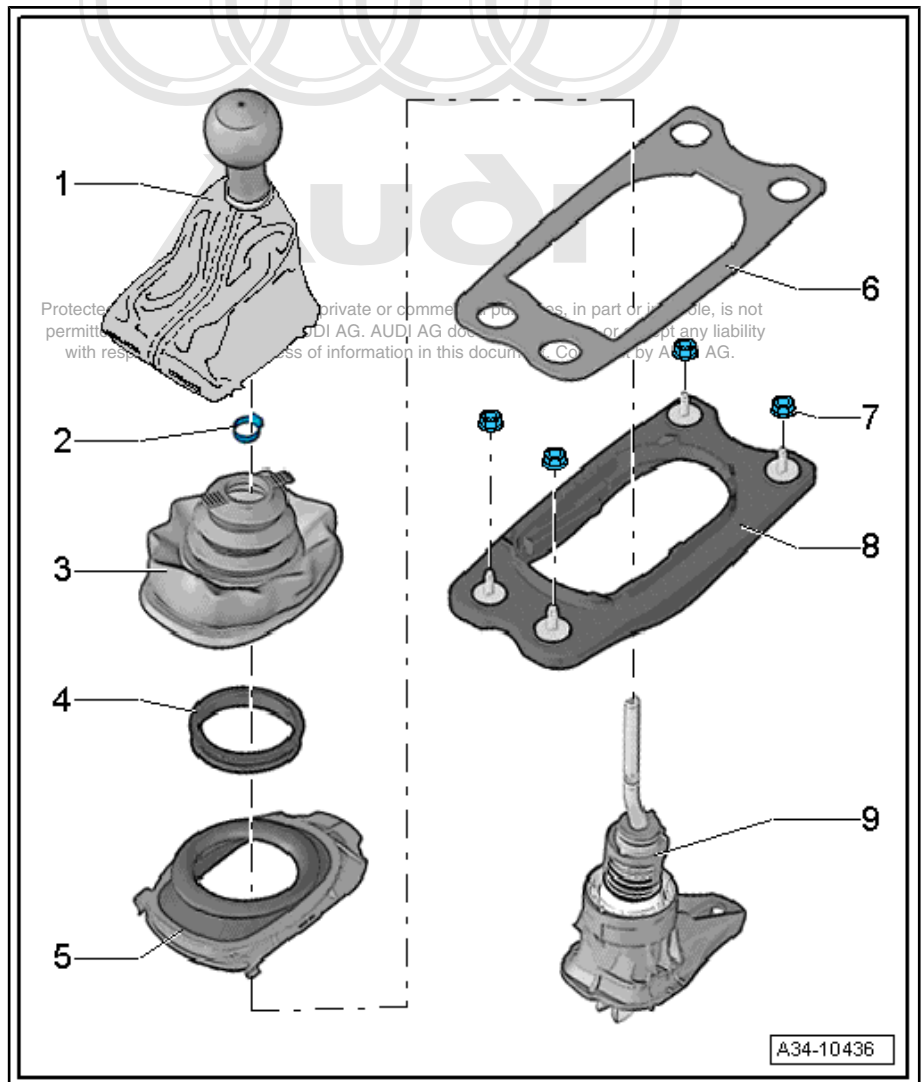
7 - Nut

- ☐ 8 Nm

8 - Mounting

- ☐ For gear lever bearing

9 - Gear lever with gear lever bearing



1.3 Exploded view - selector mechanism

1 - Circlip

- ☐ Take out before removing ball

2 - Spacer bush

3 - Spring

4 - Ball guide

- ☐ Do not grease

5 - Ball

- ☐ Do not grease

6 - Damper

- ☐ For gear lever bearing
⇒ [Item 11 \(page 38\)](#)
- ☐ Do not grease

7 - Bolt

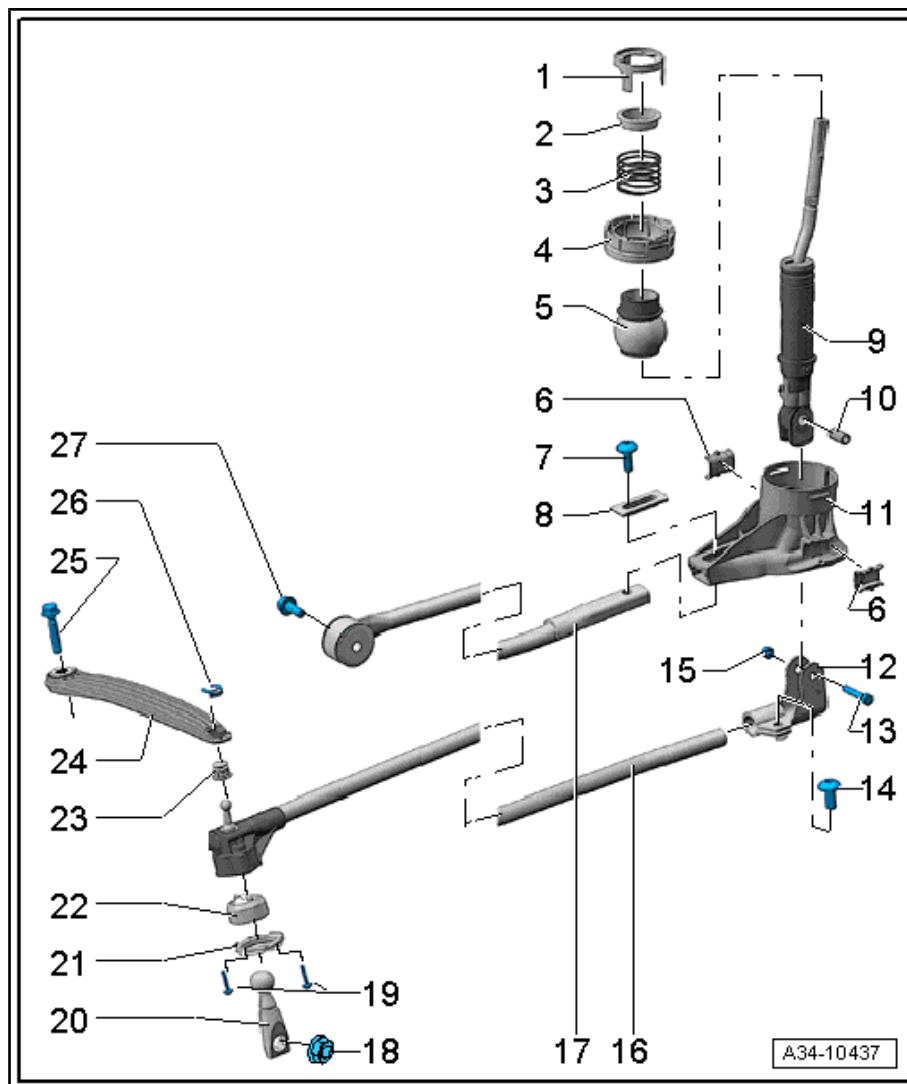
- ☐ 23 Nm

8 - Clamping plate

- ☐ Do not grease

9 - Gearbox selector lever

- ☐ Bend points towards rear
- ☐ Grease gear lever stops and gear lever contact surfaces; for grease refer to ⇒ [Electronic parts catalogue](#)
- ☐ Grease contact surfaces for joint
⇒ [Item 12 \(page 38\)](#) ;
for grease refer to ⇒ [Electronic parts catalogue](#)



10 - Spacer tube

- ☐ Grease outside circumference; for grease refer to ⇒ [Electronic parts catalogue](#)

11 - Gear lever bearing

- ☐ Removing and installing ⇒ [page 41](#)
- ☐ Do not grease

12 - Joint

- ☐ Between selector rod and gear lever
- ☐ Grease contact surfaces for gear lever; for grease refer to ⇒ [Electronic parts catalogue](#)

13 - Bolt

- ☐ For joint ⇒ [Item 12 \(page 38\)](#)

14 - Bolt

- ☐ 23 Nm

15 - Nut

- ☐ 10 Nm

16 - Selector rod

17 - Push rod

- ☐ With bolt and washer

18 - Nut

- ☐ Renew after removing
- ☐ 20 Nm

19 - Bolt

- ☐ 4 Nm

20 - Gearbox selector lever

**Caution**
*Risk of damage to selector shaft in gearbox.
Do not prise off or knock off the gearbox selector lever with a lever or hammer.
Always use puller - T40160- when removing the gearbox selector lever.*

- ☐ Pulling off ⇒ [page 46](#)
- ☐ Install so that gap in splines aligns with selector shaft

21 - Sealing collar

22 - Ball socket

- ☐ Grease pivot for gearbox selector lever ⇒ [Item 20 \(page 39\)](#) if necessary; for grease refer to ⇒ Electronic parts catalogue

23 - Bearing bush

- ☐ To remove, pull off retaining clip ⇒ [Item 26 \(page 39\)](#)

24 - Connecting rod

- ☐ To remove, pull off retaining clip ⇒ [Item 26 \(page 39\)](#)

25 - Bolt

- ☐ 20 Nm

26 - Retaining clip

27 - Bolt

- ☐ 20 Nm

1.4 Removing and installing gear knob



Note

The gear knob is removed together with the gear lever boot.

Special tools and workshop equipment required

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◆ Removal wedge - 3409-



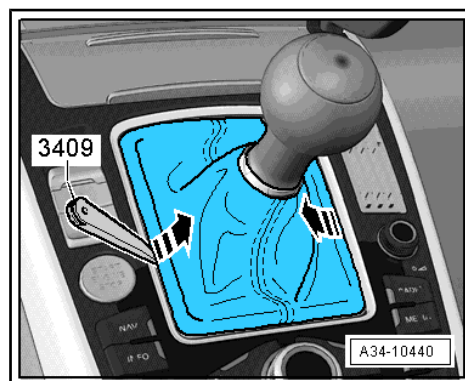
◆ Hose clip pliers - V.A.G 1275-

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Removing

- Prise out gear lever boot using removal wedge - 3409- -arrows- and pull upwards to detach.

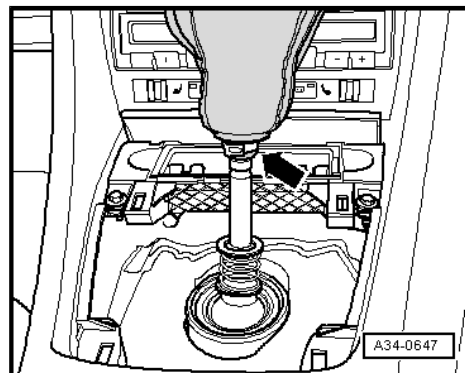


- Pull boot up and over gear knob.
- Open clip -arrow- and pull off gear knob together with boot.

Installing

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

- Secure clip -arrow- using hose clip pliers - V.A.G 1275- .

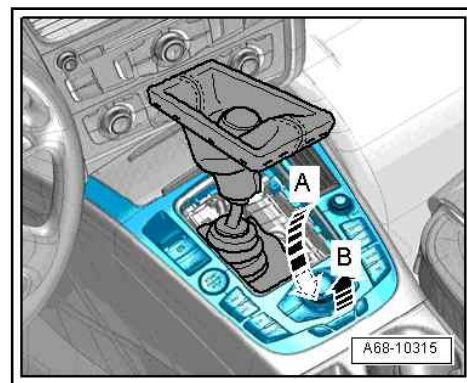


1.5 Removing and installing noise insulation

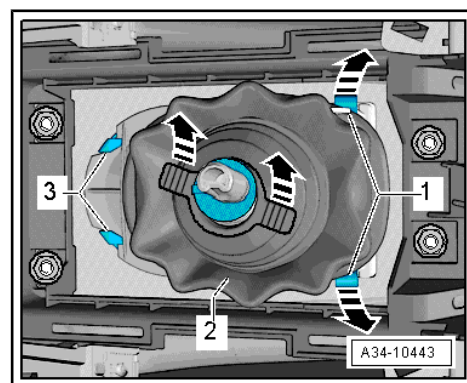
Removing

- Switch off ignition.
- Remove gear knob with gear lever boot ⇒ [page 39](#) .

- Remove multimedia system operating unit - E380- ⇒ Communication; Rep. gr. 91 ; Infotainment system; Removing and installing multimedia system operating unit -E380- .



- Release retaining tabs -1- in direction of -arrow-. At the same time, lift rear end of noise insulation slightly.
- Pull noise insulation out of tabs -3-.
- Pull boot -2- off gear lever in direction of -arrow-.

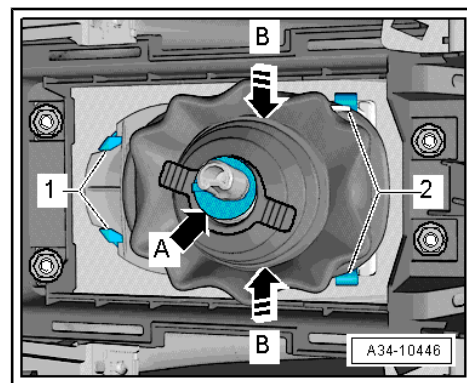


Installing

- Insert noise insulation into tabs -1- and press down until retaining tabs -2- engage.
- Pull boot over gear lever and into rounded groove -arrow A-.
- Press support ring in boot over gear lever bearing as far as stop in direction of -arrow B-.

Remaining installation steps are carried out in reverse sequence; note the following:

- Install multimedia system operating unit - E380- ⇒ Communication; Rep. gr. 91 ; Infotainment system; Removing and installing multimedia system operating unit -E380- .
- Install gear knob with gear lever boot ⇒ [page 39](#) .



1.6 Removing and installing selector mechanism

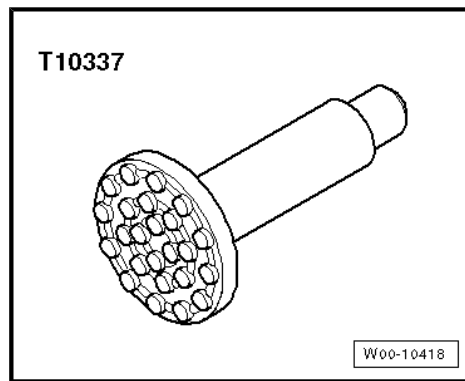
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Special tools and workshop equipment required

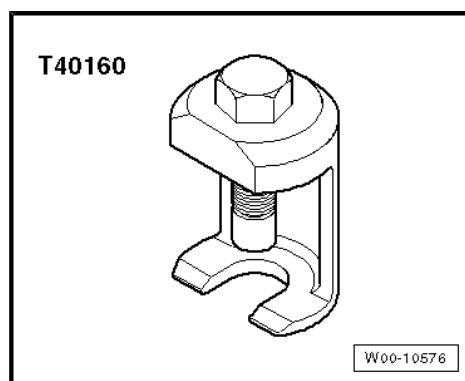
- ♦ Engine and gearbox jack - V.A.G 1383 A-



◆ Gearbox support - T10337-



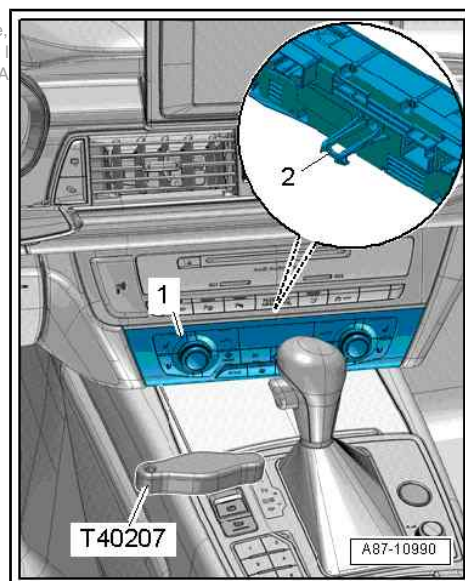
◆ Puller - T40160-



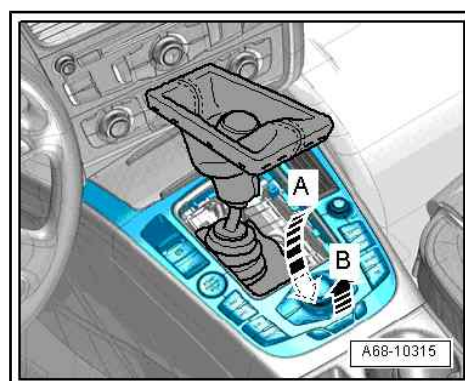
Removing

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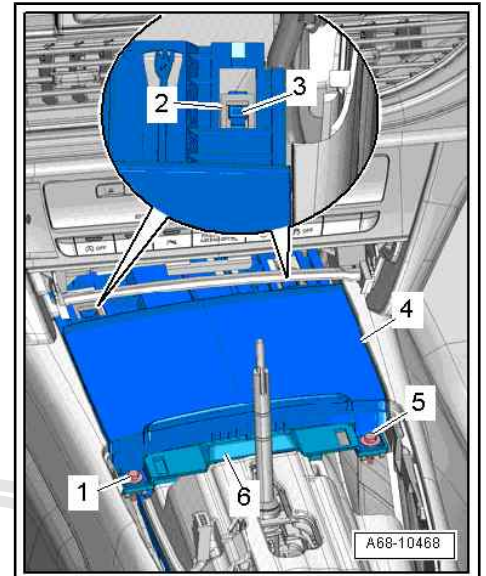
- Switch off ignition.
- Remove gear knob with gear lever boot ⇒ [page 39](#) .
- Remove air conditioner operating and display unit ⇒ Heating, air conditioning; Rep. gr. 87 ; Operating and display unit; Overview of fitting locations - operating and display unit .



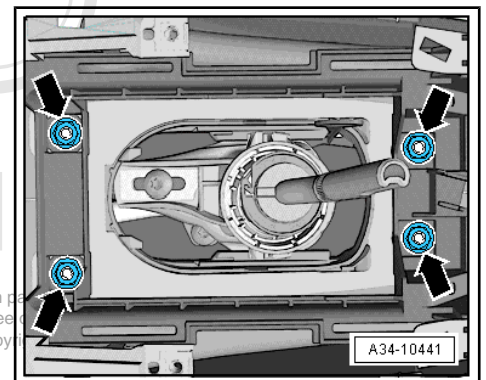
- Remove multimedia system operating unit - E380- ⇒ Communication; Rep. gr. 91 ; Infotainment system; Removing and installing multimedia system operating unit -E380- .



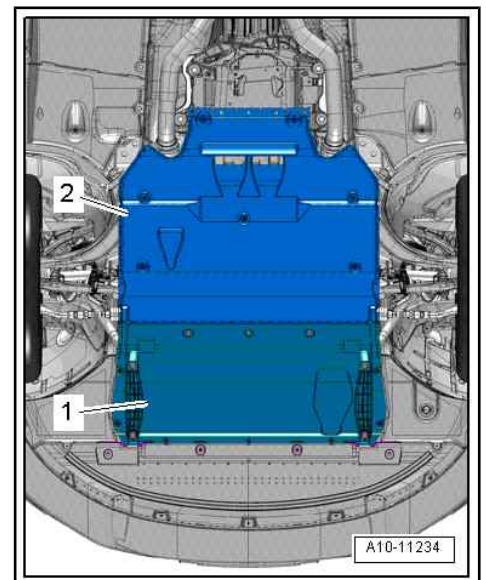
- Remove front ashtray/storage compartment -6- ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console .



- Remove noise insulation above selector mechanism
⇒ [page 40](#) .
- Unscrew nuts -arrows-.



- Remove front and rear noise insulation -1- and -2- ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .

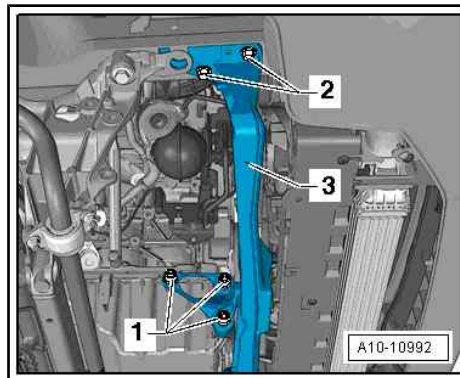


- Remove bolts -1- and detach torque reaction support from engine.



Note

Disregard items -2 and 3-.



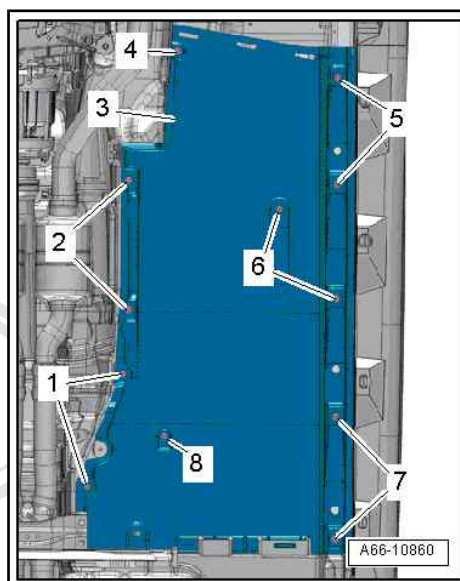
- Unscrew nuts -1- and -2- on centre cover for underbody (left and right) -3-.



Note

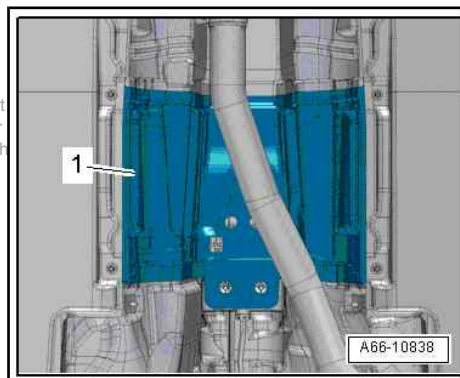
Items -4 ... 8- can be disregarded.

- Remove section of exhaust system below selector mechanism
⇒ Engine, mechanics; Rep. gr. 26 ; Exhaust pipes/silencers;
Removing and installing silencer .



- Detach heat shield -1- below selector mechanism ⇒ General body repairs, exterior; Rep. gr. 66 ; Strips / trim panels / extensions; Removing and installing heat shield for floor .

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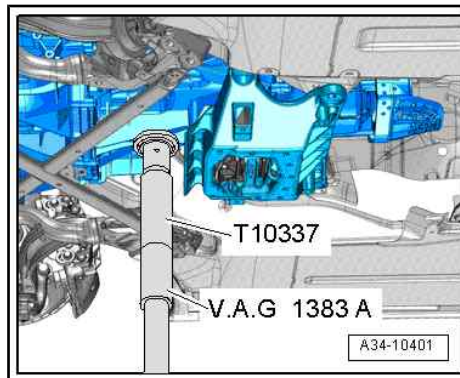
- Apply lifting column of engine and gearbox jack -V.A.G 1383 A- to gearbox from below (with gearbox support - T10337- attached).
- Raise gearbox slightly using engine and gearbox jack - V.A.G 1383 A- .



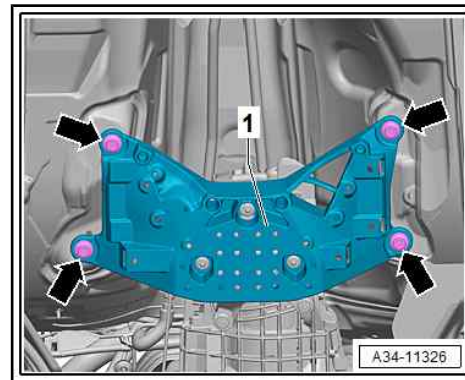
WARNING

Risk of accident.

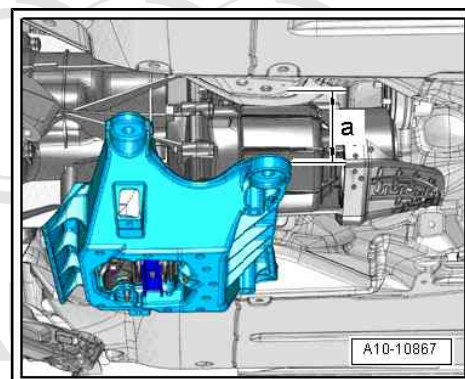
- ◆ **Engine and gearbox jack - V.A.G 1383 A- must remain in position when work is being carried out and must not be left unattended under the vehicle.**



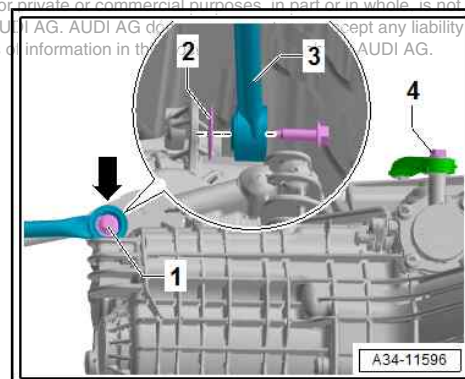
- Remove bolts -arrows- for tunnel cross member -1-.



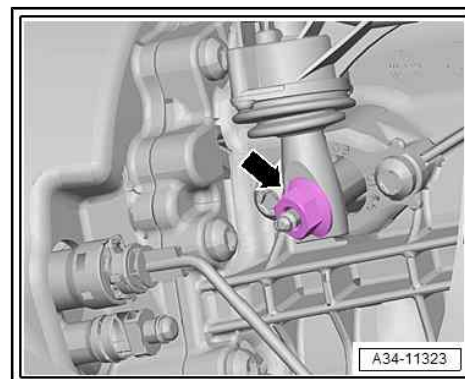
- Lower gearbox by dimension -a- using engine and gearbox jack - V.A.G 1383 A- .
- Dimension -a- = 80 mm (maximum)



- Remove bolt -1- and detach push rod -3- together with washer -2-.
- Remove bolt -4- for connecting rod.



- Remove nut -arrow- for gear selector lever on selector shaft.

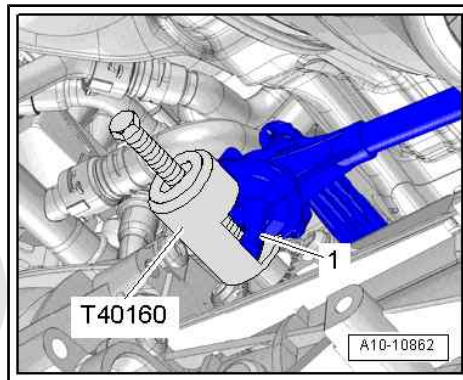




Caution

Risk of damage to selector shaft in gearbox.

- ◆ **Do not prise off or knock off the gearbox selector lever -1- with a lever or hammer.**
- ◆ **Always use puller - T40160- when removing the gearbox selector lever.**



- Apply puller - T40160- and pull off gearbox selector lever -1-.
- Take out selector mechanism towards rear.

Installing

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

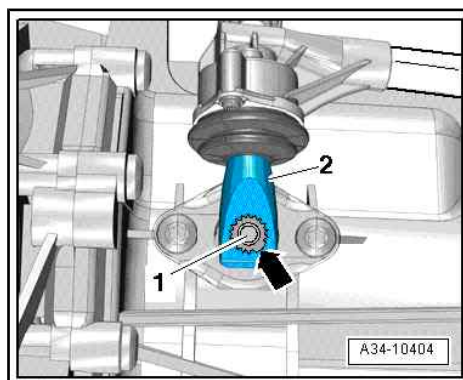


Note

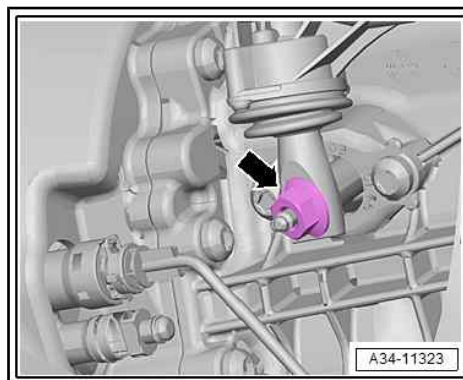
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Always renew seals, gaskets and self-locking nuts.

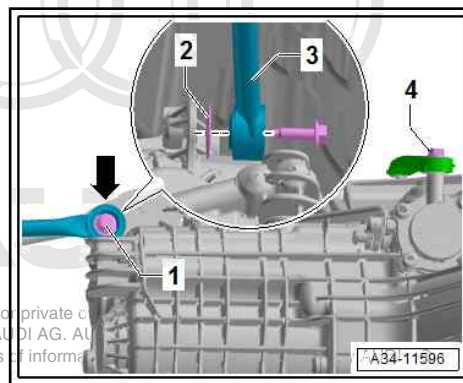
- Install gearbox selector lever as follows:
- Gearbox selector lever -2- can only be fitted onto selector shaft -1- in one position (gap in splines -arrow-).



- Tighten nut -arrow- for gear selector lever on selector shaft.



- Secure push rod -3- and connecting rod -4- on gearbox.
- Secure push rod with washer -2- at rear attachment point -arrow-.
- Install tunnel cross member on body ⇒ [page 97](#) .



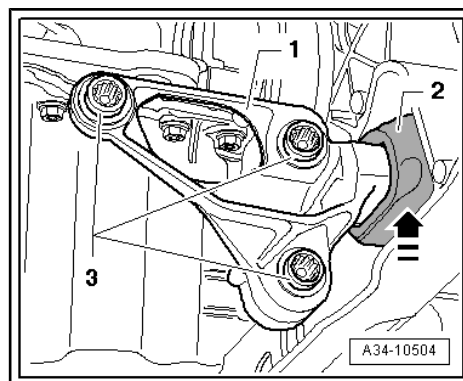
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- Push torque reaction support -1- upwards in direction indicated by -arrow- until it makes contact with cross member.



Note

Bump stop -2- must be in contact with cross member without play, but must not be under tension.



- Then tighten bolts -3- to specified torque ⇒ Engine, mechanics; Rep. gr. 10 ; Assembly mountings; Exploded view - assembly mountings .
- Install heat shield below selector mechanism ⇒ General body repairs, exterior; Rep. gr. 66 ; Strips / trim panels / extensions; Removing and installing heat shield for floor .
- Assemble exhaust system and perform stress-free alignment ⇒ Engine, mechanics; Rep. gr. 26 ; Exhaust pipes/silencers; Stress-free alignment of exhaust system .
- Install noise insulation panels ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .
- Adjust selector mechanism ⇒ [page 47](#) .
- Install front ashtray/storage compartment ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console .
- Install multimedia system operating unit - E380- ⇒ Communication; Rep. gr. 91 ; Infotainment system; Removing and installing multimedia system operating unit -E380- .
- Install air conditioner operating and display unit ⇒ Heating, air conditioning; Rep. gr. 87 ; Operating and display unit; Overview of fitting locations - operating and display unit .

Tightening torques

- ◆ ⇒ ["1.2 Exploded view - gear knob and cover", page 37](#)
- ◆ ⇒ ["1.3 Exploded view - selector mechanism", page 38](#)

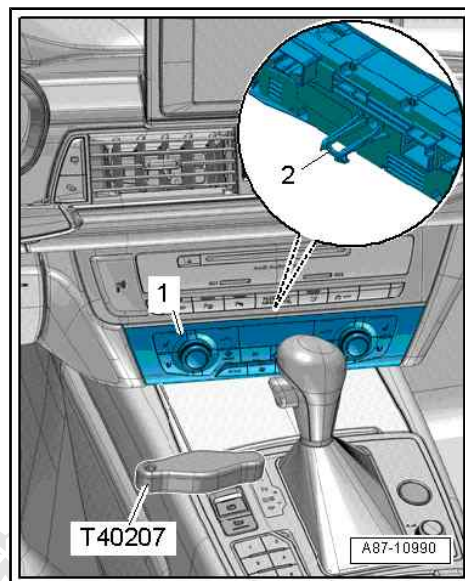
1.7 Adjusting selector mechanism

The following are prerequisites for correct gear lever alignment:

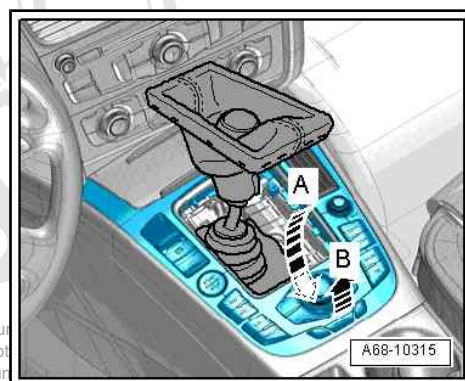
- Gear selector linkage must be in proper condition and undamaged.
- Selector mechanism must move freely.
- Gearbox, clutch and clutch mechanism must be in proper condition.
- Gearbox in neutral.

Procedure

- Switch off ignition.
- Remove gear knob with gear lever boot ⇒ [page 39](#) .
- Remove air conditioner operating and display unit ⇒ Heating, air conditioning; Rep. gr. 87 ; Operating and display unit; Overview of fitting locations - operating and display unit .

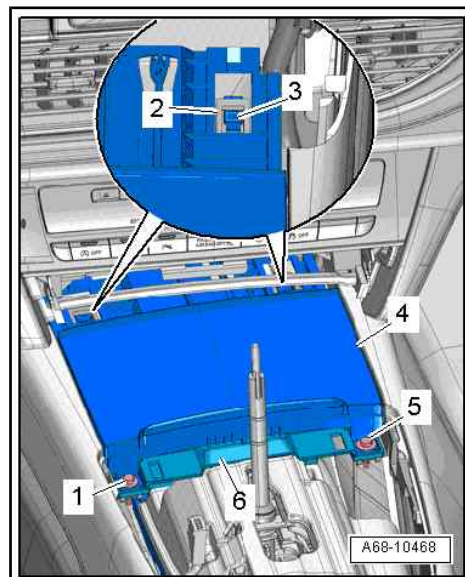


- Remove multimedia system operating unit - E380- ⇒ Communication; Rep. gr. 91 ; Infotainment system; Removing and installing multimedia system operating unit -E380- .

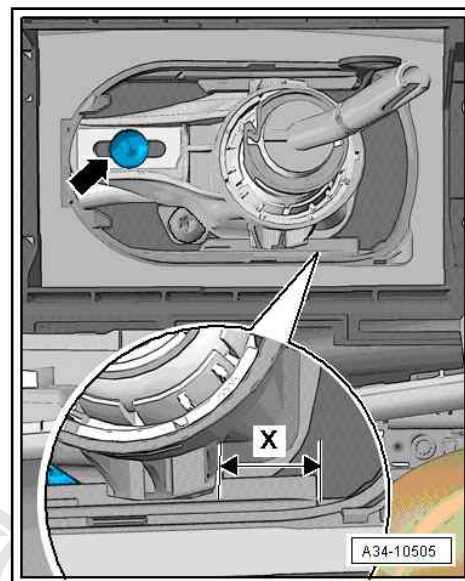


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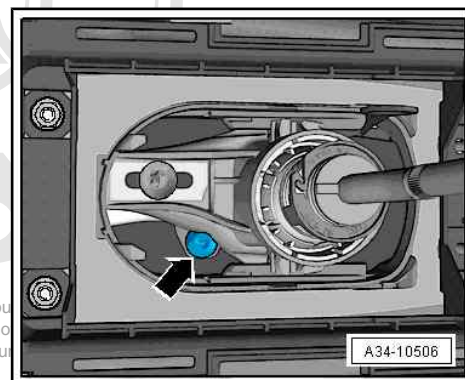
- Remove front ashtray/storage compartment -6- ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console .
- Remove noise insulation above selector mechanism ⇒ [page 40](#) .



- Check adjustment of push rod: dimension -x-.
- Specification: distance -x- = 25 mm
- If distance measured is not correct, adjust dimension -x- as follows:
- Loosen bolt -arrow- for push rod.
- The gear lever bearing should move freely in both directions on slide
- Set dimension -x- by moving gear lever bearing.
- Tighten bolt for push rod -arrow- in that position.



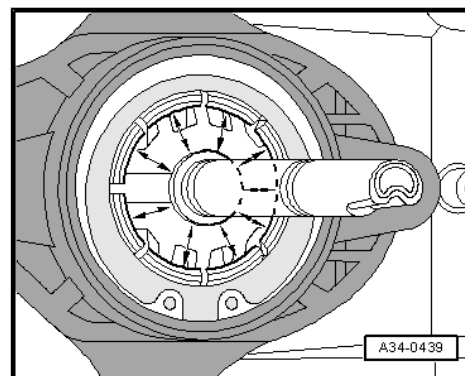
- Loosen bolt -arrow- for selector rod
- Connection between selector rod and selector mechanism should move freely.



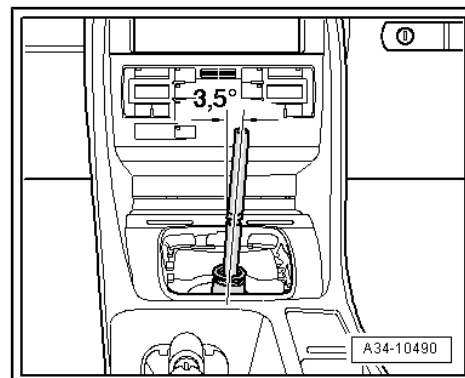
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Adjust gear lever as follows:

- Position bottom of gear lever in centre of gear lever bearing.
- Distance between gear lever bearing and bottom of gear lever -arrows- must be the same at all points.



- Align gear lever so that it points slightly (3.5°) to the right (as seen in direction of travel).
- Hold gear lever in this position.



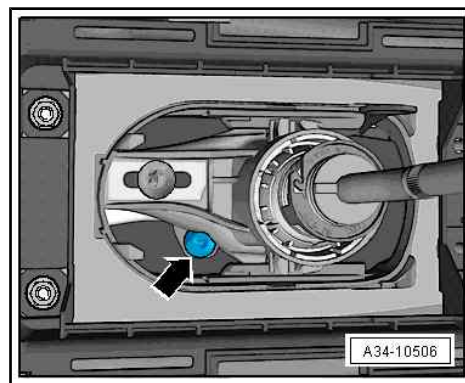
- Tighten bolt for selector rod -arrow-.



Note

The gear lever must remain in the same position while the bolt is being tightened.

- Check gear lever setting ⇒ [page 50](#) .
- Install noise insulation above selector mechanism ⇒ [page 40](#) .
- Install front ashtray/storage compartment ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console .
- Install multimedia system operating unit - E380- ⇒ Communication; Rep. gr. 91 ; Infotainment system; Removing and installing multimedia system operating unit -E380- .
- Install air conditioner operating and display unit ⇒ Heating, air conditioning; Rep. gr. 87 ; Operating and display unit; Overview of fitting locations - operating and display unit .
- Assemble gear knob with cover ⇒ [page 39](#) .



Tightening torques

- ◆ ⇒ [“1.3 Exploded view - selector mechanism”, page 38](#)

1.8 Checking selector mechanism

- Switch off engine.
- Press clutch pedal.
- Select all gears several times.
- Operate reverse gear detent (press gear lever downwards) and move gear lever all the way to the left into reverse gear gate.
- Now move gear lever forwards and engage reverse gear.



Note

Do not exert any sideways pressure on the gear lever while engaging reverse.

- Check that reverse gear has actually been engaged, and not 1st gear.
- If 1st gear has been engaged instead of reverse, the gear lever is set too far to the left. Adjust appropriately ⇒ [page 49](#) .
- Move gear lever out of reverse.
- Gear lever is in neutral position.
- Now engage 2nd gear, exerting increased pressure towards the left.
- If the gear lever sticks when engaging 2nd gear, it is set too far to the right. Adjust appropriately ⇒ [page 49](#) .

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Note

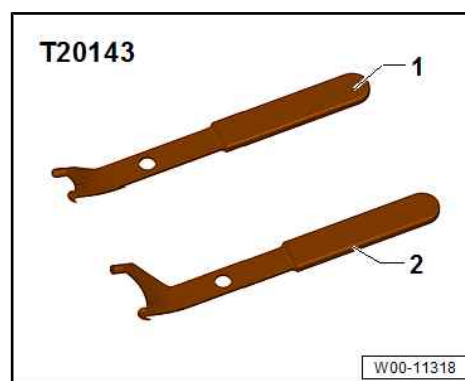
- ◆ *It should only be possible to engage reverse gear after overcoming the reverse gear detent.*
- ◆ *The gear lever should return by itself from the reverse gear gate to the 3rd/4th gear gate.*
- ◆ *If the gear lever sticks or baulks repeatedly when engaging a gear, perform the adjustment procedure again ⇒ [page 49](#).*

1.9 Renewing selector shaft oil seal

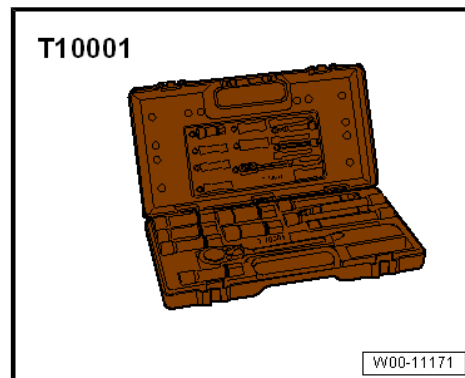
Removing and installing selector shaft oil seal (with gearbox installed in vehicle)

Special tools and workshop equipment required

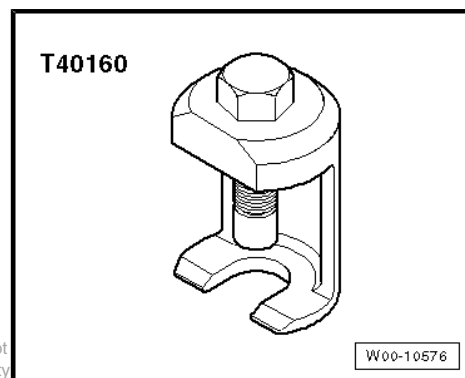
- ◆ Extractor tool - T20143/1-



- ◆ Shock absorber tool set - T10001-



- ◆ Puller - T40160-



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- ◆ Sealing grease - G 052 128 A1-

Removing

- Engage 1st gear.
- Remove rear noise insulation -2- ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .



- Unscrew nut -arrow- securing gear selector lever.

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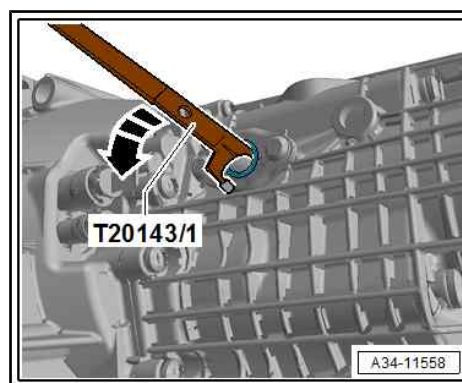
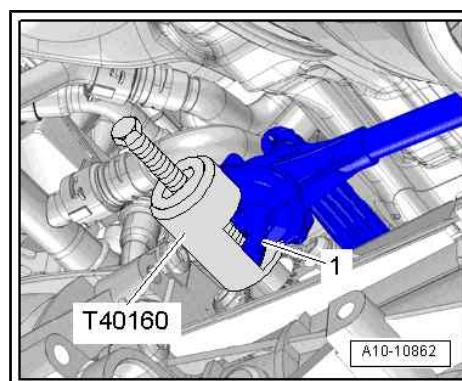
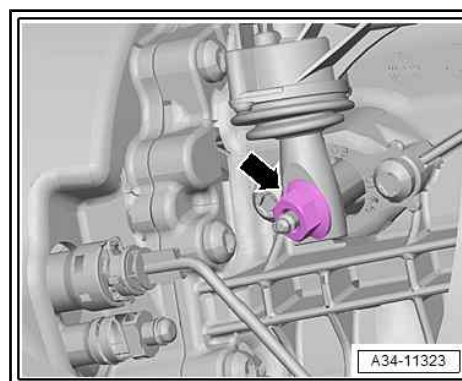
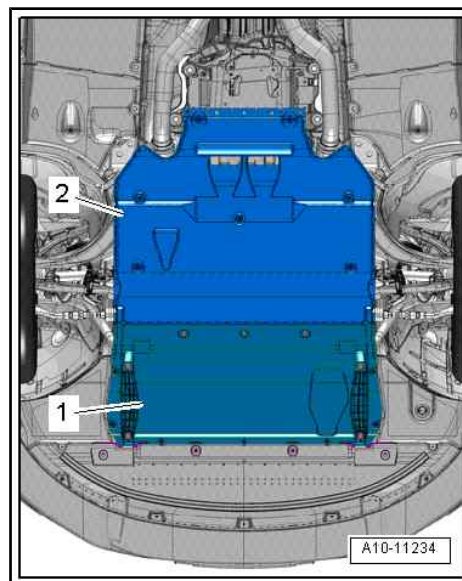


Caution

Risk of damage to selector shaft in gearbox.

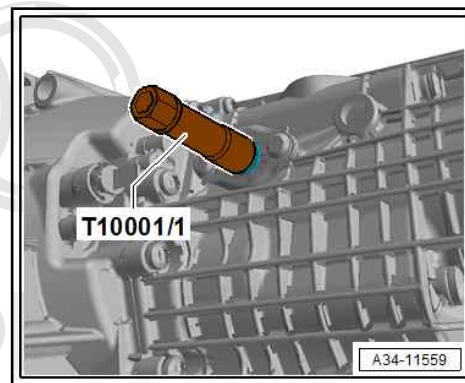
- ◆ **Do not prise off or knock off the gearbox selector lever -1- with a lever or hammer.**
- ◆ **Always use puller - T40160- when removing the gearbox selector lever.**

- Apply puller - T40160- and pull off gearbox selector lever -1-.
- Lever out selector shaft oil seal using extractor tool - T20143/1 - .
- Check selector shaft for damage.



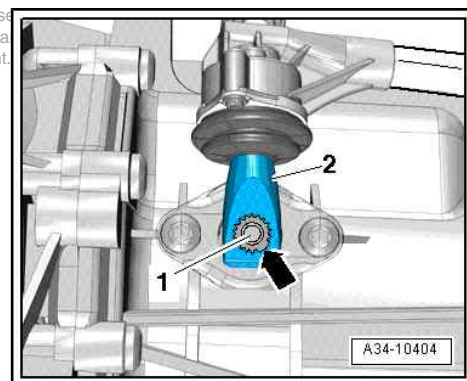
Installing

- Lightly oil outer circumference of oil seal.
- Pack space between sealing lip and dust lip half-full with sealing grease - G 052 128 A1- .
- Drive in selector shaft oil seal using -T10001/1- .
- Installation depth: 2 mm below outer edge of housing



Install gearbox selector lever as follows.

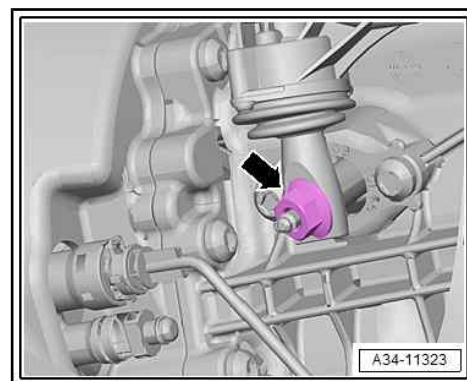
- Gearbox selector lever -2- can only be fitted onto selector shaft -1- in one position (gap in splines -arrow-).



- Tighten new nut -arrow- securing gear selector lever.
- Install noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .

Tightening torques

- ◆ ⇒ ["1.3 Exploded view - selector mechanism", page 38](#)



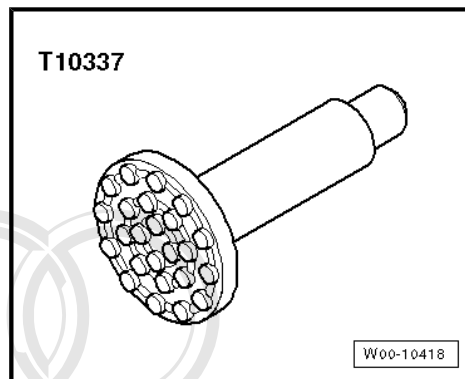
1.10 Removing and installing gear detection sensor - G604-

Special tools and workshop equipment required

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



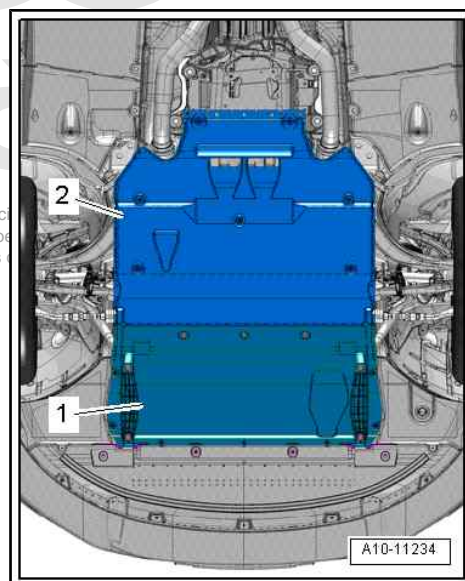
◆ Gearbox support - T10337-



Removing

- Remove front and rear noise insulation -1- and -2- ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .

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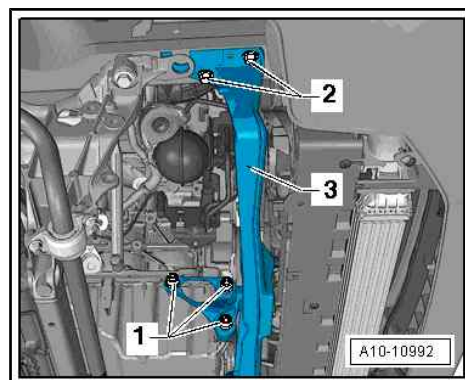


- Remove bolts -1- and detach torque reaction support from engine.

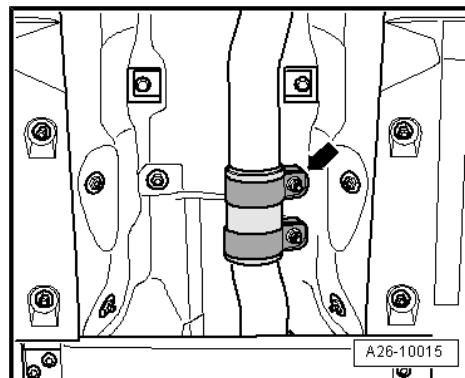


Note

- ◆ *Items marked -2- and -3- can be disregarded.*
- ◆ *The flexible joint in the front exhaust pipe must not be bent more than 10° – otherwise it can be damaged.*



- Disconnect exhaust system at clamp -arrow-.
- Using suitable wire, tie up front exhaust pipe to one side of rear section of exhaust system (at clamp).



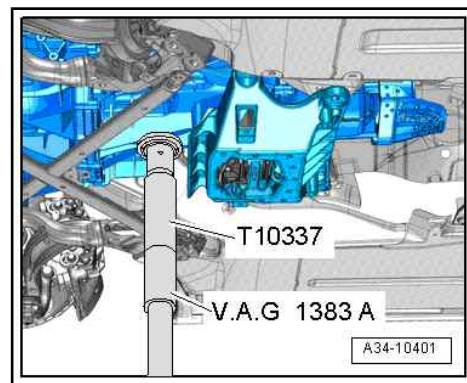
- Apply lifting column of engine and gearbox jack -V.A.G 1383 A- to gearbox from below (with gearbox support - T10337- attached).
- Raise gearbox slightly using engine and gearbox jack - V.A.G 1383 A- .



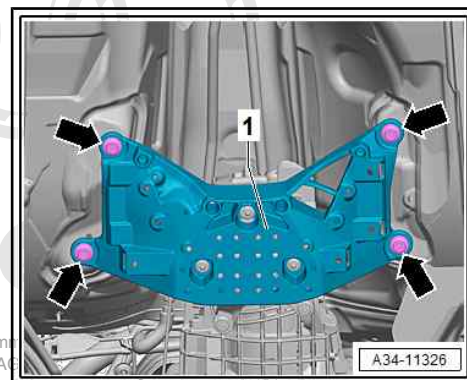
WARNING

Risk of accident.

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

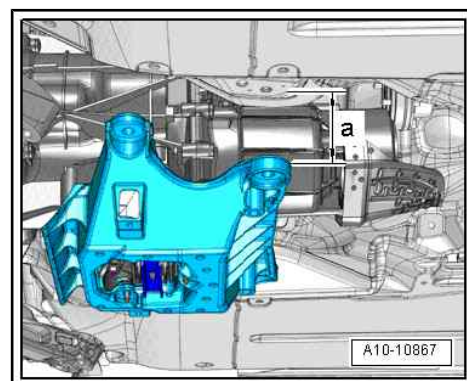


- Remove bolts -arrows- for tunnel cross member -1-.



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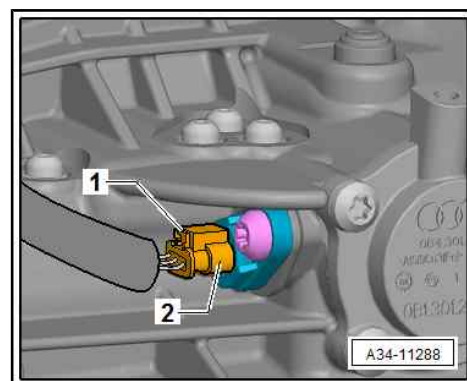
- Lower gearbox by dimension -a- using engine and gearbox jack - V.A.G 1383 A- .
- Dimension -a- = 80 mm (maximum)



Different connectors for gear detection sensor - G604-

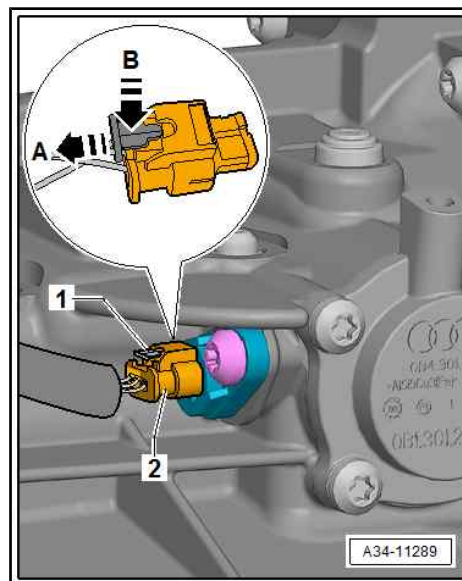
Unplug electrical connector as follows:

- Press catch -1- downwards and unplug connector -2-.



Or:

- Use screwdriver to pry out catch -1- approx. 3 mm in direction of -arrow A-.
- Press catch -1- downwards in direction of -arrow B- and unplug connector -2-.



- Remove bolt -1- and pull out gear detection sensor - G604- -3-.

Installing

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

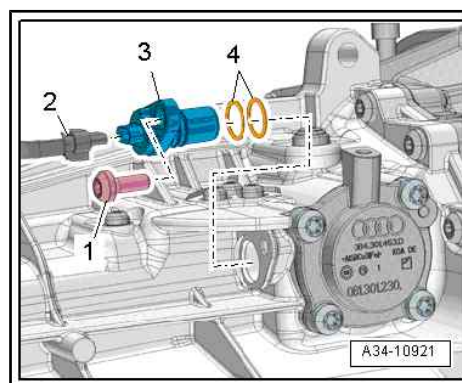
- Renew bolt -1- and O-rings -4-.



Caution

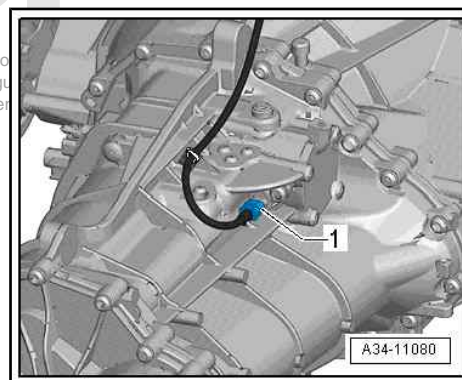
Take care when installing gear detection sensor - G604- : risk of breakage or sensor malfunction

- Gear detection sensor - G604- -3- must not be knocked into the gearbox or pulled in by tightening bolt -1-.
- O-rings -4- and bore in gearbox cover must be lubricated with gear oil.
- Gear detection sensor - G604- -3- can be pushed in carefully using a suitable tool, such as a hammer handle.

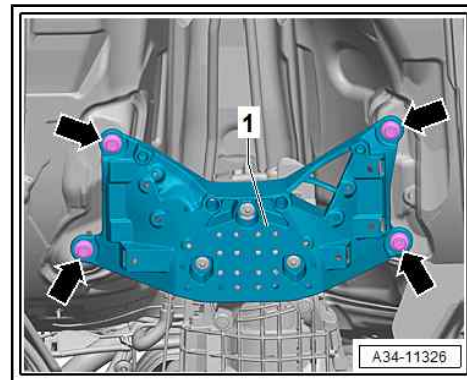


- Fit gear detection sensor - G604- -3- with new O-rings -4- in gearbox.
- Tighten new bolt -1- to specified torque ⇒ [page 57](#) .
- Attach connector -1- at gear detection sensor - G604- and lock if necessary.

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- Secure tunnel cross member -1- -arrows- ⇒ [page 97](#) .



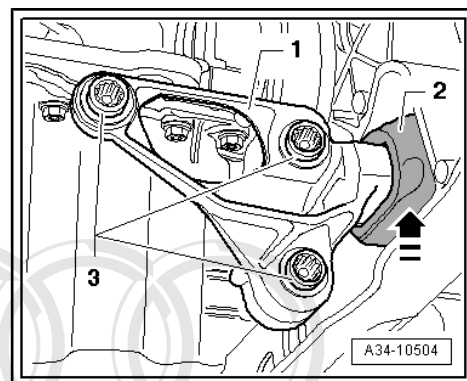
- Push torque reaction support -1- upwards in direction indicated by -arrow- until it makes contact with cross member.



Note

Bump stop -2- must be in contact with cross member without play, but must not be under tension.

- Then tighten bolts -3- to specified torque ⇒ Engine, mechanics; Rep. gr. 10 ; Assembly mountings; Exploded view - assembly mountings .



Continued for all vehicles:

- Assemble exhaust system and perform stress-free alignment ⇒ Engine, mechanics; Rep. gr. 26 ; Exhaust pipes/silencers; Stress-free alignment of exhaust system .
- Install noise insulation panels ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .

Tightening torques

Component	Nm
Gear detection sensor - G604-	8 +60° • Renew bolt

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2 Removing and installing gearbox

⇒ [“2.1 Removing gearbox - vehicles with 4-cyl. TDI engine”, page 58](#)

⇒ [“2.2 Removing gearbox - vehicles with 4-cyl. TFSI engine”, page 71](#)

⇒ [“2.3 Installing gearbox”, page 82](#)

⇒ [“2.4 Tightening torques for gearbox”, page 94](#)



WARNING

Before using the gearbox support - T40173- it is important to check that you have the correct version of this tool.

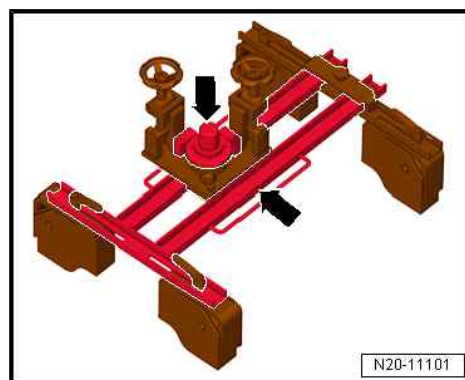
Older versions of this tool must not be used and must be replaced with the latest version.

Distinguishing features of latest version:

On the latest version of this tool, the parts shown in -red- in the illustration -arrows- have a yellow chromated finish.

If the support does not meet the specifications, proceed as follows:

- ◆ *Germany: Contact Matra to have the tool replaced.*
- ◆ *All countries except Germany: Contact your Importer to have the tool replaced.*



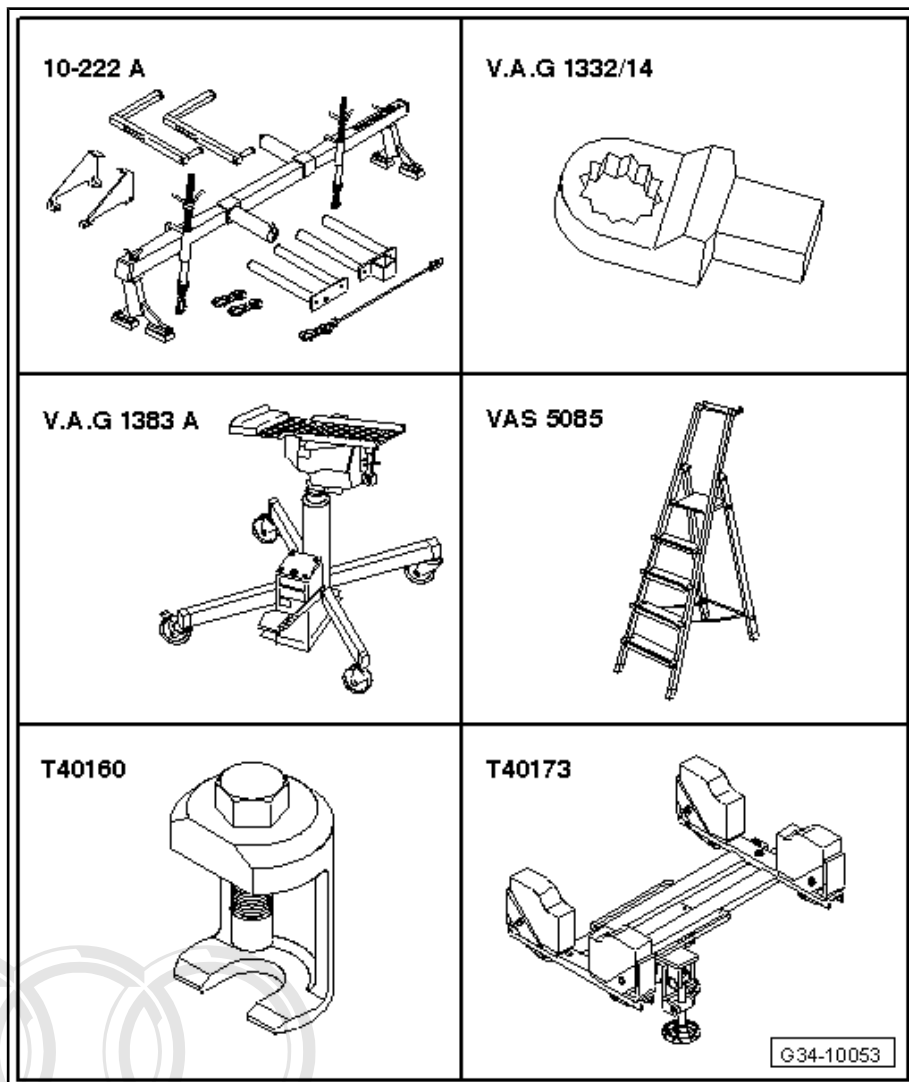
2.1 Removing gearbox - vehicles with 4-cyl. TDI engine



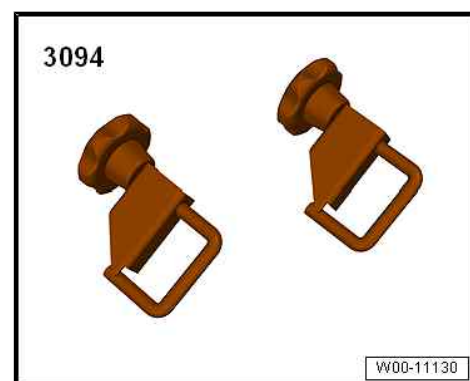
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Special tools and workshop equipment required

- ◆ Support bracket - 10 - 222 A-
- ◆ Ring spanner insert, 16 mm - V.A.G 1332/14-
- ◆ Engine and gearbox jack - V.A.G 1383 A-
- ◆ Stepladder - VAS 5085-
- ◆ Puller - T40160-
- ◆ Gearbox support - T40173-

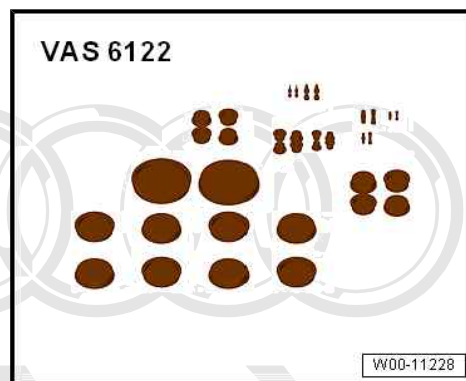


- ◆ Hose clamps up to Ø 25 mm - 3094-



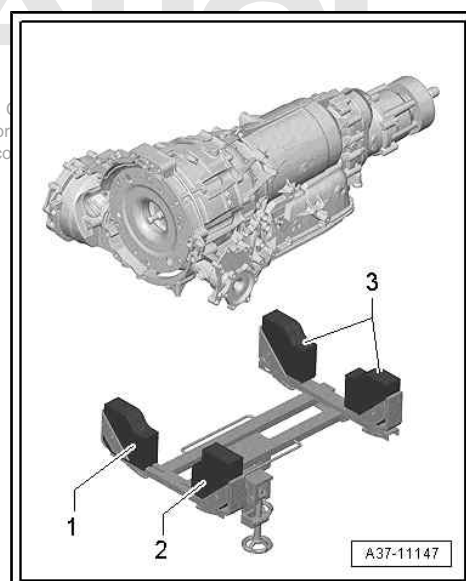
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◆ Engine bung set - VAS 6122-



Preparing gearbox support - T40173- :

- Mounting block attached at -position 1- must be rotated so that the shorter side faces upwards.
- Mounting block attached at -position 2- must be rotated so that the longer side faces upwards, as shown in illustration.
- Mounting blocks attached at -position 3- must be rotated so that the shorter side faces upwards.



Removing

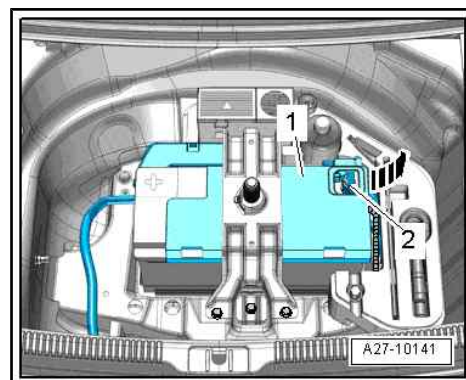
- Bring front wheels into straight-ahead position.
- Switch off ignition.
- Disconnect battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery - vehicles without high-voltage system .



Caution

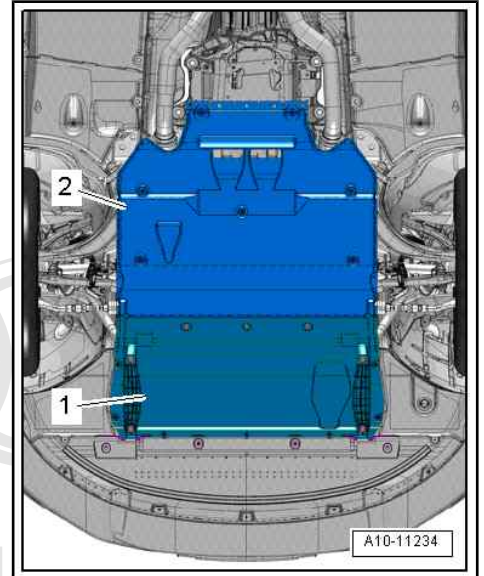
When disconnecting the battery there is a risk of irreparable damage to electronic components.

- ◆ *Observe measures required when disconnecting battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery - vehicles without high-voltage system .*

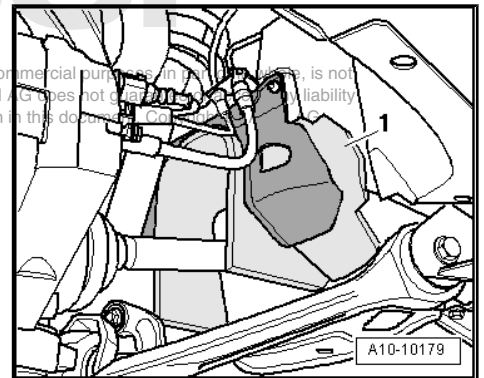


- Remove front wheels.

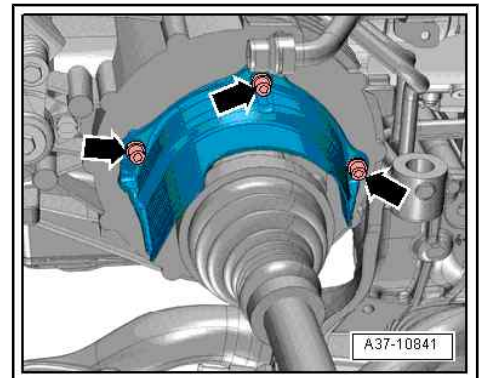
- Remove noise insulation -1- and -2- ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .



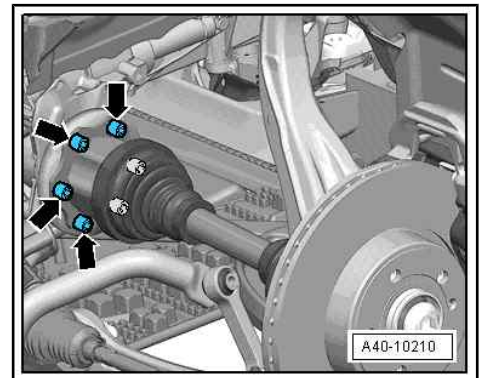
- Remove noise insulation -1- from wheel housing (right-side).
- Remove subframe shield (below drive shaft, right-side) ⇒ Running gear, axles, steering; Rep. gr. 40 ; Subframe; Exploded view - subframe .



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



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



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

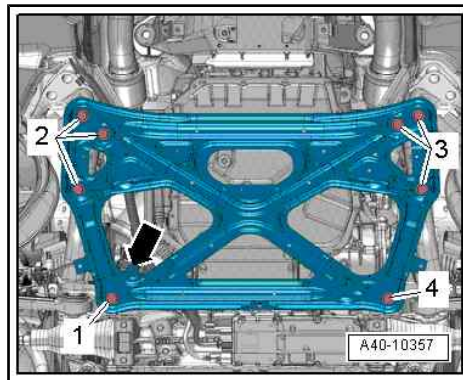


Caution

Risk of damage to parts of the running gear.

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

Do NOT support the vehicle at the subframe or the subframe cross brace (e.g. with a trolley jack).



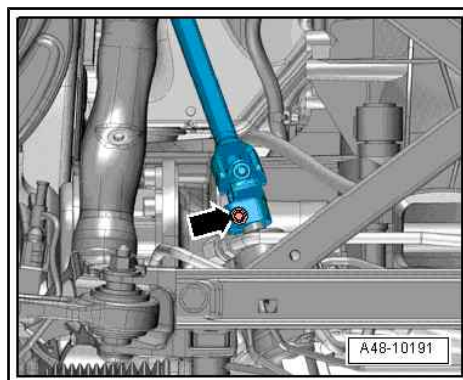
- Detach intermediate steering shaft from steering rack and telescope shaft upwards ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 48 ; Steering column; Removing and installing intermediate steering shaft .



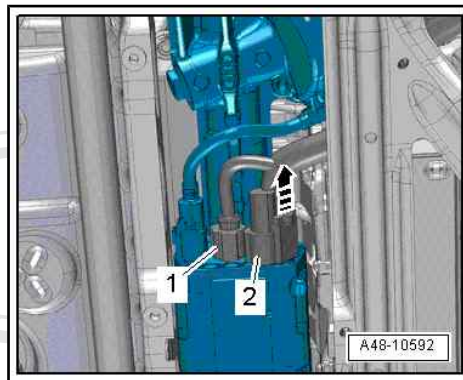
Caution

Risk of damage to coil connector for airbag.

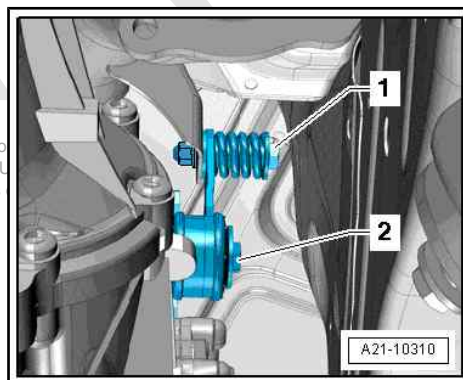
- ◆ **Front wheels must be in straight-ahead position when universal joint is detached from steering rack.**
- ◆ **Do not change position of steering wheel or steering rack after this step (if necessary, fix steering wheel in position with adhesive tape).**



- Unplug electrical connector -1- on power steering control unit - J500- .
- Unplug electrical connector -2- from power steering control unit - J500- (to do this, push retainer towards rear -arrow- and press down release catch).

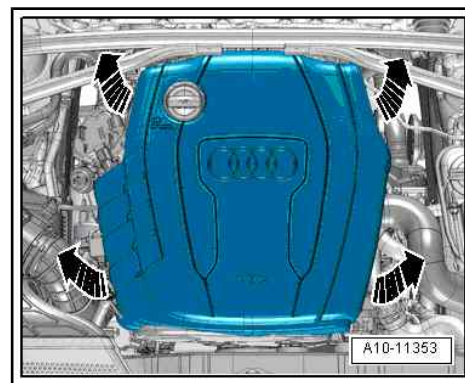


- Remove bolts -1- and -2- and detach bracket for front exhaust pipe.

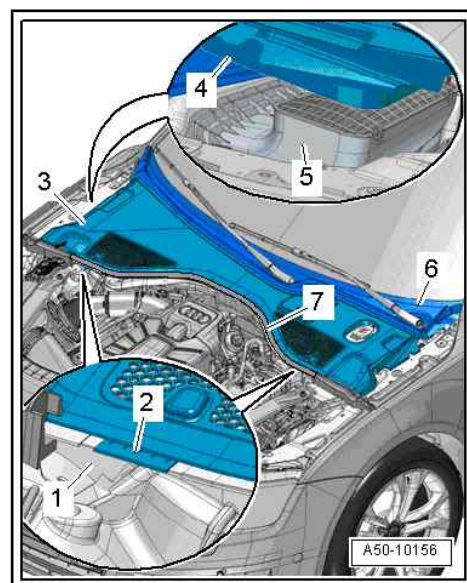


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- Carefully detach engine cover panel from retaining studs in direction of -arrow-. Do not jerk the cover panel away, and do not try to pull on one side only.
- Remove air cleaner housing ⇒ Engine, mechanics; Rep. gr. 23 ; Air cleaner; Removing and installing air cleaner housing .



- Remove plenum chamber cover -3- ⇒ General body repairs, exterior; Rep. gr. 50 ; Bulkhead; Removing and installing plenum chamber cover .



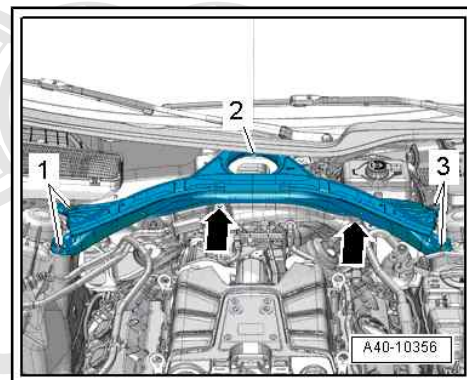
- Remove body brace ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 40 ; Suspension strut, upper links; Removing and installing body brace .



WARNING

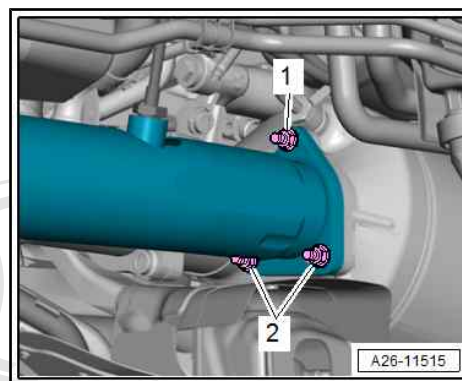
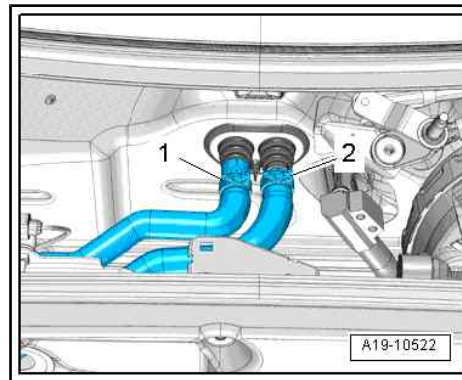
Risk of scalding from hot steam and hot coolant.

- ◆ *The cooling system is under pressure when the engine is hot.*
- ◆ *Cover filler cap on expansion tank with a cloth and open carefully to release pressure.*



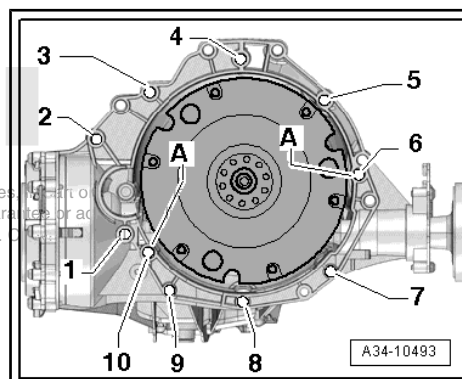
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- Cover area underneath coolant hoses -1- and -2- with absorbent cloths or paper.
- Clamp off coolant hoses -1- and -2- with hose clamps - 3094- .
- Mark coolant hoses -1- and -2- for re-installation and disconnect hoses from connection leading to heat exchanger.
- Unclip coolant hoses together with hose protector grommet from plenum chamber partition panel and push through into engine compartment.
- Detach vacuum line connection leading to brake servo at plenum chamber partition panel and remove plenum chamber partition panel ⇒ General body repairs, exterior; Rep. gr. 50 ; Bulkhead; Removing and installing plenum chamber partition panel .
- Remove nut -1- (accessible from above) securing front exhaust pipe to emission control module.
- Move clear electrical wiring to exhaust gas temperature sender in front exhaust pipe.



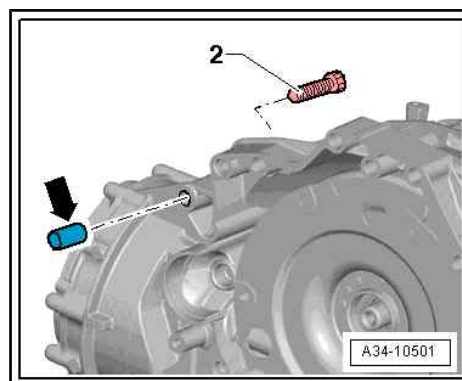
- Remove bolts -2 ... 5- securing gearbox to engine (accessible from above).

Bolt -2- also secures a bracket for wiring. Tie this bracket up to engine.

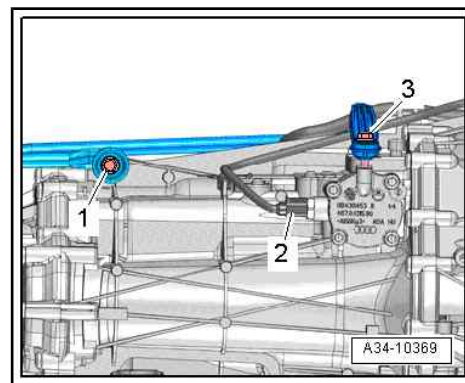


Note

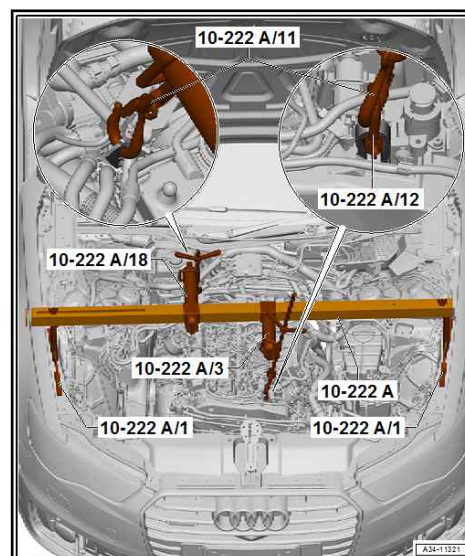
Bolt -2- also secures the starter to the gearbox and has an additional spacer sleeve -arrow-.



- Working from plenum chamber cover, remove bolt -3- for connecting rod.

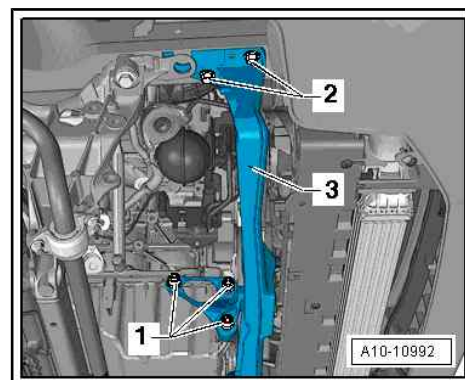


- If there are hoses and wire connections in area of engine lifting eyes for support bracket - 10 - 222 A- , remove these now.
- Set up support bracket - 10 - 222 A- with racks - 10 - 222 A / 1- , as shown in illustration.
- Fit shackle - 10 - 222 A /12- into engine lifting eye (front left) and attach to spindle - 10 - 222 A /11- .
- Hook spindle - 10 - 222 A /11- into engine lifting eye (rear right).
- Raise vehicle.

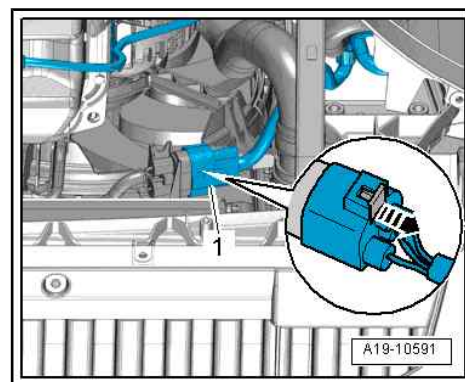


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- Remove bolts -1- and detach torque reaction support from engine.
- Remove bolts -2- on both sides and detach cross member -3-.



- Take electrical connector -1- for radiator fans out of bracket and unplug it; to do so, push retainer towards rear -arrow- and press down release catch.
- Move electrical wiring harness to radiator fan control unit - J293- clear.

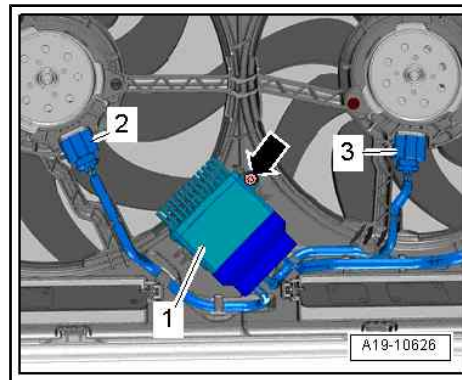


- Remove bolt -arrow-, release catch and tie up radiator fan control unit -J293- -item 1- to side.

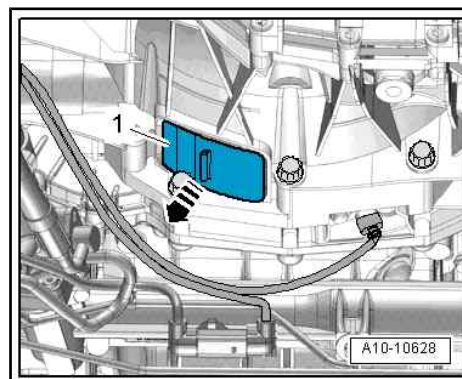


Note

Disregard items -2 and 3-.



- Pull cover -1- off bottom of gearbox -arrow-.



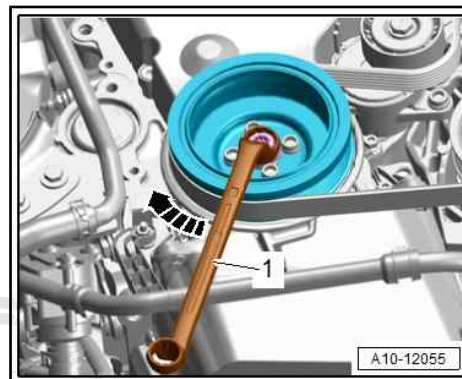
- If fitted, remove cap from vibration damper.
- To slacken bolts for flywheel, counterhold crankshaft with angled ring spanner -1- at central bolt on vibration damper.



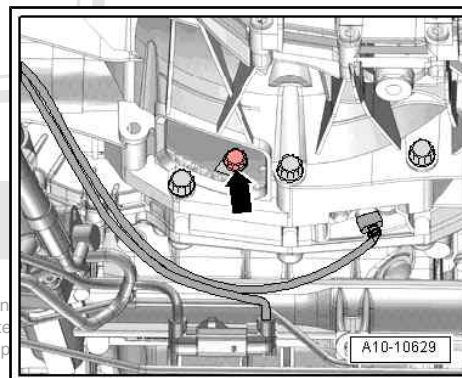
Caution

Irreparable engine damage can be caused if the toothed belt slips.

- ◆ *Only turn crankshaft in the direction of engine rotation -arrow-.*



- Remove 3 or 6 bolts -arrow- securing clutch module to drive plate (turn crankshaft 120° in direction of engine rotation each time).



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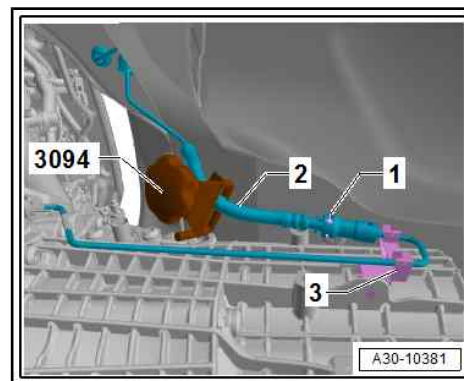
- Use hose clamp - 3094- to clamp off pipe/hose assembly -2-.



Caution

Catch escaping brake fluid.

- ◆ ***Do not operate clutch pedal after detaching pipe/hose assembly from clutch slave cylinder.***



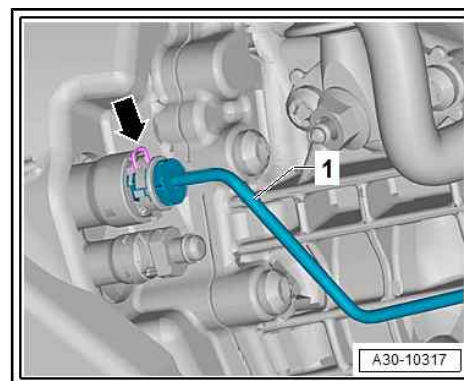
- Release retaining clip -arrow- using a screwdriver and pull out as far as stop.
- Detach pipe/hose assembly -1- from clutch slave cylinder and press it out of bracket on gearbox.



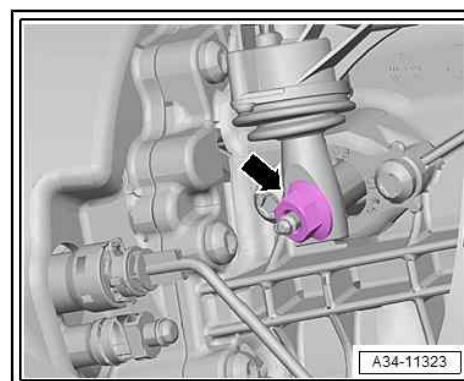
Caution

Catch escaping brake fluid.

- ◆ ***Do not operate clutch pedal after detaching pipe/hose assembly from clutch slave cylinder.***



- Seal off open lines and connections with clean plugs from engine bung set - VAS 6122- .
- Unscrew nut -arrow- securing gear selector lever.

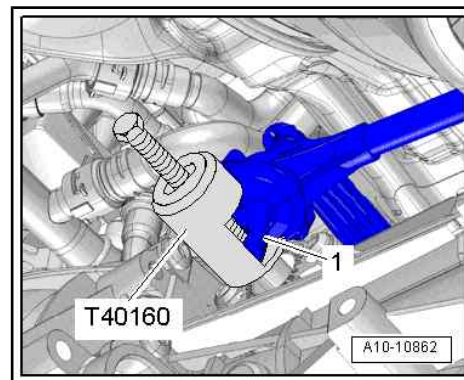


Caution

Risk of damage to selector shaft in gearbox.

- ◆ ***Do not prise off or knock off the gearbox selector lever -1- with a lever or hammer.***
- ◆ ***Always use puller - T40160- when removing the gearbox selector lever.***

- Apply puller - T40160- and pull off gearbox selector lever -1-.



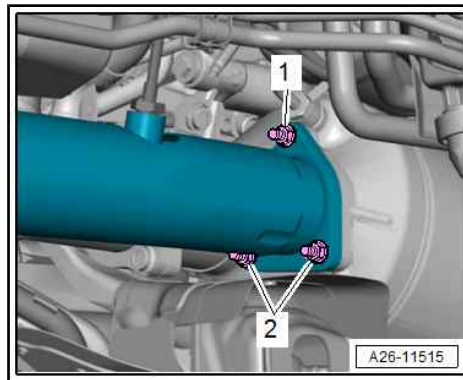
- Remove nuts -2- (accessible from below) securing front exhaust pipe to emission control module.



Caution

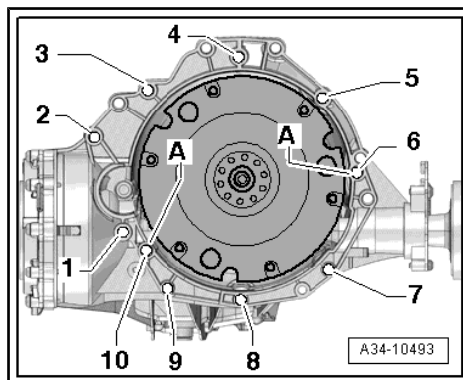
The flexible joints in the front exhaust pipe can be damaged.

- ◆ *The flexible joints in the front exhaust pipe must not be bent further than 10°.*



- Remove front exhaust pipe, taking care not to damage exhaust gas temperature sender ⇒ Engine, mechanics; Rep. gr. 26 ; Exhaust pipes/silencers; Removing and installing front exhaust pipe .

- Remove engine/gearbox securing bolts -7 ... 9-.

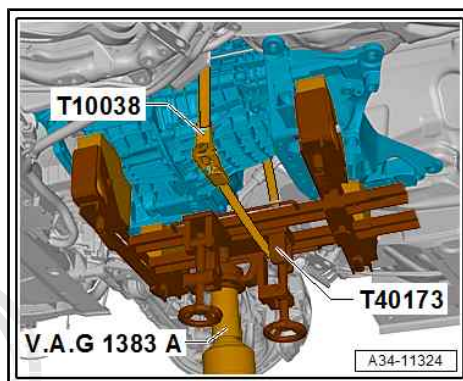


- Position engine and gearbox jack - V.A.G 1383 A- with gearbox support - T40173- underneath gearbox and secure with tensioning strap - T10038- as shown in illustration.

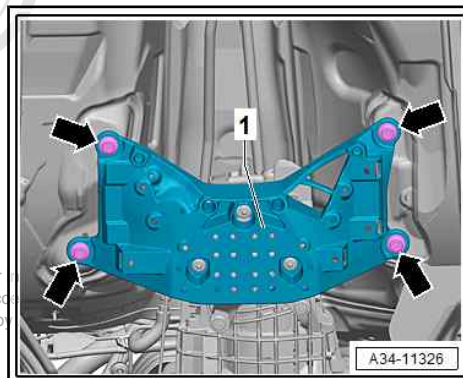


Note

Make sure no electrical wiring is trapped when attaching tensioning strap.

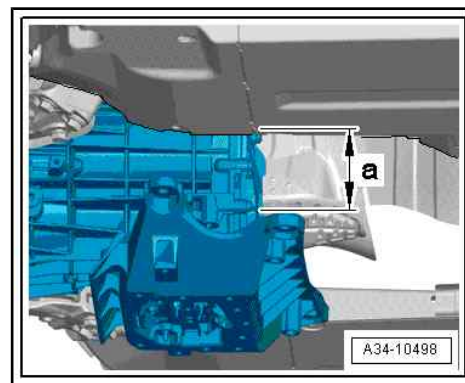


- Remove bolts -arrows- for tunnel cross member -1-.



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- Lower gearbox initially only by dimension -a- using engine and gearbox jack - V.A.G 1383 A- .
- Dimension -a- = 80 mm (maximum)



- Pre-tension front threaded spindle on support bracket - 10 - 222 A- slightly.
- Lower engine/gearbox slightly via rear spindles of support bracket - 10 - 222 A- .

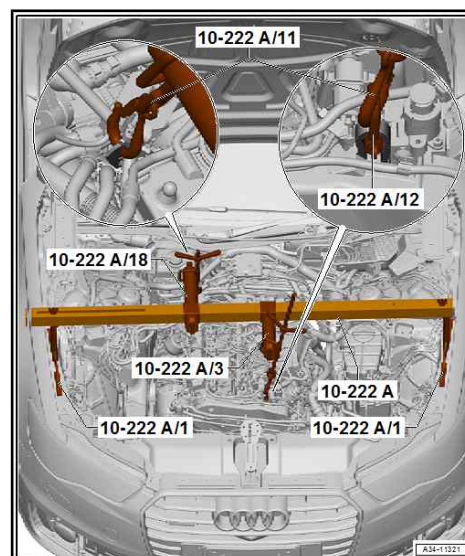


Note

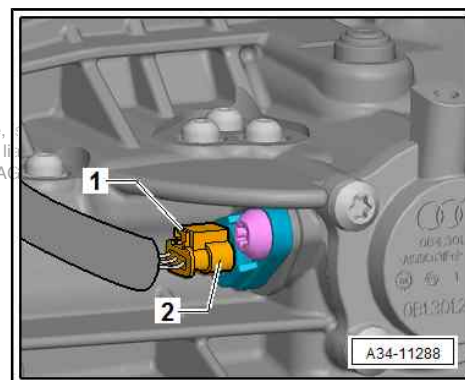
Use stepladder - VAS 5085- to be able to adjust threaded spindles while vehicle is raised.

- Unclip electrical wiring from gearbox and move it clear.

Different connectors for gear detection sensor - G604- ! Unplug electrical connector as follows:



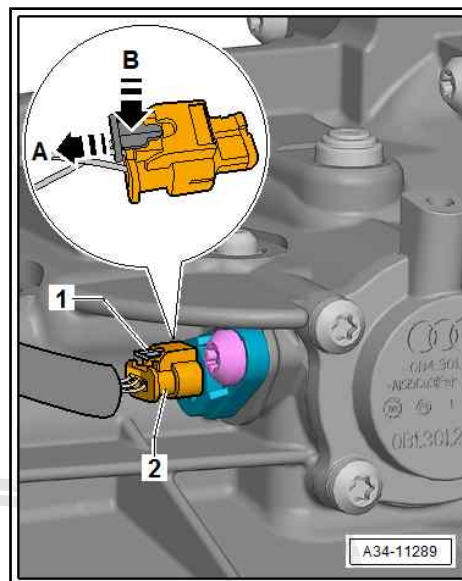
- Push catch -1- downwards, unplug connector -2- and move electrical wiring clear.



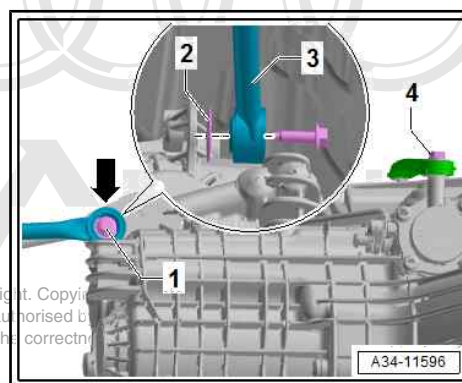
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Or:

- Use screwdriver to pry out catch -1- approx. 3 mm in direction of -arrow A-.
- Push catch -1- downwards in direction of -arrow B-, unplug connector -2- and move electrical wiring clear.



- Remove bolt -1- for push rod -3-.



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- Remove bolt -1- for starter from engine side.
- Do not remove starter.

 Note

Starter cables do not need to be disconnected.

- Remove last bolts -6- and -10- connecting engine to gearbox.

 Note

Bolt -10- is fitted from the engine side.

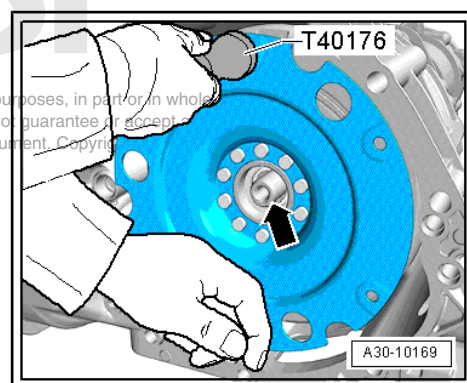
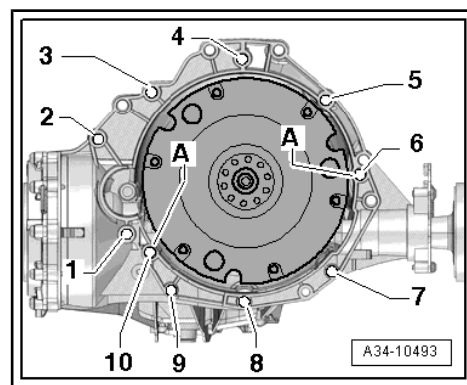
- Press gearbox off engine (approx. 20 mm).
- Then lower gearbox carefully, guiding gearbox housing past steering pinion/steering rack and cover for final drive past sub-frame.

 Note

- ◆ *When lowering the gearbox, make sure that no electrical wires are trapped on the top of the gearbox.*
- ◆ *When lowering gearbox, make sure there is sufficient clearance from drive shafts.*

If the gearbox removed previously is being replaced, the following components must be transferred to the replacement gearbox:

- ◆ Bracket for pipe/hose assembly of clutch mechanism
⇒ [page 16](#)
- ◆ Tunnel cross member with gearbox mounting and gearbox support ⇒ [page 97](#)
- ◆ If necessary, remove clutch module ⇒ ; Rep. gr. 30 ; Removing and installing clutch module .



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

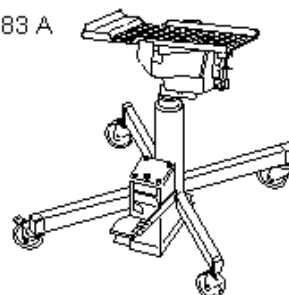
Special tools and workshop equipment required

- ◆ Ring spanner insert, 16 mm - V.A.G 1332/14-
- ◆ Engine and gearbox jack - V.A.G 1383 A-
- ◆ Stepladder - VAS 5085-
- ◆ Tensioning strap - T10038-
- ◆ Puller - T40160-
- ◆ Gearbox support - T40173-

V.A.G 1332/14



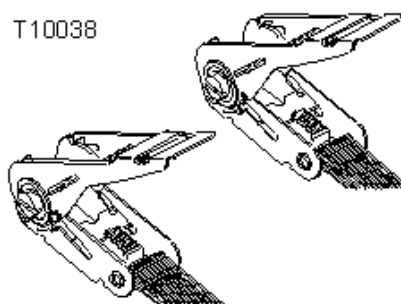
V.A.G 1383 A



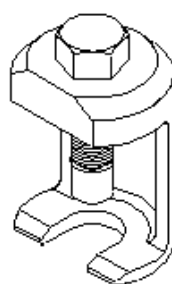
VAS 5085



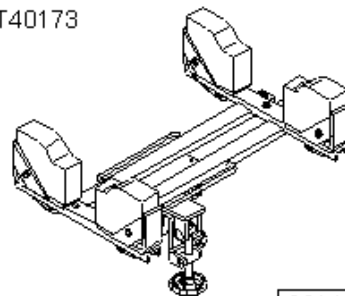
T10038



T40160



T40173



G34-10107

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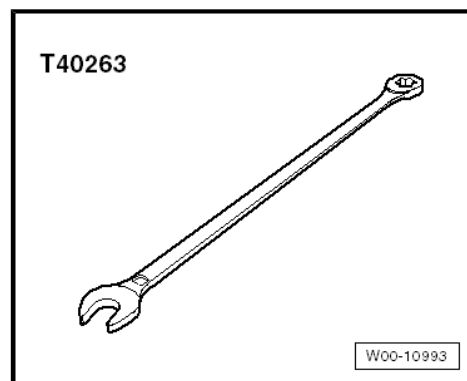
- ◆ Hose clamps up to Ø 25 mm - 3094-

3094



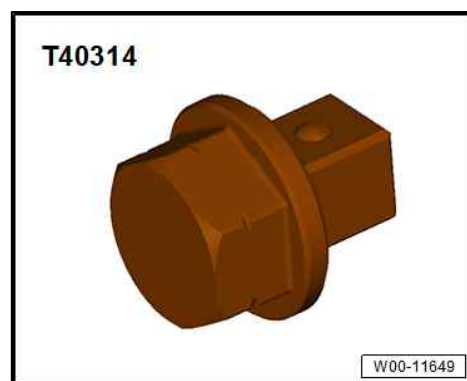
W00-11130

◆ Wrench 21 mm - T40263-

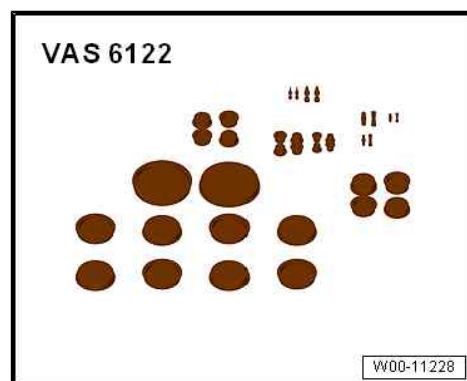


◆ Adapter - T40314-

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◆ Engine bung set - VAS 6122-



Preparing gearbox support - T40173- :

- Mounting block attached at -position 1- must be rotated so that the shorter side faces upwards.
- Mounting block attached at -position 2- must be rotated so that the longer side faces upwards, as shown in illustration.
- Mounting blocks attached at -position 3- must be rotated so that the shorter side faces upwards.

Procedure

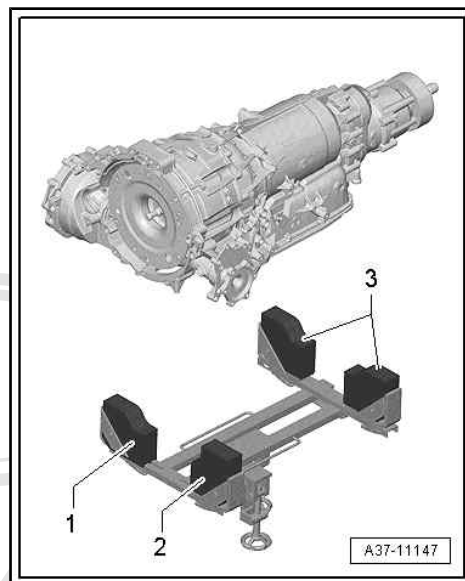
- Bring front wheels into straight-ahead position.
- Switch off ignition.



Caution

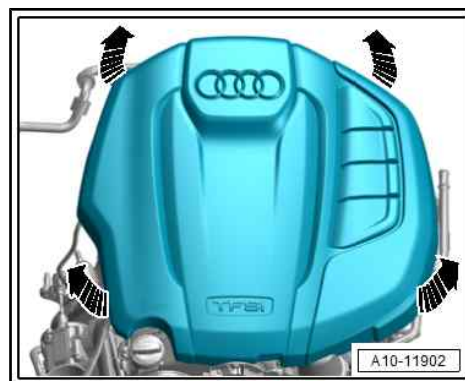
When disconnecting the battery there is a risk of irreparable damage to electronic components.

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

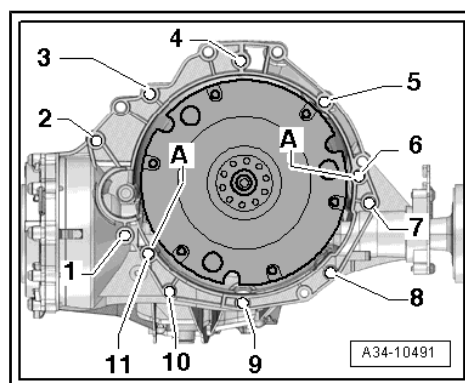


- Disconnect earth wire from battery terminal ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery .
- Remove engine cover panel ⇒ Engine, mechanics; Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .

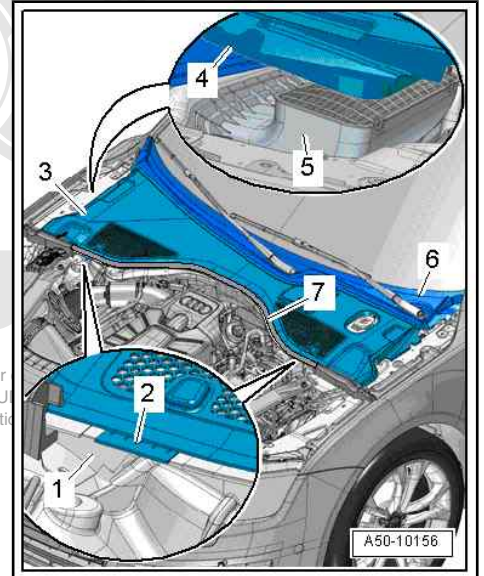
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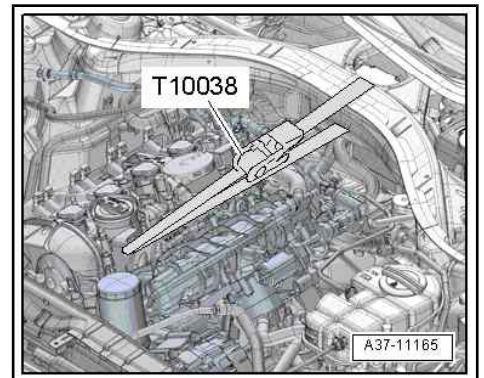
- Remove bolts -3 ... 5- securing gearbox to engine (accessible from above).



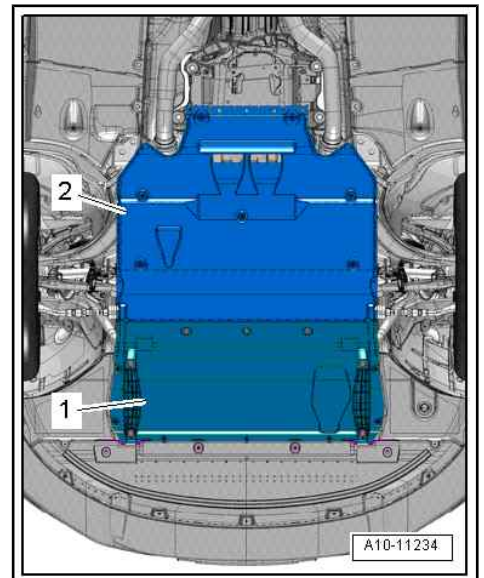
- Remove plenum chamber cover -3- ⇒ General body repairs, exterior; Rep. gr. 50 ; Bulkhead; Removing and installing plenum chamber cover .



- Secure engine with tensioning strap - T10038- as shown in illustration.



- Remove front wheels.
- Remove noise insulation -1- and -2- ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .





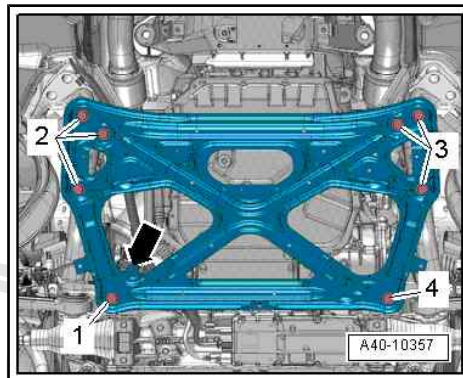
Caution

Risk of damage to parts of the running gear.

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

Do NOT support the vehicle at the subframe or the subframe cross brace (e.g. with a trolley jack).

- Remove subframe cross brace ⇒ Running gear, axles, steering; Rep. gr. 40 ; Subframe; Removing and installing subframe cross brace .



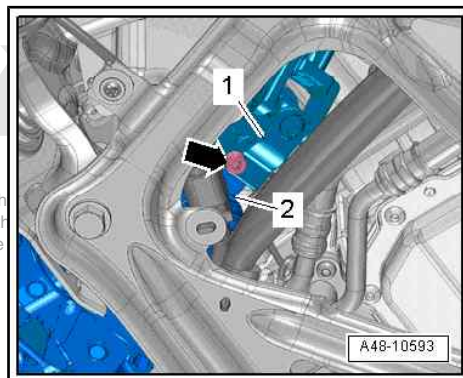
Caution

Risk of damage to coil connector for airbag.

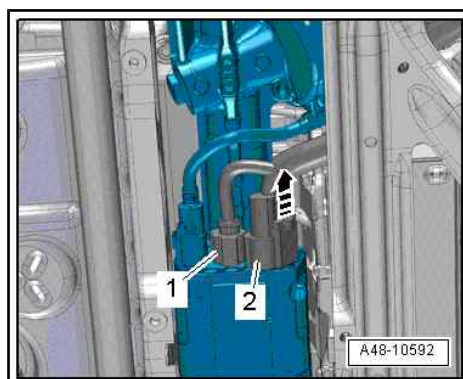
- ◆ **Front wheels must be in straight-ahead position when universal joint is detached from steering rack.**

- ◆ **Do not change position of steering wheel or steering rack after this step (if necessary, fix steering wheel in position with adhesive tape).**

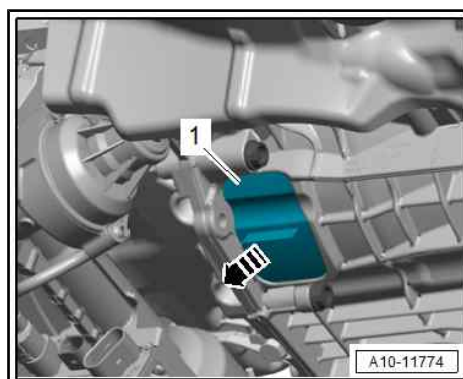
- Detach intermediate steering shaft from steering rack and telescope splines upwards ⇒ Running gear, axles, steering; Rep. gr. 48 ; Steering column; Removing and installing intermediate steering shaft .
- Unplug electrical connector -1- on power steering control unit - J500- .
- Unplug electrical connector -2- from power steering control unit - J500- (to do this, push retainer towards rear -arrow- and press down release catch).
- Move electrical wiring harness clear.



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- Pull cover -1- off bottom of gearbox -arrow-.



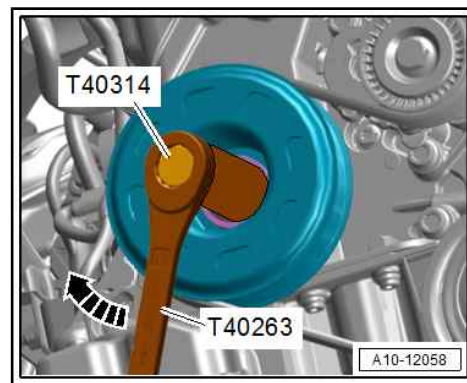
- To slacken bolts for clutch module, counterhold crankshaft at central bolt on vibration damper using wrench (21 mm) - T40263- and adapter -T40314- .



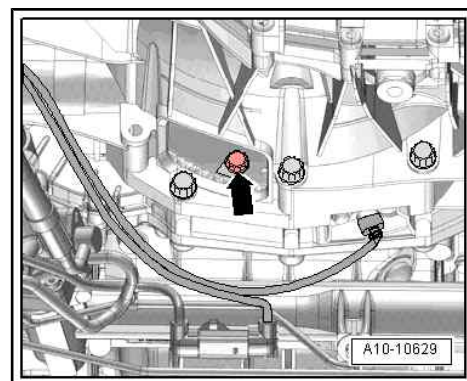
Caution

Irreparable damage can be caused if the camshaft drive chain slips.

- ◆ *Only turn crankshaft in the direction of engine rotation -arrow-.*

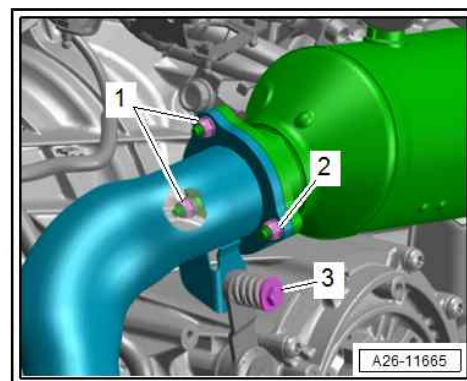


- Remove 3 bolts -arrow- for flywheel (turn crankshaft 120° in direction of engine rotation each time).

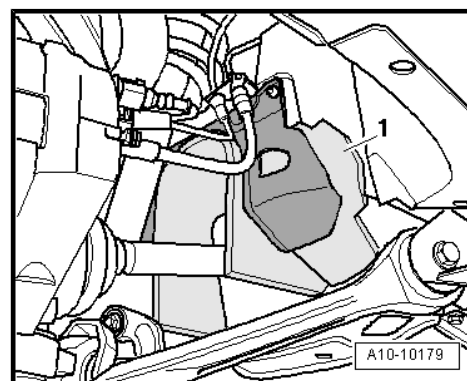


- Remove front exhaust pipe with silencers ⇒ Engine, mechanics; Rep. gr. 26 ; Exhaust pipes/silencers; Exploded view - silencers .

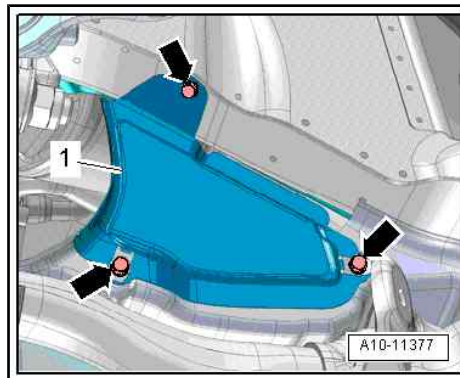
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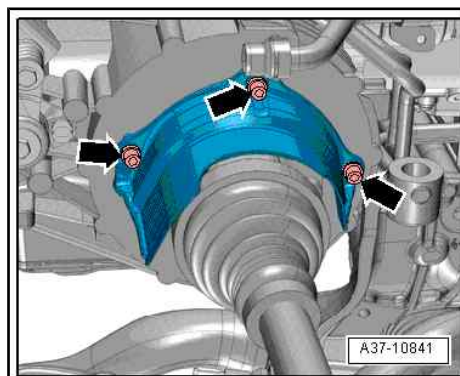
- If fitted, remove cover -1- for drive shaft from wheel housing (both sides).



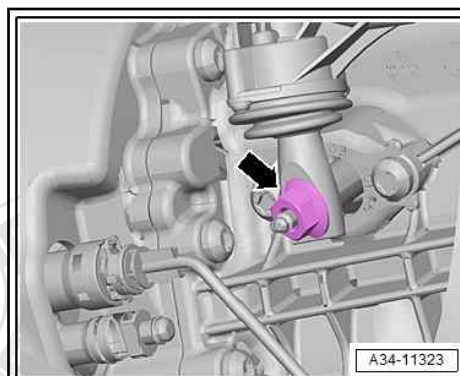
- Remove bolts -arrows- and detach heat shield -1- (both sides).



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



- Unscrew nut -arrow- securing gear selector lever.

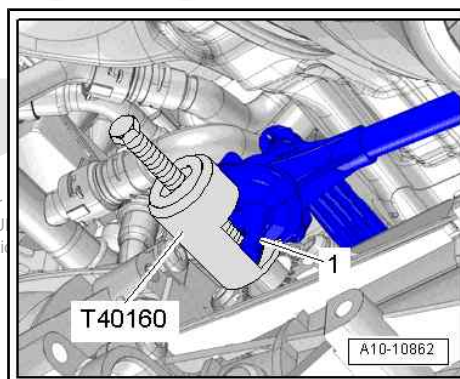


Caution

Risk of damage to selector shaft in gearbox.

- ◆ **Do not prise off or knock off the gearbox selector lever -1- with a lever or hammer.**
- ◆ **Always use puller - T40160- when removing the gearbox selector lever.**

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- Apply puller - T40160- and pull off gearbox selector lever -1-.

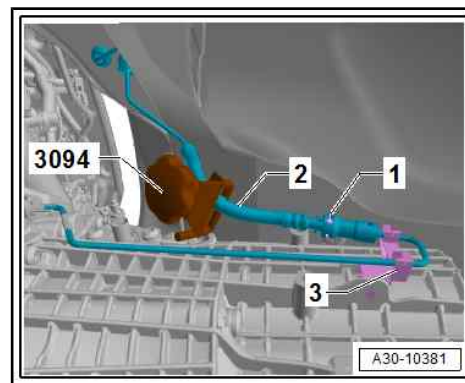
- Use hose clamp - 3094- to clamp off pipe/hose assembly -2-.



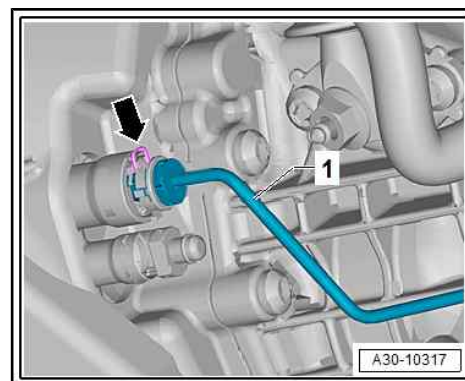
Caution

Catch escaping brake fluid.

- ◆ *Do not operate clutch pedal after detaching pipe/hose assembly from clutch slave cylinder.*



- Release retaining clip -arrow- using a screwdriver and pull out as far as stop.
- Detach pipe/hose assembly -1- from clutch slave cylinder and press it out of bracket on gearbox.
- Seal off open lines and connections with clean plugs from engine bung set - VAS 6122- .

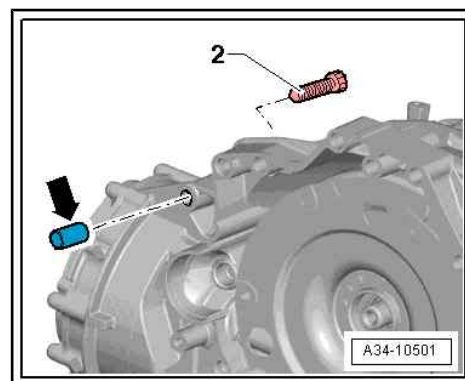


- Remove top starter bolt -2-.



Note

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



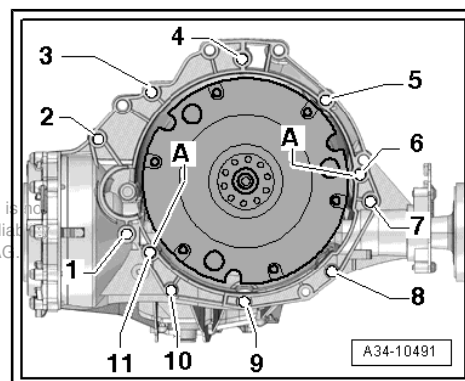
- Remove bottom starter bolt -1- from engine side.
- Detach starter from gearbox but do not remove starter.



Note

Starter cables do not need to be disconnected.

- Remove engine/gearbox securing bolts -7 ... 10-.

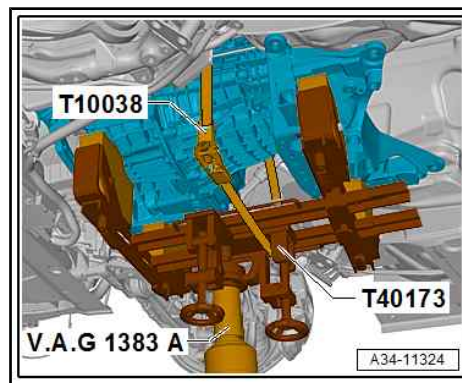


- Position engine and gearbox jack - V.A.G 1383 A- with gearbox support - T40173- underneath gearbox and secure with tensioning strap - T10038- as shown in illustration.

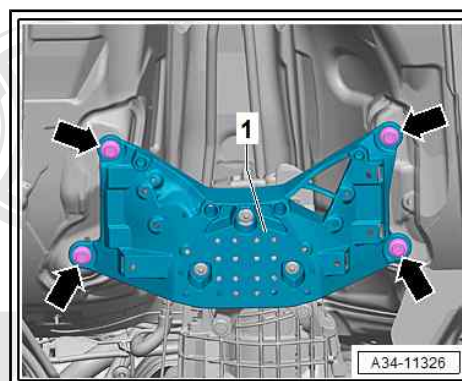


Note

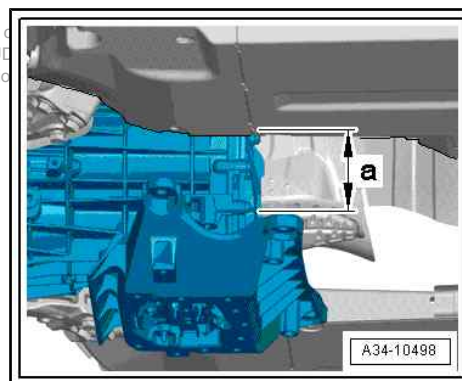
Make sure no electrical wiring is trapped when attaching tensioning strap.



- Remove bolts -arrows- for tunnel cross member -1-.

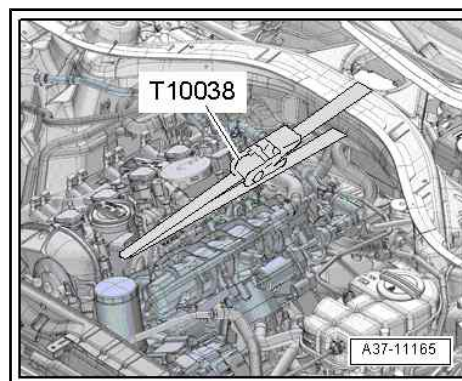


- Lower gearbox initially only by dimension -a- using engine and gearbox jack - V.A.G 1383 A- .
- Dimension -a- = 80 mm (maximum)

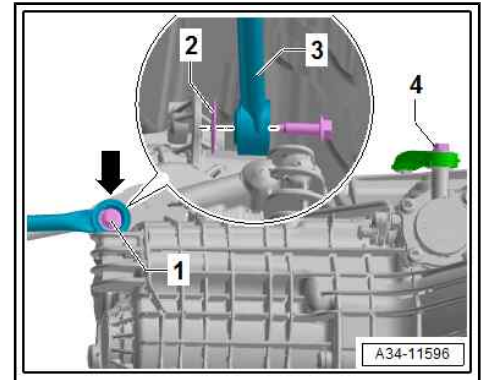


Note

- ◆ *Use stepladder - VAS 5085- so that tensioning strap can be tightened while vehicle is raised.*
- ◆ *Tighten tensioning strap - T10038- slightly.*

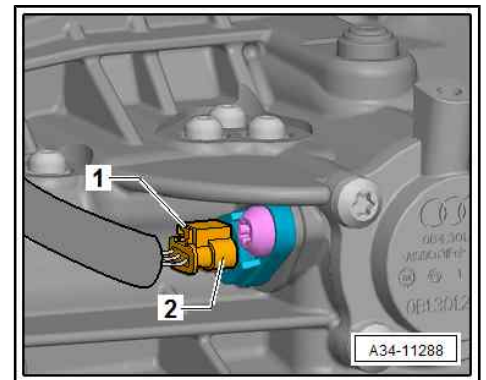


- Remove bolt -1- for push rod -3-.
- Remove bolt -4- for connecting rod.



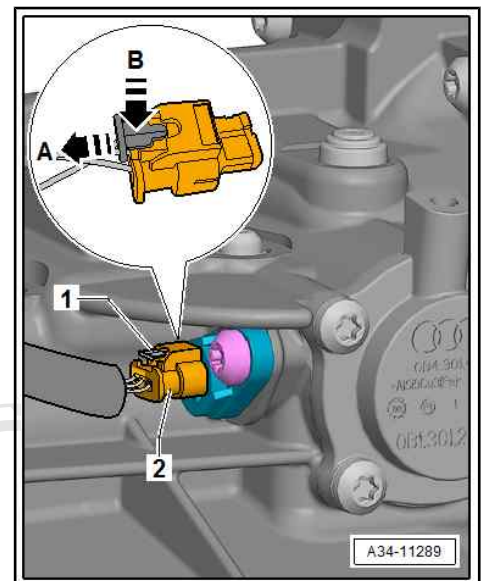
Different connectors for gear detection sensor - G604- ! Unplug electrical connector as follows:

- Push catch -1- downwards, unplug connector -2- and move electrical wiring clear.



Or

- Use screwdriver to pry out catch -1- approx. 3 mm in direction of -arrow A-.
- Push catch -1- downwards in direction of -arrow B-, unplug connector -2- and move electrical wiring clear.
- Remove bolt -1- for starter from engine side.

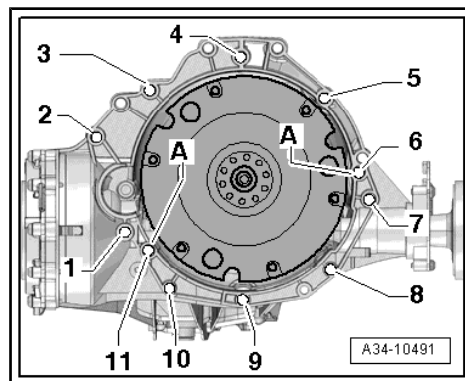


- Remove last bolts -6- and -11- connecting engine to gearbox.
- Press gearbox off engine (approx. 20 mm).
- Then lower gearbox carefully, guiding gearbox housing past steering pinion/steering rack and cover for final drive past sub-frame.



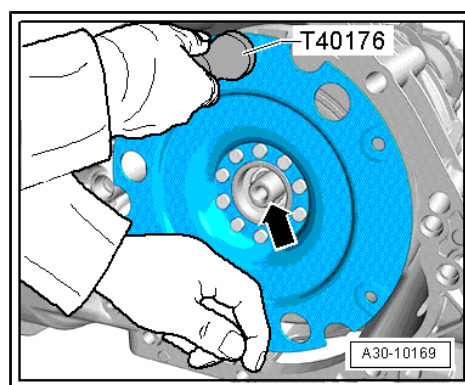
Note

- ◆ When lowering the gearbox, make sure that no electrical wires are trapped on the top of the gearbox.
- ◆ When lowering gearbox, make sure there is sufficient clearance from drive shafts.



If the gearbox removed previously is being replaced, the following components must be transferred to the replacement gearbox:

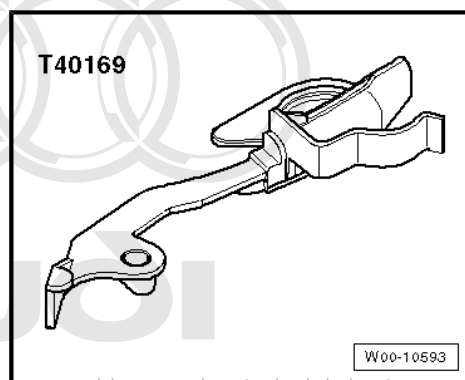
- ◆ Bracket for pipe/hose assembly of clutch mechanism
⇒ [page 16](#)
- ◆ Tunnel cross member with gearbox mounting and gearbox support ⇒ [page 97](#)
- ◆ If necessary, remove clutch module ⇒ ; Rep. gr. 30 ; Removing and installing clutch module .



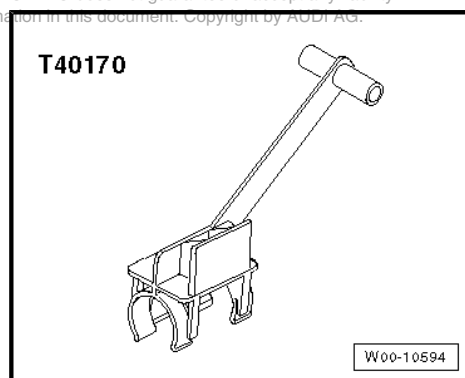
2.3 Installing gearbox

Special tools and workshop equipment required

- ◆ Assembly aid - T40169-



- ◆ Transportation lock - T40170-



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Procedure



Note

- ◆ *Renew bolts which are tightened by turning through a specified angle. The aluminium bolts securing the engine to the gearbox can be used twice only.*
- ◆ *Renew self-locking nuts and bolts, and seals, O-rings and gaskets.*
- ◆ *Secure all hose connections with the correct type of hose clips (same as original equipment) ⇒ Electronic parts catalogue .*
- ◆ *Re-attach all cable ties at the same locations when re-installing.*

Tightening torques for installing gearbox ⇒ page 94

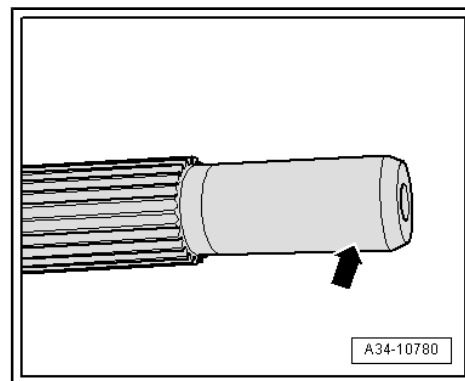
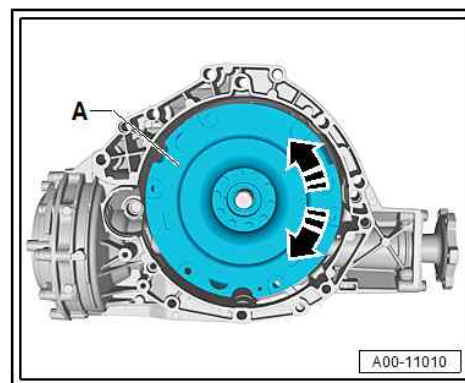
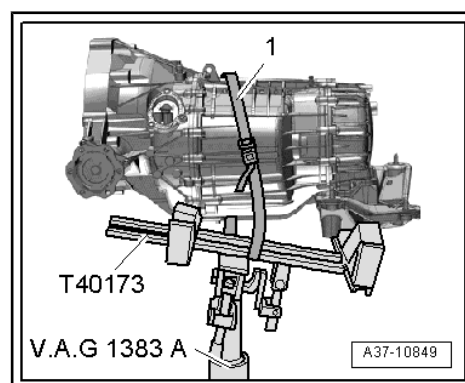
- Position gearbox on gearbox support - T40173- and secure with tensioning strap -1-, as shown in illustration.



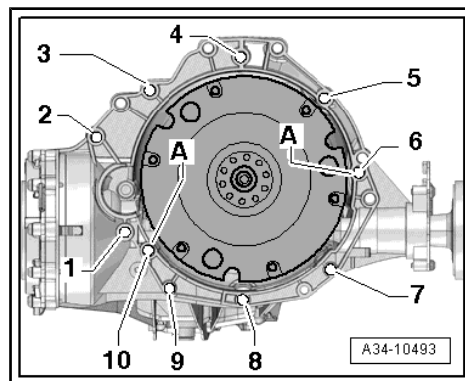
“Clacking” sound in LuK version dual-mass flywheel with centrifugal pendulum absorber

- ◆ Depending on version, clutch modules -A- with or without centrifugal pendulum absorbers may be fitted.
- ◆ When a clutch module with a centrifugal pendulum absorber is turned by hand, a clacking sound can be heard at intervals of approx. 90°.
- ◆ This is caused by a centrifugal pendulum absorber in the dual-mass flywheel and is not a fault.

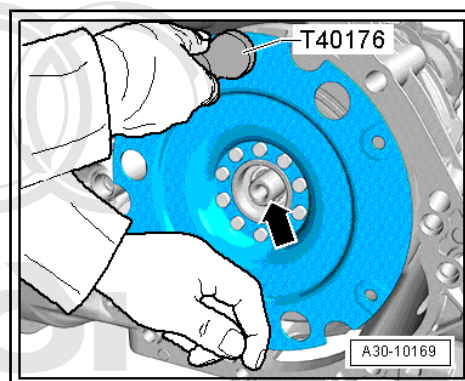
- Check input shaft for scoring around bearing in drive plate -arrow-. Renew needle bearing in drive plate if necessary ⇒ Engine, mechanics; Rep. gr. 13 ; Cylinder block (gearbox end); Renewing needle bearing in drive plate .



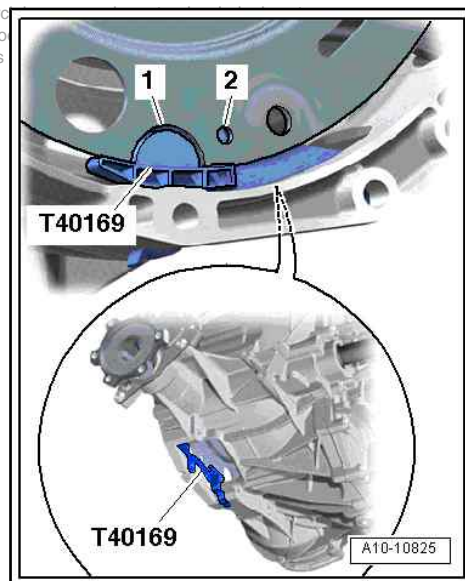
- Check that dowel sleeves -A- for centralising engine/gearbox are in the cylinder block; install any missing dowel sleeves.
- Check whether aluminium bolts -2 ... 10- can be reused for engine/gearbox connection and mark bolts if necessary
⇒ [page 95](#) .
- Install clutch module (if previously removed) ⇒ Servicing 6-speed manual gearbox 0CS, 0DJ, 0CX; Rep. gr. 30 ; Removing and installing clutch module .



- If necessary, install clutch module.



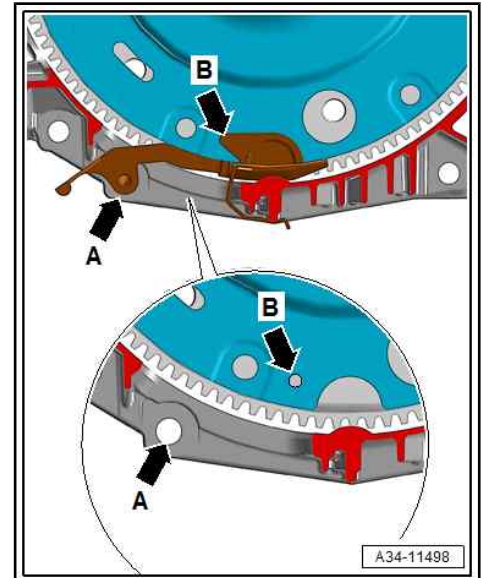
- The following preparations must be made before joining the engine and gearbox:
- Insert assembly aid - T40169- into gearbox housing and clutch module from below, as shown in illustration.



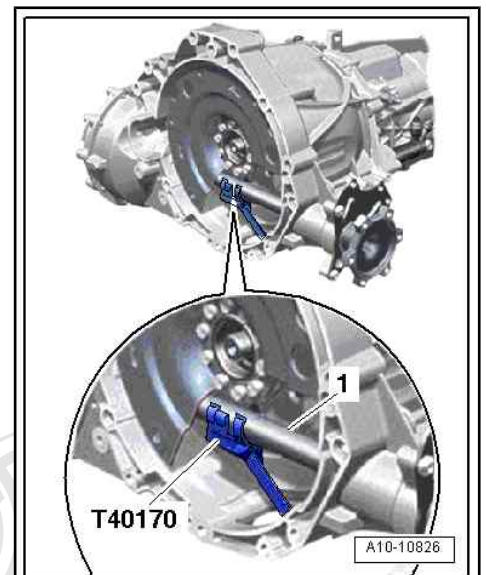
- The assembly tool - T40169- must engage in the semi-circular recess and in the hole (-arrow A- and -arrow B-).

 Note

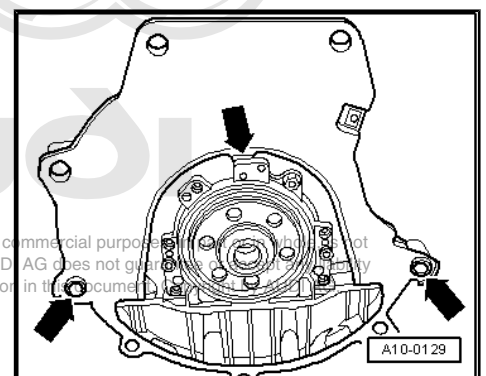
There is only one inspection hole -arrow B- at the periphery; turn the clutch module accordingly.



- Insert transportation lock - T40170- into gearbox housing from below and clamp onto flange shaft -1-.



- Make sure that the intermediate plate is engaged on the sealing flange and fitted on the dowel sleeves -arrows-.



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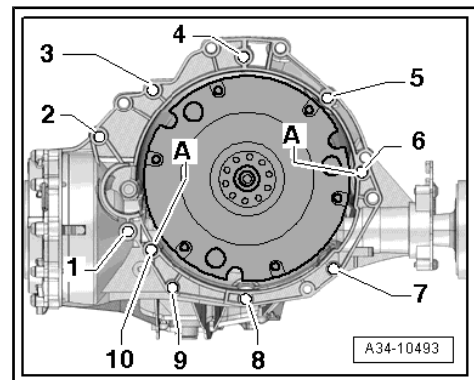
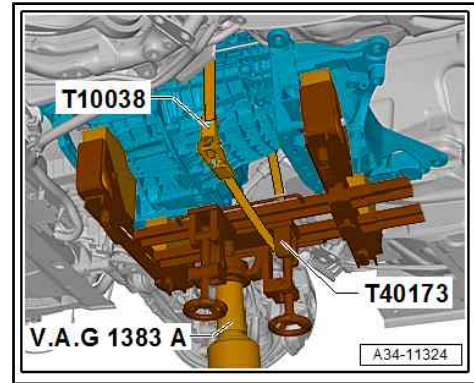
- Lift gearbox and position against engine.



Vehicles with 4-cylinder TDI engine

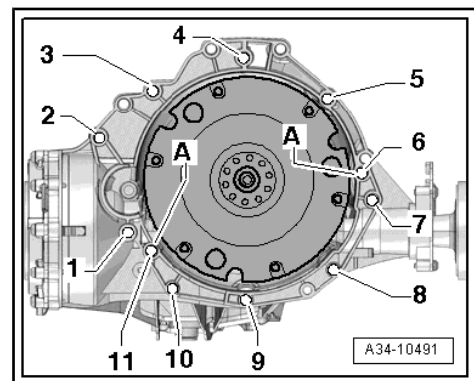
- Tighten engine/gearbox securing bolts -6 ... 10-.

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Vehicles with 4-cylinder TFSI engine

- Tighten engine/gearbox securing bolts -6 ... 11-.



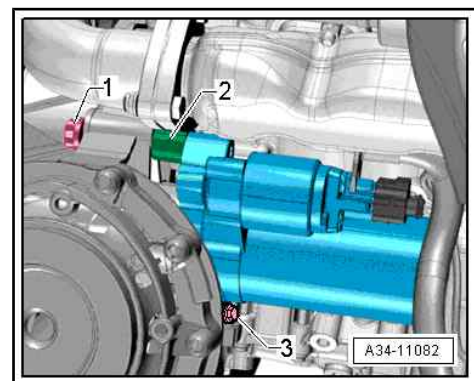
Continued for all vehicles

- Tighten bottom starter bolt -3- hand-tight from engine side.

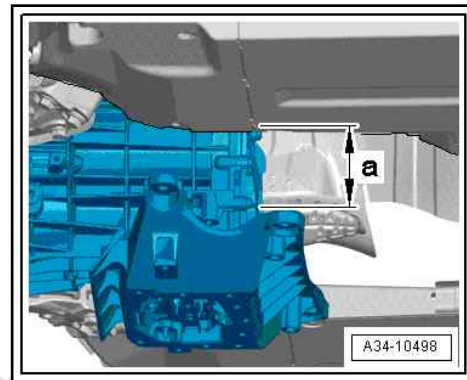


Note

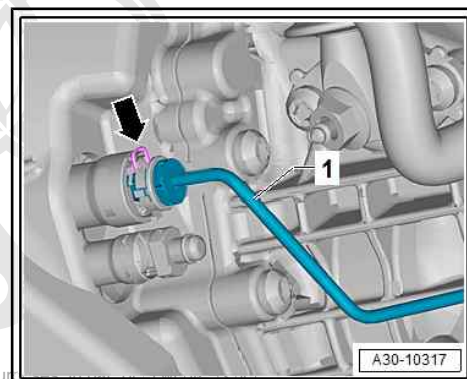
- ◆ Fit a retainer for electrical wiring on starter bolt -1-.
- ◆ When inserting bolt -1-, hold spacer sleeve -2- in installation position e.g. with pliers or a cable tie.
- Fit spacer sleeve -2- between starter and gearbox, push through bolt -1- and screw in.
- Tighten starter bolts -1- and -3-.



- Raise gearbox using engine and gearbox jack - V.A.G 1383 A- initially only until dimension -a- is reached between tunnel cross member and body.
- Dimension -a- = min. 80 mm.
- Secure electrical wire on gearbox.

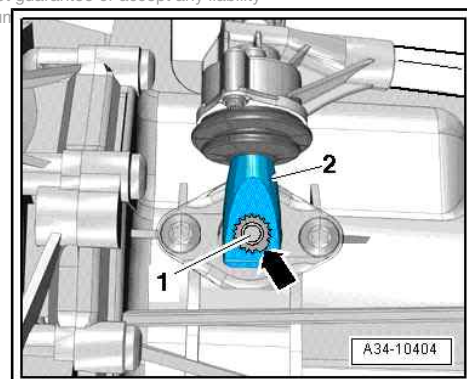


- Fit pipe/hose assembly -1- into connection of clutch slave cylinder and press in retaining clip -arrow- as far as stop.
- Pull on pipe/hose assembly -1- to check that it is secure.
- Clip pipe/hose assembly into bracket on gearbox.
- Remove hose clamp - 3094- .

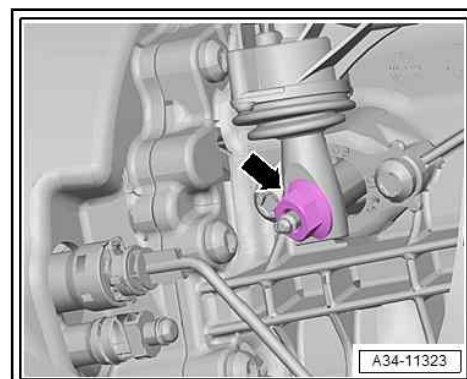


Install gearbox selector lever as follows:

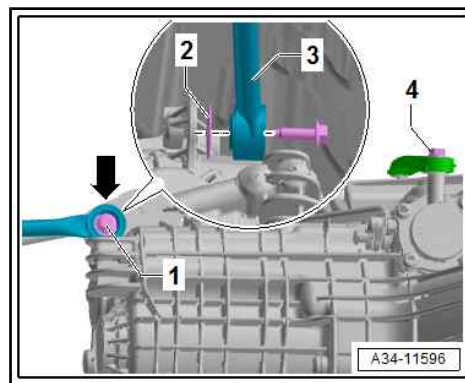
- Gearbox selector lever -2- can only be fitted onto selector shaft -1- in one position (gap in splines -arrow-).



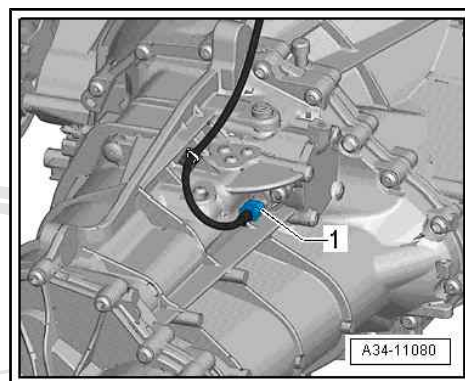
- Tighten new nut -arrow- securing gear selector lever.



- Secure push rod -3- with bolt -1-.
- Secure connecting rod -4-.



- Attach connector -1- at gear detection sensor - G604- and lock if necessary.



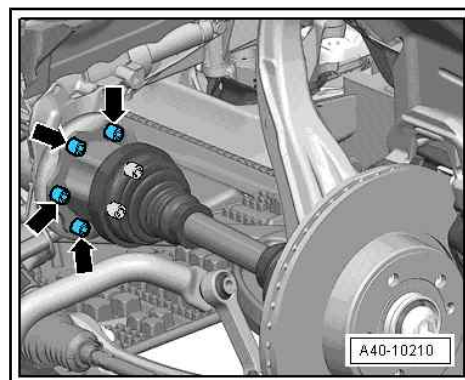
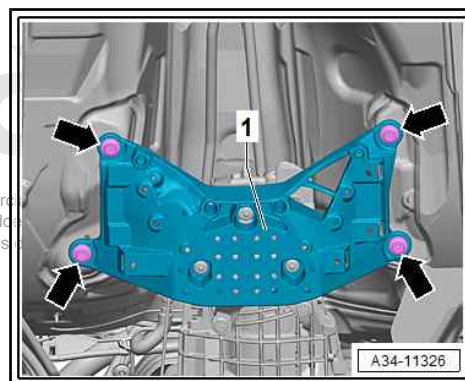
- Loosen threaded spindles on support bracket - 10 - 222 A- / tensioning strap - T10038- .



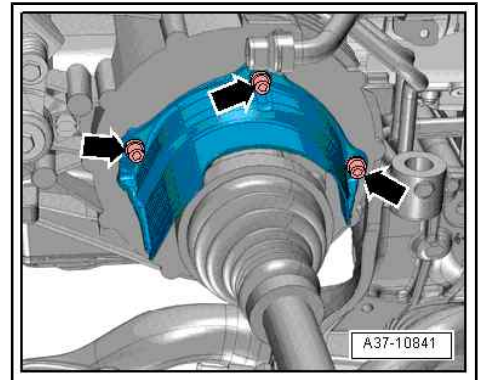
Note

Use stepladder - VAS 5085- so that threaded spindles/tensioning strap can be loosened while vehicle is raised.

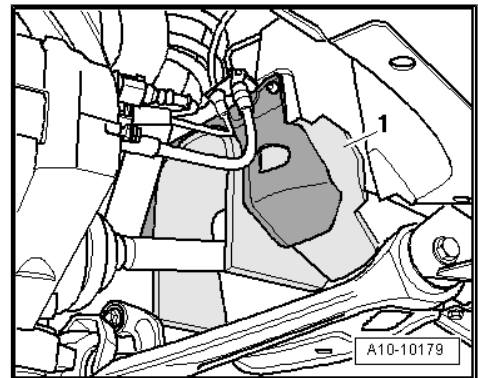
- Raise gearbox further and tighten bolts -arrows- for tunnel cross member -1- ⇒ [page 97](#) .
- Detach engine and gearbox jack - V.A.G 1383 A- with gearbox support - T40173- from gearbox.
- Secure drive shafts (left and right) to flange shafts of gearbox ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Loosening and tightening bolt securing drive shaft .



- Install heat shield for drive shaft and tighten bolts -arrows- => [page 95](#) .



- Install noise insulation -1- in wheel housing on both sides.
- Install subframe shield => Running gear, axles, steering; Rep. gr. 40 ; Subframe; Exploded view - subframe .
- Install front exhaust pipe, assemble exhaust system and perform stress-free alignment => Engine, mechanics; Rep. gr. 26 ; Exhaust pipes/silencers; Stress-free alignment of exhaust system .



Vehicles with 4-cylinder TDI engine

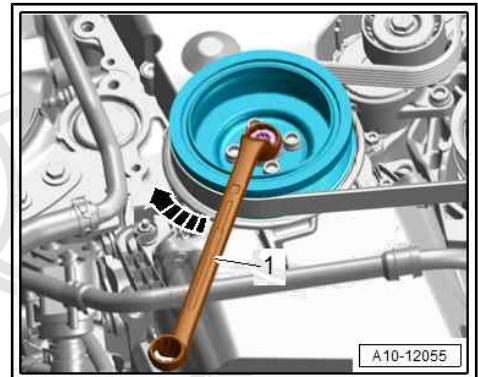
- Turn crankshaft at vibration damper 360° further in direction of engine rotation (direction of -arrow-).



Caution

Irreparable engine damage can be caused if the toothed belt slips.

- ◆ *Only turn crankshaft in the direction of engine rotation -arrow-.*



Vehicles with 4-cylinder TFSI engine

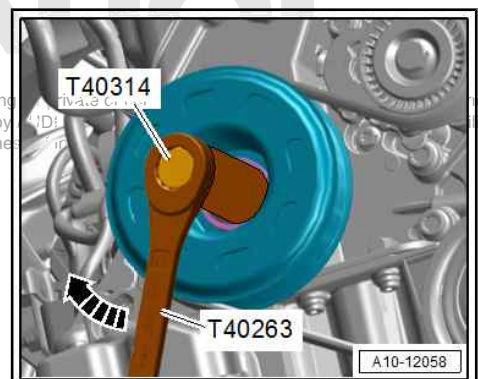
- Turn crankshaft at vibration damper 360° further in direction of engine rotation (direction of -arrow-).



Caution

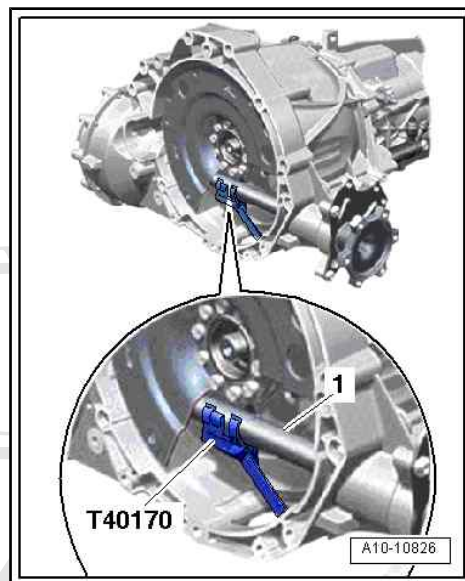
Irreparable damage can be caused if the camshaft drive chain slips.

- ◆ *Only turn crankshaft in the direction of engine rotation -arrow-.*



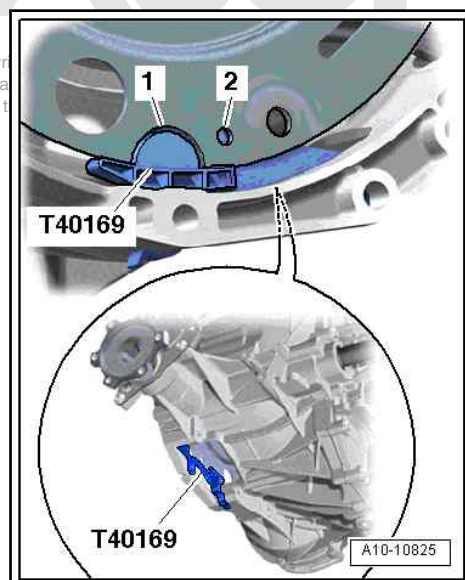
Continued for all vehicles

- Remove transportation lock - T40170- .



- Remove assembly aid - T40169- .

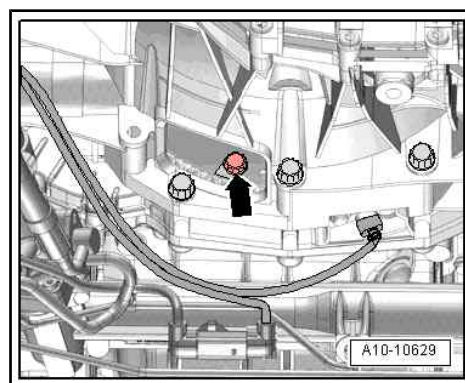
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Secure clutch module to drive plate according to specifications.

- Use new bolts.
- Different tightening sequences for bolted connections with 3 or 6 bolts
⇒ [“2.2 Tightening sequence - clutch module to drive plate”, page 30](#)
- Tightening torque
⇒ [“2.1 Exploded view - clutch module”, page 29](#)
- Tighten bolts using ring spanner insert, 16 mm - V.A.G 1332/14- .

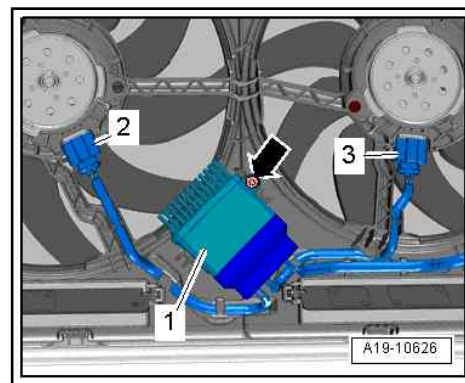


Vehicles with 4-cylinder TDI engine

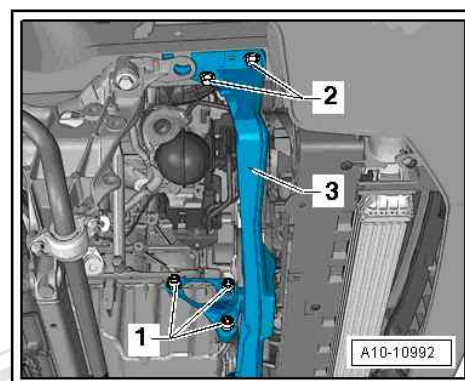
- If fitted, remove cap from vibration damper (front).
- Secure radiator fan control unit - J293- -item 1- to radiator cowl -arrow- ⇒ 4-cylinder TDI engine (2.0 ltr. 4-valve common rail - generation II); Rep. gr. 19 ; Radiator/radiator fans; Exploded view - radiator/radiator fans .

Note

Disregard items -2 and 3-.



- Fit cross member -3- and tighten bolts -2- on both sides ⇒ Engine, mechanics; Rep. gr. 10 ; Assembly mountings; Exploded view - assembly mountings .
- Attach torque reaction support to engine using bolts -1- (tighten hand-tight).

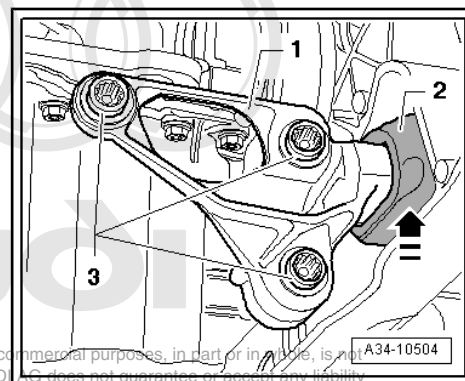


- Push torque reaction support -1- upwards in direction indicated by -arrow- until it makes contact with cross member.

Note

Bump stop -2- must be in contact with cross member without play, but must not be under tension.

- Then tighten bolts -3- to specified torque ⇒ Engine, mechanics; Rep. gr. 10 ; Assembly mountings; Exploded view - assembly mountings .

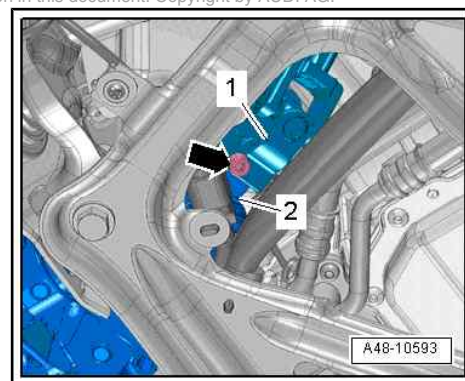


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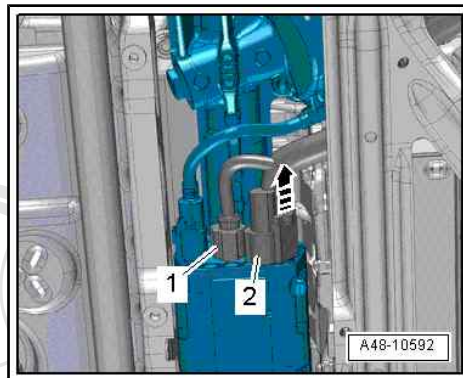
Continued for all vehicles

Remaining installation steps are carried out in reverse sequence; note the following:

- Secure universal joint of intermediate steering shaft to steering rack ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 48 ; Steering column; Removing and installing intermediate steering shaft .

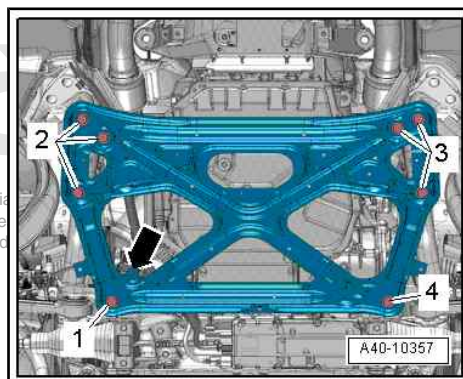


- Attach electrical connectors -1- and -2- on power steering control unit - J500- .



- Install subframe cross brace ⇒ Running gear, axles, steering;
Rep. gr. 40 ; Subframe; Removing and installing subframe cross brace .

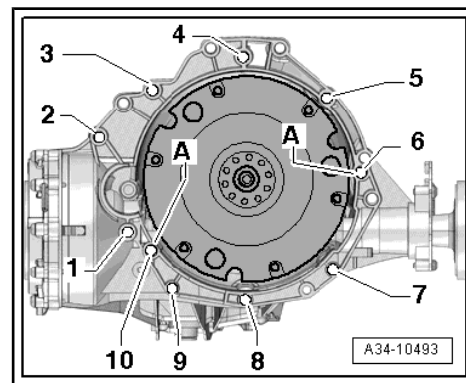
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- Remove support bracket - 10 - 222 A- .
- Screw in and tighten remaining engine/gearbox securing bolts -3 ... 5-.

Vehicles with 4-cylinder TDI engine

- Install air cleaner housing ⇒ Engine, mechanics; Rep. gr. 23 ; Air cleaner; Removing and installing air cleaner housing .
- Install plenum chamber partition panel ⇒ General body repairs, exterior; Rep. gr. 50 ; Bulkhead; Removing and installing plenum chamber partition panel .
- Check coolant level and top up coolant if necessary ⇒ Engine, mechanics; Rep. gr. 19 ; Cooling system/coolant; Draining and filling cooling system .
- Install body brace ⇒ Running gear, front-wheel drive and four-wheel drive; Rep. gr. 40 ; Suspension strut, upper links; Removing and installing body brace .



Continued for all vehicles

- Install plenum chamber cover ⇒ General body repairs, exterior; Rep. gr. 50 ; Bulkhead; Removing and installing plenum chamber cover .
- Bleed clutch hydraulics ⇒ [page 26](#) .
- Install noise insulation panels ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .
- Fit both front wheels and tighten wheel bolts to specified torque ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .
- Observe measures required after connecting battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Disconnecting and connecting battery - vehicles without high-voltage system .



Caution

Overvoltage can cause irreparable damage to control units.

- ◆ *Do not use charger for boost starting.*

Manual gearbox with forced lubrication system from 09.2016 onwards ⇒ [page 1](#)



Caution

After gearbox repairs have been performed, the gear wheels may be insufficiently lubricated as air bubbles may have formed in the oil circuit.

- ◆ *To ensure that all gear wheels are supplied with enough gear oil, these vehicles must only be driven at very low throttle for the first 30 seconds.*

2.4 Tightening torques for gearbox



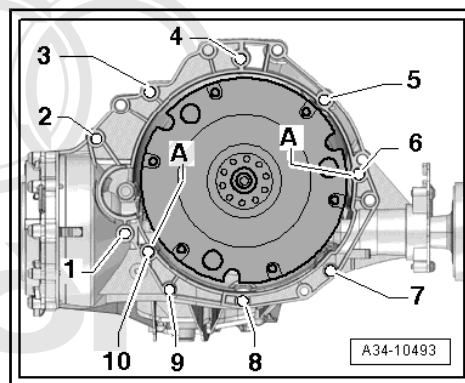
Note

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

Component	Nm
Bolts and nuts	M6 9
	M7 15
	M8 20
	M10 40
	M12 65
Except for the following:	

Securing 4-cylinder TDI engine to manual gearbox

Item	Bolt	Nm
1 ¹⁾	M10 x 50 ²⁾	65
2 ^{1) 4)}	M12 x 100 ³⁾	30 + 90°
3, 6	M12 x 75 ³⁾	30 + 90°
4, 5	M12 x 120 ³⁾	30 + 90°
7 ... 9	M10 x 75 ³⁾	15 + 90°
10	M12 x 50 ³⁾	30 + 90°
A	Dowel sleeves for centralising	



- 1) Also secures starter.
- 2) Property class 10.9; the steel bolt can be re-used any number of times.
- 3) Aluminium bolts must not be used more than twice
⇒ [page 95](#).
- 4) Also secures bracket for electrical wiring.

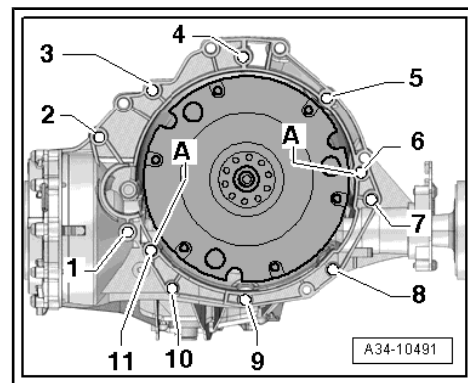
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Securing 4-cylinder TFSI engine to manual gearbox

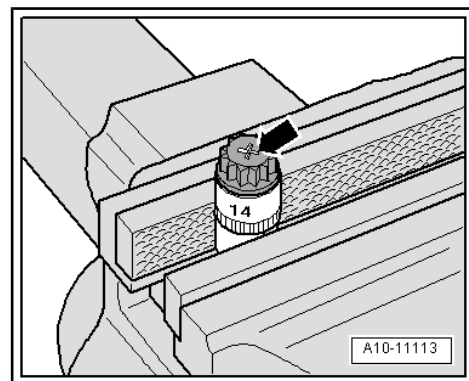
Item	Bolt	Nm
1 ¹⁾	M10x50 ²⁾	65
2 ¹⁾ , 7	M12x100 ³⁾	30 + 90°
3 ⁴⁾ , 6	M12x75 ³⁾	30 + 90°
4, 5 ⁴⁾	M12x120 ³⁾	30 + 90°
8 ... 10	M10x75 ³⁾	15 + 90°
11	M12x50 ³⁾	30 + 90°
A	Dowel sleeves for centralising	

- ¹⁾ Also secures starter.
- ²⁾ Property class 10.9; the steel bolt can be re-used any number of times.
- ³⁾ Aluminium bolts must not be used more than twice
⇒ [page 95](#).
- ⁴⁾ Also secures bracket for electrical wiring.

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- ◆ The aluminium bolts -2 ... 10- may only be used twice. After they have been used once, an "X" -arrow- must therefore be chiselled onto the bolts.
- ◆ To prevent damage to the bolts, they must not be clamped in a vice when marking them. Clamp a 14 mm socket with 1/2" drive in the vice instead, and insert the bolt into the socket, as shown in illustration.
- ◆ Bolts marked with an "X" must not be used again.

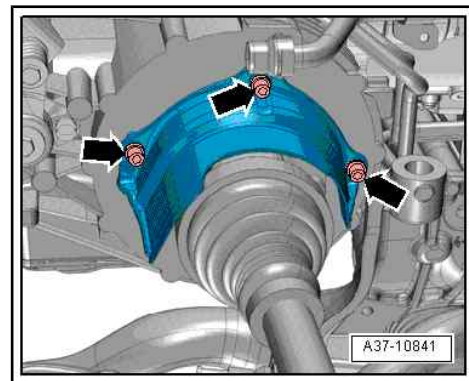


Heat shield for drive shaft - tightening torque

- Tighten bolts -arrows- for drive shaft heat shield to 23 Nm.

Additional tightening torques:

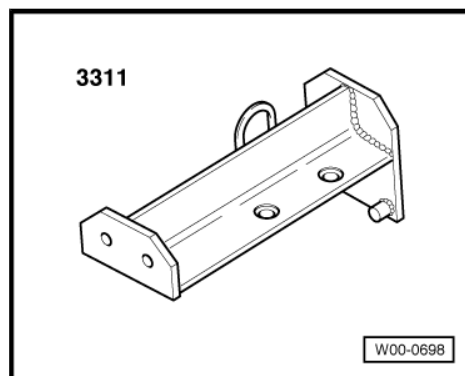
- ◆ ⇒ ["1.3 Exploded view - selector mechanism", page 38](#)



3 Transporting gearbox

Special tools and workshop equipment required

- ◆ Hook and support tool - 3311-

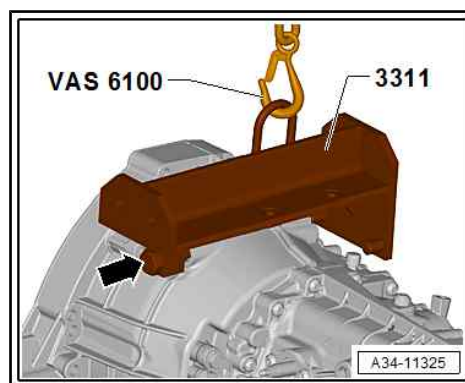


- ◆ Workshop hoist - VAS 6100-



Procedure

- Attach gearbox to hook and support tool - 3311- and secure with bolt -arrow-.
- The workshop hoist - VAS 6100- can be used to lift and move the gearbox.



4 Assembly mountings

⇒ [“4.1 Exploded view - assembly mountings”, page 97](#)

⇒ [“4.2 Removing and installing tunnel cross member”, page 97](#)

⇒ [“4.3 Removing and installing gearbox support with gearbox mounting”, page 99](#)

⇒ [“4.4 Removing and installing gearbox mounting”, page 100](#)

4.1 Exploded view - assembly mountings

1 - Nut

- ☐ 3x
- ☐ 20 Nm

2 - Tunnel cross member

- ☐ Removing and installing
⇒ [page 97](#)

3 - Bolt

- ☐ 4x
- ☐ 40 Nm

4 - Gearbox

5 - Nut

- ☐ 20 Nm

6 - Gearbox support

- ☐ Removing and installing
⇒ [page 99](#)

7 - Gearbox mounting

- ☐ Removing and installing
⇒ [page 100](#)

8 - Stop (bottom)

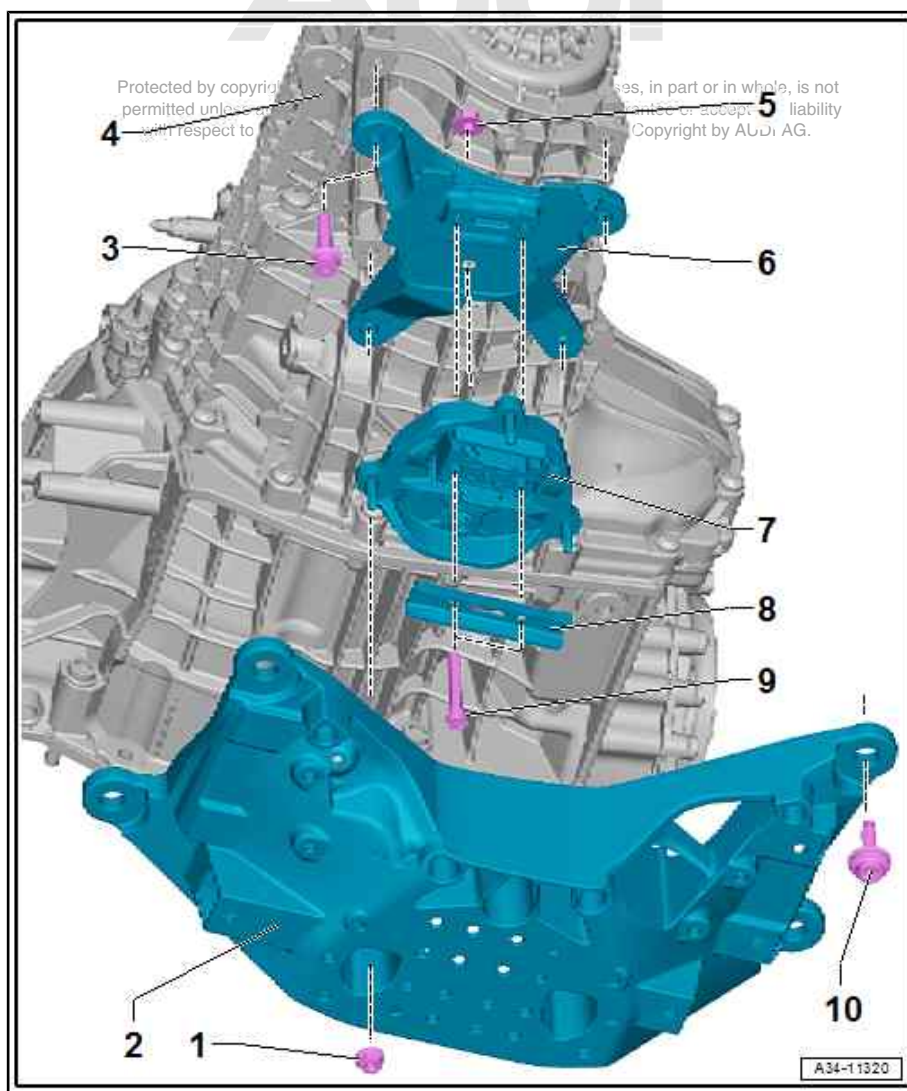
- ☐ For gearbox mounting

9 - Bolt

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

10 - Bolt

- ☐ For tunnel cross member to body
- ☐ 4x
- ☐ 70 Nm



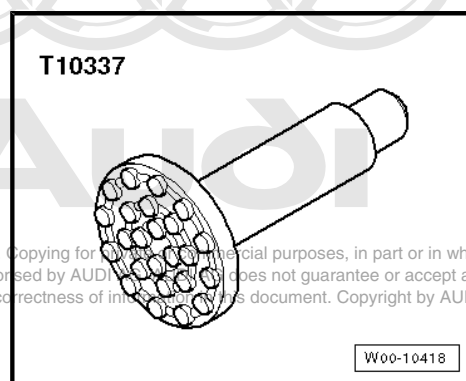
4.2 Removing and installing tunnel cross member

Special tools and workshop equipment required

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



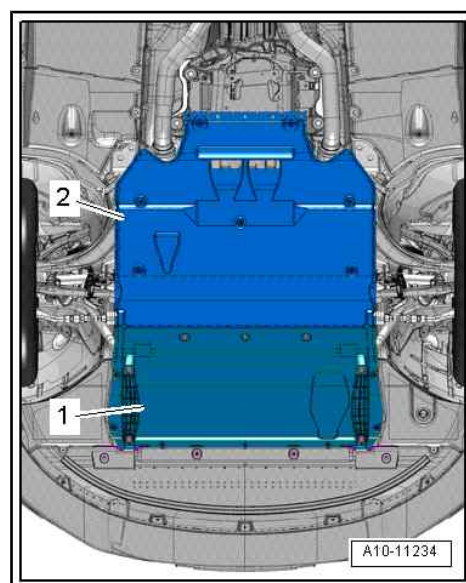
- ◆ Gearbox support - T10337-



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Removing

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



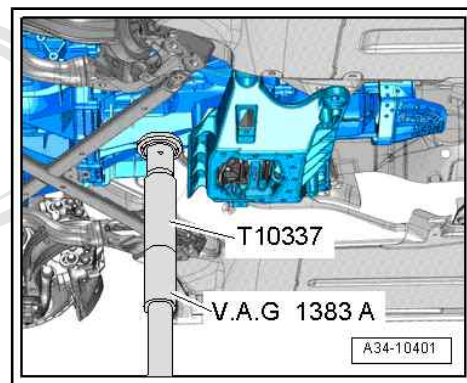
- Apply lifting column of engine and gearbox jack -V.A.G 1383 A- to gearbox from below (with gearbox support - T10337- attached).
- Raise gearbox slightly using engine and gearbox jack - V.A.G 1383 A- .



WARNING

Risk of accident.

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



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- Remove bolts -2- and detach mounting -1- for exhaust system from tunnel cross member -4-.
- Remove nuts -3- and bolts -arrows- for tunnel cross member.
- Remove tunnel cross member -4-.

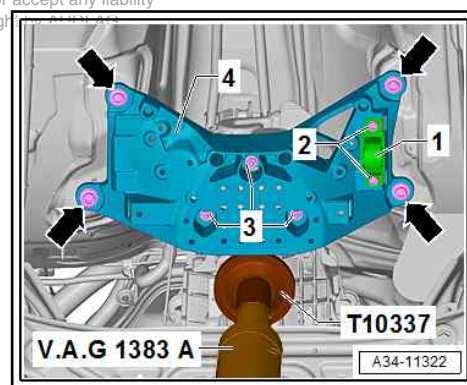
Installing

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

- Install rear noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .

Tightening torques

- ◆ ⇒ [“4.1 Exploded view - assembly mountings”, page 97](#)



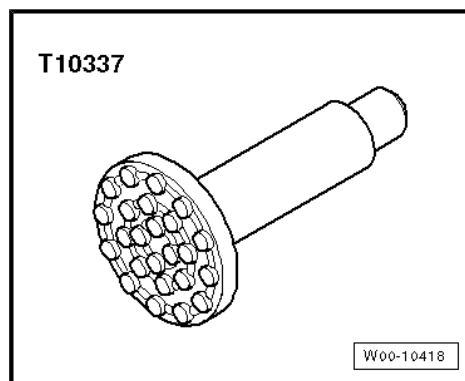
4.3 Removing and installing gearbox support with gearbox mounting

Special tools and workshop equipment required

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



◆ Gearbox support - T10337-



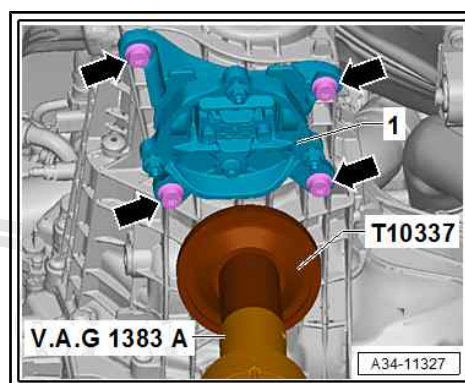
Removing

- Remove tunnel cross member ⇒ [page 97](#) .
- Remove bolts -arrows- and detach gearbox support from gearbox together with gearbox mounting -1-.

Installing

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

- Secure gearbox support to gearbox together with gearbox mounting -1- -arrows-.
- Install tunnel cross member ⇒ [page 97](#) .



Tightening torques

- ◆ ⇒ [“4.1 Exploded view - assembly mountings”, page 97](#)

4.4 Removing and installing gearbox mounting

Removing

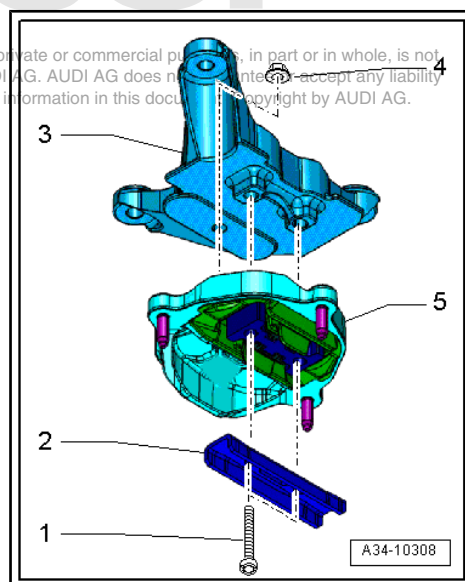
- Remove gearbox support together with gearbox mounting ⇒ [page 99](#) .
- Remove bolts -1- and detach stop -2- (bottom) for gearbox mounting.
- Remove nut -4- and detach gearbox mounting -5- from gearbox support -3-.

Installing

- Fit gearbox support -3- onto gearbox mounting -5- and tighten nut -4- hand-tight.
- Secure stop (bottom) -2- with bolts -1-.
- Tighten nut -4-.
- Install gearbox support with gearbox mounting ⇒ [page 99](#) .

Tightening torques

- ◆ ⇒ [“4.1 Exploded view - assembly mountings”, page 97](#)



5 Gear oil

⇒ ["5.1 Checking gear oil level", page 101](#)

5.1 Checking gear oil level

⇒ ["5.1.1 Differentiation of manual gearbox 0CS, 0DJ with and without forced lubrication", page 101](#)

⇒ ["5.1.2 Checking gear oil level, manual gearbox 0CS, 0DJ without forced lubrication", page 101](#)

⇒ ["5.1.3 Checking gear oil level, manual gearbox 0CS, 0DJ with forced lubrication", page 104](#)

5.1.1 Differentiation of manual gearbox 0CS, 0DJ with and without forced lubrication



Note

- ◆ From approx. 09/2016 onwards, manual gearboxes 0CS and 0DJ, front-wheel drive are fitted with a forced lubrication system.
- ◆ The gear wheels and bearings on these gearboxes are lubricated via a mechanical oil pump fitted in the gearbox.

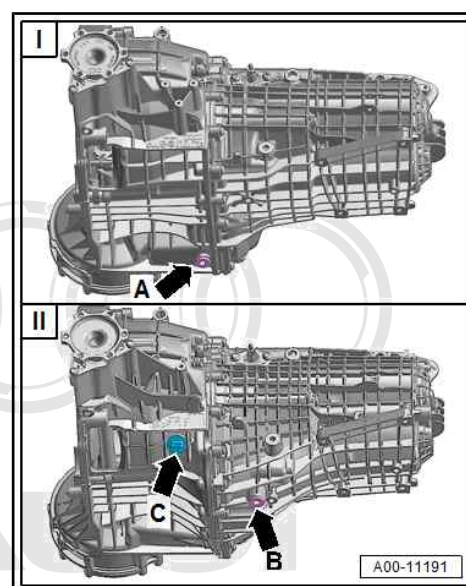
Differentiation of manual gearbox 0CS, 0DJ with and without forced lubrication

I - Manual gearbox without forced lubrication

- ◆ Oil drain plug -arrow A- is located in gearbox housing

II - Manual gearbox with forced lubrication

- ◆ Oil drain plug -arrow B- is located in gearbox cover
- ◆ Additional opening in gearbox housing with sealing plug -arrow C-



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5.1.2 Checking gear oil level, manual gearbox 0CS, 0DJ without forced lubrication

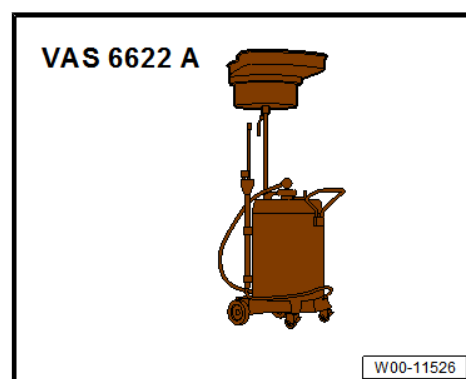


Note

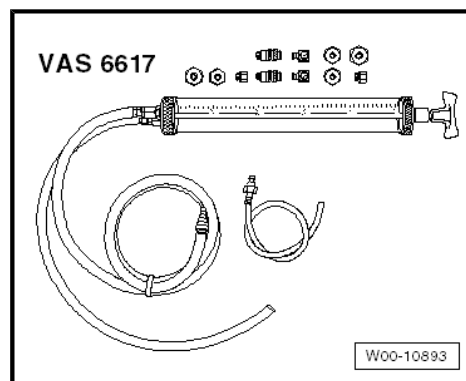
Differentiation of manual gearbox 0CS, 0DJ with and without forced lubrication ⇒ [page 101](#)

Special tools and workshop equipment required

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



◆ Hand pump for gear oil - VAS 6617-



◆ Safety goggles

Procedure



Caution

It is not possible to check the gear oil level by removing the oil filler plug.

Installation position of oil filler plug -A-

The oil level -arrow 2- will be above the bottom lip of the oil filler hole -arrow 1-.

Procedure



Note

The vehicle must be level when checking gear oil.

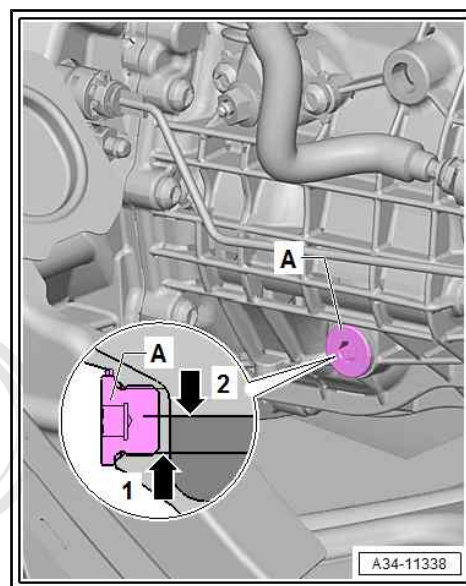
The gear oil level can only be adjusted as follows:

- Remove rear noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .
- Place used oil collection and extraction unit - VAS 6622- below gearbox.



Note

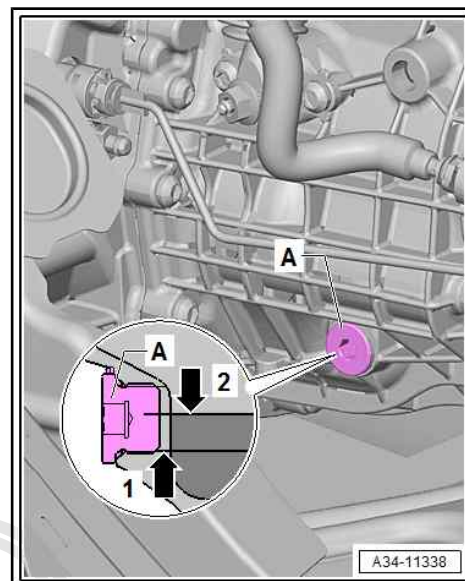
Gear oil can escape as the gear oil level is above the oil filler plug.



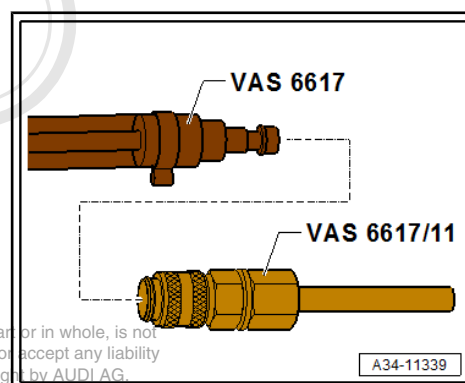
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- Carefully unscrew oil filler plug -A- and, if necessary, fill gear oil up to bottom edge of oil filler hole -arrow 1-.
- Fit oil filler plug and tighten to specified torque.
- Detach breather cap from breather pipe on upper side of gearbox.

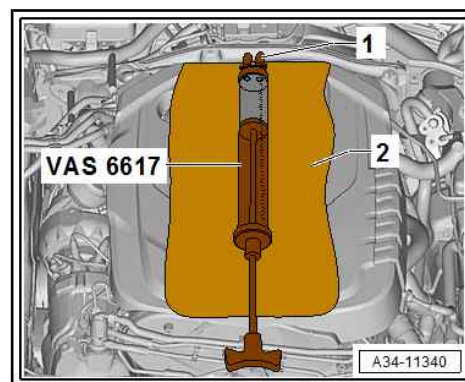
Fill up gear oil using hand pump for gear oil - VAS 6617- .



- Fit adapter - VAS 6617/11- onto hand pump for gear oil - VAS 6617- .

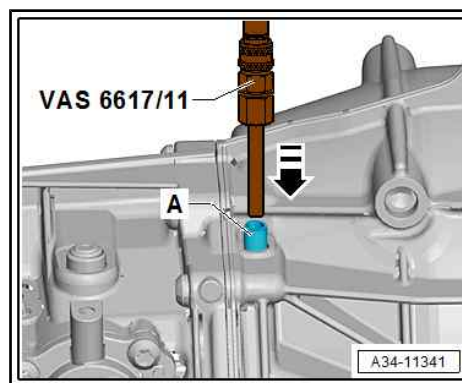


- Route hose -1- of hand pump for gear oil - VAS 6617- through engine compartment to gearbox breather.
- Cover area underneath hand pump for gear oil - VAS 6617- with a cloth -2-.



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- Insert adapter - VAS 6617/11- into breather pipe -A- of gear-box in direction of -arrow-.
- Slowly fill with remaining 0.6 ltr. gear oil. For gear oil specification, refer to ⇒ Electronic parts catalogue .
- Disconnect charging device from breather pipe and clip on breather cap.
- Wipe area clean around breather and oil filler plug with a cloth.
- Install rear noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .



Tightening torques

Component	Nm
Oil filler plug	45

5.1.3 Checking gear oil level, manual gearbox 0CS, 0DJ with forced lubrication

Procedure

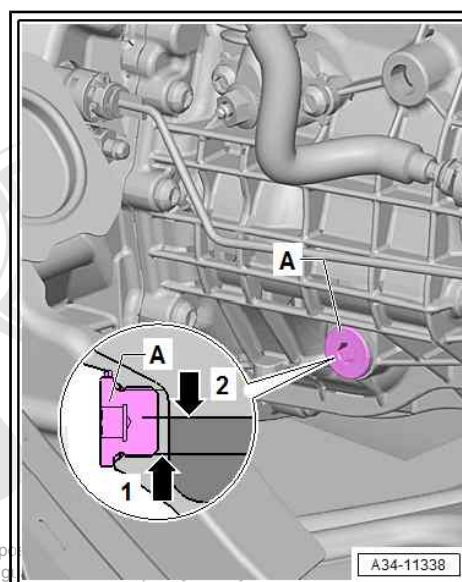


Note

- ◆ *Differentiation of manual gearbox 0CS, 0DJ with and without forced lubrication ⇒ [page 101](#)*
- ◆ *The vehicle must be level when checking gear oil.*
- Remove rear noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .
- Remove oil filler plug -A-.
- Gear oil level is correct when oil is up to bottom lip of filler hole -arrow 1-.
- If necessary, fill gear oil up to bottom edge of oil filler hole -arrow 1-.
- Fit oil filler plug and tighten to specified torque.
- Install rear noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .

Tightening torques

Component	Nm
Oil filler plug	45



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6 Dismantling and assembling gearbox

For a detailed description please refer to the Workshop Manual
⇒ Servicing 6-speed manual gearbox 0CS, 0DJ, 0CX; Rep. gr.
34 ; Dismantling and assembling gearbox .



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35 – Gears, shafts

1 Dismantling and assembling gears and shafts

For a detailed description please refer to the Workshop Manual
⇒ Servicing 6-speed manual gearbox 0CS, 0DJ, 0CX; Rep. gr.
35 ; Dismantling and assembling gears and shafts .



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39 – Final drive - front differential

1 Oil seals

⇒ [“1.1 Overview of fitting locations - oil seals”, page 107](#)

⇒ [“1.2 Renewing oil seal \(right-side\)”, page 108](#)

⇒ [“1.3 Renewing sealing cap for output shaft in gearbox cover”, page 109](#)

1.1 Overview of fitting locations - oil seals



Note

- ◆ Oil seals -A- and -C- and sealing cap -B- can only be renewed with the gearbox removed from the vehicle.
- ◆ Oil seals -D- and -F- and sealing cap -E- can be renewed with the gearbox installed in the vehicle.

A - Input shaft oil seal

- ☐ Renewing ⇒ Servicing 6-speed manual gearbox 0CS, 0DJ, 0CX; Rep. gr. 39; Overview of fitting locations - oil seals

B - Sealing cap

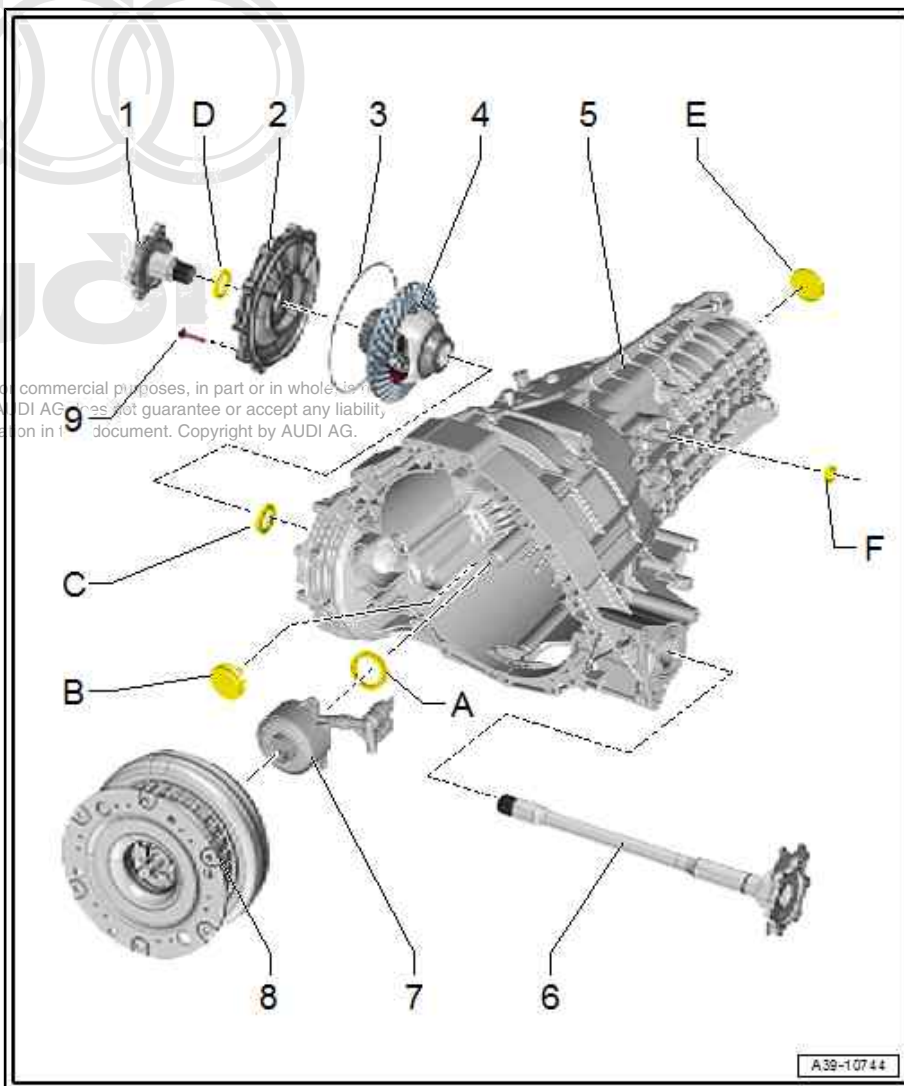
- ☐ With oil guide
- ☐ For output shaft
- ☐ Renew after removing
⇒ Servicing 6-speed manual gearbox 0CS, 0DJ, 0CX; Rep. gr. 39; Oil seals; Overview of fitting locations - oil seals
- ☐ Do not lubricate outer circumference for installation

C - Oil seal

- ☐ For flange shaft (left-side)
- ☐ Renewing ⇒ Servicing 6-speed manual gearbox 0CS, 0DJ, 0CX; Rep. gr. 39; Overview of fitting locations - oil seals

D - Oil seal

- ☐ For flange shaft (right-side)
- ☐ Renewing
⇒ [“1.2 Renewing oil seal](#)



(right-side)", page 108

E - Sealing cap

- ☐ For output shaft
- ☐ Without oil guide
- ☐ Renew after removing ⇒ ["1.3 Renewing sealing cap for output shaft in gearbox cover", page 109](#)
- ☐ Do not lubricate outer circumference for installation

F - Oil seal for selector shaft

- ☐ ⇒ ["1.9 Renewing selector shaft oil seal", page 51](#)

1 - Flange shaft (right-side)

- ☐ ⇒ ["2.2 Removing and installing flange shaft \(right-side\)", page 111](#)

2 - Cover for final drive

- ☐ Removing and installing ⇒ Servicing 6-speed manual gearbox 0CS, 0DJ, 0CX; Rep. gr. 39 ; Exploded view - differential

3 - O-ring

- ☐ On cover for final drive
- ☐ Renew after removing

4 - Differential

- ☐ Removing and installing ⇒ Servicing 6-speed manual gearbox 0CS, 0DJ, 0CX; Rep. gr. 39 ; Exploded view - differential

5 - Final drive

- ☐ Removing and installing ⇒ [page 58](#)

6 - Flange shaft (left-side)

- ☐ Removing and installing ⇒ Servicing 6-speed manual gearbox 0CS, 0DJ, 0CX; Rep. gr. 39 ; Exploded view - differential

7 - Clutch slave cylinder with release bearing

- ☐ Removing and installing ⇒ Servicing 6-speed manual gearbox 0CS, 0DJ, 0CX; Rep. gr. 30 ; Clutch mechanism; Removing and installing clutch slave cylinder together with release bearing

7 - Clutch module

- ☐ Removing and installing ⇒ Servicing 6-speed manual gearbox 0CS, 0DJ, 0CX; Rep. gr. 30 ; Clutch; Removing and installing clutch module

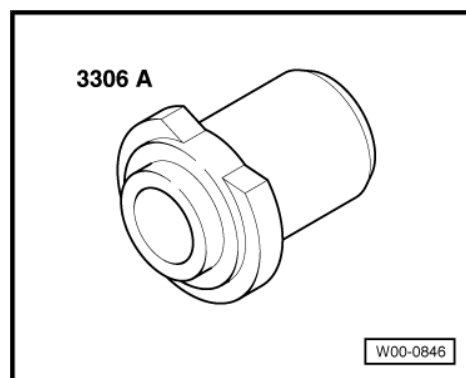
8 - Bolt

- ☐ Steel bolts
- ☐ 20 Nm +90°

1.2 Renewing oil seal (right-side)

Special tools and workshop equipment required

- ◆ Thrust piece - 3306 A-



- ◆ Sealing grease - G 052 128 A1-

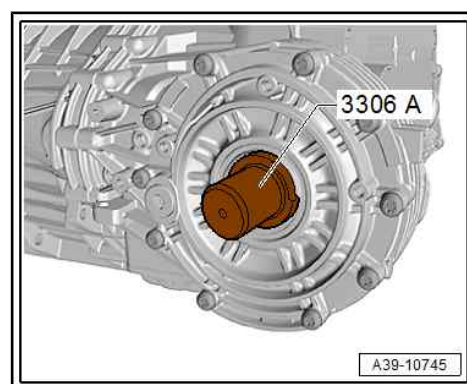
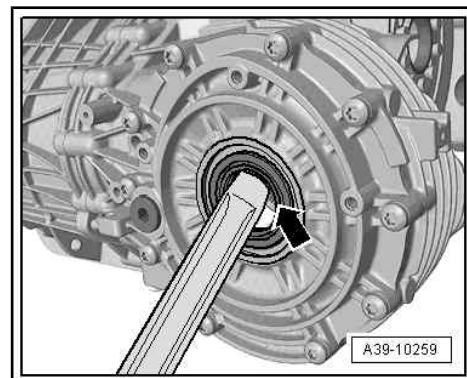
Removing

- Remove flange shaft (right-side) ⇒ [page 111](#) .
- Lever out flange shaft oil seal.

Installing

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

- Lightly oil outer circumference of new oil seal.
- Drive in new oil seal for flange shaft (right-side) as far as stop; keep seal straight when installing.
- Pack space between sealing lip and dust lip half-full with sealing grease - G 052 128 A1- .
- Install flange shaft (right-side) ⇒ [page 111](#) .



1.3 Renewing sealing cap for output shaft in gearbox cover

Special tools and workshop equipment required

- ◆ Thrust plate - 30 - 205-

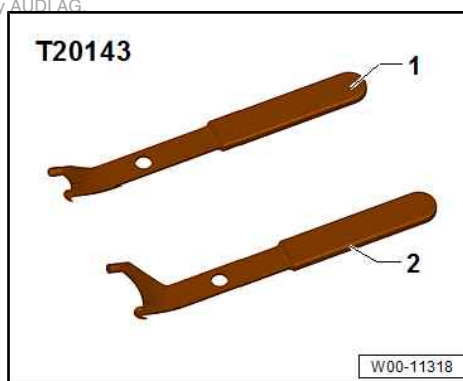


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◆ Mandrel - 30 - 505-

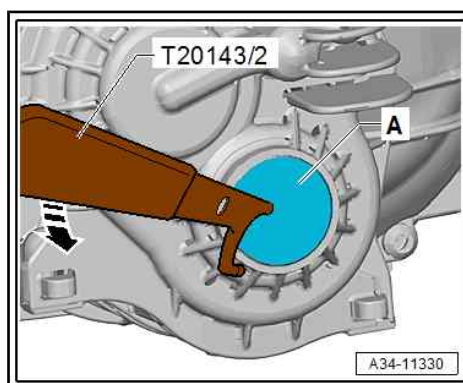


◆ Extractor tool - T20143/2-



Removing

- Pierce through centre of sealing cap -A- for output shaft and prise out in direction of -arrow-.



Installing

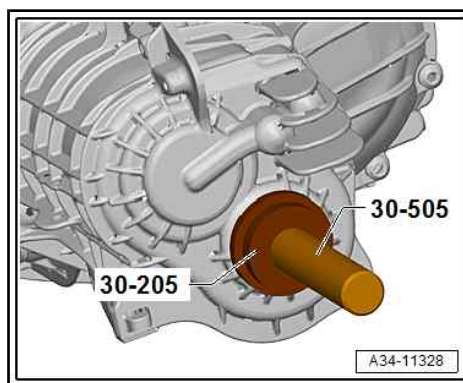


Caution

The sealing cap can only be fitted properly if the outer circumference has not been lubricated.

- ◆ *Do not lubricate outer circumference of new sealing cap for installation.*

- Drive in sealing cap for output shaft until it is flush.



2 Differential

⇒ [“2.1 Removing and installing flange shaft \(left-side\)”, page 111](#)

⇒ [“2.2 Removing and installing flange shaft \(right-side\)”, page 111](#)

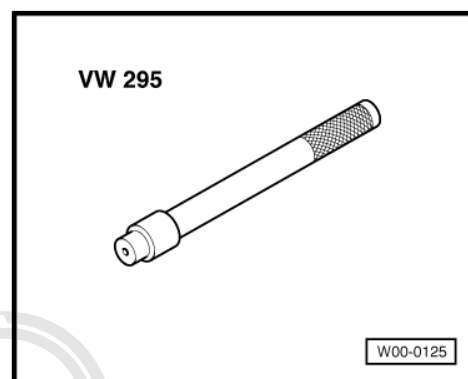
2.1 Removing and installing flange shaft (left-side)

For a detailed description please refer to the Workshop Manual
⇒ Servicing 6-speed manual gearbox 0CS, 0DJ, 0CX; Rep. gr. 39 ; Exploded view - differential .

2.2 Removing and installing flange shaft (right-side)

Special tools and workshop equipment required

◆ Drift - VW 295-



◆ Puller - T10037-

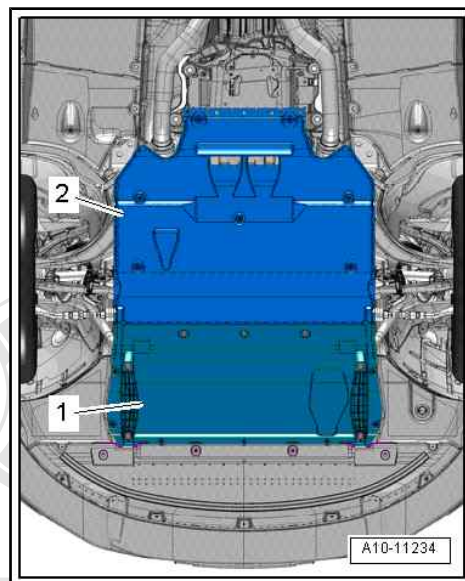


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Removing

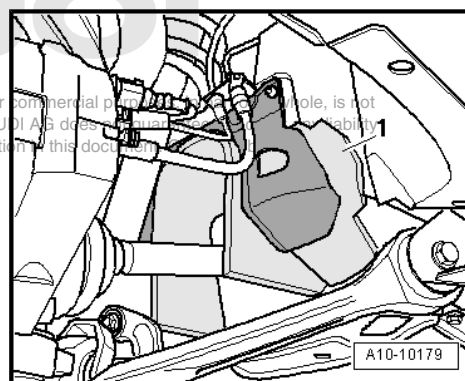
- Gearbox is installed.
- Refer to general repair instructions ⇒ [page 4](#) .
- Remove front right wheel.

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

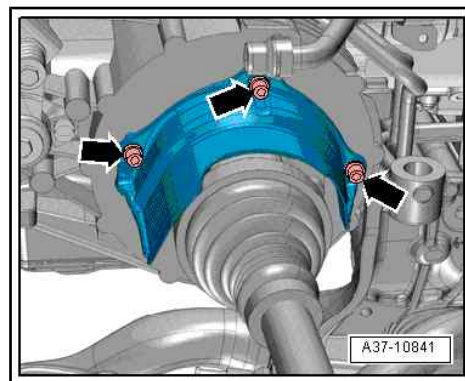


- Remove noise insulation -1- from wheel housing (right-side).

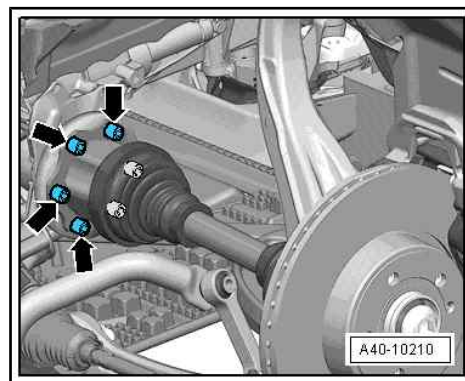
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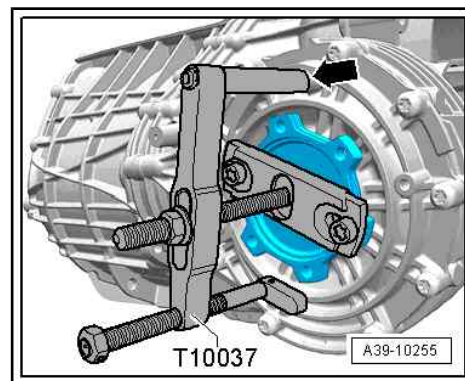
- Remove bolts -arrows- and detach heat shield for drive shaft (right-side).



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



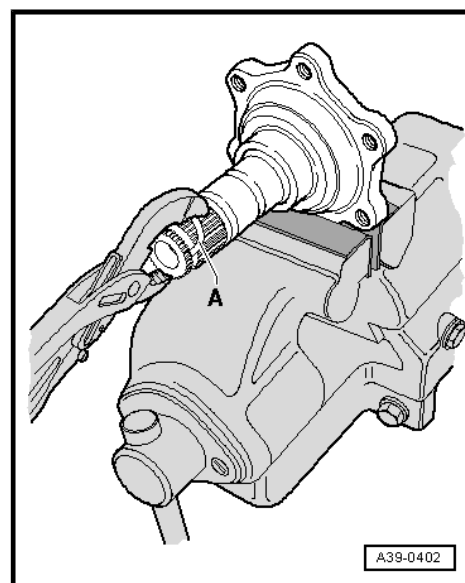
- Place drip tray under gearbox.
- Remove flange shaft (right-side); to do so, secure puller - T10037- to gearbox housing -arrow-.



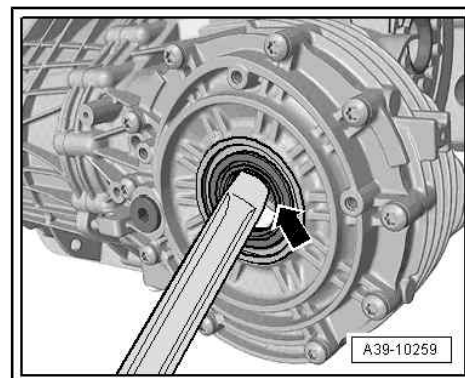
Installing

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

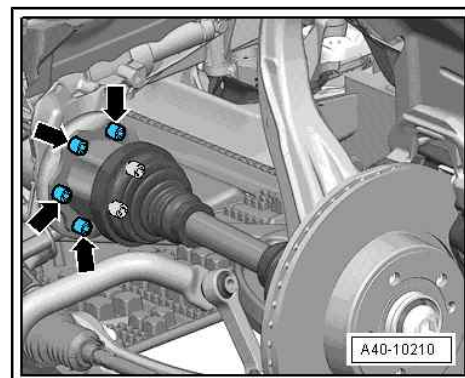
- Always renew circlip for flange shaft -A-.
- Clamp flange shaft in vice, using jaw protectors. Use new circlip -A- to press old circlip out of groove in flange shaft.



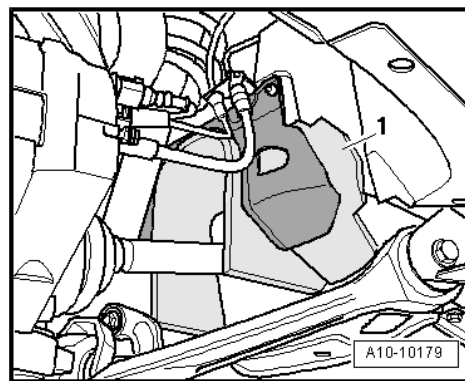
- Check flange shaft oil seal (right-side) -arrow- for damage and renew if necessary ⇒ [page 108](#).
- Pack space between sealing lip and dust lip half-full with sealing grease -G 052 128 A1-.
- Knock flange shaft in with drift -VW 295-.



- Attach drive shaft to flange shaft ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Loosening and tightening bolt securing drive shaft .
- Install heat shield for drive shaft and tighten bolts to specified torque ⇒ [page 95](#) .



- Install noise insulation -1- in wheel housing (right-side).
- Check gear oil level ⇒ [page 101](#) .
- Install rear noise insulation ⇒ General body repairs, exterior;
Rep. gr. 66 ; Noise insulation; Removing and installing noise
insulation .



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