



Workshop Manual Audi A3 2004 ➤

6-speed manual gearbox 02Q, four-wheel drive

Edition 12.2018



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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



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



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00 – Technical data

1 Identification

(ARL006078; Edition 12.2018)

⇒ [“1.1 Gearbox identification, four-wheel drive”, page 1](#)

⇒ [“1.2 Bevel box identification”, page 2](#)

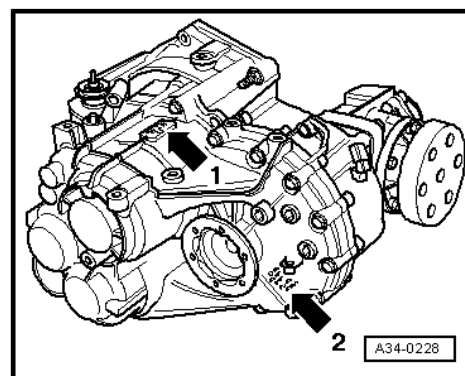
1.1 Gearbox identification, four-wheel drive

The 6-speed manual gearbox 02Q (four-wheel drive) is fitted on the Audi A3 2004 > in conjunction with the 1.8 and 2.0 ltr. TFSI engines, the 2.0 ltr. TDI engine and the 3.2 ltr. engine.

Allocation ⇒ [page 3](#) .

Location on gearbox

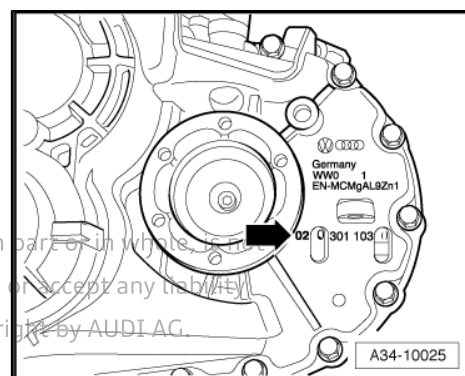
- ◆ Code letters and date of manufacture -arrow 1-
- ◆ Manual gearbox 02Q, four-wheel drive -arrow 2-



Manual gearbox 02Q, four-wheel drive -arrow 2-



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Code letters and production date of gearbox -arrow-

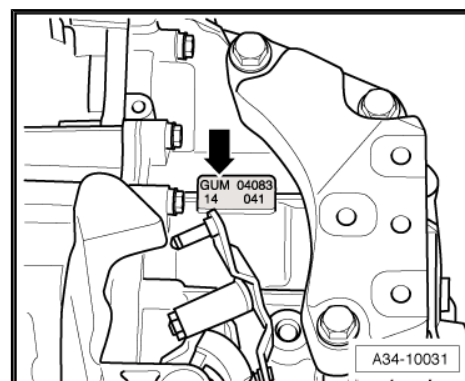
Example:	GUM	04	08	3
	Code letters	Day	Month	Year of manufacture (2003)

Additional data identify the factory where the unit was built.



Note

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

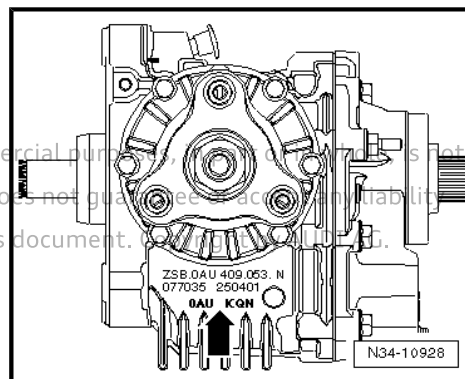




1.2 Bevel box identification

Code letters and part number of bevel box -arrow-

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2 Technical data

⇒ [“2.1 Code letters, allocation, transmission ratios, capacities”, page 3](#)

⇒ [“2.2 Capacities”, page 7](#)

⇒ [“2.3 Calculating gear ratios”, page 8](#)

2.1 Code letters, allocation, transmission ratios, capacities

Manual gearbox		6-speed 02Q (four-wheel drive)		
Code letters		FUQ	GUM	GVU
Manufactured	from	08.04	07.03	05.04
	to	04.06	04.06	04.06
Allocation	Model	A3 2004 ►	A3 2004 ►	A3 2004 ►
	Engine	2.0 ltr. - 103 kW TDI	3.2 ltr. - 184 kW MPI	2.0 ltr. - 147 kW TFSI
Ratio	Final drive I for 1st to 4th gear	62 : 16 = 3.875	72 : 17 = 4.235	72 : 17 = 4.235
$Z_2 : Z_1 = i$	Final drive II for 5th/6th gear and reverse gear	62 : 20 = 3.100	72 : 22 = 3.273	72 : 22 = 3.273
Clutch mechanism		Hydraulic		
The following data can be found in the ⇒ Electronic parts catalogue .				
◆ Individual gear ratios				
◆ Allocation of drive shaft flanges				
◆ Allocation of clutch type				
◆ Rear final drive identification				

Manual gearbox		6-speed 02Q (four-wheel drive)		
Code letters		HCR	JET	JLR
Manufactured	from	04.06	11.06	04.06
	to	05.07	05.07	05.07
Allocation	Model Engine	A3 2004 ▶ 2.0 ltr. - 125 kW TDI	A3 2004 ▶ 2.0 ltr. - 188/195 kW TFSI	A3 2004 ▶ 2.0 ltr. - 103 kW TDI
Ratio	Final drive I for 1st to 4th gear	62 : 16 = 3.875	72 : 17 = 4.235	62 : 16 = 3.875
$Z_2 : Z_1 = i$	Final drive II for 5th/6th gear and reverse gear	62 : 20 = 3.100	72 : 22 = 3.273	62 : 20 = 3.100
Clutch mechanism		Hydraulic		
The following data can be found in the ⇒ Electronic parts catalogue .				
◆ Individual gear ratios				
◆ Allocation of drive shaft flanges				
◆ Allocation of clutch type				
◆ Rear final drive identification				



Manual gearbox		6-speed 02Q (four-wheel drive)		
Code letters		JLV	JLX	JLY
Manufactured	from	04.06	04.06	03.06
	to	11.06	05.07	05.07
Allocation	Model	A3 2004 ►	A3 2004 ►	A3 2004 ►
	Engine	3.2 ltr. - 184 kW MPI	2.0 ltr. - 147 kW TFSI	2.0 ltr. - 125 kW TDI
Ratio	Final drive I for 1st to 4th gear	72 : 17 = 4.235	72 : 17 = 4.235	62 : 16 = 3.875
$Z_2 : Z_1 = i$	Final drive II for 5th/6th gear and reverse gear	72 : 22 = 3.273	72 : 22 = 3.273	62 : 20 = 3.100
Clutch mechanism		Hydraulic		
The following data can be found in the ⇒ Electronic parts catalogue .				
◆ Individual gear ratios				
◆ Allocation of drive shaft flanges				
◆ Allocation of clutch type				
◆ Rear final drive identification				

Manual gearbox		6-speed 02Q (four-wheel drive)		
Code letters		JYV	KDL	KDP
Manufactured	from	11.06	06.07	06.07
	to	05.07	02.08	01.08
Allocation	Model	A3 2004 ▶	A3 2004 ▶	A3 2004 ▶
	Engine	3.2 ltr. - 184 kW MPI	2.0 ltr. - 103 kW TDI	3.2 ltr. - 184 kW MPI
Ratio	Final drive I for 1st to 4th gear	72 : 17 = 4.235	62 : 16 = 3.875	72 : 17 = 4.235
$Z_2 : Z_1 = i$	Final drive II for 5th/6th gear and reverse gear	72 : 22 = 3.273	62 : 20 = 3.100	72 : 22 = 3.273
Clutch mechanism		Hydraulic		
The following data can be found in the ⇒ Electronic parts catalogue .				
◆ Individual gear ratios				
◆ Allocation of drive shaft flanges				
◆ Allocation of clutch type				
◆ Rear final drive identification				

Manual gearbox		6-speed 02Q (four-wheel drive)		
Code letters		KDT	KDY	KDZ
Manufactured	from	06.07	06.07	06.07
	to	01.08	02.08	02.08
Allocation	Model	A3 2004 ►	A3 2004 ►	A3 2004 ►
	Engine	2.0 ltr. - 188/195 kW TFSI	2.0 ltr. - 103 kW TDI	2.0 ltr. - 125 kW TDI
Ratio	Final drive I for 1st to 4th gear	72 : 17 = 4.235	62 : 16 = 3.875	62 : 16 = 3.875
$Z_2 : Z_1 = i$	Final drive II for 5th/6th gear and reverse gear	72 : 22 = 3.273	62 : 20 = 3.100	62 : 20 = 3.100



Manual gearbox	6-speed 02Q (four-wheel drive)		
Code letters	KDT	KDY	KDZ
Clutch mechanism	Hydraulic		
The following data can be found in the ⇒ Electronic parts catalogue .			
◆ Individual gear ratios			
◆ Allocation of drive shaft flanges			
◆ Allocation of clutch type			
◆ Rear final drive identification			

Manual gearbox		6-speed 02Q (four-wheel drive)		
Code letters		KNP	KNT	KNV
Manufactured	from	02.08	01.08	01.08
	to	06.08	06.08	06.08
Allocation	Model	A3 2004 ▶	A3 2004 ▶	A3 2004 ▶
	Engine	2.0 ltr. - 103 kW TDI	3.2 ltr. - 184 kW MPI	2.0 ltr. - 147 kW TFSI
Ratio	Final drive I for 1st to 4th gear	62 : 16 = 3.875	72 : 17 = 4.235	72 : 17 = 4.235
$Z_2 : Z_1 = i$	Final drive II for 5th/6th gear and reverse gear	62 : 20 = 3.100	72 : 22 = 3.273	72 : 22 = 3.273
Clutch mechanism		Hydraulic		
The following data can be found in the ⇒ Electronic parts catalogue .				
◆ Individual gear ratios				
◆ Allocation of drive shaft flanges				
◆ Allocation of clutch type				
◆ Rear final drive identification				

Manual gearbox		6-speed 02Q (four-wheel drive)		
Code letters		KNW	KNZ	KSC
Manufactured	from	02.08	01.08	01.08
	to	06.08	06.08	06.08
Allocation	Model Engine	A3 2004 ▶ 2.0 ltr. - 125 kW TDI	A3 2004 ▶ 2.0 ltr. - 188/195 kW TFSI	A3 2004 ▶ 1.8 ltr. - 118 kW TFSI
Ratio	Final drive I for 1st to 4th gear	62 : 16 = 3.875	72 : 17 = 4.235	71 : 18 = 4.235
$Z_2 : Z_1 = i$	Final drive II for 5th/6th gear and reverse gear	62 : 20 = 3.100	72 : 22 = 3.273	71 : 23 = 3.273
Clutch mechanism		Hydraulic		
The following data can be found in the ⇒ Electronic parts catalogue .				
◆ Individual gear ratios				
◆ Allocation of drive shaft flanges				
◆ Allocation of clutch type				
◆ Rear final drive identification				



Manual gearbox		6-speed 02Q (four-wheel drive)		
Code letters		KXU	KXY	KZN
Manufactured from to		05.09	05.09	05.09
Allocation	Model Engine	A3 2004 ► 2.0 ltr. - 103 kW TDI	A3 2004 ► 2.0 ltr. - 125 kW TDI	A3 2004 ► 3.2 ltr. - 184 kW MPI
Ratio	Final drive I for 1st to 4th gear	62 : 16 = 3.875	62 : 16 = 3.875	72 : 17 = 4.235
$Z_2 : Z_1 = i$	Final drive II for 5th/6th gear and reverse gear	62 : 20 = 3.100	62 : 20 = 3.100	72 : 22 = 3.273
Clutch mechanism		Hydraulic		
The following data can be found in the ⇒ Electronic parts catalogue .				
◆ Individual gear ratios				
◆ Allocation of drive shaft flanges				
◆ Allocation of clutch type				
◆ Rear final drive identification				

Manual gearbox		6-speed 02Q (four-wheel drive)		
Code letters		KZT	KZV	LHC
Manufactured from to		05.09	05.09	05.09
Allocation	Model Engine	A3 2004 ▶ 2.0 ltr. - 147 kW TFSI	A3 2004 ▶ 2.0 ltr. - 188/195 kW TFSI	A3 2004 ▶ 1.8 ltr. - 118 kW TFSI
Ratio	Final drive I for 1st to 4th gear	72 : 17 = 4.235	72 : 17 = 4.235	71 : 18 = 4.235
$Z_2 : Z_1 = i$	Final drive II for 5th/6th gear and reverse gear	72 : 22 = 3.273	72 : 22 = 3.273	71 : 23 = 3.273
Clutch mechanism		Hydraulic		
The following data can be found in the ⇒ Electronic parts catalogue . ◆ Individual gear ratios ◆ Allocation of drive shaft flanges ◆ Allocation of clutch type ◆ Rear final drive identification				

Manual gearbox		6-speed 02Q (four-wheel drive)		
Code letters		LNM	LPR	LPT
Manufactured from to		11.09	11.09	11.09
Allocation	Model Engine	A3 2004 ► 2.0 ltr. - 103 kW TDI	A3 2004 ► 2.0 ltr. - 103 kW TDI	A3 2004 ► 2.0 ltr. - 125 kW TDI
Ratio	Final drive I for 1st to 4th gear	62 : 16 = 3.875	62 : 16 = 3.875	62 : 16 = 3.875



Manual gearbox	6-speed 02Q (four-wheel drive)		
Code letters	LNM	LPR	LPT
Z ₂ : Z ₁ = i Final drive II for 5th/6th gear and reverse gear	62 : 20 = 3.100	62 : 20 = 3.100	62 : 20 = 3.100
Clutch mechanism	Hydraulic		
The following data can be found in the ⇒ Electronic parts catalogue .			
◆ Individual gear ratios			
◆ Allocation of drive shaft flanges			
◆ Allocation of clutch type			
◆ Rear final drive identification			

Manual gearbox		6-speed 02Q (four-wheel drive)		
Code letters		NFV	NFY	
Manufactured	from to	05.11	05.11	
Allocation	Model Engine	A3 2004 ▶ 2.0 ltr. - 103/125 kW TDI	A3 2004 ▶ 2.0 ltr. - 103/125 kW TDI	
Ratio	Final drive I for 1st to 4th gear	62 : 16 = 3.875	62 : 16 = 3.875	
$Z_2 : Z_1 = i$	Final drive II for 5th/6th gear and reverse gear	62 : 20 = 3.100	62 : 20 = 3.100	
Clutch mechanism		Hydraulic		
The following data can be found in the ⇒ Electronic parts catalogue .				
◆ Individual gear ratios				
◆ Allocation of drive shaft flanges				
◆ Allocation of clutch type				
◆ Rear final drive identification				

2.2 Capacities

⇒ ["2.2.1 Capacities - four-wheel drive", page 7](#)

⇒ ["2.2.2 Capacities - bevel box", page 8](#)

2.2.1 Capacities - four-wheel drive

Manual gearbox	6-speed 02Q (four-wheel drive)
Capacity of manual gearbox (gearbox completely dismantled)	2.3 ltr.
Capacity of manual gearbox (gearbox partially dismantled)	2.15 ltr.
♦ Gear oil specifications ⇒ Electronic parts catalogue	



2.2.2 Capacities - bevel box

Capacity of bevel box	0.9 ltr.
◆ Gear oil specifications (bevel box) ⇒ Electronic parts catalogue	

2.3 Calculating gear ratios

Example:

	6th gear	Final drive
Driving gear	ZG ₁ = 34	ZA ₁ = 22
Driven gear	ZG ₂ = 31	ZA ₂ = 72

$$i = ZG_2 : ZG_1^{1)}$$

$$i_G = \text{gear ratio} = ZG_2 : ZG_1 = 31 : 34 = 0.912$$

$$i_A = \text{axle ratio} = ZA_2 : ZA_1 = 72 : 22 = 3.273$$

$$i_{ov} = \text{overall ratio} = i_G \times i_A = 0.912 \times 3.273 = 2.985$$

1) Z₁ = number of teeth on driving gear, Z₂ = number of teeth on driven gear

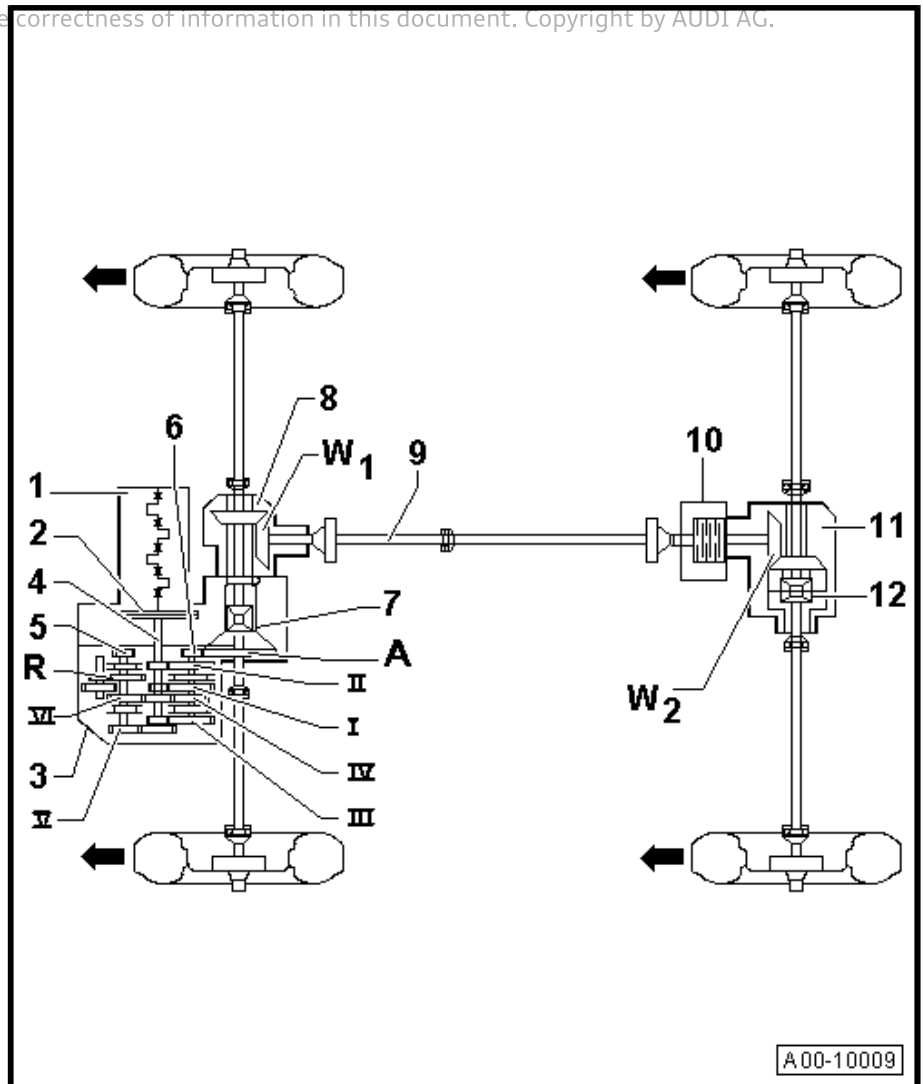


3 Transmission layout

Identification

Arrows point in direction of travel

- 1 - Engine
- 2 - Clutch
- 3 - Manual gearbox
- 4 - Input shaft
- 5 - Output shaft II for 5th, 6th and reverse gear
- 6 - Output shaft I for 1st - 4th gear
- 7 - Differential
- 8 - Bevel box
- 9 - Propshaft
- 10 - Four-wheel drive coupling
- 11 - Rear final drive
- 12 - Differential

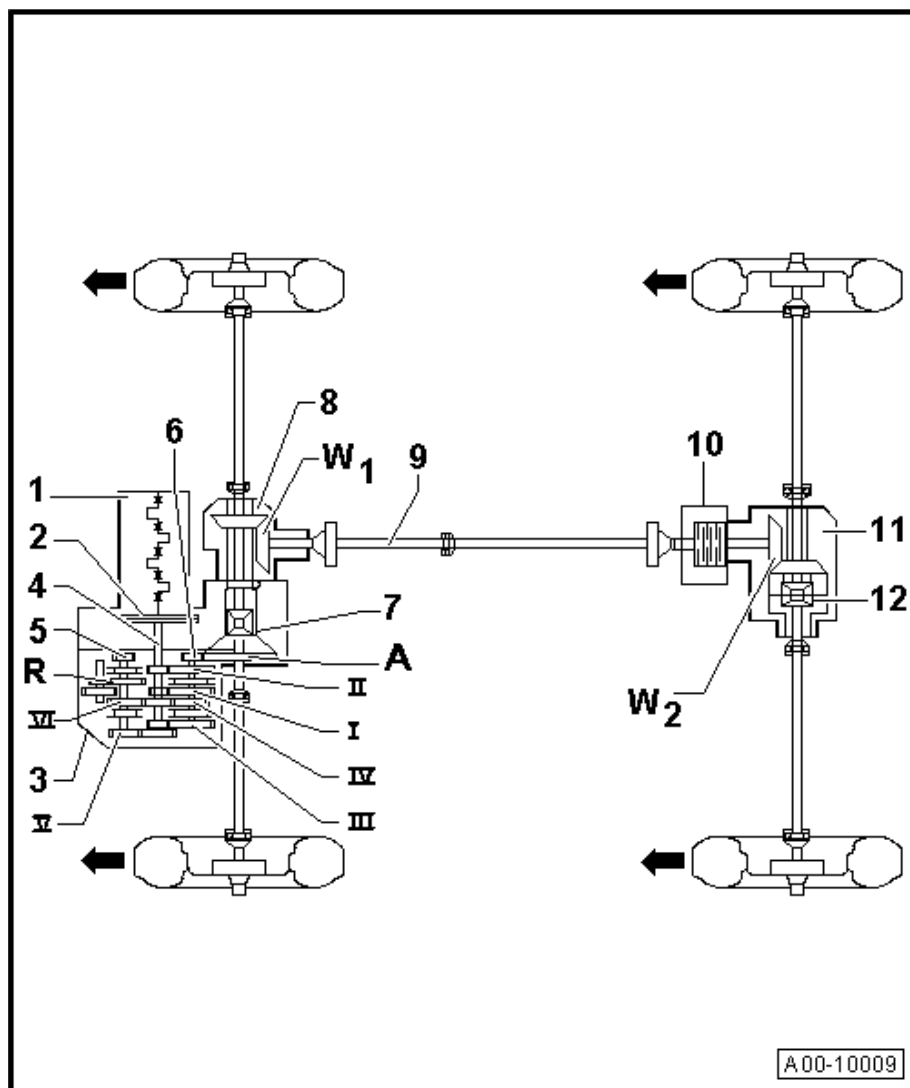


Ratio

Arrows point in direction of travel



- I - 1st gear
- II - 2nd gear
- III - 3rd gear
- IV - 4th gear
- V - 5th gear
- VI - 6th gear
- R - Reverse gear
- A - Final drive
- W1 - Front bevel gears
- W2 - Rear bevel gears



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4 Safety precautions

⇒ ["4.1 Safety precautions when working on vehicles with start/stop system", page 11](#)

4.1 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).*





5 Repair instructions

⇒ ["5.1 Contact corrosion", page 12](#)

⇒ ["5.2 General repair instructions", page 12](#)

5.1 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.

Additionally, all rubber and plastic parts and all adhesives are made of non-conductive materials.

Always install new parts if you are not sure whether used parts can be re-fitted ⇒ Electronic parts catalogue .

Please note:

- ◆ The gearbox casing is made of a magnesium alloy.
- ◆ We recommend using only genuine replacement parts; these have been tested and are compatible with aluminium.
- ◆ We recommend using Audi Genuine Accessories.



Caution

Damage caused by contact corrosion is not covered by the warranty.

5.2 General repair instructions

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

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.

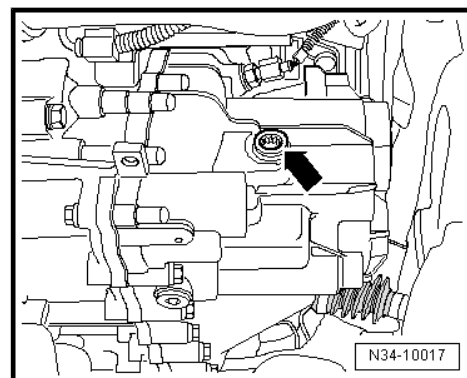
Special tools

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



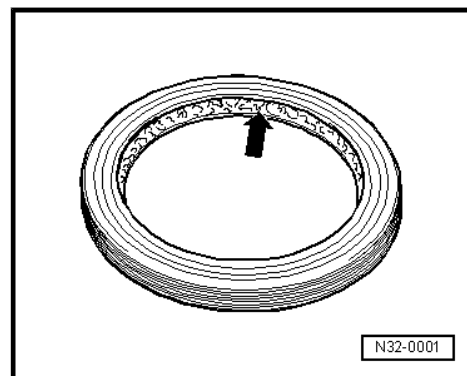
Gearbox

- ◆ Thoroughly clean all joints and connections and the surrounding areas before disconnecting.
- ◆ When assembling gearbox, ensure dowel sleeves are correctly seated.
- ◆ Allocate bolts and other components according to ⇒ Electronic parts catalogue .
- ◆ On gearboxes without an oil filler plug -arrow-, it is not possible to check the oil level by carrying out a visual inspection.
- ◆ The oil must be drained completely and the gearbox must then be filled with a precisely defined quantity of oil ⇒ [page 141](#) .
- ◆ Check oil level in bevel box ⇒ [page 184](#) .
- ◆ For gear oil specification, refer to ⇒ Electronic parts catalogue .
- ◆ Capacities ⇒ [page 7](#) .



Oil seals, seals, O-rings and gaskets

- ◆ Always renew seals, oil seals, O-rings and gaskets.
- ◆ After removing gaskets and seals, always inspect the contact surface on the housing or shaft for burrs resulting from removal or for other signs of damage.
- ◆ 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 - G 052 128 A1- .
- ◆ The open side of the oil seal should face the side containing the fluid.
- ◆ When installing a new oil seal, position the seal in the housing so that the sealing lip does not contact the shaft in the same place as the old seal (make use of installation depth tolerances).
- ◆ Lightly lubricate O-rings with oil before installation to prevent them being trapped during assembly.
- ◆ After installing new gaskets, O-rings and oil seals, check oil level in manual gearbox ⇒ [page 141](#) and bevel box ⇒ [page 184](#) .



Sealant

- ◆ Thoroughly clean joint surfaces on gearbox housing etc. before applying sealing paste.
- ◆ Apply sealing paste - AMV 188 200 03- evenly and not too thick.
- ◆ Breather holes must remain free of sealing paste.

Locking elements

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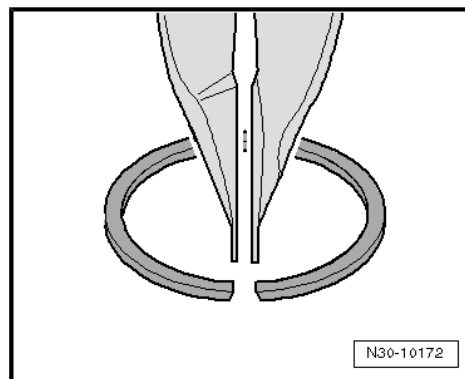


Do not over-stretch circlips.

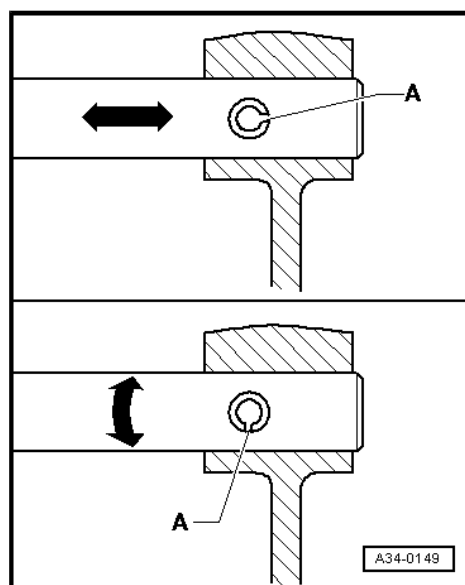
Installation position for some circlips: the circlip is fitted so that the narrow part of the gap is at the top. This also gives the pliers a better grip when removing and installing.

Always renew circlips which have been damaged or over-stretched.

Circlips must be properly seated in the base of the groove.



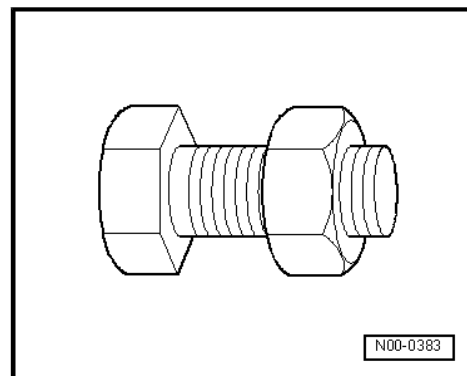
Renew spring pins. Position: the slit -A- should be in line with the line of force -arrow-.





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.
- ◆ Renew self-locking nuts and bolts.
- ◆ The tightening torques stated apply to non-oiled nuts and bolts.
- ◆ Use a wire brush to clean the threads of bolts which are secured with locking fluid. Then apply locking fluid - AMV 185 101 A1- to bolt threads before installing.
- ◆ Threaded holes which take self-locking bolts or bolts coated with locking fluid must be cleaned (using a tap or similar). Otherwise there is a danger of the bolts shearing off the next time they are removed.
- ◆ For all threaded connections, ensure that (where applicable) the contact surfaces and the nuts and bolts are not coated with wax until after assembly is completed.

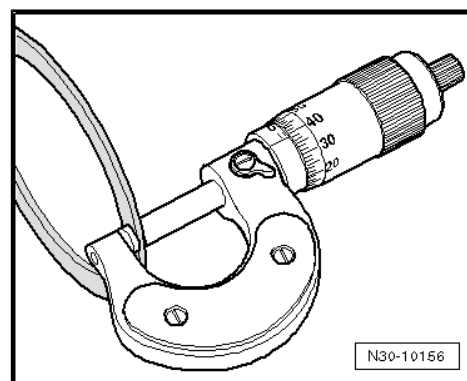


Bearings

- ◆ Install new tapered roller bearings as supplied; do not lubricate additionally with oil.
- ◆ Lubricate all bearings (except tapered roller bearings) with gear oil before installing in gearbox.
- ◆ Use inductive heater - VAS 6414- to heat inner races of tapered roller bearings to approx. 100 °C before installing. Press home onto stop when installing so there is no axial clearance.
- ◆ Do not interchange inner or outer races of bearings of the same size.
- ◆ If required, renew the tapered roller bearings on one shaft together and use new bearings from a single manufacturer.
- ◆ Install needle bearings so the lettering (side with thicker metal) faces towards the installing tool.

Shims

- ◆ Use a micrometer to measure the shims at several points. Different shim thicknesses make it possible to obtain the exact thickness required.
- ◆ Check for burrs and damage.
- ◆ Install only shims which are in perfect condition.





Synchro-rings

- ◆ Do not interchange synchro-rings. When reusing always fit to the same selector gear.
- ◆ Check for wear; renew if necessary.
- ◆ Check the grooves -arrow 1- on synchro-ring -A- and on inner ring for wear (flattened sections in grooves).
- ◆ Make sure that the coating of coated synchro-rings is not damaged.
- ◆ If an intermediate ring -B- is fitted, check the outer contact surface -arrow 2- and inner contact surface -arrow 3- of the intermediate ring for »scoring«, »visible traces of wear« and »blue discolouration (caused by overheating)«.
- ◆ Check cone on selector gear for scoring and visible traces of wear.
- ◆ Lubricate synchro-rings with gear oil before installing.

Gear wheels

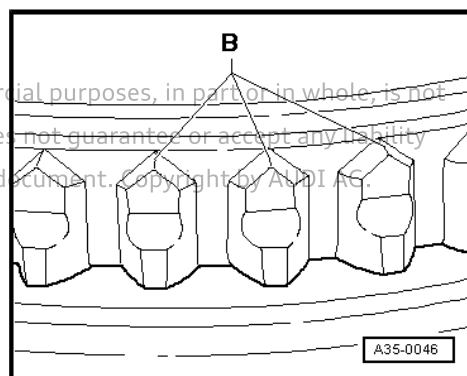
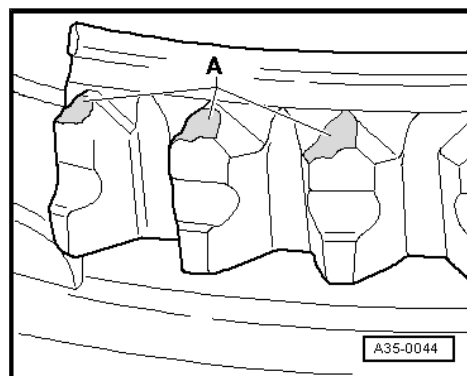
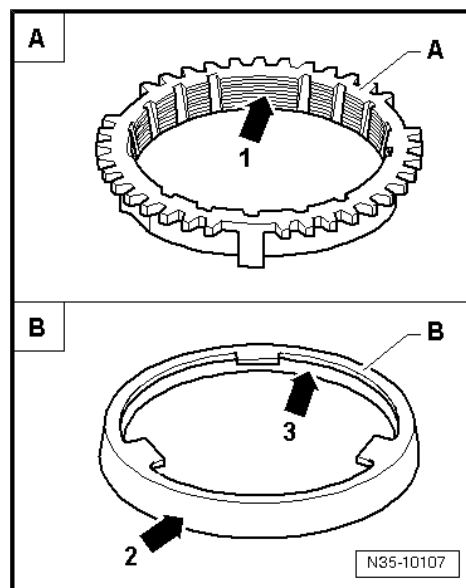
- ◆ Clean before pressing on.
- ◆ Use inductive heater - VAS 6414- to heat to approx. 100°C before installing. Press home onto stop when installing so there is no axial clearance.

Selector gears and locking collars

- ◆ After installing, check 1st to 6th speed selector gears for minimal axial play and freedom of movement.

- ◆ Abnormal wear on synchro-ring or selector gear:

A - Worn chamfer on dog teeth of synchro-ring or selector gear.



- ◆ In comparison: intact synchro-ring or selector gear:

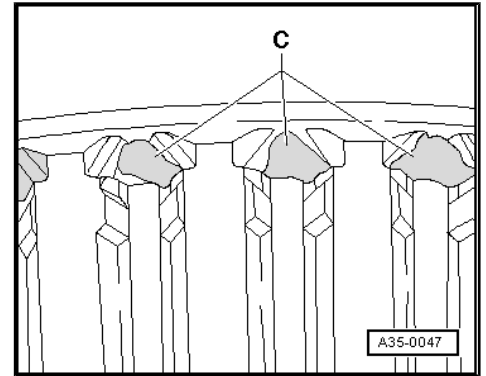
B - Intact chamfer on dog teeth of synchro-ring or selector gear.

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- ◆ Abnormal wear on locking collar:

C - Worn chamfer on internal splines of locking collar.

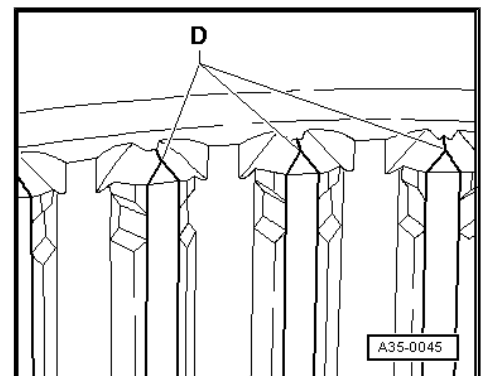


- ◆ In comparison: intact locking collar:

D - Intact chamfer on internal splines of locking collar.

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 system (further measures ⇒ [page 18](#)).
- ◆ Ensure that the pressure plate is kept straight: loosen and tighten bolts consecutively in steps of 90°.
- ◆ If the clutch has burnt out, thoroughly clean the gearbox housing in area of clutch and parts of the engine facing the gearbox in order to prevent odours.
- ◆ Only blow out dual-mass flywheel with compressed air.
- ◆ Clutch pressure plates have an anti-corrosion coating and are greased. With the exception of the friction surface for the clutch plate, the pressure plate must not be cleaned. Otherwise, the service life of the clutch will be considerably reduced.
- ◆ The friction surface of the pressure plate and the dual-mass flywheel must be cleaned (degreased) thoroughly.



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30 – Clutch

1 Overview - clutch mechanism



Note

If you suspect a defective clutch master cylinder or clutch slave cylinder, pay attention to

⇒ "1.1 Notes on removing and installing clutch master cylinder and slave cylinder", page 18 and perform

⇒ "1.2 Function check for clutch master cylinder and slave cylinder", page 19 prior to renewing.

I -

⇒ "2 Exploded view - pedal cluster, clutch master cylinder", page 21

⇒ "2.1 Removing and installing over-centre spring", page 22

⇒ "2.2 Removing and installing clutch pedal", page 24

⇒ "2.3 Removing and installing mounting bracket", page 26

⇒ "2.4 Removing and installing clutch position sender G476", page 29

⇒ "2.5 Removing and installing clutch master cylinder", page 30

II -

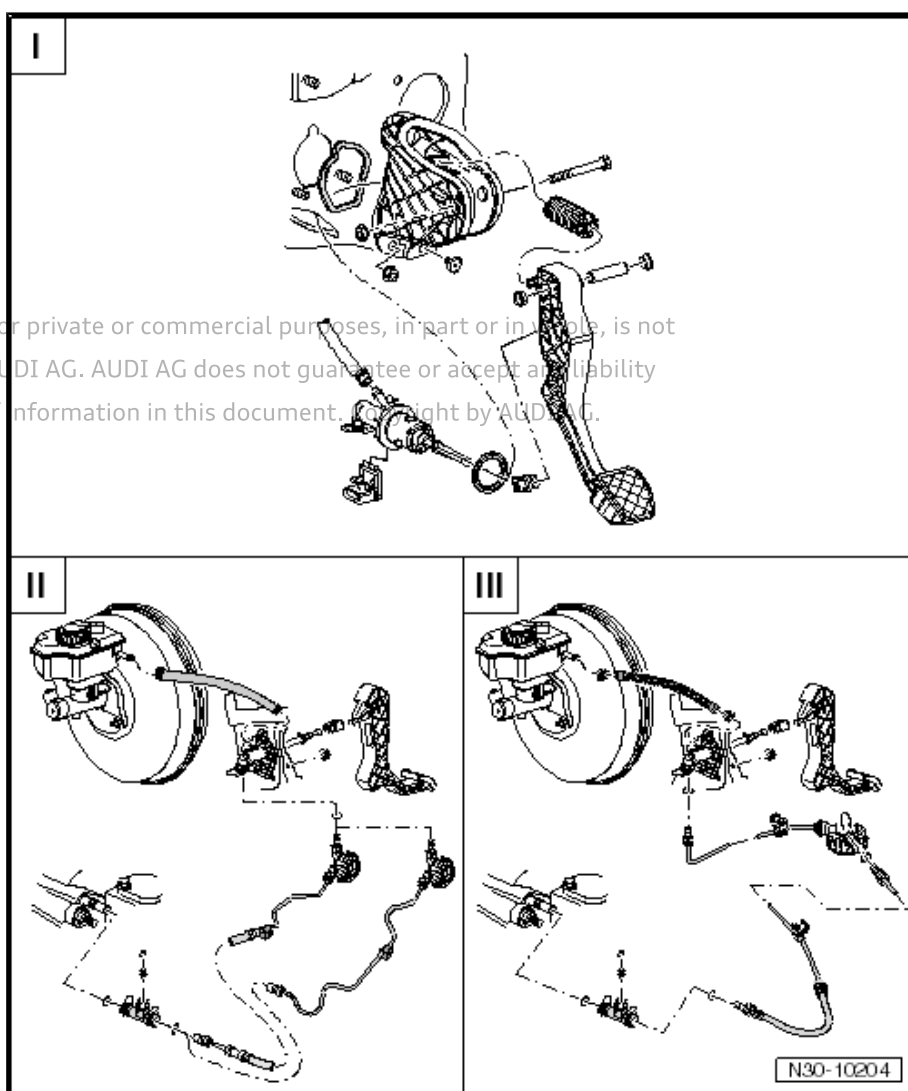
⇒ "3 Exploded view - hydraulics (LHD)", page 33

⇒ "3.1 Removing and installing pipe/hose assembly or plastic pipe", page 35

⇒ "3.2 Bleeding clutch system", page 37

III -

⇒ "4 Exploded view - hydraulics (RHD)", page 39



1.1 Notes on removing and installing clutch master cylinder and slave cylinder

- ◆ Before renewing the clutch master cylinder or slave cylinder on the assumption that it is defective you must first carry out a function check



⇒ "1.2 Function check for clutch master cylinder and slave cylinder", page 19.

- ◆ If the slave cylinder is removed from gearbox with the pipe/hose assembly still attached, make sure you do not press the clutch pedal. Otherwise, the piston will be pressed out of the slave cylinder and will be damaged irreparably.
- ◆ After installing the slave cylinder, carefully press the clutch pedal. If you feel an unusually strong point of resistance when pressing the clutch pedal, you must not press it down further. The plunger of the slave cylinder is likely to have been guided past the clutch release lever. The slave cylinder would then be destroyed once pedal force exceeds approx. 300 N.

1.2 Function check for clutch master cylinder and 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 pressed / 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.
- ◆ The vent opening is integrated in the clutch master cylinder. It is not visible from the outside.
- ◆ The vent opening must be uncovered, otherwise the permanent self-bleeding function for the hydraulic clutch system will no longer be effective.
- ◆ 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 master cylinder can no longer function.
- ◆ The self-bleeding function of the clutch system can be impaired if the footwell trim or floor mats get trapped, if the clutch pedal switch jams or if the driver rests his foot on the clutch pedal for long periods of time.

Check the complete 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 18.

Pedal forces:

- ◆ Approx. 140 N for complete service life of the clutch

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High pedal force:

- ◆ Mechanical fault on pressure plate/clutch plate ⇒ [page 45](#) or [page 51](#)

Clutch does not disengage or does not disengage fully:

- ◆ Air in hydraulic system: bleed clutch system ⇒ [page 18](#) and check hydraulic system for external and internal leaks.
- ◆ Clutch plate does not move smoothly on input shaft splines (due to corrosion or dirt, etc.)
- ◆ Foreign body in clutch system
- ◆ Mechanical fault on pressure plate/clutch plate ⇒ [page 45](#) or [page 51](#)
- ◆ Wrong components used or components forgotten when carrying out repair work (e.g. intermediate plate or dowel sleeves).



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2 Exploded view - pedal cluster, clutch master cylinder



Note

Lubricate all bearings and moving surfaces with grease - G 000 450 02-.

1 - Bulkhead

- ☐ With mounting for mounting bracket

2 - Gasket

- ☐ Renew
- ☐ Between mounting bracket and bulkhead
- ☐ Self-adhesive
- ☐ Bond onto mounting bracket

3 - Mounting bracket

- ☐ For clutch pedal
- ☐ Removing and installing ⇒ [page 26](#)

4 - Bolt

5 - Over-centre spring

- ☐ Removing and installing ⇒ [page 22](#)

6 - Bearing bush

7 - Pivot pin

8 - Clutch pedal

- ☐ Removing and installing ⇒ [page 24](#)

9 - Retaining clip

- ☐ For operating rod on clutch master cylinder

10 - Seal

- ☐ Renew
- ☐ Between clutch master cylinder and mounting bracket

11 - Clutch master cylinder

- ☐ Removing and installing ⇒ [page 30](#)

12 - Clutch position sender - G476-

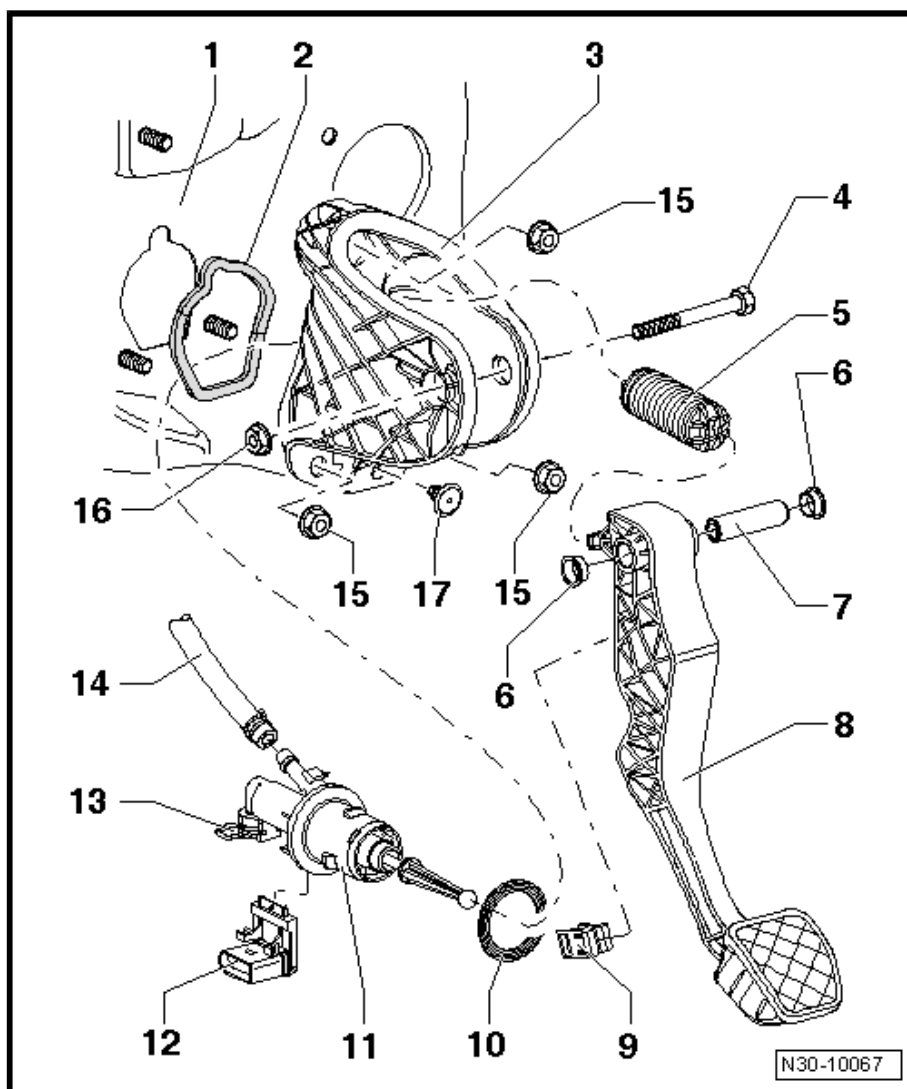
- ☐ Removing and installing ⇒ [page 29](#)
- ☐ Check in "Guided Fault Finding" ⇒ Vehicle diagnostic tester

13 - Retaining clip

- ☐ To remove and install pipe, pull out clip as far as it will go

14 - Supply hose

- ☐ To brake fluid reservoir
- ☐ Made of rubber or plastic, depending on version
- ☐ Plastic supply hose with additional seals ⇒ [page 35](#)



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15 - Nut

- ☐ For securing mounting bracket to bulkhead
- ☐ Self-locking
- ☐ Renew
- ☐ 20 Nm

16 - Nut

- ☐ Self-locking
- ☐ Renew
- ☐ 25 Nm

17 - Stop

- ☐ For clutch pedal

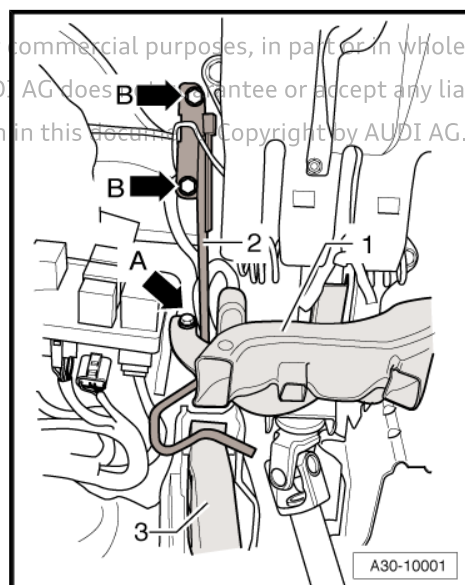


Crash bar - tightening torque

- Fit crash bar -2- and tighten 1 or 2 bolts (depending on version) -arrows B-.

- M6: 10 Nm
- M8: 20 Nm

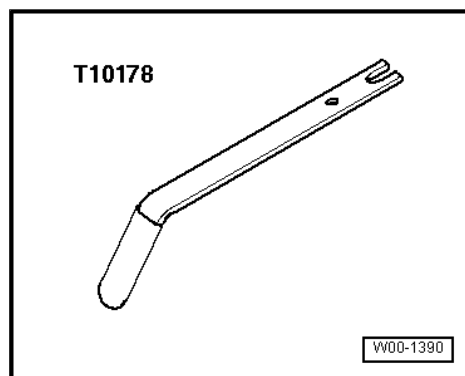
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2.1 Removing and installing over-centre spring

Special tools and workshop equipment required

- ◆ Assembly tool - T10178-

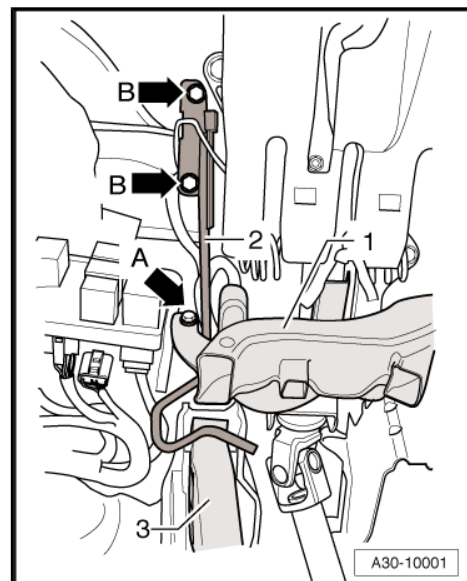


- ◆ Grease - G 000 450 02-



Removing

- Clutch pedal mounting bracket fitted in vehicle
- Move driver's seat away from pedals.
- Remove storage compartment on driver's side ⇒ Rep. gr. 68 .
- Unscrew bolt -arrow A- and remove footwell vent (front left) -1-.
- Unclip wiring harness at rear of footwell vent -1- and move clear to one side.
- If fitted, unbolt crash bar -2- (secured by one or two bolts -arrows B-, depending on version).



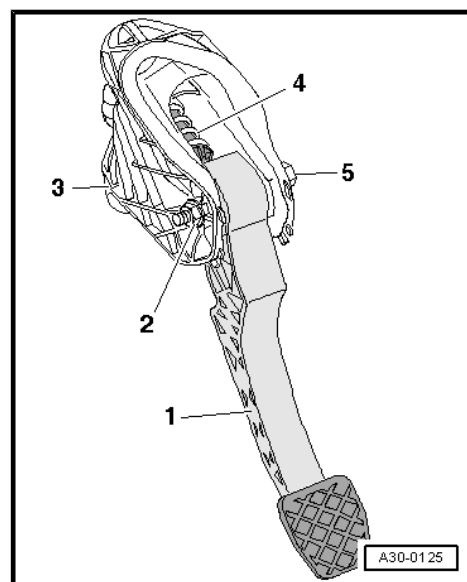
- Unbolt clutch pedal -1- from mounting bracket -3-. To do this, remove nut -2- and pull out bolt -5-.



Note

The clutch pedal does not have to be detached from the operating rod on the master cylinder.

- Pivot clutch pedal down slightly and take over-centre spring -4- out of mounting bracket.



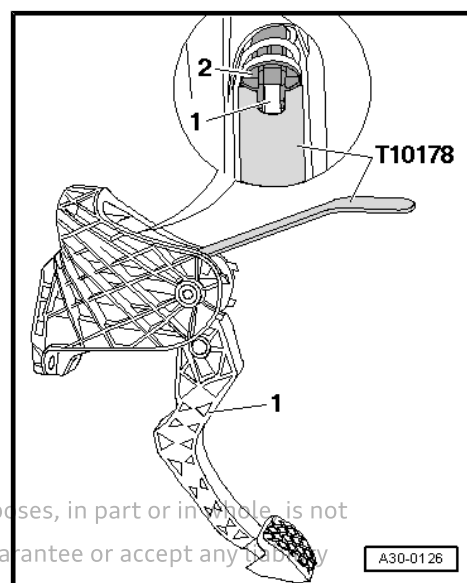
Installing

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



Note

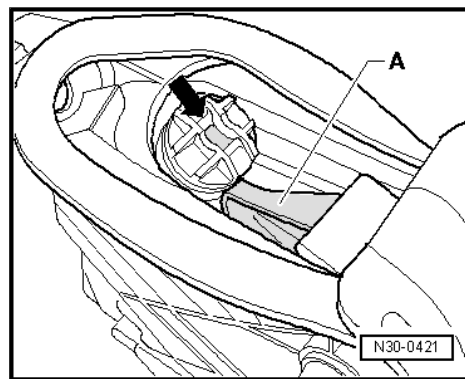
- ◆ *Renew self-locking nut.*
- ◆ *Lubricate all bearings and contact surfaces with grease - G 000 450 02- .*
- Fit over-centre spring -2- into mounting bracket from above while holding end of spring in correct position with assembly tool - T10178- .



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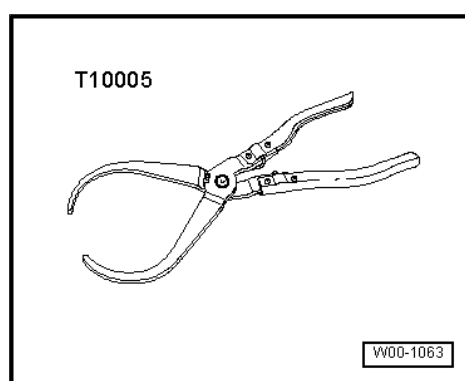
- Socket -arrow- of over-centre spring must be in vertical position.
- Fit actuator on clutch pedal -A- into corresponding socket in over-centre spring -arrow-.
- Press clutch pedal slightly, push bolt through and tighten self-locking nut. Tightening torque ⇒ [Item 16 \(page 22\)](#)
- Install crash bar ⇒ [page 22](#) .
- Install footwell vent (front left) ⇒ Rep. gr. 80 .
- Install storage compartment on driver's side ⇒ Rep. gr. 68 .



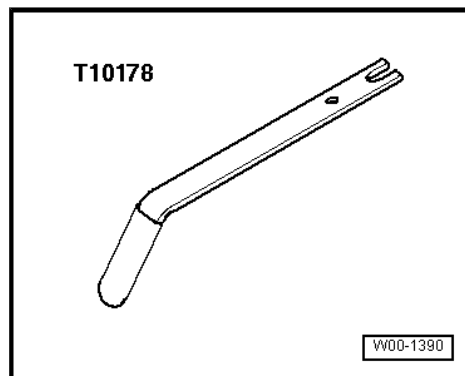
2.2 Removing and installing clutch pedal

Special tools and workshop equipment required

- ◆ Pliers - T10005-



- ◆ Assembly tool - T10178-



- ◆ Grease - G 000 450 02-



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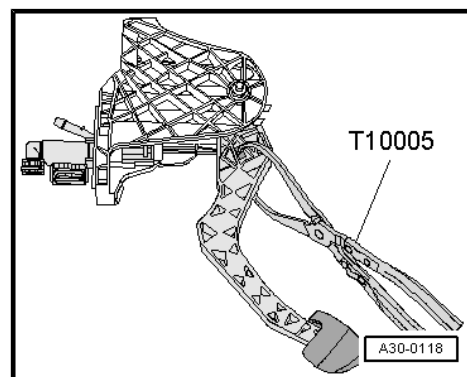
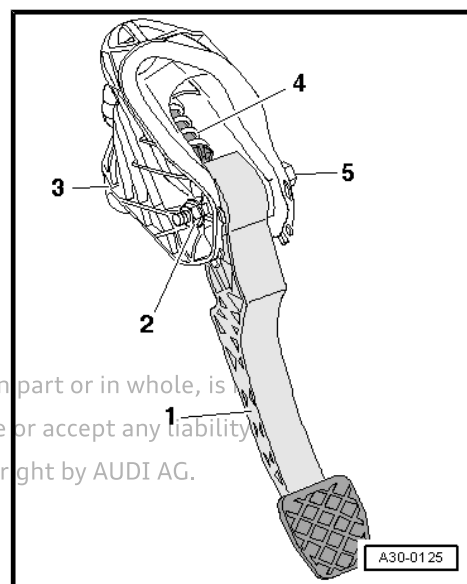
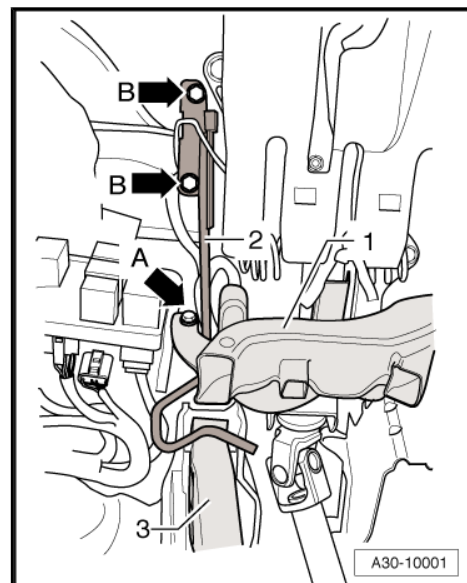
Removing

- Clutch pedal mounting bracket fitted in vehicle
- Move driver's seat away from pedals.
- Remove storage compartment on driver's side ⇒ Rep. gr. 68 .
- Unscrew bolt -arrow A- and remove footwell vent (front left) -1-.
- Unclip wiring harness at rear of footwell vent -1- and move clear to one side.
- If fitted, unbolt crash bar -2- (secured by one or two bolts -arrows B-, depending on version).
- Unbolt clutch pedal -1- from mounting bracket -3-. To do this, remove nut -2- and pull out bolt -5-.
- Pivot clutch pedal down slightly and take over-centre spring -4- out of mounting bracket.



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- Release retaining clip for operating rod on clutch pedal using pliers - T10005- .
- Remove clutch pedal.





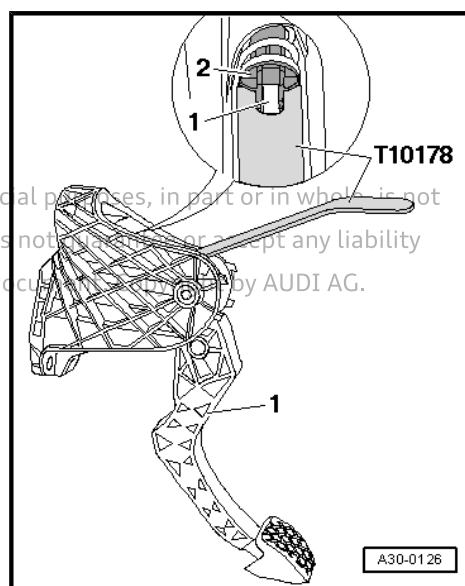
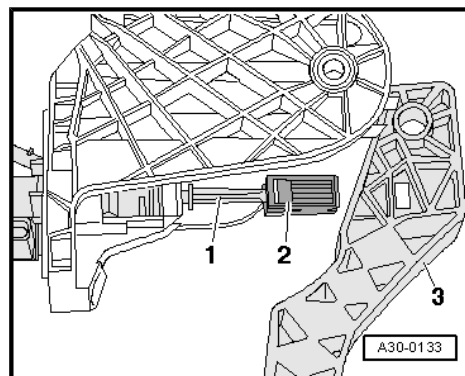
Installing

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



Note

- ◆ *Renew self-locking nut.*
- ◆ *Lubricate all bearings and contact surfaces with grease - G 000 450 02- .*
- Install retaining clip -2- on operating rod -1- of master cylinder.
- Press retaining clip into mounting on clutch pedal so that it engages audibly.
- Fit over-centre spring -2- into mounting bracket from above while holding end of spring in correct position with assembly tool - T10178- .



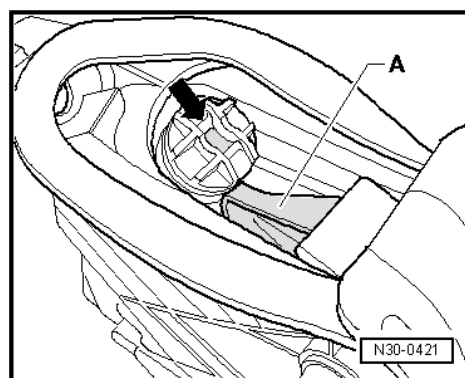
- Socket -arrow- of over-centre spring must be in vertical position.
- Fit actuator on clutch pedal -A- into corresponding socket in over-centre spring -arrow-.
- Press top of clutch pedal forwards against spring pressure of over-centre spring, push through bolt and tighten self-locking nut. Tightening torque ⇒ [Item 16 \(page 22\)](#)



Note

It is easier to press the clutch pedal against the spring if you pull back the bottom of the pedal carefully as you bring the top of the pedal into installation position.

- Install crash bar ⇒ [page 22](#) .
- Install footwell vent (front left) ⇒ Rep. gr. 80 .
- Install storage compartment on driver's side ⇒ Rep. gr. 68 .

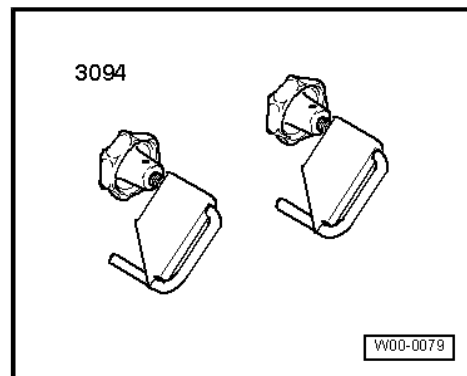


2.3 Removing and installing mounting bracket

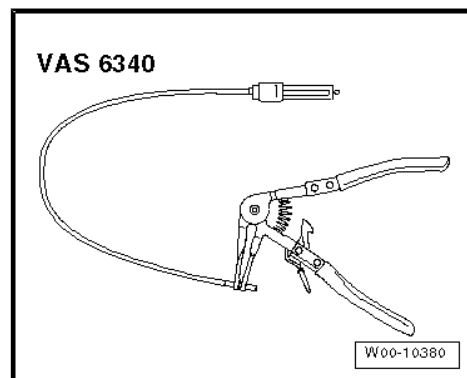
Special tools and workshop equipment required



- ◆ Hose clamps up to 25 mm - 3094-



- ◆ Hose clip pliers - VAS 6340-



Removing

- Move driver's seat away from pedals.

Vehicles with TFSI engine (with timing chain), TDI engine or V6 engine:

- Remove air cleaner housing completely ⇒ Rep. gr. 23 or ⇒ Rep. gr. 24 .

Vehicles with TFSI engine or TDI engine:

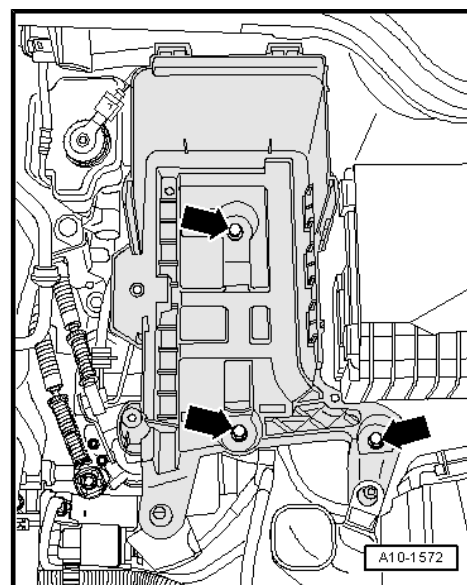


Caution

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

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

- Remove battery ⇒ Electrical system; Rep. gr. 27 .
- Remove battery tray -arrows- (detach front of battery tray from air duct if applicable).



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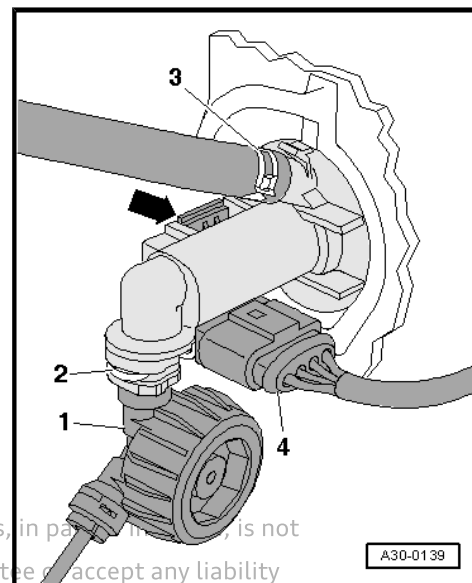
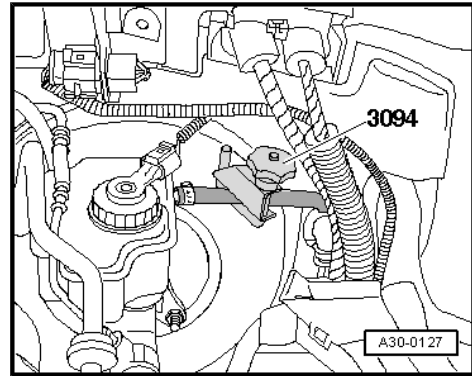
All vehicles (continued):



Note

Make sure brake fluid does not come into contact with longitudinal member or gearbox when performing the following operations. If it does, clean affected area thoroughly.

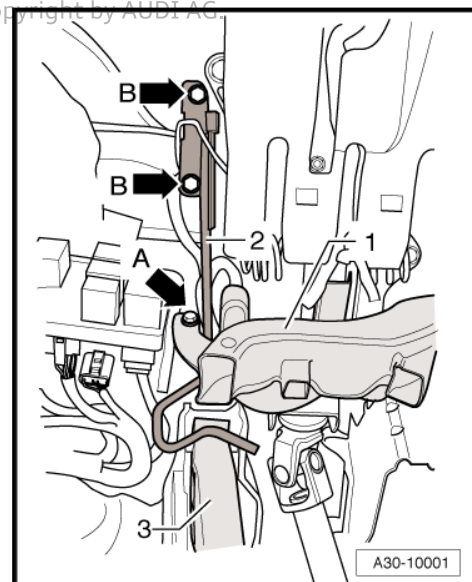
- Using hose clamp up to 25 mm - 3094- , clamp off supply hose to clutch master cylinder.
- Disconnect supply hose at clutch master cylinder (if necessary, release spring-type clip -3- using hose clip pliers - VAS 6340-).
- Release retaining clip -2- with a screwdriver and disconnect pipe/hose assembly -1- or plastic pipe from clutch master cylinder.
- Unclip and detach clutch position sender - G476- from clutch master cylinder -arrow-. Electrical connector -4- can remain connected.



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- Remove storage compartment on driver's side ➔ Rep. gr. 68 .
- Unscrew bolt -arrow A- and remove footwell vent (front left) -1-.
- If fitted, unbolt crash bar -2- (secured by one or two bolts -arrows B-, depending on version).





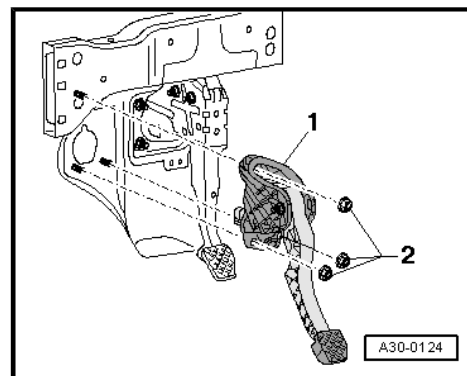
Note

When working in the footwell, put cloths on the floor covering to protect it from possible brake fluid spills.

- Remove nuts -2-.
- Take out mounting bracket -1-.

Installing

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



Note

- ◆ *Renew self-locking nuts.*
- ◆ *Secure all hose connections with the correct hose clips (as original equipment); refer to ⇒ *Electronic parts catalogue* .*
- Fit mounting bracket -1- and tighten nuts -2-.
- Install pipe/hose assembly or plastic pipe ⇒ [page 35](#) .
- Bleed clutch system ⇒ [page 37](#) .
- Install crash bar ⇒ [page 22](#) .
- Install footwell vent (front left) ⇒ Rep. gr. 80 .
- Install storage compartment on driver's side ⇒ Rep. gr. 68 .
- Install battery tray and battery ⇒ Electrical system; Rep. gr. 27 .
- Install air cleaner housing ⇒ Rep. gr. 23 or ⇒ Rep. gr. 24 .

2.4 Removing and installing clutch position sender - G476-

Removing

Vehicles with TFSI engine (with timing chain), TDI engine or V6 engine:

- Remove air cleaner housing completely ⇒ Rep. gr. 23 or ⇒ Rep. gr. 24 .



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Vehicles with TFSI engine or TDI engine:

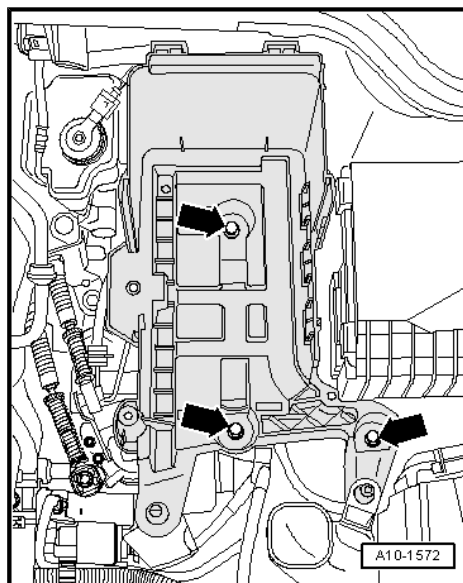


Caution

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

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

- Remove battery ⇒ Electrical system; Rep. gr. 27 .
- Remove battery tray -arrows- (detach front of battery tray from air duct if applicable).



All vehicles (continued):

- Unplug electrical connector -4-, and unclip and detach clutch position sender -G476- from master cylinder -arrow-.



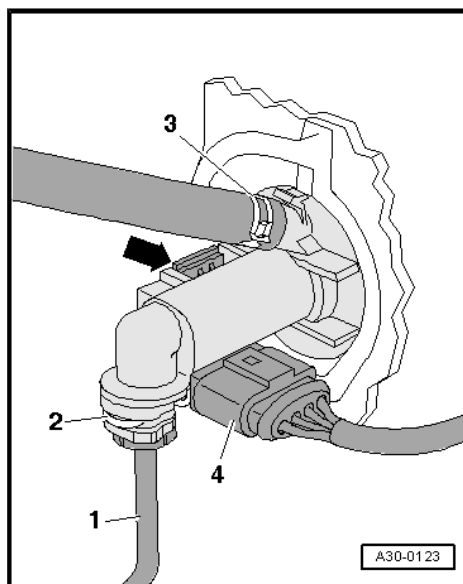
Note

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

Installing

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

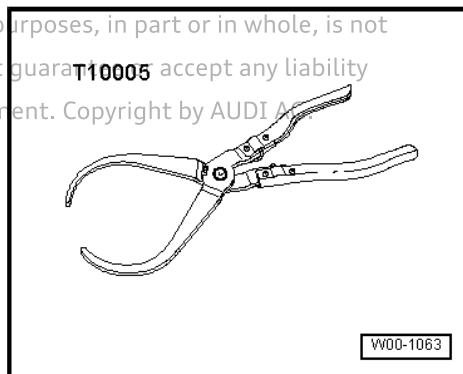
- Install battery tray and battery ⇒ Electrical system; Rep. gr. 27 .
- Install air cleaner housing ⇒ Rep. gr. 23 or ⇒ Rep. gr. 24 .



2.5 Removing and installing clutch master cylinder

Special tools and workshop equipment required

- ◆ Pliers - T10005
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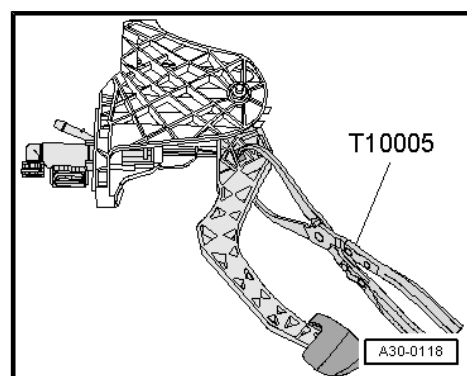


Removing

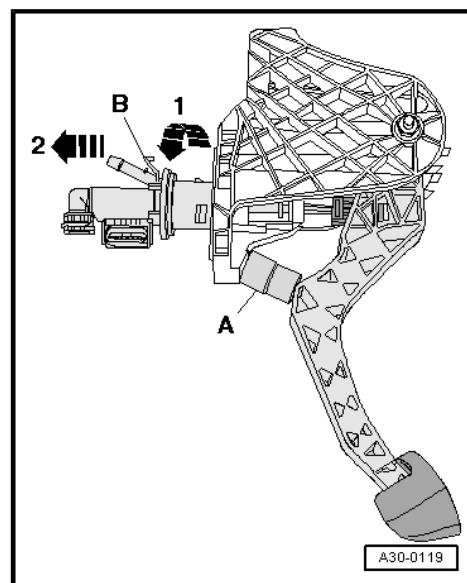


Note

- ◆ If you suspect a defective clutch master cylinder, perform function test prior to renewing
⇒ "1.1 Notes on removing and installing clutch master cylinder and slave cylinder", page 18
- ◆ When working in the footwell, put cloths on the floor covering to protect it from possible brake fluid spills.
- Remove mounting bracket ⇒ page 26 .
- Release retaining clip for operating rod on clutch pedal using pliers - T10005- .

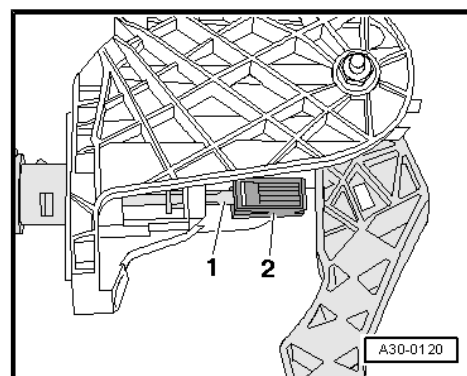


- Insert a spacer -A- between clutch pedal and stop, and press clutch pedal forward.
- ◆ Length of spacer = approx. 40 mm (e.g. 1/2" socket)
- Release retainer clip -B- and pull master cylinder out of mounting bracket -arrow 1- and -arrow 2-.



Installing

- Clutch pedal in "released" position.
- Install retaining clip -2- on operating rod -1- for clutch master cylinder.



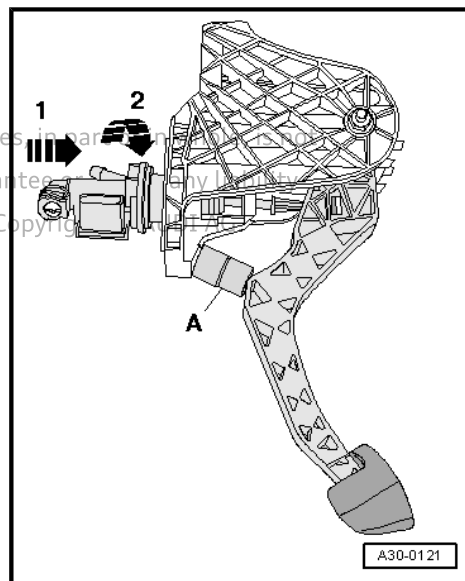


- Insert a spacer -A- between clutch pedal and stop, and press clutch pedal forward.

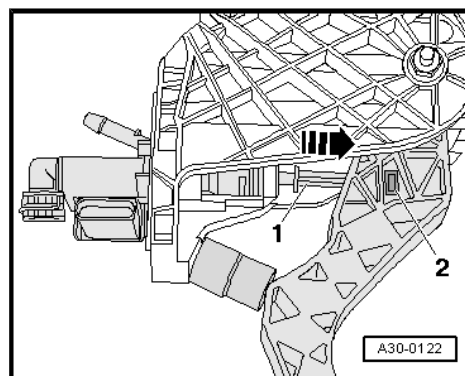
◆ Length of spacer = approx. 40 mm (e.g. 1/2" socket)

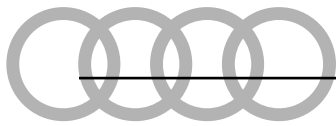
- Secure master cylinder on mounting bracket -arrow 1- and -arrow 2-

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- Press operating rod -1- for master cylinder in direction of -arrow- so that retaining clip -2- snaps into place in clutch pedal.
- Install mounting bracket ⇒ [page 26](#) .





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3 Exploded view - hydraulics (LHD)

1 - Brake fluid reservoir

2 - Spring-type clip

3 - Supply hose

- ☐ Made of rubber or plastic, depending on version
- ☐ Plastic supply hose with additional seals
⇒ [page 35](#)

4 - Clutch master cylinder

- ☐ Removing and installing
⇒ [page 30](#)

5 - Clip

- ☐ To remove and install pipe, pull out clip as far as it will go

6 - Seal or O-ring

- ☐ Renew damaged O-rings
- ☐ Push onto pipe connection
- ☐ Lubricate with brake fluid before installing
- ☐ Matched to type of connection ⇒ [page 35](#)
- ☐ For correct version, refer to ⇒ Electronic parts catalogue

7 - Retaining clip

- ☐ To remove and install retaining clip first detach master cylinder from clutch pedal ⇒ [page 24](#)

8 - Clutch pedal

- ☐ Removing and installing ⇒ [page 24](#)

9 - Nut

- ☐ Tightening torque ⇒ [Item 15 \(page 22\)](#)

10 - Pipe/hose assembly

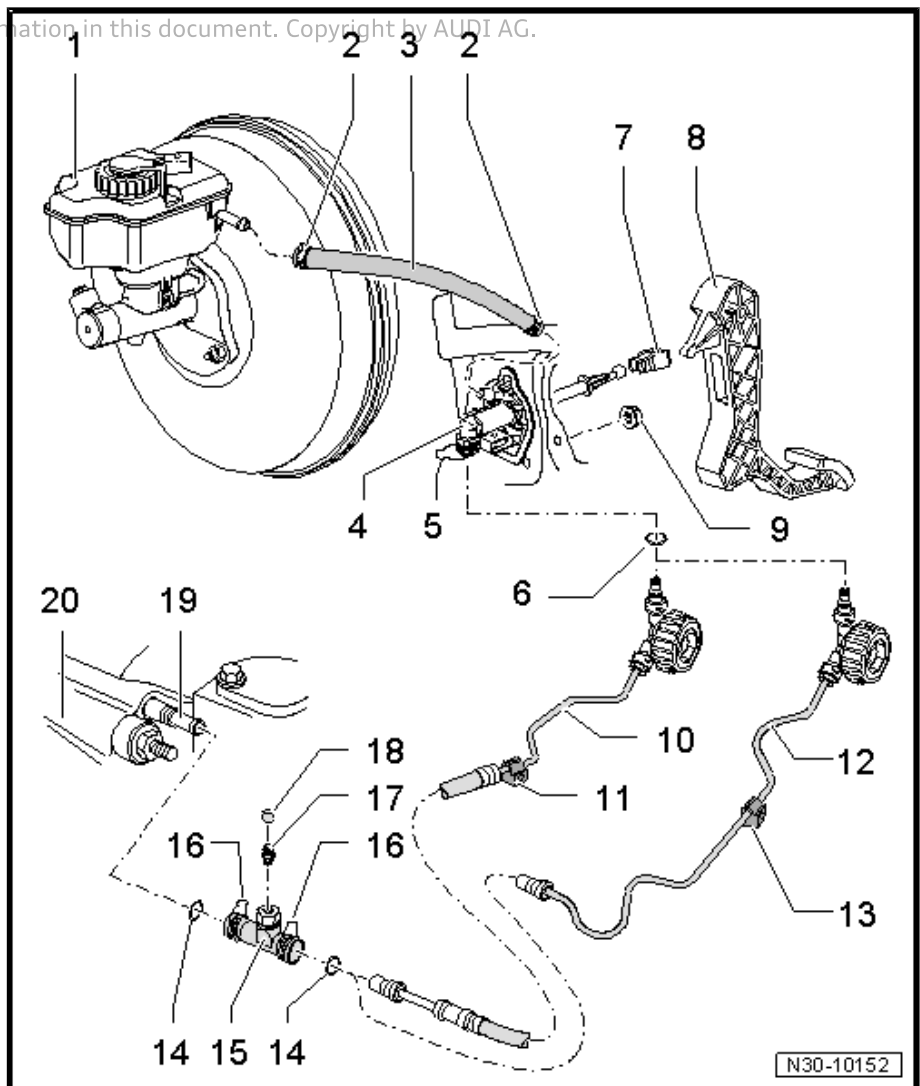
- ☐ Removing and installing ⇒ [page 35](#)
- ☐ Different types depending on gearbox version
- ☐ For correct version, refer to ⇒ Electronic parts catalogue

11 - Bracket

- ☐ For pipe/hose assembly ⇒ [Item 10 \(page 33\)](#)
- ☐ Secured on body
- ☐ Identification of retainers ⇒ [page 35](#)

12 - Plastic pipe

- ☐ Removing and installing ⇒ [page 35](#)
- ☐ Different types depending on gearbox version
- ☐ For correct version, refer to ⇒ Electronic parts catalogue





13 - Bracket

- ☐ For plastic pipe ➔ [Item 12 \(page 33\)](#)
- ☐ Secured on body
- ☐ Identification of retainers ➔ [page 35](#)

14 - Seal or O-ring

- ☐ Renew damaged O-rings
- ☐ Push onto pipe connection
- ☐ Lubricate with brake fluid before installing
- ☐ Matched to type of connection ➔ [page 35](#)
- ☐ For correct version, refer to ➔ Electronic parts catalogue

15 - Bleeder connection

16 - Clip

- ☐ To remove and install pipe/hose assembly or bleeder connection, pull out clip as far as it will go.

17 - Bleeder screw

- ☐ 4.5 Nm
- ☐ Bleeding clutch system ➔ [page 37](#)

18 - Dust cap

19 - Clutch slave cylinder with release bearing

- ☐ Can only be renewed after removing gearbox
- ☐ Removing and installing ➔ [page 42](#)

20 - Gearbox

Disconnecting and connecting pipe/hose assembly or plastic pipe at clutch master cylinder or bleeder connection

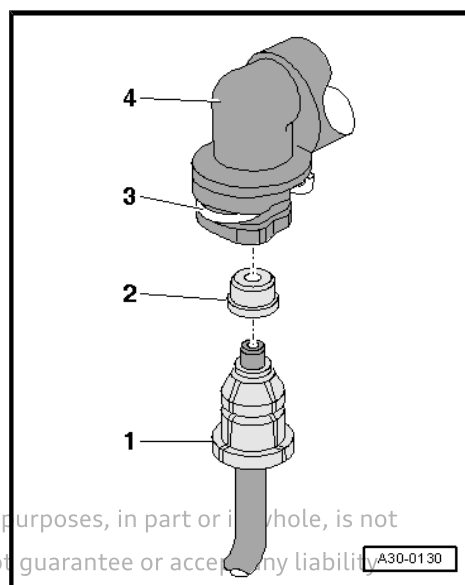
- Release clip -3- with a screwdriver and disconnect pipe/hose assembly -1- or plastic pipe from connection -4-.

Installing



Note

- ◆ *Observe distinction between seals -2- and O-rings*
➔ [page 35](#).
- ◆ *Renew damaged seals or O-rings.*
- Press pipe/hose assembly or plastic pipe -1- onto connection on clutch master cylinder or onto bleeder connection -4- so that clip -3- snaps into place.
- Pull on pipe to check that it is secure.





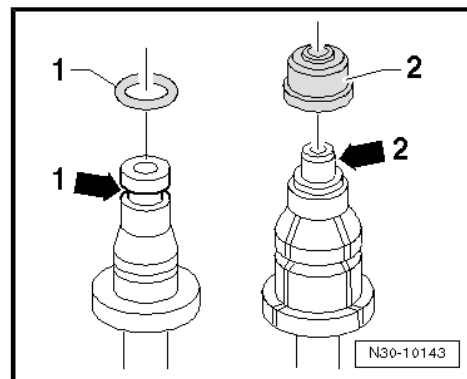
Seals or O-rings for pipe/hose assembly or plastic pipe

1 - O-ring

- ◆ Connection with annular groove -arrow 1-
- ◆ Check O-ring for damage and renew if necessary

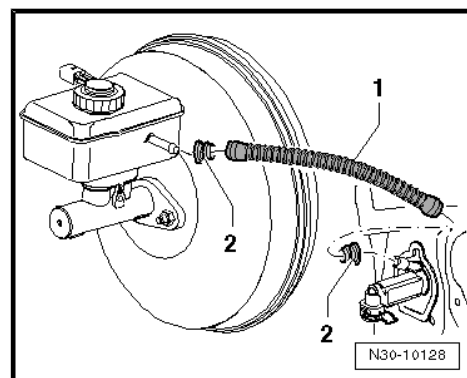
2 - Seal

- ◆ Connection with shoulder -arrow 2-
- ◆ Position seal -2- onto connection -arrow 2- before fitting



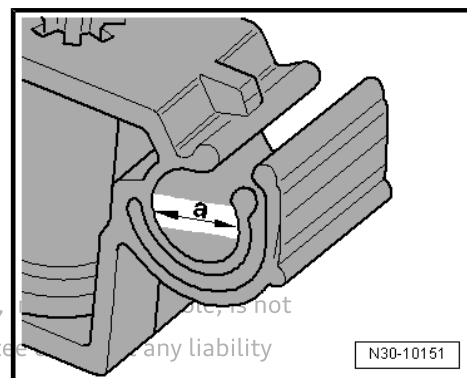
Vehicles with plastic supply hose -1-

- Seals -2- must be fitted in supply hose.



Identification of brackets

Dimension "a" (mm)	Pipe version
8	Plastic pipe
6	Pipe/hose assembly

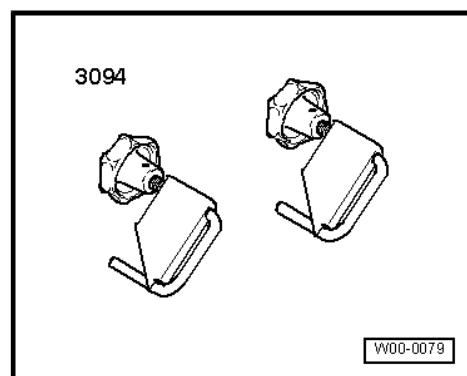


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3.1 Removing and installing pipe/hose assembly or plastic pipe

Special tools and workshop equipment required

- ◆ Hose clamps up to 25 mm - 3094-





Removing

Vehicles with TFSI engine (with timing chain), TDI engine or V6 engine:

- Remove air cleaner housing completely ⇒ Rep. gr. 23 or ⇒ Rep. gr. 24 .

Vehicles with TFSI engine or TDI engine:

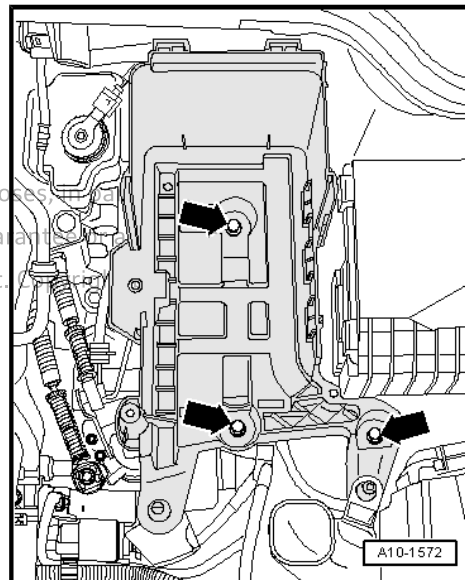


Caution

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

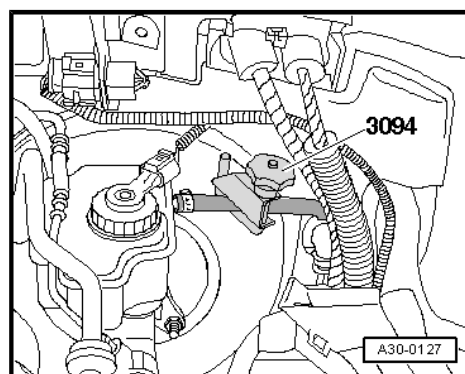
- ◆ **Observe notes on procedure for disconnecting the battery.**

- Remove battery ⇒ Electrical system; Rep. gr. 27 .
- Remove battery tray -arrows- (detach front of battery tray from air duct if applicable).



All vehicles (continued):

- Using hose clamp up to 25 mm - 3094- , clamp off supply hose to clutch master cylinder.



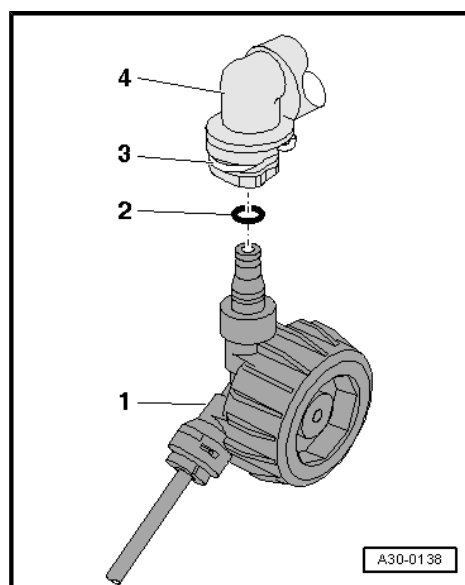
Note

- ◆ **Make sure brake fluid does not come into contact with longitudinal member or gearbox when performing the following operations. If it does, clean affected area thoroughly.**
- ◆ **Place a cloth underneath to catch escaping brake fluid.**
- To detach at clutch master cylinder, release retaining clip -3- with a screwdriver.
- Pull off pipe/hose assembly -1- or plastic pipe with O-ring -2- and detach from bracket.



Caution

Do not depress clutch pedal after removing pipe/hose assembly or plastic pipe.





Note

Place a cloth underneath to catch escaping brake fluid.

- To detach at bleeder connection, release retaining clip -2- with a screwdriver and pull pipe/hose assembly -4- or plastic pipe with O-ring or seal -3- off bleeder connection -1-.



Installing

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

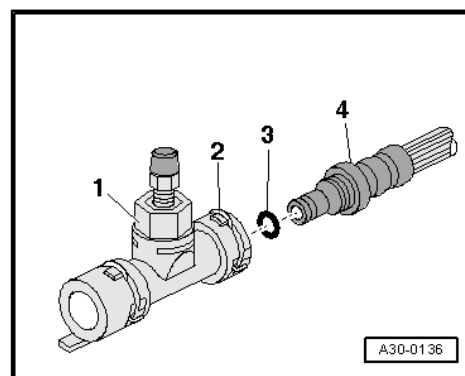
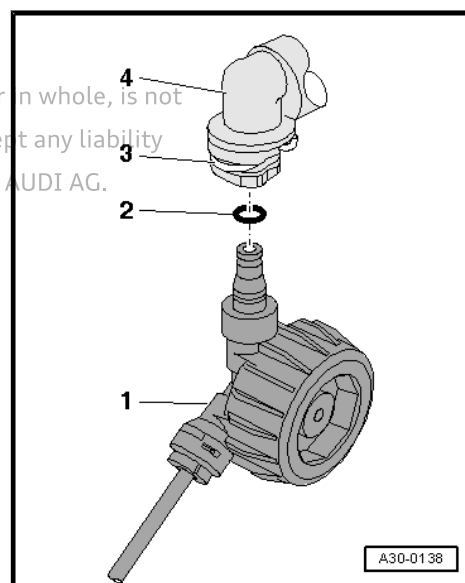
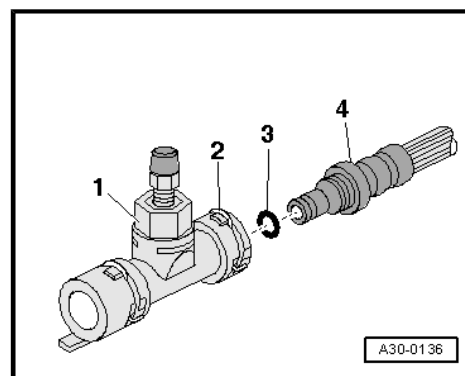
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Note

For distinction between O-rings -2- and seals, refer to [page 35](#)

- Check O-ring -2- for damage and renew if necessary.
- Press pipe/hose assembly -1- or plastic pipe onto connection on clutch master cylinder -4- so that retaining clip -3- snaps into place.
- Pull on pipe to check that it is secure.

- Check O-ring -3- for damage and renew if necessary.
- Press pipe/hose assembly -4- or plastic pipe onto bleeder connection so that retaining clip -2- snaps into place.
- Pull on pipe to check that it is secure.
- Bleed clutch system [⇒ page 37](#) .
- Install battery tray and battery [⇒ Electrical system; Rep. gr. 27](#) .
- Install air cleaner housing [⇒ Rep. gr. 23 or ⇒ Rep. gr. 24](#) .



3.2 Bleeding clutch system

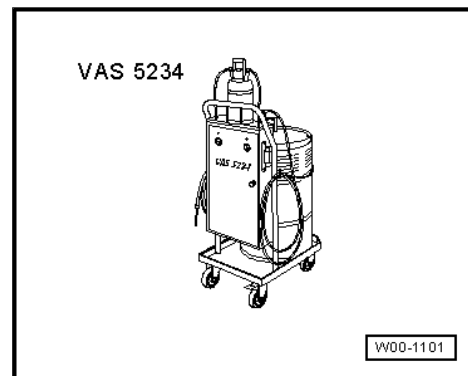
Note

- ◆ *The clutch system must be bled after performing work on the hydraulic clutch mechanism.*
- ◆ *In the following steps make sure that no brake fluid escapes onto the longitudinal member or onto the gearbox below.*
- ◆ *Before bleeding clutch system, top up brake fluid reservoir to "max." marking with brake fluid.*

Special tools and workshop equipment required



◆ Brake filling and bleeding equipment - VAS 5234-



◆ Brake fluid specification ⇒ Rep. gr. 47 .

Procedure

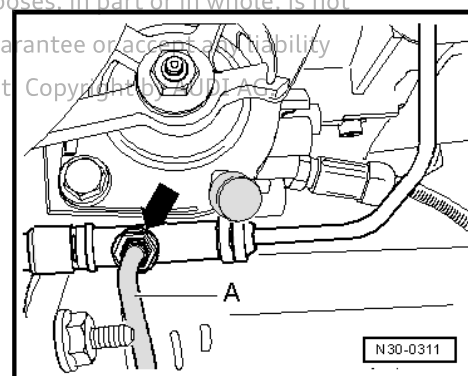
- Tightening torque ⇒ [page 33](#)

Vehicles with TFSI engine (with timing chain), TDI engine or V6 engine:

- Remove air cleaner housing completely ⇒ Rep. gr. 23 or ⇒ Rep. gr. 24 .

All vehicles (continued):

- Pull clutch pedal back to its normal position.
- Connect brake filling and bleeding equipment - VAS 5234- to brake fluid reservoir.
- Remove protective cap from bleeder screw -arrow- and connect hose -A- from bleeder bottle to bleeder screw.
- Switch on bleeding equipment.
- Operating pressure 2.0 bar
- Now open bleeder screw approx $\frac{1}{4}$ turn and allow 100 cm³ of brake fluid to run out.
- With bleeder screw open, pump clutch pedal rapidly all the way in and out by hand 15 to 20 times (approx. 2 times per second).
- Close bleeder screw.
- Switch off brake filling and bleeding equipment - VAS 5234- and relieve pressure from bleeding equipment.
- Now press clutch pedal slowly all the way in and out 10 times.
- Check that clutch system is functioning properly.
- Disconnect bleeder hose and fit protective cap.
- Detach brake filling and bleeding equipment - VAS 5234- from brake fluid reservoir.
- Install air cleaner housing ⇒ Rep. gr. 23 or ⇒ Rep. gr. 24 .





4 Exploded view - hydraulics (RHD)

1 - Brake fluid reservoir

2 - Seal

- ☐ For plastic supply hose
- ☐ Seals must be fitted in supply hose

3 - Supply hose

- ☐ Made of rubber or plastic, depending on version
- ☐ Plastic supply hose with additional seals
⇒ [Item 2 \(page 39\)](#)

4 - Clutch master cylinder

- ☐ Removing and installing
⇒ [page 30](#)

5 - Clip

- ☐ To remove and install pipe, pull out clip as far as it will go

6 - Seal or O-ring

- ☐ Matched to type of connection ⇒ [page 35](#)
- ☐ For correct version, refer to ⇒ Electronic parts catalogue
- ☐ Renew damaged seals or O-rings
- ☐ Push onto pipe connection
- ☐ Lubricate with brake fluid before installing

7 - Retaining clip

- ☐ To remove and install retaining clip first detach master cylinder from clutch pedal ⇒ [page 24](#)

8 - Clutch pedal

9 - Nut

- ☐ For securing mounting bracket to bulkhead
- ☐ 20 Nm

10 - Retainer

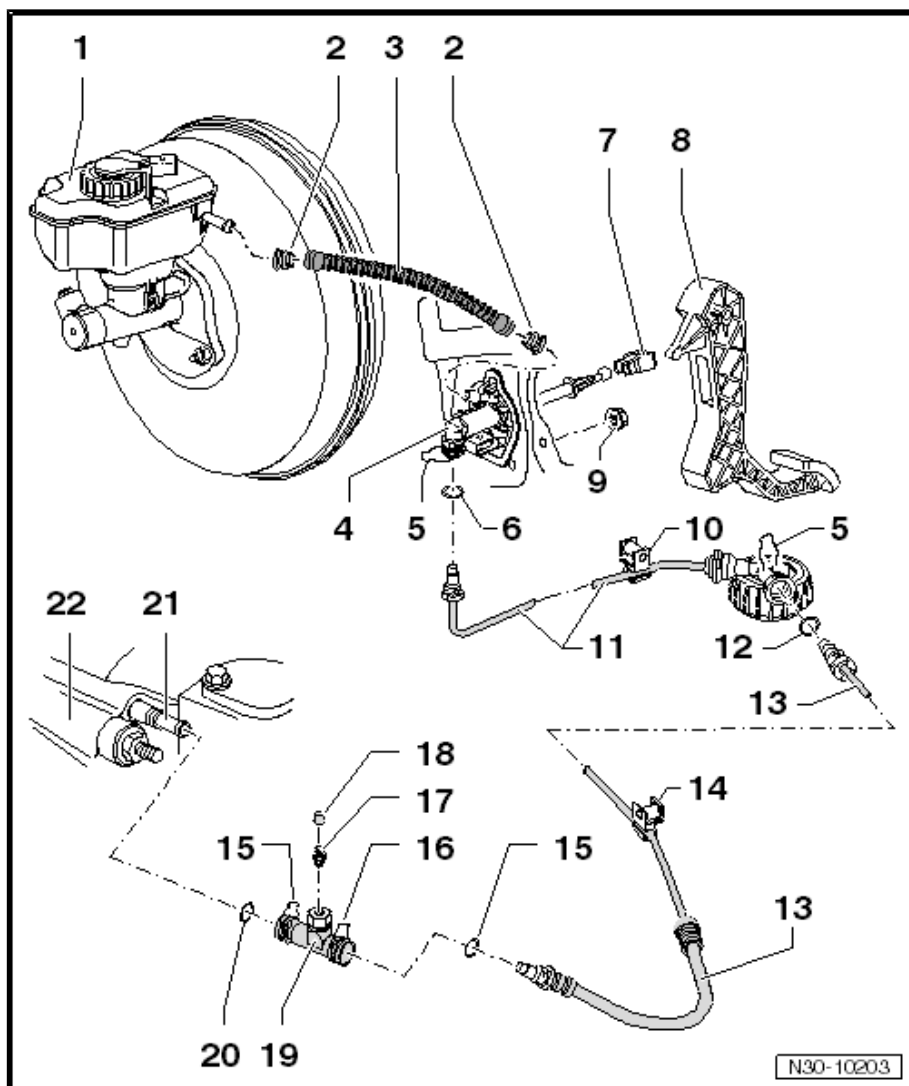
- ☐ Secured on body

11 - Pipe

- ☐ For correct version, refer to ⇒ Electronic parts catalogue
- ☐ On vehicles with 4-cylinder engine, take out battery and battery tray before removing ⇒ Electrical system; Rep. gr. 27

12 - Seal or O-ring

- ☐ Matched to type of connection ⇒ [page 35](#)
- ☐ For correct version, refer to ⇒ Electronic parts catalogue
- ☐ Renew damaged seals or O-rings
- ☐ Push onto pipe connection
- ☐ Lubricate with brake fluid before installing





13 - Pipe/hose assembly

- ☐ For correct version, refer to ⇒ Electronic parts catalogue
- ☐ On vehicles with 4-cylinder engine, take out battery and battery tray before removing ⇒ Electrical system; Rep. gr. 27

14 - Retainer

- ☐ Secured to bracket for ABS/EDL

15 - Seal or O-ring

- ☐ Matched to type of connection ⇒ [page 35](#)
- ☐ For correct version, refer to ⇒ Electronic parts catalogue
- ☐ Renew damaged seals or O-rings
- ☐ Push onto pipe connection
- ☐ Lubricate with brake fluid before installing

16 - Clip

- ☐ To remove and install pipe/hose assembly or bleeder connection, pull out clip as far as it will go.

17 - Bleeder screw

- ☐ Bleeding clutch system ⇒ [page 37](#)
- ☐ 4.5 Nm

18 - Dust cap

19 - Bleeder connection

20 - Clutch slave cylinder with release bearing

- ☐ Can only be renewed after removing gearbox
- ☐ Removing and installing ⇒ [page 42](#)

21 - Gearbox



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5 Exploded view - clutch release mechanism, slave cylinder

1 - Bolt

- ☐ 3x
- ☐ Renew
- ☐ Tighten bolts carefully in several small steps and in diagonal sequence; make sure that mounting lugs on slave cylinder do not break off
- ☐ 12 Nm for metal clutch slave cylinder
- ☐ 15 Nm for plastic clutch slave cylinder

2 - Clutch slave cylinder with release bearing

- ☐ Clutch slave cylinder and release bearing are one unit and can only be renewed together
- ☐ Do not wash out bearing; wipe clean only
- ☐ If bearing is noisy, renew together with slave cylinder
- ☐ Removing and installing ⇒ [page 42](#)

3 - O-ring

- ☐ Renew if damaged
- ☐ Push onto pipe connection
- ☐ Lubricate with brake fluid before installing

4 - Retaining clip

5 - Bleeder screw

- ☐ Tightening torque ⇒ [Item 17 \(page 34\)](#)

6 - Protective cap

7 - Retaining clip

8 - Pipe/hose assembly or plastic pipe

- ☐ To clutch master cylinder
- ☐ Removing and installing ⇒ [page 35](#)

9 - O-ring

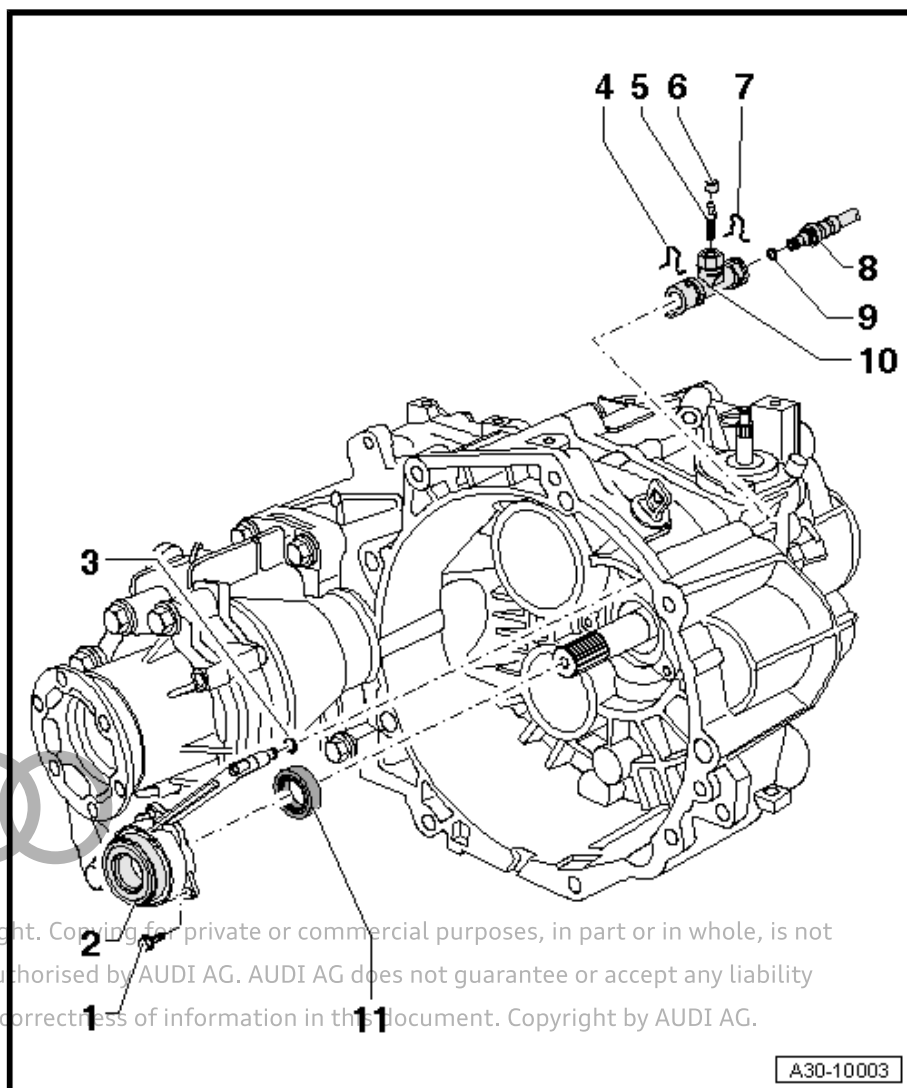
- ☐ Renew if damaged
- ☐ Push onto pipe connection
- ☐ Lubricate with brake fluid before installing

10 - Bleeder connection

- ☐ Removing and installing ⇒ ["5.1 Removing and installing clutch slave cylinder together with release bearing", page 42](#)

11 - Oil seal

- ☐ For input shaft



A30-10003



- ❑ Removing and installing ⇒ [page 174](#)

5.1 Removing and installing clutch slave cylinder together with release bearing



Note

Clutch slave cylinder and release bearing are one unit and can only be renewed together.

Removing

- Gearbox removed
- Release retaining clip -2- with a screwdriver and pull bleeder connection -4- off slave cylinder -1-.



- Remove bolts -arrows-.
- Take off slave cylinder together with release bearing -A-.

Installing

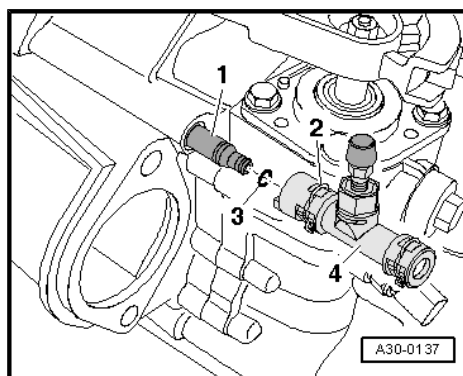
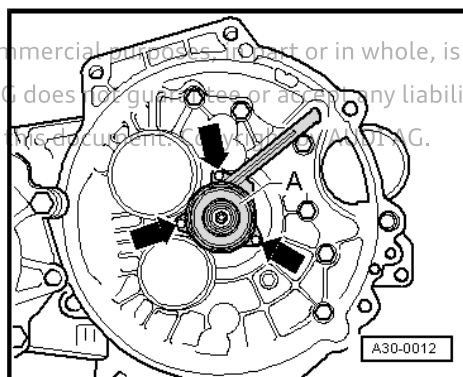
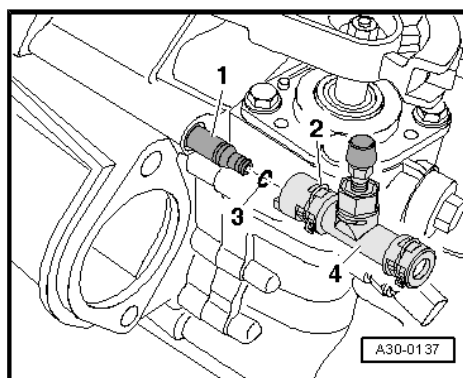
Installation is carried out in reverse order; note the following:



Caution

Tighten securing bolts for slave cylinder in small steps. Otherwise mounting lugs -arrows- can be damaged.

- Tighten bolts securing slave cylinder / release bearing ⇒ [Item 1 \(page 41\)](#).
- Check O-ring -3- for damage and renew if necessary.
- Press bleeder connection -4- onto connection on clutch slave cylinder -1- so that retaining clip -2- snaps into place.
- Pull on bleeder connection to check it is secure.
- Bleed clutch system ⇒ [page 37](#).





6 Clutch identification



Note

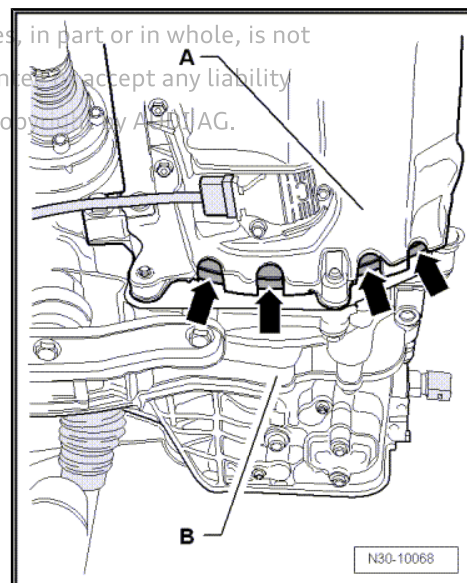
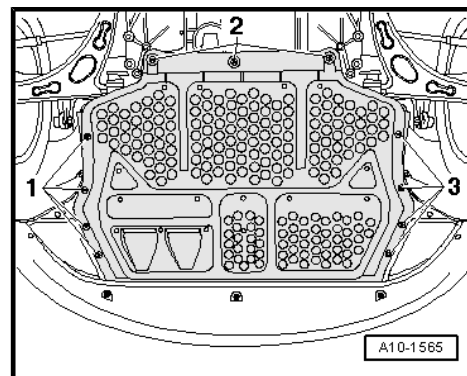
The clutch fitted in the vehicle is supplied by either "Sachs" or "LuK".

With gearbox installed, the clutch version fitted can be distinguished as follows:

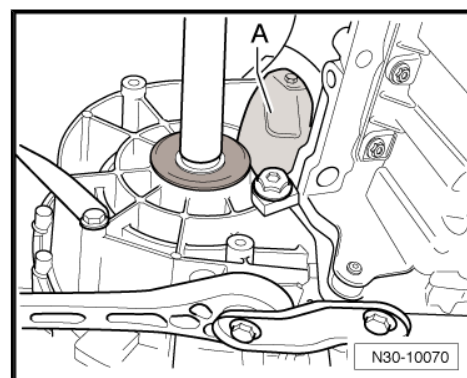
- Remove noise insulation (centre) by releasing fasteners -1 ... 3-.



A number of recesses -arrows- are located in lower area of sump between engine -A- and gearbox -B-.



- Check the contour of the flywheel visible through the recesses.
- The contour of the flywheel can also be checked by removing the small cover plate -A-.



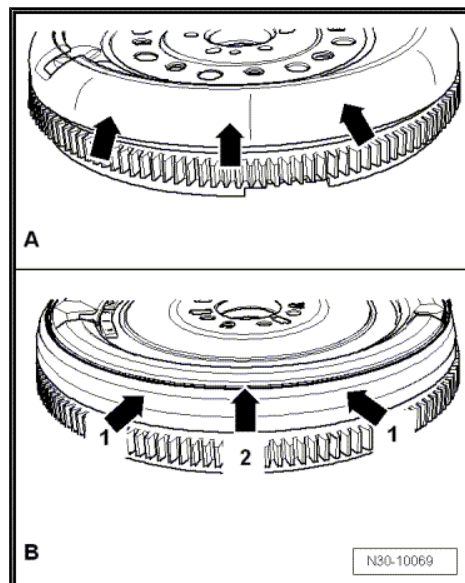


A - round contour -arrows- = Sachs version clutch

Exploded view - Sachs version clutch ⇒ [page 45](#)

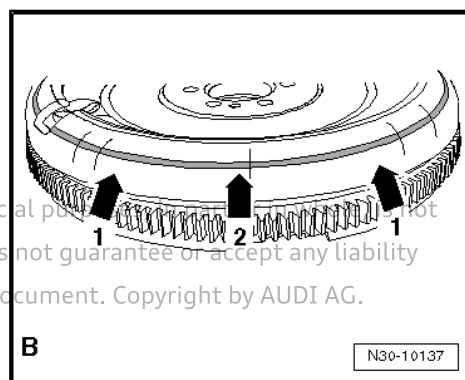
B - square contour -arrows 1- and annular groove -arrow 2- = LuK version clutch

Exploded view - LuK version clutch ⇒ [page 51](#)



Round contour -arrows 1- and annular groove -arrow 2- = LuK version clutch

Exploded view - LuK version clutch ⇒ [page 51](#)



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7 Exploded view - Sachs version clutch



Note

The dual-mass flywheel, pressure plate and clutch plate are matched together; components from another manufacturer must not be installed on the same vehicle.

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1 - Dual-mass flywheel

- ☐ Removing and installing
⇒ Rep. gr. 13
- ☐ Ensure that dowel pins fit tightly
- ☐ Contact surface for clutch lining must be free of grooves, oil and grease
- ☐ Observe instructions for removal ⇒ [page 47](#)

2 - Clutch plate

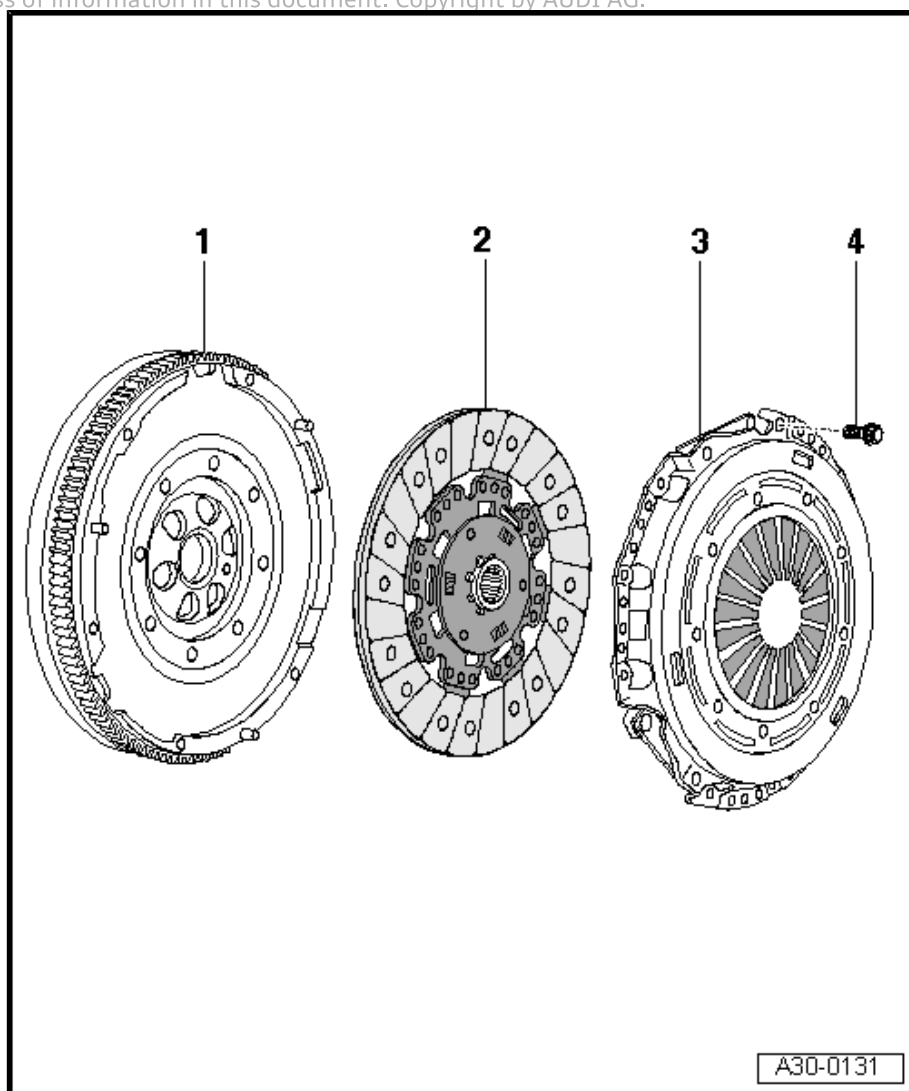
- ☐ Removing and installing
⇒ [page 47](#)
- ☐ Always renew pressure plate as well
- ☐ Installation position
⇒ [page 50](#)
- ☐ For diameter of clutch plate, refer to ⇒ Electronic parts catalogue

3 - Thrust plate

- ☐ With adjustment mechanism
- ☐ Identification
⇒ [page 46](#)
- ☐ Always renew clutch plate as well
- ☐ Removing and installing
⇒ [page 47](#)
- ☐ Checking ends of diaphragm spring
⇒ [page 46](#)
- ☐ Checking springs and riveting ⇒ [page 46](#)
- ☐ Checking wire ring or sheet-metal ring ⇒ [page 47](#)
- ☐ For correct version, refer to ⇒ Electronic parts catalogue
- ☐ Contact surface for clutch lining must be free of grooves, oil and grease

4 - Bolt

- ☐ Loosen and tighten consecutively in steps of 90°
- ☐ M6: 13 Nm
- ☐ M7: 20 Nm



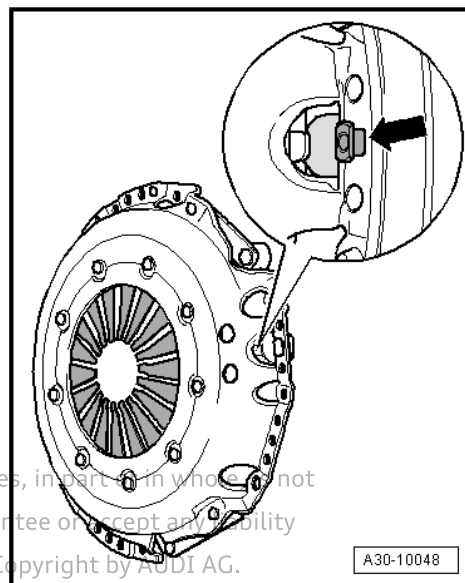


Identification of self-adjusting Sachs version clutch

- ◆ Pressure plate with stop mechanism (position sensor)
-arrow-.

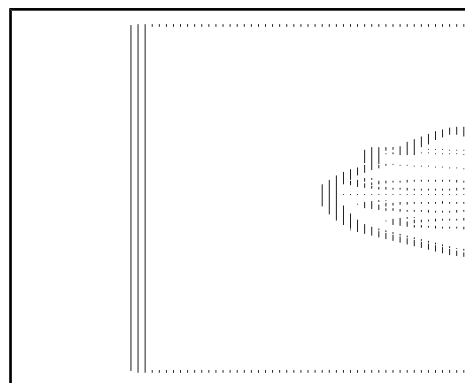


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Checking ends of diaphragm spring

- Wear up to half the thickness of the diaphragm spring
-arrows- is permissible.



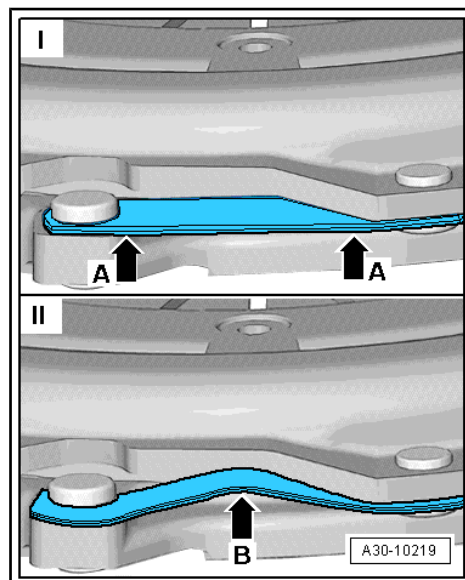
Checking springs and riveting

I - Springs OK

- Slight kinking on the outside -arrows A- is normal on production parts.

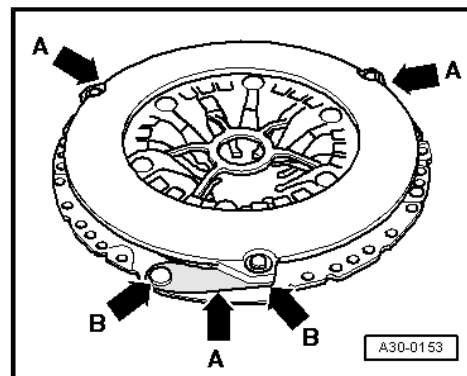
II - Springs damaged

- Renew pressure plate if springs are broken or badly bent
-arrow B-.



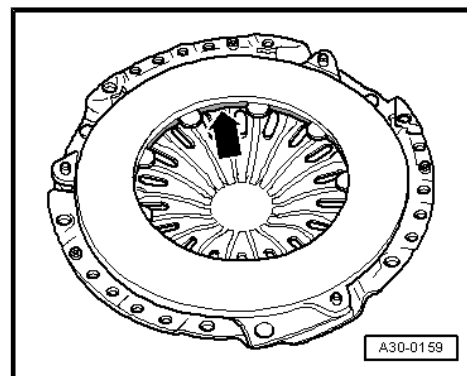


- Check that rivets -arrows B- are secure at all springs -arrows A-.
- Renew pressure plate if rivets -arrows B- are loose.



Checking wire ring or sheet-metal ring

- Check wire ring or sheet-metal ring -arrow- in pressure plate for damage.
- Renew pressure plate if wire ring or sheet-metal ring is broken.



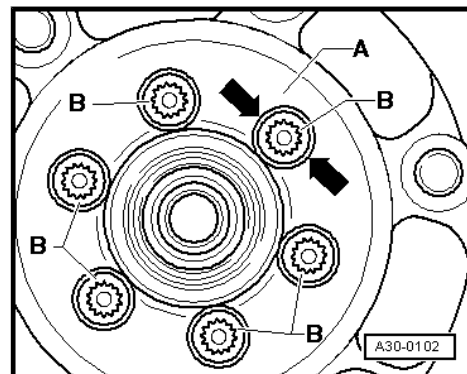
Instructions for removing dual-mass flywheel



Note

Do not use an impact wrench or pneumatic wrench to remove bolts -B-: this would severely damage the dual-mass flywheel. The bolts may only be removed by hand using conventional tools.

- Rotate dual-mass flywheel -A- so that the bolts are aligned centrally behind the holes -arrows-.
- When removing the bolts, make sure that none of the bolt heads contacts the dual-mass flywheel, as this would damage the flywheel when the bolts are unscrewed further.

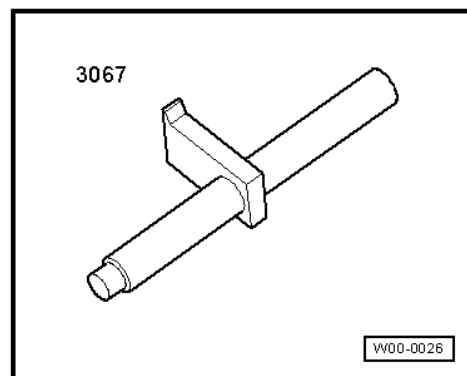


7.1

Removing and installing clutch (Sachs version)

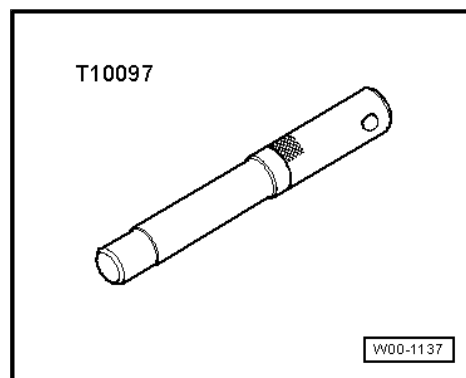
Special tools and workshop equipment required

- ◆ Counterhold tool - 3067-





- ◆ Centring mandrel - T10097-



- ◆ Grease for clutch plate splines - G 000 100-



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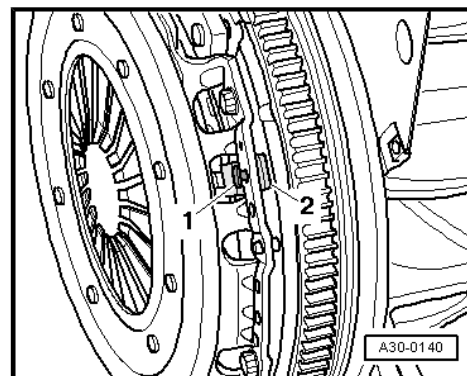


Removing

- Gearbox removed

To prevent the pressure plate from becoming distorted during removal (causes clutch grab when driving off), always adhere to the following procedure when unbolting the pressure plate:

- Apply counter-hold tool - 3067- in order to loosen bolts.
- Working clockwise, loosen all six bolts consecutively in steps of 90° (1/4 turn) until pressure plate is released.
- Stop -2- with pin -1- should come loose when bolts are slackened.
- If the stop does not come loose, push the pin towards the dual-mass flywheel.
- Take off pressure plate and clutch plate.



Installing

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



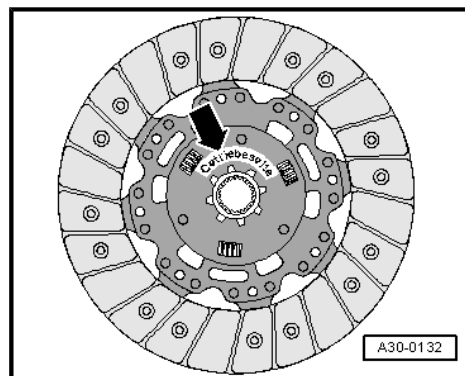
Note

- ◆ *The dual-mass flywheel, pressure plate and clutch plate are matched together; components from another manufacturer must not be installed on the same vehicle.*
- ◆ *Always renew clutch plate and pressure plate together and select the correct parts according to engine code ⇒ Electronic parts catalogue .*
- ◆ *If the clutch has burnt out, thoroughly clean the clutch housing, flywheel and parts of the engine facing the gearbox in order to reduce the smell of burnt linings.*
- ◆ *Clean input shaft splines and (in the case of used clutch plates) the hub splines. Remove corrosion and apply only a very thin coating of grease for clutch plate splines - G 000 100- to the splines. Then move clutch plate backwards and forwards on input shaft until hub moves freely on shaft. Remove any excess grease.*
- ◆ *Clutch pressure plates have an anti-corrosion coating and are greased. With the exception of the friction surface for the clutch plate, the pressure plate must not be cleaned. Otherwise, the service life of the clutch will be considerably reduced.*
- ◆ *Pressure plate friction surface and clutch plate lining must make full contact with flywheel. Only then insert bolts.*
- ◆ *Check that dowel sleeves for centralising engine/gearbox are in the cylinder block; install if necessary.*
- ◆ *If the dowel sleeves are not fitted, this will lead to gear-change problems, clutch malfunction and in some cases gearbox noise (gears will make rattling noises).*

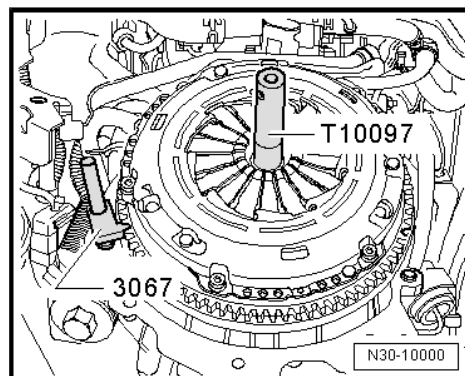


Installation position of clutch plate

- Marking "Getriebeseite" (gearbox side) faces towards gearbox

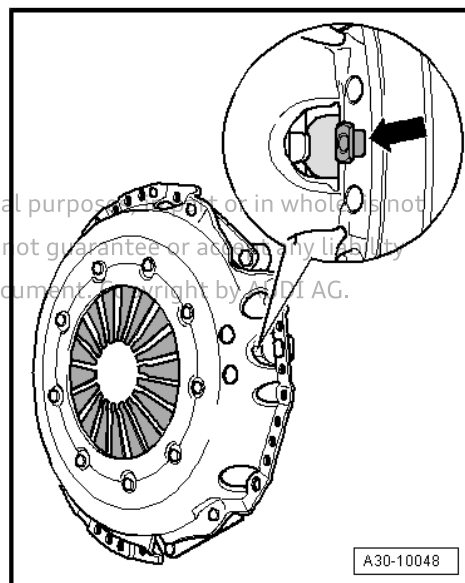


- Use counterhold tool - 3067- .
- Fit pressure plate onto dowel pins.
- Use centring mandrel - T10097- to centralise clutch plate.



To prevent the pressure plate from becoming distorted during installation (causes clutch grab when driving off), always adhere to the following procedure when installing the pressure plate:

- Make sure that the stop pin (position sensor) -arrow- is free to move.
- Screw in all 6 bolts evenly by hand until bolt heads make contact with pressure plate.
- Working clockwise, tighten all six bolts consecutively in steps of 90° (1/4 turn) until the housing makes contact with the fly-wheel.
- The stop pin -arrow- should then lift away from the pressure plate.
- Working clockwise, tighten all 6 bolts to final torque consecutively. Tightening torque ⇒ [Item 4 \(page 45\)](#)





8 Exploded view - LuK version clutch



Note

The dual-mass flywheel, pressure plate and clutch plate are matched together; components from another manufacturer must not be installed on the same vehicle.

1 - Dual-mass flywheel

- ☐ Removing and installing
⇒ Rep. gr. 13
- ☐ Ensure that dowel pins
fit tightly
- ☐ Contact surface for
clutch lining must be
free of grooves, oil and
grease
- ☐ Observe instructions for
removal ⇒ [page 53](#)

2 - Clutch plate

- ☐ Removing and installing
⇒ [page 53](#)
- ☐ Always renew SAC
pressure plate as well
- ☐ Installation position:
marking
"Getriebeseite" (gear-
box side) faces towards
gearbox
- ☐ For diameter of clutch
plate, refer to ⇒ Elec-
tronic parts catalogue

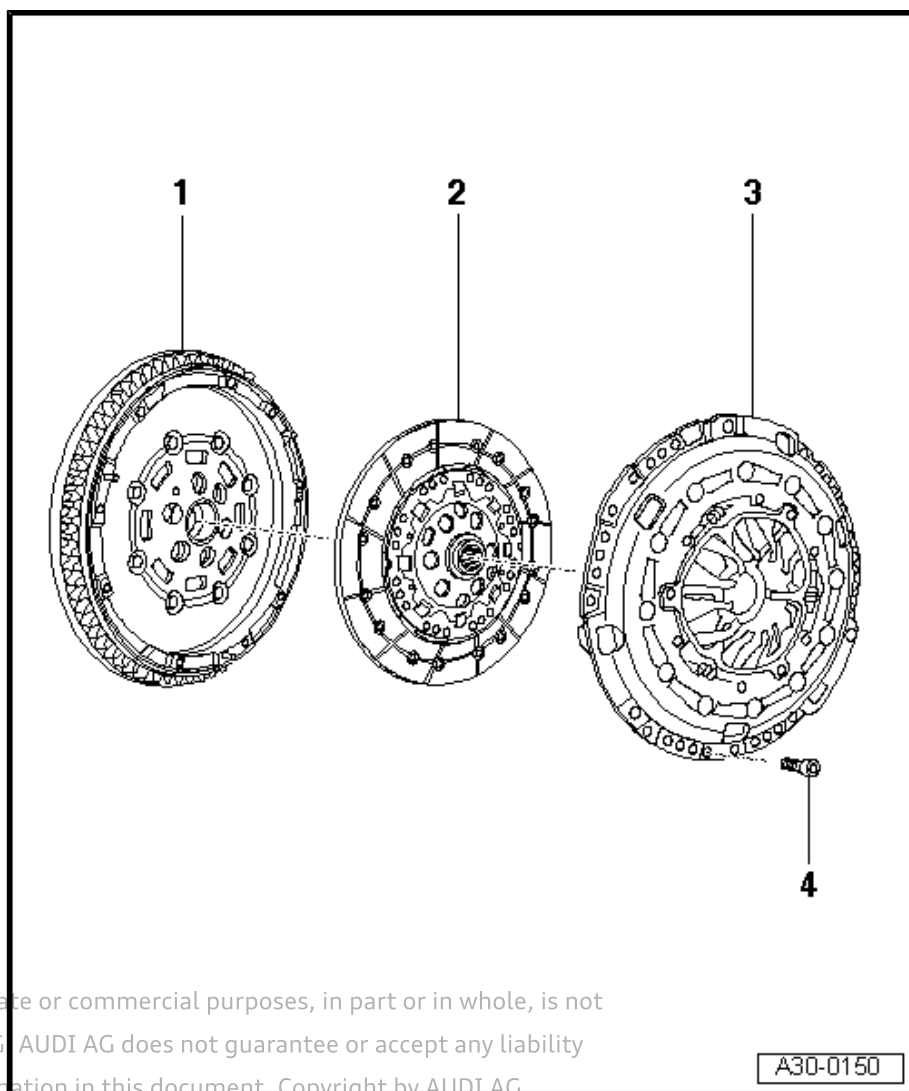
3 - SAC pressure plate

- ☐ "SAC" = self-adjusting
clutch
- ☐ Always renew clutch
plate as well
- ☐ Removing and installing
⇒ [page 53](#)
- ☐ Checking position of ad-
juster ring on new SAC
pressure plate
⇒ [page 55](#)

- ☐ Checking ends of diaphragm spring ⇒ [page 52](#)
- ☐ Checking spring connections and rivets ⇒ [page 52](#)
- ☐ Checking metal ring ⇒ [page 52](#)
- ☐ Contact surface for clutch lining must be free of grooves, oil and grease

4 - Bolt

- ☐ Loosen and tighten consecutively in steps of 90°
- ☐ M6: 13 Nm
- ☐ M7: 20 Nm



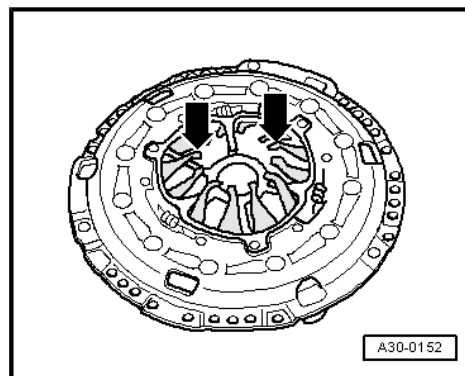
A30-0150

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Checking ends of diaphragm spring

- Wear up to half the thickness of the diaphragm spring -arrows- is permissible.



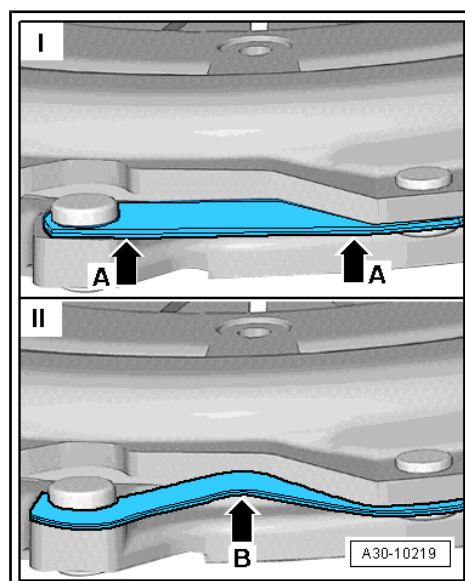
Checking springs and riveting

I - Springs OK

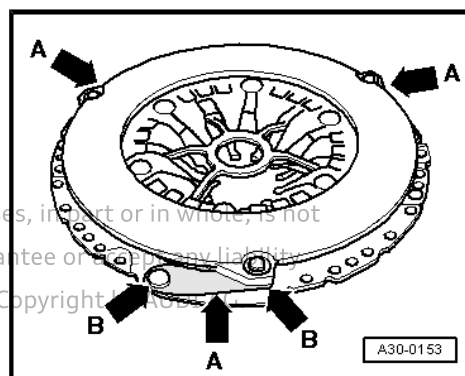
- Slight kinking on the outside -arrows A- is normal on production parts.

II - Springs damaged

- Renew pressure plate if springs are broken or badly bent -arrow B-.

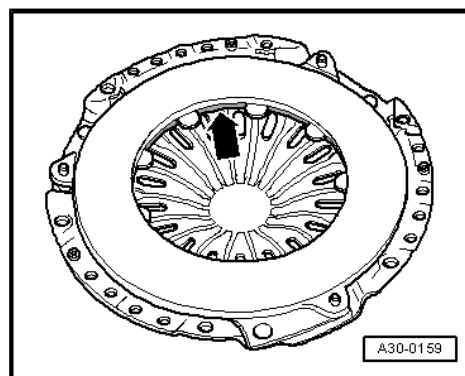


- Check that rivets -arrows B- are secure at all springs -arrows A-.
- Renew pressure plate if rivets -arrows B- are loose.



Checking metal ring

- Check metal ring -arrow- in pressure plate for damage.
- Renew pressure plate if metal ring is broken.





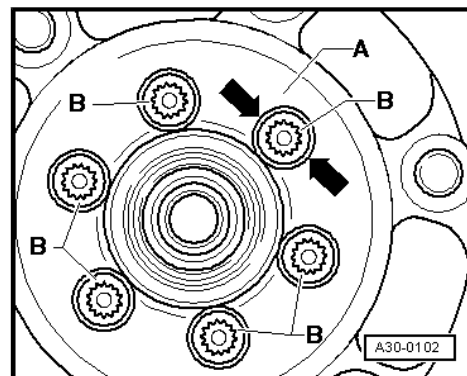
Instructions for removing dual-mass flywheel



Note

Do not use an impact wrench or pneumatic wrench to remove bolts -B-: this would severely damage the dual-mass flywheel. The bolts may only be removed by hand using conventional tools.

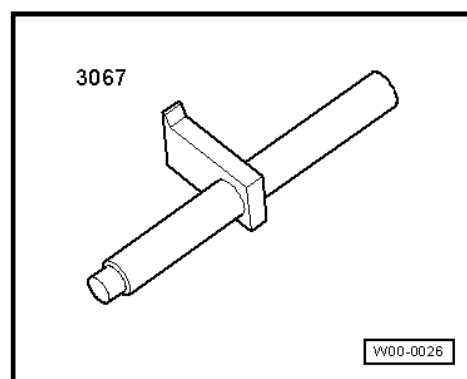
- Rotate dual-mass flywheel -A- so that the bolts are aligned centrally behind the holes -arrows-.
- When removing the bolts, make sure that none of the bolt heads contacts the dual-mass flywheel, as this would damage the flywheel when the bolts are unscrewed further.



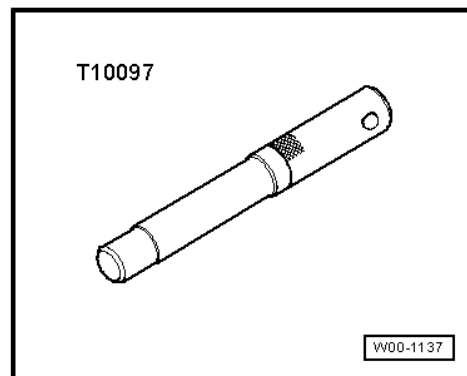
8.1 Removing and installing clutch (LuK version)

Special tools and workshop equipment required

- ◆ Counterhold tool - 3067-



- ◆ Centring mandrel - T10097-



- ◆ Grease for clutch plate splines - G 000 100-



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Removing

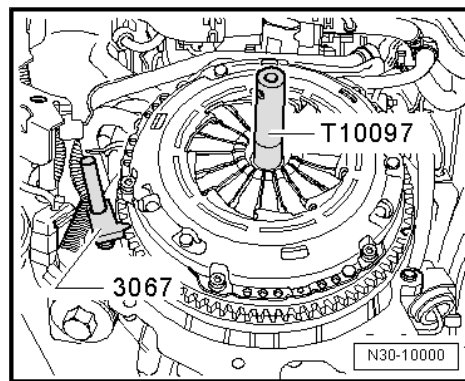
- Gearbox removed
- Apply counter-hold tool - 3067- in order to loosen bolts.

To prevent the pressure plate from becoming distorted during removal (causes clutch grab when driving off), always adhere to the following procedure when unbolting the pressure plate:

- Working clockwise, loosen all six bolts consecutively in steps of 90° (1/4 turn) until pressure plate is released.
- Take off pressure plate and clutch plate.

Installing

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



Note

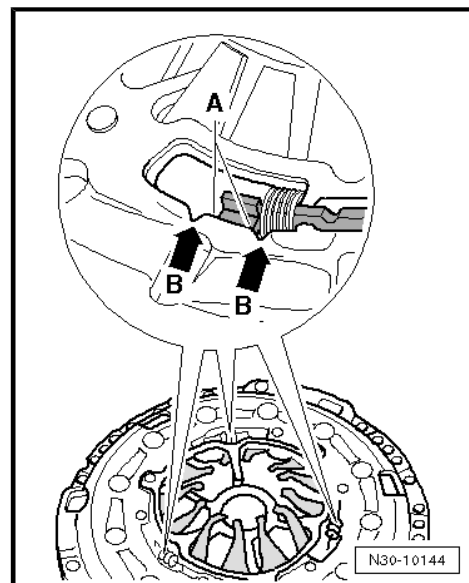
- ◆ *The dual-mass flywheel, pressure plate and clutch plate are matched together; components from another manufacturer must not be installed on the same vehicle.*
- ◆ *Always renew clutch plate and pressure plate together and select the correct parts according to engine code ⇒ Electronic parts catalogue .*
- ◆ *Checking position of adjuster ring on new pressure plate
⇒ [page 55](#)*
- ◆ *If the clutch has burnt out, thoroughly clean the clutch housing, flywheel and parts of the engine facing the gearbox in order to reduce the smell of burnt linings.*
- ◆ *Clean input shaft splines and (in the case of used clutch plates) the hub splines. Remove corrosion and apply only a very thin coating of grease for clutch plate splines - G 000 100- to the splines. Then move clutch plate backwards and forwards on input shaft until hub moves freely on shaft. Remove any excess grease.*
- ◆ *Clutch pressure plates have an anti-corrosion coating and are greased. With the exception of the friction surface for the clutch plate, the pressure plate must not be cleaned. Otherwise, the service life of the clutch will be considerably reduced.*
- ◆ *Pressure plate friction surface and clutch plate lining must make full contact with flywheel. Only then insert bolts.*
- ◆ *Check that dowel sleeves for centralising engine/gearbox are in the cylinder block; install if necessary.*
- ◆ *If the dowel sleeves are not fitted, this will lead to gear-change problems; clutch malfunction and in some cases gearbox noise (gears will make rattling noises).*

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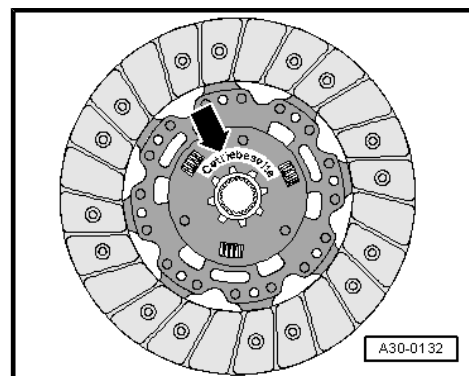


Checking position of adjustment mechanism (new SAC pressure plates only)

- The two edges -A- of the adjuster ring should be located between the two notches -arrows B-.
- If the adjuster ring is in a different position on a new pressure plate, the pressure plate and clutch plate must not be installed.
- The position of the adjuster ring can be outside the notches on used clutches.



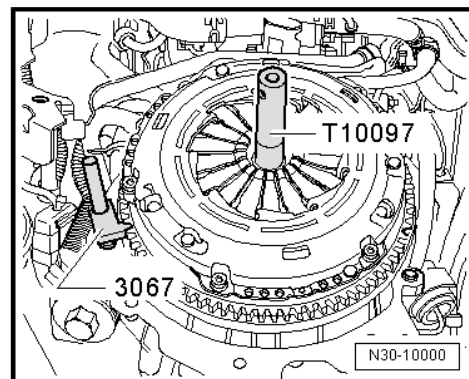
- Note correct installation position of clutch plate:
- The marking “Getriebeseite” (gearbox side) faces towards the gearbox



- Use counterhold tool - 3067- .
- Fit pressure plate onto dowel pins.
- Use centring mandrel - T10097- to centralise clutch plate.

To prevent the pressure plate from becoming distorted during installation (causes clutch grab when driving off), always adhere to the following procedure when installing the pressure plate:

- Screw in all 6 bolts evenly by hand until bolt heads make contact with pressure plate.
- Working clockwise, tighten all six bolts consecutively in steps of 90° (1/4 turn) until the housing makes contact with the fly-wheel.
- Working clockwise, tighten all 6 bolts to final torque consecutively. Tightening torque ⇒ [Item 4 \(page 51\)](#)



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34 – Controls, housing

1 Overview - selector mechanism

- ◆ ⇒ [“1.1 Exploded view - gear knob and gear lever boot”, page 58](#)
- ◆ ⇒ [“1.2 Removing and installing gear knob with gear lever boot”, page 58](#)
- ◆ ⇒ [“1.3 Separating gear lever boot from gear knob”, page 59](#)
- ◆ ⇒ [“1.4 Exploded view - gear lever and selector housing on vehicles up to model year 2007”, page 60](#)
- ◆ ⇒ [“1.5 Exploded view - selector mechanism, vehicles from model year 2008 onwards”, page 62](#)
- ◆ ⇒ [“1.6 Removing and installing selector mechanism”, page 63](#)
- ◆ ⇒ [“1.7 Exploded view - gear selector cable and gate selector cable, vehicles up to model year 2007”, page 67](#)
- ◆ ⇒ [“1.8 Exploded view - gear selector cable and gate selector cable, vehicles from model year 2008 onwards”, page 71](#)
- ◆ ⇒ [“1.9 Dismantling and assembling selector mechanism on vehicles from model year 2008 onwards”, page 76](#)
- ◆ ⇒ [“1.10 Removing and installing gear selector cable and gate selector cable”, page 80](#)
- ◆ ⇒ [“1.11 Adjusting selector mechanism”, page 81](#)
- ◆ ⇒ [“1.12 Checking gear lever setting”, page 83](#)

-Arrow A- gear selection movement

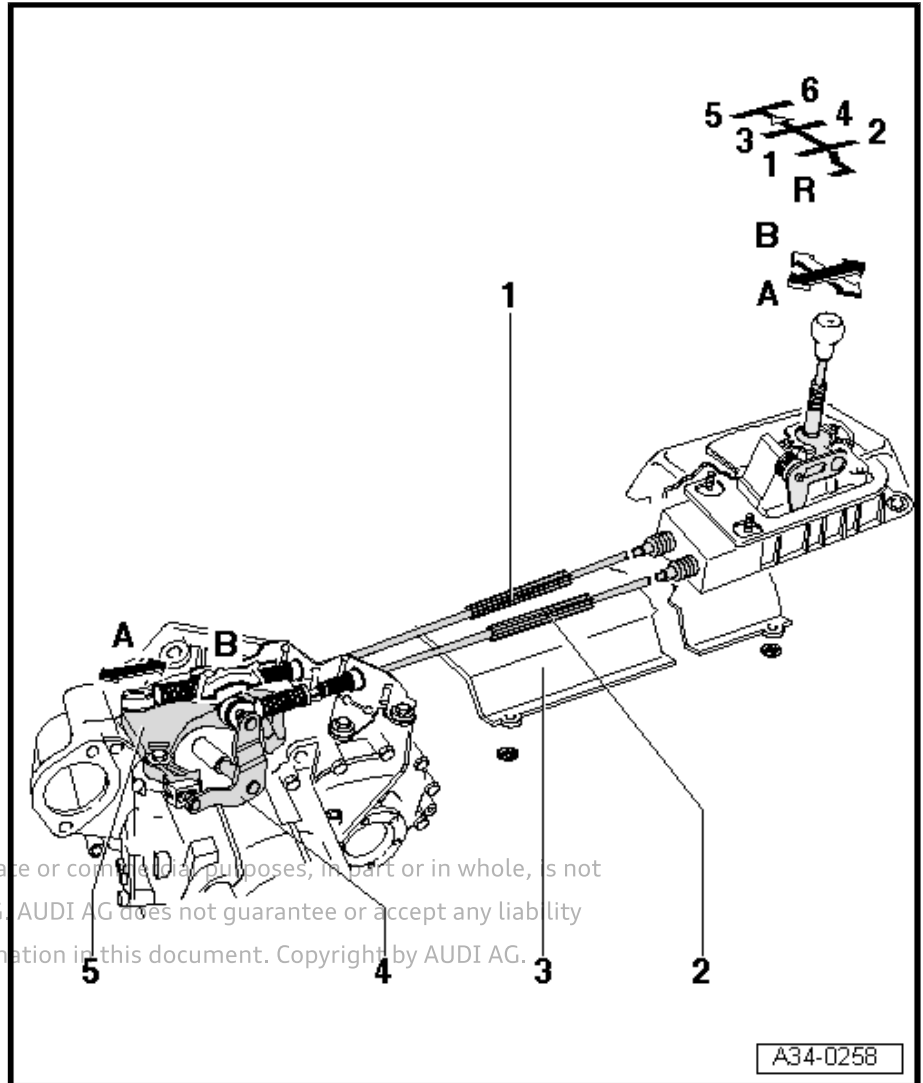
-Arrow B- gate selection movement



- 1 - Gear selector cable
- 2 - Gate selector cable
- 3 - Heat shield
 - ☐ Detach before removing selector mechanism
- 4 - Gate relay lever
- 5 - Gearbox selector lever



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1.1 Exploded view - gear knob and gear lever boot

1 - Gear lever

2 - Noise insulation cover (lower)

3 - Noise insulation cover (upper)

4 - Gear knob

- ❑ Remove and install together with gear lever boot ⇒ [page 58](#)

5 - Gear lever boot

- ❑ Remove and install together with gear knob ⇒ [page 58](#)

6 - Cover for centre console

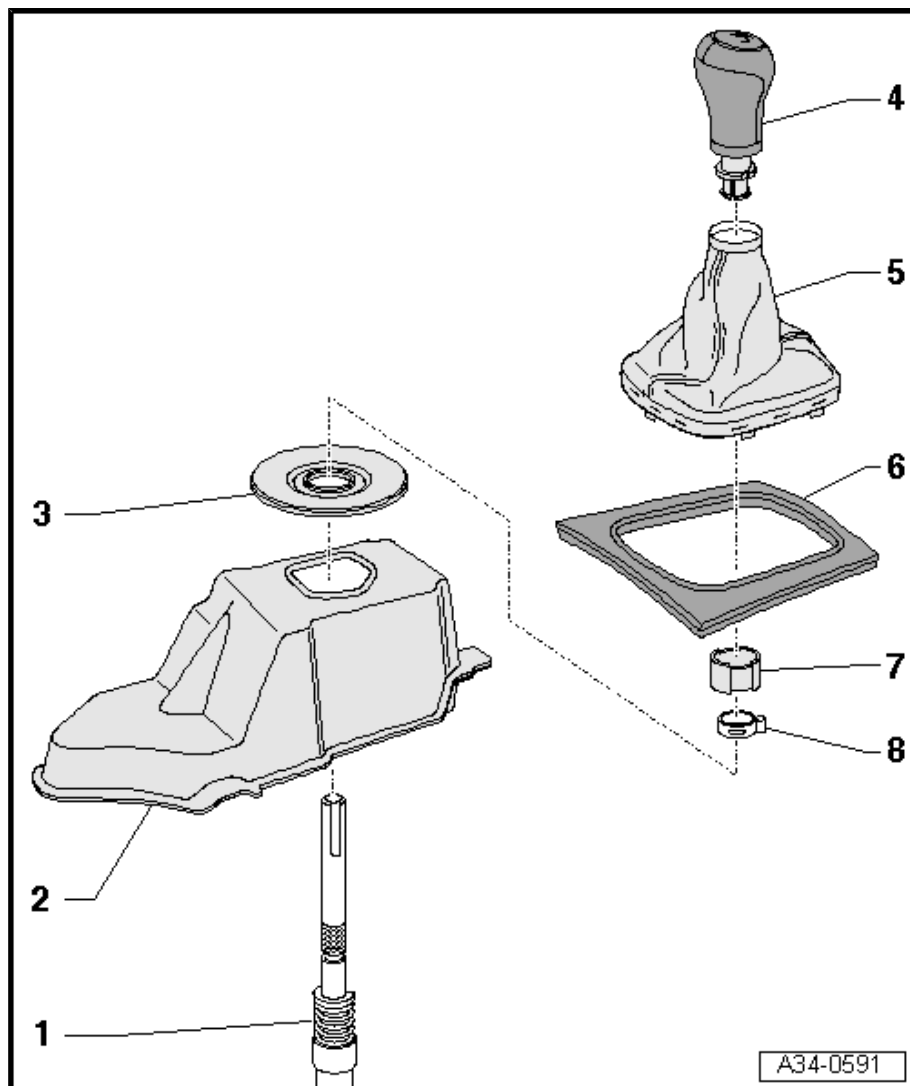
- ❑ Remove and install together with gear knob and gear lever boot ⇒ [page 58](#)

7 - Connecting piece

- ❑ Connects gear lever boot and gear knob

8 - Clip

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



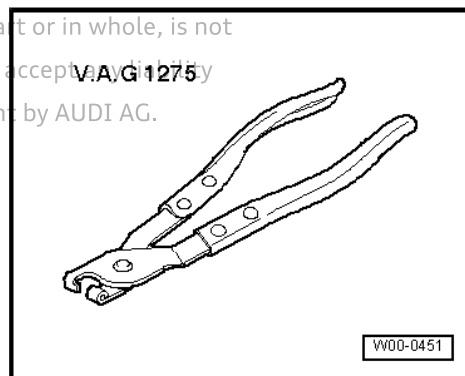
1.2

Removing and installing gear knob with gear lever boot

Special tools and workshop equipment required

- ◆ Hose clip pliers - V.A.G 1275-

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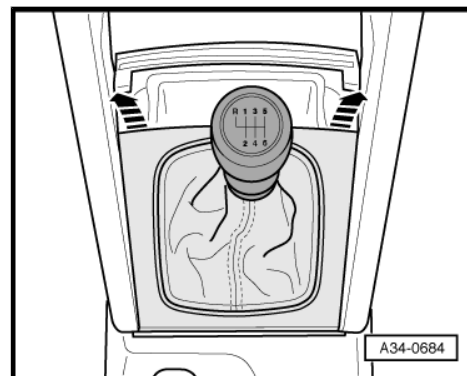
Removing



Note

The gear knob is removed together with the gear lever boot and the cover for the centre console.

- Open ashtray (if fitted).
- Carefully pry gear lever boot off centre console -arrows-.
- Pull boot up and over gear knob.

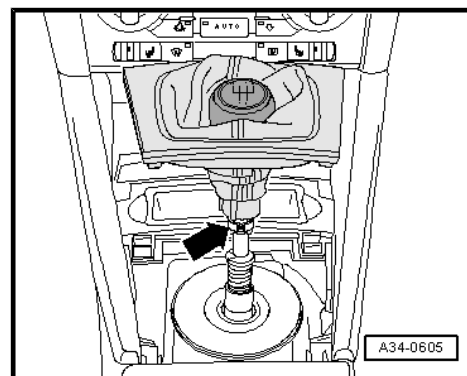


- Open clip -arrow- and pull off gear knob together with boot.

Installing

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

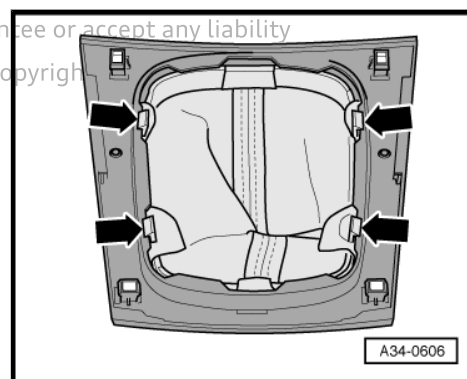
- Push gear knob together with boot onto gear lever as far as stop.
- Secure gear knob to gear lever with clip -arrow-, using hose clip pliers - V.A.G 1275- .



1.3 Separating gear lever boot from gear knob

Disconnecting

- Remove gear knob together with gear lever boot → [page 58](#).
- Unclip frame of gear lever boot from centre console cover -arrows-.



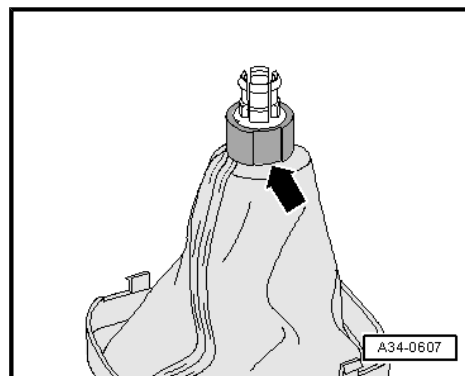


- Score into the connecting piece with a sharp knife at the point marked -arrow-.
- Then bend out the connecting piece, open it apart and remove.

Assembling

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

- Fit gear lever boot on gear knob, using a new connecting piece -arrow-.
- Install gear knob together with boot ⇒ [page 58](#) .



1.4 Exploded view - gear lever and selector housing on vehicles up to model year 2007

**Note**

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1 - Floor plate

- ☐ Bend tabs open to remove
- ☐ Renew

2 - Gasket

- ☐ Renew

3 - Gear lever**4 - O-ring**

- ☐ Renew if damaged

5 - Retaining clip**6 - Gate selector cable**

- ☐ Removing and installing ⇒ [page 80](#)
- ☐ Adjusting ⇒ [page 81](#)

7 - Gear selector cable

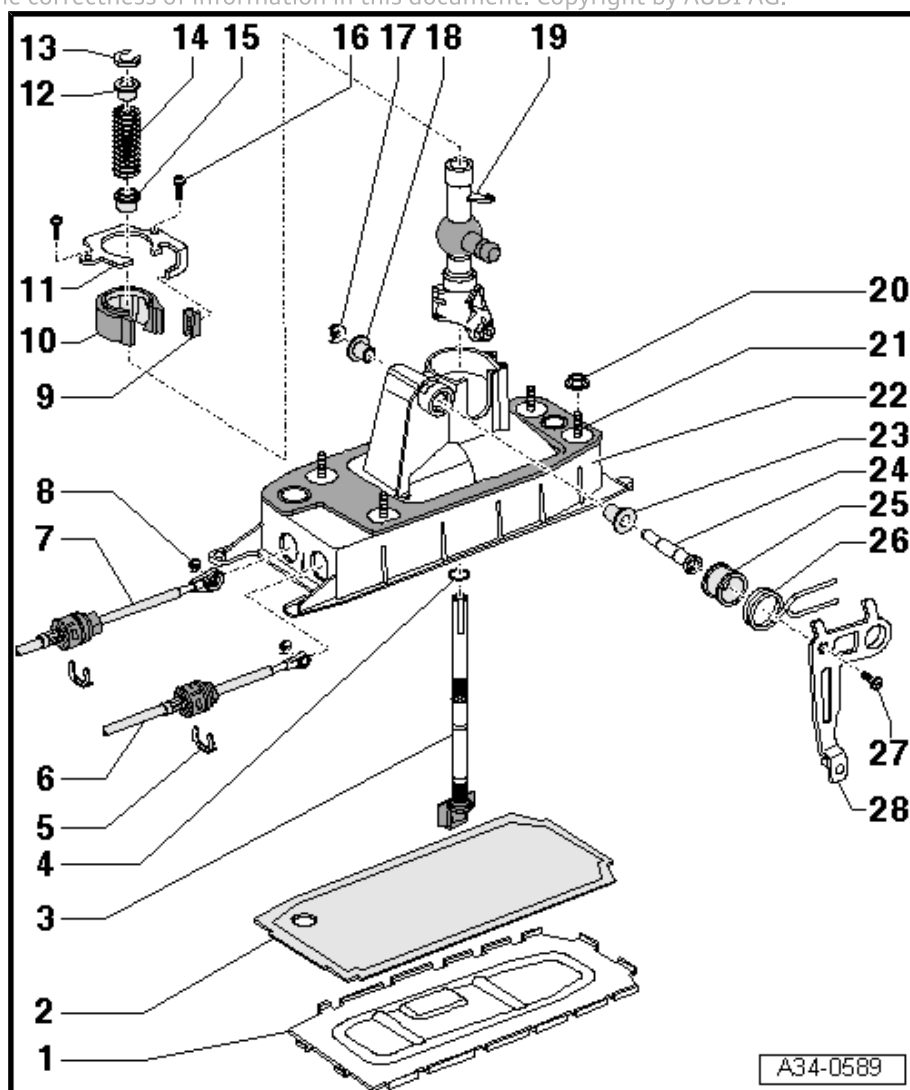
- ☐ Removing and installing ⇒ [page 80](#)
- ☐ Adjusting ⇒ [page 81](#)

8 - Securing clip**9 - Guide**

- ☐ For spring ⇒ [Item 26 \(page 61\)](#)

10 - Ball socket with damper**11 - Cover****12 - Bush****13 - Securing clip**

- ☐ Removing and installing ⇒ [page 61](#)





14 - Compression spring

15 - Bush

16 - Bolt

- ☐ 6 Nm

17 - Securing clip

18 - Bearing bush

19 - Gear lever guide

20 - Nut

- ☐ 10 Nm

21 - Gasket

- ☐ Between selector housing and floor
- ☐ Self-adhesive

22 - Selector housing

23 - Bearing bush

24 - Pivot pin

25 - Guide bush

- ☐ Press onto selector housing

26 - Compression spring

- ☐ Installing ⇒ [page 62](#)

27 - Bolt

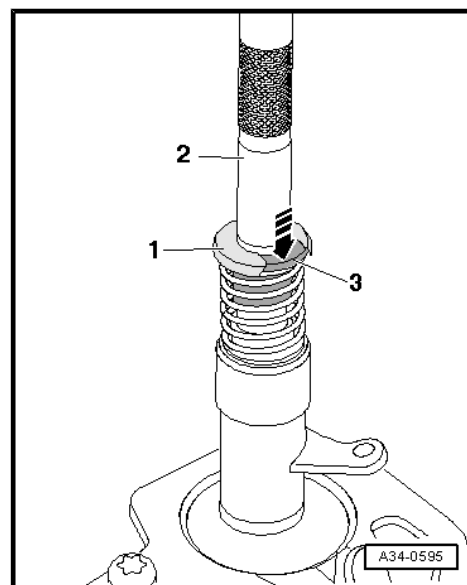
- ☐ 5 Nm

28 - Gate selector lever

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Removing and installing securing clip

- Hold gear lever -2- in position.
- Press spacer bush -3- in direction indicated (arrow).
- Take off securing clip -1-.

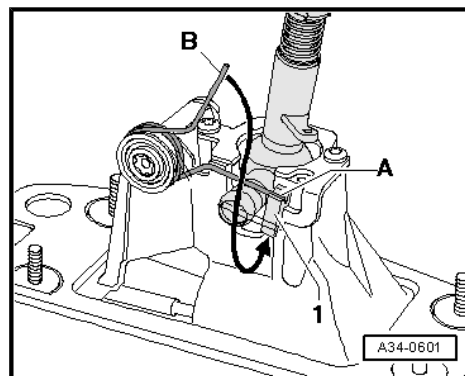


**Installing spring**

- Insert arm -A- of spring in guide -1- from above.
- Pull down arm -B- of spring and insert it in the guide from below.

**Note**

The gate selector lever is removed to give a better illustration.



1.5 Exploded view - selector mechanism, vehicles from model year 2008 onwards

**Note**

Lubricate bearings and moving surfaces with grease - G 000 450 02-.

1 - Floor plate

- ☐ Bend tabs open to remove
- ☐ Always renew

2 - Gasket

- ☐ Renew

3 - Gear lever

- ☐ Can be removed and installed without removing gear lever guide
⇒ [Item 15 \(page 63\)](#)

4 - Damping washer

- ☐ Push onto gear lever as far as stop -arrow-

5 - Retaining clip

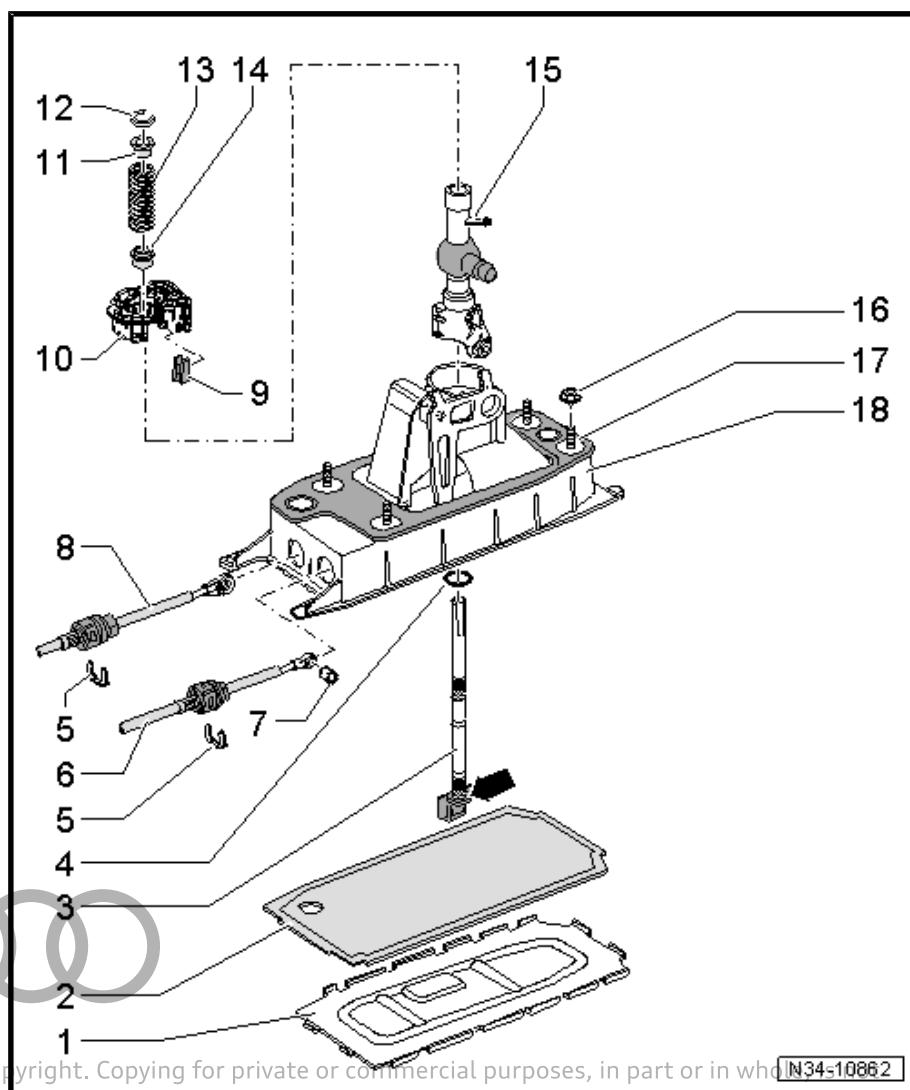
- ☐ Renew

6 - Gate selector cable

- ☐ Lever off gate selector lever
- ☐ Press onto gate selector lever inside selector mechanism
- ☐ Installation position
⇒ [page 56](#)

7 - Bush**8 - Gear selector cable**

- ☐ Lever off gear lever guide
- ☐ Press onto gear lever guide inside selector mechanism
- ☐ Installation position
⇒ [page 56](#)



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9 - Damper

10 - Bearing shell

- ☐ Will be damaged during removal
- ☐ Renew

11 - Bush

12 - Securing clip

- ☐ Removing and installing ⇒ [page 61](#)

13 - Compression spring

14 - Bush

15 - Gear lever guide

16 - Nut

- ☐ 4x
- M6 - 8 Nm
- M8 - 25 Nm

17 - Gasket

- ☐ Between selector housing and floor
- ☐ Self-adhesive
- ☐ Glue onto selector housing

18 - Selector housing

- ☐ With spring and gate selector lever
- ☐ Spring and gate selector lever cannot be removed

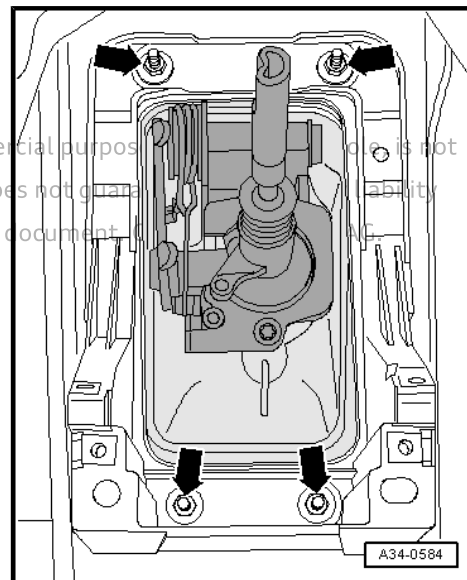
1.6 Removing and installing selector mechanism

Removing

- Remove gear knob together with gear lever boot ⇒ [page 58](#) .
- Remove ashtray or storage compartment in front centre console ⇒ Rep. gr. 68 .
- Lift out noise insulation above selector mechanism .
- Remove nuts -arrows-

Vehicles with TFSI engine (with timing chain), TDI engine or V6 engine:

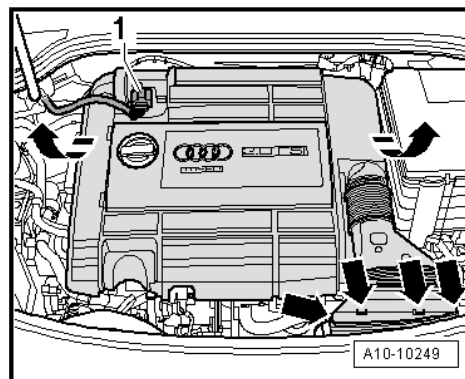
- Remove air cleaner housing completely ⇒ Rep. gr. 23 or ⇒ Rep. gr. 24 .





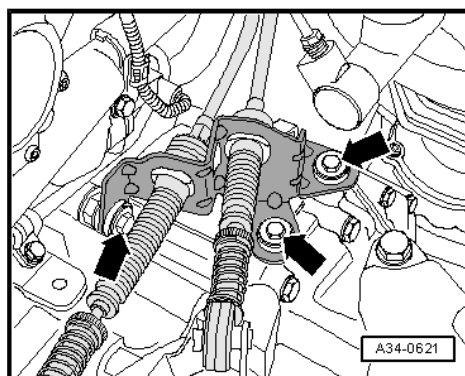
Vehicles with TFSI engine (with toothed belt):

- Completely remove engine cover panel and air cleaner (top section) ⇒ Rep. gr. 24 .



Vehicles with 4-cylinder engine:

- Remove two bolts and one flange nut -arrows- and detach cable support bracket from gearbox.

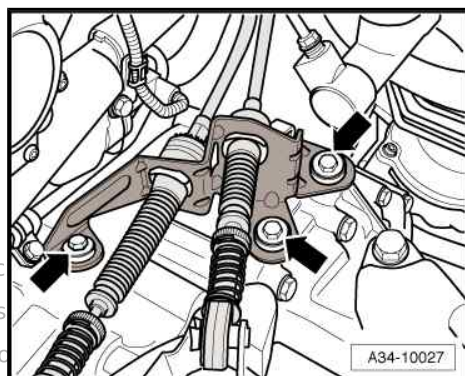


Vehicles with V6 engine:

- Remove three bolts -arrows- and detach cable support bracket from gearbox.



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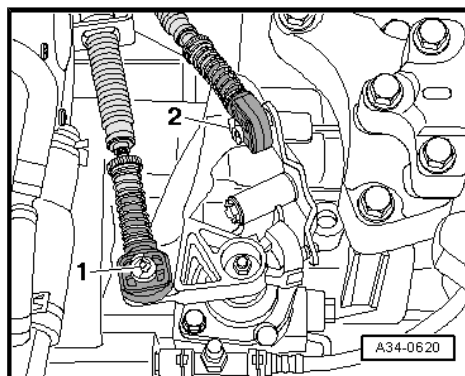


All vehicles (continued):

- Detach securing clip -1- for gear selector cable from gearbox selector lever and pull cable off pin.

Metal gate relay lever:

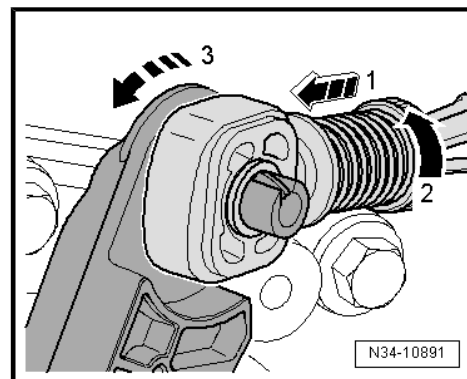
- Detach securing clip -2- for gate selector cable from gate relay lever and pull cable off pin.





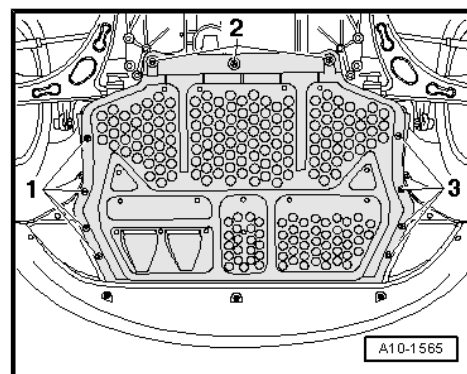
Plastic gate relay lever:

- To prevent damage to gate selector cable, cable end-piece must be detached from gate selector cable before removing relay lever.
- Pull locking mechanism forwards in direction of -arrow 1- onto stop and then turn to left in direction of -arrow 2- to lock.
- Then press gate relay lever forwards (in direction of -arrow 3-).
- Do not detach cable end-piece from gate relay lever until gate relay lever has been removed ⇒ [page 75](#).



All vehicles (continued):

- Remove noise insulation (centre) by releasing fasteners -1 ... 3-.
- Detach exhaust system at clamp.



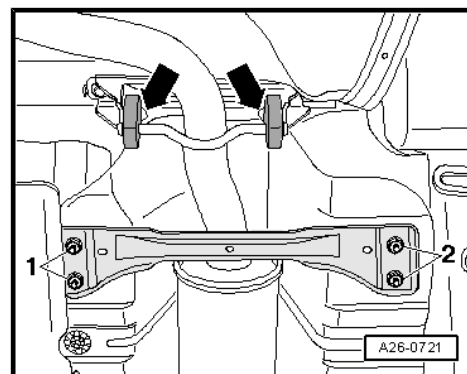
- Remove rear cross member on underbody -nuts 1 and 2-.



Note

A second mechanic will be required for detaching rear section of exhaust system.

- Detach exhaust system at rubber mountings -arrows-.
- Detach rear silencer at rubber mountings and remove rear section of exhaust system.

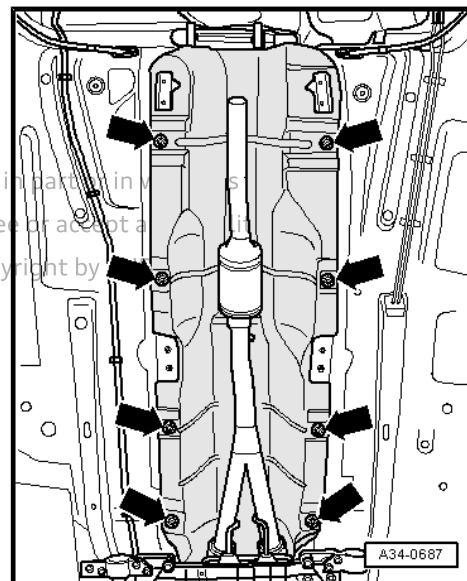


Vehicles with V6 engine:

- Remove front exhaust pipe ⇒ Rep. gr. 26.

All vehicles (continued):

- Remove propshaft ⇒ Rear final drive 02D, 0AV, 0BR and 0BY; Rep. gr. 39.
- Remove heat shield -arrows-.
- Swing selector housing down and remove with selector cables.





Installing

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

- Install selector mechanism and tighten nuts -arrows- ➔ [Item 20 \(page 61\)](#) .

- Route cables -1- from selector mechanism -2- to gearbox as follows:
- The cables must run parallel and must not be crossed.
- The cables must be routed in the slot provided in heat shield -3-.

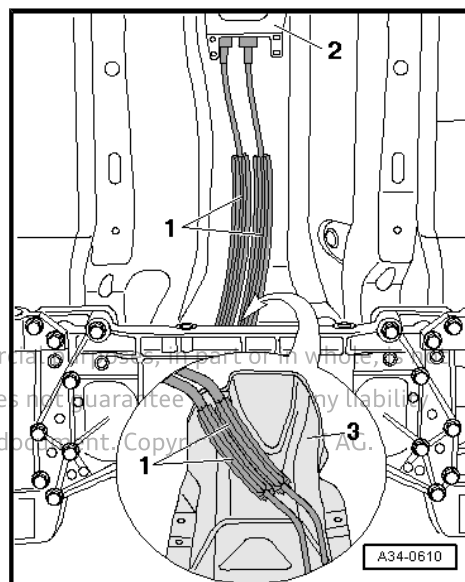
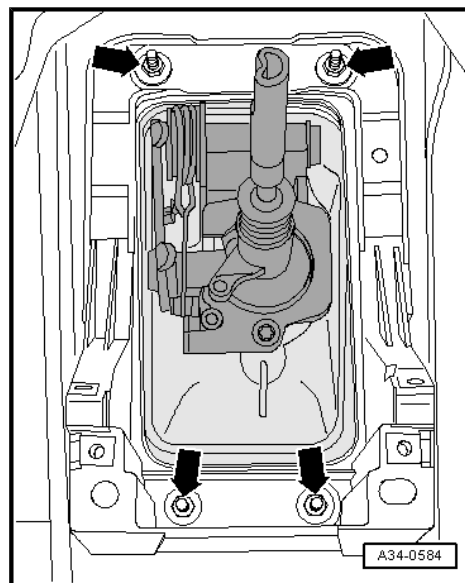


Note

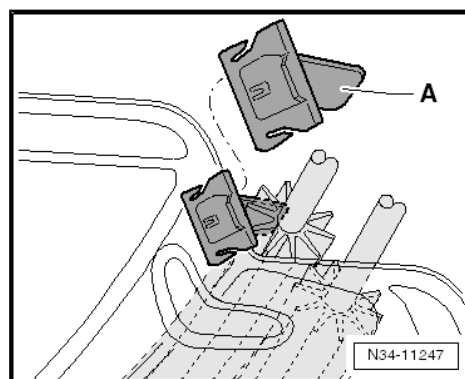


The enlargement shows the heat shield from above.

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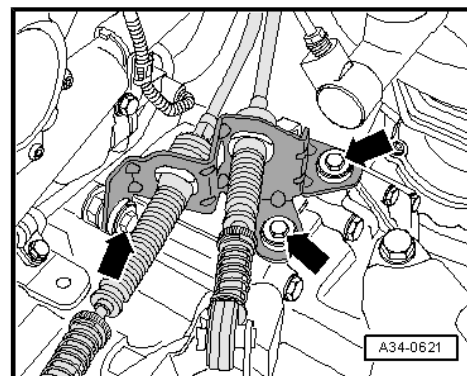


The cables and heat shield are held in the correct positions by clip -A-.





- Secure cable support bracket to gearbox -arrows-
⇒ [Item 6 \(page 68\)](#) .



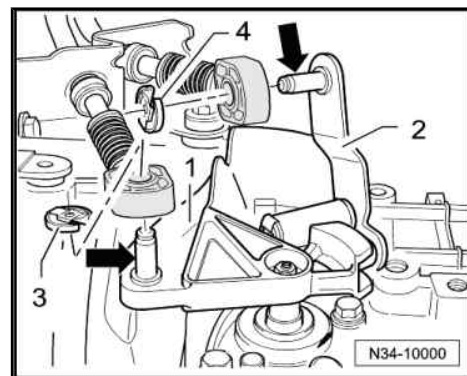
- Spread a small amount of grease - G 000 450 02- onto pins -arrows- of gearbox selector lever -1- and, if necessary, gate relay lever -2-.
- If they are removed, always renew securing clip -3- and, on vehicles with metal gate relay lever, securing clip -4-.
- Fit gear selector cable and secure with securing clip -3-.

Metal gate relay lever:

- Fit gate selector cable and secure with securing clip -4-.

Plastic gate relay lever

- Insert gate selector cable in cable end-piece.



Both versions (continued):

- Adjust selector mechanism ⇒ [page 81](#) .
- Install propshaft ⇒ Rear final drive 02D, 0AV, 0BR and 0BY; Rep. gr. 39 .
- Install exhaust system and align it so it is stress-free ⇒ Rep. gr. 26 .
- Install air cleaner housing ⇒ Rep. gr. 23 or ⇒ Rep. gr. 24 .
- Install ashtray in front section of centre console ⇒ Rep. gr. 68 .
- Install gear knob together with boot ⇒ [page 58](#) .

1.7 Exploded view - gear selector cable and gate selector cable, vehicles up to model year 2007



Note

Lubricate all bearings and moving surfaces with grease - G 000 450 02- .



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1 - Gear selector cable

- ☐ Removing and installing
⇒ [page 80](#)
- ☐ Adjusting ⇒ [page 81](#)

2 - Gate selector cable

- ☐ Removing and installing
⇒ [page 80](#)
- ☐ Adjusting ⇒ [page 81](#)

3 - Retaining clips

- ☐ Renew

4 - Selector housing

5 - Retaining clips

- ☐ Renew

6 - Bolt or nut

- ☐ 20 Nm
- ☐ 3 bolts or 2 bolts and one nut

7 - Cable support bracket

8 - Grommet

9 - Spacer

10 - Cable end-piece

- ☐ Secures gate selector cable to gate relay lever
- ☐ Release to adjust selector mechanism
⇒ [page 82](#)

11 - Cable end-piece

- ☐ Secures gear selector cable to gearbox selector lever
- ☐ Release to adjust selector mechanism ⇒ [page 82](#)

12 - Securing clip

- ☐ Renew

13 - Securing clip

- ☐ Removing from gate relay lever ⇒ [page 69](#)
- ☐ Renew

14 - Bush

15 - Gate relay lever

- ☐ Installation position ⇒ [page 70](#)
- ☐ After installing, adjust selector mechanism ⇒ [page 81](#)

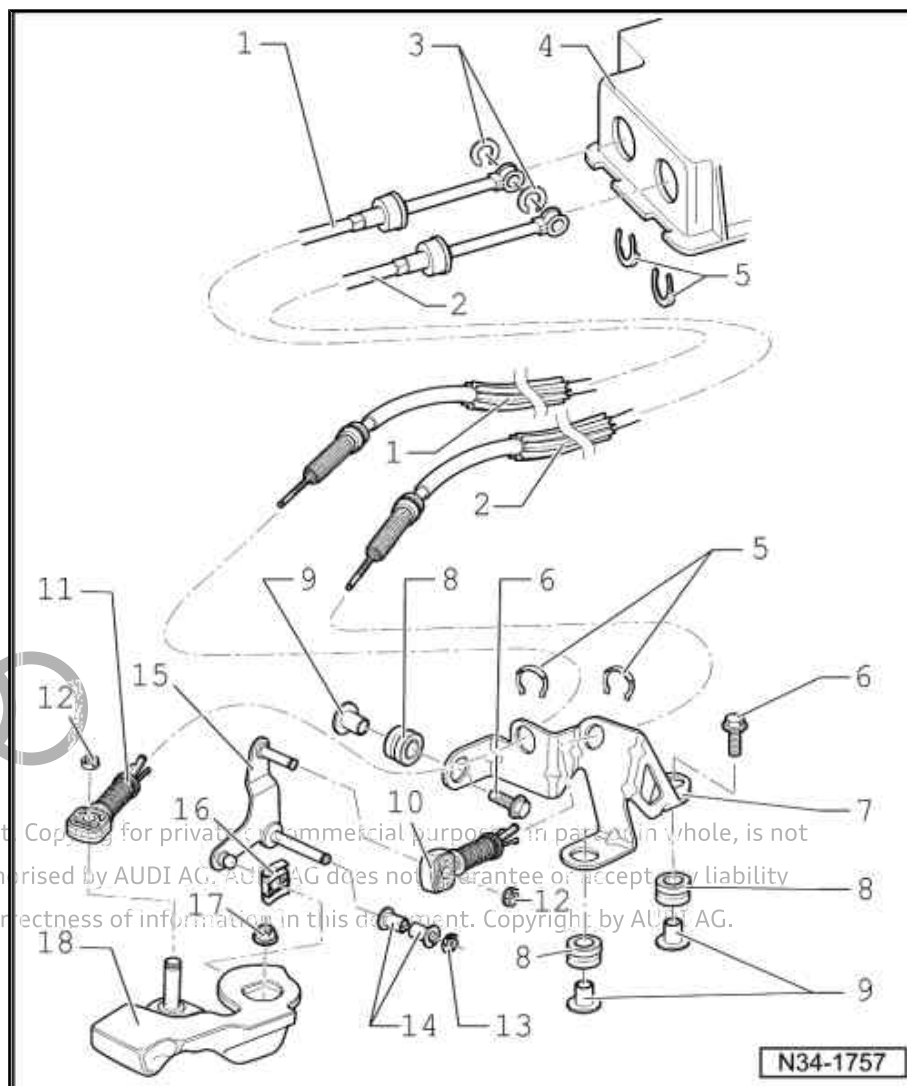
16 - Slide block

17 - Nut

- ☐ Self-locking
- ☐ Renew
- ☐ 23 Nm

18 - Gearbox selector lever

- ☐ Installing ⇒ [page 69](#)

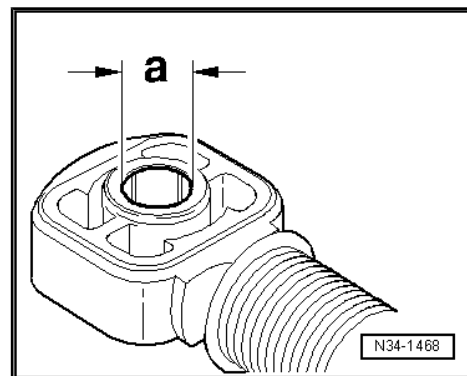




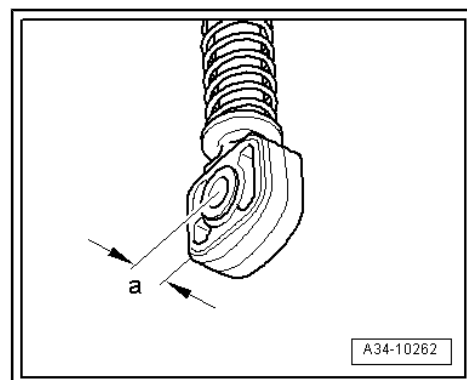
Identification of cable end-pieces

The holes in the cable end-pieces have different diameters.

Cable end-piece for:	Dimension "a"
Gear selector cable to gearbox selector lever	10 mm
Gate selector cable to gate relay lever	8 mm

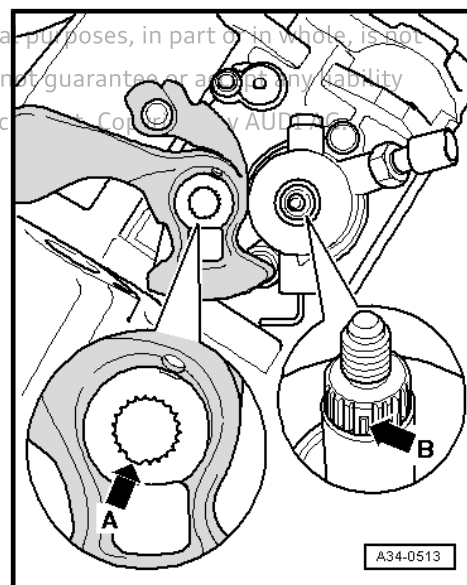


Cable end-piece for:	Dimension "a"
Gear selector cable to gearbox selector lever	20 mm
Gate selector cable to gate relay lever	18.5 mm



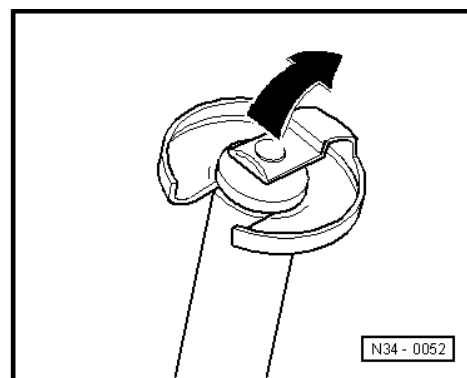
Installing gearbox selector lever

- When installing gearbox selector lever, make sure that the gap in the splines -arrow A- aligns with the wider spline -arrow B- on the selector shaft.



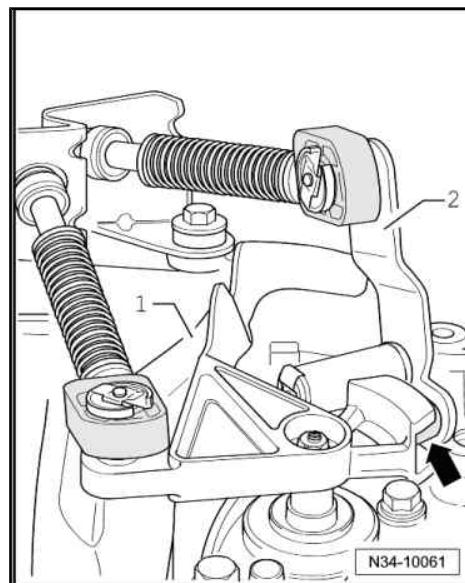
Removing securing clip from gate relay lever

- Pull up clip -arrow- and detach securing clip.

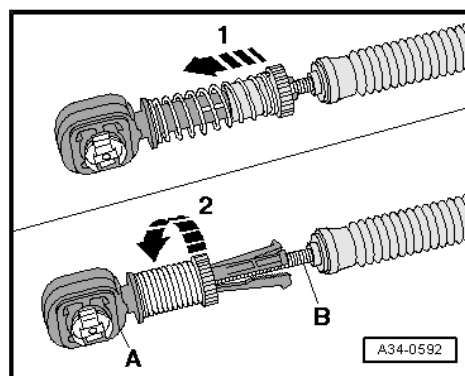


**Installation position: gearbox selector lever/gate relay lever**

- 1 - Gearbox selector lever
- 2 - Gate relay lever locates in guide rail of gearbox selector lever via slide block -arrow-.
- Coat guide rail and slide block -arrow- with grease - G 000 450 02- .

**Detaching cable end-pieces from gear selector cable and gate selector cable**

- Pull locking device forwards onto stop -arrow 1- and lock by turning anti-clockwise -arrow 2-.
- Take cable -B- out of cable end-piece -A-.

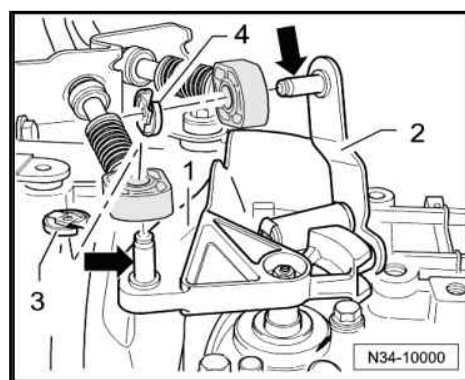
**Detaching and securing gear selector cable and gate selector cable****Detaching**

- Detach securing clip for gear selector cable -3- from gearbox selector lever -1- and pull cable off pin.
- Detach securing clip for gate selector cable -4- from gate relay lever -2- and pull cable off pin.

Securing**Note**

- ◆ *Renew securing clips.*
- ◆ *Apply a small quantity of grease - G 000 450 02- to the pins -arrows-.*

- Push gear selector cable onto gearbox selector lever -1- and secure with securing clip -3-.
- Push gate selector cable onto gate relay lever -2- and secure with securing clip -4-.





1.8 Exploded view - gear selector cable and gate selector cable, vehicles from model year 2008 onwards



Note

Lubricate all bearings and moving surfaces with grease - G 000 450 02-.

1 - Gearbox

2 - Clip

- ☐ Not fitted on all versions
- ☐ For gate relay lever from 08.2008 onwards
- ☐ Detaching and fitting
⇒ [page 75](#)

3 - Gearbox selector lever

- ☐ Fitting ⇒ [page 73](#)
- ☐ Installation position
⇒ [page 73](#)
- ☐ After installing, adjust selector mechanism
⇒ [page 81](#)

4 - Cable end-piece

- ☐ Secures gear selector cable to gearbox selector lever
- ☐ Allocation ⇒ [page 72](#)
- ☐ Detaching from gear selector cable
⇒ [page 73](#)

5 - Securing clip

- ☐ Removing ⇒ [page 74](#)
- ☐ Renew

6 - Nut

- ☐ 23 Nm
- ☐ Self-locking
- ☐ Renew

7 - Retaining clip

- ☐ Renew

8 - Gear selector cable

- ☐ Detaching and securing at gearbox selector lever ⇒ [page 74](#)
- ☐ Removing and installing ⇒ [page 80](#)
- ☐ Adjusting ⇒ [page 81](#)

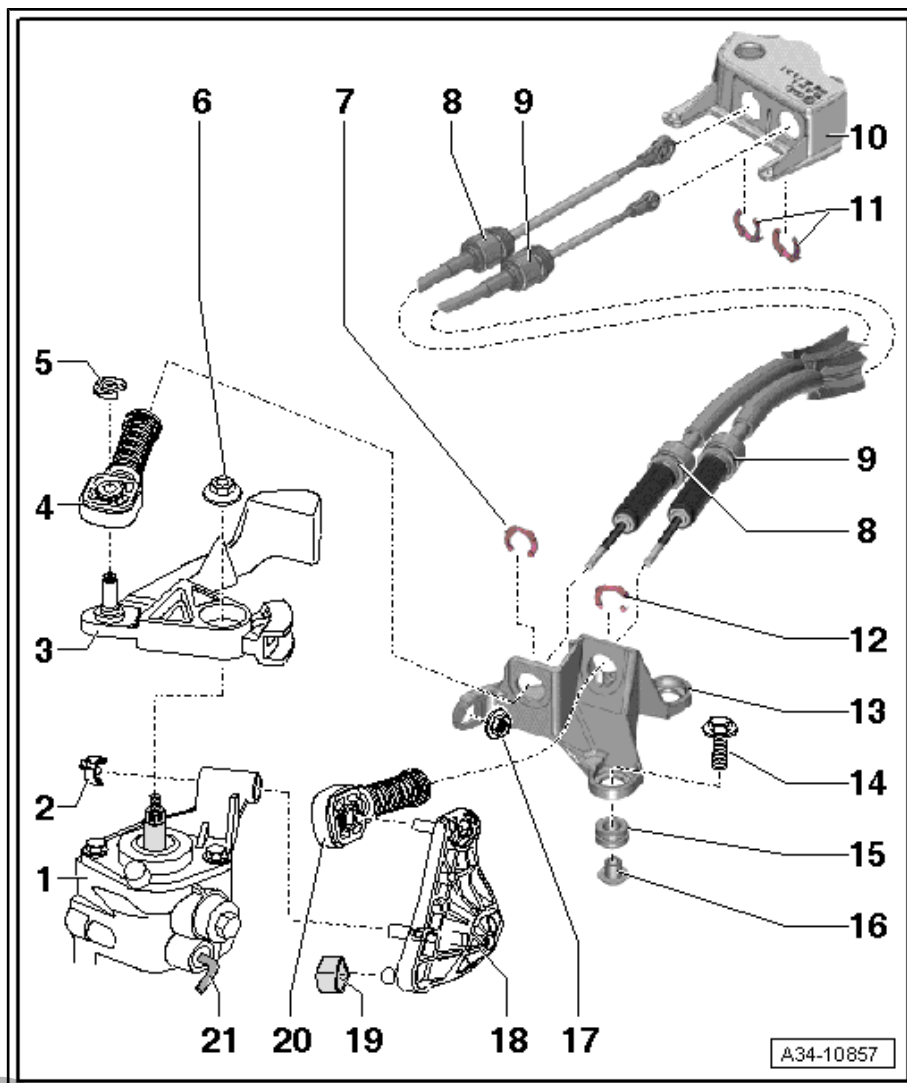
9 - Gate selector cable

- ☐ Removing and installing ⇒ [page 80](#)
- ☐ Adjusting ⇒ [page 81](#)

10 - Selector housing

11 - Retaining clips

- ☐ Renew



**12 - Retaining clip**

- ☐ Renew

13 - Cable support bracket

- ☐ Can be made of plastic or metal

14 - Bolt

- ☐ 20 Nm
- ☐ 2x on vehicles with 4-cylinder engine
- ☐ 3x on vehicles with 6-cylinder engine

15 - Grommet**16 - Bush****17 - Nut**

- ☐ 20 Nm
- ☐ Only on vehicles with 4-cylinder engine

18 - Gate relay lever

- ☐ Made of plastic
- ☐ Different versions available; for correct version refer to ⇒ Electronic parts catalogue
- ☐ Installation position ⇒ [page 73](#)
- ☐ Detaching and securing gate relay lever (with detent catch) at gearbox selector lever ⇒ [page 74](#)
- ☐ Detaching and securing gate relay lever (with clip) at gearbox selector lever ⇒ [page 75](#)

19 - Slide block

- ☐ Installation position ⇒ [page 73](#)

20 - Cable end-piece

- ☐ Secures gate selector cable to gate relay lever
- ☐ Allocation ⇒ [page 72](#)
- ☐ Detaching from gate selector cable ⇒ [page 73](#)

21 - Angled rod

- ☐ For adjusting selector mechanism ⇒ [page 81](#)

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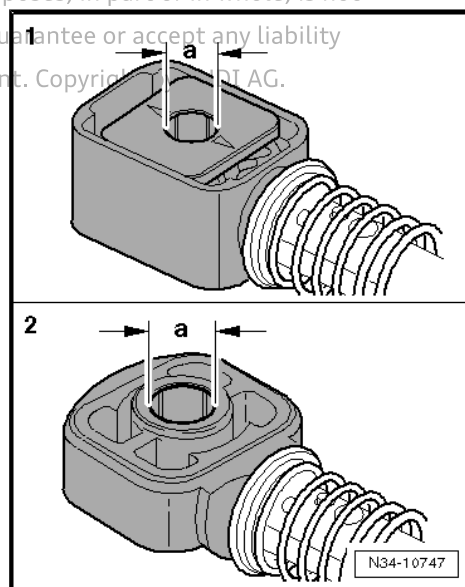
Identification of cable end-pieces

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The holes in the cable end-pieces have different diameters.

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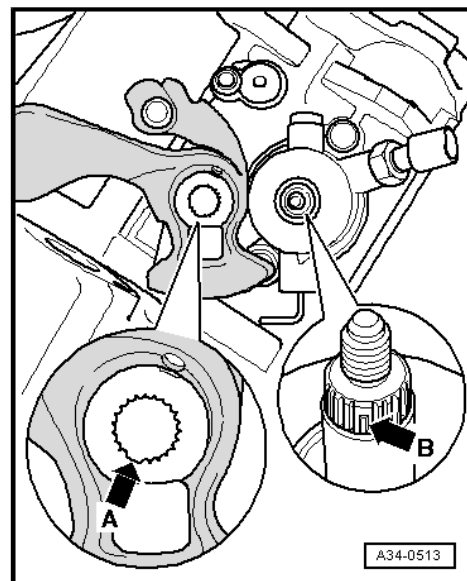
Cable end-piece for:	Dimension "a"
-1- Gear selector cable to gearbox selector lever	8.5 mm
-2- Gate selector cable to gate relay lever	10 mm





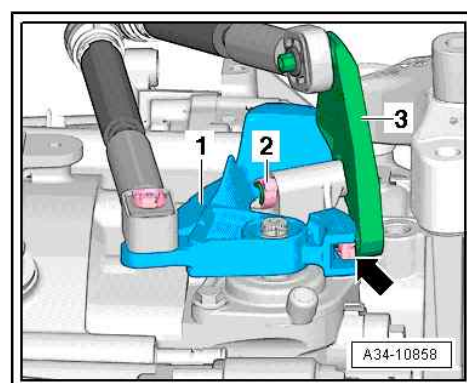
Installing gearbox selector lever

- When installing gearbox selector lever, make sure that the gap in the splines -arrow A- aligns with the wider spline -arrow B- on the selector shaft.



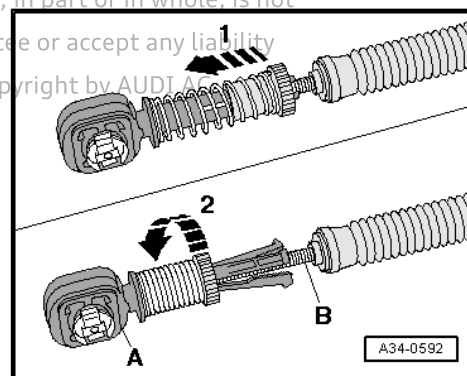
Installation position: gearbox selector lever/gate relay lever

- 1 - Gearbox selector lever
 - 2 - Clip or detent catch (depending on version)
 - 3 - Gate relay lever locates in guide rail of gearbox selector lever via slide block -arrow-.
- Coat guide rail and slide block -arrow- with grease - G 000 450 02- .



Detaching cable end-pieces from gear selector cable and gate selector cable

- Pull locking device forwards onto stop -arrow 1- and lock by turning anti-clockwise -arrow 2-.
- Take cable -B- out of cable end-piece -A-.





Detaching and securing gear selector cable at gearbox selector lever

Detaching

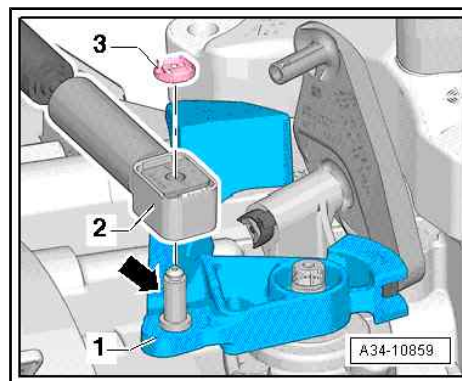
- Lift clip and detach securing clip -3- for gear selector cable from gearbox selector lever -1-.
- Detach gear selector cable -2- from pin -arrow-.

Securing



Note

- ◆ *Renew securing clip for gear selector cable.*
- ◆ *Apply a small amount of grease - G 000 450 02- to pin -arrow-.*
- Push gear selector cable -2- onto gearbox selector lever -1- and secure with securing clip -3-.



Detaching and securing gate relay lever (with detent catch) at gearbox selector lever -arrow 1-

Detaching

- Press in detent -arrow 1- as far as stop and remove gate relay lever together with cable end-piece (move relay lever in normal direction of operation).



Note

-Arrow 2- can be disregarded.

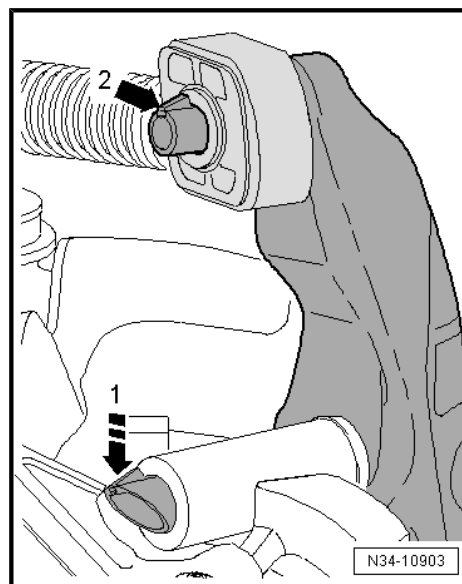
Securing



Note

To install, lubricate bearings and moving surfaces with grease - G 000 450 02- .

- Press cable end-piece onto gate relay lever ⇒ [page 75](#) .
- Insert gate relay lever with cable end-piece as far as stop.
- Gate relay lever is secured by detent -arrow 1-.
- Cable end-piece is secured by detent -arrow 2-.
- Ensure that components engage securely.



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Detaching and securing gate relay lever (with clip) at gearbox selector lever - arrow 1-

Detaching

- Remove clip -arrow 1- and take off gate relay lever together with cable end-piece.

Securing



Note

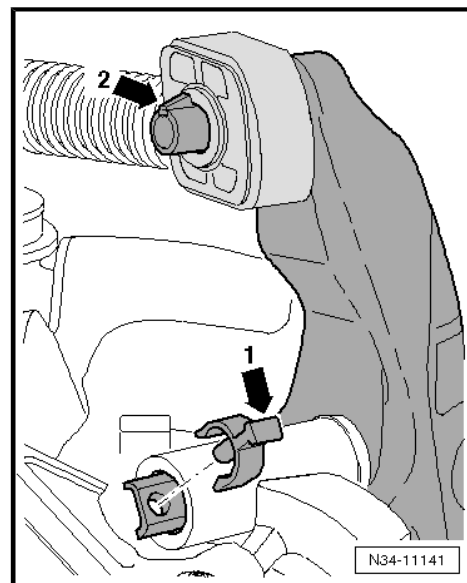
Lubricate all bearings and moving surfaces with grease - G 000 450 02- .

- Insert gate relay lever with cable end-piece as far as stop.
- Press on clip -arrow 1-, making sure it engages securely.



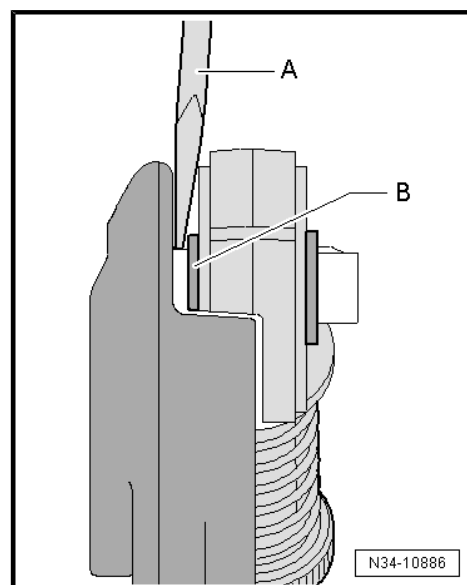
Note

-Arrow 2- can be disregarded.



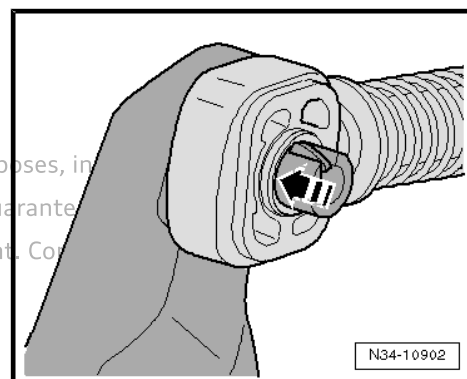
Levering cable end-piece for gate selector cable off gate relay lever

- Gate relay lever removed
- Apply plain slot screwdriver -A- between bush -B- and gate relay lever.



Pressing cable end-piece for gate selector cable onto gate relay lever

- Gate relay lever removed
- Press on cable end-piece only at bush -arrow-.
- Cable end-piece must move freely on gate relay lever.
- Cable end-piece must be behind detent.
- Ensure that components engage securely.





1.9 Dismantling and assembling selector mechanism on vehicles from model year 2008 onwards

Special tools and workshop equipment required

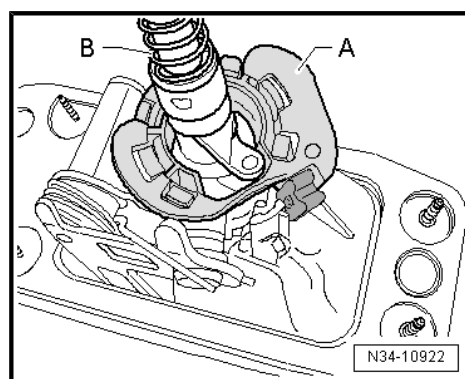
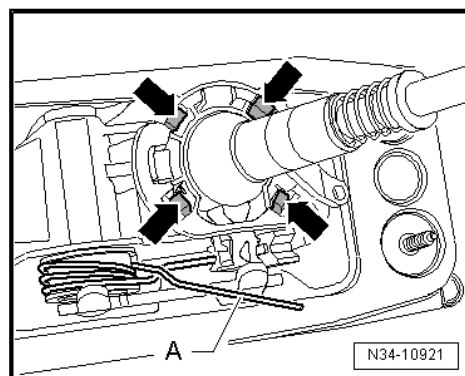
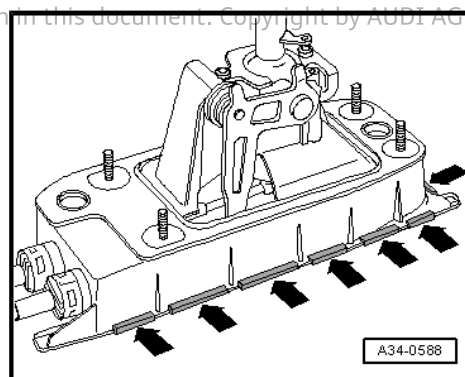
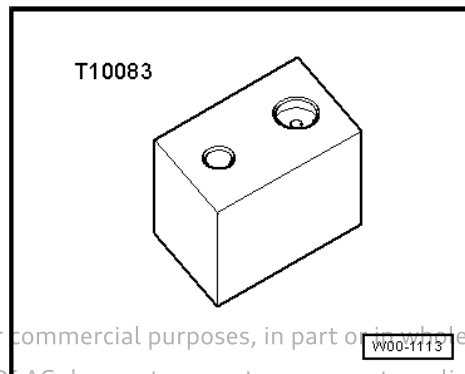
- ◆ Thrust block - T10083-



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Dismantling

- Remove selector mechanism ⇒ [page 63](#)
- Using a screwdriver, bend open tabs -arrows- on all sides of floor plate and remove floor plate.
- Remove gasket from selector housing.
- Remove gear selector cable and gate selector cable from selector housing ⇒ [page 62](#).
- Lift top spring arm -A- over tab on gate selector lever.
- Using a screwdriver, press lugs -arrows- on ball socket towards ball on gear lever guide; if necessary, break off lugs.
- Prise ball socket -A- out of selector housing together with gear lever guide and gear lever -B-.
- Then press ball socket -A- off ball on gear lever guide and remove.





i Note

- ◆ Note guides -A- when performing the following steps.
- ◆ They must not break off.

- Swivel bottom spring arm -arrow 1- onto stop on shoulder of gate selector lever.



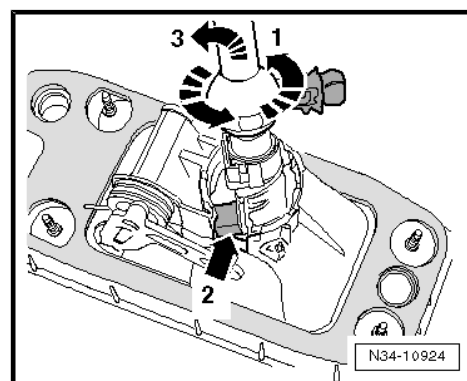
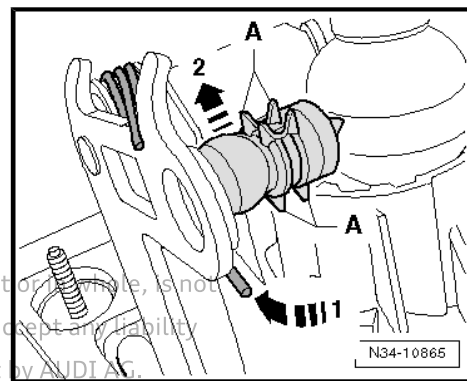
Caution

During the following steps, the bottom spring arm (-arrow 1-) can become dislodged and snap downwards off the shoulder of the gate selector lever.

- Pull gear lever guide upwards as far as stop and at the same time pull ball-head pin -arrow 2- out of gate selector lever.
- Press spring -arrow 1- carefully off the shoulder of the gate selector lever.

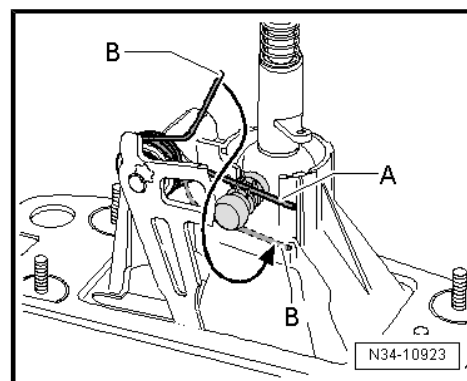
The spring arms will then compress "diagonally".

- Then turn gear lever guide in direction of -arrow 1-.
- The pin -arrow 2- should be positioned in the recess on the selector housing.
- Next, swivel gear lever guide out in direction of -arrow 3- together with gear lever.



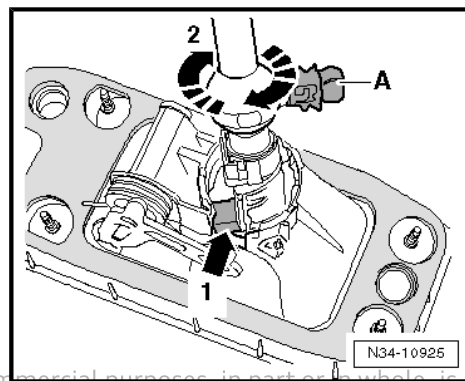
Assembling selector mechanism

- Release spring arms -A- and -B-.
- Spring arms -A- and -B- must point in opposite directions. (Shown here with gear lever guide installed.)

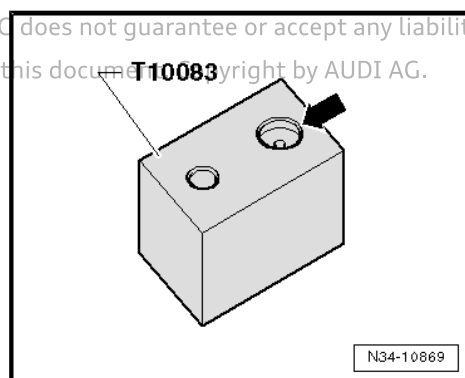




- Insert gear lever guide into selector housing together with gear lever.
- Pin -arrow 1- should be positioned just inside recess on selector housing.
- Turn gear lever guide in direction of -arrow 2- until ball-head pin -A- is above recess on selector housing.



- Position selector housing with gear lever guide onto thrust block - T10083- .
- The gear lever guide rests in the larger recess -arrow- in the thrust block - T10083- .
- The gear lever guide should protrude out of the selector housing as far as the stop.



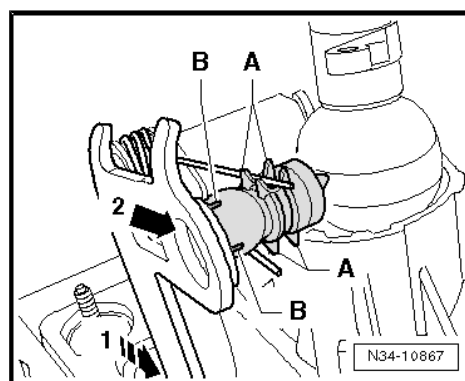
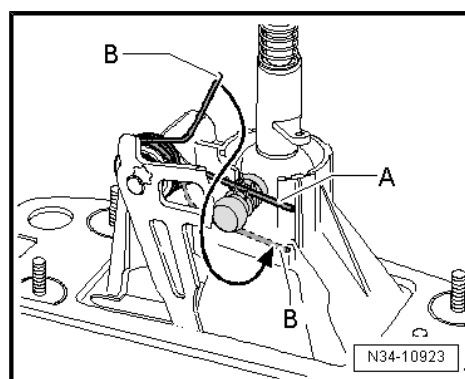
- Insert arm -A- of spring in guide from above.
- Pull arm -B- of spring downwards and insert it next to the guide (towards ball head).



Note

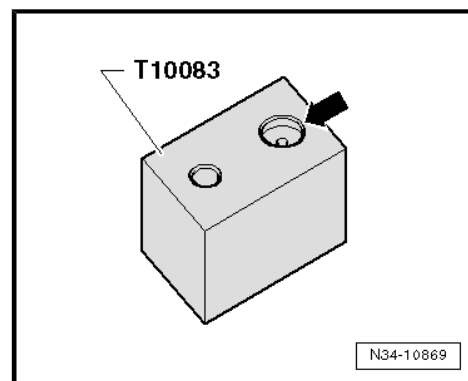
For illustration purposes, only part of the gate selector lever is shown.

- Carefully take selector housing off thrust block - T10083- together with gear lever guide.
- Move gate selector lever rearwards as far as stop in direction of -arrow 1-.
- Grease ball-head pin.
- Press ball-head pin into hole in gate selector lever -arrow 2-.
- Guides -A- and tabs -B- must not be damaged.

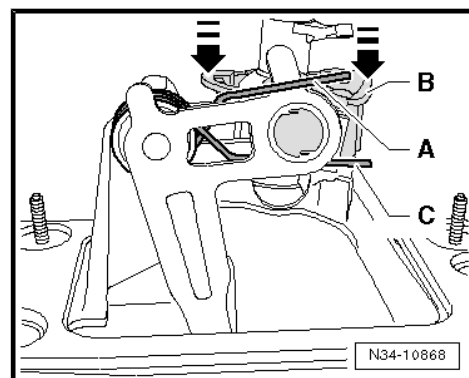




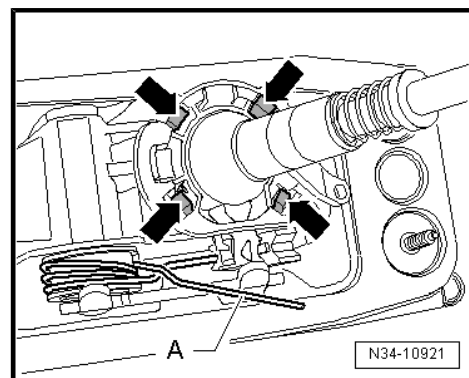
- Now insert gear lever guide (which is now fitted in selector housing) into larger recess -arrow- in thrust block - T10083- again.
- The gear lever guide should now protrude out of the selector housing as far as the stop.



- Lift top spring arm -A- over pin on gate selector lever.
- Use a new ball socket -B-.
- Grease ball socket and ball of gear lever guide.
- Press ball socket onto ball of gear lever guide as far as stop.
- Remove selector housing from thrust block - T10083- .
- Press ball socket into selector housing in direction of -arrows-.



- All four lugs -arrows- must engage.
- Lift top spring arm -A- over pin on gate selector lever into guide.
- Insert bottom spring arm into guide.
- Fit gear lever, gear selector cable and gate selector cable.
- Secure floor plate to selector housing ⇒ [page 79](#) .
- Install selector mechanism ⇒ [page 63](#) .



1.9.1 Securing floor plate to selector housing

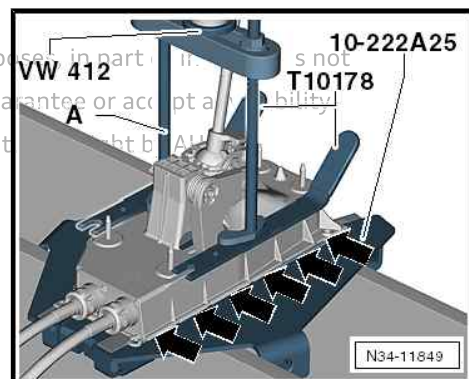
- Fit new gasket onto floor plate.



Caution

Risk of damage to selector housing and floor plate.
Only apply minimal pressure to selector housing.

- Secure floor plate by bending tabs -arrows- closed on all sides (only tabs on left side of floor plate are marked here).
- Tabs can be bent closed using wedge - T10357- .
- A- = counter-support e.g. -KUKKO- series 16



Note

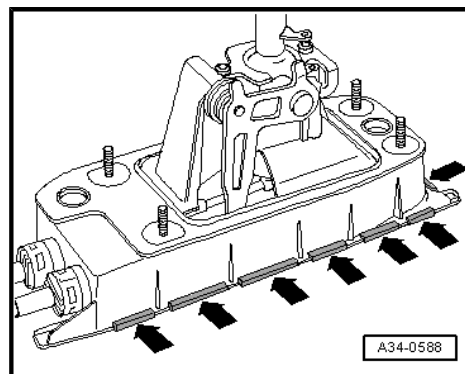
Renew gasket ⇒ [Item 2 \(page 62\)](#) .



1.10 Removing and installing gear selector cable and gate selector cable

Removing

- Remove selector mechanism ➔ [page 63](#)
- Using a screwdriver, bend open tabs -arrows- for selector mechanism on floor plate and remove floor plate.
- Remove gasket.



Selector mechanism with securing clips -1- and -4-

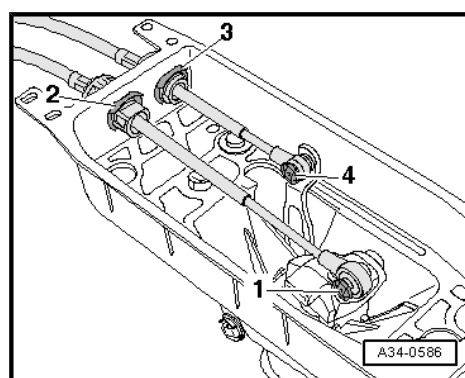
- Detach securing clips -1- and -4- and pull both cables off pins.

Selector mechanism without securing clips -1- and -4-

- Using release tool - T10236- , prise gear selector cable and gate selector cable off pins.

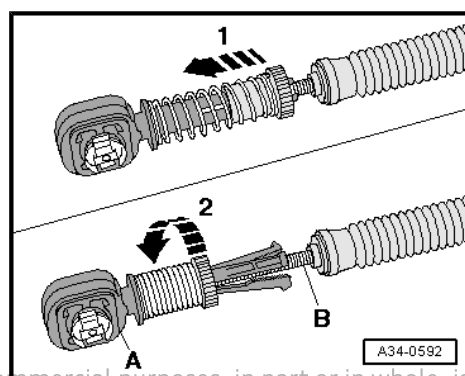
Both versions (continued):

- Take off securing clips -2 ... 3- and detach gear selector cable and gate selector cable from selector housing.

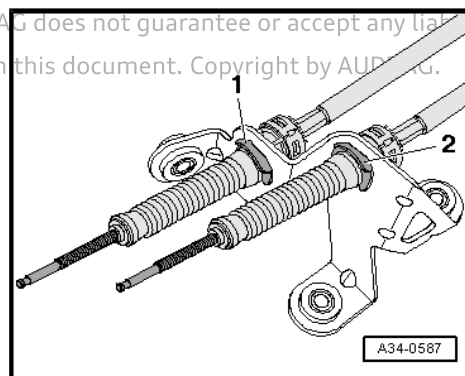


Release cable end-pieces -A- for gate selector cable and gear selector cable -B- as follows:

- Push locking sleeve forwards as far as stop -arrow 1-.
- Turn locking sleeve clockwise as far as stop -arrow 2- so that it engages.
- Detach cable end-pieces from cables.



- Pull off securing clips -1 and -2-.
- Detach cable support bracket from cables.





Installing

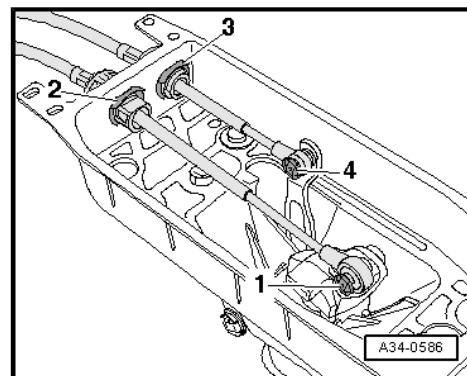
Installation is carried out in reverse order; note the following:

Selector mechanism with securing clips -1- and -4-

- Secure gear selector cable and gate selector cable to selector housing with securing clips -1 ... 4-.

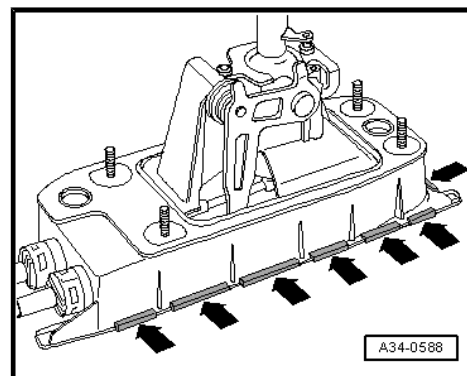
Selector mechanism without securing clips -1- and -4-

- Press gear selector cable and gate selector cable onto pins.



Both versions (continued):

- Secure floor plate to selector housing ⇒ [page 79](#) .
- Install selector mechanism ⇒ [page 63](#) .
- Adjust selector mechanism ⇒ [page 81](#) .



1.11 Adjusting selector mechanism

Special tools and workshop equipment required

- ◆ Locking pin - T10027A-

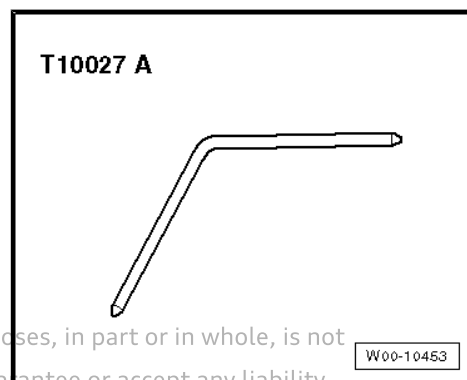


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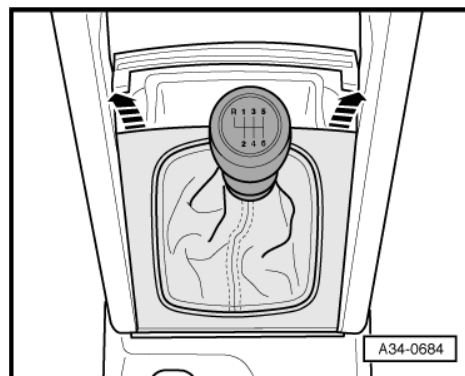
Adjustment conditions

- 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.



**Adjusting**

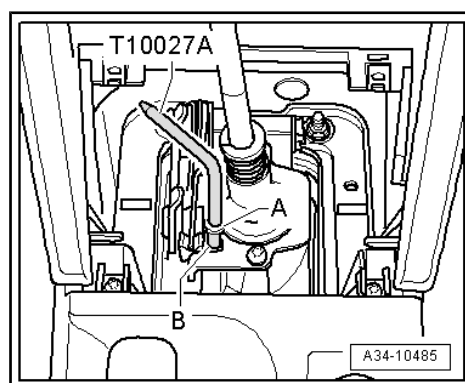
- Open ashtray (if fitted).
- Carefully pry gear lever boot off centre console -arrows-.
- Pull boot up and over gear knob.
- With gearbox in neutral, guide gear lever to the left into 1st/2nd gear gate.



- Pull noise insulation slightly to one side.
- Then guide locking pin - T10027A- through hole -A- and into hole -B-.

**Note**

The noise insulation panels are removed to give a better illustration.

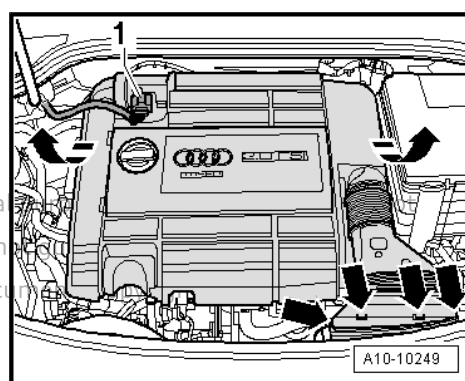
**Vehicles with TFSI engine (with timing chain), TDI engine or V6 engine:**

- Remove air cleaner housing completely ⇒ Rep. gr. 23 or ⇒ Rep. gr. 24 .

Vehicles with TFSI engine (with toothed belt):

- Completely remove engine cover panel and air cleaner (top section) ⇒ Rep. gr. 24 .

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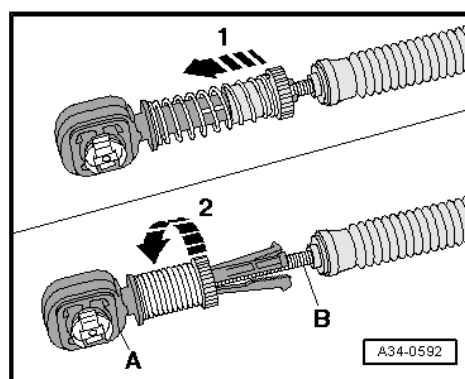
**All vehicles (continued):**

Release cable end-pieces -A- for gate selector cable and gear selector cable -B- as follows:

- Push locking sleeve forwards as far as stop -arrow 1-.
- Turn locking sleeve clockwise as far as stop -arrow 2- so that it engages.

**Note**

It should be possible to move selector cable -B- in the cable end-piece.



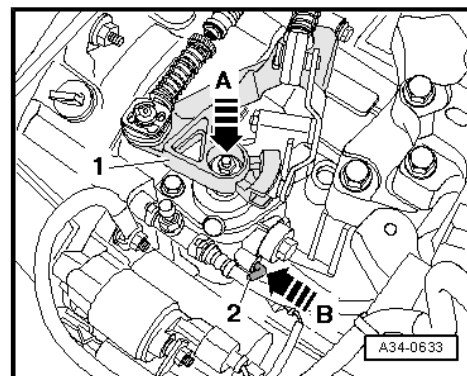


- Gearbox in neutral.

Lock the selector shaft as follows:

- Press gearbox selector lever -1- down -arrow A- into 1st/2nd gear gate, and at the same time press angled rod -2- into gearbox -arrow B- (turning slightly as necessary) until it engages.

The selector shaft is then locked and can no longer be moved.



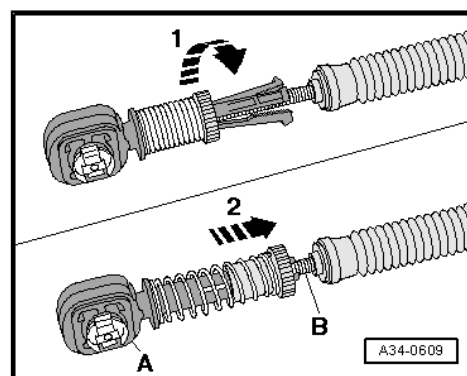
- Check that gate selector cable and gear selector cable -B- are located in cable end-pieces -A- without tension.
- Release locking sleeve -arrow 1-.
- Allow locking sleeve to slide onto stop -arrow 2-.



Note

Cable adjustment is now complete.

- Pull angled rod just far enough out of gearbox to release selector mechanism.
- Pull locking pin - T10027A- out of selector mechanism.
- Check gear lever setting ⇒ [page 83](#) .



1.12 Checking gear lever setting

- With the gearbox in neutral, the gear lever should rest in the 3rd/4th gear gate.
- Press clutch pedal.
- Select all gears several times. Pay special attention to function of reverse gear detent mechanism.
- 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.

- Install cover for centre console.
- Install air cleaner housing ⇒ Rep. gr. 23 or ⇒ Rep. gr. 24 .



2 Removing and installing gearbox

⇒ [“2.1 Removing gearbox - vehicles with TFSI engine”, page 84](#)

⇒ [“2.2 Removing gearbox - vehicles with V6 engine”, page 96](#)

⇒ [“2.3 Removing gearbox - vehicles with TDI engine”, page 108](#)

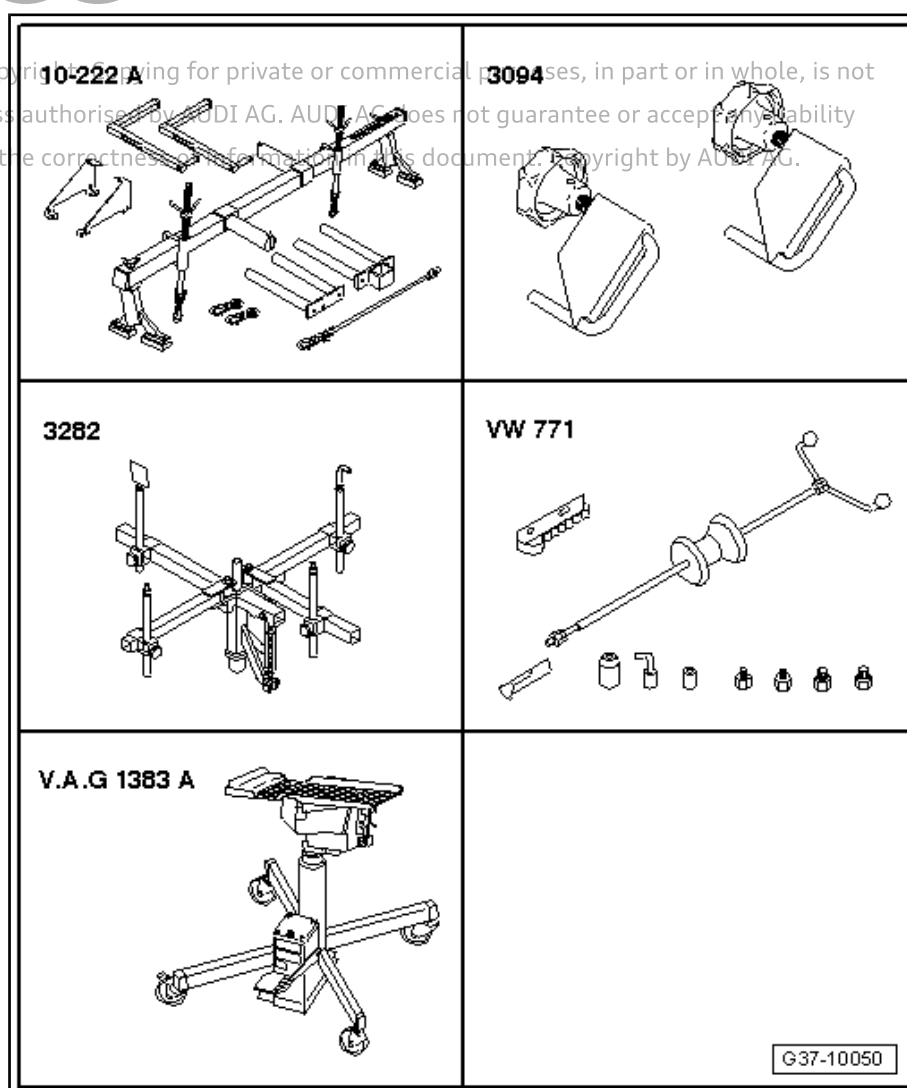
⇒ [“2.4 Installing gearbox”, page 122](#)

⇒ [“2.5 Tightening torques \(installing gearbox\)”, page 127](#)

⇒ [“3 Transporting gearbox”, page 130](#)

2.1 Removing gearbox - vehicles with TFSI engine

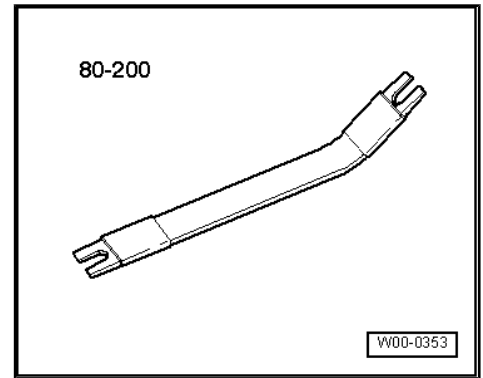
Special tools and workshop equipment required



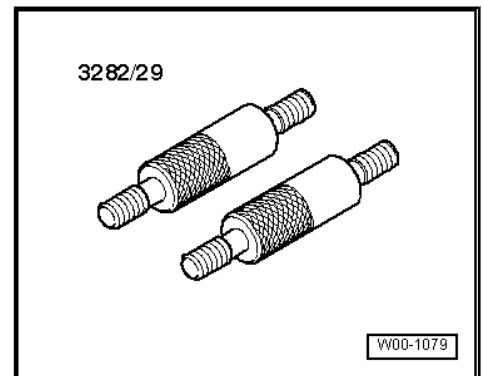
- ◆ Support bracket - 10 - 222 A-
- ◆ Hose clamps up to 25 mm - 3094-
- ◆ Gearbox support - 3282-
- ◆ Adapter - VW 771/40-
- ◆ Engine and gearbox jack - V.A.G 1383 A-



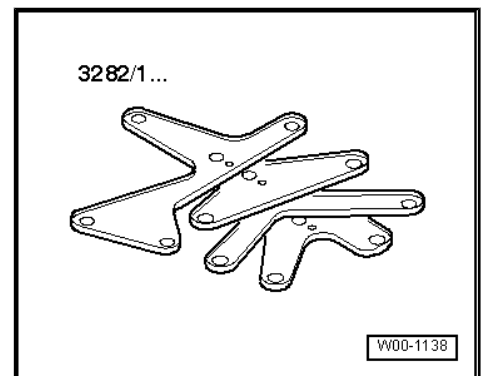
- ◆ Removal lever - 80 - 200- for vehicles from 06.2008 onwards



- ◆ Pin - 3282/29-



- ◆ Adjustment plate - 3282/33-



- ◆ Stepladder - VAS 5085-



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- ◆ Grease for clutch plate splines - G 000 100-
- ◆ Grease - G 000 450 02-
- ◆ Universal grease - G 052 735-
- ◆ M10x20 bolt



Procedure



Note

Fit all cable ties in the original positions when installing.



Caution

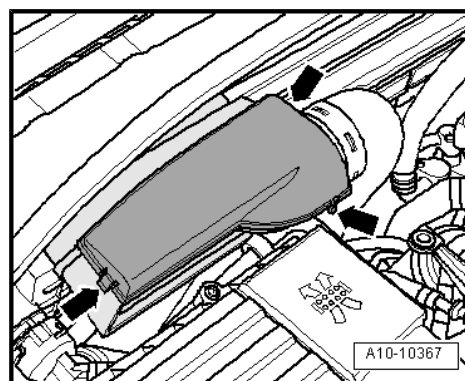
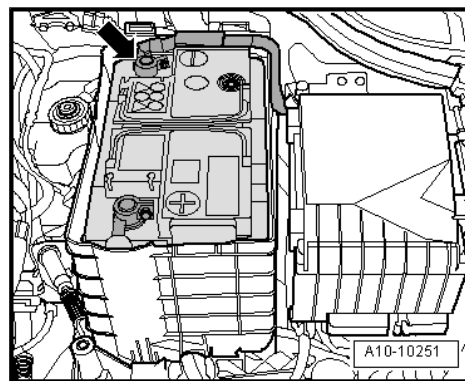
When disconnecting the battery there is a risk of irreparable damage to electronic components.

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

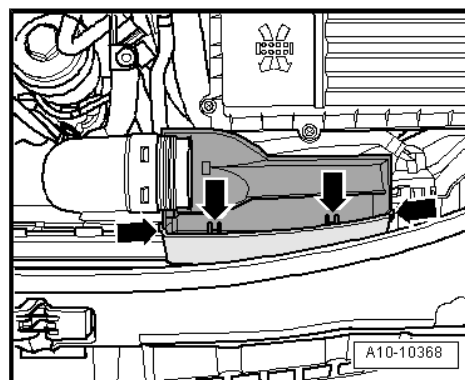
- With ignition switched off, disconnect battery earth wire -arrow- ⇒ Electrical system; Rep. gr. 27 .

Vehicles with TFSI engine (with timing chain):

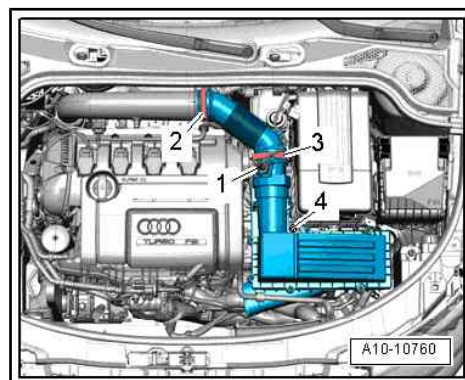
- Pull off cover for air duct (release retaining clips -arrows- on the sides).



- Pull off bottom section of air duct (release retaining clips -arrows-).
- Remove bottom section of air duct with air intake hose.



- Remove air cleaner housing completely ⇒ Rep. gr. 24 .

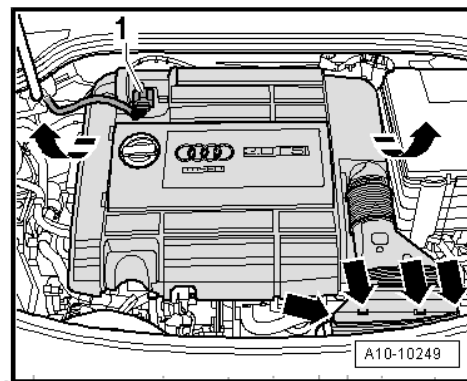


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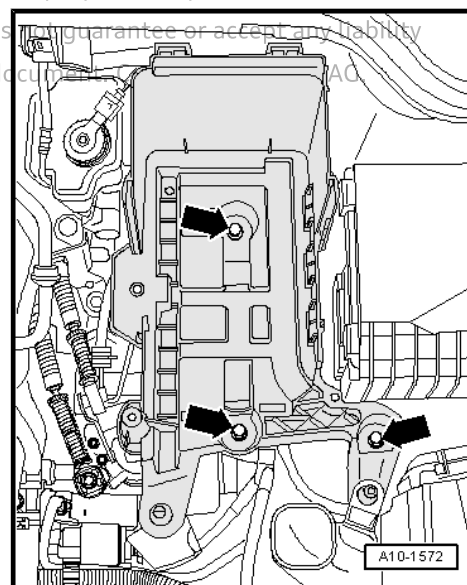
Vehicles with TFSI engine (with toothed belt):

- Completely remove engine cover panel and air cleaner (top section) ⇒ Rep. gr. 24 .



All vehicles (continued):

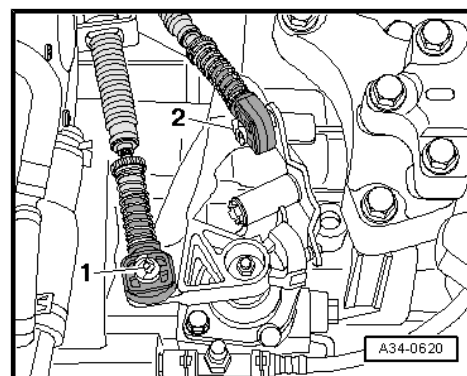
- Remove battery ⇒ Electrical system; Rep. gr. 27
- Remove battery tray -arrows- (detach front of battery tray from air duct if applicable).



- Detach securing clip -1- and pull cable end-piece off pin.

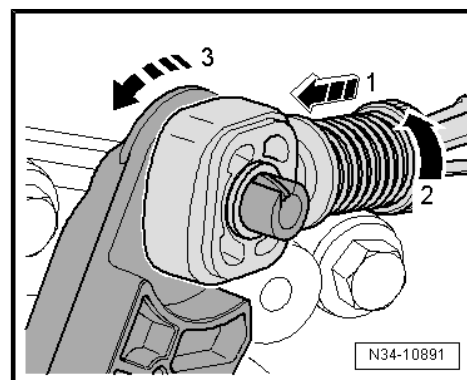
Metal gate relay lever:

- Detach securing clip -2- and pull cable end-piece off gate relay lever.



Plastic gate relay lever:

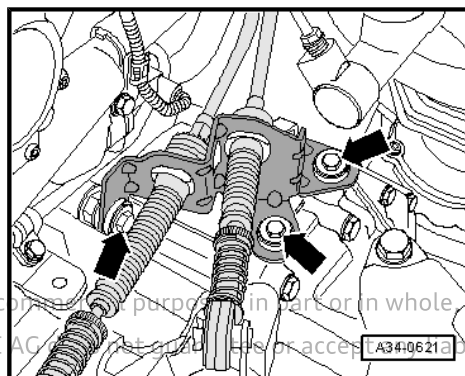
- To prevent damage to gate selector cable, cable end-piece must be detached from gate selector cable before removing relay lever.
- Pull locking mechanism forwards in direction of -arrow 1- onto stop and then turn to left in direction of -arrow 2- to lock.
- Then press gate relay lever forwards (in direction of -arrow 3-).
- Do not detach cable end-piece from gate relay lever until gate relay lever has been removed ⇒ [page 75](#) .





All vehicles (continued):

- Detach cable support bracket from gearbox -arrows-; then move to one side and tie up together with selector cables.



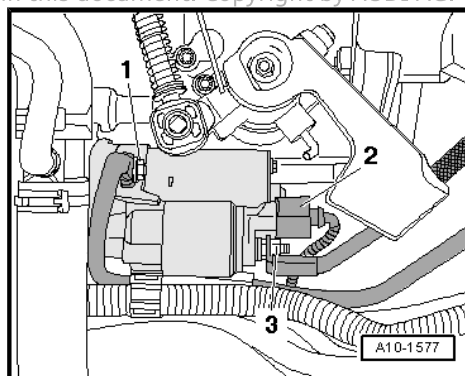
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- Unscrew earth wire -1- from upper starter bolt.



Note

Connector -2- and wire -3- remain in position on starter.

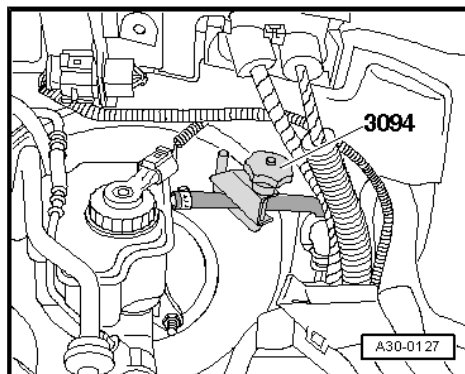


- If a plastic pipe is installed between clutch master cylinder and slave cylinder, clamp off supply hose to clutch master cylinder using hose clamp up to 25 mm - 3094- .



Note

- ◆ *Clamping off the plastic 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.*





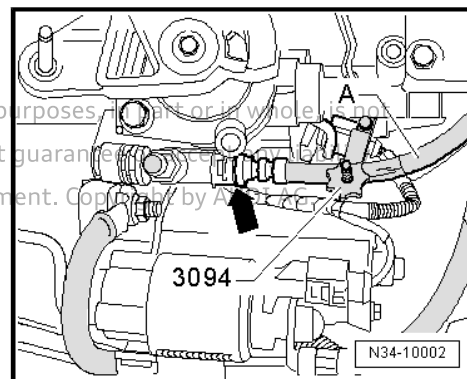
- If a pipe/hose assembly is installed between clutch master cylinder and slave cylinder, clamp off hose -A- using hose clamp up to 25 mm - 3094- .

**Note**

- ◆ *Make sure brake fluid does not come into contact with starter or gearbox when performing the following operations. If it does, clean affected area thoroughly.*

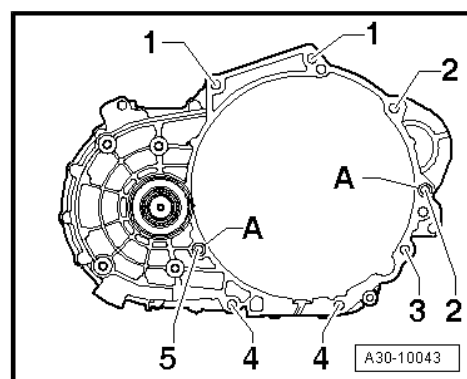
- ◆ *Place a cloth underneath to catch escaping brake fluid.*

- Pull out clip -arrow- as far as stop.
- Pull plastic pipe or pipe/hose assembly -A- out of bleeder connection for clutch slave cylinder and seal end of pipe.

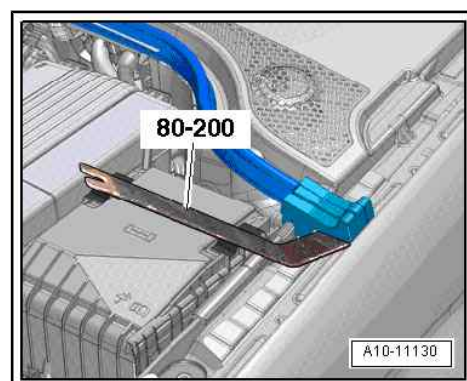
**Caution**

Do not operate clutch pedal after disconnecting pipe/hose assembly.

- Remove bolts -1- from engine/gearbox flange.
- Then remove upper securing bolt from starter -2-.

**Vehicles from 06.2008 onwards:**

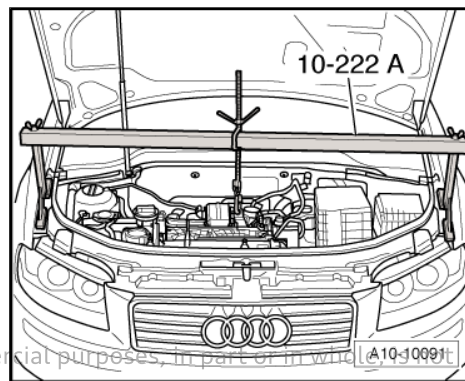
- Lever clip off sealing element using removal lever - 80 - 200- and fold up sealing element.



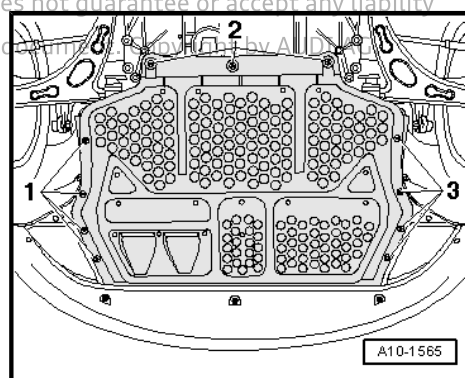


All vehicles (continued):

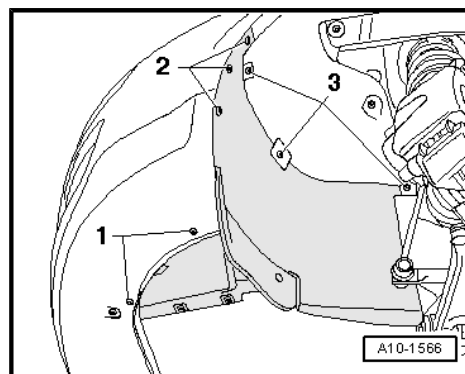
- Set up support bracket - 10 - 222 A- with adapters - 10 - 222 A /3- on wing mounting flanges.
- Engage hook of spindle in lifting eye.
- Partly take up weight of engine with spindle, but do not lift.



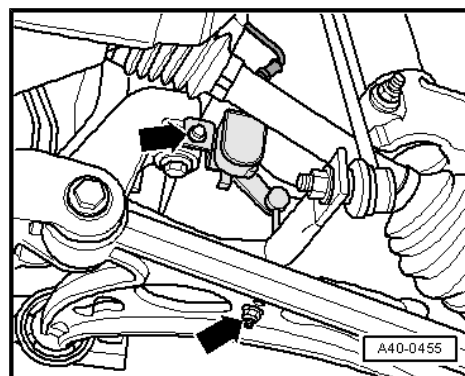
- Remove noise insulation (centre) by releasing fasteners -1 ... 3-.



- Remove noise insulation (left-side) by releasing fasteners -1 ... 3-.

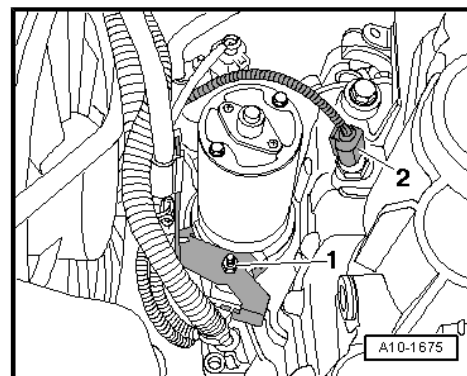


- If fitted, remove front left vehicle level sender - G78- -arrows-.

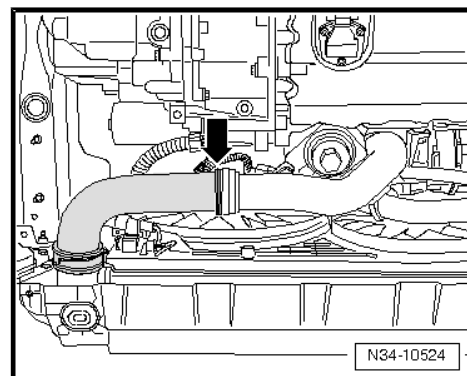




- Unplug electrical connector at reversing light switch - F4- -2-.
- Remove nut -1- and detach bracket from bottom starter bolt with electrical wiring.
- Unscrew bottom bolt securing starter -1-.
- Place starter to side onto longitudinal member.



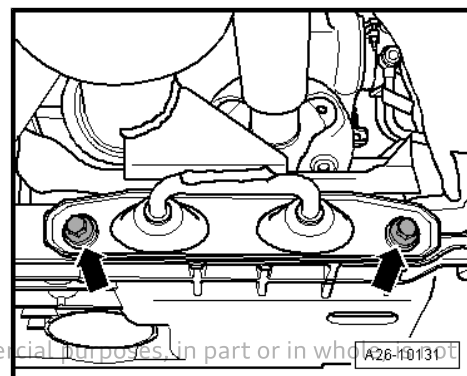
- Detach connection -arrow- at air pipe (left-side).



- Remove exhaust system bracket from subframe -arrows-.



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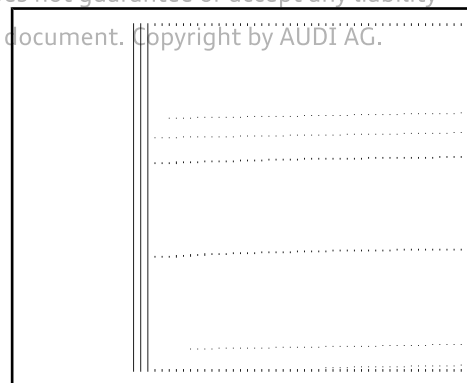


- Disconnect exhaust system at clamp -arrows-.
- Tie up the front exhaust pipe.



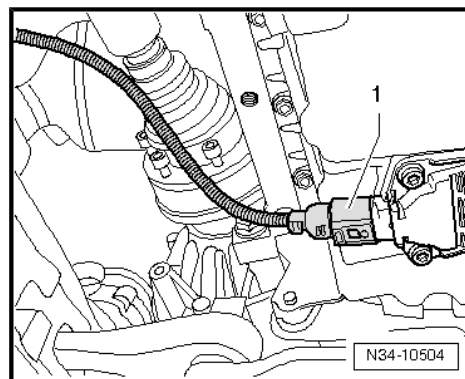
Note

To avoid damage, the flexible joints in the front exhaust pipe must not be bent more than 10°.

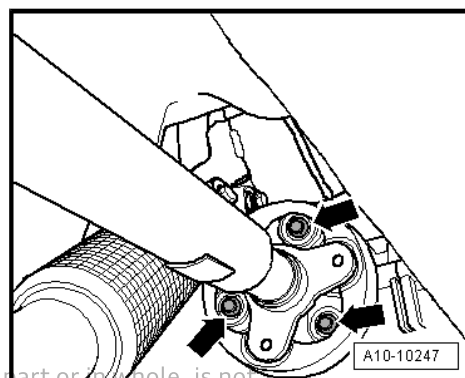




- Detach connector -1- from oil level and oil temperature sender - G266- .



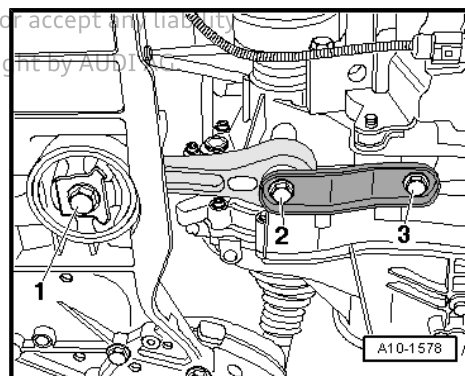
- Mark position of propshaft with flexible coupling in relation to bevel box flange.
- Unbolt flexible coupling for propshaft at bevel box -arrows- (counterhold using a suitable lever at the triangular flange).



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- Remove bolts -2- and -3- for pendulum support on gearbox.

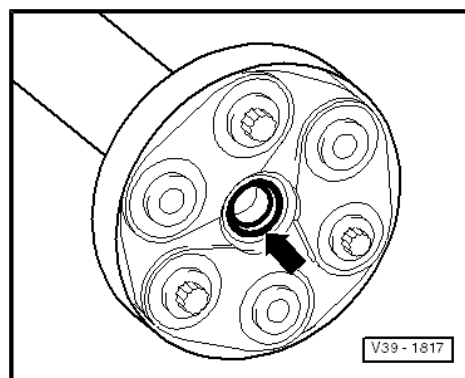
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Note

Slackening off securing bolts for pendulum support causes engine/gearbox assembly to swing forwards slightly (towards front end). Make sure that the seal -arrow- in the flange of the propshaft is not damaged when removing and installing.

- Push engine/gearbox assembly forward slightly (towards front end) and then pull propshaft off bevel box.
- Lift propshaft up and secure with wire.
- Before removal, fix subframe in position ⇒ Rep. gr. 40 .
- Remove subframe with pendulum support ⇒ Rep. gr. 40 .
- Remove suspension bracket with wishbone (left-side) ⇒ Rep. gr. 40 .



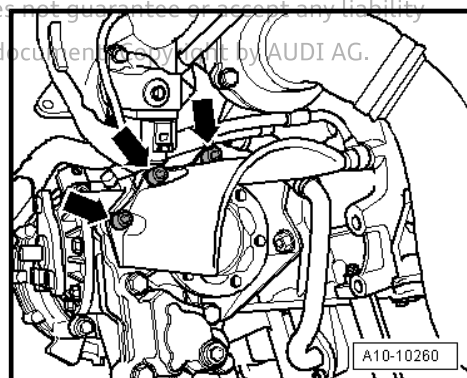
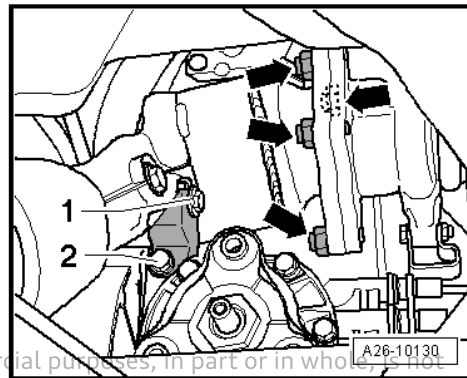


- If fitted, unscrew bolts -1- and -2- and remove support for catalytic converter.



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- Unbolt heat shield for drive shaft (right-side) from bevel box -arrows-.
- Unbolt drive shafts (left and right) from gearbox flange shafts.

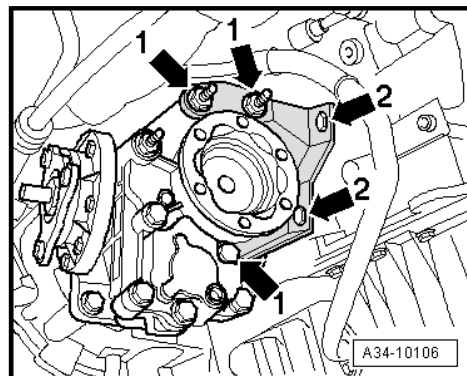


- Unscrew bolts for gearbox carrier on bevel box -arrows 1- and engine -arrows 2-.

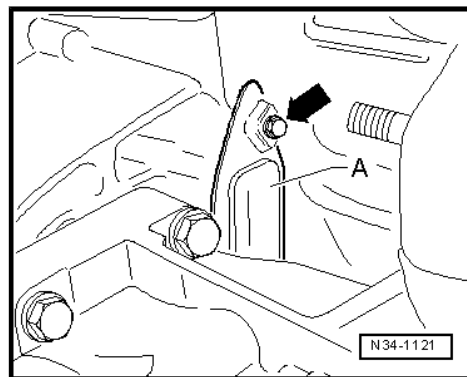


Note

Do not remove gearbox carrier until gearbox has been pressed off engine.

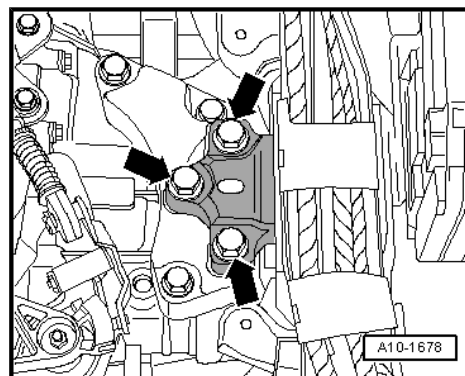


- If fitted, remove small cover plate -A- at rear of bevel box -arrow-.

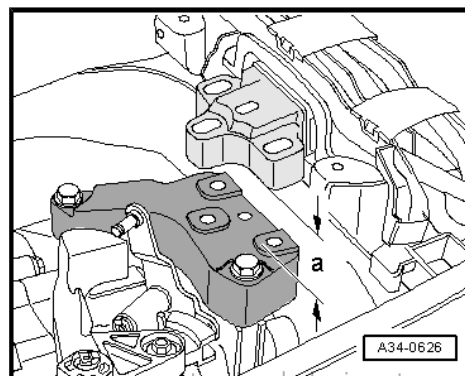




- Remove bolts -arrows- on gearbox mounting.

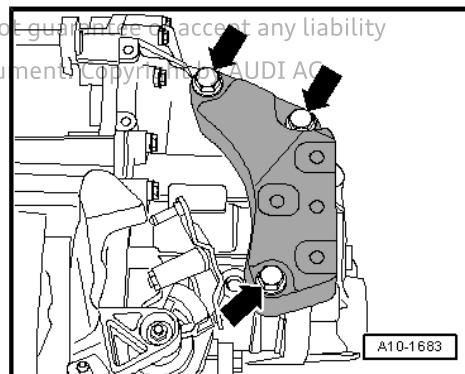


- By adjusting spindles on support bracket - 10 - 222 A- , lower gearbox by distance -a-.
- Dimension -a- = 60 mm



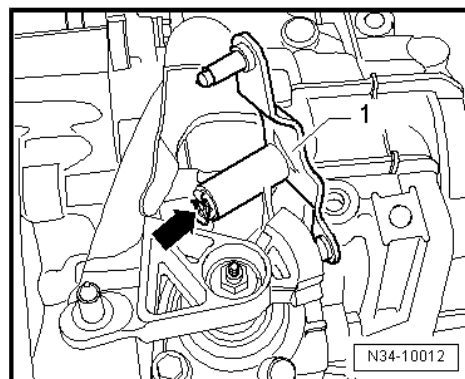
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- Unbolt gearbox support from gearbox -arrows-



Metal gate relay lever:

- Pull securing clip -arrow- off gate relay lever -1- and remove gate relay lever.





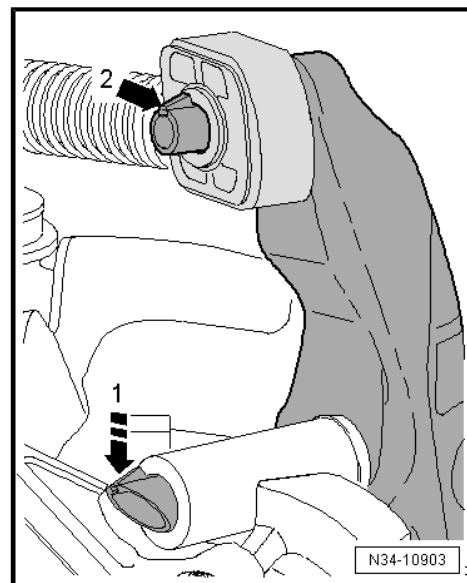
Plastic gate relay lever:

- Press in detent -arrow 1- as far as stop and remove gate relay lever together with cable end-piece (move relay lever in normal direction of operation).



Note

Disregard -item 2-.



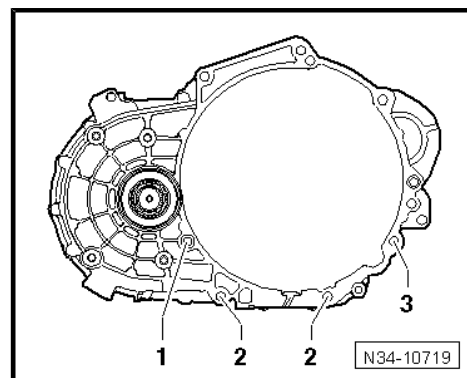
All vehicles (continued):

- Remove engine/gearbox connecting bolts (bottom) -1- (on engine side) and -2-.



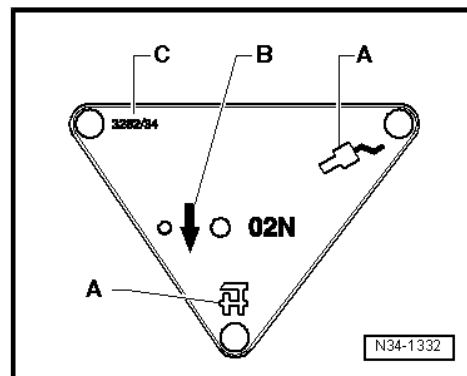
Note

Do not loosen bolt -3- at this stage.



To remove gearbox 02Q, set up gearbox support - 3282- with adjustment plate - 3282/33- .

- Insert gearbox support - 3282- in engine and gearbox jack - V.A.G 1383A- .
- Align arms of gearbox support according to holes in adjustment plate .
- Bolt on support elements -A-, as illustrated on adjustment plate .
- Screw in pin - 3282/29- in place of support element -C-.
- Place engine and gearbox jack under vehicle; arrow symbol -B- on adjustment plate points to front of vehicle.
- Align adjustment plate and gearbox parallel to one another.
- Screw pin - 3282/29- into hole for bolt securing pendulum support to gearbox.



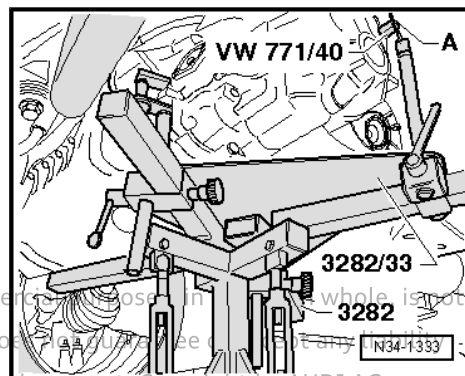
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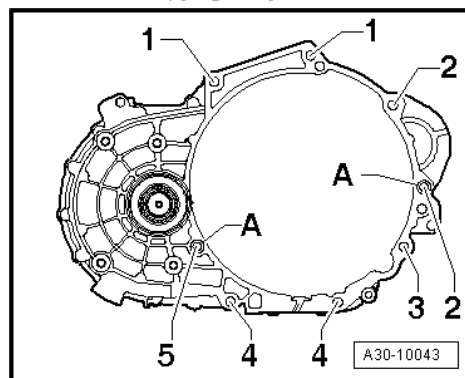
- Secure adapter - VW 771/40- in tapped hole of gearbox housing, as shown in illustration.
- Secure gearbox to gearbox support - 3282- with bolt M10x20 -A-.



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- Unscrew last engine/gearbox securing bolt -3-.
- Press gearbox off engine (dowel sleeves).

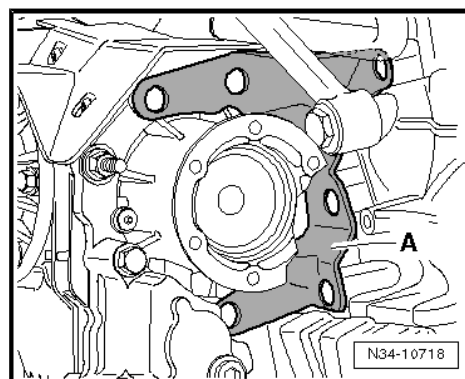


- Remove gearbox carrier -A-.
- Carefully lower gearbox.



Note

When lowering gearbox make sure the electromechanical power steering is not damaged.



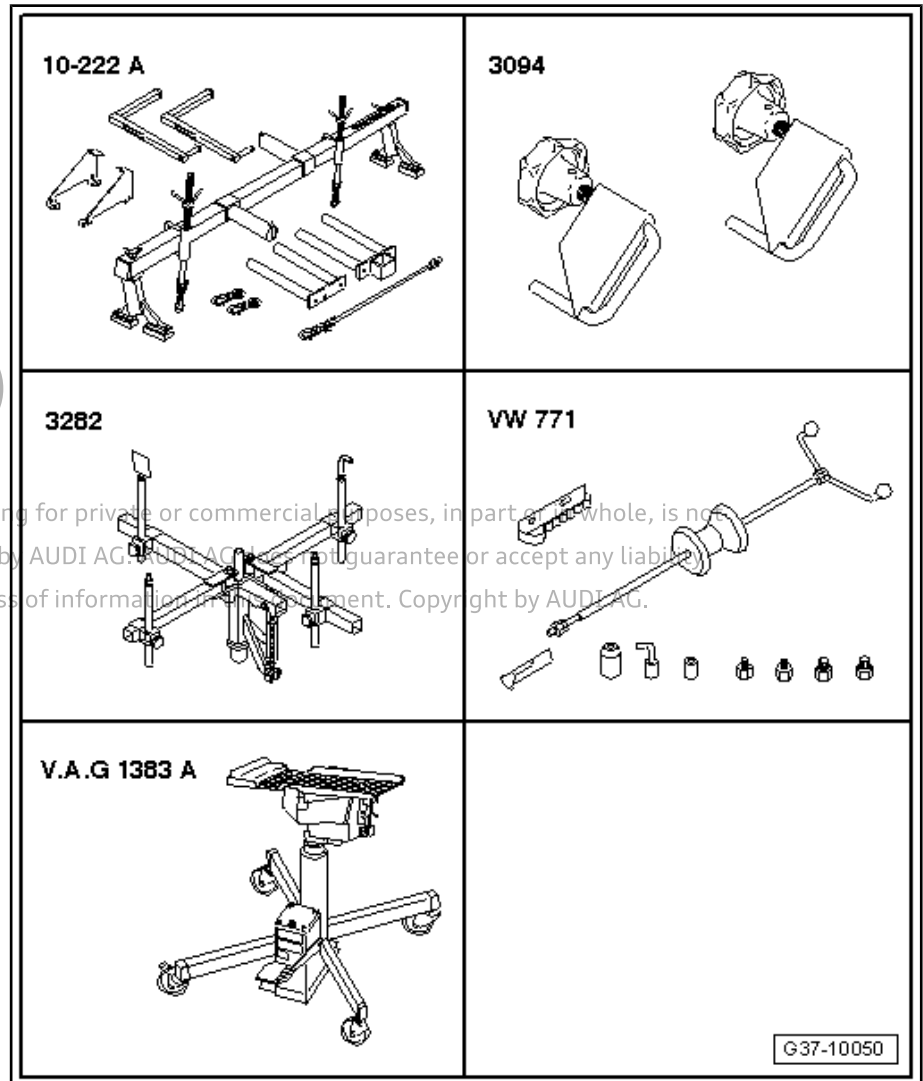
2.2 Removing gearbox - vehicles with V6 engine



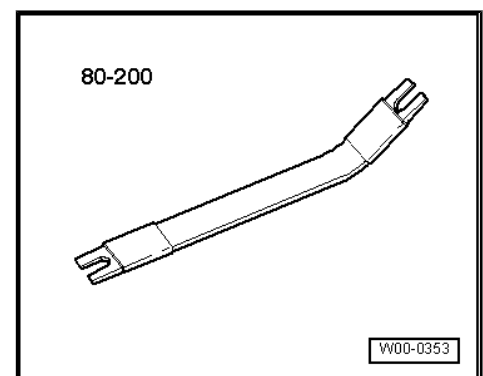
Special tools and workshop equipment required



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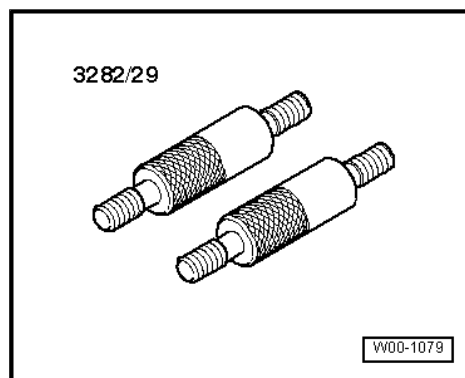


- ◆ Support bracket - 10 - 222 A-
- ◆ Hose clamps up to 25 mm - 3094-
- ◆ Gearbox support - 3282-
- ◆ Adapter - VW 771/40-
- ◆ Engine and gearbox jack - V.A.G 1383 A-
- ◆ Removal lever - 80 - 200- for vehicles from 06.2008 onwards



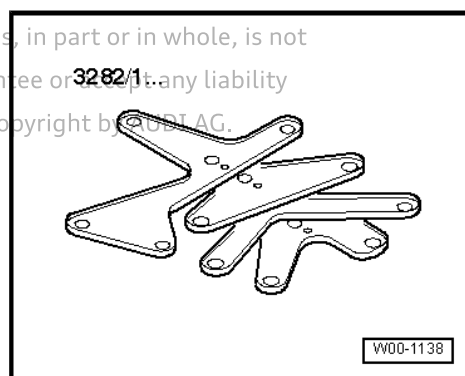


- ◆ Pin - 3282/29-



- ◆ Adjustment plate - 3282/33-

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- ◆ Stepladder - VAS 5085-



- ◆ Grease for clutch plate splines - G 000 100-
- ◆ Grease - G 000 450 02-
- ◆ Universal grease - G 052 735-
- ◆ M10x20 bolt



Procedure



Note

Fit all cable ties in the original positions when installing.

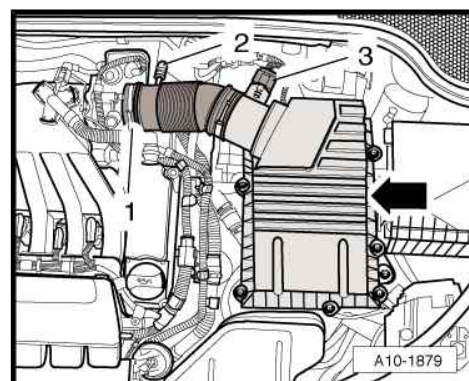
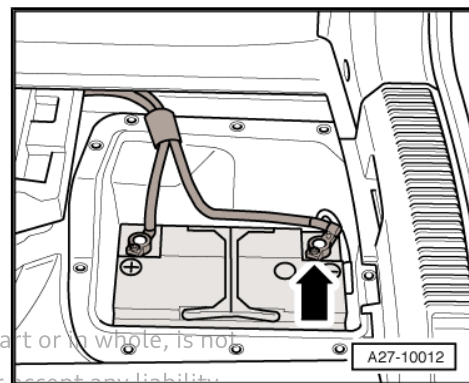


Caution

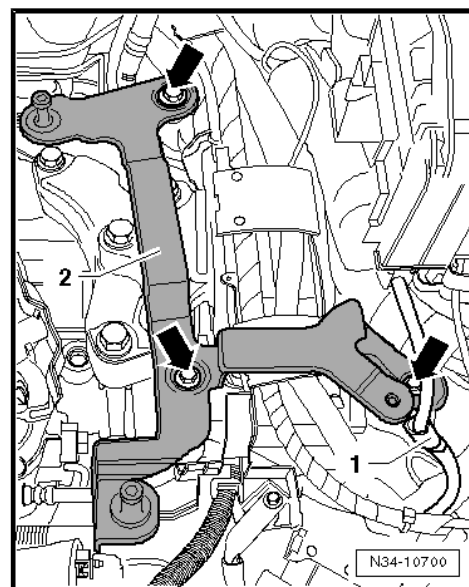
When disconnecting the battery there is a risk of irreparable damage to electronic components.

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

- With ignition switched off, disconnect battery earth wire -arrow- ⇒ Electrical system; Rep. gr. 27 .
- Remove engine cover panel.
- Remove air cleaner housing completely ⇒ Rep. gr. 24 .



- Detach line -1- from air cleaner bracket -2-.
- Remove bolts -arrows- and remove air cleaner bracket.

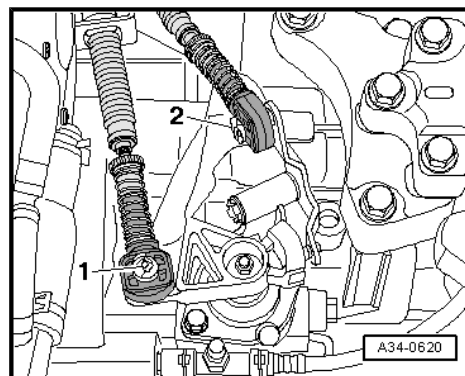




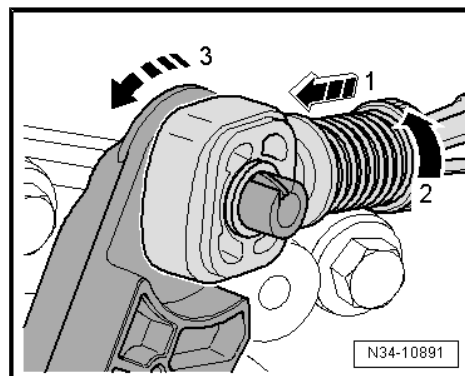
- Detach securing clip -1- and pull cable end-piece off pin.

Metal gate relay lever:

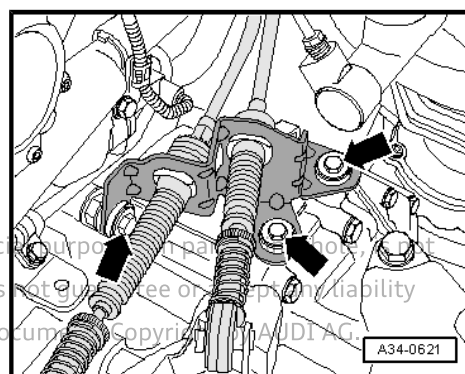
- Detach securing clip -2- and pull cable end-piece off gate relay lever.

**Plastic gate relay lever:**

- To prevent damage to gate selector cable, cable end-piece must be detached from gate selector cable before removing relay lever.
- Pull locking mechanism forwards in direction of -arrow 1- onto stop and then turn to left in direction of -arrow 2- to lock.
- Then press gate relay lever forwards (in direction of -arrow 3-).
- Do not detach cable end-piece from gate relay lever until gate relay lever has been removed ⇒ [page 75](#) .

**All vehicles (continued):**

- Detach cable support bracket from gearbox -arrows-; then move to one side and tie up together with selector cables.

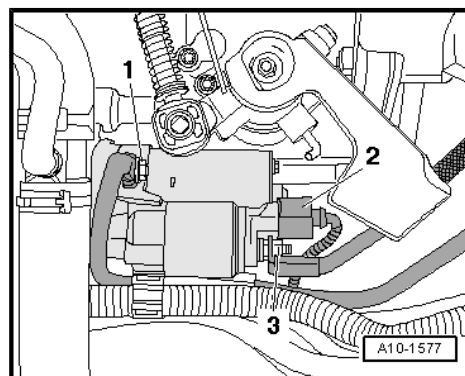


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- Unscrew earth wire -1- from upper starter bolt.

**Note**

Connector -2- and wire -3- remain in position on starter.



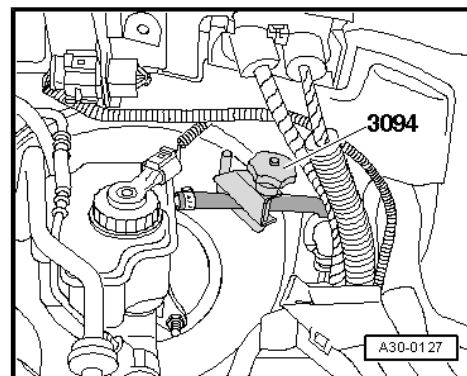


- If a plastic pipe is installed between clutch master cylinder and slave cylinder, clamp off supply hose to clutch master cylinder using hose clamp up to 25 mm - 3094- .



Note

- ◆ *Clamping off the plastic 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.*

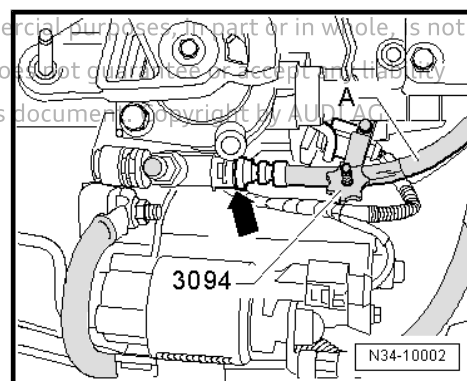


- If a pipe/hose assembly is installed between clutch master cylinder and slave cylinder, clamp off hose -A- using hose clamp up to 25 mm - 3094- .



Note

- ◆ *Make sure brake fluid does not come into contact with starter or gearbox when performing the following operations. If it does, clean affected area thoroughly.*
- ◆ *Place a cloth underneath to catch escaping brake fluid.*



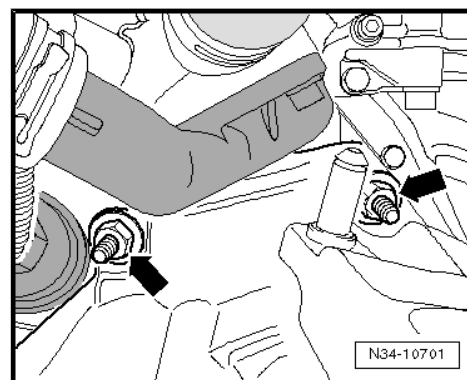
- Pull out clip -arrow- as far as stop.
- Pull plastic pipe or pipe/hose assembly -A- out of bleeder connection for clutch slave cylinder and seal end of pipe.



Caution

Do not operate clutch pedal after disconnecting pipe/hose assembly.

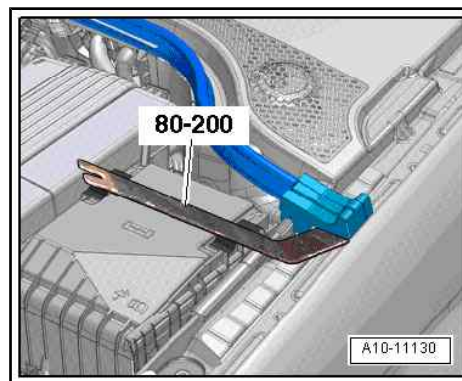
- Unscrew top engine/gearbox securing bolts -arrows-.
- Then remove upper securing bolt from starter.





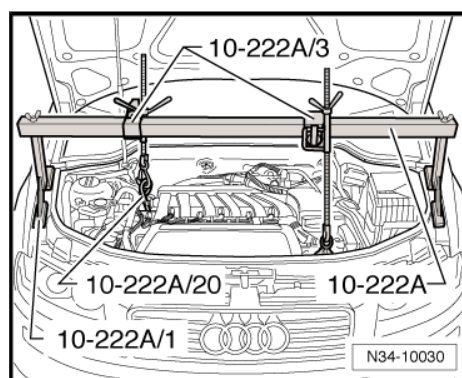
Vehicles from 06.2008 onwards:

- Lever clip off sealing element using removal lever - 80 - 200- and fold up sealing element.

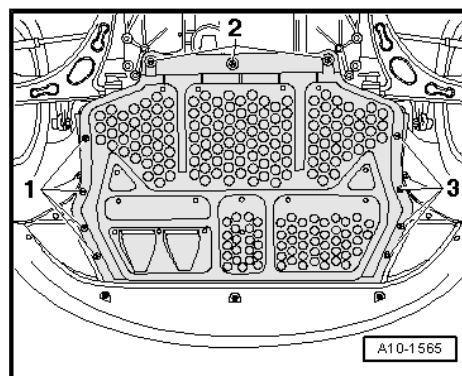


All vehicles (continued):

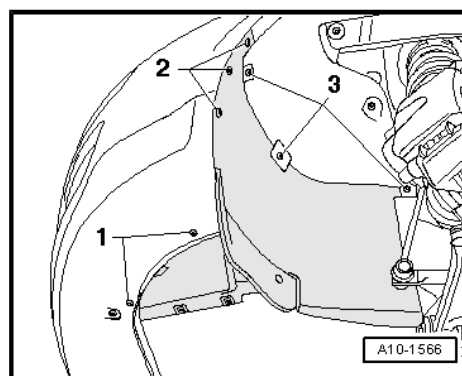
- Fit support bracket - 10-222A- together with racks - 10 - 222 A /1- and adapters - 10-222A/3- onto wing mounting flanges.
- Hook adapter - 10 - 222 A /20- into lifting eye on right side of engine.
- Take up weight of engine evenly with both spindles (but do not raise engine).



- Remove front wheels.
- Remove noise insulation (centre) by releasing fasteners -1 ... 3-.



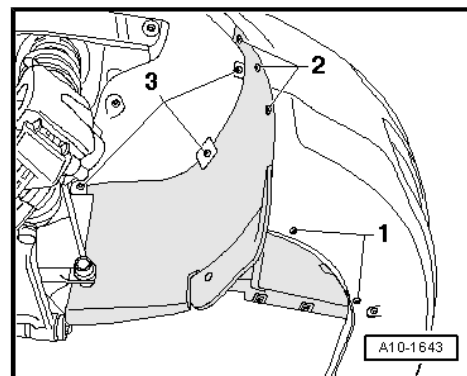
- Remove noise insulation (left-side) by releasing fasteners -1 ... 3-.



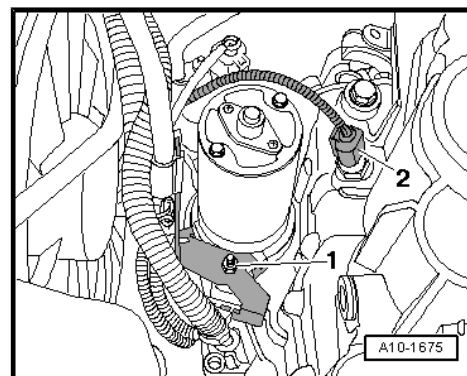
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- Remove noise insulation (right-side) -fasteners 1 ... 3-.



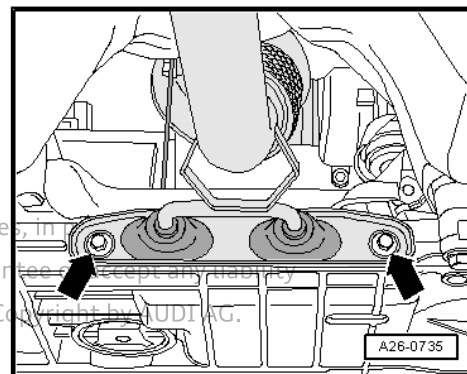
- Unplug electrical connector -2- for reversing light switch - F4- .
- Remove nut -1- and detach bracket from bottom starter bolt with electrical wiring.
- Unscrew bottom bolt securing starter -1-.
- Place starter to side onto longitudinal member.



- Remove exhaust system bracket from subframe -arrows-.



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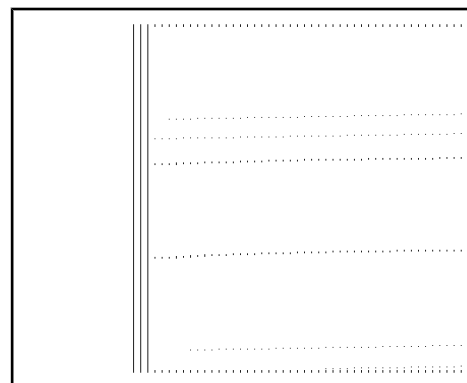


- Disconnect exhaust system at clamp -arrows-.
- Tie up the front exhaust pipe.



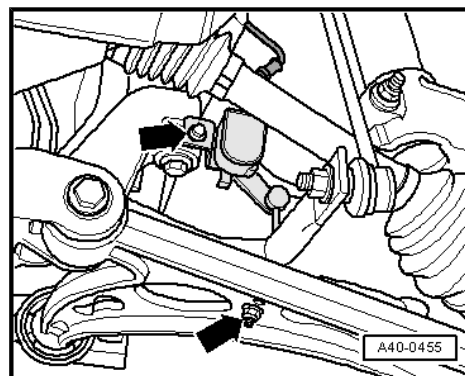
Note

To avoid damage, the flexible joints in the front exhaust pipe must not be bent more than 10°.

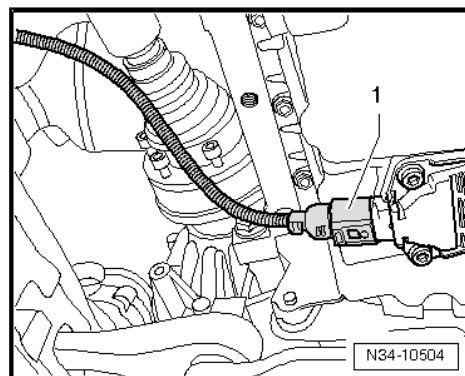




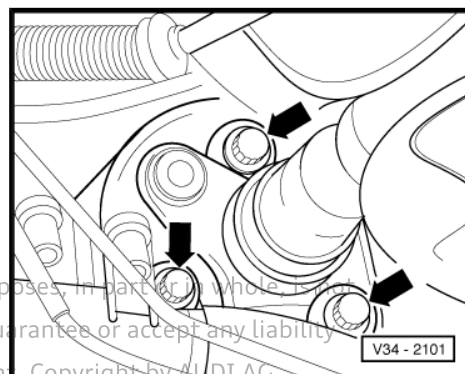
- If fitted, remove front left vehicle level sender - G78-
-arrows-.



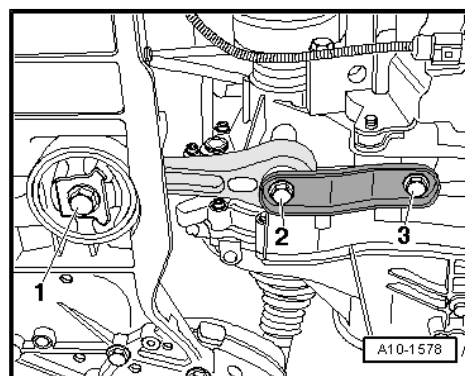
- Detach connector -1- from oil level and oil temperature sender - G266- .



- Mark position of propshaft with flexible coupling in relation to bevel box flange.
- Unbolt flexible coupling for propshaft at bevel box -arrows-
(counterhold using a suitable lever at the triangular flange).



- Remove bolts -2- and -3- for pendulum support on gearbox.



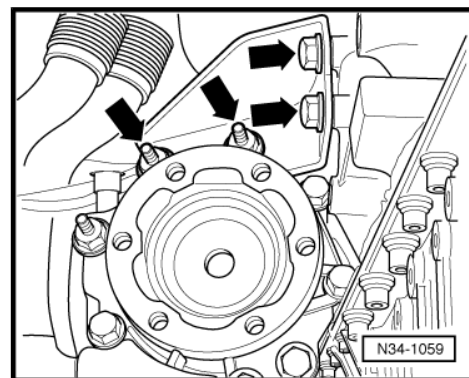
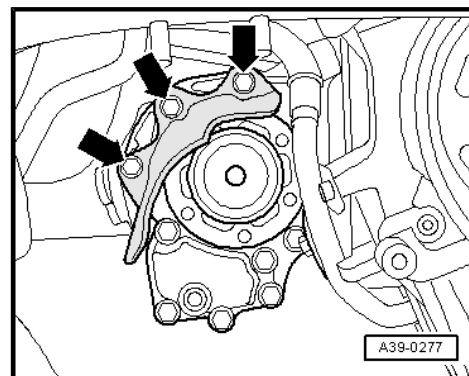
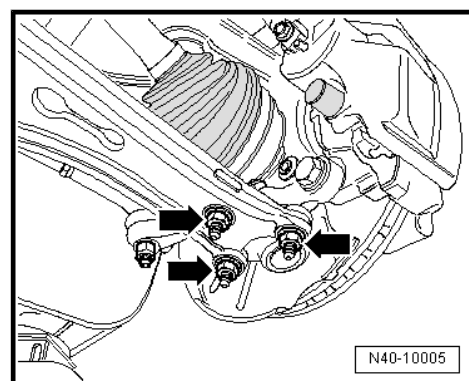
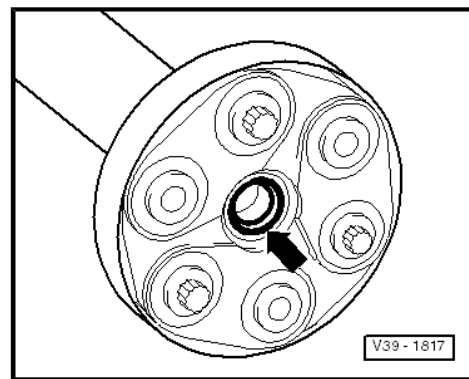
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Note

Slackening off securing bolts for pendulum support causes engine/gearbox assembly to swing forwards slightly (towards front end). Make sure that the seal -arrow- in the flange of the propshaft is not damaged when removing and installing.

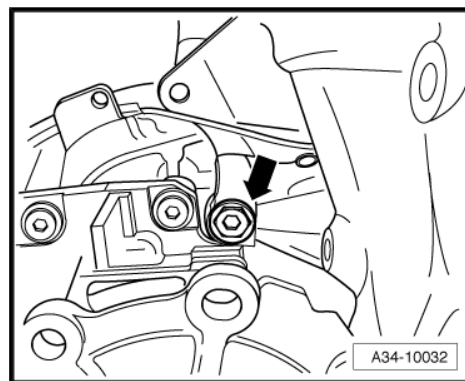
- Push engine/gearbox assembly forward slightly (towards front end) and then pull propshaft off bevel box.
- Lift propshaft up and secure with wire.
- Unscrew coupling rods on left and right of anti-roll bar.
- Unscrew nuts -arrows- securing swivel joint to wishbone.
- Detach steering rack from subframe and tie it up.
- Before removal, fix subframe in position ⇒ Rep. gr. 40 .
- Remove subframe with anti-roll bar, suspension brackets and wishbones ⇒ Rep. gr. 40 .
- Unbolt heat shield for drive shaft (right-side) from bevel box -arrows-.
- Unbolt drive shafts (left and right) from gearbox flange shafts.
- Lift drive shafts as high as possible and secure with wire, making sure you do not damage surface coating.
- Unscrew bolts -arrows- for gearbox carrier on bevel box and engine.
- Remove gearbox carrier.



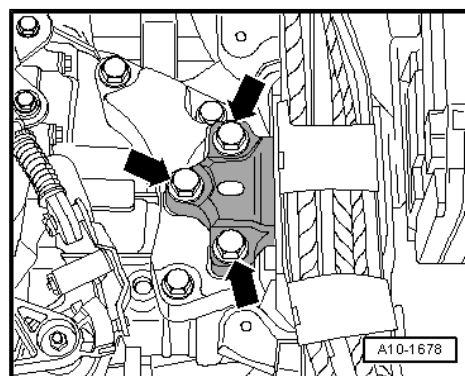
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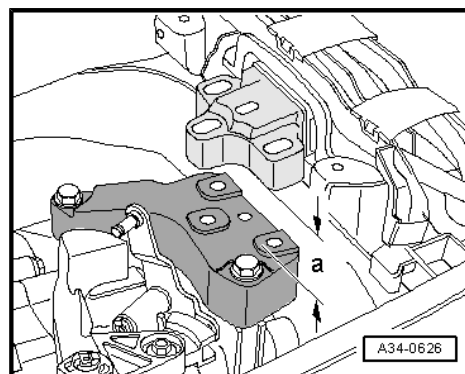
- Remove bolt -arrow- from above bevel box.



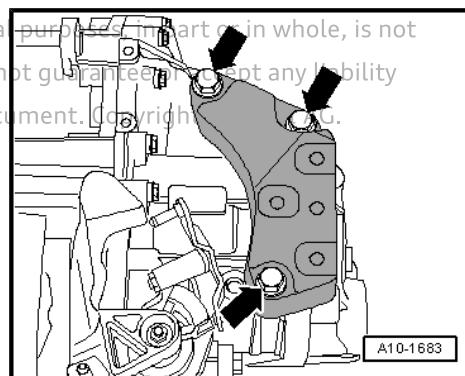
- Remove bolts -arrows- on gearbox mounting.



- By adjusting spindles on support bracket - 10 - 222 A- , lower gearbox by distance -a-.
- Dimension -a- = 70 mm



- Unbolt gearbox support from gearbox -arrows-.

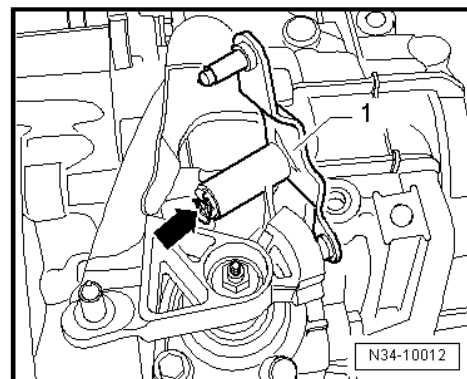


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Metal gate relay lever:

- Pull securing clip -arrow- off gate relay lever -1- and remove gate relay lever.



Plastic gate relay lever:

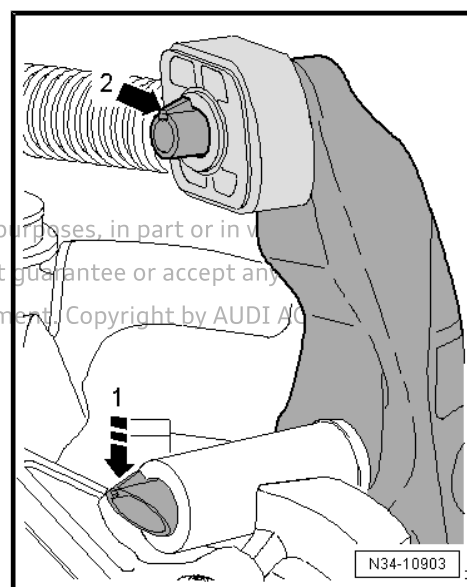
- Press in detent -arrow 1- as far as stop and remove gate relay lever together with cable end-piece (move relay lever in normal direction of operation).



Note

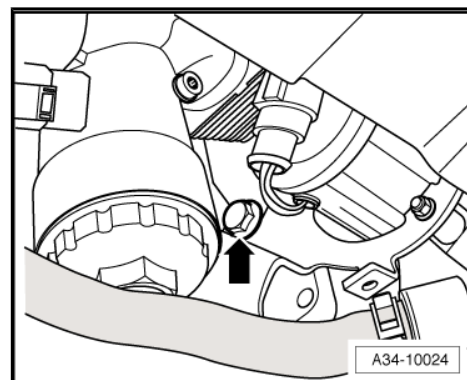
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Disregard item 2.



All vehicles (continued):

- Remove engine/gearbox connecting bolt -arrow- (on engine side).

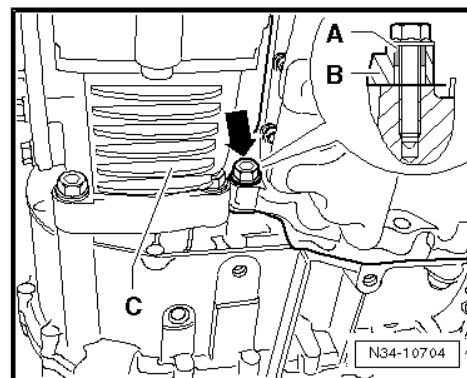


- Unscrew engine/gearbox securing bolt -arrow- located next to bevel box -C-.



Note

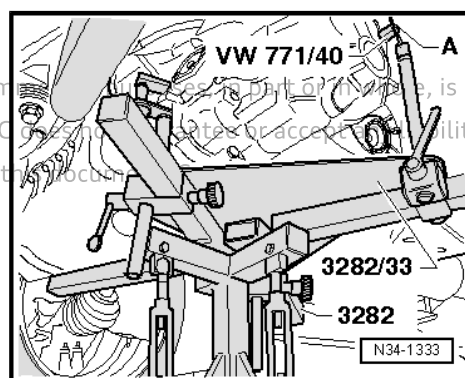
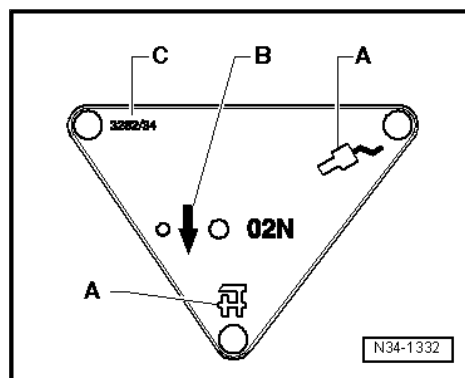
Note: retaining clip -A- securing bolt -arrow- is fitted in sump -B-.





To remove gearbox 02Q, set up gearbox support - 3282- with adjustment plate - 3282/33- .

- Insert gearbox support - 3282- in engine and gearbox jack - V.A.G 1383 A- .
- Align arms of gearbox support according to holes in adjustment plate .
- Bolt on support elements -A-, as illustrated on adjustment plate .
- Screw in pin - 3282/29- in place of support element -C-.
- Place engine and gearbox jack under vehicle; arrow symbol -B- on adjustment plate points to front of vehicle.
- Align adjustment plate and gearbox parallel to one another.
- Screw pin - 3282/29- into hole for bolt securing pendulum support to gearbox.
- Secure adapter - VW 771/40- in tapped hole of gearbox housing, as shown in illustration.
- Secure gearbox to gearbox support - 3282- with bolt M10x20 -A-.

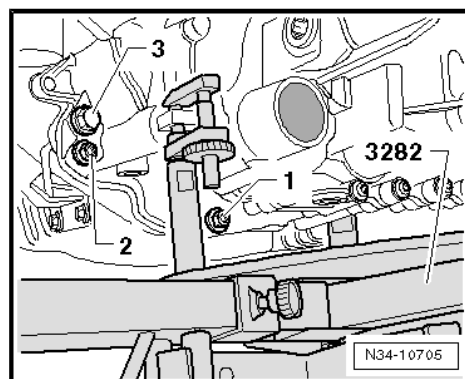


- Unscrew last engine/gearbox securing bolts at bottom -1 ... 3-.
- Press gearbox off engine (dowel sleeves).
- Carefully lower gearbox.



Note

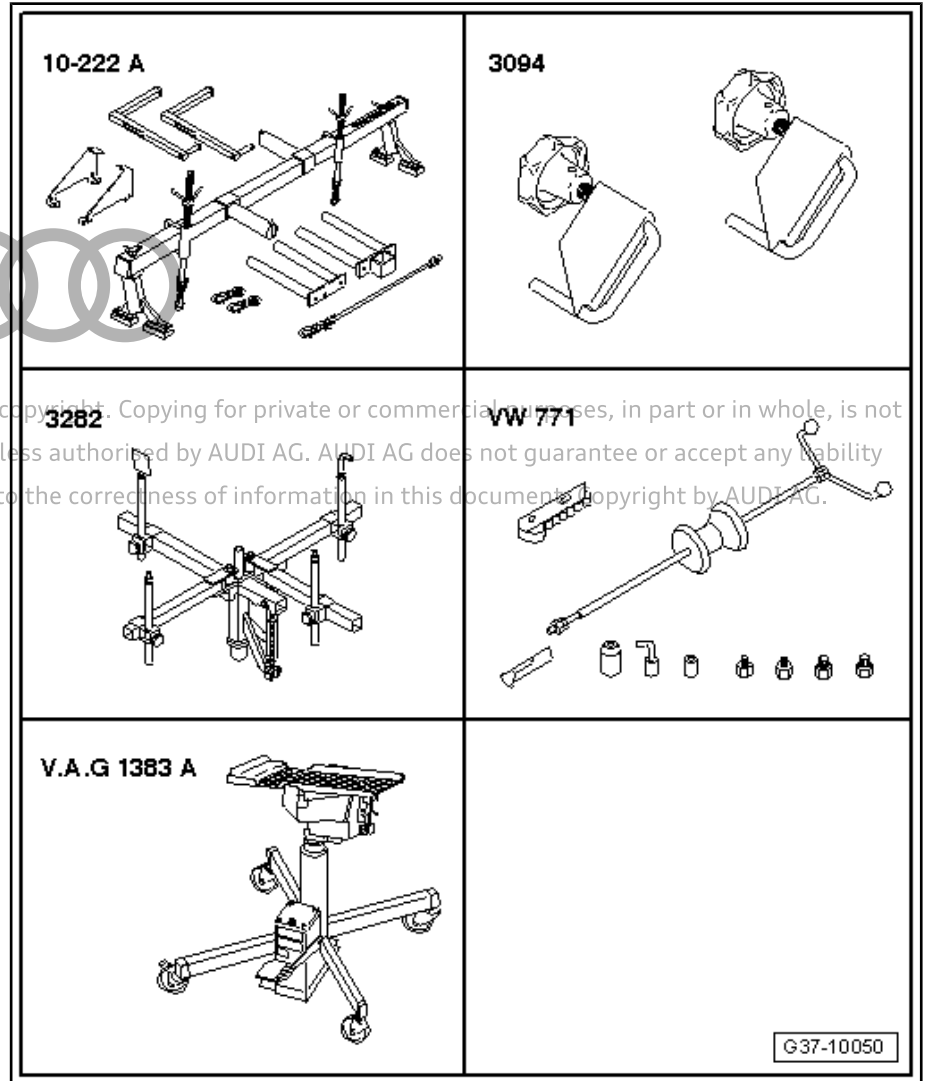
When lowering gearbox make sure the electromechanical power steering is not damaged.



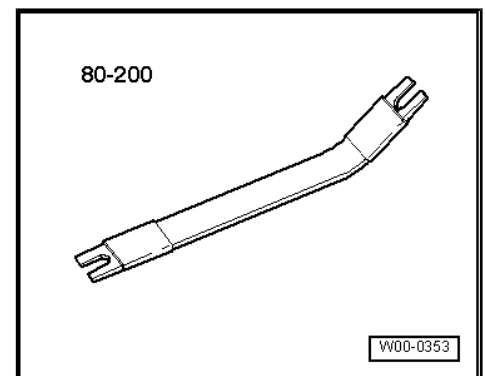
2.3 Removing gearbox - vehicles with TDI engine



Special tools and workshop equipment required

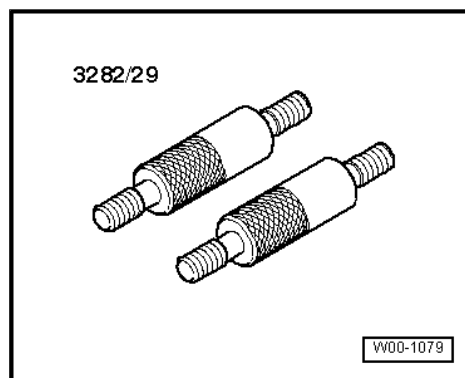


- ◆ Support bracket - 10 - 222 A-
- ◆ Hose clamps up to 25 mm - 3094-
- ◆ Gearbox support - 3282-
- ◆ Adapter - VW 771/40-
- ◆ Engine and gearbox jack - V.A.G 1383 A-
- ◆ Removal lever - 80 - 200- for vehicles from 06.2008 onwards





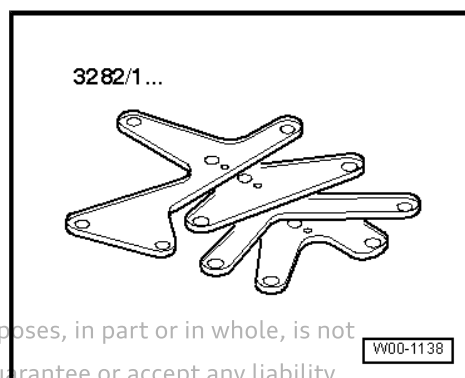
◆ Pin - 3282/29-



◆ Adjustment plate - 3282/33-



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◆ Stepladder - VAS 5085-



◆ Grease for clutch plate splines - G 000 100-

◆ Grease - G 000 450 02-

◆ Universal grease - G 052 735-

◆ M10x20 bolt



Procedure



Note

Fit all cable ties in the original positions when installing.



Caution

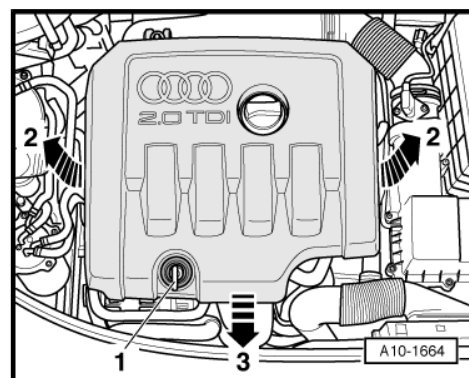
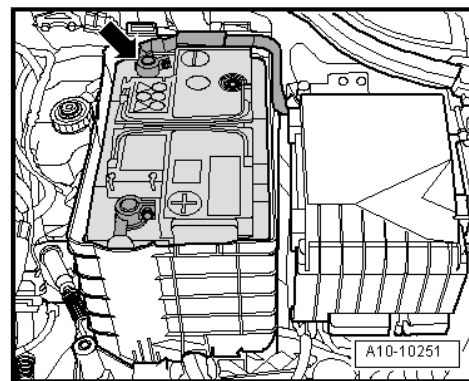
When disconnecting the battery there is a risk of irreparable damage to electronic components.

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

- With ignition switched off, disconnect battery earth wire -arrow- ⇒ Electrical system; Rep. gr. 27 .

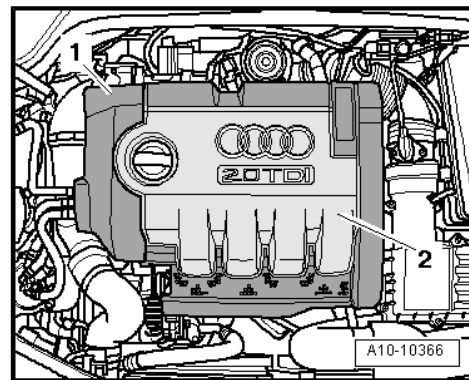
Unit injector engine with one-piece engine cover panel:

- Pull oil dipstick -1- out of guide tube.
- Raise engine cover panel at sides -arrows 2- and pull out towards front -arrow 3-.
- Insert the oil dipstick back into the guide tube.



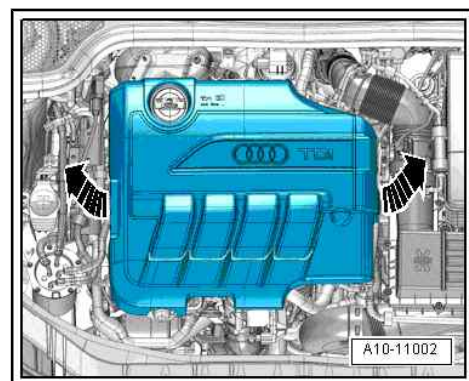
Unit injector engine with two-piece engine cover panel:

- Evenly lift off engine cover panel (outer section -1- and inner section -2-).



Common rail engine:

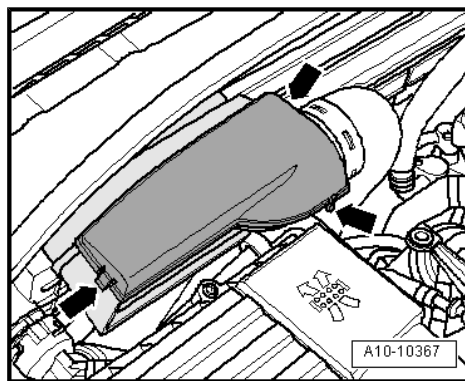
- Remove engine cover panel -arrows-.



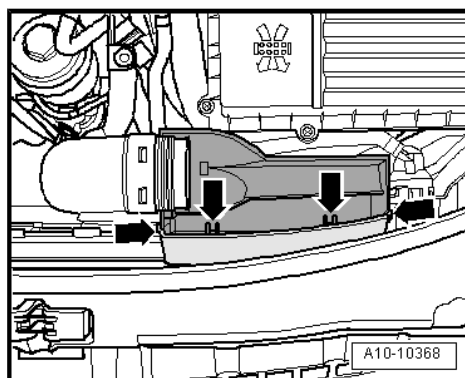


All vehicles (continued):

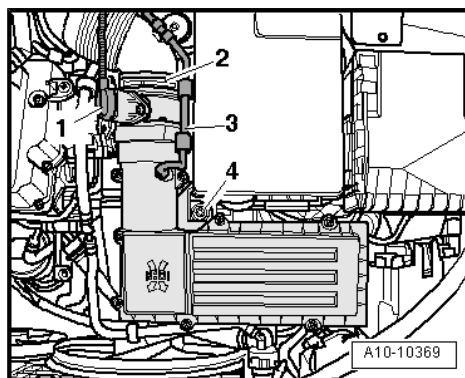
- Pull off cover for air duct (release retaining clips -arrows- on the sides).



- Pull off bottom section of air duct (release retaining clips -arrows-).
- Remove bottom section of air duct with air intake hose.



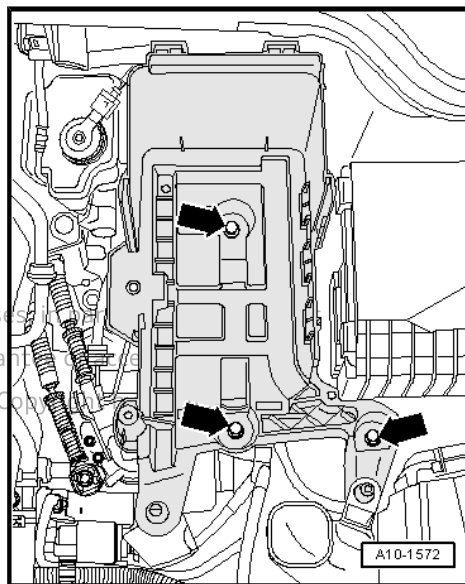
- Remove air cleaner housing completely ⇒ Rep. gr. 23 .



- Remove battery ⇒ Electrical system; Rep. gr. 27 .
- Remove battery tray -arrows- (detach front of battery tray from air duct if applicable).



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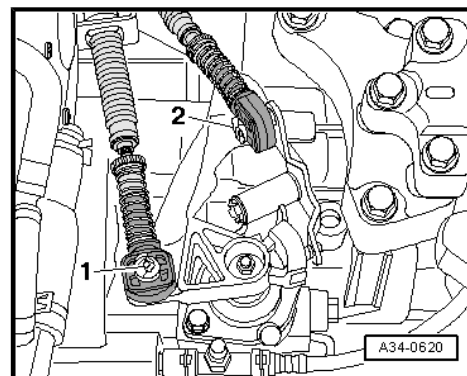




- Detach securing clip -1- and pull cable end-piece off pin.

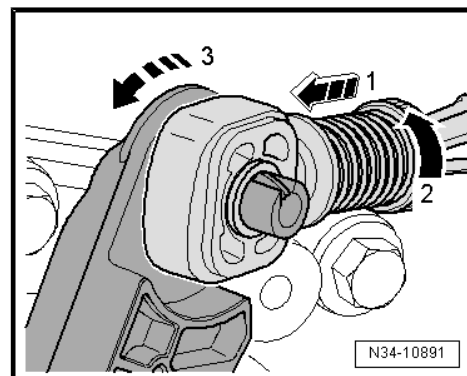
Metal gate relay lever:

- Detach securing clip -2- and pull cable end-piece off gate relay lever.



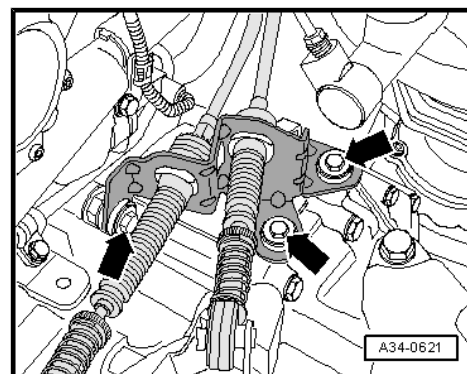
Plastic gate relay lever:

- To prevent damage to gate selector cable, cable end-piece must be detached from gate selector cable before removing relay lever.
- Pull locking mechanism forwards in direction of -arrow 1- onto stop and then turn to left in direction of -arrow 2- to lock.
- Then press gate relay lever forwards (in direction of -arrow 3-).
- Do not detach cable end-piece from gate relay lever until gate relay lever has been removed ⇒ [page 75](#).



All vehicles (continued):

- Detach cable support bracket from gearbox -arrows-; then move to one side and tie up together with selector cables.



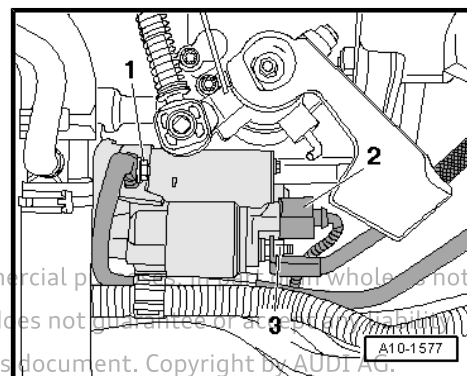
- Unscrew earth wire -1- from upper starter bolt.



Note

Connector -2- and wire -3- remain in position on starter.

- Unscrew top starter bolt -1-.



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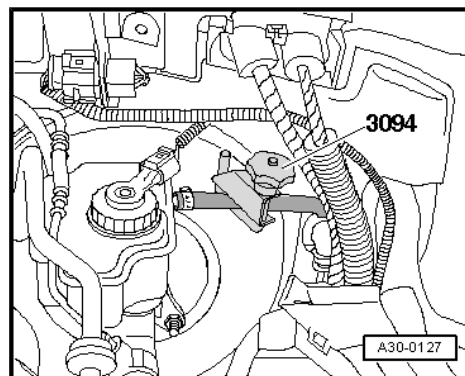


- If a plastic pipe is installed between clutch master cylinder and slave cylinder, clamp off supply hose to clutch master cylinder using hose clamp up to 25 mm - 3094- .



Note

- ◆ *Clamping off the plastic 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.*

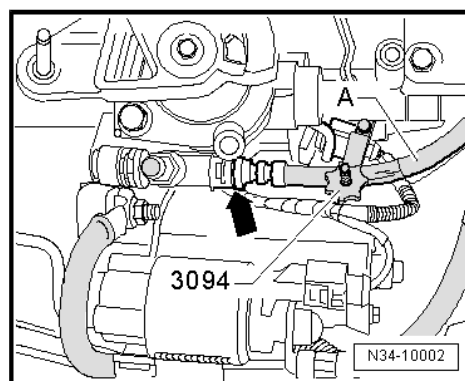


- If a pipe/hose assembly is installed between clutch master cylinder and slave cylinder, clamp off hose -A- using hose clamp up to 25 mm - 3094- .



Note

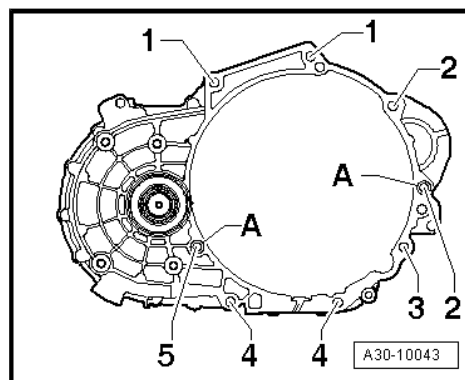
- ◆ *Make sure brake fluid does not come into contact with starter or gearbox when performing the following operations. If it does, clean affected area thoroughly.*
- ◆ *Place a cloth underneath to catch escaping brake fluid.*
- Pull out clip -arrow- as far as stop.
- Pull plastic pipe or pipe/hose assembly -A- out of bleeder connection for clutch slave cylinder and seal end of pipe.



Caution

Do not operate clutch pedal after disconnecting pipe/hose assembly.

- Remove bolts -1- from engine/gearbox flange.
- Then remove upper securing bolt from starter -2-.



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Vehicles from 06.2008 onwards:

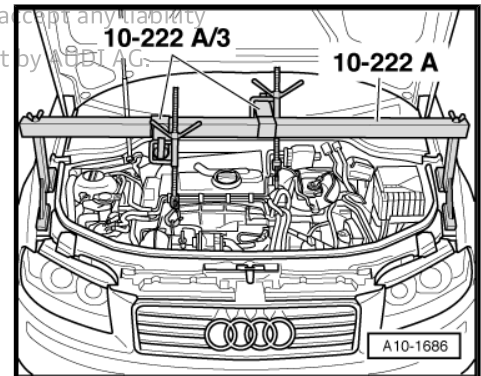
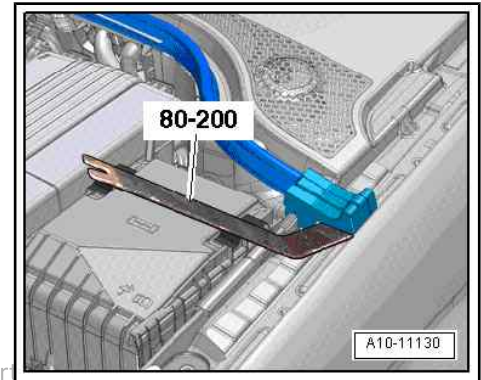
- Lever clip off sealing element using removal lever - 80 - 200- and fold up sealing element.



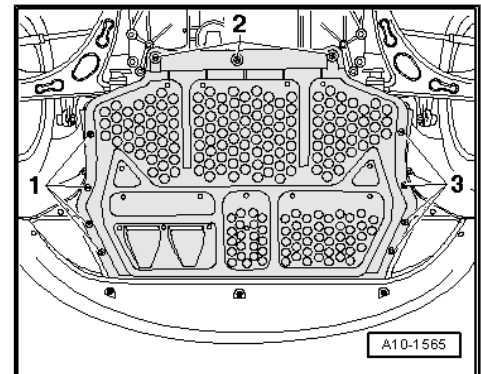
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All vehicles (continued):

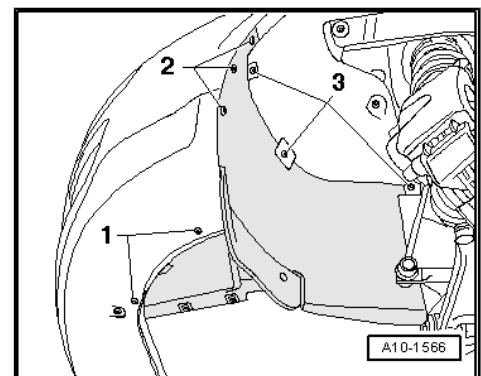
- Set up support bracket - 10 - 222 A- with adapters - 10 - 222 A /3- on wing mounting flanges.
- Engage hooks of spindles on lifting eyes.
- Partly take up weight of engine with spindles, but do not lift.



- Remove noise insulation (centre) by releasing fasteners -1 ... 3-.

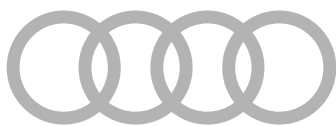


- Remove noise insulation (left-side) by releasing fasteners -1 ... 3-.

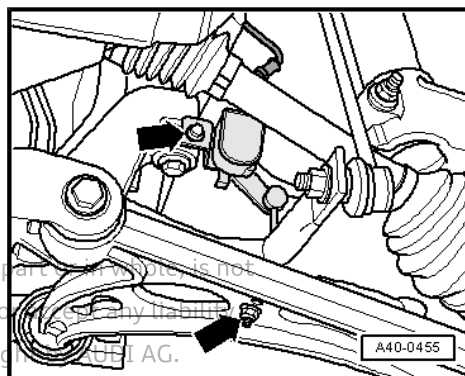




- If fitted, remove front left vehicle level sender - G78-
-arrows-.

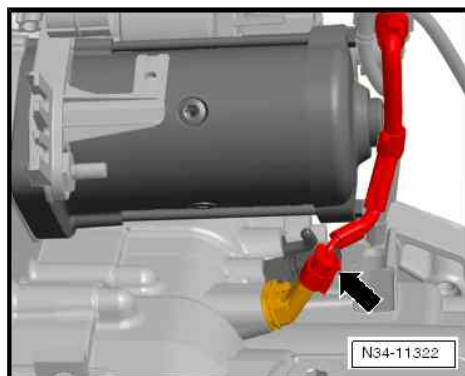


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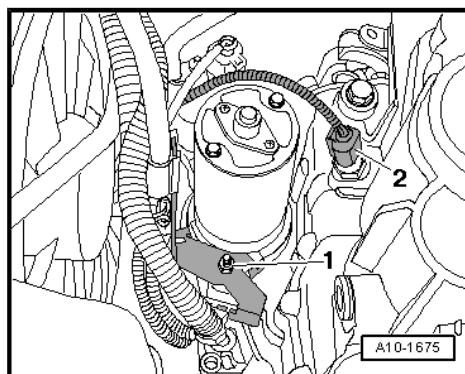
Vehicles with start/stop system:

- Unplug electrical connector -arrow- from gearbox neutral position sender - G701- .

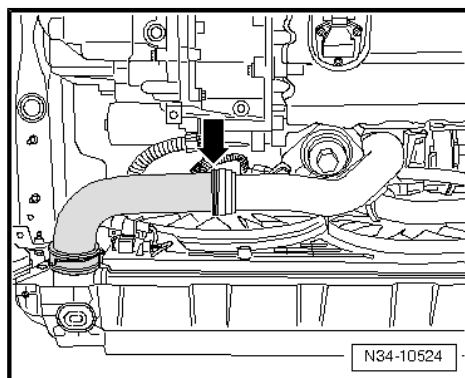


All vehicles (continued):

- Unplug electrical connector at reversing light switch - F4- -2-.
- Remove nut -1- and detach bracket from bottom starter bolt with electrical wiring.
- Unscrew bottom bolt securing starter -1-.
- Place starter to side onto longitudinal member.

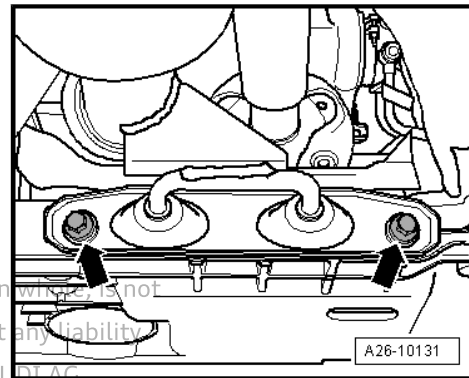


- Detach connection -arrow- at air pipe (left-side).





- Remove exhaust system bracket from subframe -arrows-.

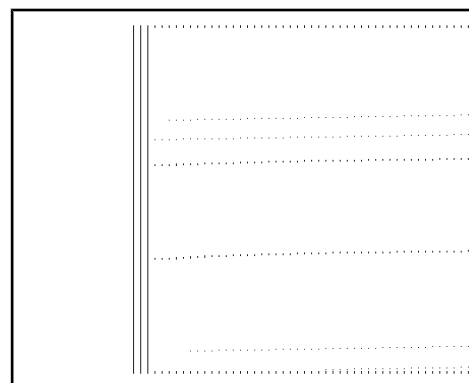


- Disconnect exhaust system at clamp -arrows-.
- Tie up the front exhaust pipe.

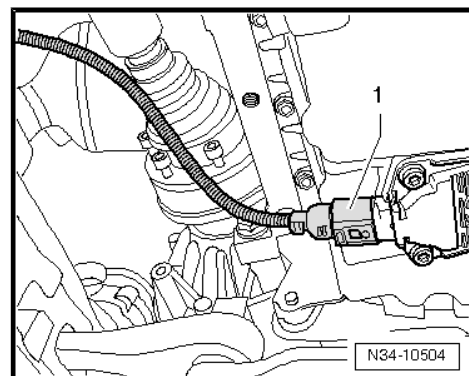


Note

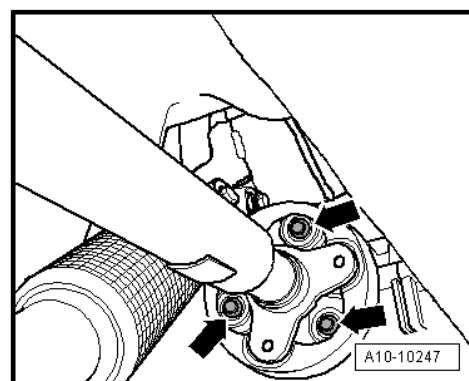
To avoid damage, the flexible joints in the front exhaust pipe must not be bent more than 10°.



- Detach connector -1- from oil level and oil temperature sender - G266- .

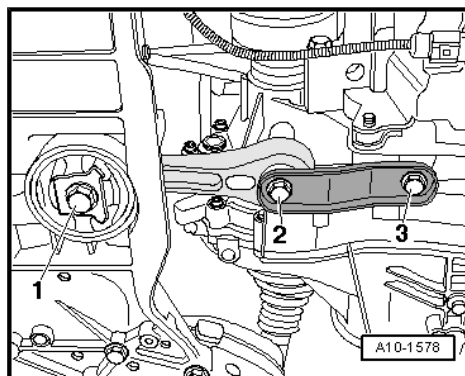


- Mark position of propshaft with flexible coupling in relation to bevel box flange.
- Unbolt flexible coupling for propshaft at bevel box -arrows- (counterhold using a suitable lever at the triangular flange).





- Remove bolts -2- and -3- for pendulum support on gearbox.



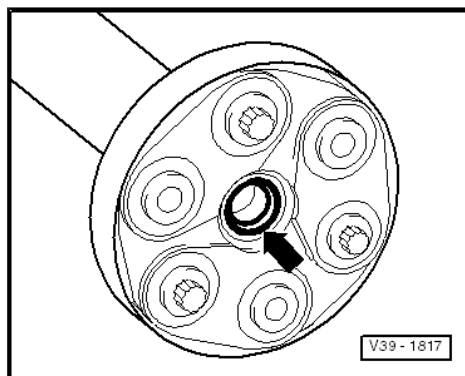
- Push engine/gearbox assembly forward slightly (towards front end) and pull propshaft off bevel box.



Caution

Make sure not to damage the oil seal -arrow- in the propshaft flange.

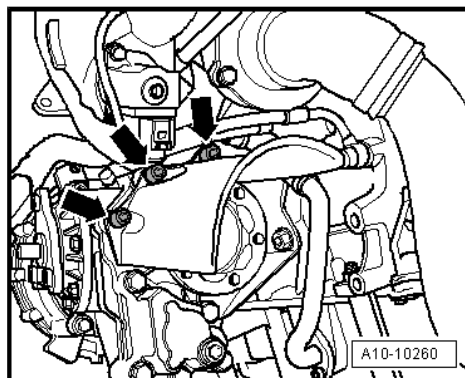
- ◆ ***Push the propshaft horizontally to the rear and towards the right side of the vehicle as far as possible.***



Note

The propshaft must be renewed if the oil seal is damaged.

- Lift propshaft up and secure with wire.
- Before removal, fix subframe in position ⇒ Rep. gr. 40 .
- Remove subframe with pendulum support ⇒ Rep. gr. 40 .
- Remove suspension bracket with wishbone (left-side) ⇒ Rep. gr. 40 .
- Unbolt heat shield for drive shaft (right-side) from bevel box -arrows-.
- Unbolt drive shafts (left and right) from gearbox flange shafts.

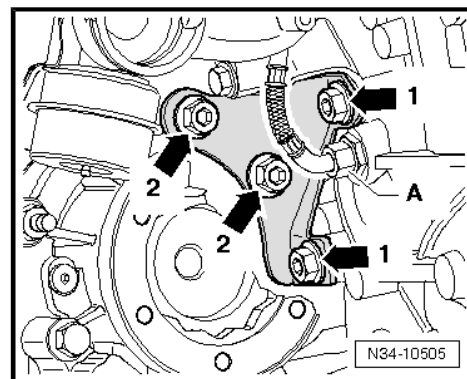


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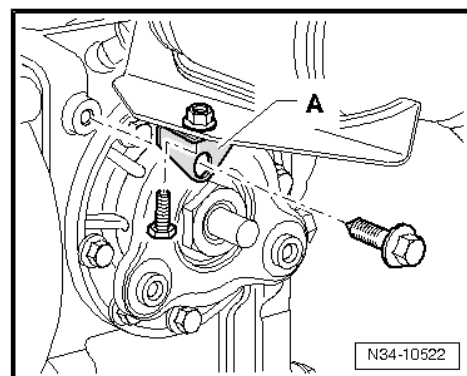


Vehicles without diesel particulate filter:

- Unscrew bolts for gearbox carrier on engine and bevel box -arrows 1- and -arrows 2-.
- Remove gearbox carrier.



- If fitted, remove exhaust system support -A- ⇒ Rep. gr. 26 .

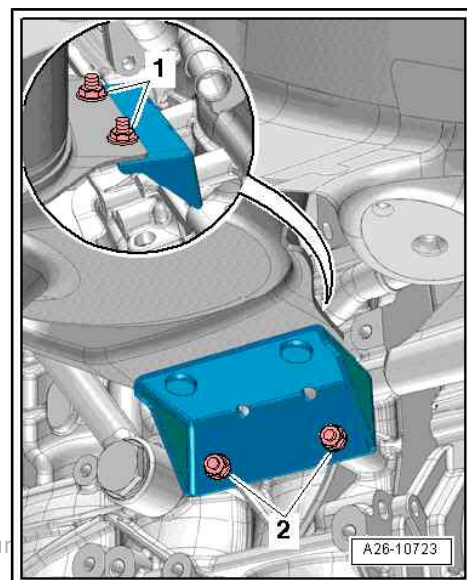


Vehicles with diesel particulate filter:

- Remove nuts -1- and -2- and detach bracket for particulate filter.



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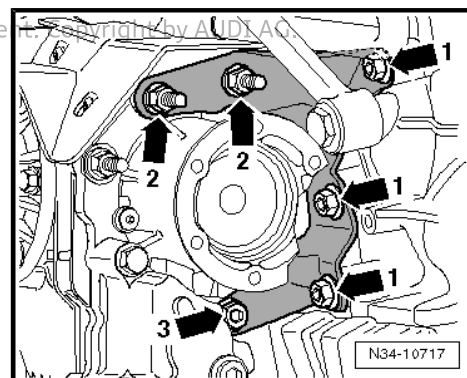


- Remove bolts for gearbox carrier on engine and bevel box -arrows 1 ... 3-.



Note

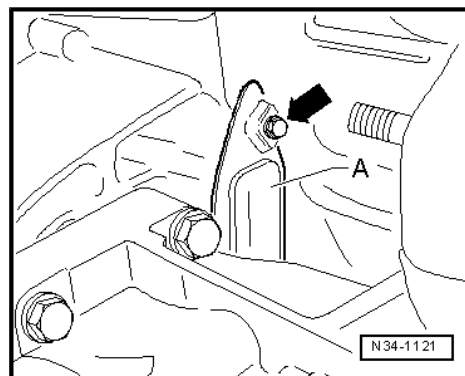
Do not remove gearbox carrier until gearbox has been pressed off engine.



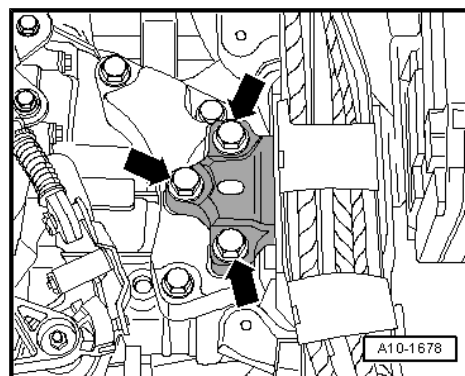


All vehicles (continued):

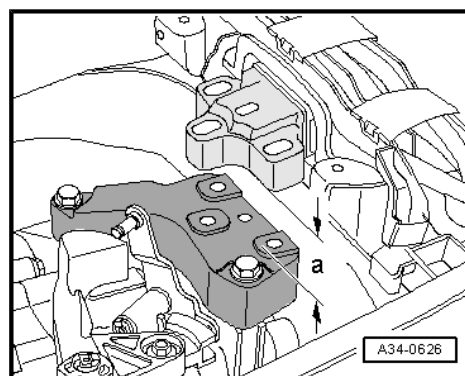
- If fitted, remove small cover plate -A- at rear of bevel box -arrow-.



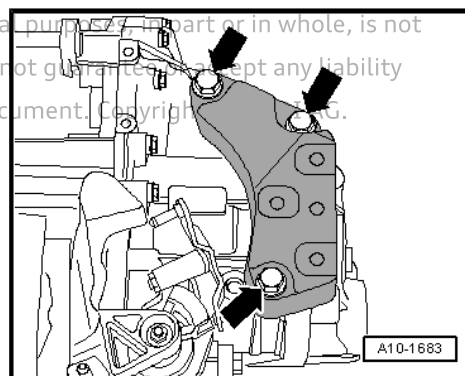
- Remove bolts -arrows- on gearbox mounting.



- By adjusting spindles on support bracket - 10 - 222 A- , lower gearbox by distance -a-.
- Dimension -a- = 60 mm



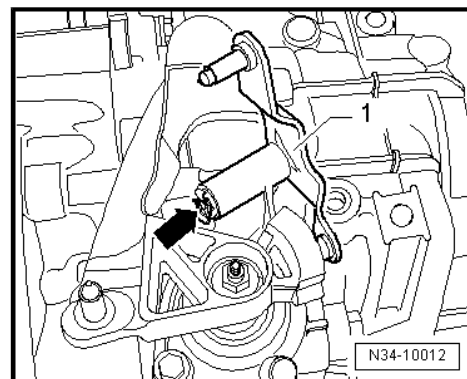
- Unbolt gearbox support from gearbox -arrows-.
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Metal gate relay lever:

- Pull securing clip -arrow- off gate relay lever -1- and remove gate relay lever.



Plastic gate relay lever:

- Press in detent -arrow 1- as far as stop and remove gate relay lever together with cable end-piece (move relay lever in normal direction of operation).

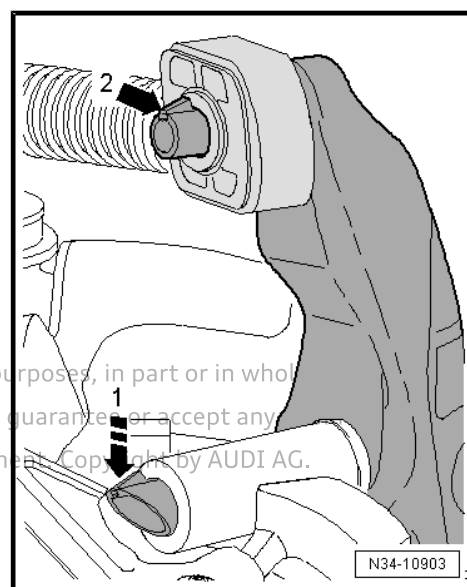


Note

Disregard -item 2-.



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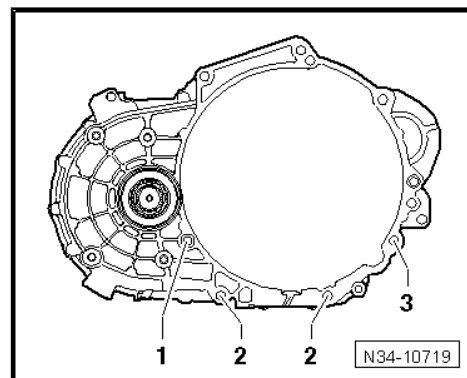
All vehicles (continued):

- Remove engine/gearbox connecting bolts (bottom) -1- (on engine side) and -2-.



Note

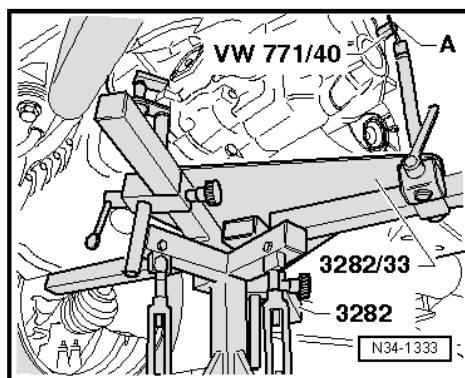
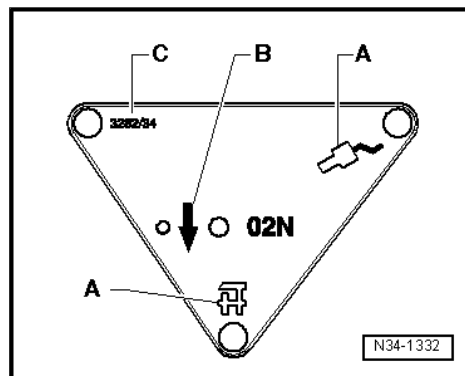
Do not loosen bolt -3- at this stage.



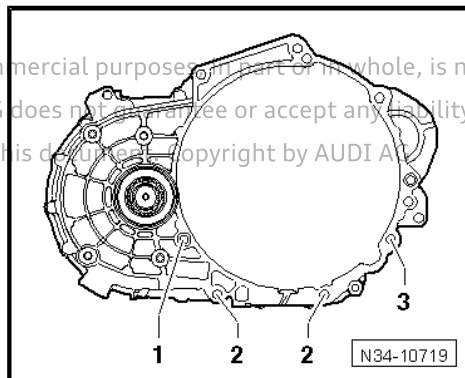


To remove gearbox 02Q, set up gearbox support - 3282- with adjustment plate - 3282/33- .

- Insert gearbox support - 3282- in engine and gearbox jack - V.A.G 1383 A- .
- Align arms of gearbox support according to holes in adjustment plate .
- Bolt on support elements -A-, as illustrated on adjustment plate .
- Screw in pin - 3282/29- in place of support element -C-.
- Place engine and gearbox jack under vehicle; arrow symbol -B- on adjustment plate points to front of vehicle.
- Align adjustment plate and gearbox parallel to one another.
- Screw pin - 3282/29- into hole for bolt securing pendulum support to gearbox.
- Secure adapter - VW 771/40- in tapped hole of gearbox housing, as shown in illustration.
- Secure gearbox to gearbox support - 3282- with bolt M10x20 -A-.



- Unscrew last engine/gearbox securing bolt -3-.
- Press gearbox off engine (dowel sleeves).



Vehicles with diesel particulate filter:

- Remove gearbox carrier -A-.

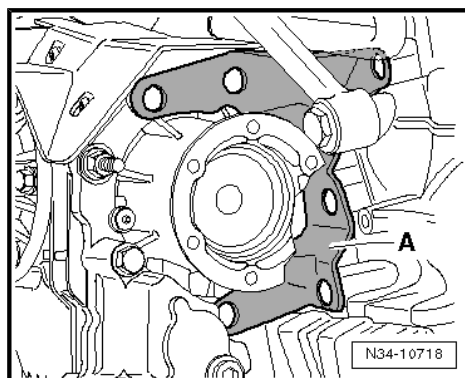
All vehicles (continued):

- Carefully lower gearbox.



Note

When lowering gearbox make sure the electromechanical power steering is not damaged.



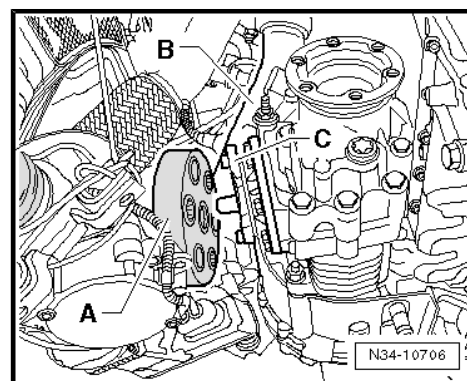
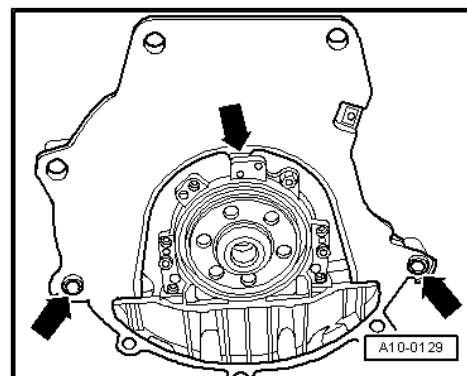
2.4 Installing gearbox

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



Note

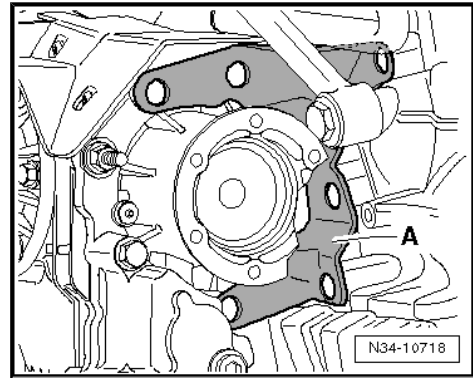
- ◆ *Renew self-locking nuts and bolts when performing assembly work.*
 - ◆ *Renew oil seals, gaskets, O-rings and bolts which are tightened by turning through a specified angle.*
 - ◆ *All cable ties which are released or cut open when removing must be refitted in the same position when installing.*
 - ◆ *Clean input shaft splines and (in the case of a used clutch plate) the hub splines. Remove corrosion and apply only a very thin coating of grease for clutch plate splines - G 000 100- to the splines. Then move clutch plate backwards and forwards on input shaft until hub moves freely on shaft. It is important to remove excess grease.*
 - ◆ *When installing a new gearbox, the gear selector lever and gate relay lever must be transferred to the new unit.*
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- Use thread tap to remove any remaining locking fluid from all threaded holes which will accommodate self-locking bolts.
 - Check that dowel sleeves for centralising engine/gearbox are in the cylinder block; install if necessary.
 - Make sure that the intermediate plate is engaged on the sealing flange and fitted on the dowel sleeves -arrows-.
 - Check that clutch plate is centralised ⇒ [page 53](#) .
 - Check release bearing for wear. If necessary, renew slave cylinder with release bearing ⇒ [page 42](#) .
 - Raise gearbox carefully using gearbox support - 3282- .
 - Align gearbox with engine and install. Guide output flange -C- on gearbox past propshaft -A- and front exhaust pipe -B-. Rotate output flange if necessary.





Vehicles with 4-cylinder engine:

- Fit gearbox carrier -A- before attaching gearbox to engine.



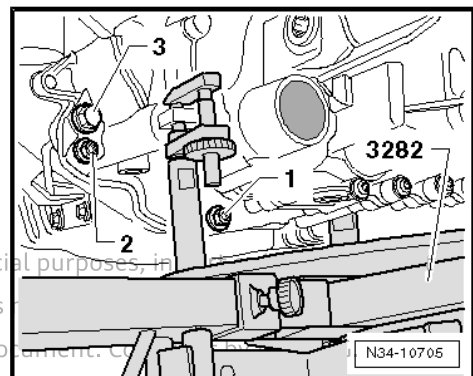
All vehicles (continued):

- Screw in bottom engine/gearbox securing bolts -1 ... 3- and tighten to specified torque ➔ [page 127](#).



Note

These 3 bolts have captive washers; for correct version refer to ➔ [Electronic parts catalogue](#).

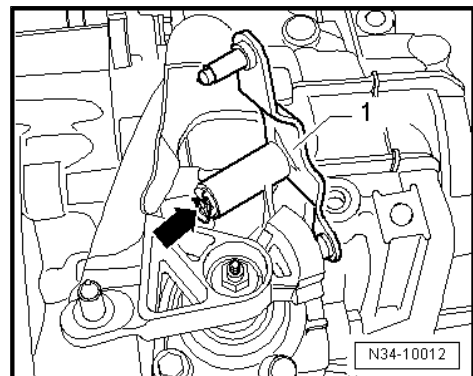


- Screw in and tighten engine/gearbox securing bolts (tightening torque ➔ [page 127](#)).

- Lubricate bearings and moving surfaces of gate relay lever -1- with grease - G 000 450 02- .

Metal gate relay lever:

- Insert gate relay lever -1- and secure with securing clip -arrow-.

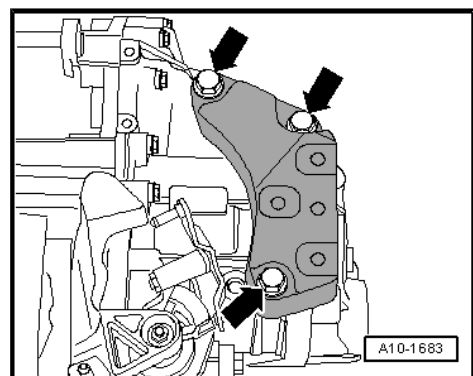


Plastic gate relay lever -1-:

- Fit gate relay lever (with detent catch) ➔ [page 74](#) .
- Fit gate relay lever (with clip) ➔ [page 75](#) .

All vehicles (continued):

- Attach gearbox support to gearbox with new hexagon bolts -arrows- and tighten to specified torque ➔ [page 131](#) .



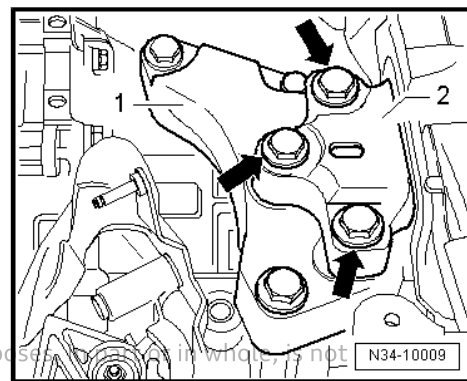


- Align engine/gearbox in installation position. To do so, tighten spindles of support bracket - 10 - 222 A- until gearbox support -1- makes contact with gearbox mounting -2-.
- In addition, place engine and gearbox jack - V.A.G 1383 A- with universal support - V.A.G 1359/2- below gearbox (near differential) and lift until gearbox support is parallel to gearbox mounting.



Note

Gearbox mounting and gearbox support must be parallel to avoid causing damage to thread of gearbox support.



- Install new hexagon bolts -arrows- for securing gearbox mounting -2- to gearbox support -1- and tighten to specified torque ⇒ [page 131](#).



Note

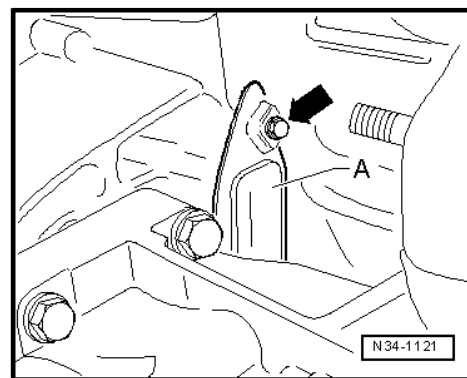
When installing gearbox ensure engine/gearbox mountings are installed stress-free ⇒ Rep. gr. 10.



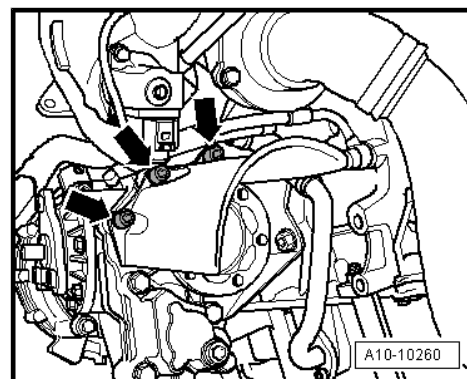
Caution

Do not remove support bracket 10-222/A until all bolts securing the left-hand assembly mounting have been tightened to the prescribed torque setting.

- Bolt gearbox carrier for bevel box to engine and bevel box, adhering to correct tightening sequence ⇒ [“6.3.1 Tightening torques for bevel box”, page 157](#).
- If fitted, install small cover plate -A- at rear of bevel box -arrow-.
- Secure drive shafts (left and right) to gearbox ⇒ Rep. gr. 40.



- Secure heat shield for drive shaft (right-side) to bevel box -arrows-.
- Tighten bolts -arrows- to 20 Nm.
- Depending on version, heat shield may only be secured with 2 nuts/2 bolts.
- Install suspension bracket with wishbone (left-side) ⇒ Rep. gr. 40.
- Install subframe/wishbones ⇒ Rep. gr. 40.
- Attach steering rack to subframe ⇒ Rep. gr. 48.





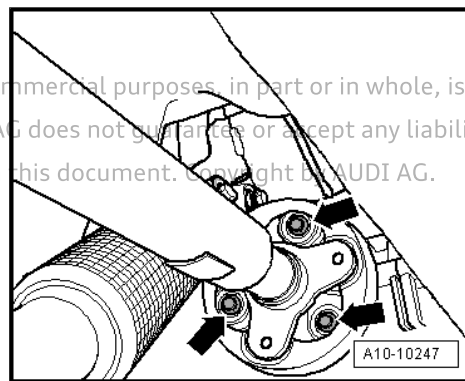
- Press engine/gearbox assembly towards bulkhead, taking care to guide pin on bevel box into propshaft flange.



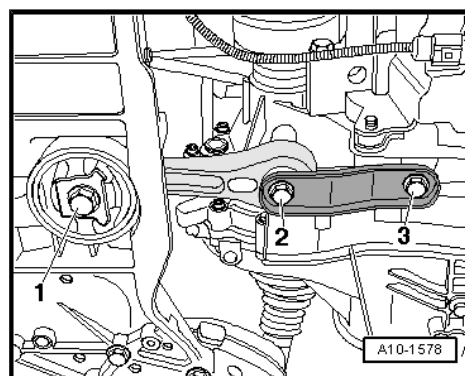
Note

- ◆ *When removing and installing the gearbox do not damage the seal in the propshaft flange. Renew propshaft if damaged.*
- ◆ *Ensure propshaft is horizontal when pushing it onto centring pin.*

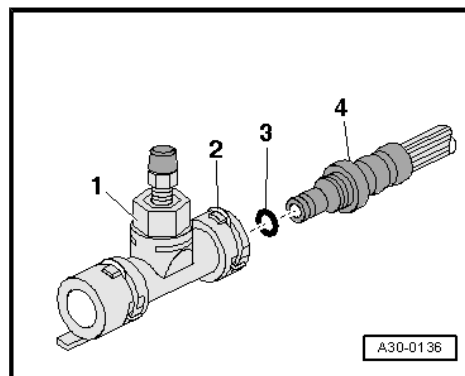
- Bolt flexible coupling on propshaft onto bevel box flange -arrows- ⇒ Rear final drive 02D, 0AV, 0BR and 0BY; Rep. gr. 39 .



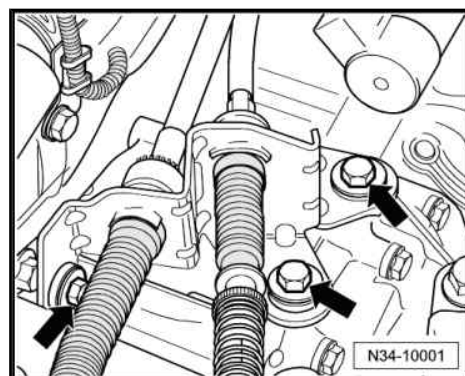
- Secure pendulum support to gearbox with bolts -2- and -3- (use new bolts ⇒ [Item 2 \(page 131\)](#)).
- If previously removed, install front left vehicle level sender - G78- .
- Install bracket for exhaust system/particulate filter ⇒ Rep. gr. 26 .



- Push pipe/hose assembly -4- into bleeder connection -1- so that retaining clip -2- snaps into place.
- Pull on pipe/hose assembly to check it is secure.
- Bleed clutch system ⇒ [page 37](#) .



- Install cable support bracket on gearbox -arrows-.





- Apply a small quantity of grease - G 000 450 02- to pin -arrow- of gearbox selector lever -1-.
- Push gear selector cable onto pin -arrow- and secure with securing clip -3-.

Metal gate relay lever -2-

- Apply a small quantity of grease - G 000 450 02- to pin -arrow- of gate relay lever -2-.
- Push gate selector cable onto pin -arrow- and secure with securing clip -4-.

Plastic gate relay lever -2-

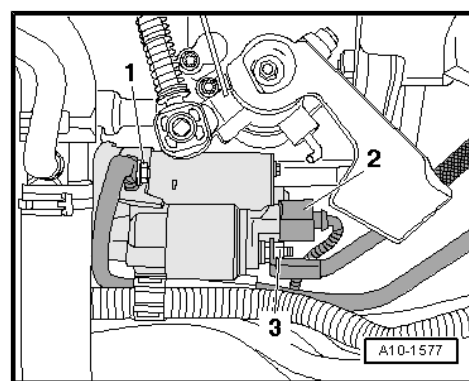
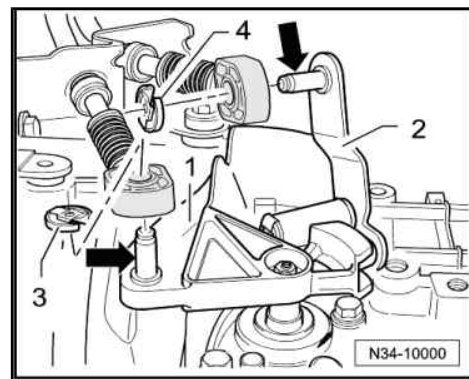
- Insert gate selector cable in cable end-piece.

All vehicles (continued)

- Adjust selector mechanism ⇒ [page 81](#) .
- Fit earth wire -1-.
- Install battery tray and battery ⇒ Electrical system; Rep. gr. 27 .
- Install air cleaner housing ⇒ Rep. gr. 23 or ⇒ Rep. gr. 24 .
- Install noise insulation panels ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation .
- Fit wheels ⇒ Rep. gr. 44 .

Vehicles with gas discharge headlights:

- Check headlight settings ⇒ Rep. gr. 94 .



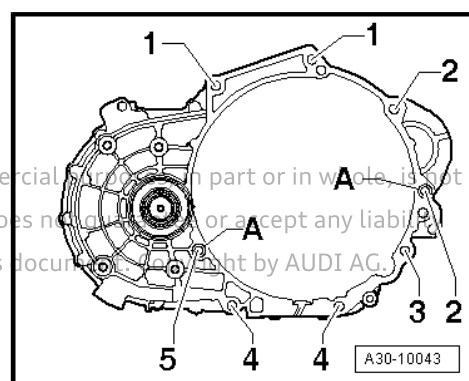
2.5 Tightening torques (installing gearbox)

Securing gearbox to engine (illustration shows gearbox flange)

Vehicles with TDI engine:

Item	Bolt	Nm
1 ¹⁾	M12x55	80
2 ¹⁾	M12x165	80
3	M10x105	40
4	M10x50	40
5 ²⁾	M12x65	80
A	Dowel sleeves for centralising	

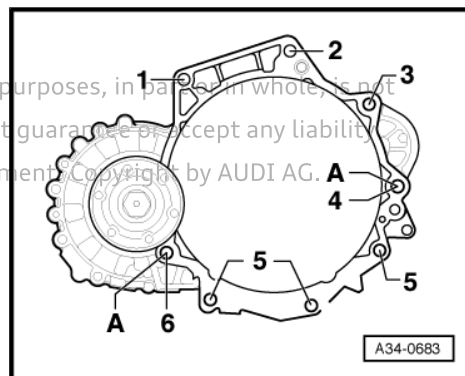
• 1¹⁾ Bolt with M8 threaded pin
 • 2²⁾ Screwed into gearbox from engine side



**Gearbox to engine on vehicles with TFSI engine (with timing chain)**

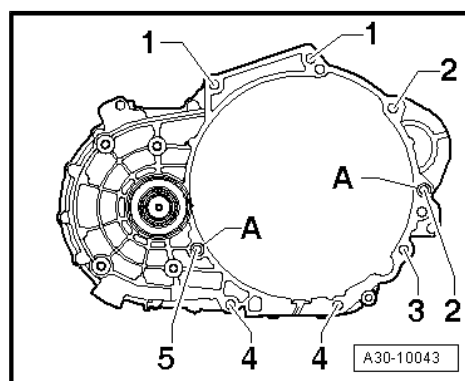
Item	Bolt	Nm
1, 2	M12x65	80
3 1)2)	M12x150	80
4 1)2)	M12x165	80
5	M10x50	40
6	M12x85	80
A	Dowel sleeves for centralising	

- 1) Bolt with M8 threaded pin
- 2) Also starter to gearbox

**Gearbox to engine on vehicles with TFSI engine (with toothed belt)**

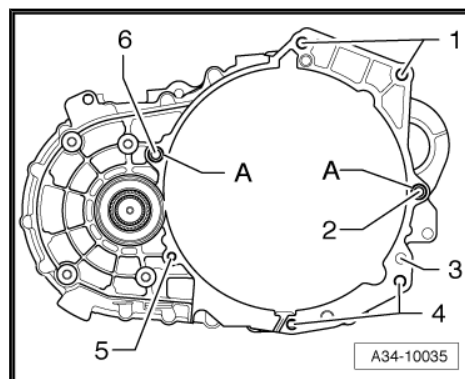
Item	Bolt	Nm
1 ¹⁾	M12x55	80
2 ¹⁾	M12x165	80
3	M10x105	40
4	M10x50	40
5 ²⁾	M12x65	80
A	Dowel sleeves for centralising	

- 1) Bolt with M8 threaded pin
- 2) Screwed into gearbox from engine side

**Gearbox to engine on vehicles with V6 engine**

Item	Bolt	Nm
1 ¹⁾ , 3	M12x55	80
2 ²⁾	M12x65	80
4, 5 ²⁾³⁾	M10x50	40
6 ²⁾	M12x80	80
A	Dowel sleeves for centralising	

- 1) Bolt with M8 threaded pin
- 2) Screwed into gearbox from engine side
- 3) Retaining clip for bolt must be fitted in engine oil sump

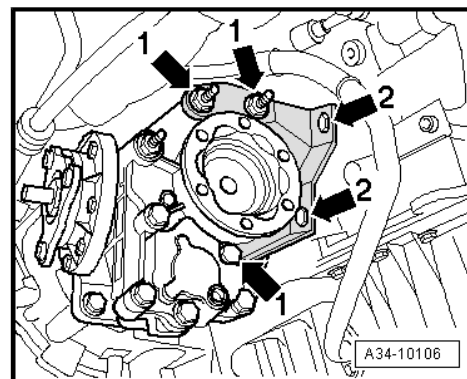
**All vehicles (continued):**

Component	Nm
Earth wire to top starter bolt	23
Bracket for electrical wiring at bottom starter bolt	23
Cover plate for flywheel	10
Selector cable support bracket to gearbox	20



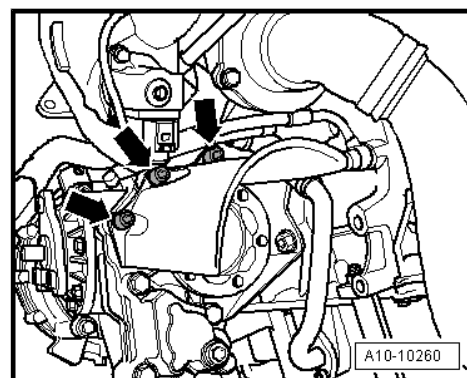
Bracket for bevel box - tightening torque and sequence

- ⇒ ["6.3.1 Tightening torques for bevel box", page 157](#)



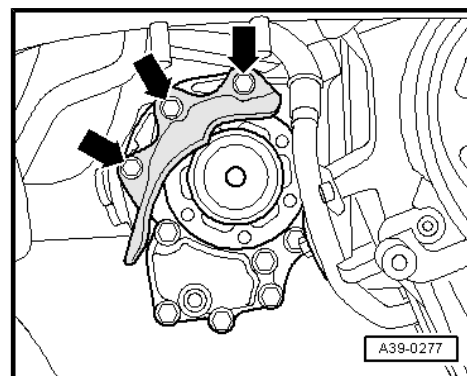
Heat shield for drive shaft (right-side) for vehicles with 2.0 ltr. TFSI engine: tightening torque

- Tighten bolts -arrows- to 25 Nm.



Heat shield for drive shaft (right-side) for vehicles with 3.2 ltr. MPI engine: tightening torque

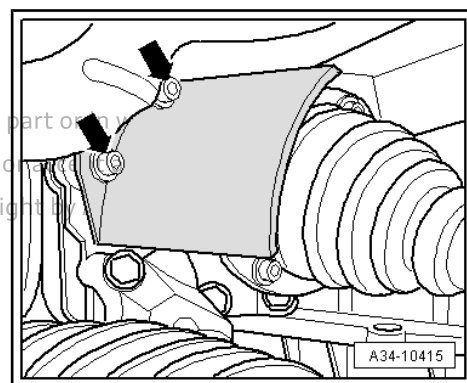
- Tighten bolts -arrows- to 25 Nm.



Heat shield for drive shaft (right-side) for vehicles with 2.0 ltr. TDI engine: tightening torque

- Tighten bolts -arrows- to 25 Nm.

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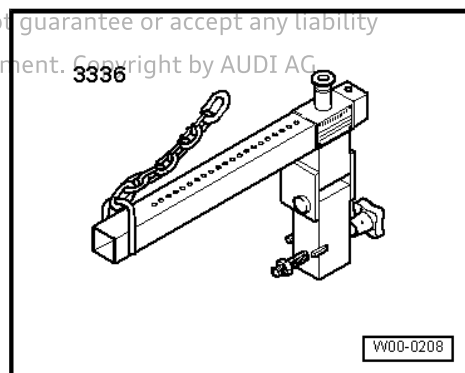


3 Transporting gearbox

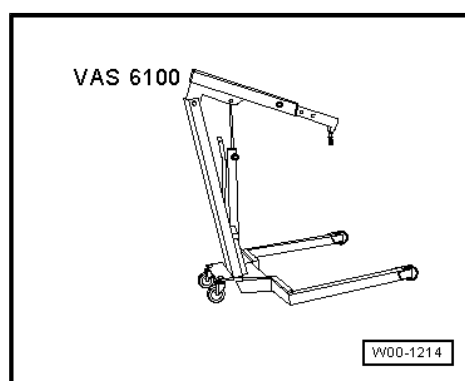
Special tools and workshop equipment required

◆ Gearbox lifting tackle - 3336-

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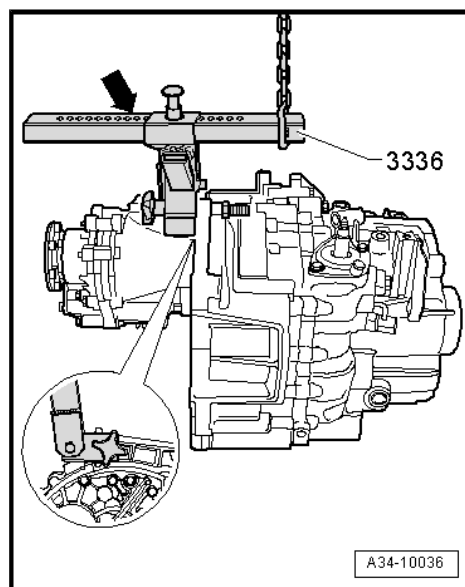
◆ Workshop hoist - VAS 6100-



- Bolt gearbox lifting tackle - 3336- to clutch housing.
- Set support arm on sliding bracket by means of locking pin -arrow-.

Number of holes visible = 9

- Take up gearbox with workshop hoist and gearbox lifting tackle - 3336- .
- Set down gearbox as required (for example in transport container).





4 Exploded view - assembly mountings

1 - Bolt

- ☐ Gearbox support to gearbox
- ☐ Renew
- ☐ 60 Nm + 90°

2 - Bolts

- ☐ Pendulum support to gearbox



Caution

On 02Q manual gearboxes, HeliCoil inserts may be fitted in the bolt connections for the pendulum support. These thread inserts are standard on gearboxes manufactured from 28 05 7 onwards.

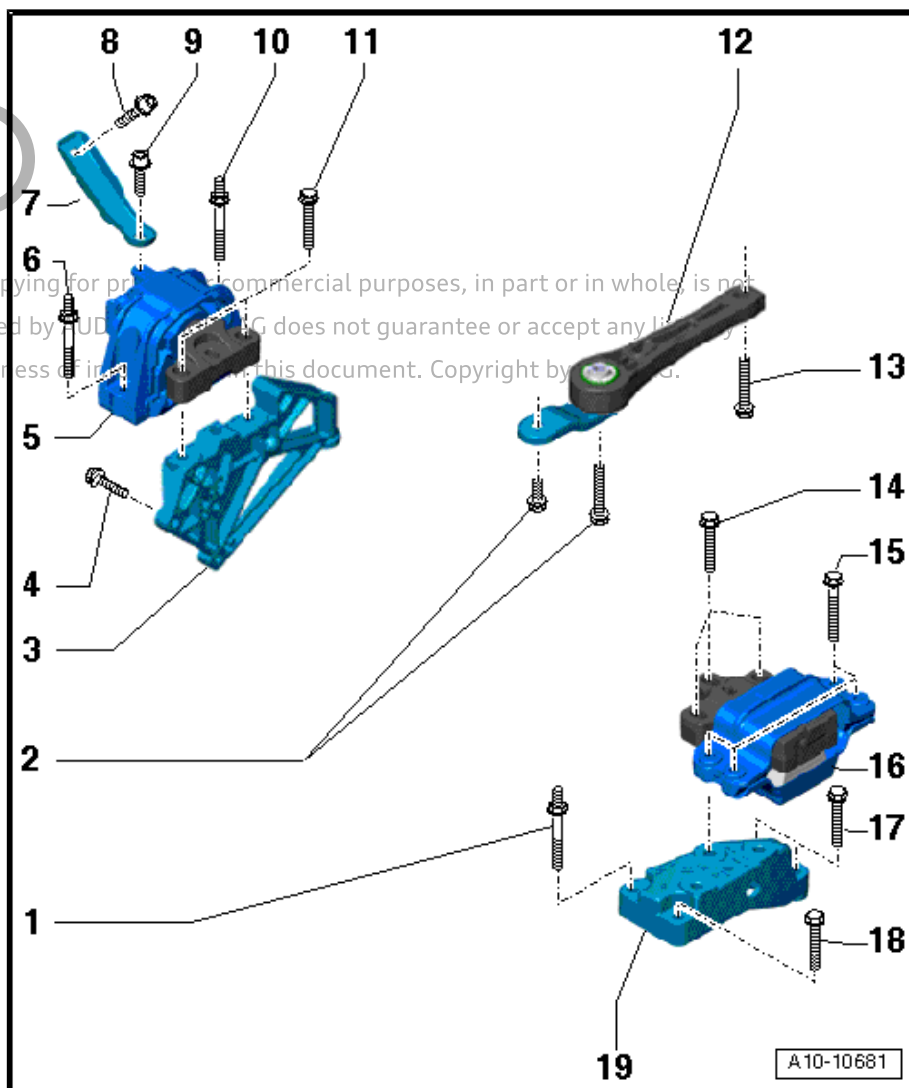
Identification
⇒ [page 133](#)

Bolts of property class 10.9 must be used on all gearboxes with HeliCoil thread inserts.

Bolts of property class 8.8 are specified for gearboxes without thread inserts.

For correct version, refer to ⇒ [Electronic parts catalogue](#)

The specified tightening torque for the bolts depends on the property class.



- Gearbox with thread inserts ⇒ [page 133](#)
 - ☐ 50 Nm + 90°
- Gearbox without thread inserts ⇒ [page 133](#)
 - ☐ 40 Nm + 90°
 - ☐ Always renew
 - ☐ Tightening sequence ⇒ [page 133](#)

3 - Engine support

- ☐ Different versions ⇒ [Electronic parts catalogue](#)

4 - Bolt

- ☐ Engine support to engine
- ☐ Tightening torque ⇒ Rep. gr. 10

5 - Engine mounting

6 - Bolt

- ☐ Engine mounting to body



- ☐ Tightening torque ⇒ Rep. gr. 10

7 - Connecting bracket

8 - Bolt

- ☐ Connecting bracket to engine mounting
- ☐ Tightening torque ⇒ Rep. gr. 10

9 - Bolt

- ☐ Connecting bracket to body
- ☐ Tightening torque ⇒ Rep. gr. 10

10 - Bolt

- ☐ Engine mounting to body
- ☐ Tightening torque ⇒ Rep. gr. 10

11 - Bolts

- ☐ Engine mounting to engine support
- ☐ Tightening torque ⇒ Rep. gr. 10

12 - Pendulum support

- ☐ Removing and installing ⇒ [page 139](#)
- ☐ Tightening sequence ⇒ [page 133](#)

13 - Bolt

- ☐ Pendulum support to subframe
- ☐ Renew
- ☐ 100 Nm + 90°
- ☐ Tightening sequence ⇒ [page 133](#)

14 - Bolt

- ☐ Gearbox mounting to gearbox support
- ☐ Renew
- ☐ 60 Nm + 90°

15 - Bolt

- ☐ Gearbox mounting to body
- ☐ Renew
- ☐ 40 Nm + 90°

16 - Gearbox mounting

- ☐ Removing and installing ⇒ [page 134](#)
- ☐ Fit to gearbox bracket, tightening torque ⇒ [page 133](#)

17 - Bolt

- ☐ Gearbox support to gearbox
- ☐ Renew
- ☐ 60 Nm + 90°

18 - Bolt

- ☐ Gearbox support to gearbox
- ☐ Renew
- ☐ 60 Nm + 90°

19 - Gearbox support

- ☐ Removing and installing ⇒ [page 134](#)
- ☐ Fit to gearbox, tightening torque ⇒ [page 133](#)

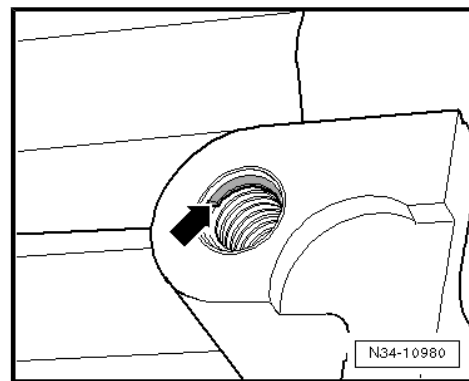


Gearbox with thread inserts (e.g. "HeliCoil") for securing pendulum support



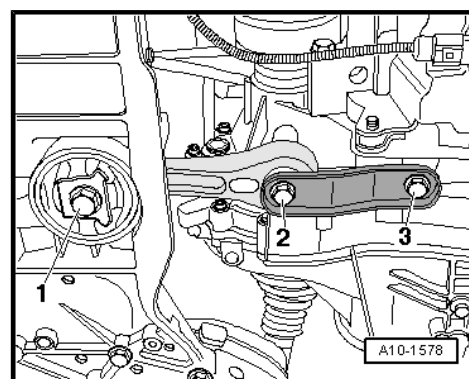
Note

- ◆ Gearboxes manufactured from 28 05 7 onwards have thread inserts (e.g. "HeliCoil") in the bolt holes for the pendulum support.
- ◆ Identification: Shoulder on first thread -arrow-.
- ◆ Different tightening torques ⇒ [Item 2 \(page 131\)](#)
- ◆ Select correct securing bolts from ⇒ *Electronic parts catalogue*.



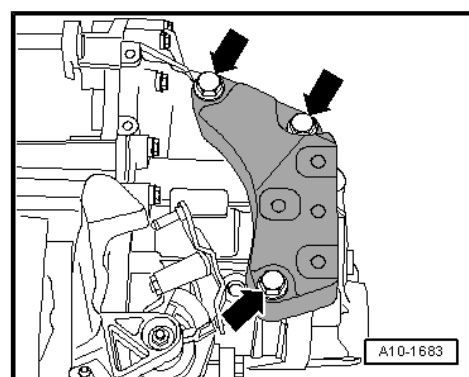
Tightening sequence for pendulum support

- Renew bolts.
- First secure pendulum support to gearbox (-2- and -3-), then on subframe -1-.



Tightening sequence for assembly mountings (gearbox side)

- First secure gearbox bracket to gearbox -arrows-.



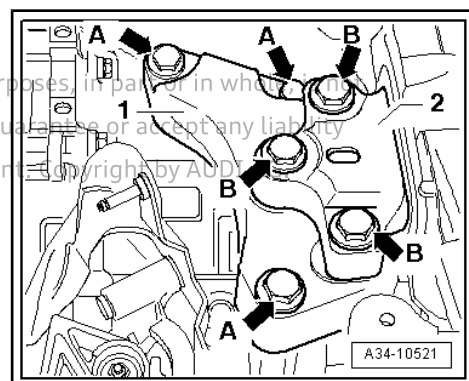
- Pull gearbox up with spindle on support bracket - 10 - 222 A- until gearbox bracket -1- contacts support arm of gearbox mounting -2-.
- Hand-tighten bolts -arrows B- initially.



Caution

Screw in bolts straight when fitting as otherwise the threads in the support arm of the gearbox mounting will be damaged.

- ◆ Gearbox bracket -1- and support arm of gearbox mounting -2- must be aligned in absolutely parallel position before fitting bolts -arrows B-. If necessary, lift gearbox at rear using trolley jack.



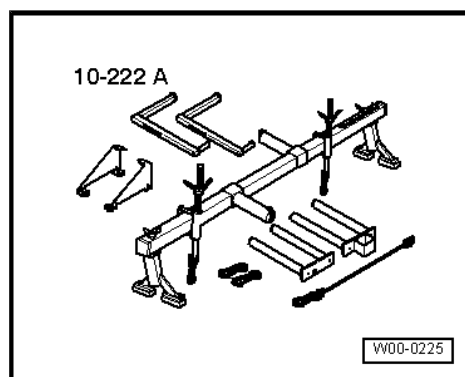
- Only tighten bolts after subframe has been installed ⇒ Rep. gr. 40 and assembly mountings aligned ⇒ Rep. gr. 10.



4.1 Removing and installing gearbox mounting

Special tools and workshop equipment required

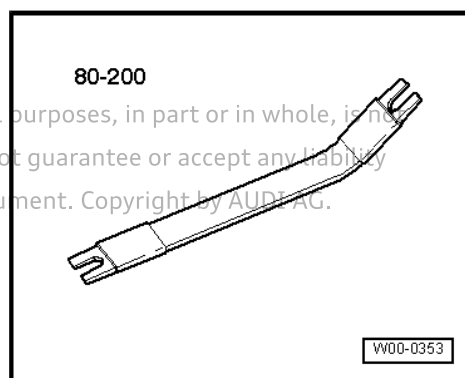
- ◆ Support bracket - 10 - 222 A-



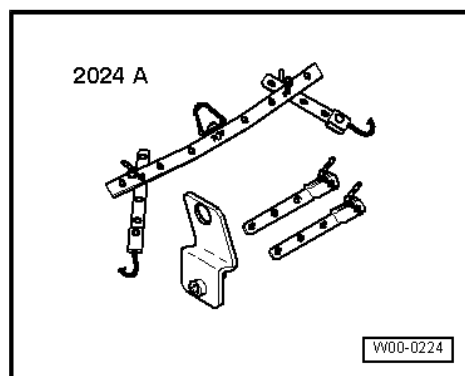
- ◆ Removal lever - 80 - 200- for vehicles from 06.2008 onwards



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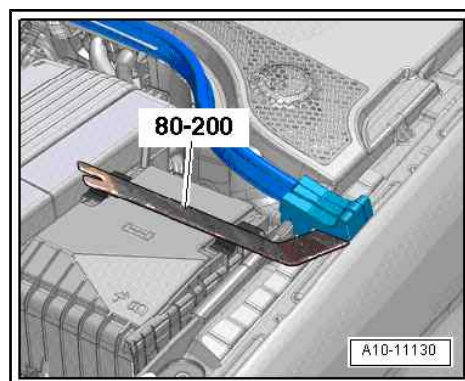
- ◆ Transportation shackle -2024 A /2- for vehicles with TFSI engine (with timing chain)



Removing

Vehicles from 06.2008 onwards:

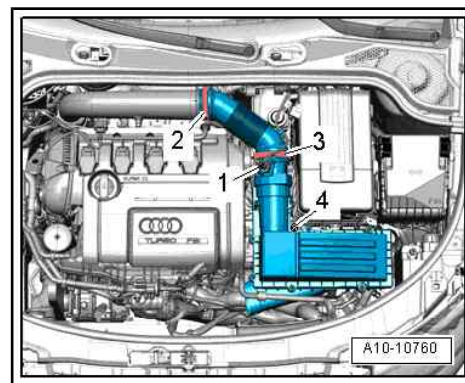
- Lever clip off sealing element using removal lever - 80 - 200- and fold up sealing element.





Vehicles with TFSI engine (with timing chain):

- Remove air cleaner housing completely ⇒ Rep. gr. 24 .
- Remove engine cover panel ⇒ Rep. gr. 10 .

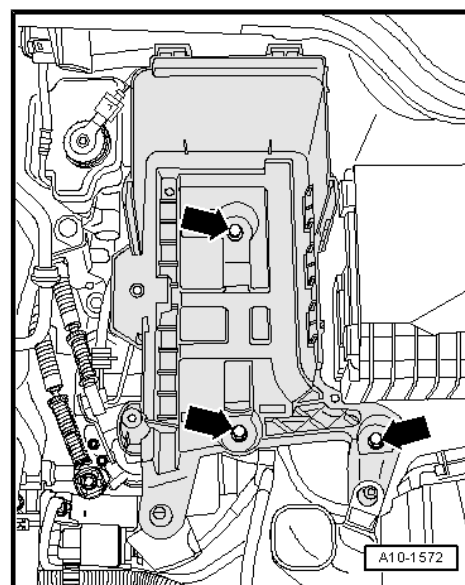


Caution

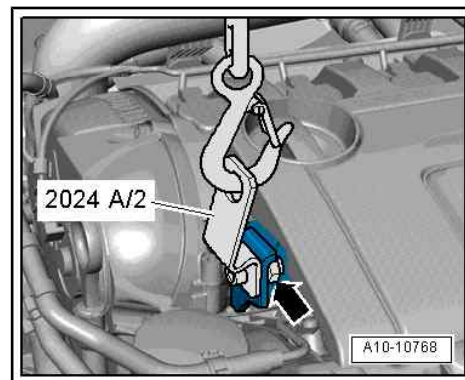
When disconnecting the battery there is a risk of irreparable damage to electronic components.

♦ *Observe notes on procedure for disconnecting the battery.*

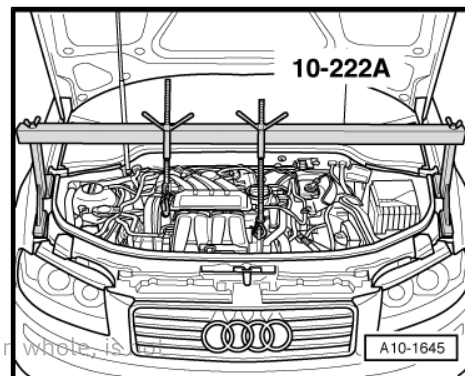
- Remove battery ⇒ Electrical system; Rep. gr. 27 .
- Remove battery tray -arrows- (detach front of battery tray from air duct if applicable).



- Bolt transportation shackle -2024 A /2- to engine lifting eye using flange nut -arrow-.



- Set up support bracket - 10 - 222 A- on wing mounting flanges. Spindles face to the front.
- Hook spindles -10 - 222 A /11- onto transportation shackle -2024 A /2- and engine lifting eye.
- Take up weight of engine/gearbox assembly evenly with both spindles; do not lift.

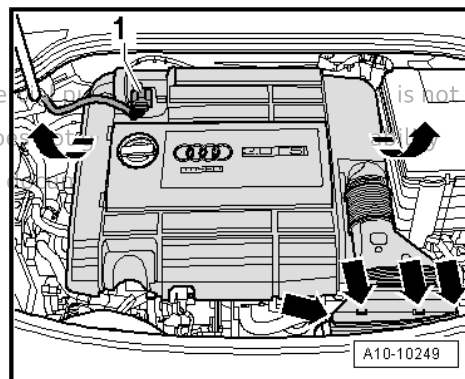


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**Vehicles with TFSI engine (with toothed belt):**

- Completely remove engine cover panel and air cleaner (top section) ⇒ Rep. gr. 24

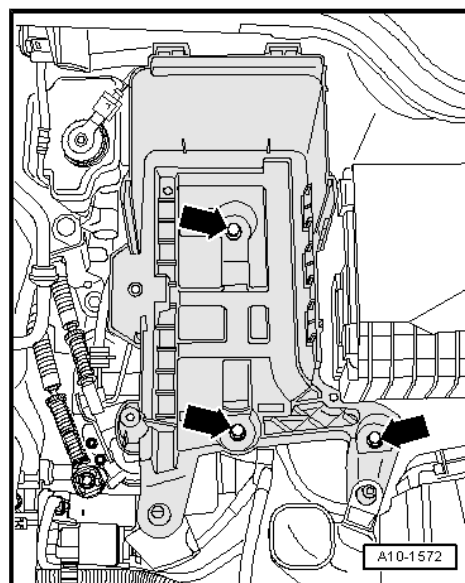
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**Caution**

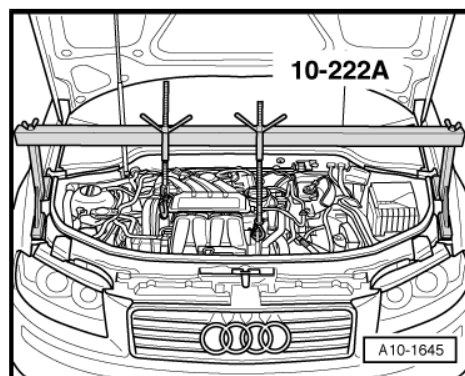
When disconnecting the battery there is a risk of irreparable damage to electronic components.

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

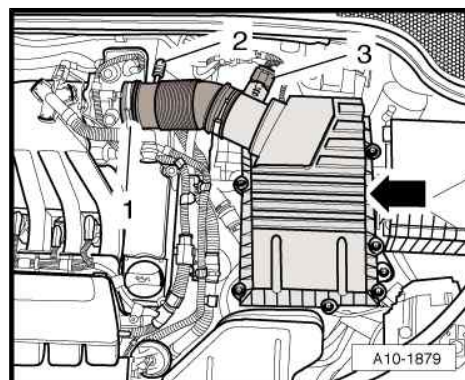
- Remove battery ⇒ Electrical system; Rep. gr. 27 .
- Remove battery tray -arrows- (detach front of battery tray from air duct if applicable).



- Set up support bracket - 10 - 222 A- on wing mounting flanges. Spindles face to the front.
- Attach spindles -10 - 222 A /11- to engine lifting eyes.
- Take up weight of engine/gearbox assembly evenly with both spindles; do not lift.

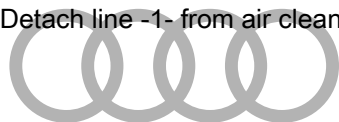
**Vehicles with V6 engine:**

- Remove air cleaner housing completely ⇒ Rep. gr. 24 .

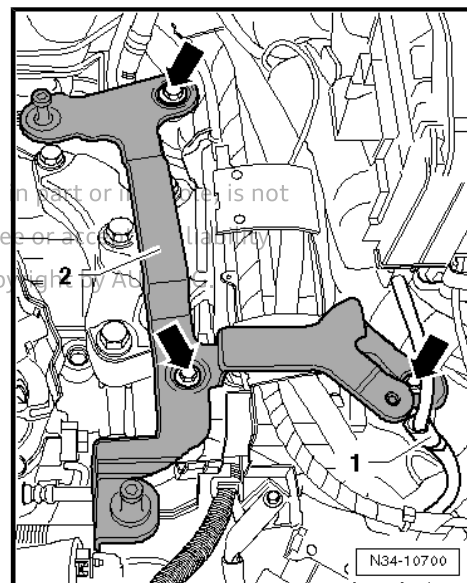




- Detach line -1- from air cleaner bracket -2-.



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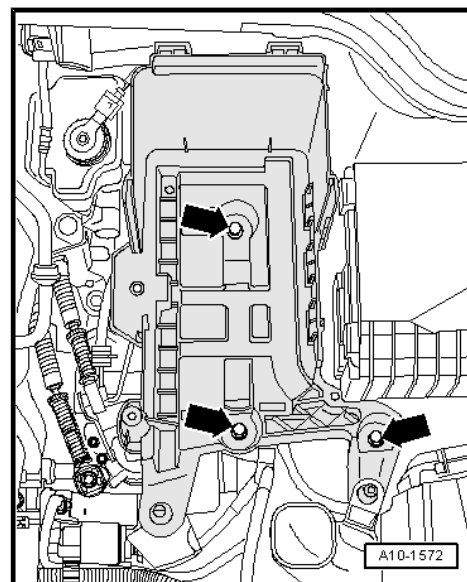


Caution

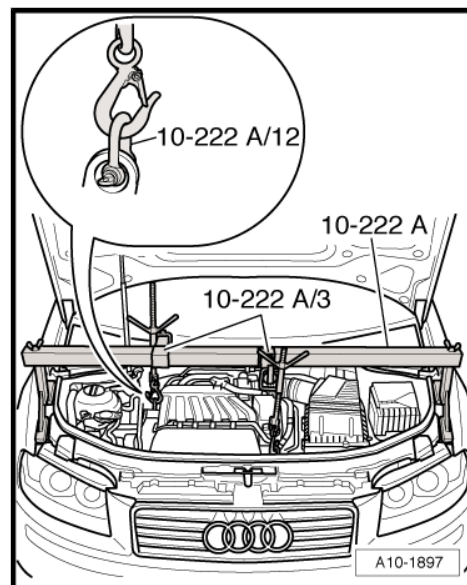
When disconnecting the battery there is a risk of irreparable damage to electronic components.

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

- Remove battery ⇒ Electrical system; Rep. gr. 27 .
- Remove battery tray -arrows- (detach front of battery tray from air duct if applicable).



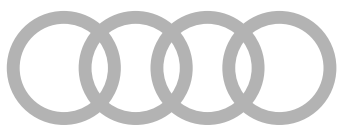
- Fix a shackle - 10-222 A/12- to engine lifting eye (rear right).
- Set up support bracket - 10 - 222 A- with adapters -10 - 222 A /3- on bolted flanges of wing panels.
- Hook spindles -10 - 222 A /11- onto shackle - 10-222 A/12- and engine lifting eye.
- Take up weight of engine/gearbox assembly evenly with both spindles; do not lift.



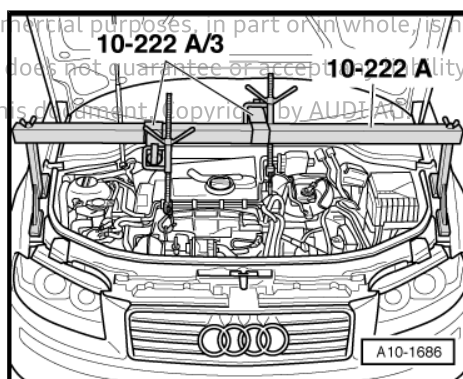
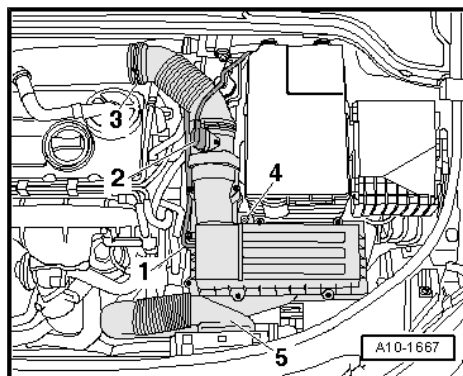


Vehicles with TDI engine:

- Remove air cleaner housing completely ⇒ Rep. gr. 23 .
- Remove engine cover panel ⇒ Rep. gr. 10 .

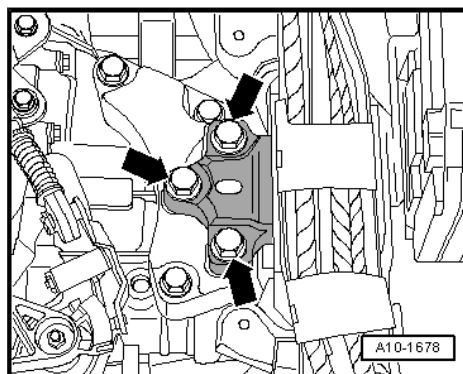


- Set up support bracket 10-222 A with adapters 10-222 A /3- on bolted flanges of wing panels.
- Attach spindles 10-222 A /11- to engine lifting eyes.
- Take up weight of engine/gearbox assembly evenly with both spindles; do not lift.

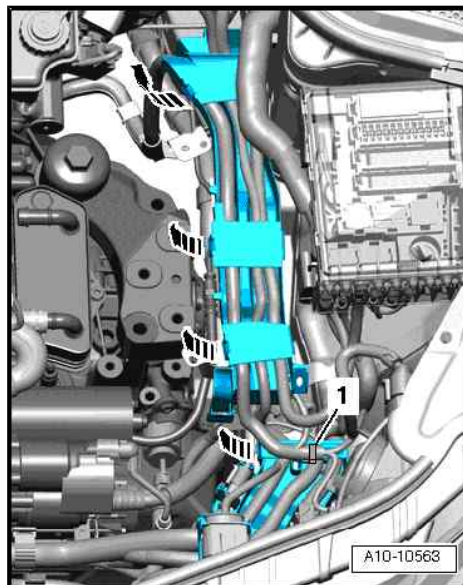


All vehicles (continued):

- Remove bolts -arrows-.



- Open retainers for wiring duct -arrows-.
- Cut open cable tie -1- and push electrical wiring to one side.
- Unclip wiring duct.





- Unscrew bolts -1- and remove gearbox mounting -A-.

Installing

- Tightening torques
⇒ ["4 Exploded view - assembly mountings", page 131](#)

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

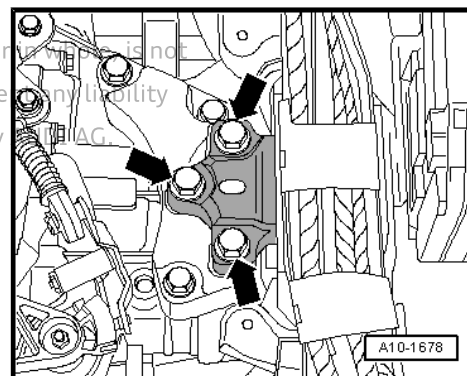
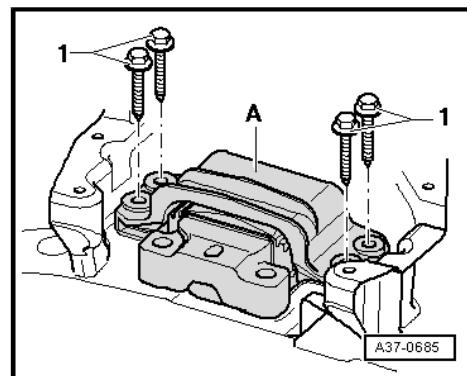
- Tighten gearbox mounting -A- on longitudinal member.



Caution

Bolts must be fitted straight to avoid damage to threads in gearbox support.

- ◆ **Gearbox support and support arm of gearbox mounting must be perfectly parallel to each other before screwing in bolts -arrows-. If necessary, lift gearbox at rear using trolley jack.**
- ◆ **Only remove support bracket - 10 - 222 A- when bolts on assembly mounting -arrows- have been tightened to specified torque.**

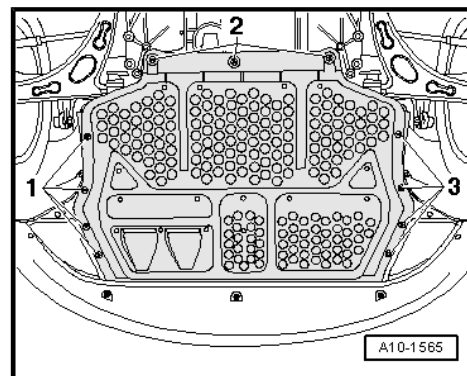


- Lift gearbox with spindle of support bracket until gearbox support makes contact with support arm of gearbox mounting.
- Bolt support arm of gearbox mounting onto gearbox support using new bolts -arrows-.
- Adjust assembly mountings ⇒ Rep. gr. 10 .
- Detach support bracket - 10 - 222 A- from engine.
- Install battery tray and battery ⇒ Electrical system; Rep. gr. 27 .
- Install air cleaner housing ⇒ Rep. gr. 23 or ⇒ Rep. gr. 24 .

4.2 Removing and installing pendulum support

Removing

- Remove noise insulation (centre) by releasing fasteners -1 ... 3-.



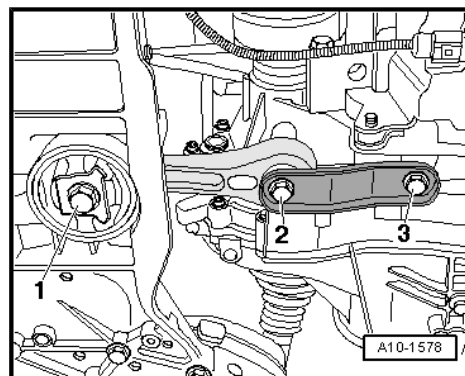


- Unscrew bolts -1 ... 3- and remove pendulum support.

Installing

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

- Tightening torques
⇒ ["4 Exploded view - assembly mountings", page 131](#)

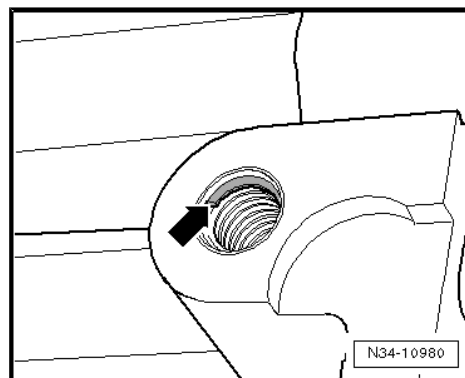


Gearbox with thread inserts (e.g. "HeliCoil") for securing pendulum support

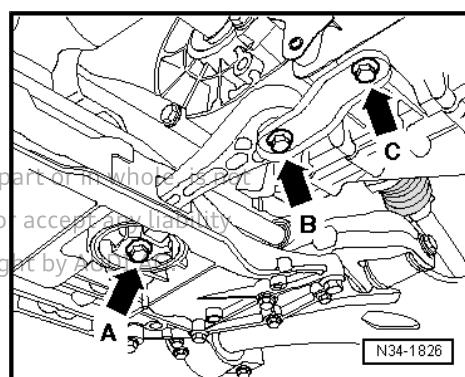


Note

- ◆ Gearboxes manufactured from 28 05 7 onwards have thread inserts (e.g. "HeliCoil") in the bolt holes for the pendulum support.
- ◆ Identification: Shoulder on first thread -arrow-.
- ◆ Different tightening torques ⇒ [Item 2 \(page 131\)](#)
- ◆ Select correct securing bolts from ⇒ *Electronic parts catalogue* .



- First secure pendulum support to gearbox -arrow B- and -arrow C-, then on subframe -arrow A-.
- Install noise insulation ⇒ *General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation* .



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5 Gear oil

⇒ [“5.1 Distinguishing manual gearboxes for oil filling”, page 141](#)

⇒ [“5.2 Checking gear oil level”, page 141](#)

⇒ [“5.2.3 Tightening torque for oil filler/oil drain plug”, page 146](#)

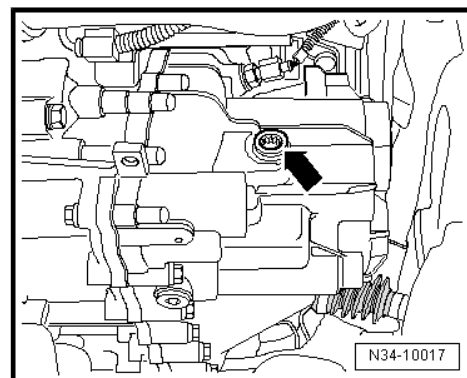
⇒ [“4.1 Checking gear oil level”, page 184](#)

5.1 Distinguishing manual gearboxes for oil filling

There is no oil filler plug -arrow- on some manual gearbox versions.

- Please note the following table:

Manual gearbox with oil filler plug	Manual gearbox without oil filler plug
⇒ “5.2.1 Checking gear oil level - gearbox with oil filler plug”, page 141	Checking gear oil level • Gearbox installed ⇒ “5.2.2 Checking gear oil level - gearbox without oil filler plug”, page 143
	Filling up with gear oil ◆ Gearbox has been removed and is to be repaired ⇒ Servicing - manual gearbox; Rep. gr. 34 ; Dismantling and assembling gearbox; Exploded view - gearbox



5.2 Checking gear oil level

⇒ [“5.2.1 Checking gear oil level - gearbox with oil filler plug”, page 141](#)

⇒ [“5.2.2 Checking gear oil level - gearbox without oil filler plug”, page 143](#)

5.2.1 Checking gear oil level - gearbox with oil filler plug



Note



◆ The manual gearbox and bevel box have separate oil fillings.

◆ Checking gear oil level in bevel box ⇒ [page 184](#)

◆ For gear oil specification, refer to ⇒ [Electronic parts catalogue](#).

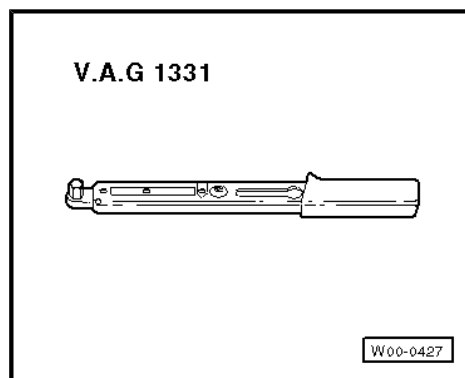
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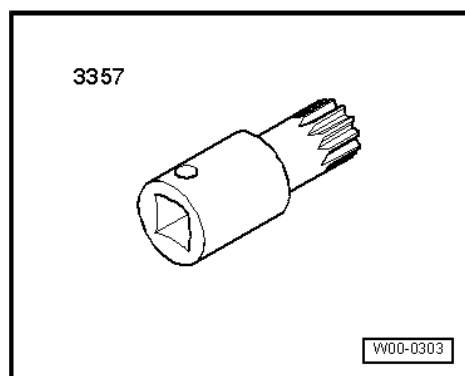
Special tools and workshop equipment required



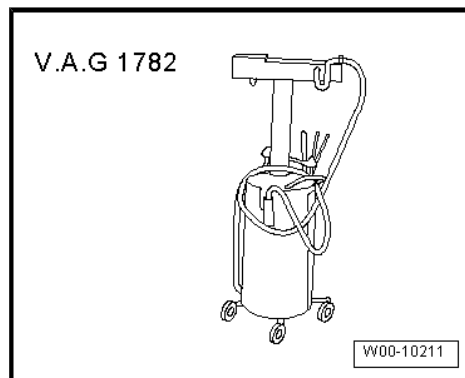
- ◆ Torque wrench - V.A.G 1331-



- ◆ Socket - 3357-

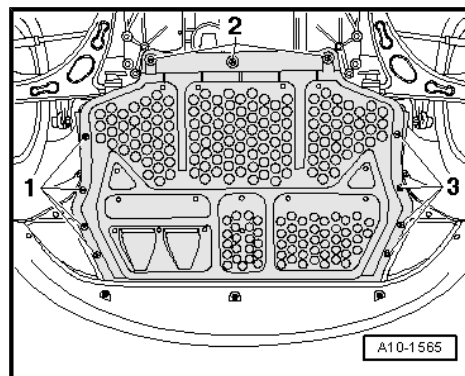


- ◆ Or
- ◆ 17 mm socket (hexagon key)
- ◆ Used oil collection and extraction unit - V.A.G 1782-



Procedure

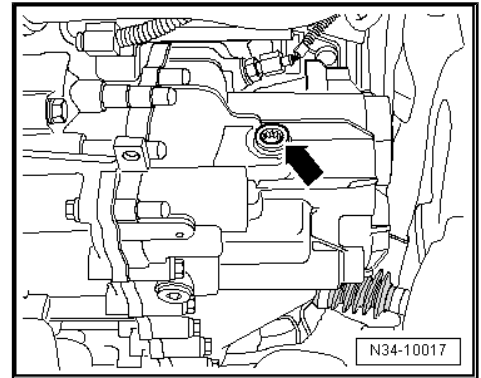
- Tightening torque ⇒ [page 146](#)
- Drive vehicle onto a four-column lifting platform or over an inspection pit (vehicle must be horizontal).
- Remove noise insulation (centre) by releasing fasteners -1 ... 3-.
- Place used oil collection and extraction unit - V.A.G 1782- below gearbox.



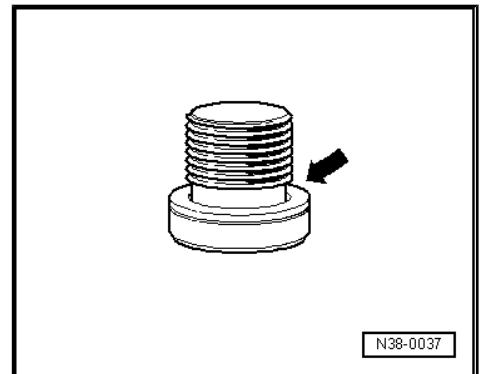
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- Remove oil filler plug -arrow- in manual gearbox.
- Specification: oil level up to bottom lip of filler hole
- Top up with gear oil if necessary; specification ⇒ Electronic parts catalogue .



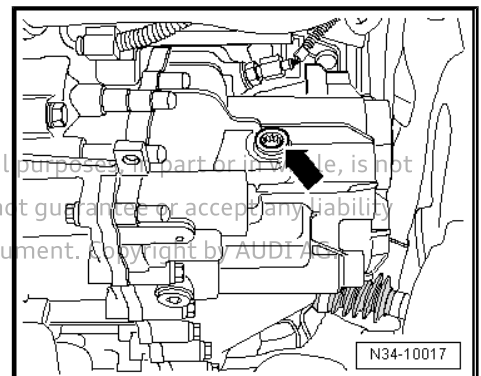
- Screw in and tighten plug with new seal -arrow-, if fitted
⇒ ["5.2.3 Tightening torque for oil filler/oil drain plug"](#),
[page 146](#) .
- Install noise insulation ⇒ General body repairs, exterior; Rep.
gr. 66 ; Noise insulation; Exploded view - noise insulation .



5.2.2 Checking gear oil level - gearbox without oil filler plug

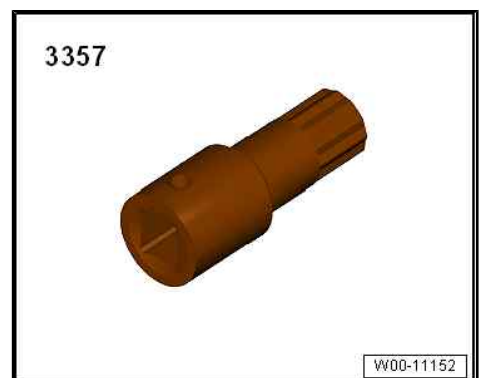
- On gearboxes without an oil filler plug -arrow-, it is not possible to check the oil level by carrying out a visual inspection.
- The oil must be drained completely and the gearbox must then be filled with a precisely defined quantity of oil.

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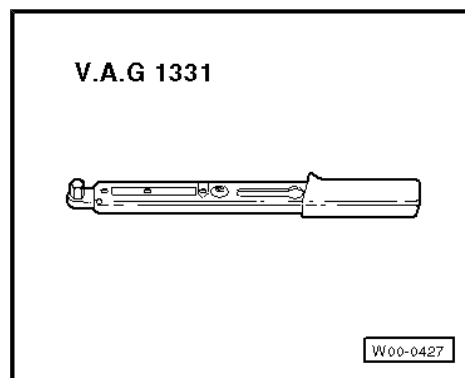
Special tools and workshop equipment required

- ◆ Multi-point bit - 3357- for oil drain plug with multi-point socket

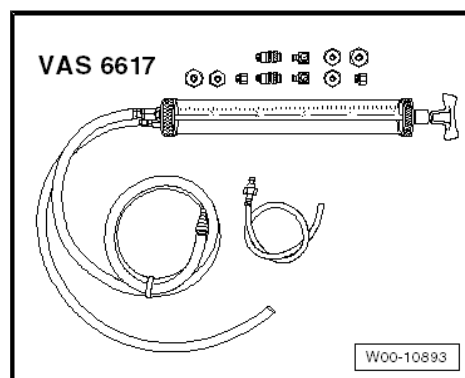




- ◆ Torque wrench - V.A.G 1331-



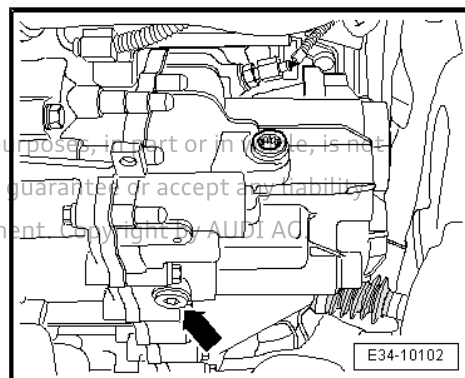
- ◆ Hand pump for gear oil - VAS 6617-



- ◆ Adapter -VAS 6617/11- (not illustrated)
- ◆ Measuring container, capacity at least 3 litres

Procedure

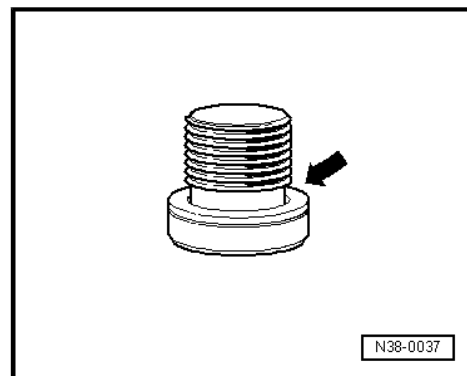
- Gear oil specifications ⇒ Electronic parts catalogue
- Remove one-piece noise insulation / noise insulation (front) ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation .
- Place measuring container with capacity of at least 3 litres underneath (container must have been cleaned thoroughly).
- Remove oil drain plug -arrow- and drain gear oil into measuring container until no more oil drips out.



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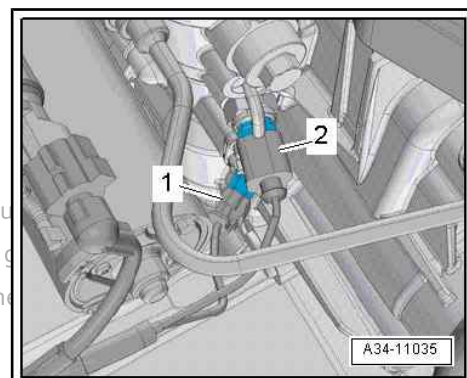
- Screw in and tighten oil drain plug with new seal -arrow-, if fitted
⇒ ["5.2.3 Tightening torque for oil filler/oil drain plug", page 146](#).
- Check quantity of oil in measuring container and top up if necessary.
- Specification: 2.15 ltr.



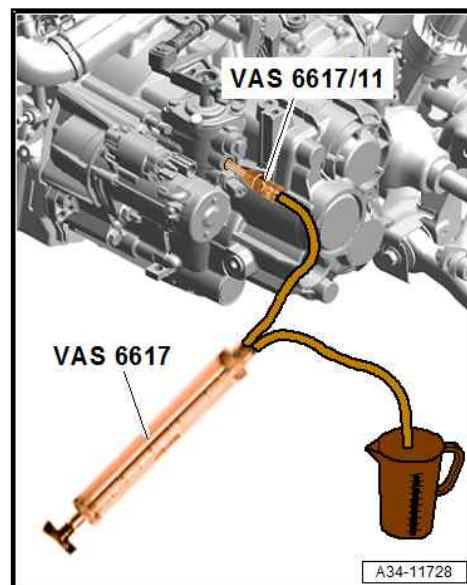
- Unplug electrical connector -2- and unscrew reversing light switch -F4-.



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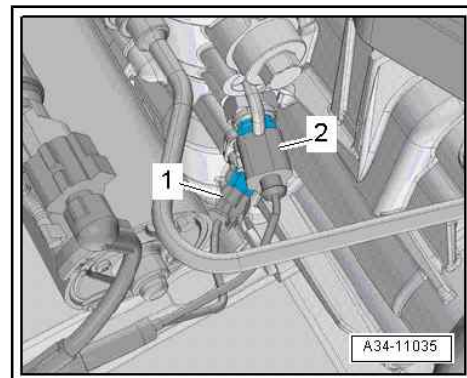
- Fill gearbox with 2.15 ltr. of gear oil via hole for reversing light switch using hand pump for gear oil -VAS 6617- and adapter -VAS 6617/11-.



- Secure reversing light switch -F4- and plug in electrical connector -2-.

Tightening torques

- ◆ Reversing light switch : 20 Nm
- ◆ ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation



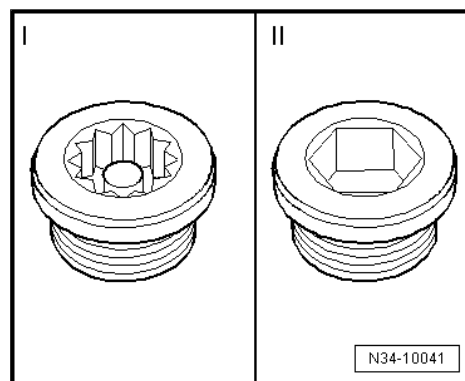


5.2.3 Tightening torque for oil filler/oil drain plug

Different versions of oil filler/oil drain plug

I - Oil filler/oil drain plug with multi-point socket: 45 Nm

II - Oil filler/oil drain plug with hexagon socket 35 Nm



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6 Removing and installing bevel box

⇒ ["6.1 Removing bevel box - vehicles with petrol engine", page 147](#)

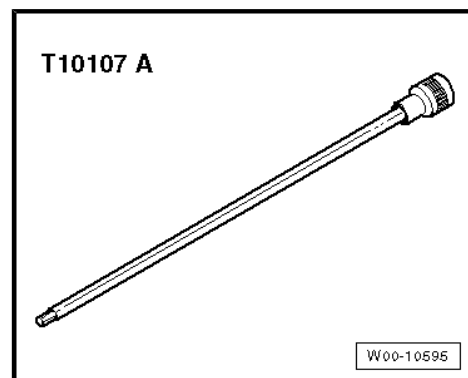
⇒ ["6.2 Removing bevel box - vehicles with diesel engine", page 151](#)

⇒ ["6.3 Installing bevel box", page 155](#)

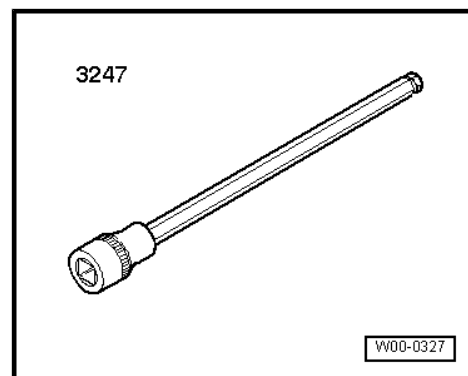
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Special tools and workshop equipment required

- ◆ Socket - T10107 A- (6 mm)



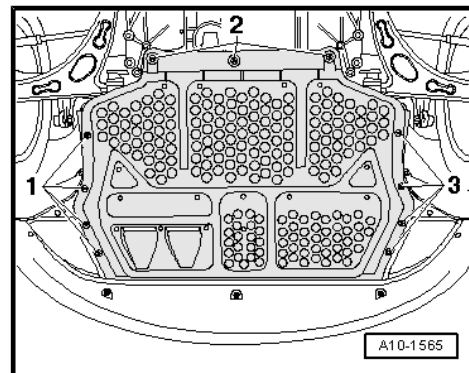
- ◆ Socket (8 mm) - 3247-



6.1 Removing bevel box - vehicles with petrol engine

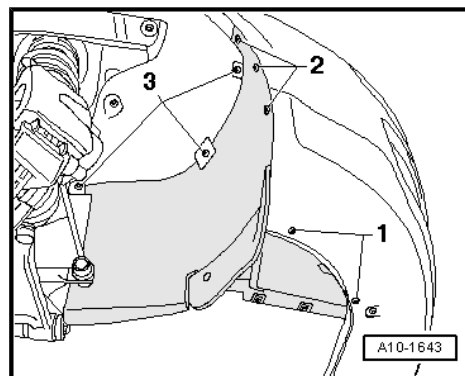
Removing

- Remove noise insulation (centre) by releasing fasteners -1 ... 3-.

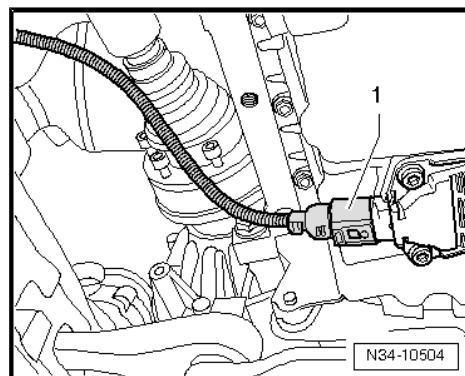




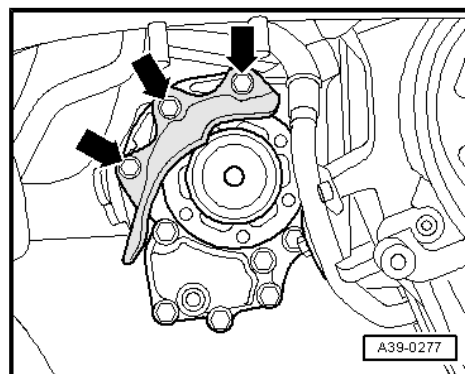
- Remove noise insulation (right-side) -fasteners 1 ... 3-.



- Detach connector -1- from oil level and oil temperature sender - G266- .



- Remove drive shaft (right-side) ⇒ Rep. gr. 40 .
- Unbolt heat shield for drive shaft (right-side) from bevel box -arrows-.
- Depending on version, heat shield may only be secured with 2 nuts/2 bolts.

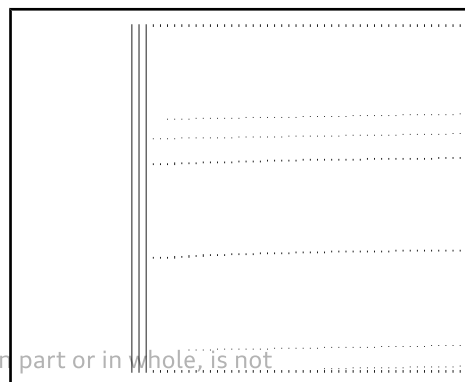


- Disconnect exhaust system at clamp -arrows-.
- Tie up the front exhaust pipe.



Note

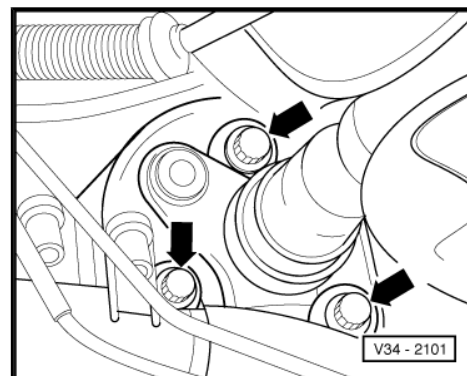
To prevent damage, the flexible couplings in the front exhaust pipe must not be bent further than 10°.



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- Mark position of propshaft with flexible coupling in relation to bevel box flange.
- Unbolt flexible coupling for propshaft at bevel box -arrows- (counterhold using a suitable lever at the triangular flange).

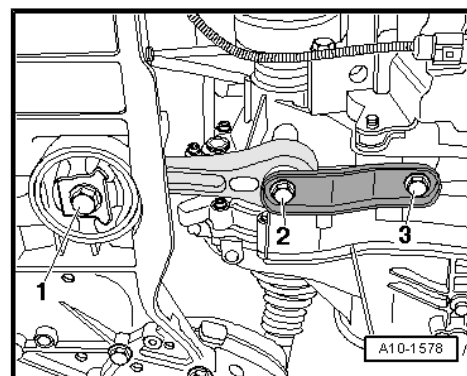


- Remove bolts -2- and -3-.



Note

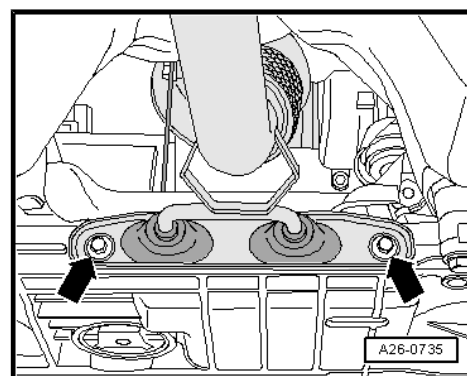
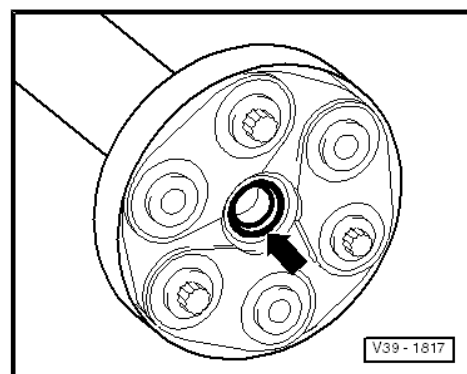
Bolt -1- can be disregarded.



Note

Slackening off securing bolts for pendulum support causes engine/gearbox assembly to swing forwards slightly (towards front end). Make sure that the seal -arrow- in the flange of the propshaft is not damaged when removing and installing.

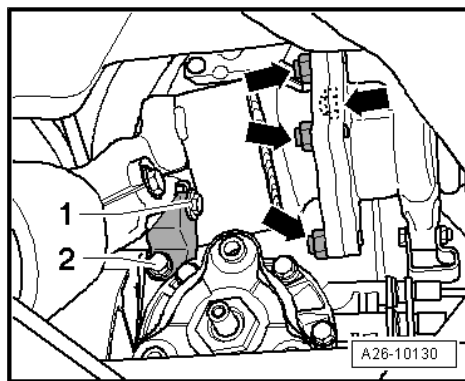
- Push engine/gearbox assembly forward slightly (towards front end) and then pull propshaft off bevel box.
- Lift propshaft up and secure with wire.
- Remove exhaust system bracket from subframe -arrows-.
- Remove subframe ⇒ Rep. gr. 40 .



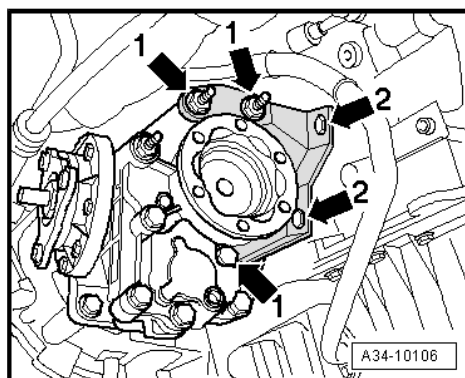


Vehicles with TFSI engine:

- If fitted, unscrew bolts -1- and -2- and remove support for catalytic converter.

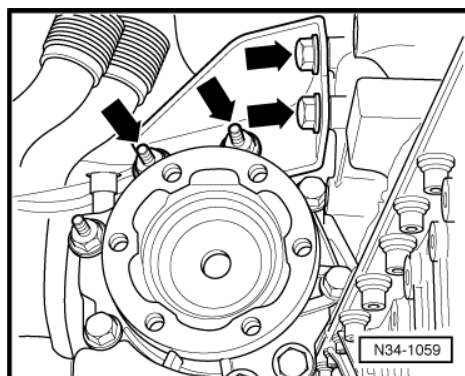


- Unscrew bolts for gearbox carrier on bevel box -arrows 1- and engine -arrows 2-.
- Remove gearbox carrier.



Vehicles with 6-cylinder engine:

- Unscrew bolts -arrows- for gearbox carrier on bevel box and engine.
- Remove gearbox carrier.



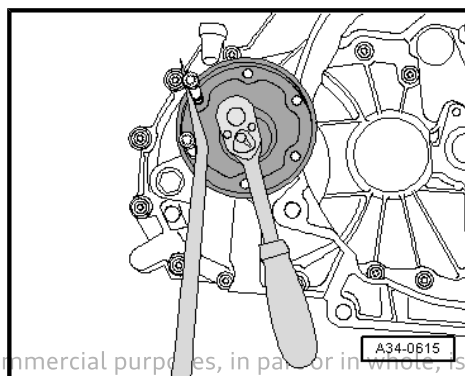
All vehicles (continued):

- Remove bolt for flange shaft (right-side) using socket and extended bit - T10107 A- .



Note

The flange shaft (right-side) remains in the bevel box.

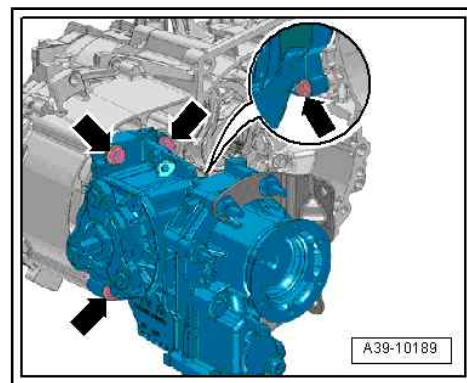


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- Unscrew bolts (4 in total) securing bevel box to manual gearbox -arrows-.
- Carefully push bevel box away from gearbox, making sure it does not fall down.
- Take out bevel box.

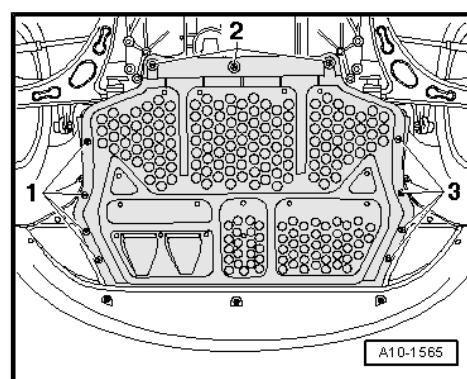
Install bevel box ⇒ [page 155](#) .



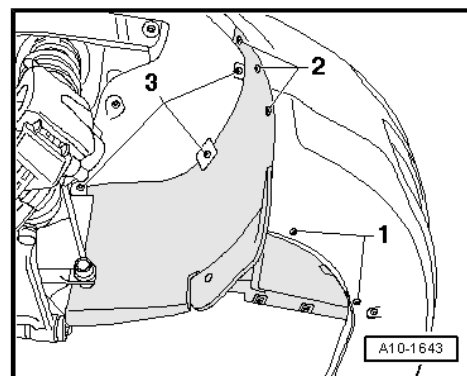
6.2 Removing bevel box - vehicles with diesel engine

Removing

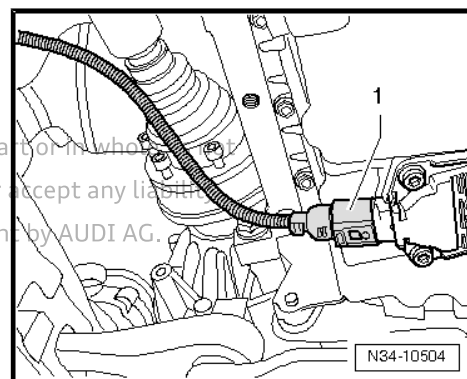
- Remove noise insulation (centre) by releasing fasteners -1 ... 3-.



- Remove noise insulation (right-side) -fasteners 1 ... 3-.



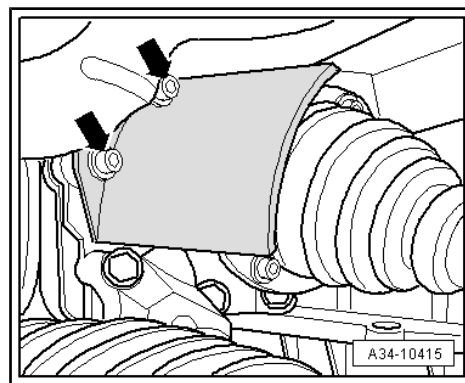
- Detach connector -1- from oil level and oil temperature sender - G266- .



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- Remove drive shaft (right-side) ⇒ Rep. gr. 40 .
- Unbolt heat shield for drive shaft (right-side) from bevel box -arrows-.

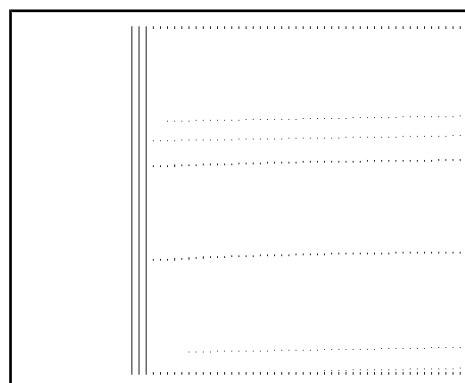


- Disconnect exhaust system at clamp -arrows-.
- Tie up the front exhaust pipe.

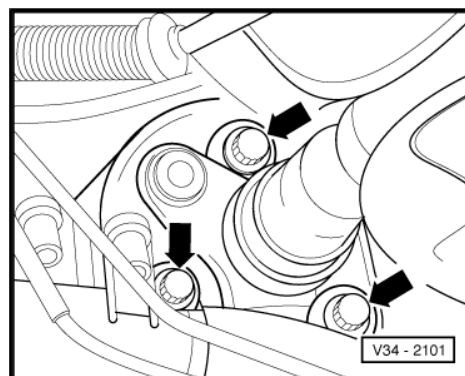


Note

To prevent damage, the flexible couplings in the front exhaust pipe must not be bent further than 10°.



- Mark position of propshaft with flexible coupling in relation to bevel box flange.
- Unbolt flexible coupling for propshaft at bevel box -arrows- (counterhold using a suitable lever at the triangular flange).

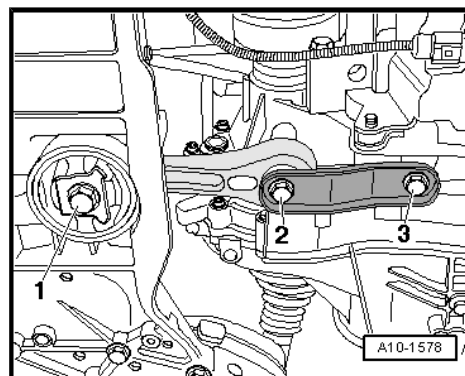


- Remove bolts -2- and -3-.



Note

Bolt -1- can be disregarded.



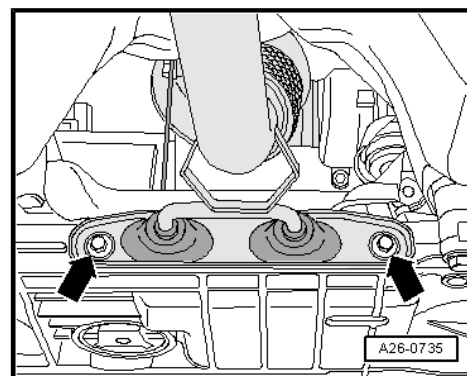
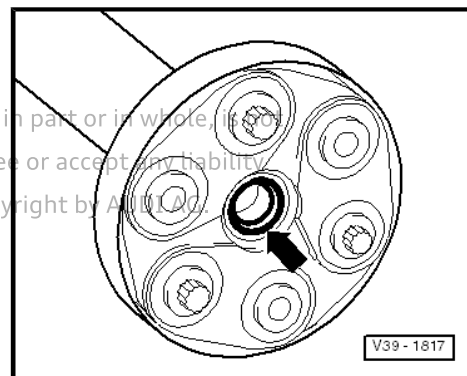
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Note

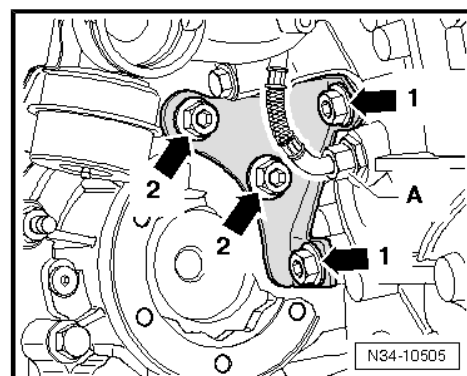
Slackening off securing bolts for pendulum support causes engine/gearbox assembly to swing forwards slightly (towards front end). Make sure that the seal -arrow- in the flange of the propshaft is not damaged when removing and installing.

- Push engine/gearbox assembly forward slightly (towards front end) and then pull propshaft off bevel box.
- Lift propshaft up and secure with wire.
- Remove exhaust system bracket from subframe -arrows-.
- Remove subframe ⇒ Rep. gr. 40 .

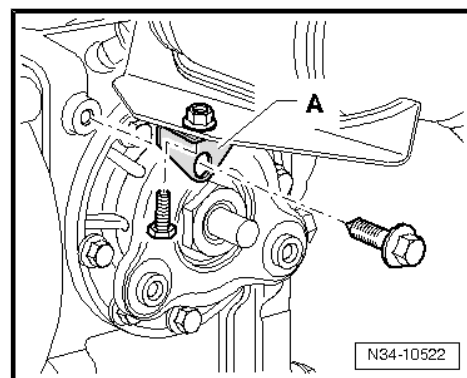


Vehicles with TDI engine without particulate filter

- Unscrew bolts for gearbox carrier on engine and bevel box -arrows 1- and -arrows 2-.
- Remove gearbox carrier.



- If fitted, remove exhaust system support -A- ⇒ Rep. gr. 26 .





- Unscrew bolt for flange shaft (right-side) using socket and extended bit - T10107 A- -arrow 1-.

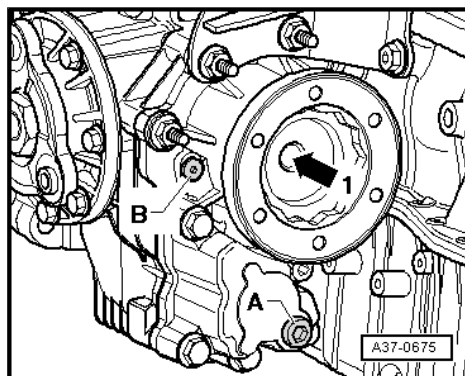


Note

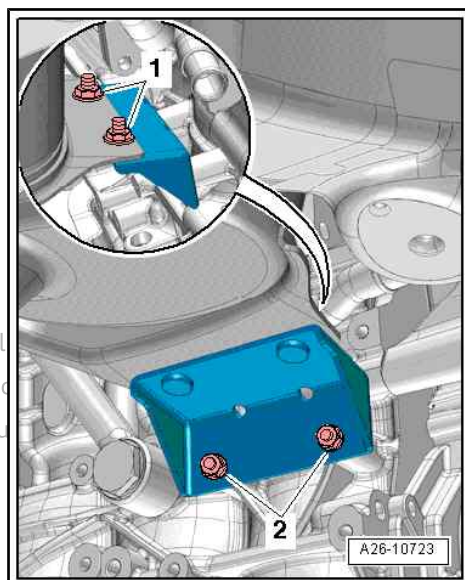
The flange shaft (right-side) remains in the bevel box.

Vehicles with TDI engine with particulate filter:

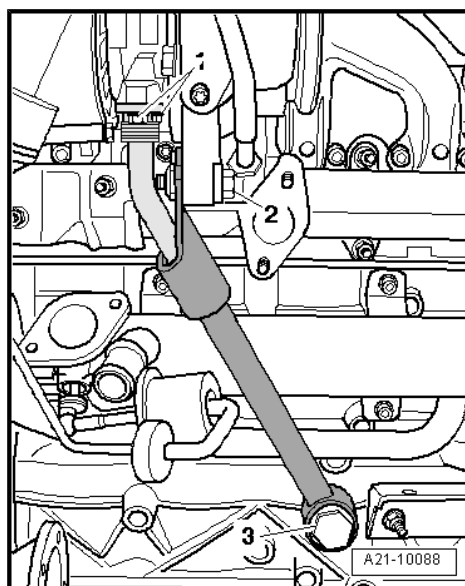
- Place used oil collection and extraction unit - V.A.G 1782- below gearbox.
- Remove oil drain plug -A- and drain oil.
- Retighten oil drain plug -A-. Tightening torque
⇒ [Item 7 \(page 176\)](#)
- Remove bolt -arrow 1- using socket and extended bit - T10107 A- .
- Remove flange shaft (right-side) ⇒ [page 177](#) .
- Remove nuts -1- and -2- and detach bracket for particulate filter.



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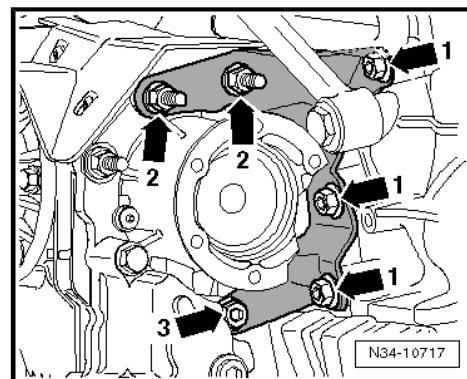


- Position used oil collection and extraction unit - V.A.G 1782- below engine.
- Remove bolt -2- and banjo bolt -3-.
- Detach bracket for turbocharger from oil return pipe.





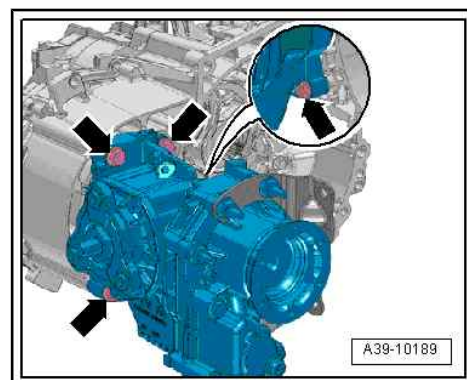
- Remove bolts -arrows 1, 2, 3- and detach gearbox carrier.



All vehicles (continued):

- Unscrew bolts (4 in total) securing bevel box to manual gearbox -arrows-.
- Carefully push bevel box away from gearbox, making sure it does not fall down.
- Take out bevel box.

Install bevel box [⇒ page 155](#) .



6.3 Installing bevel box

- Tightening torques
[⇒ "6.3.1 Tightening torques for bevel box", page 157](#)

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



Note

- ◆ *Renew gaskets, seals and self-locking nuts.*
- ◆ *Lubricate splines on differential of manual gearbox with grease for clutch plate splines - G 000 100- .*



Caution

The oil seal between the bevel box and the gearbox can be damaged.

- ◆ *Turn flange shaft while fitting bevel box with flange shaft (right-side) onto gearbox.*

- Push bevel box fully onto gearbox, ensuring that splines of bevel box input shaft and differential are centred when brought together.
- Also align the teeth of the flange shaft (right-side) and the differential pinion; if necessary turn the flange shaft.
- If the teeth are correctly positioned and the components are located centrally, the bevel box will slide against the gearbox onto the stop.

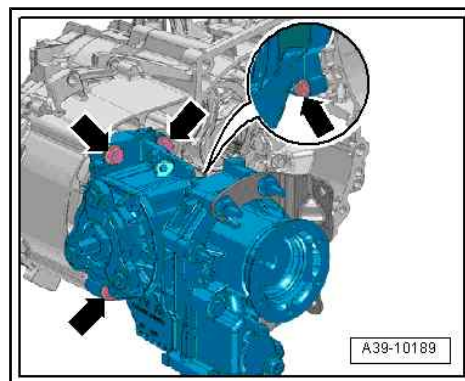


- Secure bevel box to gearbox -arrows-. Tightening torque
⇒ [“6.3.1 Tightening torques for bevel box”, page 157](#)

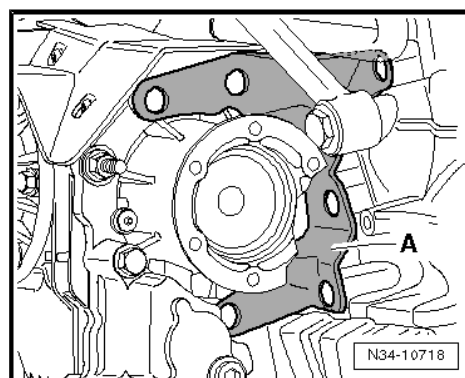


Note

Do not use the securing bolts to pull the bevel box onto the gearbox. This could cause the bevel box to tilt and the securing eyes could break off.



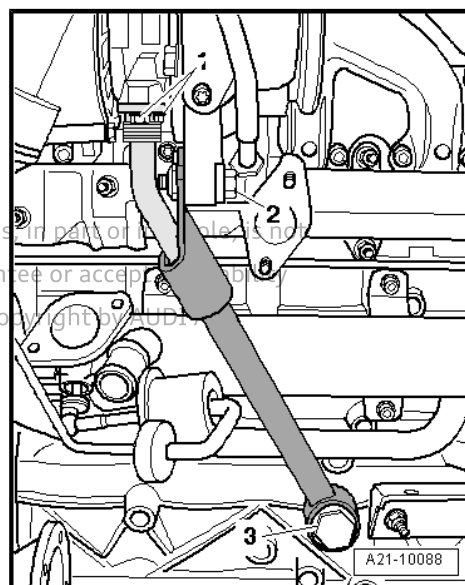
- Install gearbox carrier -A-. Note assembly sequence when doing so ⇒ [page 157](#) .



Vehicles with diesel engine and particulate filter:

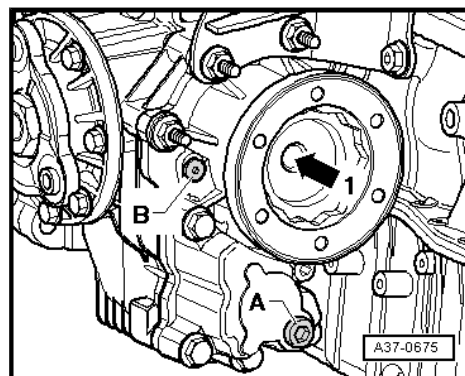
- Install bracket for turbocharger. To do so, tighten bolt -2- and banjo bolt -3- ⇒ Rep. gr. 21 .
- Install bracket for particulate filter ⇒ Rep. gr. 26 .

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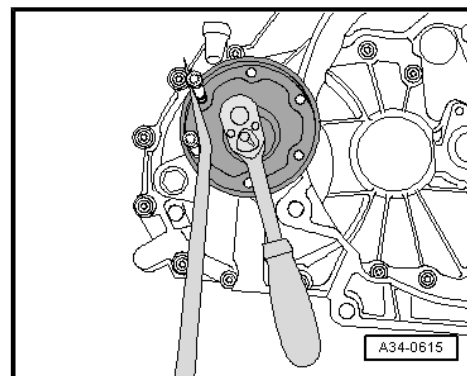
- Install flange shaft (right-side) ⇒ [page 178](#) .

All vehicles (continued):

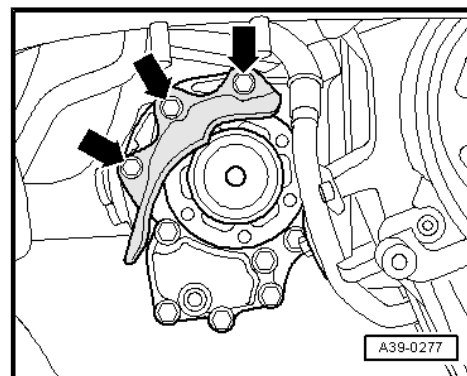




- Tighten bolt for flange shaft (right-side) -arrow 1- using socket and extended bit - T10107 A- .
- Check oil level in bevel box ⇒ [page 184](#) .
- Check gear oil level in gearbox ⇒ [page 141](#) .
- Install drive shaft (right-side) ⇒ Rep. gr. 40 .



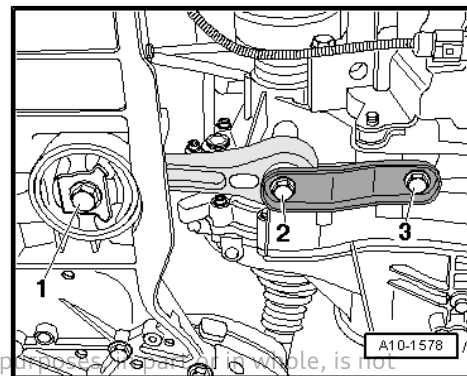
- Install heat shield for drive shaft (right-side) ⇒ [page 129](#) .
- Depending on version, heat shield may only be secured with 2 nuts/2 bolts ⇒ [page 129](#) .
- Install subframe ⇒ Rep. gr. 40 .
- Attach steering rack to subframe ⇒ Rep. gr. 48 .
- Press engine/gearbox assembly towards bulkhead, taking care to guide pin on bevel box into propshaft flange.



Note

- ◆ When removing and installing the bevel box do not damage the seal in the propshaft flange. Renew propshaft if damaged.
- ◆ Ensure propshaft is horizontal when pushing it onto centring pin.

- Secure pendulum support to gearbox with bolts -2- and -3- (use new bolts ⇒ [Item 2 \(page 131\)](#)).
- Bolt flexible coupling on propshaft onto bevel box flange ⇒ Rear final drive 02D, 0AV, 0BR and 0BY; Rep. gr. 39 .
- If previously removed, install front left vehicle level sender - G78- .
- Assemble exhaust system and install all exhaust system brackets ⇒ Rep. gr. 26 .
- Install noise insulation ⇒ Rep. gr. 66 .
- Fit wheels ⇒ Rep. gr. 44 .

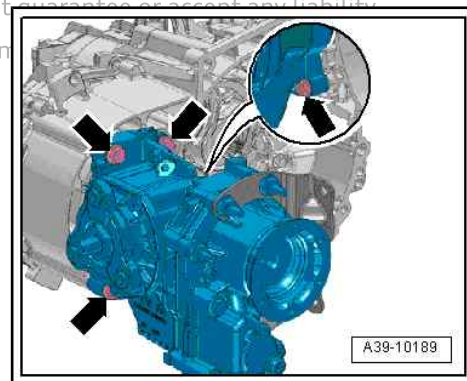


6.3.1 Tightening torques for bevel box

Tightening torque for bevel box to gearbox

- Tighten bolts in stages as follows:

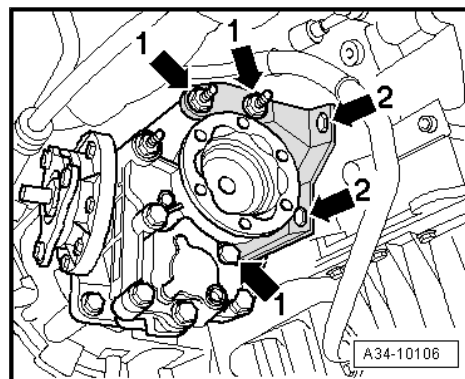
Stage	Bolts	Tightening torque/angle specification
1.	-Arrows-	Screw in by hand until contact is made
2.	-Arrows-	40 Nm
3.	-Arrows-	Turn 90° further



**Bracket for bevel box for vehicles with 2.0 ltr. TFSI engine: tightening torque and sequence**

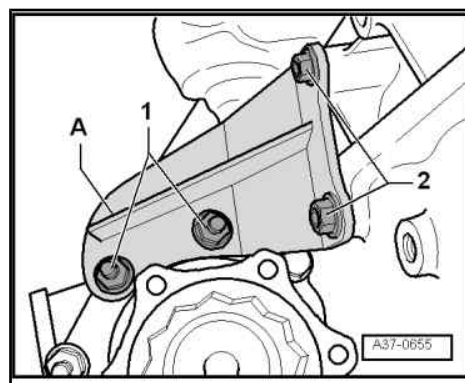
– Tighten bolts in 3 stages as follows:

1. Screw in bolts -1- (hand-tight).
2. Tighten bolts -2- to 40 Nm.
3. Tighten bolts -1- to 40 Nm.

**Bracket -A- for bevel box for vehicles with 3.2 ltr. MPI engine: tightening torque and sequence**

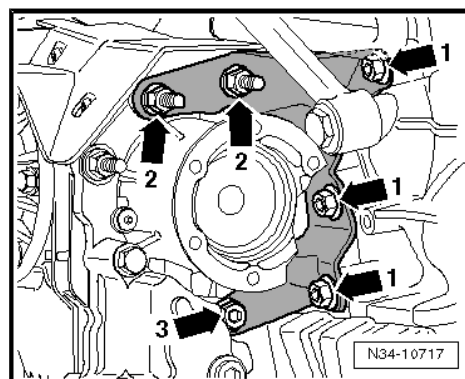
– Tighten bolts in 4 stages as follows:

1. Screw in bolts -1- and -2- hand-tight.
2. Pre-tighten bolts -1- to 3 Nm.
3. Tighten bolts -2- to 35 Nm.
4. Tighten bolts -1- to 45 Nm.

**Bracket for bevel box for vehicles with 2.0 ltr. TDI engine (version with 6 bolts): tightening torque and sequence**

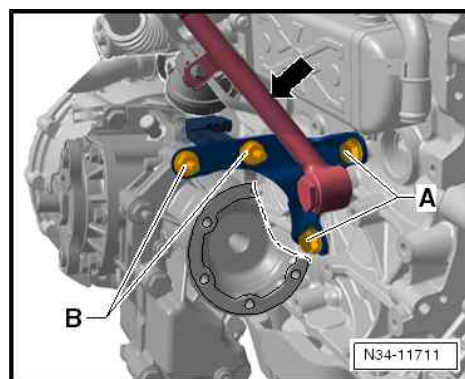
– Tighten bolts in 5 stages as follows:

1. Screw in bolts -1- and -2- hand-tight.
2. Pre-tighten bolts -1- to 8 Nm.
3. Tighten bolts -2- to 8 Nm.
4. Tighten bolts -1- to 40 Nm.
5. Tighten bolts -2- to 40 Nm.

**Bracket for bevel box for vehicles with 2.0 ltr. TDI engine (version with 4 bolts): tightening torque and sequence**

Item	Bolt	Qty.
A	M10 x 21	2
B	M10 x 45	2

- Screw in all bolts hand-tight.
- Tighten bolts -B- to 40 Nm.
- Tighten bolts -A- to 40 Nm.



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7 Exploded view - selector unit

1 - Bearing bush

- ☐ For selector shaft
- ☐ Removing and installing
⇒ Servicing 6-speed manual gearbox 02Q, front-wheel drive and four-wheel drive; Rep. gr. 34 ; Dismantling and assembling gearbox; Exploded view - gearbox housing and selector mechanism

2 - Selector unit

- ☐ Consists of selector shaft and selector mechanism cover
- ☐ Components cannot be separated from each other
- ☐ Different versions
- ☐ For correct version, refer to ⇒ Electronic parts catalogue
- ☐ Removing and installing (with gearbox installed)
⇒ [page 161](#)

3 - O-ring

- ☐ Fit in circular slot on selector mechanism cover
- ☐ Lubricate with gear oil before installing
- ☐ Always renew

4 - Cap

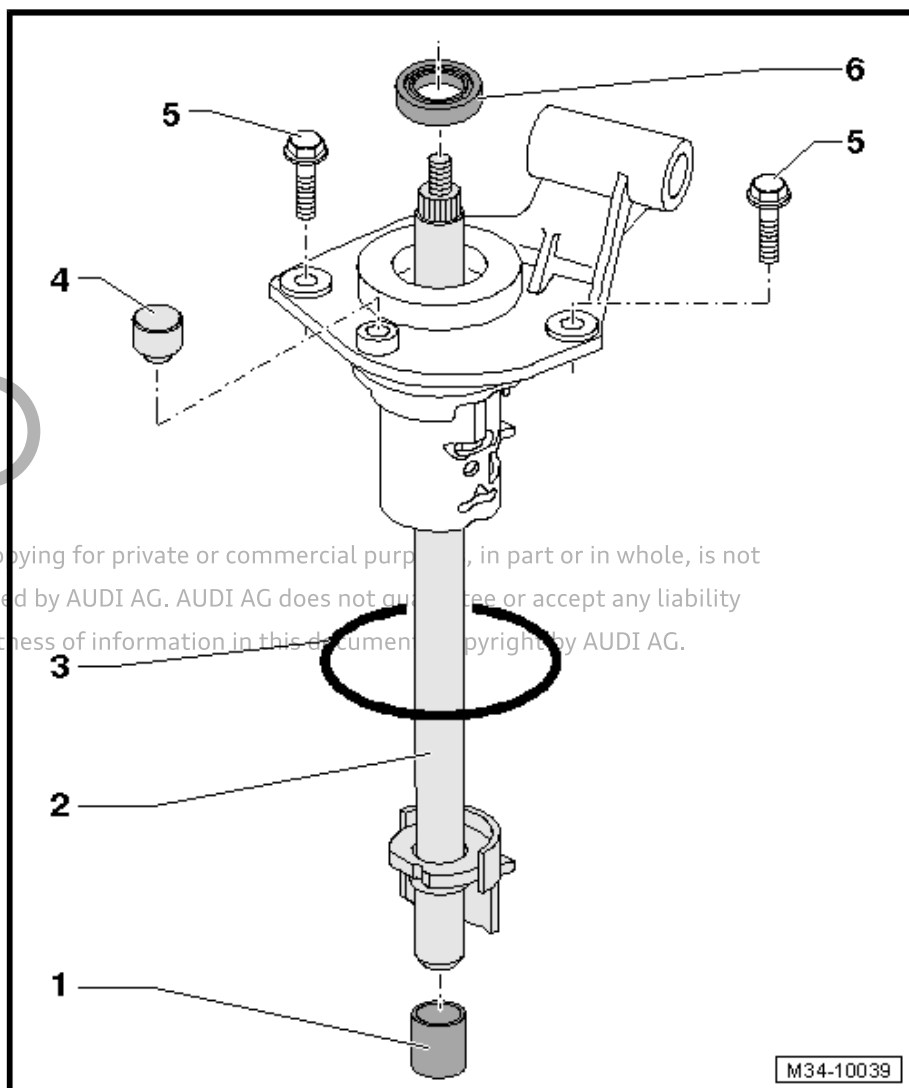
- ☐ For gearbox breather

5 - Bolt

- ☐ For selector unit on gearbox housing
- ☐ 20 Nm
- ☐ Always renew

6 - Oil seal for selector shaft

- ☐ Renewing ⇒ [page 159](#)

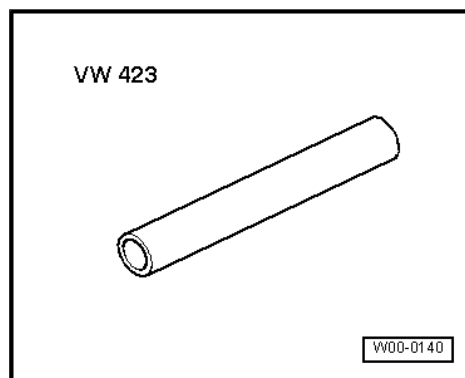


7.1 Renewing oil seal for selector shaft

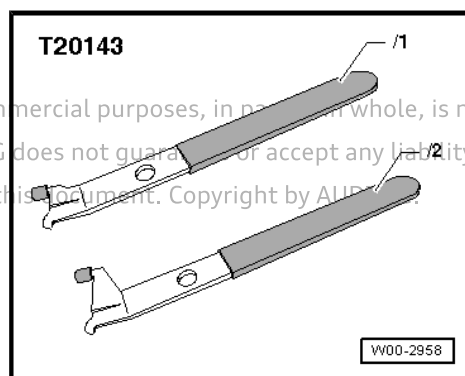
Special tools and workshop equipment required



◆ Tube - VW 423-



◆ Extractor tool - T20143/1-



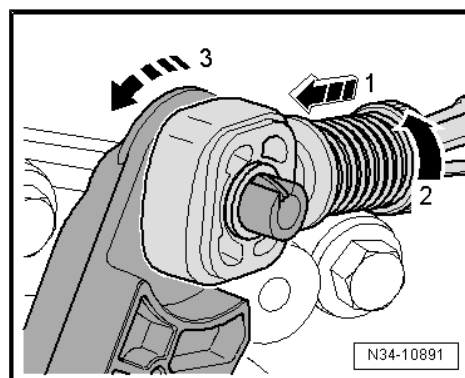
◆ Sealing grease - G 052 128 A1-

Procedure

- Completely remove air cleaner housing ⇒ Rep. gr. 23 ; Air cleaner; Exploded view - air cleaner housing , or ⇒ Rep. gr. 24 ; Air cleaner; Exploded view - air cleaner housing .

Plastic gate relay lever -1-:

- Pull locking mechanism forwards in direction of -arrow 1- onto stop and then turn to left in direction of -arrow 2- to lock.
- Press gate relay lever forwards (in direction of -arrow 3-) and at the same time pull gate selector cable out of cable end-piece.
- Removing gate relay lever (with detent catch) ⇒ [page 74](#)
- Remove gate relay lever (with clip) ⇒ [page 75](#) .

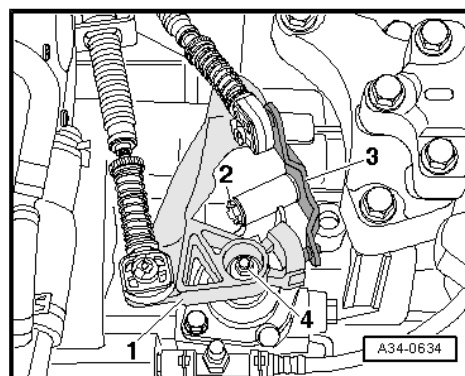
**Metal gate relay lever:**

- Detach circlip -2- and push gate relay lever -3- sideways out of bearing.

All vehicles (continued):**Note**

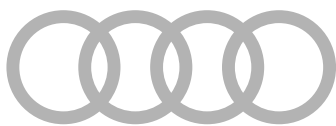
If the gearbox bracket makes it impossible to remove the gate relay lever, remove the gate selector cable from the gate relay lever. Guide the slide block out of gearbox selector lever.

- Remove nut -4- and take out gearbox selector lever -1-.

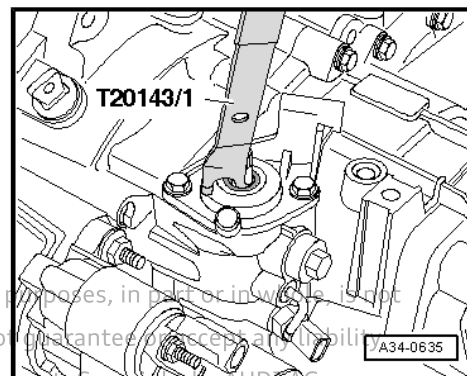




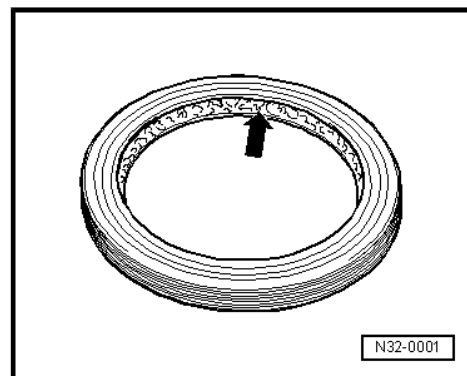
- Pry out oil seal using extractor tool - T20143/1- .



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- Lightly oil outer circumference of new oil seal.
- Drive in new oil seal onto stop (take care to keep oil seal straight).
- Pack space between sealing lip and dust lip -arrow- half full with sealing grease - G 052 128 A1- .



- Drive in oil seal using tube - VW 423- .

Perform further installation in reverse order, paying attention to the following:

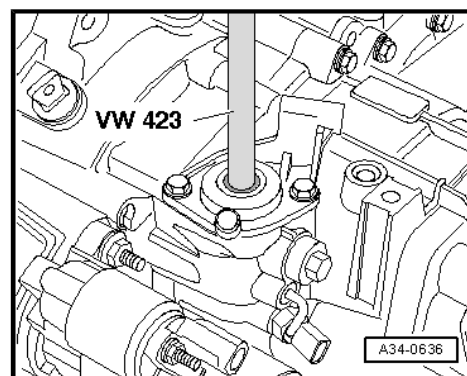
- Install gearbox selector lever and gate relay lever ⇒ [page 67](#) / ⇒ [page 71](#) .



Note

The gearbox selector lever can only be installed in one position.

- Install air cleaner housing ⇒ Rep. gr. 23 ; Air cleaner; Exploded view - air cleaner housing , or ⇒ Rep. gr. 24 ; Air cleaner; Exploded view - air cleaner housing .



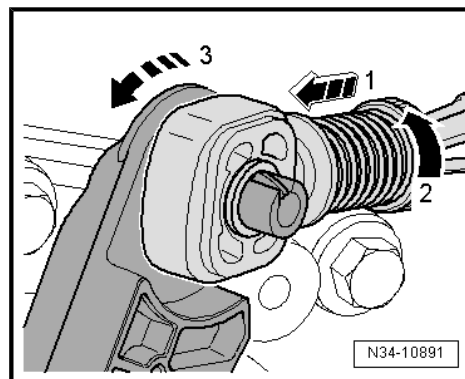
7.2 Removing and installing selector unit (gearbox installed)

Removing

- Remove complete air cleaner housing (does not apply to engine codes BWA and BPY) ⇒ Rep. gr. 24 ; Air cleaner; Exploded view - air cleaner housing .

**Plastic gate relay lever -1-:**

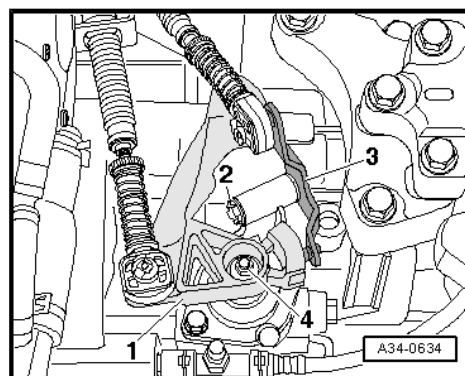
- Pull locking mechanism forwards in direction of -arrow 1- onto stop and then turn to left in direction of -arrow 2- to lock.
- Press gate relay lever forwards (in direction of -arrow 3-) and at the same time pull gate selector cable out of cable end-piece.
- Removing gate relay lever (with detent catch) ⇒ [page 74](#)
- Remove gate relay lever (with clip) ⇒ [page 75](#).

**Metal gate relay lever:**

- Detach circlip -2- and push gate relay lever -3- sideways out of bearing.

All vehicles (continued):**Note**

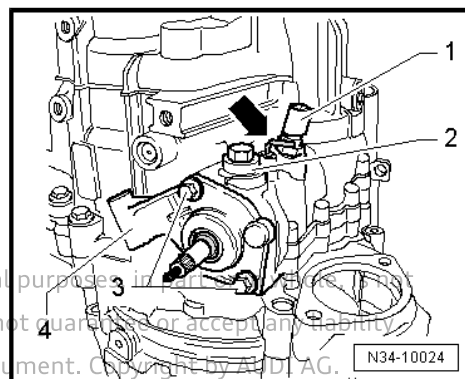
If the gearbox bracket makes it impossible to remove the gate relay lever, remove the gate selector cable from the gate relay lever. Guide the slide block out of gearbox selector lever.



- Remove nut -4- and take out gearbox selector lever -1-.
- Put selector shaft in neutral position.

**Caution**

Make sure that the selector shaft is not locked in position by the angled rod -arrow- when carrying out the following steps.

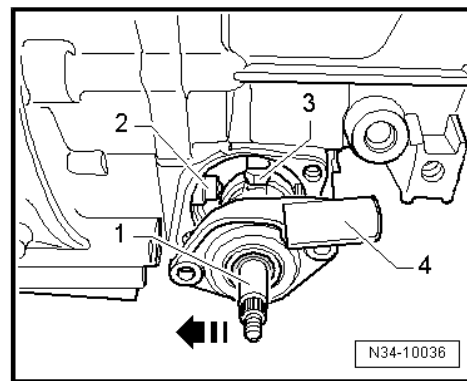


- Remove reversing light switch - F4- -1-.
- Remove locking bolt -2-.
- Unscrew bolts -3-.
- Pull selector shaft with selector mechanism cover -4- out of gearbox housing.



Installing

- Tightening torques ⇒ Servicing 6-speed manual gearbox 02Q; Rep. gr. 34 ; Dismantling and assembling gearbox; Exploded view - gearbox housing and selector mechanism
- Now push selector shaft -1- against stop sleeve -2- in direction of -arrow- and run selector finger -3- down through selector forks and onto stop.
- Selector mechanism cover -4- should be parallel to joint surface on gearbox housing.
- Selector shaft should move up and down easily (gate selector movement).



Note

If the selector mechanism cover is not parallel with the joint surface, the selector shaft is not seated in its bottom mounting.

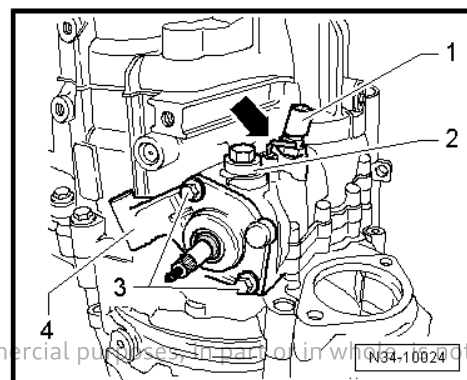
- Tighten bolts -3- for selector mechanism cover -4-.
- Screw in locking bolt -2-; angled rod -arrow- must be released.
- Install reversing light switch - F4- -1-.
- Install gearbox selector lever and gate relay lever ⇒ [page 67](#) / ⇒ [page 71](#) .



Note

The gearbox selector lever can only be installed in one position.

- Install air cleaner housing ⇒ Rep. gr. 24; Air cleaner; Exploded view - air cleaner housing .





8 Dismantling and assembling gearbox

For a detailed description please refer to the Workshop Manual
⇒ Servicing 6-speed manual gearbox 02Q; Rep. gr. 34 ; Dismantling and assembling gearbox .



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9 Gearbox housing, clutch housing

For a detailed description please refer to the Workshop Manual
⇒ Servicing 6-speed manual gearbox 02Q; Rep. gr. 34 ; Gearbox
housing, clutch housing .



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35 – Gears, shafts

1 Input shaft

For a detailed description please refer to the Workshop Manual
⇒ Servicing 6-speed manual gearbox 02Q; Rep. gr. 35 ; Input
shaft .



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2 Output shaft

For a detailed description please refer to the Workshop Manual
⇒ Servicing 6-speed manual gearbox 02Q; Rep. gr. 35 ; Output
shaft .



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39 – Final drive - front differential

1 Oil seals

⇒ [“1.1 Overview of fitting locations - oil seals and flange shaft on gearbox”, page 168](#)

⇒ [“1.1.1 Removing and installing flange shaft \(left-side\)”, page 169](#)

⇒ [“1.1.2 Renewing oil seal for flange shaft \(left-side\)”, page 170](#)

⇒ [“1.1.3 Renewing oil seal for bevel box with gearbox installed”, page 171](#)

⇒ [“2 Renewing input shaft oil seal”, page 174](#)

⇒ [“3 Overview of fitting locations - oil seals and flange shaft on bevel box”, page 176](#)

⇒ [“3.1 Removing and installing flange shaft \(right-side\)”, page 177](#)

⇒ [“3.2 Renewing flange shaft oil seal \(right-side\) at bevel box \(outer seal\)”, page 179](#)

⇒ [“3.3 Renewing needle bearings \(polygon bearings\) for flange shaft \(right-side\)”, page 180](#)

⇒ [“3.4 Renewing oil seal between gearbox and bevel box \(on bevel box\)”, page 181](#)

⇒ [“3.5 Renewing oil seal for bevel box output flange”, page 183](#)

1.1 Overview of fitting locations - oil seals and flange shaft on gearbox



1 - Oil seal

- ☐ Between bevel box and gearbox
- ☐ Renewing with manual gearbox installed
⇒ [page 171](#)

2 - Oil seal

- ☐ For selector shaft
- ☐ Renewing ⇒ [page 159](#)

3 - Gearbox selector lever

4 - Nut

- ☐ Tightening torque
⇒ [Item 17 \(page 68\)](#)

5 - Oil seal

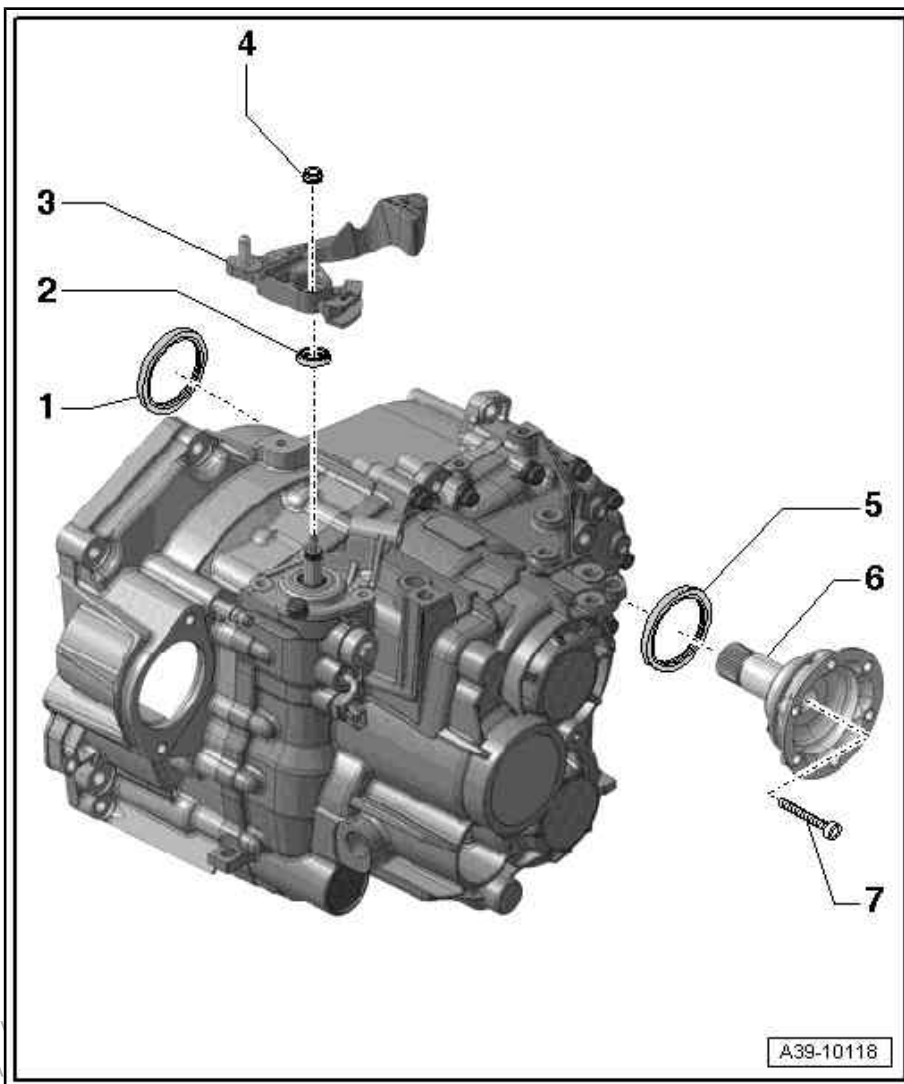
- ☐ For flange shaft (left-side)
- ☐ Renewing ⇒ [page 170](#)

6 - Flange shaft (left-side)

- ☐ Removing and installing
⇒ [page 169](#)

7 - Bolt

- ☐ 33 Nm
- ☐ Renew

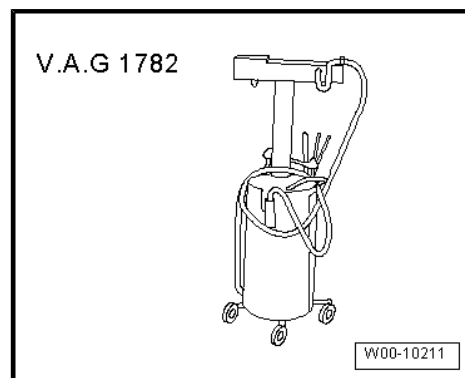


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1.1.1 Removing and installing flange shaft (left-side)

Special tools and workshop equipment required

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





Removing

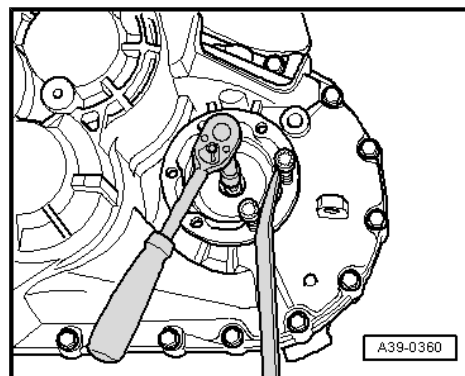
- Remove drive shaft (left-side) ⇒ Rep. gr. 40 .
- Place used oil collection and extraction unit - V.A.G 1782- below gearbox.
- Remove bolt securing flange shaft (left-side). To do so, screw two bolts into flange and counterhold flange shaft with suitable lever.
- Pull out flange shaft and spring.

Installing

- Tightening torque ⇒ [page 168](#)

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

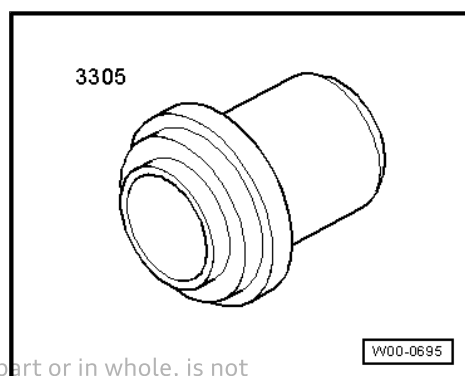
- Push flange shaft in against spring pressure and secure with bolt.
- Install drive shaft (left-side) ⇒ Rep. gr. 40 .
- Check gear oil level in manual gearbox and top up as required ⇒ [page 141](#) .



1.1.2 Renewing oil seal for flange shaft (left-side)

Special tools and workshop equipment required

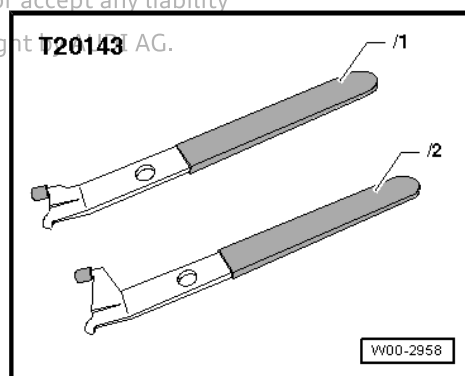
- ◆ Thrust piece - 3305-



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- ◆ Extractor tool - T20143/2-

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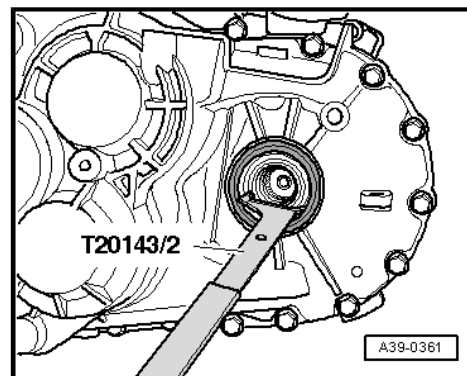


- ◆ Sealing grease - G 052 128 A1-

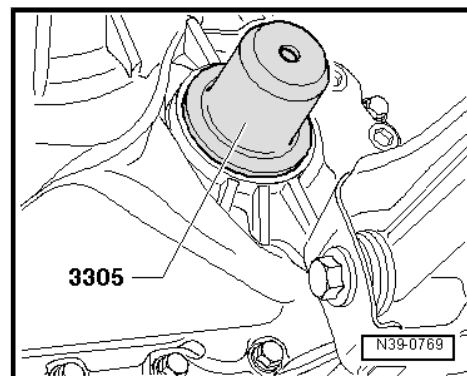


Procedure

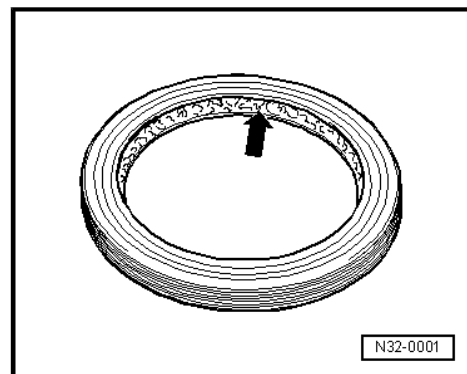
- Gearbox in vehicle
- Remove flange shaft (left-side) ⇒ [page 169](#) .
- Pull out flange shaft oil seal using extractor tool - T20143/2- .



- Lightly oil outer circumference of new oil seal.
- Drive in new oil seal onto stop (take care to keep oil seal straight).



- Pack space between sealing lip and dust lip -arrow- half full with sealing grease - G 052 128 A1- .
- Install flange shaft (left-side) ⇒ [page 169](#) .
- Check gear oil level in manual gearbox and top up as required ⇒ [page 141](#) .



1.1.3 Renewing oil seal for bevel box with gearbox installed

Special tools and workshop equipment required

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

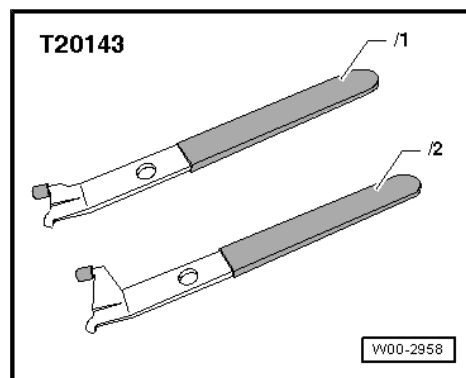


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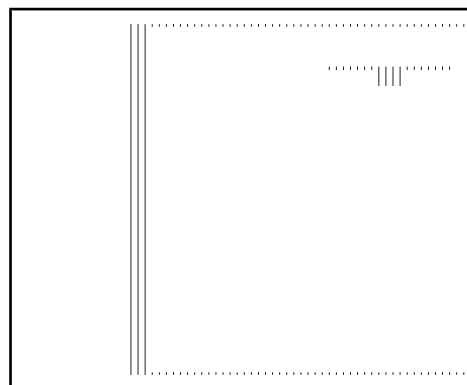




- ◆ Extractor tool - T20143/2-



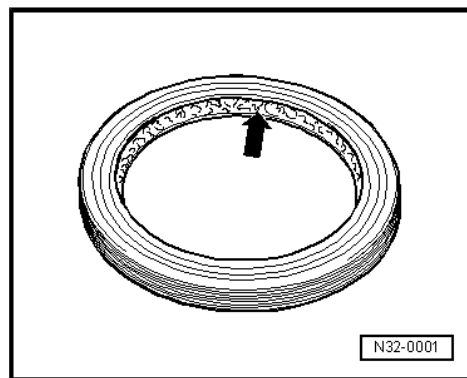
- ◆ Thrust piece - T10243-



- ◆ Sealing grease - G 052 128 A1-

Procedure

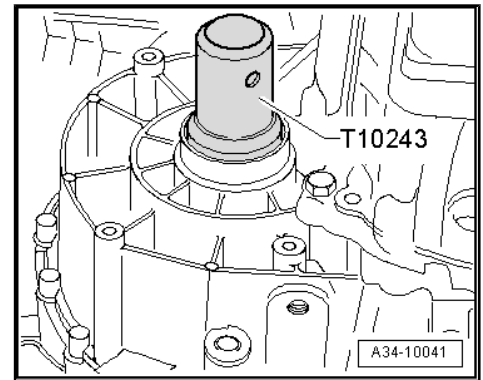
- Bevel box removed ➔ [page 147](#) .
- Place used oil collection and extraction unit - V.A.G 1782- underneath.
- Pry out oil seal for bevel box using extractor tool - T20143/2- or oil seal extractor lever - VW 681- .
- Pack space between sealing lip and dust lip -arrow- half-full with sealing grease - G 052 128 A1- .
- Lightly oil outer circumference of new oil seal.



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- Drive in oil seal onto stop.



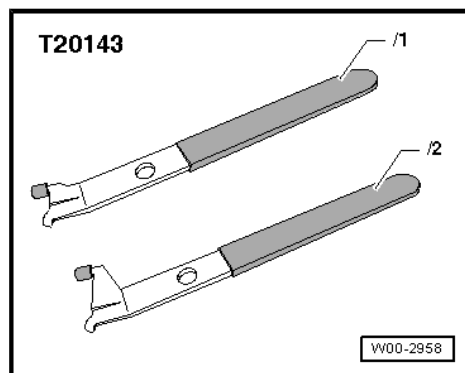
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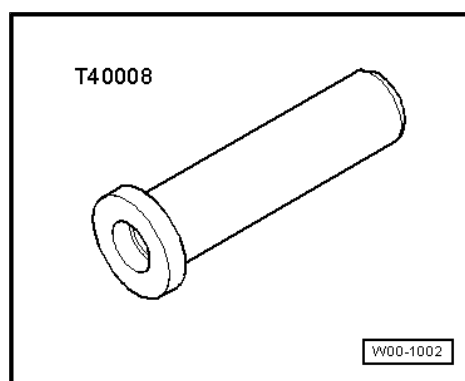
2 Renewing input shaft oil seal

Special tools and workshop equipment required

- ◆ Extractor tool - T20143/1-



- ◆ Thrust piece - T40008-



- ◆ Sealing grease - G 052 128 A1-

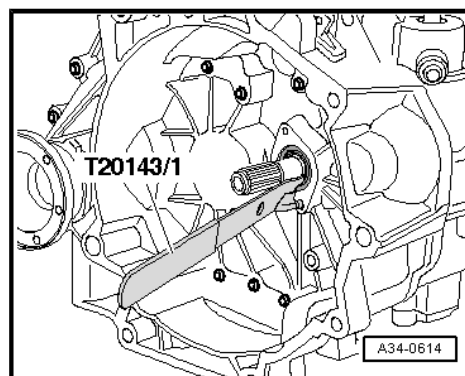
Procedure

- Gearbox removed ⇒ [page 84](#) .
- Remove clutch slave cylinder with release bearing ⇒ [page 42](#) .
- Pry out input shaft oil seal using extractor tool - T20143/1- .

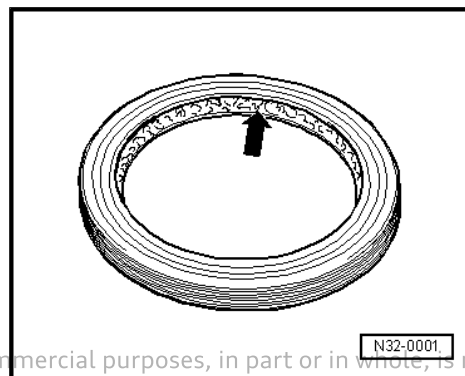


Note

Take care not to damage running surface for oil seal on input shaft.



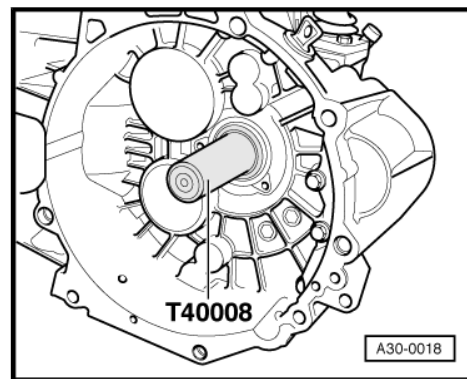
- Pack space between sealing lip and dust lip -arrow- half-full with sealing grease - G 052 128 A1- .
- Lightly oil outer circumference of new oil seal.



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- Drive in oil seal until flush using thrust piece - T40008- .
- Install clutch slave cylinder with release bearing ⇒ [page 42](#) .



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3 Overview of fitting locations - oil seals and flange shaft on bevel box

1 - Nut

- ☐ 480 Nm
- ☐ Renew

2 - Output flange on bevel box

3 - Output flange cap

- ☐ Renew if damaged

4 - Oil seal

- ☐ For output flange on bevel box
- ☐ Renewing ⇒ [page 183](#)

5 - Oil seal on bevel box

- ☐ Between gearbox and bevel box
- ☐ Renewing ⇒ [page 181](#)

6 - Bevel box

- ☐ Removing and installing ⇒ [page 147](#)

7 - Plug

- ☐ For oil drain hole on bevel box
- ☐ 60 Nm

8 - Oil seal

- ☐ For flange shaft (right-side) on bevel box (outer)
- ☐ Renewing ⇒ [page 179](#)

9 - Plug

- ☐ For oil filler hole at bevel box
- ☐ 15 Nm

10 - Bolt

- ☐ Bevel box to gearbox
- ☐ 40 Nm and then turn 45° further
- ☐ 4x
- ☐ Renew

11 - Breather pipe

12 - Breather cap

13 - Bolt

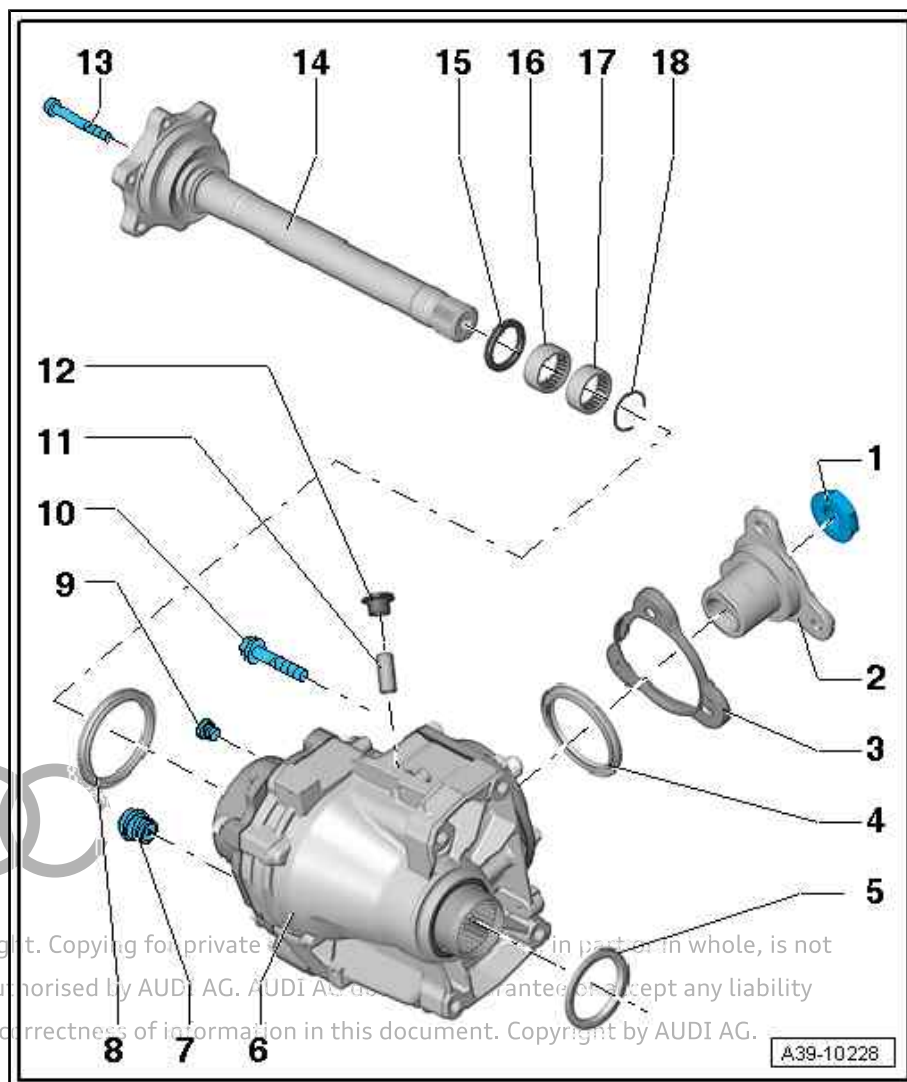
- ☐ 33 Nm
- ☐ Renew

14 - Flange shaft (right-side)

- ☐ Removing and installing ⇒ [page 177](#)

15 - Oil seal

- ☐ Renew





16 - Needle bearing (polygon bearing)

- ☐ Does not turn easily when flange shaft is removed; this does not indicate a fault
- ☐ Acoustic check can only be performed when installed
- ☐ Check for damage such as cracking in outer race
- ☐ Renewing → [page 180](#)

17 - Needle bearing (polygon bearing)

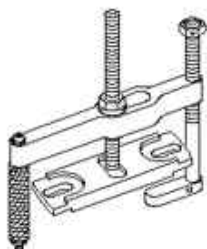
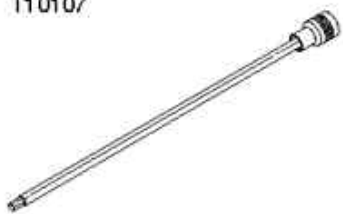
- ☐ Does not turn easily when flange shaft is removed; this does not indicate a fault
- ☐ Acoustic check can only be performed when installed
- ☐ Check for damage such as cracking in outer race
- ☐ Renewing → [page 180](#)

18 - Circlip

- ☐ Renew

3.1 Removing and installing flange shaft (right-side)

Special tools and workshop equipment required

V.A.G 1782 	T10037 
T10107 	
	G39-0115

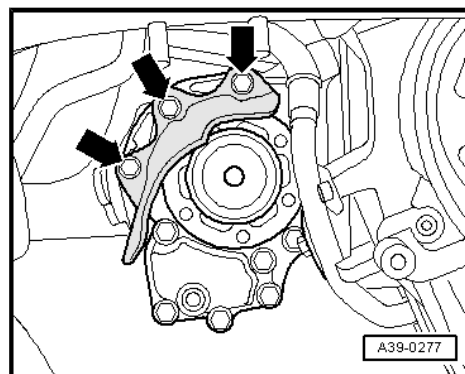
- ◆ Used oil collection and extraction unit - V.A.G 1782-
- ◆ Puller - T10037-



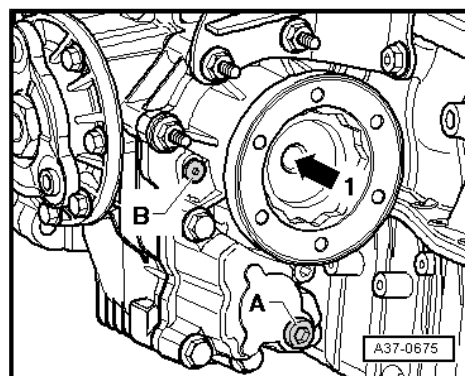
◆ Socket - T10107 A-

Removing

- Remove drive shaft (right-side) ⇒ Rep. gr. 40 .
- Unbolt heat shield for drive shaft (right-side) from bevel box -arrows-.



- Place used oil collection and extraction unit - V.A.G 1782- below gearbox.
- Using socket and extended bit - T10107 A- , remove bolt -arrow 1- securing flange shaft (right-side). To do so, screw two bolts into flange and counterhold flange shaft with suitable lever.

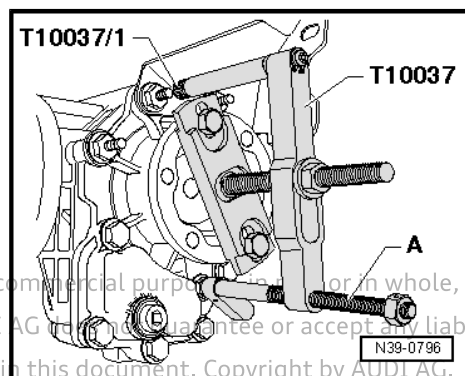


- Attach puller - T10037- to flange shaft (right-side).

**Note**

Use the puller - T10037- to remove the flange shaft (right-side) to avoid damaging the polygon bearings on the flange shaft.

- Place a spacer (e.g. press tool - VW 434-) between gearbox carrier and knurled nut -T10037/1-.
- Use knurled nut -T10037- and lower support -A- to align puller - T10037- parallel with flange.
- Pull out flange shaft.

**Installing**

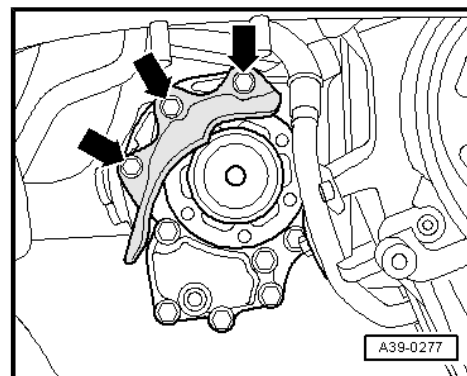
- Tightening torque ⇒ [page 176](#)

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

- Carefully drive in flange shaft (while turning).
- Secure flange shaft.
- Check gear oil level in bevel box and top up ⇒ [page 141](#) .
- Install drive shaft (right-side) ⇒ Rep. gr. 40 .



- Install heat shield for drive shaft (right-side) ⇒ [page 129](#) .
- Depending on version, heat shield may only be secured with 2 nuts/2 bolts ⇒ [page 129](#) .

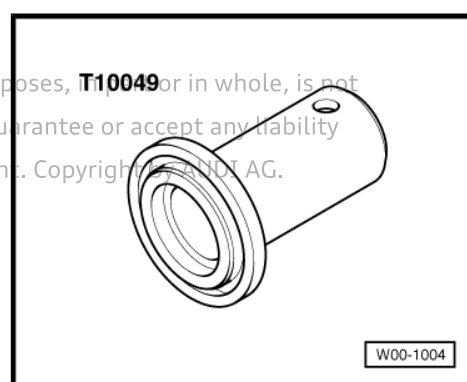


3.2 Renewing flange shaft oil seal (right-side) at bevel box (outer seal)

Special tools and workshop equipment required

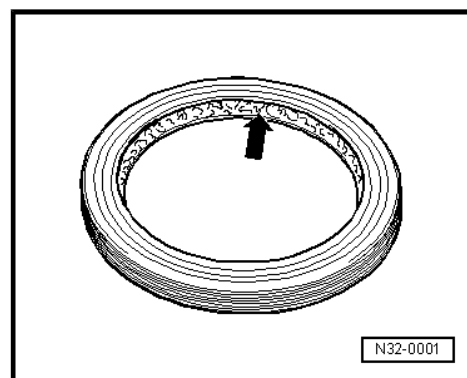
- ◆ Thrust piece - T10049-

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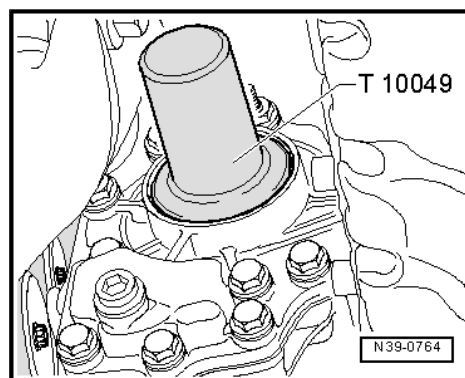
Procedure

- Gearbox in vehicle
- Remove flange shaft (right-side) ⇒ [page 177](#) .
- Pry out flange shaft oil seal using assembly lever.
- Lightly oil outer circumference of new oil seal.
- Pack space between sealing lip and dust lip -arrow- half full with sealing grease - G 052 128 A1- .



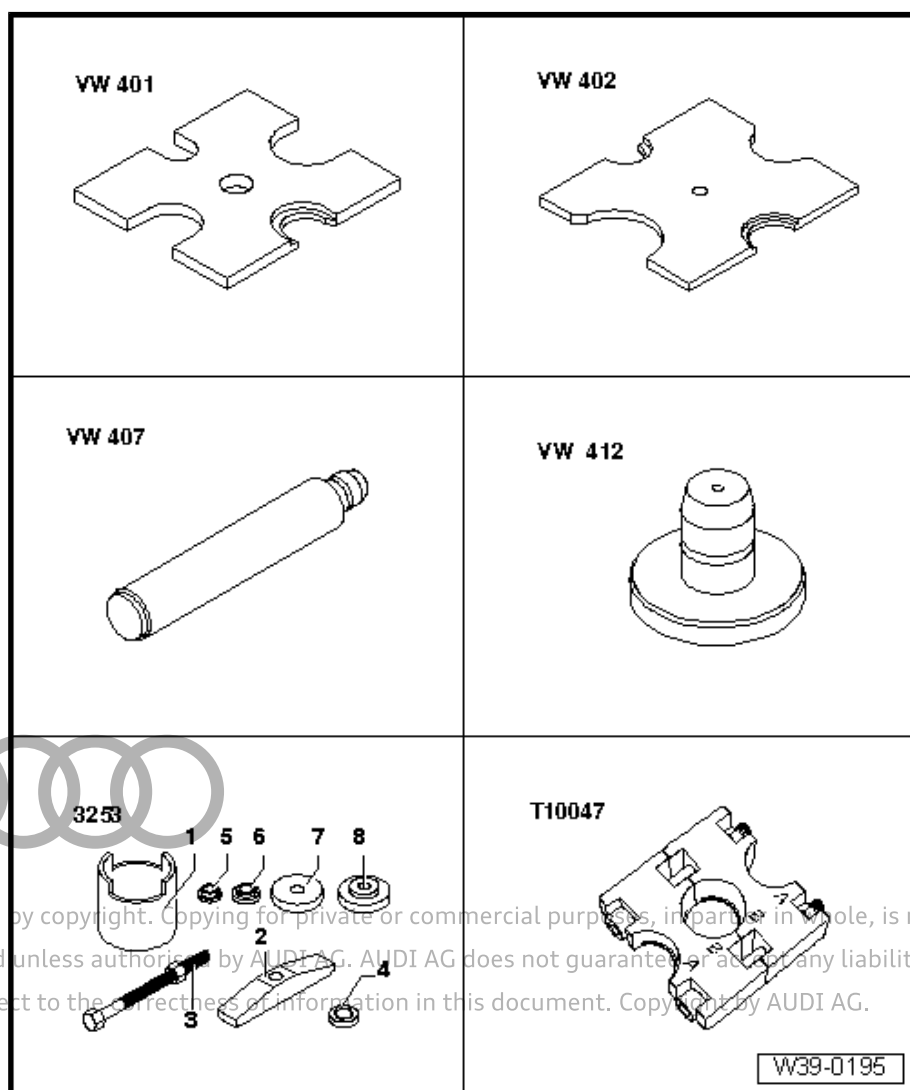


- Drive oil seal in onto stop using thrust piece - T10049- .
- Install flange shaft (right-side) ⇒ [page 177](#) .



3.3 Renewing needle bearings (polygon bearings) for flange shaft (right-side)

Special tools and workshop equipment required



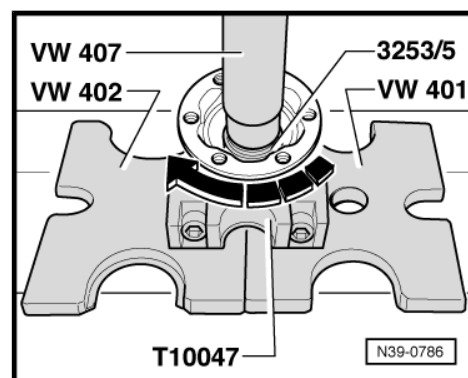
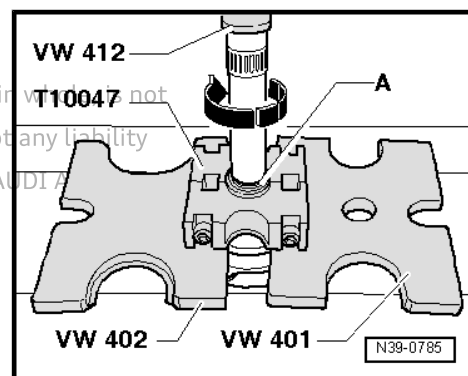
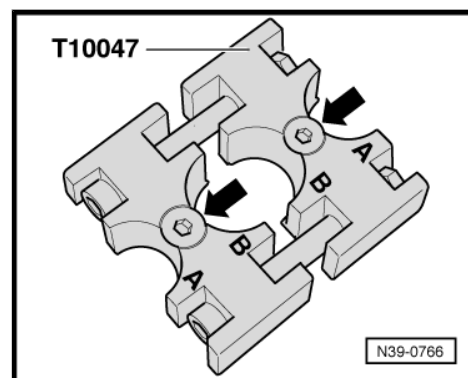
- ◆ Thrust plate - VW 401-
- ◆ Thrust plate - VW 402-
- ◆ Press tool - VW 407-
- ◆ Press tool - VW 412-
- ◆ Assembly tool - VAS 3253-



◆ Tensioner - T10047-

Procedure

- Remove flange shaft (right-side) ⇒ [page 177](#) .
- Assemble assembly tool - T10047- , as shown in illustration.
- Marks "B" on both parts of tool face each other.
- The stepped shoulders -arrows- must then be below the bearing.
- Screw parts together as far as stop.

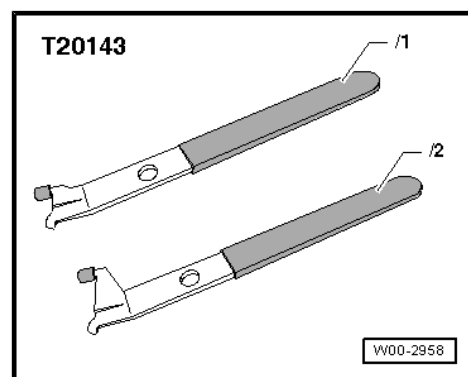


- Remove circlip -A-.
- To prevent damage to contact surface of needle bearings on shaft, rotate shaft -arrow- when pressing off.
- To prevent damage to contact surface of needle bearings on shaft, rotate shaft -arrow- when pressing on.
- Secure needle bearings in position with new circlip.
- Install flange shaft (right-side) ⇒ [page 177](#) .

3.4 Renewing oil seal between gearbox and bevel box (on bevel box)

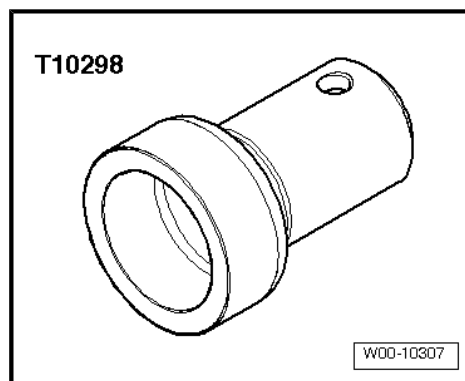
Special tools and workshop equipment required

◆ Extractor hook -T20143-



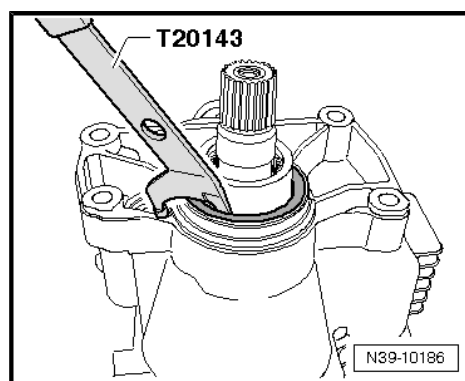


◆ Thrust piece - T10298-

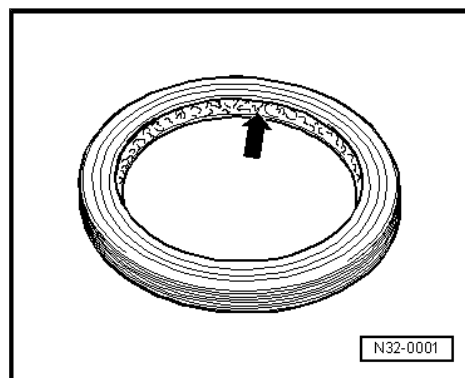


Procedure

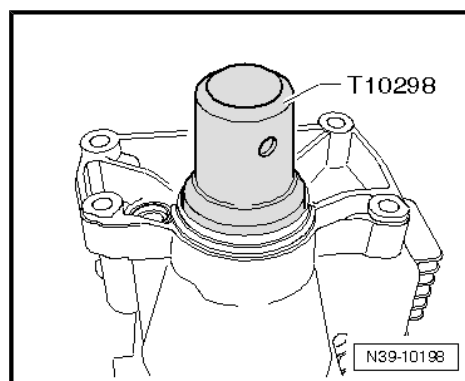
- Bevel box removed ⇒ [page 147](#) .
- Pry out oil seal from bevel box with extractor tool - T20143/1- or - T20143/2- .



- Lightly oil outer circumference of new oil seal.
- Pack space between sealing lip and dust lip -arrow- half full with sealing grease - G 052 128 A1- .



- Drive oil seal in as far as stop using thrust piece - T10298- .
- Install bevel box ⇒ [page 147](#) .
- Check gear oil level in bevel box and top up ⇒ [page 141](#) .



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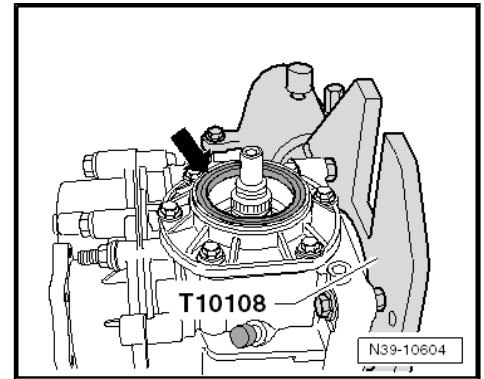
3.5 Renewing oil seal for bevel box output flange

Procedure



Note

- ◆ The oil seal for bevel box output flange -arrow- can only be renewed with the bevel box removed ⇒ [page 147](#) .
- ◆ For a description of the repair procedure, please refer to the Workshop Manual ⇒ Servicing 6-speed manual gearbox 02Q, front-wheel drive and four-wheel drive; Rep. gr. 39 ; Bevel box, Renewing oil seals for bevel box .



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4 Gear oil

⇒ ["4.1 Checking gear oil level", page 184](#)

⇒ ["4.2 Draining and filling gear oil", page 185](#)

4.1 Checking gear oil level



Note

- ◆ The bevel box is secured to the side of the gearbox and has a separate oil filling.
- ◆ For gear oil specifications, refer to ⇒ *Electronic parts catalogue*.

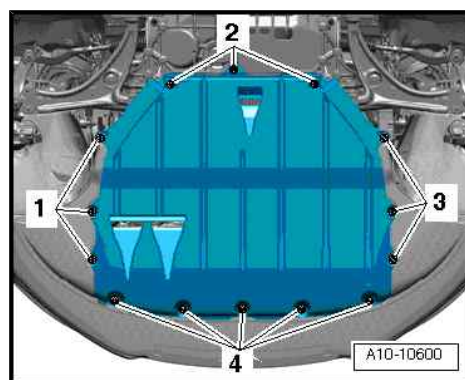
Procedure

- Tightening torque ⇒ [page 185](#)
- Renew screw plug for oil filler hole.
- Vehicle must be standing on level surface.
- Bevel box must be in installation position.
- Release fasteners -1 ... 4- and remove centre noise insulation.



Note

Place a cloth below to catch escaping gear oil.



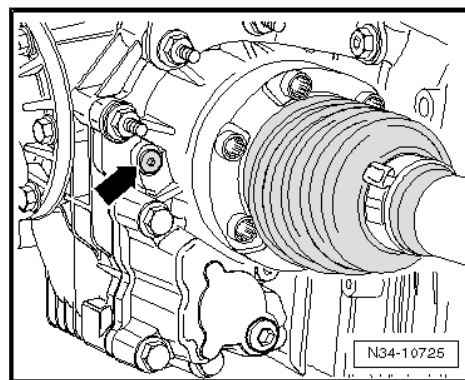
- Remove oil filler plug -arrow- in bevel box.
- Specification: oil level up to bottom lip of filler hole
- Top up gear oil as necessary
⇒ ["4.2 Draining and filling gear oil", page 185](#).



Note

Carefully remove any traces of escaped oil on bevel box.

- Tighten new oil filler plug. Tightening torque ⇒ [page 185](#)
- Install noise insulation ⇒ *General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation*.

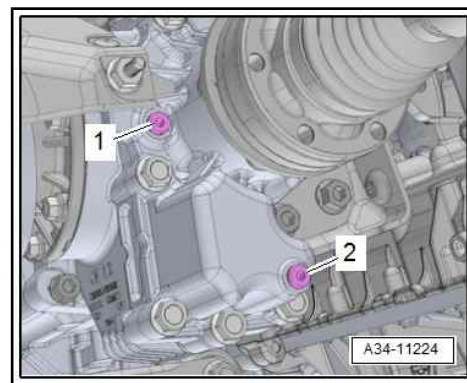


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Oil drain plug/filler plug - tightening torque

Item	Bolt	Nm
1	Oil filler plug	15
2	Oil drain plug	• M10 x 1 15 Nm • M20 x 1.5 60 Nm
	• Renew screw plugs.	



4.2 Draining and filling gear oil



Note

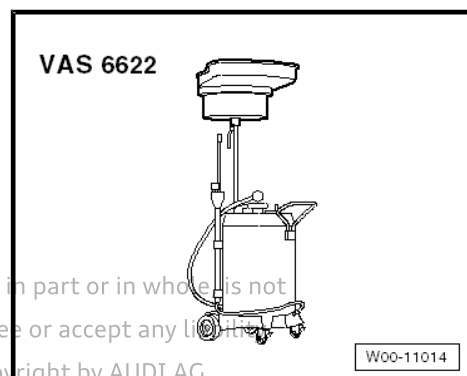
- ◆ The gear oil in the bevel box only needs to be drained if repairs are required. An oil change is not normally required.
- ◆ For gear oil specifications, refer to ⇒ Electronic parts catalogue.

Special tools and workshop equipment required

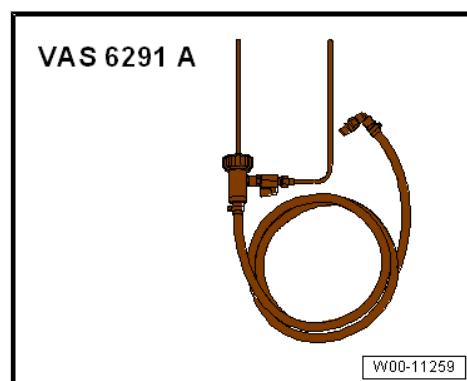
- ◆ Used oil collection and extraction unit - VAS 6622-



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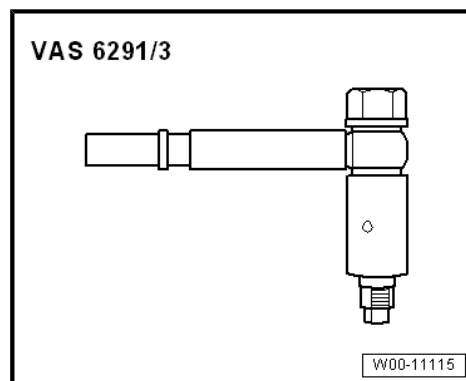


- ◆ Filling device for four-wheel drive coupling 2 - VAS 6291-

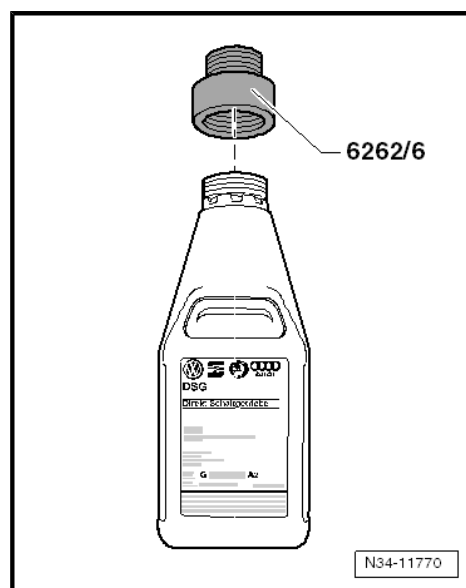




- ◆ Adapter for oil filling - VAS 6291/3-



- ◆ Adapter - VAS 6262/6-



- ◆ Safety goggles
- ◆ Protective gloves (acid resistant)

Draining

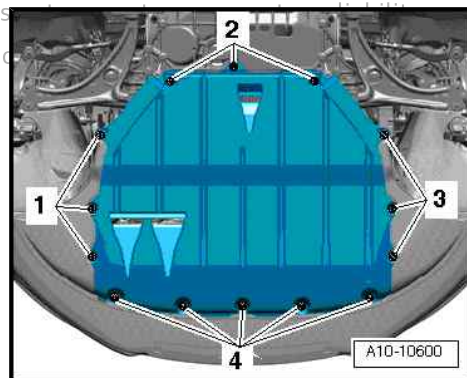
- Vehicle must be standing on level surface.
- Bevel box must be in installation position.
- Tightening torques ⇒ [page 185](#)



Note

Renew oil drain plug and oil filler plug.

- Release fasteners -1 ... 4- and remove centre noise insulation.





- Place used oil collection and extraction unit - VAS 6622- below gearbox.



WARNING

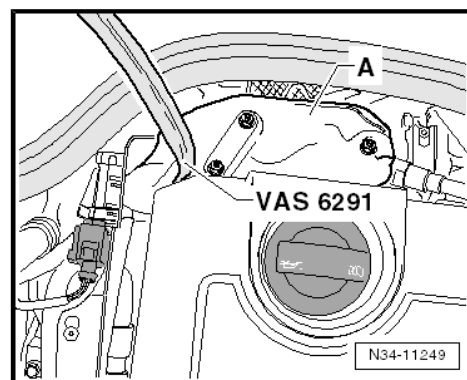
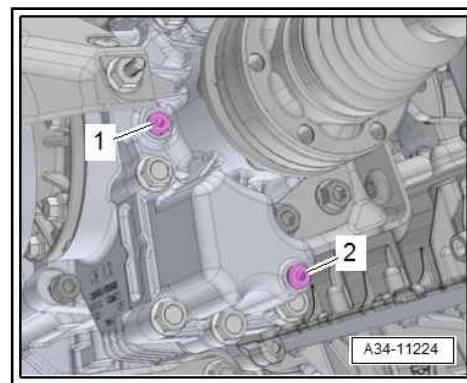
Hot gear oil can cause burns.

- ◆ *Put on safety goggles.*
- ◆ *Wear protective gloves (acid resistant).*

- Remove oil drain plug -2- and allow gear oil to drain off.
- Screw in and tighten new oil drain plug.

Filling

- Route hose for filling device - VAS 6291 A- through engine compartment.
- Vehicles with particulate filter -A-: Guide hose of filling device past particulate filter on right side.

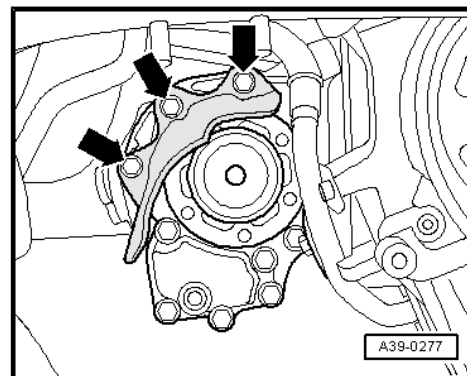


- If necessary, unbolt heat shield for drive shaft (right-side) from bevel box -arrows-.



Note

Illustration shows 3.2 ltr. MPI engine.

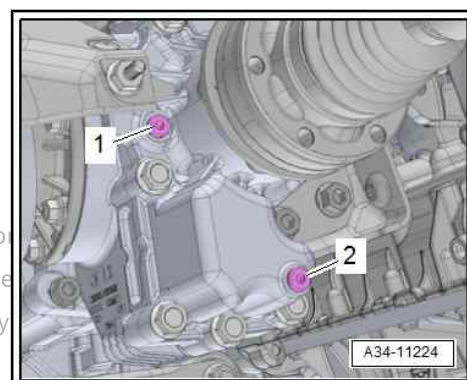


Note

Leave used oil collection and extraction unit - VAS 6622- in position below gearbox to catch escaping gear oil.

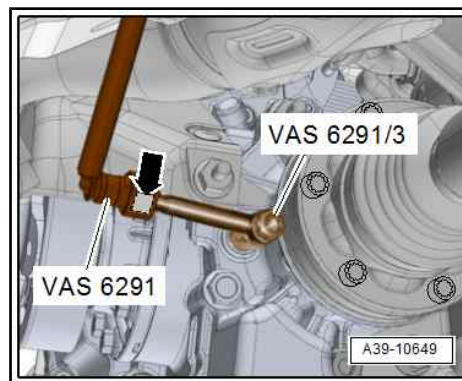
- Remove screw plug -1- from oil filler hole.

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- Screw in adapter -VAS 6291/3- as far as stop.
- Connect elbow joint of filling device - VAS 6291 A- to adapter -VAS 6291/3- , making sure it engages.
- The hose must not hang down.

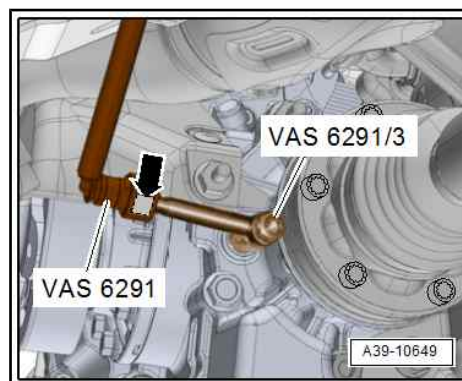
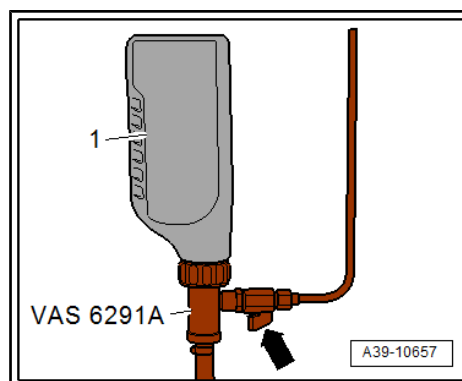


- Make sure that valve -arrow- is closed.
- Screw oil container -1- onto filling device - VAS 6291 A- .

**Note**

For some oil containers, an additional adapter -VAS 6262/6- must be used.

- Open valve -arrow- and hold up oil container as shown in illustration.
- The bevel box will now be filled.
- When bevel box is filled correctly oil will emerge at adapter - VAS 6291/3- .
- When gear oil comes out at adapter - VAS 6291/3- , put down oil container so that excess oil can drain back into container.
- When oil stops flowing back, detach filling device .
- Fit new oil filler plug and tighten. Tightening torque
⇒ [page 185](#)

**Note**

Carefully remove any traces of escaped oil on bevel box.

- If previously removed, install heat shield for drive shaft (right-side) ⇒ [page 129](#) , ⇒ [page 129](#) or ⇒ [page 129](#) .
- Install noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Exploded view - noise insulation .



5 Differential

For a detailed description please refer to the Workshop Manual
⇒ Servicing 6-speed manual gearbox 02Q; Rep. gr. 39 ; Differential .

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6 Propshaft

Description of propshaft ⇒ Rear final drive 02D, 0AV, 0BR and 0BY; Rep. gr. 39 .



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7 Rear final drive

Description of rear final drive ⇒ Rear final drive 02D, 0AV, 0BR and 0BY; Rep. gr. 39 .



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