



Workshop Manual

Audi Q3 2012 ➤
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Audi Q3 China 2013 ➤

6-speed manual gearbox 02Q, 0BB
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Edition 11.2014

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

(ARL003940; Edition 11.2014)

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

1.1 Gearbox identification

⇒ [“1.1.1 Gearbox identification - 6-speed manual gearbox 0BB, front-wheel drive and 02Q, front-wheel drive”, page 1](#)

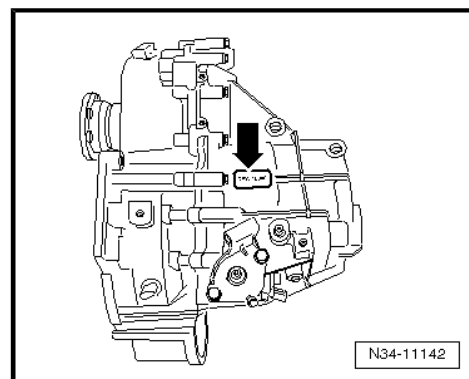
⇒ [“1.1.2 Gearbox identification - 6-speed manual gearbox 02Q, four-wheel drive”, page 1](#)

1.1.1 Gearbox identification - 6-speed manual gearbox 0BB, front-wheel drive and 02Q, front-wheel drive

The 6-speed manual gearbox 0BB/02Q, front-wheel drive is installed in the Audi Q3 2012 ►. Allocation ⇒ [page 3](#).

Location on gearbox

- ◆ Code letters and production date -arrow-



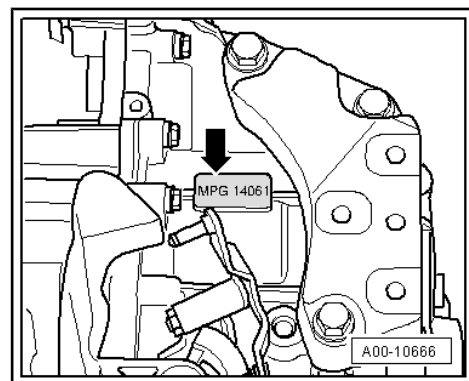
Code letters and production date of gearbox -arrow-

Example:	NFZ	14	06	1
	Code letters	Day	Month	Year of manufacture (2011)

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.
- ◆ Location of vehicle data stickers ⇒ Maintenance ; Booklet 820.

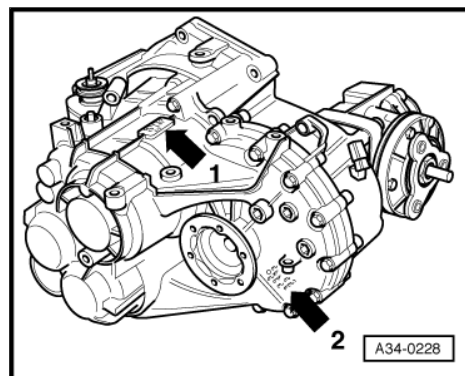


1.1.2 Gearbox identification - 6-speed manual gearbox 02Q, four-wheel drive

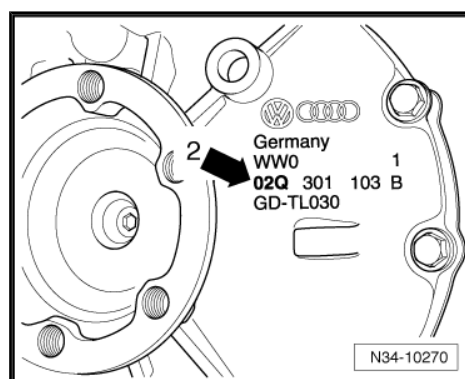
The 6-speed manual gearbox 02Q, four-wheel drive is installed in the Audi Q3 2012 ►. Allocation ⇒ [page 3](#).

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-



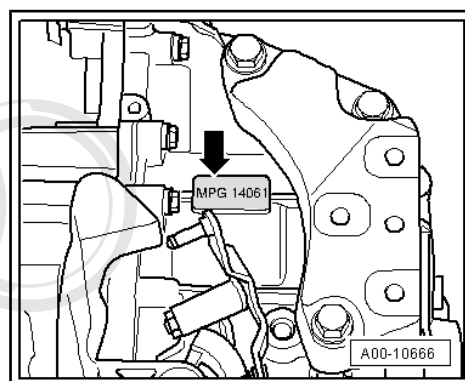
Code letters and production date of gearbox -arrow-

Example:	MPG	14	06	1
	Code letters	Day	Month	Year of manufacture (2011)

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.
- ◆ Location of vehicle data stickers ⇒ Maintenance ; Booklet 820 .



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2 Technical data

⇒ "2.1 Allocation of gearbox to engine", page 3

⇒ "2.2 Capacities", page 5

⇒ "2.3 Calculating gear ratios", page 5

2.1 Allocation of gearbox to engine

⇒ "2.1.1 Allocation of gearbox to engine - 6-speed manual gearbox 0BB, front-wheel drive and 02Q, front-wheel drive", page 3

⇒ "2.1.2 Allocation of gearbox to engine - 6-speed manual gearbox 02Q, four-wheel drive", page 4

2.1.1 Allocation of gearbox to engine - 6-speed manual gearbox 0BB, front-wheel drive and 02Q, front-wheel drive

Manual gearbox		6-speed 0BB, front-wheel drive		
Code letters		NFZ	NVJ	
Manufactured	from to	12.11	05.15	
Allocation	Model Engine	Q3 2012 ► 2.0 ltr. TDI 88/100/103 kW Start/stop	Q3 2012 ► 2.0 ltr. TFSI 132 kW Start/stop	
Ratio	Final drive I for 1st to 4th gear	71 : 18 = 3.944	71 : 18 = 3.944	
$Z_2 : Z_1 = i$	Final drive II for 5th/6th gear and reverse gear	71 : 23 = 3.087	71 : 23 = 3.087	
The following data can be found in the ⇒ Electronic parts catalogue . ♦ Individual gear ratios ♦ Allocation of drive shaft flanges ♦ Allocation of clutch type				

Manual gearbox		6-speed 02Q, front-wheel drive		
Code letters		NFX	NTE	QQN
Manufactured	from to	05.13	10.13	11.14
Allocation	Model Engine	Q3 2012 ► 2.0 ltr. TDI 103 kW Start/stop	Q3 2012 ► 1.4 ltr. TFSI 110 kW Start/stop	Q3 2012 ► 2.0 ltr. TDI 100/110 kW Start/stop
Ratio	Final drive I for 1st to 4th gear	71 : 18 = 3.944	73 : 16 = 4.563	70 : 19 = 3.684
$Z_2 : Z_1 = i$	Final drive II for 5th/6th gear and reverse gear	71 : 18 = 3.944	73 : 21 = 3.476	70 : 24 = 2.967
The following data can be found in the ⇒ Electronic parts catalogue . ♦ Individual gear ratios ♦ Allocation of drive shaft flanges ♦ Allocation of clutch type				



2.1.2 Allocation of gearbox to engine - 6-speed manual gearbox 02Q, four-wheel drive

Manual gearbox		6-speed 02Q, four-wheel drive		
Code letters		LWP	MKH	MPG
Manufactured	from to	06.11	12.11	06.11
Allocation	Model Engine	Q3 2012 ► 2.0 ltr. TFSI 125 kW	Q3 2012 ► 2.0 ltr. TDI 103 kW Start/stop	Q3 2012 ► 2.0 ltr. TFSI 125 kW Start/stop
Ratio	Final drive I for 1st to 4th gear	72 : 17 = 4.235	71 : 18 = 3.944	72 : 17 = 4.235
$Z_2 : Z_1 = i$	Final drive II for 5th/6th gear and reverse gear	72 : 22 = 3.273	71 : 23 = 3.087	72 : 22 = 3.273
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		NVH	QCR	
Manufactured	from to	05.15	12.14	
Allocation	Model Engine	Q3 2012 ► 2.0 ltr. TFSI 132 kW	Q3 2012 ► 2.0 ltr. TDI 110 kW Start/stop	
Ratio	Final drive I for 1st to 4th gear	71 : 18 = 3.944	71 : 18 = 3.944	
$Z_2 : Z_1 = i$	Final drive II for 5th/6th gear and reverse gear	71 : 23 = 3.087	71 : 23 = 3.087	
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 - 6-speed manual gearbox 0BB, front-wheel drive and 02Q, front-wheel drive", page 5](#)

⇒ ["2.2.2 Capacities - 6-speed manual gearbox 02Q, four-wheel drive", page 5](#)

2.2.1 Capacities - 6-speed manual gearbox 0BB, front-wheel drive and 02Q, front-wheel drive

Manual gearbox	6-speed 0BB/02Q, front-wheel drive
Capacity of manual gearbox	2.3 ltr.
◆ Gear oil specifications	⇒ Electronic parts catalogue

- Checking gear oil level (manual gearbox) ⇒ [page 178](#)

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

Manual gearbox	6-speed 02Q, four-wheel drive
Gear oil capacity in manual gearbox	2.3 ltr.
Gear oil capacity in bevel box	0.9 ltr.
◆ Gear oil specifications (manual gearbox)	⇒ Electronic parts catalogue
◆ Gear oil specifications (bevel box)	⇒ Electronic parts catalogue

- Checking gear oil level (manual gearbox) ⇒ [page 178](#)
- Checking gear oil level (bevel box) ⇒ [page 215](#)
- Draining and filling gear oil ⇒ [page 216](#)

2.3 Calculating gear ratios

Example:

	6th gear	Final drive
Driving gear	$ZG_1 = 34$	$ZA_1 = 22$
Driven gear	$ZG_2 = 31$	$ZA_2 = 72$

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

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

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

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

1) Z_1 = number of teeth on driving gear, Z_2 = number of teeth on driven gear

3 Transmission layout

⇒ "3.1 Transmission layout - front-wheel drive", page 6

⇒ "3.2 Transmission layout - four-wheel drive", page 7

3.1 Transmission layout - front-wheel drive

Identification and ratio

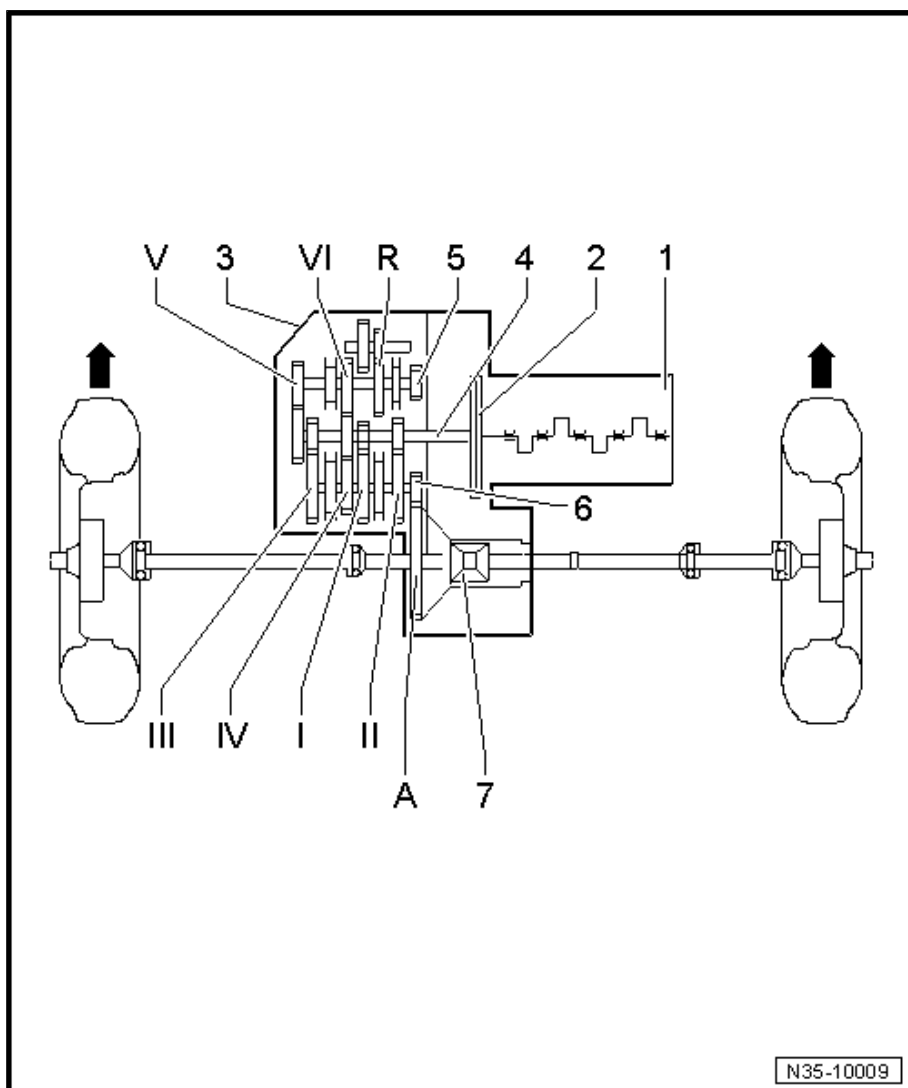


Note

-Arrows- point in direction of travel.

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- 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
- I - 1st gear
- II - 2nd gear
- III - 3rd gear
- IV - 4th gear
- V - 5th gear
- VI - 6th gear
- R - Reverse gear
- A - Final drive



3.2 Transmission layout - four-wheel drive

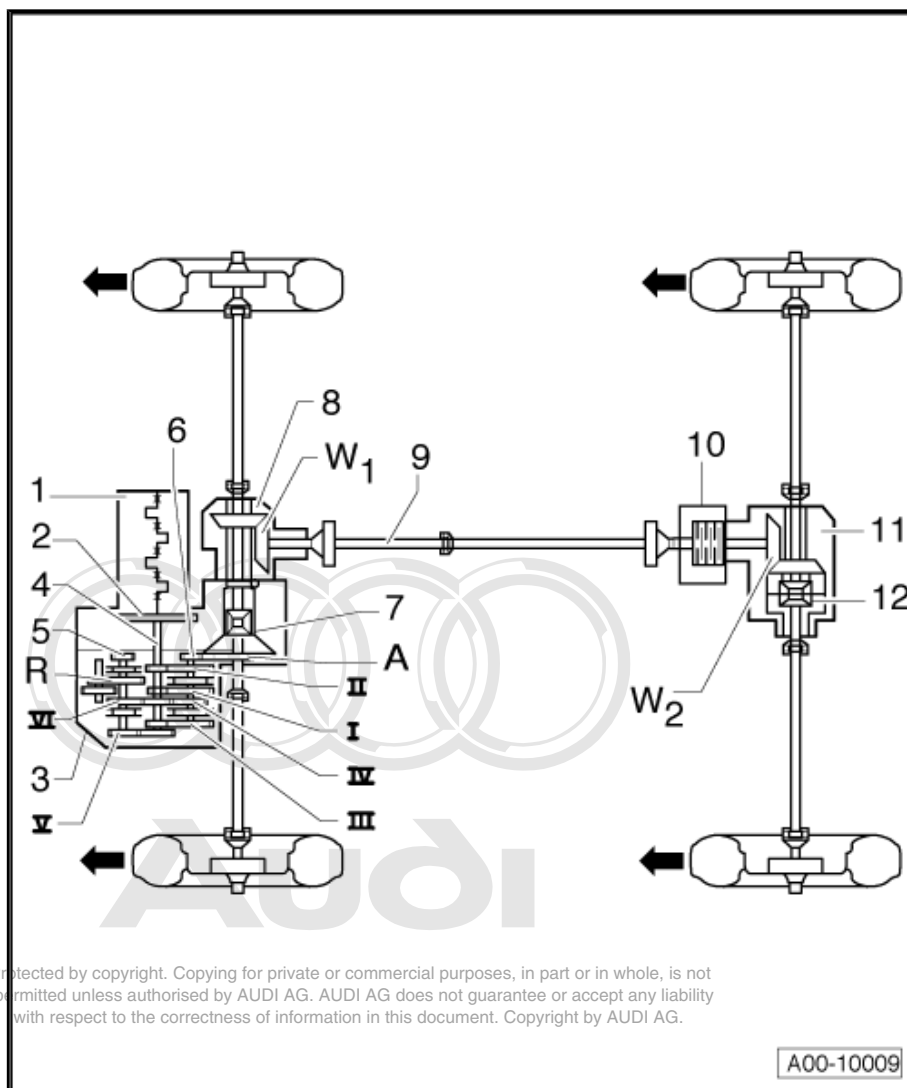
Identification and ratio



Note

-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 - Haldex coupling
- 11 - Rear final drive
- 12 - Differential
- 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



4 Safety precautions

⇒ "4.1 Safety precautions when working on vehicles with start/stop system", page 8

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.*
- ◆ *Therefore it is important to ensure that the start/stop system is deactivated when performing repairs (switch off ignition, if required switch on ignition again).*



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5 Repair instructions

⇒ [“5.1 General repair instructions”, page 9](#)

⇒ [“5.2 Contact corrosion”, page 13](#)

5.1 General repair instructions

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

A number of generally applicable instructions for the various repair procedures 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

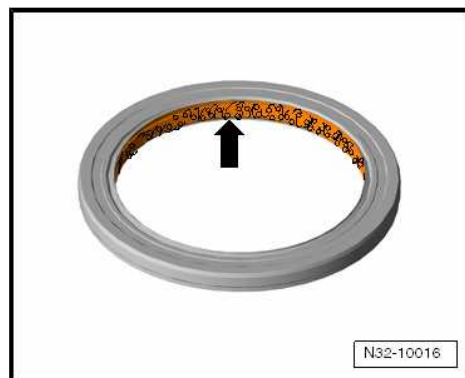
- ◆ Allocate bolts and other components according to gearbox code letters, refer to ⇒ Electronic parts catalogue ⇒ [page 3](#) .
- ◆ Thoroughly clean all joints and connections and the surrounding areas before dismantling.
- ◆ When installing gearbox ensure dowel sleeves are correctly seated.
- ◆ Clean contact surfaces when assembling mounting brackets and waxed components. The contact surfaces must be free of wax and grease.
- ◆ After installing a replacement gearbox with bevel box, check oil level in manual gearbox ⇒ [page 178](#) and bevel box ⇒ [page 215](#) if necessary; capacities ⇒ [page 3](#) , specifications ⇒ Electronic parts catalogue .



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Oil seals, seals, O-rings and gaskets

- ◆ Always renew 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.
- ◆ Thoroughly clean housing joint surfaces before assembling.
- ◆ Before installing oil seals, lightly oil the outer circumference of the seal and fill the space between the sealing lips - arrow - about half full with grease - 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 178](#) and bevel box ➔ [page 215](#) .

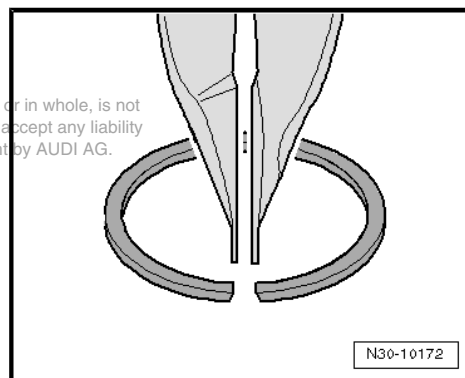


Sealants

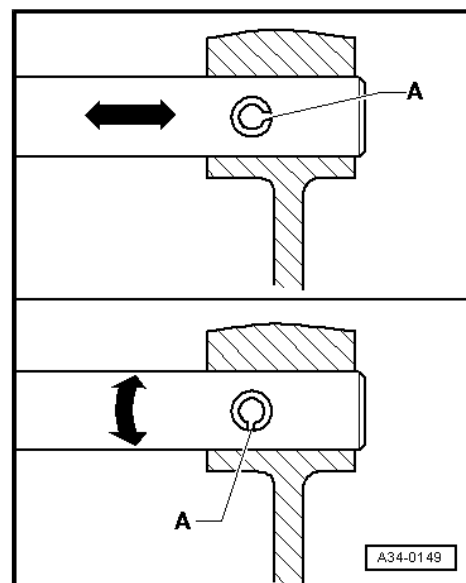
- ◆ Thoroughly clean housing contact surfaces before applying sealing paste.
- ◆ Apply sealing paste - AMV 188 001 02- evenly and not too thickly.
- ◆ Breather holes must remain free of sealing paste.

Locking elements

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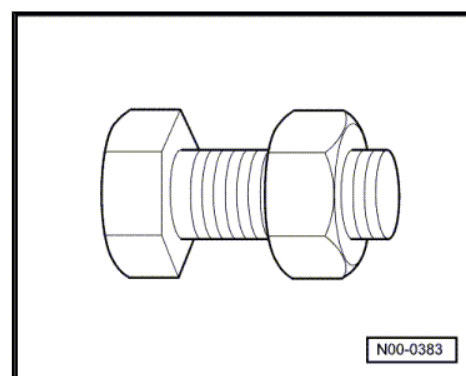


- ◆ Do not over-stretch circlips.
- ◆ Installation position for some circlips: the circlip is fitted so that the narrow part of the gap is at the top. This also gives the pliers a better grip when removing and installing.
- ◆ Always renew circlips which have been damaged or over-stretched.
- ◆ Circlips 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.
- ◆ Loosen and tighten particularly sensitive parts in diagonal sequence and in stages, taking care to keep them straight.
- ◆ 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 thread 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

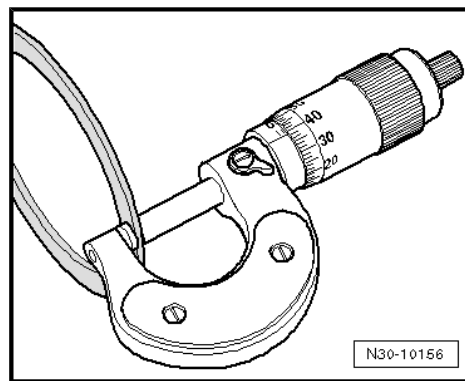
- ◆ Install new tapered roller bearings as supplied; do not lubricate additionally with oil.
- ◆ Lubricate all bearings (except tapered roller bearings) with gear oil before installing in gearbox.
- ◆ Use inductive heater, VAS 6414, to heat inner races of tapered roller bearings to approx. 100°C before installing. Press home onto stop when installing so there is no axial clearance.
- ◆ Do not interchange the outer or inner races of bearings of the same size (the bearings are paired).
- ◆ 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. When reusing synchro-rings, always fit to the same selector gear.
- ◆ Check for wear; renew if necessary.
- ◆ Lubricate with gear oil before installing.



Checking synchro-rings for 1st to 3rd gear

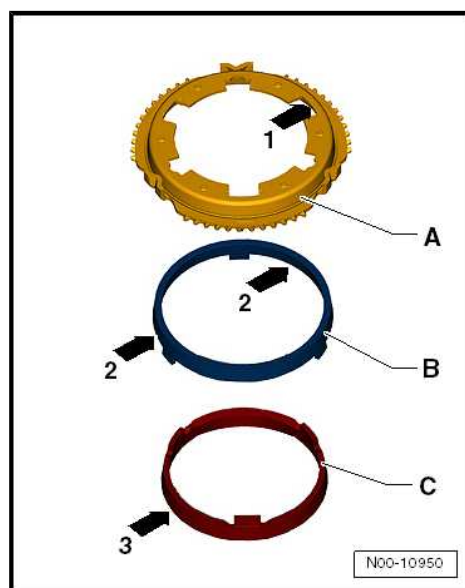
- ◆ Check contact surface -arrow 1- on synchro-ring -A- and contact surface -arrow 3- on inner ring -C- for grooves or scoring.
- ◆ Check coated contact surfaces -arrows 2- on outer ring -B- for damage (flattened sections, missing particles of friction lining).

Gear wheels, synchro-hubs

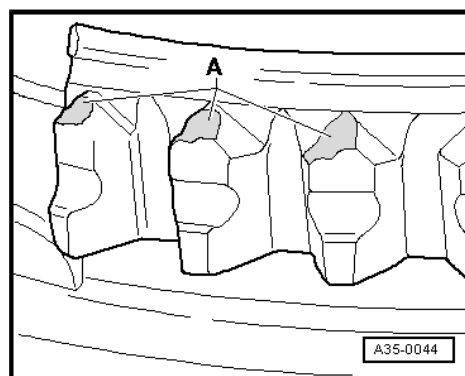
- ◆ Clean before pressing on.
- ◆ Use inductive heater - VAS 6414- to heat to approx. 100°C before installing. Press home onto stop when installing so there is no axial clearance.
- ◆ Note correct installation position.

Selector gears and locking collars

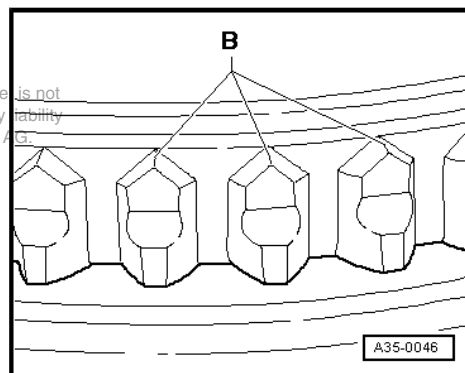
- ◆ After installing, check 1st to 6th speed selector gears for minimal axial play and freedom of movement.



- ◆ Abnormal wear on synchro-ring or selector gear:
A - Worn chamfer on dog teeth of synchro-ring or selector gear.



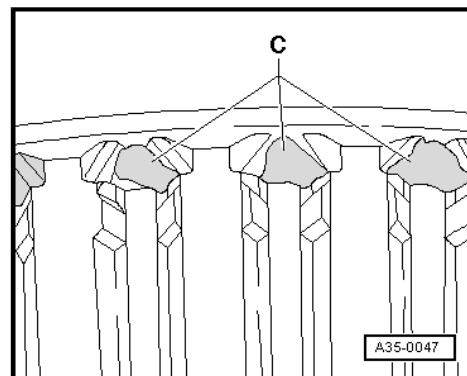
- ◆ In comparison: intact synchro-ring or selector gear:
B - Intact chamfer on dog teeth of synchro-ring or selector gear.



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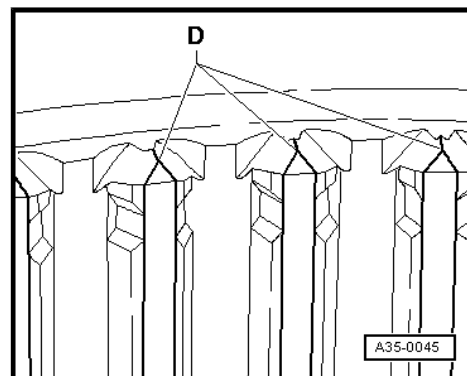
- ◆ Abnormal wear on locking collar:

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 21](#)).
- ◆ 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 clutch housing, flywheel and parts of the engine facing the gearbox in order to prevent odour.
- ◆ 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 clutch pressure plate must not be cleaned. Otherwise, the service life of the clutch will be considerably reduced.
- ◆ The friction surface of the clutch pressure plate and the dual-mass flywheel must be cleaned (degreased) thoroughly.

5.2 Contact corrosion

The gearbox housing and clutch housing are made of a magnesium alloy.

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

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

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

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

Please note:

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



30 – Clutch

1 Clutch mechanism

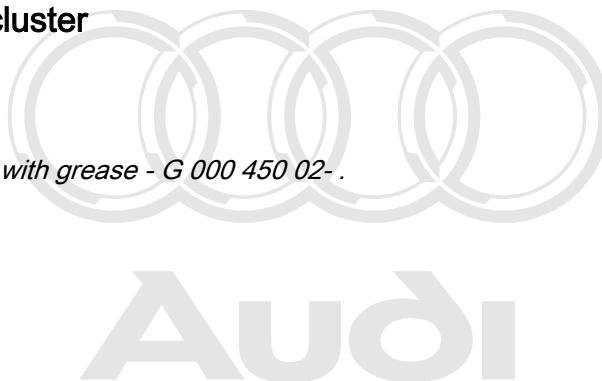
- ⇒ [“1.1 Exploded view - pedal cluster”, page 14](#)
- ⇒ [“1.2 Exploded view - clutch hydraulics”, page 16](#)
- ⇒ [“1.3 Exploded view - clutch release mechanism”, page 19](#)
- ⇒ [“1.4 Checking clutch master cylinder and clutch slave cylinder”, page 21](#)
- ⇒ [“1.5 Removing and installing clutch position sender G476 ”, page 22](#)
- ⇒ [“1.6 Removing and installing over-centre spring”, page 22](#)
- ⇒ [“1.7 Removing and installing clutch pedal”, page 26](#)
- ⇒ [“1.8 Removing and installing mounting bracket”, page 27](#)
- ⇒ [“1.9 Removing and installing clutch master cylinder”, page 31](#)
- ⇒ [“1.10 Removing and installing clutch slave cylinder together with release bearing”, page 33](#)
- ⇒ [“1.11 Removing and installing lines for clutch hydraulics”, page 34](#)
- ⇒ [“1.12 Bleeding clutch hydraulics”, page 36](#)

1.1 Exploded view - pedal cluster



Note

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



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1 - Plenum chamber partition panel

- ☐ With mounting for mounting bracket

2 - Gasket

- ☐ Self-adhesive
- ☐ Renew
- ☐ Bond onto mounting bracket

3 - Mounting bracket

- ☐ For clutch pedal
- ☐ Removing and installing
⇒ [page 27](#)

4 - Bolt

5 - Over-centre spring

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

6 - Bearing bush

7 - Pivot pin

8 - Clutch pedal

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

9 - Retaining clip

- ☐ For operating rod on clutch master cylinder

10 - Seal

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

11 - Clutch master cylinder

- ☐ Removing and installing ⇒ [page 31](#)

12 - Clutch position sender - G476-

- ☐ Checking in [Guided Fault Finding](#) ⇒ Vehicle diagnostic tester
- ☐ Removing and installing ⇒ [page 22](#)

13 - Retaining clip

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

14 - Supply hose

15 - Nut

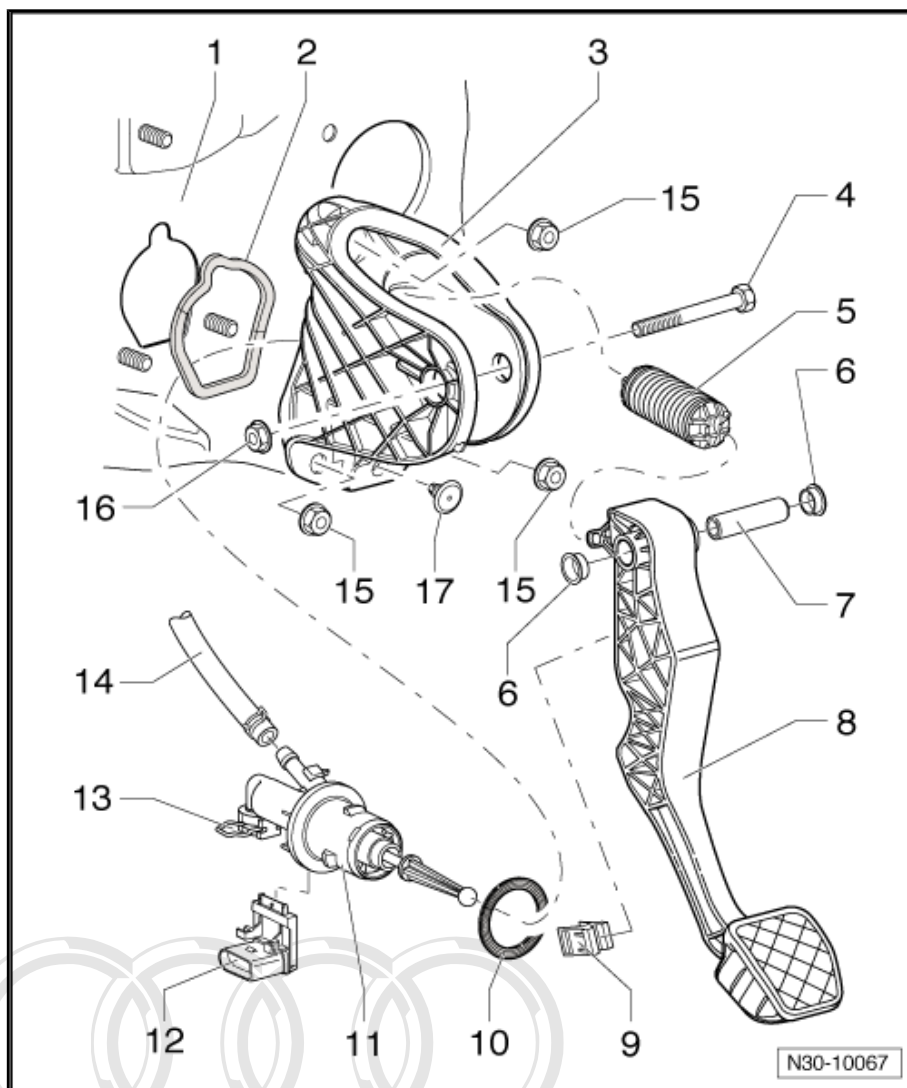
- ☐ Self-locking
- ☐ Renew
- ☐ 20 Nm

16 - Nut

- ☐ Renew
- ☐ 25 Nm

17 - Stop

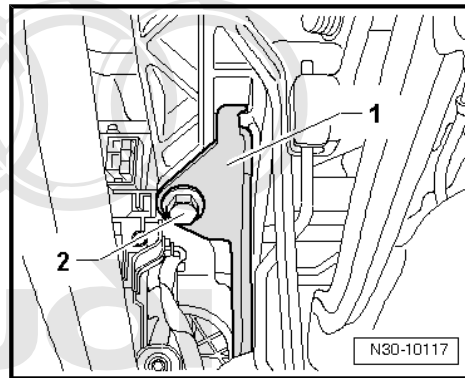
- ☐ For clutch pedal



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Crash bar - tightening torque

- Tighten bolt -2- for crash bar -1- to 20 Nm.



1.2 Exploded view - clutch hydraulics

⇒ **"1.2.1 Exploded view - clutch hydraulics, LHD vehicles", page 16**

⇒ **"1.2.2 Exploded view - clutch hydraulics, RHD vehicles", page 18**

1.2.1 Exploded view - clutch hydraulics, LHD vehicles

1 - Clutch slave cylinder with release bearing

- ☐ Can only be renewed after removing gearbox
- ☐ Removing and installing
⇒ [page 33](#)

2 - Bleeder connection

3 - Retaining clip

- ☐ To remove and install bleeder connection, pull out retaining clip as far as it will go

4 - Bleeder screw

- ☐ 4.5 Nm
- ☐ Bleeding clutch system
⇒ [page 36](#)

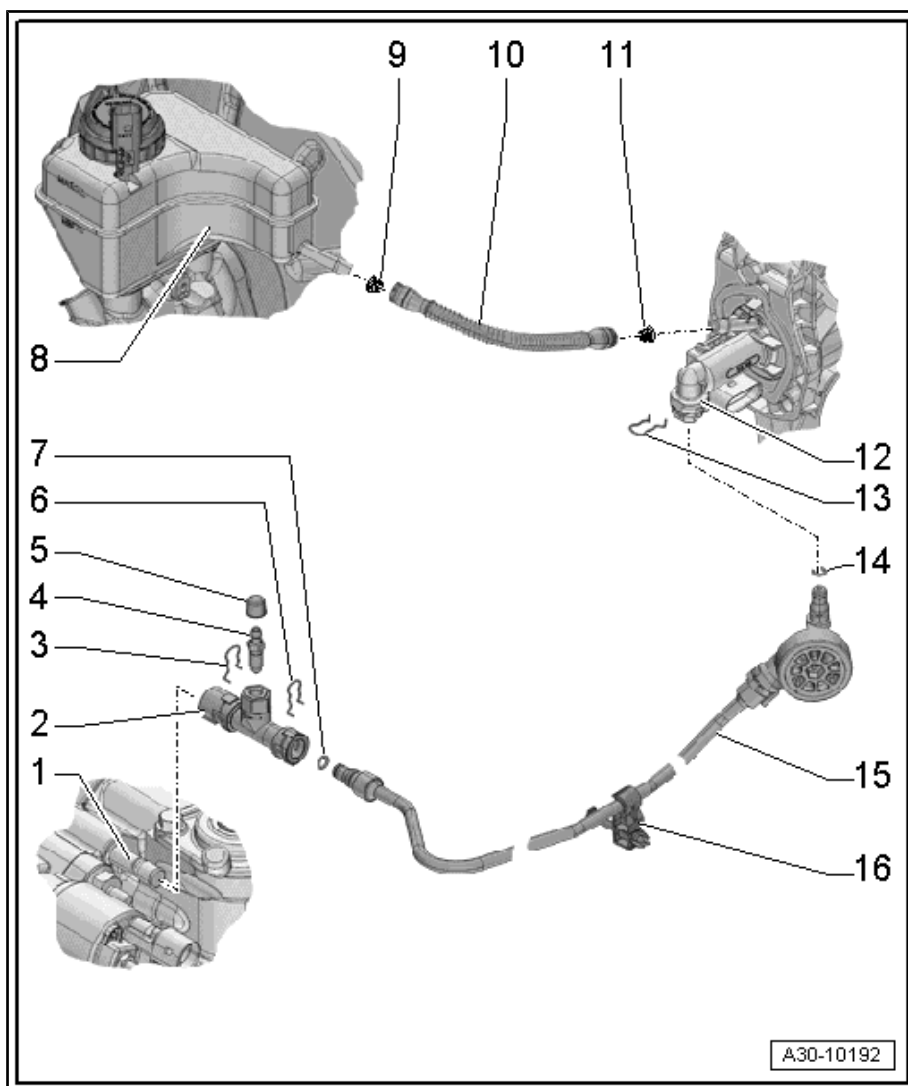
5 - Dust cap

6 - Retaining clip

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

7 - Seal

- ☐ Different versions according to type of connection; for correct version refer to ⇒ Electronic parts catalogue
- ☐ Renew if damaged
- ☐ Push onto pipe connection
- ☐ Lubricate with brake fluid before installing



8 - Brake fluid reservoir

9 - Seal

- ☐ Must be fitted in supply hose

10 - Supply hose

11 - Seal

- ☐ Must be fitted in supply hose

12 - Clutch master cylinder

- ☐ Removing and installing ⇒ [page 31](#)

13 - Retaining clip

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

14 - Seal

- ☐ Different versions according to type of connection; for correct version refer to ⇒ Electronic parts catalogue
- ☐ Renew if damaged
- ☐ Push onto pipe **connection**
- ☐ Lubricate with brake fluid before installing

15 - Pipe

- ☐ Removing and installing ⇒ [page 34](#)

16 - Bracket

- ☐ Attached to body

Disconnecting and connecting pipe

- Release retaining clip -3- with a screwdriver and pull pipe -1- off connection -4-.

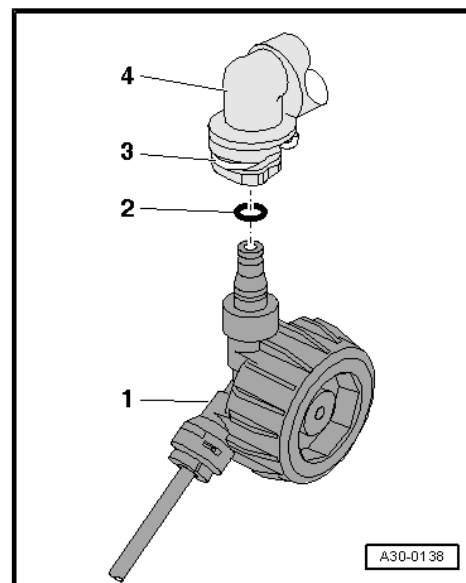
Installing



Note

Renew damaged O-rings -2-.

- Push pipe -1- into connection -4- so that retaining clip -3- snaps into place.
- Pull on pipe to check it is secure.



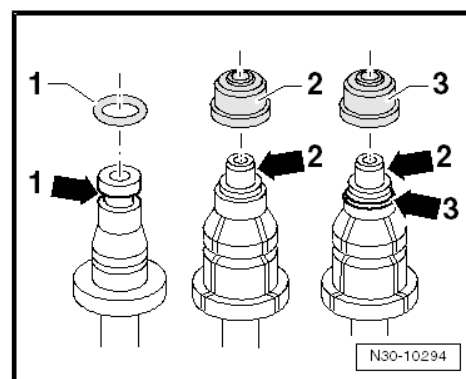
Pipe with seal or O-ring

- ◆ Pipe connection -arrow 1- and O-ring -1-
- ◆ Pipe connection with shoulder -arrow 2- and seal -2-
- ◆ Pipe connection with shoulder -arrow 2-, annular groove -arrow 3- and seal -3-



Note

On the connection with annular groove -arrow 3- the seal must be inserted in the groove.



1.2.2 Exploded view - clutch hydraulics, RHD vehicles

1 - Clutch slave cylinder with release bearing

- ☐ Can only be renewed after removing gearbox
- ☐ Removing and installing ⇒ [page 33](#)

2 - Bleeder connection

3 - Retaining clip

- ☐ To remove and install bleeder connection, pull out retaining clip as far as it will go

4 - Bleeder screw

- ☐ 4.5 Nm
- ☐ Bleeding clutch system ⇒ [page 36](#)

5 - Dust cap

6 - Retaining clip

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

7 - Seal

- ☐ Different versions according to type of connection; for correct version refer to ⇒ Electronic parts catalogue
- ☐ Renew if damaged
- ☐ Push onto pipe connection
- ☐ Lubricate with brake fluid before installing

8 - Brake fluid reservoir

9 - Seal

- ☐ Must be fitted in supply hose

10 - Supply hose

11 - Seal

- ☐ Must be fitted in supply hose

12 - Clutch master cylinder

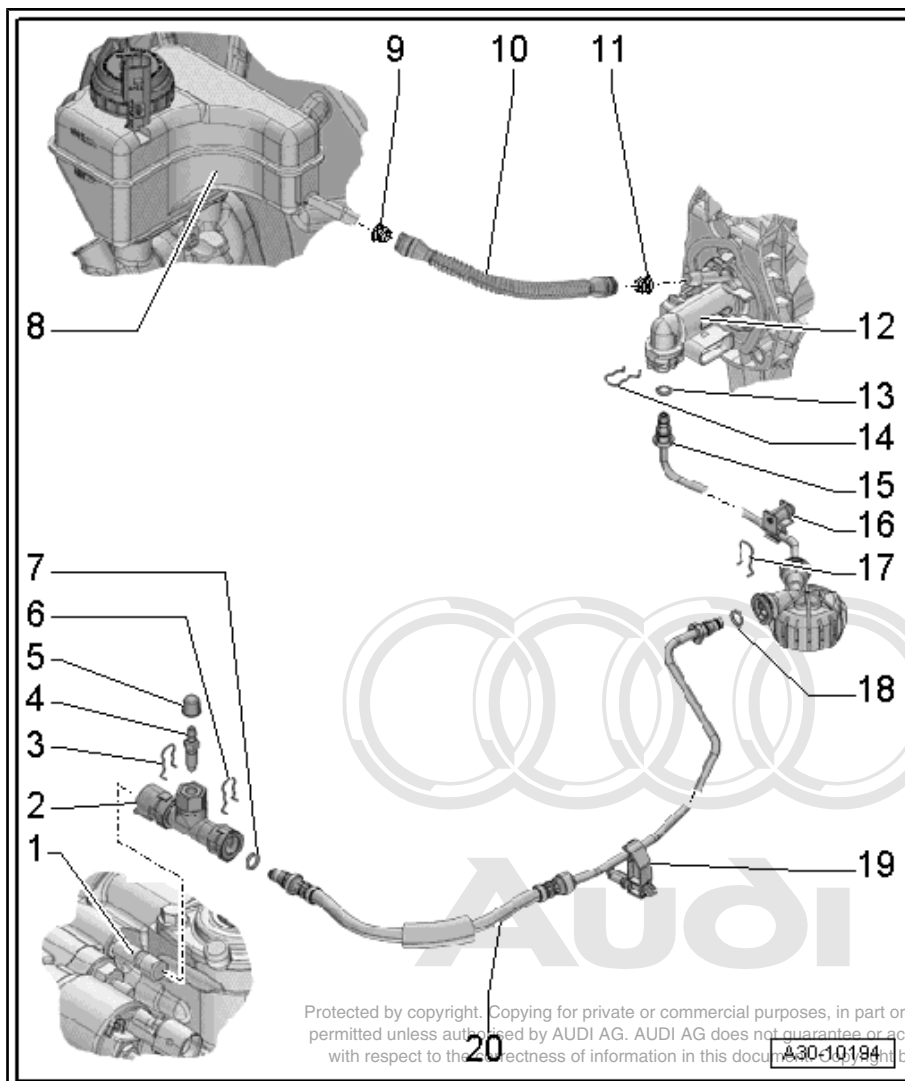
- ☐ Removing and installing ⇒ [page 31](#)

13 - Retaining clip

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

14 - Seal

- ☐ Different versions according to type of connection; for correct version refer to ⇒ Electronic parts catalogue
- ☐ Renew if damaged
- ☐ Push onto pipe connection
- ☐ Lubricate with brake fluid before installing





Note

Select correct thread pitch of bolt
when cleaning tapped holes for
bolts in clutch housing.

3 - Gearbox

4 - Retaining clip

- ☐ For clutch slave cylinder with divided supply line ⇒ [page 20](#)
- ☐ To remove and install pipe, pull out retaining clip as far as it will go
- ☐ Push on until retaining clip engages audibly

5 - O-ring

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

6 - Pipe

- ☐ To clutch master cylinder
- ☐ Depending on version, also clutch slave cylinder -1- with permanently connected pipe

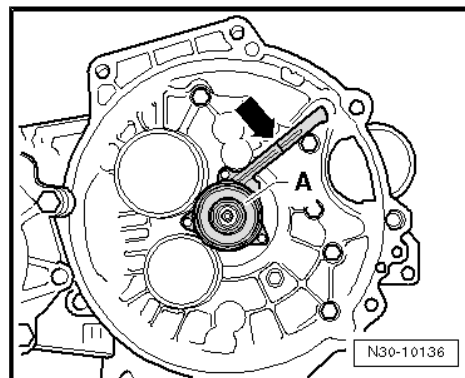
7 - O-ring

- ☐ For clutch slave cylinder with divided supply line ⇒ [page 20](#)
- ☐ Renew if damaged
- ☐ Push onto pipe connection
- ☐ Lubricate with brake fluid before installing

Clutch slave cylinder -A- with divided supply line

- ◆ Depending on version, supply line for some clutch slave cylinders is divided in area of -arrow-.

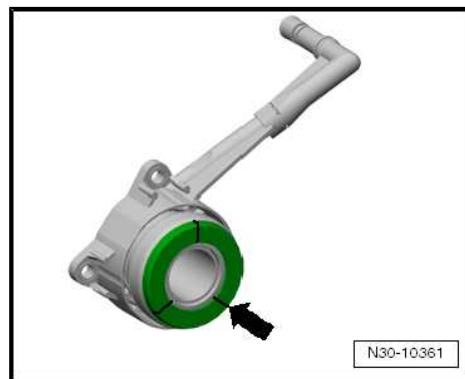
For correct version, refer to ⇒ Electronic parts catalogue



From approx. 05.11. onwards: release bearing with additional plastic disc

- Identification: projections -arrow- on plastic disc.
- Pressure plate has been adapted ⇒ [page 21](#) .
- If required, modified release bearing and modified pressure plate must always be fitted together

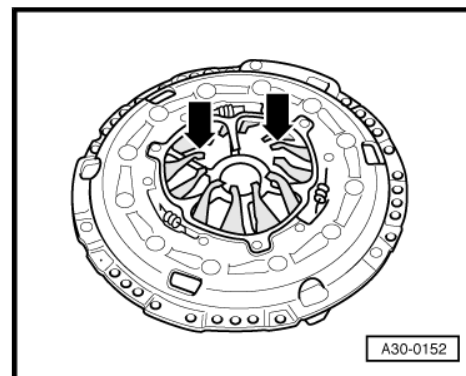
For correct version, refer to ⇒ Electronic parts catalogue



For release bearing with additional plastic disc only: tips of diaphragm springs on pressure plate (-arrows-), slightly lower overall height

- Release bearing with additional plastic disc and pressure plate with tips of diaphragm springs of slightly lower overall height must only be installed together.

For correct version, refer to ➔ Electronic parts catalogue



1.4 Checking clutch master cylinder and clutch slave cylinder

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

Noises when operating the clutch:

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

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

- ◆ Check whether the clutch pedal returns all the way to its initial position, thereby uncovering the vent opening in the master cylinder.
- ◆ 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 or if the driver rests his/her 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 bleeder connection, as well as the pipe/hose assembly including connections for external leaks (visual inspection).
- ◆ Check joint between engine and gearbox for traces of brake fluid escaping from clutch slave cylinder.
- ◆ If you identify any leaks you must renew the leaking component.
- ◆ Bleed clutch system ➔ [page 36](#).

Pedal forces:

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

High pedal force:

- ◆ Mechanically defective pressure plate/clutch plate
⇒ [page 39](#) .

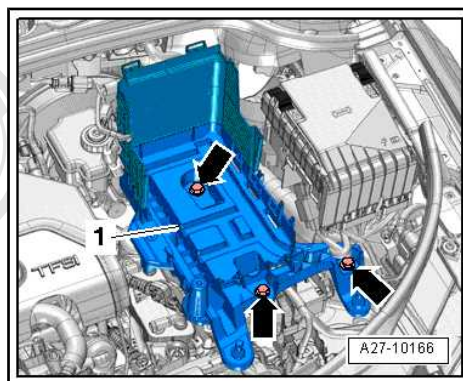
Clutch does not disengage or does not disengage fully:

- ◆ Air in hydraulic system: bleed clutch system ⇒ [page 36](#) 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
- ◆ Mechanically defective pressure plate/clutch plate
⇒ [page 39](#) .
- ◆ Wrong components used or components forgotten when carrying out repair work (e.g. intermediate plate or dowel sleeves).

1.5 Removing and installing clutch position sender - G476-

Removing

- Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .



- Unclip clutch position sender - G476- at master cylinder -arrow- and remove.
- Unplug electrical connector-4-

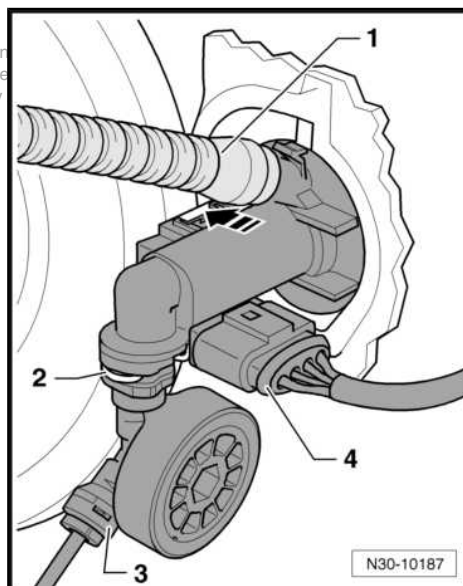
Note

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

Installing

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

- Install battery tray and battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .



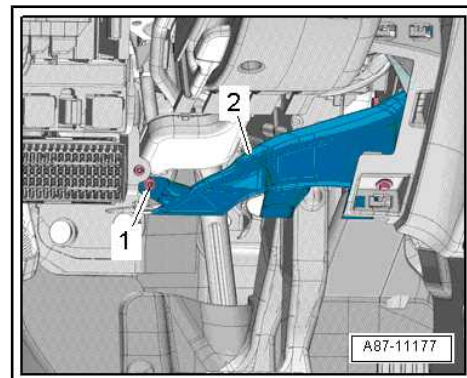
1.6 Removing and installing over-centre spring

Special tools and workshop equipment required

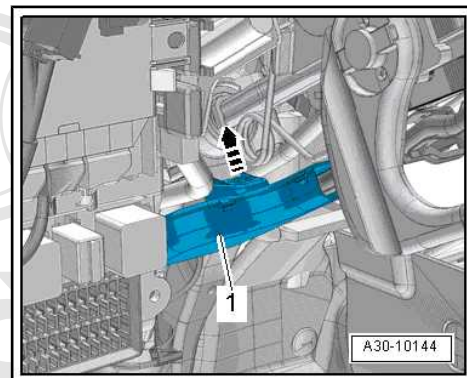
◆ Grease - G 000 450 02-

Removing

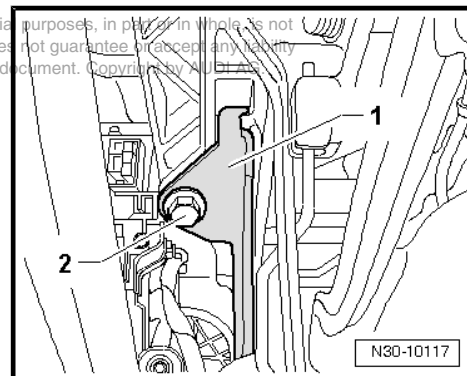
- Move driver's seat to rearmost position.
- Move steering wheel up as far as it will go, making use of full range of steering column adjuster.
- Remove footwell vent on driver's side ⇒ Heating, air conditioning; Rep. gr. 87 ; Air duct system; Removing and installing driver side footwell vent .



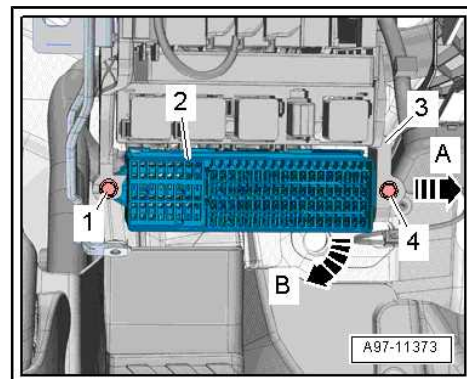
- Release catch -arrow-, detach wiring duct -1- towards the rear and push to one side.



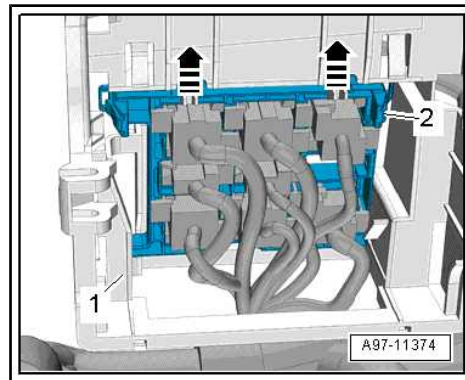
- Remove bolt -2- and detach crash bar -1-.



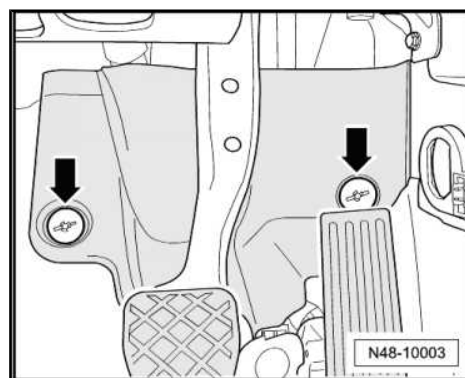
- Unbolt fuse holder C - SC- and place to one side ⇒ Electrical system; Rep. gr. 97 ; Relay carriers, fuse carriers, electronics boxes; Overview of fitting locations - relay carriers, fuse carriers, electronics boxes .



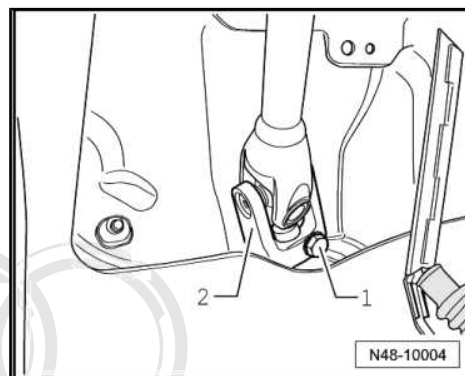
- Disengage relay carrier under dash panel (left-side) and place to one side ⇒ Electrical system; Rep. gr. 97 ; Relay carriers, fuse carriers, electronic boxes; Overview of fitting locations - relay carriers, fuse carriers, electronic boxes .



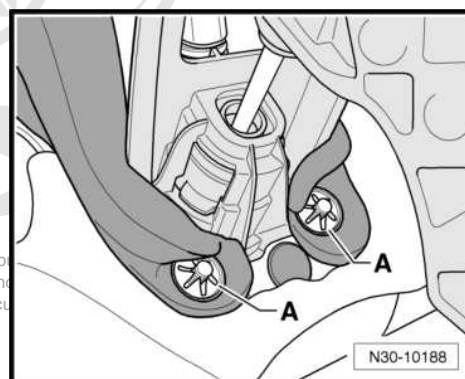
- Remove nuts -arrows- and detach footwell trim.



- Remove bolt -1- and pull off universal joint -2- upwards.

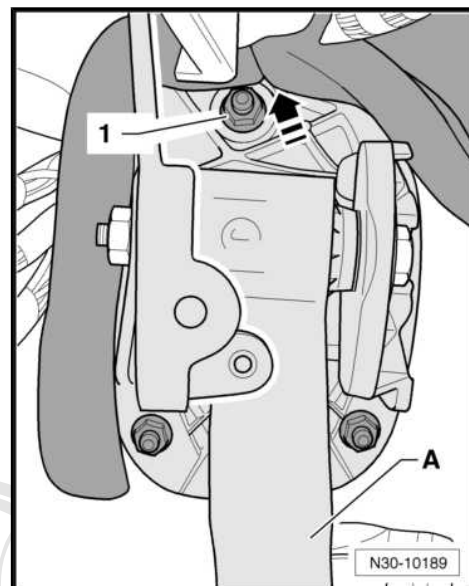


- Prise off clamping washers -A- and detach insulation from lower part of mounting bracket.



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- Push insulation upwards -arrow- at nut -1- above clutch pedal -A-.



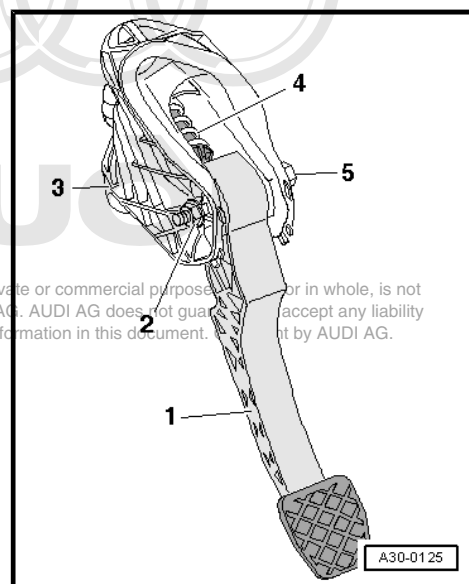
- Remove nut -2-, pull out bolt -5- and detach clutch pedal -1- from mounting bracket -3-.



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

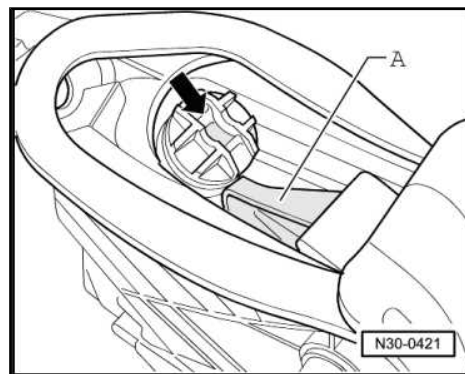
Installation is carried out in reverse sequence; note the following:



Note

- ◆ *Renew self-locking nut.*
- ◆ *Lubricate all bearings and contact surfaces with grease - G 000 450 02- .*

- Insert over-centre spring in mounting bracket from above.
- The bearing recess -arrow- for the actuator lug -A- on the clutch pedal must be vertical.
- Fit actuator lug on clutch pedal into corresponding socket in over-centre spring.
- Press clutch pedal slightly and secure with bolt.
- Install relay carrier under dash panel (left-side) and relay carrier C - SC- ➔ Electrical system; Rep. gr. 97 ; Relay carriers, fuse carriers, electronic boxes; Overview of fitting locations - relay carriers, fuse carriers, electronic boxes .
- Install footwell vent on driver's side ➔ Heating, air conditioning; Rep. gr. 87 ; Air routing; Removing and installing driver side footwell vent .



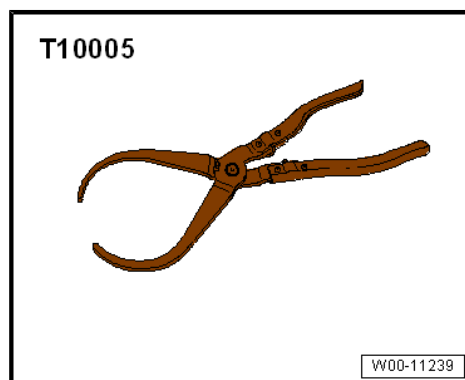
Tightening torques

- ◆ ➔ [“1.1 Exploded view - pedal cluster”, page 14](#)
- ◆ ➔ [Fig. “Crash bar - tightening torque”, page 16](#)

1.7 Removing and installing clutch pedal

Special tools and workshop equipment required

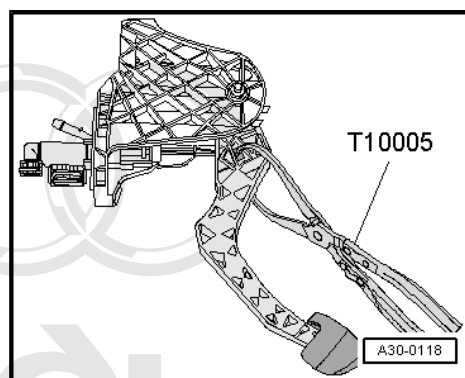
- ◆ Pliers - T10005-



- ◆ Grease - G 000 450 02-

Removing

- Remove over-centre spring ➔ [page 22](#) .
- Release retaining clip on operating rod for clutch master cylinder using pliers - T10005- .
- Remove clutch pedal.



Installing

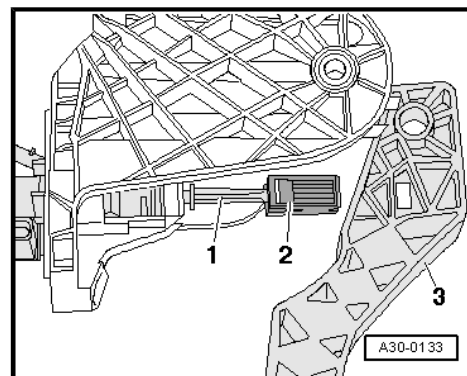
Installation is carried out in reverse sequence; note the following:



Note

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

- Install retaining clip -2- on operating rod -1- for master cylinder.
- Press retaining clip into mounting on clutch pedal so that it snaps into place.
- Install over-centre spring ⇒ [page 22](#) .



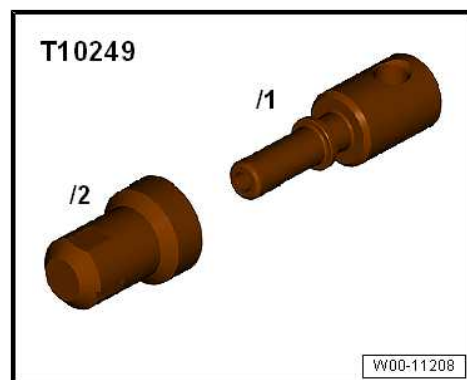
1.8 Removing and installing mounting bracket

Special tools and workshop equipment required

- ◆ Hose clamps, up to 25 mm - 3094-



- ◆ Sealing tool - T10249-



Removing

- Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .

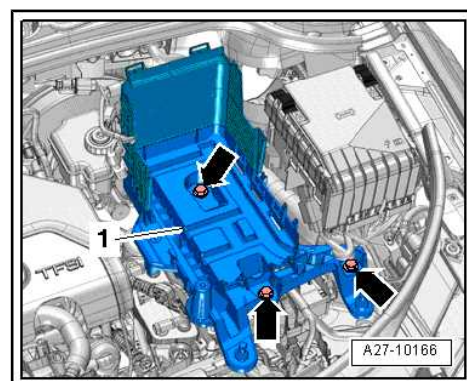


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Risk of skin irritation.

- ◆ *Always wear chemical-resistant protective gloves to prevent brake fluid from contacting skin.*



 Note

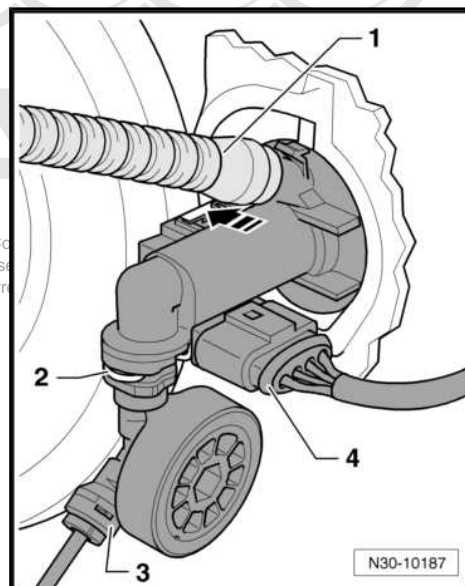
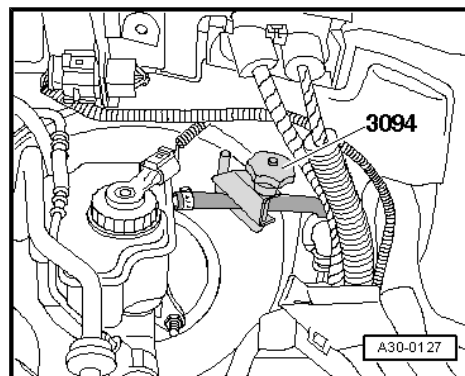
Place a lint-free cloth below clutch master cylinder to catch escaping brake fluid.

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

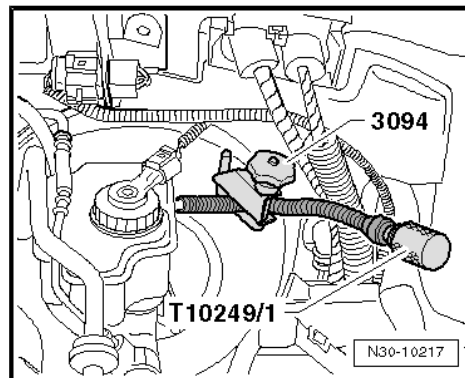
 Note

- ◆ *In the following steps make sure that no brake fluid escapes onto the longitudinal member or onto the gearbox. If this does happen, clean the affected area thoroughly.*
- ◆ *Clamping off the supply hose with the hose clamp -3094- will cause a permanent deformation.*
- ◆ *However, this does not damage the supply hose.*
- ◆ *After removing the hose clamp -3094- , the supply hose must be returned to its original shape.*

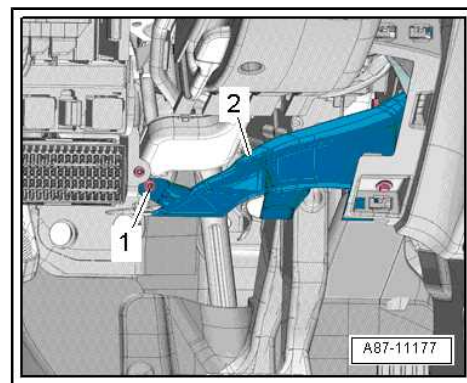
- Disconnect supply hose -1- at clutch master cylinder.
- Pull out retaining clip -2- as far as it will go and disconnect pipe from clutch master cylinder.
- Unclip and detach clutch position sender - G476- from clutch master cylinder -arrow-. Electrical connector -4- can remain connected.



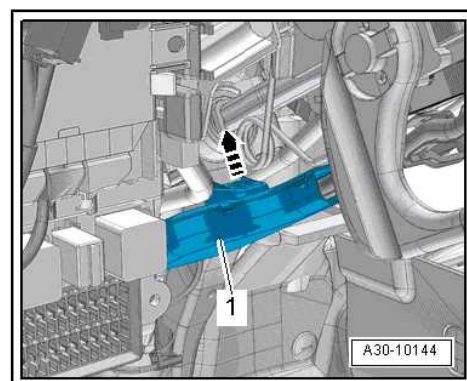
- After disconnecting supply hose, plug supply hose using sealing tool -T10249/1- .



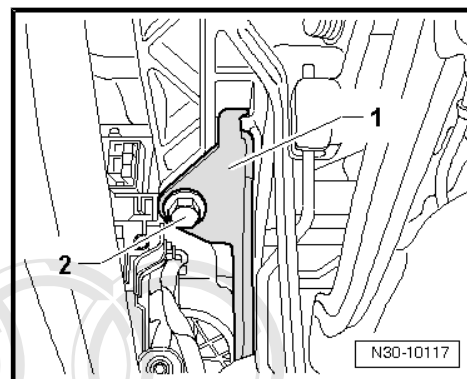
- Move driver's seat to rearmost position.
- Move steering wheel up as far as it will go, making use of full range of steering column adjuster.
- Remove footwell vent on driver's side ⇒ Heating, air conditioning; Rep. gr. 87 ; Air duct system; Removing and installing driver side footwell vent .



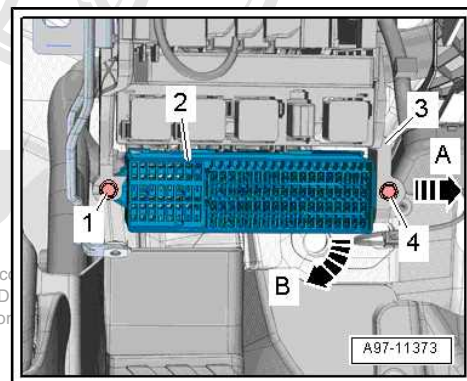
- Release catch -arrow-, detach wiring duct -1- towards the rear and push to one side.



- Remove bolt -2- and detach crash bar -1-.



- Unbolt fuse holder C - SC- and place to one side ⇒ Electrical system; Rep. gr. 97 ; Relay carriers, fuse carriers, electronics boxes; Overview of fitting locations - relay carriers, fuse carriers, electronics boxes .



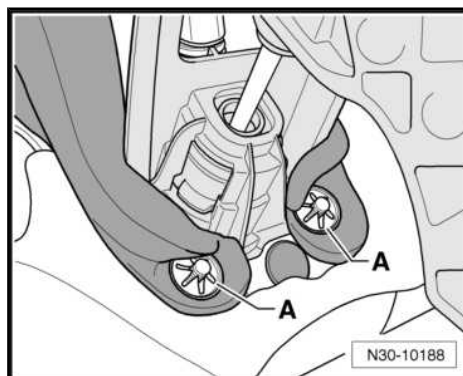
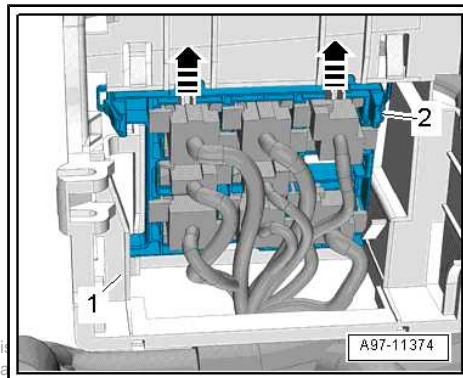
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- Disengage relay carrier under dash panel (left-side) and place to one side ⇒ Electrical system; Rep. gr. 97 ; Relay carriers, fuse carriers, electronic boxes; Overview of fitting locations - relay carriers, fuse carriers, electronic boxes .

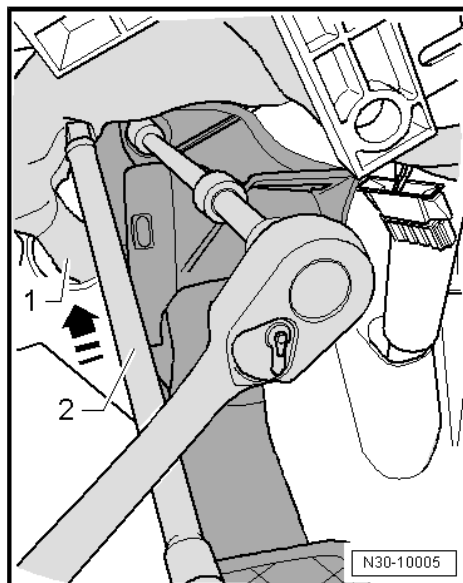
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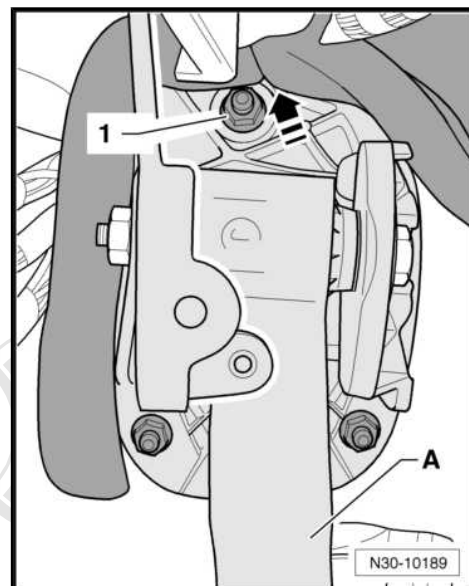
- Prise off clamping washers -A- and detach insulation from lower part of mounting bracket.



- Wrap adhesive tape round universal joint from socket set - V.A.G 1835- .
- Push electrical wiring harness -1- upwards and to the left -arrow- using extension -2- from -V.A.G 1835- .



- Push insulation above clutch pedal -A- upwards -arrow-.
- Remove nut -1-.



 Note

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

- Remove nuts -1, 2-.
- Detach mounting bracket -3- and insulation.

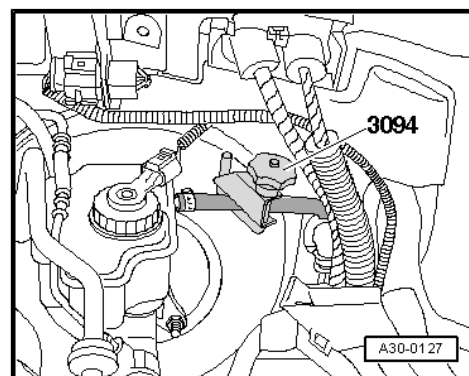
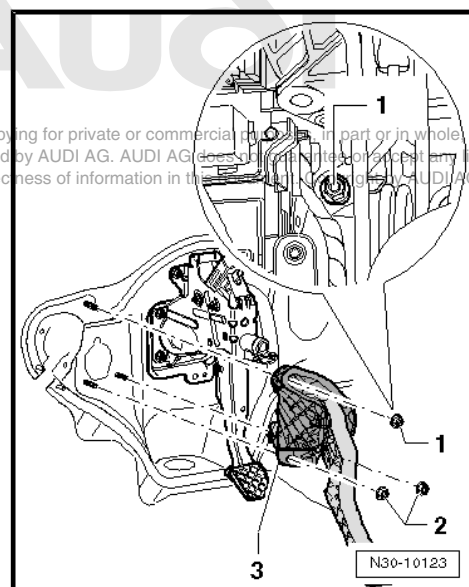
Installing

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

 Note

Renew self-locking nuts.

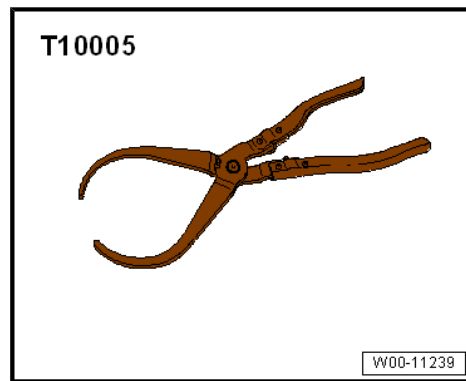
- Connect pipe to connection ⇒ [page 17](#) .
- After removing the hose clamp - 3094- , the supply hose must be returned to its original shape.
- Install crash bar
⇒ [Fig. "Crash bar - tightening torque"](#) , [page 16](#) .
- Install relay carrier under dash panel (left-side) and relay carrier C - SC- ⇒ Electrical system; Rep. gr. 97 ; Relay carriers, fuse carriers, electronic boxes; Overview of fitting locations - relay carriers, fuse carriers, electronic boxes .
- Install footwell vent on driver's side ⇒ Heating, air conditioning; Rep. gr. 87 ; Air routing; Removing and installing driver side footwell vent .
- Bleed clutch system ⇒ [page 36](#) .
- Install battery tray and battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .



1.9 Removing and installing clutch master cylinder

Special tools and workshop equipment required

◆ Pliers - T10005-



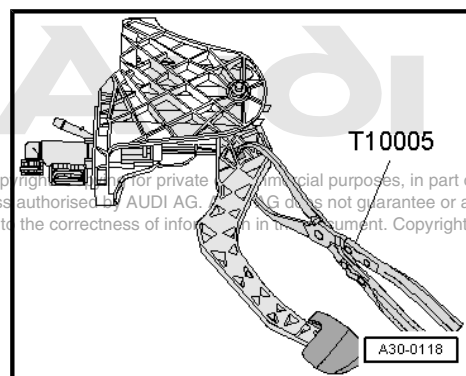
◆ Spacer, approx. 40 mm long (e.g. 1/2" socket)

Removing

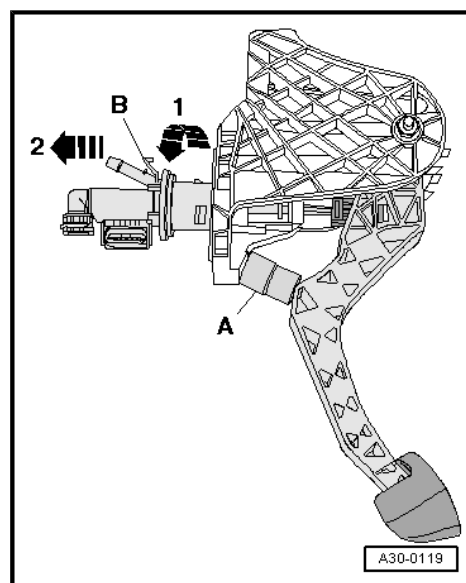


Note

- ◆ *If you suspect a defective clutch master cylinder, perform function test prior to renewing ⇒ [page 21](#) .*
- ◆ *When working in the footwell, put cloths on the floor covering to protect it from possible brake fluid spills.*
- Remove mounting bracket ⇒ [page 27](#) .
- Release retaining clip on operating rod for clutch master cylinder using pliers - T10005- .

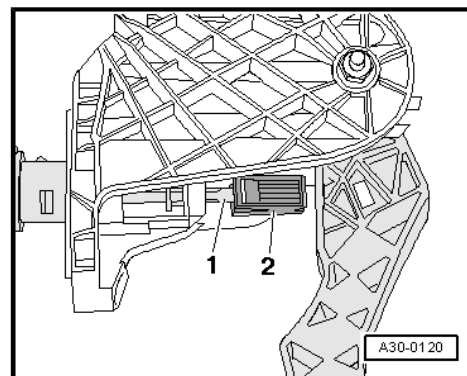


- Insert spacer -A- between clutch pedal and stop, and press clutch pedal forward.
- Release retainer clip -B- and pull clutch master cylinder out of mounting bracket -arrow 1- and -arrow 2-.

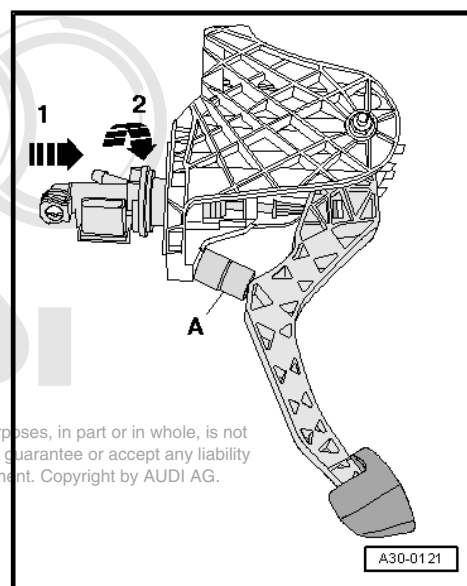


Installing

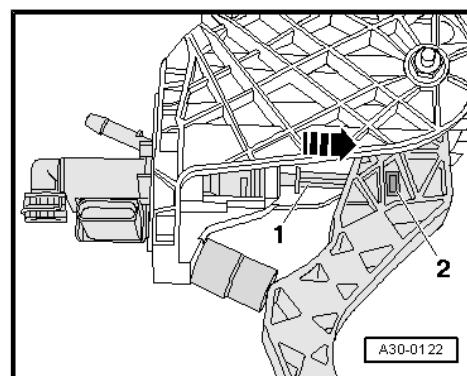
- Clutch pedal in “released” position.
- Install retaining clip -2- on operating rod -1- for clutch master cylinder.



- Insert spacer -A- between clutch pedal and stop, and press clutch pedal forward.
- Secure master cylinder on mounting bracket -arrow 1- and -arrow 2-.



- 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 27](#) .



1.10 Removing and installing clutch slave cylinder together with release bearing



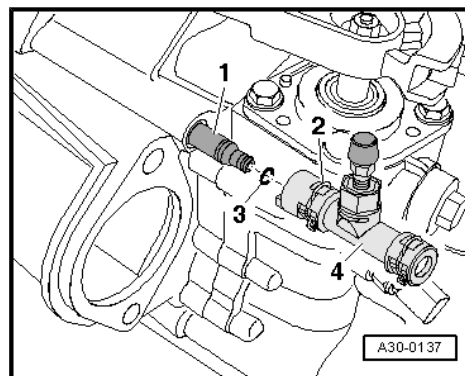
Note

- ◆ *Slave cylinder and release bearing are one unit and can only be renewed together.*
- ◆ *If you suspect a defective clutch slave cylinder, perform function test prior to renewing ➔ [page 21](#) .*

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

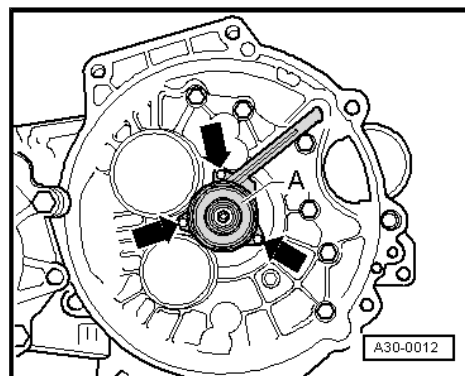
Installation is carried out in reverse sequence; note the following:



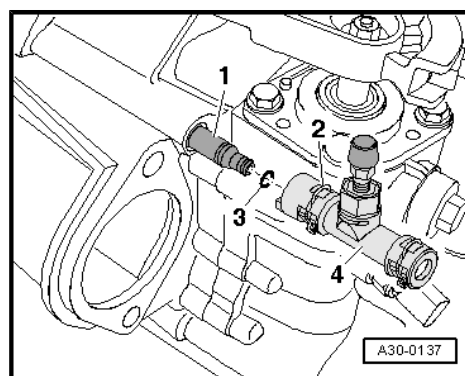
Caution

Risk of damage to clutch slave cylinder.

- ◆ *The bolts must only be tightened in small steps to avoid any risk of breaking off the mounting lugs -arrows- on the clutch slave cylinder.*



- Check seal -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 36](#) .



1.11 Removing and installing lines for clutch hydraulics

Special tools and workshop equipment required

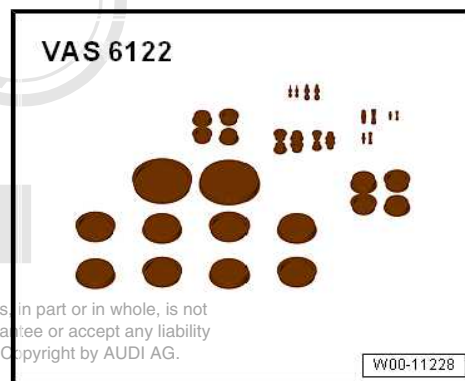
- ◆ Hose clamps, up to 25 mm - 3094-



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W00-11130

◆ Engine bung set - VAS 6122-



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Removing

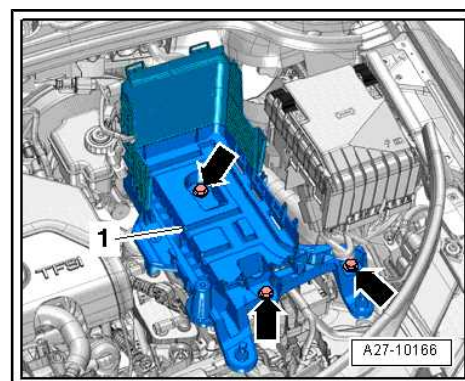
- Remove battery and battery tray -1- ➔ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .



WARNING

Risk of skin irritation.

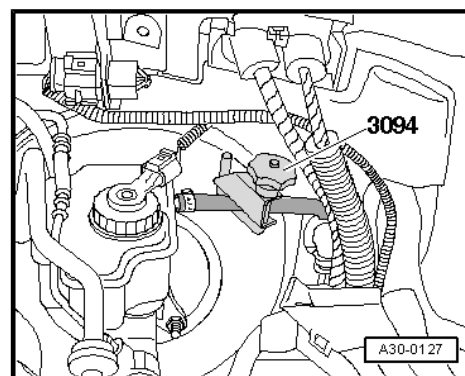
- ◆ *Always wear chemical-resistant protective gloves to prevent brake fluid from contacting skin.*



Note

Place a lint-free cloth below clutch master cylinder to catch escaping brake fluid.

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



Note

- ◆ *In the following steps make sure that no brake fluid escapes onto the longitudinal member or onto the gearbox. If this does happen, clean the affected area thoroughly.*
- ◆ *Clamping off the supply hose with the hose clamp -3094- will cause a permanent deformation.*
- ◆ *However, this does not damage the supply hose.*
- ◆ *After removing the hose clamp -3094- , the supply hose must be returned to its original shape.*

 Note

Place a lint-free cloth below bleeder connection to catch escaping brake fluid.

- Pull out retaining clip -arrow- as far as it will go and disconnect pipe -A- from bleeder connection.

 Note

-Item B- can be disregarded.

- Seal off open lines and connections with clean plugs from engine bung set - VAS 6122- .
- Release retaining clip -3- and pull pipe -1- off clutch master cylinder -4- and bleeder connection.



Caution

Catch escaping brake fluid.

- ◆ *Do not operate clutch pedal after pipe has been disconnected.*

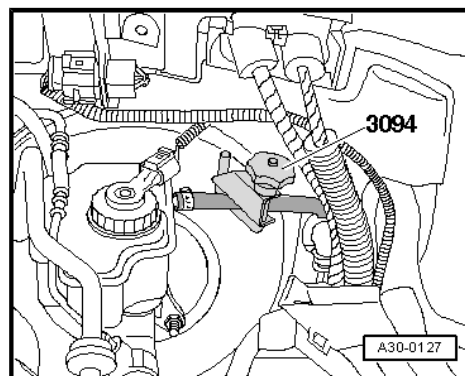
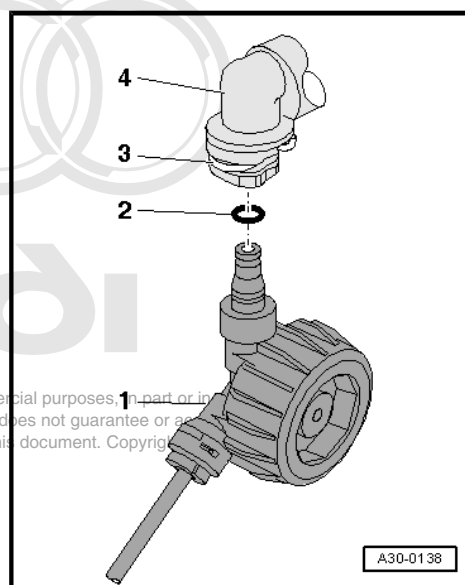
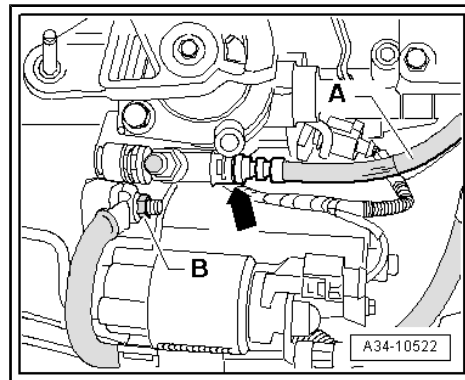
- Move pipe clear and remove.

Installing

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

- Connect pipe ⇒ [page 17](#) .

- After removing the hose clamp - 3094- , the supply hose must be returned to its original shape.
- Bleed clutch system ⇒ [page 36](#) .
- Install battery tray and battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .



1.12 Bleeding clutch hydraulics

Special tools and workshop equipment required

- ◆ Brake filling and bleeding equipment - VAS 5234-



- ◆ Brake fluid specification ⇒ Electronic parts catalogue .

Procedure

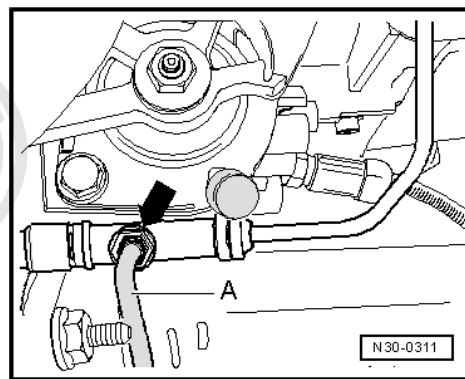


Note

- ◆ *The clutch system must be bled after performing work on the hydraulic clutch mechanism.*
- ◆ *When performing the following steps, make sure that no brake fluid escapes onto the gearbox.*
- ◆ *Before bleeding the clutch system, top up the brake fluid reservoir to the "Max." marking with brake fluid.*
- ◆ *The brake fluid in the clutch system should be changed at the same intervals as the brake fluid in the brake system ⇒ Maintenance ; Booklet 820 ; Description of work; Brake fluid: changing (every 2 years) .*

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- If bleeder screw -arrow- is not accessible, remove air cleaner housing ⇒ Rep. gr. 23 ; Air cleaner; Removing and installing air cleaner housing or ⇒ Rep. gr. 24 ; Air cleaner; Removing and installing air cleaner housing .
- Pull clutch pedal back to rest position.
- Remove dust cap from bleeder screw -arrow-.
- Connect bleeder hose -A- to pressure hose of fluid collector bottle.
- Switch on brake filling and bleeding equipment - VAS 5234- .
- Operating pressure 2.0 bar
- Open bleeder screw.
- 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.
- Pump clutch pedal all the way in and out 10 times with your foot.
- Check that clutch system is functioning properly.
- Install air cleaner housing ⇒ Rep. gr. 23 ; Air cleaner; Removing and installing air cleaner housing or ⇒ Rep. gr. 24 ; Air cleaner; Removing and installing air cleaner housing .



Tightening torques

- ◆ ⇒ ["1.2 Exploded view - clutch hydraulics", page 16](#)

2 Clutch

⇒ [“2.1 Exploded view - clutch unit”, page 39](#)

⇒ [“2.2 Identifying different makes of clutch”, page 44](#)

⇒ [“2.3 Removing and installing clutch”, page 45](#)

2.1 Exploded view - clutch unit

⇒ [“2.1.1 Exploded view - Sachs version clutch”, page 39](#)

⇒ [“2.1.2 Exploded view - LuK version clutch”, page 42](#)

2.1.1 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.

1 - Dual-mass flywheel

- ☐ Removing and installing
⇒ Rep. gr. 13 ; Cylinder block (gearbox end);
Removing and installing flywheel

- ☐ Ensure that dowel pins fit tightly

- ☐ Contact surface for clutch lining must be free of grooves, oil and grease

- ☐ Observe instructions for removal ⇒ [page 41](#)

2 - Clutch plate

- ☐ Removing and installing
⇒ [page 45](#)

- ☐ Always renew pressure plate as well

- ☐ Installation position
⇒ [page 48](#)

- ☐ For diameter of clutch plate, refer to ⇒ Electronic parts catalogue

3 - Pressure plate

- ☐ With adjustment mechanism

- ☐ Identification
⇒ [page 40](#)

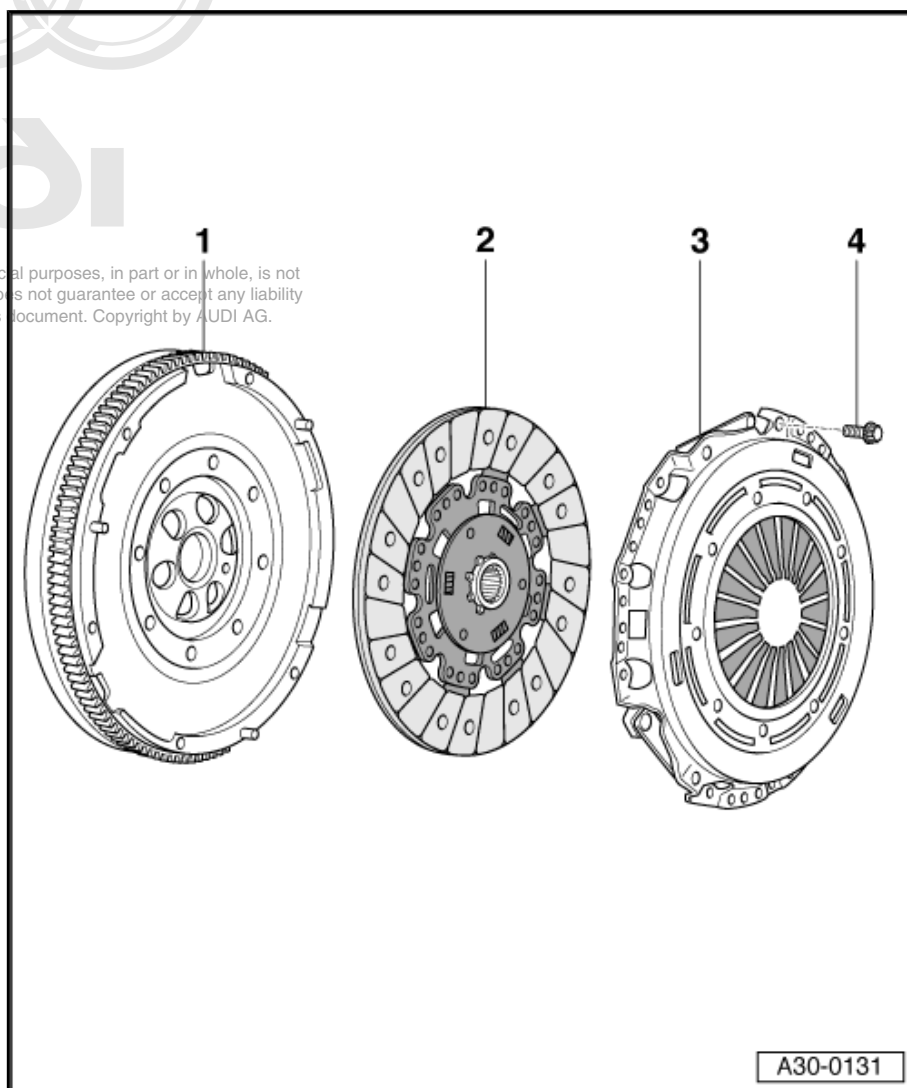
- ☐ Removing and installing
⇒ [page 45](#)

- ☐ Checking ends of diaphragm spring
⇒ [page 40](#)

- ☐ Checking springs and riveting ⇒ [page 41](#)

- ☐ Checking wire ring or sheet-metal ring ⇒ [page 41](#)

- ☐ Always renew clutch plate as well



A30-0131

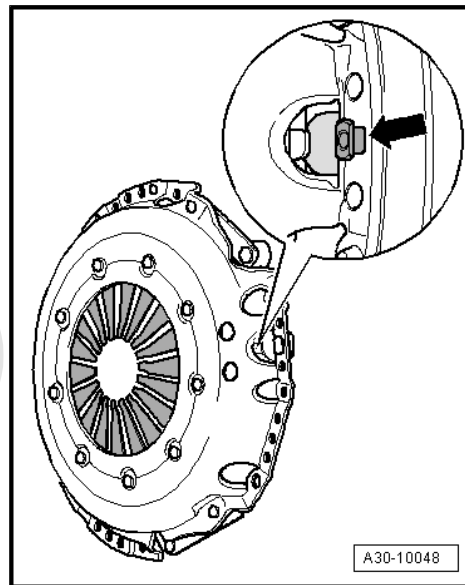
- ❑ From approx. 05.11. onwards: release bearing with additional plastic disc ➔ [page 20](#) , pressure plate has been adapted ➔ [page 21](#)
- ❑ For correct version, refer to ➔ Electronic parts catalogue
- ❑ Contact surface for clutch lining must be free of grooves, oil and grease

4 - Bolt

- ❑ M6 - 13 Nm
- ❑ M7 - 20 Nm
- ❑ Loosen and tighten bolts consecutively in steps of 90°

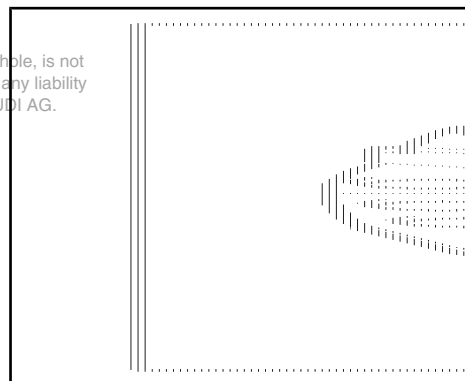
Identification of self-adjusting Sachs version clutch

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



Checking ends of diaphragm spring

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



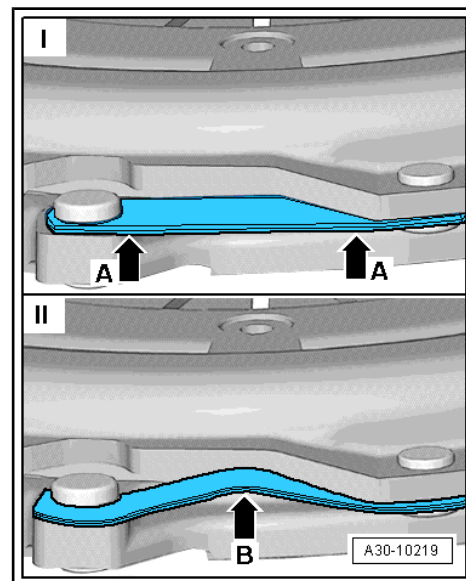
Checking springs and riveting

I - Springs OK

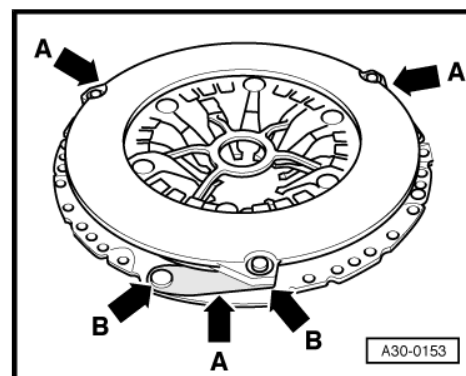
- Slight kinking on the outside -arrows A- is normal on production parts.

II - Springs damaged

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

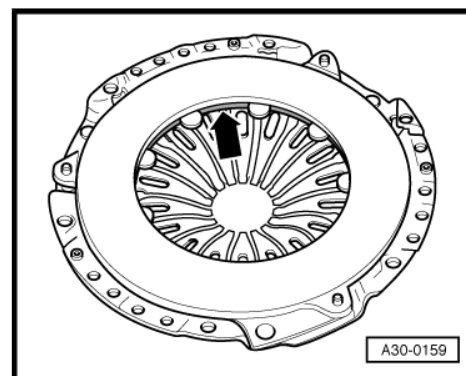


- Check that rivets -arrows B- are secure at all springs -arrows A-.
- Renew pressure plate if rivets -arrows B- are loose.



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.



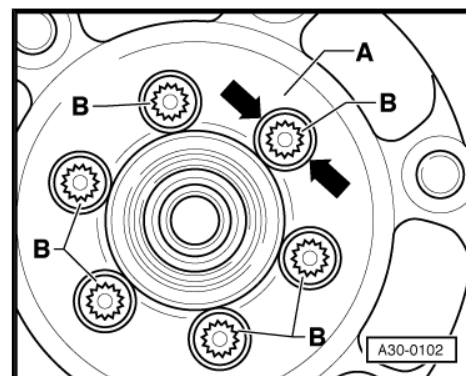
Instructions for removing dual-mass flywheel



Note

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

- 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.



2.1.2 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 ; Cylinder
block (gearbox end);
Removing and installing
flywheel
- ☐ Ensure that dowel pins
fit tightly
- ☐ Contact surface for
clutch lining must be
free of grooves, oil and
grease
- ☐ Observe instructions for
removal ⇒ [page 44](#)

2 - Clutch plate

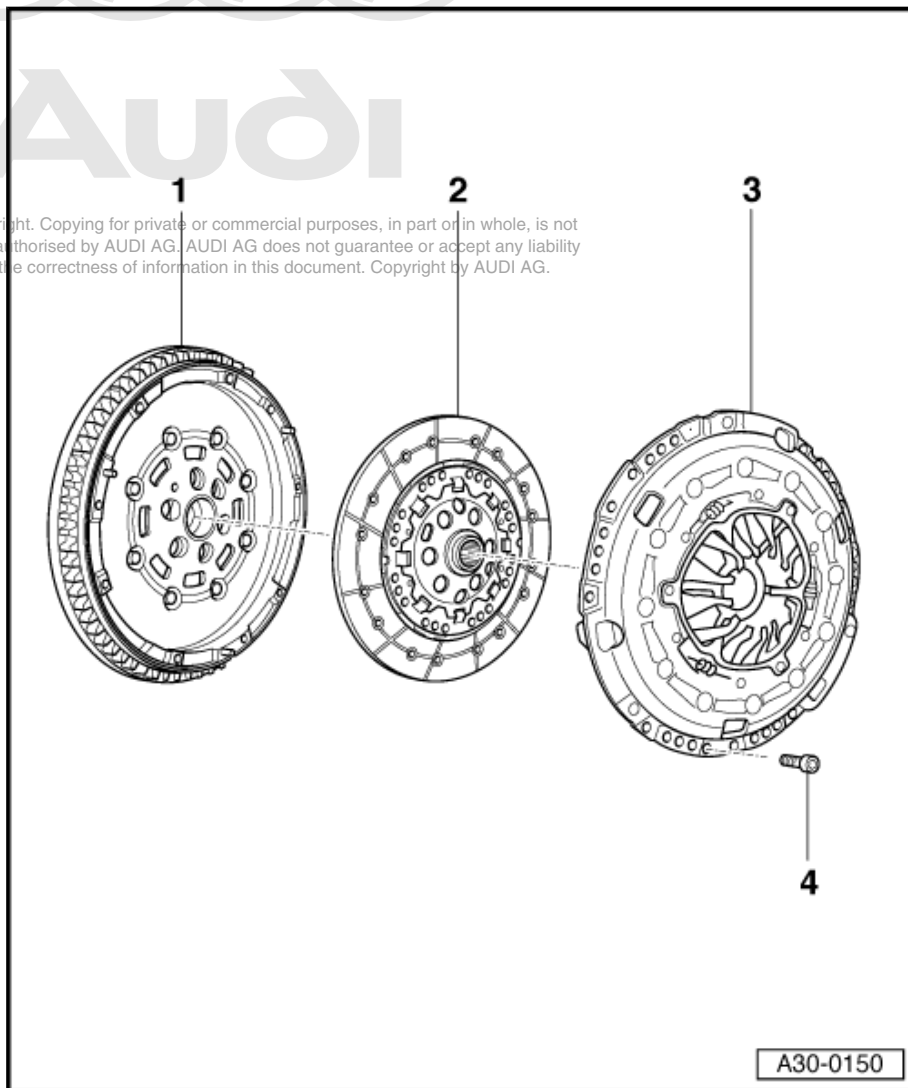
- ☐ Removing and installing
⇒ [page 48](#)
- ☐ Always renew SAC
pressure plate as well
- ☐ Installation position:
marking
"Getriebeseite" (gear-
box side) faces towards
gearbox
- ☐ For diameter of clutch
plate, refer to ⇒ Elec-
tronic parts catalogue

3 - SAC pressure plate

- ☐ SAC = self-adjusting
clutch
- ☐ Always renew clutch
plate as well
- ☐ Removing and installing
⇒ [page 48](#)
- ☐ Checking position of ad-
juster ring on new SAC pressure plate ⇒ [page 51](#)
- ☐ Checking ends of diaphragm spring ⇒ [page 43](#)
- ☐ Checking spring connection and rivets ⇒ [page 43](#)
- ☐ Checking metal ring ⇒ [page 43](#)
- ☐ From approx. 05.11. onwards: release bearing with additional plastic disc ⇒ [page 20](#) , pressure plate has
been adapted ⇒ [page 21](#)
- ☐ For correct version, refer to ⇒ Electronic parts catalogue
- ☐ Contact surface for clutch lining must be free of grooves, oil and grease

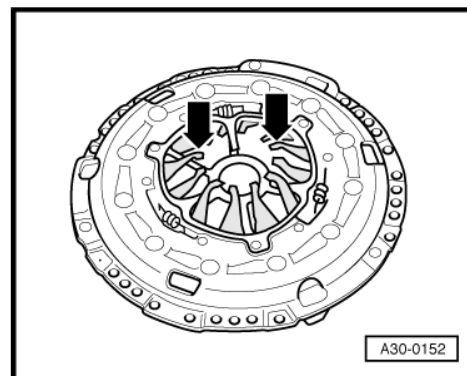
4 - Bolt

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



Checking ends of diaphragm spring

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



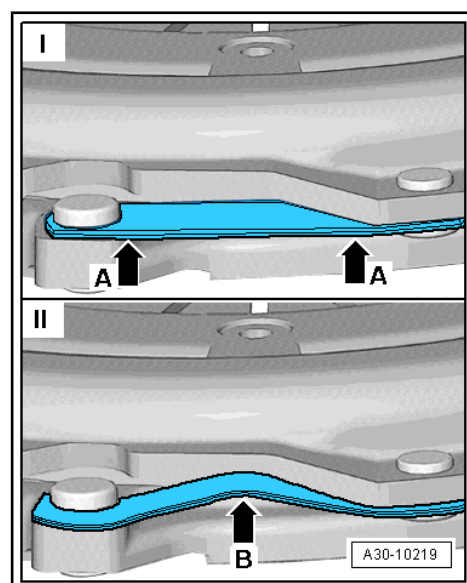
Checking springs and riveting

I - Springs OK

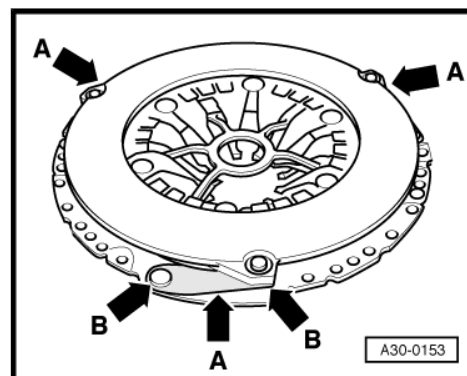
- Slight kinking on the outside -arrows A- is normal on production parts.

II - Springs damaged

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

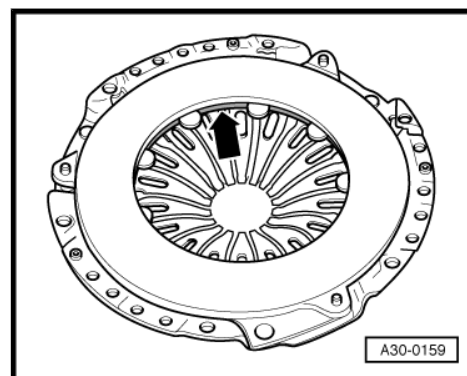


- Check that rivets -arrows B- are secure at all springs -arrows A-.
- Renew pressure plate if rivets -arrows B- are loose.



Checking metal ring

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



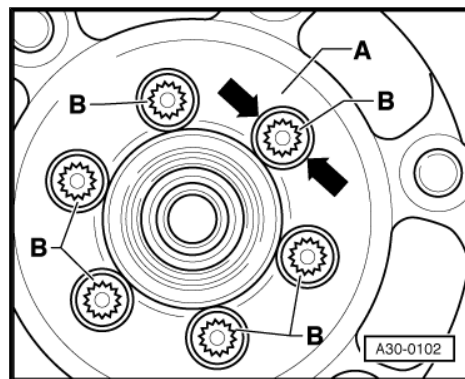
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Instructions for removing dual-mass flywheel

Note

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

- 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.



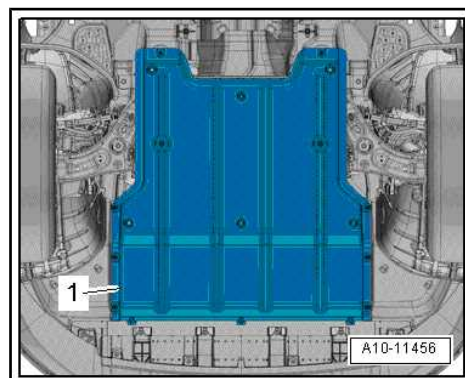
2.2 Identifying different makes of clutch

Note

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

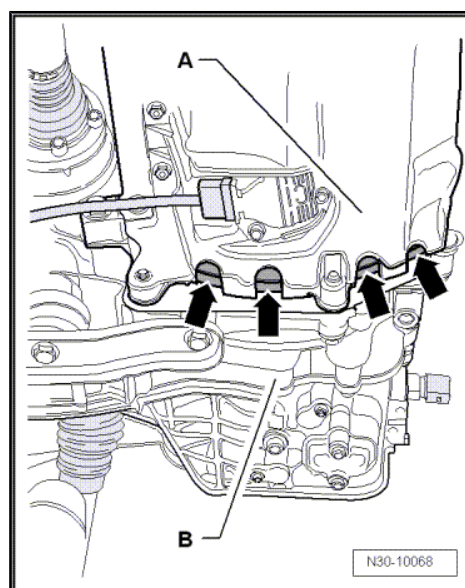
With gearbox installed, the clutch version fitted can be distinguished as follows:

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



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.

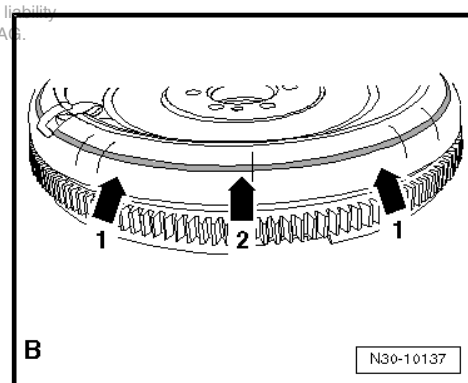
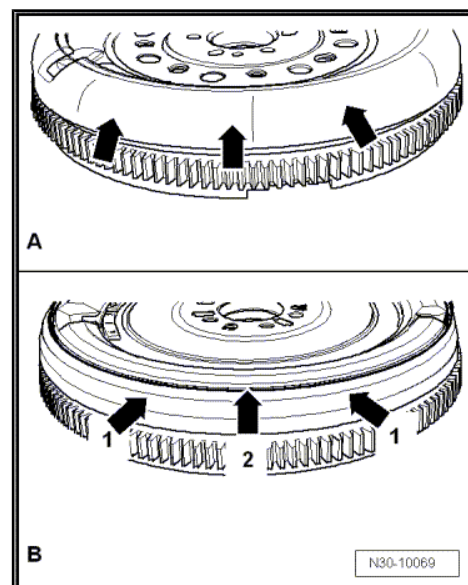
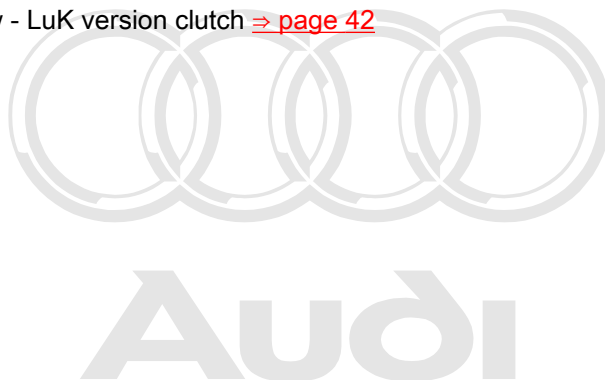


A - round contour -arrows- = Sachs version clutch

Exploded view - Sachs version clutch ➔ [page 39](#)

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

Exploded view - LuK version clutch ➔ [page 42](#)



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

Exploded view - LuK version clutch ➔ [page 42](#)

2.3 Removing and installing clutch

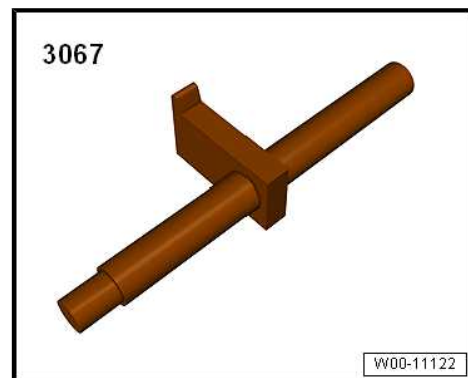
➔ ["2.3.1 Removing and installing Sachs version clutch", page 45](#)

➔ ["2.3.2 Removing and installing LuK version clutch", page 48](#)

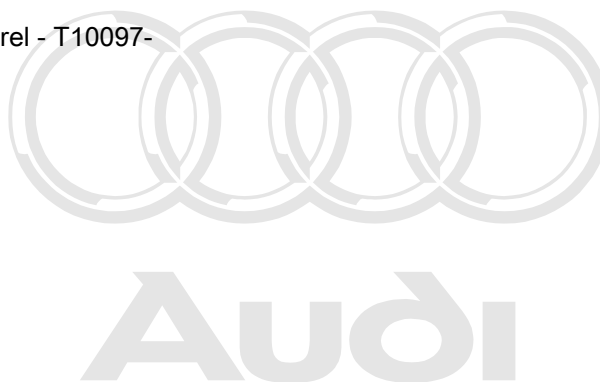
2.3.1 Removing and installing Sachs version clutch

Special tools and workshop equipment required

- ◆ Counterhold tool - 3067-



- ◆ Centring mandrel - T10097-



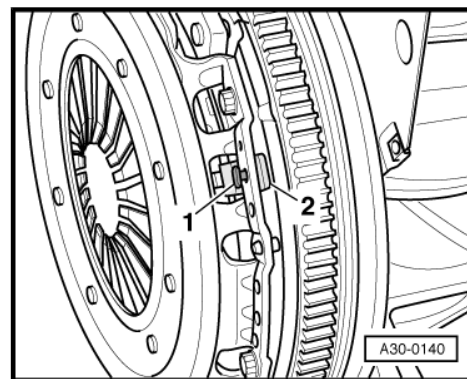
- ◆ Grease for clutch plate splines - G 000 100-
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Removing

- Gearbox removed ⇒ [page 78](#) .

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° ($\frac{1}{4}$ 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 sequence; note the following:



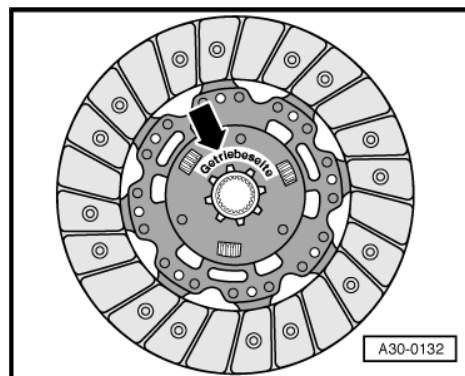
Note

- ◆ 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 gearbox housing in area of clutch and parts of the engine facing the gearbox in order to prevent odours.
- ◆ Blow off flywheel with compressed air only.
- ◆ 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.
- ◆ 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.
- ◆ Clutch plate linings must make full contact with flywheel and friction surface of clutch pressure plate. 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).

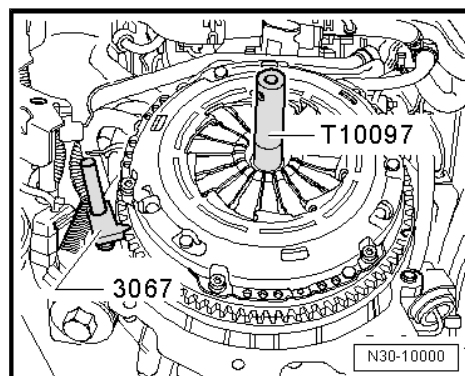
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Installation position of clutch plate

- Marking "Getriebeseite" (gearbox side) and the protruding spring cage face towards gearbox.

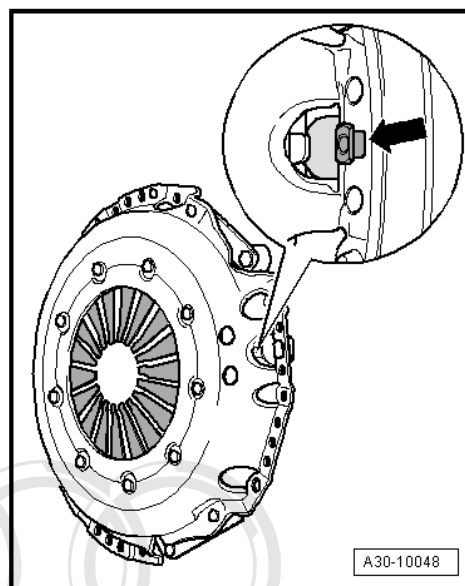


- Use counterhold tool - 3067- .
- Fit pressure plate onto centring pins.
- Use centring mandrel - T10097- to centralise clutch plate.



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 \(page 40\)](#)

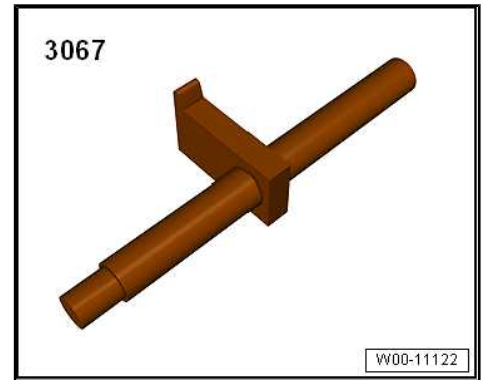


2.3.2 Removing and installing LuK version clutch

Special tools and workshop equipment required

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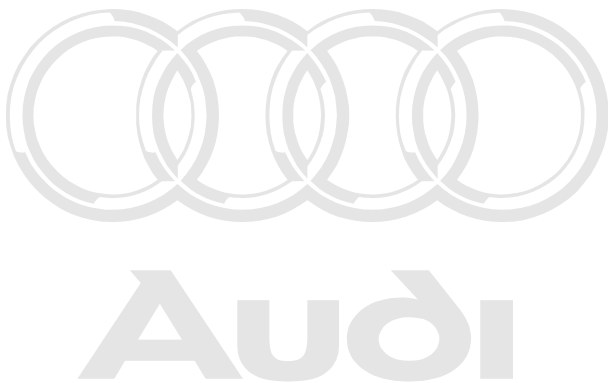
◆ Counterhold tool - 3067-



◆ Centring mandrel - T10097-



◆ Grease for clutch plate splines - G 000 100-



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Removing

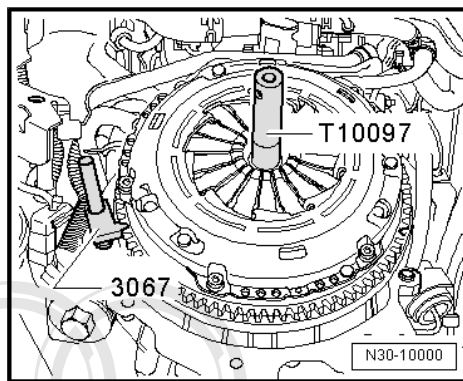
- Gearbox removed ➔ [page 78](#) .
- Apply counter-hold tool - 3067- in order to loosen bolts.

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 sequence; note the following:

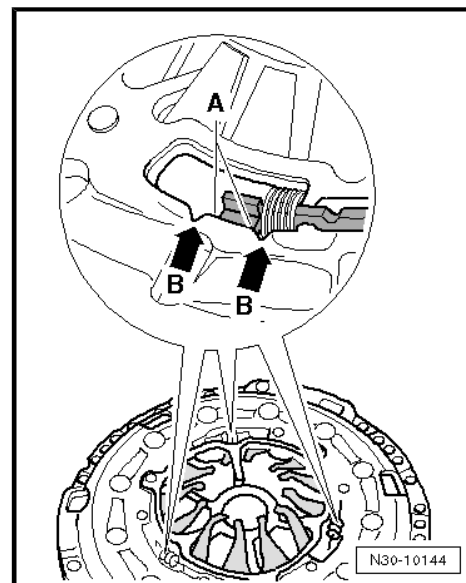


Note

- ◆ *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 51](#)*
- ◆ *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.*
- ◆ *Blow off flywheel with compressed air only.*
- ◆ *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.*
- ◆ *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.*
- ◆ *Clutch plate linings must make full contact with flywheel and friction surface of clutch pressure plate. 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).*

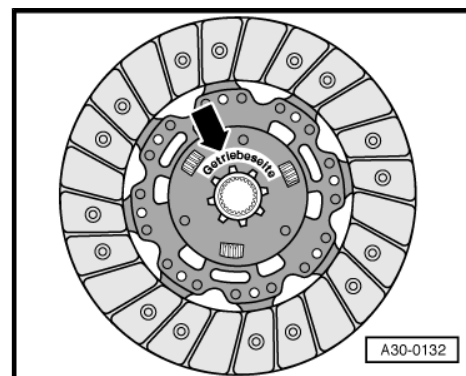
Checking position of adjustment mechanism (new SAC pressure plates only)

- 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.



Installation position of clutch plate

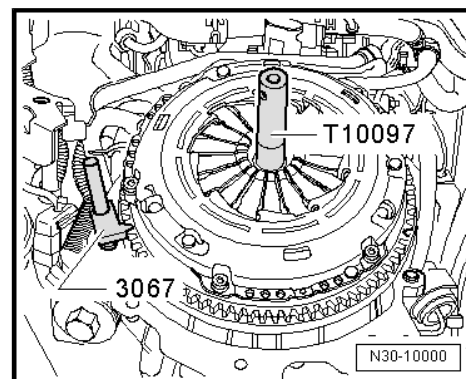
- The marking "Getriebeseite" (gearbox side) faces towards the gearbox.



- Use counterhold tool - 3067- .
- Fit pressure plate onto centring 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 \(page 42\)](#)



34 – Controls, housing

1 Selector mechanism

⇒ [“1.1 Overview - selector mechanism”, page 52](#)

⇒ [“1.2 Exploded view - gear knob and cover”, page 54](#)

⇒ [“1.3 Exploded view - gear lever and selector housing”, page 55](#)

⇒ [“1.4 Exploded view - selector cables”, page 57](#)

⇒ [“1.5 Removing and installing gear knob”, page 61](#)

⇒ [“1.6 Removing and installing selector mechanism”, page 63](#)

⇒ [“1.7 Removing and installing selector cable”, page 65](#)

⇒ [“1.8 Dismantling and assembling selector mechanism”, page 66](#)

⇒ [“1.9 Adjusting selector mechanism”, page 72](#)

⇒ [“1.10 Checking selector mechanism”, page 74](#)

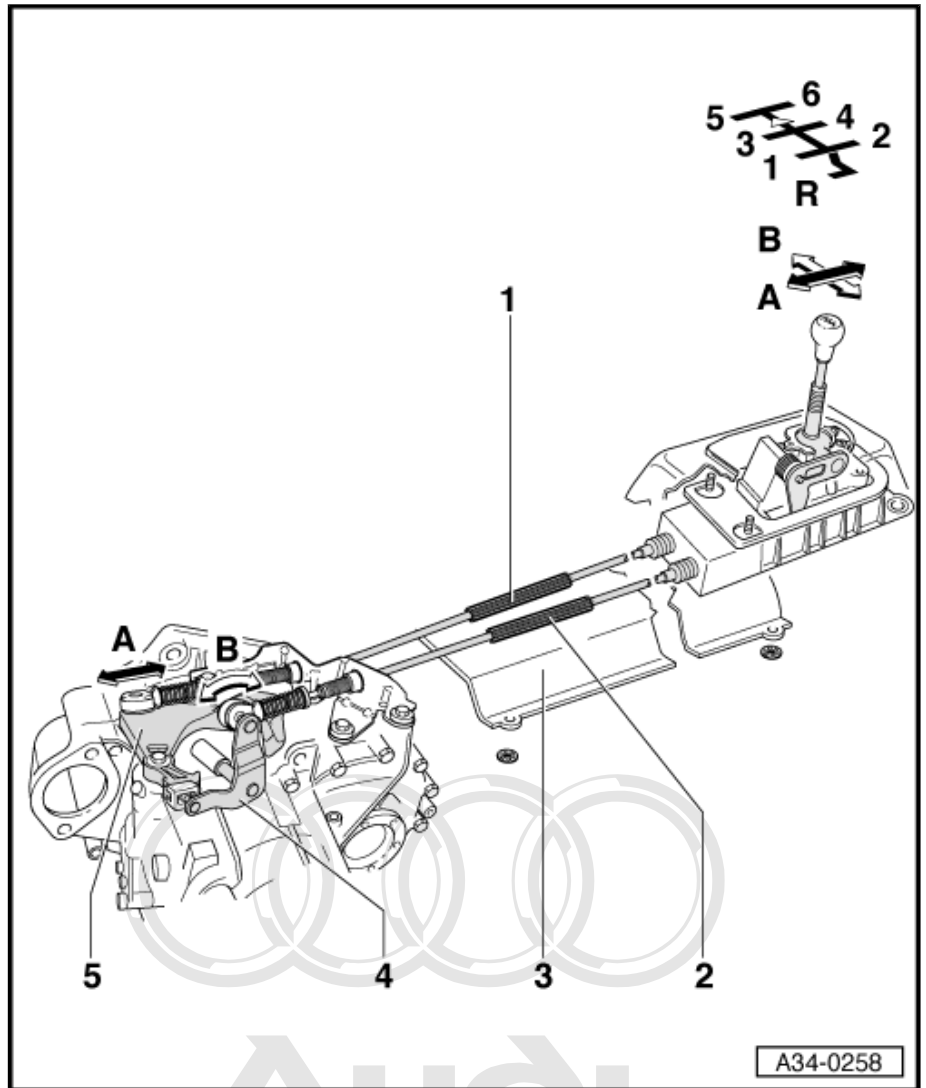
⇒ [“1.11 Renewing selector shaft oil seal”, page 74](#)

1.1 Overview - selector mechanism



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- 1 - Gear selector cable
- 2 - Gate selector cable
- 3 - Heat shield
- 4 - Gate relay lever
- 5 - Gearbox selector lever



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1.2 Exploded view - gear knob and cover

1 - Gear lever

2 - Noise insulation cover (lower)

3 - Gear knob

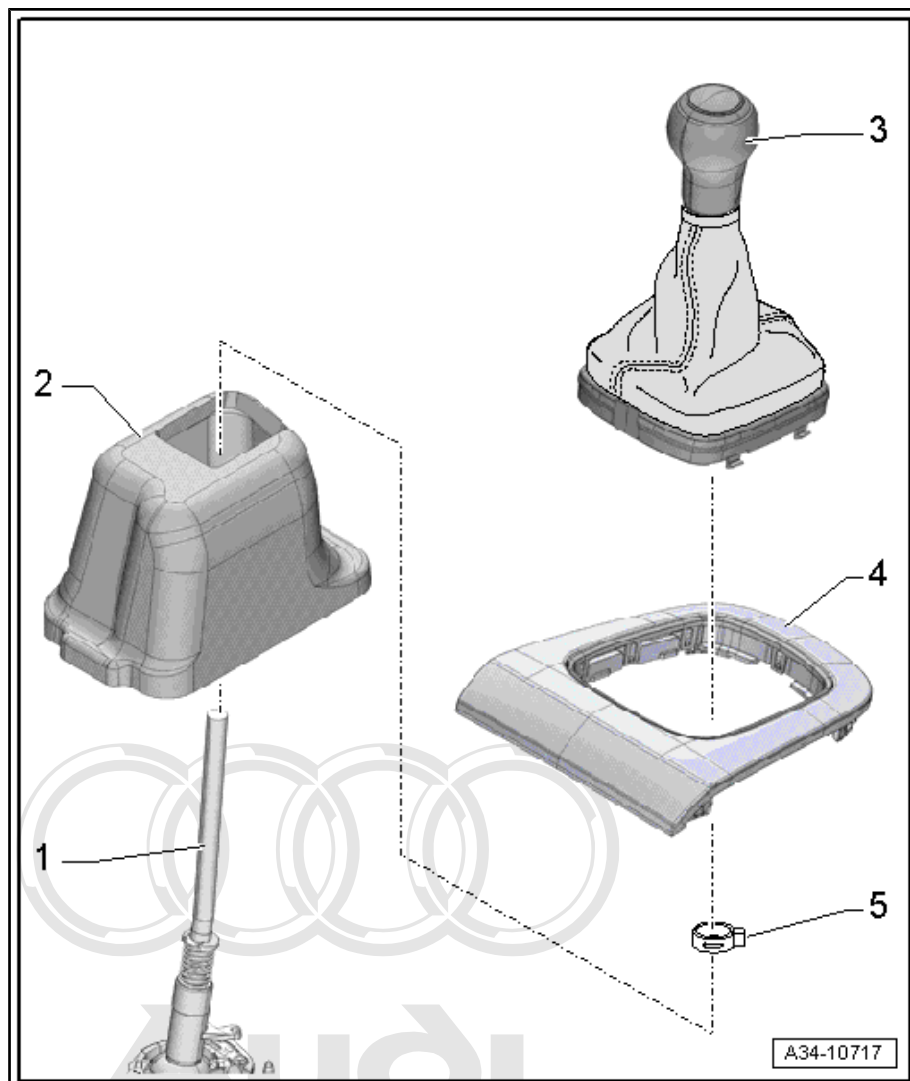
- ☐ With gear lever boot
- ☐ Removing and installing
⇒ [page 61](#)

4 - Cover

- ☐ For centre console

5 - Clip

- ☐ Secures gear knob to gear lever



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

- ☐ Bend tabs open to remove
- ☐ Always renew after removing
- ☐ Secure to selector housing ⇒ **page 72**

☐ Renew

- ❑ Can be removed and installed without removing gear lever guide
⇒ Item 15 (page 56)

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

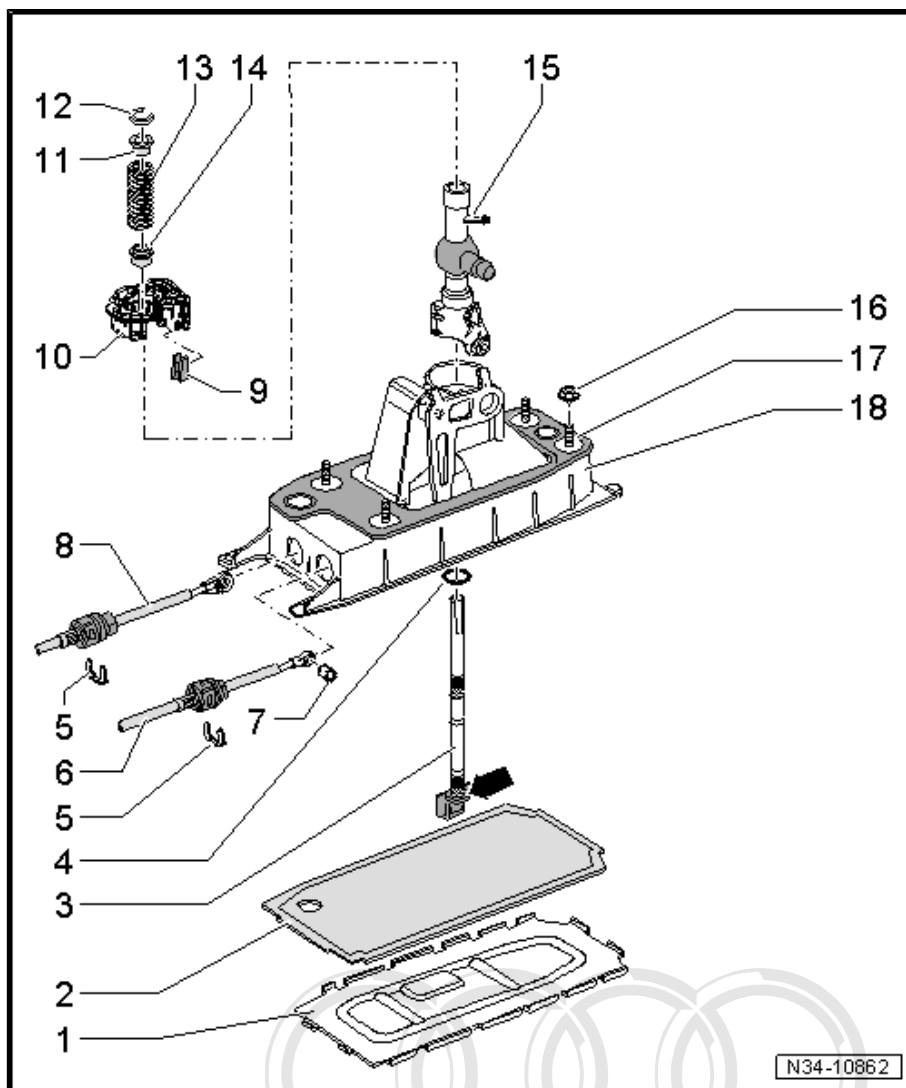
☐ Renew

- ☐ Lever off gate selector lever
- ☐ Press onto gate selector lever inside selector mechanism
- ☐ Installation position
⇒ [page 52](#)
- ☐ Removing and installing
⇒ [page 65](#)

- ☐ Lever off gear lever guide
- ☐ Press onto gear lever guide inside selector mechanism
- ☐ Installation position ⇒ [page 52](#)
- ☐ Removing and installing ⇒ [page 65](#)

- ☐ Cannot be removed without being damaged
- ☐ Renew

- ❏ Removing and installing ⇒ [page 56](#)



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13 - Spring

14 - Bush

15 - Gear lever guide

16 - Nut

- ☐ 4x
- M6 - 8 Nm
- M8 - 25 Nm

17 - Gasket

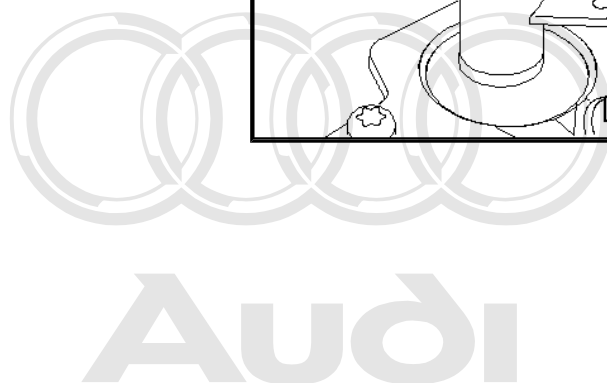
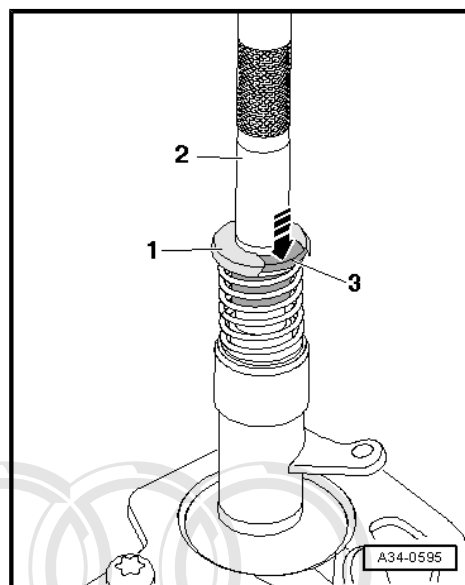
- ☐ Between selector housing and floor
- ☐ Self-adhesive
- ☐ Glue onto selector housing

18 - Selector housing

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

Removing and installing securing clip

- Hold gear lever -2- and press bush -3- in direction of -arrow-.
- Remove securing clip -1-.



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1.4 Exploded view - selector cables



Note

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

1 - Gearbox

2 - Clip

- ☐ For gate relay lever
- ☐ Detaching and fitting
⇒ [page 60](#)

3 - Gearbox selector lever

- ☐ Fitting ⇒ [page 59](#)
- ☐ Installation position
⇒ [page 59](#)
- ☐ After installing, adjust
selector mechanism
⇒ [page 72](#)

4 - Cable end-piece

- ☐ Secures gear selector
cable to gearbox selec-
tor lever
- ☐ Allocation ⇒ [page 58](#)
- ☐ Detaching from gear se-
lector cable
⇒ [page 60](#)

5 - Securing clip

- ☐ Removing ⇒ [page 60](#)
- ☐ Always renew after re-
moving

6 - Nut

- ☐ Self-locking
- ☐ Renew
- ☐ 23 Nm

7 - Retaining clip

- ☐ Renew

8 - Gear selector cable

- ☐ Detaching and securing at gearbox selector lever ⇒ [page 60](#)
- ☐ Removing and installing ⇒ [page 65](#)
- ☐ Adjusting ⇒ [page 72](#)

9 - Gate selector cable

- ☐ Removing and installing ⇒ [page 65](#)
- ☐ Adjusting ⇒ [page 72](#)

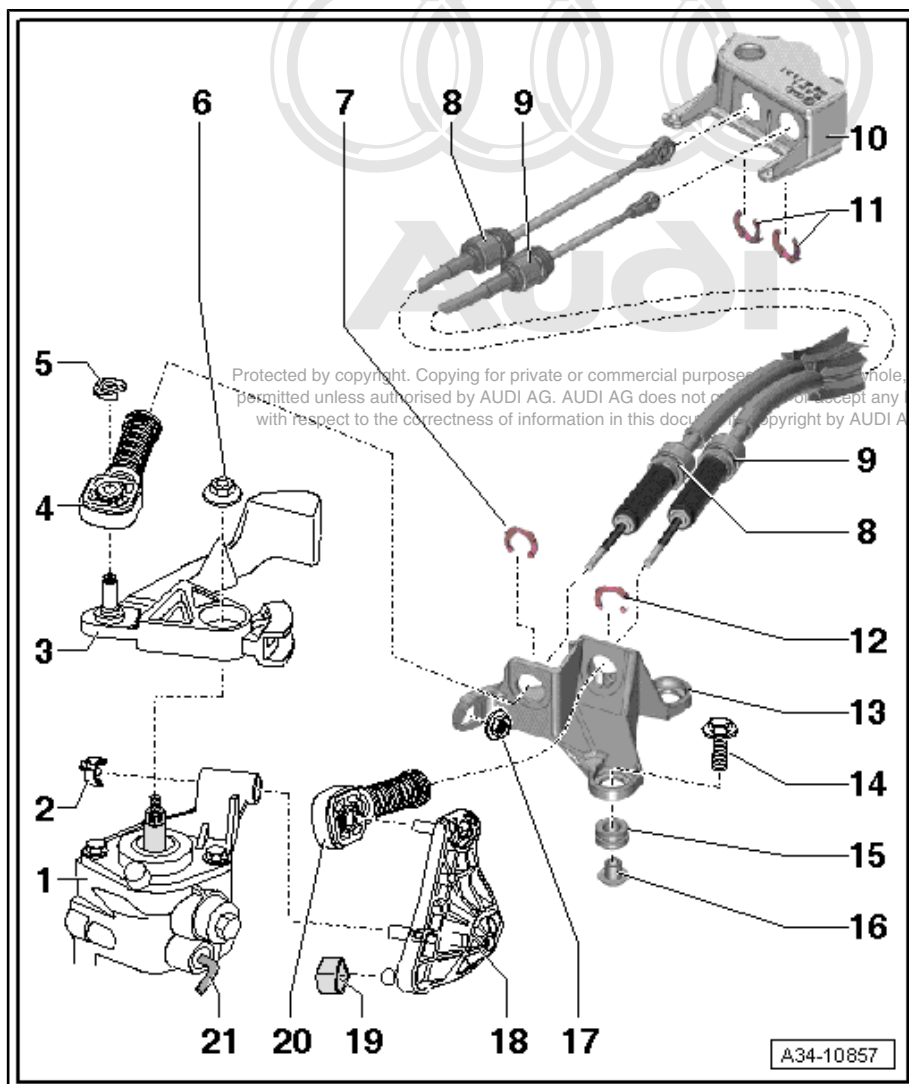
10 - Selector housing

11 - Retaining clips

- ☐ Renew

12 - Retaining clip

- ☐ Renew



13 - Cable support bracket

14 - Bolt

- ☐ 20 Nm

15 - Grommet

16 - Bush

17 - Nut

- ☐ 20 Nm

18 - Gate relay lever

- ☐ Installation position ➔ [page 59](#)
- ☐ Detaching and securing at gearbox selector lever ➔ [page 60](#)

19 - Slide block

- ☐ Installation position ➔ [page 59](#)

20 - Cable end-piece

- ☐ Secures gate selector cable to gate relay lever
- ☐ Allocation ➔ [page 58](#)
- ☐ Detaching from gate selector cable ➔ [page 60](#)

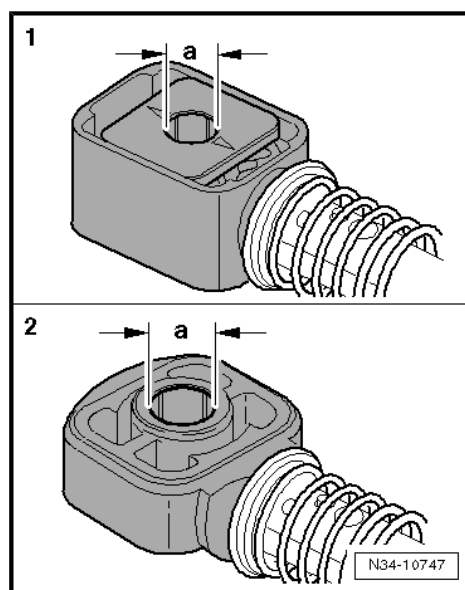
21 - Angled rod

- ☐ For adjusting selector mechanism ➔ [page 72](#)

Identification of cable end-pieces

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

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

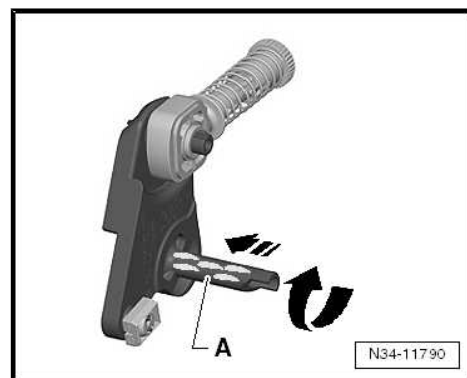
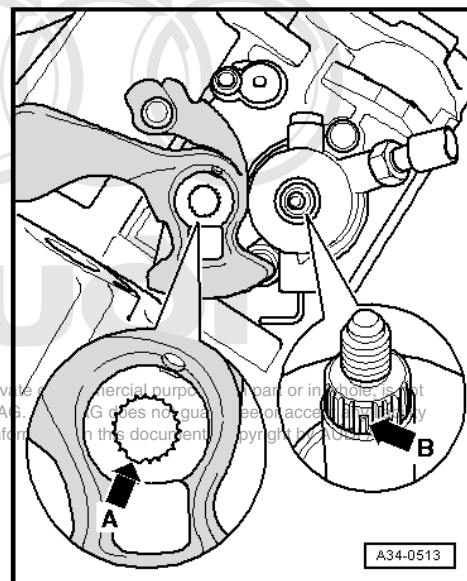


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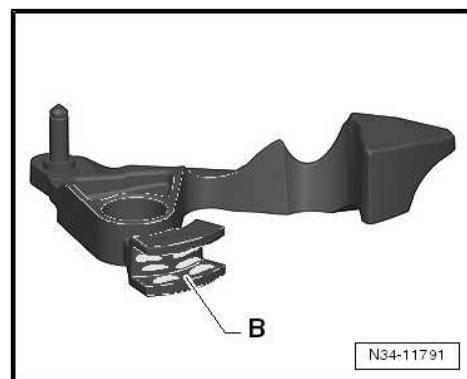
Installing gearbox selector lever

- 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.

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- When installing, lubricate the following areas thoroughly:
- Shaft -A- of gate relay lever -arrows-.
- Guide rail -B- of gearbox selector lever into which gate relay lever engages.
- Illustration of gate relay lever and gearbox selector lever may differ from actual components.
- Lubricate with grease - G 000 450 02- .



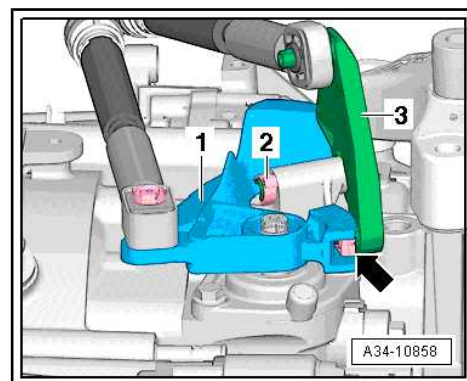
Installation position: gearbox selector lever/gate relay lever

- Gearbox selector lever
- Clip
- Gate relay lever locates in guide rail of gearbox selector lever via slide block -arrow B-.



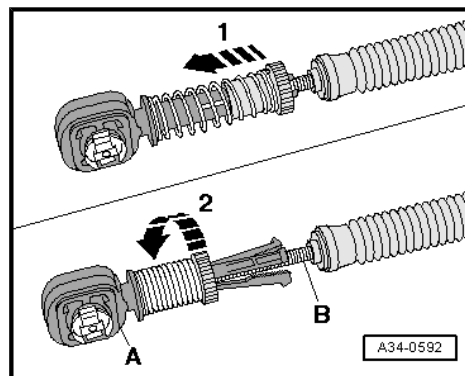
Note

Lubricate 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 mechanism forwards -arrow 1- onto stop and then turn to left -arrow 2- to lock.
- Take cable -B- out of cable end-piece -A-.



Detaching and securing gear selector cable at gearbox selector lever

Detaching

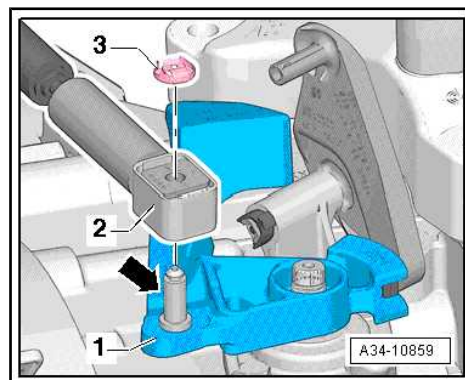
- Lift up tab and detach securing clip -3- for gear selector cable from gearbox selector lever -1-.
- Pull gear selector cable -2- off pin -arrow-.

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 at gearbox selector lever

Detaching

- 2nd gear engaged
- Remove clip -arrow 1- and take off gate relay lever together with cable end-piece.



Note

-Arrow 2- can be disregarded.

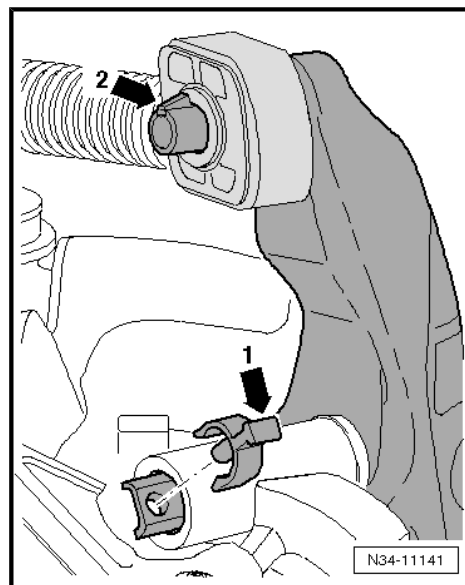
Securing



Note

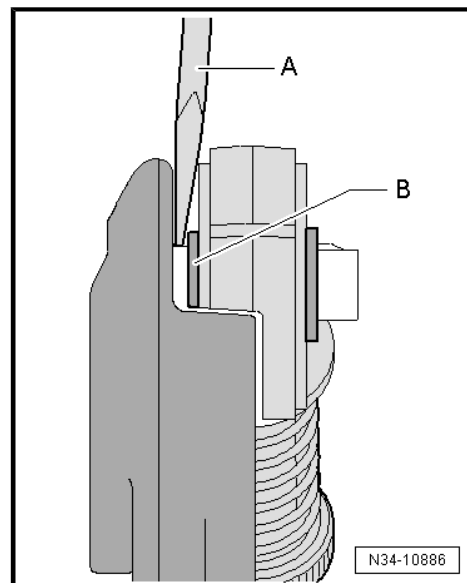
Lubricate all bearings and moving surfaces with grease - G 000 450 02- .

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



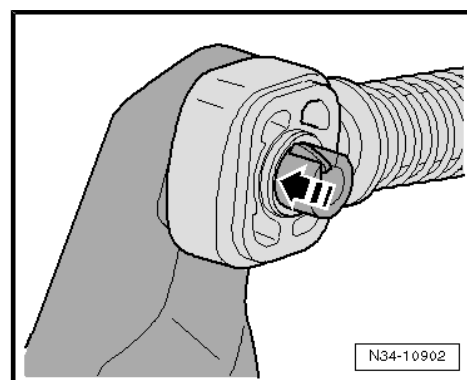
Levering cable end-piece for gate selector cable off gate relay lever

- 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

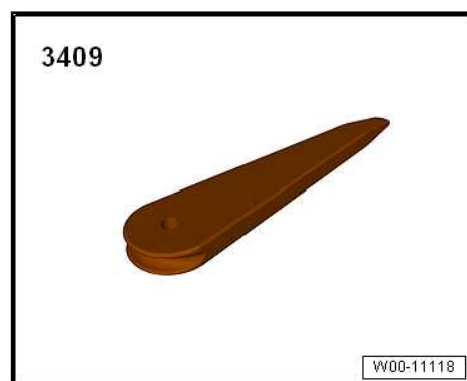
- Gate relay lever removed
- Press on cable end-piece only at bush -arrow-.
- Cable end-piece must move freely on gate relay lever.
- Cable end-piece must be behind detent.
- Ensure that components engage securely.



1.5 Removing and installing gear knob

Special tools and workshop equipment required

- ◆ Removal wedge - 3409-



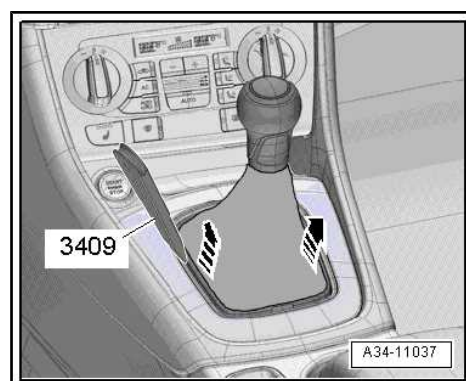
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◆ Hose clip pliers - V.A.G 1275A-



Removing

- Using removal wedge - 3409- , carefully pry gear lever boot off cover for centre console -arrows-.

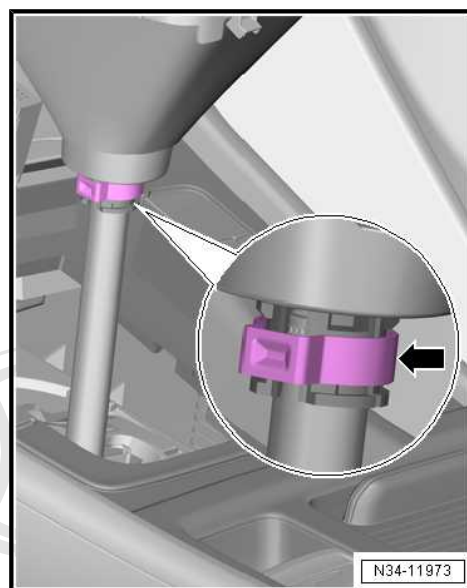


- Pull boot up and over gear knob.
- Open clip -arrow- and pull off gear knob together with boot.

Installing

Installation is carried out in reverse sequence; 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 1275A- .

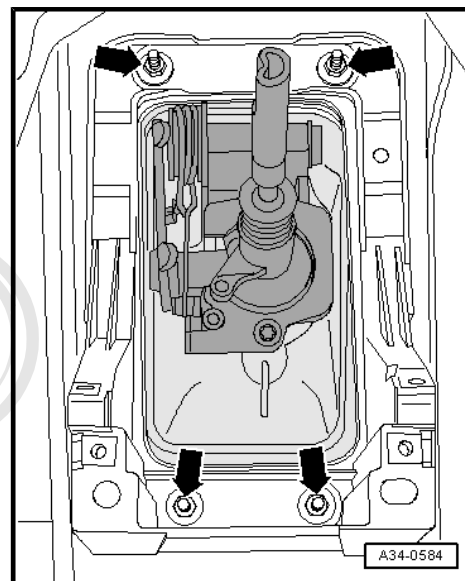


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1.6 Removing and installing selector mechanism

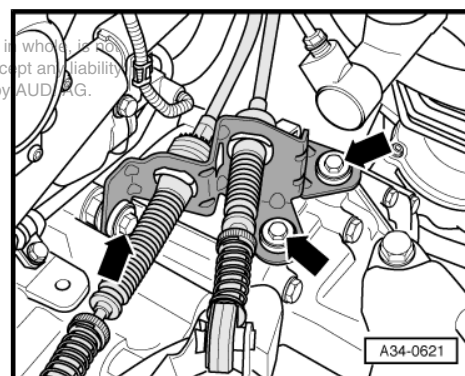
Removing

- Remove gear knob with gear lever boot ⇒ [page 61](#) .
- Remove centre console insert ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing centre console insert .
- Lift out noise insulation above selector mechanism.
- Remove nuts -arrows-.
- Remove air cleaner housing ⇒ Rep. gr. 23 ; Air cleaner; Removing and installing air cleaner housing or ⇒ Rep. gr. 24 ; Air cleaner; Removing and installing air cleaner housing .



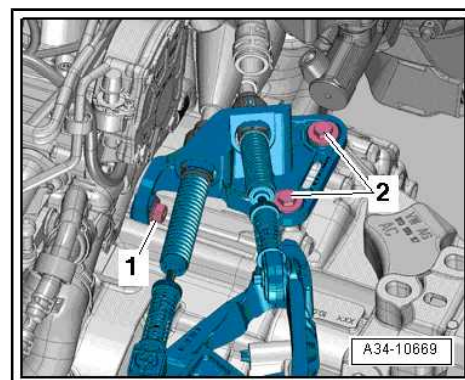
Cable support bracket, version 1:

- Unscrew bolts and nut -arrows- and place cable support bracket to one side together with cables.



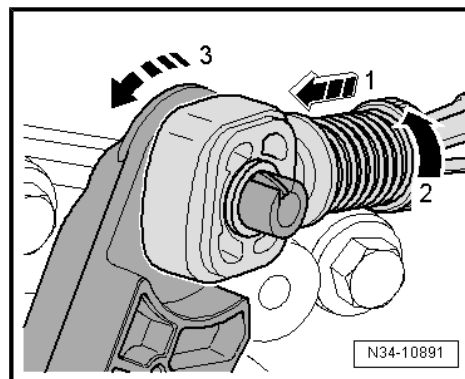
Cable support bracket, version 2:

- Unscrew nut -1- and bolts -2- and place cable support bracket to one side together with cables.



Continued for all vehicles:

- Pull locking mechanism forwards -arrow 1- onto stop and then turn to left -arrow 2- to lock.
- Press gate relay lever forwards -arrow 3- and pull gate selector cable out of cable end-piece.



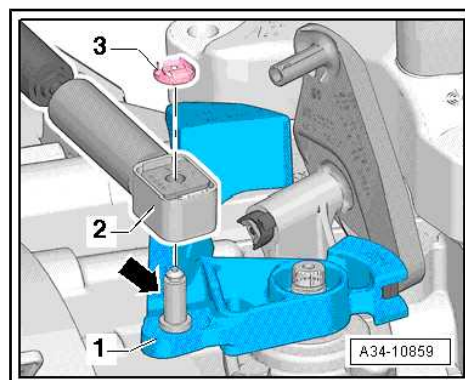
- Detach securing clip -3- for gear selector cable from gearbox selector lever -1- and pull selector cable -2- off pin -arrow-.



Note

Do not detach cable end-piece from gate relay lever until gate relay lever has been removed ➔ [page 61](#) .

- Remove heat shield for underbody ➔ General body repairs, exterior; Rep. gr. 66 ; Strips / trim panels / extensions; Removing and installing heat shield for floor .
- Swing selector housing down and remove with selector cables.



Installing gearbox selector lever

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



Note

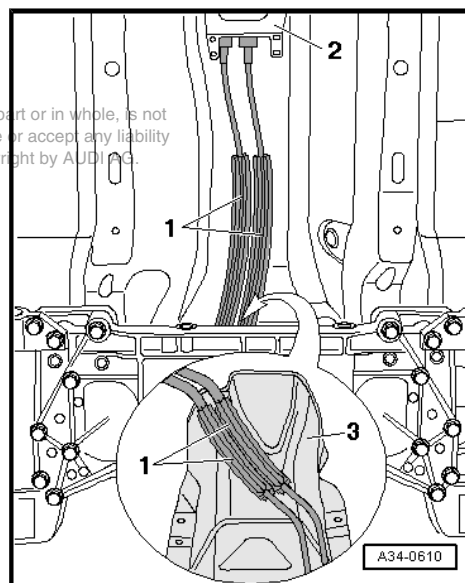
Renew securing clip.

- 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-.

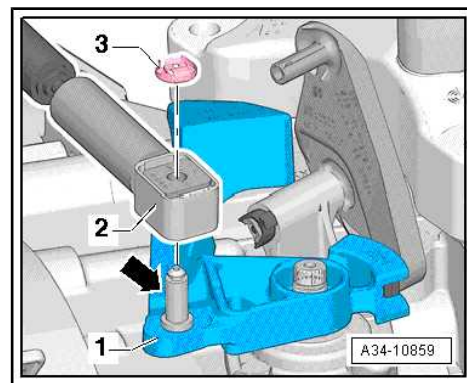


Note

The enlargement shows the heat shield from above.



- Apply a small amount of grease - G 000 450 02- to pin -arrow- of gearbox selector lever -1- and, if necessary, to gate relay lever.
- Adjust selector mechanism ⇒ [page 72](#) .
- Install heat shield for underbody ⇒ General body repairs, exterior; Rep. gr. 66 ; Strips / trim panels / extensions; Removing and installing heat shield for floor .
- Install air cleaner housing ⇒ Rep. gr. 23 ; Air cleaner; Removing and installing air cleaner housing or ⇒ Rep. gr. 24 ; Air cleaner; Removing and installing air cleaner housing .
- Install centre console insert ⇒ General body repairs, interior; Rep. gr. 68 ; Centre console; Removing and installing centre console insert .
- Install gear knob with gear lever boot ⇒ [page 61](#) .



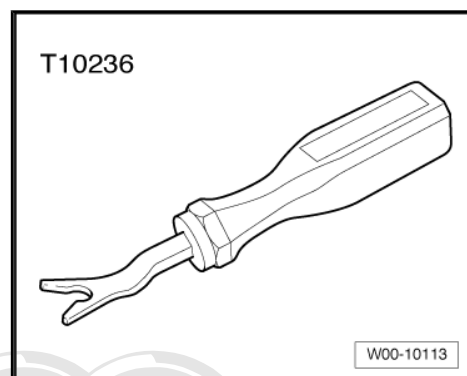
Tightening torques

- ◆ ⇒ [“1.3 Exploded view - gear lever and selector housing”, page 55](#)
- ◆ ⇒ [“1.4 Exploded view - selector cables”, page 57](#)

1.7 Removing and installing selector cable

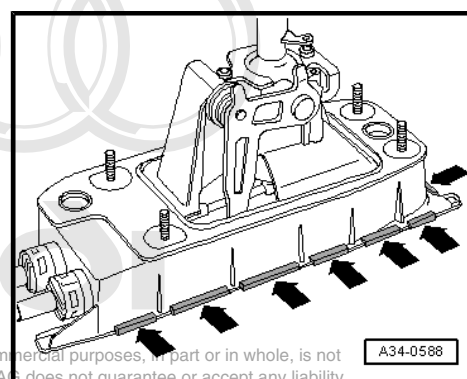
Special tools and workshop equipment required

- ◆ Release tool - T10236-



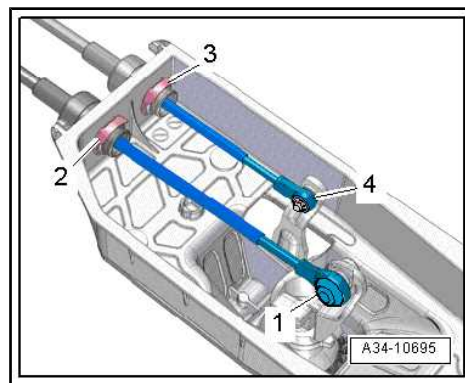
Removing

- Remove selector mechanism ⇒ [page 63](#) .
- Open out tabs -arrows- on floor plate all round with screwdriver and remove floor plate.
- Remove gasket from selector housing.



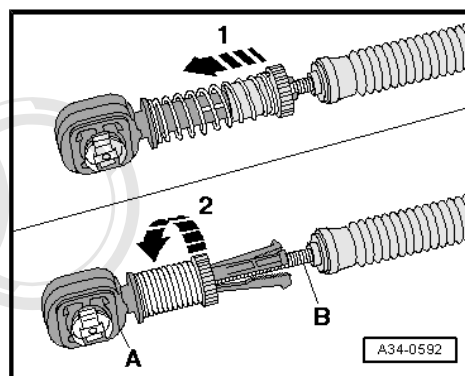
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- Detach retaining clips -2, 3-.
- Press off gear selector cable -1- and gate selector cable -4- using a screwdriver.



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 selector cables.



- Remove securing clips -1- and -2-.
- Detach cable support bracket from selector cables.

Installing

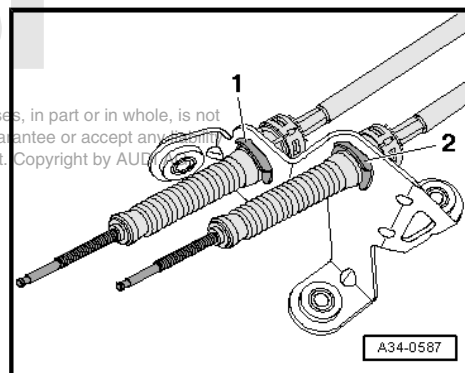
Installation is carried out in reverse sequence; note the following:



Note

Renew the securing clips and the floor plate including the gasket.

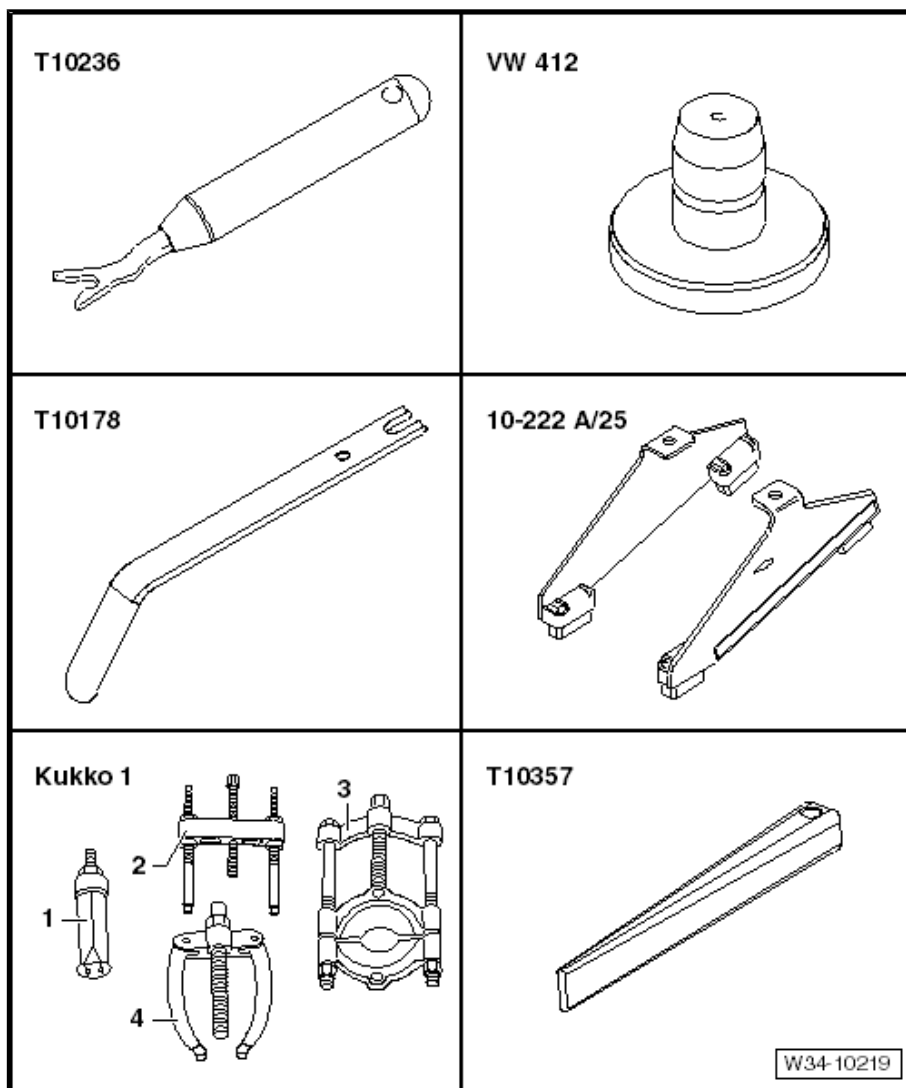
- Secure floor plate to selector housing ➔ [page 72](#) .
- Install selector mechanism ➔ [page 63](#) .
- Adjust selector mechanism ➔ [page 72](#) .



1.8 Dismantling and assembling selector mechanism

Special tools and workshop equipment required

- ◆ Release tool - T10236-
- ◆ Press tool - VW 412-
- ◆ Assembly tool - T10178-
- ◆ Adapters - 10 - 222 A /25-
- ◆ 2 = Counter-support , e.g. - Kukko- series 16
- ◆ Wedge - T10357-



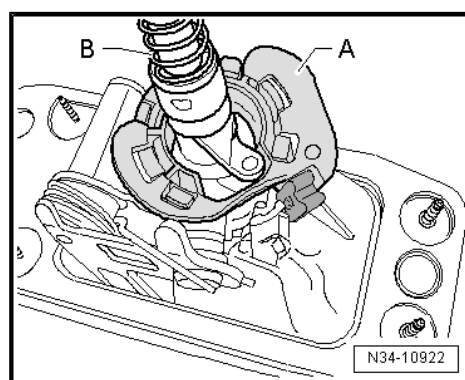
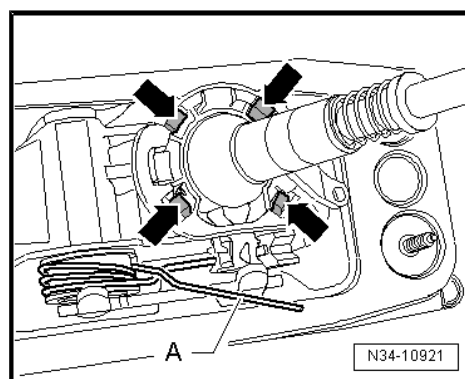
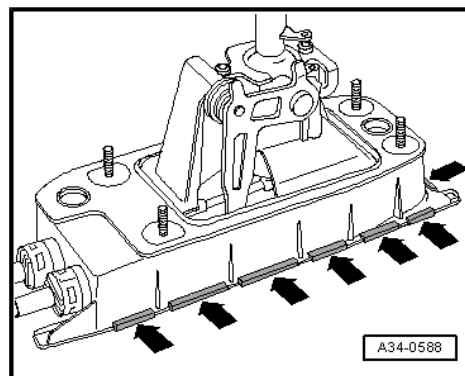
- ◆ Thrust block - T10083-



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Dismantling

- Remove selector mechanism ➔ [page 63](#) .
- Open out tabs -arrows- on floor plate all round with screwdriver and remove floor plate.
- Remove gasket from selector housing.
- Remove gear selector cable and gate selector cable from selector housing ➔ [page 65](#) .
- 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-.
- Press ball socket -A- off ball on gear lever guide and remove.



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Caution

Risk of damage to guides -A-.

- ◆ *Take care not to break off the guides -A- when performing the following steps.*

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

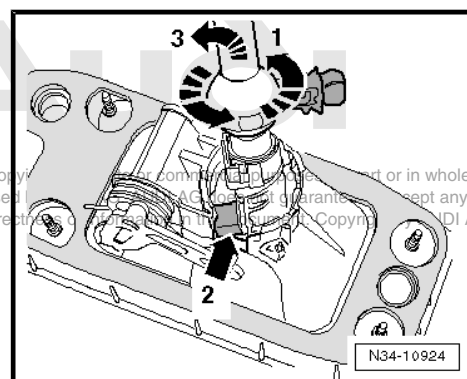
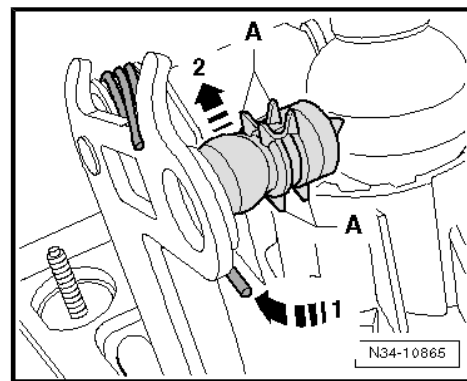


WARNING

Risk of injury

- ◆ *During the following steps, the bottom spring arm 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 out of gate selector lever -arrow 2-.
- Press spring carefully off shoulder of gate selector lever.
- The spring arms will then compress “diagonally”.
- 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.



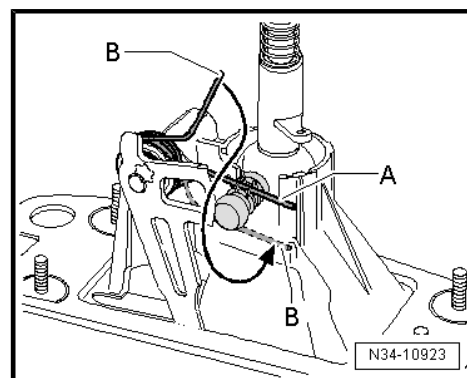
Assembling



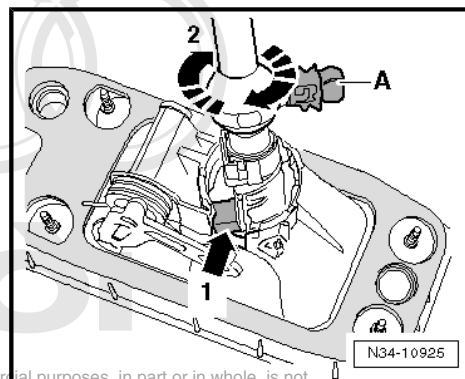
Note

Renew the ball socket and the floor plate including the gasket.

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

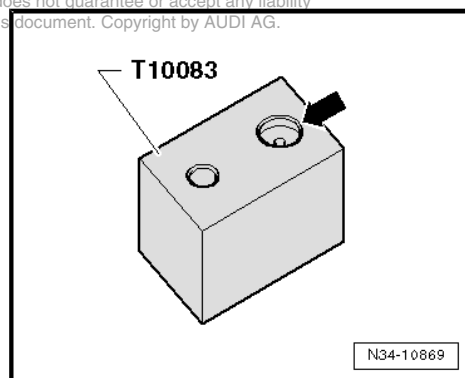


- Insert gear lever guide into selector housing together with gear lever.
- Pin -arrow 1- should be positioned just inside recess on selector housing.
- Turn gear lever guide in direction of -arrow 2- until ball-head pin -A- is above recess on selector housing.



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- Carefully place selector housing on thrust block - T10083- together with gear lever guide.
- 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.



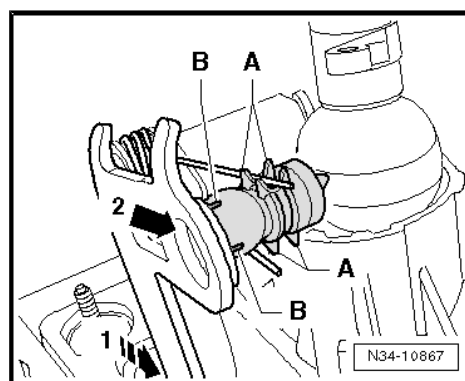
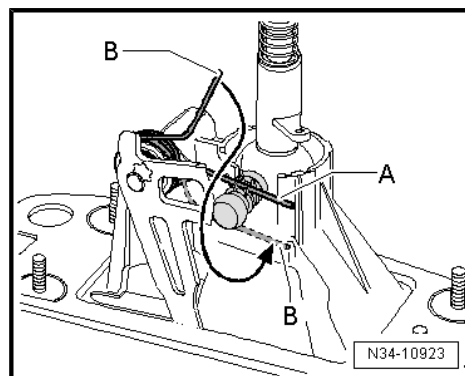
- Insert arm -A- of spring in guide from above.
- Pull arm -B- of spring downwards and insert it next to the guide (towards ball head).



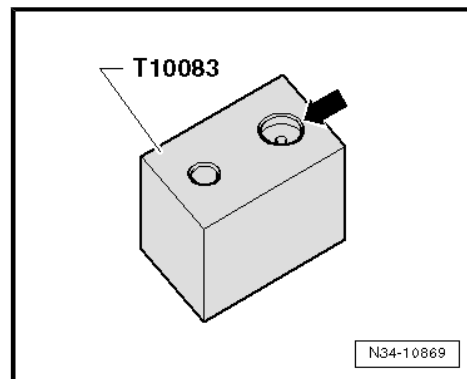
Note

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 back as far as stop -arrow 1-.
- Grease ball-head pin.
- Press ball-head pin into hole on gate selector lever -arrow 2-.
- Guides -A- and tabs -B- must not be damaged.



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



- Lift top spring arm -A- over tab on gate selector lever.

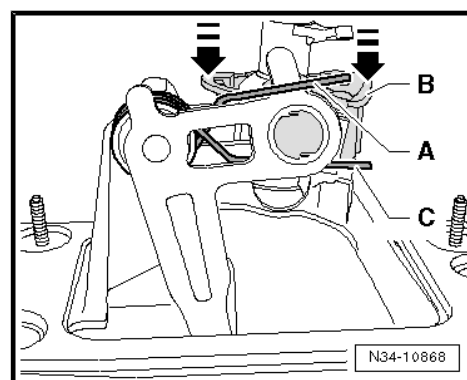


Note

Renew 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- .

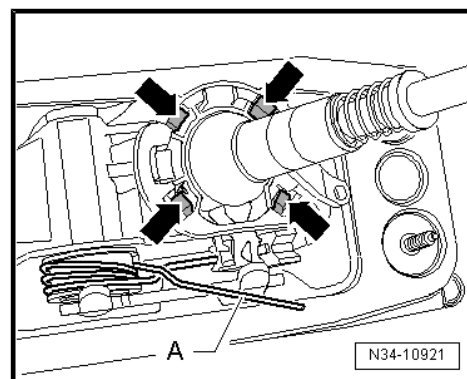
Press ball socket into selector housing in direction of arrows.
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- All four lugs -arrows- must engage.
- Lift top spring arm -A- over tab on gate selector lever and into guide.
- Insert bottom spring arm into guide.

Further assembly is carried out in reverse sequence; note the following:

- Install gear selector cable and gate selector cable in selector housing ➔ [page 65](#) .



Securing floor plate to selector housing

- Renew floor plate and gasket ➔ [Item 2 \(page 55\)](#) .
- Fit new gasket onto floor plate.

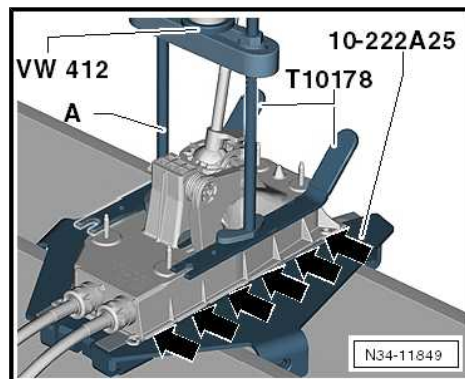


Caution

Risk of damage to selector housing and floor plate.

Apply only light pressure to selector housing.

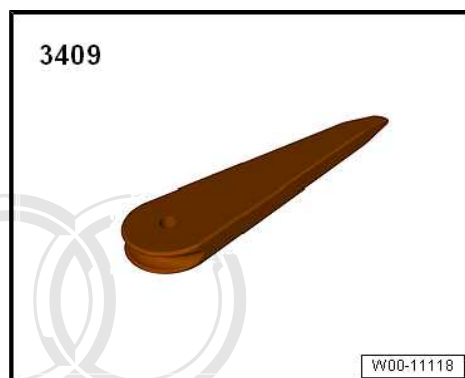
- Secure floor plate by bending tabs -arrows- closed on all sides (only tabs on left side of floor plate are marked here).
- Tabs can be bent closed using wedge - T10357- .
- A- = Counter-support e.g. -Kukko- series 16
- Glue new gasket ➔ [Item 17 \(page 56\)](#) onto selector housing.
- Install selector mechanism ➔ [page 63](#) .
- Adjust selector mechanism ➔ [page 72](#) .



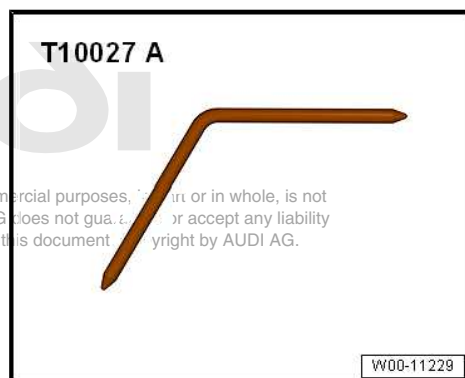
1.9 Adjusting selector mechanism

Special tools and workshop equipment required

- ◆ Removal wedge - 3409-



- ◆ Locking pin - T10027A-



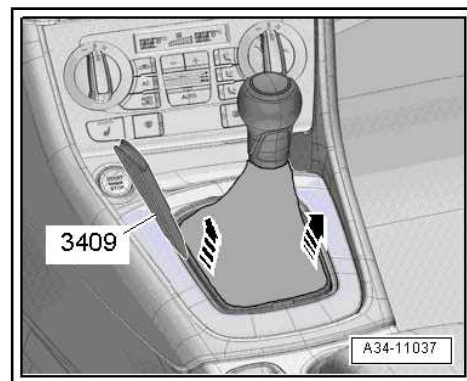
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Requirements for adjustment

- 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

- Using removal wedge - 3409- , carefully pry gear lever boot off cover for centre console -arrows-.
- Pull boot up and over gear knob.
- With gearbox in neutral, move gear lever to the left into 1st/2nd gear gate.



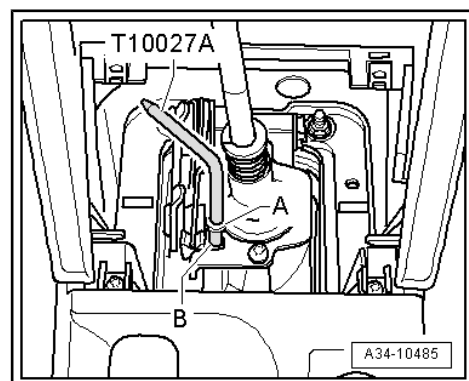
- Pull noise insulation slightly to one side.
- Then guide locking pin - T10027A- through hole -A- and into hole -B-.



Note

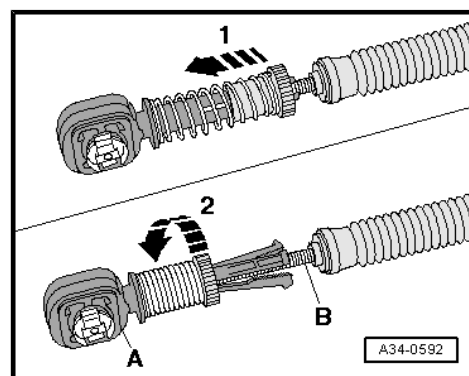
The noise insulation panels are removed to give a better illustration.

- Remove air cleaner housing ⇒ Rep. gr. 23 ; Air cleaner; Removing and installing air cleaner housing or ⇒ Rep. gr. 24 ; Air cleaner; Removing and installing air cleaner housing .



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

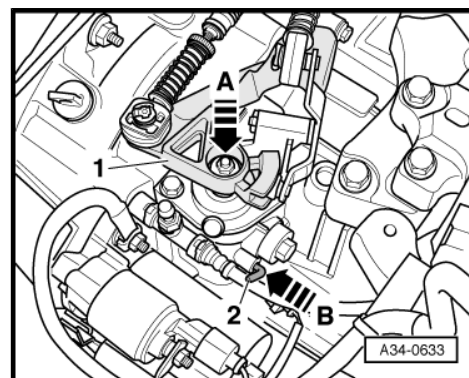
- Push locking sleeve forwards as far as stop -arrow 1-.
- Turn locking sleeve clockwise as far as stop -arrow 2- so that it engages.
- It should be possible to move selector cable -B- in the cable end-piece.



- Gearbox in neutral.

Lock selector shaft as follows:

- Push gearbox selector lever -1- down into 1st/2nd gear gate -arrow A-. At the same time, turn angled rod -2- slightly and press into gearbox -arrow B- until it engages.
- The selector shaft is then locked and can no longer be moved.



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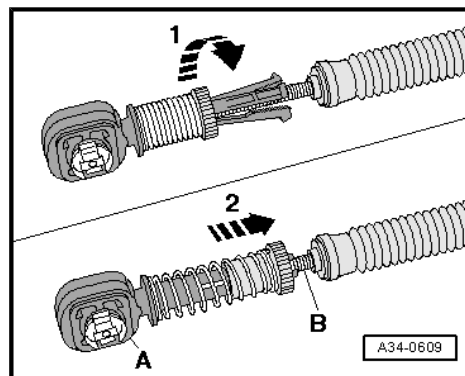
- Check that gate selector cable and gear selector cable -B- are located in cable end-pieces -A- without tension.
- Release locking sleeve -arrow 1-.
- Let locking sleeve slide back as far as stop -arrow 2-.



Note

Cable adjustment is now complete.

- Pull angled rod just far enough out of gearbox to release selector mechanism.
- Pull locking pin - T10027 A- out of selector mechanism.
- Check gear lever setting ⇒ [page 74](#) .



1.10 Checking selector mechanism

- With the gearbox in neutral, the gear lever should rest in the 3rd/4th gear gate.
- Depress clutch.
- Shift through all gears several times, paying 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 air cleaner housing ⇒ Rep. gr. 23 ; Air cleaner; Removing and installing air cleaner housing or ⇒ Rep. gr. 24 ; Air cleaner; Removing and installing air cleaner housing .

1.11 Renewing selector shaft oil seal

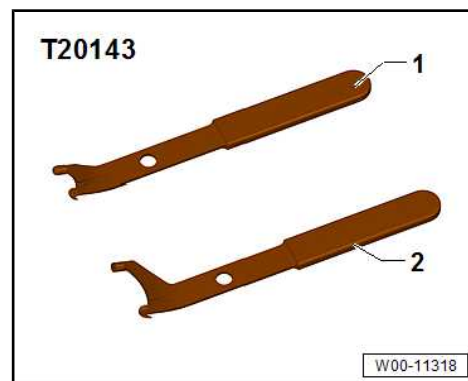
Special tools and workshop equipment required

- ♦ Tube - VW 423-



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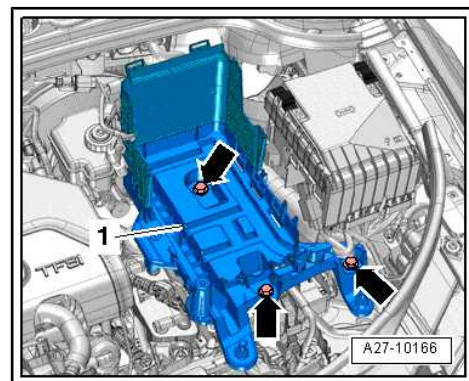
◆ Extractor tool - T20143/1-



◆ Sealing grease - G 052 128 A1-

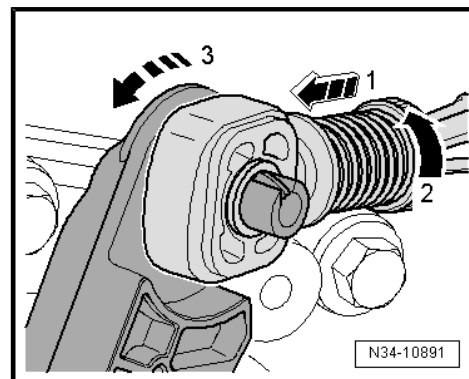
Procedure

- 1.4 ltr. TFSI engine: Remove battery and battery tray -1- ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .
- 2.0 ltr. TFSI and TDI engines: Remove air cleaner housing ⇒ Rep. gr. 23 ; Air cleaner; Removing and installing air cleaner housing or ⇒ Rep. gr. 24 ; Air cleaner; Removing and installing air cleaner housing .

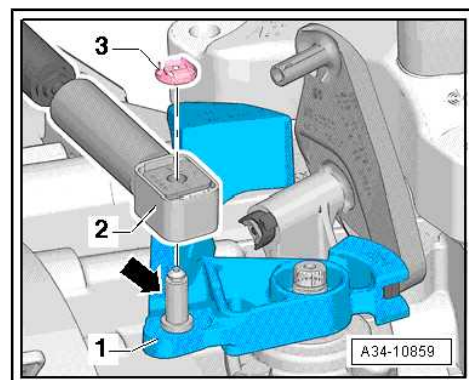


- Pull locking mechanism forwards -arrow 1- onto stop and then turn in direction of -arrow 2- to lock.
- Press gate relay lever forwards -arrow 3- and pull gate selector cable out of cable end-piece.

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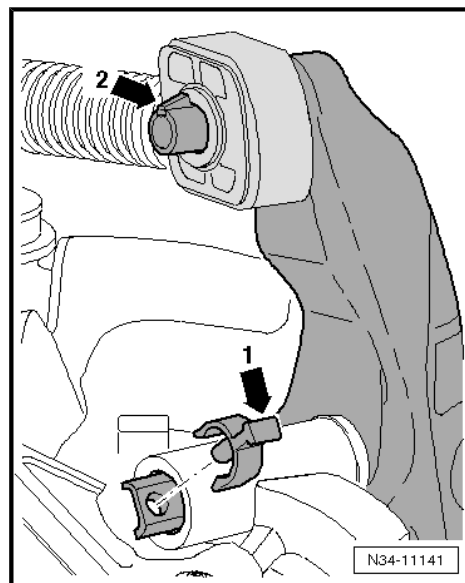
- Detach securing clip -3- for gear selector cable from gearbox selector lever -1- and pull selector cable -2- off pin -arrow-.



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

 Note

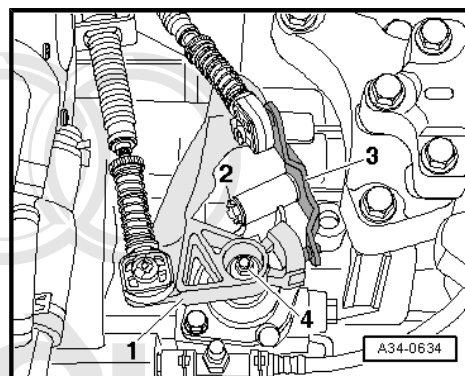
- ◆ *Do not detach cable end-piece -arrow 2- from gate relay lever until gate relay lever has been removed ⇒ [page 61](#) .*
- ◆ *If the gearbox bracket makes it impossible to remove the gate relay lever, guide the slide block out of the gearbox selector lever.*



- Remove gearbox selector lever -1- from selector shaft by removing nut -4-.

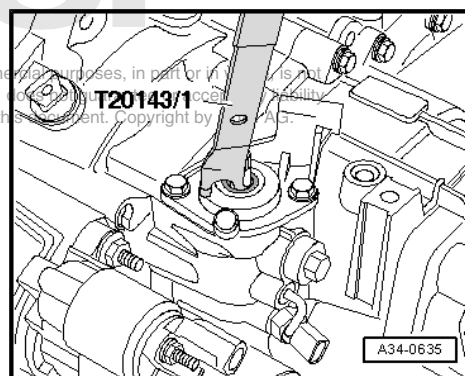
 Note

- ◆ *-Items 2 and 3- can be disregarded.*
- ◆ *If gearbox selector lever cannot be detached by hand, use a commercially available puller.*

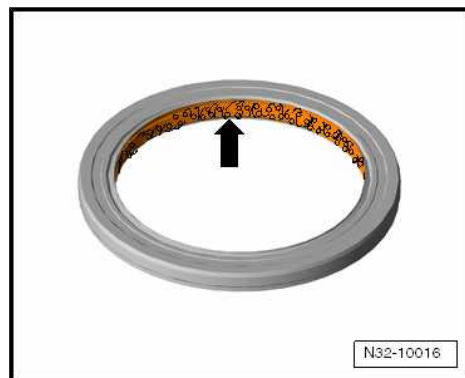


- Pull out oil seal with extractor tool - T20143/1- .

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



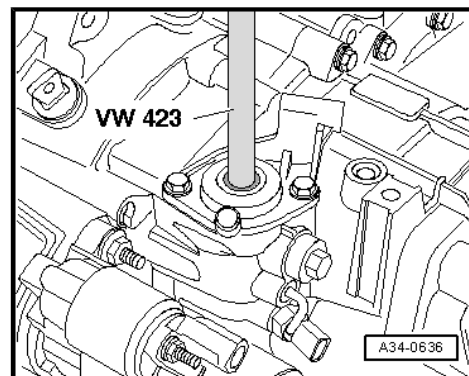
- Drive in oil seal with tube - VW 423- .

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

- Install gearbox selector lever ⇒ [page 59](#) .
- Install gate relay lever ⇒ [page 60](#) and ⇒ [page 59](#) .
- Adjust selector mechanism ⇒ [page 72](#) .

Tightening torques

- ◆ Air cleaner housing ⇒ Rep. gr. 23 ; Air cleaner; Removing and installing air cleaner housing or ⇒ Rep. gr. 24 ; Air cleaner; Exploded view - air cleaner housing
- ◆ Battery tray and battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Exploded view - battery



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2 Removing and installing gearbox

⇒ [“2.1 Removing gearbox”, page 78](#)

⇒ [“2.2 Installing gearbox”, page 141](#)

⇒ [“2.3 Tightening torques for gearbox”, page 144](#)

2.1 Removing gearbox

⇒ [“2.1.1 Removing gearbox - vehicles with 1.4 ltr. TFSI engine”, page 78](#)

⇒ [“2.1.2 Removing gearbox - vehicles with 2.0 ltr. TFSI engine \(generation II\)”, page 88](#)

⇒ [“2.1.3 Removing gearbox - vehicles with 2.0 ltr. TFSI engine \(generation III\)”, page 98](#)

⇒ [“2.1.4 Removing gearbox - vehicles with 2.0 ltr. TDI engine \(EA 189, generation II\) and front-wheel drive”, page 107](#)

⇒ [“2.1.5 Removing gearbox - vehicles with 2.0 ltr. TDI engine \(EA 189, generation II\) and four-wheel drive”, page 117](#)

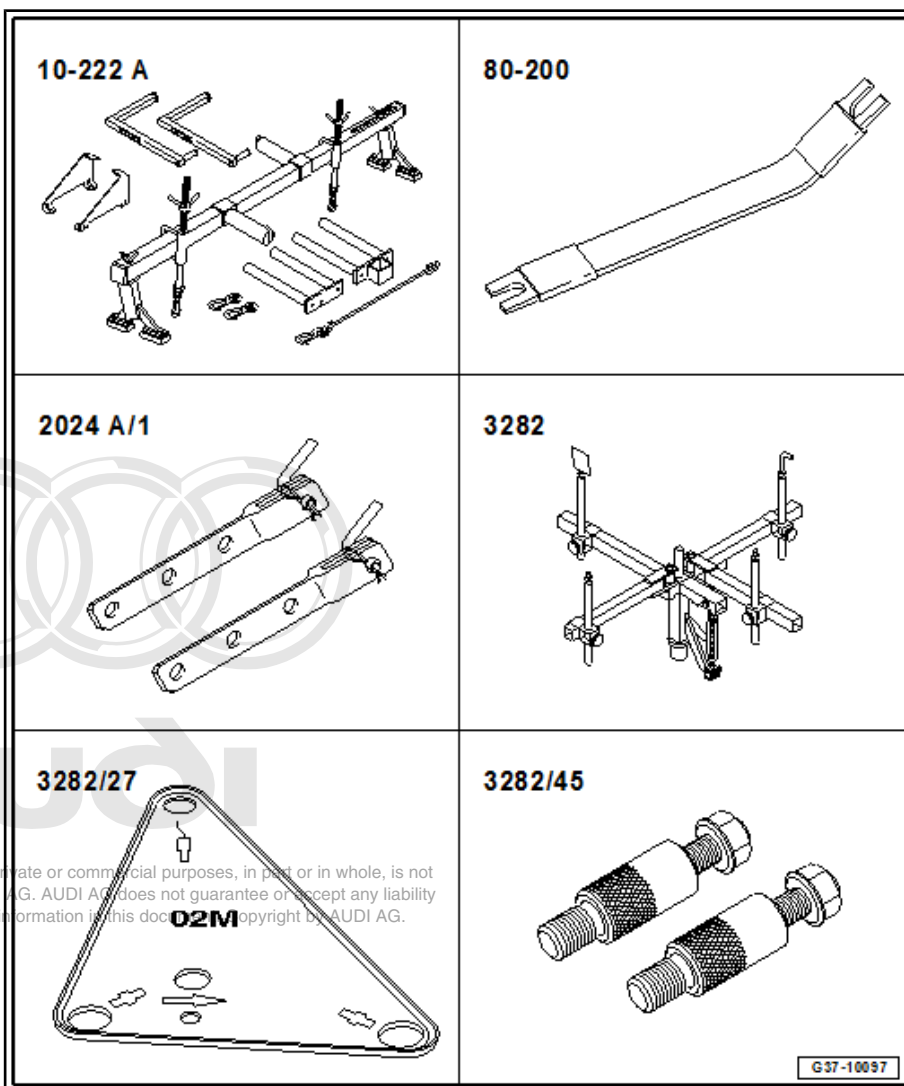
⇒ [“2.1.6 Removing gearbox - vehicles with 2.0 ltr. TDI engine \(EA 288, generation I\)”, page 132](#)

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2.1.1 Removing gearbox - vehicles with 1.4 ltr. TFSI engine

Special tools and workshop equipment required

- ◆ Support bracket - 10-222A-
- ◆ Removal lever - 80-200-
- ◆ Extension -2024A/1- of lifting tackle - 2024A-
- ◆ Gearbox support - 3282-
- ◆ Adjustment plate - 3282/27-
- ◆ Pins - 3282/45-



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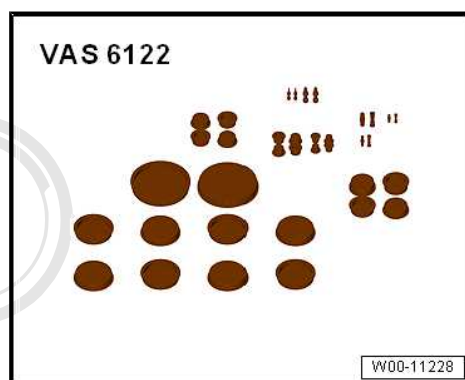
- ◆ Engine and gearbox jack - V.A.G 1383 A-



◆ Stepladder - VAS 5085-



◆ Engine bung set - VAS 6122-



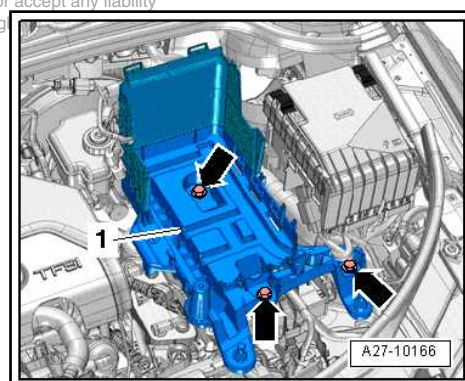
◆ Grease for clutch plate splines - G 000 100-

◆ Grease - G 000 450 02-

◆ Universal grease - G 052 735-

Procedure

- Switch off ignition.
- Remove battery and battery tray -1- ➔ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .



- Remove starter ⇒ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter
- Remove flange shaft (right-side) ⇒ [page 198](#) .



- Remove gate relay lever ⇒ [page 60](#) .
- Detach securing clip -3- from gearbox selector lever -1- and pull gear selector cable -2- off pin -arrow-.

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- Unscrew nut -1- and bolts -2- and place cable support bracket to one side together with cables.

- Remove nut -3- and detach earth wire.



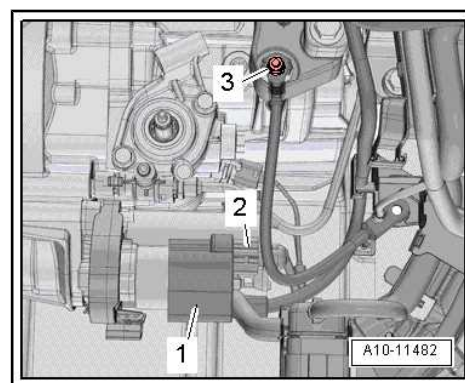
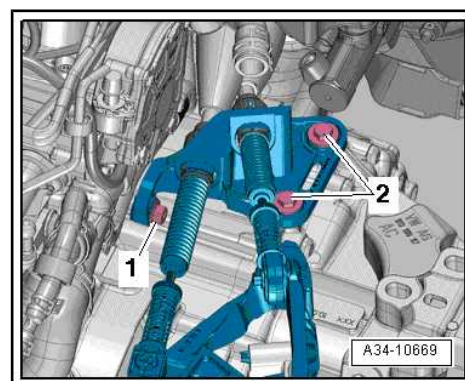
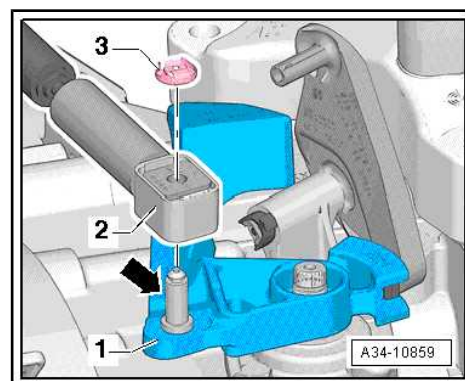
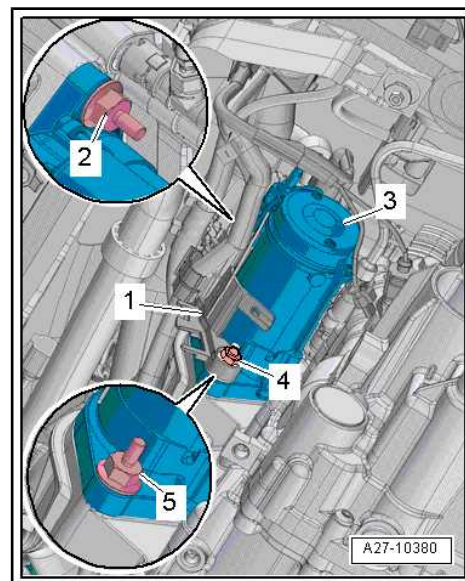
-Items 1 and 2- can be disregarded.



WARNING

Risk of skin irritation.

- ◆ *Always wear chemical-resistant protective gloves to prevent brake fluid from contacting skin.*



 Note

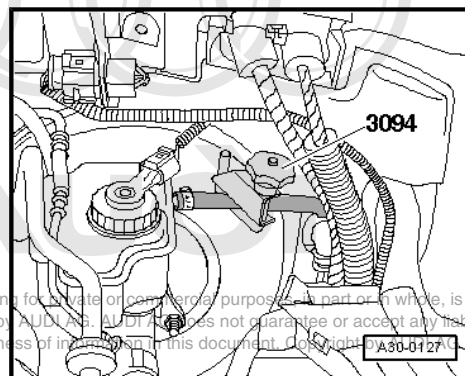
Place a lint-free cloth below clutch master cylinder to catch escaping brake fluid.

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

 Note

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- ◆ *In the following steps make sure that no brake fluid escapes onto the longitudinal member or onto the gearbox. If this does happen, clean the affected area thoroughly.*
- ◆ *Clamping off the supply hose with the hose clamp -3094- will cause a permanent deformation.*
- ◆ *However, this does not damage the supply hose.*
- ◆ *After removing the hose clamp -3094- , the supply hose must be returned to its original shape.*



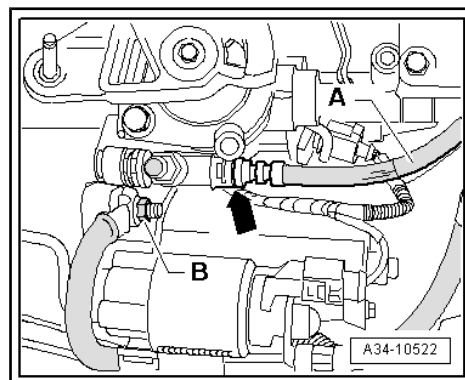
 Note

Place a lint-free cloth below bleeder connection to catch escaping brake fluid.

- Pull out retaining clip -arrow- as far as it will go and disconnect pipe -A- from bleeder connection.

 Note

-Item B- can be disregarded.



- Seal off open lines and connections with clean plugs from engine bung set - VAS 6122- .

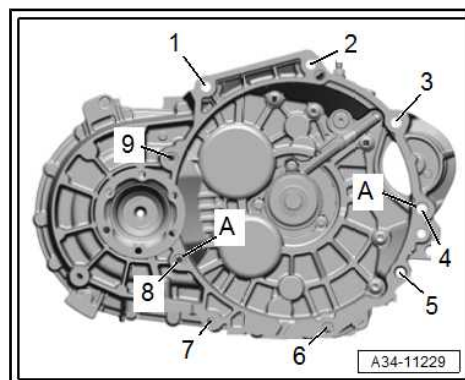


Caution

Catch escaping brake fluid.

- ◆ ***Do not operate clutch pedal after detaching pipe from bleeder connection for clutch slave cylinder.***

- Remove bolts -1, 2- securing gearbox to engine.



- Unclip sealing element -1- on both sides using removal lever - 80-200- .



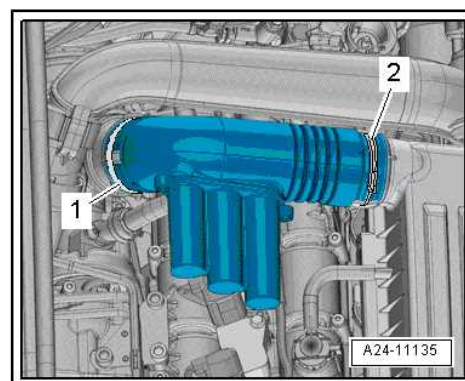
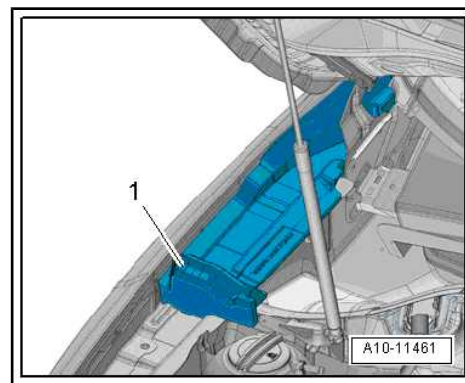
- Remove air cleaner housing ⇒ Rep. gr. 24 ; Air cleaner; Removing and installing air cleaner housing .
- Release hose clip -1- and detach air pipe.

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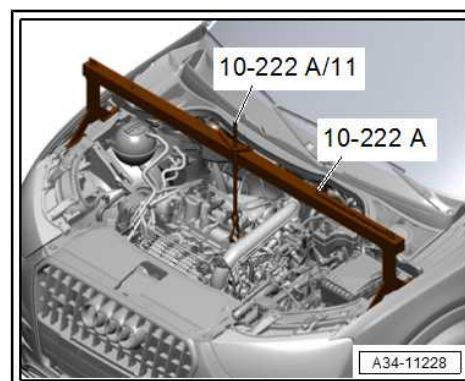


Note

-Item 2- can be disregarded.



- Set up support bracket - 10-222A- with spindle -10-222A /11- on wing mounting flanges, as shown in illustration.
- Engage hook of spindle (left-side) in engine lifting eye.
- Take up weight of engine/gearbox assembly slightly with spindle; do not lift.

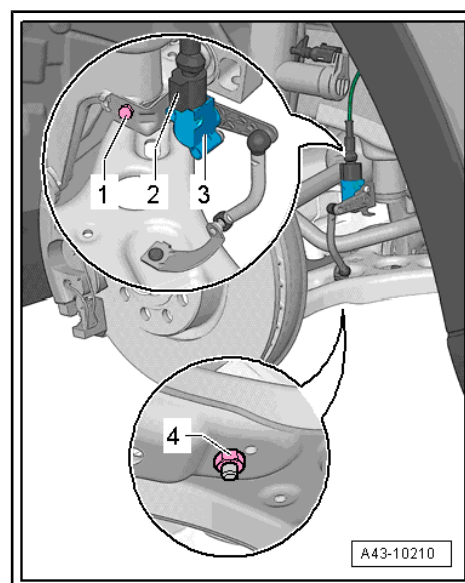


- If fitted, remove nut -4- and bolt -1- on both sides and place front vehicle level sender -3- to one side.

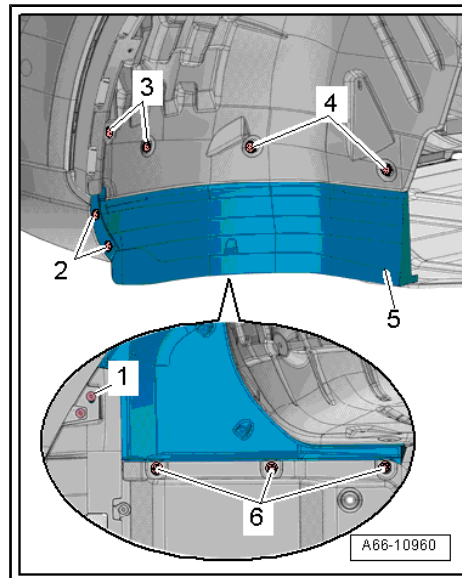


Note

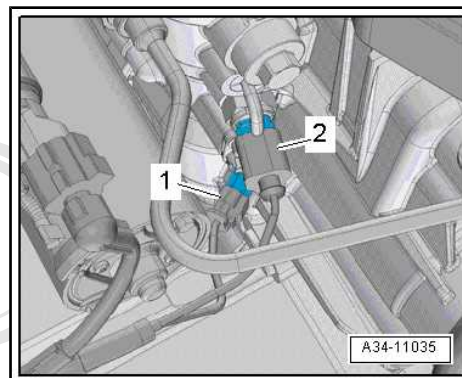
-Item 2- can be disregarded.



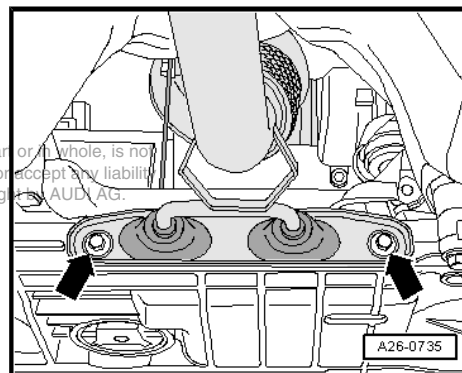
- Remove wheel spoiler -5- (left-side) ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liner; Exploded view - wheel housing liner (front) .
- Remove front wheel (left-side) ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .



- Unplug electrical connectors:
- 1 - Gearbox neutral position sender - G701-
- 2 - Reversing light switch - F4-



- Remove bolts -arrows- for exhaust pipe bracket from sub-frame.



- Disconnect exhaust system at clamp -arrow-.

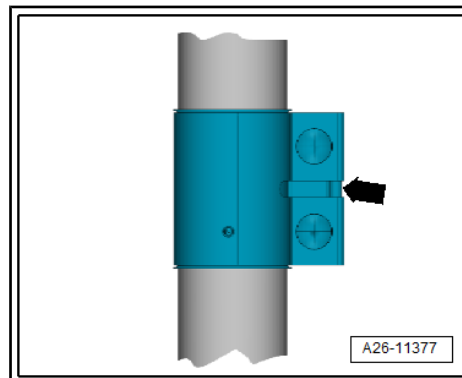


Caution

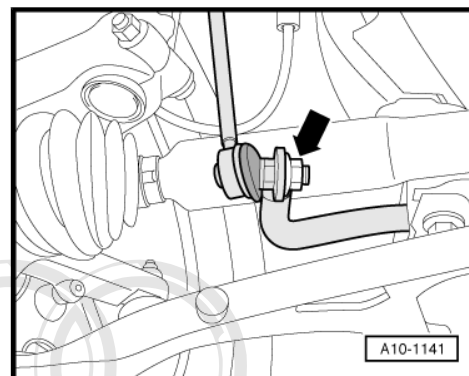
Risk of damage to flexible joint.

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

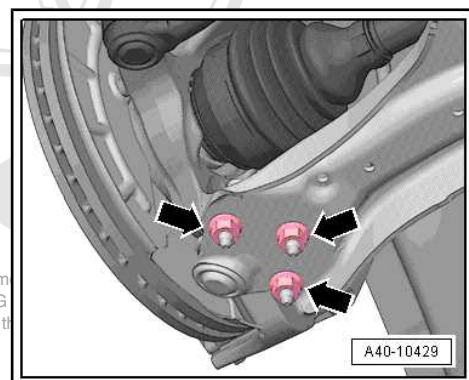
- Tie up front exhaust pipe.



- Unscrew nut -arrow- for coupling rod on anti-roll bar (left-side).



- Remove nuts -arrows- securing swivel joint (left-side).
- Disengage swivel joint (left-side) from wishbone.
- Unbolt drive shaft -arrow- (left-side) from flange shaft ➔ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .



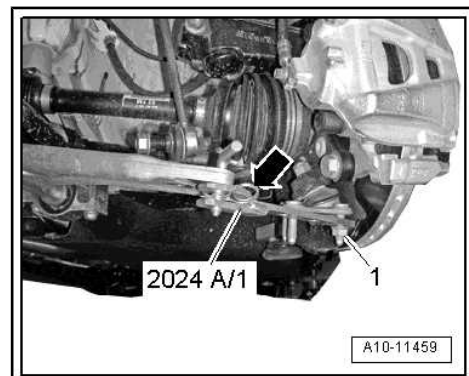
- Swivel suspension strut (left-side) outwards and support with extension -2024A/1- as shown in illustration.



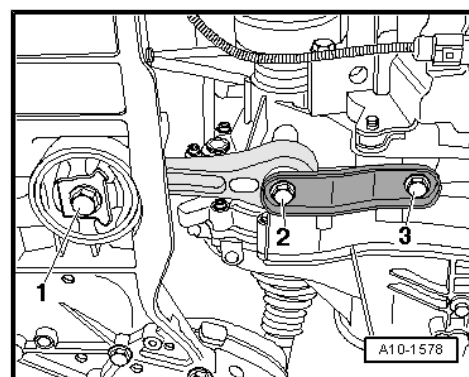
WARNING

Risk of accident if parts of support are not properly secured.

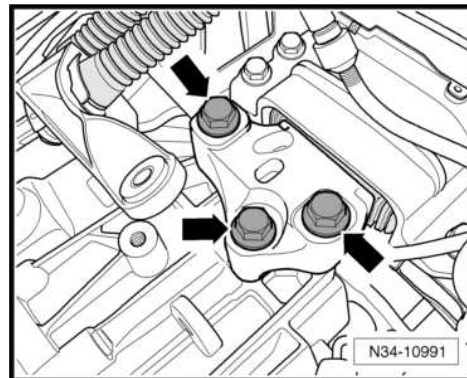
- ◆ *Secure locking pin and swivel joint with retaining clip -arrow- and nut -1-.*



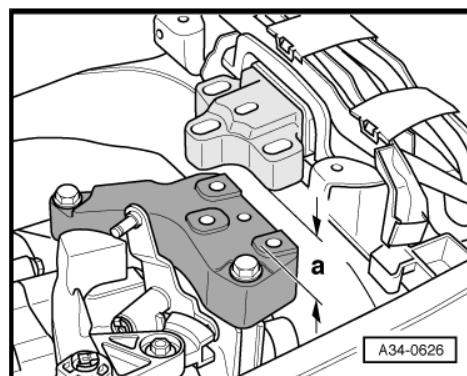
- Swivel drive shaft (left-side) towards front.
- Remove bolts -1, 2, 3- and detach pendulum support.



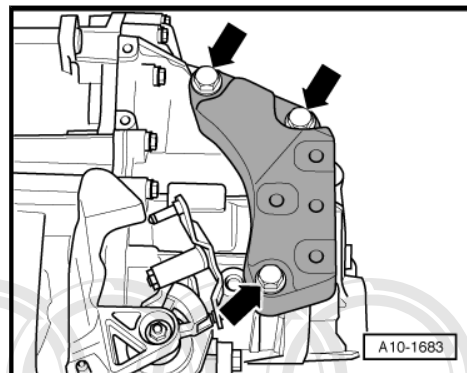
- Remove bolts -arrows- from gearbox mounting.



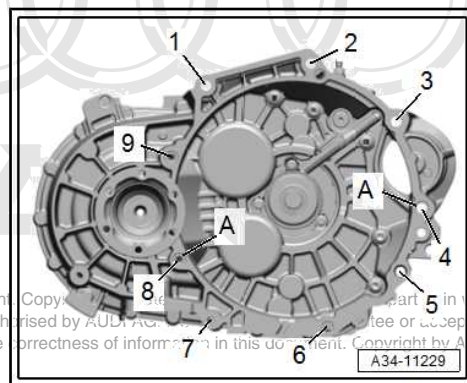
- Adjust spindles of support bracket - 10-222A- to lower gearbox by distance -a-.
- Dimension -a- = 60 mm



- Remove bolts -arrows- and detach gearbox support from gearbox.



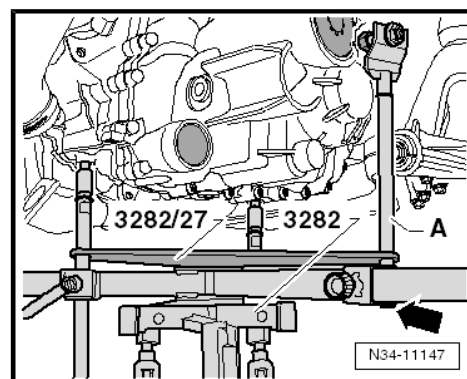
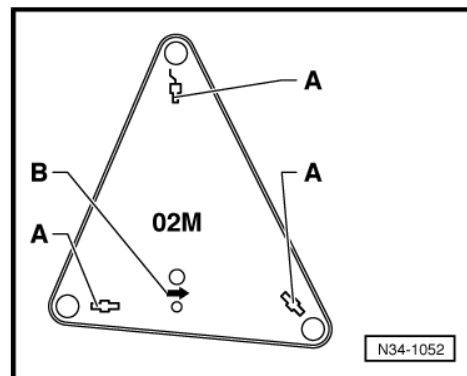
- Remove bolts -5, 6, 7, 9- securing gearbox to engine.



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To remove gearbox "0BB" set up gearbox support - 3282- with adjustment plate - 3282/27- .

- Insert gearbox support - 3282- in engine and gearbox jack - V.A.G 1383A- .
- Align arms of gearbox support according to holes in adjustment plate.
- Screw in support elements -A-, as illustrated on adjustment plate.
- Place engine and gearbox jack - V.A.G 1383A- underneath vehicle.
- The arrow symbol -B- on the adjustment plate points in the direction of travel.
- Align adjustment plate parallel with gearbox.
- Pin -A- should be flush with underside of guide of gearbox support -arrow-.



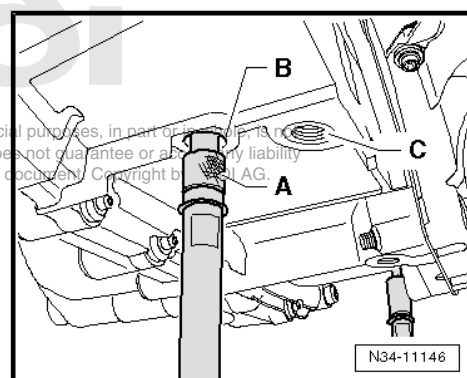
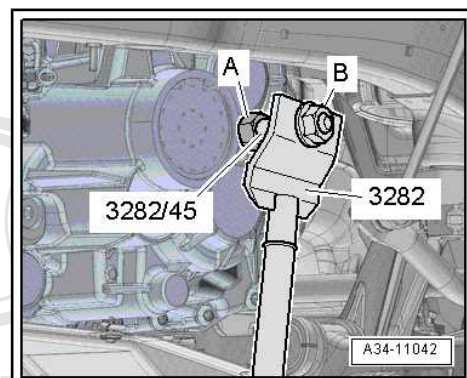
- Screw bolt - 3282/45- into threaded hole in gearbox housing as shown in illustration.



Note

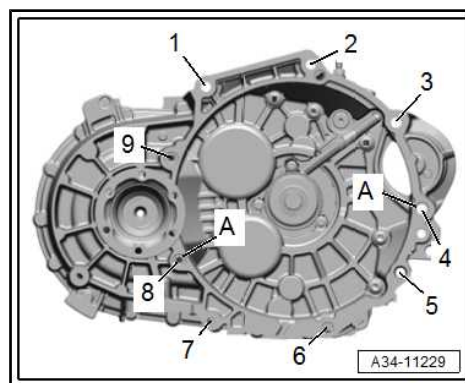
The bolt - 3282/45- cannot be screwed in completely, so use an M10 nut -item A- (approx 5 mm thick) as a spacer.

- Secure gearbox to gearbox support - 3282- with flange nut -B-.
- Insert pin -A- of gearbox support - 3282- into attachment point -B- next to rear threaded hole -C- for pendulum support.



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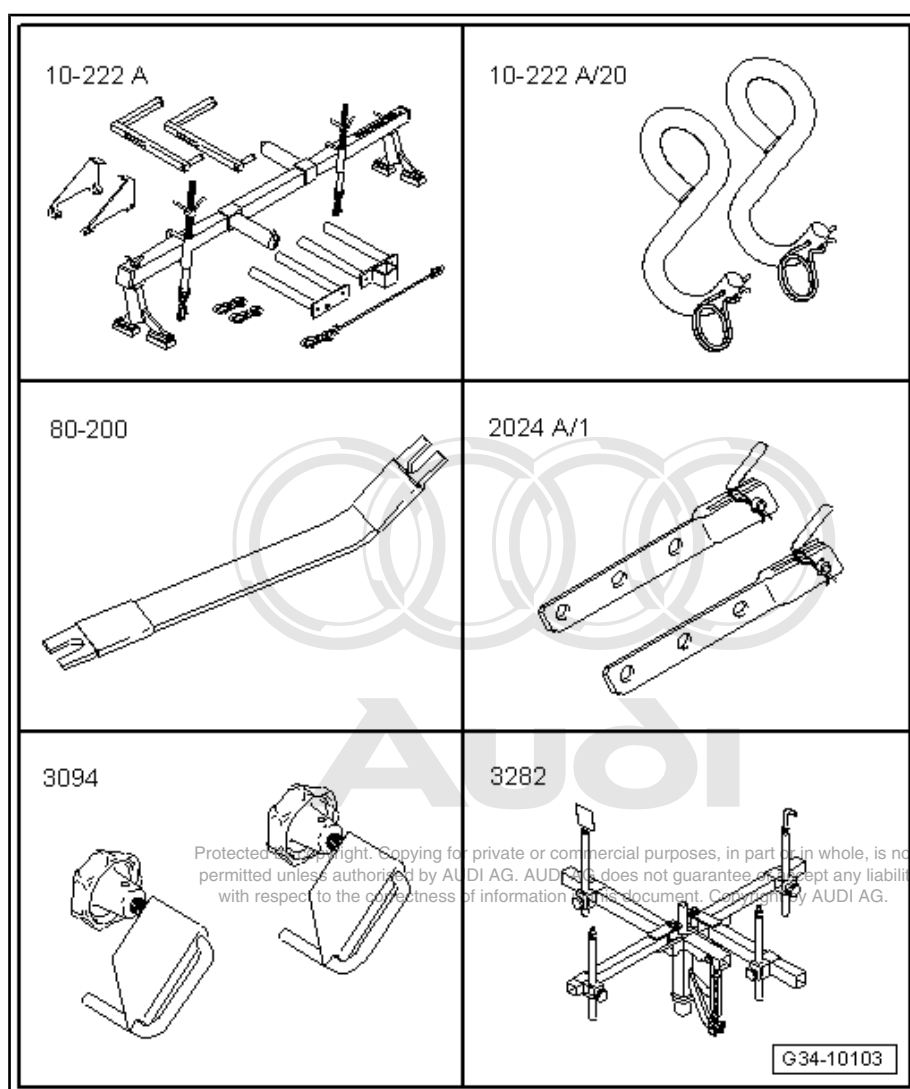
- Remove last bolt -8- securing gearbox to engine.
- Press gearbox off engine (dowel sleeves).
- Carefully lower gearbox.



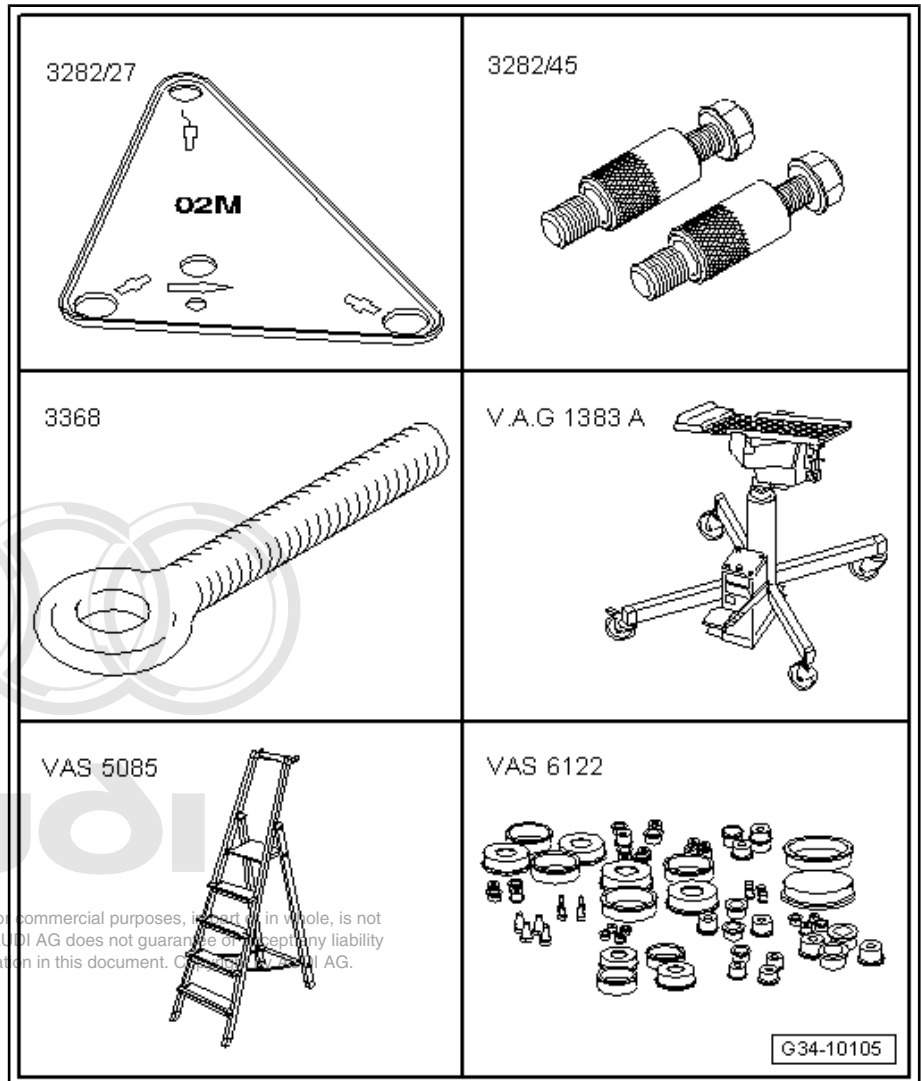
2.1.2 Removing gearbox - vehicles with 2.0 ltr. TFSI engine (generation II)

Special tools and workshop equipment required

- ◆ Support bracket - 10-222A-
- ◆ Adapters - 10-222A/20-
- ◆ Removal lever - 80-200-
- ◆ Extension -2024A/1- of lifting tackle - 2024A-
- ◆ Hose clamps, up to 25 mm - 3094-
- ◆ Gearbox support - 3282-

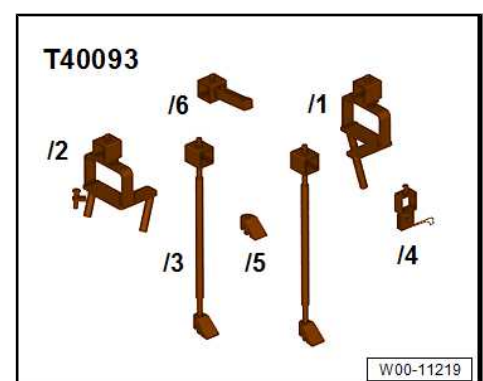


- ◆ Adjustment plate - 3282/27-
- ◆ Bolts - 3282/45-
- ◆ Eye-head bolt - 3368-
- ◆ Engine and gearbox jack - V.A.G 1383 A-
- ◆ Stepladder - VAS 5085-
- ◆ Engine bung set - VAS 6122-



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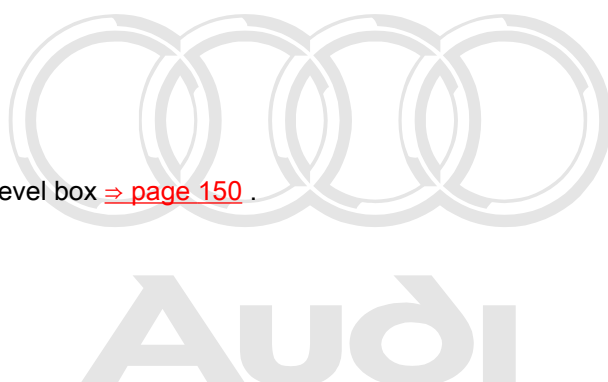
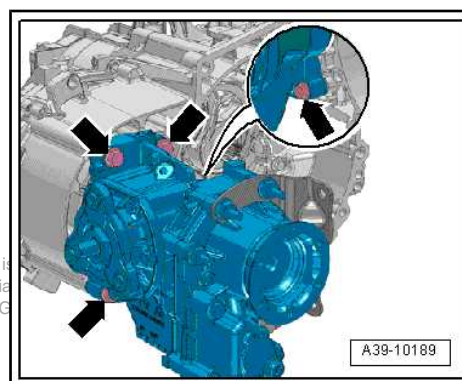
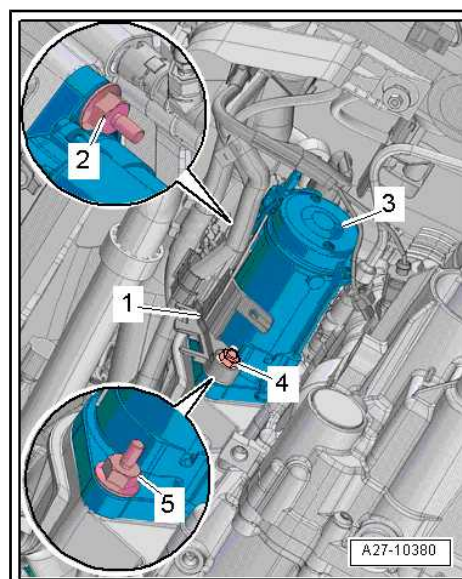
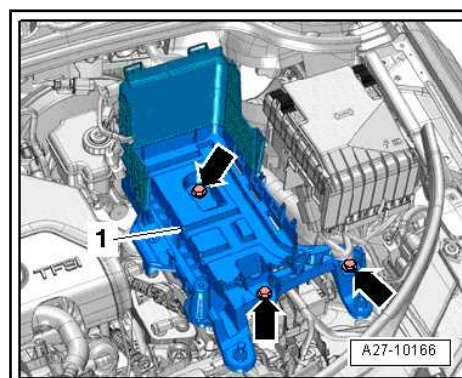
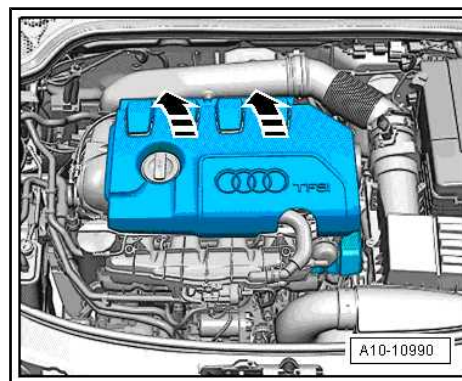
- ◆ -T40093/6- from engine support supplement set - T40093-



- ◆ Grease for clutch plate splines - G 000 100-
- ◆ Grease - G 000 450 02-
- ◆ Universal grease - G 052 735-
- ◆ Flange nut M10 or nut with washer
- ◆ Nut M10, approx. 5 mm thick

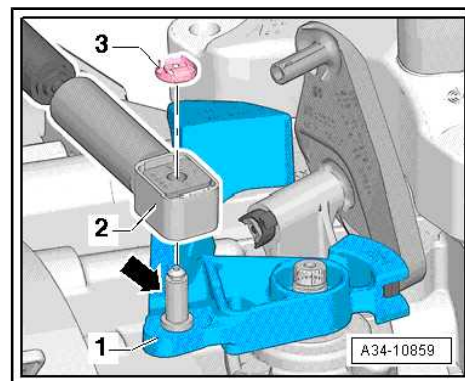
Procedure

- Remove engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .
- Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .
- Remove starter ⇒ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter
- Remove bevel box ⇒ [page 150](#) .



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- Remove gate relay lever ➔ [page 60](#) .
- Detach securing clip -3- from gearbox selector lever -1- and pull gear selector cable -2- off pin -arrow-.

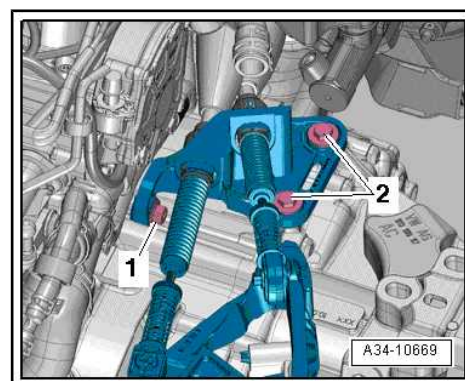


- Unscrew nut -1- and bolts -2- and place cable support bracket to one side together with cables.

 **WARNING**

Risk of skin irritation.

◆ *Always wear chemical-resistant protective gloves to prevent brake fluid from contacting skin.*



Note

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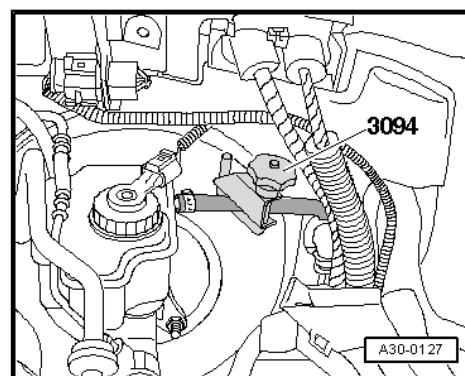
Place a lint-free cloth below clutch master cylinder to catch escaping brake fluid.

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



Note

- ◆ *In the following steps make sure that no brake fluid escapes onto the longitudinal member or onto the gearbox. If this does happen, clean the affected area thoroughly.*
- ◆ *Clamping off the supply hose with the hose clamp -3094- will cause a permanent deformation.*
- ◆ *However, this does not damage the supply hose.*
- ◆ *After removing the hose clamp -3094- , the supply hose must be returned to its original shape.*



 Note

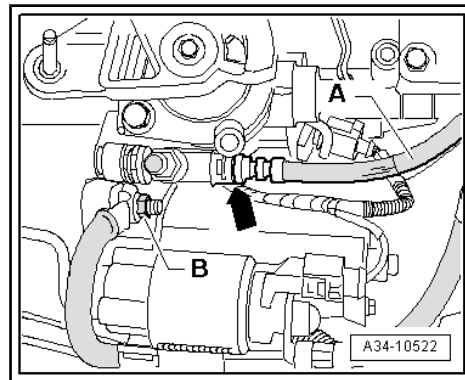
Place a lint-free cloth below bleeder connection to catch escaping brake fluid.

- Pull out retaining clip -arrow- as far as it will go and disconnect pipe -A- from bleeder connection.

 Note

-Item B- can be disregarded.

- Seal off open lines and connections with clean plugs from engine bung set - VAS 6122- .

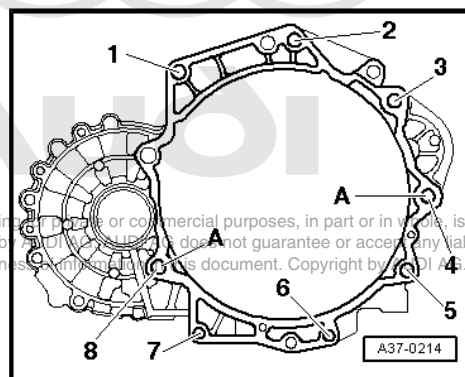


Caution

Catch escaping brake fluid.

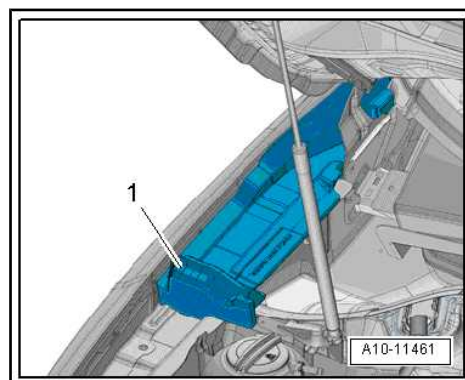
- ◆ *Do not operate clutch pedal after detaching pipe from bleeder connection for clutch slave cylinder.*

- Remove bolts -1, 2- securing gearbox to engine.

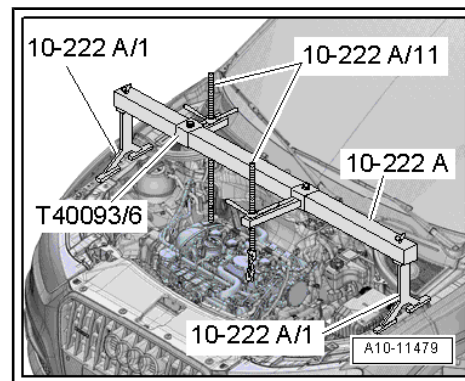


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- Unclip sealing element -1- on both sides using removal lever - 80-200- .



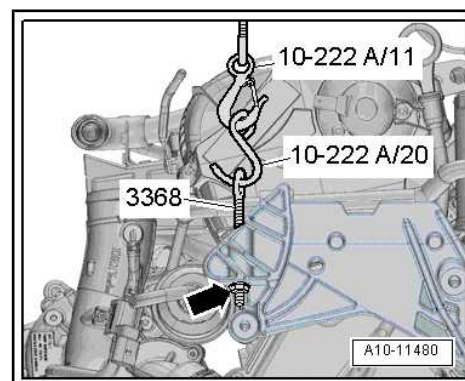
- Set up support bracket - 10-222A- with spindles -10-222A /11- on wing mounting flanges, as shown in illustration.
- Engage hook of spindle (left-side) in engine lifting eye.



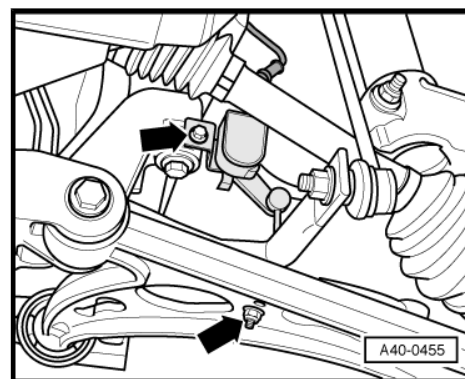
WARNING

Risk of accident if threaded attachment comes loose.

- ◆ *To ensure that the eye-head bolt - 3368- is securely attached, screw on a flange nut or nut with washer -arrow- at least 6 turns.*

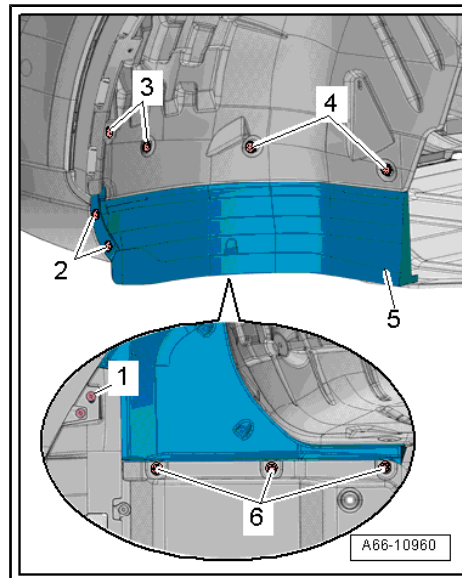


- Secure eye-head bolt - 3368- with M10 flange nut or nut with washer to engine support as shown in illustration.
- Hook spindle - 10-222A/11- with adapter - 10-222A/20- (right-side) onto eye-head bolt - 3368- .
- Take up weight of engine/gearbox assembly evenly with both spindles; do not lift.
- If fitted, remove front left vehicle level sender - G78- -arrows-.

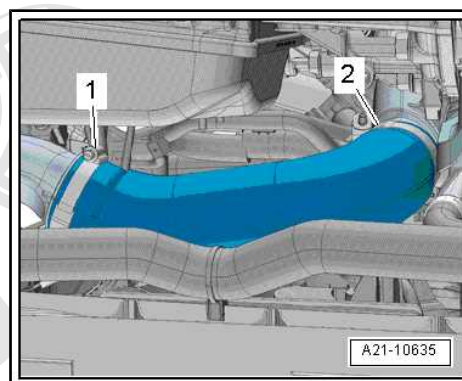


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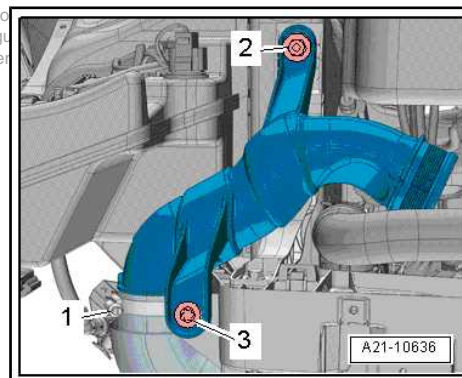
- Remove wheel spoiler -5- (left-side) ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liner; Exploded view - wheel housing liner (front) .
- Remove front wheel (left-side) ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .



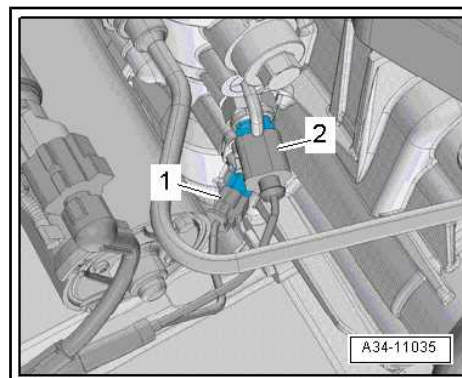
- Release hose clips -1 and 2- and remove air intake hose.



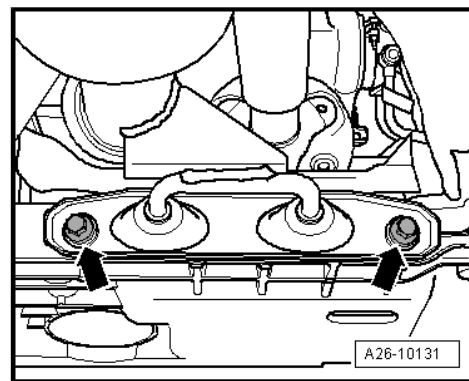
- Unscrew nut -2- and bolt -3-.
- Release hose clip -1- and detach air pipe.



- Unplug electrical connectors:
- 1 - Gearbox neutral position sender - G701-
- 2 - Reversing light switch - F4-



- Remove bolts -arrows- for exhaust pipe bracket from sub-frame.



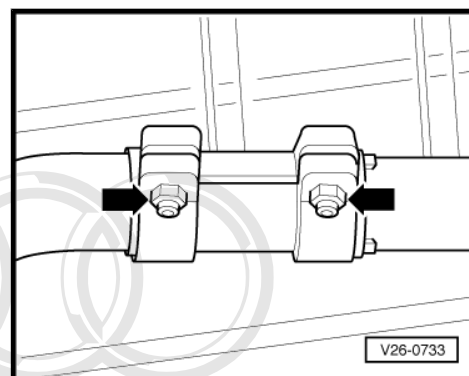
- Disconnect exhaust system at clamp -arrows-.



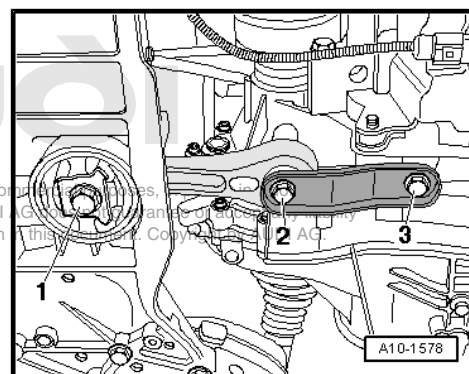
Caution

Risk of damage to flexible joint.

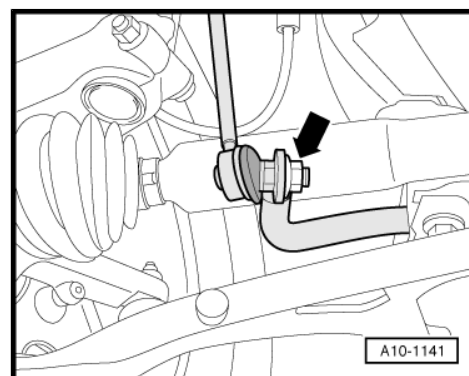
- ◆ *The flexible joint in the front exhaust pipe must not be bent further than 10°.*



- Tie up front exhaust pipe.
- Remove bolts -1, 2, 3- and detach pendulum support.



- Unscrew nut -arrow- for coupling rod on anti-roll bar (left-side).
- Unbolt drive shaft (left-side) from gearbox.



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- Remove nuts -arrows- securing swivel joint (left-side).
- Disengage swivel joint (left-side) from wishbone.
- Detach drive shaft (left-side) from gearbox and tie up ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .

 Note

Make sure you do not damage surface coating on drive shaft.

- Swivel suspension strut (left-side) outwards and support with extension -2024A/1- as shown in illustration.

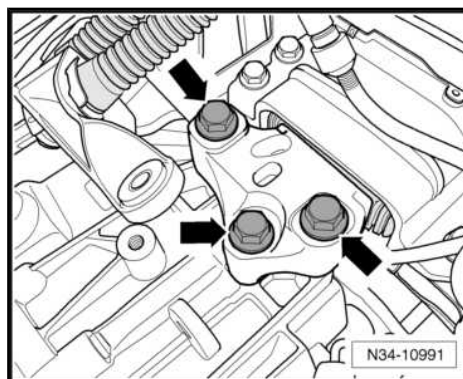
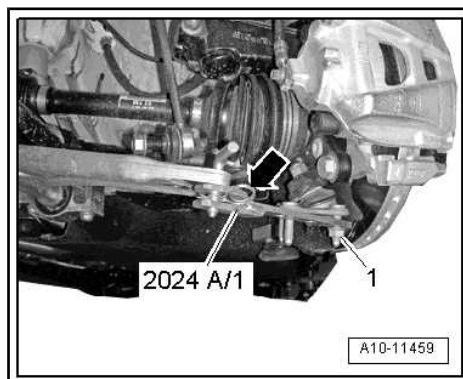
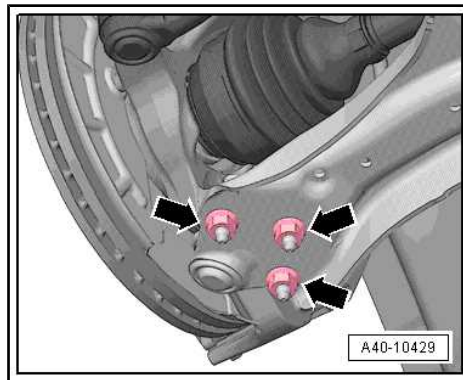


WARNING

Risk of accident if parts of support are not properly secured.

- ◆ *Secure locking pin and swivel joint with retaining clip -arrow- and nut -1-.*

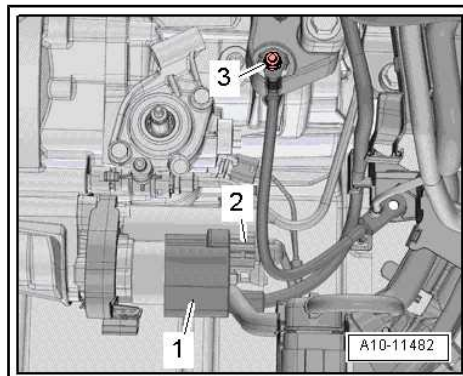
- Swivel drive shaft (left-side) towards front.
- Remove bolts -arrows- from gearbox mounting.



- Remove nut -3- and detach earth wire.

 Note

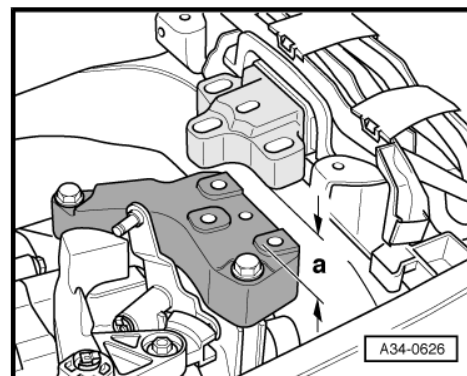
-Items 1 and 2- can be disregarded.



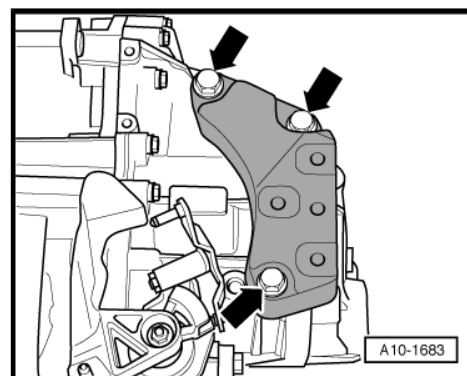
- Adjust spindles of support bracket - 10-222A- to lower gearbox by distance -a-.
- Dimension -a- = 60 mm

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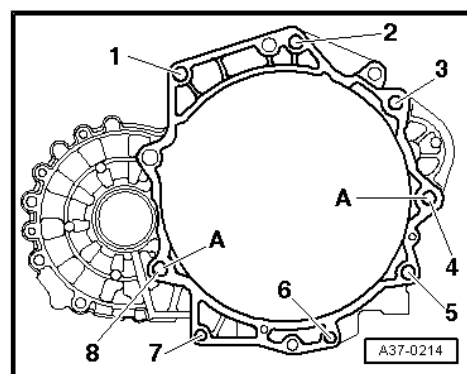
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- Remove bolts -arrows- and detach gearbox bracket from gearbox.

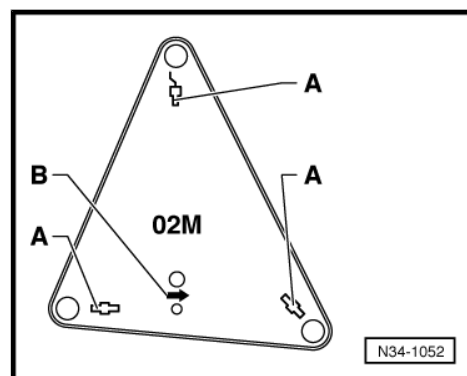


- Remove bolts -6, 7, 8- securing gearbox to engine.

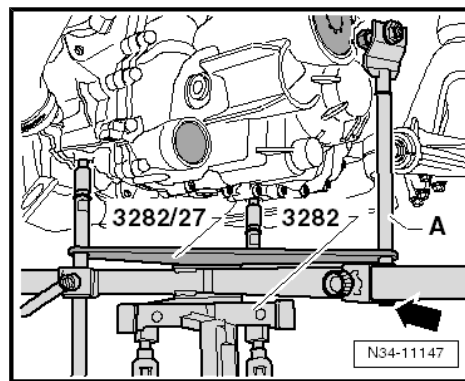


To remove gearbox "02Q" set up gearbox support - 3282- with adjustment plate - 3282/27- .

- Insert gearbox support - 3282- in engine and gearbox jack - V.A.G 1383A- .
- Align arms of gearbox support according to holes in adjustment plate.
- Screw in support elements -A-, as illustrated on adjustment plate.
- Place engine and gearbox jack - V.A.G 1383A- underneath vehicle.
- The arrow symbol -B- on the adjustment plate points in the direction of travel.



- Align adjustment plate parallel with gearbox.
- Pin -A- should be flush with underside of guide of gearbox support -arrow-.



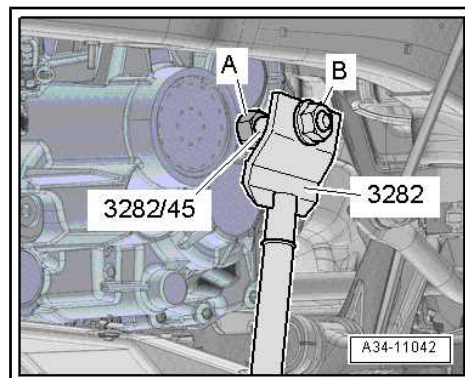
- Screw bolt - 3282/45- into threaded hole in gearbox housing as shown in illustration.



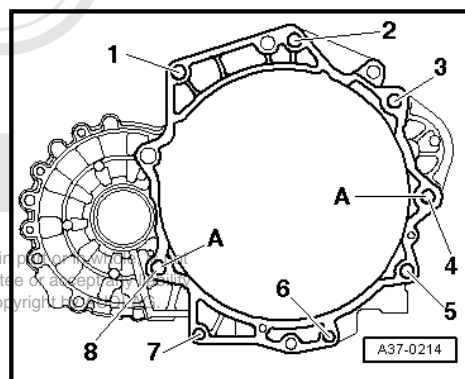
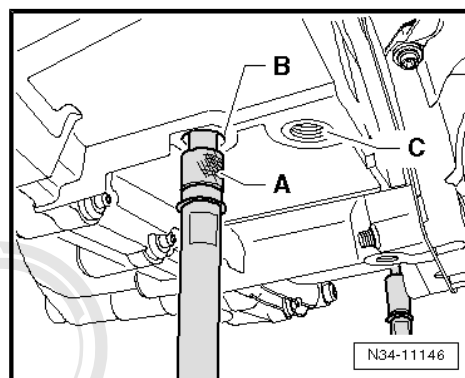
Note

The bolt - 3282/45- cannot be screwed in completely, so use an M10 nut -item A- (approx 5 mm thick) as a spacer.

- Secure gearbox to gearbox support - 3282- with flange nut -B-.
- Insert pin -A- of gearbox support - 3282- into attachment point -B- next to rear threaded hole -C- for pendulum support.



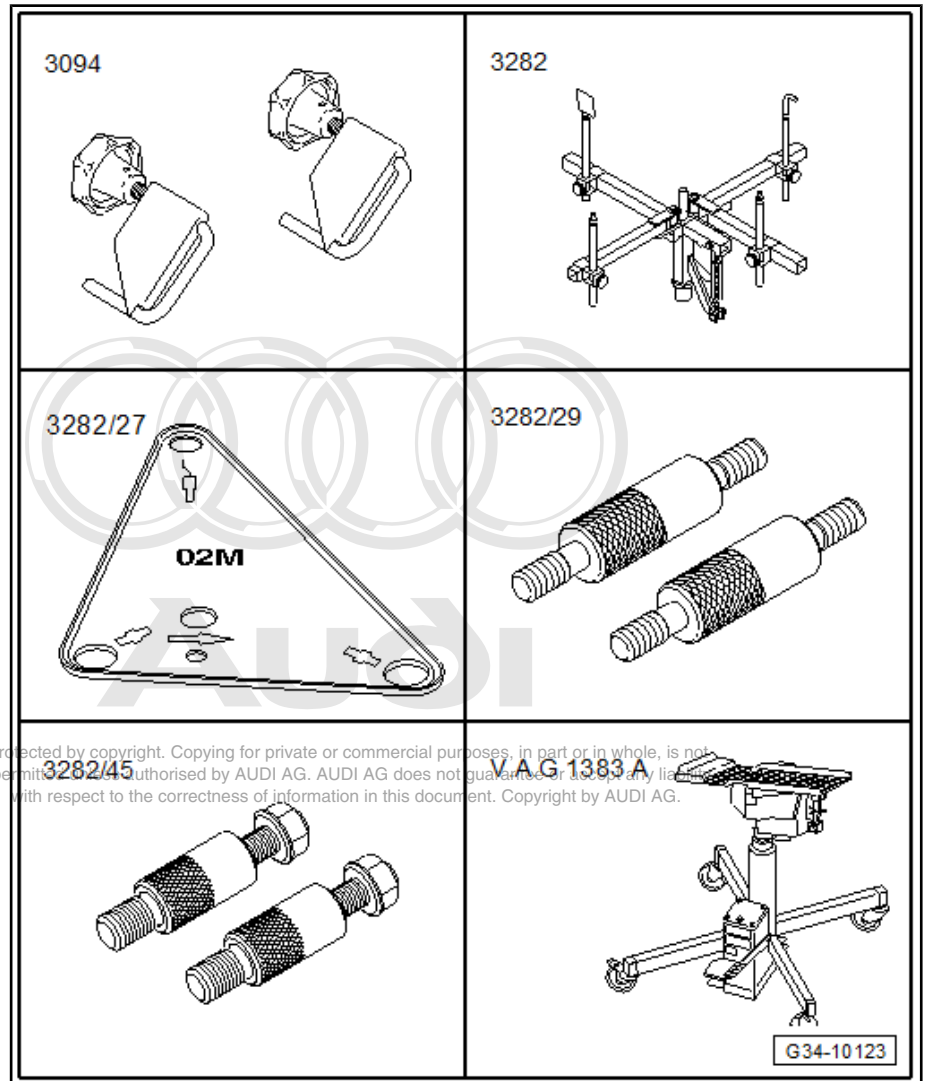
- Remove last bolt -5- securing gearbox to engine.
- Press gearbox off engine (dowel sleeves).
- Carefully lower gearbox.



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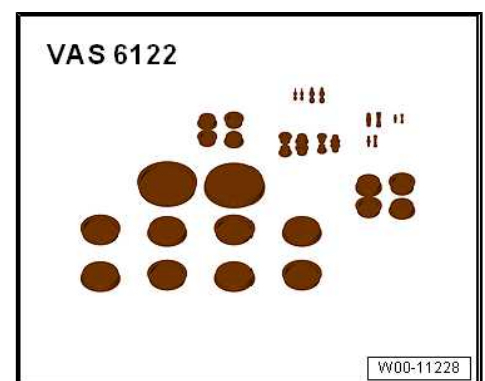
2.1.3 Removing gearbox - vehicles with 2.0 ltr. TFSI engine (generation III)

- ◆ Hose clamps, up to 25 mm - 3094-
- ◆ Gearbox support - 3282-
- ◆ Adjustment plate - 3282/27-
- ◆ Pins - 3282/29-
- ◆ Bolts - 3282/45-
- ◆ Engine and gearbox jack - V.A.G 1383 A-



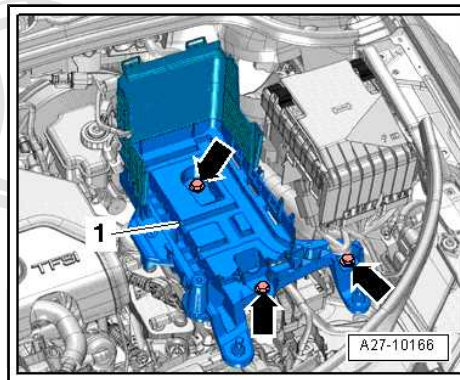
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- ◆ Engine bung set - VAS 6122-

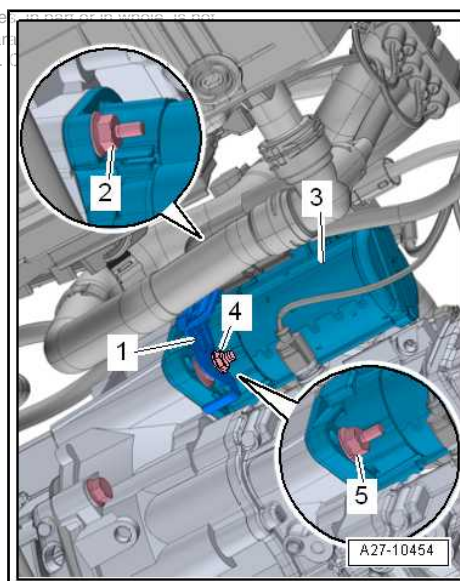


Procedure

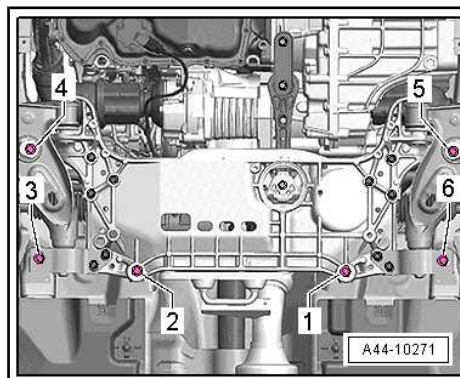
- Remove battery tray -1- ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .



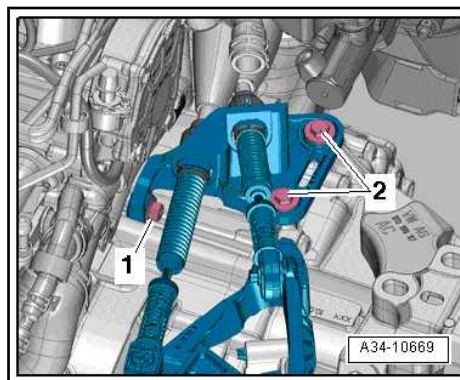
- Remove starter -3- ⇒ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter .



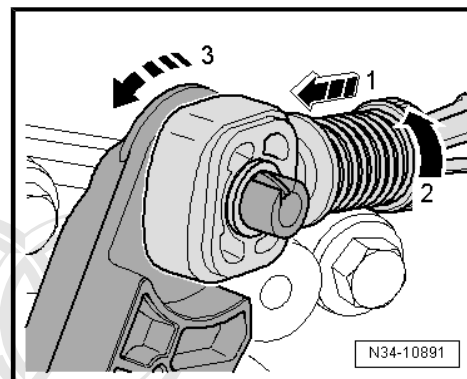
- Remove subframe -9- without steering rack (fit locating pins - T10096-) ⇒ Running gear, axles, steering; Rep. gr. 40 ; Subframe; Removing and installing subframe without steering rack .
- Remove wheel spoiler (front left) ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liner; Exploded view - wheel housing liner (front) .



- Unscrew nut -1- and bolts -2- and place cable support bracket to one side together with cables.



- Pull locking mechanism forwards -arrow 1- onto stop and then turn to left -arrow 2- to lock.
- Press gate relay lever forwards -arrow 3- and pull gate selector cable out of cable end-piece.



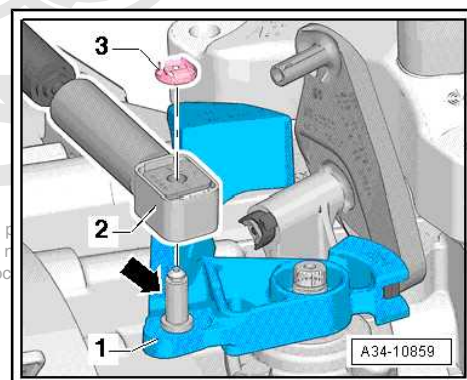
- Detach securing clip -3- for gear selector cable from gearbox selector lever -1- and pull selector cable -2- off pin -arrow-.



Note

The gate relay lever must be removed before detaching the cable end-piece ➔ [page 61](#) .

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Note

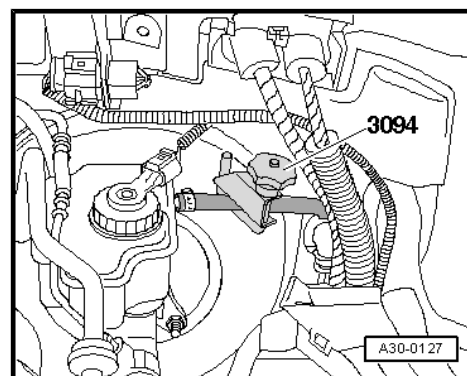
In the following steps make sure that no brake fluid escapes onto the longitudinal member or onto the gearbox below. If this does happen, clean the affected area thoroughly.

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



Note

- ◆ *Clamping off the supply hose with the hose clamp - 3094- will cause a permanent deformation.*
- ◆ *However, this does not damage the supply hose.*
- ◆ *After removing the hose clamp -3094- , the supply hose must be returned to its original shape.*



- Place lint-free cloth under bleeder connection.
- Pull out retaining clip -arrow- as far as it will go and disconnect pipe/hose assembly -A- from bleeder connection.

 Note

-Item B- can be disregarded.

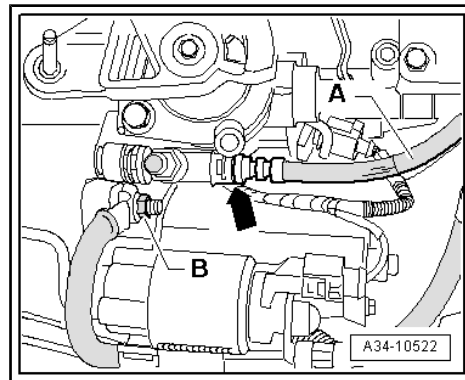
- Seal off open lines and connections with clean plugs from engine bung set - VAS 6122- .



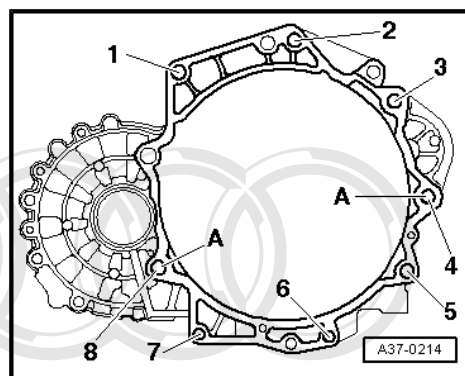
Caution

Catch escaping brake fluid.

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



- Remove bolts -1, 2- securing gearbox to engine.

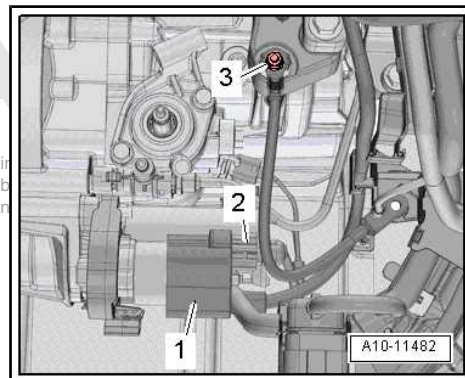


- Remove nut -3- and detach earth wire.

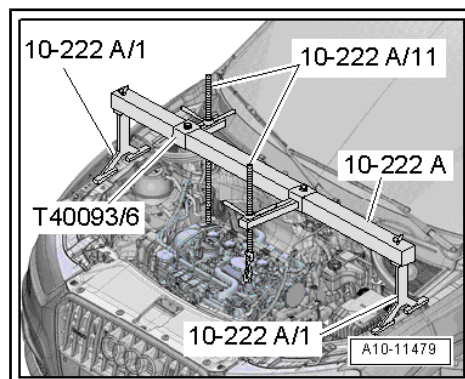
 Note

-Items 1 and 2- can be disregarded.

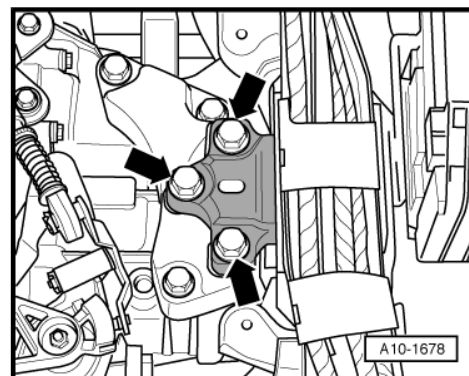
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- Support engine in installation position ⇒ Rep. gr. 10 ; Assembly mountings; Supporting engine in installation position .

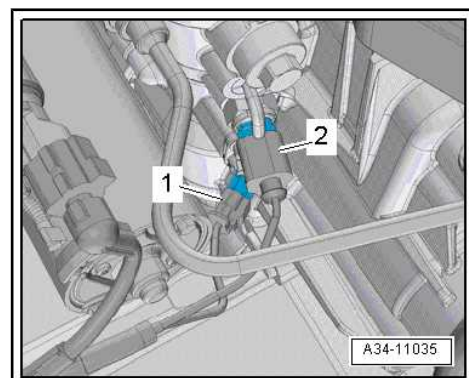


- Remove bolts -arrows- from gearbox mounting.

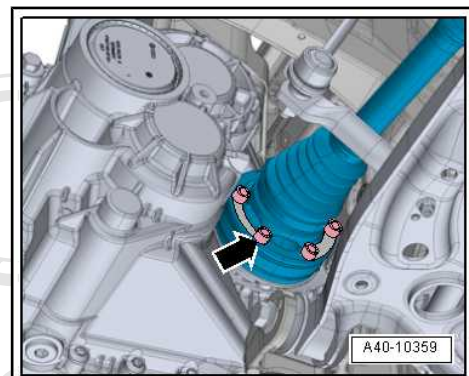


- Disconnect electrical connections on gearbox (front left).

- 1 - Gearbox neutral position sender - G701-
- 2 - Reversing light switch - F4-



- Unbolt drive shaft -arrow- from flange shafts on both sides and tie up to rear ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .



Vehicles with four-wheel drive:

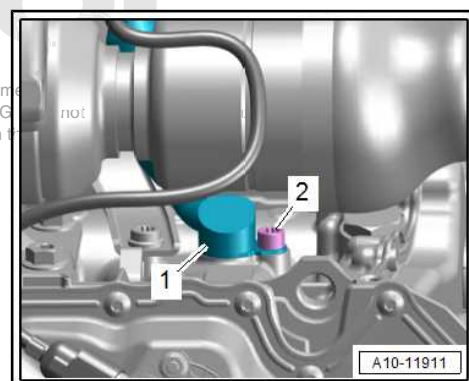


Note

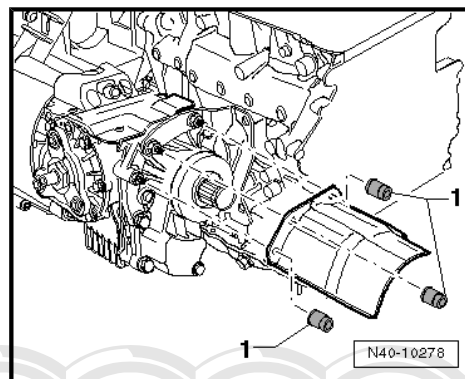
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Place cloth below connection to catch escaping engine oil.

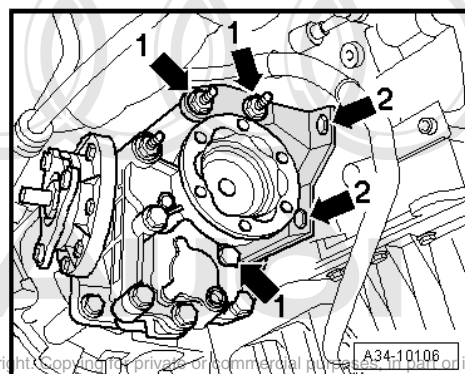
- Remove bolt -2-, disconnect oil supply connection -1- from cylinder block and press to one side.



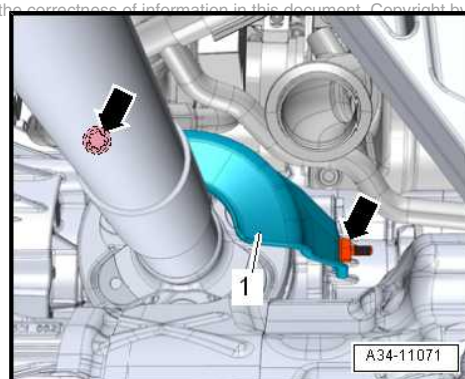
- Remove nuts -1- and detach heat shield for drive shaft (right-side).



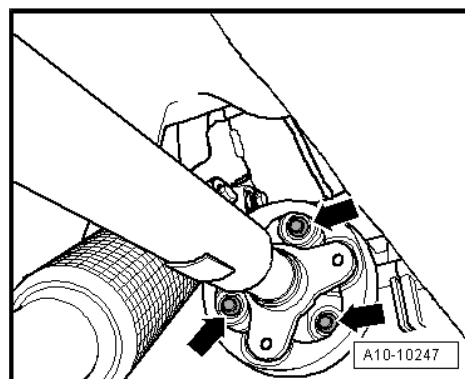
- Remove bolts -1, 2- and detach bracket for bevel box.



- Remove bolts -arrows- and detach heat shield -1-.



- Mark position of flexible coupling relative to bevel box flange for re-installation.
- Remove bolts -arrows- securing flexible coupling of propshaft to bevel box (counterhold triangular flange with suitable lever) ⇒ Rear final drive; Rep. gr. 39 ; Propshaft; Removing and installing propshaft .



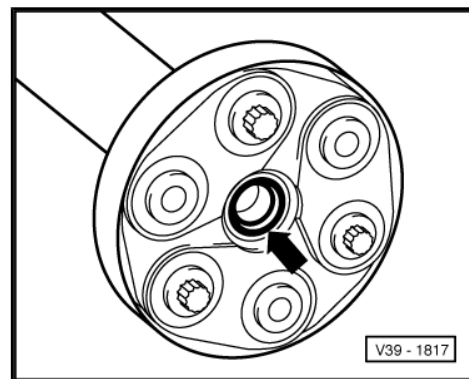
- Push engine/gearbox assembly slightly towards front of vehicle and then pull propshaft off bevel box.



Caution

The seal -arrow- in the propshaft flange can be damaged.

- ◆ *Push propshaft towards the rear and to the right as far as possible.*

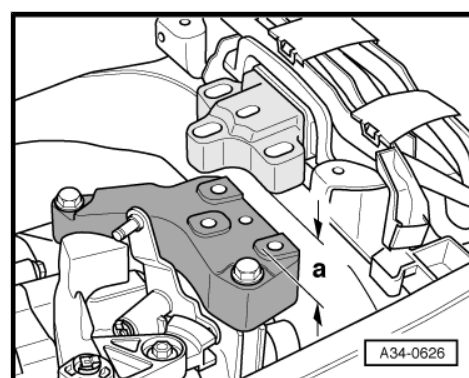


Note

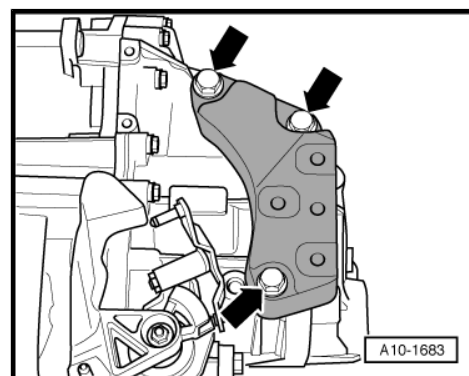
If seal is damaged propshaft must be renewed.

Continued for all vehicles:

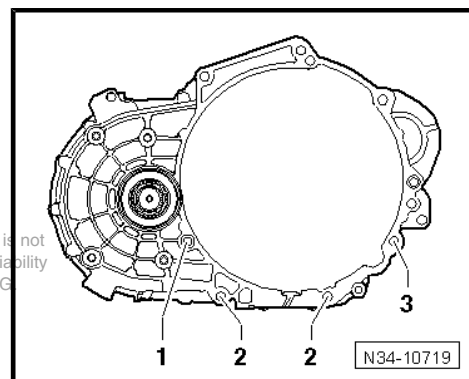
- Adjust spindles of support bracket - 10-222A- to lower gearbox by distance -a-.
- Dimension -a- = 60 mm



- Remove bolts -arrows- and detach gearbox support from gearbox.



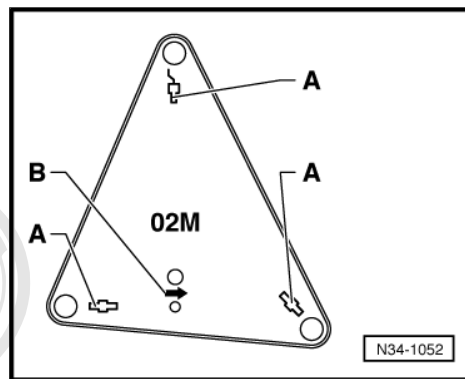
- Remove bolts -2, 3- securing gearbox to engine.



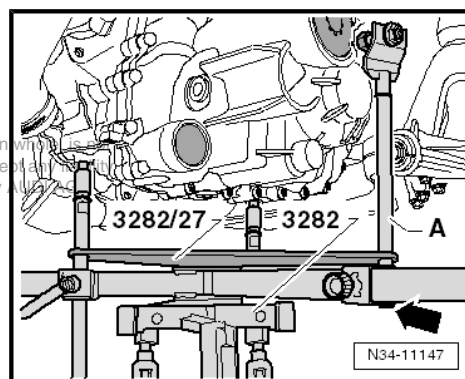
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To remove gearbox "02Q" set up gearbox support - 3282- with adjustment plate - 3282/27- .

- 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.
- Screw in support elements -A-, as illustrated on adjustment plate.
- Place engine and gearbox jack - V.A.G 1383 A- underneath vehicle.
- The arrow symbol -B- on the adjustment plate points in the direction of travel.
- Align adjustment plate parallel with gearbox.
- Pin -A- should be flush with underside of guide of gearbox support -arrow-.



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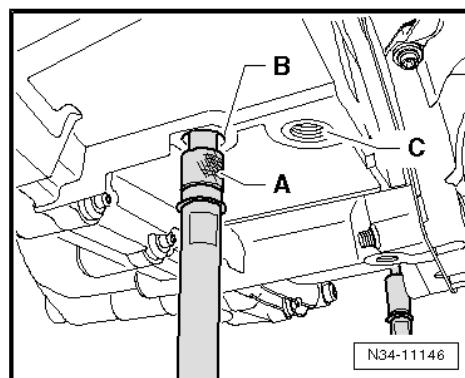
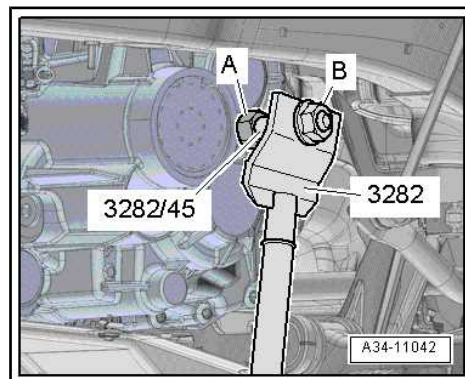
- Screw bolt - 3282/45- into threaded hole in gearbox housing as shown in illustration.



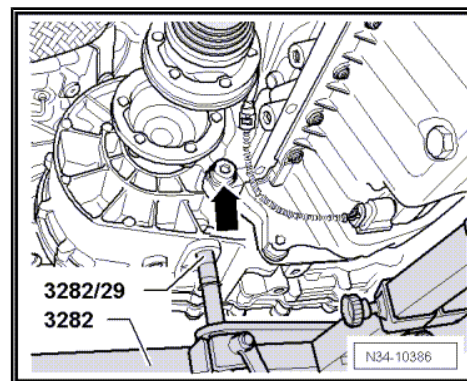
Note

The bolt - 3282/45- cannot be screwed in completely, so use an M10 nut -item A- (approx 5 mm thick) as a spacer.

- Secure gearbox to gearbox support - 3282- with flange nut -B-.
- Insert pin -A- of gearbox support - 3282- into attachment point -B- next to rear threaded hole -C- for pendulum support.



- Remove last engine/gearbox securing bolt -arrow-.
- Press gearbox off engine (dowel sleeves).
- Carefully lower gearbox.

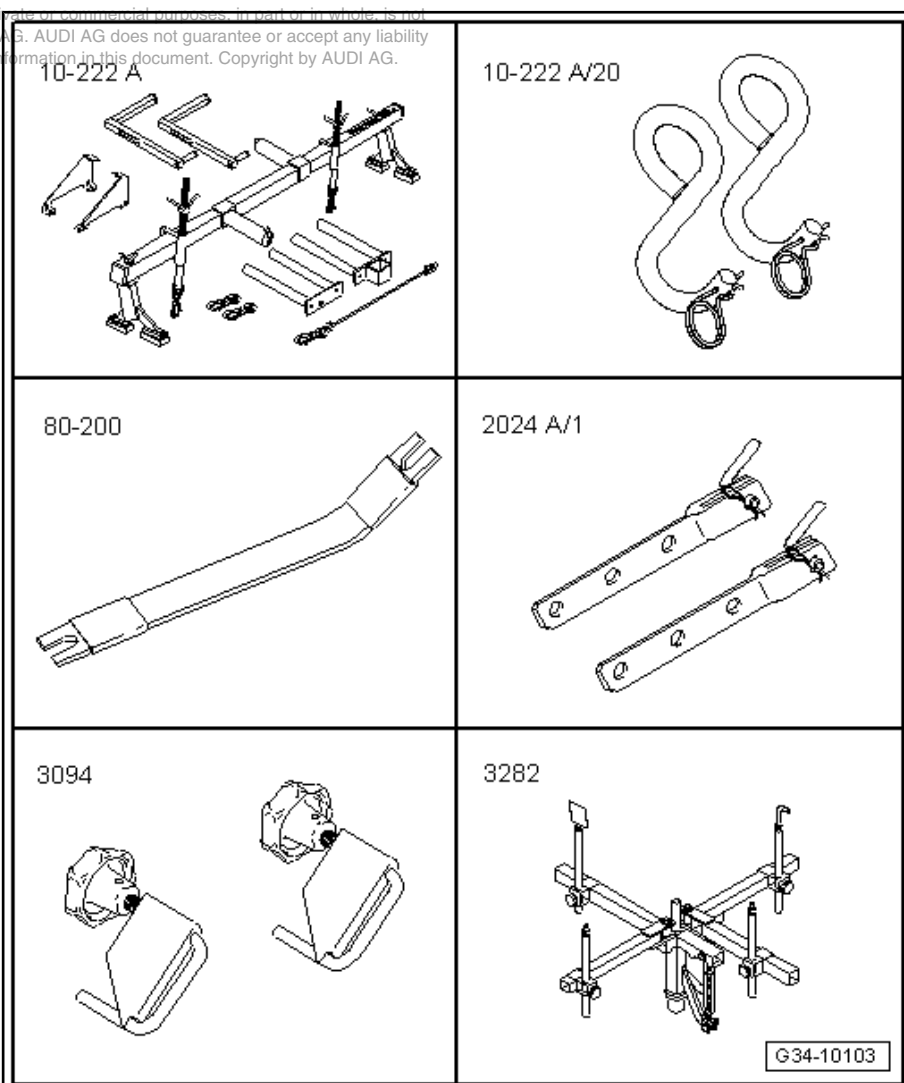


2.1.4 Removing gearbox - vehicles with 2.0 ltr. TDI engine (EA 189, generation II) and front-wheel drive

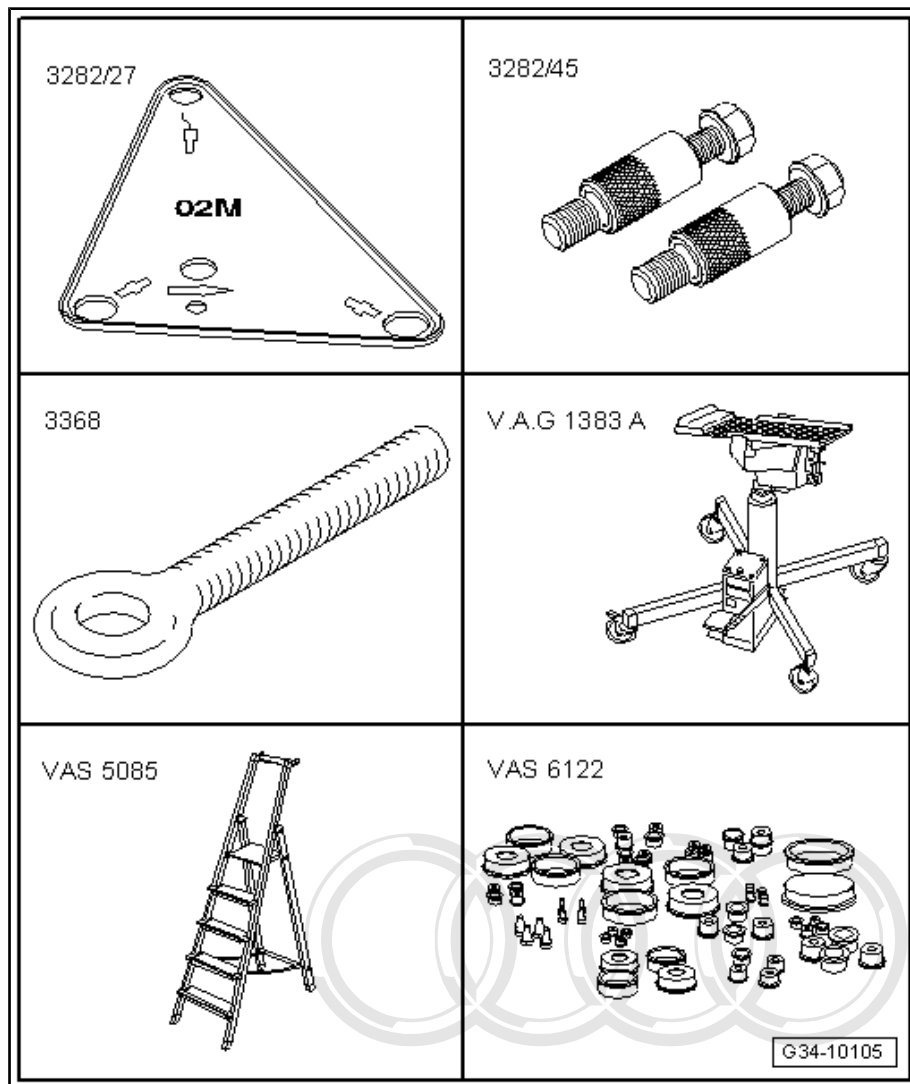
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Special tools and workshop equipment required

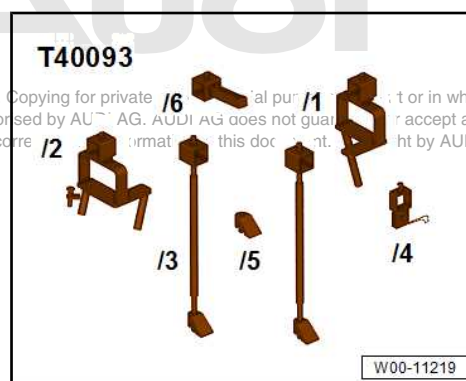
- ◆ Support bracket - 10-222A-
- ◆ Adapters - 10-222A/20-
- ◆ Removal lever - 80-200-
- ◆ Extension -2024A/1- of lifting tackle - 2024A-
- ◆ Hose clamps, up to 25 mm - 3094-
- ◆ Gearbox support - 3282-



- ◆ Adjustment plate - 3282/27-
- ◆ Bolts - 3282/45-
- ◆ Eye-head bolt - 3368-
- ◆ Engine and gearbox jack - V.A.G 1383 A-
- ◆ Stepladder - VAS 5085-
- ◆ Engine bung set - VAS 6122-



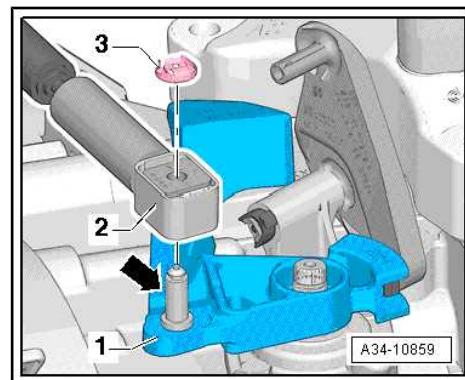
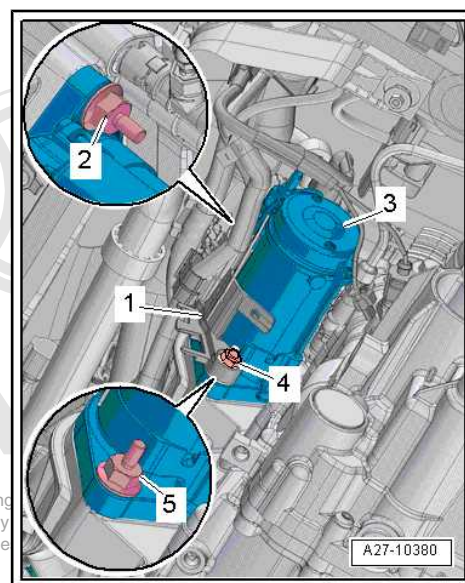
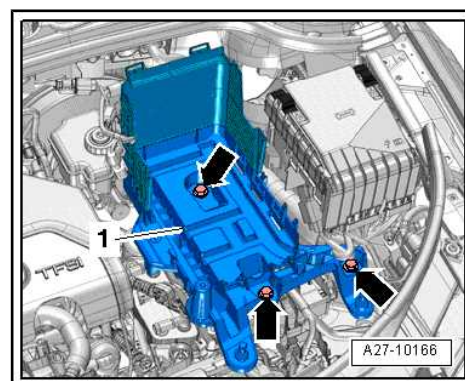
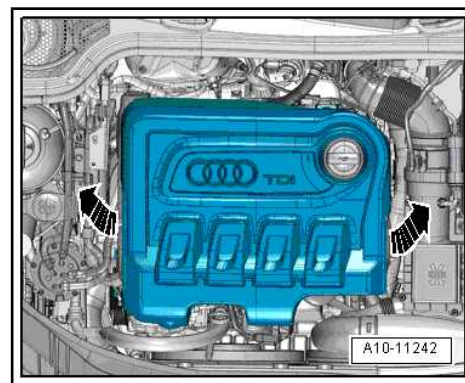
- ◆ -T40093/6- from engine support supplement set - T40093-



- ◆ Grease for clutch plate splines - G 000 100-
- ◆ Grease - G 000 450 02-
- ◆ Universal grease - G 052 735-
- ◆ Flange nut M10 or nut with washer
- ◆ Nut M10, approx. 5 mm thick

Procedure

- Switch off ignition.
- Remove engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .
- Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .
- Remove starter ⇒ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter
- Remove flange shaft (right-side) ⇒ [page 198](#) .
- Remove gate relay lever ⇒ [page 60](#) .
- Detach securing clip -3- from gearbox selector lever -1- and pull gear selector cable -2- off pin -arrow-.



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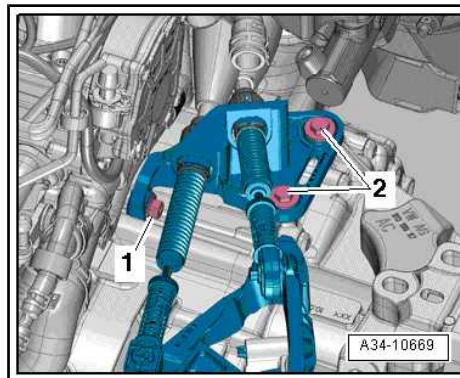
- Unscrew nut -1- and bolts -2- and place cable support bracket to one side together with cables.



WARNING

Risk of skin irritation.

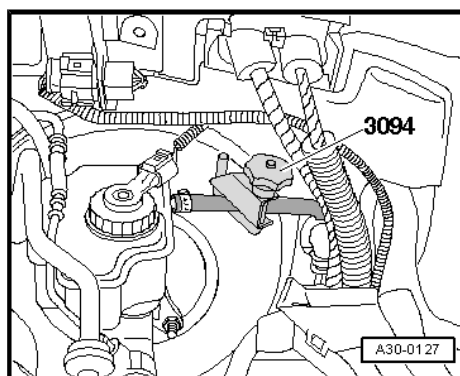
- ◆ *Always wear chemical-resistant protective gloves to prevent brake fluid from contacting skin.*



Note

Place a lint-free cloth below clutch master cylinder to catch escaping brake fluid.

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



Note

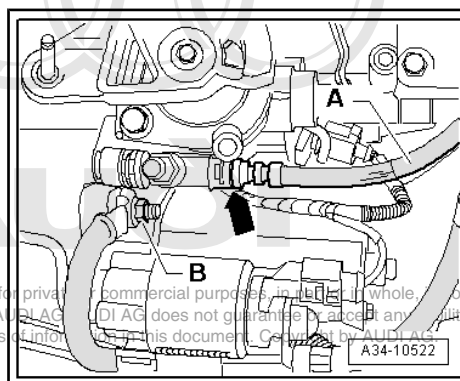
- ◆ *In the following steps make sure that no brake fluid escapes onto the longitudinal member or onto the gearbox. If this does happen, clean the affected area thoroughly.*
- ◆ *Clamping off the supply hose with the hose clamp -3094- will cause a permanent deformation.*
- ◆ *However, this does not damage the supply hose.*
- ◆ *After removing the hose clamp -3094- , the supply hose must be returned to its original shape.*



Note

Place a lint-free cloth below bleeder connection to catch escaping brake fluid.

- Pull out retaining clip -arrow- as far as it will go and disconnect pipe -A- from bleeder connection.



Note

-Item B- can be disregarded.

- Seal off open lines and connections with clean plugs from engine bung set - VAS 6122- .

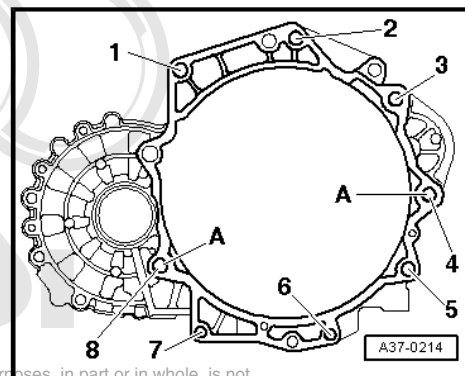


Caution

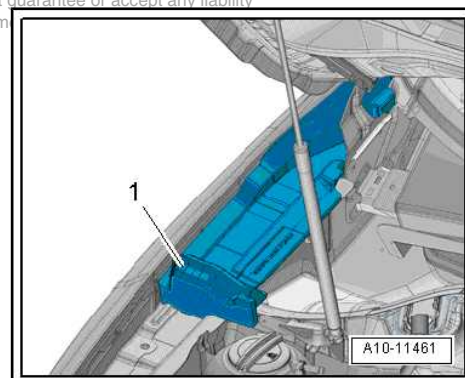
Catch escaping brake fluid.

- ◆ *Do not operate clutch pedal after detaching pipe from bleeder connection for clutch slave cylinder.*

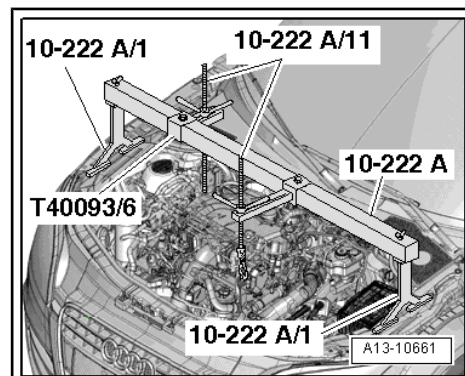
- Remove bolts -1, 2- securing gearbox to engine.



- Unclip sealing element -1- on both sides using removal lever - 80-200- .



- Set up support bracket - 10-222A- with spindles -10-222A /11- on wing mounting flanges, as shown in illustration.
- Engage hook of spindle (left-side) in engine lifting eye.

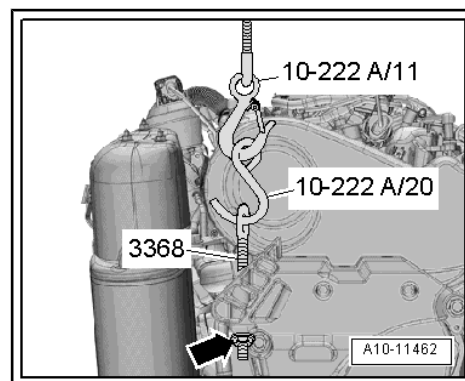


WARNING

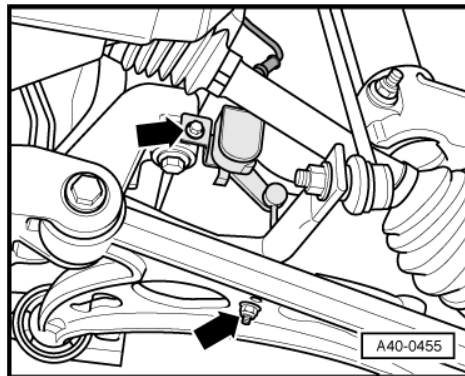
Risk of accident if threaded attachment comes loose.

- ◆ *To ensure that the eye-head bolt - 3368- is securely attached, screw on a flange nut or nut with washer -arrow- at least 6 turns.*

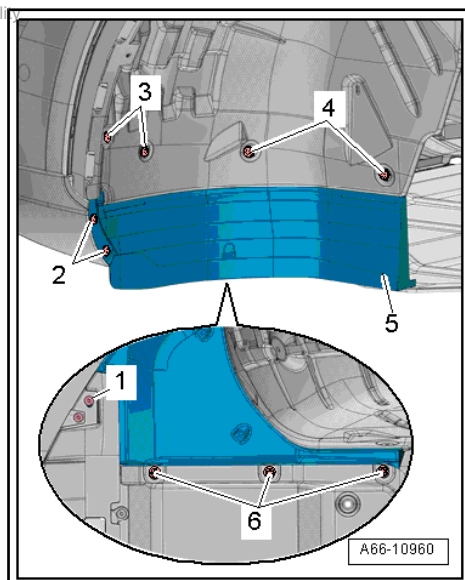
- Secure eye-head bolt - 3368- with M10 flange nut or nut with washer to engine support as shown in illustration.
- Hook spindle - 10-222A/11- with adapter - 10-222A/20- (right-side) onto eye-head bolt - 3368- .
- Take up weight of engine/gearbox assembly evenly with both spindles; do not lift.



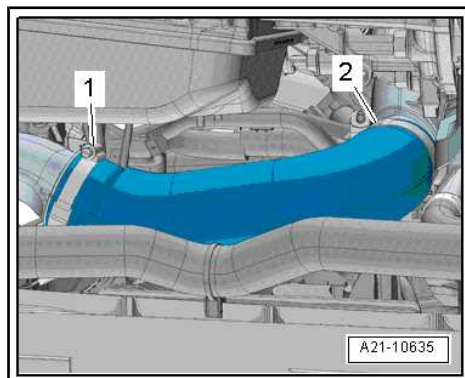
- If fitted, remove front left vehicle level sender - G78-
-arrows-.



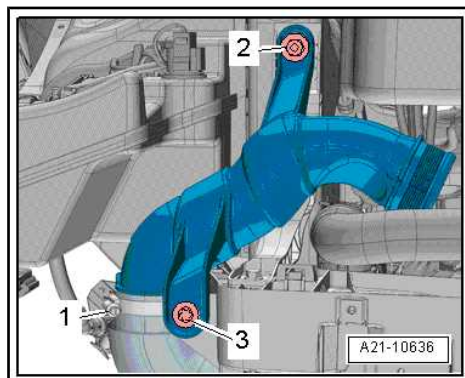
- Remove wheel spoiler -5- (left-side) ➤ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liner; Exploded view - wheel housing liner (front) .
- Remove front wheel (left-side) ➤ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .



- Release hose clips -1- and -2- and remove air hose.
- Seal off open lines and connections with clean plugs from engine bung set - VAS 6122- .



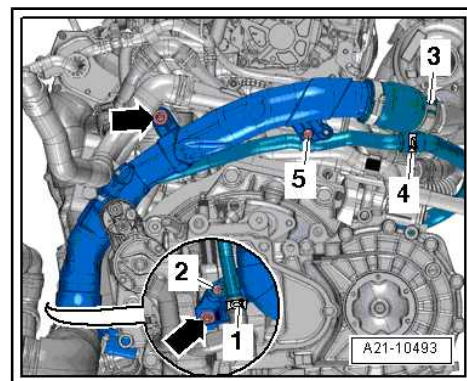
- Unscrew nut -2- and bolt -3-.
- Release hose clip -1- and detach air pipe.
- Seal off open lines and connections with clean plugs from engine bung set - VAS 6122- .



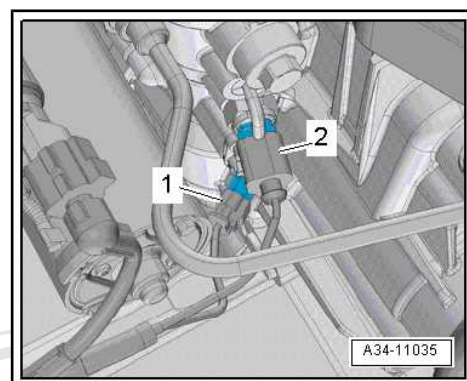
- Remove bolts -2, 5- and -arrows-.
- Move electrical wiring and hoses clear at air pipe (left-side) using removal lever - 80-200- .
- Release hose clip -3- and detach air pipe (left-side) from below.

 Note

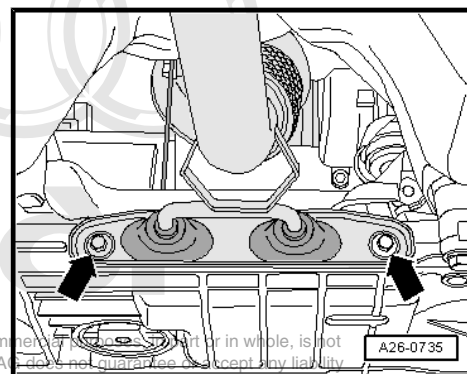
-Items 1 and 4- can be disregarded.



- Unplug electrical connectors:
- 1 - Gearbox neutral position sender - G701-
- 2 - Reversing light switch - F4-



- Remove bolts -arrows- for exhaust pipe bracket from sub-frame.



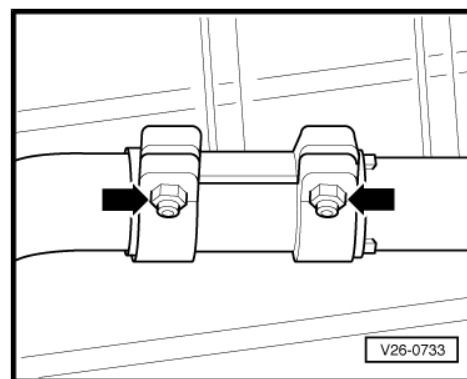
- Disconnect exhaust system at clamp -arrows-.



Caution

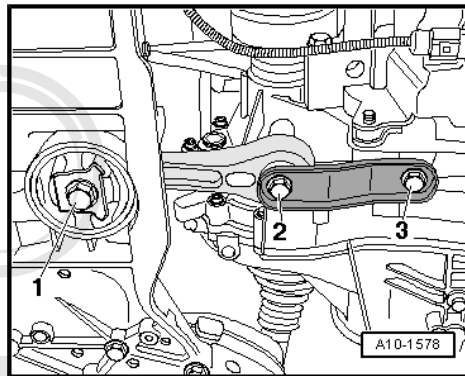
Risk of damage to flexible joint.

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



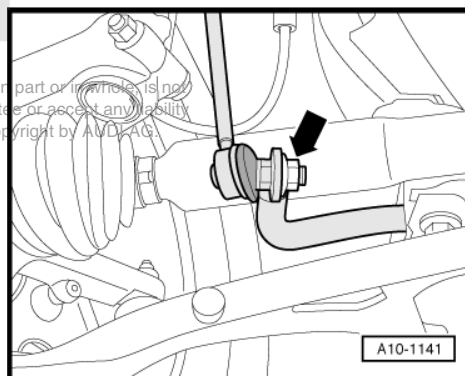
- Tie up front exhaust pipe.

- Remove bolts -1, 2, 3- and detach pendulum support.

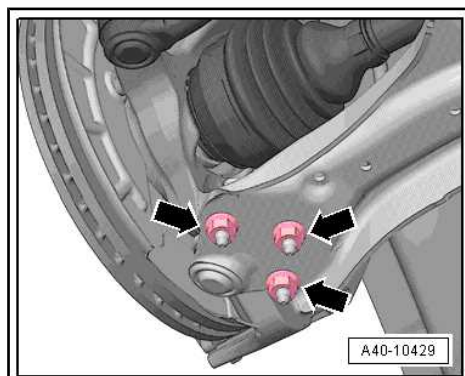


- Unscrew nut -arrow- for coupling rod on anti-roll bar (left-side).

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- Remove nuts -arrows- securing swivel joint (left-side).
- Disengage swivel joint (left-side) from wishbone.
- Detach drive shaft (left-side) from gearbox and tie up ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .



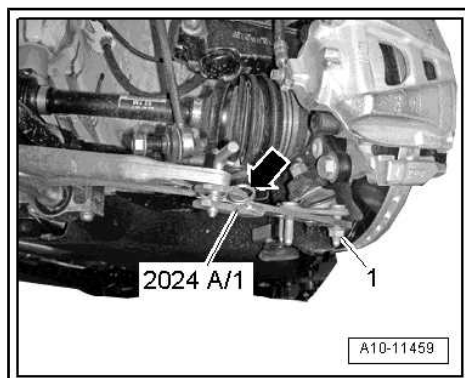
- Swivel suspension strut (left-side) outwards and support with extension -2024A/1- as shown in illustration.



WARNING

Risk of accident if parts of support are not properly secured.

- ◆ *Secure locking pin and swivel joint with retaining clip -arrow- and nut -1-.*



- Swivel drive shaft (left-side) towards front.

- Remove nut -3- and detach earth wire.

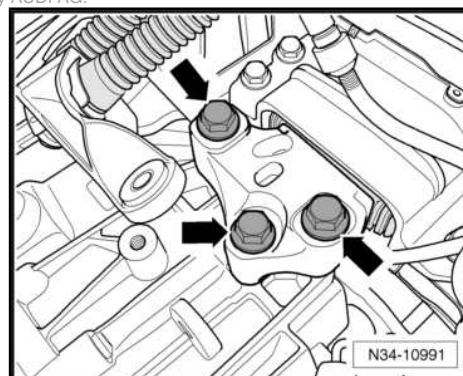
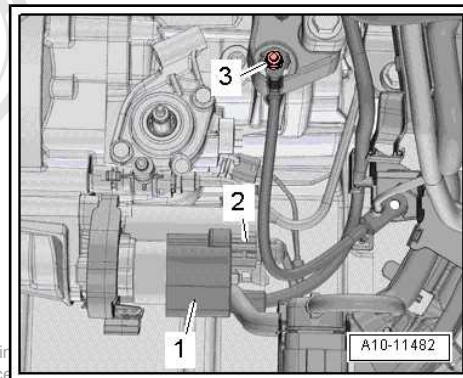


Note

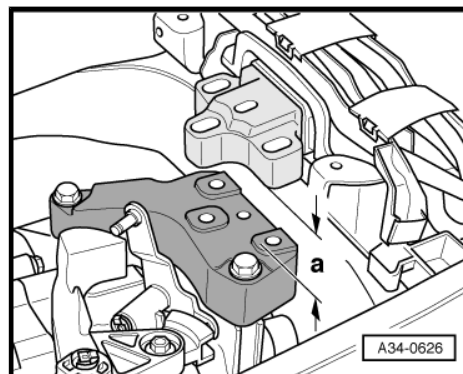
-Items 1 and 2- can be disregarded.

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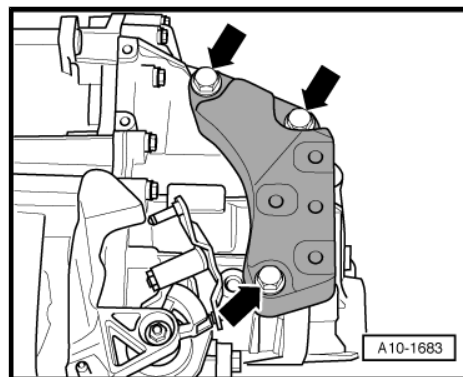
- Remove bolts -arrows- from gearbox mounting.



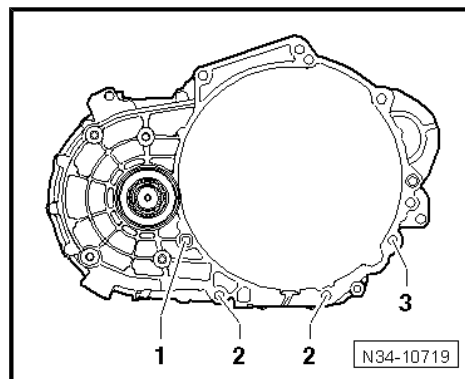
- Adjust spindles of support bracket - 10-222A- to lower gearbox by distance -a-.
- Dimension -a- = 60 mm



- Remove bolts -arrows- and detach gearbox support from gearbox.

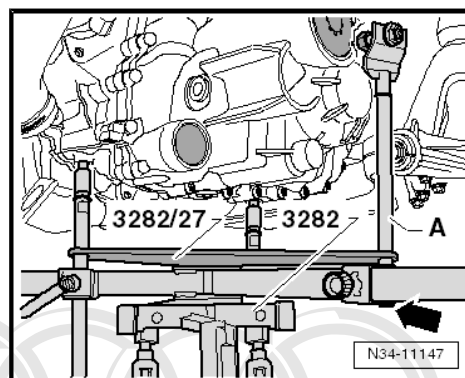
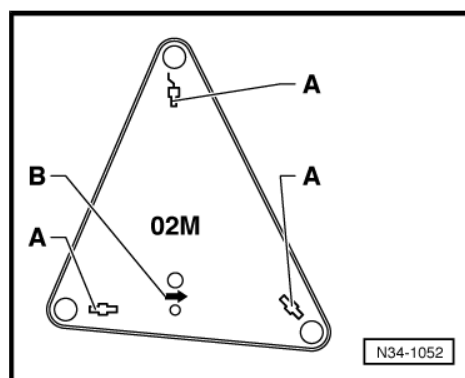


- Remove bolts -2- and -3- securing gearbox to engine.



To remove gearbox "0BB" set up gearbox support - 3282- with adjustment plate - 3282/27- .

- Insert gearbox support - 3282- in engine and gearbox jack - V.A.G 1383A- .
- Align arms of gearbox support according to holes in adjustment plate.
- Screw in support elements -A-, as illustrated on adjustment plate.
- Place engine and gearbox jack - V.A.G 1383A- underneath vehicle.
- The arrow symbol -B- on the adjustment plate points in the direction of travel.
- Align adjustment plate parallel with gearbox.
- Pin -A- should be flush with underside of guide of gearbox support -arrow-.



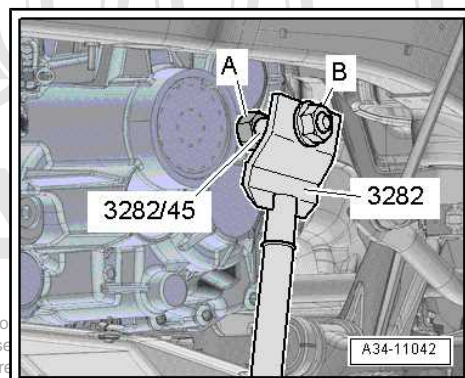
- Screw bolt - 3282/45- into threaded hole in gearbox housing as shown in illustration.



Note

The bolt - 3282/45- cannot be screwed in completely, so use an M10 nut -item A- (approx 5 mm thick) as a spacer.

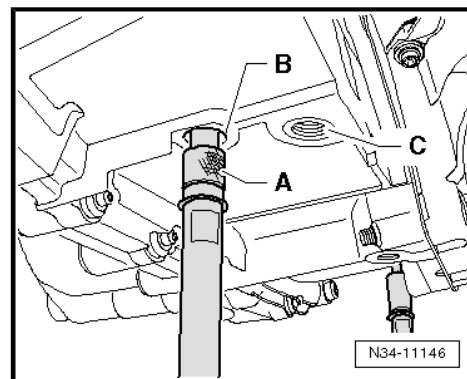
- Secure gearbox to gearbox support - 3282- with flange nut -B-.



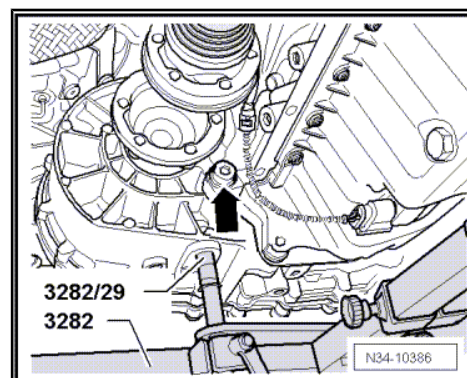
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is not liability G.

- Insert pin -A- of gearbox support - 3282- into attachment point -B- next to rear threaded hole -C- for pendulum support.



- Remove last engine/gearbox securing bolt -arrow-.
- Press gearbox off engine (dowel sleeves).
- Carefully lower gearbox.

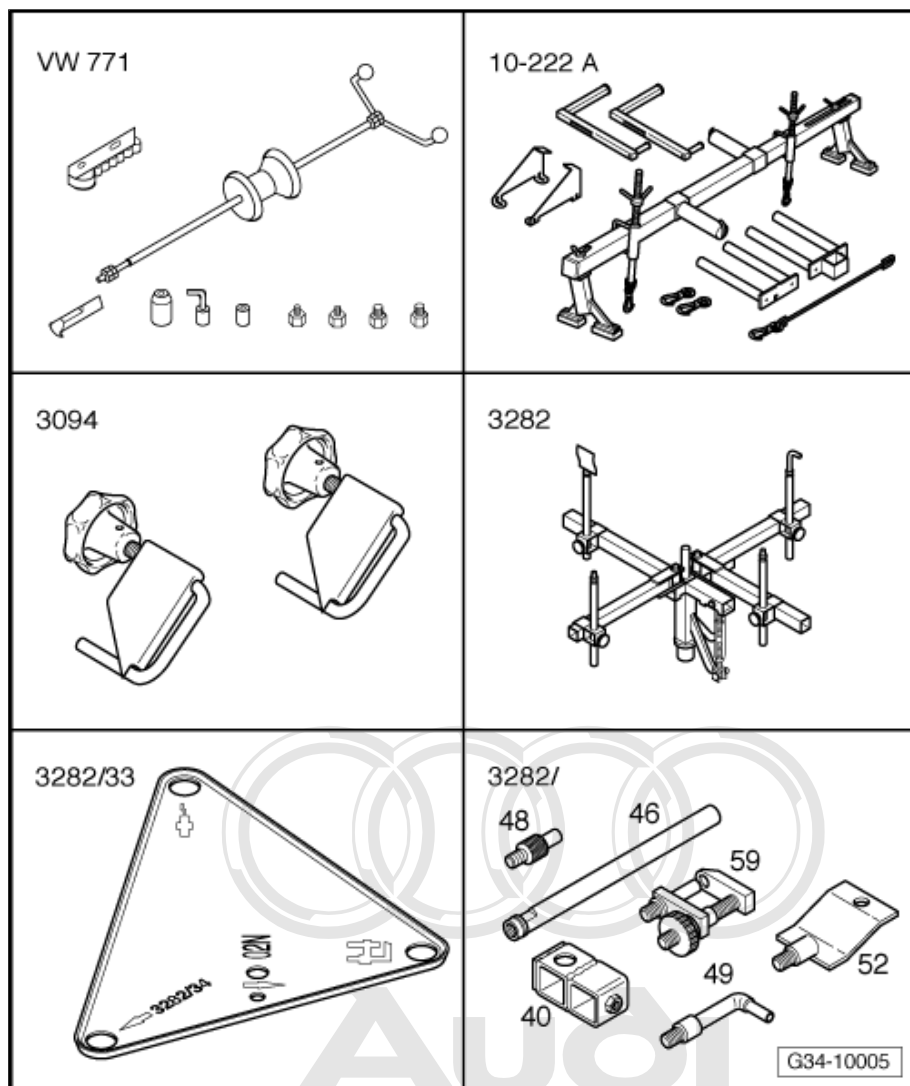


2.1.5 Removing gearbox - vehicles with 2.0 ltr. TDI engine (EA 189, generation II) and four-wheel drive

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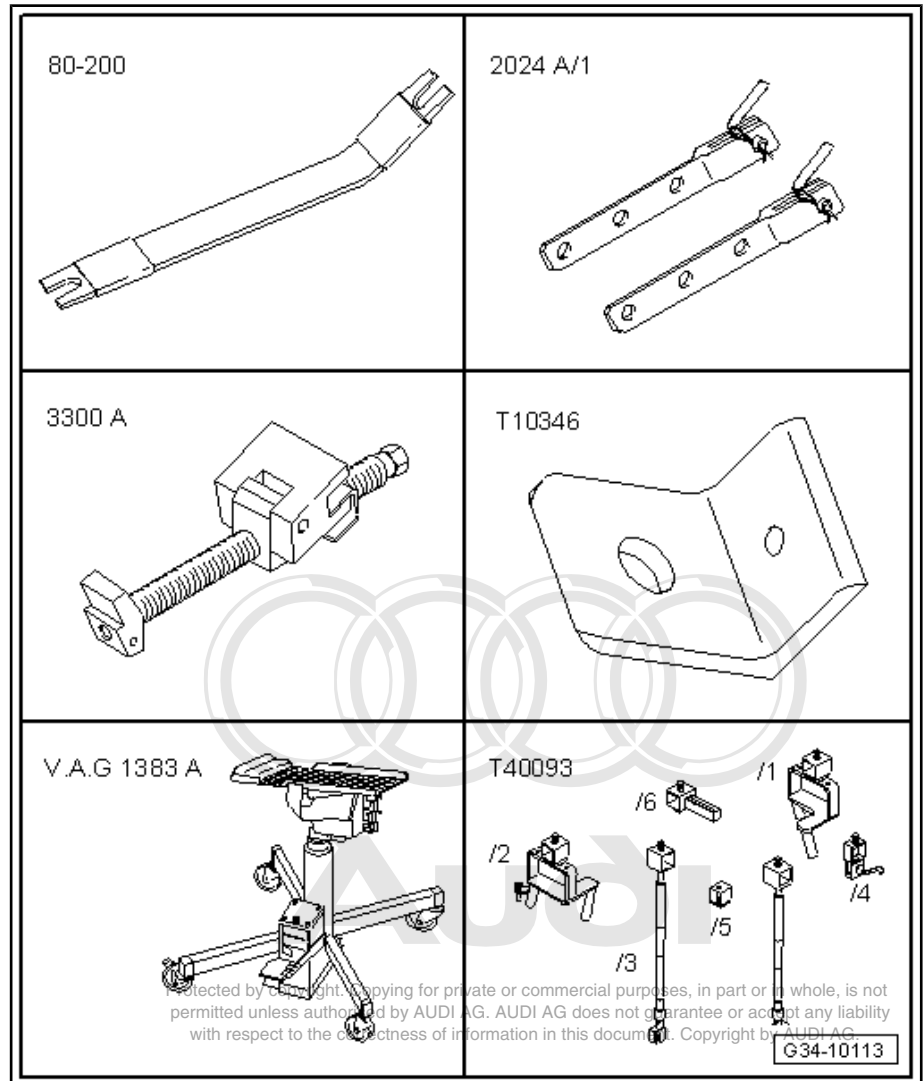
Special tools and workshop equipment required

- ◆ Adapter - VW 771/40-
- ◆ Support bracket - 10-222A-
- ◆ Hose clamps, up to 25 mm - 3094-
- ◆ Gearbox support - 3282-
- ◆ Adjustment plate - 3282/33-
- ◆ Pin - 3282/29-
- ◆ Support elements for gearbox (select appropriate element when fitting adjustment plate onto gearbox support)

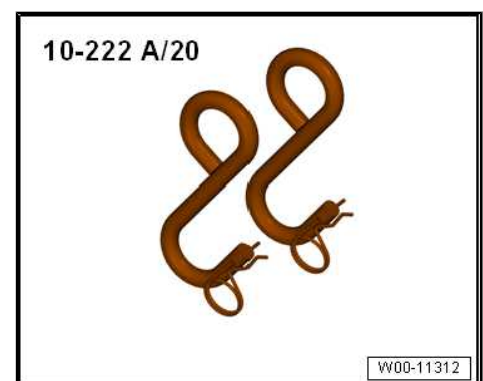


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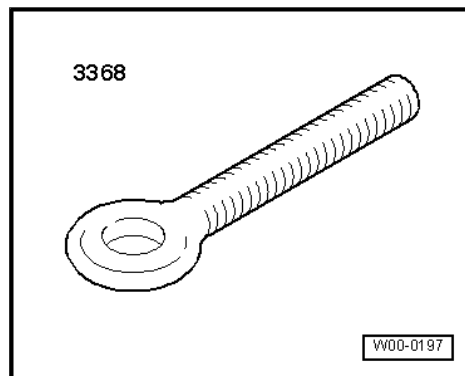
- ◆ Removal lever - 80-200-
- ◆ Extension -2024A/1- of lifting tackle - 2024A-
- ◆ Engine support - 3300 A-
- ◆ Bracket - T10346-
- ◆ Engine and gearbox jack - V.A.G 1383 A-
- ◆ -T40093/6- from engine support supplement set - T40093-



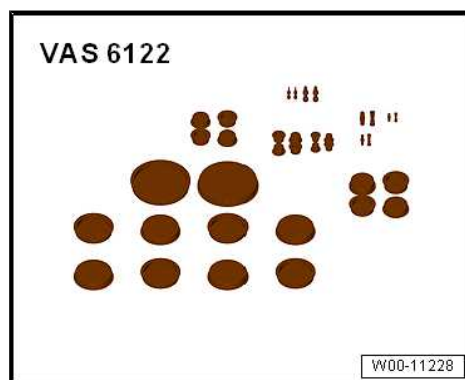
- ◆ Adapters - 10-222A/20-



◆ Eye-head bolt - 3368-



◆ Engine bung set - VAS 6122-



◆ Grease for clutch plate splines - G 000 100-

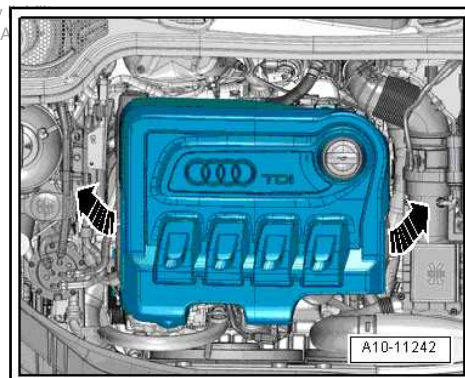
◆ Grease - G 000 450 02-

◆ Flange bolt M6 x 20

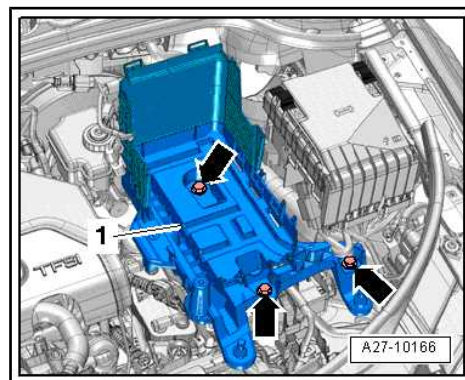
◆ Bolt M10 x 20

Procedure

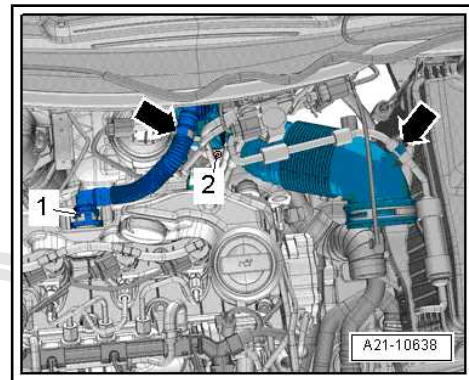
- Remove engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .



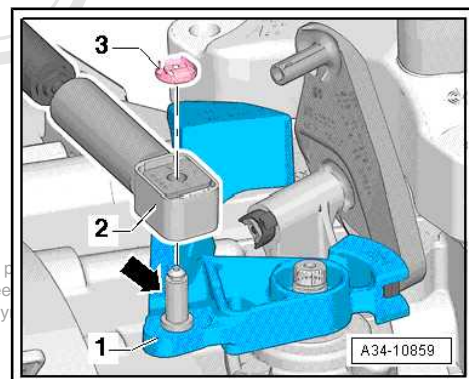
- Remove battery and battery tray ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .



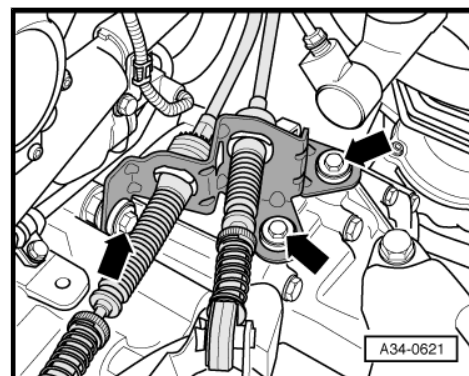
- Press release tabs and disconnect crankcase breather hose -1- from cylinder head cover.
- Move vacuum hoses clear -arrows-.
- Remove bolt -2-, swivel air pipe and connection to rear and detach from turbocharger.



- Detach securing clip -3- from gearbox selector lever -1- and pull gear selector cable -2- off pin -arrow-.
- Remove gate relay lever ➔ [page 60](#) .



- Unscrew bolts and nut -arrows- and place cable support bracket to one side together with cables.



WARNING

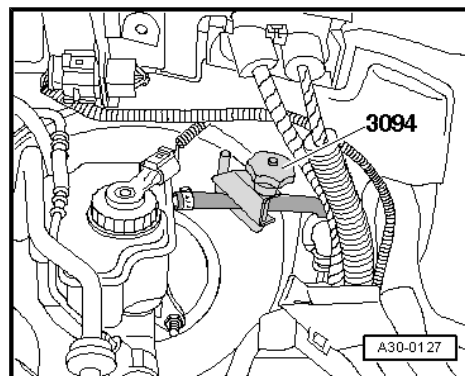
Risk of skin irritation.

- ◆ *Always wear chemical-resistant protective gloves to prevent brake fluid from contacting skin.*

 Note

Place a lint-free cloth below clutch master cylinder to catch escaping brake fluid.

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



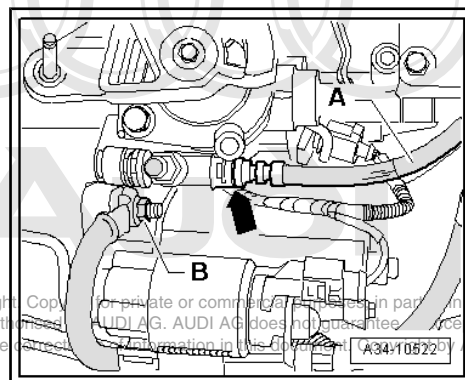
 Note

- ◆ *In the following steps make sure that no brake fluid escapes onto the longitudinal member or onto the gearbox. If this does happen, clean the affected area thoroughly.*
- ◆ *Clamping off the supply hose with the hose clamp -3094- will cause a permanent deformation.*
- ◆ *However, this does not damage the supply hose.*
- ◆ *After removing the hose clamp -3094- , the supply hose must be returned to its original shape.*

 Note

Place a lint-free cloth below bleeder connection to catch escaping brake fluid.

- Pull out retaining clip -arrow- as far as it will go and disconnect pipe -A- from bleeder connection.



 Note

-Item B- can be disregarded.

- Seal off open lines and connections with clean plugs from engine bung set - VAS 6122- .



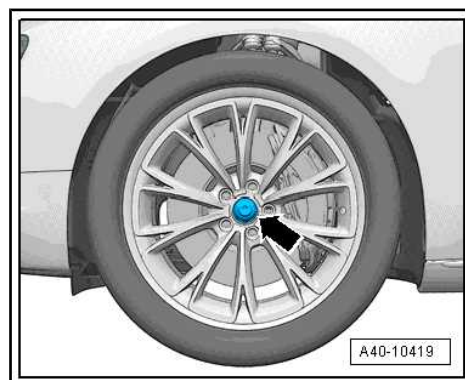
Caution

Catch escaping brake fluid.

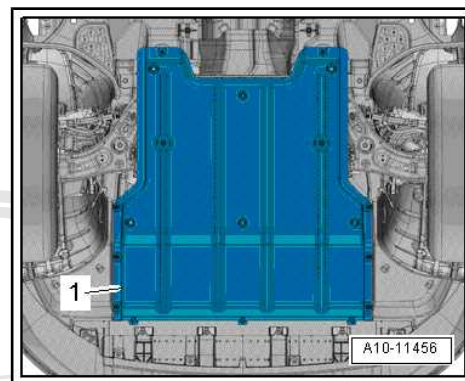
- ◆ ***Do not operate clutch pedal after detaching pipe from bleeder connection for clutch slave cylinder.***

Drive shaft (right-side) must be removed at a later stage.

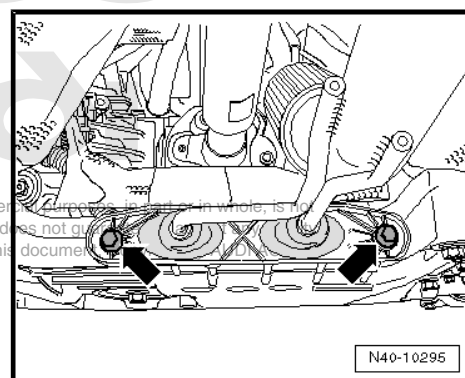
- With vehicle still standing on its wheels, slacken off twelve-point bolt -arrow- on front wheel (right-side) with socket (24 mm) - T10361- 90° (maximum). Do not slacken further, as this would damage the wheel bearing.



- Remove front wheels (left and right) ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .
- Remove noise insulation -1- ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .
- Remove wheel housing liner (front) with wheel spoiler on both sides ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Removing and installing wheel housing liner (front) .



- Remove exhaust system bracket from subframe -arrows-.

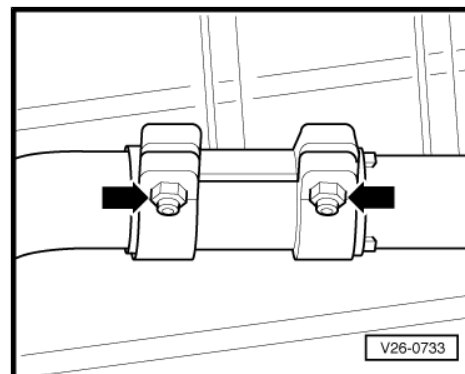


- Disconnect exhaust system at clamp -arrows-.

 **Caution**

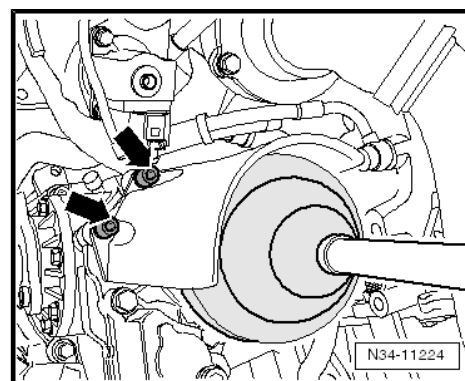
Risk of damage to flexible joint.

♦ ***The flexible joint in the front exhaust pipe must not be bent further than 10°.***



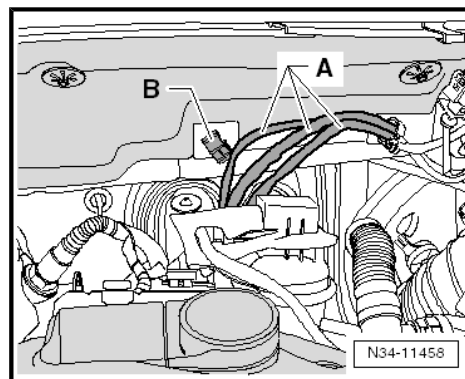
- Tie up front exhaust pipe.

- Detach heat shield for drive shaft from bevel box (2 nuts -arrows-).
- Remove drive shaft (right-side) ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .

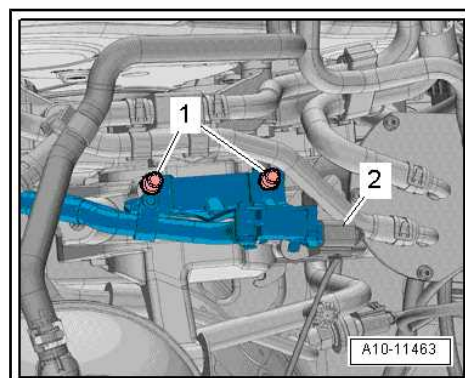


Detach particle filter from engine as follows:

- Take wiring -A- out of bracket -B-.



- Unplug electrical connector -2-.
- Remove bolts -1- and move pressure differential sender - G505- clear with bracket.

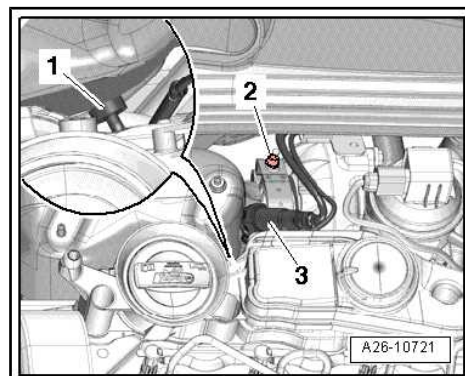


- Loosen bolt -2- and remove clamp.

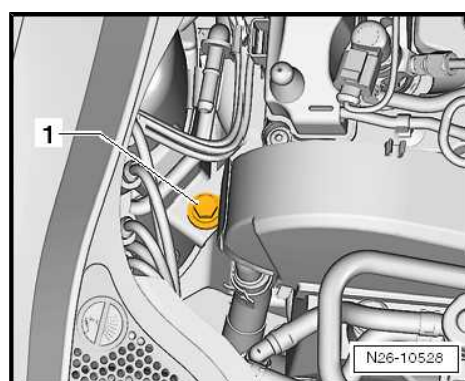


Note

-Items 1 and 3- can be disregarded.

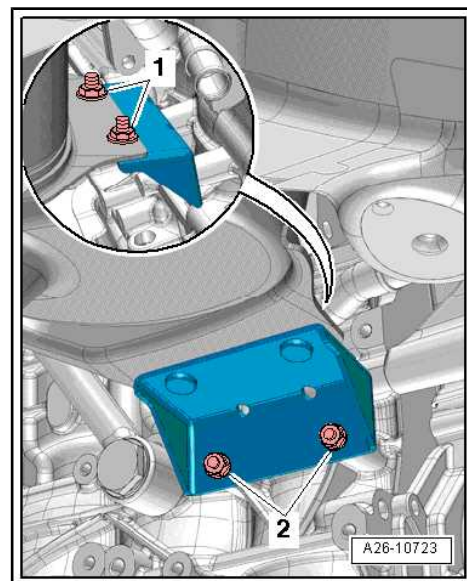


- Remove bolt -1- on bracket (top) for particulate filter.

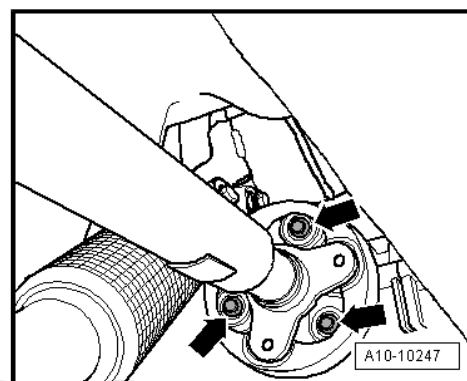


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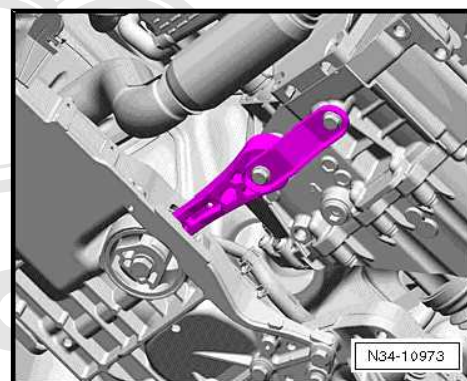
- Remove nuts -1- and -2- and detach bracket for particulate filter (bottom).
- Tie up particulate filter towards rear in direction of plenum chamber partition panel.



- Mark position of flexible coupling relative to bevel box flange for re-installation.
- Remove bolts -arrows- securing flexible coupling of propshaft to bevel box (counterhold triangular flange with suitable lever) ⇒ Rear final drive; Rep. gr. 39 ; Propshaft; Removing and installing propshaft .



- Remove pendulum support.



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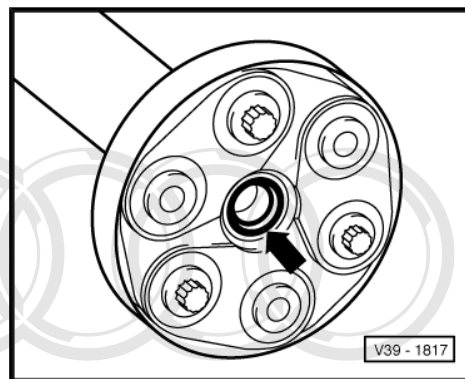
- Push engine/gearbox assembly slightly towards front of vehicle and then pull propshaft off bevel box.



Caution

The seal -arrow- in the propshaft flange can be damaged.

- ◆ *Push propshaft towards the rear and to the right as far as possible.*

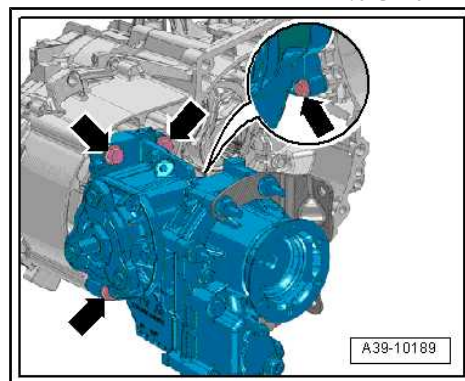


Note

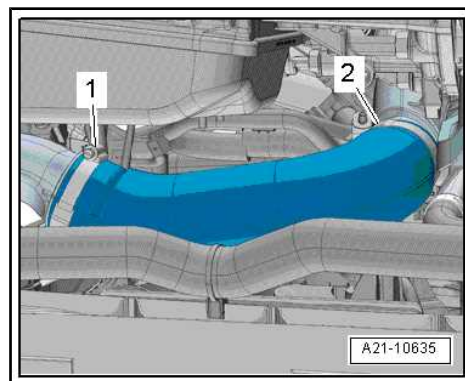
If seal is damaged propshaft must be renewed.

- Place a cloth on the subframe to prevent damage to the paint on the propshaft.
- Place propshaft on subframe.
- Remove bevel box ➔ [page 159](#) .

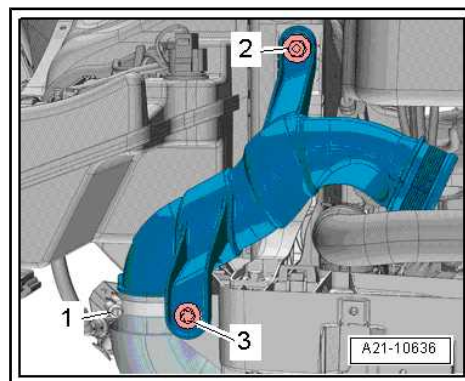
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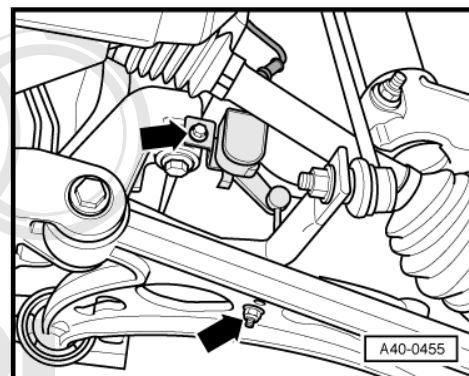
- Release hose clips -1- and 2- and remove air intake hose.



- Unscrew bolt -1- and nut -3-.
- Release hose clip -2- and detach air pipe.

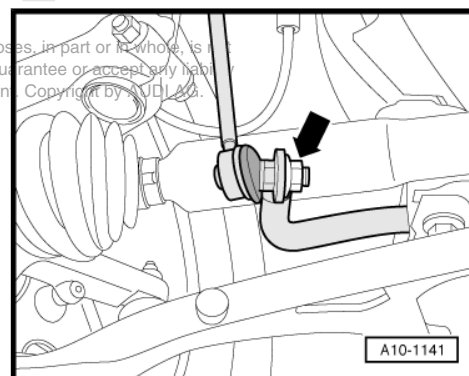


- If fitted, remove vehicle level sender (front left) - G78- from wishbone -bottom arrow-.



- Unscrew nut -arrow- for coupling rod on anti-roll bar (left-side).

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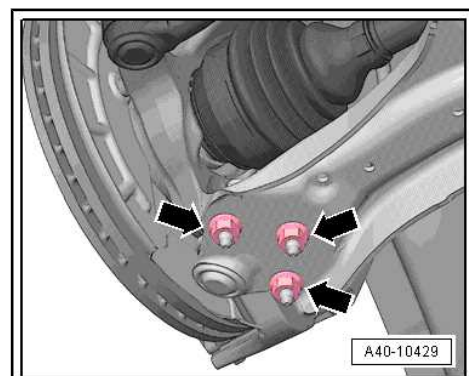


- Remove nuts -arrows- securing swivel joint (left-side).
- Disengage swivel joint (left-side) from wishbone.
- Detach drive shaft (left-side) from gearbox and tie up ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .



Note

Make sure you do not damage surface coating on drive shaft.



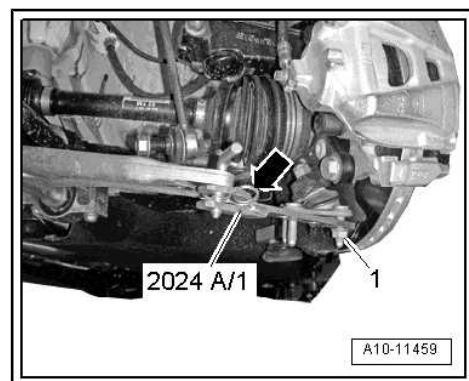
- Swivel suspension strut (left-side) outwards and support with extension -2024A/1- as shown in illustration.



WARNING

Risk of accident if parts of support are not properly secured.

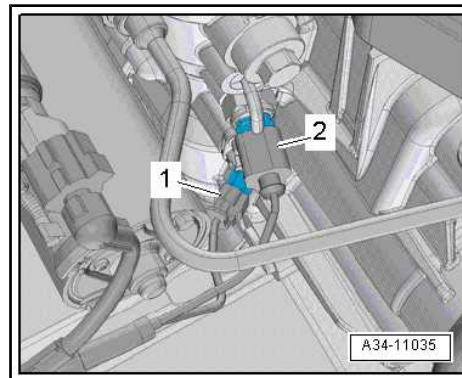
- ◆ *Secure locking pin and swivel joint with retaining clip -arrow- and nut -1-.*



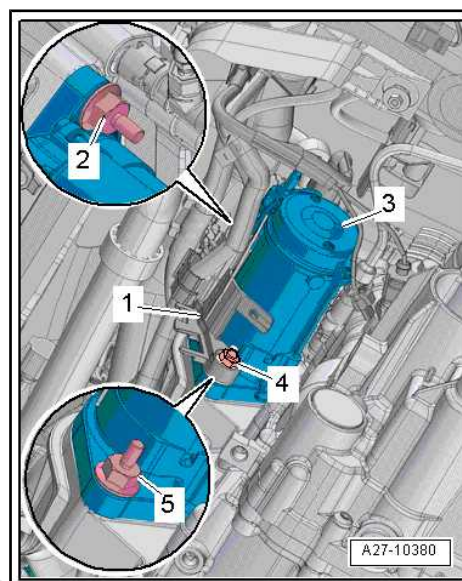
- Swivel drive shaft (left-side) towards front.

– Unplug electrical connectors:

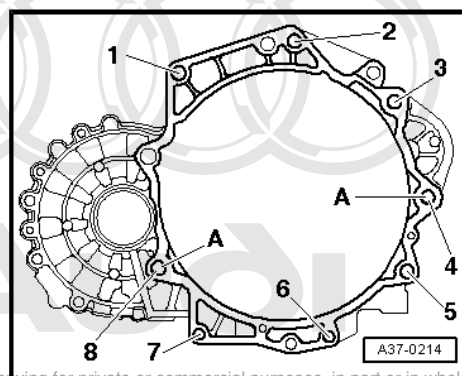
- 1 - Gearbox neutral position sender - G701-
- 2 - Reversing light switch - F4-



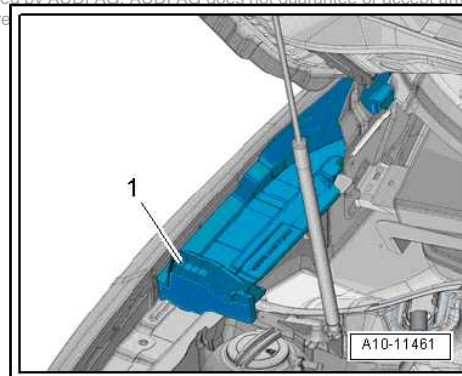
– Remove starter ⇒ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter



– Remove bolts -1, 2- securing gearbox to engine.

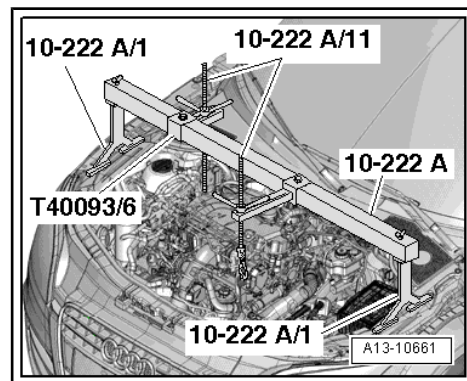


– Unclip sealing element -1- on both sides using removal lever - 80-200- .



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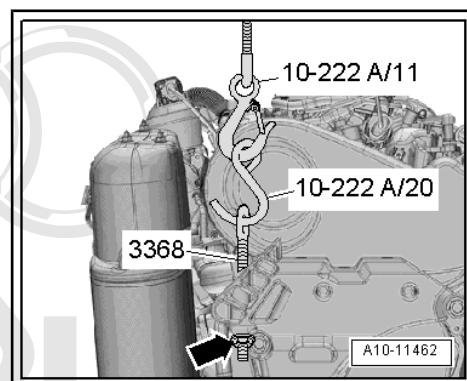
- Set up support bracket - 10-222A- with spindles -10-222A/11- on wing mounting flanges, as shown in illustration.
- Engage hook of spindle (left-side) in engine lifting eye.



WARNING

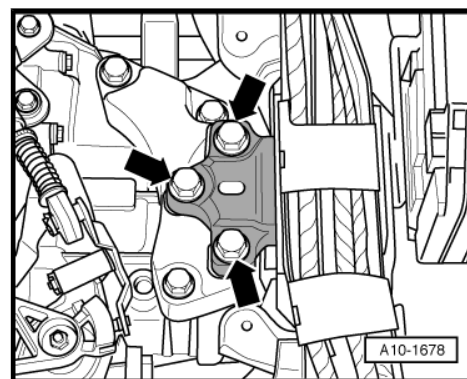
Risk of accident if threaded attachment comes loose.

- ◆ *To ensure that the eye-head bolt - 3368- is securely attached, screw on a flange nut or nut with washer -arrow- at least 6 turns.*



- Secure eye-head bolt - 3368- with M10 flange nut or nut with washer to engine support as shown in illustration.
- Hook spindle - 10-222A/11- with adapter - 10-222A/20- (right-side) onto eye-head bolt - 3368- .
- Take up weight of engine/gearbox assembly evenly with both spindles; do not lift.
- Remove bolts -arrows- for gearbox mounting (left-side).

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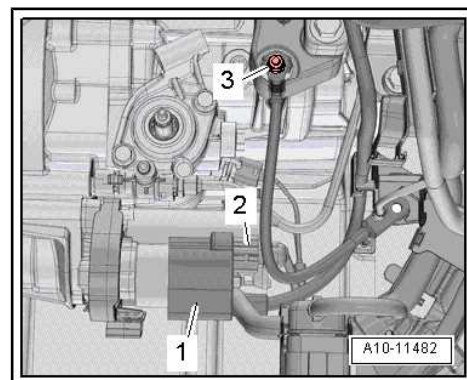


- Remove nut -3- from centre hex stud and detach earth wire.

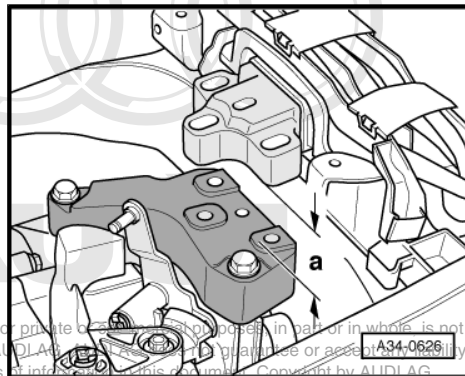


Note

-Items 1 and 2- can be disregarded.

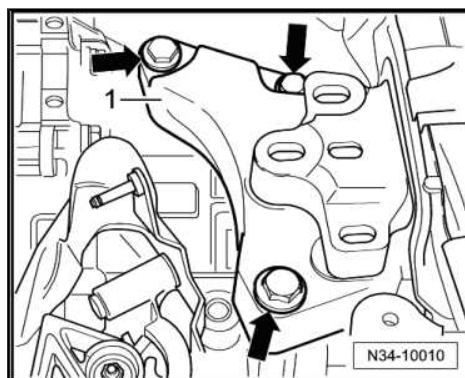


- Adjust spindles of support bracket - 10-222A- to lower gearbox by distance -a-.
- Dimension -a- = 60 mm

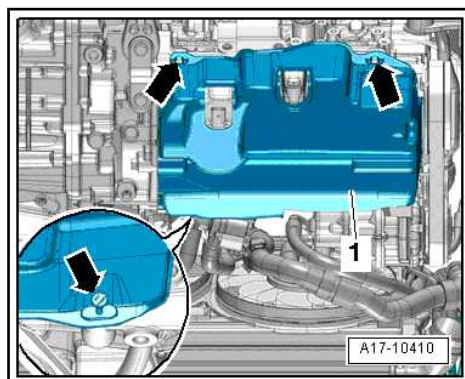


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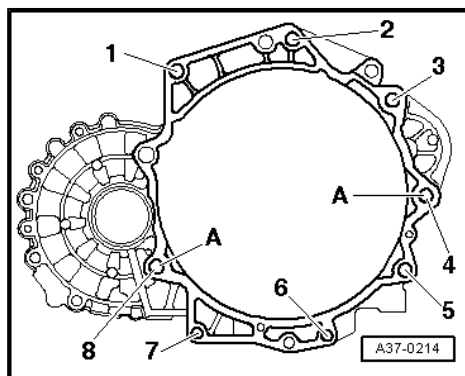
- Remove bolts -arrows- and detach gearbox bracket -1- from gearbox.



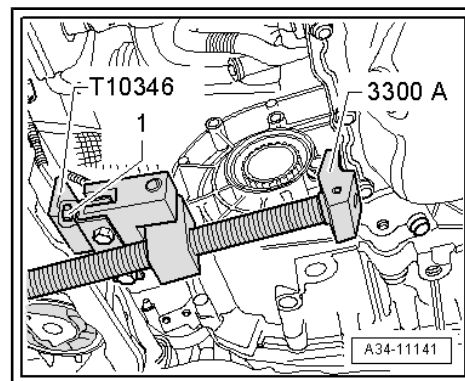
- Loosen fasteners -arrows- and remove noise insulation panel -1- for oil pan.



- Remove bolts -6, 7, 8- securing gearbox to engine.



- Secure bracket - T10346- by tightening bolt -1- in threaded hole (left-side) of subframe.
- 1- = Flange bolt M6 x 20
- Secure engine support - 3300 A- to bracket - T10346- .
- Press engine slightly towards front of vehicle using spindle of engine support - 3300 A- , taking care not to damage radiator cowl.

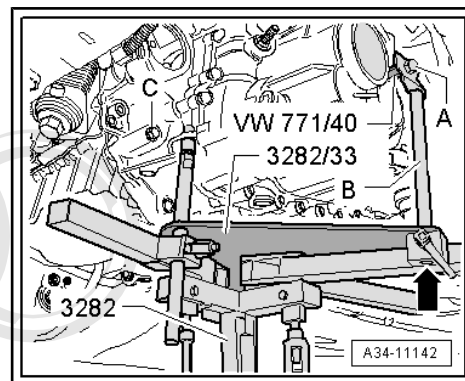
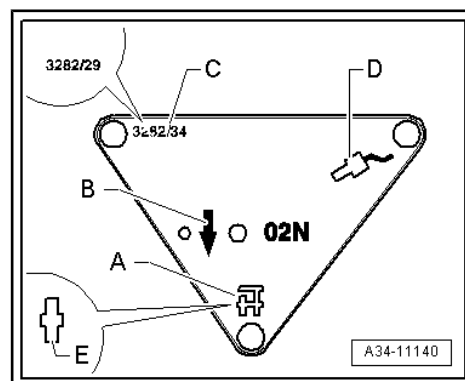


To remove gearbox "02Q" set up gearbox support - 3282- with adjustment plate - 3282/33- .

- 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 .

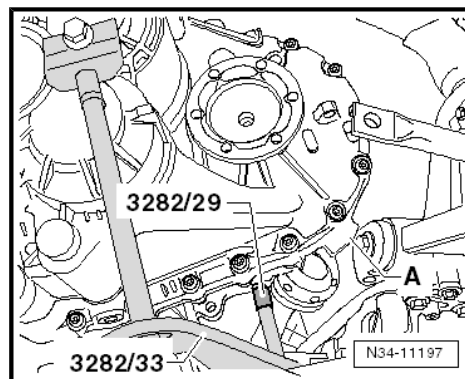
Modify support elements -A- and -C- illustrated on adjustment plate as follows:

- ◆ Screw in pin -E- instead of support element -A-.
- ◆ Screw in pin - 3282/29- instead of support element -C-
- Place engine and gearbox jack - V.A.G 1383A- underneath vehicle.
- The arrow symbol -B- on the adjustment plate points in the direction of travel.
- Align adjustment plate parallel with gearbox.
- Secure adapter - VW 771/40- in tapped hole of gearbox housing, as shown in illustration.
- Then screw pin - 3282/29- into rear tapped hole for bolt securing pendulum support to gearbox.
- Secure gearbox to gearbox support - 3282- with bolt M10x20 -A-.
- Pin -B- should be flush with underside of guide of gearbox support - 3282- -arrow-.
- Remove last bolt -C- securing gearbox to engine.
- Push the gearbox off engine (dowel sleeves) and swing carefully towards the subframe.
- Use spindles to tilt gearbox support - 3282- .
- The differential must face upwards.
- Pivot gearbox downwards on left side.



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- Guide gearbox with differential -A- past subframe.

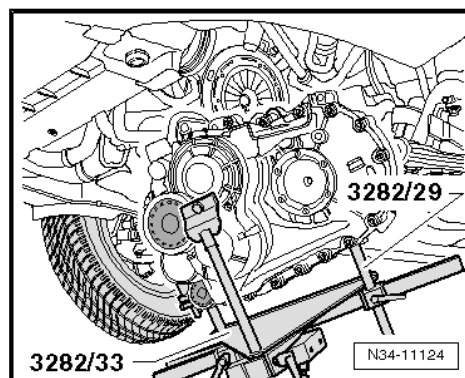


- Swivel gearbox out further and lower carefully.



Note

Pay attention to all pipes/hoses/wiring when lowering gearbox.

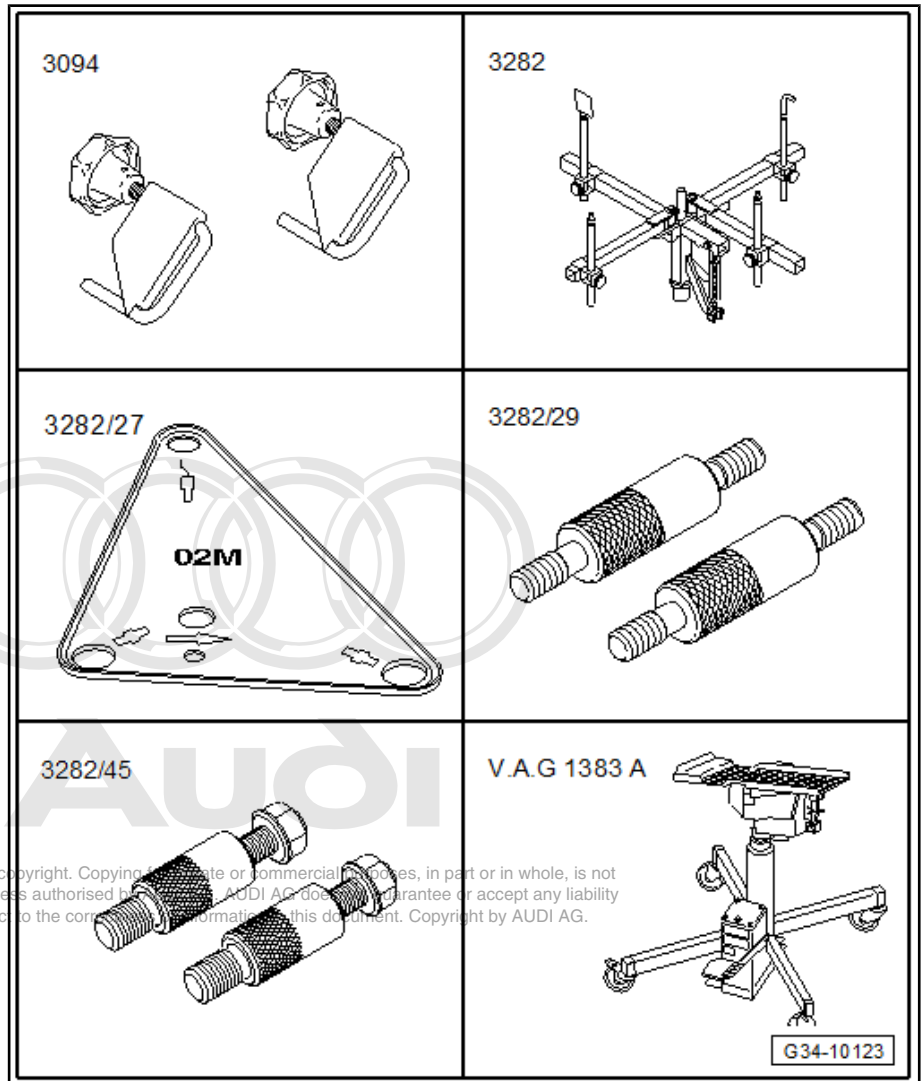


2.1.6 Removing gearbox - vehicles with 2.0 ltr. TDI engine (EA 288, generation I)

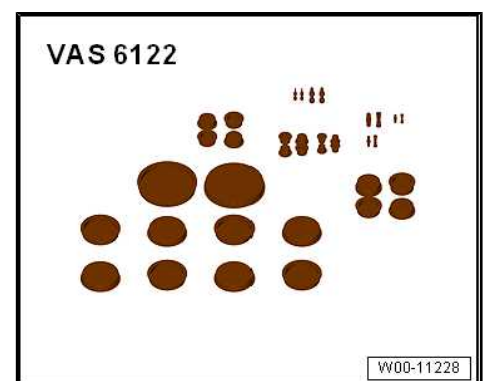


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- ◆ Hose clamps, up to 25 mm - 3094-
- ◆ Gearbox support - 3282-
- ◆ Adjustment plate - 3282/27-
- ◆ Pins - 3282/29-
- ◆ Bolts - 3282/45-
- ◆ Engine and gearbox jack - V.A.G 1383 A-

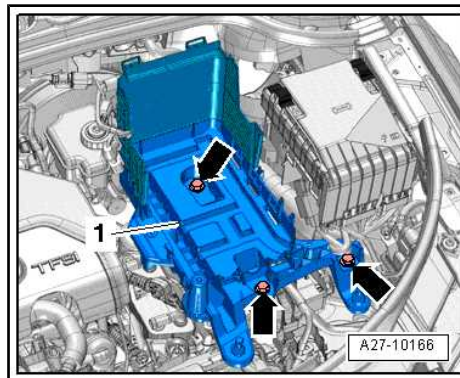


- ◆ Engine bung set - VAS 6122-

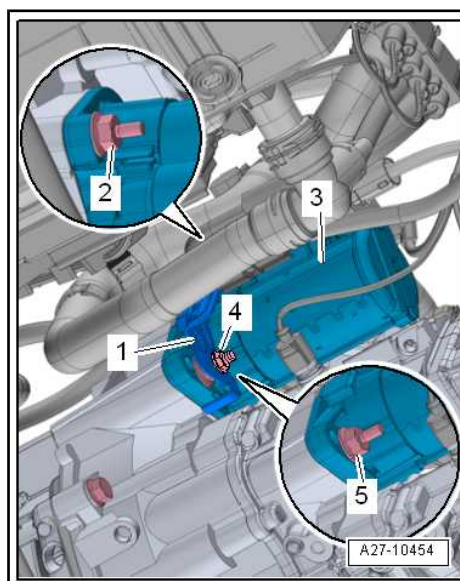


Procedure

- Remove battery tray -1- ➔ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .

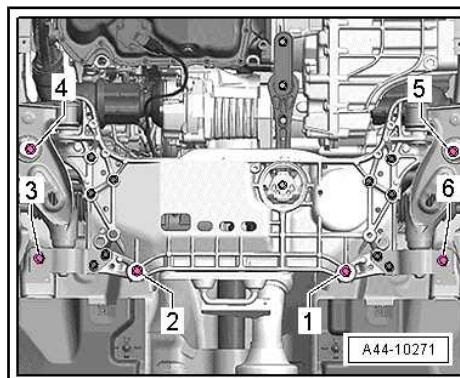


- Remove starter -3- ➔ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter .

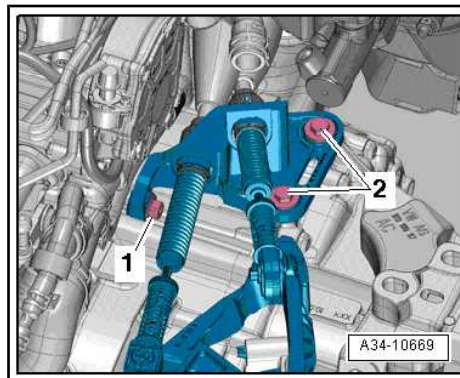


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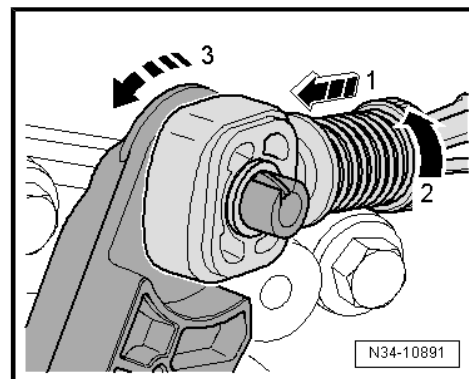
- Remove subframe -9- without steering rack ➔ Running gear, axles, steering; Rep. gr. 40 ; Subframe; Removing and installing subframe without steering rack .
- Remove wheel spoiler (front left) ➔ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liner; Exploded view - wheel housing liner (front) .



- Unscrew nut -1- and bolts -2- and place cable support bracket to one side together with cables.



- Pull locking mechanism forwards -arrow 1- onto stop and then turn to left -arrow 2- to lock.
- Press gate relay lever forwards -arrow 3- and pull gate selector cable out of cable end-piece.

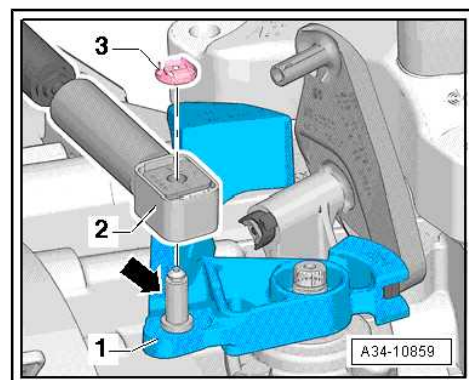


- Detach securing clip -3- for gear selector cable from gearbox selector lever -1- and pull selector cable -2- off pin -arrow-.



Note

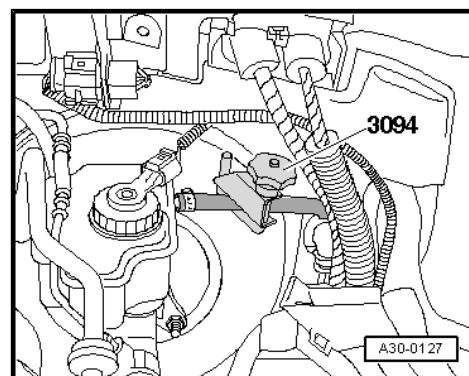
The gate relay lever must be removed before detaching the cable end-piece ➔ [page 61](#).



Note

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

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



Note

- ◆ Clamping off the supply hose with the hose clamp - 3094- will cause a permanent deformation.
- ◆ However, this does not damage the supply hose.
- ◆ After removing the hose clamp -3094- , the supply hose must be returned to its original shape.

- Place lint-free cloth under bleeder connection.
- Pull out retaining clip -arrow- as far as it will go and disconnect pipe/hose assembly -A- from bleeder connection.

 Note

-Item B- can be disregarded.

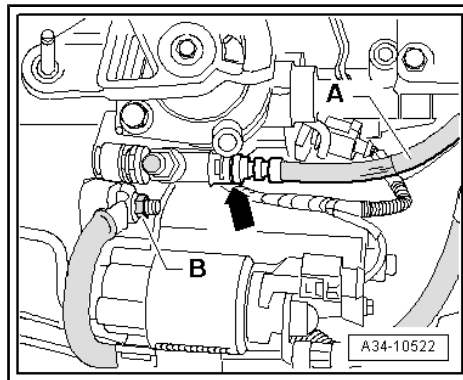
- Seal off open lines and connections with clean plugs from engine bung set - VAS 6122- .



Caution

Catch escaping brake fluid.

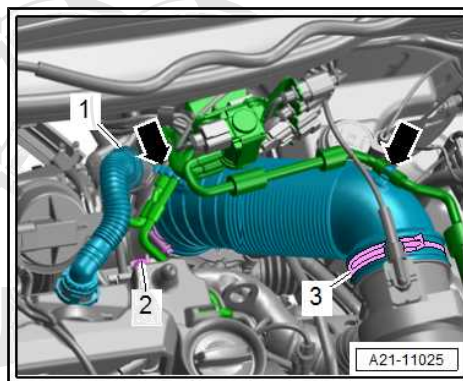
- ◆ **Do not operate clutch pedal after detaching pipe/hose assembly from bleeder connection on clutch slave cylinder.**



- Press release tabs on both sides and disconnect crankcase breather hose -1- from cylinder head cover.
- Move clear vacuum hoses at air pipe -arrows-.
- Remove bolt -2-, swivel air pipe and connection to rear and detach from turbocharger.

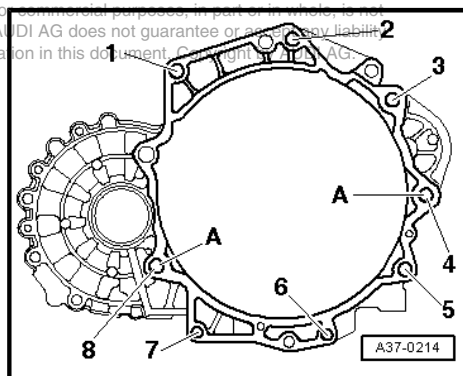
 Note

-Item 3- can be disregarded.



- Remove bolts -1, 2- securing gearbox to engine.

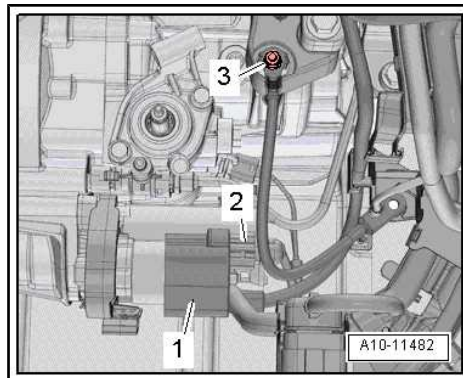
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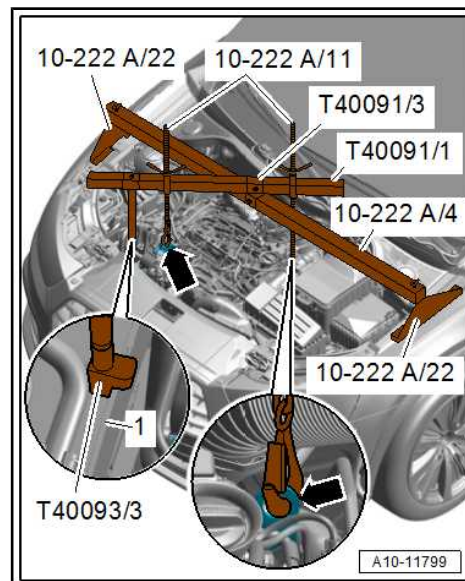
- Remove nut -3- and detach earth wire.

 Note

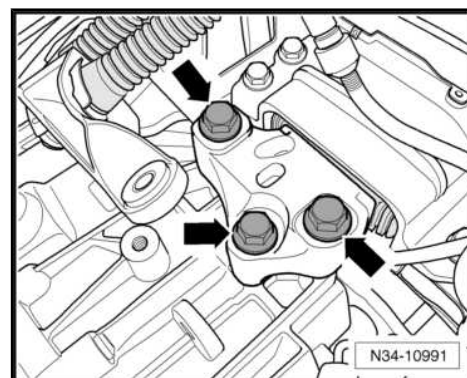
-Items 1 and 2- can be disregarded.



- Support engine in installation position ⇒ Rep. gr. 10 ; Assembly mountings; Supporting engine in installation position .

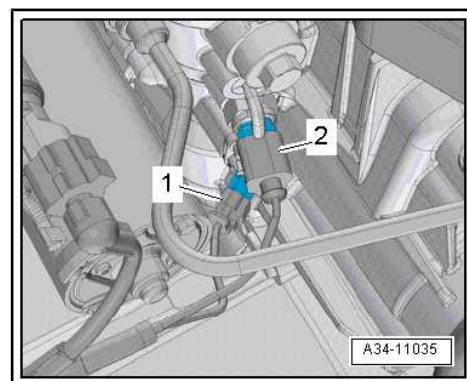


- Remove bolts -arrows- from gearbox mounting.

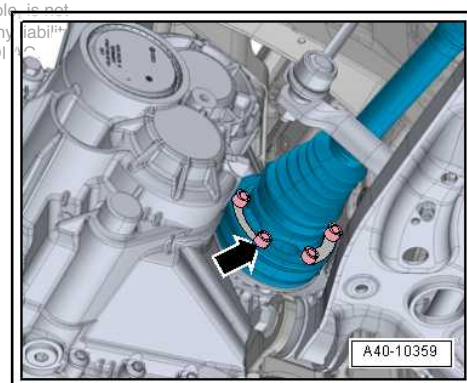


- Disconnect electrical connections on gearbox (front left).

- 1 - Gearbox neutral position sender - G701-
- 2 - Reversing light switch - F4-

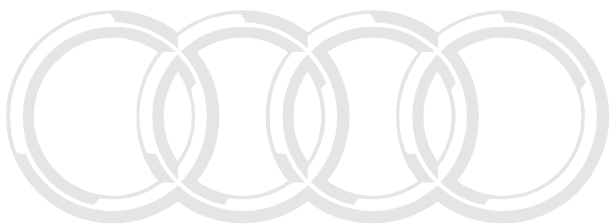


- Unbolt drive shaft, arrow, from flange shafts on both sides and tie up to rear Running gear axes steering; Rep gr 40; Drive shaft; Removing and installing drive shaft .



Vehicles with four-wheel drive:

- Remove bolts -1, 2- and detach bracket for bevel box.



- Remove bolts -arrows- and detach heat shield -1-.

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- Mark position of flexible coupling relative to bevel box flange for re-installation.
- Remove bolts -arrows- securing flexible coupling of propshaft to bevel box (counterhold triangular flange with suitable lever) ⇒ Rear final drive; Rep. gr. 39 ; Propshaft; Removing and installing propshaft .

- Push engine/gearbox assembly slightly towards front of vehicle and then pull propshaft off bevel box.



Caution

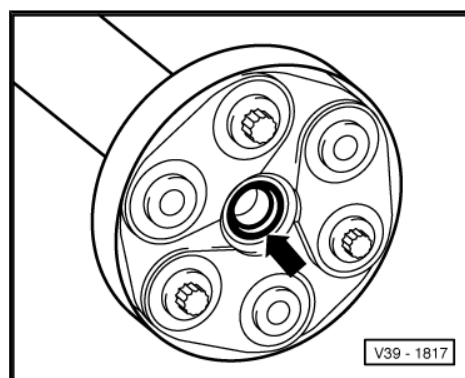
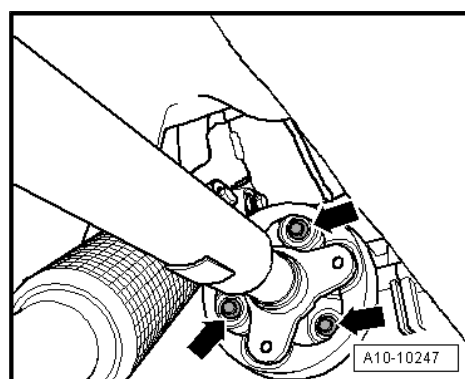
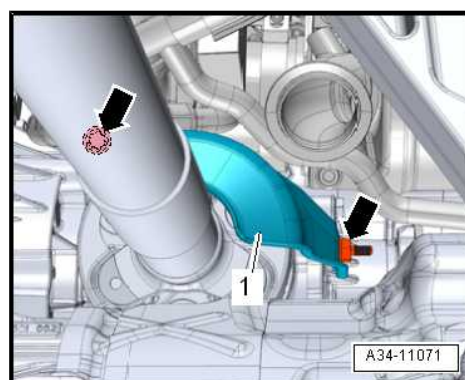
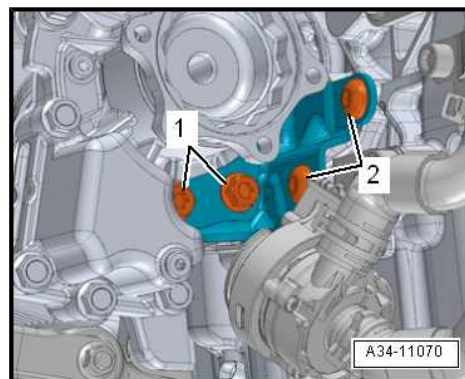
The seal -arrow- in the propshaft flange can be damaged.

- ◆ *Push propshaft towards the rear and to the right as far as possible.*



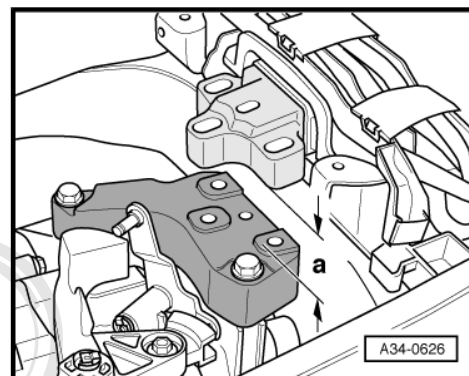
Note

If seal is damaged propshaft must be renewed.

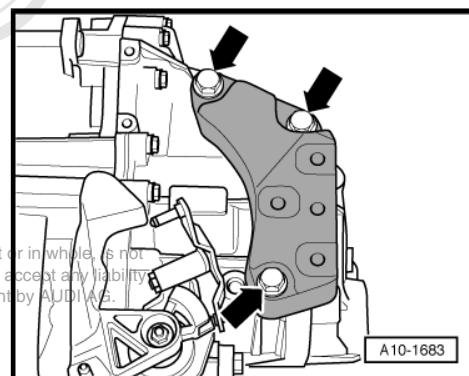


Continued for all vehicles:

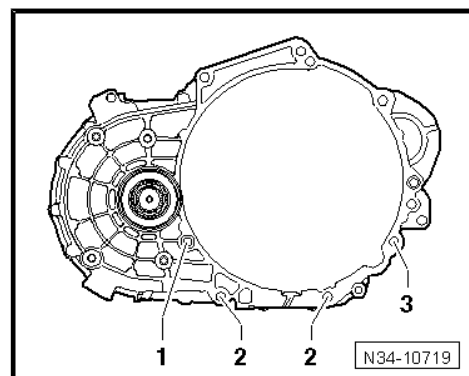
- Adjust spindles of support bracket - 10-222A- to lower gearbox by distance -a-.
- Dimension -a- = 60 mm



- Remove bolts -arrows- and detach gearbox support from gearbox.

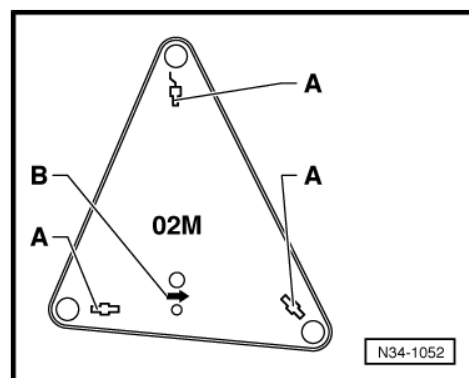


- Remove bolts -2, 3- securing gearbox to engine.

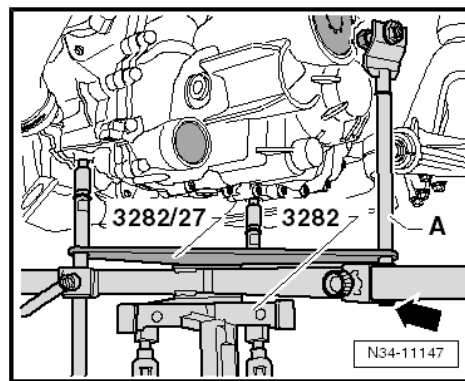


To remove gearbox "02Q" set up gearbox support - 3282- with adjustment plate - 3282/27- .

- 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.
- Screw in support elements -A-, as illustrated on adjustment plate.
- Place engine and gearbox jack - V.A.G 1383 A- underneath vehicle.
- The arrow symbol -B- on the adjustment plate points in the direction of travel.



- Align adjustment plate parallel with gearbox.
- Pin -A- should be flush with underside of guide of gearbox support -arrow-.



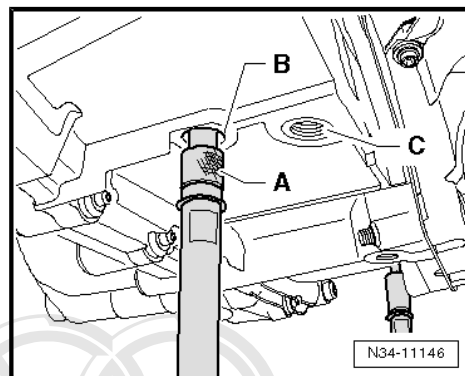
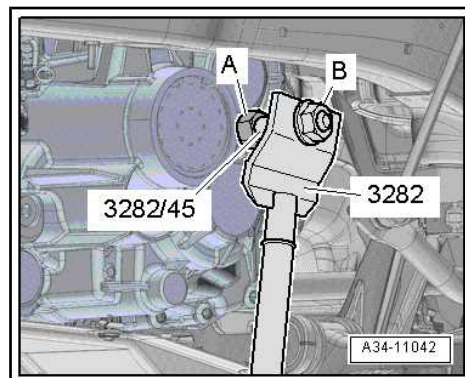
- Screw bolt - 3282/45- into threaded hole in gearbox housing as shown in illustration.



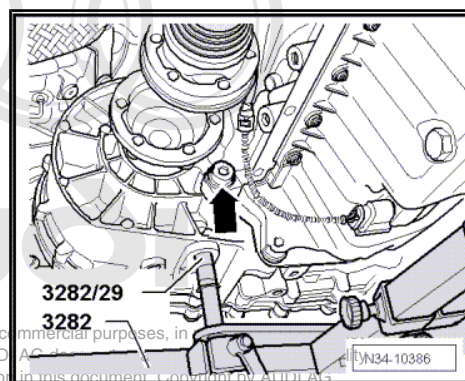
Note

The bolt - 3282/45- cannot be screwed in completely, so use an M10 nut -item A- (approx 5 mm thick) as a spacer.

- Secure gearbox to gearbox support - 3282- with flange nut -B-.
- Insert pin -A- of gearbox support - 3282- into attachment point -B- next to rear threaded hole -C- for pendulum support.



- Remove last engine/gearbox securing bolt -arrow-.
- Press gearbox off engine (dowel sleeves).
- Carefully lower gearbox.



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2.2 Installing gearbox

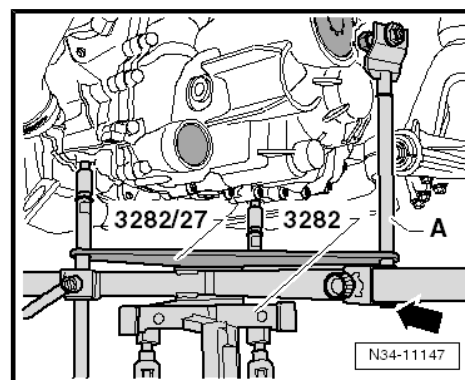


Note

- ◆ *Renew bolts which are tightened by turning through a specified angle.*
- ◆ *Renew self-locking nuts and bolts, and seals, O-rings and gaskets.*
- ◆ *Secure all hose connections with the correct hose clips (as original equipment); refer to ⇒ *Electronic parts catalogue* .*

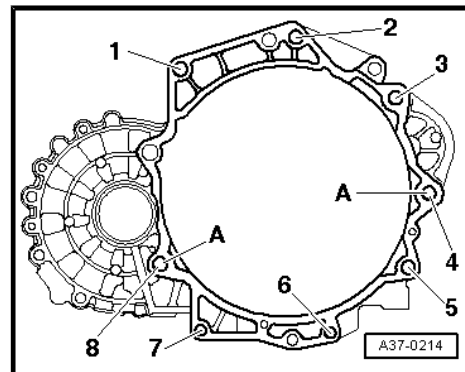
Tightening torques for installing gearbox ⇒ [page 144](#)

- When fitting a replacement gearbox: attach gearbox selector lever and gate relay lever to new gearbox.
- Place gearbox on gearbox support - 3282- and secure in position.
- Using a thread tap, carefully remove remaining locking fluid from all threaded holes which will accommodate self-locking bolts.
- Clean splines of input shaft and apply a thin coat of grease for clutch plate splines - G 000 100- .
- It should be possible to push the clutch plate back and forth slightly on the input shaft.
- Check that dowel sleeves -A- for centralising engine/gearbox are in the cylinder block; install any missing dowel sleeves.



Note

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).



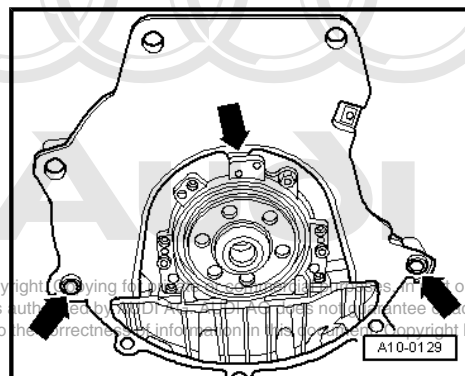
- Make sure that intermediate plate is engaged on sealing flange -top arrow- and fitted onto dowel sleeves -bottom arrows-.
- Check release bearing for wear. If necessary, renew clutch slave cylinder with release bearing ➔ [page 33](#) .
- Raise gearbox carefully using gearbox support - 3282- .



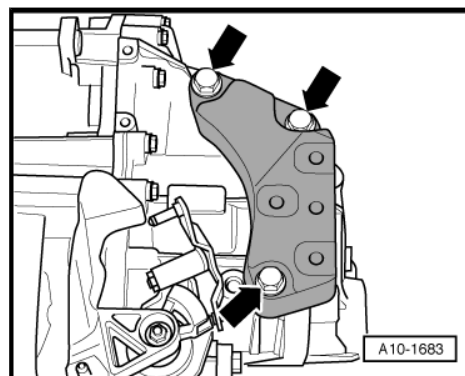
Caution

Risk of damage due to brake fluid escaping at clutch master cylinder.

- ◆ ***Cover connection or bleeder connection with a cloth as brake fluid may escape from connection for clutch master cylinder when pushing gearbox towards engine.***



- Align gearbox with engine and install.
- Install gearbox bracket with new bolts -arrows-.



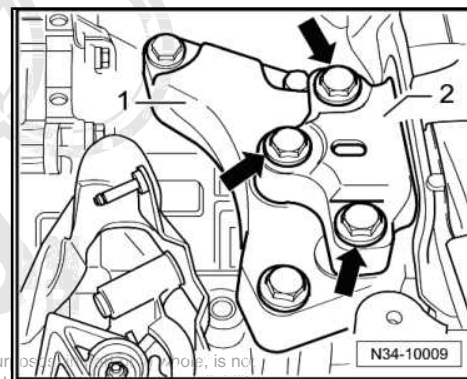
- Align engine/gearbox assembly in installation position; to do so, tighten spindles of support bracket - 10-222A- until gearbox bracket -1- makes contact with gearbox mounting -2-.



Caution

The threads in the gearbox bracket can be damaged if the bolts are not inserted straight.

- ◆ *Before fitting the bolts -arrows-, the gearbox bracket and the gearbox mounting must be aligned so they are exactly parallel. To do this, place engine and gearbox jack - V.A.G 1383 A- below gearbox (near differential) and lift until gearbox bracket is parallel with gearbox mounting.*



- Check adjustment of assembly mountings ⇒ Rep. gr. 10 ; Assembly mountings; Checking adjustment of assembly mountings .



Caution

Risk of accident.

- ◆ *Do not remove support bracket - 10-222A- until all bolts securing the left-hand engine/gearbox mounting have been tightened to the specified torque.*

Vehicles with front-wheel drive:

- Install flange shaft (right-side) ⇒ [page 198](#) .

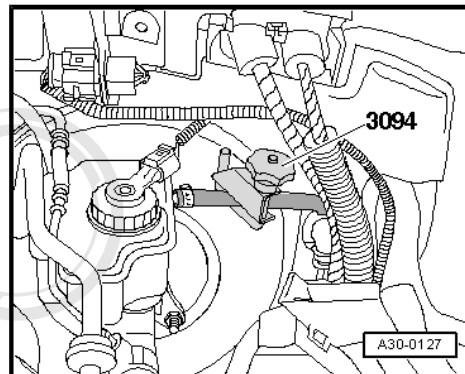
Vehicles with four-wheel drive:

- Install bevel box ⇒ [page 172](#) .
- Attach propshaft to bevel box ⇒ Rep. gr. 39 ; Removing and installing propshaft .

Continued for all vehicles:

- Install components of exhaust system ⇒ Rep. gr. 26 ; Exhaust pipes/silencers; Exploded view - silencers .
- Install particulate filter ⇒ Rep. gr. 26 ; Emission control system; Removing and installing particulate filter .
- Install drive shafts ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .
- Install heat shield for drive shaft (right-side) ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Exploded view - drive shaft .
- Install wishbone and swivel joint ⇒ Running gear, axles, steering; Rep. gr. 40 ; Lower wishbone, swivel joint; Exploded view - lower wishbone, swivel joint .
- Install coupling rod ⇒ Running gear, axles, steering; Rep. gr. 40 ; Subframe; Exploded view - subframe .
- Install front left vehicle level sender - G78- ⇒ Running gear, axles, steering; Rep. gr. 43 ; Vehicle level senders; Exploded view - front vehicle level sender .
- Install pendulum support ⇒ Rep. gr. 10 ; Assembly mountings; Removing and installing pendulum support .
- Install air pipe and air hose ⇒ Rep. gr. 21 ; Charge air system; Exploded view - charge air system .

- Install wheel housing liner (front) with wheel spoiler on both sides ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Removing and installing wheel housing liner (front) .
- Connect pipe to bleeder connection ⇒ [page 17](#) .
- After removing the hose clamp - 3094- , the supply hose must be returned to its original shape.
- Bleed clutch system ⇒ [page 36](#) .
- Install cables and cable support bracket on gearbox ⇒ [page 57](#) .
- Install gate relay lever ⇒ [page 60](#) .
- Install starter ⇒ Electrical system; Rep. gr. 27 ; Starter; Removing and installing starter .
- Install earth wire ⇒ Current flow diagrams, Electrical fault finding and Fitting locations.
- Install battery tray and battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .
- Fit front wheels ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .
- Check gear oil level in gearbox ⇒ [page 178](#) .



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Vehicles with four-wheel drive:

- Check gear oil level in bevel box ⇒ [page 215](#) .

2.3 Tightening torques for gearbox



Note

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

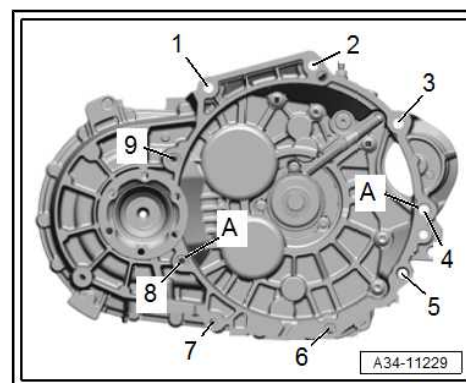
Component	Nm
Bolts and nuts	M6 9
	M7 15
	M8 20
	M10 40
	M12 65

Assembly mountings ⇒ [page 147](#)

Securing manual gearbox 02Q (front-wheel drive) to 1.4 ltr. TFSI engine

Item	Bolt	Nm
1 ¹⁾ , 2	M12x60	80
3, 4 ^{1) 2)}	M12x170	80
5	M10x110	40
6, 7	M10x50	40
8	M12x70	80
A	Dowel sleeves for centralising	

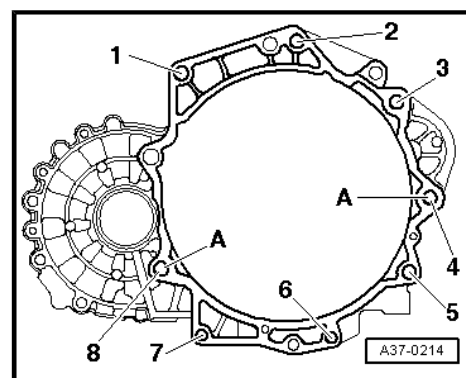
- ¹⁾ Bolt with stud M8
- ²⁾ Also secures starter.



Securing manual gearbox 0BB/02Q (front-wheel drive) to 2.0 ltr. TFSI/TDI engine

Item	Bolt	Nm
1, 2	M12x65	80
3 ^{1) 2)}	M12x150	80
4 ^{1) 2)}	M12x165	80
5, 6, 7	M10x50	40
8	M12x85	80
A	Dowel sleeves for centralising	

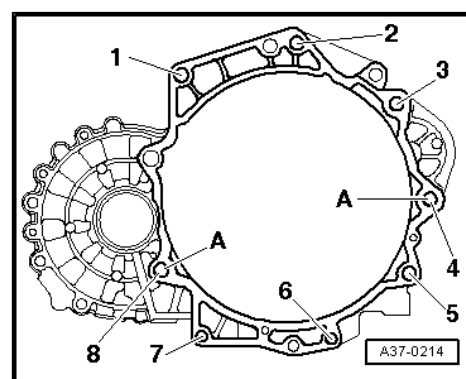
- ¹⁾ Bolt with stud M8
- ²⁾ Also secures starter.



Securing manual gearbox 02Q (four-wheel drive) to 2.0 ltr. TFSI engine

Item	Bolt	Nm
1, 2	M12 x 65	80
3 ^{1) 2)}	M12 x 150	80
4 ^{1) 2)}	M12 x 165	80
5, 6, 7	M10 x 50	40
8	M12 x 85	80
A	Dowel sleeves for centralising	

- ¹⁾ Bolt with stud M8
- ²⁾ Also secures starter.

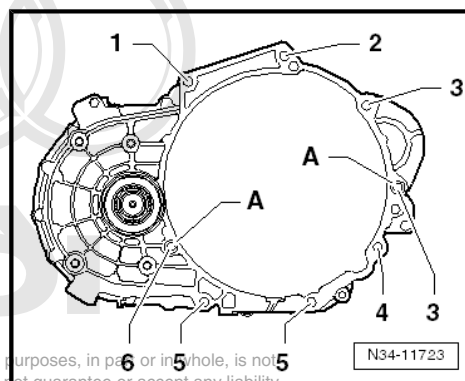


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Securing manual gearbox 02Q (four-wheel drive) to 2.0 ltr. TDI engine

Item	Bolt	Nm
1 ¹⁾	M12 x 55	80
2	M12 x 50 ⁴⁾	80
3 ^{2) 3)}	M12 x 165	80
4	M10 x 105	40
5	M10 x 50	40
6	M12 x 70	80
A	Dowel sleeves for centralising	

- ¹⁾ Bolt with long stud M8
- ²⁾ Bolt with short stud M8
- ³⁾ Also secures starter.
- ⁴⁾ Or bolt M12 x 55 with short stud M8



3 Assembly mountings

⇒ [“3.1 Exploded view - assembly mountings”, page 147](#)

3.1 Exploded view - assembly mountings

⇒ [“3.1.1 Exploded view - assembly mountings, 1.4 ltr. TFSI engine”, page 147](#)

⇒ [“3.1.2 Exploded view - assembly mountings, 2.0 ltr. TFSI and TDI engines”, page 149](#)

3.1.1 Exploded view - assembly mountings, 1.4 ltr. TFSI engine

1 - Bolt

- ❑ Tightening torque ⇒
Rep. gr. 10 ; Assembly
mountings; Exploded
view - assembly mount-
ings

2 - Engine support

- ❑ Removing and installing
⇒ Rep. gr. 10 ; Assem-
bly mountings; Explod-
ed view - assembly
mountings

3 - Engine mounting

- ❑ With support arm
- ❑ Removing and installing
⇒ Rep. gr. 10 ; Assem-
bly mountings; Remov-
ing and installing engine
mounting

4, 5, 6 - Bolts

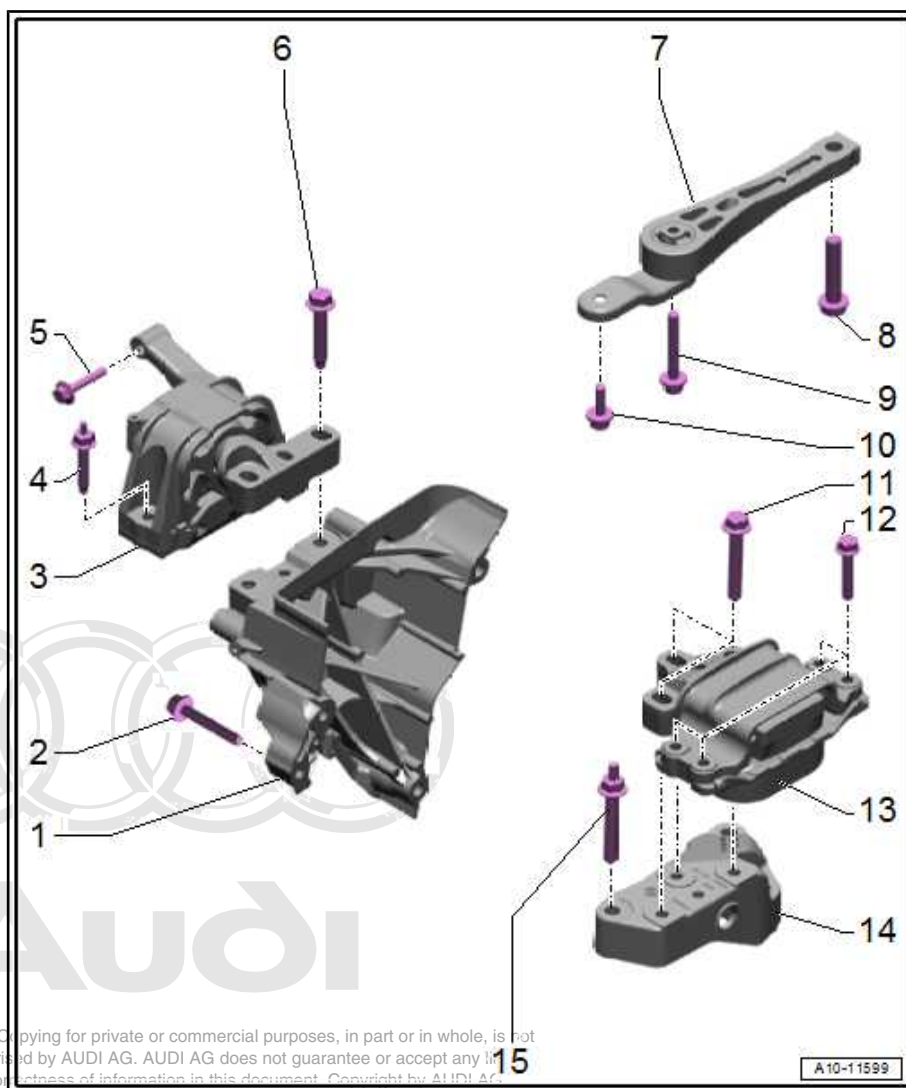
- ❑ Tightening torque ⇒
Rep. gr. 10 ; Assembly
mountings; Exploded
view - assembly mount-
ings

7 - Pendulum support

- ❑ Removing and installing
⇒ Rep. gr. 10 ; Assem-
bly mountings; Remov-
ing and installing pendu-
lum support

8, 9, 10 - Bolts

- ❑ Tightening torque ⇒
Rep. gr. 10 ; Assembly



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A 10-11599



mountings; Exploded
view - assembly mountings

11 - Bolt

- ☐ Renew after removal
- ☐ 60 Nm +90°

12 - Bolt

- ☐ Renew after removal
- ☐ 60 Nm +90°

13 - Gearbox mounting

- ☐ With support arm
- ☐ Removing and installing ⇒ Rep. gr. 10 ; Assembly mountings; Removing and installing gearbox mounting

14 - Gearbox support

- ☐ Removing ⇒ [“2.1.1 Removing gearbox - vehicles with 1.4 ltr. TFSI engine”, page 78](#)
- ☐ Installing ⇒ [“2.2 Installing gearbox”, page 141](#)

15 - Bolt

- ☐ Renew after removal
- ☐ 60 Nm +90°

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3.1.2 Exploded view - assembly mountings, 2.0 ltr. TFSI and TDI engines

1 - Engine support

- ☐ Removing and installing
⇒ Rep. gr. 10 ; Assembly mountings; Exploded view - assembly mountings

1 - Bolt

- ☐ Tightening torque ⇒
Rep. gr. 10 ; Assembly mountings; Exploded view - assembly mountings

3 - Engine mounting

- ☐ With support arm
- ☐ Removing and installing
⇒ Rep. gr. 10 ; Assembly mountings; Removing and installing engine mounting

4, 5, 6 - Bolts

- ☐ Tightening torque ⇒
Rep. gr. 10 ; Assembly mountings; Exploded view - assembly mountings

7 - Pendulum support

- ☐ Removing and installing
⇒ Rep. gr. 10 ; Assembly mountings; Removing and installing pendulum support

8, 9, 10 - Bolts

- ☐ Tightening torque ⇒
Rep. gr. 10 ; Assembly mountings; Exploded view - assembly mountings

11 - Bolt

- ☐ Renew after removal
- ☐ 60 Nm +90°

12 - Bolt

- ☐ Renew after removal
- ☐ 60 Nm +90°

13 - Gearbox mounting

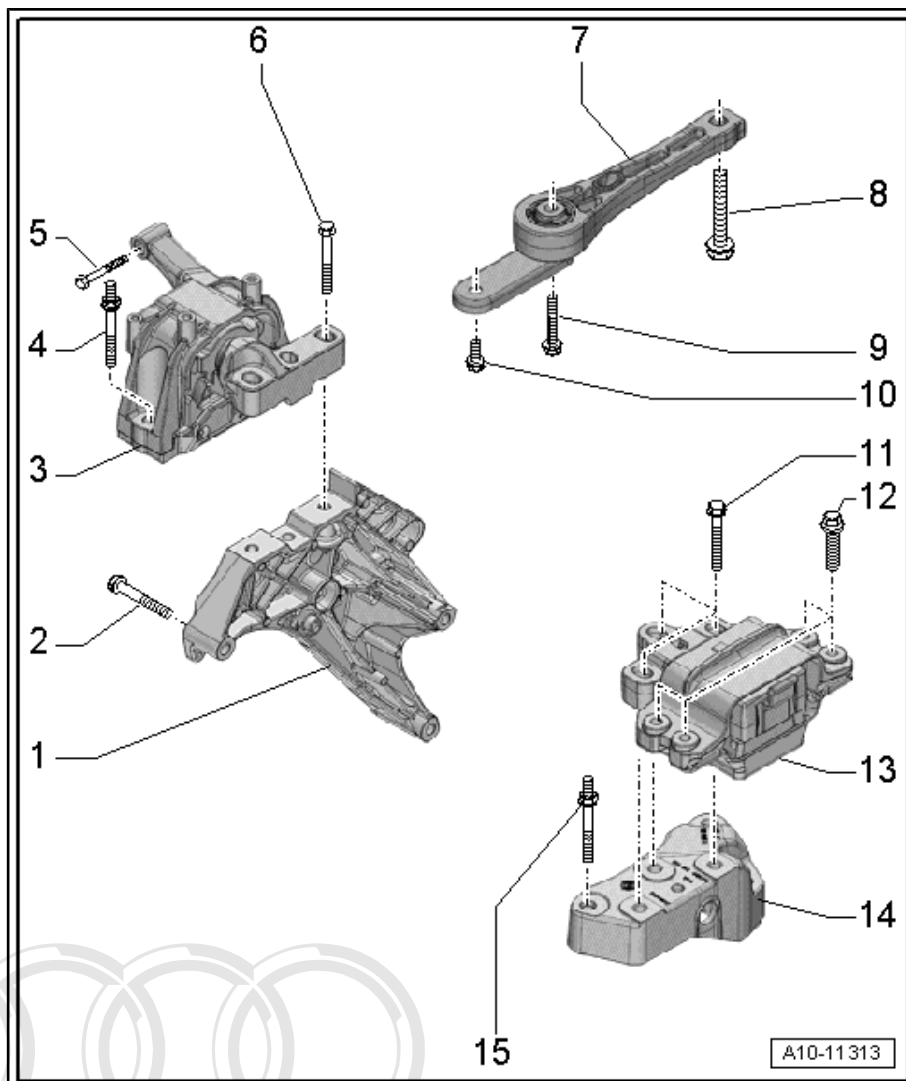
- ☐ With support arm
- ☐ Removing and installing ⇒ Rep. gr. 10 ; Assembly mountings; Removing and installing gearbox mounting

14 - Gearbox support

- ☐ Removing ⇒ ["2.1 Removing gearbox", page 78](#)
- ☐ Installing ⇒ ["2.2 Installing gearbox", page 141](#)

15 - Bolt

- ☐ Renew after removal
- ☐ 60 Nm +90°



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4 Bevel box

⇒ [“4.1 Removing bevel box”, page 150](#)

⇒ [“4.2 Installing bevel box”, page 172](#)

4.1 Removing bevel box

⇒ [“4.1.1 Removing bevel box - vehicles with 2.0 ltr. TFSI engine \(generation II\)”, page 150](#)

⇒ [“4.1.2 Removing bevel box - vehicles with 2.0 ltr. TFSI engine \(generation III\)”, page 154](#)

⇒ [“4.1.3 Removing bevel box - vehicles with 2.0 ltr. TDI engine \(EA 189, generation II\)”, page 159](#)

⇒ [“4.1.4 Removing bevel box - vehicles with 2.0 ltr. TDI engine \(EA 288, generation I\)”, page 165](#)

⇒ [“4.1.5 Removing and installing bevel box \(gearbox removed from vehicle\)”, page 170](#)

4.1.1 Removing bevel box - vehicles with 2.0 ltr. TFSI engine (generation II)

Special tools and workshop equipment required

- ◆ Socket and extended bit - T10107A- , 6 mm



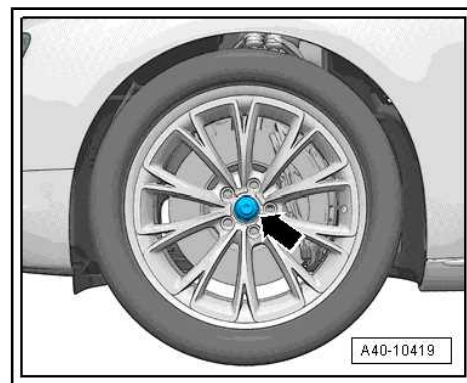
- ◆ Socket (24 mm) - T10361A-



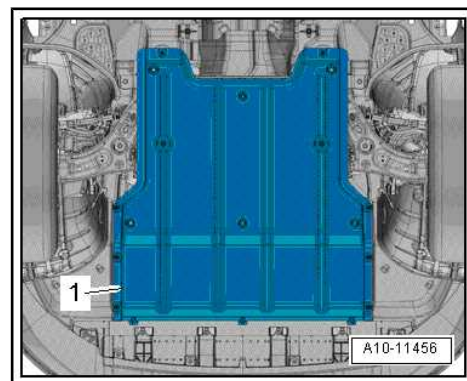
Removing

Drive shaft (right-side) must be removed at a later stage.

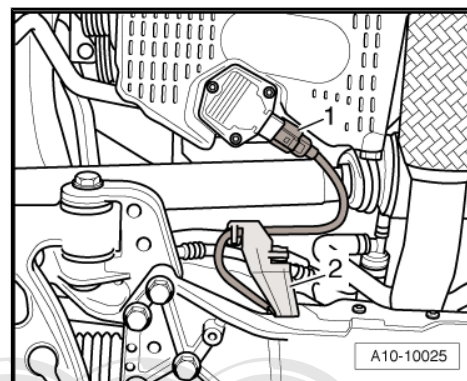
- With vehicle still standing on its wheels, slacken off twelve-point bolt -arrow- on front wheel (right-side) with socket (24 mm) - T10361- 90° (maximum). Do not slacken further, as this would damage the wheel bearing.
- Remove front wheel (right-side) ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .



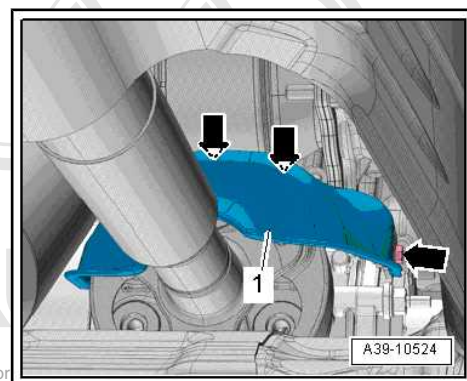
- Remove noise insulation -1- ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .



- Unplug electrical connector -1- at oil level and oil temperature sender - G266- .
- Unclip bracket -2- for electrical wiring leading to oil level and oil temperature sender - G266- at subframe.
- Remove drive shaft (right-side) ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .

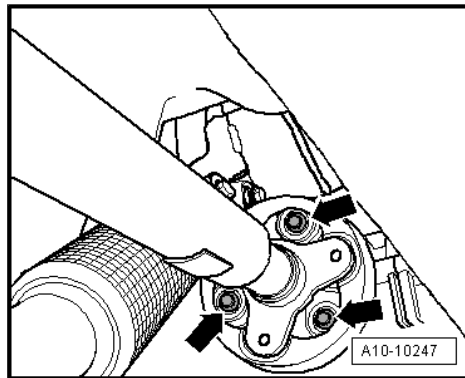


- If fitted, remove bolts -arrows- and detach heat shield -1-.



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- Mark position of flexible coupling relative to bevel box flange for re-installation.
- Remove bolts -arrows- securing flexible coupling of propshaft to bevel box (counterhold triangular flange with suitable lever)
⇒ Rear final drive; Rep. gr. 39 ; Propshaft; Removing and installing propshaft .



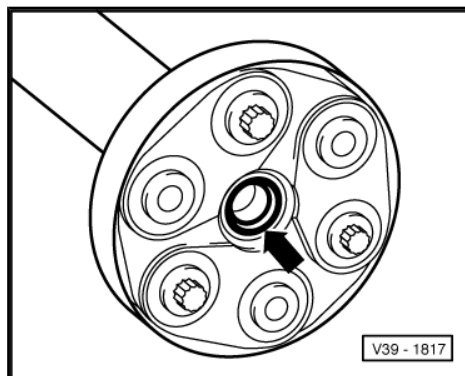
- Push engine/gearbox assembly slightly towards front of vehicle and then pull propshaft off bevel box.



Caution

The seal -arrow- in the propshaft flange can be damaged.

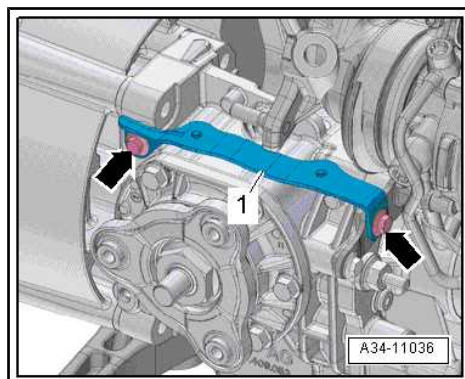
- ◆ *Push propshaft towards the rear and to the right as far as possible.*



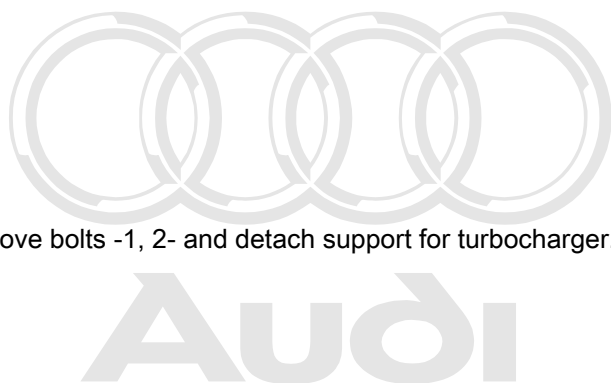
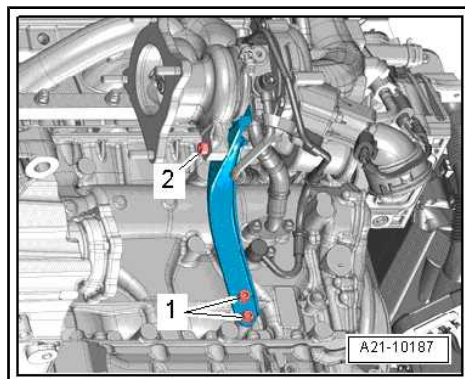
Note

If seal is damaged propshaft must be renewed.

- Remove bolts -arrows- and detach bracket -1-.



- Remove bolts -1, 2- and detach support for turbocharger.

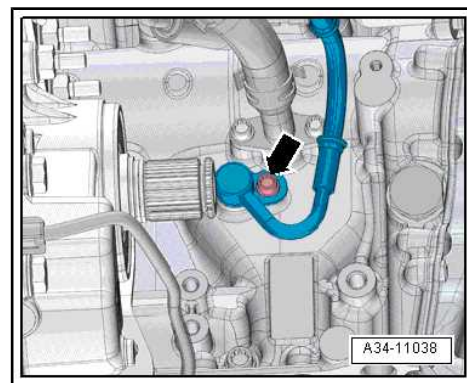


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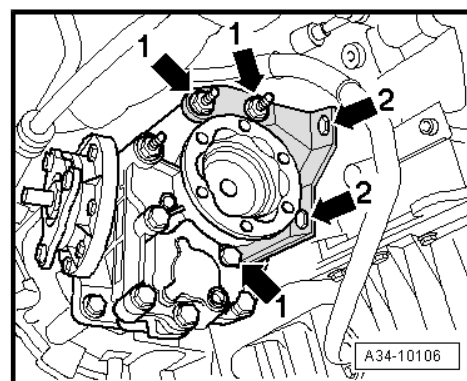
 Note

Place cloth below connection to catch escaping engine oil.

- Remove bolt -arrow-, disconnect oil supply line from cylinder block and press to the side.



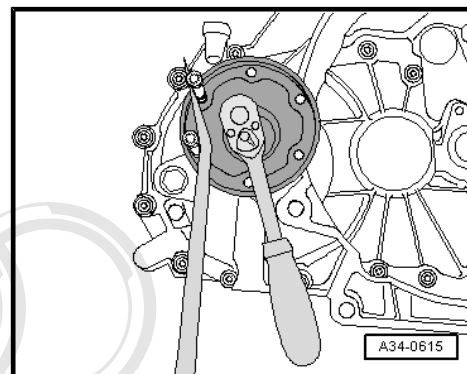
- Remove bolts -arrows 1 and 2- for gearbox carrier.



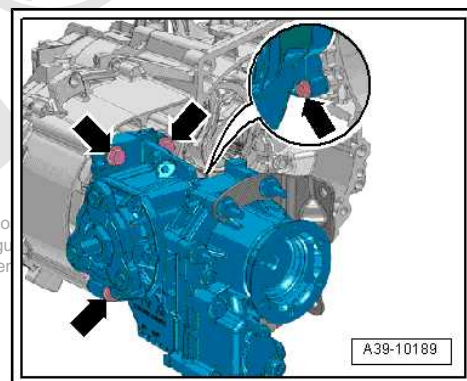
- Remove bolt for flange shaft (right-side) using socket and extended bit - T10107 A- .

 Note

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



- Remove bolts -arrows- securing bevel box to gearbox.

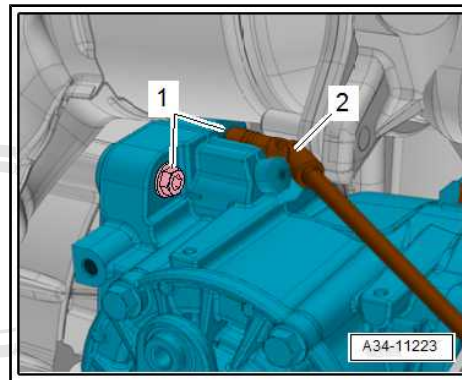


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i Note

Use a jointed socket wrench -2- to unscrew bolts at top -1-.

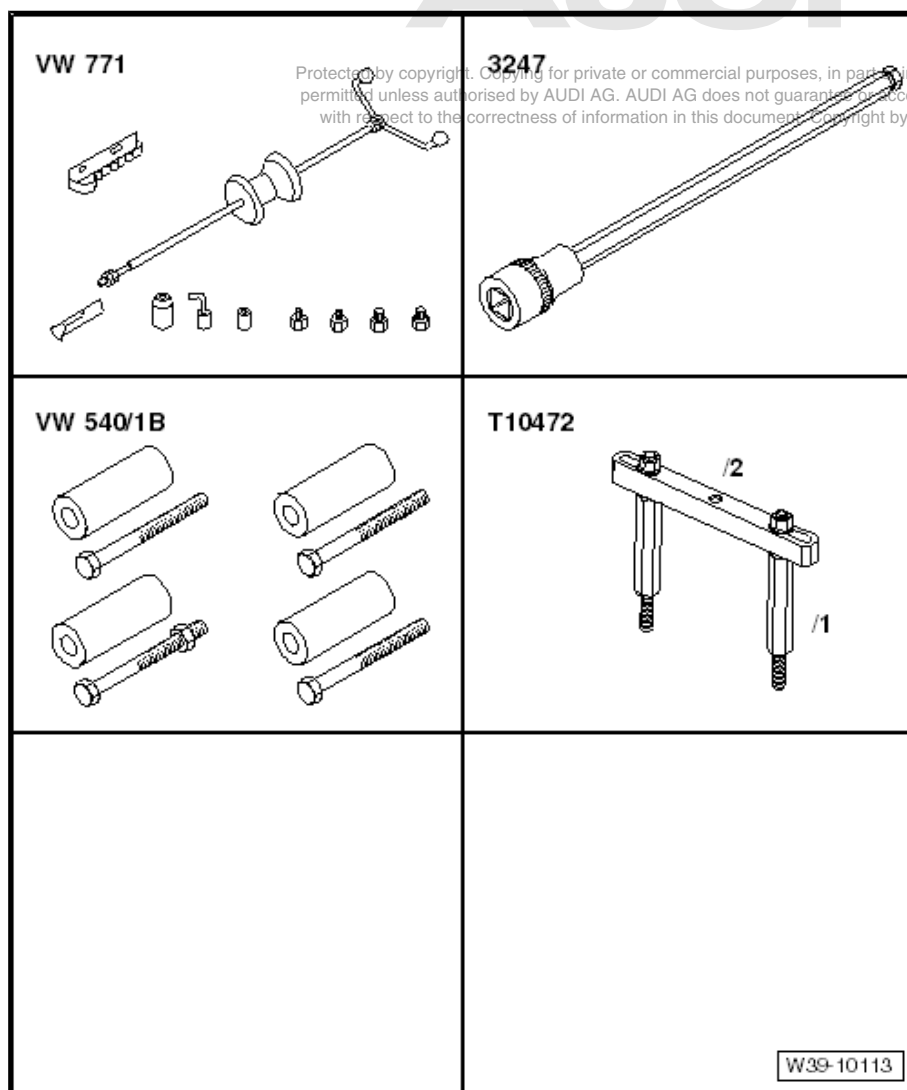
- Carefully push bevel box away from gearbox, making sure it does not fall down.
- Detach bevel box together with bracket for bevel box.



4.1.2 Removing bevel box - vehicles with 2.0 ltr. TFSI engine (generation III)

Special tools and workshop equipment required

- ◆ Multi-purpose tool - VW 771-
- ◆ Hexagon key extension, 8 mm - 3247-
- ◆ Engine and gearbox support supplement - VW 540/1 B-
- ◆ Puller - T10472-



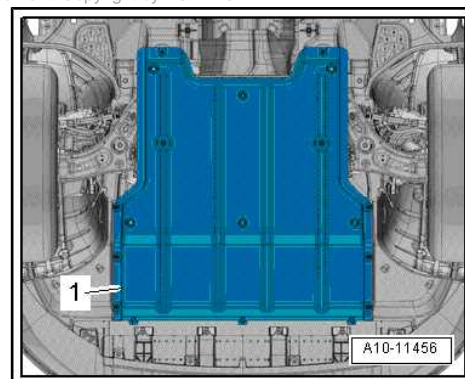
◆ Extension -2024A/1-



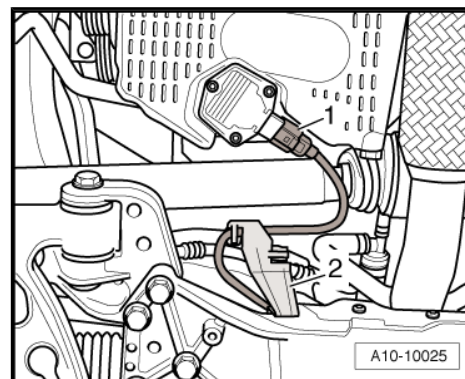
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Removing

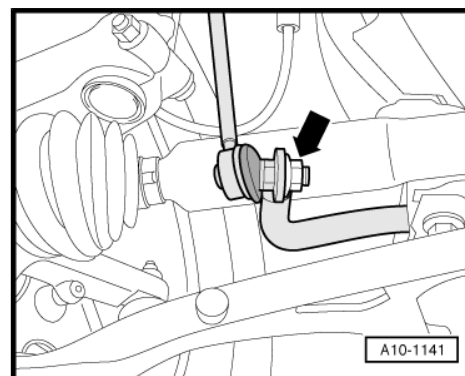
- Remove front wheel (right-side) ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .
- Remove noise insulation -1- ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .



- Unplug electrical connector -1- at oil level and oil temperature sender - G266- .
- Unclip bracket -2- for electrical wiring leading to oil level and oil temperature sender - G266- at subframe.



- Unscrew nut -arrow- for coupling rod on anti-roll bar (right-side).
- If fitted, unscrew nut for bracket for front right vehicle level sender - G289- .

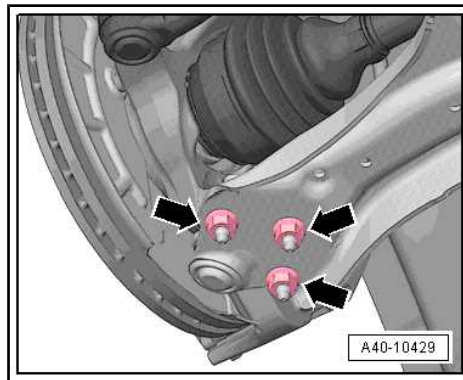


- Remove nuts -arrows- securing swivel joint (right-side).
- Disengage swivel joint (right-side) from wishbone.
- Detach drive shaft (right-side) from bevel box and tie up ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .



Note

Make sure you do not damage surface coating on drive shaft.



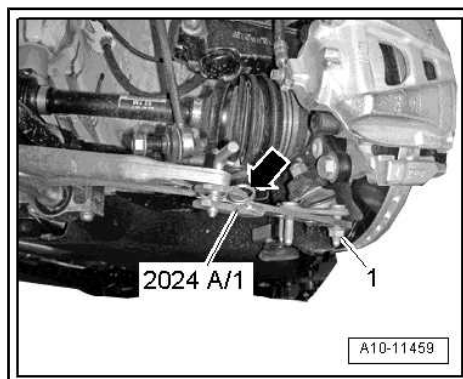
- Swivel suspension strut (right-side) outwards and support with extension -2024A/1- , as shown in illustration.



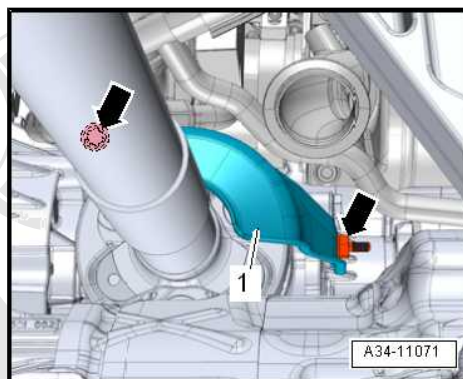
WARNING

Risk of accident if parts of support are not properly secured.

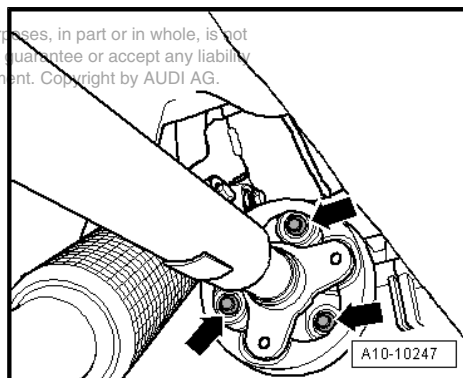
- ◆ *Secure locking pin and swivel joint with retaining clip -arrow- and nut -1-.*



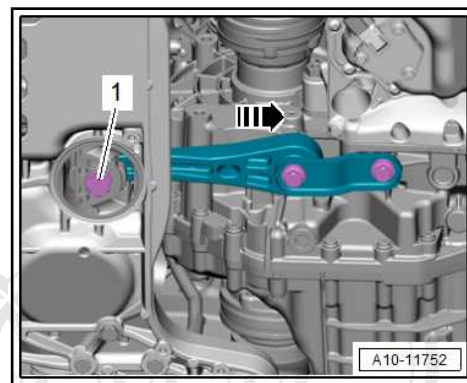
- Remove bolts -arrows- and detach heat shield -1-.



- Mark position of flexible coupling relative to bevel box flange for re-installation.
- Remove bolts -arrows- securing flexible coupling of propshaft to bevel box (counterhold triangular flange with suitable lever) ⇒ Rear final drive; Rep. gr. 39 ; Propshaft; Removing and installing propshaft .



- Remove bolt -1- for pendulum support and push engine/gear-box assembly forwards -arrow- until it is possible to re-install bolt.



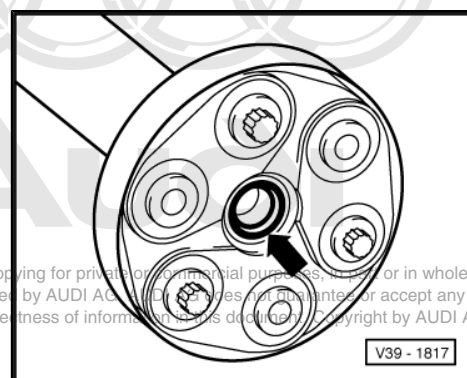
- Detach propshaft from bevel box.



Caution

The seal -arrow- in the propshaft flange can be damaged.

- ◆ *Push propshaft towards the rear and to the right as far as possible.*



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Note

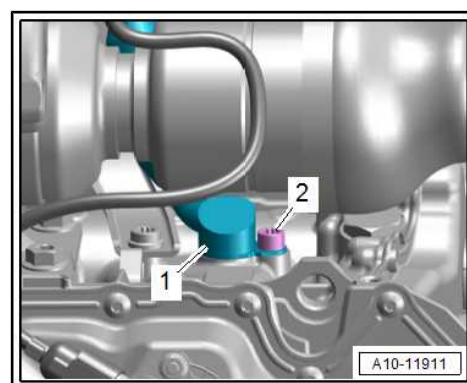
If seal is damaged propshaft must be renewed.



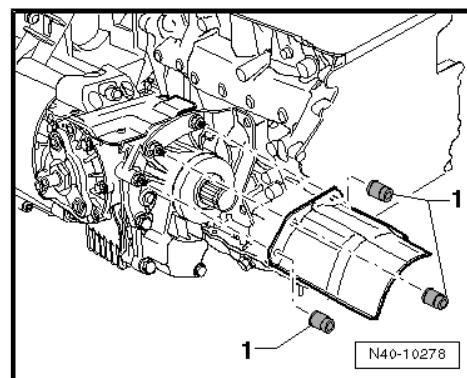
Note

Place cloth below connection to catch escaping engine oil.

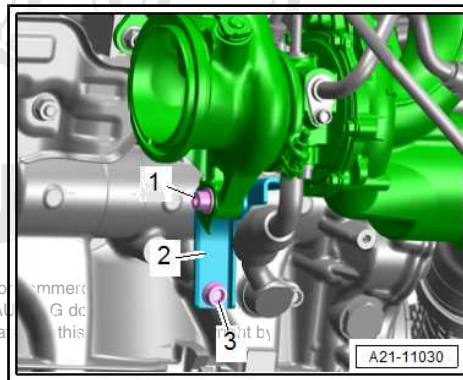
- Remove bolt -2-, disconnect oil supply connection -1- from cylinder block and press to one side.



- Remove nuts -1- and detach heat shield for drive shaft (right-side).



- Remove bolts -1, 3- and detach support for turbocharger.

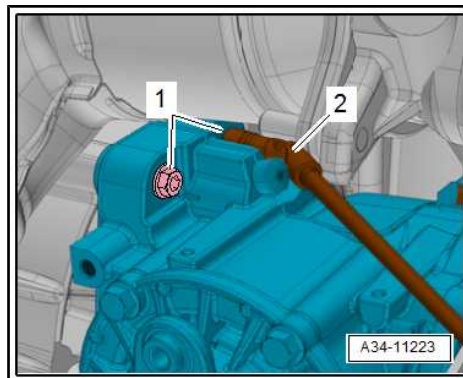


- Remove top bolts -1- securing bevel box to gearbox.



Note

Use a jointed socket wrench -2- to unscrew bolts.



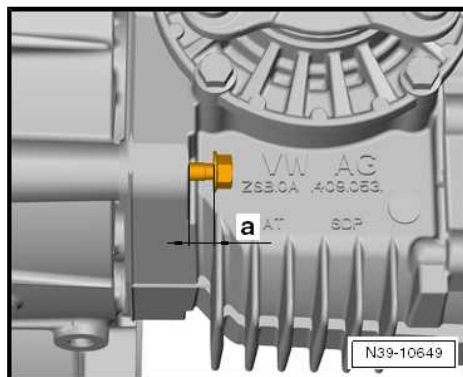
- Loosen bottom bolts -arrows- securing bevel box to gearbox: unscrew only as far as dimension -a-.

- Dimension -a- = 15 mm

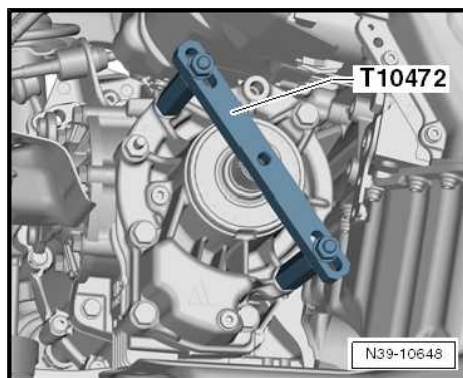


Note

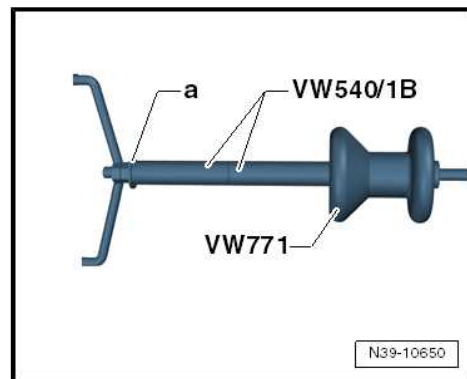
This prevents the gearbox from dropping out when it is slackened with multi-purpose tool - VW 771- .



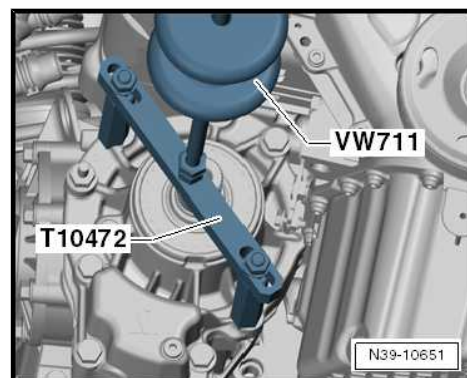
- Attach puller - T10472- to bevel box, as shown in illustration.



- Prepare multi-purpose tool - VW 771- with a washer -a- and 2 sleeves from engine and gearbox support supplement - VW 540/1 B- , as shown in illustration.



- Secure multi-purpose tool - VW 771- to puller - T10472- and detach bevel box from gearbox.
- Remove multi-purpose tool and puller.
- Remove bottom bolts and remove bevel box.



4.1.3 Removing bevel box - vehicles with 2.0 ltr. TDI engine (EA 189, generation II)

Special tools and workshop equipment required

- ◆ Puller - T10037-



- ◆ Socket and extended bit - T10107A-



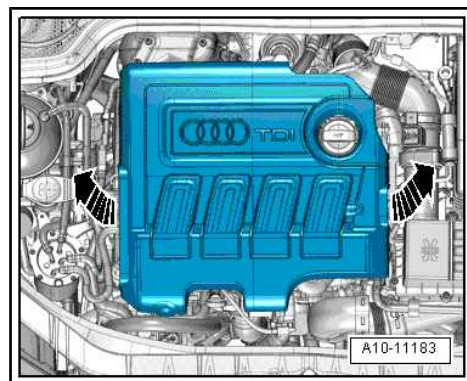
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◆ Cover cap - T10460-



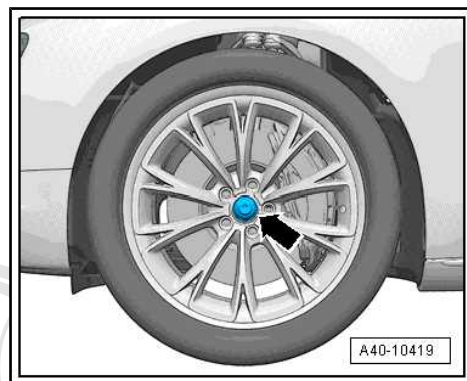
Procedure

- Remove engine cover panel ⇒ Rep. gr. 10 ; Engine cover panel; Removing and installing engine cover panel .

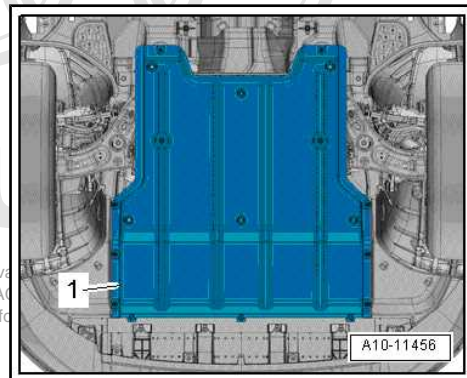


Drive shaft (right-side) must be removed at a later stage.

- With vehicle still standing on its wheels, slacken off twelve-point bolt -arrow- on front wheel (right-side) with socket (24 mm) - T10361- 90° (maximum). Do not slacken further, as this would damage the wheel bearing.

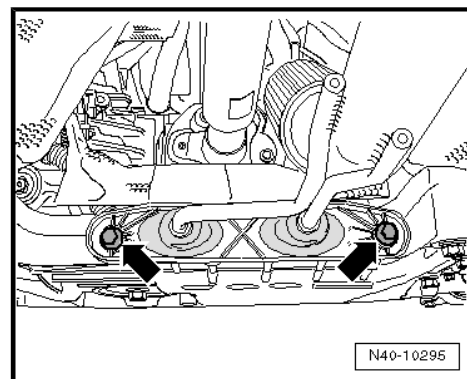


- Remove front wheel (right-side) ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .
- Remove noise insulation -1- ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .
- Remove wheel housing liner (front right) ⇒ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Removing and installing wheel housing liner (front) .



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- Remove exhaust system bracket from subframe -arrows-.



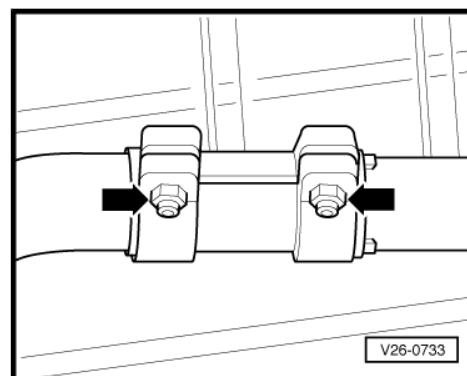
- Disconnect exhaust system at clamp -arrows-.



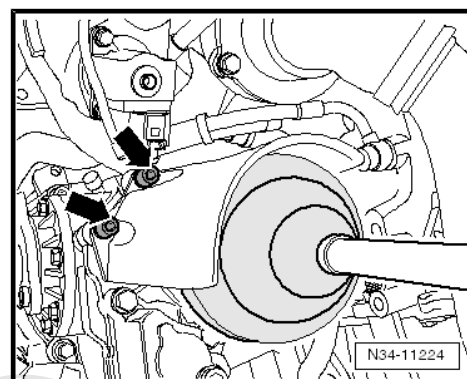
Caution

Risk of damage to flexible joint.

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

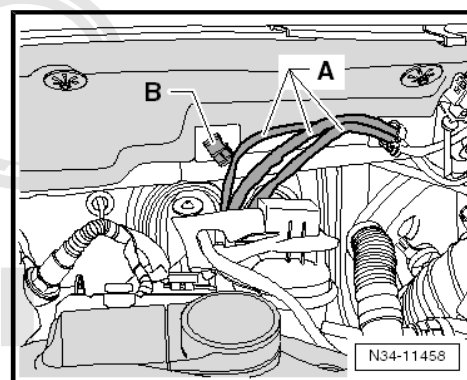


- Tie up front exhaust pipe.
- Detach heat shield for drive shaft from bevel box (2 nuts -arrows-).
- Remove drive shaft (right-side) ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .



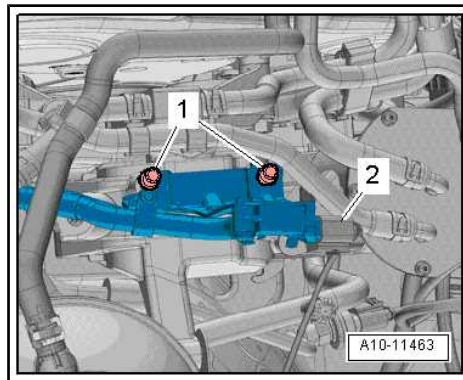
Detach particle filter from engine as follows:

- Take wiring -A- out of bracket -B-.



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- Unplug electrical connector -2-.
- Remove bolts -1- and move pressure differential sender - G505- clear with bracket.

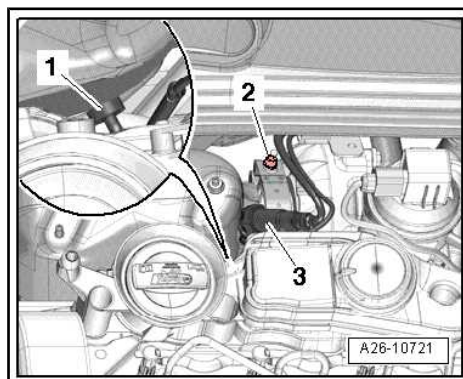


- Loosen bolt -2- and remove clamp.

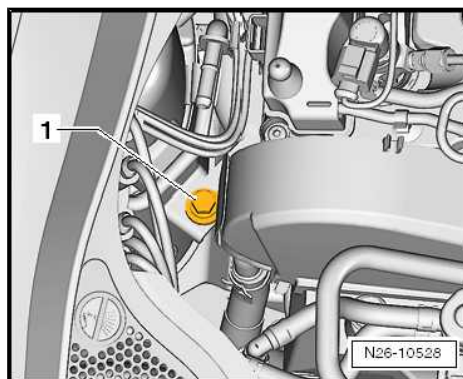


Note

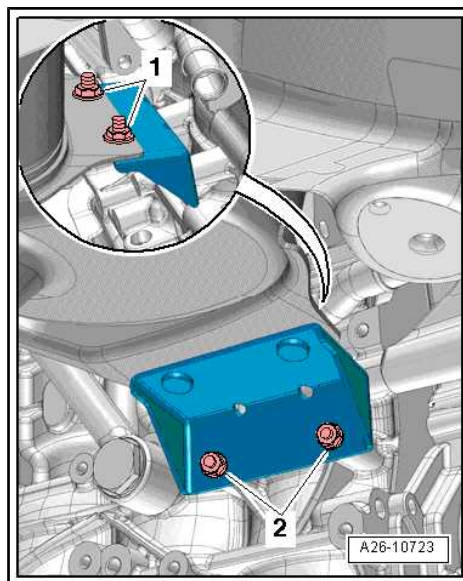
-Items 1 and 3- can be disregarded.



- Remove bolt -1- on bracket (top) for particulate filter.

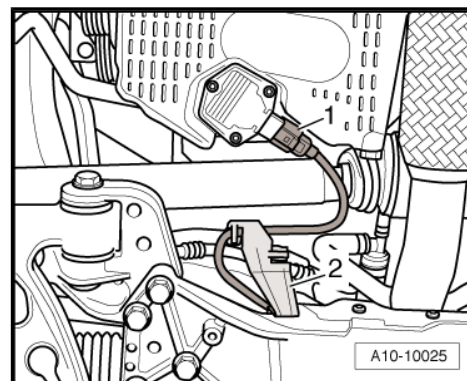


- Remove nuts -1- and -2- and detach bracket for particulate filter (bottom).
- Tie up particulate filter towards rear in direction of plenum chamber partition panel.

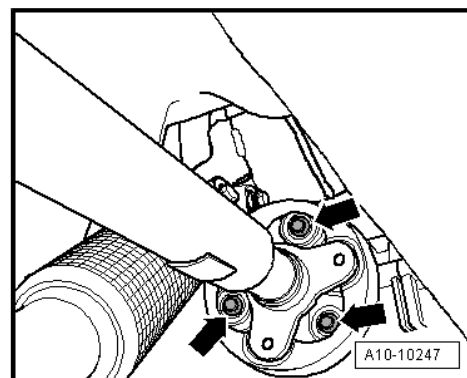


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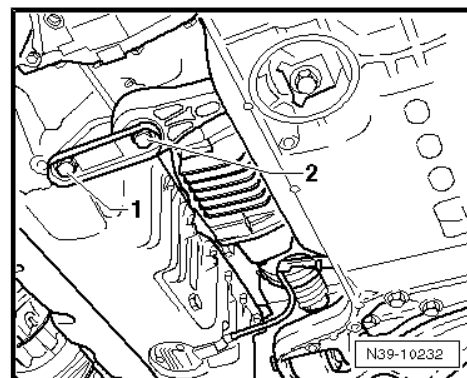
- Unplug electrical connector -1- at oil level and oil temperature sender - G266- .
- Unclip bracket -2- for electrical wiring leading to oil level and oil temperature sender - G266- at subframe.



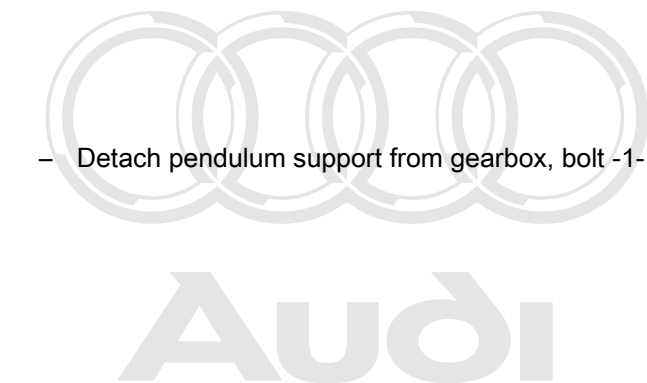
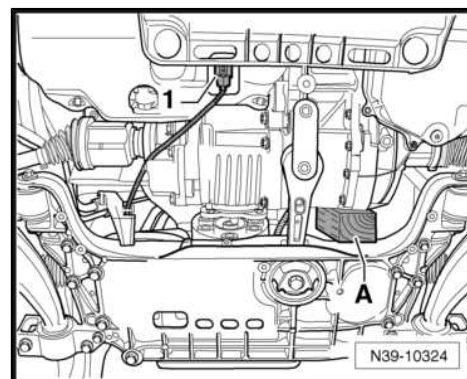
- Mark position of flexible coupling relative to bevel box flange for re-installation.
- Remove bolts -arrows- securing flexible coupling of propshaft to bevel box (counterhold triangular flange with suitable lever)
⇒ Rear final drive; Rep. gr. 39 ; Propshaft; Removing and installing propshaft .



- Detach pendulum support from gearbox, bolt -1- and bolt -2-.



- Push engine/gearbox assembly slightly towards front end and secure in this position with a suitable block of wood -A-.



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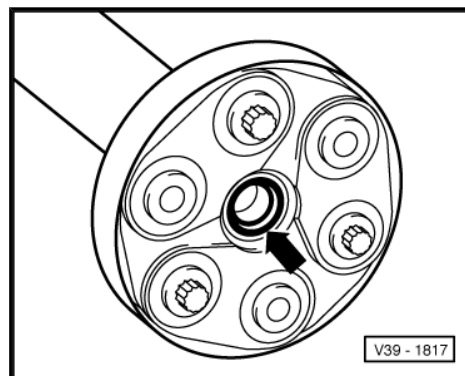
- Detach propshaft from bevel box while doing so.



Caution

The seal -arrow- in the propshaft flange can be damaged.

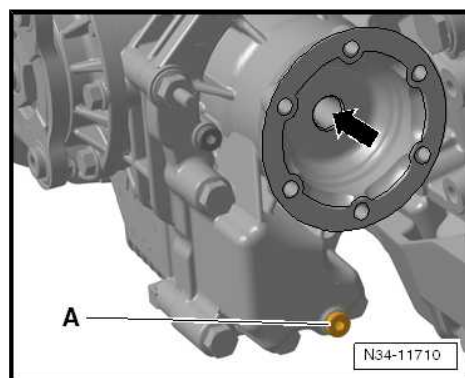
- ◆ *Push propshaft towards the rear and to the right as far as possible.*



Note

If seal is damaged propshaft must be renewed.

- Place a cloth on the subframe to prevent damage to the paint on the propshaft.
- Place propshaft on subframe.
- Remove plug -A- and drain oil from bevel box.
- Then screw in new plug and tighten.
- Using socket and extended bit - T10107 A- , remove bolt -arrow- securing flange shaft (right-side). To do so, screw two bolts into flange and counterhold flange shaft with suitable lever.



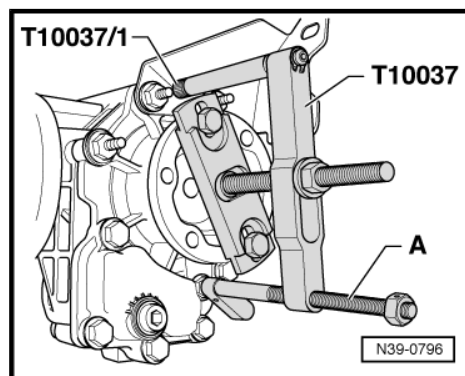
- Bolt puller - T10037- to flange shaft (right-side).



Note

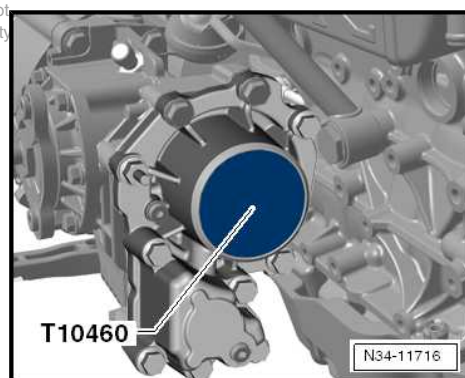
Use the puller - T10037- to remove the flange shaft (right-side) to avoid damaging the bearings of the flange shaft.

- Place a spacer (e.g. press tool - VW 434-) between gearbox carrier and knurled nut - T10037/1- .
- Use spindle -A- to align puller parallel with flange.
- Pull out flange shaft (right-side).

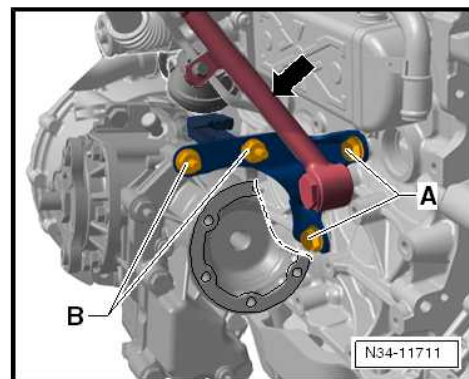


- Seal off bevel box with sealing cap - T10460-.

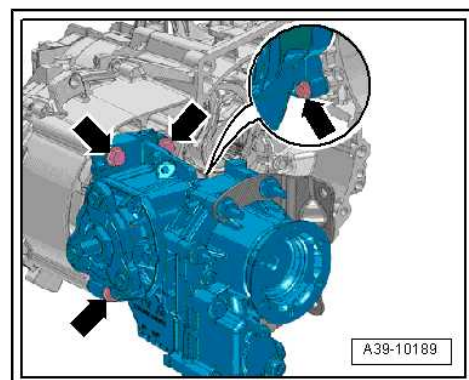
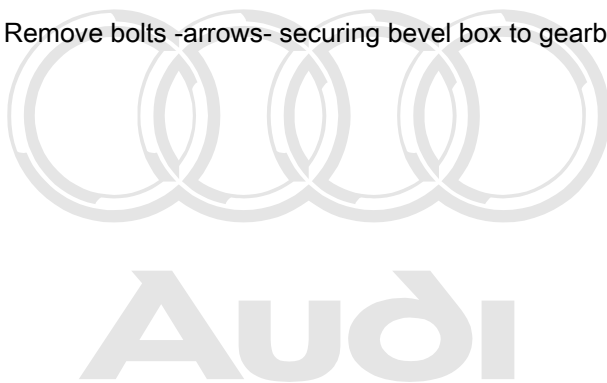
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- Remove support for turbocharger -arrow- ⇒ Rep. gr. 21 ; Turbocharger; Exploded view - turbocharger .
- Unscrew bolts -A- and -B- for gearbox carrier on engine and bevel box.
- Remove gearbox carrier.



- Remove bolts -arrows- securing bevel box to gearbox.



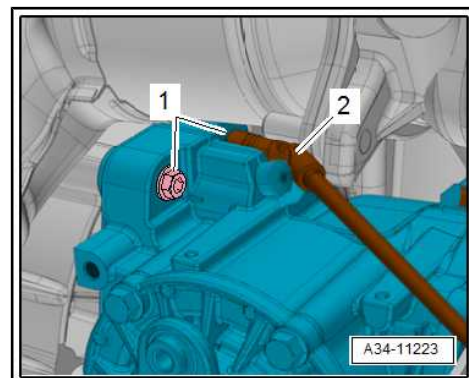
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Note

Use a jointed socket wrench -2- to unscrew bolts at top -1-.

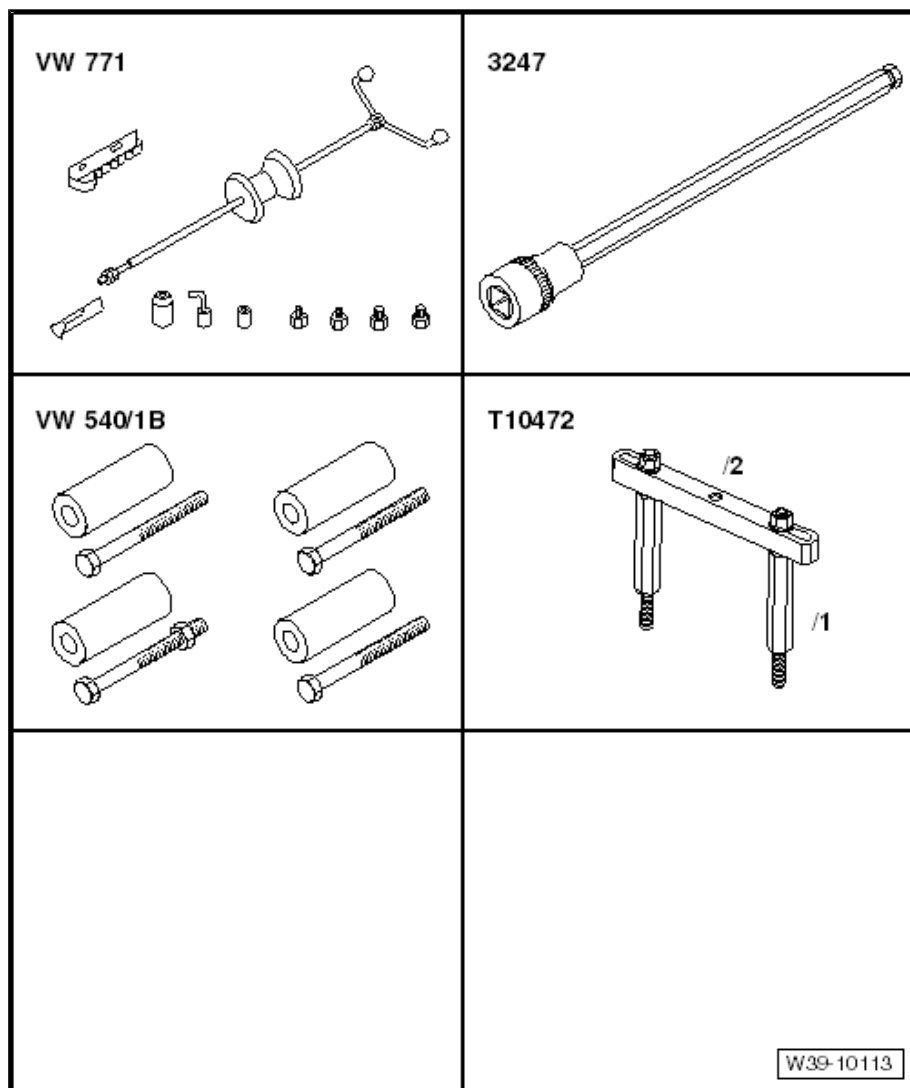
- Carefully press bevel box off gearbox and remove.



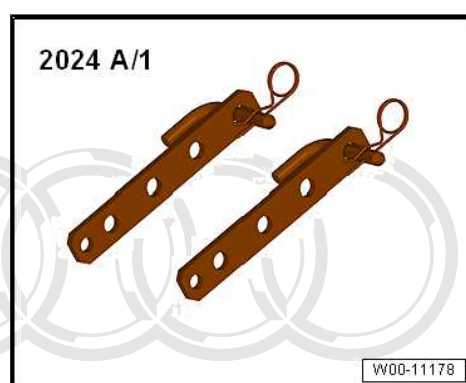
4.1.4 Removing bevel box - vehicles with 2.0 ltr. TDI engine (EA 288, generation I)

Special tools and workshop equipment required

- ◆ Multi-purpose tool - VW 771-
- ◆ Hexagon key extension, 8 mm - 3247-
- ◆ Engine and gearbox support supplement - VW 540/1 B-
- ◆ Puller - T10472-



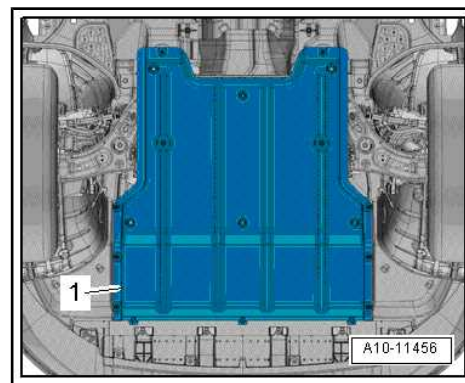
- ◆ Extension -2024A/1-



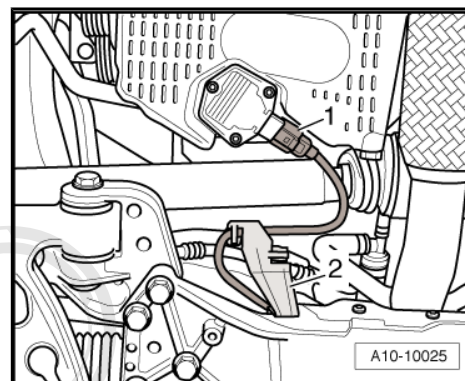
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Removing

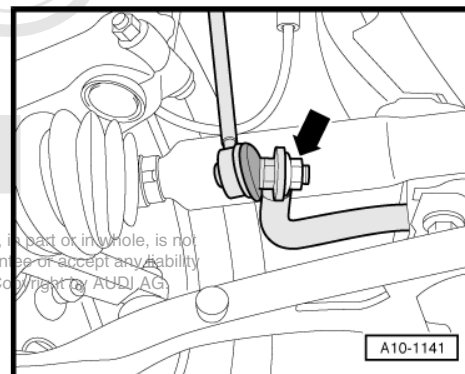
- Remove front wheel (right-side) ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .
- Remove noise insulation -1- ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .



- Unplug electrical connector -1- at oil level and oil temperature sender - G266- .
- Unclip bracket -2- for electrical wiring leading to oil level and oil temperature sender - G266- at subframe.



- Unscrew nut -arrow- for coupling rod on anti-roll bar (right-side).
- If fitted, unscrew nut for bracket for front right vehicle level sender - G289- .

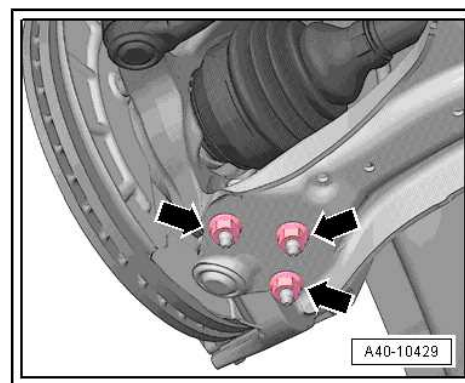


- Remove nuts -arrows- securing swivel joint (right-side).
- Disengage swivel joint (right-side) from wishbone.
- Detach drive shaft (right-side) from bevel box and tie up ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .



Note

Make sure you do not damage surface coating on drive shaft.



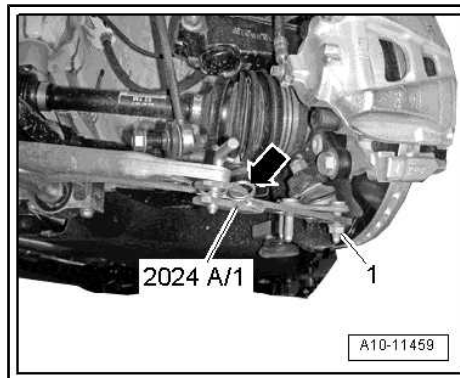
- Swivel suspension strut (right-side) outwards and support with extension -2024A/1- , as shown in illustration.



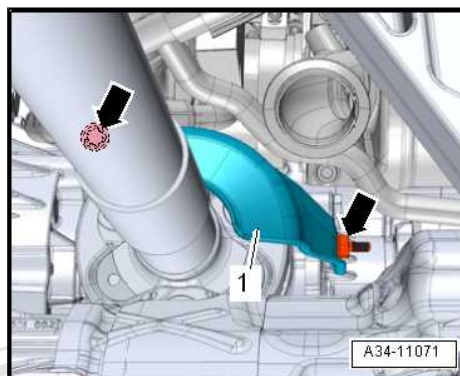
WARNING

Risk of accident if parts of support are not properly secured.

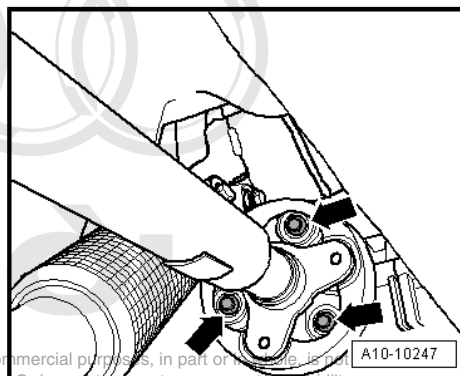
- ◆ *Secure locking pin and swivel joint with retaining clip -arrow- and nut -1-.*



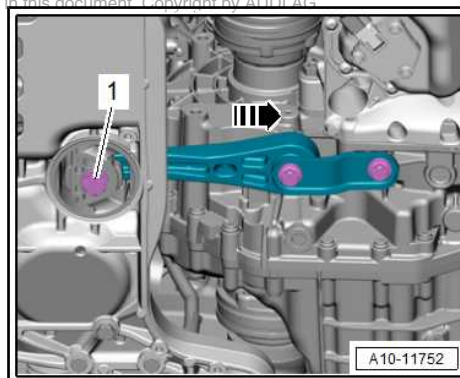
- Remove bolts -arrows- and detach heat shield -1-.



- Mark position of flexible coupling relative to bevel box flange for re-installation.
- Remove bolts -arrows- securing flexible coupling of propshaft to bevel box (counterhold triangular flange with suitable lever) ⇒ Rear final drive; Rep. gr. 39 ; Propshaft; Removing and installing propshaft .



- Remove bolt -1- for pendulum support and push engine/gear-box assembly forwards -arrow- until it is possible to re-install bolt.



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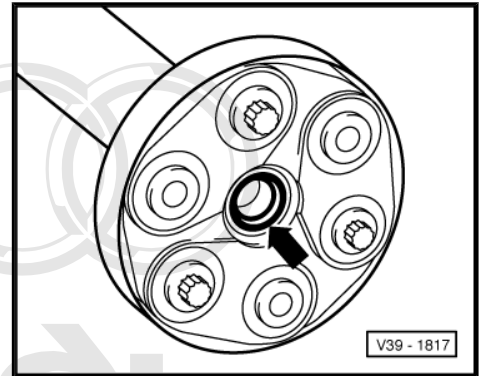
- Detach propshaft from bevel box.



Caution

The seal -arrow- in the propshaft flange can be damaged.

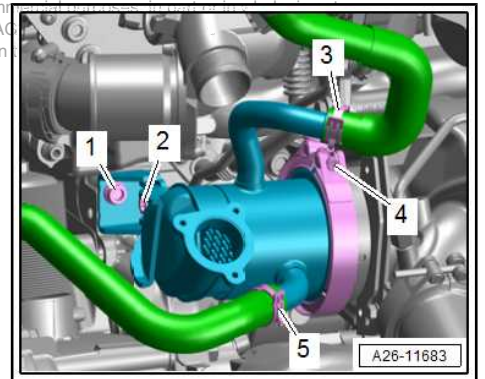
- ◆ *Push propshaft towards the rear and to the right as far as possible.*



Note

If seal is damaged propshaft must be renewed.

- Remove exhaust gas recirculation cooler ➤ Rep. gr. 26; Exhaust gas recirculation; Removing and installing exhaust gas recirculation cooler.

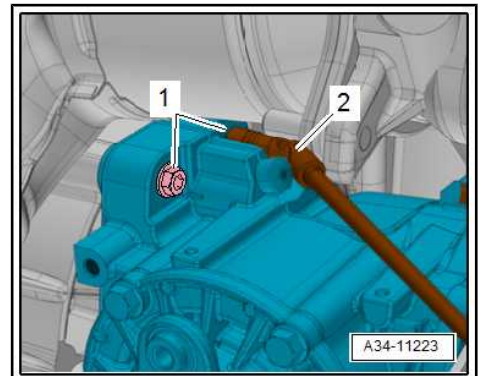


- Remove top bolts -1- securing bevel box to gearbox.



Note

Use a jointed socket wrench -2- to unscrew bolts.



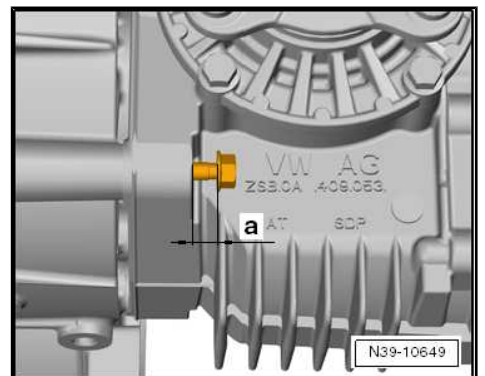
- Loosen bottom bolts -arrows- securing bevel box to gearbox: unscrew only as far as dimension -a-.

- Dimension -a- = 15 mm

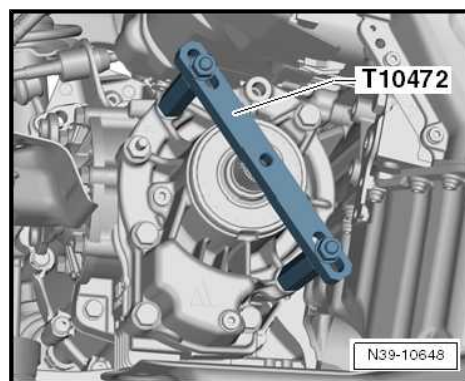


Note

This prevents the gearbox from dropping out when it is slackened with multi-purpose tool - VW 771- .

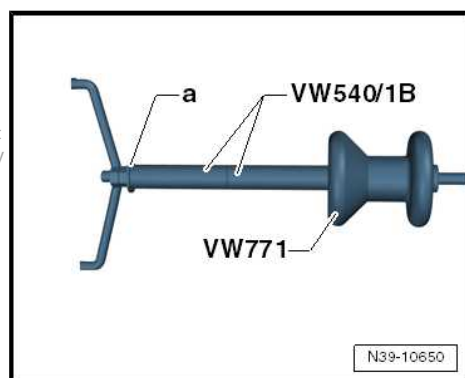


- Attach puller - T10472- to bevel box, as shown in illustration.

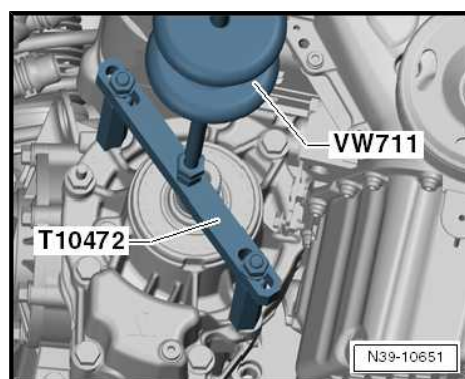


- Prepare multi-purpose tool - VW 771- with a washer -a- and 2 sleeves from engine and gearbox support supplement - VW 540/1 B- , as shown in illustration.

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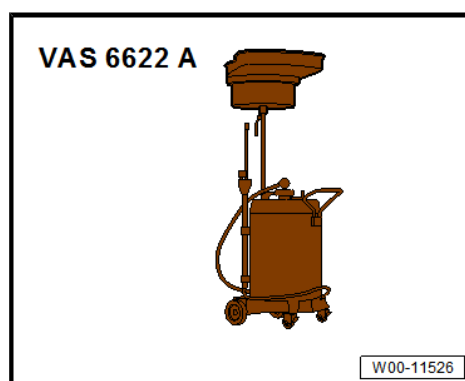
- Secure multi-purpose tool - VW 771- to puller - T10472- and detach bevel box from gearbox.
- Remove multi-purpose tool and puller.
- Remove bottom bolts and remove bevel box.



4.1.5 Removing and installing bevel box (gearbox removed from vehicle)

Special tools and workshop equipment required

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

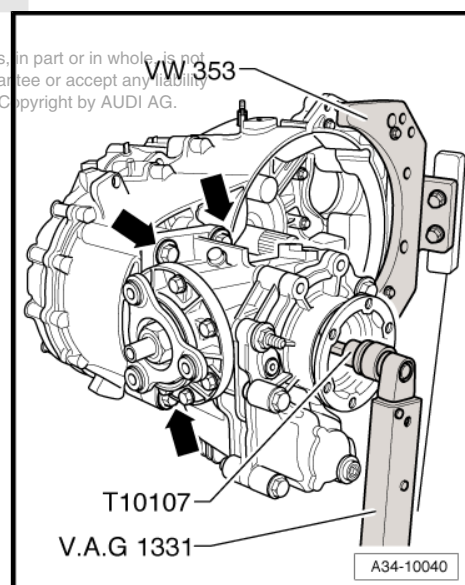


- ◆ Socket and extended bit - T10107 A-



Procedure

- Gearbox secured to engine and gearbox support
⇒ [page 180](#)
- Place used oil collection and extraction unit - VAS 6622A- underneath.
- Remove countersunk bolt for flange shaft (right-side) with - T10107A- .
- Remove 4 bolts -arrows- securing bevel box to gearbox (illustration only shows 3 bolts).
- Carefully push bevel box away from gearbox, making sure it does not fall down.



Attach bevel box to gearbox as follows:

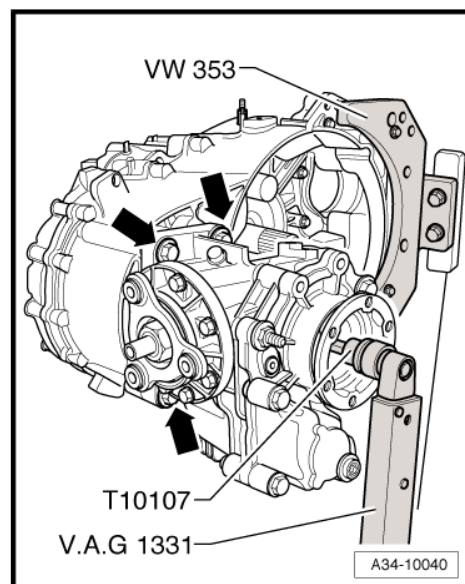
- Push bevel box fully onto gearbox, ensuring that splines of bevel box input shaft and differential are centred when brought together.
- Also bring splines of flange shaft (right-side) and bevel gear in differential into alignment by turning flange shaft if necessary.
- If the teeth are correctly positioned and the components are located centrally, the bevel box will slide against the gearbox onto the stop.



Caution

Risk of irreparable damage to bevel box housing.

- ◆ *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.*



Tightening torques

- ◆ ⇒ [“4.2.2 Tightening torques for bevel box”, page 175](#)
- ◆ ⇒ [“2.1 Exploded view - differential”, page 195](#)

4.2 Installing bevel box

⇒ [“4.2.1 Installing bevel box”, page 172](#)

⇒ [“4.2.2 Tightening torques for bevel box”, page 175](#)

4.2.1 Installing bevel box

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

Tightening torques ⇒ [page 175](#)



Note

Renew seals, gaskets and self-locking nuts.

- Push bevel box fully onto gearbox, ensuring that splines of bevel box input shaft and differential are centred when brought together.
- If fitted, also bring splines of flange shaft (right-side) and bevel gear in differential into alignment by turning flange shaft if necessary.
- If the teeth are correctly positioned and the components are located centrally, the bevel box will slide against the gearbox onto the stop.

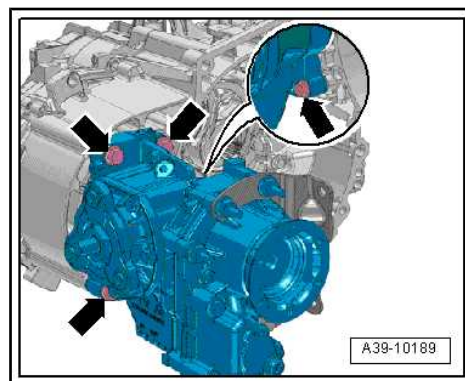


Caution

Risk of irreparable damage to bevel box housing.

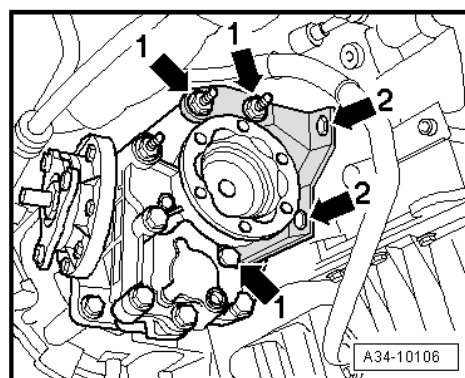
- ◆ **Do not use the securing bolts to pull the bevel box onto the gearbox. This could cause the bevel box to tilt and the securing eyes could break off.**

- Tighten bolts -arrows- securing bevel box to gearbox to specified torque ⇒ [page 175](#).

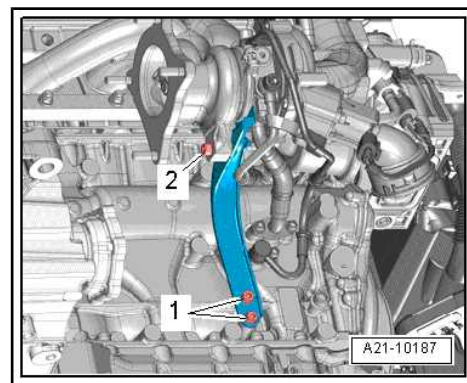


Vehicles with 2.0 ltr. TFSI engine

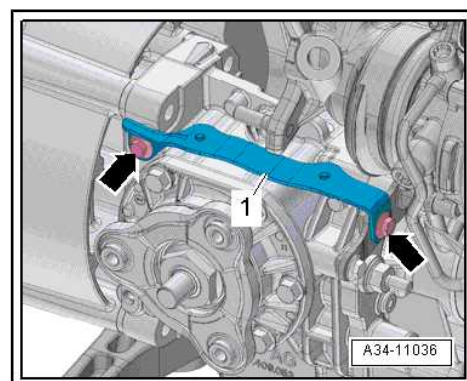
- Tighten bolt for flange shaft (right-side) with socket and extended bit - T10107 A- ; tightening torque ⇒ [Item 3 \(page 195\)](#).
- Bolt gearbox carrier for bevel box to engine and bevel box, adhering to correct tightening sequence -1- and -2- ⇒ [page 175](#).



- Install oil supply line and support for turbocharger, bolts -1, 2- ➔ Rep. gr. 21 ; Turbocharger; Exploded view - turbocharger .



- Secure bracket -1- to bevel box with bolts -arrows- ➔ [page 175](#) .



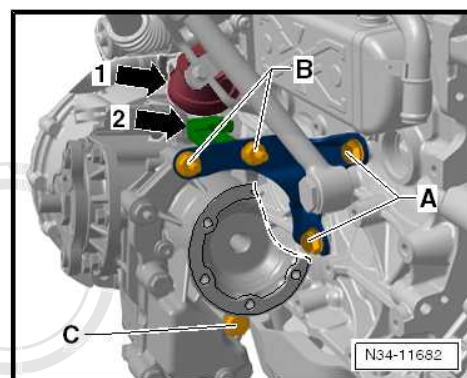
Vehicles with 2.0 ltr. TDI engine

- When installing, pivot gearbox carrier towards engine and fit onto centre hex studs -B-, taking care not to damage vacuum unit -arrow 1-.



Note

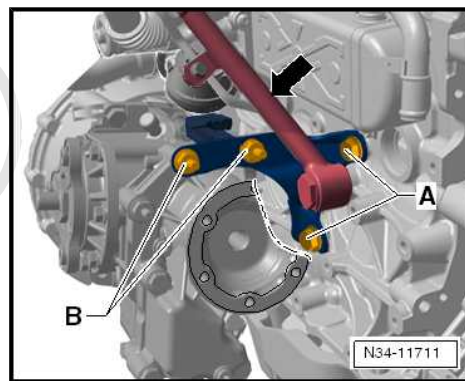
- ◆ Plastic piece -arrow 2- must not slip off gearbox carrier.
- ◆ Items -A and C- can be disregarded.



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- Bolt gearbox carrier for bevel box to engine and bevel box, adhering to correct tightening sequence -A- and -B- ➔ [page 175](#) .
- Install support for turbocharger -arrow- ➔ Rep. gr. 21 ; Turbocharger; Exploded view - turbocharger .
- Carefully drive in flange shaft (right-side). At the same time, turn flange shaft to avoid damage to bearings.
- Tighten bolt for flange shaft (right-side) with socket and extended bit - T10107 A- ; tightening torque ➔ [Item 3 \(page 195\)](#) .
- Attach particulate filter to engine ➔ Rep. gr. 26 ; Emission control system; Removing and installing particulate filter .



Continued for all vehicles:

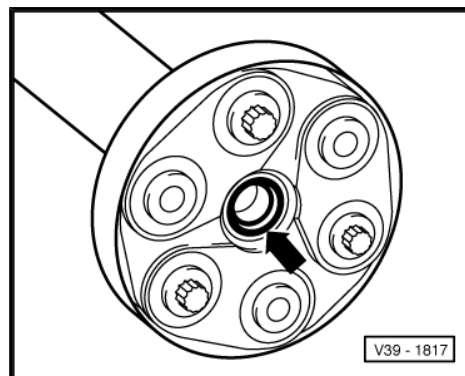
- Install drive shaft (right-side) ➔ ~~Running gear, axles, steering~~; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .
- Install heat shield for drive shaft (right-side) ➔ ~~Running gear, axles, steering~~; Rep. gr. 40 ; Drive shaft; Exploded view - drive shaft .
- Tighten bolted connections at wishbone and swivel joint to specified torque ➔ ~~Running gear, axles, steering~~; Rep. gr. 40 ; Lower wishbone, swivel joint; Exploded view - lower wishbone, swivel joint .
- Tighten bolted connections at coupling rod to specified torque ➔ ~~Running gear, axles, steering~~; Rep. gr. 40 ; Subframe; Exploded view - subframe .
- Tighten bolted connections at front vehicle level sender to specified torque ➔ ~~Running gear, axles, steering~~; Rep. gr. 43 ; Vehicle level senders; Exploded view - front vehicle level sender .



Caution

The seal -arrow- in the propshaft flange can be damaged.

- ◆ *Ensure propshaft is horizontal when pushing it onto centring pin.*



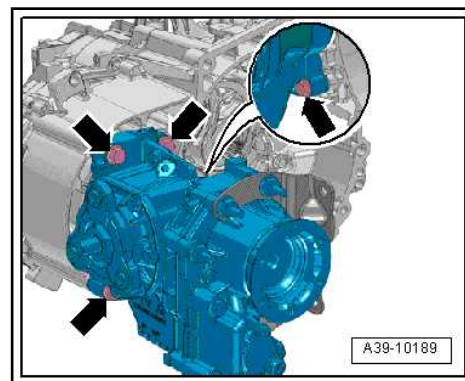
- Secure propshaft ➔ Rep. gr. 39 ; Propshaft; Removing and installing propshaft .
- Attach pendulum support to gearbox ➔ Rep. gr. 10 ; Assembly mountings; Removing and installing pendulum support .
- Fill up gear oil in bevel box ➔ [page 216](#) or check gear oil level in bevel box ➔ [page 215](#) .
- Check gear oil level in manual gearbox and top up as required ➔ [page 178](#) .
- Install front wheel housing liner ➔ General body repairs, exterior; Rep. gr. 66 ; Wheel housing liners; Removing and installing front wheel housing liner .
- Install noise insulation ➔ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .
- Fit front wheel (right-side) ➔ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .

4.2.2 Tightening torques for bevel box

Tightening torque for bevel box to gearbox

- Tighten bolts in stages as follows:

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

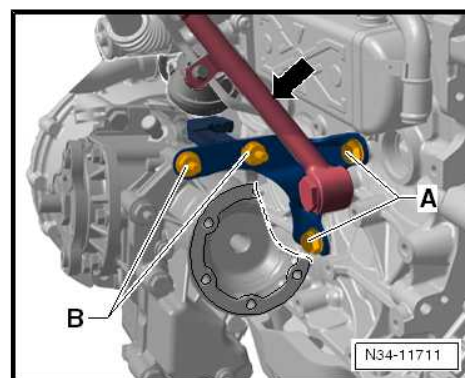


Bracket for bevel box for vehicles with 2.0 ltr. TDI engine: tightening torque and sequence

- Tighten bolts in stages as follows:

Stage	Bolts	Tightening torque
1.	-A- and -B-	Screw in by hand until contact is made
2.	-B-	40 Nm
3.	-A-	40 Nm

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

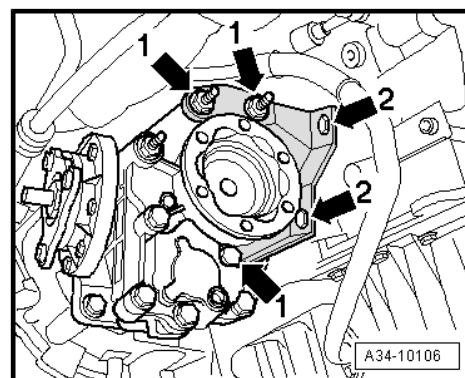


Note

Renew bolts.

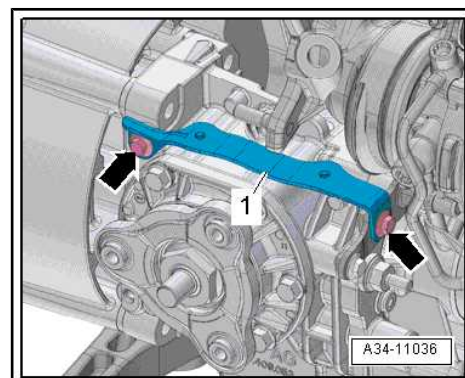
- Tighten bolts in stages as follows:

Stage	Bolts	Tightening torque
1.	-Arrows 1-	Screw in by hand until contact is made
2.	-Arrows 2-	40 Nm
3.	-Arrows 1-	40 Nm



Bracket on bevel box: tightening torque

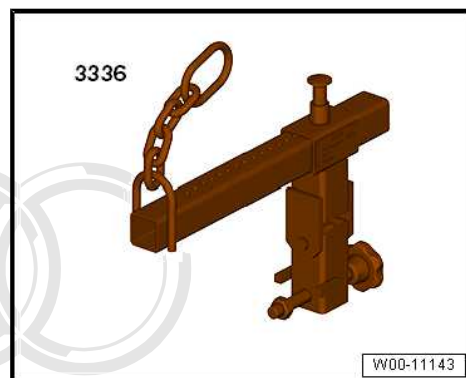
- Tighten bolts -arrows- to 20 Nm.



5 Transporting gearbox

Special tools and workshop equipment required

- ◆ Gearbox lifting tackle - 3336-



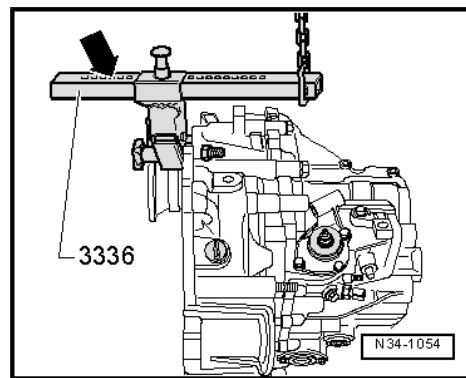
- ◆ Workshop hoist - VAS 6100-



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Manual gearbox 0BB/02Q, front-wheel drive:

- Bolt gearbox lifting tackle - 3336- to clutch housing.
- Set support arm on sliding bracket by means of locking pin -arrow-.
- Number of holes visible = 6

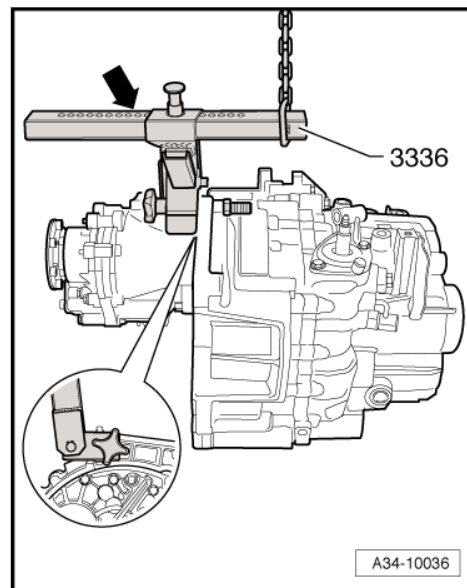


Manual gearbox 02Q, four-wheel drive:

- 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

Continued for all gearboxes

- Take up gearbox with workshop hoist and gearbox lifting tackle - 3336- .



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6 Gear oil

⇒ "6.1 Checking gear oil level", page 178

6.1 Checking gear oil level



Note

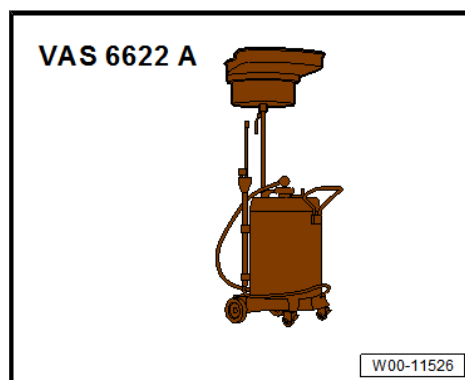
- ◆ The manual gearbox 02Q (four-wheel drive) and bevel box have separate oil fillings.
- ◆ Checking gear oil level in bevel box ⇒ [page 215](#)

Special tools and workshop equipment required

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

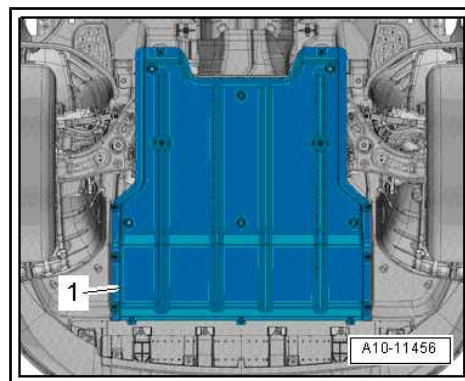


- ◆ Used oil collection and extraction unit - VAS 6622A-



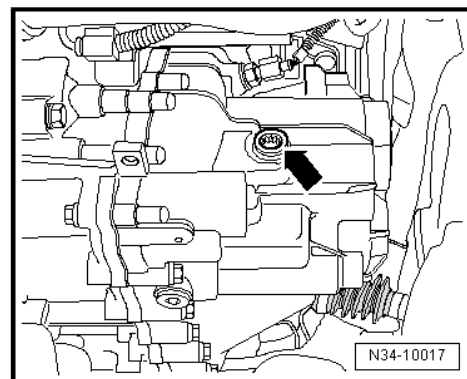
Procedure

- Drive vehicle onto a four-pillar lifting platform or over an inspection pit so it is standing horizontal.
- Remove noise insulation -1- ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .
- Place used oil collection and extraction unit - VAS 6622A- below gearbox.



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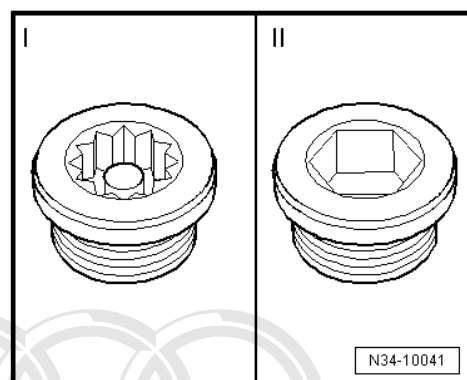
- Remove plug -arrow- for oil filler hole in manual gearbox.
- Specification: oil level up to bottom lip of filler hole
- Top up gear oil if necessary.
- For gear oil specification, refer to ⇒ Electronic parts catalogue .
- Screw in plug -arrow- with new seal, if fitted.
- Install noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .



Tightening torques

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

II - Oil filler/oil drain plug with hexagon socket - 30 Nm

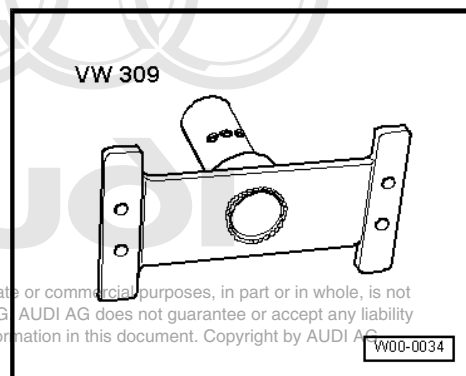


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7 Securing to engine and gearbox support

Special tools and workshop equipment required

- ◆ Support plate - VW 309-

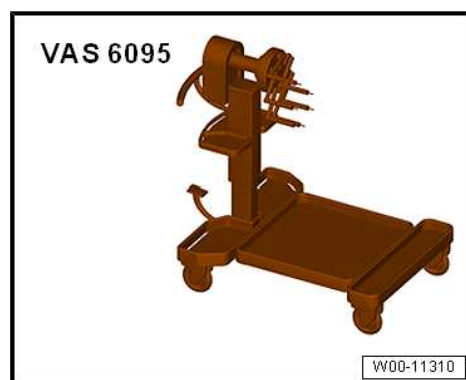


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- ◆ Gearbox support - VW 353-

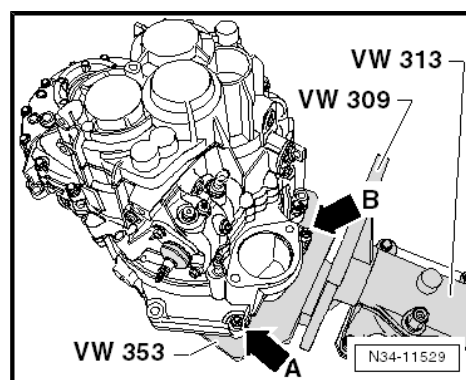


- ◆ Engine and gearbox support - VAS 6095-



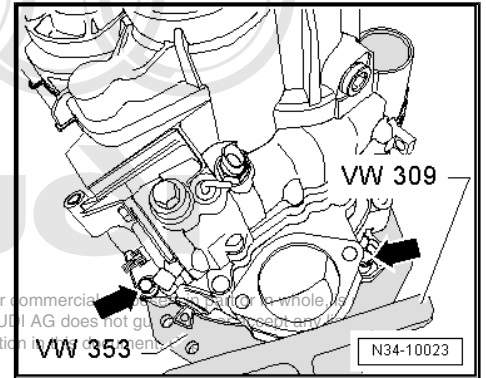
Manual gearbox 0BB/02Q, front-wheel drive:

- Secure gearbox to gearbox support - VW 353- with bolts -arrow A- and -arrow B-.



Manual gearbox 02Q, four-wheel drive:

- Secure gearbox with gearbox support - VW 353- to support plate - VW 309- -arrows-.
- Insert support plate - VW 309- in engine and gearbox support - VAS 6095- .



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8 Dismantling and assembling gearbox

⇒ ["8.1 Dismantling and assembling gearbox", page 182](#)

⇒ ["8.2 Exploded view - selector unit", page 182](#)

⇒ ["8.3 Removing and installing selector unit", page 183](#)

8.1 Dismantling and assembling gearbox

For a detailed description please refer to the Workshop Manual
⇒ Servicing manual gearbox; Rep. gr. 34 ; Dismantling and assembling gearbox .

8.2 Exploded view - selector unit



Note

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

1 - Bearing bush

- ☐ For selector shaft
- ☐ Removing and installing
⇒ Servicing - manual gearbox; Rep. gr. 34 ; Gearbox housing, clutch housing; Servicing gearbox housing

2 - Selector unit

- ☐ Selector shaft with selector mechanism cover
- ☐ Removing and installing
⇒ [page 183](#)

3 - O-ring

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

4 - Cap

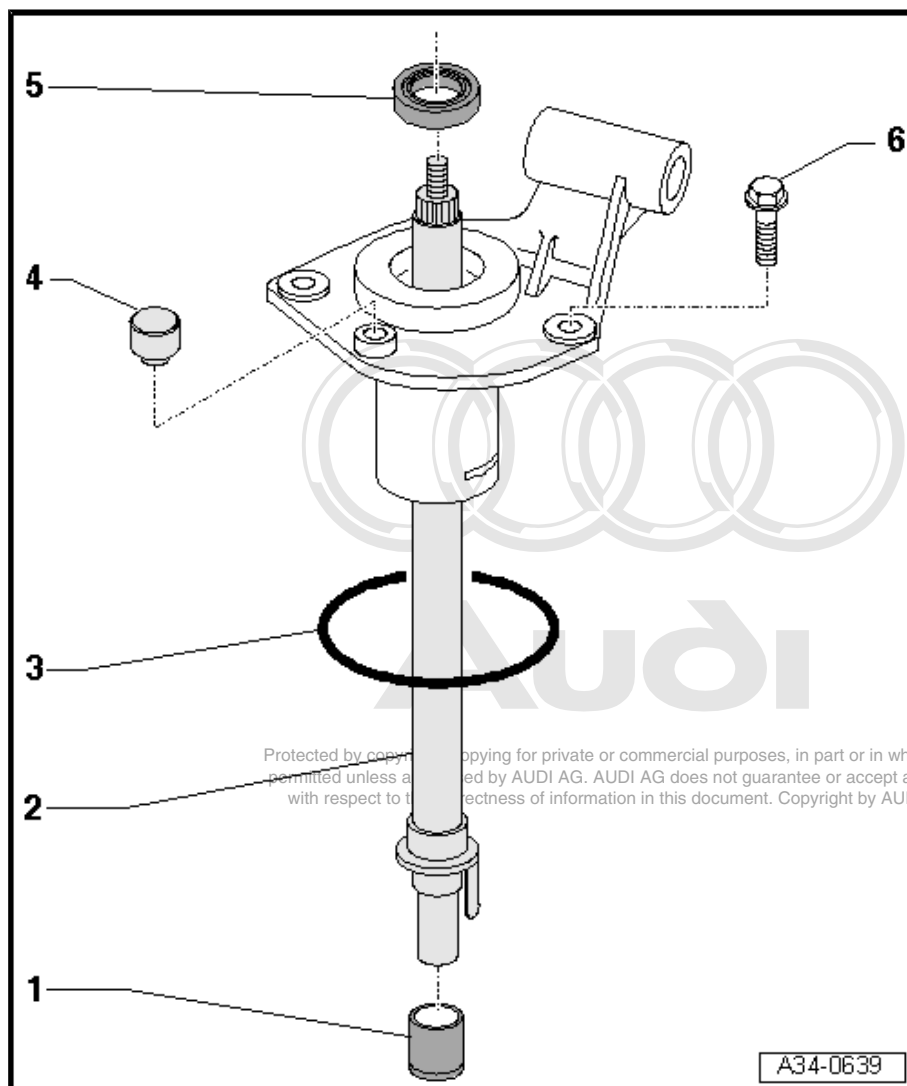
- ☐ For gearbox breather

5 - Seal

- ☐ For selector shaft
- ☐ Renewing ⇒ [page 74](#)

6 - Bolt

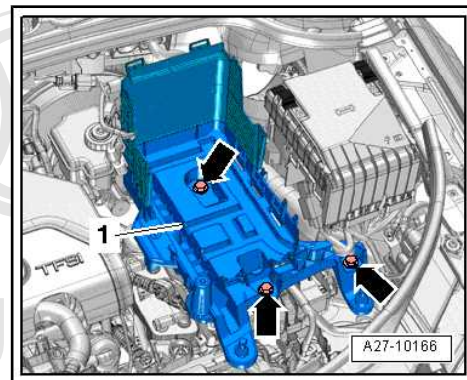
- ☐ Renew after removal
- ☐ 20 Nm



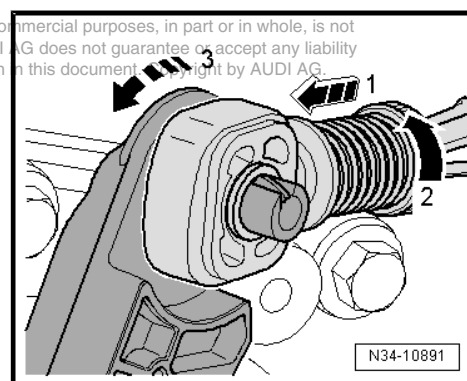
8.3 Removing and installing selector unit

Removing

- 1.4 ltr. TFSI engine: Remove battery and battery tray -1- ⇒ Electrical system; Rep. gr. 27 ; Battery; Removing and installing battery tray .
- 2.0 ltr. TFSI and TDI engines: Remove air cleaner housing ⇒ Rep. gr. 23 ; Air cleaner; Removing and installing air cleaner housing or ⇒ Rep. gr. 24 ; Air cleaner; Removing and installing air cleaner housing .



- Pull locking mechanism forwards -arrow 1- onto stop and then turn to left -arrow 2- to lock.
- Press gate relay lever forwards -arrow 3- and pull gate selector cable out of cable end-piece.

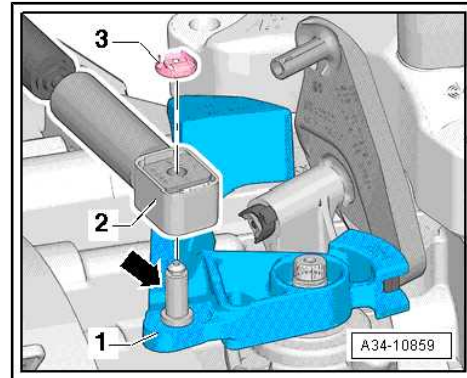


- Detach securing clip -3- for gear selector cable from gearbox selector lever -1- and pull selector cable -2- off pin -arrow-.



Note

- ◆ Do not detach cable end-piece from gate relay lever until gate relay lever has been removed ⇒ [page 61](#) .
- ◆ If the gearbox support 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.

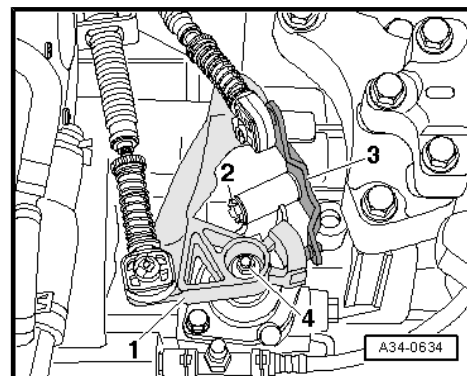


- Remove nut -4- and take out gearbox selector lever -1-.



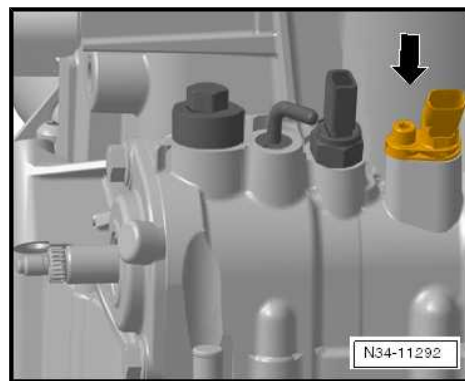
Note

-Items 2 and 3- can be disregarded.



Gearbox for vehicles with start/stop system:

- Remove gearbox neutral position sender - G701- -arrow-.



Continued for all gearboxes:

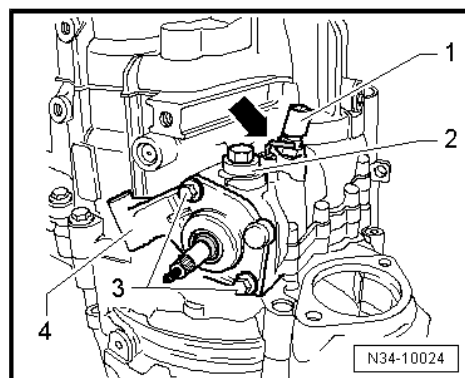
- Put selector shaft in neutral position.



Caution

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

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



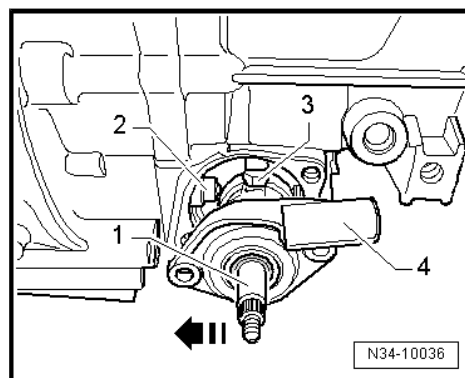
Installing

- 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.



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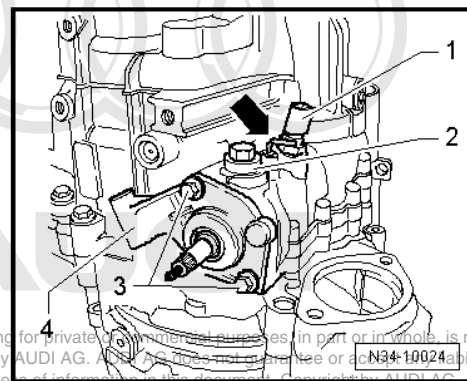
- Tighten bolts -3- for selector mechanism cover -4-.
- Screw in locking bolt -2-; angled rod -arrow- must be released.
- Install reversing light switch - F4- -item 1- and gearbox neutral position sender - G701- .

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

- Install gate relay lever ⇒ [page 60](#) and ⇒ [page 59](#) .
- Install gearbox selector lever ⇒ [page 59](#) .

Tightening torques

- ◆ ⇒ ["8.2 Exploded view - selector unit", page 182](#) .
- ◆ Air cleaner housing ⇒ Rep. gr. 23 ; Air cleaner; Removing and installing air cleaner housing or ⇒ Rep. gr. 24 ; Air cleaner; Exploded view - air cleaner housing
- ◆ Battery tray and battery ⇒ Electrical system; Rep. gr. 27 ; Battery; Exploded view - battery
- ◆ ⇒ Servicing - manual gearbox; Rep. gr. 34 ; Dismantling and assembling gearbox; Exploded view - gearbox



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35 – Gears, shafts

1 Input shaft

⇒ [“1.1 Dismantling and assembling input shaft”, page 186](#)

⇒ [“1.2 Renewing input shaft oil seal”, page 186](#)

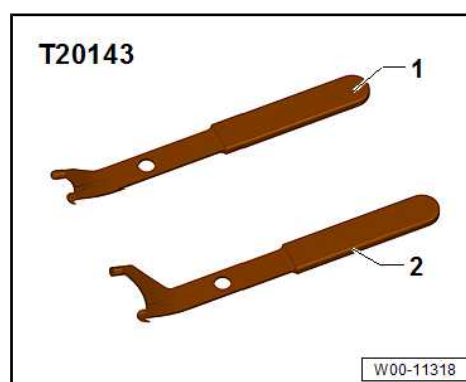
1.1 Dismantling and assembling input shaft

For a detailed description please refer to the Workshop Manual
 ⇒ Servicing - manual gearbox; Rep. gr. 35 ; Input shaft .

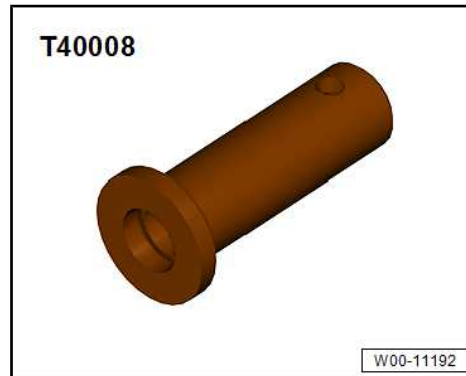
1.2 Renewing input shaft oil seal

Special tools and workshop equipment required

- ◆ Extractor tool - T20143/1-



- ◆ Thrust piece - T40008-



- ◆ Sealing grease - G 052 128 A1-

Procedure

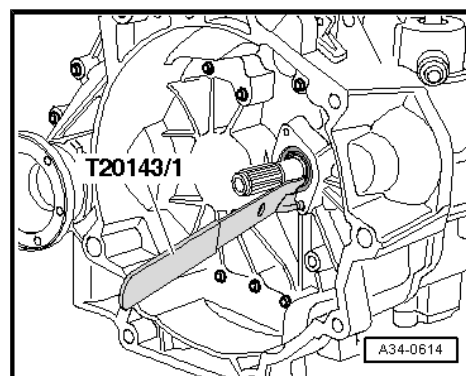
- Gearbox removed
- Remove clutch slave cylinder with release bearing
 ⇒ [page 33](#) .
- Use extractor tool - T20143/1- to pull out input shaft oil seal.



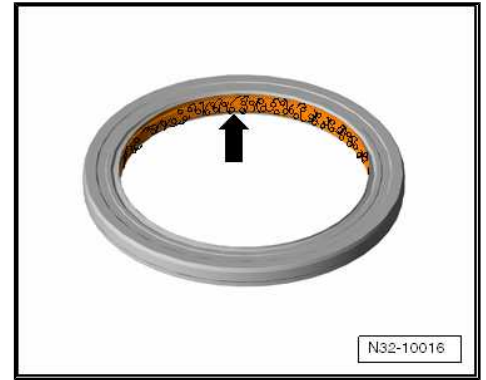
Note

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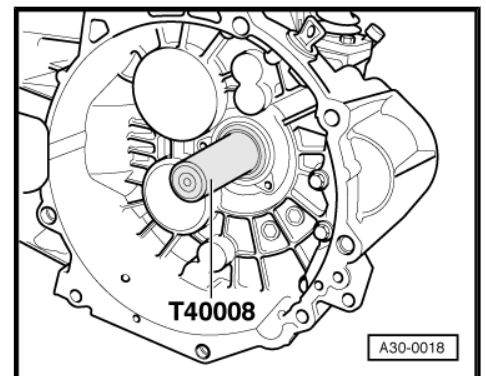
Take care not to damage contact surface for oil seal on input shaft.



- 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.



- Drive in oil seal until flush with thrust piece - T40008- .
- Install clutch slave cylinder with release bearing ⇒ [page 33](#) .



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2 Output shaft

⇒ **"2.1 Dismantling and assembling output shaft", page 188**

2.1 Dismantling and assembling output shaft

For a detailed description please refer to the Workshop Manual
⇒ Servicing - manual gearbox; 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”, page 189](#)

⇒ [“1.2 Renewing oil seal \(left-side\)”, page 190](#)

⇒ [“1.3 Renewing oil seal \(right-side\)”, page 191](#)

1.1 Overview of fitting locations - oil seals

1 - Gearbox

2 - Oil seal

- ☐ For input shaft
- ☐ Renewing ⇒ [page 186](#)

3 - Oil seal (right-side)

- ☐ Renewing:
- ◆ Front-wheel drive vehicles
⇒ [page 191](#)
- ◆ Four-wheel drive vehicles
⇒ [page 192](#)

4 - Oil seal

- ☐ For selector shaft
- ☐ Renewing ⇒ [page 74](#)

5 - Oil seal (right-side)

- ☐ Outer seal at bevel box
- ☐ For four-wheel drive vehicles
- ☐ Renewing ⇒ [page 204](#)

6 - Oil seal

- ☐ Renew after removal
- ☐ Insert in annular groove in flange shaft (right-side)
- ☐ Remove needle bearings (polygon bearings) -item 8- in order to renew oil seal
⇒ [page 212](#)

7 - Flange shaft (right-side)

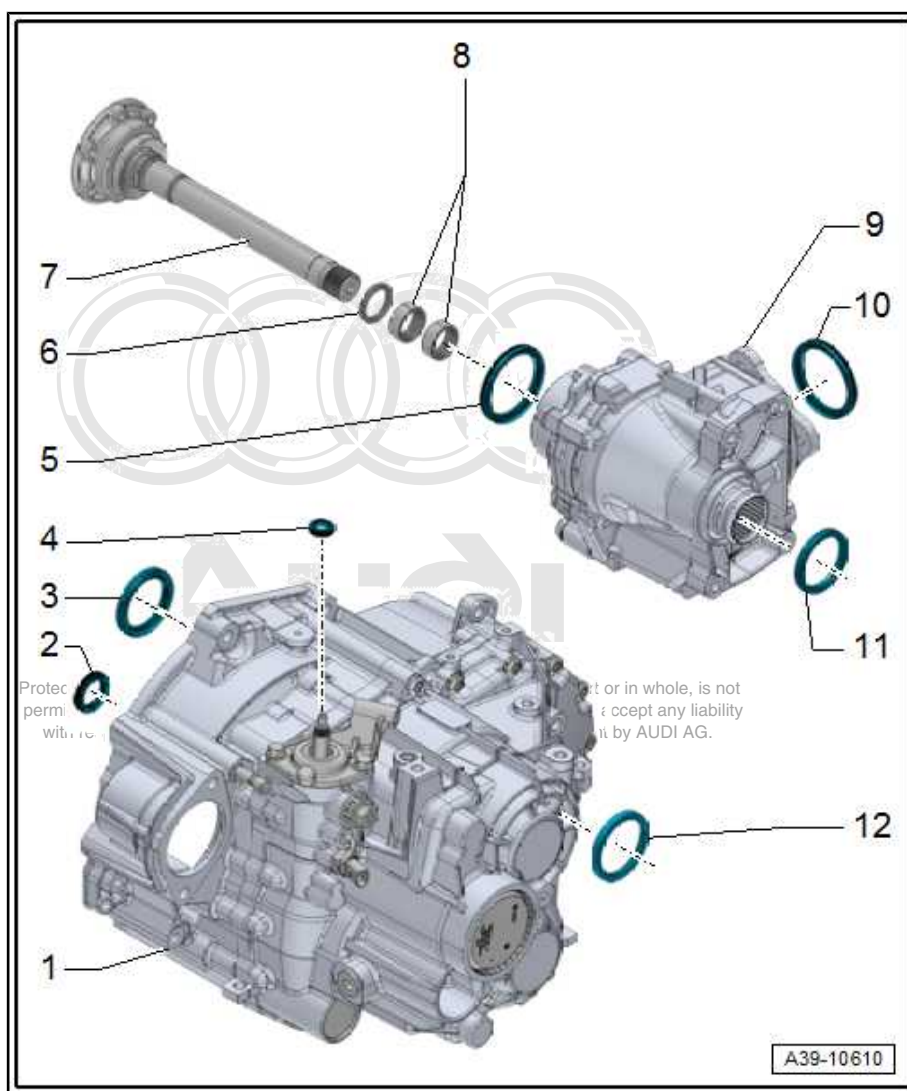
- ☐ For four-wheel drive vehicles
- ☐ Removing and installing ⇒ [page 198](#)

8 - 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 212](#)

9 - Bevel box

- ☐ Removing and installing ⇒ [page 150](#)
- ☐ ⇒ [“3.1 Exploded view - bevel box”, page 203](#)



10 - Oil seal

- ☐ For output flange
- ☐ For four-wheel drive vehicles
- ☐ Renewing ➔ [page 207](#)

11 - Oil seal

- ☐ On bevel box between gearbox and bevel box
- ☐ For four-wheel drive vehicles
- ☐ Renewing ➔ [page 206](#)

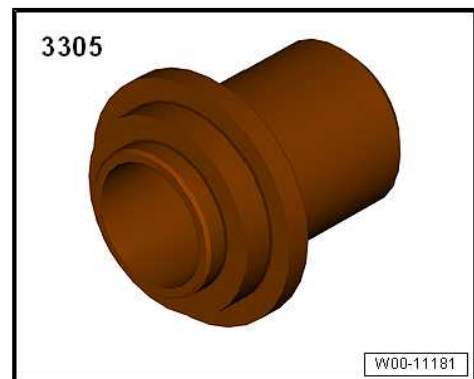
12 - Oil seal

- ☐ For flange shaft (left-side)
- ☐ Renewing ➔ [page 190](#)

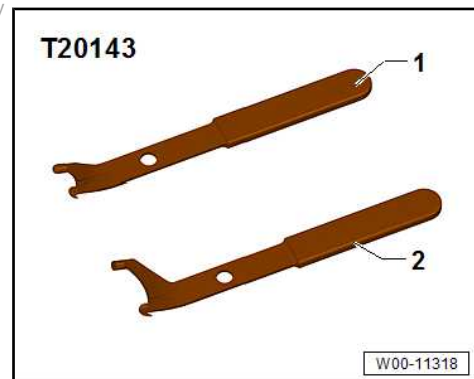
1.2 Renewing oil seal (left-side)

Special tools and workshop equipment required

- ◆ Thrust piece - 3305-



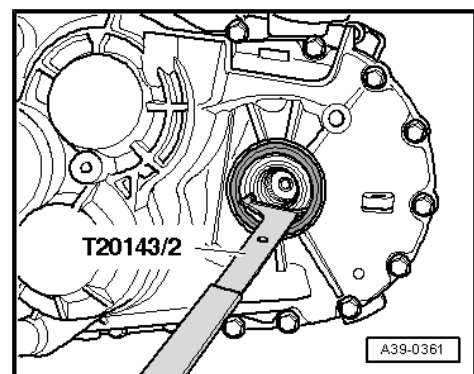
- ◆ Extractor tool - T20143/2-



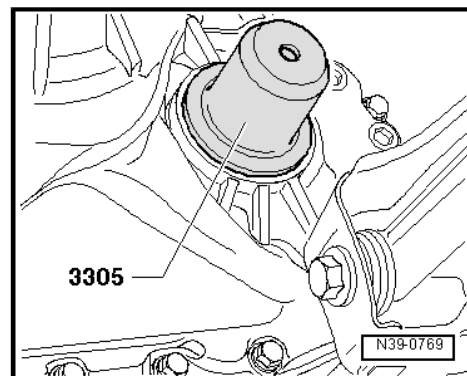
- ◆ Sealing grease - G 052 128 A1-

Procedure

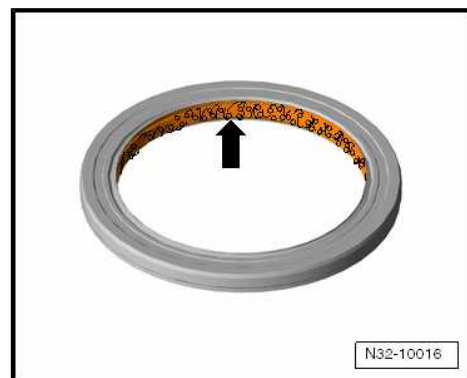
- Gearbox in vehicle
- Remove flange shaft (left-side) ➔ [page 196](#) .
- Pull out flange shaft oil seal using oil seal extractor - T20143/2- .



- Lightly oil outer circumference of new oil seal.
- Drive in new seal onto stop (take care to keep 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 196](#) .
- Check gear oil level in gearbox ➔ [page 178](#) .



1.3 Renewing oil seal (right-side)

➔ [“1.3.1 Renewing oil seal \(right-side\) - vehicles with front-wheel drive”, page 191](#)

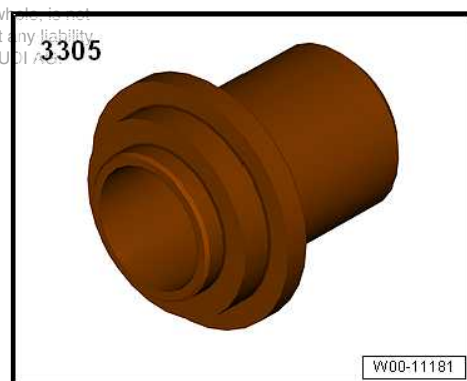
➔ [“1.3.2 Renewing oil seal \(right-side\) - vehicles with four-wheel drive”, page 192](#)

1.3.1 Renewing oil seal (right-side) - vehicles with front-wheel drive

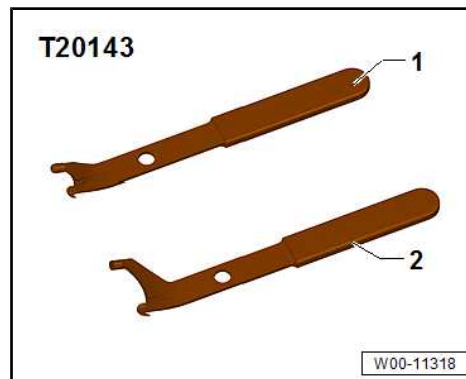
Special tools and workshop equipment required

- ◆ Thrust piece - 3305

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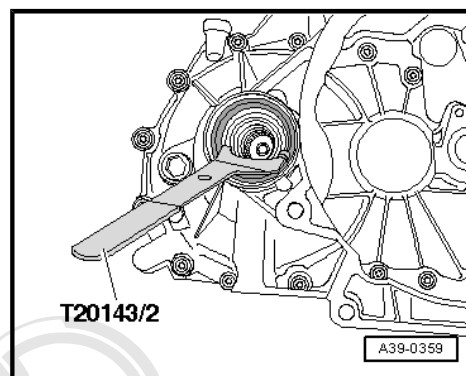
◆ Extractor tool - T20143/2-



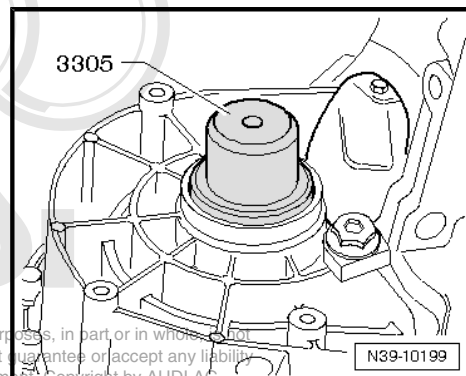
◆ Sealing grease - G 052 128 A1-

Removing

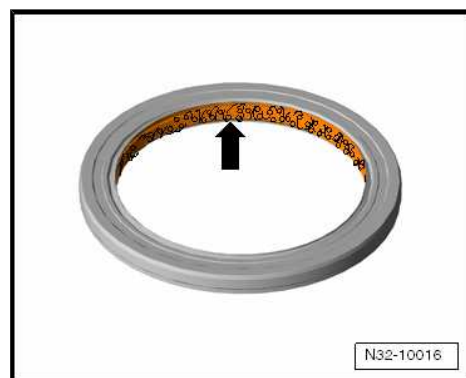
- Gearbox in vehicle
- Remove flange shaft (right-side) ➔ [page 198](#) .
- Pull seal out with oil seal extractor lever - T20143/2- .



- Lightly oil outer circumference of new oil seal.
- Drive in new seal onto stop (take care to keep seal straight).



- Pack space between sealing lip and dust lip -arrow- half full with sealing grease - G 052 128 A1- .
- Install flange shaft (right-side) ➔ [page 198](#) .
- Check gear oil level in gearbox ➔ [page 178](#) .



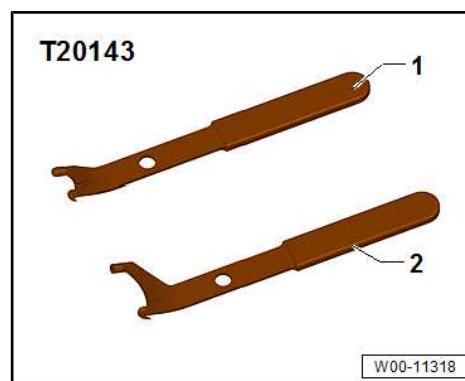
1.3.2 Renewing oil seal (right-side) - vehicles with four-wheel drive

Special tools and workshop equipment required

◆ Thrust piece - T10243-



◆ Extractor tool - T20143/2-

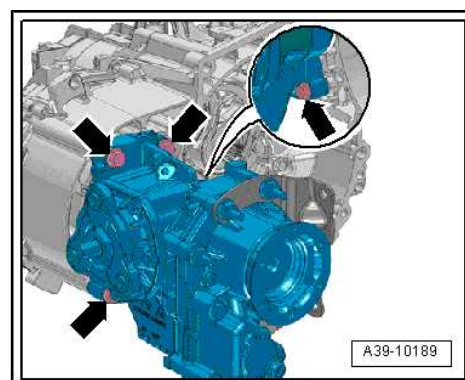


◆ Sealing grease - G 052 128 A1-

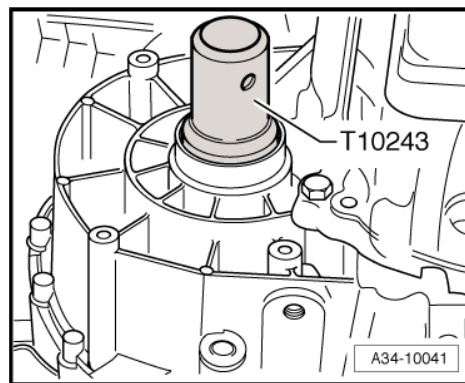
Procedure



- Bevel box removed ⇒ [page 150](#) .
- Pull seal out with oil seal extractor lever - 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 in new seal onto stop (take care to keep seal straight).



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2 Differential

⇒ [“2.1 Exploded view - differential”, page 195](#)

⇒ [“2.2 Removing and installing flange shaft \(left-side\)”, page 196](#)

⇒ [“2.3 Removing and installing flange shaft \(right-side\)”, page 198](#)

⇒ [“2.4 Dismantling and assembling differential”, page 202](#)

2.1 Exploded view - differential

1 - Bolt

- ☐ 33 Nm

2 - Flange shaft (right-side)

- ☐ For vehicles with front-wheel drive
- ☐ Removing and installing
⇒ [page 196](#)

3 - Bolt

- ☐ 33 Nm

4 - Flange shaft (right-side)

- ☐ Removing and installing
⇒ [page 198](#)

5 - Oil seal

- ☐ Renew after removal
- ☐ Insert in annular groove
in flange shaft (right-side)
- ☐ Remove needle bearings (polygon bearings)
-item 6- in order to renew oil seal

6 - 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 212](#)

7 - Circlip

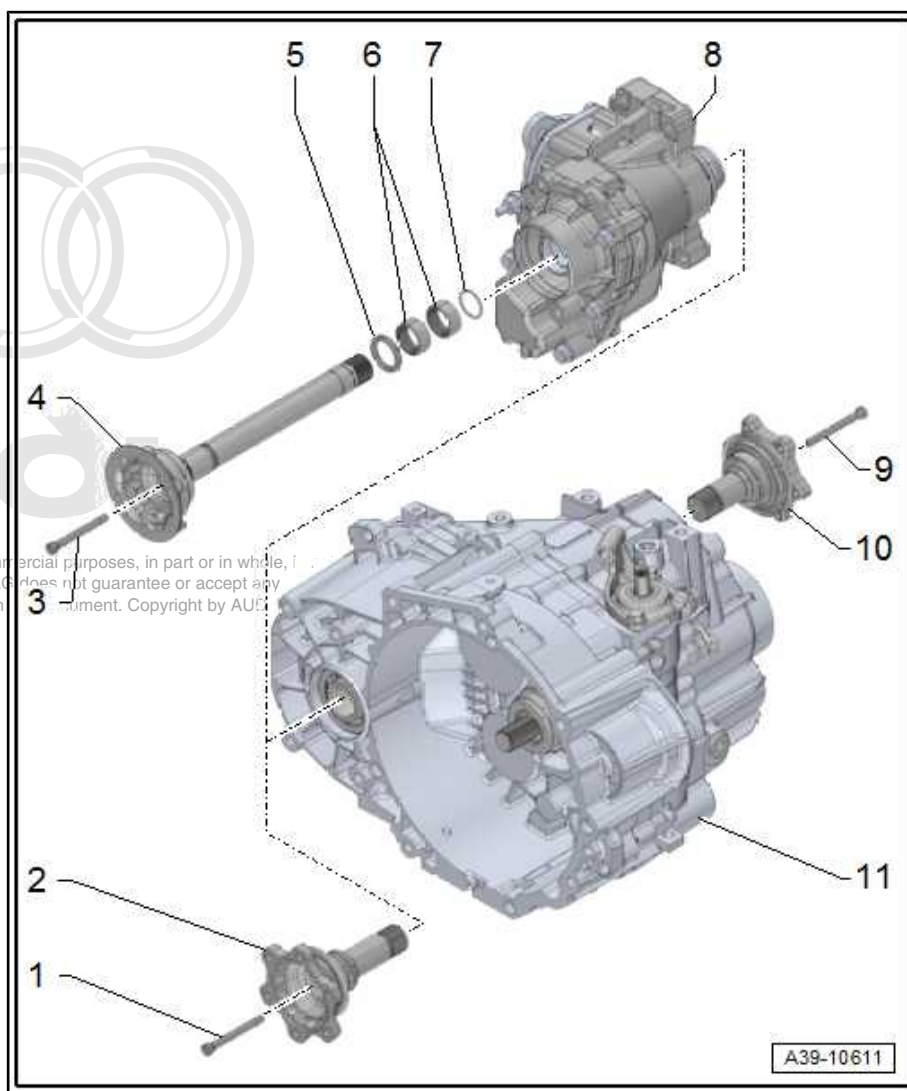
- ☐ Renew after removal

8 - Bevel box

- ☐ Removing and installing ⇒ [page 150](#)
- ☐ ⇒ [“3.1 Exploded view - bevel box”, page 203](#)

9 - Bolt

- ☐ 33 Nm



10 - Flange shaft (left-side)

- Removing and installing ⇒ [page 196](#)

11 - Gearbox

2.2 Removing and installing flange shaft (left-side)

Special tools and workshop equipment required

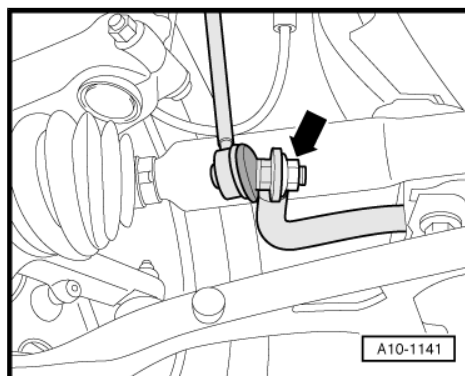
- ◆ Extension -2024A/1-



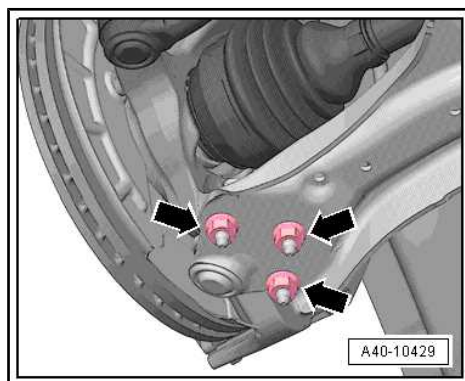
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Removing

- Remove front wheel (left-side) ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .
- Unscrew nut -arrow- for coupling rod on anti-roll bar (left-side).



- Remove nuts -arrows- securing swivel joint (left-side).

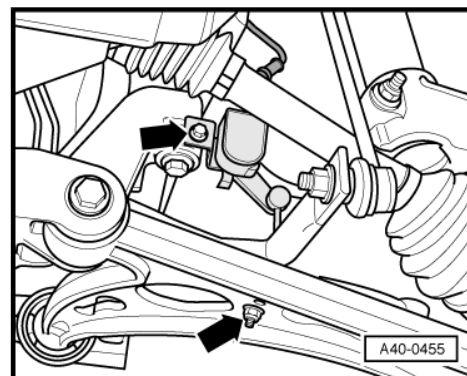


- If fitted, unscrew nut -bottom arrow- on bracket for front left vehicle level sender - G78- .
- Disengage swivel joint (left-side) from wishbone.
- Detach drive shaft (left-side) from gearbox and tie up ➔ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .



Note

Make sure you do not damage surface coating on drive shaft.



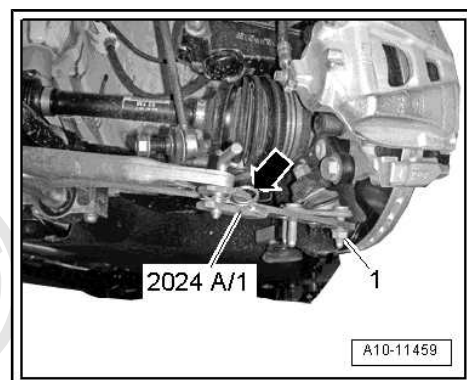
- Swivel suspension strut (left-side) outwards and support with extension -2024A/1- as shown in illustration.



WARNING

Risk of accident if parts of support are not properly secured.

- ◆ *Secure locking pin and swivel joint with retaining clip -arrow- and nut -1-.*



- 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.

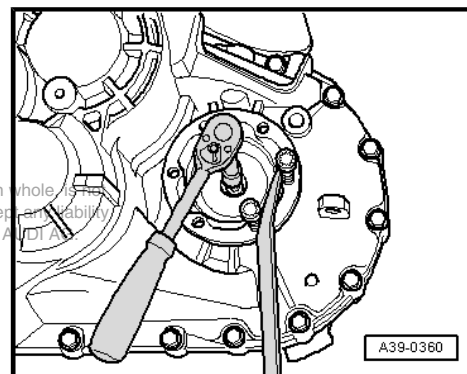
Installing

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



Note

Clean contact surface and sealing surface before installing flange shaft.



- Push flange shaft in against spring pressure and secure with bolt.
- Install drive shaft (left-side) ➔ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .
- Install wishbone and swivel joint ➔ Running gear, axles, steering; Rep. gr. 40 ; Lower wishbone, swivel joint; Exploded view - lower wishbone, swivel joint .
- Install coupling rod ➔ Running gear, axles, steering; Rep. gr. 40 ; Subframe; Exploded view - subframe .
- If previously removed, install front left vehicle level sender - G78- .
- Fit front wheel (left-side) ➔ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .
- Check gear oil level in manual gearbox and top up as required ➔ [page 178](#) .

Tightening torques

- ◆ ➔ ["2.1 Exploded view - differential", page 195](#)

2.3 Removing and installing flange shaft (right-side)

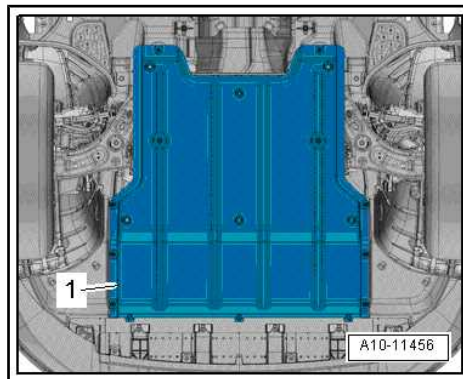
⇒ "2.3.1 Removing and installing flange shaft (right-side) - vehicles with front-wheel drive", page 198

⇒ "2.3.2 Removing and installing flange shaft (right-side) - vehicles with four-wheel drive", page 199

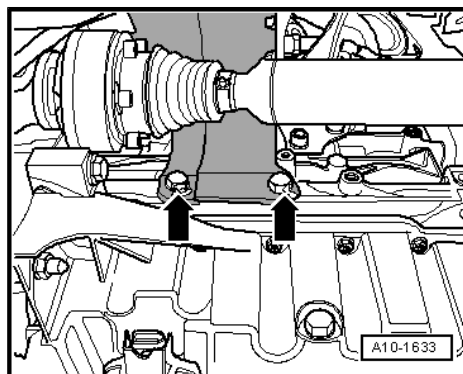
2.3.1 Removing and installing flange shaft (right-side) - vehicles with front-wheel drive

Removing

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



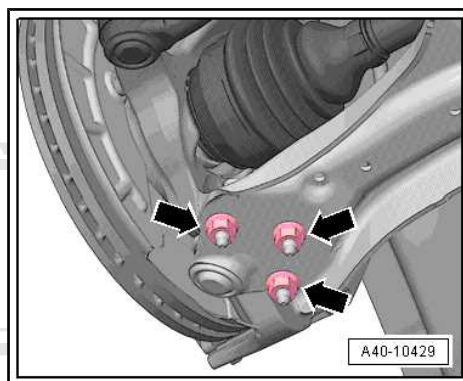
- If fitted, detach heat shield for drive shaft (right-side) -arrows-.



Note

The following work steps are shown on the left side of the vehicle.

- Remove nuts -arrows- securing swivel joint (right-side).
- If fitted, unscrew nut on bracket for front right vehicle level sender - G289- .
- Disengage swivel joint (right-side) from wishbone.
- Detach drive shaft (right-side) from gearbox and tie up ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .



Note

Make sure you do not damage surface coating on drive shaft.

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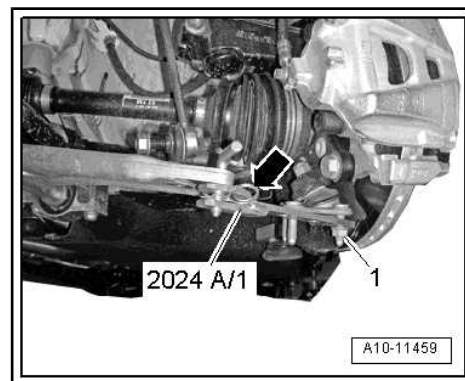
- Swivel suspension strut (right-side) outwards and support with extension -2024A/1-, as shown in illustration.



WARNING

Risk of accident if parts of support are not properly secured.

- ◆ *Secure locking pin and swivel joint with retaining clip -arrow- and nut -1-.*

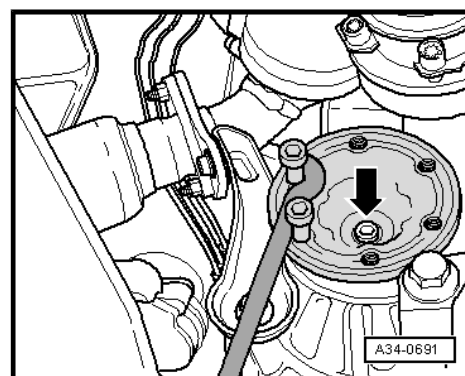


- Remove bolt -arrow- securing flange shaft. To do so, screw two bolts into flange and counterhold flange shaft with suitable lever.
- Place drip tray below gearbox.
- Pull out flange shaft and spring.

Installing

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

- Install drive shaft ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .
- Install heat shield for drive shaft ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Exploded view - drive shaft .
- Install wishbone and swivel joint ⇒ Running gear, axles, steering; Rep. gr. 40 ; Lower wishbone, swivel joint; Exploded view - lower wishbone, swivel joint .
- Check gearbox oil ⇒ [page 178](#) .
- Install noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .



Tightening torques

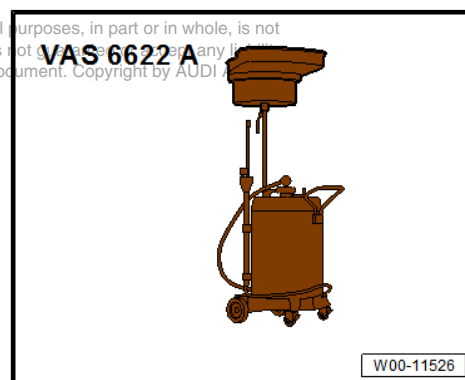
- ◆ ⇒ [“2.1 Exploded view - differential”, page 195](#)

2.3.2 Removing and installing flange shaft (right-side) - vehicles with four-wheel drive

Special tools and workshop equipment required

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

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◆ Puller - T10037-

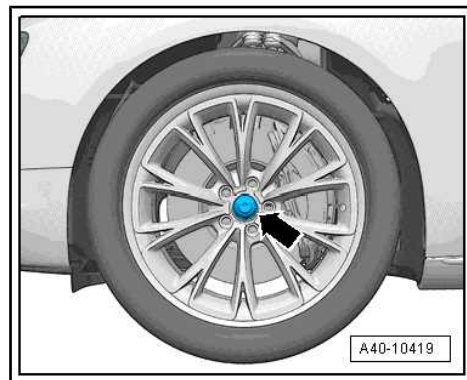


◆ Socket and extended bit - T10107 A-

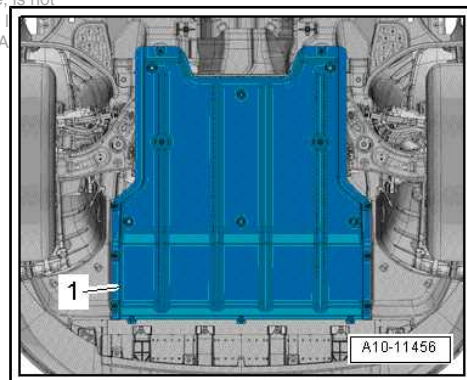


Removing

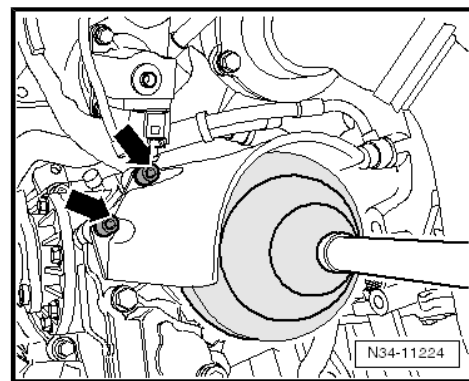
- With vehicle still standing on its wheels, slacken off twelve-point bolt -arrow- on front wheel (right-side) with socket (24 mm) - T10361- 90° (maximum). Do not slacken further, as this would damage the wheel bearing.
- Remove front wheel (right-side) ⇒ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .



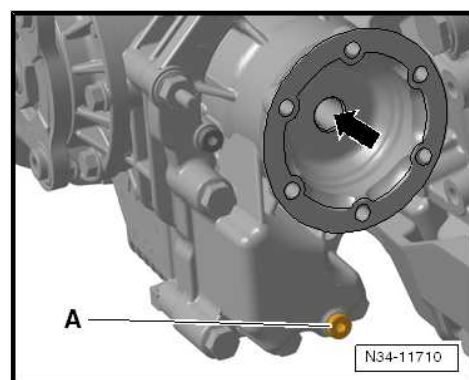
- Remove noise insulation 1 ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation, Removing and installing noise insulation .



- If fitted, remove bolts -arrows- and detach heat shield for drive shaft (right-side).
- Remove drive shaft (right-side) ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .



- Place used oil collection and extraction unit - VAS 6622A- underneath.
- Remove plug -A- and drain oil from bevel box.
- Then screw in new plug and tighten.
- Using socket and extended bit - T10107 A- , remove bolt -arrow- securing flange shaft (right-side). To do so, screw two bolts into flange and counterhold flange shaft with suitable lever.



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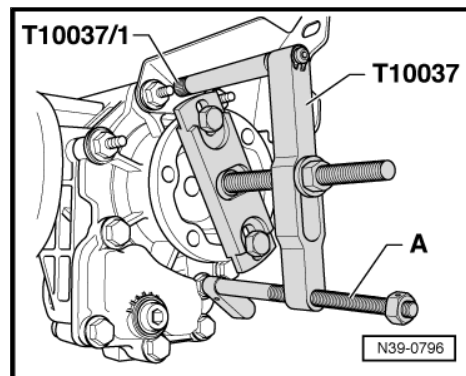
- Attach puller - T10037- to flange shaft (right-side).



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 lower support -A- to align puller - T10037- parallel with flange.
- Pull out flange shaft.



Installing

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



Note

Clean contact surface and sealing surface before installing flange shaft.

- Carefully drive in flange shaft (while turning).
- Tighten bolts securing flange shaft to specified torque.
- Check gear oil level ➔ [page 215](#) .
- Install drive shaft (right-side) ➔ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Removing and installing drive shaft .
- Install heat shield for drive shaft (right-side) ➔ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Exploded view - drive shaft .
- Fit front wheel (right-side) ➔ Running gear, axles, steering; Rep. gr. 44 ; Wheels, tyres .

Tightening torques

- ♦ ➔ [“2.1 Exploded view - differential”, page 195](#)

2.4 Dismantling and assembling differential

For a detailed description please refer to the Workshop Manual
➔ Servicing - manual gearbox; Rep. gr. 39 ; Differential; Exploded view - differential .

3 Bevel box

⇒ [“3.1 Exploded view - bevel box”, page 203](#)

⇒ [“3.2 Renewing oil seals for bevel box”, page 204](#)

3.1 Exploded view - bevel box

1 - Oil seal

- ☐ On bevel box between gearbox and bevel box
- ☐ Renewing ⇒ [page 206](#)

2 - Bevel box

- ☐ Removing ⇒ [page 150](#)
- ☐ Installing ⇒ [page 172](#)
- ☐ Removing and installing (with gearbox removed) ⇒ [page 170](#)

3 - Screw plug

- ☐ For oil drain hole on bevel box
- ☐ With captive seal
- ☐ Always renew
- ☐ 15 Nm

4 - Oil seal for flange shaft (right-side)

- ☐ Outer seal at bevel box
- ☐ Renewing ⇒ [page 204](#)

5 - Screw plug

- ☐ For oil filler hole at bevel box
- ☐ Always renew
- ☐ 15 Nm

6 - Breather pipe

- ☐ For bevel box breather
- ☐ Press in onto stop

7 - Cap

- ☐ For bevel box breather

8 - Flange shaft (right-side)

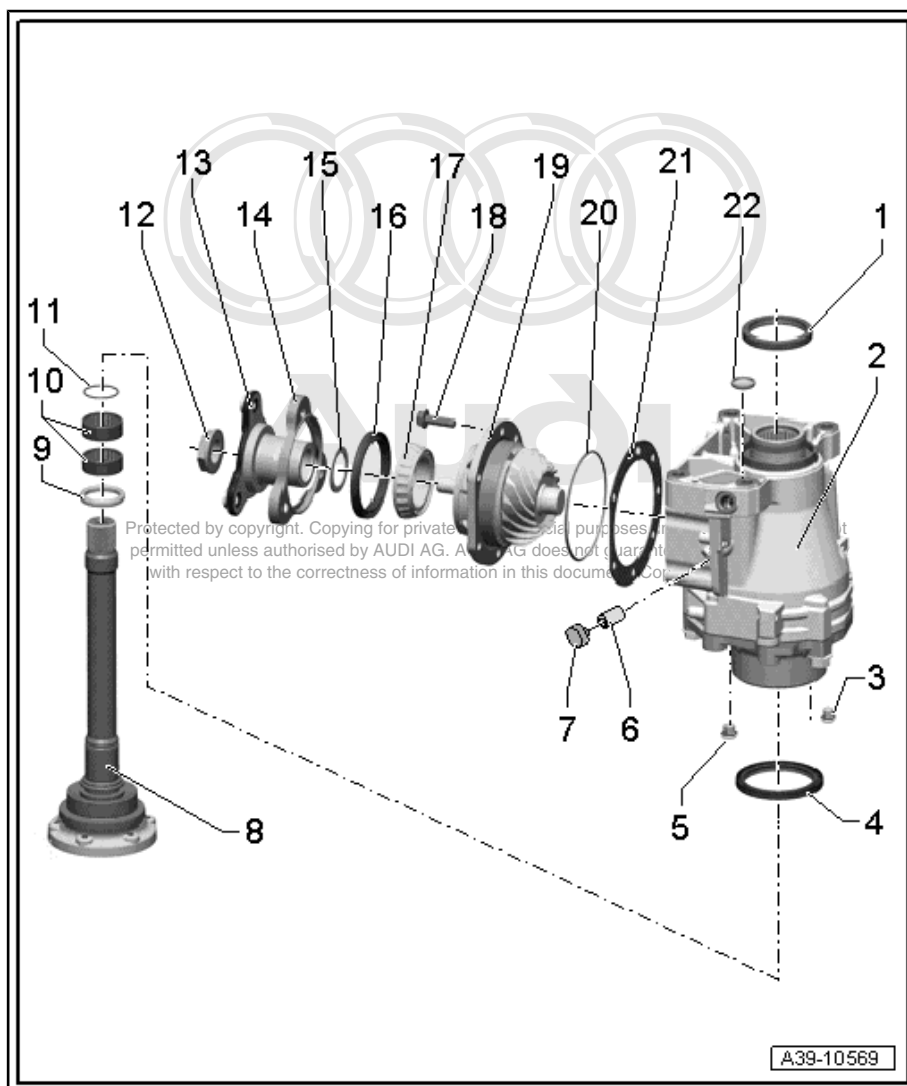
- ☐ Removing and installing ⇒ [page 198](#)

9 - Oil seal

- ☐ Renew
- ☐ Insert in annular groove in flange shaft (right-side)
- ☐ Remove needle bearings (polygon bearings ⇒ [Item 10 \(page 203\)](#)) in order to renew oil seal ⇒ [page 212](#)

10 - 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 212](#)





11 - Circlip

- ☐ Renew

12 - Nut

- ☐ 480 Nm
- ☐ Apply locking fluid - D 000 600- when fitting
- ☐ Renew

13 - Output flange on bevel box

14 - Output flange cap

- ☐ Must engage with output flange
- ☐ Renew if damaged

15 - Shim

- ☐ Component is not available as a replacement part

16 - Oil seal for output flange on bevel box

- ☐ Renewing ⇒ [page 207](#)

17 - Tapered roller bearing inner race

- ☐ Component is not available as a replacement part

18 - Bolt

- ☐ 25 Nm
- ☐ Centre hex studs for securing heat shield for drive shaft (right-side) are fitted in place of some bolts

19 - Pinion housing

- ☐ With shaft bevel gear and taper roller bearing outer race
- ☐ Components are not available as replacement parts
- ☐ Carefully prise off and drive in on alternate sides
- ☐ Observe bolt holes; pinion housing fits only in one position

20 - O-ring

- ☐ To renew, unscrew bolts ⇒ [Item 18 \(page 204\)](#) and carefully lever off pinion housing at projecting webs on outside edge

21 - Shim

- ☐ Component is not available as a replacement part
- ☐ Observe bolt holes on bevel box; shim can only be fitted in one position

22 - Sealing cap

- ☐ Drive in as far as stop using spacer tube - VW 540/1 B- .

3.2 Renewing oil seals for bevel box

⇒ [“3.2.1 Renewing oil seal \(right-side\)”, page 204](#)

⇒ [“3.2.2 Renewing oil seal between gearbox and bevel box \(on bevel box\)”, page 206](#)

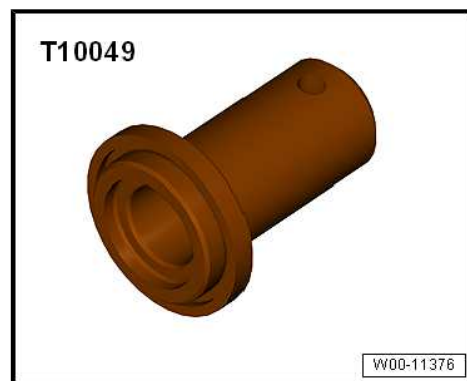
⇒ [“3.2.3 Renewing oil seal for output flange”, page 207](#)

⇒ [“3.2.4 Renewing needle bearings \(polygon bearings\) for flange shaft \(right-side\)”, page 212](#)

3.2.1 Renewing oil seal (right-side)

Special tools and workshop equipment required

◆ Thrust piece - T10049-



◆ Extractor tool - T20143-



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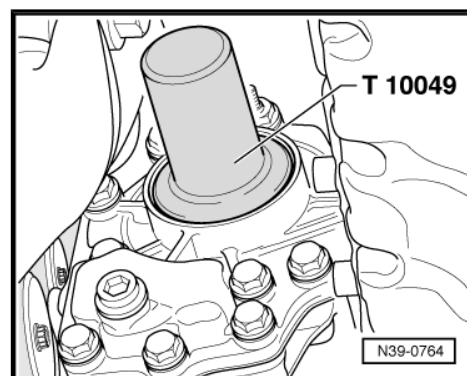
◆ Sealing grease - G 052 128 A1-

Procedure

- Gearbox in vehicle
- Remove flange shaft (right-side) ⇒ [page 198](#) .
- Pull out oil seal (right-side) using extractor tool -T20143/2- .
- Pack space between sealing lip and dust lip -arrow- half full with sealing grease - G 052 128 A1- .



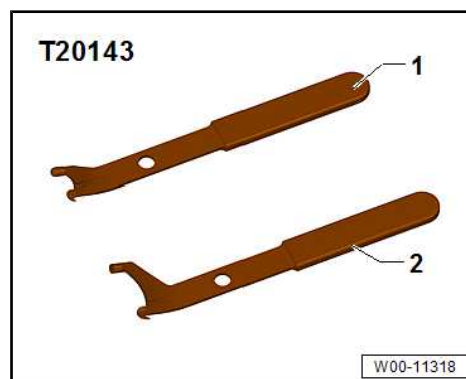
- Drive in new oil seal onto stop using thrust piece - T10049- . Take care to keep seal straight when installing.
- Install flange shaft (right-side) ⇒ [page 198](#) .
- Check gear oil level ⇒ [page 215](#) .



3.2.2 Renewing oil seal between gearbox and bevel box (on bevel box)

Special tools and workshop equipment required

- ◆ Extractor tool - T20143-



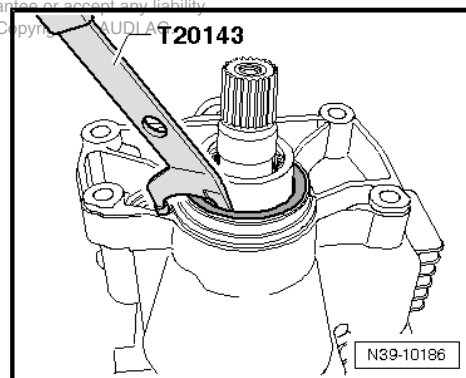
- ◆ Thrust piece - T10298-



- ◆ Sealing grease - G 052 128 A1-

Procedure

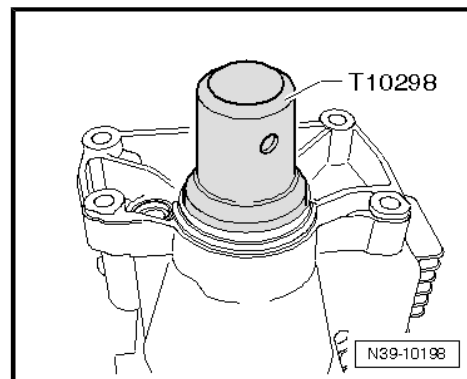
- Bevel box removed ➔ [page 150](#) .
- Pry out oil seal from bevel box with extractor tool - T20143/1- or - T20143/2- .



- Pack space between sealing lip and dust lip -arrow- half full with sealing grease - G 052 128 A1- .



- Drive in new oil seal onto stop using thrust piece - T10298- .
Take care to keep seal straight when installing.

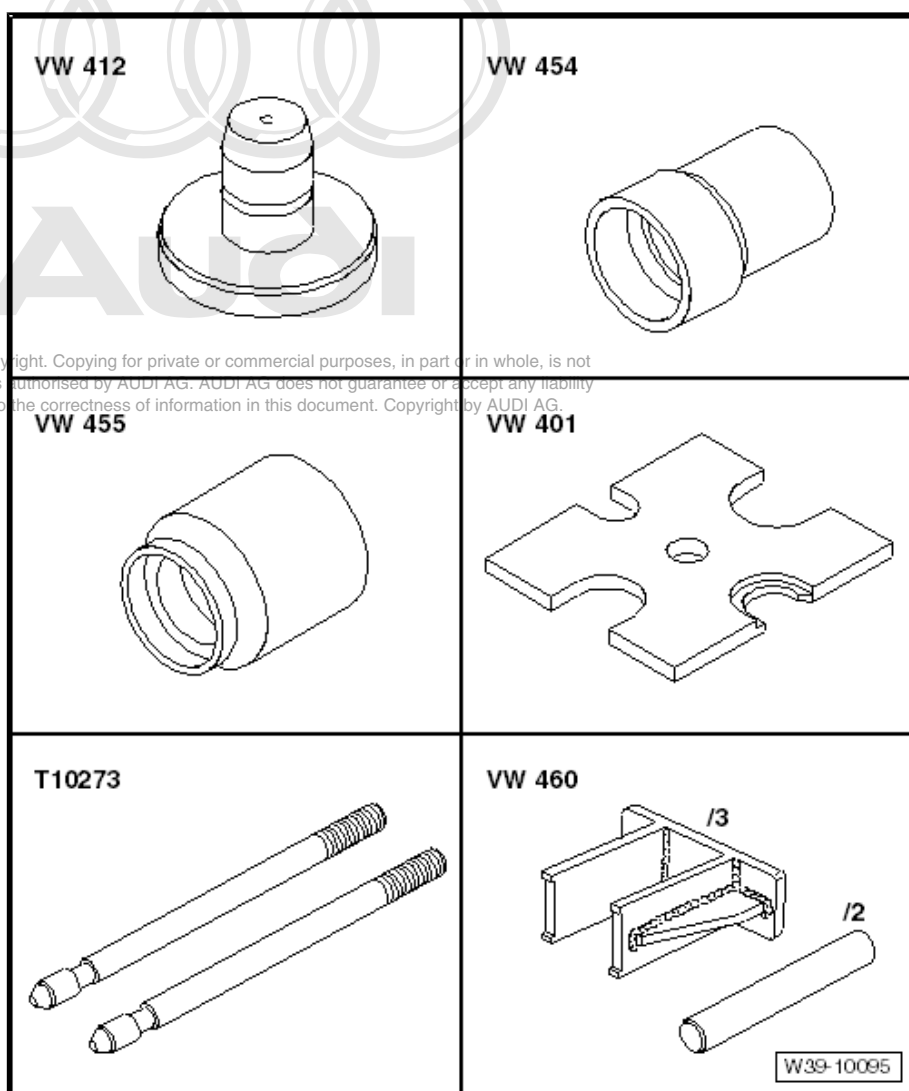


3.2.3 Renewing oil seal for output flange

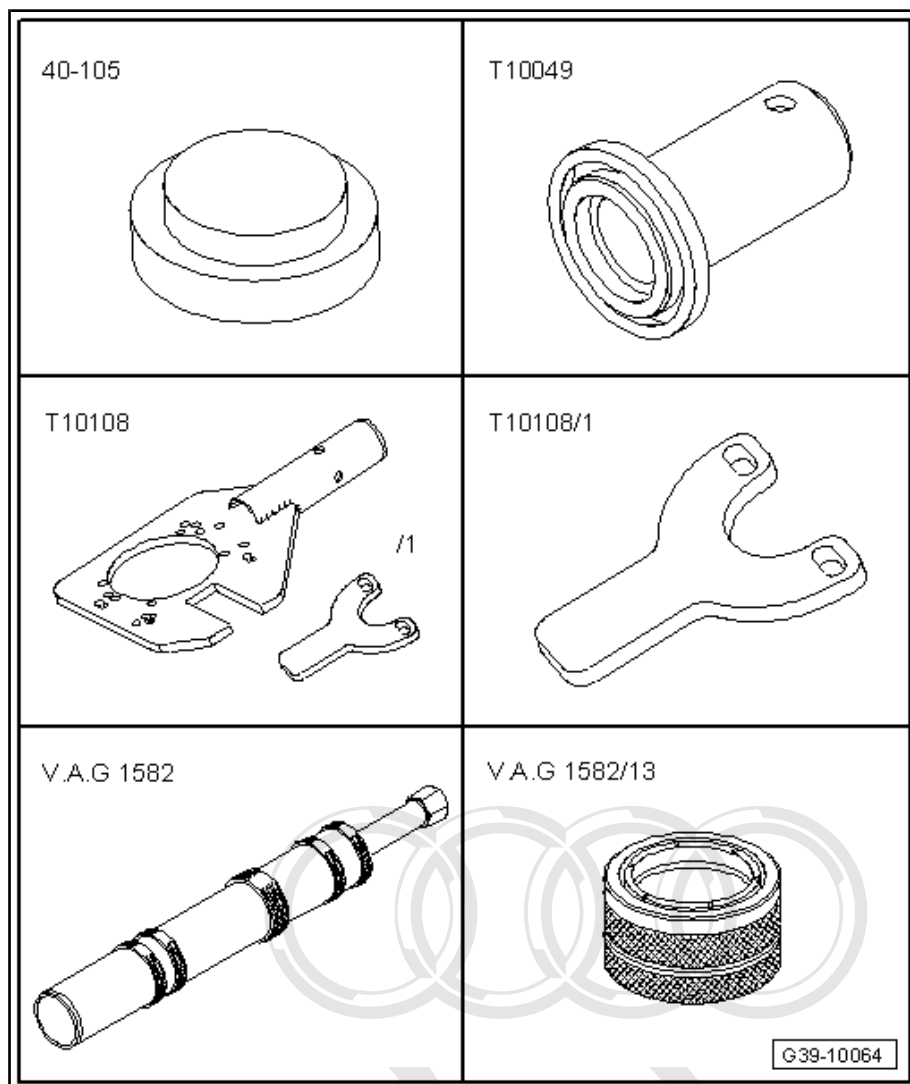
Special tools and workshop equipment required

- ◆ Press tool - VW 412-
- ◆ Press tool - VW 454-
- ◆ Installing sleeve - VW 455-
- ◆ Thrust plate - VW 401-
- ◆ 2 studs M8 x 30 mm or guide pins M8 - T10273-
- ◆ Pin - VW 460/2-

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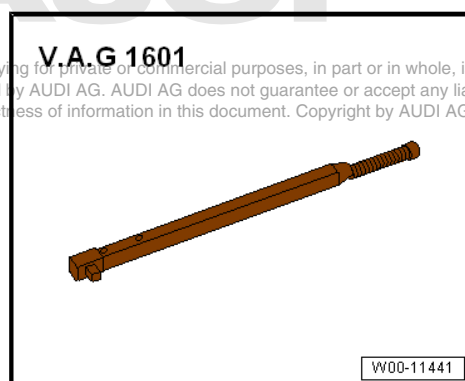


- ◆ Thrust plate - 40 - 105-
- ◆ Thrust piece - T10049-
- ◆ Gearbox support - T10108-
- ◆ Support plate - T10108/1-
- ◆ Tapered roller bearing puller - V.A.G 1582-
- ◆ Adapter - V.A.G 1582/13-



- ◆ Torque wrench - V.A.G 1601-

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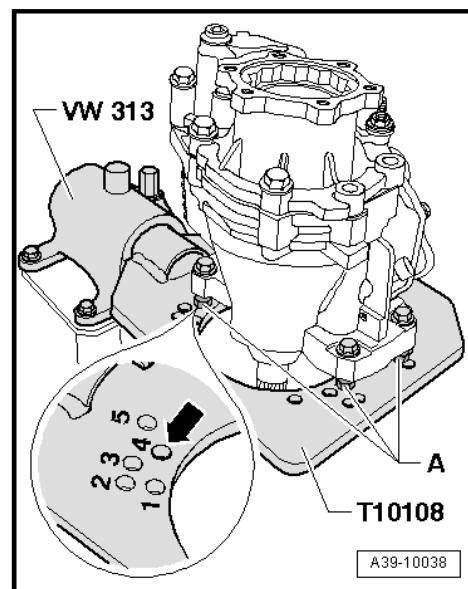
- ◆ Three-arm puller - Kukko 45-2-



- ◆ Sealing grease - G 052 128 A1-
- ◆ 2x bolts (M10 x 30)
- ◆ 4x nuts (M12 x 10)

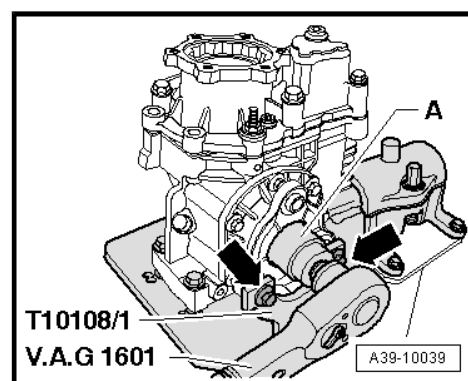
Procedure

- Bevel box removed ⇒ [page 150](#) .
- Place nut M12 x 10 -item A- between bevel box and gearbox support - T10108- and fit bevel box on hole marked "4" -arrow- in gearbox support.
- Then align the bevel box with the three remaining holes and secure (place nuts -A- in between).
- Drain gear oil out of bevel box ⇒ [page 216](#) .



- Lock bevel box output flange with support plate -T10108/1- by screwing in two M10 x 30 bolts -arrows-.
- Remove output flange nut.

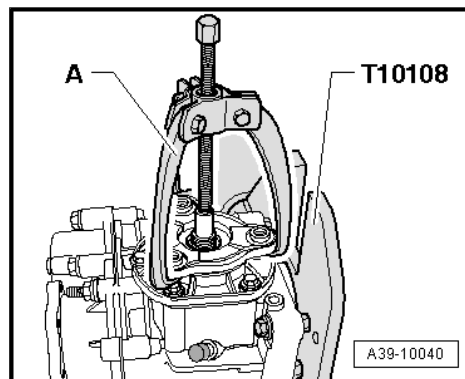
A - 36 mm socket for $\frac{3}{4}$ " drive



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- Swing bevel box so that output flange points upwards.
- Pull output flange off shaft bevel gear of bevel box.

A - Three-arm puller , e.g. -Kukko 45-2-

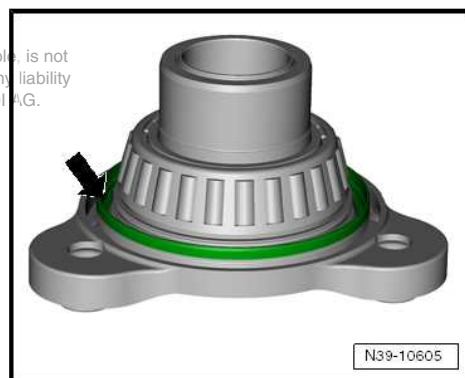


Note

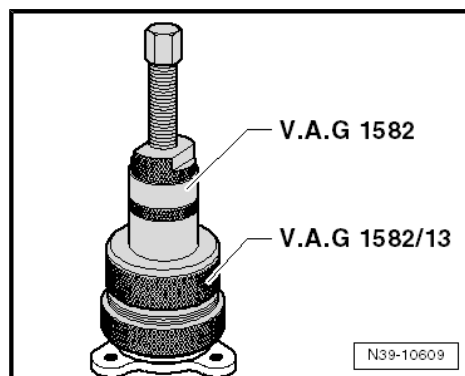
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When pulling off the output flange, the tapered roller bearing inner race and oil seal -arrow- remain fitted on the output flange.

Remove oil seal as follows:

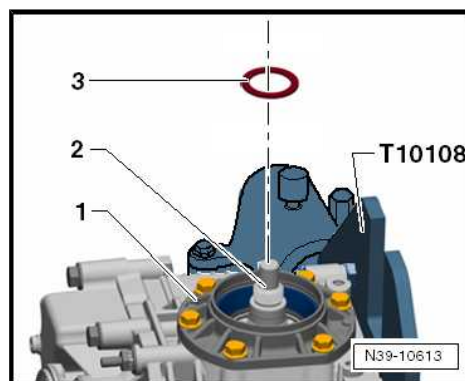


- In order to remove oil seal, tapered roller bearing inner race must be pulled off output flange.
- Place thrust plate - 40 - 105- on output flange.
- Pull off inner race for tapered roller bearing from output flange using tapered roller bearing puller - V.A.G 1582- and adapter - V.A.G 1582/13- .
- Remove oil seal for output flange.

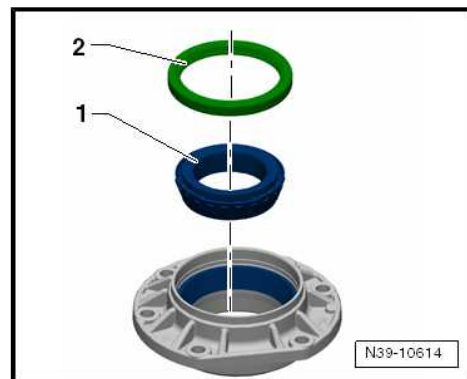


Install oil seal as follows:

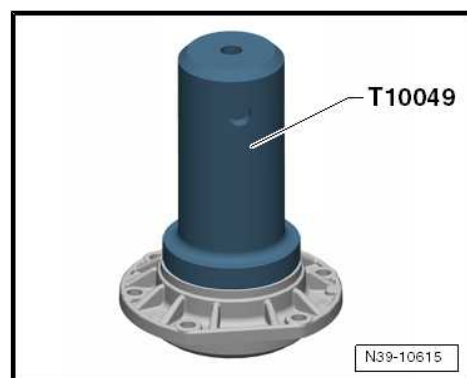
- In order to install oil seal, pinion housing -1- and shaft bevel gear -2- must first be removed.
- Remove bolts for pinion housing -1- and carefully lever off pinion housing in a diagonal sequence at projecting edges.
- Remove pinion housing with shaft bevel gear -2-.
- Clean thread on shaft bevel gear.
- If shim -3- was removed with output flange, it must be re-installed in pinion housing.
- This ensures the bearing preload of shaft bevel gear in pinion housing.



- Insert old tapered bearing roller inner race -1- into pinion housing.
- Lightly lubricate outer circumference of new oil seal -2- for output flange.



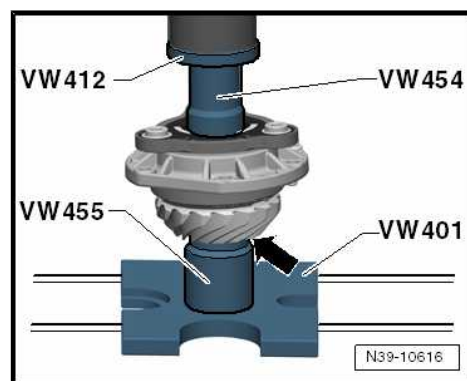
- Drive in new oil seal using thrust piece - T10049- .
- Oil seal must be flush with top edge of housing.



- Pack space between sealing lip and dust lip -arrow- half full with sealing grease - G 052 128 A1- .



- Press together output flange and pinion housing with shaft bevel gear as far as stop.
- The shoulder -arrow- on installing sleeve - VW 455- faces towards shaft bevel gear.



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- Screw studs M8 x 30 mm = -A- or guide pins M8 - T10273- into final drive housing.
- Slide new O-ring -1- onto pinion housing -2-.

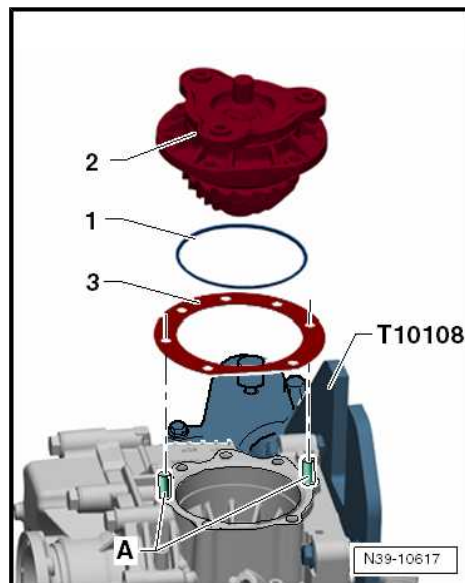
Pinion housing -2- and shim -3- can only be fitted in one position.

- Insert old shim -3-.
- Carefully drive in pinion housing in a diagonal sequence as far as stop using pin - VW 460/2- .

A small gap remains between pinion housing and housing for bevel box.

The gap closes when bolts for pinion housing are tightened.

- Tighten bolts securing pinion housing -2- in a diagonal sequence to specified torque.



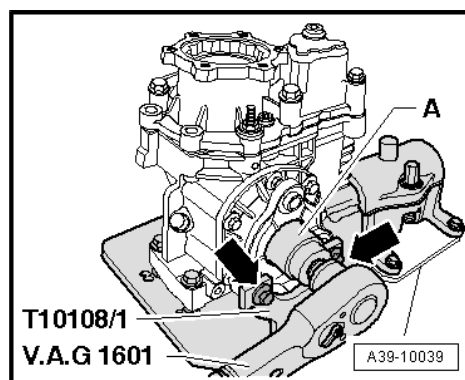
- Coat thread of new nut for output flange with locking fluid - D 000 600- and tighten to specified torque.

A - 36 mm socket for $\frac{3}{4}$ " drive

- Top up gear oil after installing bevel box ➔ [page 216](#) .

Tightening torques

- ♦ ➔ ["3.1 Exploded view - bevel box", page 203](#)



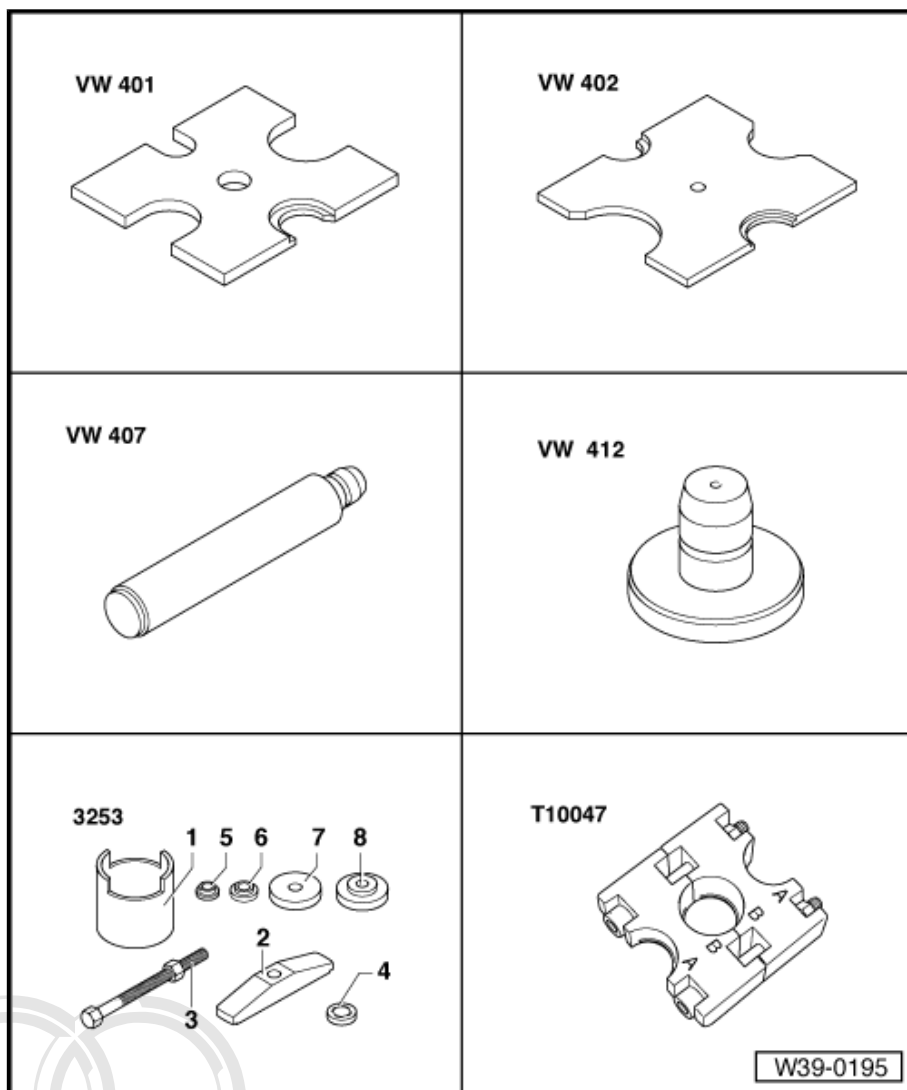
3.2.4 Renewing needle bearings (polygon bearings) for flange shaft (right-side)



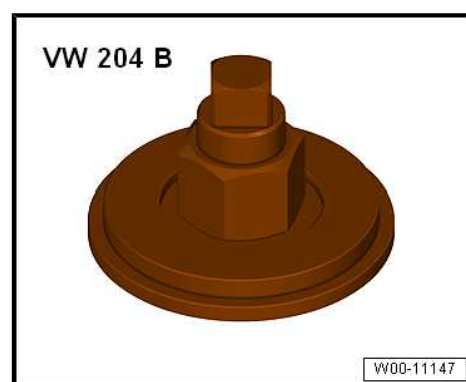
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Special tools and workshop equipment required

- ◆ Thrust plate - VW 401-
- ◆ Thrust plate - VW 402-
- ◆ Press tool - VW 407-
- ◆ Press tool - VW 412-
- ◆ Assembly tool - 3253-
- ◆ Clamp - T10047-



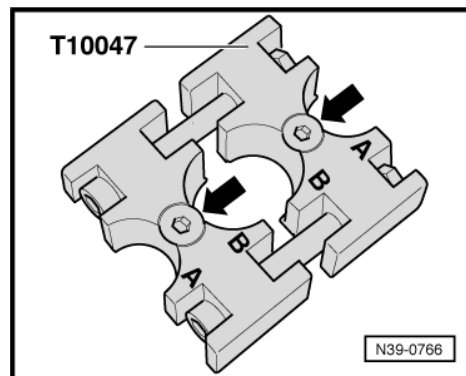
- ◆ Crankshaft seal installing tool - VW 204 B-



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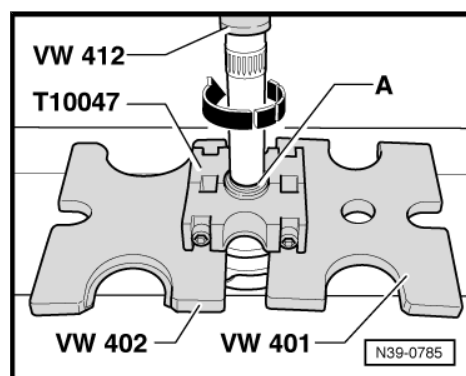
Procedure

- Remove flange shaft (right-side) ➤ [page 198](#) .
- Attach clamp - T10047- to flange shaft 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- for needle bearings.
- To prevent damage to contact surface of needle bearings on shaft, rotate shaft -arrow- when pressing on.

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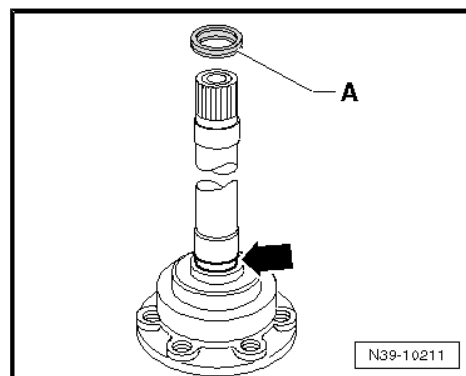


- Remove old oil seal -A- from groove -arrow-.
- Lubricate new oil seal -A- lightly with gear oil and install.

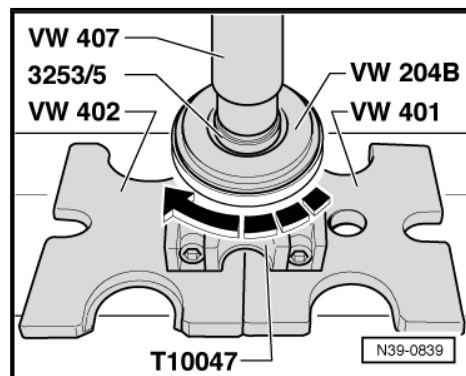


Note

Make sure that seal is not twisted.



- To prevent damage to contact surface of needle bearings on shaft, rotate shaft -arrow- when pressing off.
- Secure needle bearings in position with new circlip.
- Install flange shaft (right-side) ➤ [page 198](#) .



4 Gear oil

⇒ "4.1 Checking gear oil level", page 215

⇒ "4.2 Draining and filling gear oil", page 216

4.1 Checking gear oil level



Note

- ◆ The bevel box is secured to the side of the gearbox and has a separate self-contained oil filling.
- ◆ For gear oil specifications, refer to ⇒ Electronic parts catalogue.

Procedure

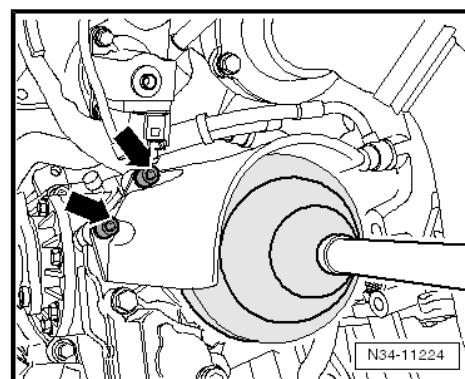
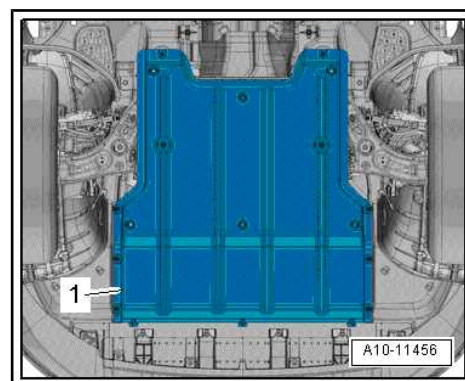


Note

Renew screw plug for oil filler hole.

- Vehicle must be absolutely horizontal (on a four-pillar lifting platform or over an inspection pit).
- Engine not running.
- Remove noise insulation -1- ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation.
- If necessary, unbolt heat shield for drive shaft (right-side) from bevel box, 2 nuts -arrows-.

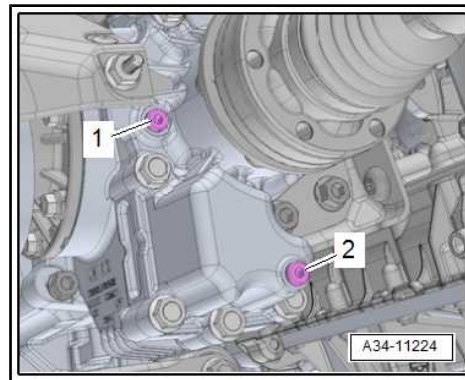
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 Note

Place a cloth below to catch escaping gear oil.

- Remove screw plug -1- from oil filler hole.
- Specification: gear oil level up to bottom lip of filler hole.
- Top up gear oil as necessary ⇒ [page 216](#) .



 Note

- ◆ *Carefully remove any traces of escaped oil on bevel box.*
- ◆ *-Item 2- can be disregarded.*
- Install heat shield for drive shaft (right-side) ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Exploded view - drive shaft .
- Install noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .

Tightening torques

- ◆ ⇒ ["3.1 Exploded view - bevel box", page 203](#)

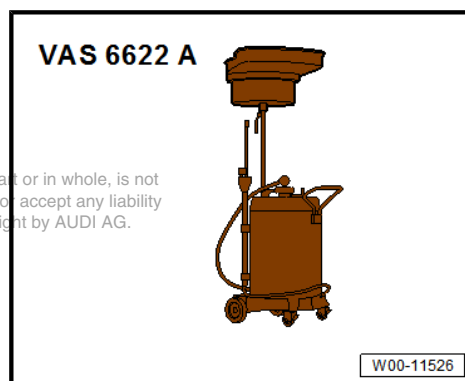
4.2 Draining and filling gear oil

 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 .*

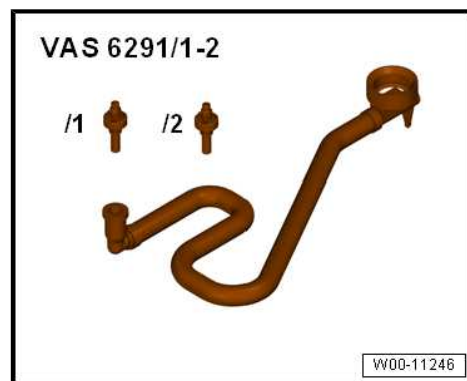
Special tools and workshop equipment required

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

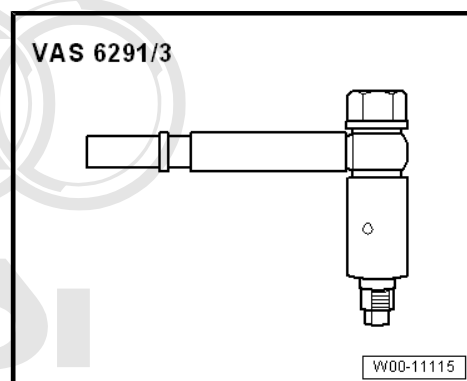


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- ◆ Charging device for Haldex coupling 2 - VAS 6291 A-

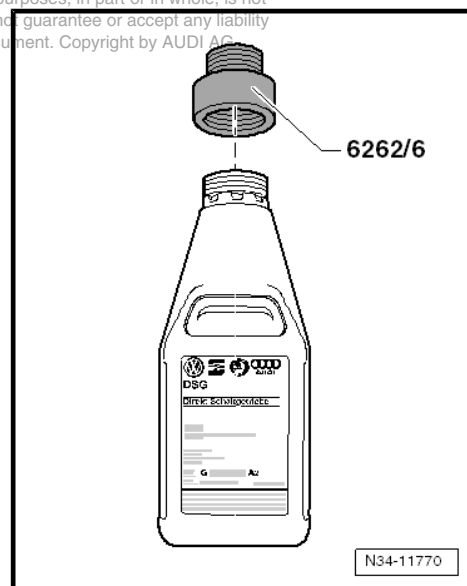


- ◆ Adapter -VAS 6291/3-



- ◆ For some oil containers, an additional adapter -VAS 6262/6- must be used.

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- ◆ Safety goggles
- ◆ Protective gloves (acid resistant)

Draining

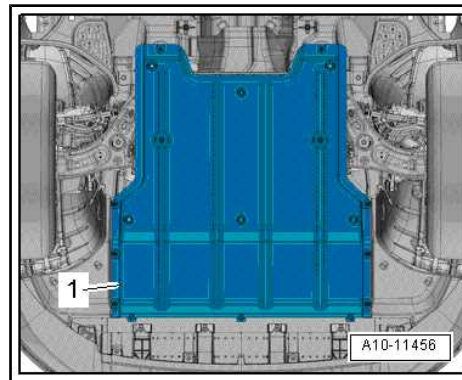


Note

Renew oil drain plug and oil filler plug.

- Vehicle must be absolutely horizontal (on a four-pillar lifting platform or over an inspection pit).
- Engine not running.

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



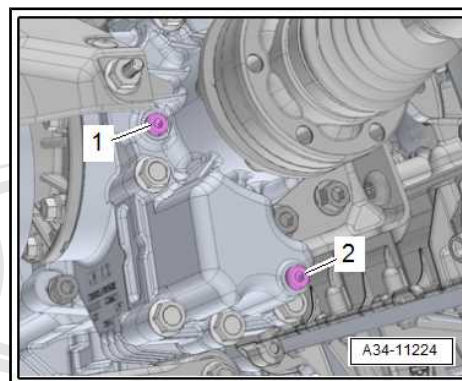
- Place used oil collection and extraction unit - VAS 6622- below gearbox.



WARNING

Hot gear oil can cause burns.

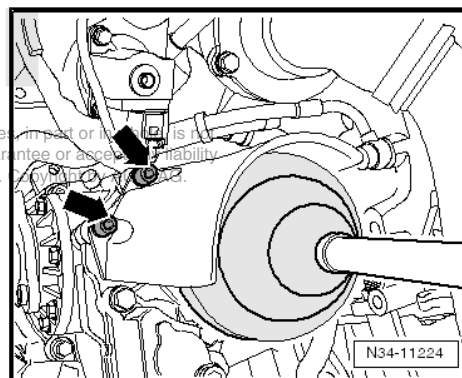
- ◆ *Wear safety goggles.*
- ◆ *Wear protective gloves (acid resistant).*



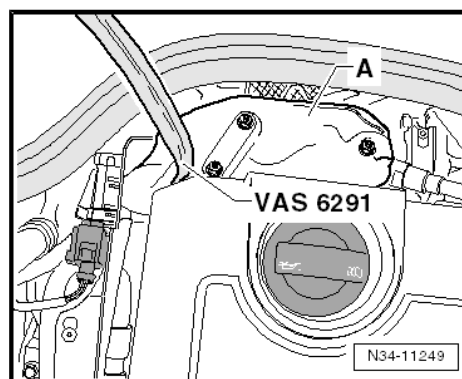
- Remove oil drain plug -2- and allow gear oil to drain off.
- Tighten new oil drain plug.

Filling

- If fitted, remove bolts -arrows- and detach heat shield for drive shaft (right-side).
- Route hose for charging device for Haldex coupling 2 - VAS 6291 A- through engine compartment.



- Vehicles with particulate filter -A-: Guide hose of charging device for Haldex coupling 2 - VAS 6291 A- past particulate filter on right side.

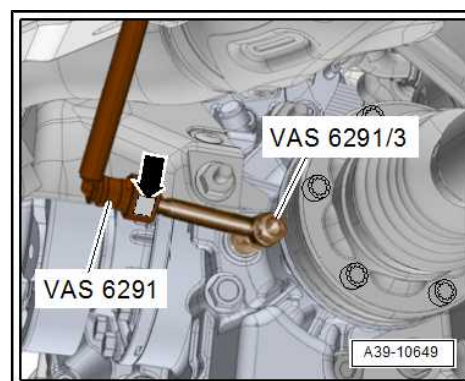
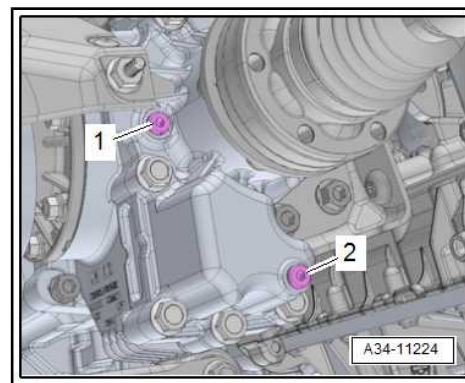




Note

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.
- Screw in adapter -VAS 6291/3- as far as stop.
- Connect elbow joint of charging device for Haldex coupling 2 - VAS 6291 A- to adapter -VAS 6291/3- , making sure it engages.
- The hose must not hang down.



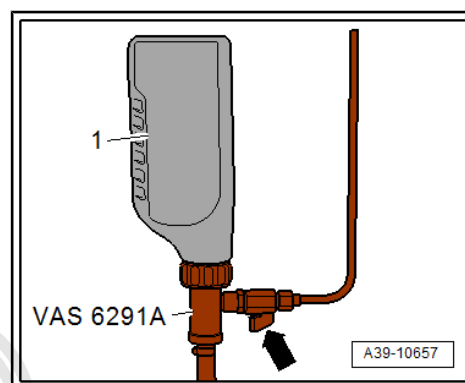
- Make sure that valve -arrow- is closed.
- Screw oil container -1- onto charging device for Haldex coupling 2 - VAS 6291 A- .



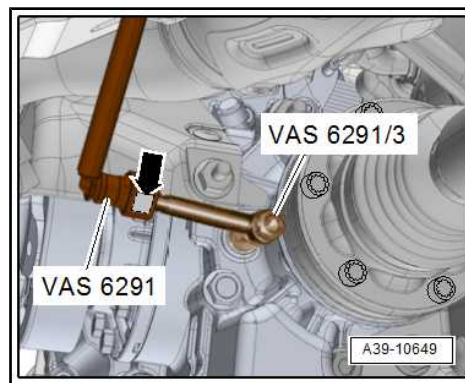
Note

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 charging device for Hal-dex coupling 2 - VAS 6291 A- .
- Screw in »old« oil filler plug and tighten lightly.
- Start engine, engage a gear and allow gearbox to turn for approx. 2 minutes.
- Switch off engine and remove oil filler plug.
- Check oil level and fill gear oil up to bottom lip of filler hole again if necessary.
- Tighten new oil filler plug.



Note

Carefully remove any traces of escaped oil on bevel box.

- Install noise insulation ⇒ General body repairs, exterior; Rep. gr. 66 ; Noise insulation; Removing and installing noise insulation .
- Install heat shield for drive shaft (right-side) ⇒ Running gear, axles, steering; Rep. gr. 40 ; Drive shaft; Exploded view - drive shaft .

Tightening torques

- ♦ ⇒ ["3.1 Exploded view - bevel box", page 203](#)



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